MINUTES
TOWN OF AMHERST
AMHERST PLANNING BOARD MEETING
February 20, 2025
6:30 PM

The Planning Board will hold a public work session at 6:00PM in the Amherst Municipal Building, 5583 Main Street, Williamsville, NY 14221 on the same date.

This meeting is being video recorded.

ROLL CALL

Attendee Name	Organization	Title	Status	Arrived
Michael Chmiel	Town of Amherst	Chair	Present	
John B. Davis	Town of Amherst	Board Member	Absent	
Harbinder Gill	Town of Amherst	Board Member	Present	
Carrie H. Kahn	Town of Amherst	Board Member	Present	
Brittany Lee Penberthy	Town of Amherst	Board Member	Present	
Joseph P. Raffaele Jr.	Town of Amherst	Board Member	Absent	
Jonathan O'Rourke	Town of Amherst	Board Member	Present	
Dan Howard	Town of Amherst	Planning Director	Present	
Daniel J. Ulatowski	Town of Amherst	Assistant Planning Director/ZEO	Present	
Scott Marshall	Town of Amherst	Principal Planner	Present	
Amy Carrato	Town of Amherst	Community Development Assistant	Present	
Jacqualine Berger	Town of Amherst	Councilmember	Present	

Samuel A. Alba	Town of Amherst	Interim Town Attorney	Present	
Sebastiane Odiata	Town of Amherst	Senior Deputy Attorney	Present	

Note: There will be no public hearing or opportunity to speak for the projects listed under the Unfinished Business section of this agenda.

Please note the following time limits for speakers at public hearings:

- **Presentation by Petitioner: 15 minutes**
- **Rebuttal by neighborhood/resident spokesperson: 15 minutes**
- **Individual speakers: 3 minutes**

PUBLIC HEARINGS

SITE PLANS & RELIEF FROM CONDITIONS OF SITE PLANS

1. PROPOSED AMHERST DEVELOPMENT PARK - BUILDING ADDITION, SP-1988-11P
Property located at 6000-6020 N. Bailey Avenue (BCD)
Benderson Development Co. LLC, Petitioner

Proposed 10,069 square foot building addition to the western end of #6010 Bailey Avenue and reconfiguration/expansion to the parking area on the north side of the development south of Romney Road to provide additional 139 parking spaces on site bringing the total parking to 591 spaces. The petitioner has indicated that they will also be requesting a waiver of required sidewalks along Romney Road.

September 19, 2024

James Boglioli, Esq., Benderson Development Co. LLC, represented the petitioner, explained the proposal and was available to answer questions from the Board.

In response to the Board's questions, Mr. Boglioli stated Benderson is not moving forward with the previous Delta Sonic site plan and shopping centers are located nearby but are not a part of this site plan.

No further comments were heard on this proposal.

Following discussion, Ms. Penberthy moved to adjourn the request. The motion was seconded by Mr. Giuliani and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

October 17, 2024

No comments were heard on this proposal.

Following discussion, Ms. Penberthy moved to keep the public hearing open and adjourn the request. The motion was seconded by Mr. Giuliani and carried. Ayes 5, Noes 0, Absent 2 (Gill, Kahn).

January 16, 2025

No comments were heard on this proposal.

Following discussion, Mr. Gill moved to adjourn the request. The motion was seconded by Mr. Raffaele and carried. Ayes 5, Noes 0, Absent 2 (Kahn, Penberthy).

February 20, 2025

James Boglioli, Esq., Benderson Development Co. LLC, represented the petitioner, explained the proposal and was available to answer questions from the Board.

In response to the Board's questions, Mr. Boglioli stated the pedestrian walkways that were discussed are all sidewalks.

No comments were heard on this proposal. The hearing was closed.

Following discussion, Mr. O'Rourke moved to approve the sidewalk waiver request. The motion was seconded by Ms. Kahn and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

Following approval of the sidewalk waiver request, Mr. Gill moved to approve the request based on the resolution. The motion was seconded by Mr. O'Rourke and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Harbinder Gill, Board Member
SECONDER:	Jonathan O'Rourke, Board Member
AYES:	Chmiel, Gill, Kahn, Penberthy, O'Rourke
ABSENT:	Davis, Raffaele Jr.

2. PROPOSED SAWYERS LANDING RESIDENTIAL/COMMERCIAL USE REVISIONS AND PARCEL SPLIT, SP-2021-05A
Property located at 42-50 Dodge Road (Muir Woods Site A) (NCD)
Sawyers Landing LLC, Petitioner

This site proposes changes to the previously approved “Sawyers Landing” mixed use development on “Site A’ of the Muir Woods Development as follows:

- Replacing the previously approved 4 story apartment building in the northwest most portion of the site with a 4 story climate controlled self-storage facility.
- The two 4-story mixed-use buildings closest to Dodge Road, each will now have 15,000 sq. ft. (as previous approved) of 1st floor commercial space (as previous approved) and 56 (51 previously approved) apartment units (5 of which will be on the first floor whereas previously all units were upper story).
- 87 two-story townhomes for sale (previously 22, 2-story duplex townhomes in the central northwest portion of the site, 27 duplex homes on small lots with 2-car garages in the central northeast portion of the site and two 1-story 6 unit apartment buildings with attached garages in the northeast portion of the site).
- The total residential unit count has been reduced to 199 (previously 258 units).
- The total parking count has been reduced to 401 spaces (previously 494 spaces).
- Dividing the parcel into 4 main lots.

Development is proposed predominately in the northern half of the site ('Site A'), with the southern portion that is predominantly wetlands to be donated to the Town. A 0.98± acre area in the northwest corner of the site at the Sweet Home/Dodge Road intersection is proposed as permanent open space. Two (2) curb cuts to Dodge Road are proposed (larger center driveway divided by a median plus a driveway further southeast on Dodge Road). A pedestrian/bike trail extending from Sites B, C and D of the Muir Woods property to the east are proposed to continue to this site, following the southern property line along Dodge Road and winding through the easterly portion of the 'Site A' development. A trail is also shown that connects the proposed bikeway to the Town's existing Ellicott Creek Trailway on the south side of Dodge Road. A 6-ft. high fence is shown on plans along the north property line that abuts the "Bucyrus Heights" residential neighborhood and Heritage Heights Elementary School.

January 16, 2025

Sean Hopkins, Esq., Hopkins Sorgi & McCarthy, represented the petitioner, explained the proposal and was available to answer questions from the Board. William and Alex Sevryn were also present.

No comments were heard on this proposal.

Following discussion, Mr. Raffaele moved to adjourn the request. The motion was seconded by Mr. O'Rourke and carried. Ayes 5, Noes 0, Absent 2 (Kahn, Penberthy).

February 20, 2025

Sean Hopkins, Esq., Hopkins Sorgi & McCarthy, represented the petitioner, explained the proposal and was available to answer questions from the Board.

In response to the Board's questions, Mr. Hopkins stated there are sidewalks within the site, the petitioner will revisit the number of sidewalks on the site, the trail will be open year round, and they have been in discussions with the Sweet Home School District regarding a connection to the school and a designated on-site pick up/drop off location.

No further comments were heard on this proposal.

Following discussion, Mr. Gill moved to close the public hearing. The motion was seconded by Ms. Kahn and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

Following the closing of the public hearing, Mr. Gill moved to adjourn the decision until the March 20, 2025 Planning Board meeting. The motion was seconded by Ms. Kahn and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

Public Hearing Closed
Decision Adjourned to March 20, 2025 meeting

RESULT:	**ADJOURNED [UNANIMOUS]**	**Next: 3/20/2025 6:30 PM**
MOVER:	Harbinder Gill, Board Member	
SECONDER:	Carrie H. Kahn, Board Member	
AYES:	Chmiel, Gill, Kahn, Penberthy, O'Rourke	
ABSENT:	Davis, Raffaele Jr.	

3. PROPOSED AMHERST MUNICIPAL COMPLEX LIBRARY PLAYGROUND ADDITION, SP-1986-30_D
Property located at 350-500 (350) John James Audubon Parkway
Town of Amherst, Petitioner

Proposal to construct a 5,042± square foot playground.

Jessica Boudreau, Project Manager with the Town of Amherst Engineering Department, represented the petitioner, explained the proposal and was available to answer questions from the Board.

No further comments were heard on this proposal. The hearing was closed.

Following discussion, Mr. O'Rourke moved to approve the Negative Declaration. The motion was seconded by Ms. Kahn and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

Following approval of the Negative Declaration, Ms. Penberthy moved to approve the the request based on the resolution. The motion was seconded by Mr. O'Rourke and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Brittany Lee Penberthy, Board Member
SECONDER:	Jonathan O'Rourke, Board Member
AYES:	Chmiel, Gill, Kahn, Penberthy, O'Rourke
ABSENT:	Davis, Raffaele Jr.

SUBDIVISIONS & RELIEF FROM CONDITIONS OF SUBDIVISIONS

None

REZONING & RELIEF FROM CONDITIONS OF REZONINGS

4. REQUEST TO REZONE 0.96± ACRES OF LAND FROM R-3 TO OB, Z-2024-04
Property located at 1692 Maple Road
Michael and Corine Ciccheti, Petitioner

The purpose of this rezoning request is to allow for the potential use of the site for a medical office building.

Sean Hopkins, Esq., Hopkins Sorgi & McCarthy, represented the petitioner, explained the proposal and was available to answer questions from the Board.

In response to the Board's questions, Mr. Hopkins stated the applicant wants to own a stand alone building.

No further comments were heard on this proposal. The hearing was closed.

Following discussion, Ms. Penberthy moved to recommend approval to the Town Board based on the resolution. The motion was seconded by Mr. O'Rourke and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Brittany Lee Penberthy, Board Member
SECONDER:	Jonathan O'Rourke, Board Member
AYES:	Chmiel, Gill, Kahn, Penberthy, O'Rourke
ABSENT:	Davis, Raffaele Jr.

MISCELLANEOUS

None

OTHER COMMUNICATIONS

All public hearings are completed and closed at the termination of public discussion for each agenda item unless otherwise specified by the Chair.

UNFINISHED BUSINESS

Note: All public hearings have been completed. There will be no public hearings for items listed under this section.

SITE PLANS & RELIEF FROM CONDITIONS OF SITE PLANS

None

SUBDIVISIONS & RELIEF FROM CONDITIONS OF SUBDIVISIONS

None

REZONING & RELIEF FROM CONDITIONS OF REZONINGS

None

MISCELLANEOUS

None

OTHER COMMUNICATIONS

DIRECTOR'S REPORT

MINUTES APPROVAL

January 16, 2025
Mr. O'Rourke moved to approve the minutes. The motion was seconded by Mr. Gill and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele).

ADJOURNMENT

Ms. Kahn moved to adjourn the meeting. The motion was seconded by Ms. Penberthy and carried. Ayes 5, Noes 0, Absent 2 (Davis, Raffaele). The Planning Board meeting of date was adjourned at time pm.

TOWN OF AMHERST

APPLICATION & REVIEW PROCEDURE

MAJOR SITE PLAN

MATERIALS MUST BE PROVIDED IN AN ELECTRONIC FORMAT THAT CONTAINS PDF FILES OF THE APPLICATION, EAF, SITE PLAN DRAWING SET SURVEY, LANDSCAPE PLAN, PRELIMINARY BUILDING FLOO PLANS / ELEVATIONS & ANY OTHER SUPPORTING INFORMATION. THIS MUST BE SUBMITTED WITH YOUR APPLICATION. APPLICATIONS WILL NOT BE TRANSMITTED WITHOUT THIS ELECTRONIC INFORMATION.

THIS ALSO APPLIES TO REVISED MATERIALS THAT AR SUBMITTED.

This application package includes the following:

- Application Procedures
- Application Form & Checklist
- Stormwater Pollution Prevention Plan Checklist
- Appendix A Town of Amherst EAF Addendum
- Appendix B Criteria for Required 8½" x 11" Sketches
- Appendix C Erie Sewer District No. 5 – Commercial / Industrial New & Existing Buildings Requirements

- IMPORTANT-

1. A pre-submittal consultation with Planning Department staff is *strongly recommended* prior to submitting an application. The pre-submittal meeting gives the applicant an opportunity to discuss with staff such items as:
   - classifying the action as a major site plan, minor site plan, or minor site plan adjustment;
   - determining what specific information will be required to be submitted with the application;
   - identifying and discussing issues that must be addressed as part of the SEQR review;
   - identifying any potential variances required to implement the project as proposed.

   An appointment is required for all meetings with Planning Department staff.

2. This site plan petition is subject to the requirements of 6 NYCRR Part 617, State Environmental Quality Review Act (SEQR), and Chapter 104 of the Town of Amherst Code, as amended. The Planning Board cannot make a SEQR determination unless a complete Environmental Assessment Form (EAF), including Town of Amherst EAF Addendum, and any required supplementary information such as traffic impact studies, archaeological reports, wetland delineations or geotechnical reports, are submitted. SEQR issues may be discussed with Planning Department staff at a recommended pre-submittal meeting. Unlisted Actions require a Short EAF; Type I Actions require a Full EAF. The following is a link to the NYSDEC website and fillable forms with instructions*:*
   http://www.dec.ny.gov/permits/6191.html.

3. **Review by the Town Design Advisory Board (DAB) is required for Major Site Plans located in the following Mixed-Use zoning districts:**

Traditional Infill 2.5 (TI-2.5)
Traditional Infill 4 (TI-4)
Shallow Corridor 3 (SC-3)
Deep Corridor 3 (DC-3)
Deep Corridor 5 (DC-5)
Center 2.5 (CTR-2.5)
Center 5 (CTR-5)
Center 8 (CTR-8)

The application for DAB review is required to be filed in conjunction with the major site plan application.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

4. The application shall be executed or consented to in writing by the owner of the property.

5. **Any variances from the Zoning Board of Appeals, or any decision from the Town Board (e.g. removal of deed restrictions) must be obtained prior to action by the Planning Board on a Site Plan application.**

6. Submittal of an application grants permission to Town staff and Planning Board members to access the parcel(s) under consideration.

7. All site plan drawings must be prepared by a Registered Architect, Professional Engineer, Landscape Architect, or Land Surveyor (as applicable) licensed to practice in New York State.

8. If you wish to include a Coordinated Sign Plan application with the site plan petition, a separate application must be completed. Contact the Planning Department for a copy of a Coordinated Sign Plan application package.

9. All drawings should be no larger than 24 in. x 36 in. If site characteristics warrant larger plan sheets, they may be accepted subject to Planning Department concurrence. All drawings must also reserve a 4 in. x 6 in. area in the lower right hand corner for official Town use.

APPLICATION PROCEDURES

1. Applicant secures application package from the Planning Department, 5583 Main Street, Williamsville, NY 14221. (716) 631-7051. Forms are also available online at: www.amherst.ny.us, (keyword: Planning).

2. Applicant prepares information as required on the Site Plan Submittal Checklist, attached. NOTE: Some proposals may not require all items on the checklist; please verify with the Planning Department.

3. Applicant schedules an appointment with the Planning Department to review the following:
   - a complete set of site plan drawings, preliminary building elevations and floor plans (no larger than 24" x 36" in size)
   - Environmental Assessment Form (EAF) & Town EAF Addendum
   - any supporting reports and materials
   - verification from the Town Assessor that the address in the application is correct

4. Applicant schedules an application submittal appointment with the Planning Department. NO SITE PLAN WILL BE ACCEPTED FOR REVIEW WITHOUT A PRE-SET SUBMITTAL APPOINTMENT.

5. At the submittal appointment, applicant provides fourteen (14) complete and collated sets of drawings and application information to the Planning Department **(materials will not be accepted unless folded into 9" x 12" in size),** including**:**
   - application form
   - Environmental Assessment Form (EAF)
   - supporting reports / materials
   - complete set of site plan drawings, preliminary building elevations and floor plans (**at least one (1) set of drawings must bear a raised or wet seal and signature of the design professional** who prepared the plans; the remaining copies may be submitted with a facsimile of the seal and signature)
   - digital files of all materials in pdf format
   - an 8½" x 11" reduction of the sketch plan or plat drawing (see Appendix B)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

6. After approval for filing by the Planning Department, applicant submits all necessary fees to the Town Clerk. **(See Schedule of Fees on first page of application and make checks payable to: Town of Amherst.)**

7. The applicant returns a copy of the filing receipt to the Planning Department.

8. The Planning Department transmits remaining thirteen (13) copies of the application and supporting materials to:
   - Assessor
   - Commissioner of Building
   - Town Engineer
   - Superintendent of Highways
   - Traffic/Safety Board
   - Fire Chiefs' Association
   - Plumbing Division
   - Right-of-Way Agent
   - Police Department (if applicable)
   - Zoning Enforcement Officer
   - Other Town and outside agencies, as applicable

9. Within 30 days of its receipt of the complete application for Site Plan approval, each agency completes its review and notifies the Planning Department in writing of its comments or recommendations as required by Ordinance.

10. The applicant may be required to submit revised plans, reports, or materials to address review agency comments. The procedures for submittal of revised plans are as follows:

    - A cover letter addressing all comments received to date is required.
    - "Highlight" the area of change on the drawings and provide a notation describing the change.
    - Revised plans/materials are required. Planning staff should be contacted to determine the number of sets needed.
    - All revised plans and materials must also be provided in an electronic format that contains pdf files of the revised information.

11. The Planning Board reviews the EAF to determine whether a Draft Environmental Impact Statement (DEIS) is required. The petitioner will be advised in the event that a DEIS is required and afforded the opportunity to prepare it. If the petitioner declines, the Planning Board will prepare the DEIS at the petitioner's expense. The public hearing will be held on the DEIS concurrently with the Planning Board hearing on the application.

12. Planning Board Meeting Procedures:

    The applicant or representative presents the project at the public hearing before the Planning Board and is available to answer any questions. The Planning Board may take any of the following actions:

    - Adjourn the hearing to a future Planning Board meeting (hearing remains open).
    - Close the hearing and table action on the site plan to a future Planning Board meeting. (The Planning Board may remove the item from the agenda until such time as all required information is provided.)
    - Close the hearing and make a decision on the site plan.

    All determinations on matters before the Planning Board are made after all public hearings on that meeting's agenda are completed.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

13. A copy of the Planning Board's determination will be provided to the applicant, his / her representative, the Building Commissioner and the Town Clerk approximately 1 week following the Planning Board meeting at which it was heard.

14. If the Planning Board approves a Site Plan with conditions, the Planning Department will work with the applicant to ensure that all conditions of the approval are satisfactorily addressed. When all conditions are satisfied, the applicant submits **seven (7) final copies** of the complete set of all site plan drawings, folded into 9" x 12". For site plans in the Mixed-Use zoning districts, building elevations will also be required.

    All 7 sets must have original wet seals and include the required 4 in. x 6 in area in the lower right hand corner for official Town use. These drawings will be stamped and signed "Approved" by the Planning Director and transmitted to Town Departments for their files and use.

15. A building permit will not be issued by the Building Department until the stamped and signed Site Plan is issued by the Planning Director.

NOTE: Please check with the Planning Department to determine the deadline date for filing applications. Due to the public hearing notice requirements and department reviews, no site plan application will be placed on the Planning Board agenda after the deadline for filing has closed. Scheduling may be delayed if an application is incomplete.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Major Site Plan Review

For Official Use

File #: _____ **Acreage** _____ **Fee $** _____

Address Verified by Assessor's Office _____ VERIFIED BY DATE

Materials Received by Planning Department _____ RECEIVED BY DATE

Fee Paid to Town Clerk _____ RECEIVED BY DATE

Site Plan Review		**Fill In Applicable Fees**
1 acre or less	$1,250.00	_____
Each additional acre or fraction thereof	$ 650.00/acre	_____
Amendments to Site Plans	$1,200.00	_____
Request for Relief of / Change to Conditions of Site Plan Approval	$1,200.00	_____
Request for Extension of Site Plan Approval	$ 450.00	_____
Stormwater Pollution Prevention Plan		
1 - 4.99 Acres	$ 500.00	_____
5 - 10 Acres	$ 750.00	_____
>10 Acres	$1,000.00	_____
Affidavit Fee for Public Hearing	$ 15.00	_____
	TOTAL FEE:	**$**_____

To Be Completed By Applicant

Petitioner:

Name: Benderson Development Company, LLC

Address: 570 Delaware Avenue

Buffalo , New York 14202

city state zip code

Phone: 716-878-9626 Fax: _____

E Mail: _____

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAJOR SITE PLAN APPLICATION (con't) ***Page 2***

Representative (Architect, Engineer, Landscape Architect, Surveyor, or Attorney)**:**

Name: James A. Boglioli

Address: 570 Delaware Avenue

Buffalo , New York 14202
city state zip code

Phone: 716-878-9626 Fax:

E Mail: jmb@benderson.com

Project Location (must be verified by Town Assessor's Office)**:**

Address: 6000 - 6040 North Bailey Avenue

SBL No(s): 54.14-1-12.211, 54.14-1-12.211/A, 54.14-1-12.211/B

Project Name: Two Building additions 5,441sf & 14,554sf

Project Description: Please see the attached letter of intent

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAJOR SITE PLAN APPLICATION (con't) ***Page 3***

If this petition is an amendment to a previously approved site plan, please describe the proposed changes (include type and size of existing structures and number of existing parking spaces):

Please see the attached letter of intent

	existing	proposed	total
Gross Floor Area (non-residential):	246,740	266,735	+19,995
Gross Floor Area Residential:	N/A	N/A	N/A
Number of Residential Units:	N/A	N/A	N/A
Number of Parking Spaces:	452	688	+236

Acreage of Parcel: 17.43

(list each parcel separately)

Frontage on Public Roads: Romney: 945'

(list each road separately) N. Bailey: 445.6'

Existing Zoning District(s) R-D

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Site Plan Submittal Requirements and Checklist

The following checklist outlines the information required by the Planning Department to accept a Site Plan application for review. ***It is strongly recommended that you make an appointment with Planning Staff to determine which items apply to your application***.

Item No.	Item	Submitted	Official use
I Basic Drawing Information			
1.0	**Drawing size not to exceed 24" x 36"**		
2.0	**Title of Drawing**		
3.0	**Name and address of Applicant**		
4.0	**Name of person preparing drawing**		
5.0	**Wet seal/raised seal and signature of NYS licensed architect, engineer, landscape architect, or surveyor (as applicable)**		
6.0	**Project address**		
7.0	**Zoning of subject property and adjacent parcels**		
8.0	**North point, scale, date, and revision date(s)**		
9.0	**4" x 6" reserved area in lower right hand corner for official Town use**		
II Structures, Paved Areas, & Open Space			
1.0	**Existing and Proposed Streets**		
1.1	Names of all existing and proposed streets		
1.2	Width and radii of proposed curb-cuts		
1.3	Existing curb-cuts on adjacent and opposite properties		
1.4	Show ROW width, pavement dimensions, lane widths, pavement markings, and proposed signage on proposed streets		
1.5	Show proposed ROW consistent with planned NYSDOT, Erie County, or Town road projects (if applicable)		
1.6	Show location of proposed cross access to adjacent parcels along with a draft easement		
1.7	Designation of Fire Lanes (if applicable)		
1.8	Fire apparatus access roads		
1.9	Label any proposed roads as public or private		
1.10	Location and dimensions of sidewalks		
1.11	Typical cross sections and profiles of proposed streets, pedestrian walkways, and bikeways		
2.0	**Proposed Structures**		
2.1	Location and complete dimensions of proposed structures		
2.2	Setback dimensions of structure(s) to all property lines		
2.3	Proposed use of structures		
2.4	Gross square feet area of each structure		
2.5	Location of all building entrances		
2.6	Indicate type of roof construction/materials		
2.7	Location, height, and design detail of existing and proposed fences and walls		
2.8	Location of light standards and building mounted lights		
2.9	Location of dumpster and detail of dumpster enclosure with gate		
2.10	Layout and dimensions of the lot(s) proposed for development		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.	Item	Submitted	Official use
II Structures, Paved Areas, & Open Space (cont'd)			
3.0	**Floor Plans with individual rooms and spaces labeled** (fully dimensioned)		
4.0	**Building elevations with height dimensions from finished grade to the highest point of the roof and to midpoint of gable or hip of a pitched roof.** (fully dimensioned)		
4.1	Show screening of mechanical equipment		
5.0	**Parking/Loading/Stacking Areas**		
5.1	Location and complete dimensions of all paved areas		
5.2	Setback dimensions of all paved areas to property lines		
5.3	Dimension of typical parking space and drive aisles		
5.4	Location and layout of handicapped parking spaces & access aisles		
5.5	Detail of vertical signage for handicapped parking and access aisles		
5.6	Indicate minimum parking requirement & number of spaces provided		
5.7	Proposed signage for directing and guiding traffic		
5.8	Curb cut permits from NYS, Erie County, or Town (if applicable)		
5.9	Pedestrian connections (from proposed structures to public sidewalk network)		
6.0	**Location and proposed development of all open spaces, including parks, playgrounds, and open reservations**		
III Utilities and Drainage			
1.0	**Engineers Report** (bound separately from the Stormwater Pollution Prevention Plan [SWPPP])		
1.1	Stamped/sealed and signed by NYS licensed architect or professional engineer		
1.2	Proposed water service sizing, RPZ pressure and fire safety flow and pressure calculations		
1.3	Proposed sanitary sewer facility load calculations (avg. & peak flows) including calculation of the peaking factor		
1.4	Proposed storm drainage facility calculations (see information included with this application)		
2.0	**Grading Plan**		
2.1	Existing and proposed grades indicated (proposed grades may not exceed 1 on 3)		
3.0	**Water Service**		
3.1	Location, size and material of existing and proposed facilities		
3.2	Location of existing and proposed fire hydrant location(s)		
3.3	Indicate use of sprinklers, location of Fire Department connection, and proposed fire protection systems		
3.4	Existing and proposed meter/RPZ size and location		
3.5	Applicable construction details		
4.0	**Sanitary Sewers**		
4.1	Locations, sizes, slopes, inverts, and materials of all existing and proposed facilities		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.		Submitted	Official use
III Utilities and Drainage (cont'd)			
4.2	Applicable construction details		
4.3	Proposed water/oil/grease interceptor sizing calculations by a professional engineer (if applicable)		
5.0	**Storm Drainage**		
5.1	Locations, sizes, slopes, inverts, and materials of existing and proposed storm drainage facilities		
5.2	Connection of roof drains to proposed drainage system		
5.3	Applicable Town Standard construction details		
5.4	Existing and proposed swales and ditches		
5.5	Detention area cross-section and high-level elevations		
5.6	County and State approval for tie-in to existing sewers		
6.0	**Stormwater Pollution Prevention Plan (SWPPP) as applicable** (bound separately from the Engineer's Report) **See attached checklist.**		
7.0	**Natural Gas Service**		
8.0	**Location of transformers, generators and other mechanical equipment; include detail drawings (if applicable)**		
9.0	**Downstream Sanitary Capacity Analysis (DSCA) Report** (must be submitted if proposed average flows are greater than 2,500 gallons per day)		
9.1	The DSCA Report must include a detailed downstream sewer capacity analysis and the calculations of and commitment to (via Developer commitment letter) the required financial contribution to the Town's I/I mitigation fund based on peak flow conditions. The contribution must be based on $250 per gallon per minute of mitigated flow		
IV Lighting Plan			
1.0	**Photometric plan showing light spread in foot candles at property lines**		
1.1	Detail of all light standards, including dimension of height from finished grade		
1.2	Detail of all exterior lighting fixtures		
V Landscape Plan			
1.0	**Wet/raised seal and signature of a licensed Landscape Architect**		
2.0	**Provide a calculation of the total Parking area and a calculation of interior parking area in square feet and as a percentage**		
3.0	**Indicate location, size, number and type of proposed landscape materials**		
4.0	**Indicate location, type and size of <u>all</u> existing trees 4" caliper or larger and indicate which will be removed or retained**		
VI Other Required Information/General Requirements			
1.0	**Complete boundary survey that includes all existing structures, acreage, legal description with reference to a property line, street, or other known feature, and easements plotted to scale by a NYS licensed land surveyor**		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.		Submitted	Official Use
VI Other Required Information/General Requirements (cont'd)			
1.1	Copies of all easements, reciprocal access agreement or similar leag documents		
2.0	**Topographic Survey with a 30 ft. buffer outside all property lines by a NYS licensed land surveyor**		
3.0	**Draft of any deed restrictions, covenants, provisions for home associations and common ownership, and reciprocal easement agreements (as applicable).**		
4.0	**For assessment purposes, state intent to apply for condominium status (if applicable).**		
5.0	**Completed and signed Environmental Assessment Form**		
5.1	Soil boring report and geotechnical report prepared by a qualified Professional Engineer (if applicable)		
5.2	Traffic Impact Study (if applicable)		
5.3	Archaeological survey (if applicable		
5.4	Wetland Delineation report (if applicable)		
6.0	**Show existing zoning(s) of both the subject property and adjacent parcels on the Site Plan and the Landscape Plan**		
7.0	**Location of NYSDEC wetlands (including buffer area) and/or federal wetlands; indicate jurisdictional status**		
8.0	**Location of Floodway and floodplain** (if applicable)		
9.0	**Documentation pertaining to any conditions of zonings, including copies of required deed restrictions; indicate date of rezoning and the parcel address under which it was rezoned (if applicable)**		
10.0	**Documentation related to any required variances granted by the ZBA**		
11.0	**For residential site plans, provide a statement from the appropriate school district that adequate school sites and facilities are available.**		
12.0	**8 1/2" X 11" reduction of primary site plan drawing (see appendix "B" of application package for specifications)**		
13.0	**A CD containing a PDF of all site plan drawings (Must also be provided with revised drawings)**		
VII Additional Required Information for Projects in the Mixed Use Districts			
1.0	**Design Advisory Board Application**		
1.1	Required for Major Site Plan		
1.2	Required at the Planning Directors Discretion for Minor Site Plans		
2.0	**Block & Street Network Plan**		
2.1	Designation of Core, Local & Alley streets		
2.2	Dimensions of Blocks		
3.0	**Block Usage Plan (as applicable)**		
3.1	Designation of site usage for each block including open space areas		
4.0	**Phasing Plan**		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

For official use only:

_____
Approved/Date

X:\Current_Planning\Application Forms 2013 Working Doc\Major Site Plan\Site Plan Submittal Requirements and Checklist (3).doc

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

TOWN OF AMHERST
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
-- ADDENDUM --

1. For each applicable category of proposed <u>new</u> structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   _____ Geotechnical report attached _____ Not applicable

3. Is your property located: On Youngs Road between Dodge and Klein Roads? □ Yes □ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? □ Yes □ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? □ Yes □ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   _____
   _____

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: □ Yes □ No

   Describe_____
   _____

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project_____
   Source: _____

8. Will blasting occur during construction? □ Yes □ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? □ Yes □ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
    _____ average flow _____ peak flow.

    (Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources,* is your property 'blue-rated' for historic significance? □ Yes □ No

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NY 14202
716.886.0211.P 716.886.2269.F

November 15, 2023

VIA HAND DELIVERY
Robert J. Gilmour., Chair
Members of the Planning Board
Town of Amherst
5583 Main Street
Williamsville, NY 14221

Re: Application for Site Plan Approval
6000 – 6040 North Bailey Ave, Amherst, New York (BDC: 1723)

Dear Chair Gilmour and Members of the Planning Board:

In connection with the above-referenced property, Benderson Development Company, LLC and Delta Sonic Carwash Systems, Inc. is seeking to relocate its office from downtown Buffalo to Amherst. As part of this relocation, both companies are seeking to relocate approximately 250 employes to Amherst. In addition, Delta Sonic is proposing to locate its various warehouse locations in Western New York to the property which includes, research and development, warehousing, fabrication, and soap blending uses.

The Subject Property

As the Planning Board is aware, Amherst Development Park is a business park located in the Research and Development (RD) zoning district. It maintains frontage on North Bailey Ave. and Romney Road and is improved with five buildings. An aerial photograph of the property is attached as **Exhibit A**. To the north, across Romney Road, is the Boulevard, a large shopping center in the SC zoning district. To the west, abutting the Subject Property, is the Boulevard South, another shopping center in the SC zoning district. To the east, across N. Bailey Road will be another large development anchored by Costco and Dick's and located in the SC zoning district. To the south is an office building and the Boulevard towers, located within the CTR-5 and MFR-5 zoning districts, respectively. The properties located to the north, east and west of the Subject Property are all owned by Benderson Development.

The Proposed Project

In order to accommodate the new offices and the Delta Sonic warehouse, Benderson is proposing the following changes:

- A 5,441 s.f. building expansion to connect the existing 26,709 s.f. and 35,826 s.f. buildings located along Romney Road in the northwest corner of the Subject Property to accommodate the new offices.
- A 14,554 s.f. building expansion to connect the existing 34,632 s.f. and 59,591 s.f. buildings located along rear of the property in the southwest corner of the Subject Property to accommodate Delta Sonic's warehouse uses.
- The reconfiguration of the parking field along Romney Road to add an additional row of parking against Romney Road and the reconfiguration of the parking to the south to add an extra row of parking along the southern property line.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NY 14202
716.886.0211.P 716.886.2269.F

- The reconfiguration of the area between the two buildings (office and warehouse) to add outdoor greenspace, patio area and parking, as well as to re-work the loading docks to the southerly building.

- Additional site, utility, landscaping, sidewalk and other enhancements in connection with the above - referenced changes.

- Upgrading of the building façade to accommodate the new development.

Conclusion

We look forward to working with the Town on this project. We believe this project represents a great development opportunity for this area that is consistent with the previous development of the property. If there are any questions regarding this letter or the enclosed documentation, please feel free to contact me at (716) 878-9626 or jamesboglioli@benderson.com.

Thank you,
BENDERSON DEVELOPMENT COMPANY, LLC
James A. Boglioli
James A. Boglioli, Esq.
Director, Right to Build – Northeast US

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Exhibit A

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)


1723 - Amherst Development Park
Romney Dr
Romney Dr
Romney Dr
Romney Dr

TOWN OF AMHERST
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
-- ADDENDUM --

1. For each applicable category of proposed new structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Odessa silt loam	Severe	Severe	Severe	Severe	Severe

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   X Geotechnical report attached _____ Not applicable
   Report will be submitted as soon as it is completed

3. Is your property located: On Youngs Road between Dodge and Klein Roads? ☐ Yes ☑ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? ☐ Yes ☑ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? ☐ Yes ☑ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   Blvd Consumer Square; Amherst Commerce park; Maple Crossing; Blvd South (TJ Maxx Plaza);
   1401 - 1405 Niagara Falls Blvd; 3980 Maple Road; 50 Keph Drive; 1715 & 1721 Niagara Falls Blvd

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: ☐ Yes ☑ No

   Describe_____
   _____

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project 77 TOTAL TRIPS
   Source: ITE - Trip Generation Manual

8. Will blasting occur during construction? ☐ Yes ☑ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? ☐ Yes ☑ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
    2,000 GPD average flow 12.7 GPM peak flow.

    (Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources,* is your property 'blue-rated' for historic significance? ☐ Yes ☑ No

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

Name of Action or Project:
Proposed Building Additions & Site Modifications

Project Location (describe, and attach a location map):
6000-6040 North Bailey Ave, Town of Amherst, Erie County

Brief Description of Proposed Action:
The proposed action consists of two building additions (5,441 SF and 14,554 SF) to connect the western most buildings on the north and south sides of the site, replacement of existing Town of Amherst storm pipes, expansion of the existing parking field, new drainage improvements, paving, landscaping and site lighting. The existing loading area between the new additions will be modified to provide at grade pedestrian access points, additional parking and outdoor amenity areas.

Name of Applicant or Sponsor:	Telephone: 716-878-9626
Benderson Development Company, LLC	E-Mail: jamesboglioli@benderson.com

Address:
570 Delaware Ave

City/PO:	State:	Zip Code:
Buffalo	New York	14202

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: Town of Amherst Planning Board; Town of Amherst Zoning Board of Appeals; Town of Amherst Building Permit; NYSDEC Stormwater Permit	☐	☑

3.a. Total acreage of the site of the proposed action? 17.43 acres
b. Total acreage to be physically disturbed? 3.29 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 31.64 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____
☐ Parkland

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	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO ☐	YES ☑	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify:	NO ☑	YES ☐	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	NO ☑	YES ☐	
b. Are public transportation service(s) available at or near the site of the proposed action?	☐	☑	
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	☐	☑	
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: N/A Utilize existing services	NO ☐	YES ☑	
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: Connect to existing on-site water services	NO ☐	YES ☑	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: Connect to existing on-site sanitary service	NO ☐	YES ☑	
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	NO ☑	YES ☐	
b. Is the proposed action located in an archeological sensitive area?	☑	☐	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	NO ☑	YES ☐	
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres:	☑	☐	

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:
☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☐ Wetland ☑ Urban ☑ Suburban

15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	NO ☑	YES ☐
16. Is the project site located in the 100 year flood plain?	NO ☑	YES ☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☑ NO ☐ YES	☐	☑
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☐ NO ☑ YES On-site storm management through a series of catch basins		

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	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: On-site stormwater runoff to underground detention system (31,000 CF)	☐	☑
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☑	☐

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: David Zuppelli Date: 11.15.2023

Signature: David Zuppelli

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

STORMWATER POLLUTION PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES

At

Amherst Development Park
6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

November 2023



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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Section 101 - Scope

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Section 103 - Operator's Name and Address

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Appendix A Site Location Maps

Appendix B NYSDEC Notice of Intent (NOI)

Appendix C MS4 SWPPP Acceptance Form

Appendix D Engineer's Report

Appendix E NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Appendix F Forms

- Contractor's Certification
- Owner/Operator Certification
- SWPPP Preparer Certification
- NYSDEC Letter of Acknowledgment

Appendix G NYSDEC Notice of Termination (NOT)

Town of Amherst Level 1 Inspection – Post Construction Stormwater Management

Appendix H Construction Documents

Appendix I Standard Erosion Control Details

Appendix J NYSDEC Stormwater Management Inspection Lists

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101 SCOPE

A. **PURPOSE:** Benderson Development Company, LLC has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by Benderson Development Company, LLC; and/or liquidated damages. This section provides a descriptive explanation of Benderson Development Company, LLC Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and electronically submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities. Once a copy of the SPDES permit is received from NYSDEC, a copy will be included in Appendix F of this report.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is not subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to

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comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **General Construction Site Inspection and Maintenance Requirements**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

B. **Owner or operator Maintenance Inspection Requirements**

1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the **owner or operator** can stop conducting the maintenance inspections. The **owner or operator** shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of the General Permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

The **owner or operator** shall have a **qualified inspector** conduct site inspections in conformance with the following requirements:

Note: The **trained contractor** identified in Part III.A.6 of the General Permit **cannot** conduct the **qualified inspector** site inspections unless they meet the **qualified inspector** qualifications included in Appendix A of the General Permit. In order to perform these inspections, the trained contractor would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A **qualified inspector** shall conduct site inspections for all construction activities identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

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b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the **qualified inspector** shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the **qualified inspector** shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to **disturb greater than five (5) acres** of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been **temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas**, the **qualified inspector** shall conduct a site inspection at least once every thirty (30) calendar days. The **owner or operator** shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice” certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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3. At a minimum, the **qualified inspector** shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The **qualified inspector** shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;

   b. Name and title of person(s) performing inspection;

   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

   d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

   f. Identification of all erosion and sediment control practices that need repair or maintenance;

   g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

   i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

   j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

   k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The **qualified inspector** shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The **qualified inspector** shall attach paper color copies of the digital photographs to the

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inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the **qualified inspector** shall notify the **owner or operator** and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the **qualified inspector**. Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

I. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to submitting the NOT to the Department. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

The Town of Amherst - Notice of Termination Requirement: Prior to submitting the NOT, the Town of Amherst requires a Level 1 inspection of all stormwater management practices. See Appendix G: Town of Amherst Level 1 Inspection – Post Construction Stormwater Management.

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102 PROJECT NAME AND LOCATION

Amherst Development Park

6000-6040 North Bailey Ave

Town of Amherst, County of Erie, New York

42.996°N, 78.817°W

Estimated Area of Site ≈ 17.14 acres

Estimated Area to be Disturbed by Construction Activities ≈ 6.95+/- acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Benderson Development Company, LLC

570 Delaware Ave.

Buffalo, NY 14202

Contact Person: Matt Oates

Telephone: 716-878-9397

104 PROJECT DESCRIPTION

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.14 of which 6.95 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of stormwater management areas including topsoil & seed

D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and parking lot

G. Final grading & landscaping

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H. Construction of buildings

This project is owned by Benderson Development Company, LLC and will be developed by Benderson Development Company, LLC The work area consists of approximately 6.95+/- acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 85. The post-construction runoff curve number for the site will be "CN" = 95. Approximately 6.95+/- acres total will be disturbed by construction activities.

See soils information located in Appendix I.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to an unnamed open/closed drainage system north of the site that discharges to Ellicott Creek and ultimately the Niagara River.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above.

110 HISTORIC PLACES

No critical habitats have been determined to be on the site.

111 WETLANDS AND/OR OTHER SURFACE WATERS

No wetlands or other surface waters are located on the site

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

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B. Use of stabilization method for all slopes having a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

b. The **owner or operator** shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Construct temporary construction exits at locations shown on the Demolition & Erosion Control Plan Sheet.

B. Install perimeter silt fence/silt socks/silt sock in the locations shown on the Demolition & Erosion Control Plan Sheet.

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C. Clear & Grub site.

D. Installation of detention basin to act as sediment basins (do not install bioretention soil or underdrains until stabilized)

E. Commence site grading.

F. Disturbed areas of the site where construction activity has ceased for more than 14 days shall be temporarily seeded and watered.

G. Construction of buildings

H. Installation of proposed utilities

I. Finalize pavement subgrade preparation.

J. Construct all curb, drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all inlets.

K. Dust control.

L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.

M. Install base material as required for pavement.

N. Carry out final grading and seeding and planting.

O. Clean storm system following construction, clean detention basins of any silt and return to design grades.

P. Remove silt fencing/silt sock only after all paving is complete and exposed surfaces are stabilized.

Q. Remove temporary construction exits only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

Refer to Appendix D, Engineer's Report

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

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Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in designated areas which will have temporary erosion & sediment control measures installed. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used

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for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

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B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

The SWPPP for this site development project requires regulated MS4 approval from the Town of Amherst. All changes to the SWPPP must be approved by the Town of Amherst prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the

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filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

   - Inspect catch basins, storm manholes, treatment structures, storm piping and stormwater pond for debris and accumulation of sediment.
   - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
   - Flush piping with water if necessary to remove accumulated sediment.
   - Bioretention areas shall be maintained per the NYSDEC Maintenance and Management Checklist included in this SWPPP.
   - Check all stone outfall structures for erosion and re-stone if necessary to prevent further erosion.
   - Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
   - A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

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Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers

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- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.

2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

3. Products will be kept in their original containers with the original manufacturer's label in legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

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4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm

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water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Amherst. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

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118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These

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individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system

120 STORM WATER CONTROL FACILITY MAINTENANCE

The frequency of inspections for the bioretention areas shall match the frequencies listed on the “Bioretention Operation, Maintenance and Management Inspection Checklist” in Appendix J of the SWPPP.

The proposed catch basins, as per section 115, shall be inspected 4 times per year for removal of floatable debris. Any silt buildup over 6” in depth shall be removed and disposed of properly off-site.

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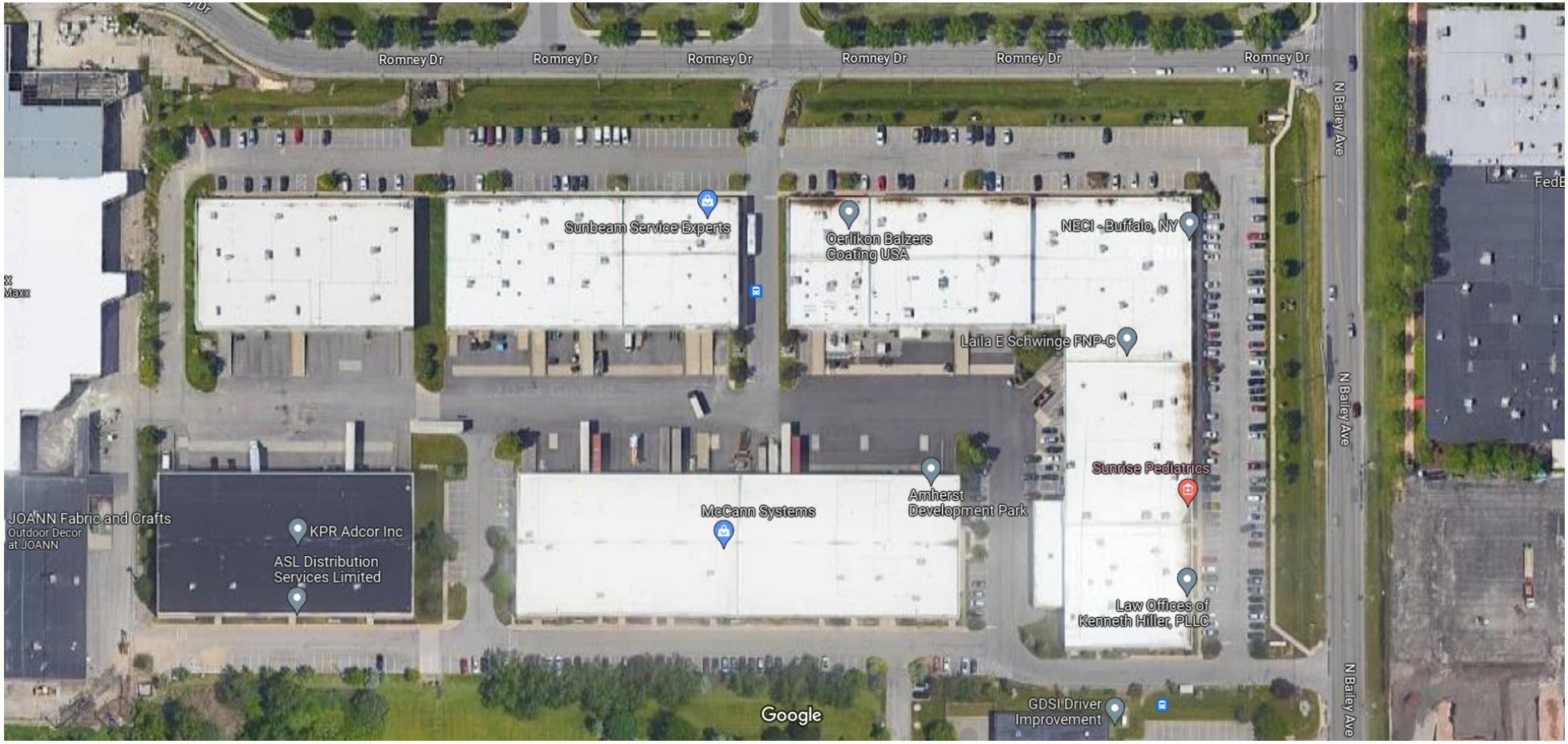
Appendix A

Site Location Maps

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Google Maps romney road



Imagery ©2023 Airbus, CNES / Airbus, Maxar Technologies, New York GIS, U.S. Geological Survey, USDA/FPAC/GEO, Map data ©2023 100 ft

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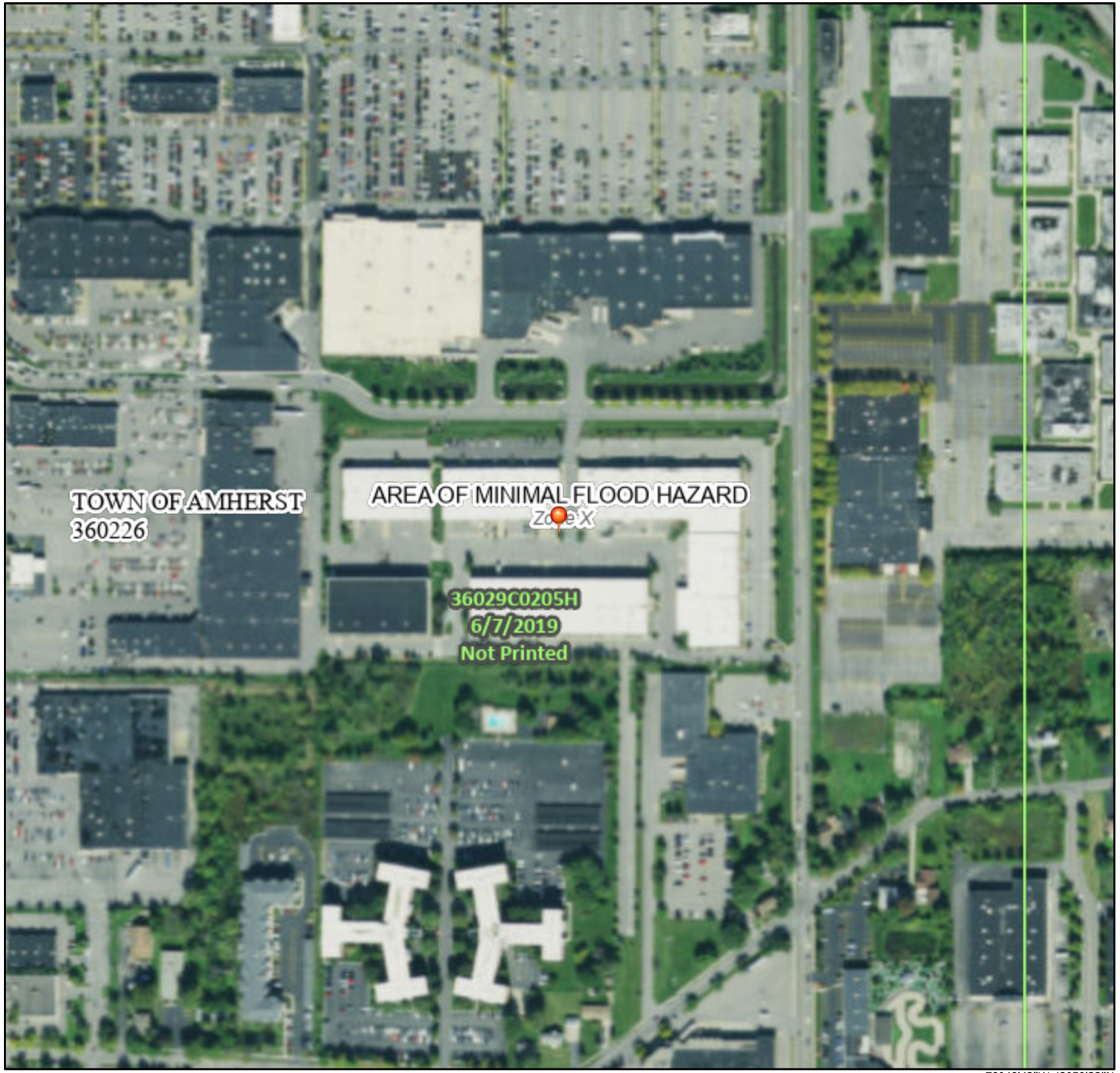
National Flood Hazard Layer FIRMette

78°49'19"W 43°N



78°48'42"W 42°59'33"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BF *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, V*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazar as of 1% annual chance flood with a depth less than one foot or with d areas of less than one square mil
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk du Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee
- **OTHER AREAS**
  - NO SCREEN Area of Minimal Flood Hazard *Zo*
  - Effective LOMRs
  - Area of Undetermined Flood Haza
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 Cross Sections with 1% Annual Ch
  - 17.5 Water Surface Elevation
  - Coastal Transect
  - 513 Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an appro point selected by the user and does not r an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This ma was exported on 11/13/2023 at 9:45 AM and does not reflect changes or amendments subsequent to this date an time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following n elements do not appear: basemap imagery, flood zone labe legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized area regulatory purposes.

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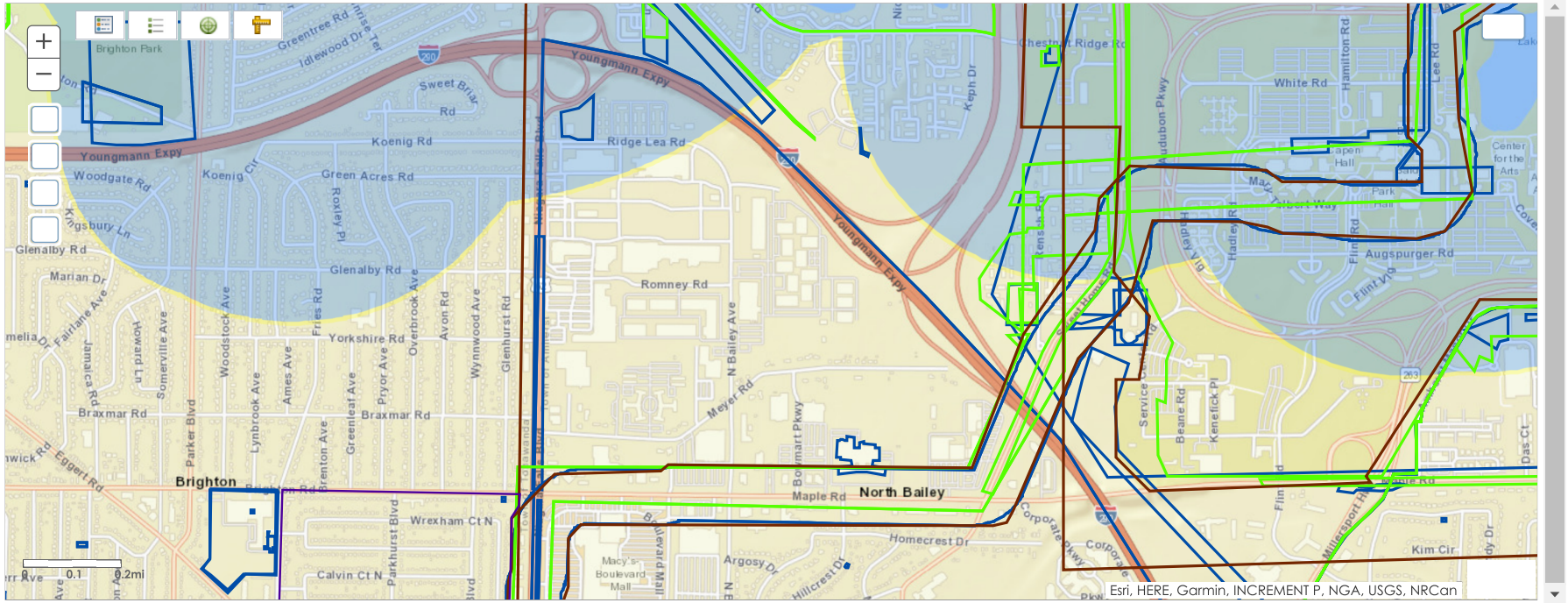
CRIS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE

Welcome Guest User | Contact Us | FAQ | Help | Sign Out



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Version 1.2.18

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Appendix B

NYSDEC Notice of Intent (NOI)

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NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Benderson Development Company

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Oates

Owner/Operator Contact Person First Name
Matt

Owner/Operator Mailing Address
570 Delaware Ave

City
Buffalo

State: NY Zip: 14202 -

Phone (Owner/Operator): 7168780397 Fax (Owner/Operator): ___ - ___ - ____

Email (Owner/Operator)
MattOates@benderson.com

FED TAX ID
16-1549911 (not required for individuals)

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Project Site Information

Project/Site Name

Amherst Development Park

Street Address (NOT P.O. BOX)

6000-6040 North Bailey Ave

Side of Street

○ **North** ○ **South** ○ **East** ● **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Town of Amherst

State: NY | Zip: 14226- | County: Erie | DEC Region: 9

Name of Nearest Cross Street

Romney Road

Distance to Nearest Cross Street (Feet)

0

Project In Relation to Cross Street

○ **North** ● **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel

54.14-1-19.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

-7 | | | 8 | 8 | 1 | 7

Ex. -73.749

Y Coordinates (Northing)

4 | 2 | 9 | 9 | 6 | | |

Ex. 42.652

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

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3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use	Post-Development Future Land Use
○ FOREST	○ SINGLE FAMILY HOME
○ PASTURE/OPEN LAND	○ SINGLE FAMILY SUBDIVISION
○ CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
○ SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
○ SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
○ TOWN HOME RESIDENTIAL	○ INDUSTRIAL
○ MULTIFAMILY RESIDENTIAL	● COMMERCIAL
○ INSTITUTIONAL/SCHOOL	○ MUNICIPAL
○ INDUSTRIAL	○ ROAD/HIGHWAY
● COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
○ ROAD/HIGHWAY	○ BIKE PATH/TRAIL
○ RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
○ BIKE PATH/TRAIL	○ PARKING LOT
○ LINEAR UTILITY	○ CLEARING/GRADING ONLY
○ PARKING LOT	○ DEMOLITION, NO REDEVELOPMENT
○ OTHER	○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
	○ OTHER

Number of Lots

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
17.1	7.0	3.9	5.9

5. Do you plan to disturb more than 5 acres of soil at any one time? ● **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
0 %	0 %	0 %	100 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
03/01/2024	01/01/2025

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9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name: Ellicott Creek

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ● Yes ○ No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ Yes ● No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ Yes ● No
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ Yes ● No
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ Yes ● No

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15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Town of Amherst & NYSDOT

open/closed stormwater drainage system

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

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24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer: Carmina Wood Design

Contact Name (Last, Space, First): Wood, Christopher

Mailing Address: 487 Main Street Suite 600

City: Buffalo

State: NY Zip: 14203-

Phone: 7168422165 Fax: - -

Email: cwood@carminawooddesign.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name: Christopher **MI**:

Last Name: Wood

Signature:

Date: 11/16/2023

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25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ● Rock Outlet Protection
- ○ Streambank Protection

Other

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Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ● **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.749 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

7738089822

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)	
RR Techniques (Area Reduction)				
○ Conservation of Natural Areas (RR-1)		and/or		
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or		
○ Tree Planting/Tree Pit (RR-3)		and/or		
○ Disconnection of Rooftop Runoff (RR-4)		and/or		
RR Techniques (Volume Reduction)				
○ Vegetated Swale (RR-5)				
○ Rain Garden (RR-6)				
○ Stormwater Planter (RR-7)				
○ Rain Barrel/Cistern (RR-8)				
○ Porous Pavement (RR-9)				
○ Green Roof (RR-10)				
Standard SMPs with RRv Capacity				
○ Infiltration Trench (I-1)				
○ Infiltration Basin (I-2)				
○ Dry Well (I-3)				
○ Underground Infiltration System (I-4)				
○ Bioretention (F-5)			1.97	
○ Dry Swale (O-1)				
Standard SMPs				
○ Micropool Extended Detention (P-1)				
○ Wet Pond (P-2)				
○ Wet Extended Detention (P-3)				
○ Multiple Pond System (P-4)				
○ Pocket Pond (P-5)				
○ Surface Sand Filter (F-1)				
○ Underground Sand Filter (F-2)				
○ Perimeter Sand Filter (F-3)				
○ Organic Filter (F-4)				
○ Shallow Wetland (W-1)				
○ Extended Detention Wetland (W-2)				
○ Pond/Wetland System (W-3)				
○ Pocket Wetland (W-4)				
○ Wet Swale (O-2)				

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Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
● Other WQ Structure	3.92

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name TBD

Manufacturer TBD

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.094 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.056 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.655 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.749

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.230 **acre-feet**

CPv Provided

0.230 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

20.51 **CFS**

Post-development

13.54 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

41.10 **CFS**

Post-development

25.60 **CFS**

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37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Benderson Development Company

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

-RRv is required for any new impervious within a redevelopment project
-Onsite soils with slow infiltration rates (Hydrologic soil group "D")

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ● **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name: Matt

MI:

Print Last Name: Oates

Owner/Operator Signature:

Date: / /

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

MS4 SWPPP Acceptance Form

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Benderson Development, LLC
2. Contact Person:	Matt Oates
3. Street Address:	570 Delaware Ave
4. City/State/Zip:	Buffalo, NY 14202
II. Project Site Information	
5. Project/Site Name:	Amherst Development Park
6. Street Address:	6000-6040 North Bailey Ave
7. City/State/Zip:	Amherst, NY 14226
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	Town of Amherst
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix D

Engineer's Report

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

ENGINEER'S REPORT

for

Amherst Development Park

6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

November 2023



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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Section 2 - Stormwater Drainage System

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Appendix C - Storm Sewer Drainage Calculations

- Water Quality and Runoff Reduction Calculations
- Stormwater Runoff Summaries and Runoff Delineation Maps
- HydroCAD Analysis

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Section 1 – Location & Description

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.14 of which 6.95 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Section 2 – Stormwater Drainage System

The existing site is generally flat. An existing open/closed drainage system onsite drains north to an open swale along the north side of Romney Rd. Three existing 3'x5' arch stormwater conveyance pipes are also located onsite within a 30' wide Town of Amherst Drainage easement. These conveyance pipes flow from the south property line to north and discharge into the open swale along Romney Rd. The existing swale flows east along Romney Rd and north along North Bailey Ave and outlets to an existing stormwater management pond located adjacent to Interstate 290. Runoff from the pond is then conveyed north via open and closed drainage systems and discharges to Ellicott Creek and ultimately the Niagara River. All proposed stormwater runoff from the project site will continue to discharge to the existing stormwater system along Romney Road.

This project is subject to the Boulevard Central Special Stormwater Design Conditions adopted by the Town of Amherst. In addition to the requirements of the NYSDEC SPDES General Permit, the project must also provide the following criteria for Projected Growth Redevelopment Scenarios and Enhanced Phosphorus Removal:

- Provide 10% escalation of proposed peak flow when compared to existing conditions peak flows.
- Median curve number (CN) to compute existing conditions.
- Water Quality volume based on the 1-year, 24-hour storm according to Chapter 10 of the NYSDEC Stormwater Management Design Manual.

For purposes of the runoff analysis and the stormwater drainage system design, portions of the project site were classified as "Redevelopment" per NYSDEC Stormwater Management Design Manual Chapter 9 requirements. The nature of this construction project will be a "Redevelopment" with an increase in impervious area. The proposed stormwater management system was designed to attenuate proposed runoff to existing conditions prior to discharge.

The proposed stormwater drainage system will consist of a combination of overland sheet flow and HDPE pipe channel flow connected by a series of drainage inlets located throughout the project site. Proposed stormwater runoff will be collected and conveyed to an underground stormwater chamber detention area onsite and discharged via outlet control pipes to the existing stormwater system along Romney Road.

The bioretention areas will provide Runoff Reduction and Water Quality volume requirements for "New Development" areas. The filter area planting soil depth varies throughout the bioretention areas but maintains a minimum of at least 18 inches of soil. The 18 inches of soil is an acceptable deviation per the NYSDEC where existing grades prevent the full 2.5'-4' foot soil depth. A series of 6" underdrains below the planting soil will be located throughout the bioretention areas connected by overflow drainage inlets to convey runoff directly to the closed stormwater management system. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover: No existing natural features exist onsite.
2. Calculation of Water Quality Volume (WQv) for site. See "Storm Sewer Drainage Calculations".

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3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity. Bioretention areas were incorporated into the site design to provide required RRv and WQv for "New Development" areas. See "Storm Sewer Drainage Calculations".
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas. See "Storm Sewer Drainage Calculations".
5. Design of volume and peak rate control practices where required. See "Storm Sewer Drainage Calculations".

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality:
The NYSDEC requires water quality treatment prior to discharge. This will be achieved by the application of bioretention areas and water quality treatment structures. The total WQv provided was 0.749 ac-ft and equal to the required WQv of 0.749 ac-ft. The required water quality volume was calculated based on the proposed 6.95 acres of proposed development area.

Runoff Reduction Volume:
The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for contributing runoff areas in the WQv. The RRv provided was 0.094 ac-ft and greater than the required RRv min. of 0.056 ac-ft. The required runoff reduction volume was calculated based on 3.03 acres of proposed "new development" area that includes 1.97 acres of "new impervious" area.

100% of the required WQv was not reduced due to the followings site specific limitations: Drainage areas with impermeable soils, Type D. In addition, below is a summary of how each green infrastructure technique was evaluated and determined to be feasible or infeasible:

1. Conservation of natural areas: no natural existing features present onsite.
2. Sheetflow to riparian buffers or filter strips: no riparian buffers possible on the site; filter strips not feasible given the limited area for development.
3. Vegetated Open Swales: swales were not feasible given the limited area for development.
4. Tree Plantings: new trees were planted throughout the site.
5. Disconnection of Roof Top Runoff: disconnection not feasible for these types of projects.
6. Stream Daylighting: is not feasible given the limited area for development.
7. Rain Garden: bioretention areas installed throughout site.
8. Green Roof: the proposed use of the building makes this an unfeasible practice.
9. Stormwater Planter: this method is not recommended for these types of projects.
10. Rain Barrels & Cisterns: collected water would not be used for irrigation.
11. Porous Pavement: porous pavement is not recommended for areas with impermeable soils (Type D) and areas with sediment laden runoff (salting in winter months).

Channel Protection:
The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 10,004 cf will be accommodated in the stormwater detention areas onsite.

Overbank Flooding:
The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 13.54 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

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Extreme Storm Protection:
The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 25.60 cfs, which is below the existing peak 100-year runoff of 41.10 cfs.

Town of Amherst:
The Town requires that the 25-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event *under the 10% escalation scenario*. Storage of this storm will be provided within the onsite stormwater detention areas. At the 25-year storm event the stormwater drainage system will allow discharge of 19.34 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

Design Criteria:
Storm pipes: 10-year storm
RUNOFF ANALYSIS OF PROPOSED DEVELOPMENT AREA:

STORM EVENT	EXISTING RUNOFF (cfs)	PROPOSED RUNOFF (cfs)	10% ESCALATION (cfs)
1 YEAR	8.12	7.30	8.03
2 YEAR	11.64	9.40	10.34
5 YEAR	16.25	11.90	13.09
10 YEAR	20.51	13.54	14.89
25 YEAR	27.36	18.03	19.83
50 YEAR	33.68	21.83	24.01
100 YEAR	41.10	25.60	28.16

WATER QUALITY SUMMARY:
WQv REQUIRED = 0.749 AC-FT
RRv MIN. REQUIRED = 0.056 AC-FT
RRv PROVIDED WITHIN BIORETENTION AREAS = 0.094 AC-FT
WQv PROVIDED WITHIN BIORETENTION AREAS = 0.234 AC-FT
WQv PROVIDED BY TREATMENT STRUCTURES = 0.515 AC-FT
TOTAL WQv PROVIDED = 0.749 AC-FT

BIORETENTION FILTER AREA SUMMARY:
FILTER AREA = 9,266 SF

See attached “Storm Sewer Drainage Calculations” for additional information.

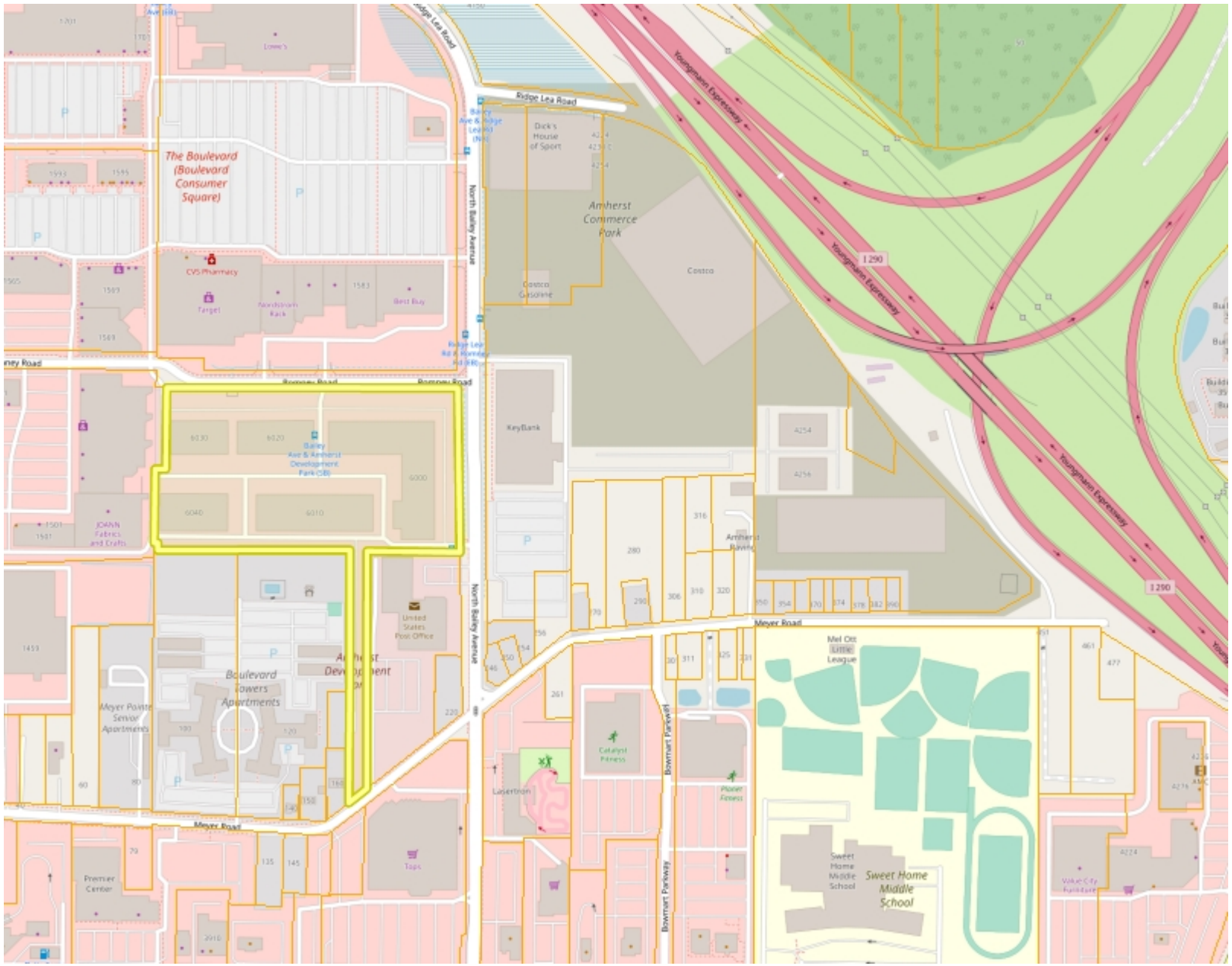
Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix A

Location Maps

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Erie County On-Line Mapping Application





Legend

- Parcels

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

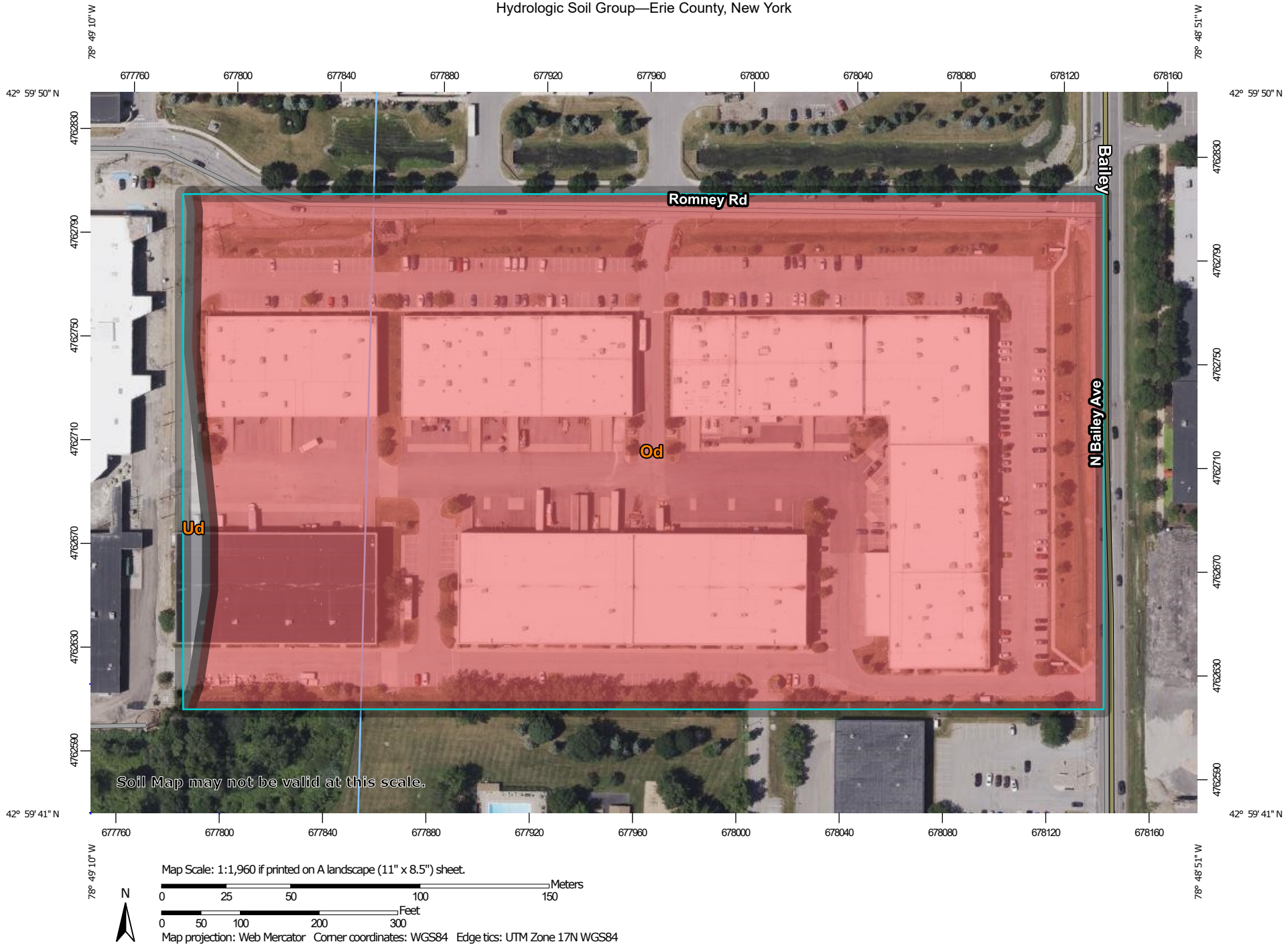
1: 9,028

Appendix B

Web Soil Survey – Hydrologic Soils Group

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydrologic Soil Group—Erie County, New York



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Erie County, New York
Survey Area Data: Version 23, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 9, 2022—Aug 15, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Od	Odessa silt loam, 0 to 3 percent slopes	D	17.2	98.2%
Ud	Urban land		0.3	1.8%
Totals for Area of Interest			**17.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

Storm Sewer Drainage Calculations

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Water Quality and Runoff Reduction Calculations

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

WATER QUALITY REQUIRED FOR PROPOSED DEVELOPMENT AREA Area, Acres = 6.95

(Note: Reference Chap. 9 NYSDEC Stormwater Design Manual)

"Redevelopment Activity", Acres = 3.92 "New development", Acres = 3.03

(existing, disturbed impervious area)

Total proposed impervious, Acres = 5.89

"New" impervious, Acres = 1.97

Water Quality Volume (WQv) WQv Required = 1-Year, 24-Hour Design Storm

See Attached Worksheet & HydroCAD "WQ1" & "WQ2":

WQ1, Proposed Overall Development Area, ac-ft =	0.749
WQ2, Redevelopment Area, ac-ft =	0.515
Flow Through Alt. Practice = 100% WQv for Redevelopment, ac-ft =	0.515
WQ3, New Development Area, ac-ft =	0.234
Total WQv Required, ac-ft =	0.749

Note: Runoff Reduction Volume (RRv) sizing criteria not required for "Redevelopment Activity" portion of project.

See attached Bioretention Worksheet for RRv sizing for "New Development" portion of project.

RRv PROVIDED FOR PROPOSED DEVELOPMENT AREA (See NYSDEC worksheets)

Min. RRv Req'd, cf = 2,446

Min. RRv Req'd, ac-ft = 0.056

(P=1 yr storm event =1.80 in)

	WQv, cf	RRv, cf
Bioretention Area	10,193	4,077
WQ Treatment Structure(s)	22,433	0
TOTAL, cf	32626.45	4077
TOTAL, ac-ft	0.749	0.094

WQ & RR SUMMARY (ac-ft):

TOTAL WATER QUALITY PROVIDED FOR PROPOSED DEVELOPMENT AREA 0.749

IS WATER QUALITY VOLUME REQUIREMENT MET? Yes

(WQv provided equal to or greater than WQv required)

IS RUNOFF REDUCTION VOLUME REQUIREMENT MET? Yes

(RRv provided equal to or greater than Min. RRv required)

Revised_/_/_

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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24-4099 AMHERST DEVELOPMENT PARK 11/14/23

WATER QUALITY VOLUME FOR ENHANCED PHOSPHORUS REMOVAL

* WQ_v = 1-YR, 24-HR DESIGN STORM (HYDROCAD)

① PROPOSED OVERALL DEVELOPMENT AREA = 6.95 AC

GREENSPACE =
IMPERVIOUS =
$T_c \leq 5.0$ MIN

→ 1-YR, 24-HR HYDROCAD RUNOFF VOLUME

WQ_1 = 0.749 AC-FT
(SEE ATTACHED "WQ1" HYDROCAD)

② REDEVELOPMENT AREA = 3.92 AC (EXISTING IMPERVIOUS)

1-YR, 24-HR HYDROCAD RUNOFF VOLUME = 0.515 AC-FT
(SEE ATTACHED "WQ2" HYDROCAD)

PER NYSDEC STORMWATER DESIGN MANUAL 10.3.6

* PERFORMANCE CRITERIA: OPTIONS
  1. USE 25% WQ_v OF REDEVELOPMENT AREA FOR SMP'S
  2. USE 75% WQ_v OF REDEVELOPMENT AREA FOR VOLUME BASED ALTERNATIVE PRACTICE
  3. USE 100% WQ_v OF REDEVELOPMENT AREA FOR FLOW THROUGH ALT. PRACTICE

USE OPTION ③

WQ_2 = 0.515 AC-FT

③ NEW DEVELOPMENT AREA =

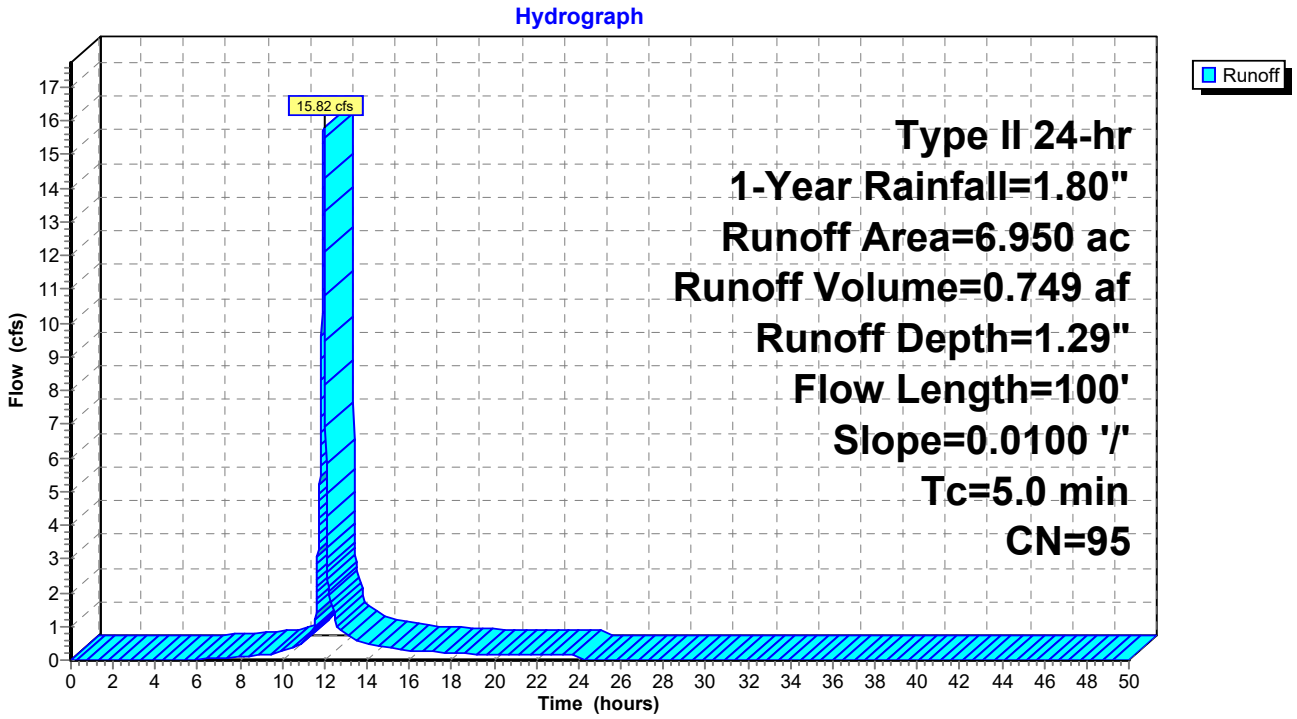
WQ_3 = 0.749 AC-FT − 0.515 AC-FT = 0.234 AC-FT

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

23-4099 Proposed WQv
Prepared by Carmina Wood Morris, PC
HydroCAD® 10.20-2g s/n 05019 © 2022 HydroCAD Software Solutions LLC

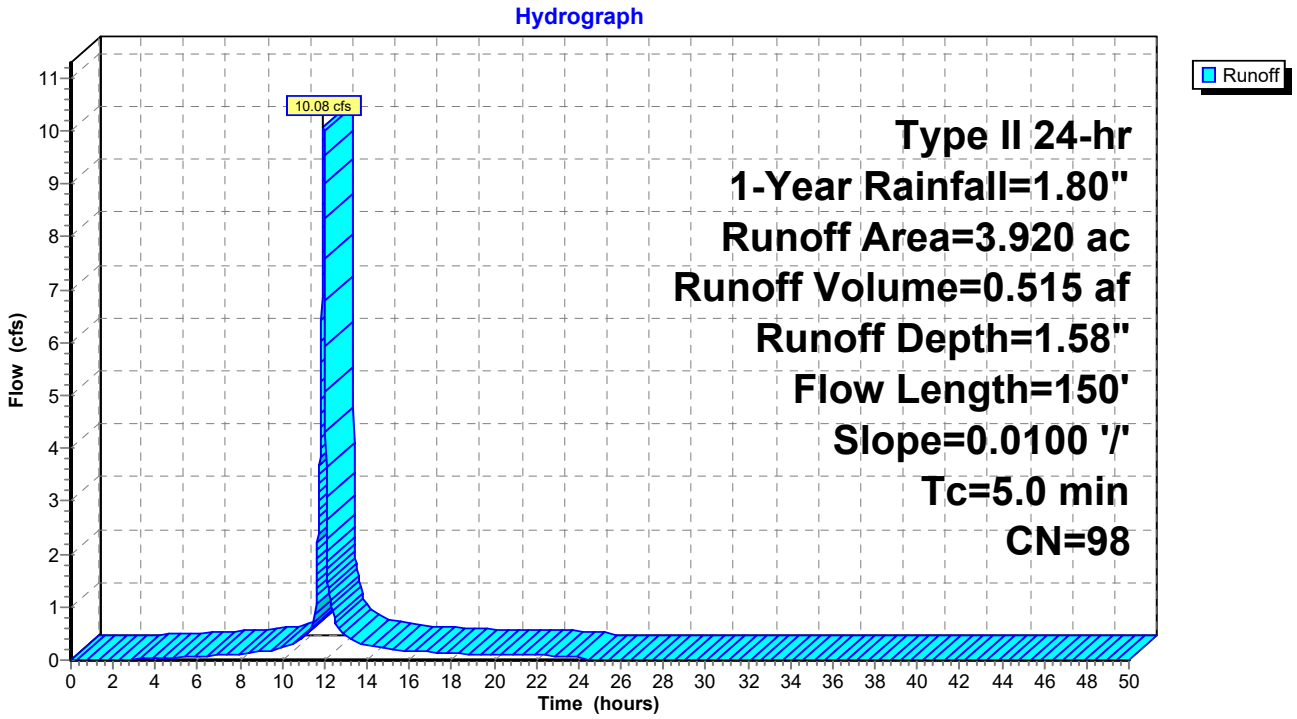
Type II 24-hr 1-Year Rainfall=1.80"
Printed 11/14/2023

Subcatchment WQ1: Proposed Site - Overall Area



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Subcatchment 2S: Proposed Site - Redevelopment Area



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

WATER QUALITY TREATMENT STRUCTURE SIZING CALCULATIONS

Area, Acres = 3.92

Water Quality Volume (WQv)

WQv (ac-ft)= 0.515

WQv (cf)= 22,433

Water Quality Peak Flow Calculation for Flow Through Practices

Q, WQv in Watershed Inches = (WQv/A)x12 = 1.577

P = 1.8

"Rational Method" CN Value = $1000/[10 + 5P + 10Q - 10(Q^2 + 1.25\,QP)^{½}]$

CN= 98

Initial Abstration: Table 4-I, Ia = 0.041

Ia/P Ratio = 0.023

Tc (HydroCAD), min.= 5

Tc (HydroCAD), hr.= 0.1

Unit Peak Discharge, qu (csm/in) 1000

Peak Discharge (Qp) = qu * A * WQv

Where: A = drainage area, in square miles

WQv = Water Quality Volume, in watershed inches

qu = the unit peak discharge, in cfs/mi²/inch

Qp, (cfs) = 9.656

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Chapter 4 Graphical Peak Discharge Method

This chapter presents the Graphical Peak Discharge method for computing peak discharge from rural and urban areas. The Graphical method was developed from hydrograph analyses using TR-20, "Computer Program for Project Formulation—Hydrology" (SCS 1983). The peak discharge equation used is:

$$q_p = q_u A_m Q F_p \qquad \text{[eq. 4-1]}$$

where:

q_p = peak discharge (cfs)
q_u = unit peak discharge (csm/in)
A_m = drainage area (mi^2)
Q = runoff (in)
F_p = pond and swamp adjustment factor

The input requirements for the Graphical method are as follows: (1) T_c (hr), (2) drainage area (mi^2), (3) appropriate rainfall distribution (I, IA, II, or III), (4) 24-hour rainfall (in), and (5) CN. If pond and swamp areas are spread throughout the watershed and are not considered in the T_c computation, an adjustment for pond and swamp areas is also needed.

Peak discharge computation

For a selected rainfall frequency, the 24-hour rainfall (P) is obtained from appendix B or more detailed local precipitation maps. CN and total runoff (Q) for the watershed are computed according to the methods outlined in chapter 2. The CN is used to determine the initial abstraction (I_a) from table 4-1. I_a / P is then computed.

If the computed I_a / P ratio is outside the range in exhibit 4 (4-I, 4-IA, 4-II, and 4-III) for the rainfall distribution of interest, then the limiting value should be used. If the ratio falls between the limiting values, use linear interpolation. Figure 4-1 illustrates the sensitivity of I_a / P to CN and P.

Peak discharge per square mile per inch of runoff (q_u) is obtained from exhibit 4-I, 4-IA, 4-II, or 4-III by using T_c (chapter 3), rainfall distribution type, and I_a / P ratio. The pond and swamp adjustment factor is obtained from table 4-2 (rounded to the nearest table value). Use worksheet 4 in appendix D to aid in computing the peak discharge using the Graphical method.

Figure 4-1 Variation of I_a / P for P and CN

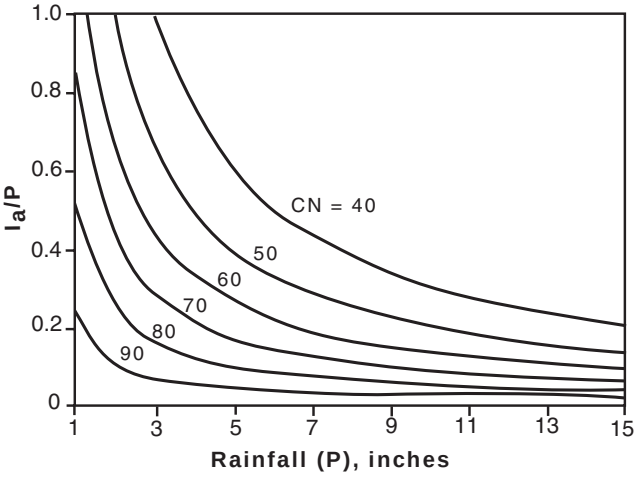
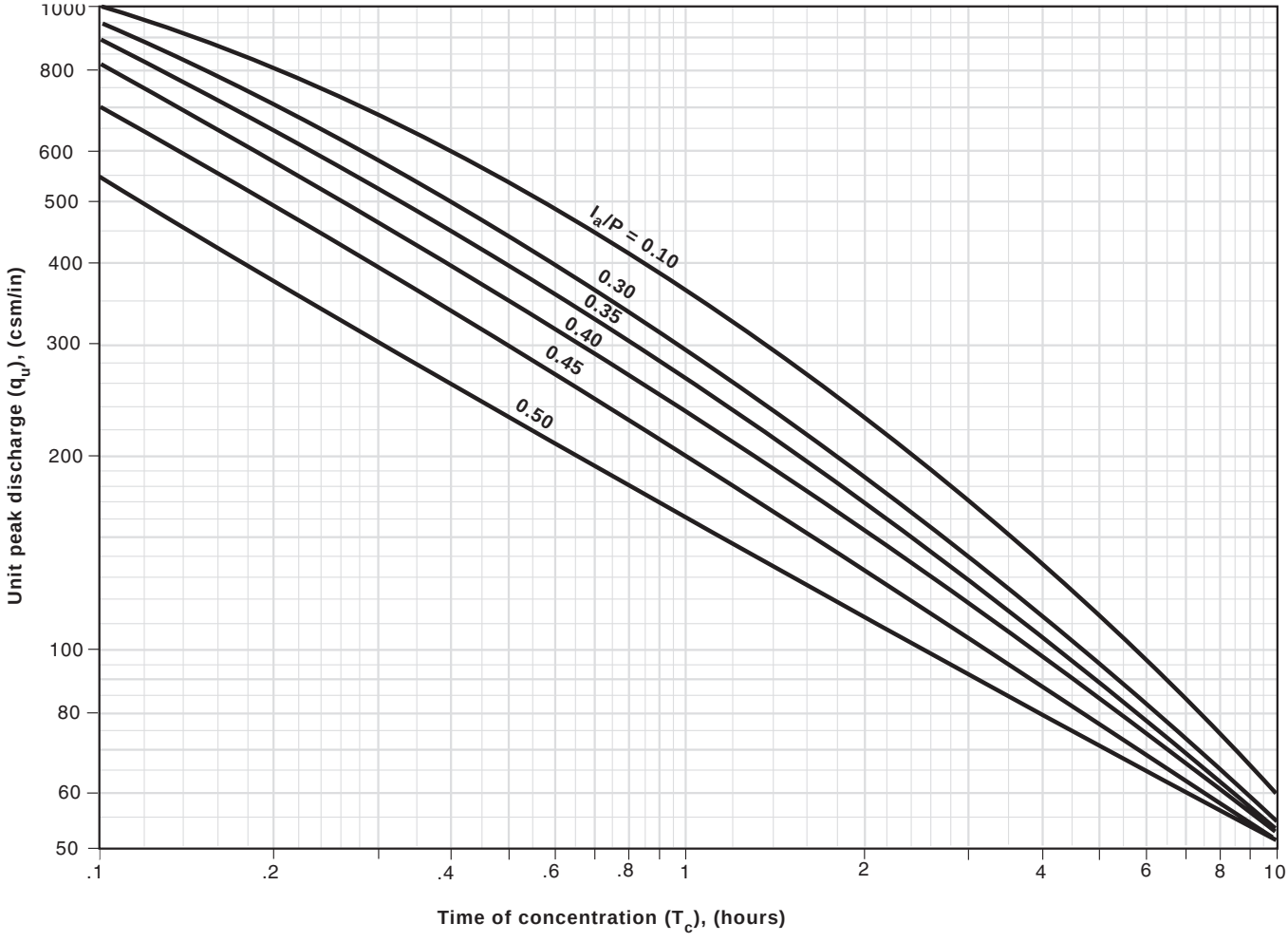


Table 4-1 I_a values for runoff curve numbers

Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Exhibit 4-II Unit peal discharge (q_u) for NRCS (SCS) type II rainfall distribution



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	No

Design Point:		
P=	1.80	*inch*

Manually enter P, Total Area and Impervious Cover.

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	3.03	1.97	65%	0.64	12,575	
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	3.03	1.97	65%	0.64	**12,575**	**Subtotal 1**
Total	3.03	1.97	65%	0.64	**12,575**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

Technique	Total Contributing Area *(Acre)*	Contributing Impervious Area *(Acre)*	Notes
Conservation of Natural Areas	0.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to 150 feet*
Filter Strips	0.00	0.00	
Tree Planting	3.03	1.97	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**3.03**	**1.97**	

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	3.03	1.97	65%	0.64	12,575
Subtract Area	-3.03	-1.97			
WQv adjusted after Area Reductions	**0.00**	**0.00**	0%	0.05	0
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	0.00	0.00	0%	0.05	**0**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**3.03**	20%
Total Area	3.03	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	1.97	*acre*
Precipitation	1.8	*in*
Rv	0.95	
Minimum RRv	**2,446**	***ft3***
	0.06	af

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	3.03	1.97	0.65	0.64	12574.68	1.80	
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	65%	0.64	12,575	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate		*in/hour*	
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		12,575	*ft^3*	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.25	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**11432**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	96.25	*ft*	
Filter Length	96.27	*ft*	
Filter Area	9265.9875	*ft^2*	
Actual Volume Provided	10193	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?		No	Select Practice	N/A
RRv	4,077			
RRv applied	**4,077**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	8,498	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	Error		*Check to be sure Area provided ≥ Af*	

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Stormwater Runoff Summaries and Runoff Delineation Maps

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New York
Location	New York, United States
Latitude	42.996 degrees North
Longitude	78.817 degrees West
Elevation	170 feet
Date/Time	Mon Nov 13 2023 09:29:03 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.41	0.50	0.66	0.82	1.00	**1yr**	0.71	0.93	1.13	1.34	1.56	1.80	2.09	**1yr**	1.60	2.01	2.42	2.91	3.39	**1yr**
2yr	0.30	0.47	0.58	0.77	0.96	1.18	**2yr**	0.83	1.08	1.34	1.59	1.87	2.18	2.46	**2yr**	1.93	2.36	2.78	3.31	3.80	**2yr**
5yr	0.36	0.56	0.70	0.94	1.20	1.48	**5yr**	1.03	1.35	1.67	1.98	2.30	2.65	3.00	**5yr**	2.34	2.89	3.37	3.97	4.54	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.76	**10yr**	1.22	1.61	1.98	2.34	2.70	3.07	3.49	**10yr**	2.72	3.36	3.90	4.56	5.19	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.20	**25yr**	1.53	2.01	2.48	2.90	3.32	3.73	4.27	**25yr**	3.30	4.10	4.74	5.48	6.20	**25yr**
50yr	0.54	0.87	1.11	1.55	2.09	2.60	**50yr**	1.81	2.39	2.94	3.42	3.88	4.33	4.97	**50yr**	3.83	4.78	5.49	6.30	7.10	**50yr**
100yr	0.61	0.99	1.28	1.82	2.48	3.10	**100yr**	2.14	2.84	3.49	4.04	4.55	5.03	5.79	**100yr**	4.45	5.57	6.36	7.24	8.13	**100yr**
200yr	0.71	1.15	1.49	2.14	2.95	3.68	**200yr**	2.54	3.39	4.14	4.77	5.33	5.84	6.75	**200yr**	5.17	6.49	7.37	8.32	9.31	**200yr**
500yr	0.85	1.39	1.82	2.64	3.70	4.62	**500yr**	3.19	4.27	5.19	5.93	6.57	7.13	8.26	**500yr**	6.31	7.95	8.96	10.01	11.14	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.35	0.42	0.57	0.70	0.87	**1yr**	0.61	0.85	0.86	1.15	1.44	1.62	1.90	**1yr**	1.44	1.83	2.08	2.63	3.10	**1yr**
2yr	0.29	0.45	0.55	0.75	0.92	1.06	**2yr**	0.80	1.04	1.16	1.42	1.71	2.10	2.35	**2yr**	1.86	2.26	2.67	3.19	3.66	**2yr**
5yr	0.33	0.51	0.63	0.86	1.10	1.26	**5yr**	0.95	1.23	1.38	1.67	2.01	2.43	2.71	**5yr**	2.15	2.60	3.03	3.61	4.08	**5yr**
10yr	0.36	0.55	0.68	0.95	1.23	1.42	**10yr**	1.06	1.39	1.56	1.87	2.26	2.71	3.01	**10yr**	2.40	2.89	3.32	3.95	4.41	**10yr**
25yr	0.41	0.62	0.77	1.10	1.45	1.67	**25yr**	1.25	1.64	1.81	2.18	2.64	3.12	3.44	**25yr**	2.76	3.31	3.73	4.42	4.84	**25yr**
50yr	0.45	0.68	0.84	1.21	1.63	1.88	**50yr**	1.41	1.84	2.02	2.43	2.95	3.47	3.82	**50yr**	3.07	3.67	4.05	4.82	5.18	**50yr**
100yr	0.49	0.74	0.92	1.33	1.83	2.12	**100yr**	1.58	2.07	2.25	2.70	3.31	3.88	4.21	**100yr**	3.43	4.05	4.39	5.25	5.53	**100yr**
200yr	0.53	0.80	1.02	1.47	2.06	2.40	**200yr**	1.77	2.34	2.49	2.99	3.69	4.34	4.65	**200yr**	3.84	4.47	4.74	5.69	5.88	**200yr**
500yr	0.60	0.90	1.16	1.68	2.39	2.81	**500yr**	2.06	2.74	2.83	3.40	4.23	5.08	5.31	**500yr**	4.50	5.11	5.18	6.32	6.32	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.30	0.46	0.56	0.75	0.93	1.07	**1yr**	0.80	1.05	1.20	1.41	1.70	1.93	2.33	**1yr**	1.71	2.24	2.61	3.09	3.63	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.16	**2yr**	0.86	1.13	1.28	1.56	1.86	2.28	2.58	**2yr**	2.02	2.48	2.95	3.48	4.03	**2yr**
5yr	0.39	0.60	0.74	1.02	1.30	1.53	**5yr**	1.12	1.50	1.68	2.06	2.44	2.88	3.31	**5yr**	2.55	3.18	3.75	4.36	5.04	**5yr**
10yr	0.46	0.71	0.88	1.22	1.58	1.89	**10yr**	1.37	1.84	2.09	2.55	3.01	3.45	4.01	**10yr**	3.05	3.86	4.52	5.17	6.02	**10yr**
25yr	0.58	0.89	1.10	1.58	2.07	2.51	**25yr**	1.79	2.45	2.79	3.39	3.98	4.40	5.18	**25yr**	3.89	4.98	5.84	6.52	7.63	**25yr**
50yr	0.69	1.05	1.31	1.88	2.53	3.11	**50yr**	2.18	3.04	3.47	4.22	4.91	5.28	6.28	**50yr**	4.68	6.04	7.10	7.79	9.17	**50yr**
100yr	0.83	1.25	1.56	2.26	3.10	3.85	**100yr**	2.68	3.77	4.33	5.24	6.07	6.33	7.62	**100yr**	5.60	7.33	8.59	9.30	10.98	**100yr**
200yr	0.99	1.48	1.88	2.72	3.80	4.78	**200yr**	3.28	4.67	5.42	6.54	7.50	7.57	9.24	**200yr**	6.70	8.88	10.46	11.13	13.20	**200yr**
500yr	1.25	1.87	2.40	3.49	4.96	6.37	**500yr**	4.28	6.22	7.30	8.75	9.94	9.62	11.94	**500yr**	8.52	11.48	13.59	14.13	16.77	**500yr**

Powered by ACIS Northeast Regional Climate Center

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

24-4099 AMHERST DEVELOPMENT PARK 11/15/23

STORMWATER DRAINAGE ANALYSIS

-PROJECTED GROWTH REDEVELOPMENT SCENARIO-

- USE MEDIAN CURVE NUMBER (CN) FOR EXISTING RUNOFF AREAS

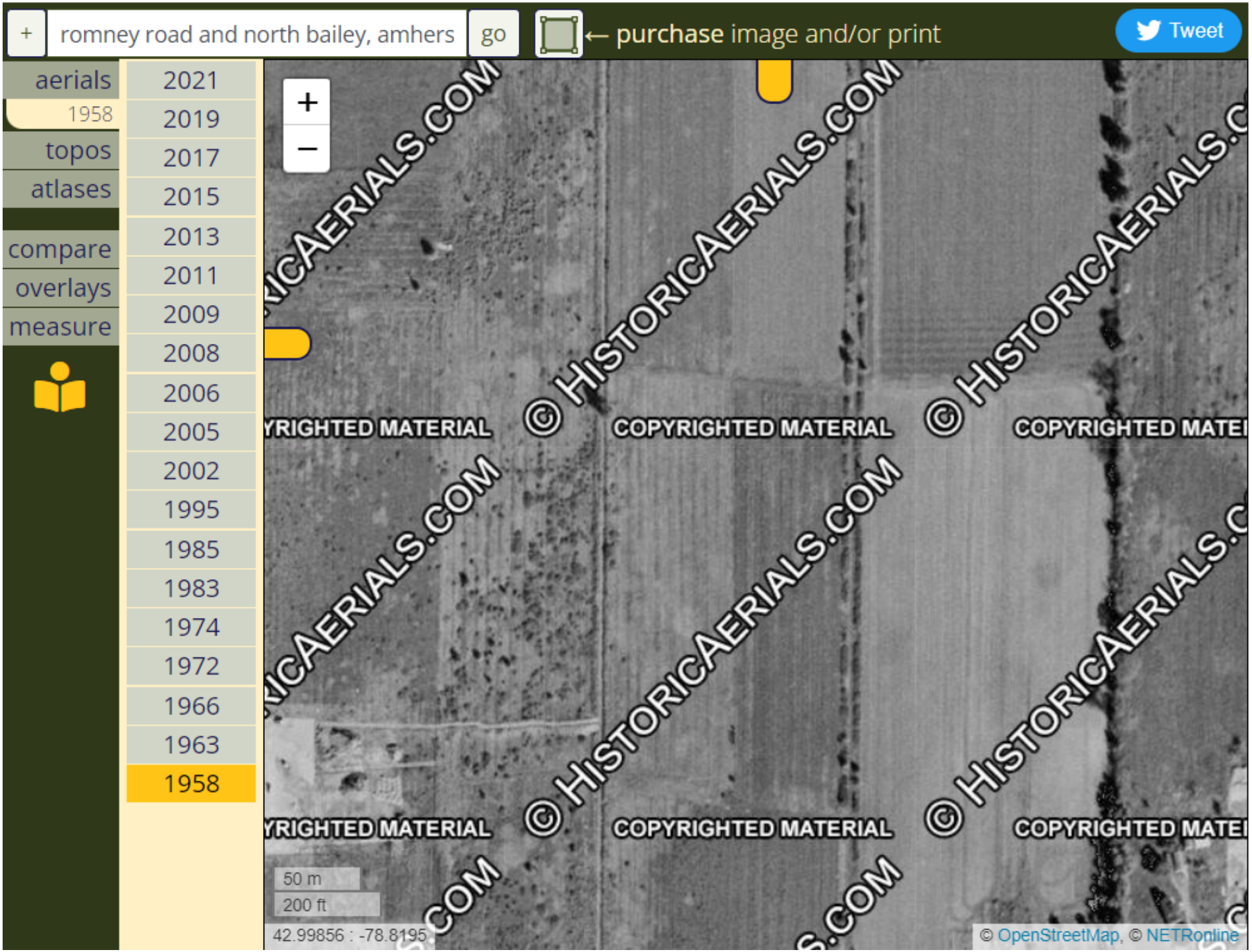
  50% RUNOFF RATE EXISTING LAND COVER
  50% PRIOR TO DEVELOPMENT (1958 HISTORIC AERIAL)
  MEADOW / FARM FIELD

- TOTAL EXISTING AREA = 6.95 AC.

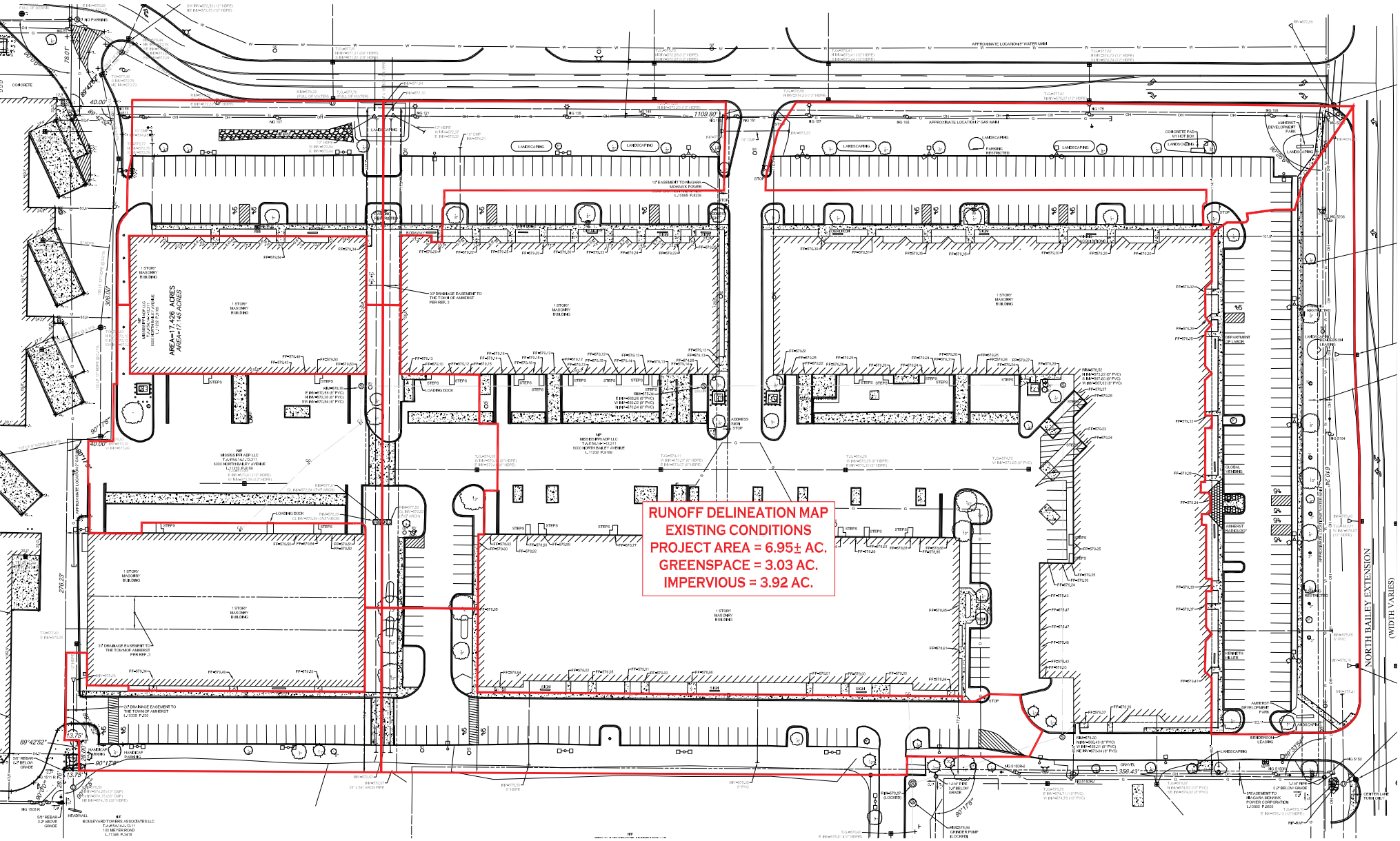
  GRASS/LANDSCAPED = 3.03 AC.
  IMPERVIOUS = 3.92 AC.

(15) APPLY MEDIAN CN: MEADOW/FARM FIELD = 3.48 AC.
GRASS/LANDSCAPED = 1.52 AC.
IMPERVIOUS = 1.95 AC.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

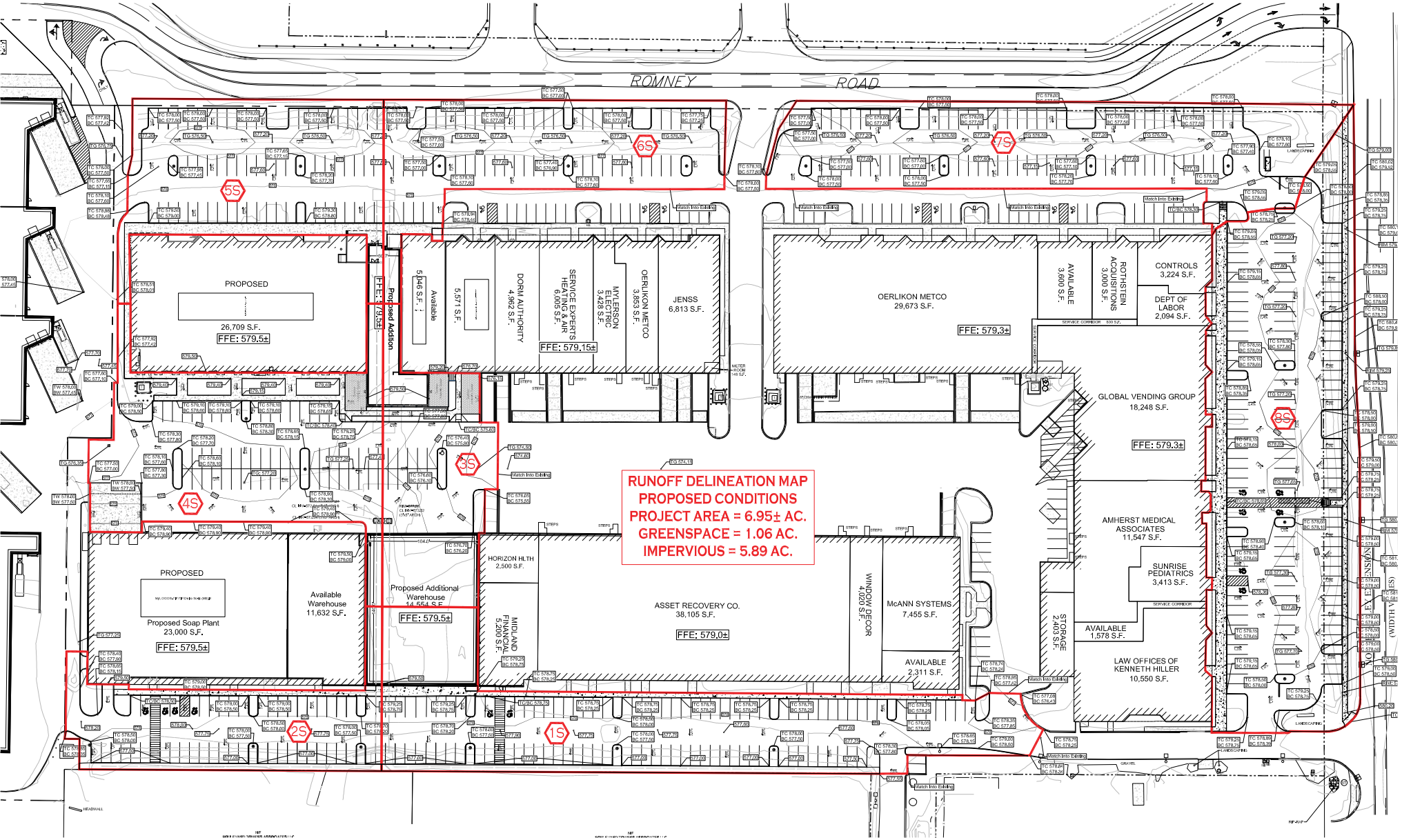


Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Subcatchment 1S: Existing Site

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	1.80	8.12	0.378	0.65
2-Year	2.18	11.64	0.538	0.93
5-Year	2.65	16.25	0.752	1.30
10-Year	3.07	20.51	0.954	1.65
25-Year	3.73	27.36	1.285	2.22
50-Year	4.33	33.68	1.595	2.75
100-Year	**5.03**	**41.10**	**1.967**	**3.40**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

23-4099 Proposed *Type II 24-hr 100-Year Rainfall=5.03"*
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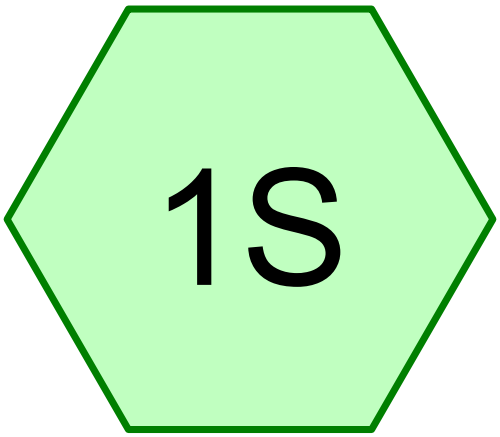
Events for Pond 1P: Detention Storage & Outlet

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)	10% Escalation (cfs)
1-Year	15.93	7.30	572.35	10,004	8.03
2-Year	20.03	9.40	572.49	12,348	10.34
5-Year	25.06	11.90	572.66	15,215	13.09
10-Year	29.54	13.54	572.83	17,843	14.89
25-Year	36.53	18.03	573.09	21,706	19.83
50-Year	42.86	21.83	573.37	25,076	24.01
100-Year	**50.20**	**25.60**	**573.83**	**29,010**	28.16

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

HydroCAD Analysis

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Existing Site

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Subcat Reach Pond Link

Routing Diagram for 23-4099 Existing
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.520	84	50-75% Grass cover, Fair, HSG D (1S)
1.950	98	Impervious (1S)
3.480	78	Meadow, non-grazed, HSG D (1S)
6.950	**85**	**TOTAL AREA**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
5.000	HSG D	1S
1.950	Other	1S
6.950		**TOTAL AREA**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchmen Numbers
0.000	0.000	0.000	1.520	0.000	1.520	50-75% Grass cover, Fair	1S
0.000	0.000	0.000	0.000	1.950	1.950	Impervious	1S
0.000	0.000	0.000	3.480	0.000	3.480	Meadow, non-grazed	1S
0.000	**0.000**	**0.000**	**5.000**	**1.950**	**6.950**	**TOTAL AREA**	

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=0.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=8.12 cfs 0.378 af

Total Runoff Area = 6.950 ac Runoff Volume = 0.378 af Average Runoff Depth = 0.65"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

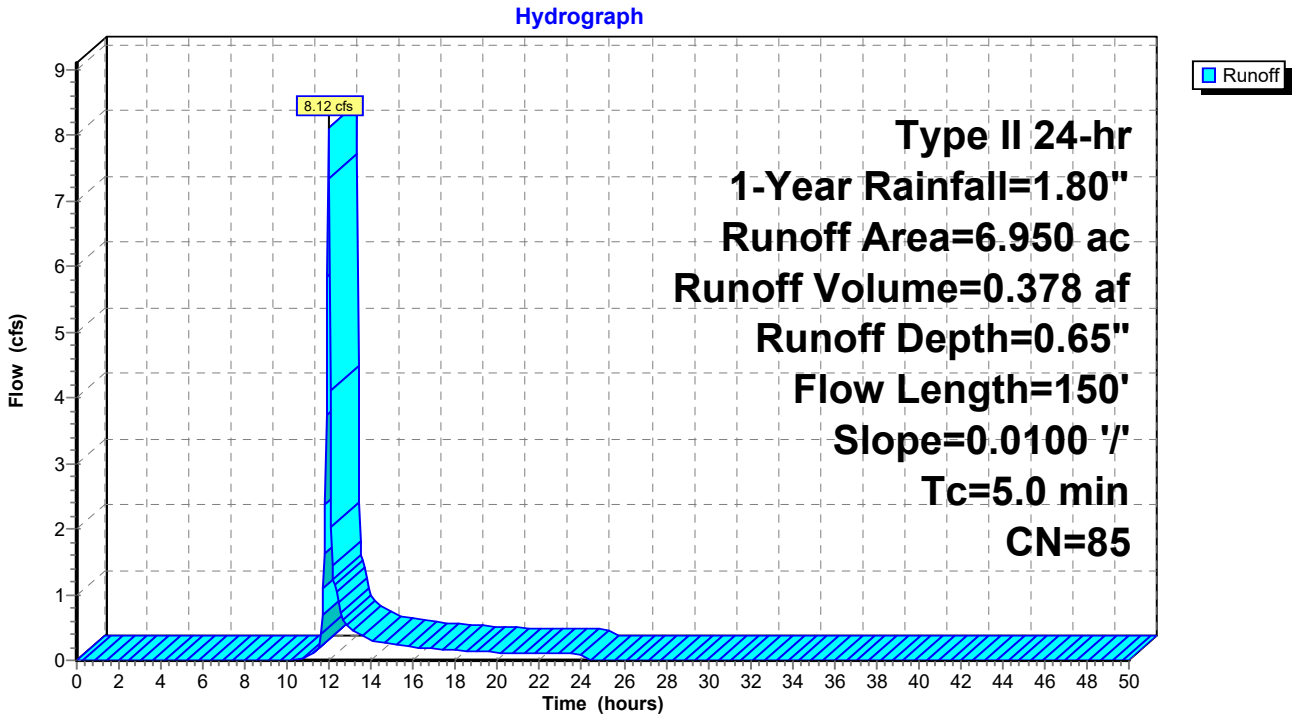
Runoff = 8.12 cfs @ 11.96 hrs, Volume= 0.378 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=1.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=20.51 cfs 0.954 af

Total Runoff Area = 6.950 ac Runoff Volume = 0.954 af Average Runoff Depth = 1.65"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

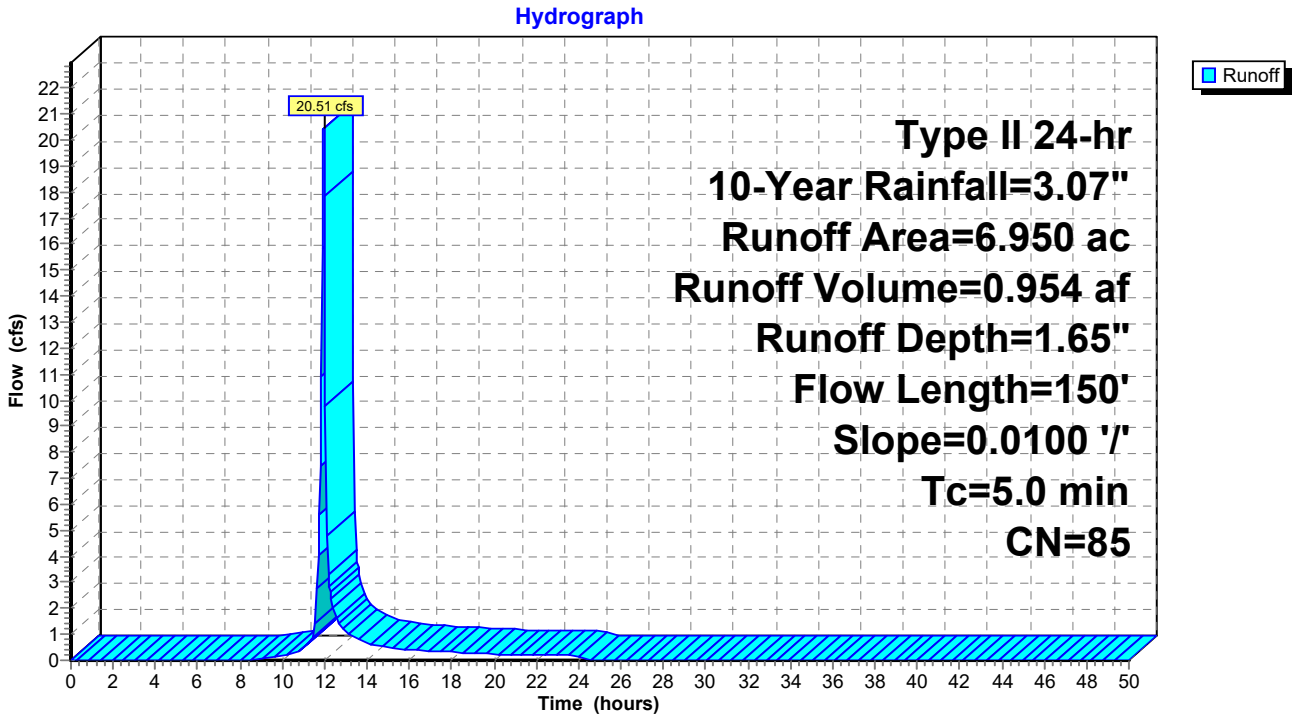
Runoff = 20.51 cfs @ 11.96 hrs, Volume= 0.954 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=2.22"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=27.36 cfs 1.285 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.285 af Average Runoff Depth = 2.22"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

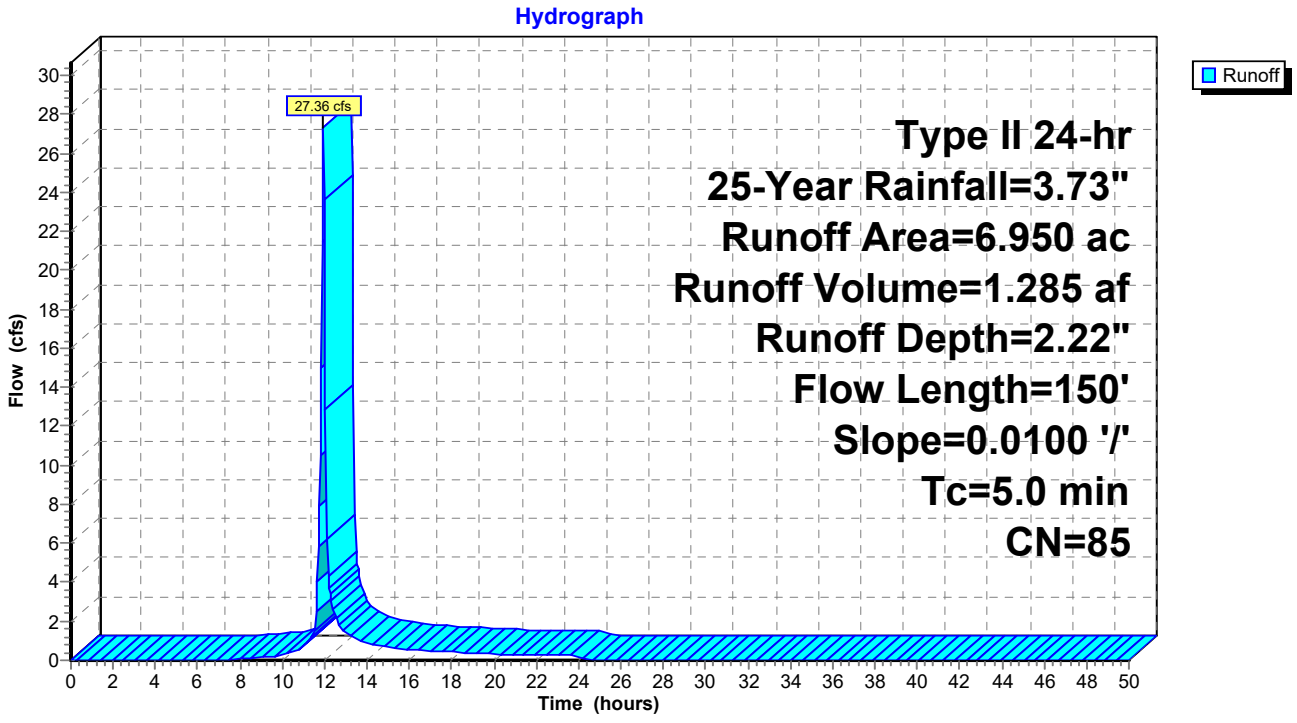
Runoff = 27.36 cfs @ 11.96 hrs, Volume= 1.285 af, Depth= 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=3.40"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=41.10 cfs 1.967 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.967 af Average Runoff Depth = 3.40"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

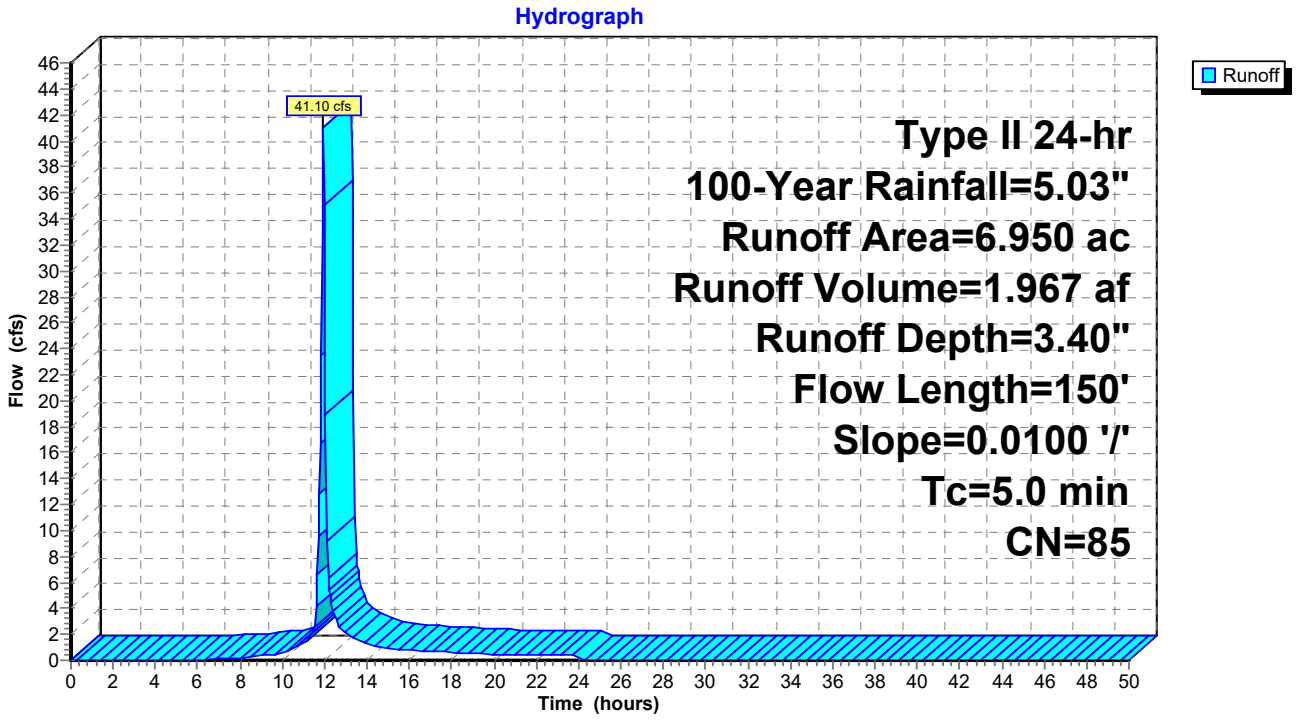
Runoff = 41.10 cfs @ 11.95 hrs, Volume= 1.967 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.03"

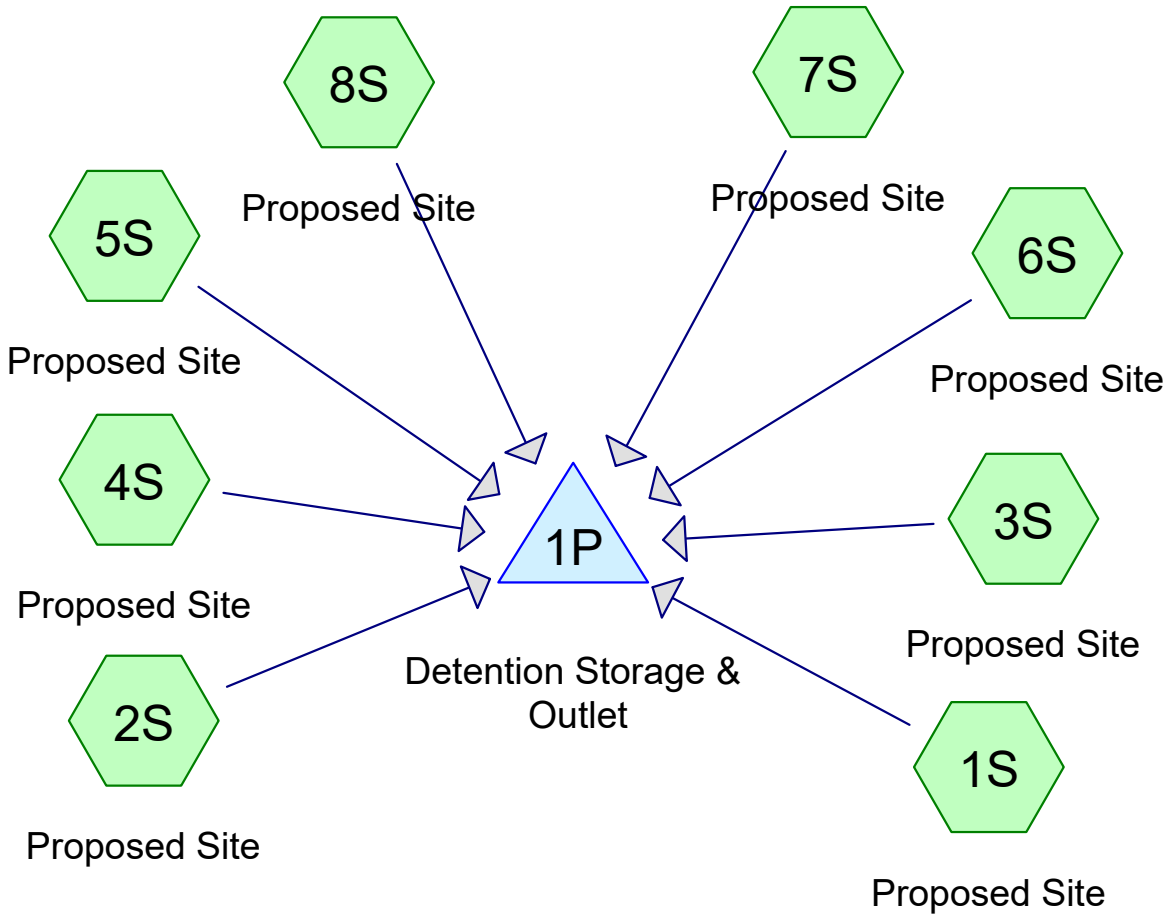
	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Subcat Reach Pond Link

Routing Diagram for 23-4099 Proposed
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Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.060	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S)
5.890	98	Impervious, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S)
6.950	**95**	**TOTAL AREA**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
6.950	HSG D	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	Other	
6.950		**TOTAL AREA**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	1.060	0.000	1.060	>75% Grass cover, Good	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	0.000	0.000	5.890	0.000	5.890	Impervious	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	**0.000**	**0.000**	**6.950**	**0.000**	**6.950**	**TOTAL AREA**	

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	571.50	571.50	10.0	0.0000	0.013	0.0	12.0	0.0

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=2.67 cfs 0.129 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=1.21 cfs 0.057 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=1.48"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=1.22 cfs 0.060 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=2.12 cfs 0.102 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=1.69 cfs 0.082 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=1.53 cfs 0.072 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=1.21"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=2.10 cfs 0.098 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=1.21"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=3.40 cfs 0.158 af

Pond 1P: Detention Storage & Outlet Peak Elev=572.35' Storage=10,004 cf Inflow=15.93 cfs 0.759 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=7.30 cfs 0.756 af

Total Runoff Area = 6.950 ac Runoff Volume = 0.759 af Average Runoff Depth = 1.31"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

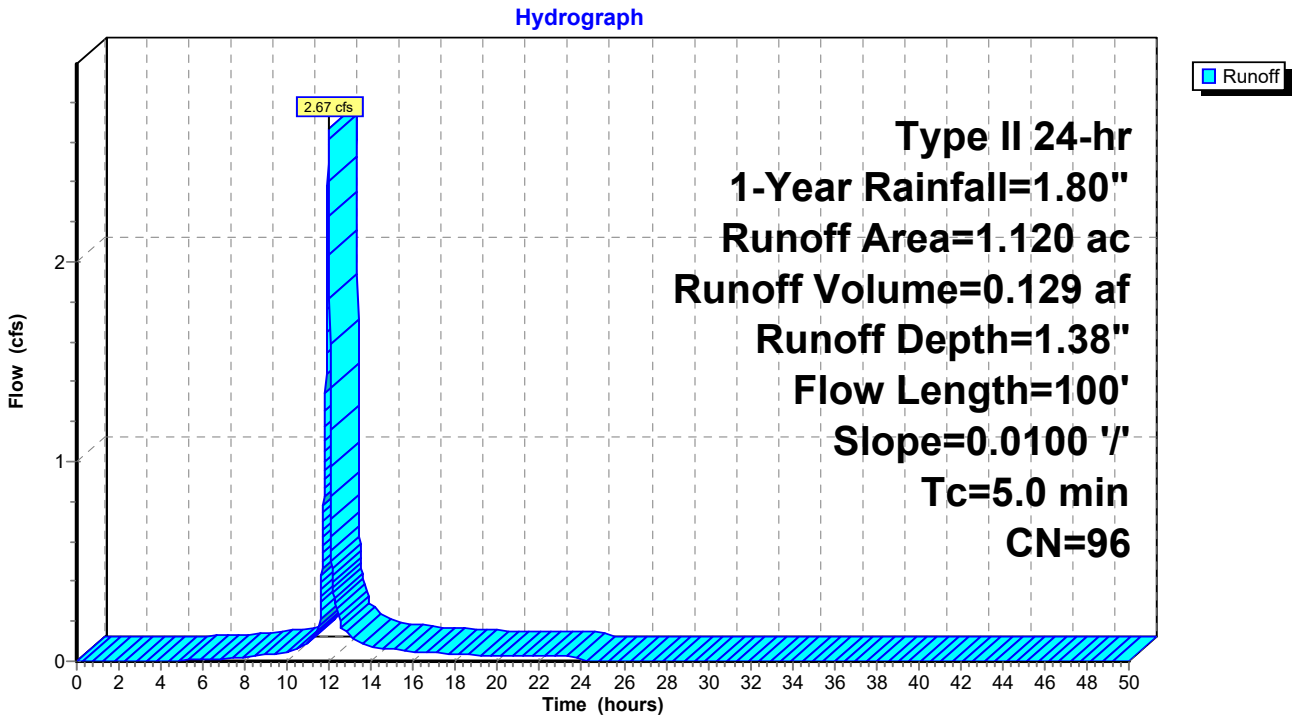
Runoff = 2.67 cfs @ 11.96 hrs, Volume= 0.129 af, Depth= 1.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

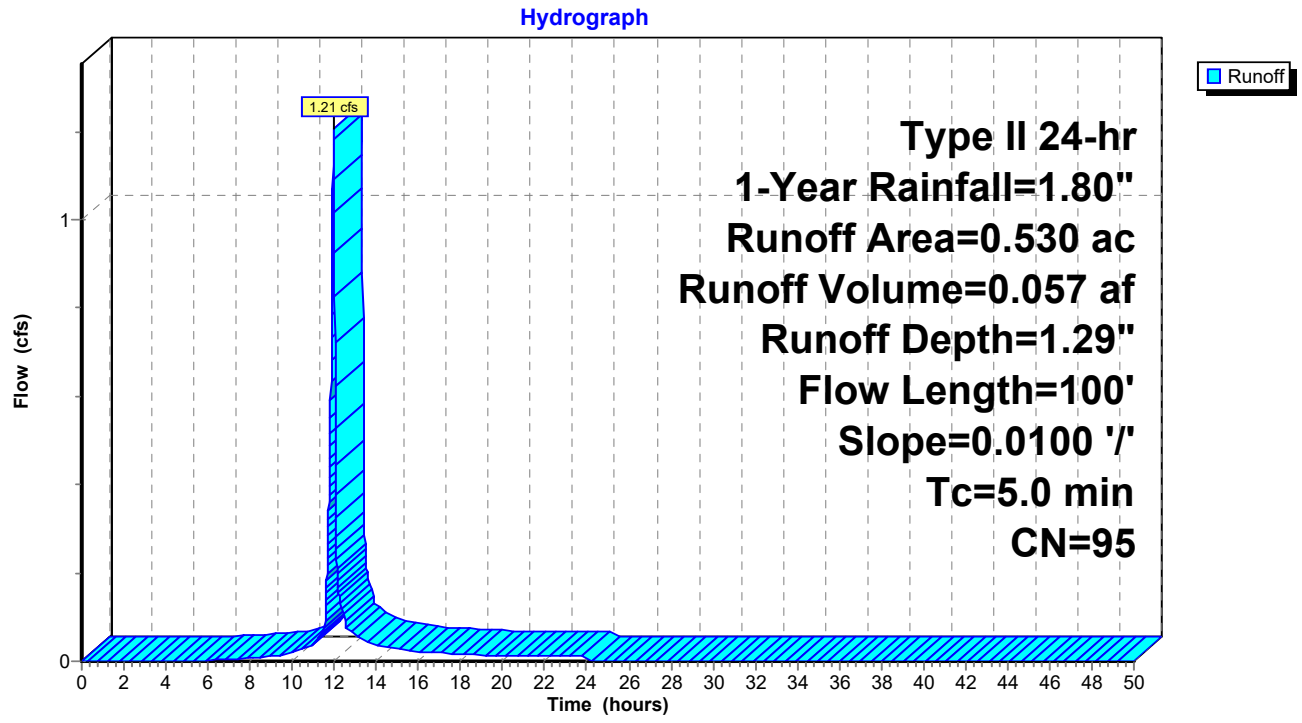
Runoff = 1.21 cfs @ 11.96 hrs, Volume= 0.057 af, Depth= 1.29"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

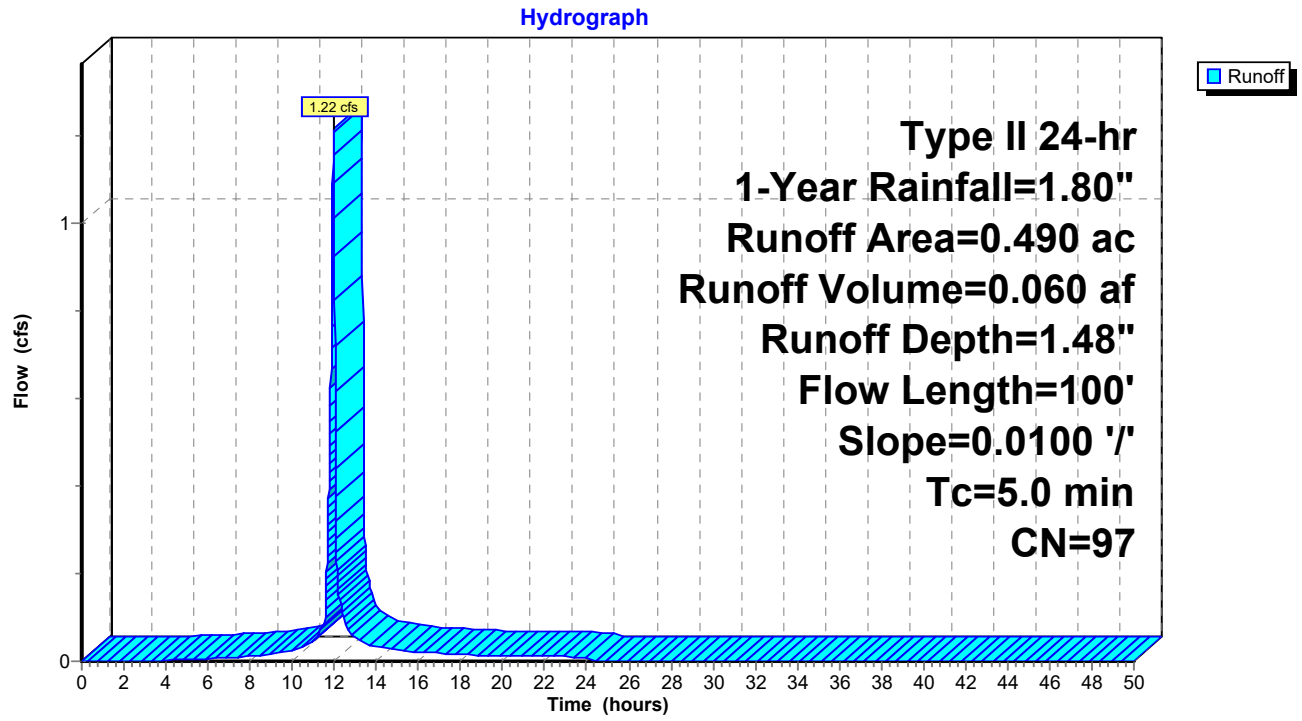
Runoff = 1.22 cfs @ 11.96 hrs, Volume= 0.060 af, Depth= 1.48"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

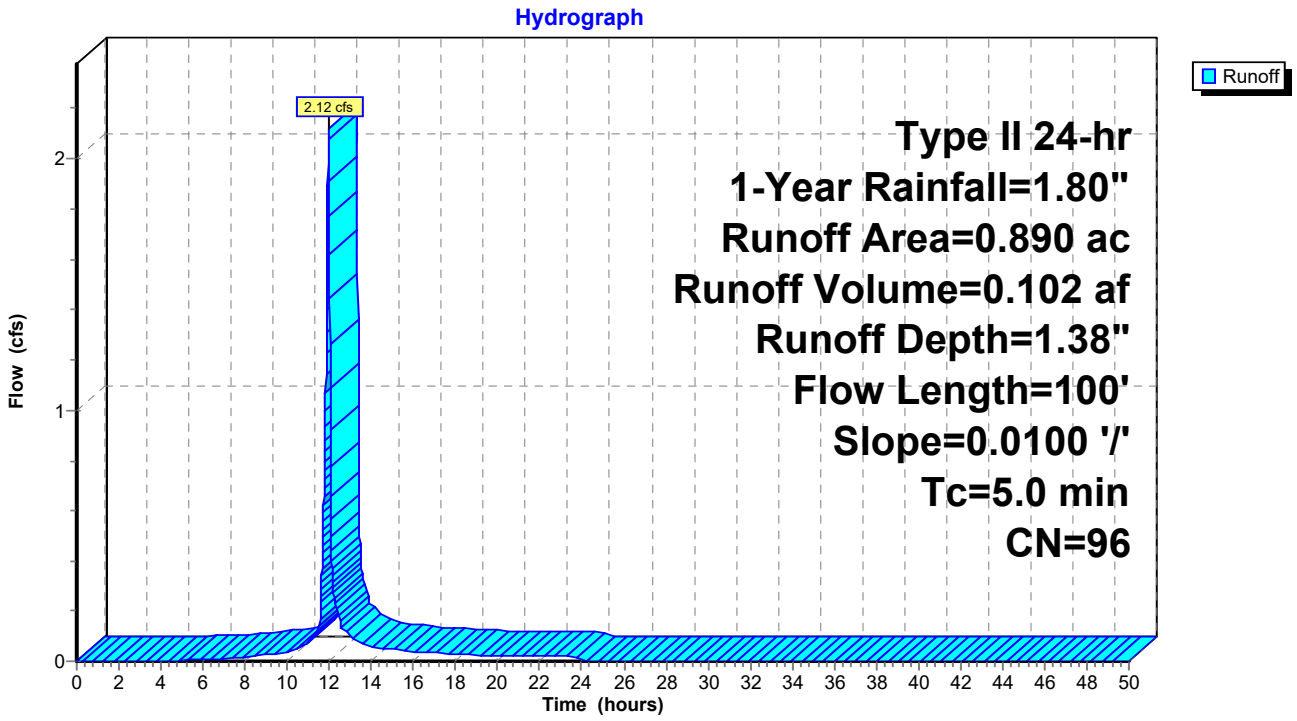
Runoff = 2.12 cfs @ 11.96 hrs, Volume= 0.102 af, Depth= 1.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

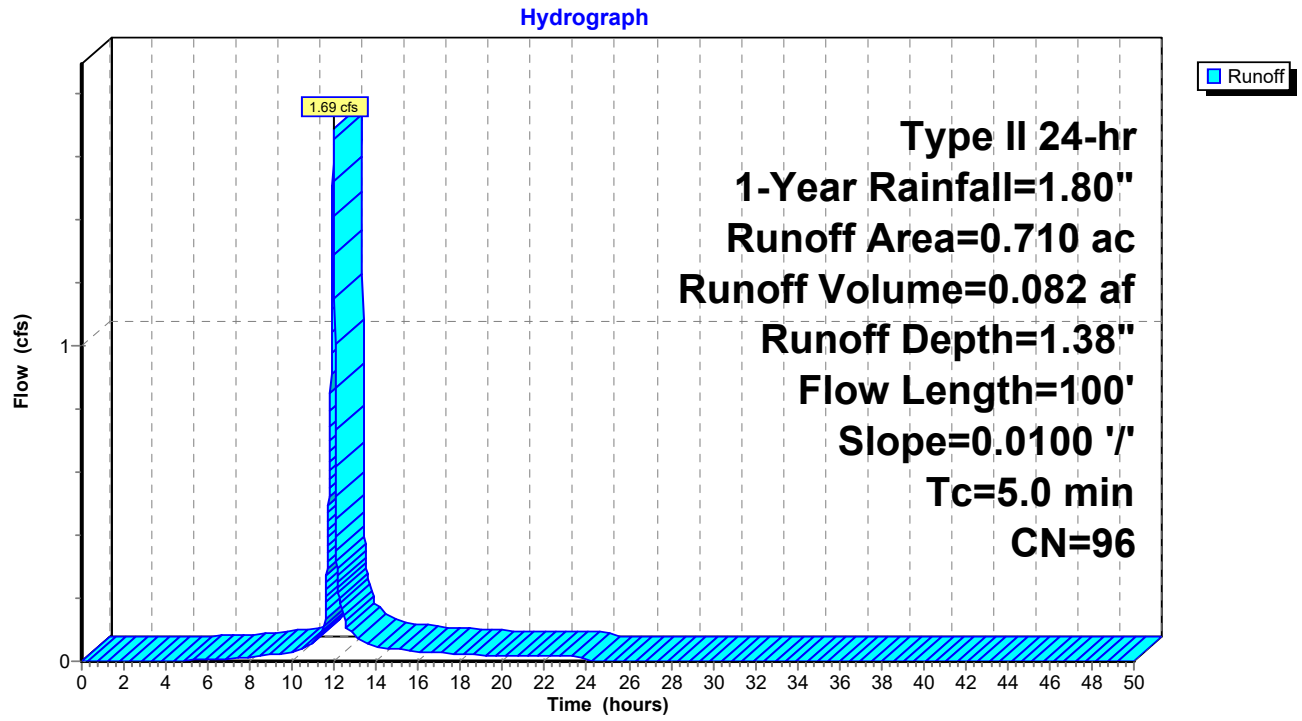
Runoff = 1.69 cfs @ 11.96 hrs, Volume= 0.082 af, Depth= 1.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

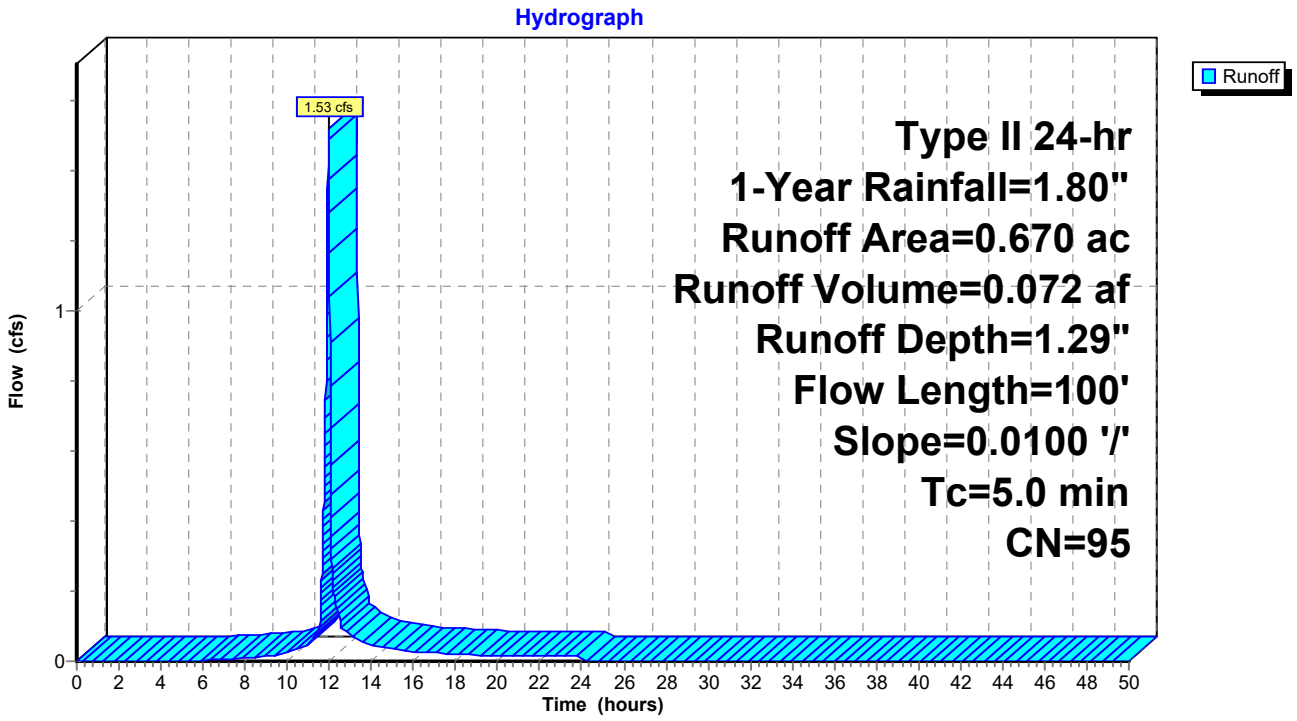
Runoff = 1.53 cfs @ 11.96 hrs, Volume= 0.072 af, Depth= 1.29"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

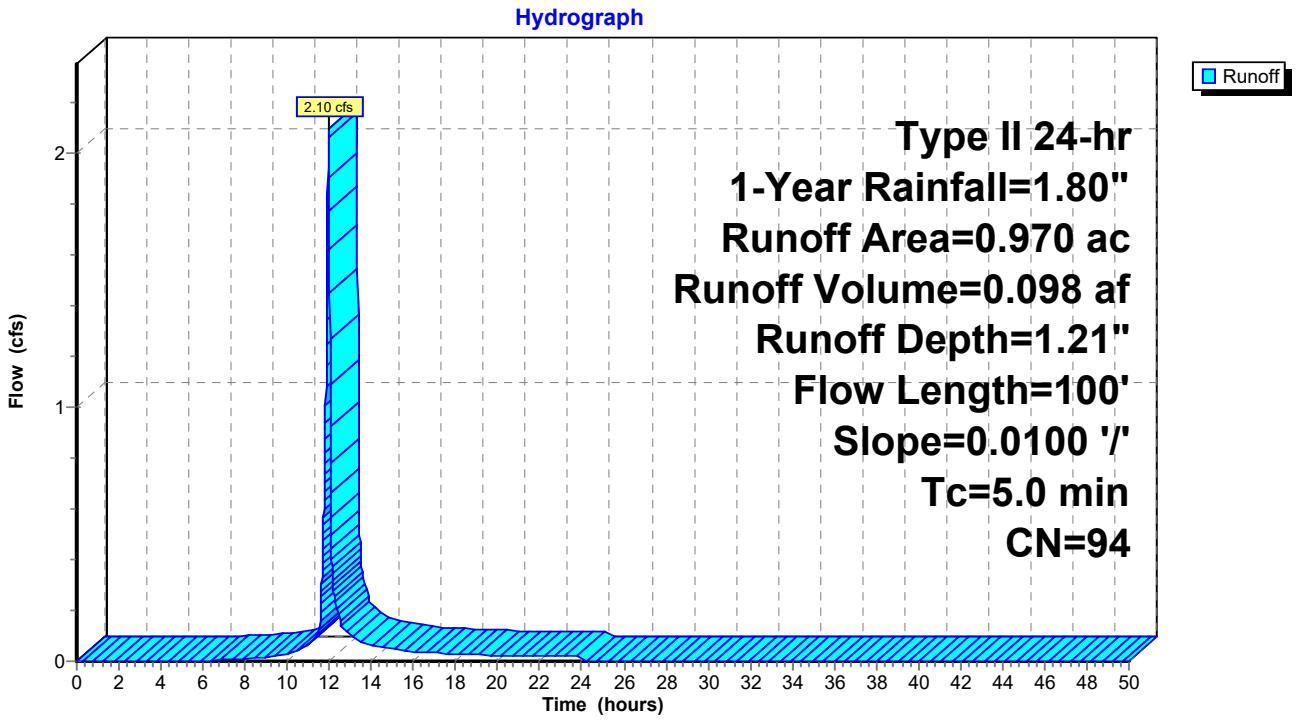
Runoff = 2.10 cfs @ 11.96 hrs, Volume= 0.098 af, Depth= 1.21"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

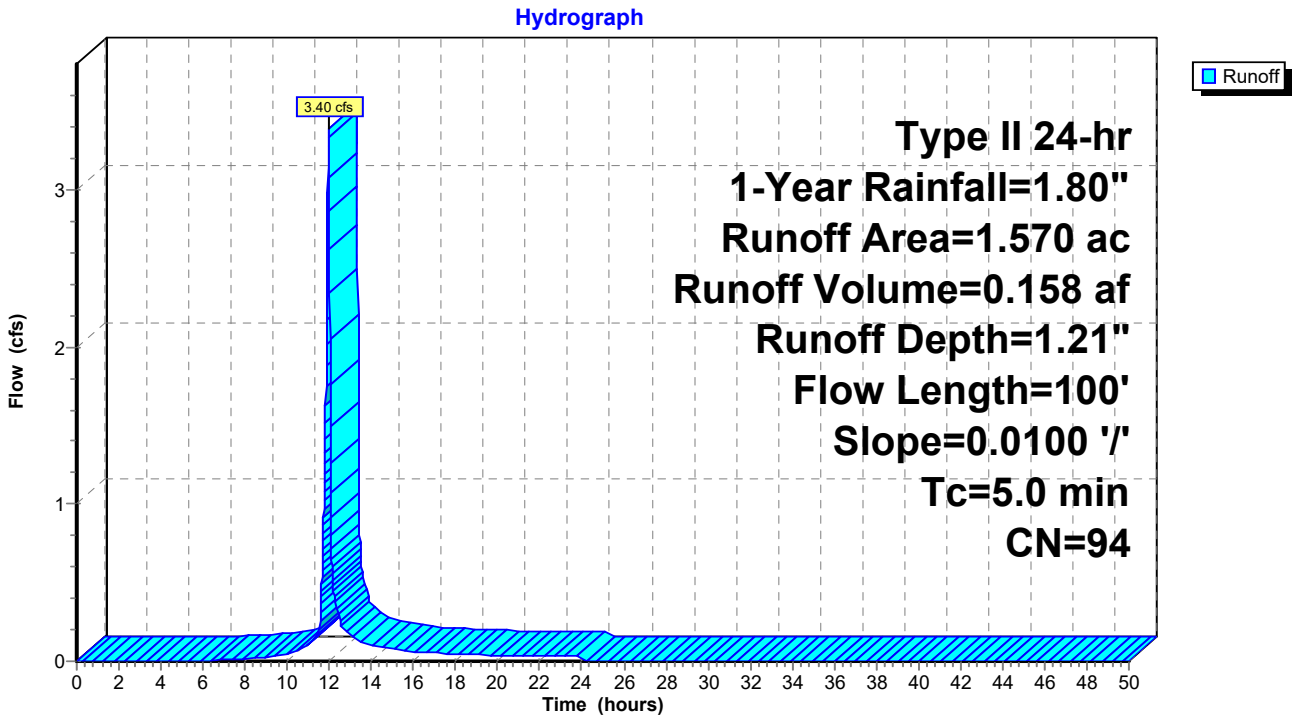
Runoff = 3.40 cfs @ 11.96 hrs, Volume= 0.158 af, Depth= 1.21"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 1.31" for 1-Year event
Inflow = 15.93 cfs @ 11.96 hrs, Volume= 0.759 af
Outflow = 7.30 cfs @ 12.05 hrs, Volume= 0.756 af, Atten= 54%, Lag= 5.3 min
Primary = 7.30 cfs @ 12.05 hrs, Volume= 0.756 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 572.35' @ 12.05 hrs Surf.Area= 20,584 sf Storage= 10,004 cf

Plug-Flow detention time= 55.9 min calculated for 0.756 af (100% of inflow)
Center-of-Mass det. time= 53.4 min (847.4 - 793.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=7.30 cfs @ 12.05 hrs HW=572.35' (Free Discharge)
↑**1=Outlet Pipe** (Barrel Controls 7.30 cfs @ 2.78 fps)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

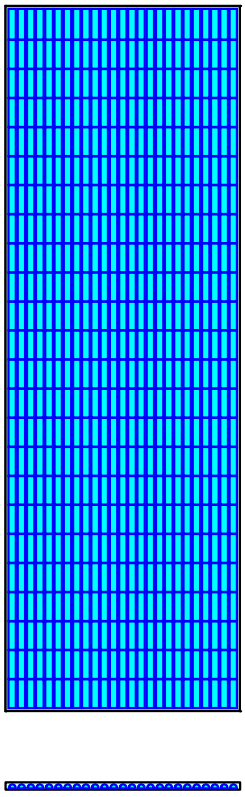
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

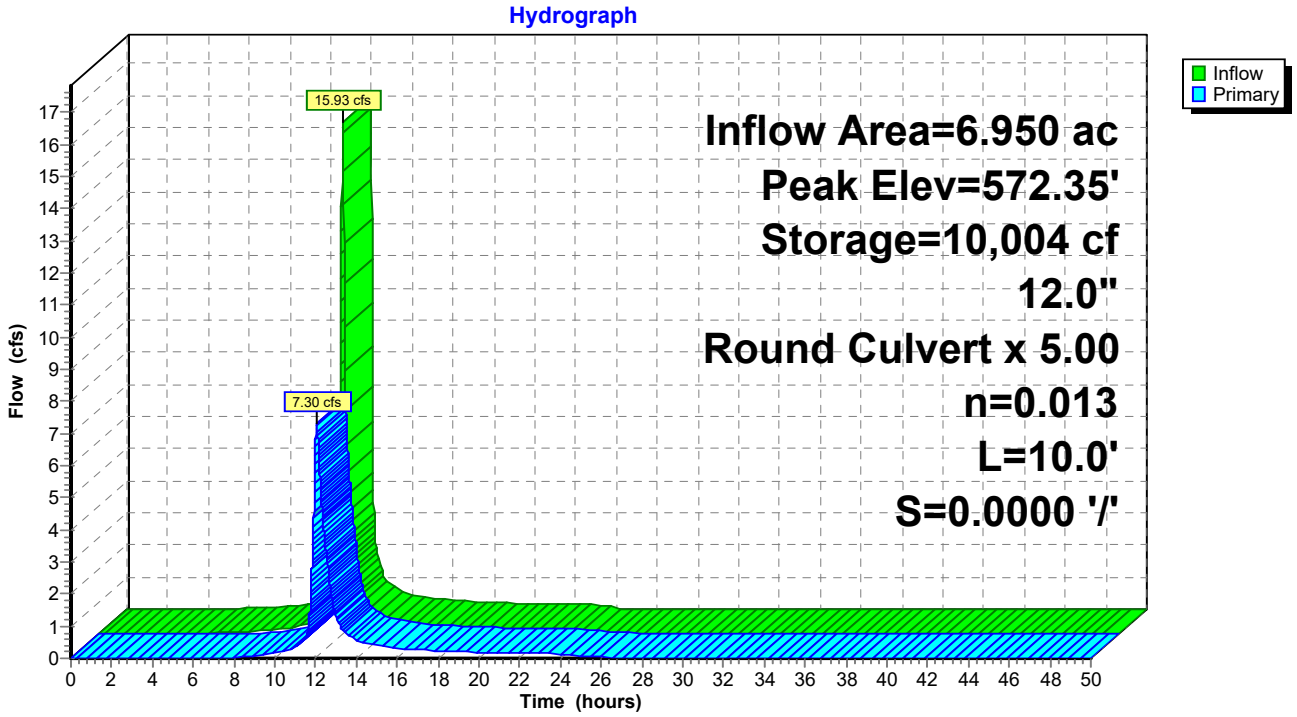
Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=4.85 cfs 0.245 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.25 cfs 0.111 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=2.73"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=2.16 cfs 0.111 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=3.86 cfs 0.194 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=3.08 cfs 0.155 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.84 cfs 0.141 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=2.42"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=4.01 cfs 0.195 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=2.42"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=6.50 cfs 0.316 af

Pond 1P: Detention Storage & Outlet Peak Elev=572.83' Storage=17,843 cf Inflow=29.54 cfs 1.469 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=13.54 cfs 1.466 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.469 af Average Runoff Depth = 2.54"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

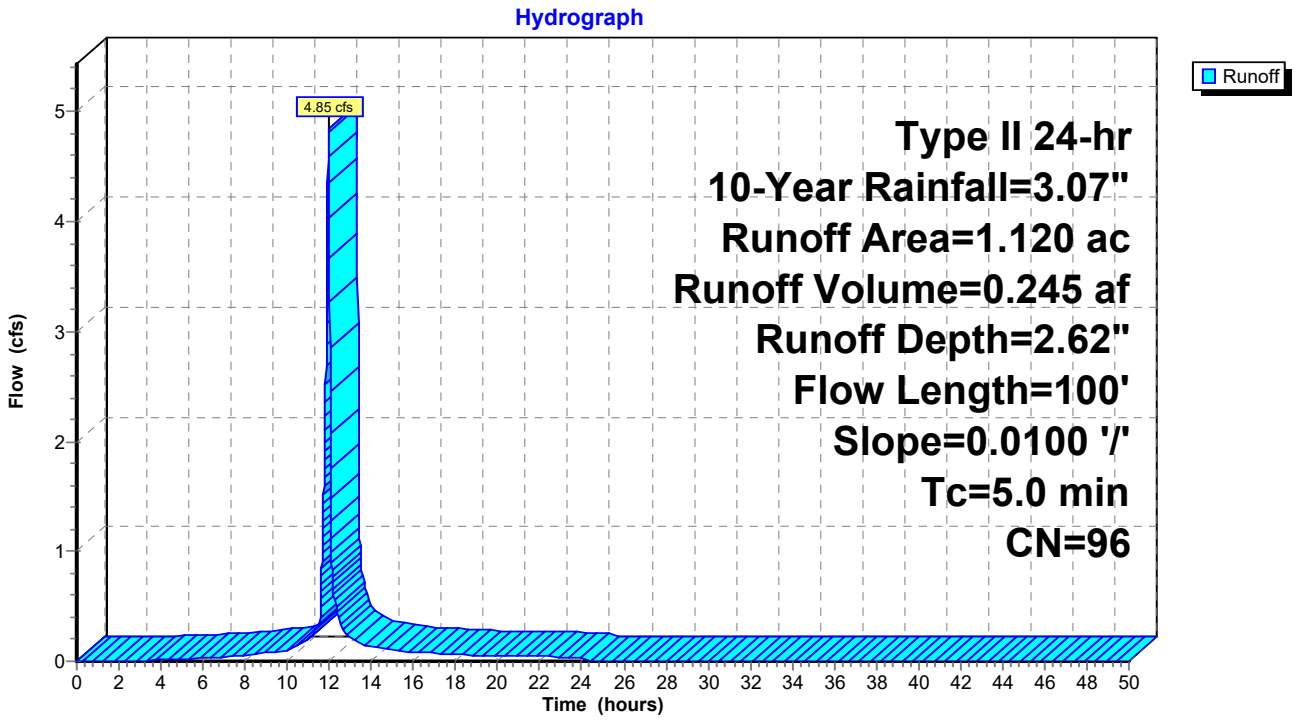
Runoff = 4.85 cfs @ 11.96 hrs, Volume= 0.245 af, Depth= 2.62"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

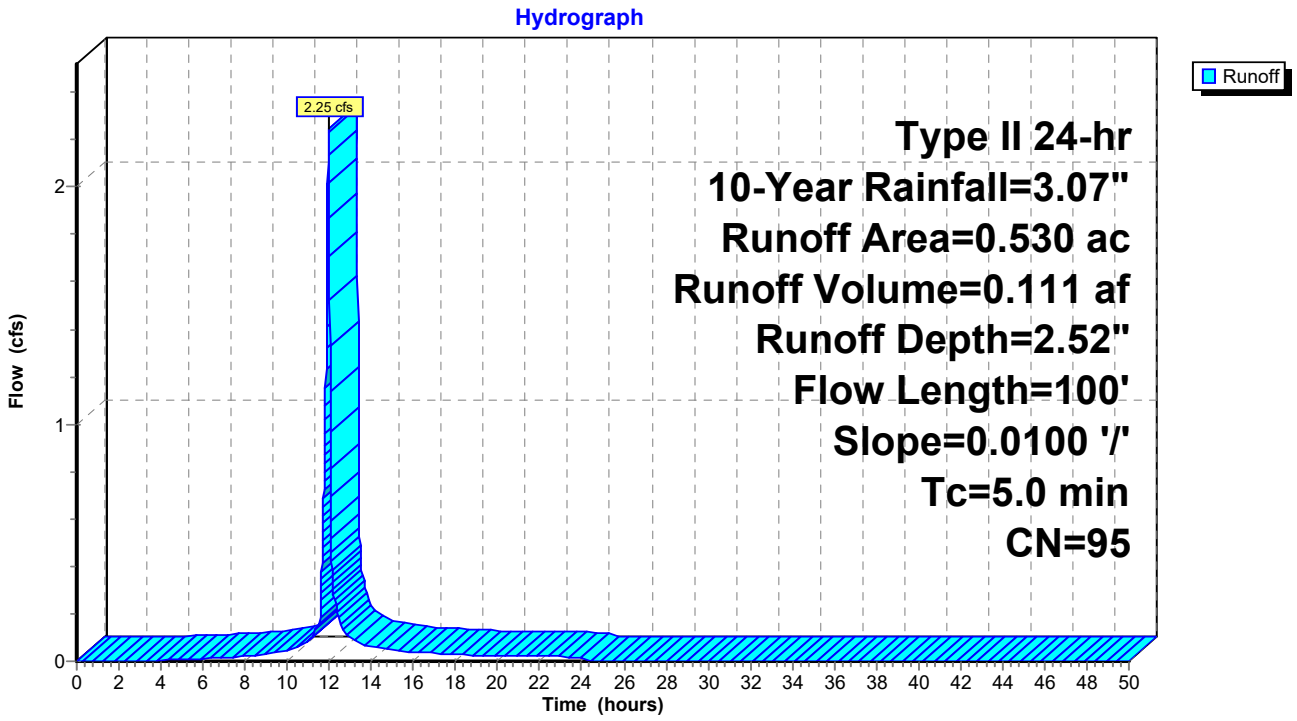
Runoff = 2.25 cfs @ 11.96 hrs, Volume= 0.111 af, Depth= 2.52"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

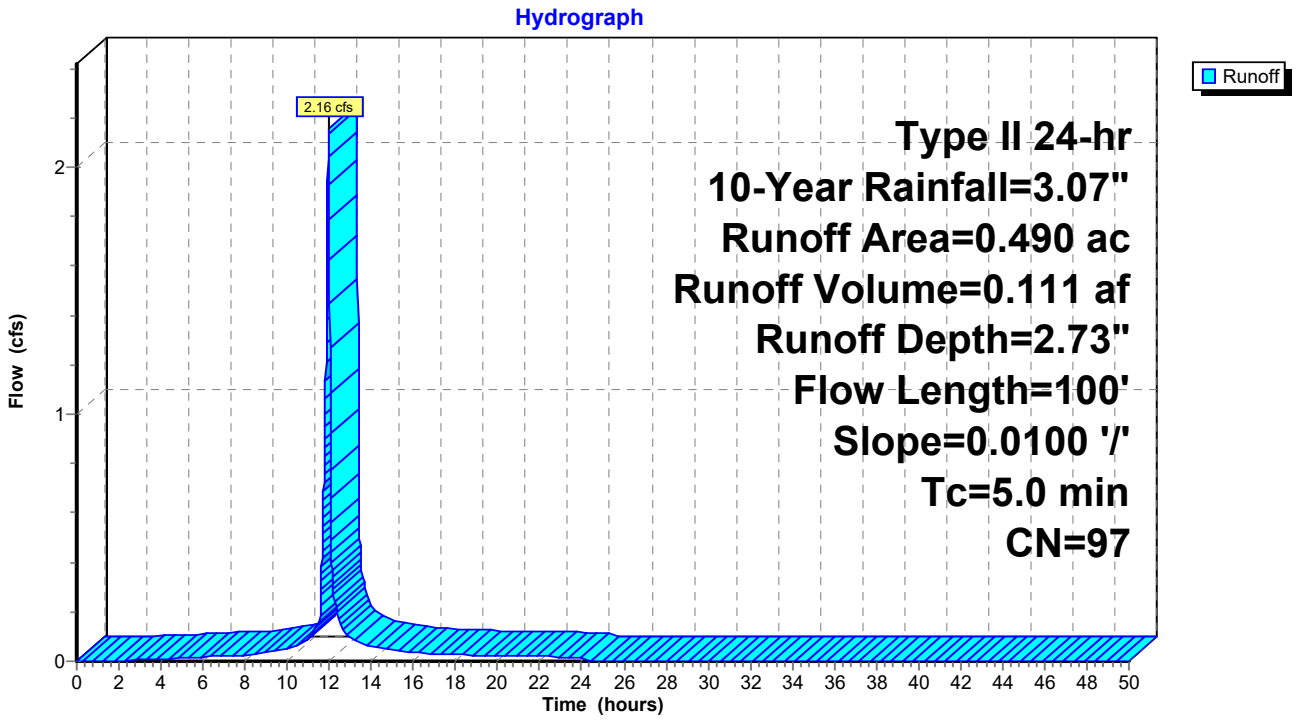
Runoff = 2.16 cfs @ 11.96 hrs, Volume= 0.111 af, Depth= 2.73"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

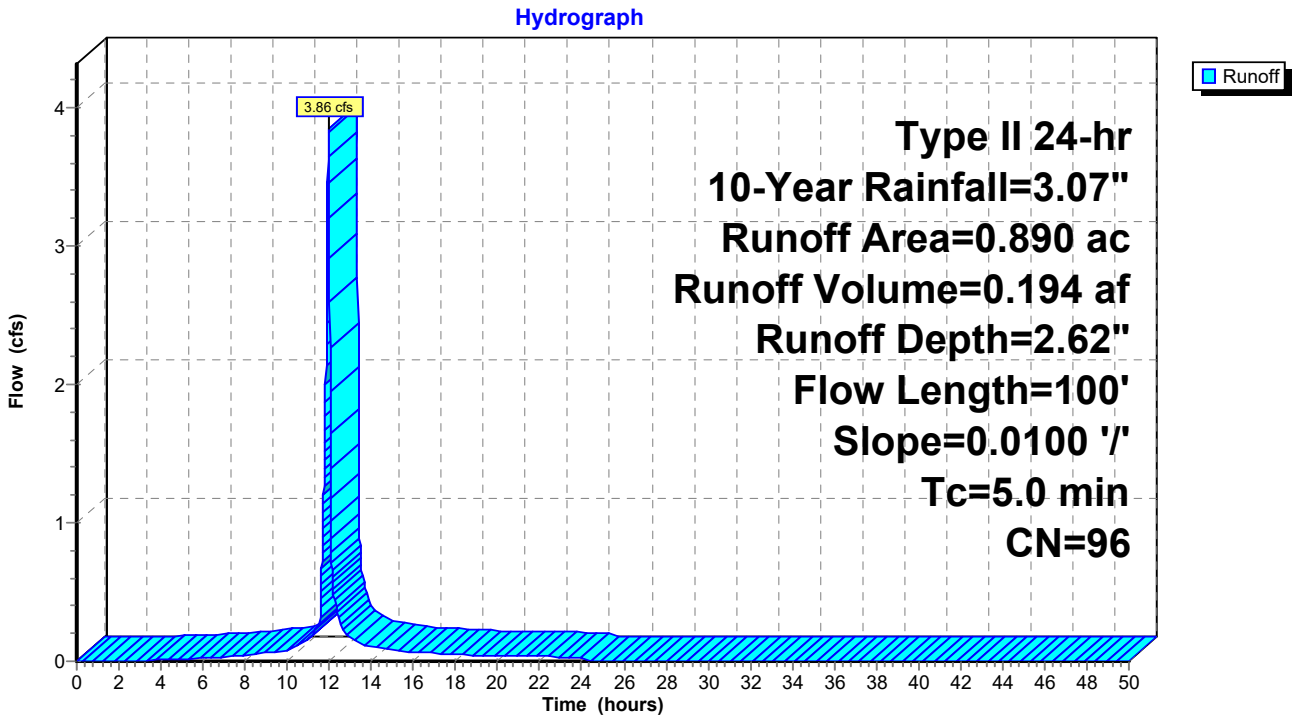
Runoff = 3.86 cfs @ 11.96 hrs, Volume= 0.194 af, Depth= 2.62"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

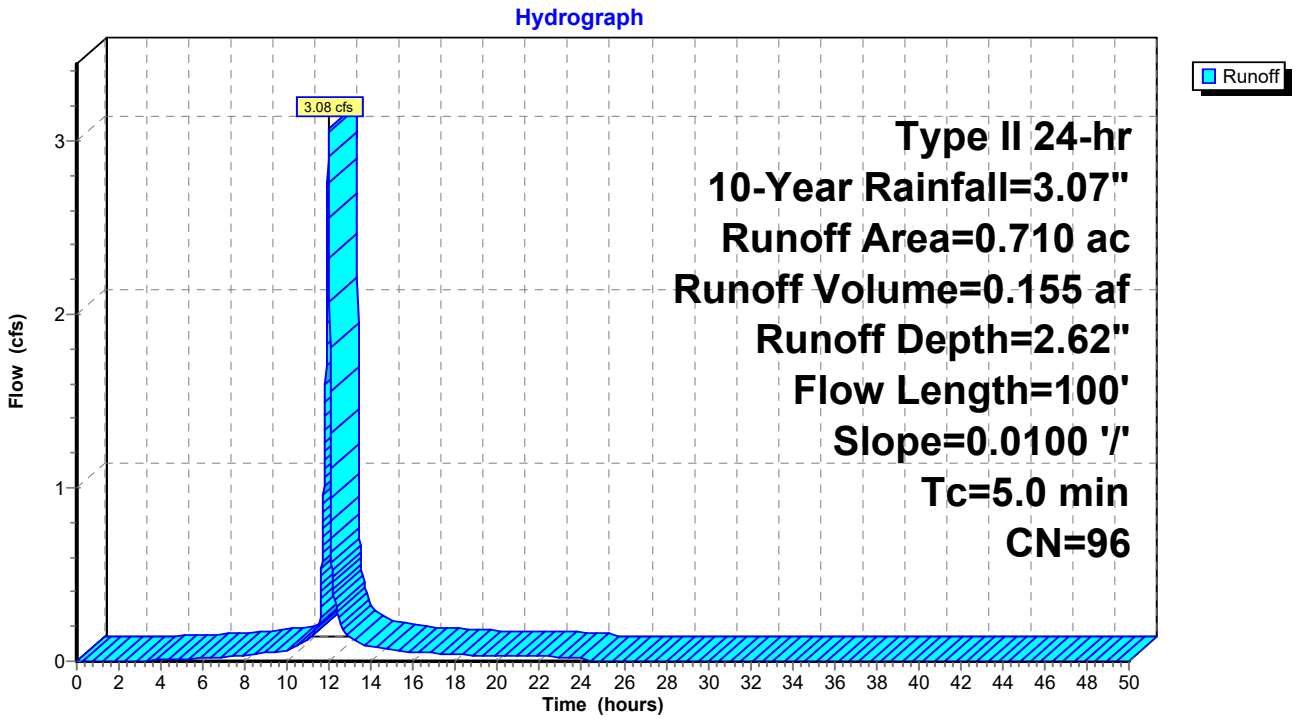
Runoff = 3.08 cfs @ 11.96 hrs, Volume= 0.155 af, Depth= 2.62"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

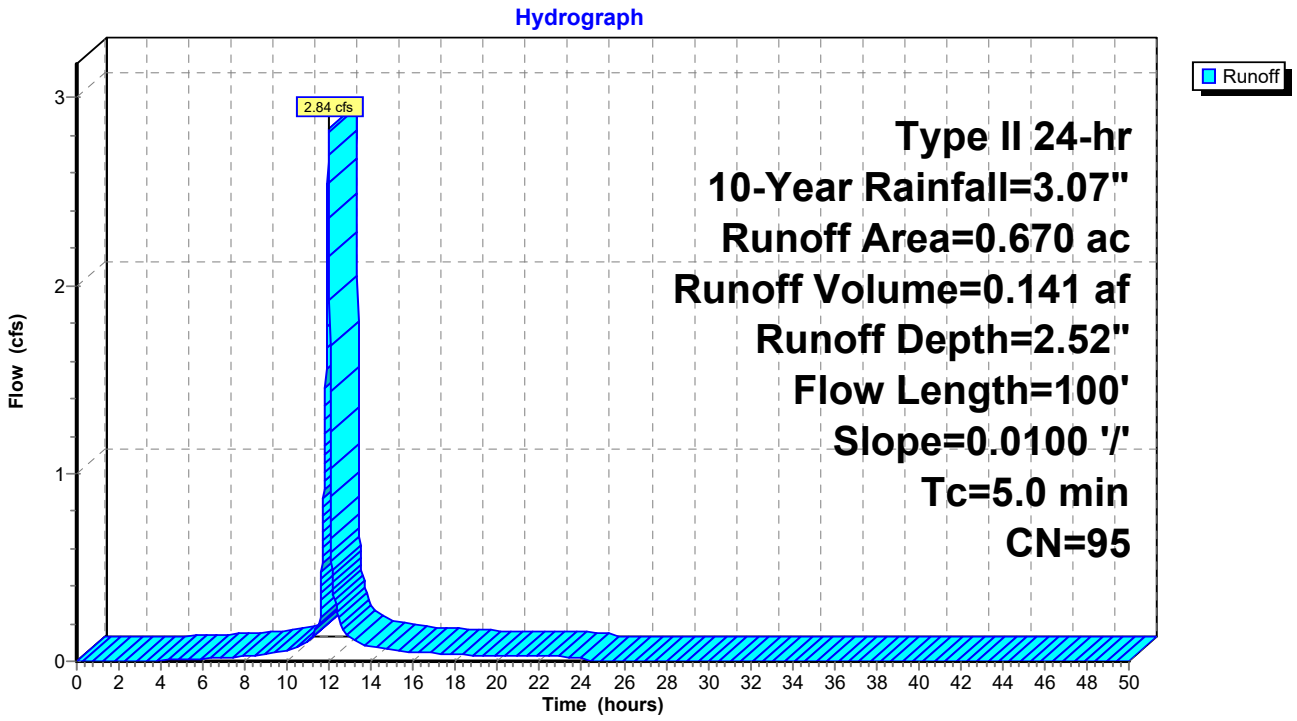
Runoff = 2.84 cfs @ 11.96 hrs, Volume= 0.141 af, Depth= 2.52"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

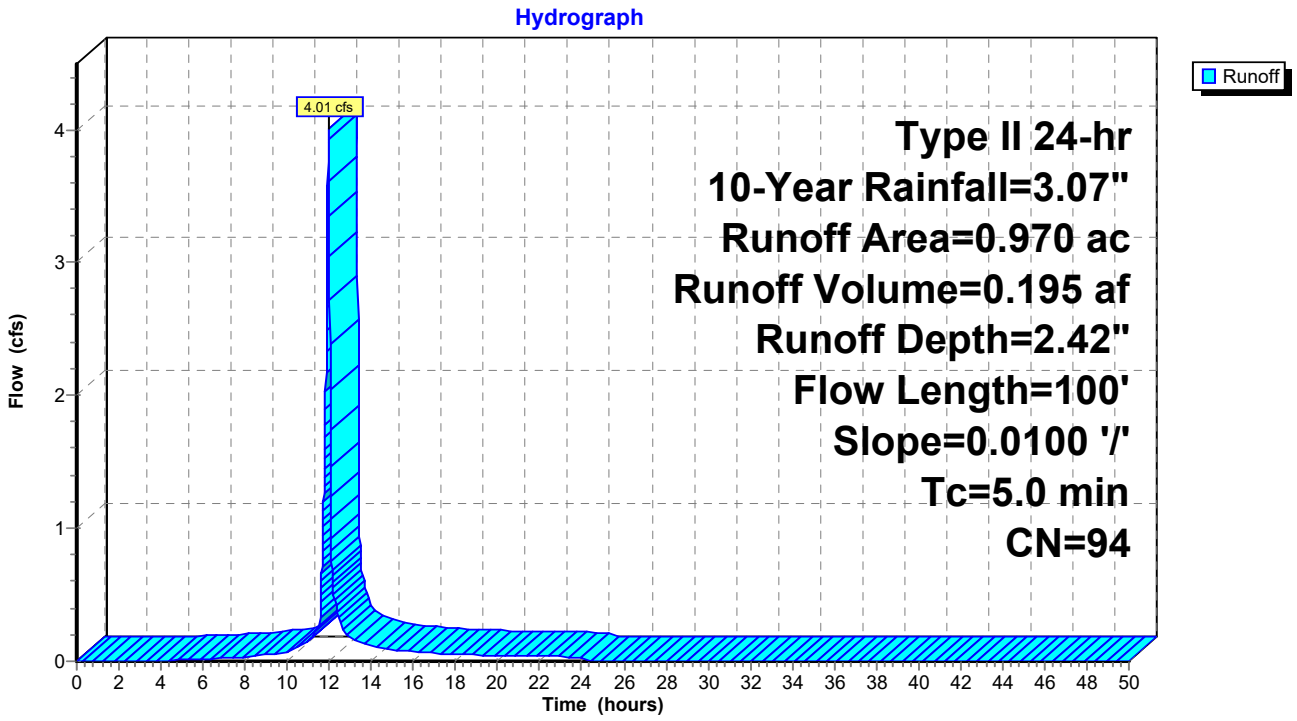
Runoff = 4.01 cfs @ 11.96 hrs, Volume= 0.195 af, Depth= 2.42"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

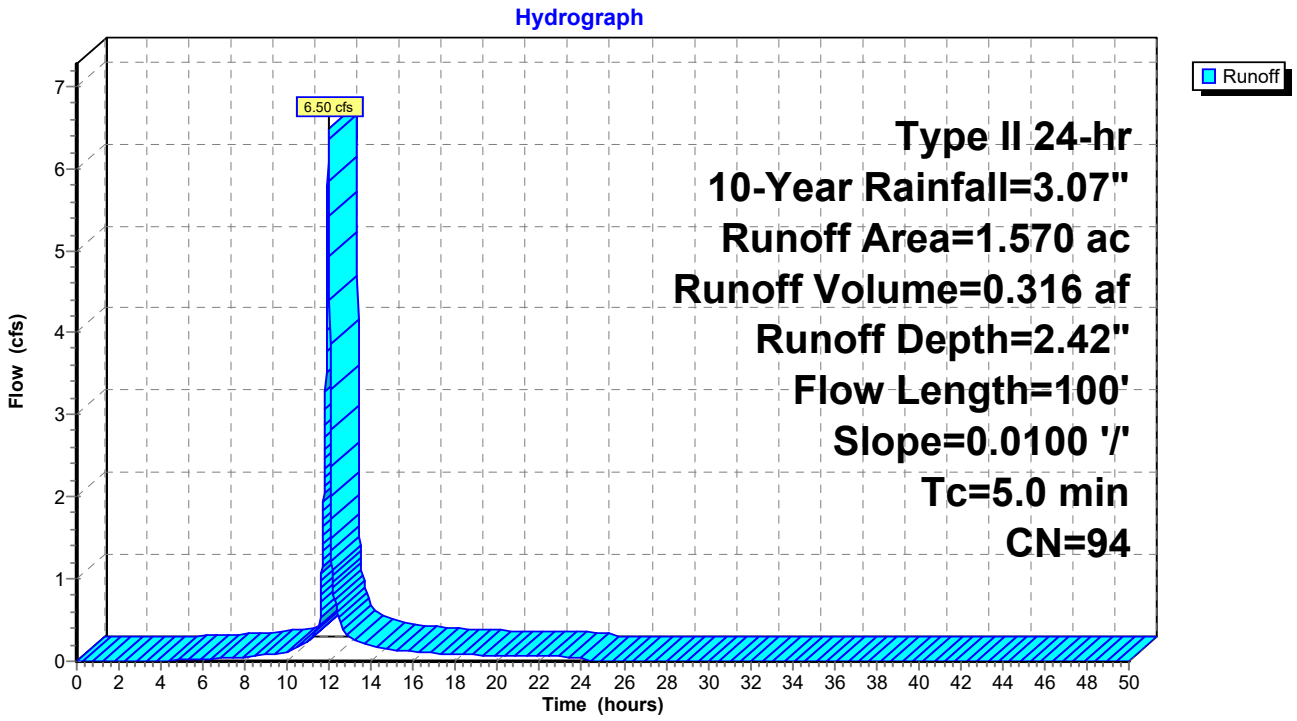
Runoff = 6.50 cfs @ 11.96 hrs, Volume= 0.316 af, Depth= 2.42"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 2.54" for 10-Year event
Inflow = 29.54 cfs @ 11.96 hrs, Volume= 1.469 af
Outflow = 13.54 cfs @ 12.04 hrs, Volume= 1.466 af, Atten= 54%, Lag= 5.3 min
Primary = 13.54 cfs @ 12.04 hrs, Volume= 1.466 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 572.83' @ 12.05 hrs Surf.Area= 20,584 sf Storage= 17,843 cf

Plug-Flow detention time= 42.6 min calculated for 1.466 af (100% of inflow)
Center-of-Mass det. time= 41.5 min (817.6 - 776.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=13.54 cfs @ 12.04 hrs HW=572.83' (Free Discharge)
↑**1=Outlet Pipe** (Barrel Controls 13.54 cfs @ 3.45 fps)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

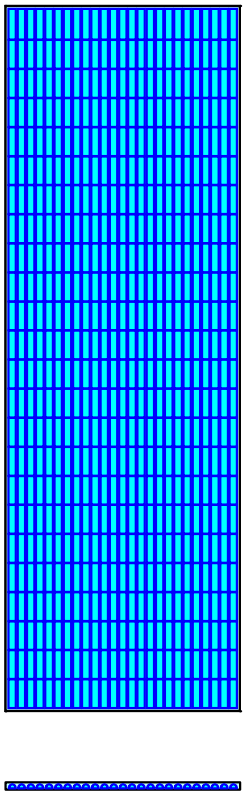
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

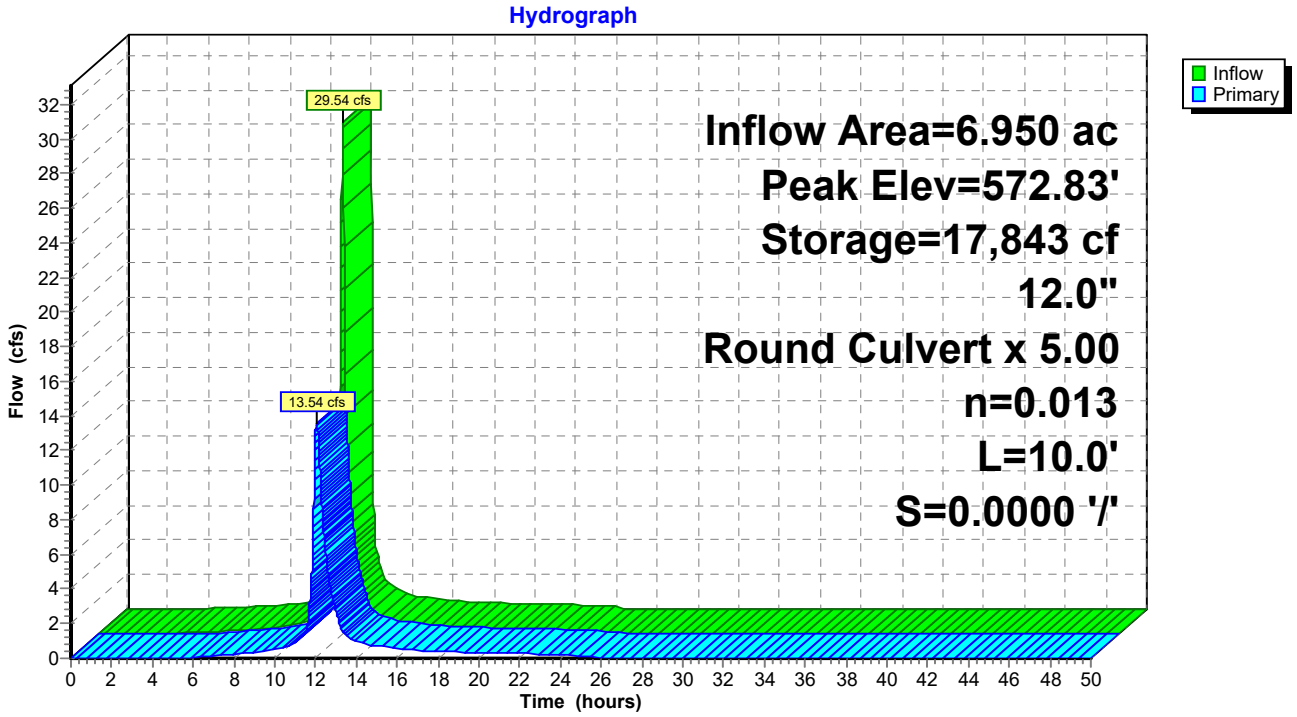
Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=5.97 cfs 0.305 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.78 cfs 0.140 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=3.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=2.65 cfs 0.138 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=4.75 cfs 0.243 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=3.79 cfs 0.194 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=3.52 cfs 0.177 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=3.06"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=5.00 cfs 0.247 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=3.06"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=8.09 cfs 0.400 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.09' Storage=21,706 cf Inflow=36.53 cfs 1.844 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=18.03 cfs 1.841 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.844 af Average Runoff Depth = 3.18"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

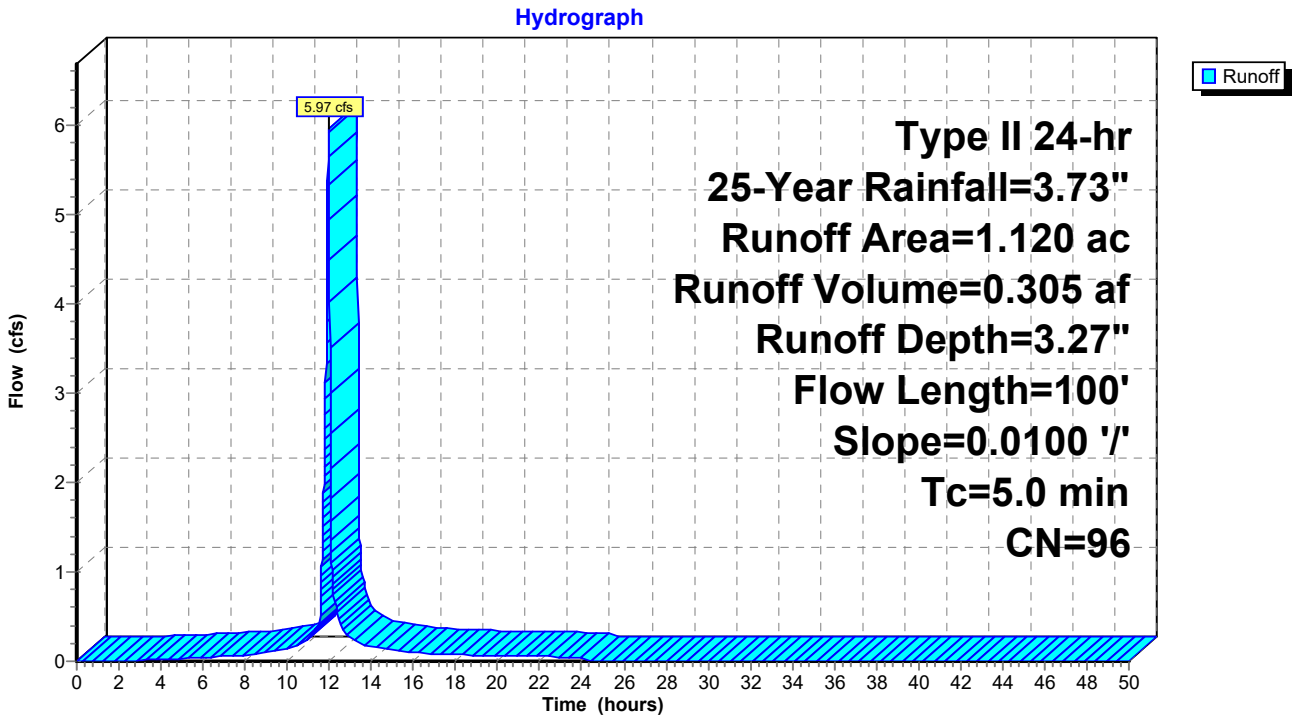
Runoff = 5.97 cfs @ 11.96 hrs, Volume= 0.305 af, Depth= 3.27"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

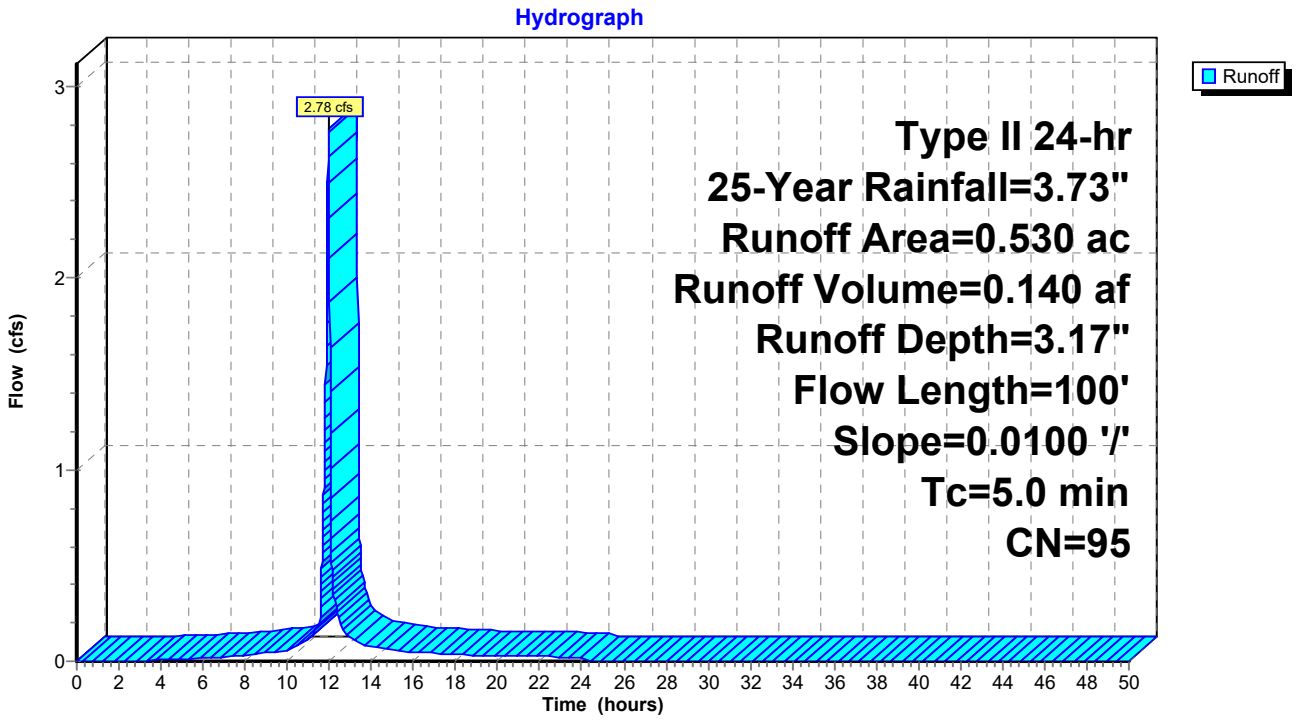
Runoff = 2.78 cfs @ 11.96 hrs, Volume= 0.140 af, Depth= 3.17"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

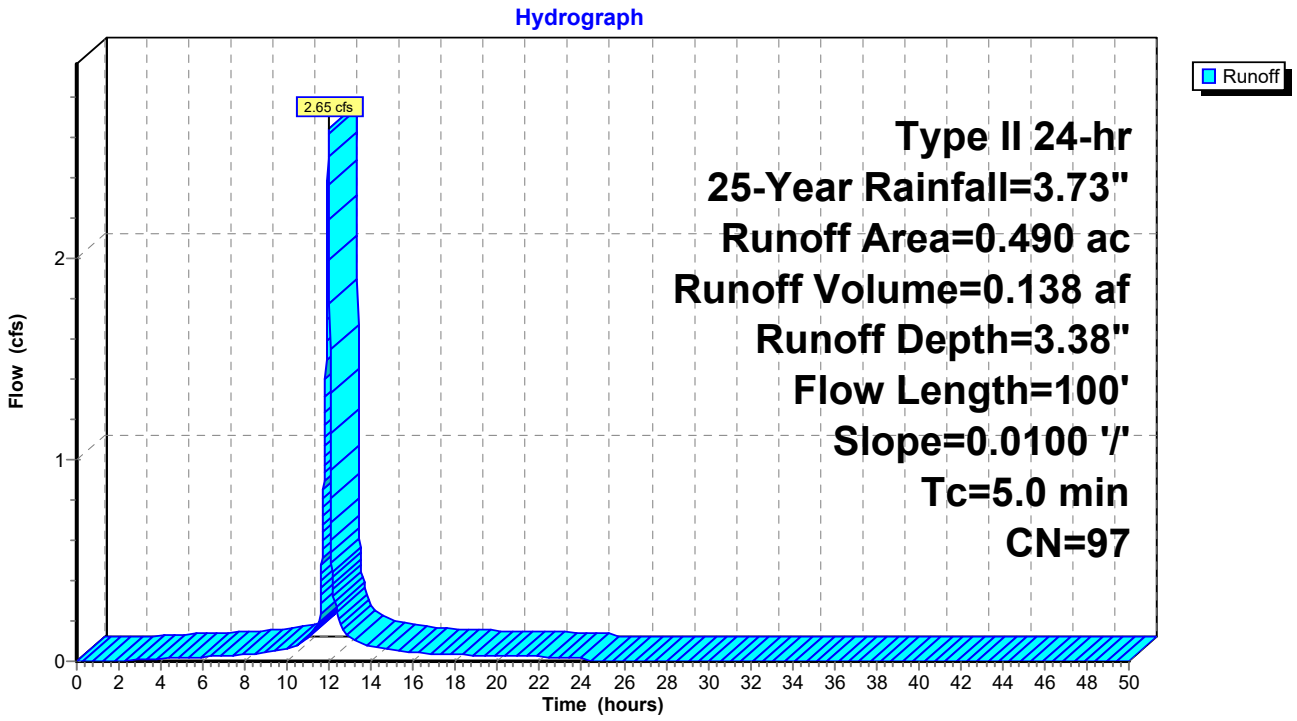
Runoff = 2.65 cfs @ 11.96 hrs, Volume= 0.138 af, Depth= 3.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

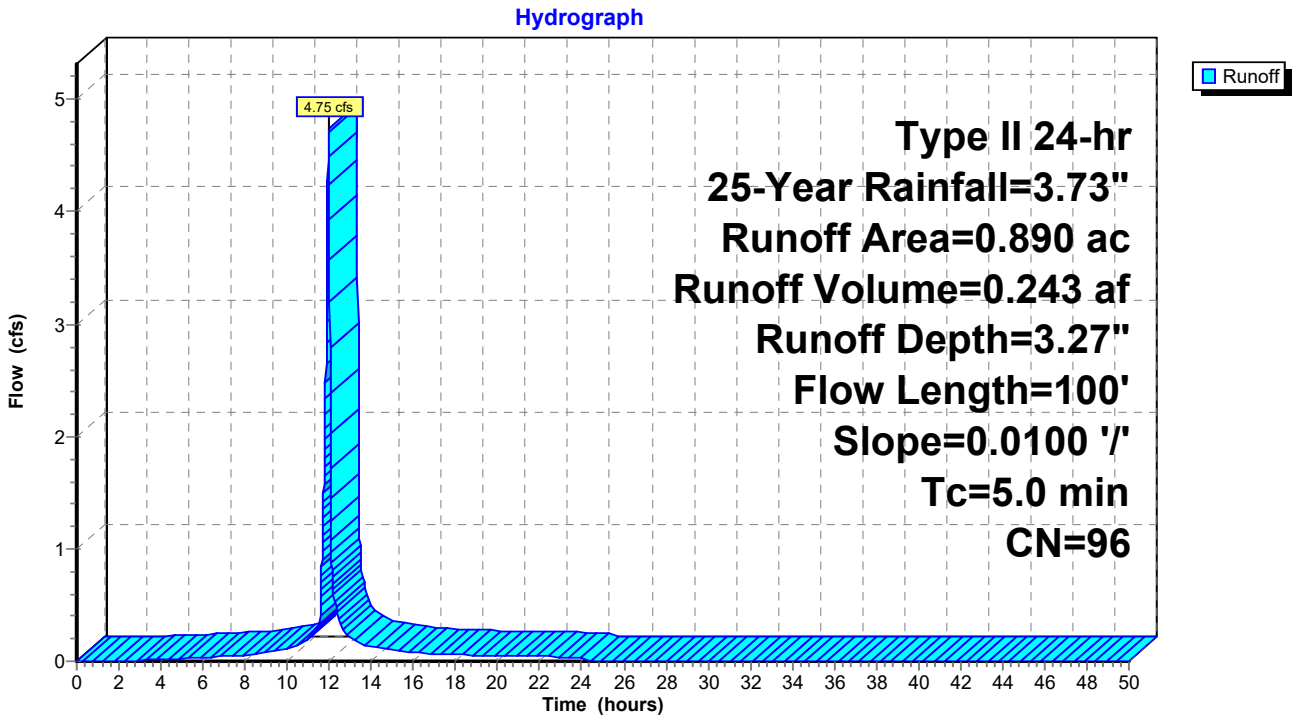
Runoff = 4.75 cfs @ 11.96 hrs, Volume= 0.243 af, Depth= 3.27"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

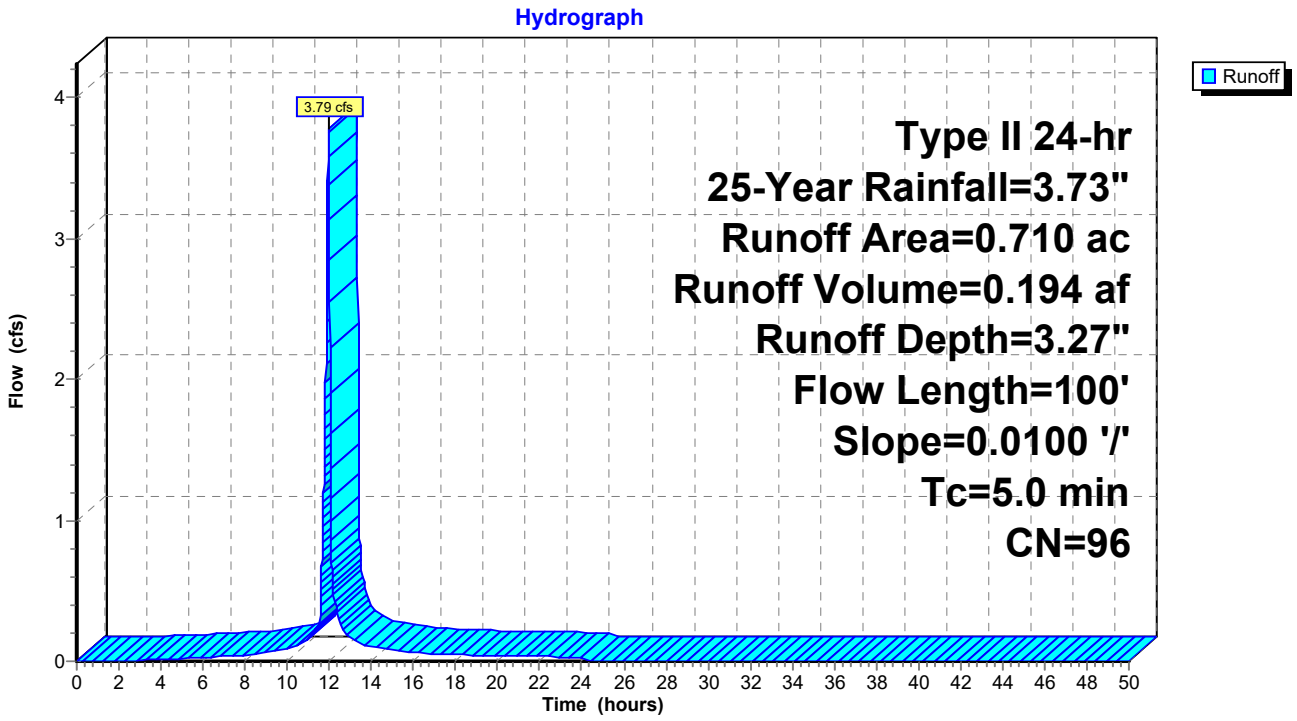
Runoff = 3.79 cfs @ 11.96 hrs, Volume= 0.194 af, Depth= 3.27"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

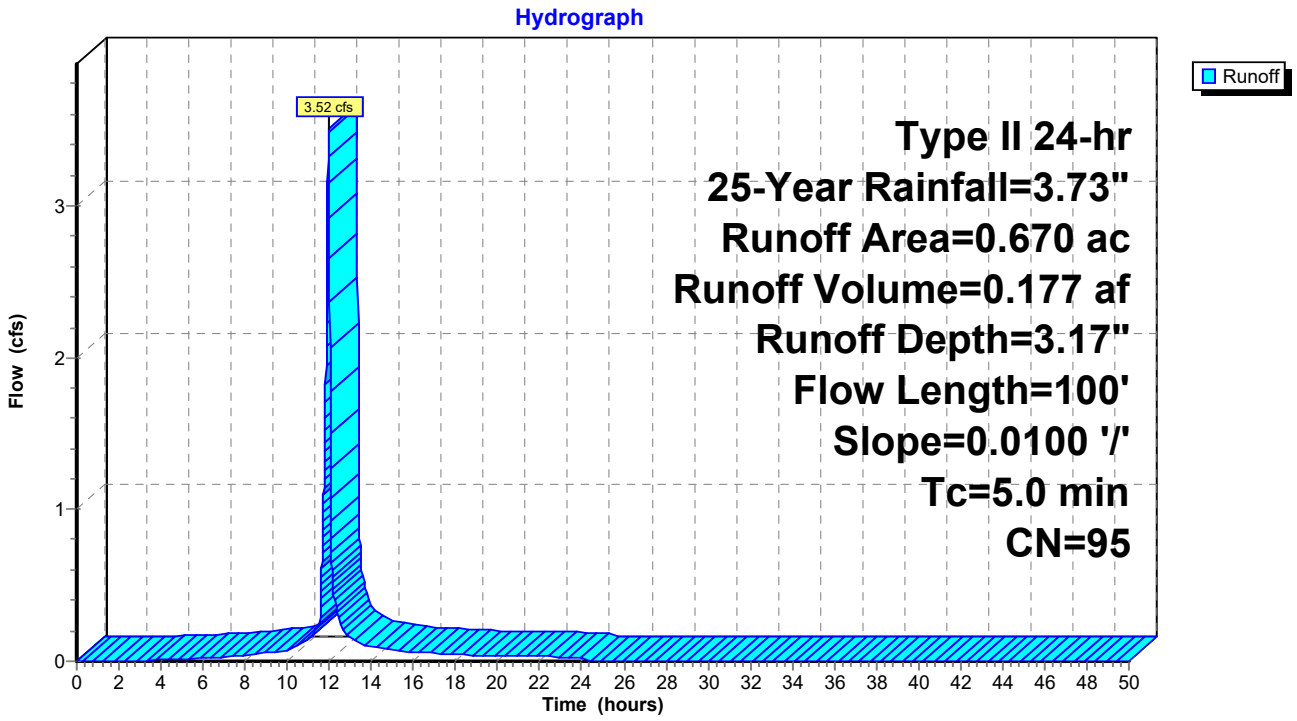
Runoff = 3.52 cfs @ 11.96 hrs, Volume= 0.177 af, Depth= 3.17"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

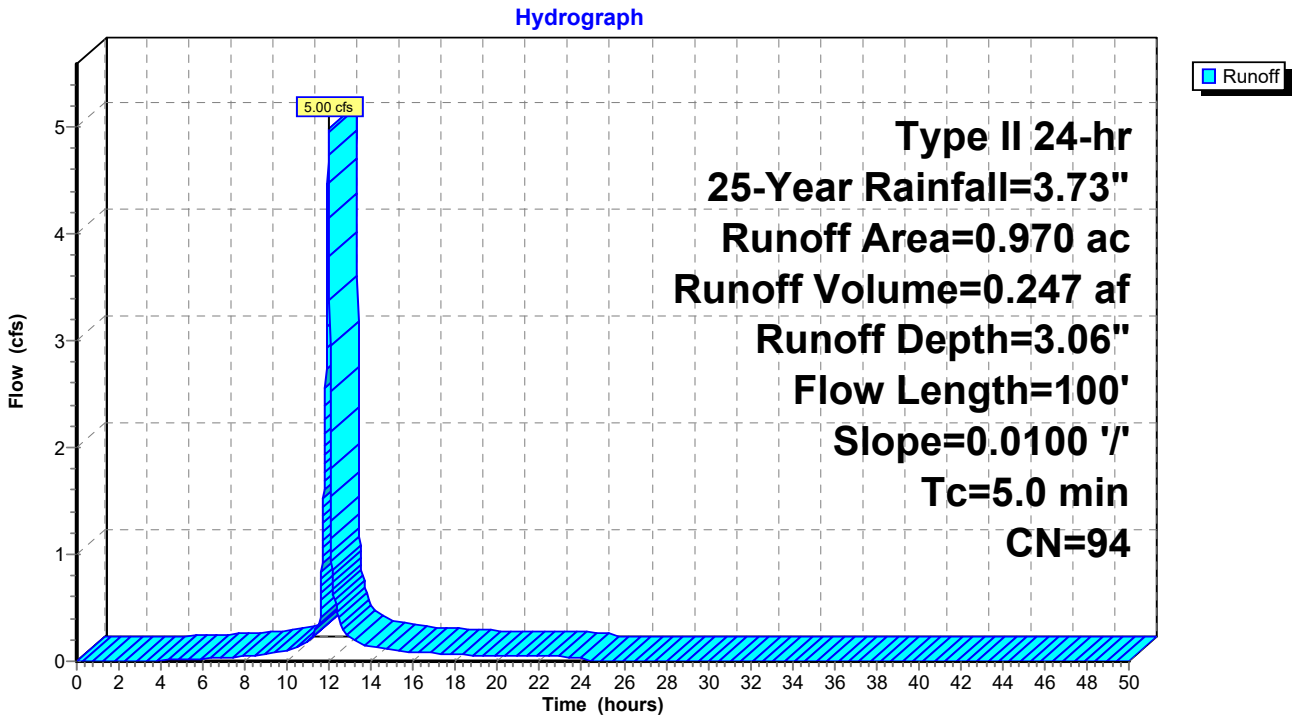
Runoff = 5.00 cfs @ 11.96 hrs, Volume= 0.247 af, Depth= 3.06"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

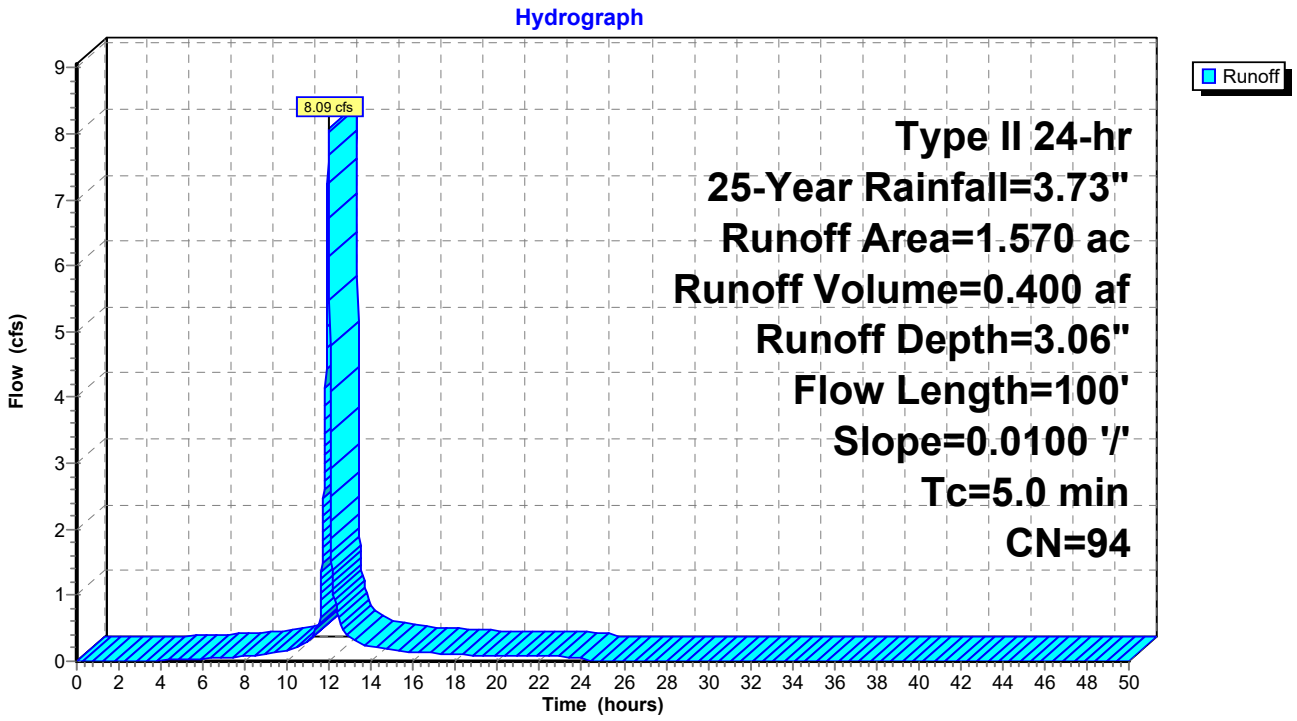
Runoff = 8.09 cfs @ 11.96 hrs, Volume= 0.400 af, Depth= 3.06"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 3.18" for 25-Year event
Inflow = 36.53 cfs @ 11.96 hrs, Volume= 1.844 af
Outflow = 18.03 cfs @ 12.04 hrs, Volume= 1.841 af, Atten= 51%, Lag= 5.1 min
Primary = 18.03 cfs @ 12.04 hrs, Volume= 1.841 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.09' @ 12.04 hrs Surf.Area= 20,584 sf Storage= 21,706 cf

Plug-Flow detention time= 39.0 min calculated for 1.841 af (100% of inflow)
Center-of-Mass det. time= 38.1 min (808.4 - 770.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=18.02 cfs @ 12.04 hrs HW=573.09' (Free Discharge)
↑**1=Outlet Pipe** (Barrel Controls 18.02 cfs @ 4.59 fps)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

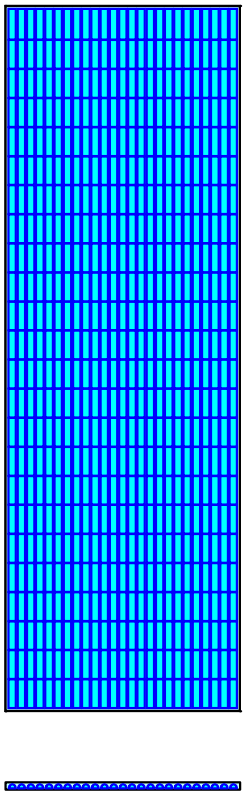
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

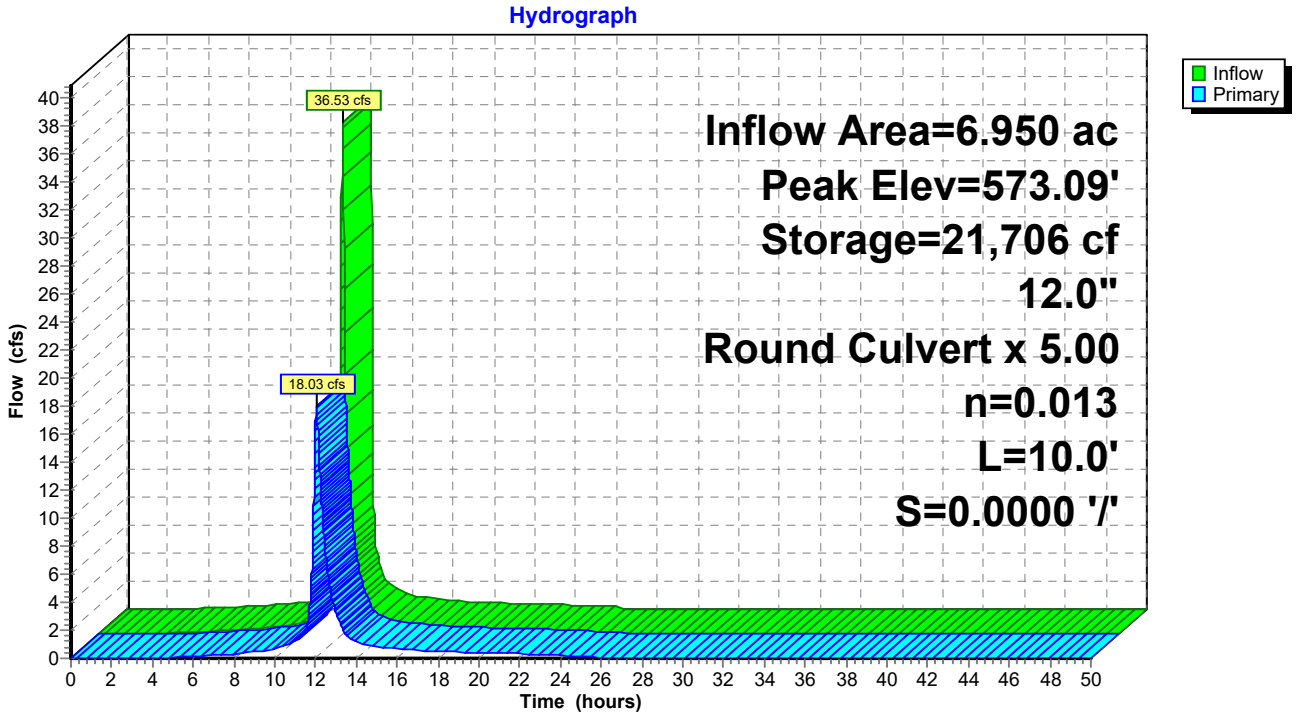
Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=8.16 cfs 0.426 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=3.82 cfs 0.197 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=4.68"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=3.60 cfs 0.191 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=6.49 cfs 0.338 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=5.17 cfs 0.270 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=4.83 cfs 0.248 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=4.34"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=6.92 cfs 0.351 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=4.34"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=11.20 cfs 0.567 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.83' Storage=29,010 cf Inflow=50.20 cfs 2.588 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=25.60 cfs 2.585 af

Total Runoff Area = 6.950 ac Runoff Volume = 2.588 af Average Runoff Depth = 4.47"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

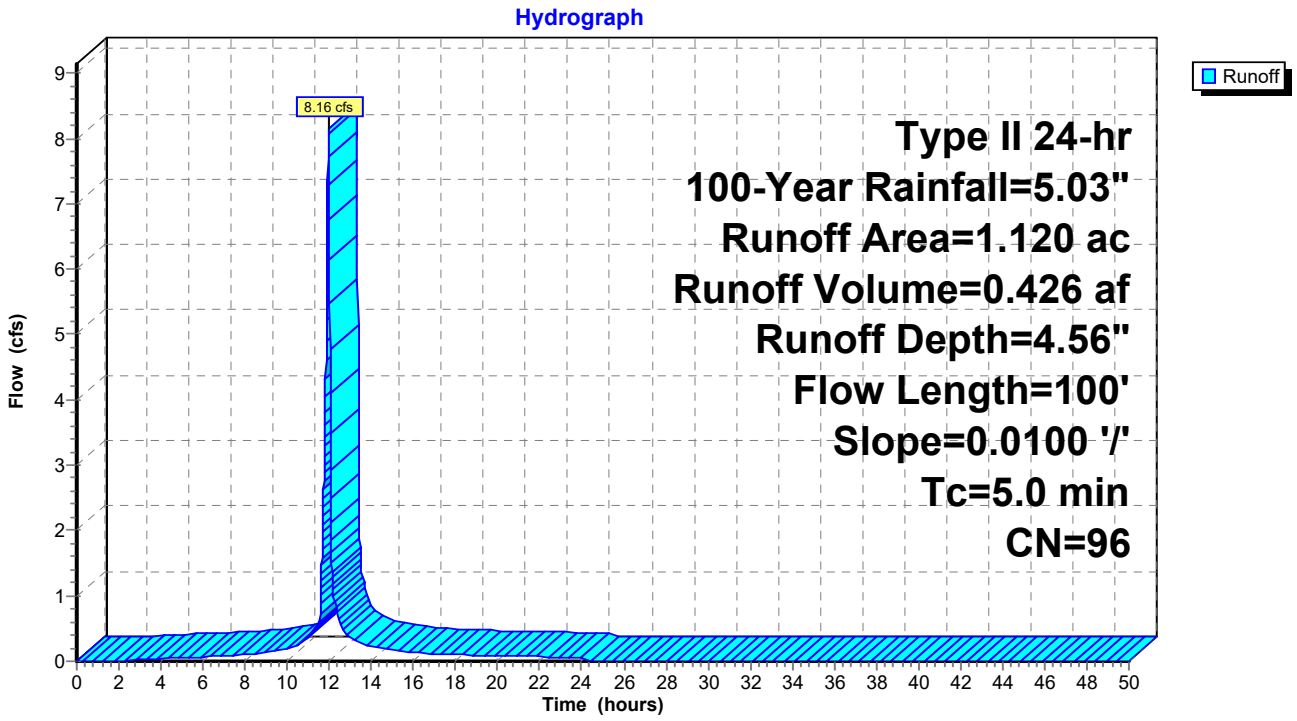
Runoff = 8.16 cfs @ 11.96 hrs, Volume= 0.426 af, Depth= 4.56"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

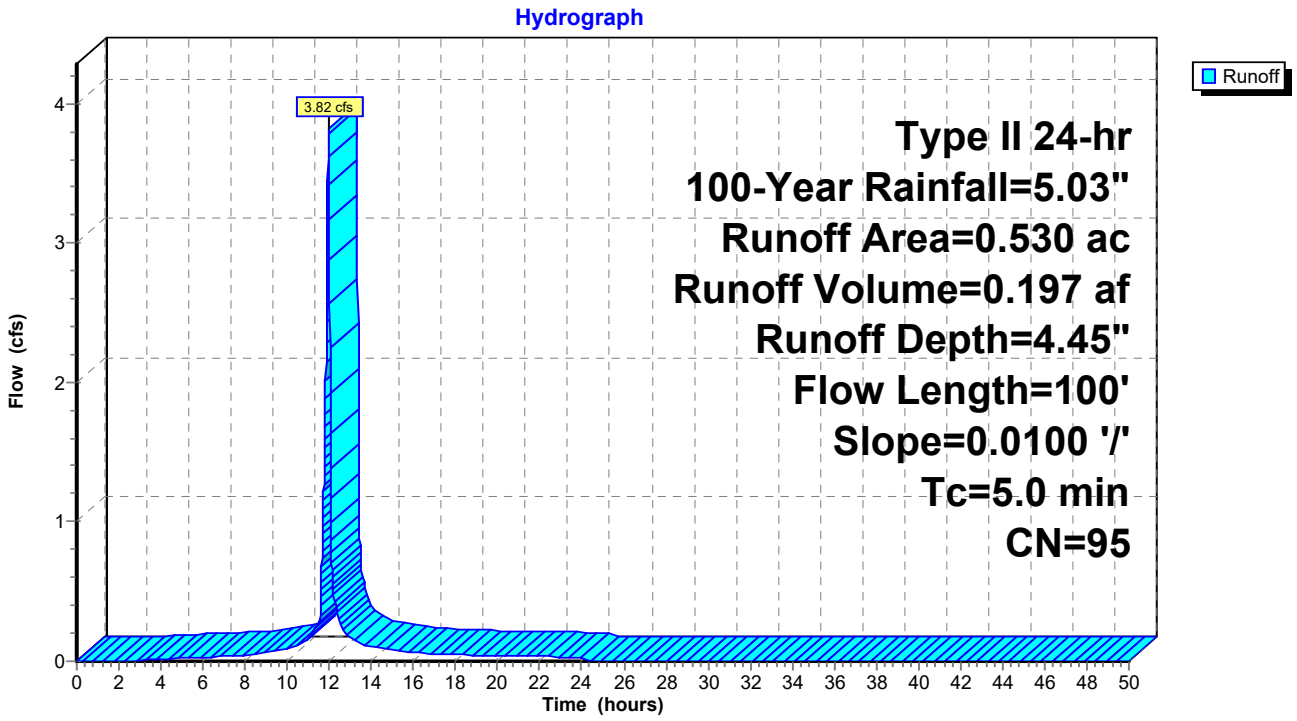
Runoff = 3.82 cfs @ 11.96 hrs, Volume= 0.197 af, Depth= 4.45"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

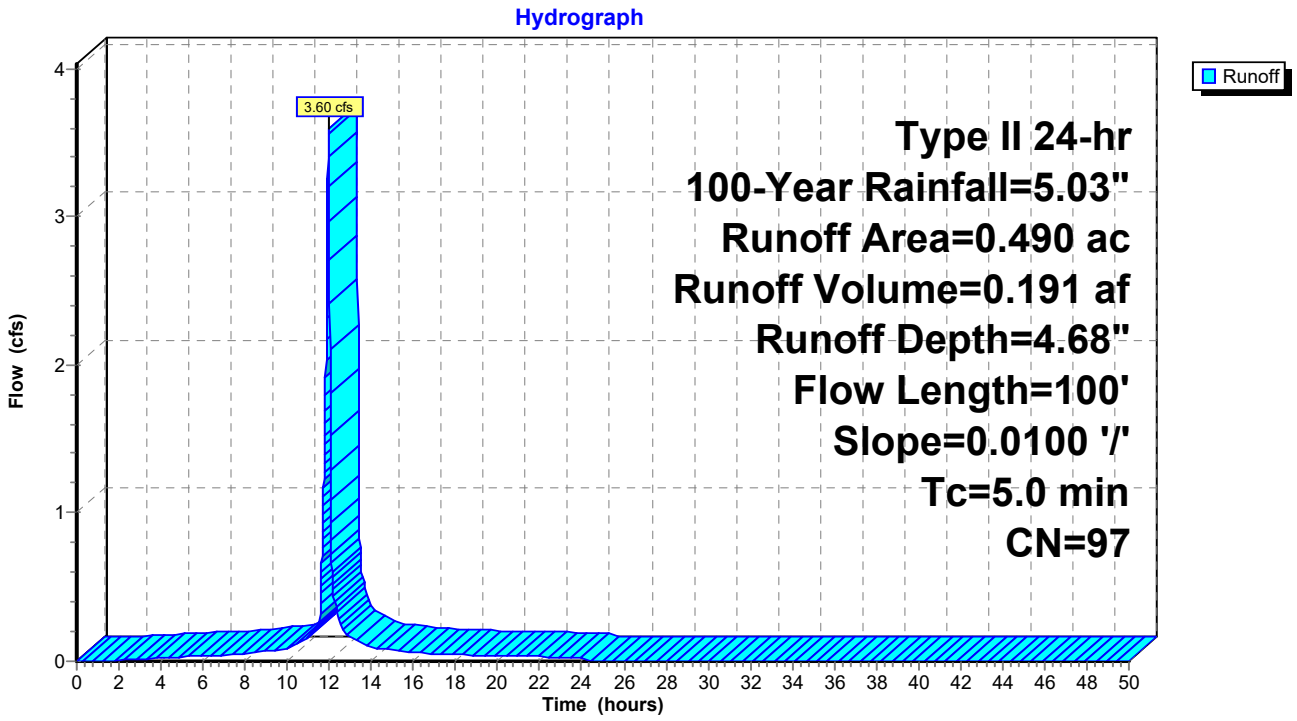
Runoff = 3.60 cfs @ 11.96 hrs, Volume= 0.191 af, Depth= 4.68"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

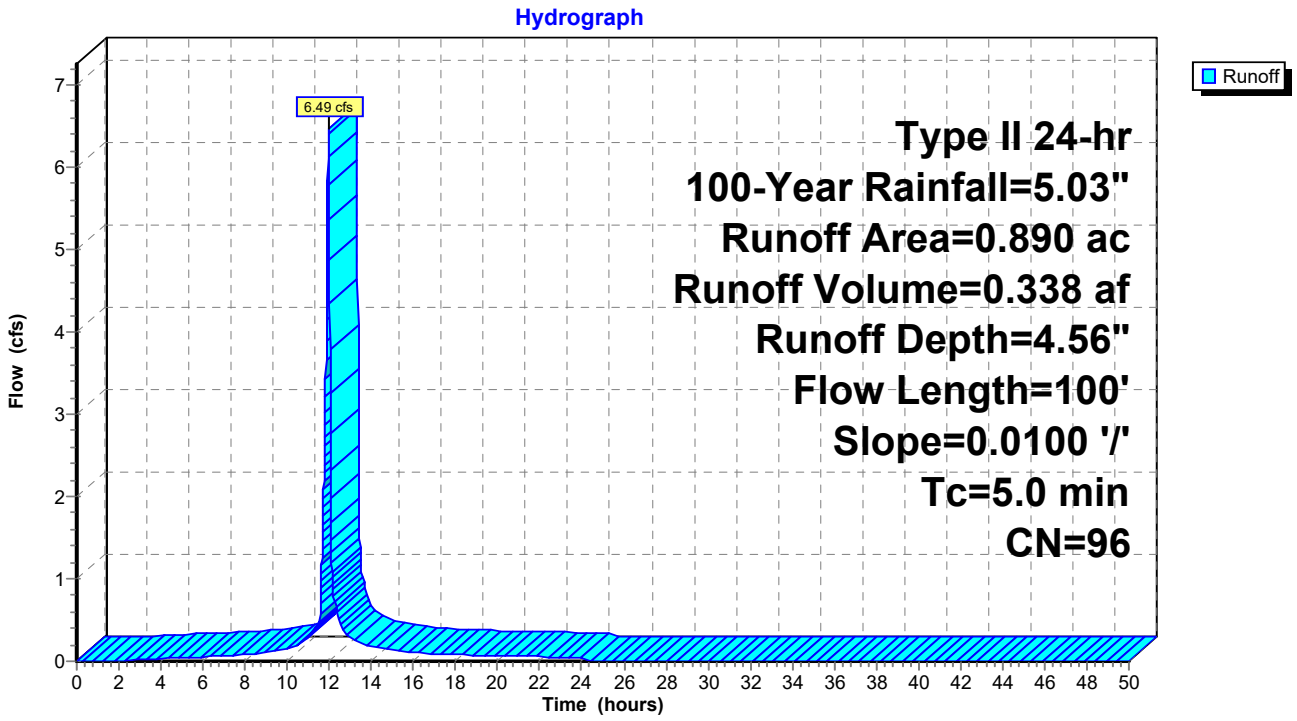
Runoff = 6.49 cfs @ 11.96 hrs, Volume= 0.338 af, Depth= 4.56"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

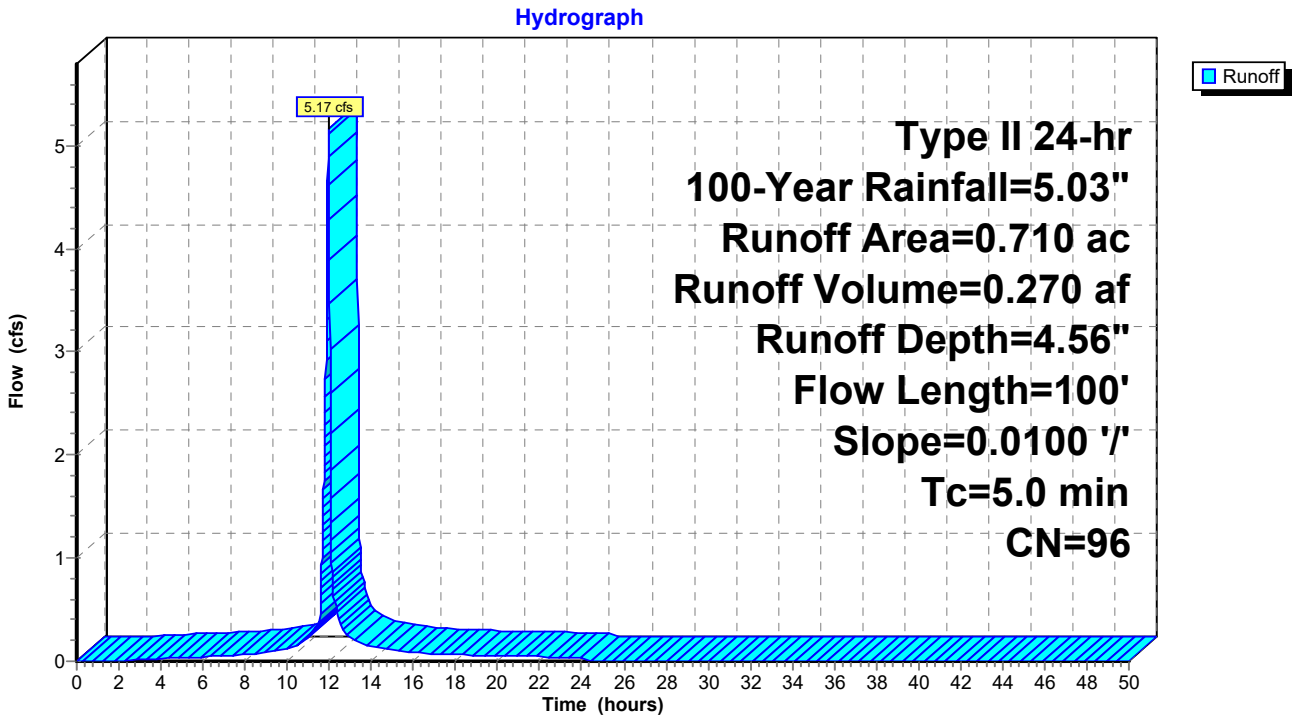
Runoff = 5.17 cfs @ 11.96 hrs, Volume= 0.270 af, Depth= 4.56"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

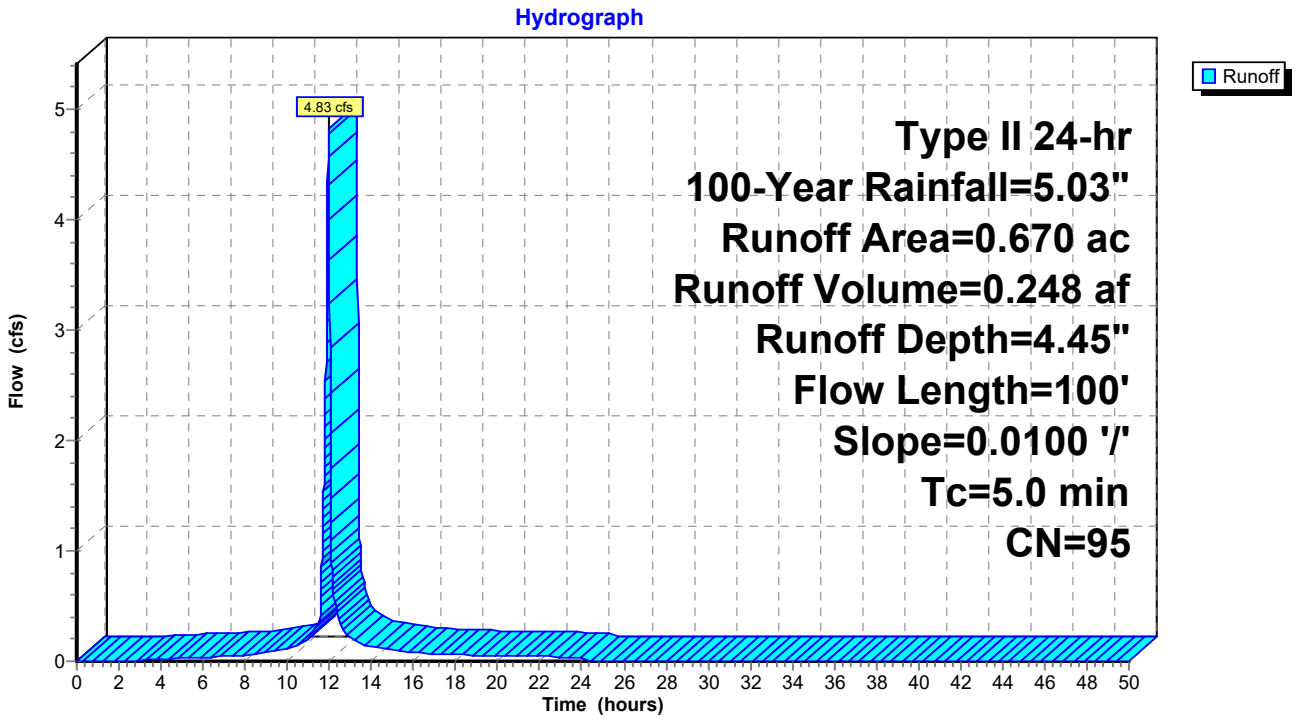
Runoff = 4.83 cfs @ 11.96 hrs, Volume= 0.248 af, Depth= 4.45"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

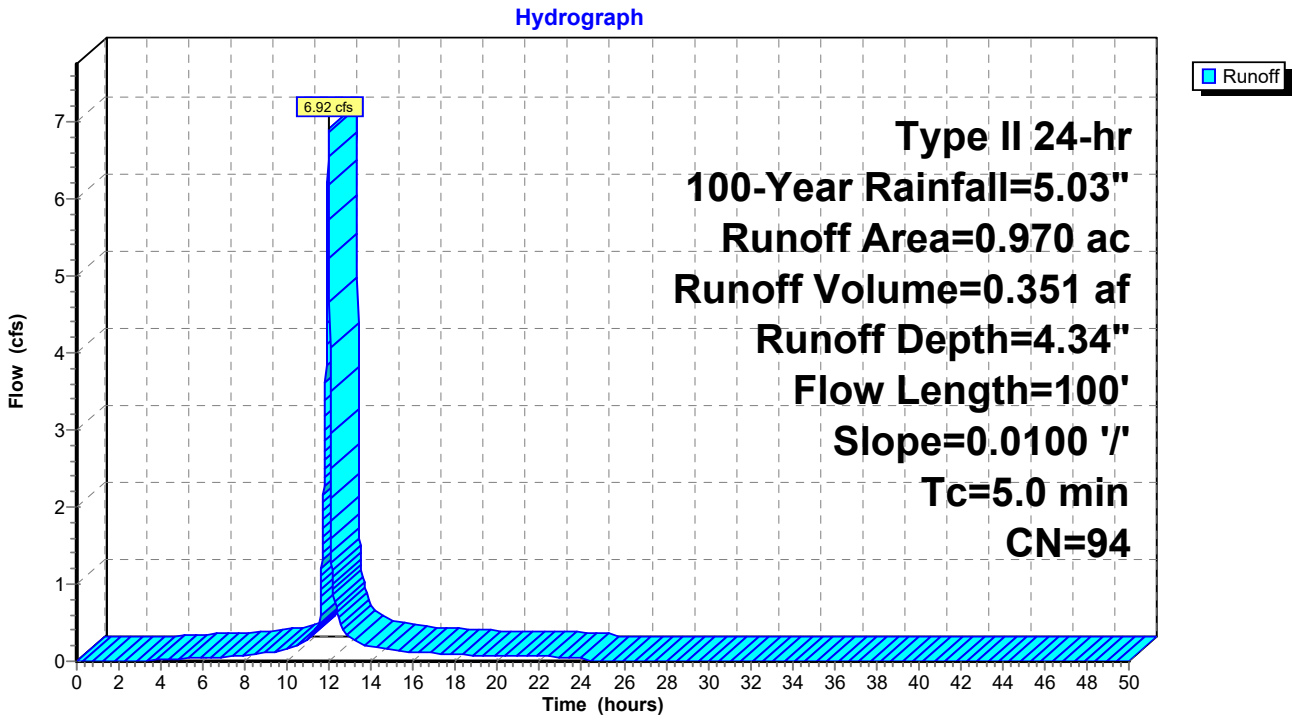
Runoff = 6.92 cfs @ 11.96 hrs, Volume= 0.351 af, Depth= 4.34"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

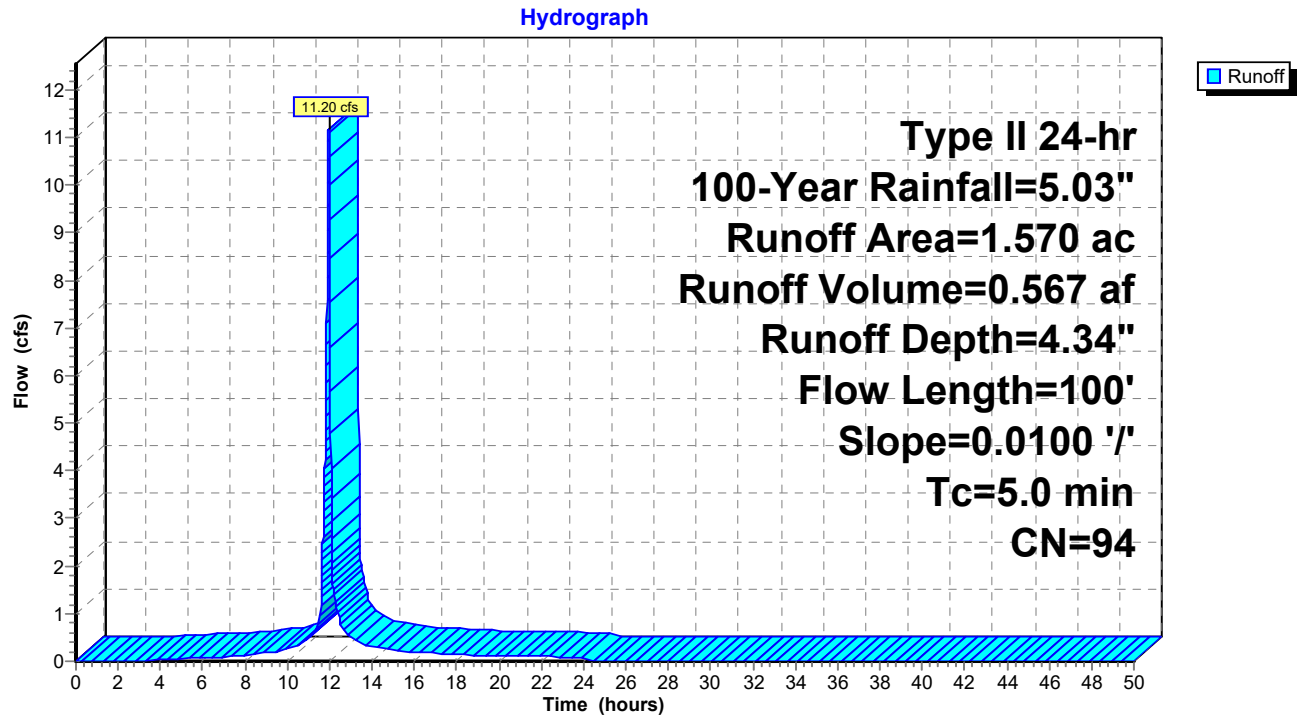
Runoff = 11.20 cfs @ 11.96 hrs, Volume= 0.567 af, Depth= 4.34"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 4.47" for 100-Year event
Inflow = 50.20 cfs @ 11.96 hrs, Volume= 2.588 af
Outflow = 25.60 cfs @ 12.04 hrs, Volume= 2.585 af, Atten= 49%, Lag= 5.0 min
Primary = 25.60 cfs @ 12.04 hrs, Volume= 2.585 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.83' @ 12.04 hrs Surf.Area= 20,584 sf Storage= 29,010 cf

Plug-Flow detention time= 34.5 min calculated for 2.585 af (100% of inflow)
Center-of-Mass det. time= 33.7 min (795.7 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=25.59 cfs @ 12.04 hrs HW=573.83' (Free Discharge)
↑**1=Outlet Pipe** (Inlet Controls 25.59 cfs @ 6.52 fps)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

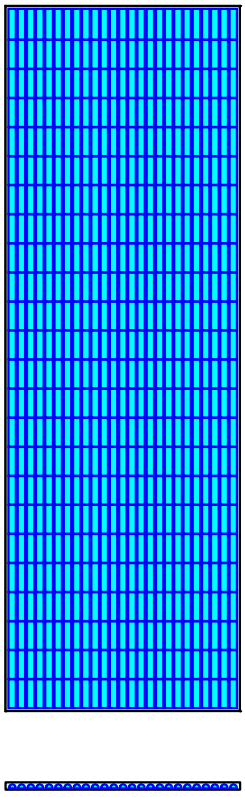
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



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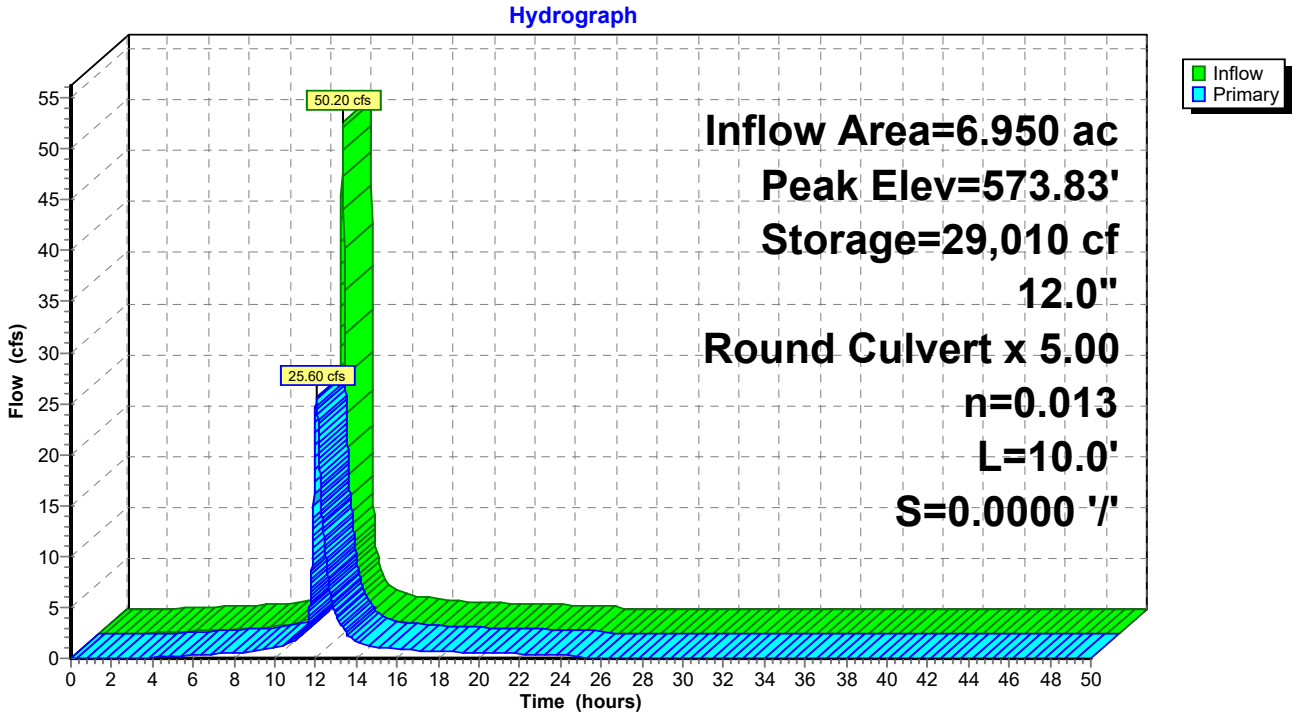
Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix E

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

(i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

(ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

(iii) *Minimize* the amount of soil exposed during *construction activity*;

(iv) *Minimize* the disturbance of *steep slopes*;

(v) *Minimize* sediment *discharge*s from the site;

(vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

(vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

(viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

(ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

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(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

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calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

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E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

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8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

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B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

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must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

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b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

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use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

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b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

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the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

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b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

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b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

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begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

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d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

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(Part IV.C.4.a)

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

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b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

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b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

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E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

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(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

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include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

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3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

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(Part VII.R)

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

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Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

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and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

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Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

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New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

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Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

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SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

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Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

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training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

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APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

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Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

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Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

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Appendix C

Figure 1 - New York City Watershed East of the Hudson

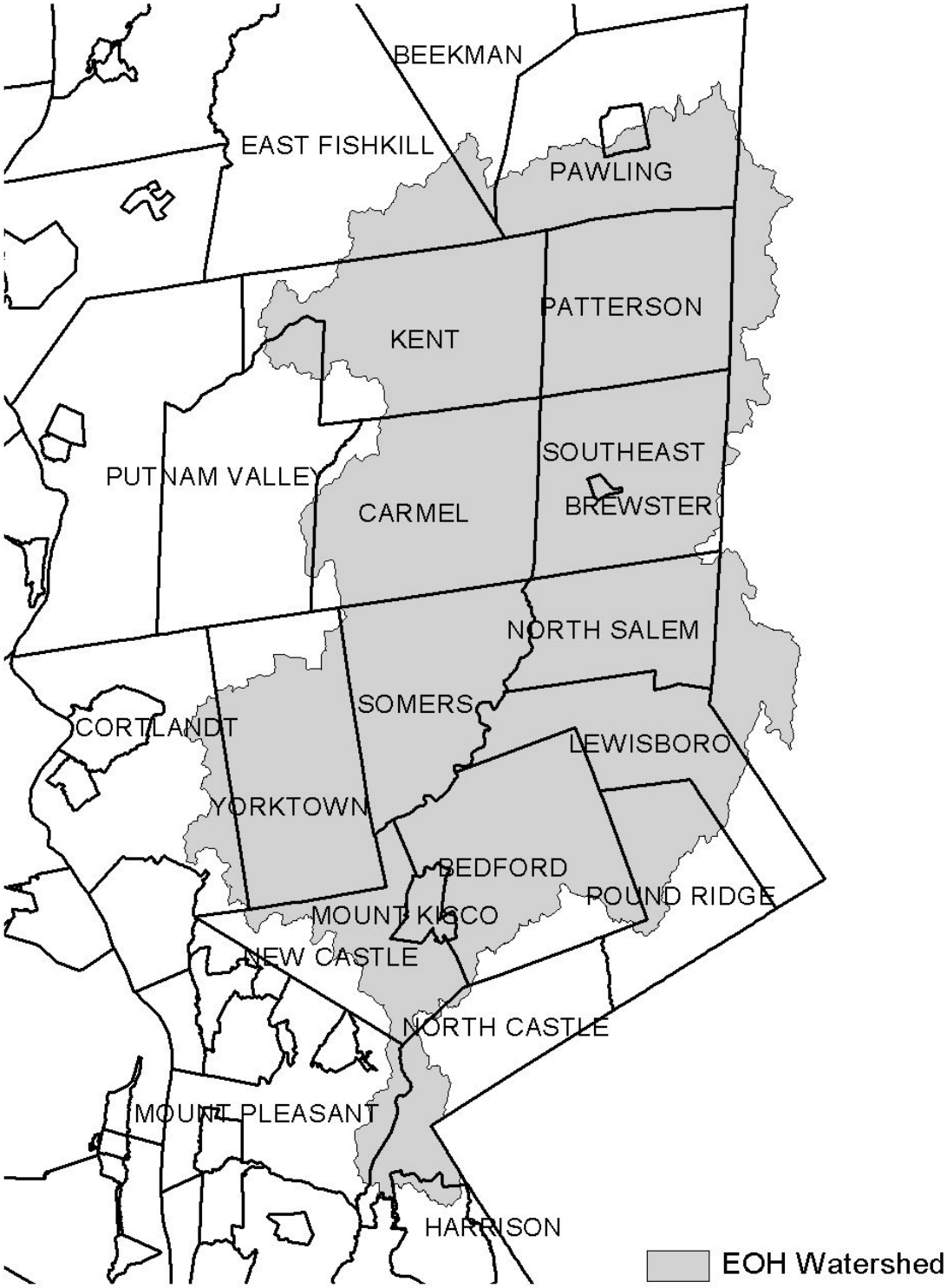

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Figure 2 - Onondaga Lake Watershed



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Figure 3 - Greenwood Lake Watershed



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Figure 4 - Oscawana Lake Watershed

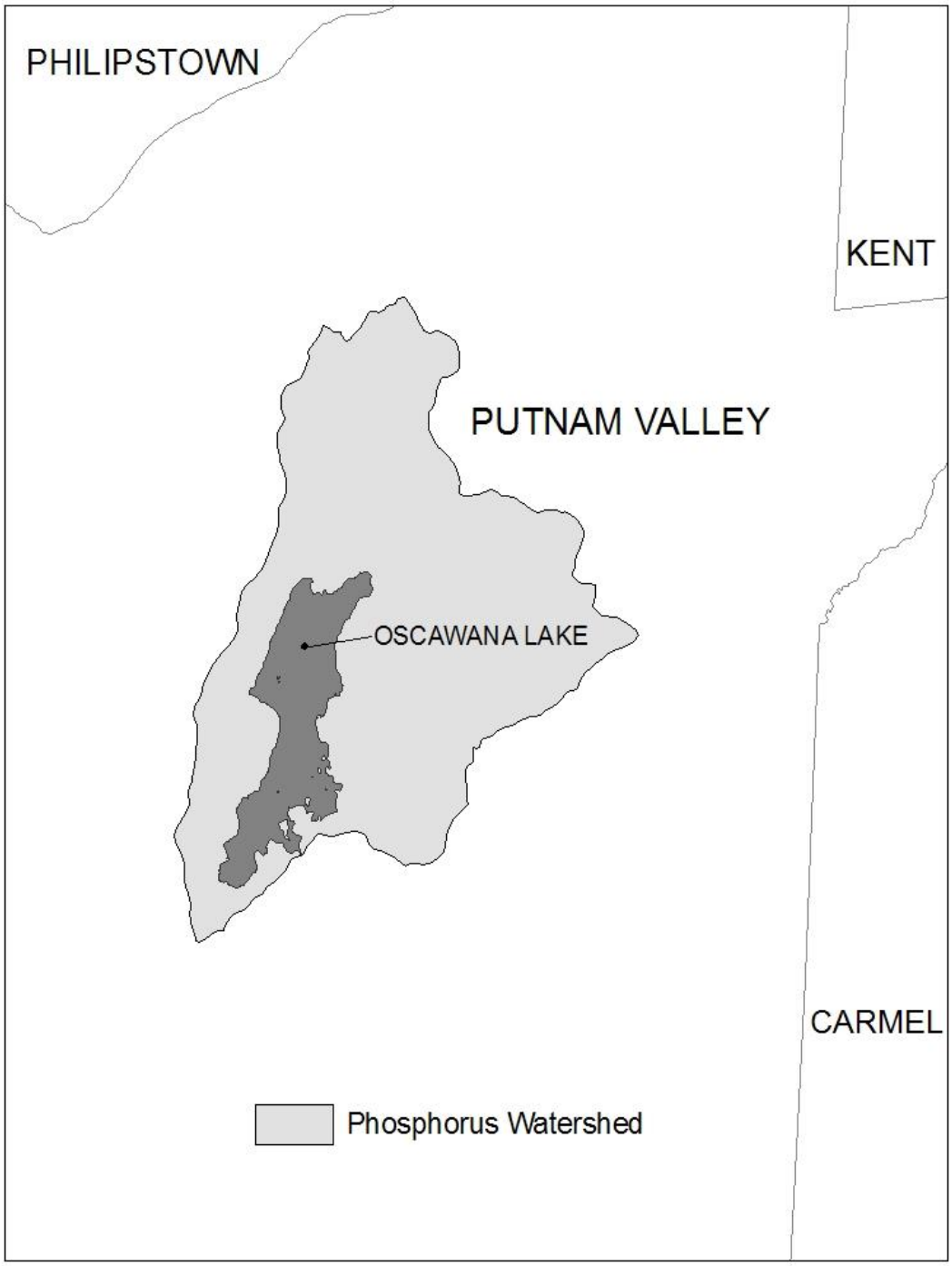

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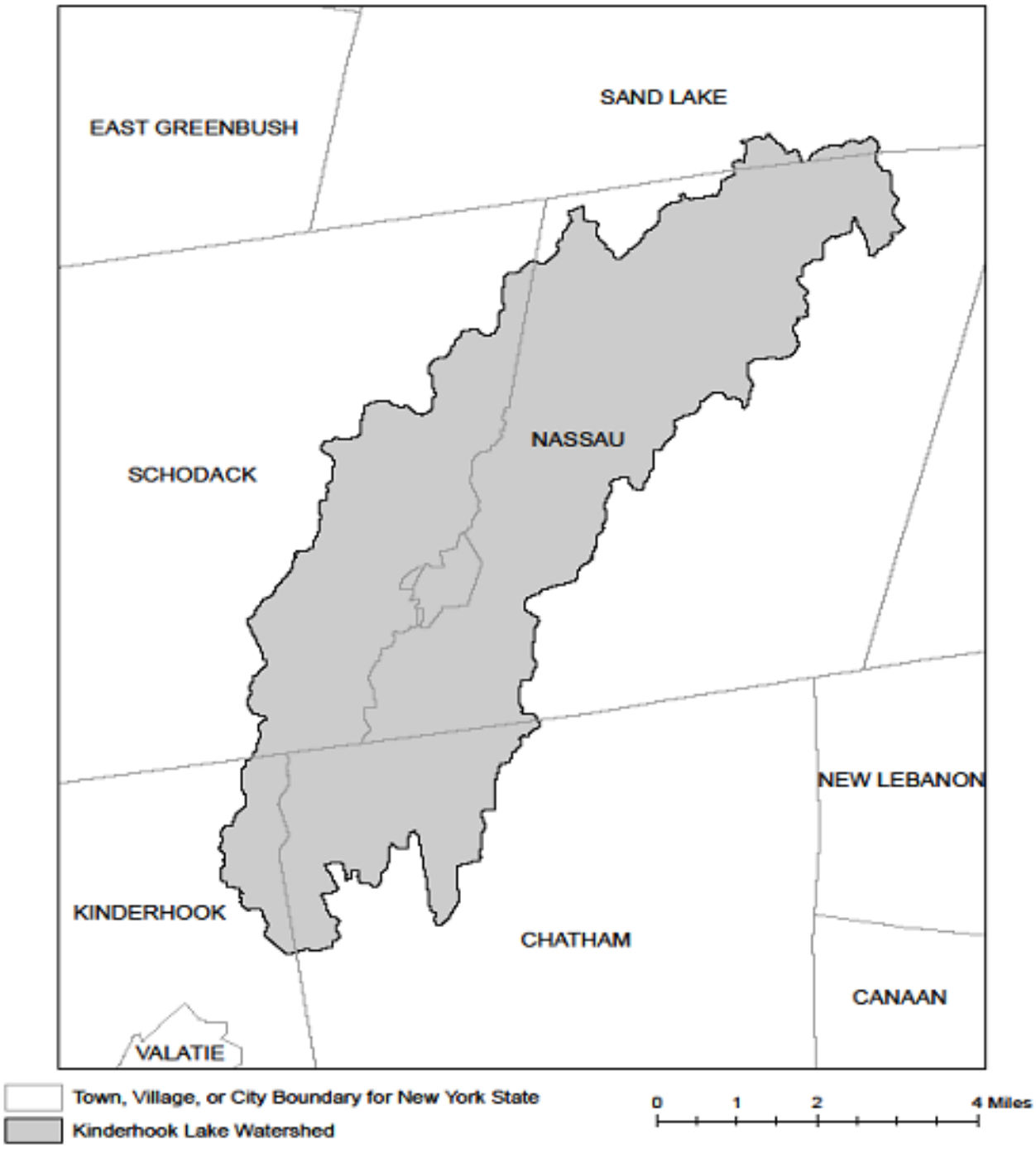
Figure 5 - Kinderhook Lake Watershed



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APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

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APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

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303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

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APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix F

Forms

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Amherst Development Park
6000-6040 North Bailey Ave
Amherst, NY 14226

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of Amherst.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

eNOI Submission Number: _____

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Benderson Development Company, LLC - 570 Delaware Ave - Buffalo, NY 14202

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher		Wood
First name	MI	Last Name

	11-26-23
Signature	Date

Revised: January 2020

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix G

NYSDEC Notice of Termination (NOT)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

Facility Certification Form Cover Sheet

A. General Information

Use only one Cover Sheet per site with as many specific structural BMP Inspection Report attachments as needed. Please attach digital photographs of the site and structural BMPs as applicable.

Development Name:_____ Inspection Date:_____

BMP Owner:_____ Inspection Company:_____

Owner Address:_____ Company Address:_____

Owner Phone #:_____ Inspector Name:_____

Owner Email:_____ Inspector Phone #:_____

Inspector Email:_____

B. Inspection Report Attachments

The listed stormwater controls are the Structural BMPs who's Inspection Reports are to be completed per the NYS Stormwater Design Manual for this site. Please use one inspection report per BMP inspected and submit all forms together with this Cover Sheet as one single report. Also, please document the number of each structural BMP found at this site in the space below.

BMP	# of BMP	BMP	# of BMP
Micropool Extended Detention Pond (P-1)		Infiltration Basin (I-2)	
Wet Pond (P-2)		Dry Well (I-3)	
Wet Extended Detention Pond (P-3)		Surface Sand Filter (F-1)	
Multiple Pond System (P-4)		Underground Sand Filter (F-2)	
Shallow Wetland (W-1)		Perimeter Sand Filter (F-3)	
Extended Detention Wetland (W-2)		Organic Filter (F-4)	
Pond/ Wetland System (W-3)		Bioretention (F-5)	
Pocket Wetland (W-4)		Dry Swale (O-1)	
Infiltration Trench (I-1)		Wet Swale (O-2)	
Alternate Stormwater Management Practices			

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

C. Inspection Results

FAIL*

*** If any one item on the inspection form is coded as "Work needed", then the entire BMP fails inspection.**

***If a site has multiple BMPs and on fails inspection, this cover sheet is marked as fail until all items on all BMPs pass inspection.**

NOTE: Applicable BMP Inspection Reports and confirmatory digital photographs summarizing required repairs must be submitted to the Town following completion of the preliminary inspection. A re-inspection and certification must be completed within 30 days of the failed preliminary report.

PASS

NOTE: A passing inspection form should be signed below by the appropriate professional and submitted to the Town on or before the established inspection due date. Attach all applicable BMP Inspection Reports and confirmatory digital photographs accordingly.

D. Professional Certification

To be completed only when all structural BMPs at this site are functional with no outstanding maintenance issues.

I,_____, as a duly registered _____ attest that a thorough inspection has been completed for all structural BMPsthat are associated with this particular site. All inspected structural BMPs are performing properly and are in compliance with the terms and conditions of the recorded maintenance agreement for the site.

Signature:_____

Date:_____

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix H

Construction Documents

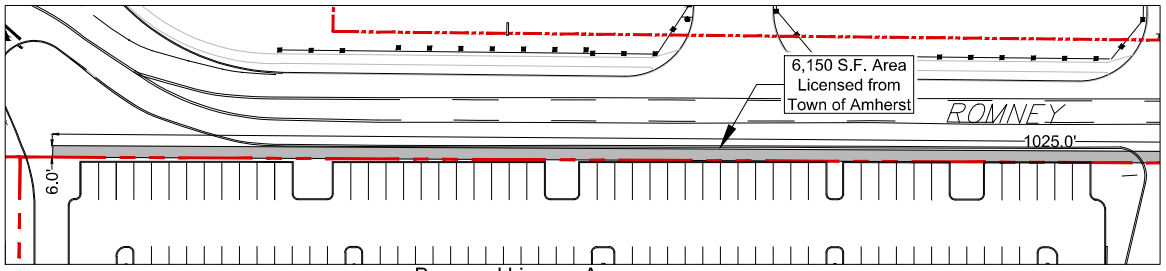
Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST, NY ZONING ANALYSIS		
	REQUIRED	PROVIDED
ZONED (RD)	R-D	R-D
MIN LOT AREA	1 AC	17.14 AC
MAX. BUILDING HEIGHT	65'	<30'
BUILDING SETBACKS:		
FRONT YARD	40'	102.3'
SIDE YARD	15'	16.7'
REAR YARD	15'	48.4'
PARKING / ROAD/AUX SETBACKS:		
FRONT - PROPERTY LINE	*25'	**0'
SIDE YARD	*10'	0'
REAR YARD	10'	**6.0'

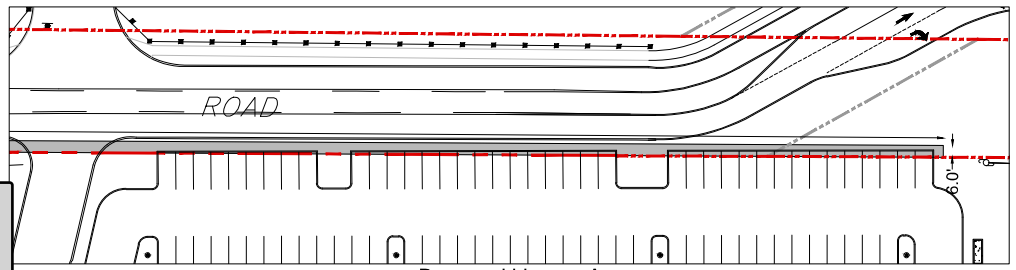
* Area to be determined to be licensed from Town of Amherst
** - Variance Required
- Curb Island Dimensions are measured from the inside of curb.

PROPOSED PARKING ANAYLSIS				
USE	CODE	S.F. USAGE	REQUIRED	PROVIDED
WAREHOUSE	1 / 1000 S.F.	181,343 SF	182 Spaces	
MEDICAL	1 / 150 S.F.	14,960 SF	100 Spaces	
RETAIL/OFFICE	1 / 200 S.F.	66,106 SF	331 Spaces	
TOTAL		262,409 SF	613 Spaces	688 Spaces
STALL SIZE			9' X 19'	9' X 19'

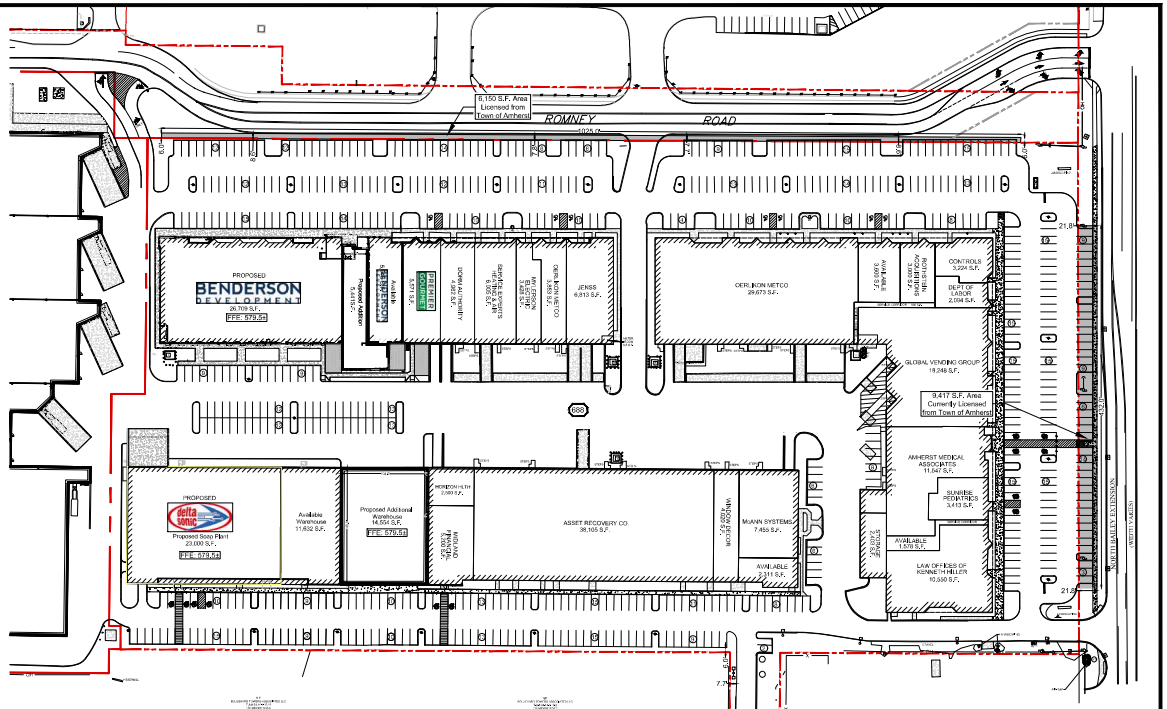
*Refer alternative parking study for site required parking



Proposed Licence Area
(1" = 30')



Proposed Licence Area
(1" = 30')



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:
ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE
UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION 7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

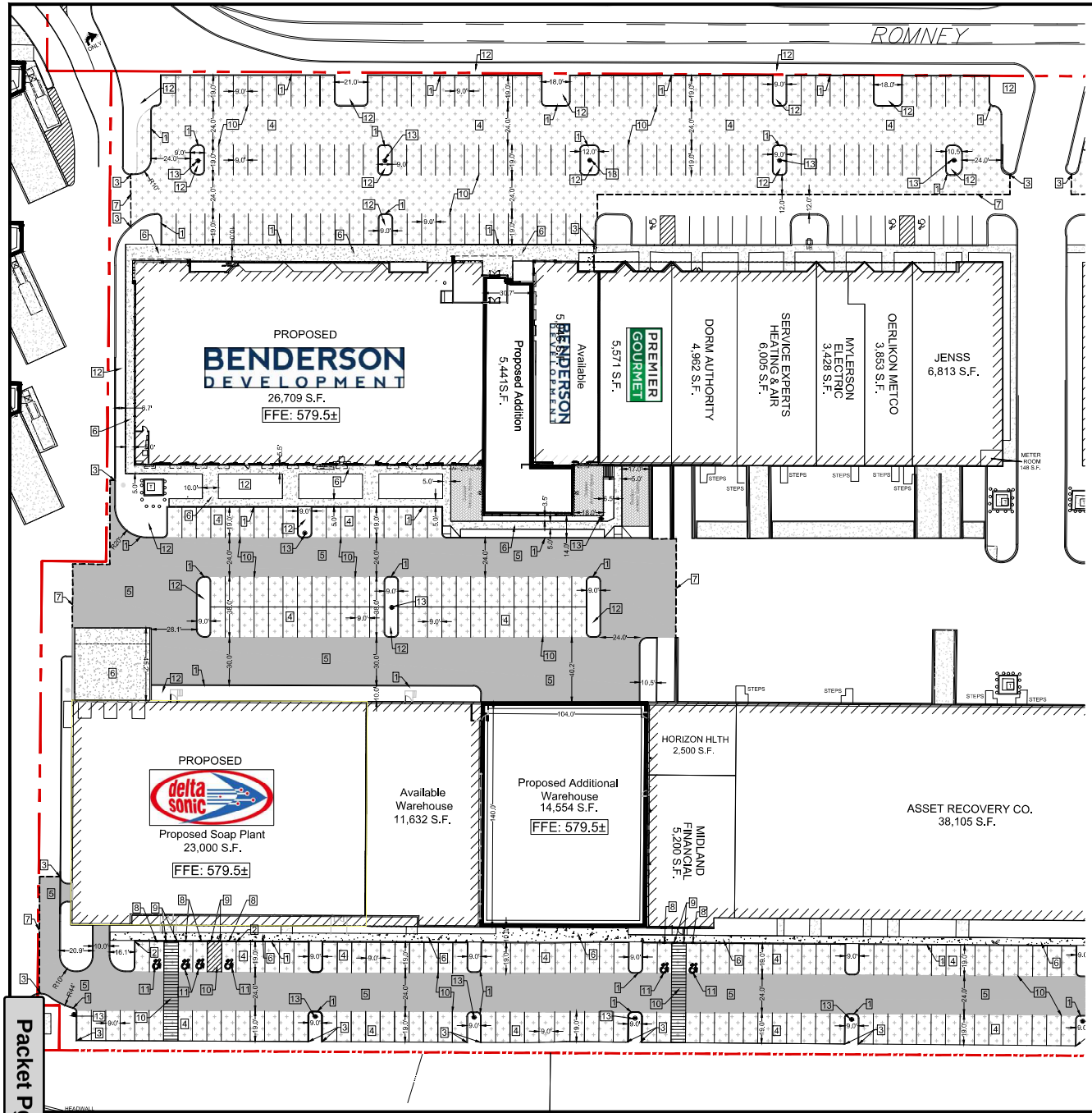
JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Overall Site Plan

SCALE: 1:70
DRAWN BY: DMZ
DRAWING NO.: C4.0
CHECKED BY: MAO
DATE: 11.06.2023

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE, NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THEIR WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE, REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE, REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN.
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES).
    1) L. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS +28 ENCURE (WITHIN 24HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
    2) DARK GREY CONCRETE SIDEWALKS SHALL HAVE CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT: CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PROCEDURE ABOVE (WAITING THE RELEASE AGENT OFF, APPLY 10 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (1) COAT OF: CHEMMASTERS - POLYSEAL EC.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE, SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES:

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement

NB: All curb Radii to be 3' unless otherwise noted.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

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PROPOSED SITE MODIFICATIONS

CONSULTANT

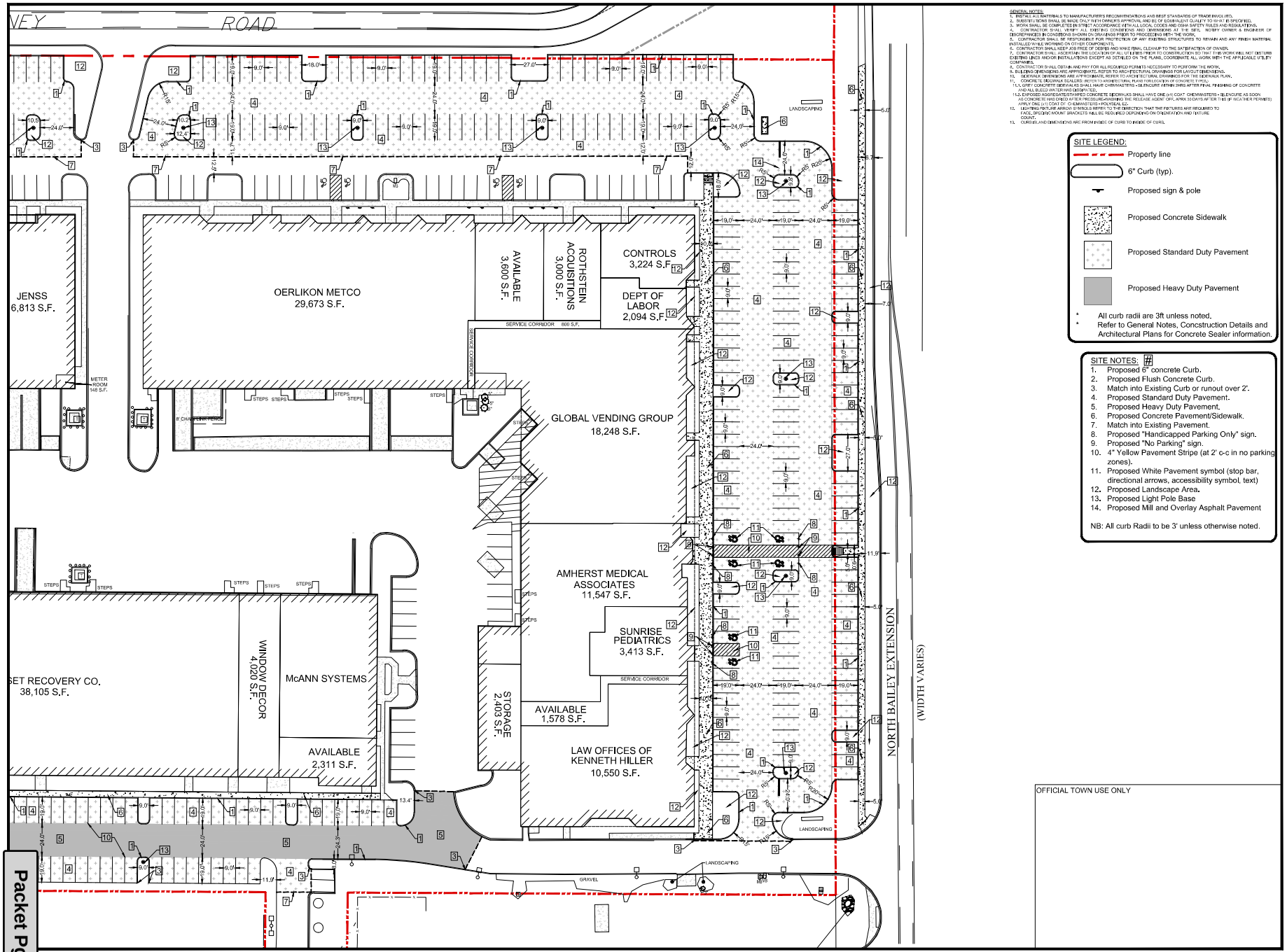
JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Detailed Site Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.
CHECKED BY: MAO
DATE: 08.16.2023
C4.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THE WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN.
11. CONCRETE SIDEWALK SEALERS: REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN (HRS) AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISPARTED.
    11.2. ALL EXPOSED AGGREGATE CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT: CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PROCEDURE AMONG THE RELEASE AGENT OFF, APPLY 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (1) COAT OF: CHEMMASTERS - POLYSEAL EC.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES:

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement

NB: All curb Radii to be 3' unless otherwise noted.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

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Know what's below. Call before you dig

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

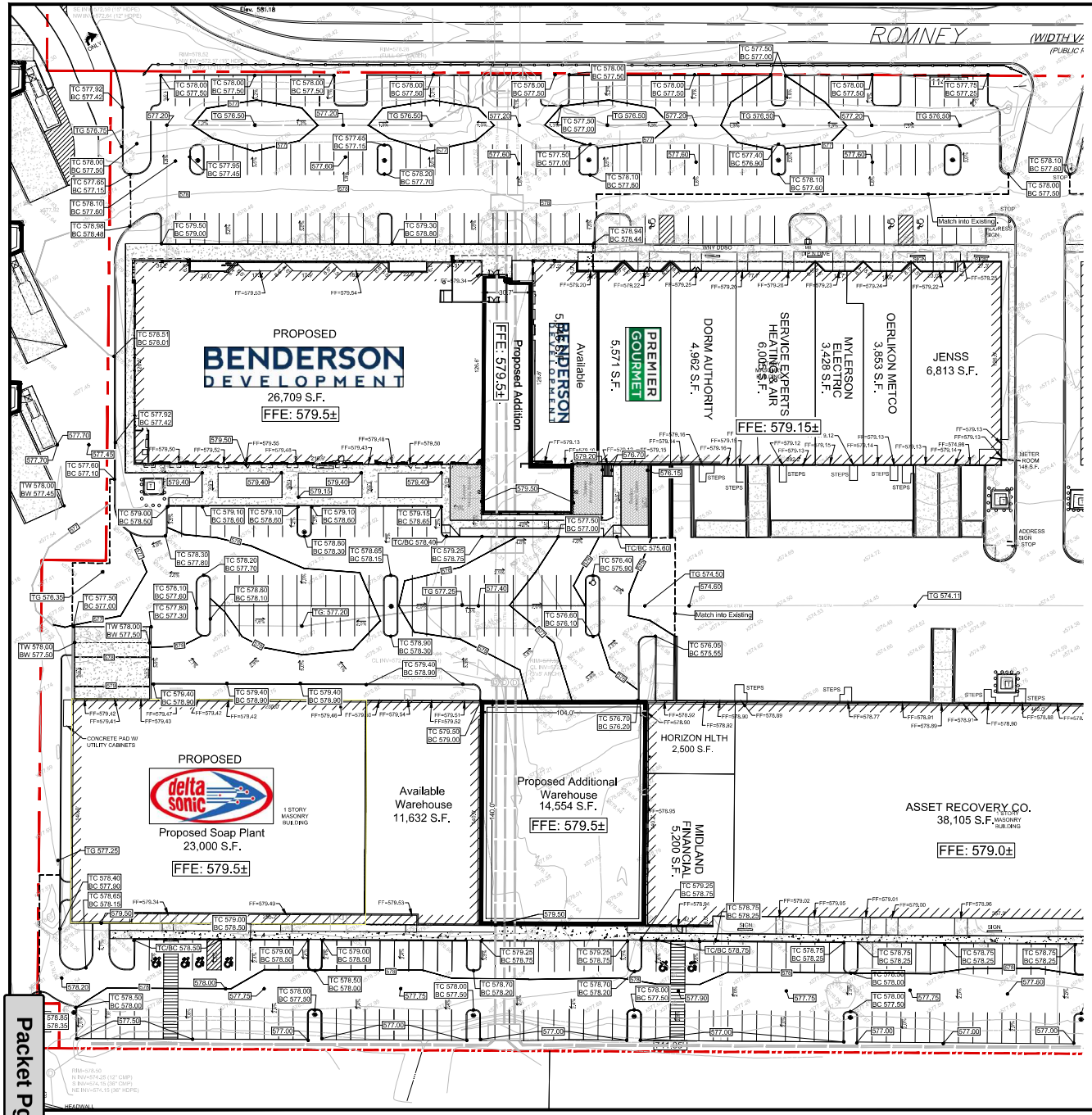
TITLE:
Detailed Site Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.
CHECKED BY: MAO
DATE: 08.16.2023

C4.

Packet Pg. 257

1.a



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
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10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN.
11. CONCRETE SIDEWALK SEALERS: REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS +28 ENCLOSE WITHIN THREE AFTER FINAL FINISHING OF CONCRETE AND ALL BUGS WATER HAS DISAPPEARED.
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

GRADING LEGEND:

- Property Line
- 6" Curb (typ).
- TG ## — Catch Basin - Top of Grade
- ### — Proposed Contour Line
- ##% — Slope Direction

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DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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CONSULTANT

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BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE: Grading Plan (West)

SCALE: 1:30

DRAWN BY: DMZ

DRAWING NO.: C5.0

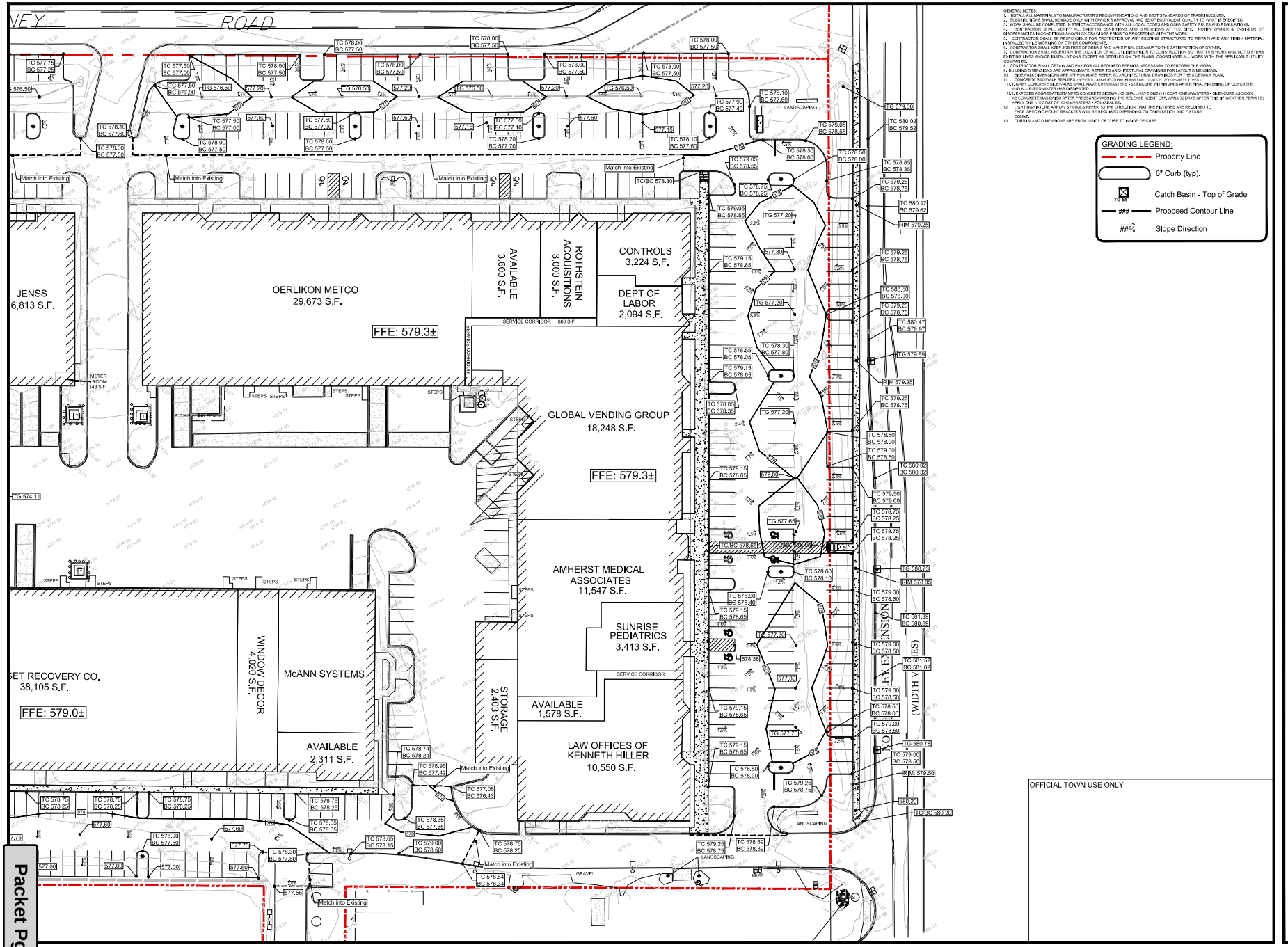
CHECKED BY: MAO

DATE: 11.08.2023

Packet Pg. 258

1.a

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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No.	DATE	BY	REMARKS

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SEAL

TITLE:
Grading Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.: C5.0
CHECKED BY: MAO
DATE: 11.08.2023

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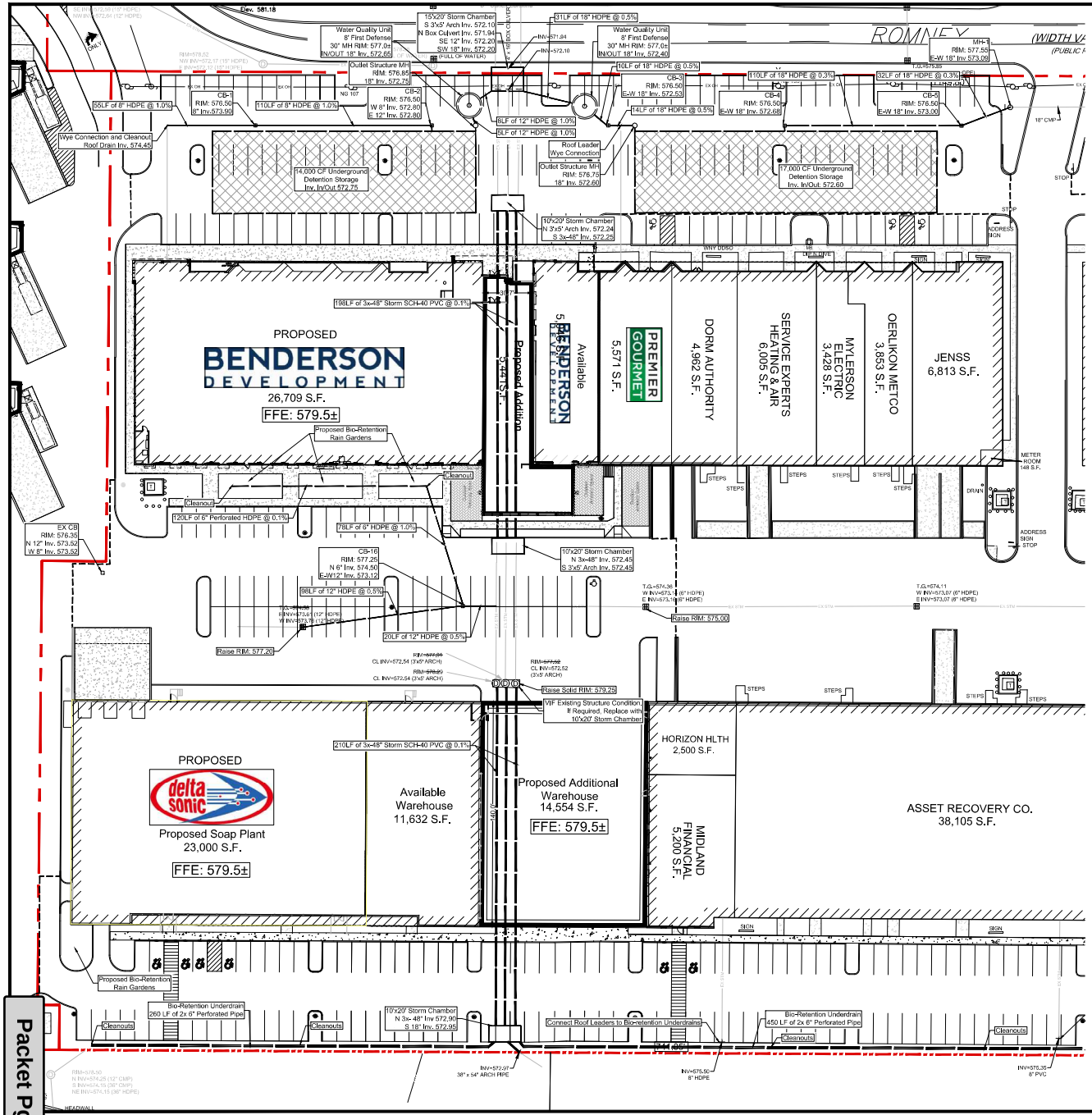

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NORTH

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CONSULTANT

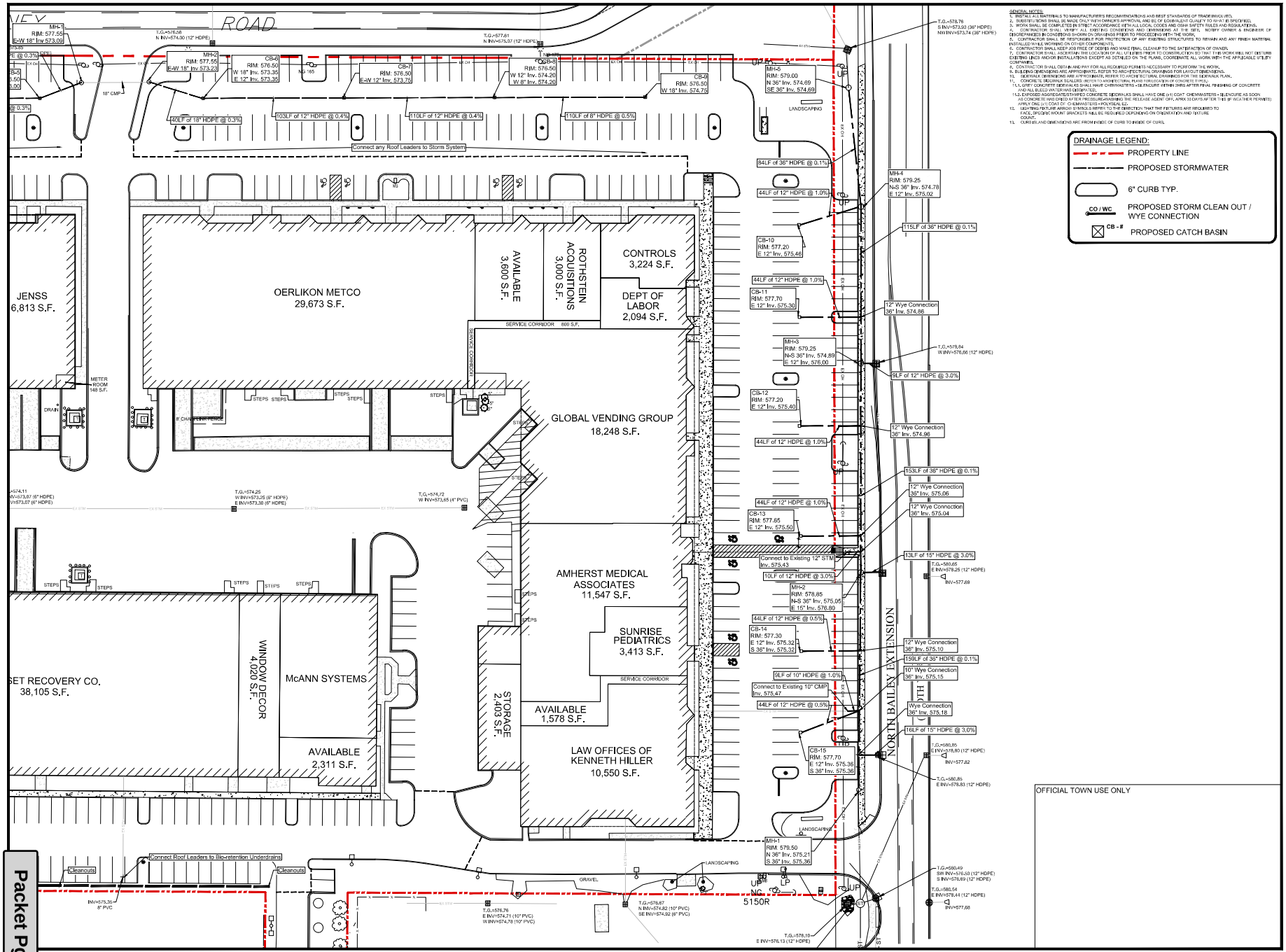
JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.
CHECKED BY: MAO
DATE: 11.08.2023
C5.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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SEAL

TITLE:
Drainage Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
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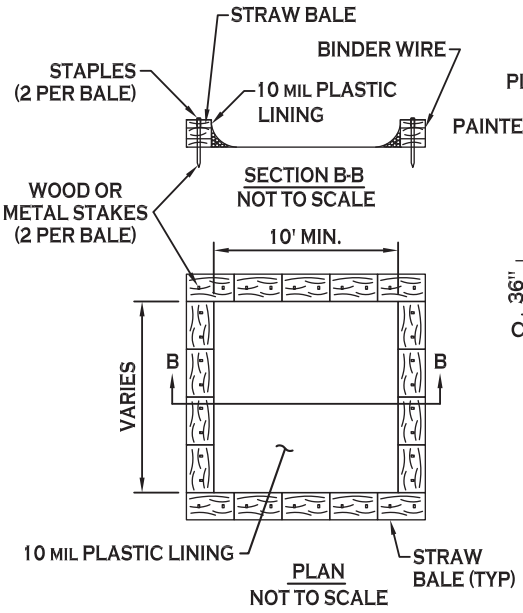
Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

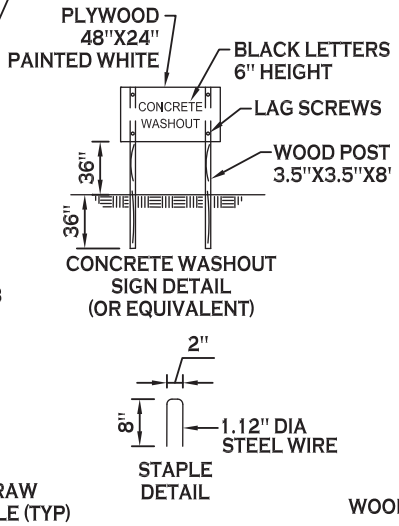
Appendix I

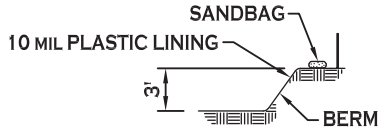
Standard Erosion Control Details

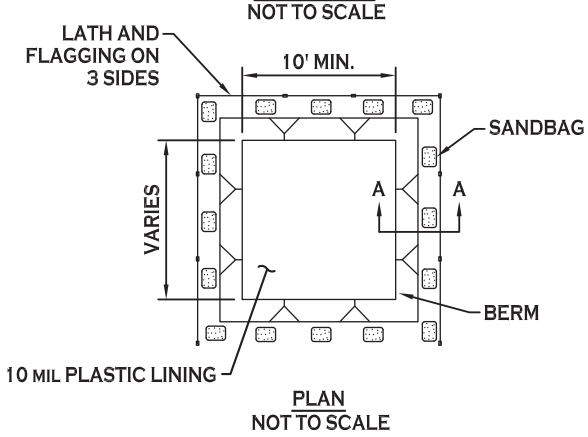
Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



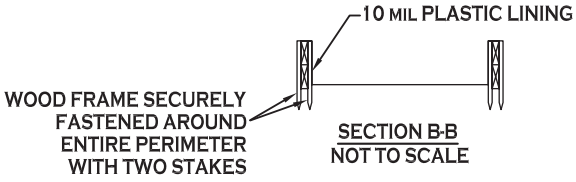
TYPE "ABOVE GRADE" WITH STRAW BALES

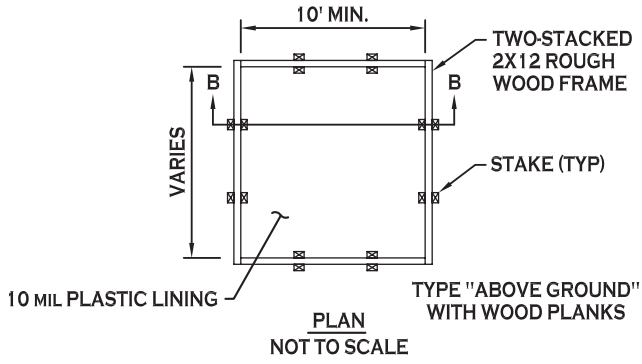






TYPE "BELOW GRADE"



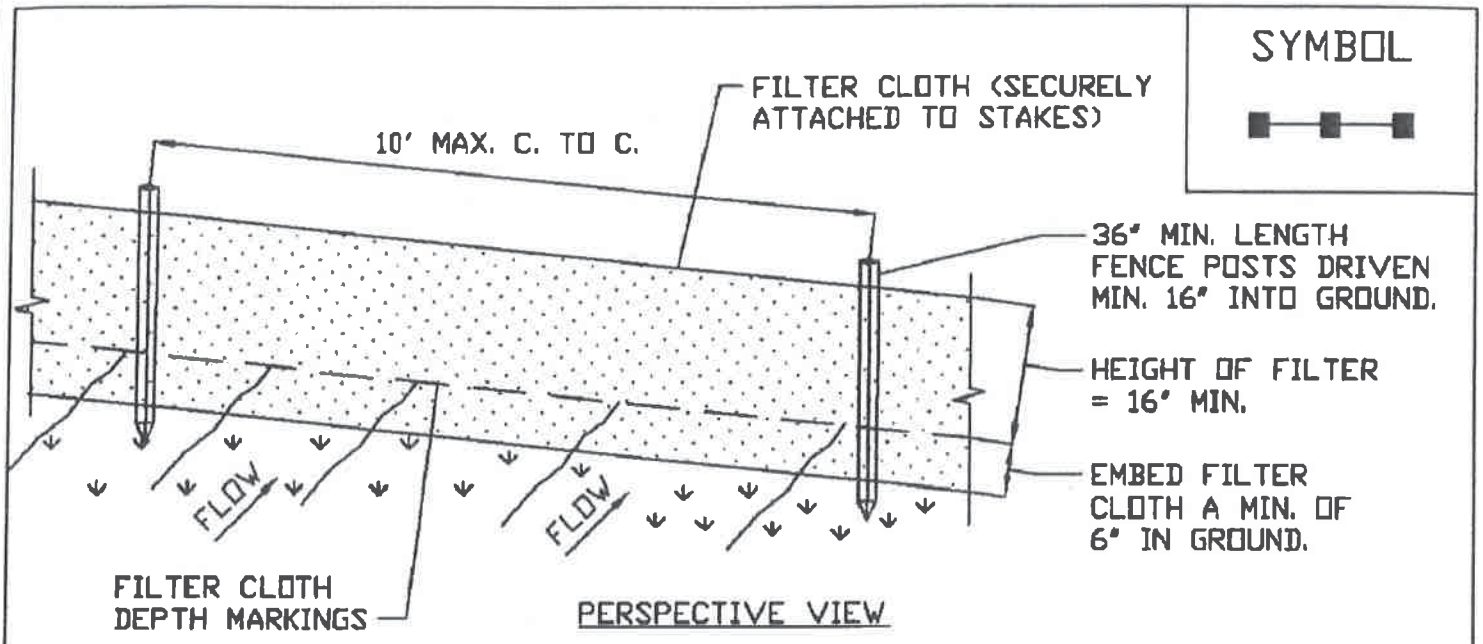


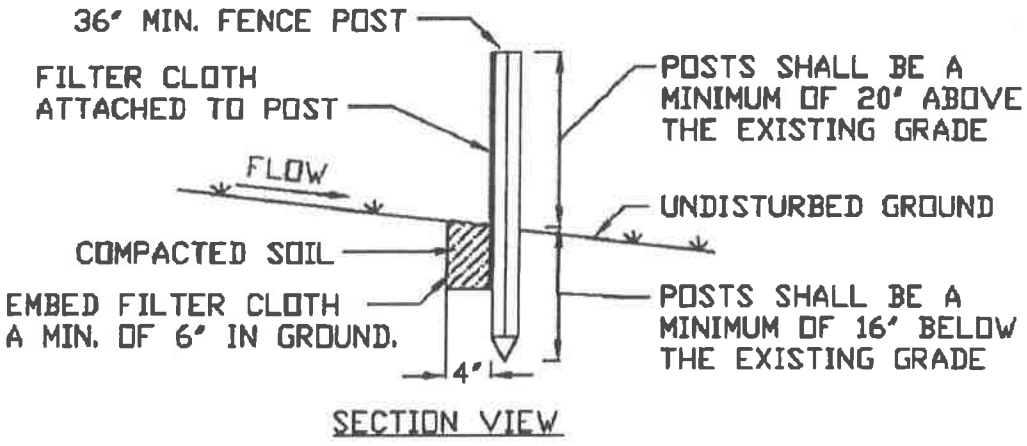
NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL

NOT TO SCALE



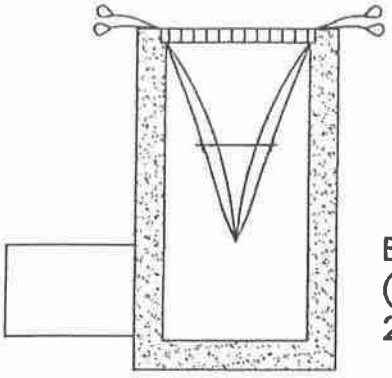


CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

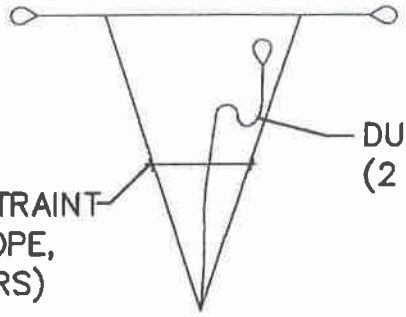
SILT FENCE (WITHOUT WIRE MESH BACKING)

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

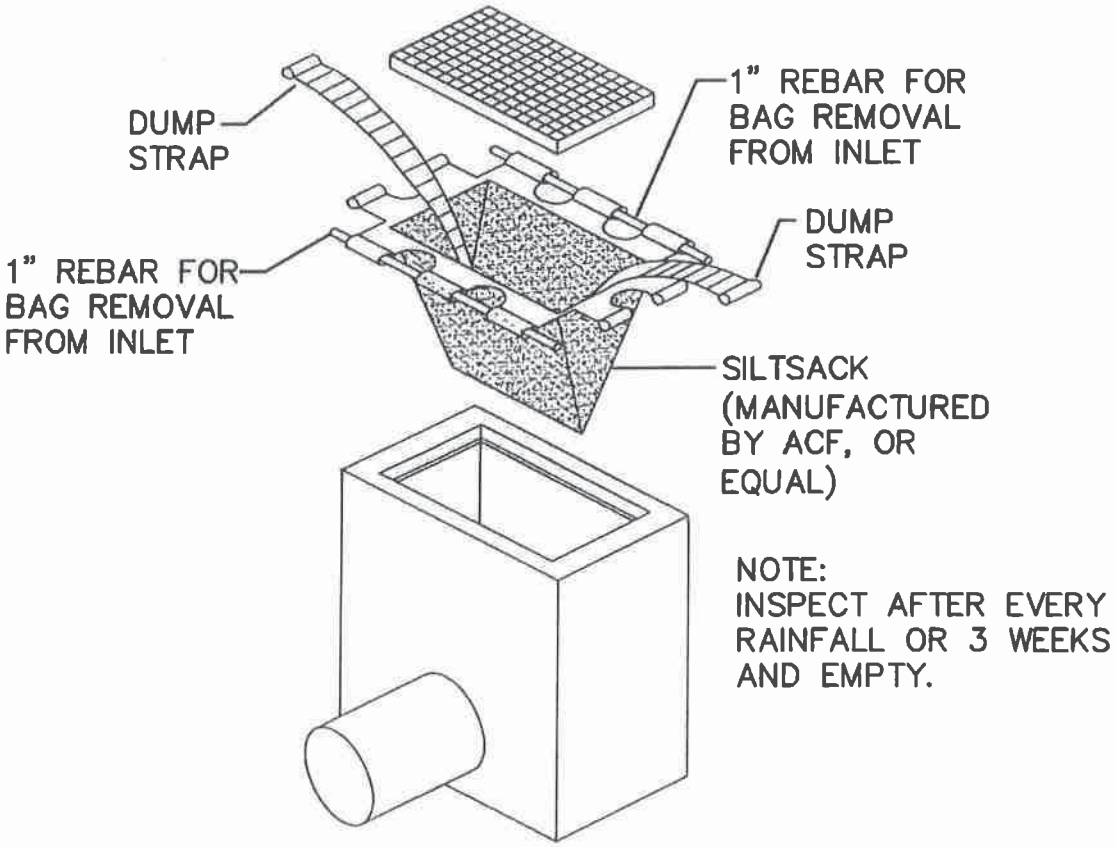


EXPANSION RESTRAINT
(1/4" NYLON ROPE,
2" FLAT WASHERS)

INSTALLATION DETAIL



BAG DETAIL



NOTE:
INSPECT AFTER EVERY
RAINFALL OR 3 WEEKS
AND EMPTY.

SILT SACK DETAIL

NOT TO SCALE

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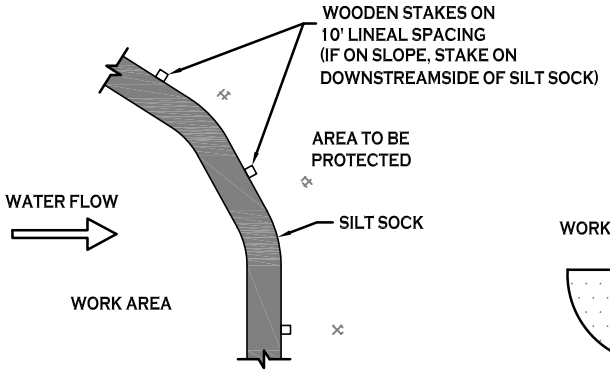
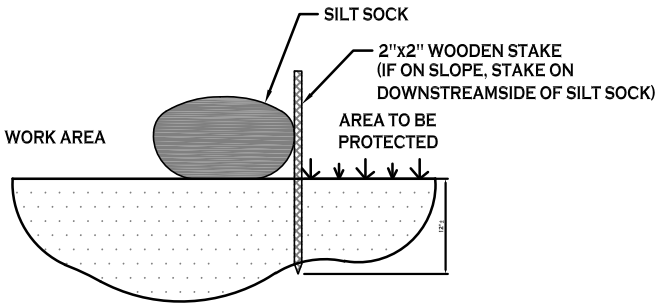
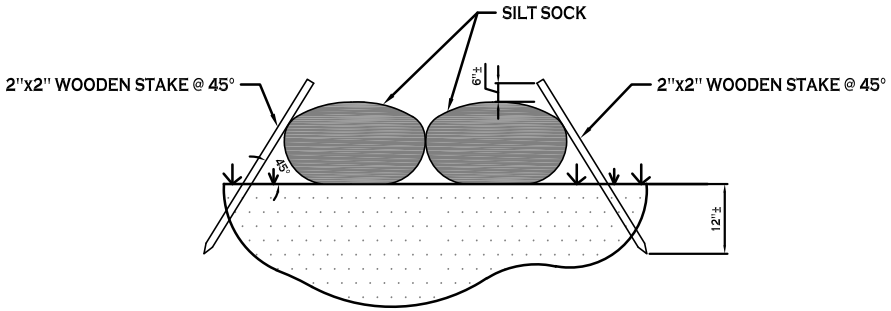


PLAN VIEW



SECTION VIEW



SECTION VIEW @ JOINT OVERLAP

NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

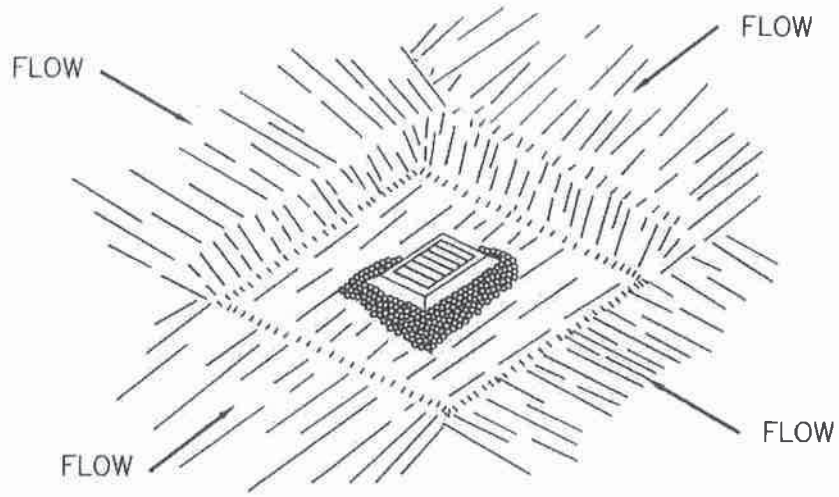
CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

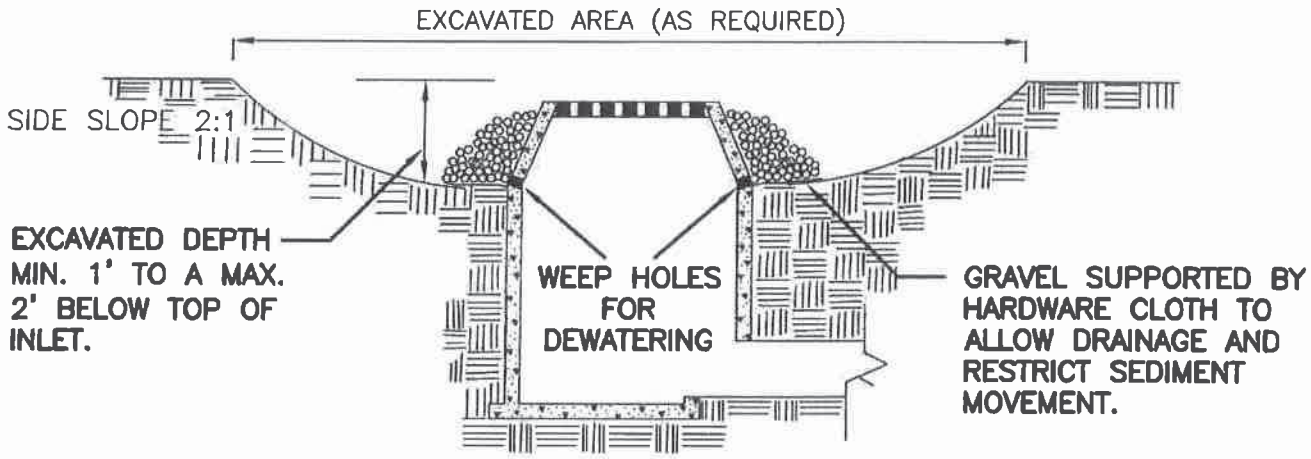
SILT SOCK SHALL BE OVERLAPPED 12" AT JOINTS AND STAKED ON EACH SIDE OF THE SOCK AT A 45° ANGLE

SILT SOCK DETAIL

N.T.S.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





CONSTRUCTION SPECIFICATIONS

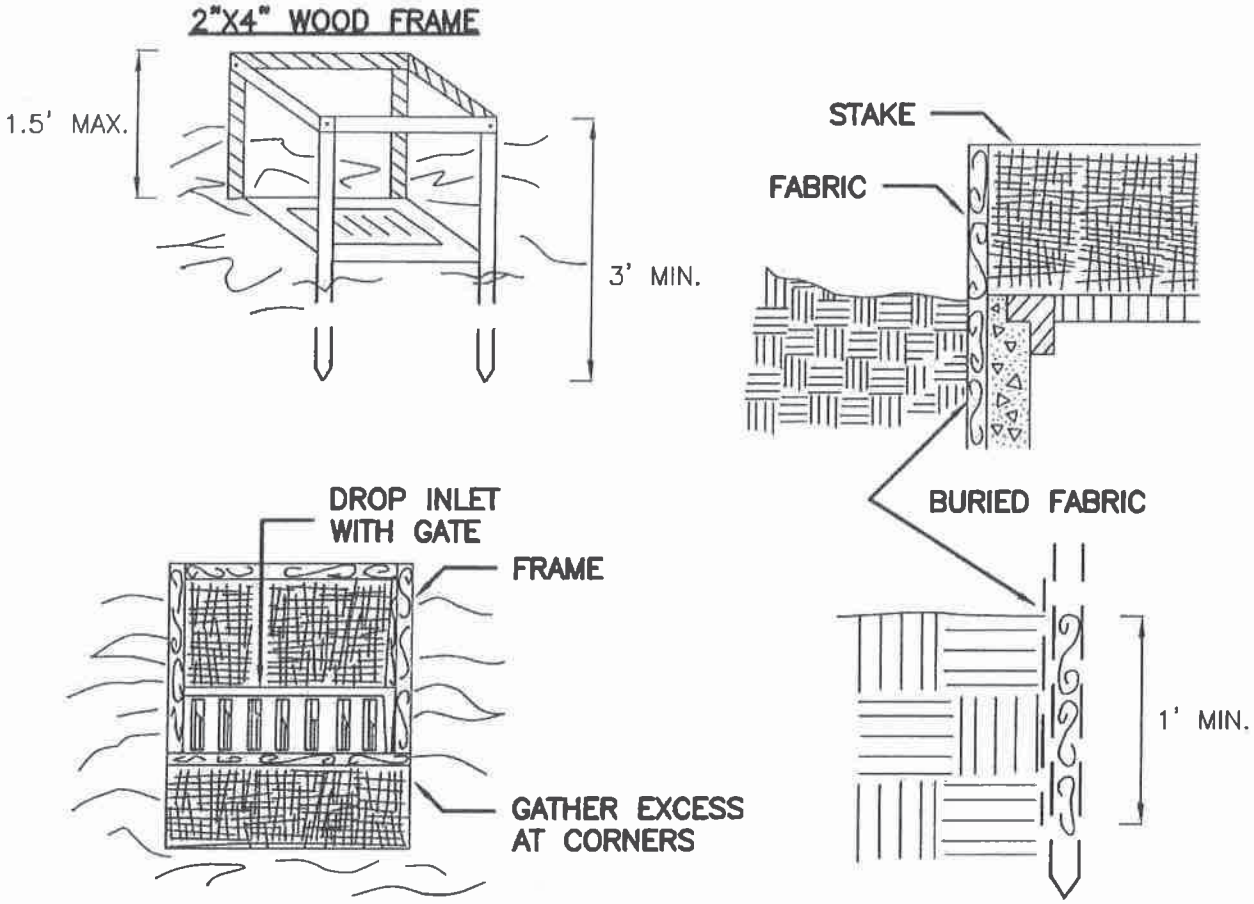
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



CONSTRUCTION SPECIFICATIONS

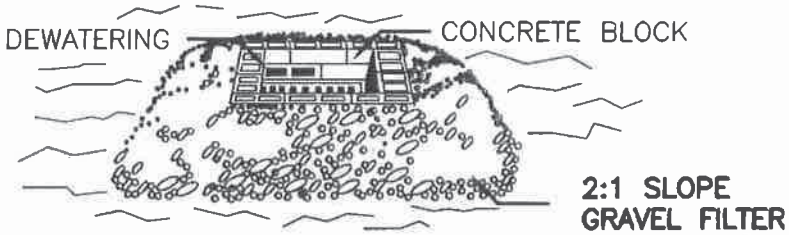
1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

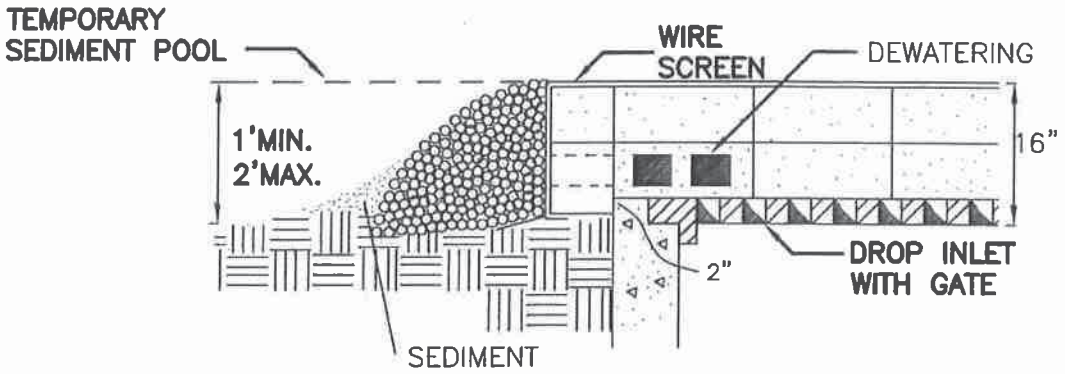
INLET PROTECTION DETAIL 2

NOT TO SCALE

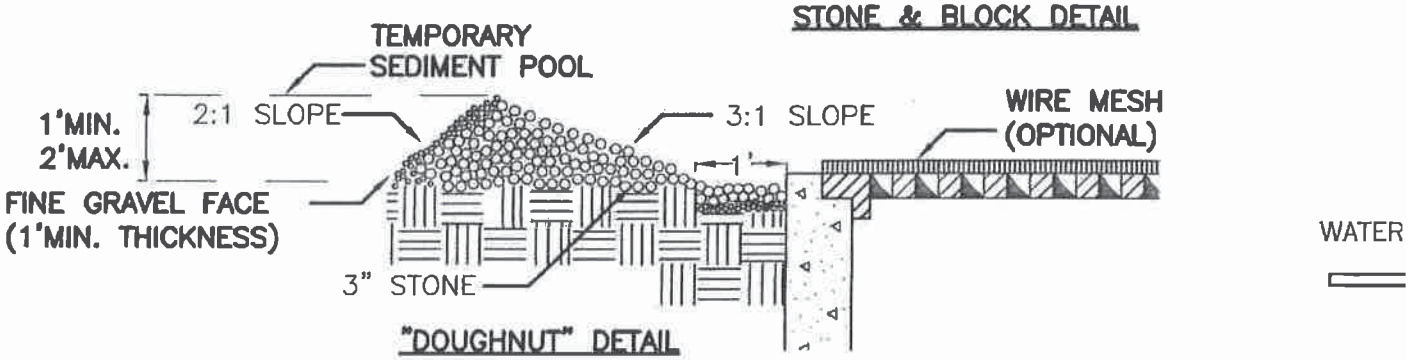
Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

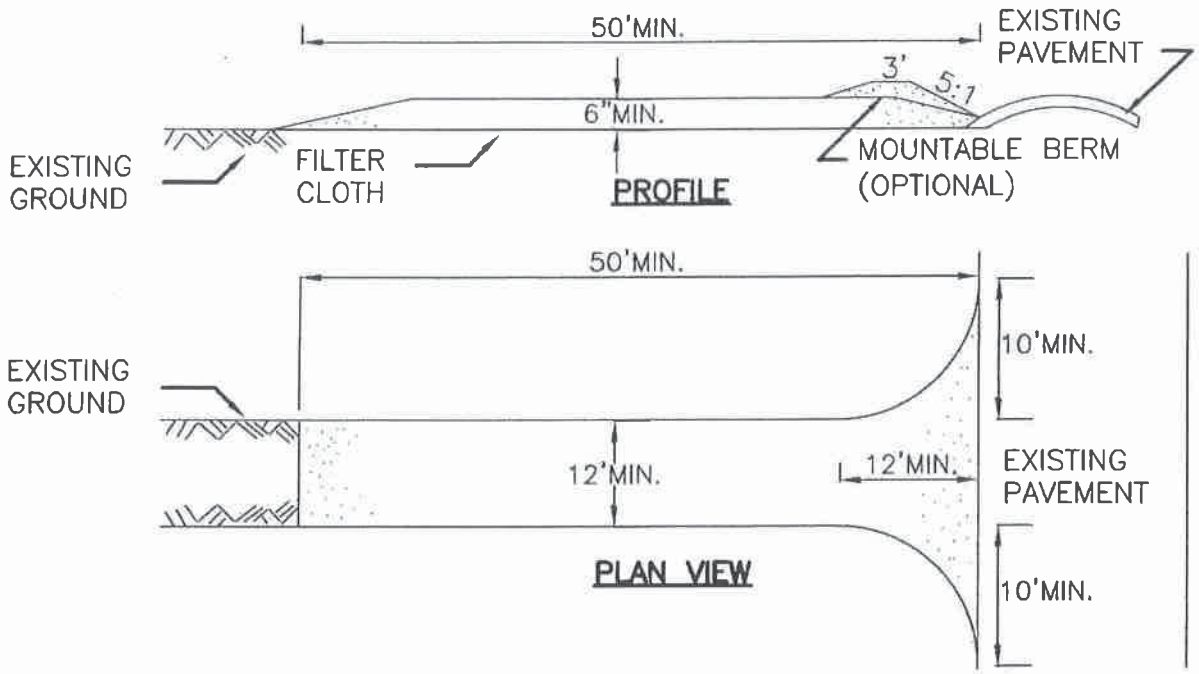
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2–3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

NOT TO SCALE

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



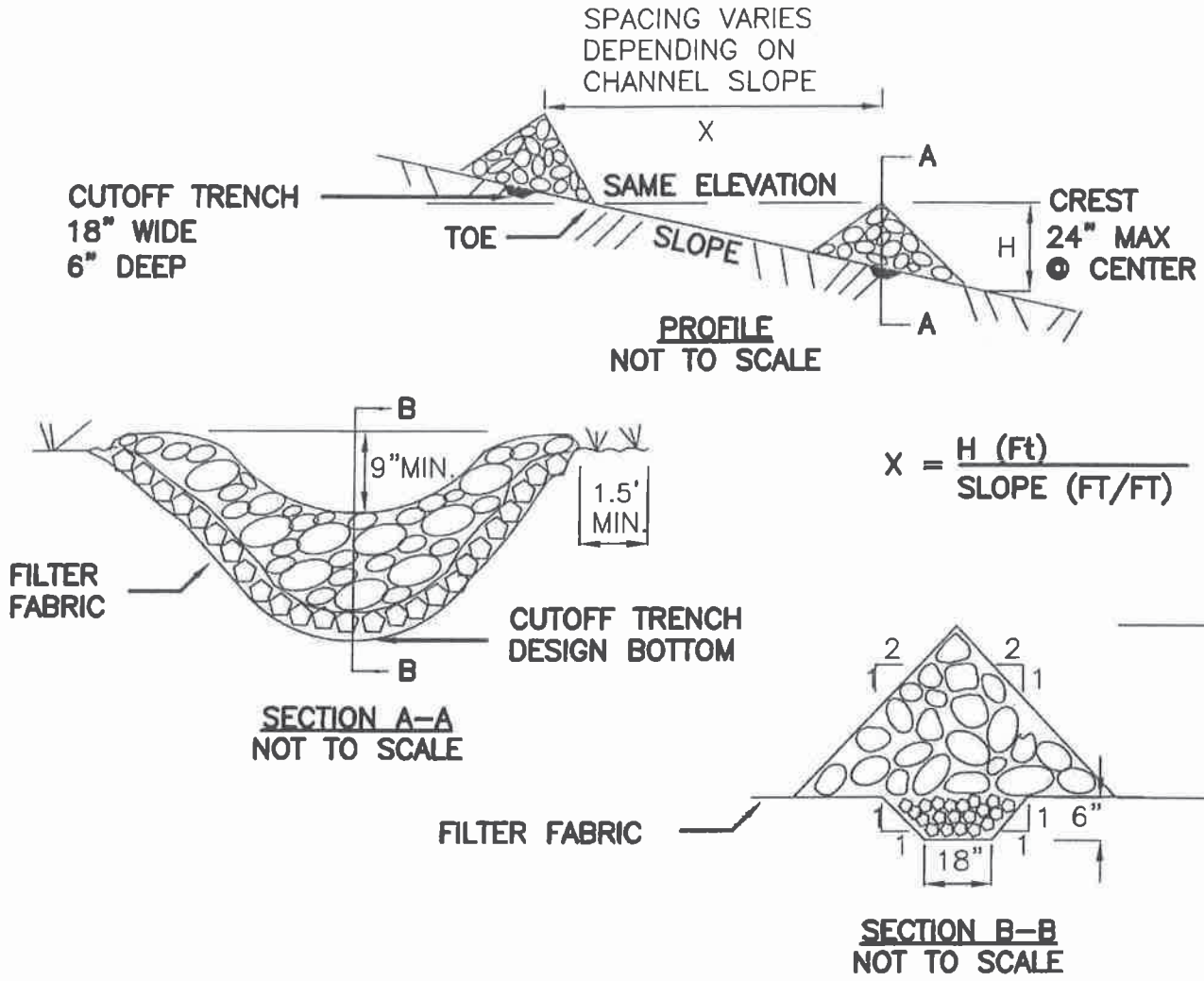
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CON–STRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

STONE CHECK DAM DETAIL

NOT TO SCALE

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix J

NYSDEC Stormwater Management Inspection Lists

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORMWATER CONTROL FACILITY
MAINTENANCE AGREEMENT

Stormwater Management Facility Inspection Procedures

Post Construction Operation & Maintenance:

1. On a quarterly basis, perform the following:
   a. Inspect catch basins, manholes and storm piping for debris and accumulation of sediment.
   b. Remove and properly dispose of any collected debris from structures.
   c. Flush storm sewers with water, if necessary, to remove accumulated sediment.
   d. Check all rip rap stone for erosion and re-stone, if necessary, to prevent further erosion.
   e. Inspect grass and landscaped areas for un-vegetated areas or areas with less than 80% healthy stand of grass and reseed and mulch as necessary. Water areas daily if reseeded between July and August.

2. Maintain all lawn areas by regular mowing, including the grass slopes of the detention basins. Any eroded areas shall be re-graded, seeded and mulched immediately.

3. Inspect detention basins for debris and sediment accumulation two times per year (spring and fall). Debris and sediment accumulation should be removed from the basin every five to six years or with sediment buildup over 6" in depth. Remove and properly dispose of any collected debris and sediment.

4. The bioretention area shall be maintained as required in the NYSDEC Stormwater Management Design Manual and as a component of the property landscaping and shall be maintained on a regular basis. Sediment must be removed when accumulation depth exceeds on inch. Any erosion of the bioretention berm must be repaired as soon as possible to prevent diversion around the bioretention area.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Comments:

Actions to be Taken:

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Comments:

Actions to be Taken:

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

ENGINEER'S REPORT

for

Proposed 5K Retail/Restaurant
7470 Transit Road
Town of Amherst, NY 14221

Prepared for

Benderson Development Company, LLC
570 Delaware Avenue,
City of Buffalo NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

11/2023



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table of Contents

Written Engineer's Report

Section 1 - Location & Description
Section 2 - Water Service
Section 3 - Sanitary Sewer Service
Section 4 - Storm Sewer Service

Appendices

Appendix A Site Location Map

Appendix B Sanitary Sewer and Water Demand Calculations

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Section 1 - Location & Description

This project is a redevelopment of a 0.76 acre site located on the east side of Transit Road just north of Tennyson Road, in the Town of Amherst, and is currently zoned G-B General Business. Construction will consist of a proposed 5,153 sf mixed use (1,153 SF Restaurant & 4,000 SF Retail) building with an associated parking area, utility, lighting, and landscaping improvements. Currently at the proposed site location there is an ex. restaurant building, with associated utilities & an ex. parking lot. The ex. building, associated utilities, and ex. parking lot areas are all to be removed within the scope of work for this site. The area to be disturbed for this project is approximately 0.70 acres total when construction is completed.

Section 2 - Water Service

Water service for the proposed building will be tapped off an ex. 6" ECWA water main, located along the north side of Tennyson Road. The proposed domestic service will be a 2" type 'k' copper, and it will run north approx. 15 LF into the proposed building. Inside the proposed building mechanical room the 2" domestic service will have a meter (by ECWA) and RPZ installed. Heat & lighting will be provided within the building to prevent freezing & for testing. Drainage due to testing or failure of the RPZ will be to the outside ground via a through-wall drain to the outside. Water inside the building will be used for typical domestic uses.

Domestic Summary:	
Peak Operating Demand:	3.03 gpm
Water Main:	6" on Tennyson Road
Static Pressure:	47 psi (ECWA)
Friction Loss:	0.0 psi
Loss through meter/RPZ:	13.0 psi
Elevation Loss:	0.0 psi
Pressure after RPZ:	34.0 psi

Repairs to all devices will be made during off hours, dual backflow preventers are not required. The site is not located in a 100-year flood plain. Disinfection of the water service following installation will be continuous feed, according to AWWA C-651, latest revision.

Section 3 - Sanitary Sewer Service

The proposed 6" sanitary sewer service will connect to the ex. 18" V.T.P. Town of Amherst sanitary sewer located within the middle of Tennyson Road. The proposed service will consist of approximately 51 LF of a 6" SDR-35 PVC sanitary sewer lateral at a min. slope of 1.0%.

Design Parameters

Retail:	0.1 gpd x 4,000 sf =	400 gpd
Restaurant:	35 gpd x 20 seats =	700 gpd

Total site sanitary demand:		= 1,100 gpd	
Peak sanitary demand:	1,100 gpd * 4.41	= 4,852 gpd	*use peaking factor of 4.41

The hydraulic loading rate is per "Design Standards for Intermediate Sized Wastewater Treatment Systems" 2014, NYSDEC. Refer to Attachment A for peaking factor calculation.

Section 4 - Storm Sewer Service

The ex. site currently sheet drains in multiple directions within the parking lot areas to catch basin structures that collect and convey the stormwater to an ex. underground leech field storm system. Ex. building roof leaders are connected into this stormwater system. This ex. underground stormwater system, all associated catch basins, storm water piping, & ex. building roof leaders are all to be removed as part of the proposed site work.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

The proposed onsite storm sewer system for this development project consists of smooth interior and perforated HDPE pipes connected by a series of catch basins. Proposed building roof leaders will be connected into the perforated HDPE piping installed around the perimeter of the proposed building. The stormwater system will ultimately outlet into the ex. Town of Amherst stormwater catch basin located along the south side of Tennyson Road.

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

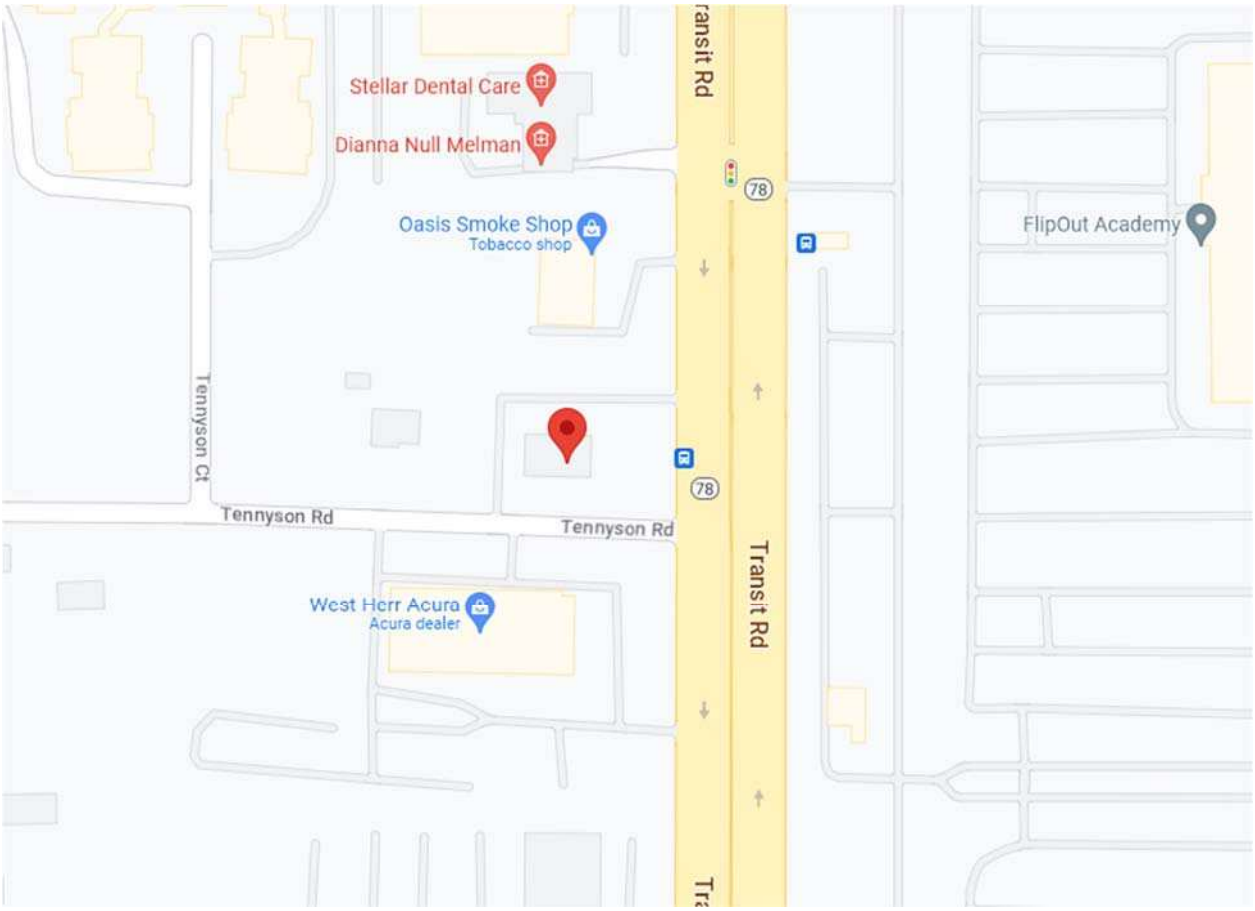
Appendix A

Site Location Map

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix A

Site Location Map



Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix B

Sanitary Sewer and Water Demand Calculations

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINA WOOD DESIGN
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 22.311 Date: 11/6/2023
Project Name: Proposed 5K Bldg Rev. _/_/_
Project Address: 7470 Transit Road, Amherst NY
Subject: Sanitary Sewage & Water Demand Calcs
Sheet: 1 of 1

1.a

Sanitary Sewage Demand Calculations:

Average Daily Flow
Proposed 5K Building:

Retail =	0.1	gpd	x	4,000	sf	=	400	gpd		*Retail = 0.1 gpd/SF
Restaurant =	35	gpd	x	20	seats	=	700	gpd		*Restaurant = 35 gpd/seat

Total Site Sanitary Demand: = 1,100 gpd

Find Peak Sanitary Demand:

Peaking Factor based on Population:

Total demand: 1,100 gpd / 100 gpcd = 11 per capita

Population (P) = 11 people

Peaking Factor : (18 +ÖP) / (4 + ÖP) where P is in thousands

Peaking Factor = 4.41

Peak Sanitary Demand = 1,100 x 4.41 = 4,852 gpd

Water Demand Calculations (domestic):

Proposed 5K Building:

1,100 gpd x 1.1 = 1,210 gpd *use 110% of sewage demand

*use 1.8 peaking factor and assume a 12 hour day

1,210 gpd x 1day/12hr x 1hr/60min = 1.68 gpm

1.68 gpm x 1.8 = 3.03 gpm Q_{peak}

Headlosses:

Q_{peak} = 3.03 gpm
Pipe = 2 inch Type 'K' Copper C = 130
Length = 15 LF

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(15)(3.03)^{1.85}}{(130)^{1.85}\ (2)^{4.866}} = 0.01 \text{ ft} = 0.00 \text{ psi}$$

Δ elev = 0 ft = 0.00 psi
Loss through meter = 1 psi
Loss through RPZ = 12 psi
Total Losses = 13.00 psi
Static Pressure = 47 psi (Per ECWA flow test 02/05/2021)
Residual Pressure Following RPZ = 47.0 - 13.0 = 34.00 psi

Attachment: SP-1988-11P_application_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PROPOSED SITE MODIFICATIONS

Amherst Development Park
6000 - 6040 N.Bailey Ave, Amherst, NY
BDC Property # 1723
SITE DEVELOPMENT DRAWINGS

INDEX OF DRAWINGS

DWG. #	DRAWING NAME	REVISION	DATE
C1.0	COVER SHEET	1	11.16.2023
C2.0	EXISTING SURVEY		
C3.00	DEMOLITION & EROSION CONTROL PLAN WEST	1	11.16.2023
C3.01	DEMOLITION & EROSION CONTROL PLAN EAST		
C3.10	DEMOLITION & EROSION CONTROL PLAN DETAILS		
C4.0	OVERALL SITE PLAN		
C4.10	DETAILED SITE PLAN WEST	1	11.16.2023
C4.11	DETAILED SITE PLAN EAST		
C4.20	CONSTRUCTION DETAILS		
C5.00	GRADING PLAN WEST	1	11.16.2023
C5.01	GRADING PLAN EAST		
C5.10	DRAINAGE PLAN WEST	1	11.16.2023
C5.11	DRAINAGE PLAN EAST		
C5.20	DRAINAGE DETAILS		
C6.00	UTILITY PLAN WEST	1	11.16.2023
C6.01	UTILITY PLAN EAST		
C6.10	UTILITY DETAILS		
C7.0	LANDSCAPING PLAN		
C8.0	LIGHTING PLAN		

OWNER/DEVELOPER:

NAME: BENDERSON DEVELOPMENT COMPANY, LLC
ADDRESS: 570 DELAWARE AVENUE, BUFFALO, NY 14202
CONTACT: DAVID ZUPPELLI
PHONE: 716 - 878 - 9683

BENDERSON DEVELOPMENT COMPANY, LLC
570 Delaware Ave.
Buffalo, New York 14202

SURVEYOR

NAME: KHEOPS ARCHITECTURE, ENGINEERING & SURVEY, DCP
ADDRESS: 300 PEARL STREET, BUFFALO, NY 14202
CONTACT: -
PHONE: 716-849-8739

UTILITIES:

NATURAL GAS
NAME/TITLE: WILLIAM SCHNEIDER
COMPANY/DEPT: NATURAL FUEL GAS
ADDRESS: -
PHONE: 716 - 696 - 6460

TELEPHONE COMPANY
NAME/TITLE: JOHN HECKMAN
COMPANY/DEPT: VERIZON
ADDRESS: -
PHONE: 716 - 840 - 8603

ELECTRIC
NAME/TITLE: -
COMPANY/DEPT: NATIONAL GRID
ADDRESS: -
PHONE: -

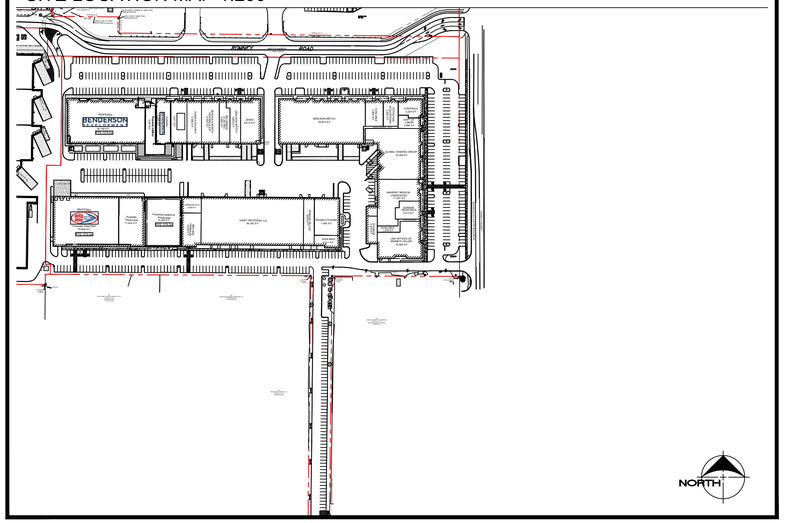
DIG SAFELY NEW YORK
PHONE: 1 - 800 - 962 - 7962 OR (811)

AGENCIES:

ENGINEERING DEPARTMENT
NAME/TITLE: JEFF BURROUGHS
COMPANY/DEPT: TOWN OF AMHERST, NY - ENGINEERING DPT
ADDRESS: 1100 NORTH FOREST RD, WILLIAMSVILLE, NY
PHONE: 716 - 631 - 7154 EX 7418

BUILDING & PLUMBING DEPARTMENT
NAME/TITLE: -
COMPANY/DEPT: TOWN OF AMHERST, NY - BUILDING DPT
ADDRESS: 5583 MAIN STREET, WILLIAMSVILLE, NY 14221
PHONE: 716 - 631 - 7080

SITE LOCATION MAP 1:200



REGIONAL LOCATION MAP NTS



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	11.16.2023	DZ	SWPPP Update

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

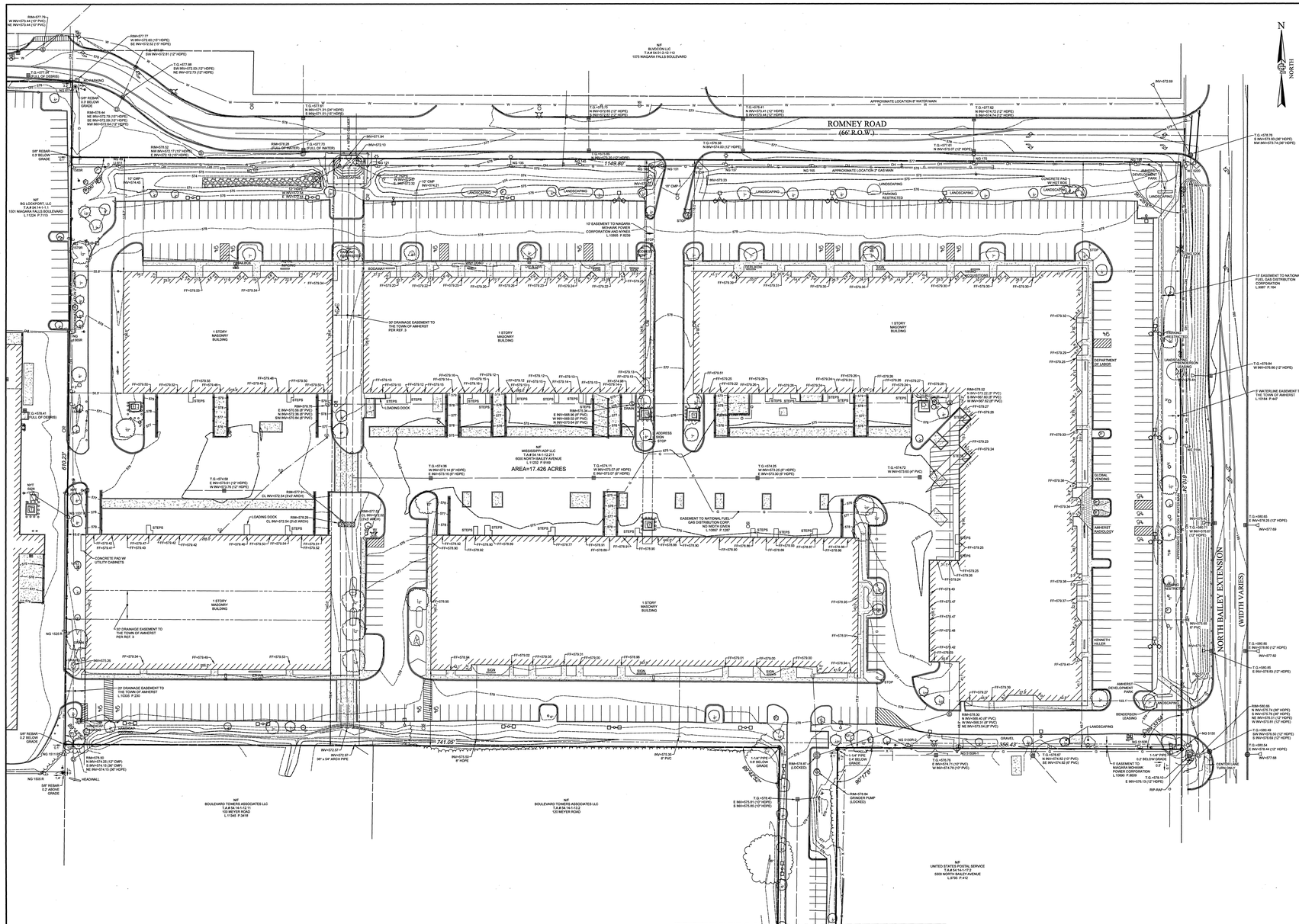
SEAL

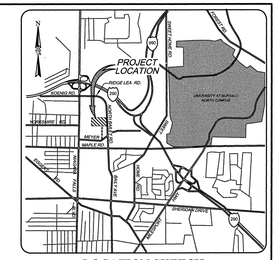


TITLE:
COVER SHEET

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.
C1.0

Attachment: SP-1988-11P drawings 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





LOCATION SKETCH

NOT TO SCALE

LINE LEGEND

- SECTION/PARCEL BOUNDARY
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST. RIGHT-OF-WAY LINE
- EXIST. EDGE OF PAVEMENT
- EXISTING WATER MAIN, VALVE, & HYDRANT.
- EXISTING SANITARY SEWER, & MANHOLE.
- EXISTING DRAINAGE SEWER, FIELD INLET, INLET MANHOLE, MANHOLE, & END SECTION.
- EXISTING OVERHEAD UTILITIES
- EXISTING TELEPHONE
- EXISTING UNDERGROUND UTILITIES
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING GUARD RAIL
- TREE,HEDGE,EDGE OF WOODS
- EXISTING SWALE
- EXISTING SPOT ELEVATION @ X
- CONCRETE PAD/ CONCRETE SIDEWALK

SYMBOL LEGEND

DRAINAGE MANHOLE		ELECTRIC MANHOLE	
INLET DRAINAGE MANHOLE		ELECTRIC METER	
CATCH BASIN	T	TELEPHONE MANHOLE	
END SECTION		TELEPHONE PEDESTAL	
END OF PIPE	PH	PHONE BOOTH	
MANHOLE		PEDESTRIAN POLE	
SANITARY MANHOLE	TRAF. CONT. CAB.	TRAFFIC CONTROL CABINET	
CLEAN OUT		LAMP POST	
GAS VALVE		LIGHT POLE	
GAS SERVICE		UTILITY POLE WITH LIGHT	
GAS METER	FLAG POLE	FLAG POLE	
WATER VALVE	MB	MAILBOX	
WATER SERVICE		BOLLARD	
HYDRANT		POST	
WATER METER		SIGN	
CABLE TV PEDESTAL	CTV	SIGN	
SIGNAL POLE		UTILITY POLE	
TURNING ARROW		GUY WIRE	
HANDICAP		PULL BOX	
STOP BAR	STOP	ELECTRIC PULL BOX	
TREE DECIDUOUS		TELEPHONE PULL BOX	
TREE CONIFEROUS		TRAFFIC PULL BOX	
BUSH		TRANSFORMER	

EASEMENT NOTES
T.A.# 54.14-1-12.211

1. EASEMENT MADE BY BOULEVARD POWER CO. TO NEW YORK TELEPHONE COMPANY RECORDED OCTOBER 30, 1968 IN LIBER 7527 OF DEEDS, PAGE 543. (NOT PLOTTABLE)
2. EASEMENT MADE BY MARIET DEVELOPMENT CORPORATION OF NEW YORK TO NIAGARA MOHAWK POWER CORPORATION RECORDED SEPTEMBER 11, 1967 IN LIBER 7392 OF DEEDS, PAGE 474. (DOES NOT AFFECT PREMISES)
3. RIGHT OF WAY MADE BY MARIET DEVELOPMENT CORPORATION OF NEW YORK TO IROQUOIS GAS CORPORATION RECORDED SEPTEMBER 29, 1967 IN LIBER 7399 OF DEEDS, PAGE 98. (NOT PLOTTABLE)
4. EASEMENT FROM NIAGARA BOULEVARD TOWERS, INC TO NIAGARA MOHAWK POWER CORPORATION AND NEW YORK TELEPHONE CO. RECORDED ON AUGUST 29, 1968 IN LIBER 7506 OF DEEDS, PAGE 503. (NOT PLOTTABLE)
5. EASEMENT RESERVED BY BOULEVARD TOWERS CO. CONTAINED IN DEED RECORDED ON JULY 28, 1988 AT LIBER 9895 OF DEEDS, PAGE 528.

SURVEY NOTES

1. TOPOGRAPHY SHOWN FROM A FIELD SURVEY BY COSTICH ENGINEERING ON 5/4/2021 HORIZONTAL AND VERTICAL DATA OBTAINED THROUGH NYSDOT CORS NETWORK REFERENCED TO THE FOLLOWING MONUMENT

HAMBURG CORS STATION
-LATITUDE: 42-43-37.82029 (N) } NAD 83 (CORS)
-LONGITUDE: 078-54-54.28808 (W)
-ELLIP HEIGHT: 212.508 METERS } NAVD 88 (CORS)

REFERENCES

1. THE DEEDS AS SHOWN ON FILE AT THE ERIE COUNTY CLERKS OFFICE.
2. ALTA/NSPS LAND TITLE SURVEY PREPARED FOR DDR - PROJECT SABRE PROJECT, PREPARED BY BOCK & CLARK, HAVING PROJECT NO. 2015043N-003, DATED 1/26/2016.
3. ALTA/NSPS LAND TITLE SURVEY 6000-6040 NORTH BAILEY AVENUE, PREPARED BY TVGA CONSULTANTS, HAVING JOB NO. 2006.0095.00, DATED 6/12/2006.

UTILITY INFORMATION

UTILITY INFORMATION PER UFPO DESIGN TICKET # 04261-000-825-00 DATED APRIL 29, 2021

1. CHARTER COMMUNICATIONS BUFFALO	317-575-7800 X2	NO CONFLICT
2. ERIE COUNTY WATER AUTHORITY	716-655-8207	UTILITIES PLOTTED
3. LIGHTOWER FIBER TECHNOLOGIES	888-632-0931 X2	NO RESPONSE
4. NATIONAL FUEL GAS - TONAWANDA	716-857-7431	UTILITIES PLOTTED
5. NATIONAL GRID - WEST - ELECTRIC	315-428-6319	NO CONFLICT
6. SUNOCO PIPELINE LP	713-989-7079	NO RESPONSE
7. TOWN OF AMHERST	716-631-7413	UTILITIES PLOTTED
8. VERIZON / BUFFALO	315-937-2515	UTILITIES PLOTTED

SITE DATA

T.A.# 54.14-1-12.211

1. EXISTING ZONING: RD - RESEARCH AND DEVELOPMENT DISTRICT
2. BULK REQUIREMENTS:

	REQUIRED
MIN. LOT AREA (SF)	1 ACRE
MAX LOT COVERAGE	NONE REQUIRED
MIN. LOT WIDTH (FT)	35
MAX. BUILDING HEIGHT (FT)	65 FEET
MIN. FRONT YARD SETBACK (FT)	20 FEET FOR BUILDINGS UP TO 35 FEET IN HEIGHT; 30 FEET FOR BUILDINGS GREATER THAN 35 FEET IN HEIGHT
MIN. SIDE YARD SETBACK (FT)	0 TO 10 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET
MIN. REAR YARD SETBACK (FT)	15 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET

CERTIFICATION

WE, COSTICH ENGINEERING, D.P.C., HEREBY CERTIFY TO:

THIS MAP WAS PREPARED FROM NOTES OF AN INSTRUMENT SURVEY COMPLETED ON MAY 12, 2021 AND FROM THE REFERENCE(S) LISTED HEREON. NO SEARCH OF RECORDS, OTHER THAN THOSE REFERENCED, WAS MADE FOR EASEMENTS OR ENCUMBRANCES AFFECTING THIS PARCEL.

By: Daniel T. Hirbik, N.Y.S. L.S., No. 050449 Date: 6-7-2021

Dig Safely. New York. Call 811 before you dig

EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE

40 0 20 40 80 100

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

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COSTICH ENGINEERING, D.P.C.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR, (ARCHITECT WHERE APPROPRIATE) TO ALTER AN ITEM ON THIS DOCUMENT. IN ANY WAY ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY", FOLLOWED BY HIS/HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION, TO THE DOCUMENT.

STATE OF NEW YORK — DANIEL T. HIRBIK — L.S. NO. 050449 — LICENSED LAND SURVEYOR

PROJECT ENGINEER	M.O.R.
DRAWN BY	G.M.S.
BOUNDARY	G.M.S.
TOPOGRAPHIC	G.M.S.
DATE	6/1/2021
SCALE	1"=40'

COSTICH ENGINEERING
217 LAKE AVENUE
ROCHESTER, NY 14608
(585) 458-3020

- CIVIL ENGINEERING
- LAND SURVEYING
- LANDSCAPE ARCHITECTURE

TITLE OF PROJECT: 1723/5256 AMHERST DEVELOPMENT

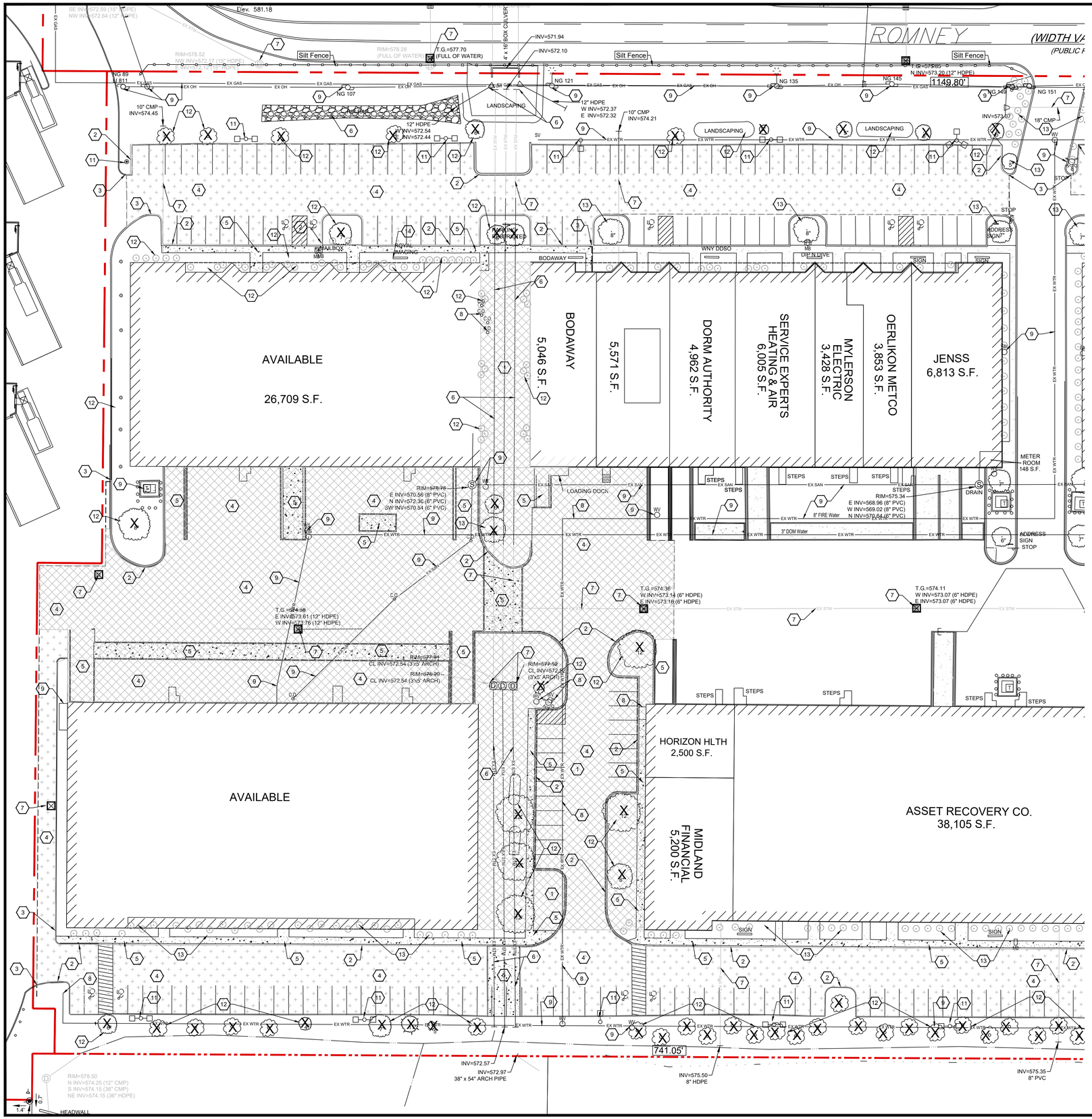
TITLE OF DRAWING: EXISTING FEATURES

LOCATION OF PROJECT: TAX PARCEL NO. 54.14-1-12.211
TOWN LOT 81, TOWNSHIP 13, RANGE 7,
HOLLAND LAND COMPANY'S SURVEY;
TOWN OF AMHERST, COUNTY OF ERIE, STATE OF NEW YORK

CLIENT: BENDERSON DEVELOPMENT CO., INC.
570 DELAWARE AVENUE
BUFFALO, NEW YORK 14202

DWG # 8084
VA110
SHEET 1 OF 1

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

DEMOLITION LEGEND:

- Property Line
- EX ELEC — Existing Electric
- EX GAS — Existing Gas
- EX WTR — Existing Water
- EX OH — Existing Overhead Utility
- EX SAN — Existing Sanitary
- EX STM — Existing Storm
- EX TC — Existing Telecoms
- Saw Cut Line
- Silt Fence/Sock
- Inlet Protection
- X — Tree Removal
- Existing area to be removed.
- Existing Asphalt Pavement to be Removed. Sub-base to Remain.

DEMOLITION NOTES: (#)

1. Existing Area to be Cleared.
2. Existing Curb to be removed.
3. Limits of Curb Removal.
4. Existing Asphalt Pavement to be removed.
5. Existing Concrete Sidewalk/ Pavement/ Ramps to be removed.
6. Existing Storm Drainage/CB to be removed.
7. Existing Storm Drainage/CB to remain and be protected during Construction.
8. Existing Utility Structure to be removed.
9. Existing Utility Structure to remain and be protected during Construction.
10. Existing Pylon Sign to remain and be protected during Construction.
11. Existing Light Pole Base to be Relocated
12. Existing Landscaping to be Removed
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14. Existing Bollard/Signage to be removed.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	11.16.2023	DZ	SWPPP Update

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

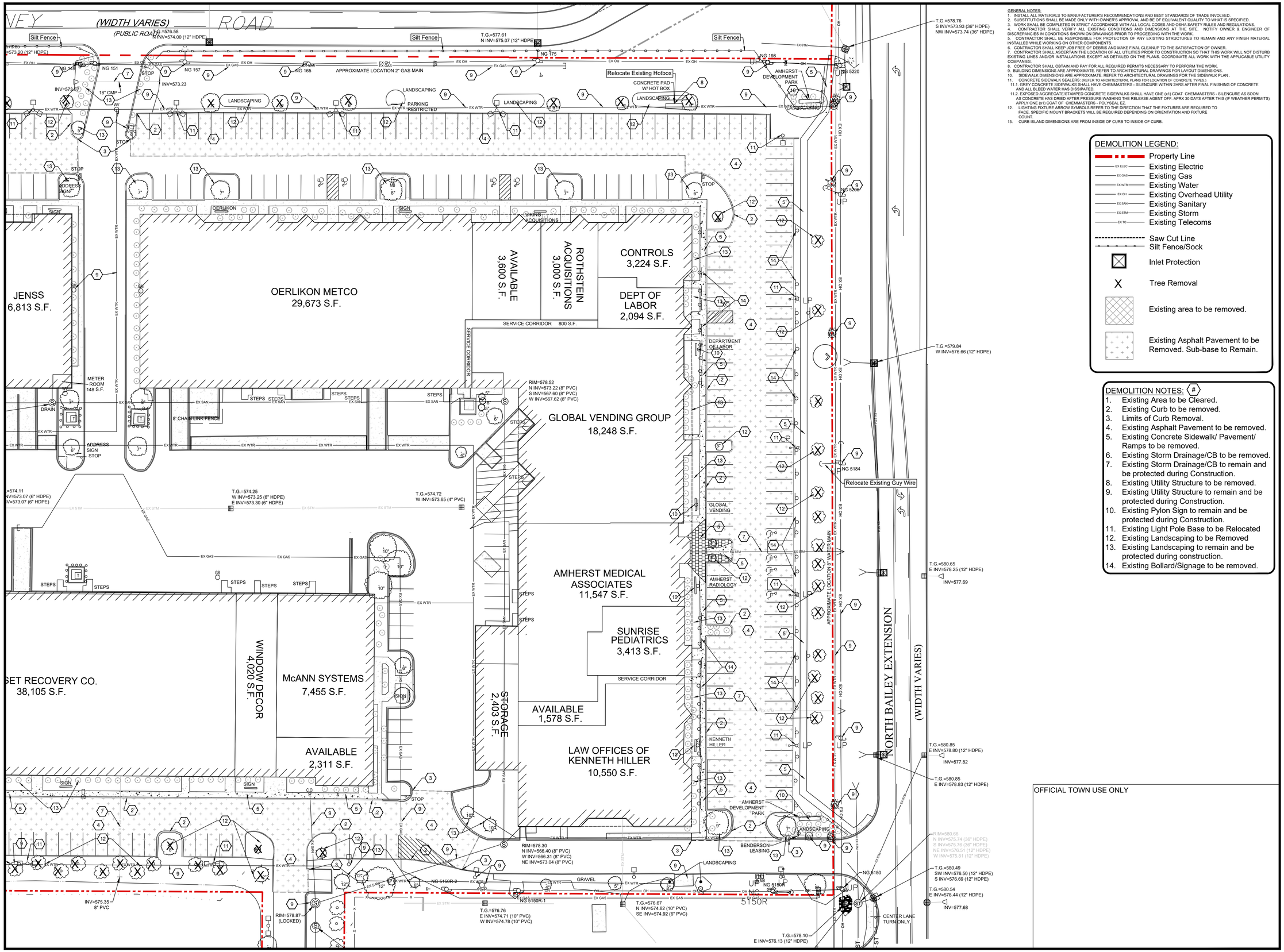
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE: Demolition and Erosion Control Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C3.00

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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No.	DATE	BY	REMARKS

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6000 - 6040 North Bailey Ave
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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

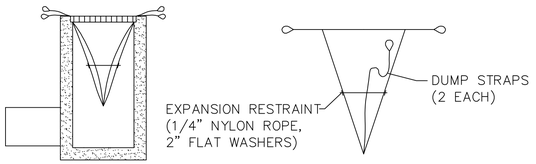
SEAL



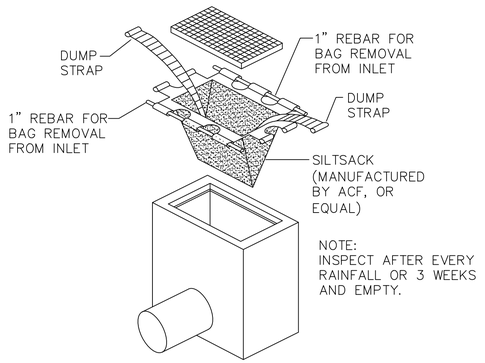
TITLE:
Demolition and Erosion Control Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C3.01

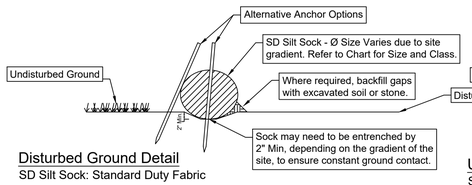
Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



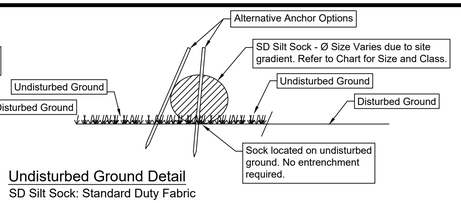
INSTALLATION DETAIL BAG DETAIL



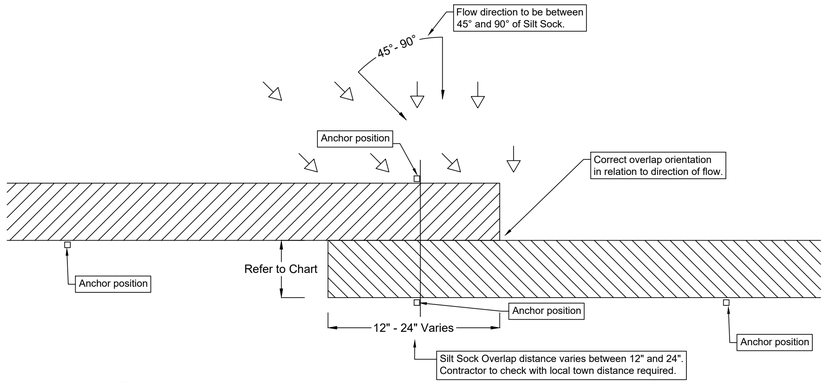
SILT SACK DETAIL
N.T.S.



Disturbed Ground Detail
SD Silt Sock: Standard Duty Fabric



Undisturbed Ground Detail
SD Silt Sock: Standard Duty Fabric



Overlap Detail - PLAN
1) Anchors required at the overlap section are to stay outside the Silt Sock and not pierce through the material. See alternative anchor positons in details above.

Anchor at Overlaped Ends - SECTION

Size & Class Chart			
	Diameter		
Gradient	8"	12"	18"
0 - 2%	30	55	75
2.1 - 5%	25	40	55
5.1 - 10%	15	30	40
10.1 - 33%	10	15	20
> 33%	5	10	15

SD SILT SOCK DETAIL
SD Silt Sock: Standard Duty Fabric

Notes:
1 - Do not use sock below the normal watermark or perpendicular to flow in river and where the maximum incline is greater than 50%.
2 - Contractors should be aware of federal, state and local laws, rules regulations or permit requirements for the use of Silt Socks on site.
3 - Sock should be positioned on the outline of the area to be protected, but must be installed between 45° to 90° from directions of flow.
4 - Sock may be required to be entrenched a minimum of 2" on disturbed ground to ensure constant ground contact.
5 - All gaps and ruts must be backfilled with soil or sock material.
6 - Sock overlap should be in the direction of the flow. Overlap amount will be between 12" and 24". Contractor to check with local town for requirements.
7 - If sediment collects to 1/2 the height of the sock, then a second sock may be stacked immediately up slope of the original instead of removing the sediment.
8 - Sock joint is where two sock sections meet on a level grade, overlap and adjoining ends, tightening the ends together, and anchoring through each end. Where two sections meet on un-level ground, j-hook higher elevated end, anchor, and begin new section just below. Back fill any gaps.
9 - Sock should be inspected and repaired as needed.
10 - If ruts begin under the sock they should be backfilled with soil and compacted so that the ground and sock have continuous contact.
11 - If sock rolls out of place, the sock should be repositioned and secured with additional anchors.
12 - Tears in the Sock fabric may be repaired by wrapping a new piece of fabric over the sock and securing, or by place a second sock immediately up slope with the required overlap beyond deformation.
13 - A section of sock should be replaced whenever it has weakened to such an extent that the efficiency is reduced or diminished. Weakening can occur because the natural mesh fabric breaks down over time of from being moved/dragged on site.
14 - Sock should be replaced when sediment has built up and has been removed three times.
15 - All sediment in disturbed area next to sock must be removed and correctly disposed of before the sock can be removed.
16 - When removing, cut sock open and spread the filler material around. The netting should be removed from site.
17 - Sock should be installed before works commence on site.

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No.	DATE	BY	REMARKS

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PREPARED FOR
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SEAL



TITLE: Demolition and Erosion Control Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C3.10

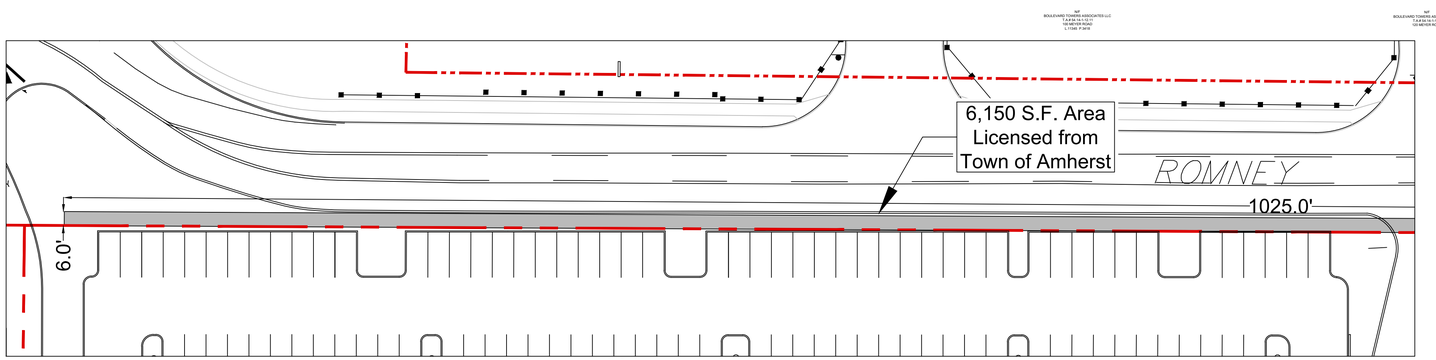
Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST, NY ZONING ANALYSIS		
	REQUIRED	PROVIDED
ZONED (RD)	R-D	R-D
MIN LOT AREA	1 AC	17.14 AC
MAX. BUILDING HEIGHT	65'	<30'
BUILDING SETBACKS:		
FRONT YARD	40'	102.3'
SIDE YARD	15'	16.7'
REAR YARD	15'	48.4'
PARKING / ROAD/AUX SETBACKS:		
FRONT - PROPERTY LINE	*25'	**0'
SIDE YARD	*10'	0'
REAR YARD	10'	**6.0'

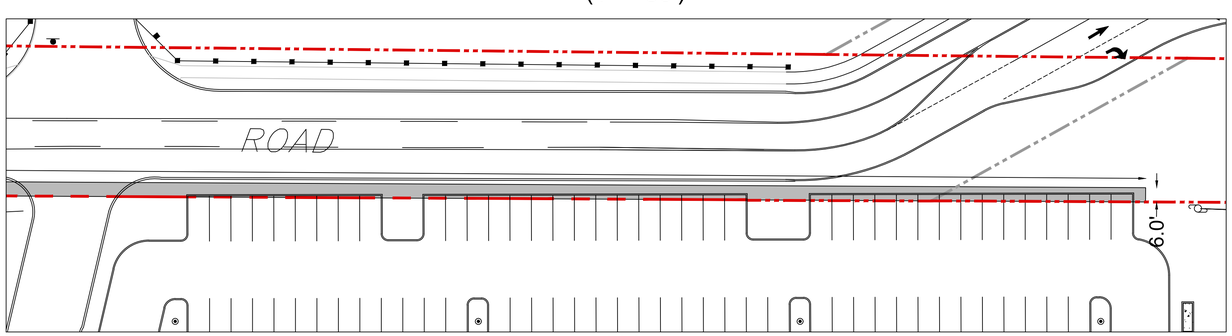
* Area to be determined to be licensed from Town of Amherst
** - Variance Required
- Curb Island Dimensions are measured from the inside of curb.

PROPOSED PARKING ANAYLSIS				
USE	CODE	S.F. USAGE	REQUIRED	PROVIDED
WAREHOUSE	1 / 1000 S.F.	181,343 SF	182 Spaces	
MEDICAL	1 / 150 S.F.	14,960 SF	100 Spaces	
RETAIL/OFFICE	1 / 200 S.F.	66,106 SF	331 Spaces	
TOTAL		262,409 SF	613 Spaces	688 Spaces
STALL SIZE			9' X 19'	9' X 19'

*Refer alternative parking study for site required parking



Proposed Licence Area
(1" = 30')



Proposed Licence Area
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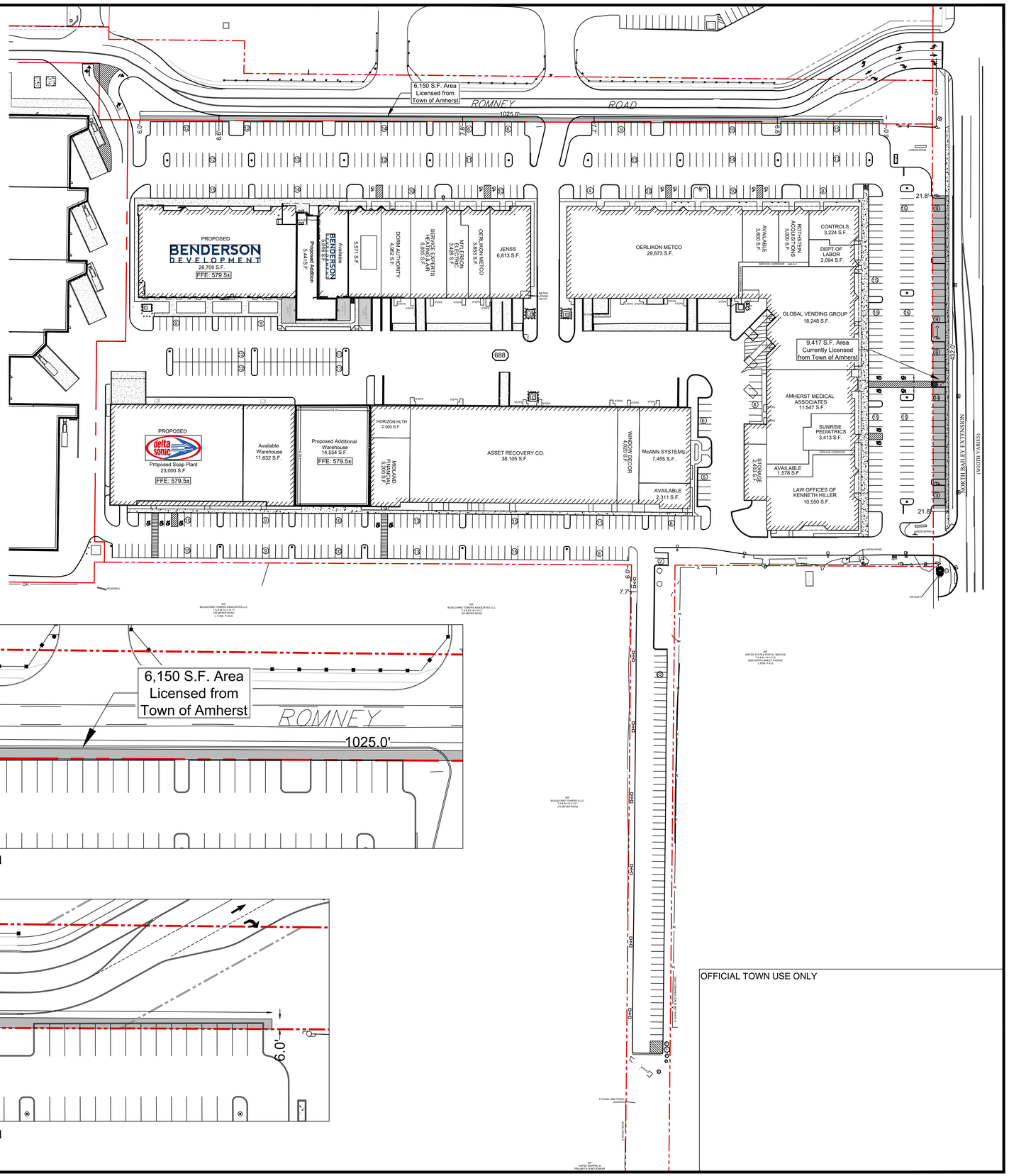

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

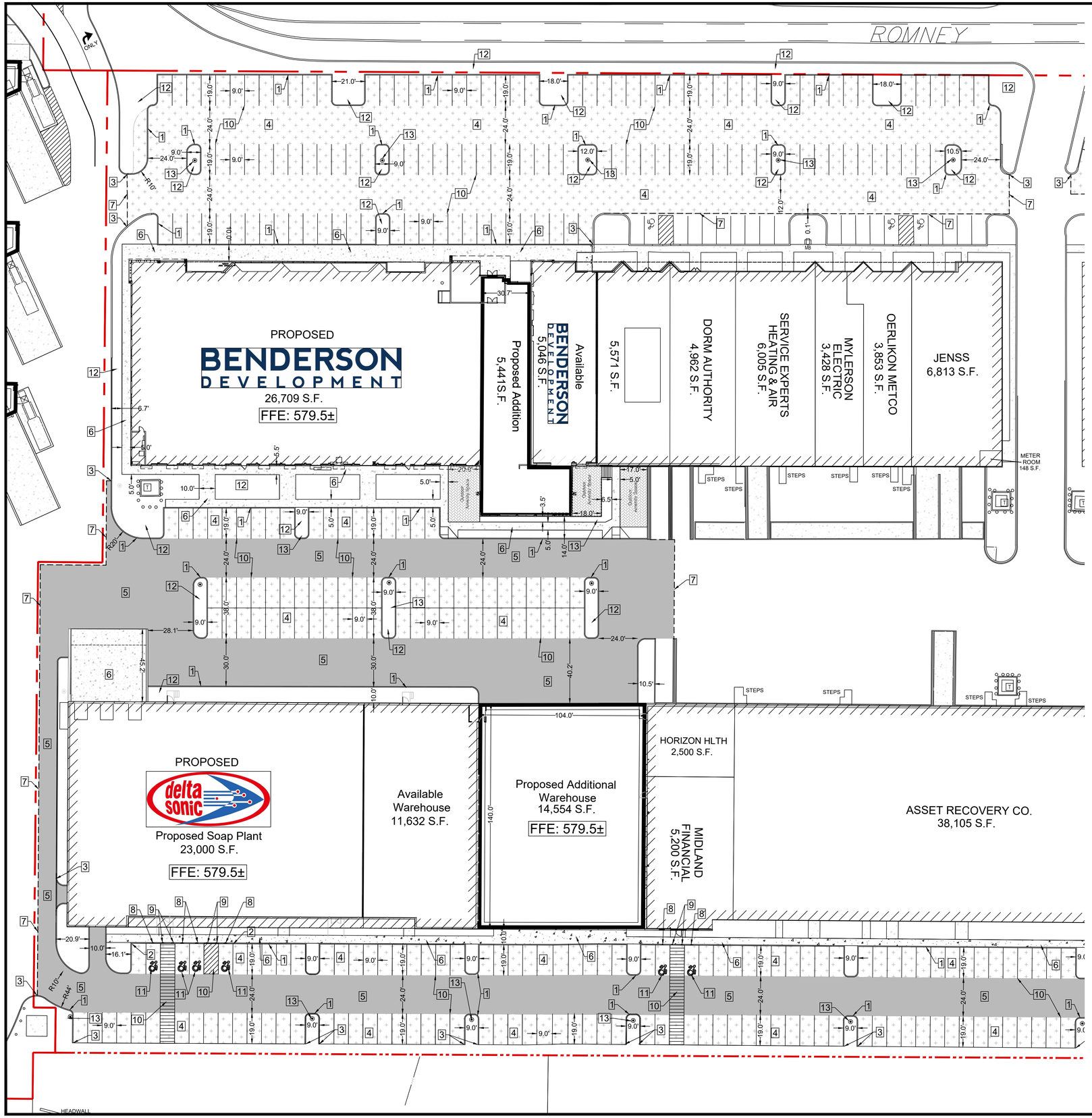
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 039179 STATE OF NEW YORK

TITLE:
Overall
Site Plan

SCALE: 1:70
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C4.0

Attachment: SP-1988-11P drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES: #

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement

NB: All curb Radii to be 3' unless otherwise noted.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	11.16.2023	DZ	SWPPP Update

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PREPARED FOR
BENDERSON DEVELOPMENT
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(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:
Detailed Site Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C4.10

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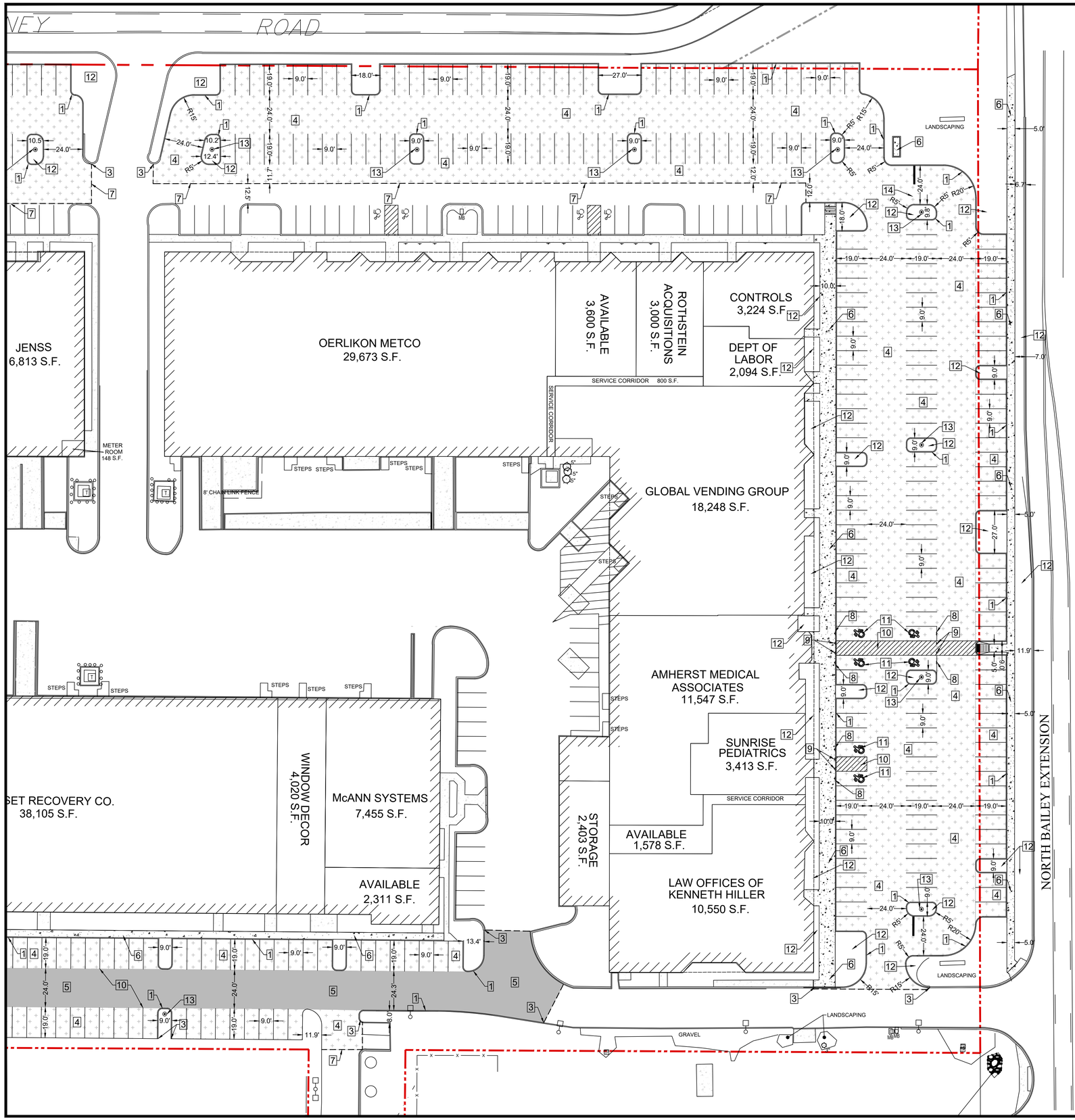

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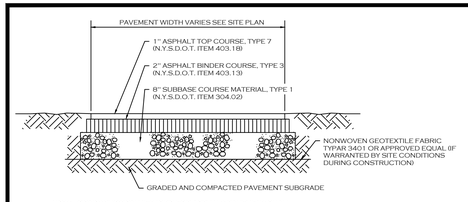
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031139 STATE OF NEW YORK

TITLE:
Detailed Site Plan (East)

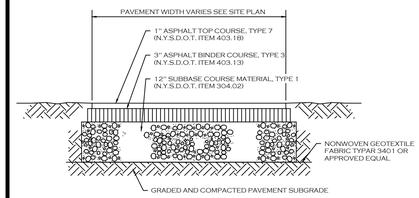
SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C4.11

Attachment: SP-1988-11P drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION



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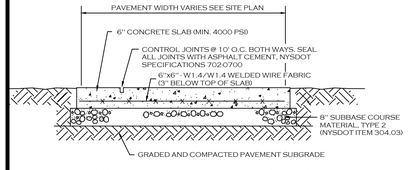
HEAVY DUTY ASPHALT SECTION



NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

CONCRETE SIDEWALK SEALERS:
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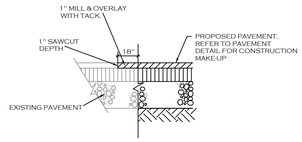
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.

CONCRETE PAVEMENT (INC DUMPSTER)



PAVEMENT TRANSITION DETAIL
(ASPHALT PAVEMENT)

SIDEWALK CURB RAMP DETAIL

NOTES:
1. (1.5% SIDEWALK) GRADES ARE FOR REPRESENTATION ONLY. REFER TO LAYOUT FOR PROPOSED GRADES.

NOTES:
1. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3
2. BUTT JOINTS TO BE AT 5'-0" O.C. BOTH WAYS- SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.

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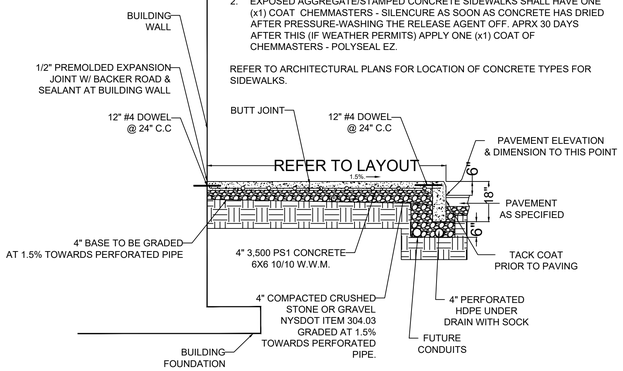
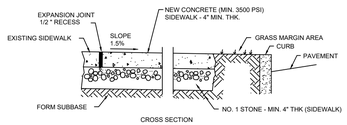


BUILDING SIDEWALK DETAIL

CONTRACTOR TO VERIFY WITH OWNER ON CURB DETAIL



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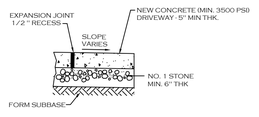
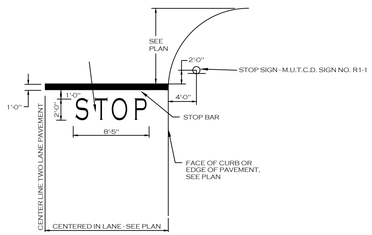
STANDARD CONCRETE SIDEWALK

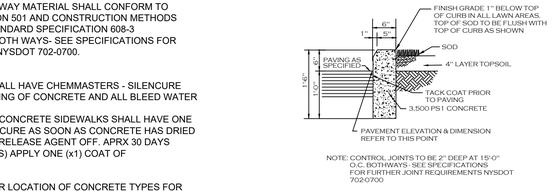


NOTES:
1. CONTROL JOINTS TO BE AT 10'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.

RPZ ENCLOSURE PAD

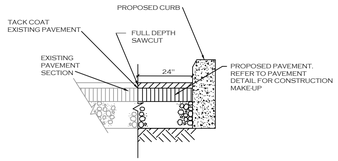


STOP BAR DETAIL

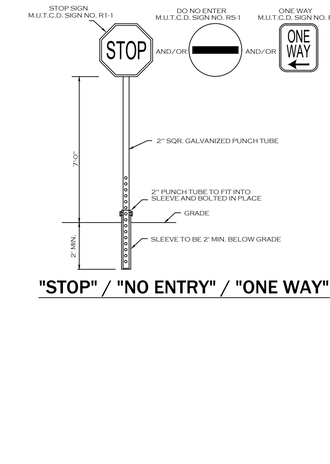


NOTE: CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700

TYPE "A" CONCRETE CURB

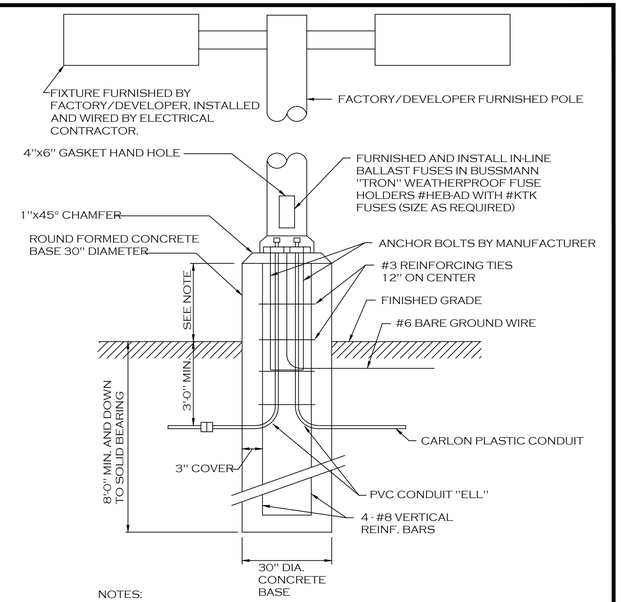


CURB AND PAVEMENT TRANISTION DETAIL



HANDICAP / NO PARKING SIGNS

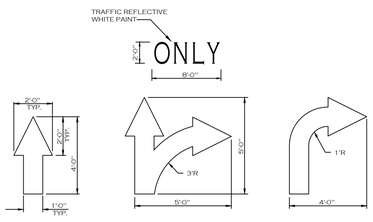
"STOP" / "NO ENTRY" / "ONE WAY" SIGNS



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
IN PAVEMENT: 30" ABOVE GRADE
IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION

Light Pole Mounting



INTERNATIONAL ACCESSIBILITY SYMBOL

PAINTED TRAFFIC ARROWS

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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(716) 886-0211

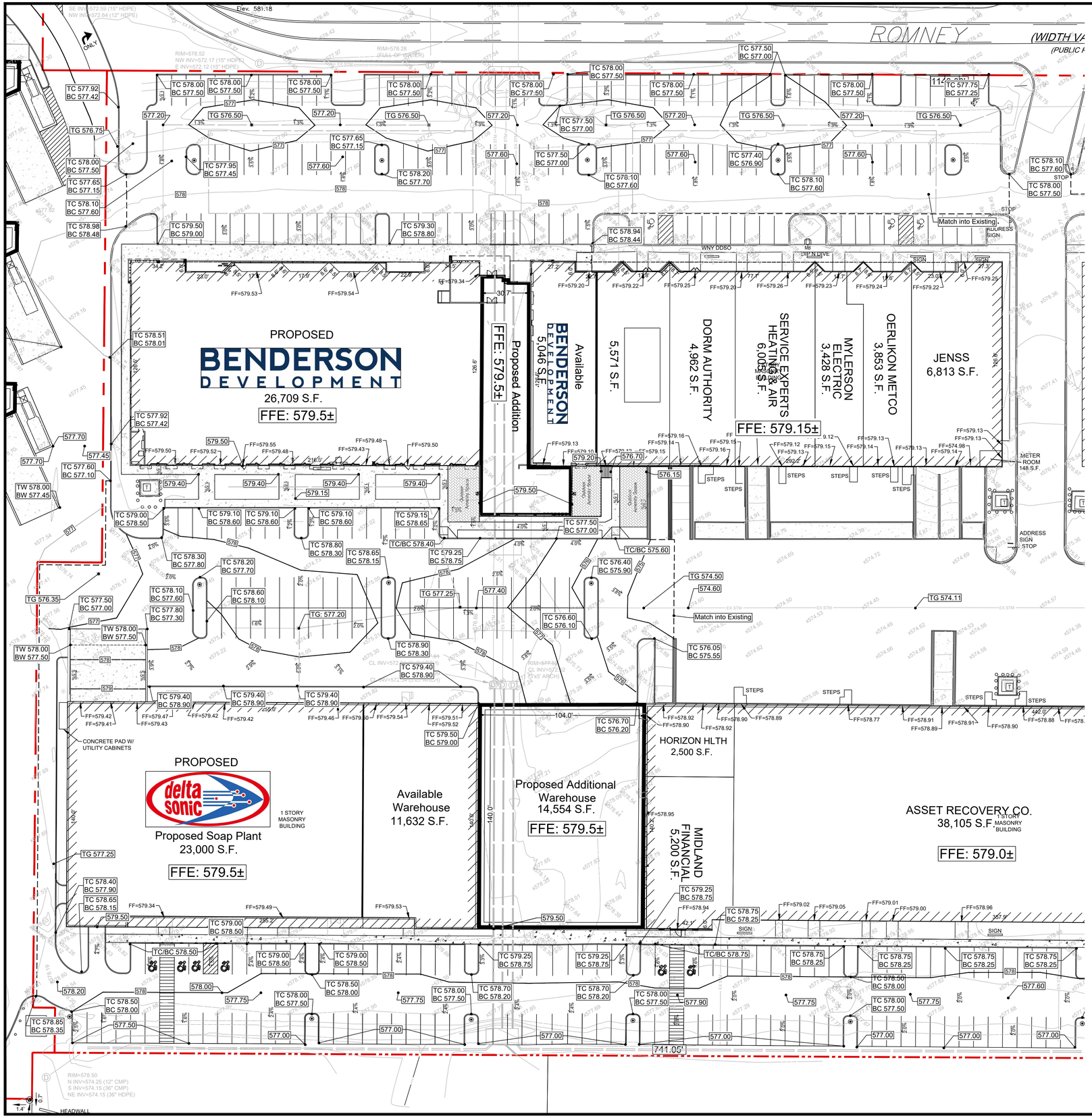
SEAL



TITLE: Construction Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C4.20

Attachment: SP-1988-11P_drawings_091924 (2825 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:

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13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

GRADING LEGEND:

- Property Line
- 6" Curb (typ).
- TG ## — Catch Basin - Top of Grade
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OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	11.16.2023	DZ	SWPPP Update

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 035109 STATE OF NEW YORK

TITLE:
Grading Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.00

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

ROAD

JENSS
6,813 S.F.

OERLIKON METCO
29,673 S.F.

FFE: 579.3±

AVAILABLE
3,600 S.F.

ROTHSTEIN ACQUISITIONS
3,000 S.F.

CONTROLS
3,224 S.F.

DEPT OF LABOR
2,094 S.F.

SERVICE CORRIDOR 800 S.F.

SERVICE CORRIDOR

METER ROOM
148 S.F.

8' CHAIN LINK FENCE

GLOBAL VENDING GROUP
18,248 S.F.

FFE: 579.3±

AMHERST MEDICAL ASSOCIATES
11,547 S.F.

SUNRISE PEDIATRICS
3,413 S.F.

SERVICE CORRIDOR

AVAILABLE
1,578 S.F.

LAW OFFICES OF KENNETH HILLER
10,550 S.F.

STORAGE
2,403 S.F.

WINDOW DECOR
4,020 S.F.

McANN SYSTEMS
7,455 S.F.

AVAILABLE
2,311 S.F.

SET RECOVERY CO.
38,105 S.F.

FFE: 579.0±

EX. (WIDTH VARIES)

LANDSCAPING

GRAVEL

Match into Existing

STEPS

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No.	DATE	BY	REMARKS

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SEAL

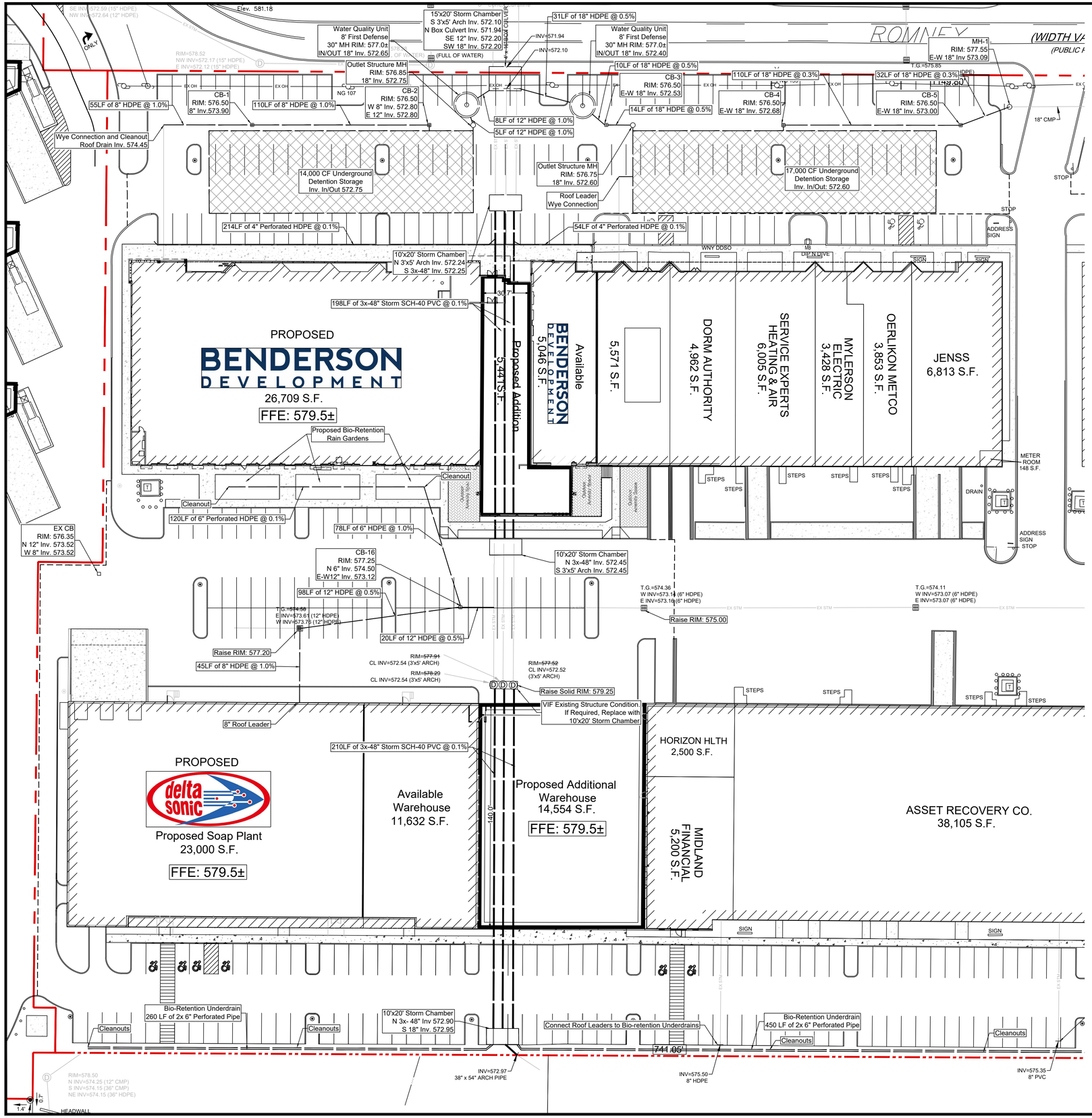
REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031709 STATE OF NEW YORK

TITLE:

Grading Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.01

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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(716) 886-0211

SEAL

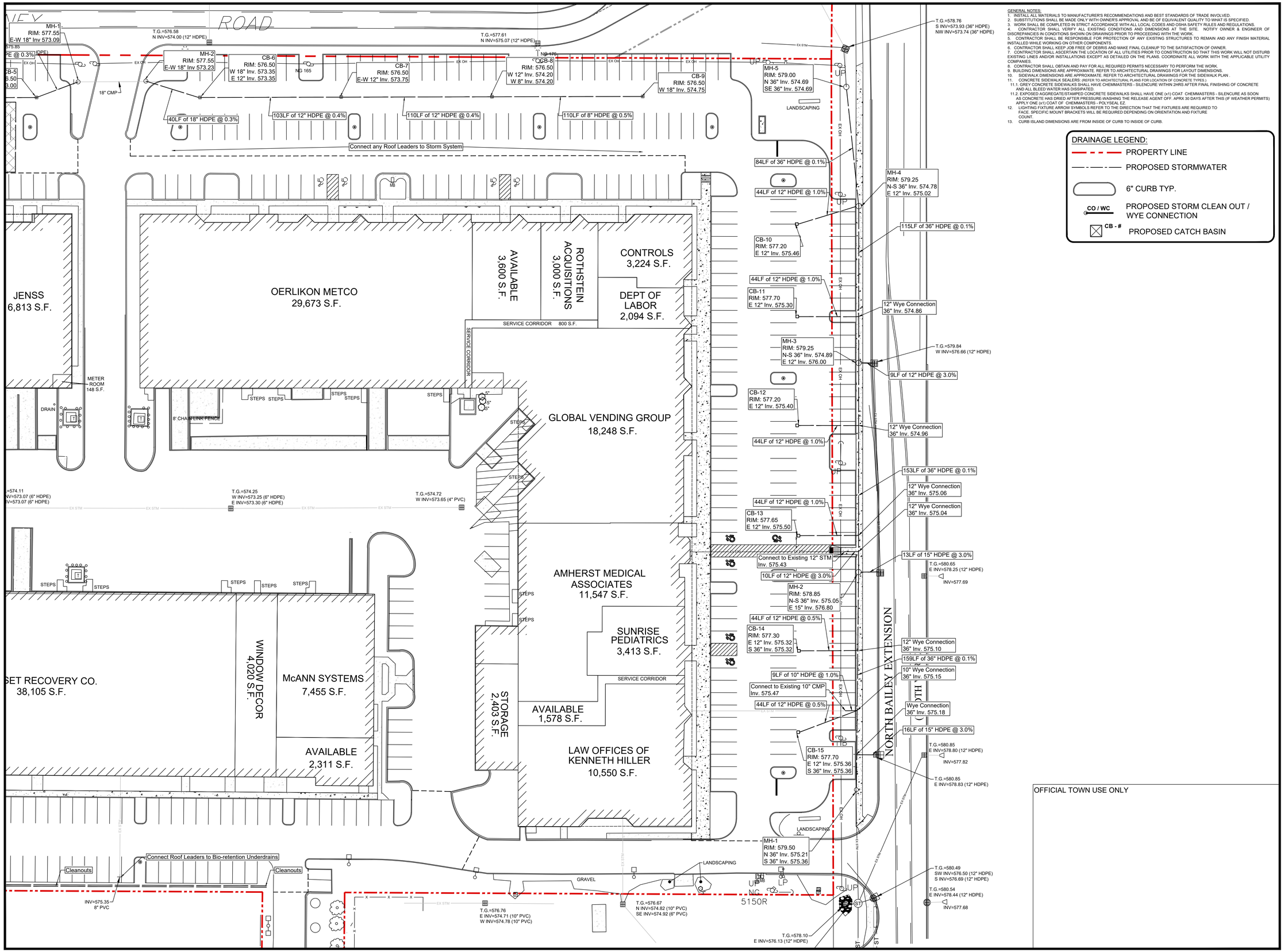
REGISTERED ARCHITECT JAMES ALLEN RUMSEY 039 STATE OF NEW YORK

TITLE:

Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.10

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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DRAINAGE LEGEND:

- PROPERTY LINE
- PROPOSED STORMWATER
- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

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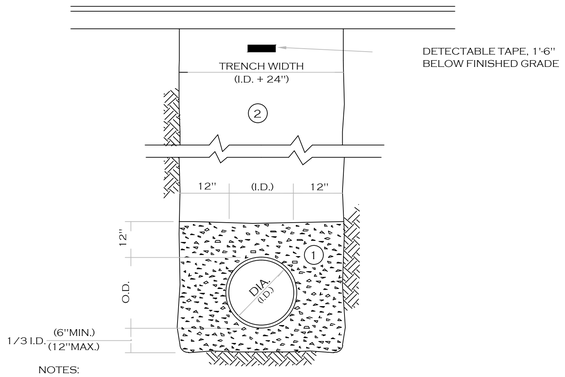


NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

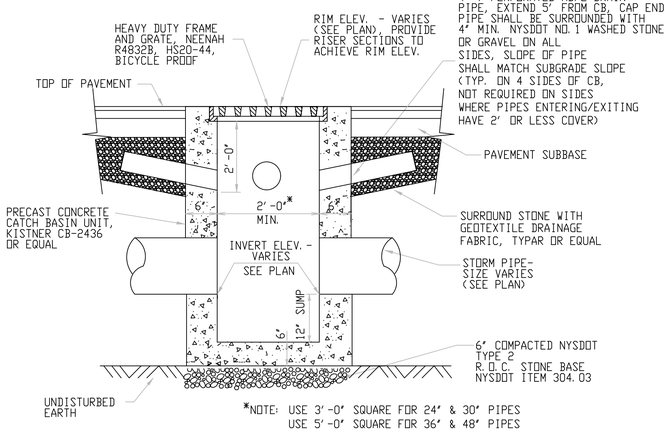
(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

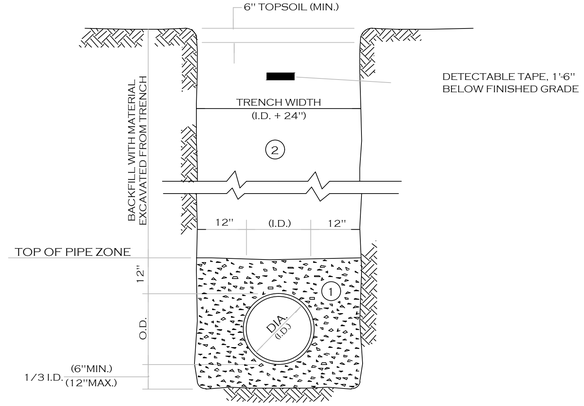
(2) TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERAIL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

TRENCH SECTION IN PAVED AREAS



TYPICAL PRECAST CATCH BASIN



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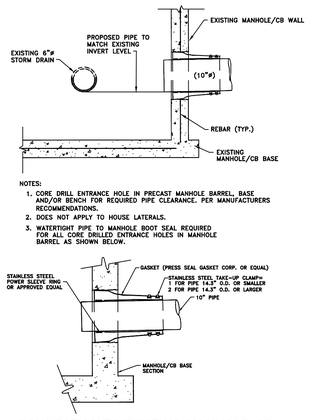
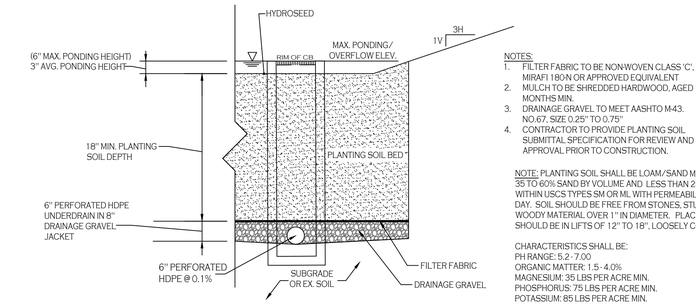
(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

TRENCH SECTION IN UNPAVED AREAS



CONNECTION TO EXISTING MANHOLE/CB



BIORETENTION AREA - TYPICAL SECTION

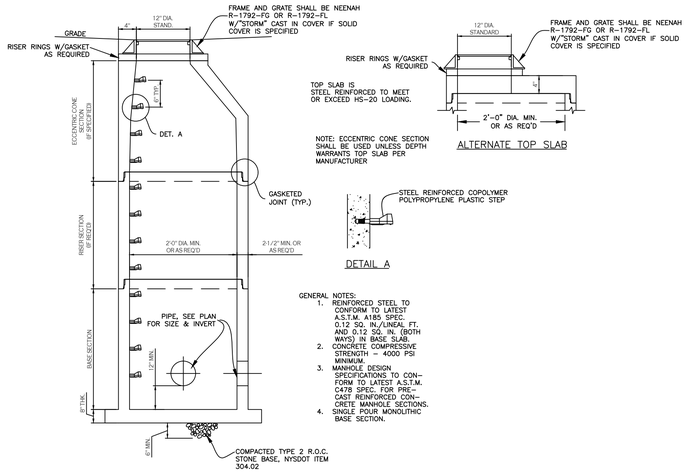
NOTES:
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43, NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 1.0 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

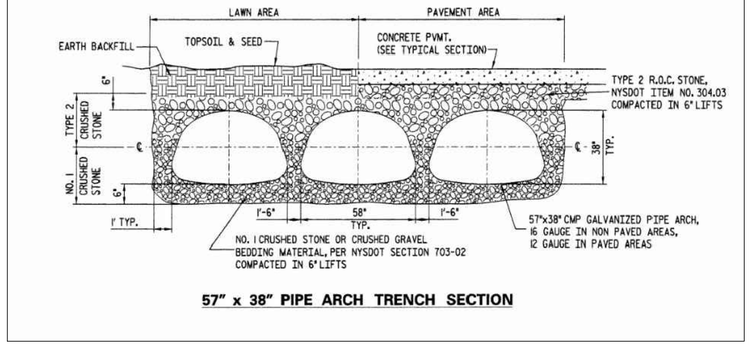
CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5



TYPICAL STORM MANHOLE DETAIL



57" x 38" PIPE ARCH TRENCH SECTION

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NOTICE

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

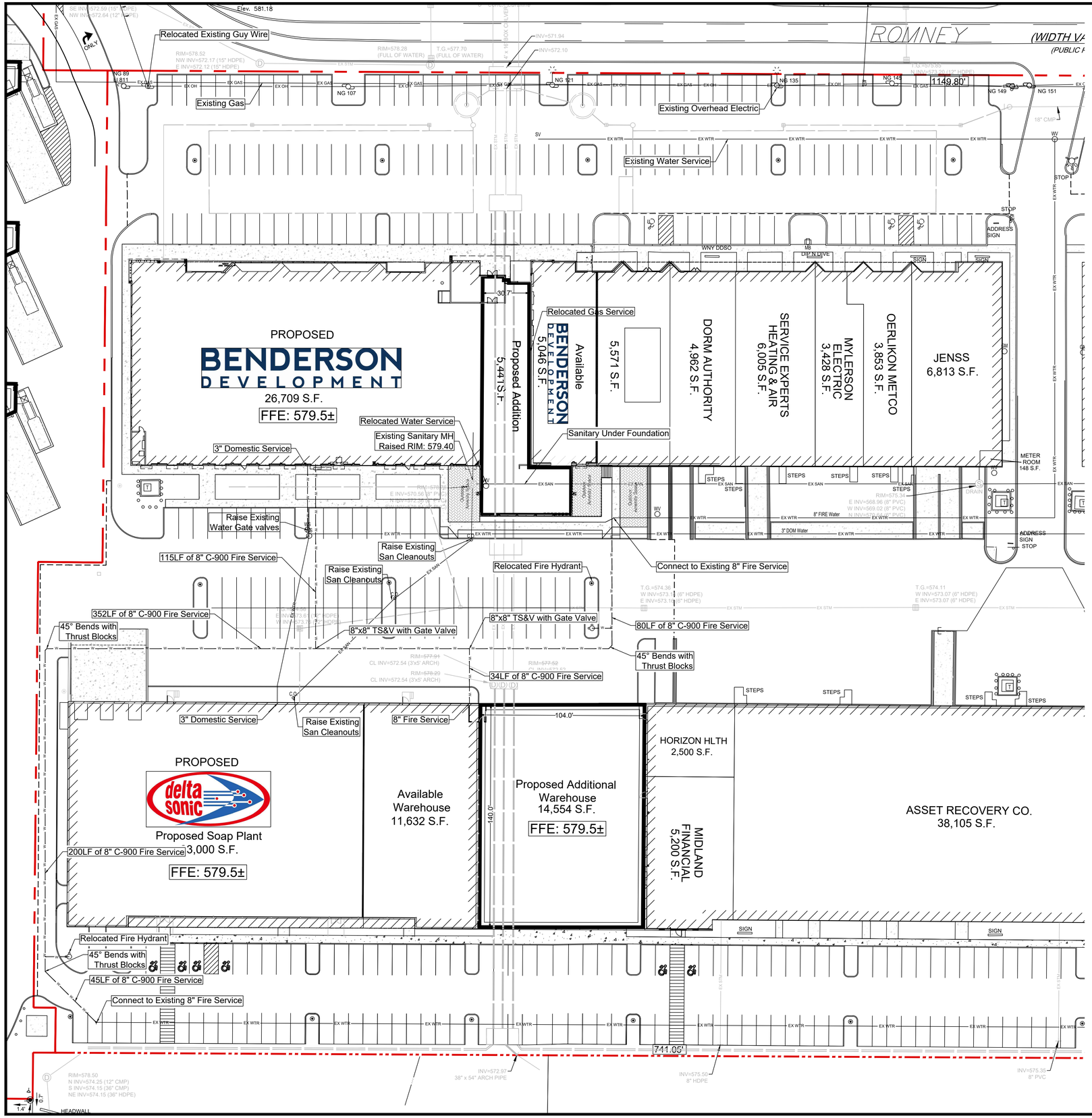
SEAL



TITLE:
Drainage Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.20

Attachment: SP-1988-11P drawings 091924 (25252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SANITARY SEWER NOTES:
1. THE CONTRACTOR IS ADVISED THAT A TRENCH SHIELD AND/OR SHORING DESIGNED IN ACCORDANCE WITH OSHA STANDARDS SHALL BE USED IN ALL OPEN TRENCH EXCAVATIONS.
2. ANY CONTRACTOR AND/OR PLUMBER PERFORMING WORKING IN A CONFINED SPACE (ie MANHOLES, WETWELLS, CHAMBERS) OWNED BY THE TOWN MUST CERTIFY TO THE TOWN THAT THEY HAVE THEIR OWN CONFINED SPACE ENTRY PROGRAM THAT MEETS OR EXCEEDS OSHA'S REGULATIONS. CERTIFICATION MUST BE NOTARIZED BY A NOTARY PUBLIC.
3. CONSTRUCTION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE TOWN AND NEW YORK STATE CODES.
4. IF ANY PROPOSED SEWER LATERAL RUNS UNDER PAVED AREA AND HAS LESS THAN 4' COVER, CONCRETE ENCASEMENT IS REQUIRED. IF MORE THAN 4' COVER IS PROVIDED IN PAVED AREAS SELECT FILL IS REQUIRED.
5. THE CONTRACTOR MUST NOTIFY THE TOWN ENGINEER OFFICE AND THE PLUMBING INSPECTOR 24 HOURS IN ADVANCE OF CONSTRUCTION.
6. CLEANOUTS ARE REQUIRED EVERY 100' AND AT CHANGE IN DIRECTION.
7. ABANDONED SANITARY SEWER CONNECTIONS FROM THE SITE, IF ANY, REQUIRE PROOF OF A DISTRICT PERMIT FOR DISCONNECTION PRIOR TO THE NEW CONNECTION BEING MADE.

UTILITY NOTES:
1. PROVIDE FITTINGS AND BLOCKING AS NECESSARY AT ALL BENDS IN WATER LINES.
2. WHERE UTILITIES ARE INSTALLED IN EXISTING PAVEMENT, LANDSCAPED AREA ETC. ANY ITEMS REMOVED/DAMAGED SHALL BE REPLACED IN KIND.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS NECESSARY: STATE, COUNTY, AND TOWN.
4. WATER MAINS TO HAVE MINIMUM 5FT COVER.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	11.16.2023	DZ	SWPPP Update

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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

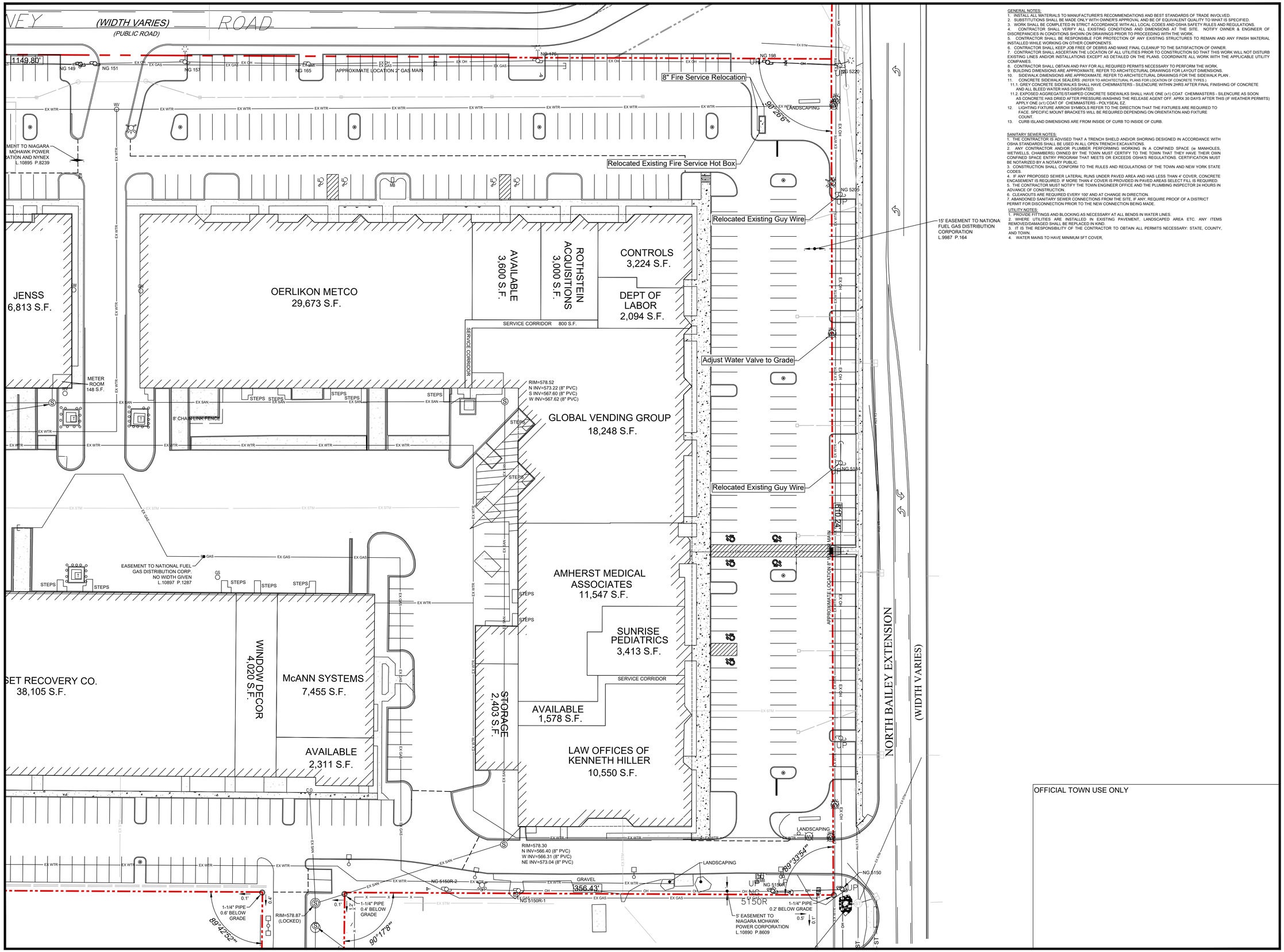
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 036103 STATE OF NEW YORK

TITLE:
Utility Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C6.00

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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No.	DATE	BY	REMARKS

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PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

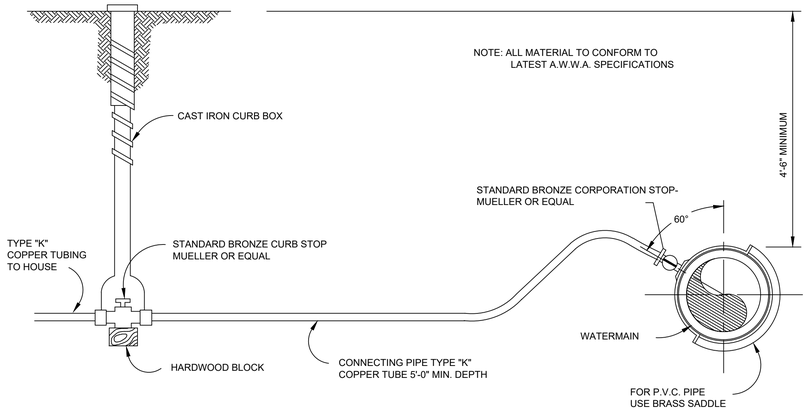
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031708 STATE OF NEW YORK

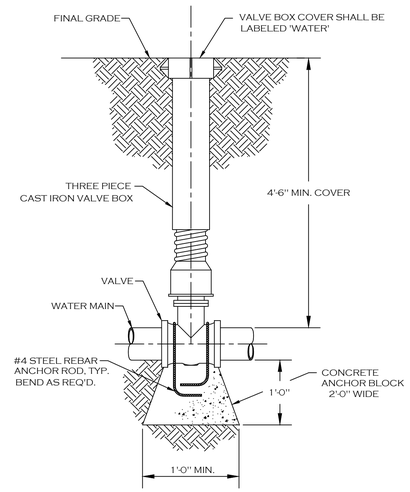
TITLE:
Utility Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C6.01

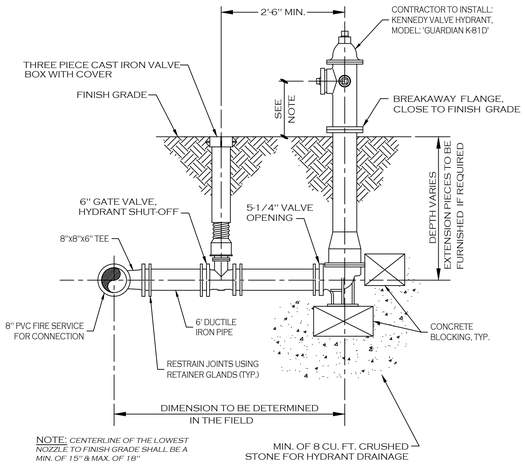
Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



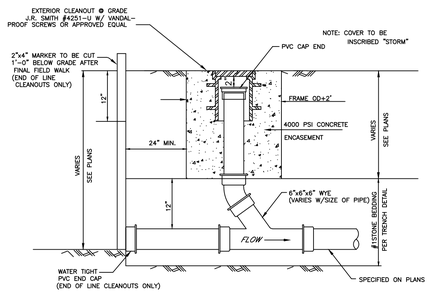
TYPICAL WATER SERVICE LINE INSTALLATION



TYPICAL GATE VALVE DETAIL

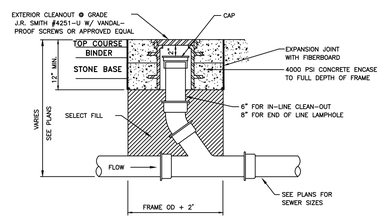


TYPICAL FIRE HYDRANT ASSEMBLY DETAIL



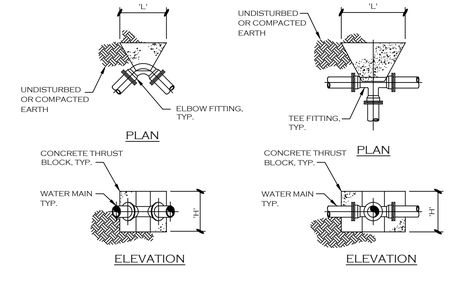
CLEANOUT IN LANDSCAPED AREAS

NOT TO SCALE



CLEANOUT IN PAVED AREAS

NOT TO SCALE



DIMENSION SCHEDULE								
PIPE SIZE	90° ELBOW		45° ELBOW		22.5° ELBOW		11.25° ELBOW	
	'H'	'L'	'H'	'L'	'H'	'L'	'H'	'L'
4"	1.5'	2.0'	1.0'	2.0'	1.0'	1.0'	1.0'	1.0'
6"	2.0'	2.5'	1.5'	2.0'	1.0'	1.5'	1.0'	1.5'
8"	2.5'	3.5'	2.0'	2.5'	1.5'	1.5'	1.0'	2.0'
10"	3.0'	4.5'	2.5'	3.0'	1.5'	3.0'	1.0'	2.5'
12"	3.5'	5.0'	3.0'	3.5'	2.5'	2.5'	1.5'	2.5'

DIMENSION SCHEDULE		
PIPE SIZE	TEE OR TAP SLEEVE	
—	'H'	'L'
4"	1.5'	1.0'
6"	1.5'	2.5'
8"	1.5'	3.5'
10"	2.5'	3.5'
12"	3.5'	3.5'

THRUST BLOCK SCHEDULE

WATER MAIN

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

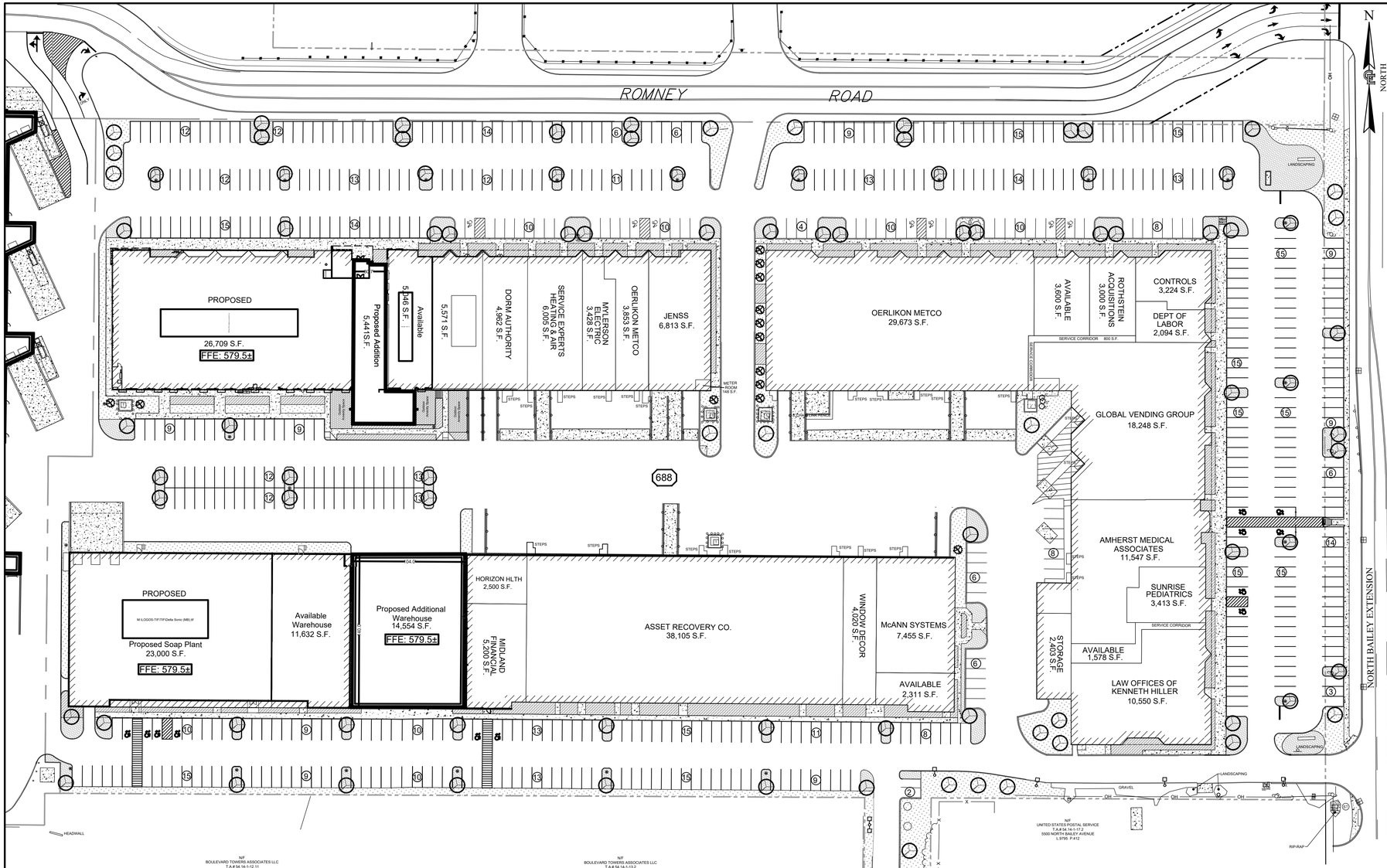
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031709 STATE OF NEW YORK

TITLE: Utility Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C6.10

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



FOUNDATION PLANT PALETTE

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE
EVERGREEN TREES						
	To	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6-8' HT.	BB	HT. 15', SP. 3-4'
ORNAMENTAL TREES						
	Ag	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6-8' HT.	BB	HT. 15-25', SP. 15-25'
	Cf	CORNUS FLORIDA	FLOWERING DOGWOOD	6-8' HT.	BB	HT. 15-30', SP. 15-30'
SHRUBS						
	Ig	ILEX GLABRA 'STRONG BOX'	STRONGBOX INKBERRY HOLLY	HT. 24" MIN	BB	HT. 2-3', SP. 2-3'
	Iv	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	HT. 24" MIN	CONT.	HT. 3-5', SP. 4-6'
	Ra	ROSA 'RADTKO'	DOUBLE KNOCKOUT ROSE	NO. 3 (24" MIN)	CONT.	HT. 2-5', SP. 6-8'
	Tx	TAXUS X MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	HT. 24" MIN	CONT.	HT. 3-4', SP. 4-6'
	Vi	VIBURNUM CARLESII 'KOREAN SPICE'	KOREAN SPICE VIBURNUM	HT. 24" MIN	CONT.	HT. 3.5', SP. 4-5'
PERENNIALS & GRASSES						
	Ca	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	NO. 2	CONT.	HT. 4-6', SP. 2'-3'
	Ha	HAKONECHLOA MACRA 'ALL GOLD'	ALL GOLD JAPANESE FOREST GRASS	NO. 3	CONT.	HT. 1.5', SP. 1.5'
	Hm	HEUCHERA MICRANTHA 'PALACE PURPLE'	CORAL BELLS PALACE PURPLE	NO. 2	CONT.	HT. 2, SP. 1.5'
	Nf	NEPETA HYBRID 'CAT'S PAJAMAS'	CAT'S PAJAMA'S CATMINT	NO. 3	CONT.	HT. 18-20" SP. 18-20"
	Pv	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	NO. 2	CONT.	HT. 3-4', SP. 3-4'
	Ss	SEDUM 'AUTUMN JOY'	AUTUMN JOY STONE CROP SEDUM	NO. 2	CONT.	HT. 18-24", SP. 18-24"

ABBREVIATIONS:
BB=BALLED & BURLAPPED BR=BARE ROOT
CAL.=CALIPER IN INCHES CONT.=CONTAINER
HT.=HEIGHT NO.#=GALLON SIZE
SP.=SPREAD

NOTES:
- CALIPER TO BE MEASURED 6" ABOVE GRADE
- PLANT SYMBOLS REPRESENT 2/3 MATURE SIZE

PARKING LOT PLANT PALETTE

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE
EVERGREEN TREES						
	Pm	PSUEDOTSUGA MENZIESII	DOUGLAS FIR	6-7' HT.	BB	HT. 40-80', SP. 12-20'
	To	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6-8' HT.	BB	HT. 15', SP. 3-4'
DECIDUOUS TREES						
	Gt	GLEDITSIA TRIACANTHOS INERM.	THORNLESS HONEY LOCUST	2.5-3" CAL.	BB	HT. 60-80', SP. 60-80'
	Zs	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2.5-3" CAL.	BB	HT. 45', SP. 15'
SHRUBS						
	Am	ARONIA MELANOCARPA	LOWSCAPE MOUND CHOKEBERRY	NO. 3 (24" MIN)	CONT.	HT. 1-2', SP. 1.5-2'
	Iv	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	HT. 24" MIN	CONT.	HT. 3-5', SP. 4-6'
	Rm	ROSA MEIGALPIO	RED DRIFT GROUNDCOVER ROSE	NO. 3 (24" MIN)	CONT.	HT. 1-1.5', SP. 2-2.5'
	Ra	ROSA 'RADTKO'	DOUBLE KNOCKOUT ROSE	NO. 3 (24" MIN)	CONT.	HT. 2-5', SP. 6-8'
	Sj	SPIRAEA JAPONICA 'GOLDMOUND'	GOLDMOUND SPIREA	HT. 24" MIN	CONT.	HT. 2-3', SP. 4'
	Tx	TAXUS X MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	HT. 24" MIN	CONT.	HT. 3-4', SP. 4-6'
PERENNIALS & GRASSES						
	He	HEMEROCALLIS X 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	NO. 1	CONT.	HT. 1-1.5', SP. 1-1.5'
	Ir	IRIS PALLIDA 'VARIEGATA'	VARIEGATED SWEET IRIS	BULB	CONT.	HT. 2', SP. 1'
	Nf	NEPETA HYBRID 'CAT'S PAJAMAS'	CAT'S PAJAMA'S CATMINT	NO. 3	CONT.	HT. 18-20" SP. 18-20"
	Pc	PANICUM VIRGATUM 'CHEYENNE SKY'	CHEYENNE SKY SWITCHGRASS	NO. 3	CONT.	HT. 2-3', SP. 1.5-2'
	Pe	PENNISETUM ALOPECUROIDES 'LEMON SQUEEZE'	LEMON SQUEEZE FLOWERING FOUNTAIN GRASS	NO. 3	CONT.	HT. 2.5-3', SP. 2-2.5'

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NOTES:
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- PLANT SYMBOLS REPRESENT 2/3 MATURE SIZE

PROPOSED LAWN

AREAS TO RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDRO SEED MIX

NOTE:
ALL DISTURBED LAWN AREAS SHALL RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDROSEED MIX.

SEED MIX:

	LBS/ACRE	%BY PURITY	%GERM
'Pennfine' Perennial Rye Grass	35	85	85
'Pennlawn' Red Fescue	35	97	80
'Baron' and 'Midnight' Kentucky Bluegrass	30	85	80

SEEDING RATE: 6.0 POUNDS PER 1,000 SQUARE FEET

MULCH: STRAW OR WOOD FIBER MULCH APPLIED AT THE RATE OF TWO TONS PER ACRE

STARTING FERTILIZER: 5:10:10 AT 20 POUNDS PER 1,000 SQUARE FEET

FOR FALL OR EARLY WINTER, SEED WITH CERTIFIED "AROOSTOCK" WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE.

TREE LEGEND

PROPOSED DECIDUOUS AND EVERGREEN TREES

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL SECURE CURRENT PLANS AND SPECIFICATIONS FOR PROPER CONSTRUCTION METHODS AND MATERIAL OF ALL LANDSCAPING PRIOR TO COMMENCING WORK.
2. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS AS NOTED IN THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN ASSOCIATION OF NURSERYMEN, ANSI Z60.1 (LATEST EDITION).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY TAKEOFF.
4. THE CONTRACTOR SHALL PERFORM A ROUGH FIELD STAKEOUT OF ALL PLANT MATERIAL AND SHRUB-BEDS. CONTACT OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL. LOCATIONS SHOWN ON THE PLANS CONVEY DESIGN INTENT ONLY. ACTUAL LOCATIONS WILL BE AS DIRECTED BY THE LANDSCAPE ARCHITECT AT THE TIME OF INSTALLATION.
5. THE CONTRACTOR IS HEREBY NOTIFIED THAT UNDERGROUND UTILITIES EXIST. SHOULD LOCATION OF TREES BE WITHIN 5' OF UNDERGROUND UTILITIES, RELOCATE SAID TREES TO A MINIMUM OF 5' FROM BALL TO UTILITIES.
6. SHOULD LOCATION OF TREES BE WITHIN 20' OF OVERHEAD WIRES, RELOCATE SAID TREES TO A MINIMUM OF 20' FROM WIRES.
7. ALL TREES AND SHRUBS SHALL RECEIVE A 3" LAYER OF BLACK SHREDDED HARDWOOD BARK MULCH.
8. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY AT THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
9. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR OWNER'S PROJECT LANDSCAPE ARCHITECT.
10. ANY PLANT WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY , AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS (INCLUDING, BUT NOT LIMITED TO WATERING, SPRAYING, MULCHING, FERTILIZING, AND REMOVAL OF STAKES AND GUYS) AND NEWLY ESTABLISHED LAWN AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE OWNER.
12. ALL AREAS DISTURBED BY UTILITY INSTALLATION AND SITE GRADING ACTIVITY SHALL RECEIVE 6" APPROVED TOPSOIL (TO A COMPACTED DEPTH OF 6", UNLESS OTHERWISE SPECIFIED BY THE GOVERNING MUNICIPALITY) BE FINE GRADES, SEEDED, MULCHED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
13. ANY IRRIGATION COMPONENT DAMAGED DURING SITE OR LANDSCAPE RENOVATIONS MUST BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.
14. A ONE YEAR GUARANTEE SHALL BE PROVIDED ON ALL PLANT MATERIALS FROM THE DATE OF PROVISIONAL ACCEPTANCE.
15. PLANTING BACKFILL MIXTURE SHALL CONSIST OF 3 PARTS TOPSOIL AND 1 PART COMPOST THOROUGHLY MIXED.
16. STAKE TREES IMMEDIATELY AFTER PLANTING.
17. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE WORK AREA. IF ANY TREE IS LOCATED CLOSER THAN 5' TO AN UNDERGROUND UTILITY, IT SHALL BE RELOCATED TO A LOCATION THAT IS A MINIMUM OF 5' AWAY AS MEASURED FROM THE ROOTBALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, AND SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.

UDIG-NY 811

EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

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COSTICH ENGINEERING, D.P.C.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR, ARCHITECT OR LANDSCAPE ARCHITECT, TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY", FOLLOWED BY HIS/HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION, TO THE DOCUMENT.

REGISTERED LANDSCAPE ARCHITECT — SARAH COSTICH LEWING — 002574 — STATE OF NEW YORK

PROJECT MANAGER	E.R.G.
DRAWN BY	E.L.O.
BOUNDARY	---
TOPO/BASE	---
DATE	11/15/2023
SCALE	1"=50'

COSTICH ENGINEERING
- Civil Engineering
- Land Surveying
- Landscape Architecture

217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

TITLE OF PROJECT
PROJECT TITLE
PRJ. DESCRIPTION OR ST. ADDRESS

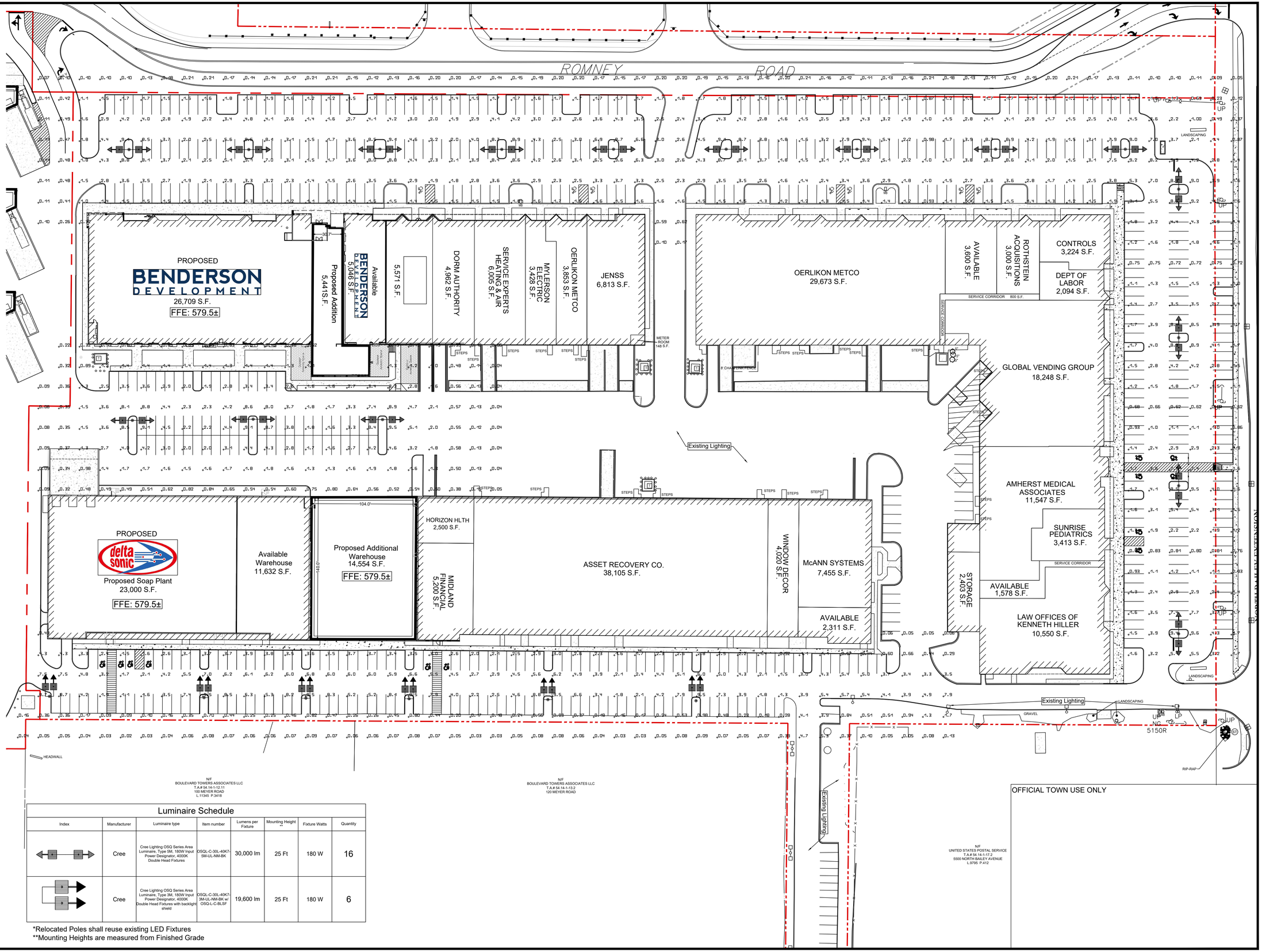
TITLE OF DRAWING
LANDSCAPE PLAN EXHIBIT

LOCATION OF PROJECT
TAX PARCEL NO.'S
TOWN LOT , TOWNSHIP , RANGE , SECTION, TRACT, PURCHASE, COUNTY OF MONROE, STATE OF NEW YORK

CLIENT
CLIENT NAME
CLIENT ADDRESS
ROCHESTER, NEW YORK XXXXX

DWG. # 8084.01
LE100
SHEET 1 OF 2

Attachment: SP-1988-11P drawings 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Luminaire Schedule

Index	Manufacturer	Luminaire type	Item number	Lumens per Fixture	Mounting Height **	Fixture Watts	Quantity
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 5M, 180W Input Power Designator, 4000K Double Head Fixtures	OSQL-C-30L-40K7-5M-UL-NM-BK	30,000 lm	25 Ft	180 W	16
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 3M, 180W Input Power Designator, 4000K Double Head Fixtures with backlight shield	OSQL-C-30L-40K7-3M-UL-NM-BK w/ OSQ-L-C-BLSF	19,600 lm	25 Ft	180 W	6

*Relocated Poles shall reuse existing LED Fixtures
**Mounting Heights are measured from Finished Grade

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Site Lighting Plan

SCALE: 1:70

DRAWN BY: DMZ

CHECKED BY: MAO

DATE: 11.08.2023

DRAWING NO. C8.00

Attachment: SP-1988-11P_drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)


delta sonic


ROMNEY ENTRANCE
BENDERSON / DELTA SONIC OFFICE

Attachment: SP-1988-11P drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P drawings 091904 (24252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAIN ENTRY - NE CORNER

BENDERSON / DELTA SONIC OFFICE



Attachment: SP-1988-11P drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P drawings_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST

APPLICATION & REVIEW PROCEDURE

MAJOR SITE PLAN

MATERIALS MUST BE PROVIDED IN AN ELECTRONIC FORMAT THAT CONTAINS PDF FILES OF THE APPLICATION, EAF, SITE PLAN DRAWING SET SURVEY, LANDSCAPE PLAN, PRELIMINARY BUILDING FLOO PLANS / ELEVATIONS & ANY OTHER SUPPORTING INFORMATION. THIS MUST BE SUBMITTED WITH YOUR APPLICATION. APPLICATIONS WILL NOT BE TRANSMITTED WITHOUT THIS ELECTRONIC INFORMATION.

THIS ALSO APPLIES TO REVISED MATERIALS THAT AR SUBMITTED.

This application package includes the following:

- Application Procedures
- Application Form & Checklist
- Stormwater Pollution Prevention Plan Checklist
- Appendix A Town of Amherst EAF Addendum
- Appendix B Criteria for Required 8½" x 11" Sketches
- Appendix C Erie Sewer District No. 5 – Commercial / Industrial New & Existing Buildings Requirements

- IMPORTANT-

1. A pre-submittal consultation with Planning Department staff is *strongly recommended* prior to submitting an application. The pre-submittal meeting gives the applicant an opportunity to discuss with staff such items as:
   - classifying the action as a major site plan, minor site plan, or minor site plan adjustment;
   - determining what specific information will be required to be submitted with the application;
   - identifying and discussing issues that must be addressed as part of the SEQR review;
   - identifying any potential variances required to implement the project as proposed.

   An appointment is required for all meetings with Planning Department staff.

2. This site plan petition is subject to the requirements of 6 NYCRR Part 617, State Environmental Quality Review Act (SEQR), and Chapter 104 of the Town of Amherst Code, as amended. The Planning Board cannot make a SEQR determination unless a complete Environmental Assessment Form (EAF), including Town of Amherst EAF Addendum, and any required supplementary information such as traffic impact studies, archaeological reports, wetland delineations or geotechnical reports, are submitted. SEQR issues may be discussed with Planning Department staff at a recommended pre-submittal meeting. Unlisted Actions require a Short EAF; Type I Actions require a Full EAF. The following is a link to the NYSDEC website and fillable forms with instructions*:*
   http://www.dec.ny.gov/permits/6191.html.

3. **Review by the Town Design Advisory Board (DAB) is required for Major Site Plans located in the following Mixed-Use zoning districts:**

   Traditional Infill 2.5 (TI-2.5)
   Traditional Infill 4 (TI-4)
   Shallow Corridor 3 (SC-3)
   Deep Corridor 3 (DC-3)
   Deep Corridor 5 (DC-5)
   Center 2.5 (CTR-2.5)
   Center 5 (CTR-5)
   Center 8 (CTR-8)

   The application for DAB review is required to be filed in conjunction with the major site plan application.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

4. The application shall be executed or consented to in writing by the owner of the property.

5. **Any variances from the Zoning Board of Appeals, or any decision from the Town Board (e.g. removal of deed restrictions) must be obtained prior to action by the Planning Board on a Site Plan application.**

6. Submittal of an application grants permission to Town staff and Planning Board members to access the parcel(s) under consideration.

7. All site plan drawings must be prepared by a Registered Architect, Professional Engineer, Landscape Architect, or Land Surveyor (as applicable) licensed to practice in New York State.

8. If you wish to include a Coordinated Sign Plan application with the site plan petition, a separate application must be completed. Contact the Planning Department for a copy of a Coordinated Sign Plan application package.

9. All drawings should be no larger than 24 in. x 36 in. If site characteristics warrant larger plan sheets, they may be accepted subject to Planning Department concurrence. All drawings must also reserve a 4 in. x 6 in. area in the lower right hand corner for official Town use.

APPLICATION PROCEDURES

1. Applicant secures application package from the Planning Department, 5583 Main Street, Williamsville, NY 14221. (716) 631-7051. Forms are also available online at: www.amherst.ny.us, (keyword: Planning).

2. Applicant prepares information as required on the Site Plan Submittal Checklist, attached. NOTE: Some proposals may not require all items on the checklist; please verify with the Planning Department.

3. Applicant schedules an appointment with the Planning Department to review the following:
   - a complete set of site plan drawings, preliminary building elevations and floor plans (no larger than 24" x 36" in size)
   - Environmental Assessment Form (EAF) & Town EAF Addendum
   - any supporting reports and materials
   - verification from the Town Assessor that the address in the application is correct

4. Applicant schedules an application submittal appointment with the Planning Department. NO SITE PLAN WILL BE ACCEPTED FOR REVIEW WITHOUT A PRE-SET SUBMITTAL APPOINTMENT.

5. At the submittal appointment, applicant provides fourteen (14) complete and collated sets of drawings and application information to the Planning Department **(materials will not be accepted unless folded into 9" x 12" in size),** including**:**
   - application form
   - Environmental Assessment Form (EAF)
   - supporting reports / materials
   - complete set of site plan drawings, preliminary building elevations and floor plans (**at least one (1) set of drawings must bear a raised or wet seal and signature of the design professional** who prepared the plans; the remaining copies may be submitted with a facsimile of the seal and signature)
   - digital files of all materials in pdf format
   - an 8½" x 11" reduction of the sketch plan or plat drawing (see Appendix B)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

6. After approval for filing by the Planning Department, applicant submits all necessary fees to the Town Clerk. **(See Schedule of Fees on first page of application and make checks payable to: Town of Amherst.)**

7. The applicant returns a copy of the filing receipt to the Planning Department.

8. The Planning Department transmits remaining thirteen (13) copies of the application and supporting materials to:
   - Assessor
   - Commissioner of Building
   - Town Engineer
   - Superintendent of Highways
   - Traffic/Safety Board
   - Fire Chiefs' Association
   - Plumbing Division
   - Right-of-Way Agent
   - Police Department (if applicable)
   - Zoning Enforcement Officer
   - Other Town and outside agencies, as applicable

9. Within 30 days of its receipt of the complete application for Site Plan approval, each agency completes its review and notifies the Planning Department in writing of its comments or recommendations as required by Ordinance.

10. The applicant may be required to submit revised plans, reports, or materials to address review agency comments. The procedures for submittal of revised plans are as follows:

    - A cover letter addressing all comments received to date is required.
    - "Highlight" the area of change on the drawings and provide a notation describing the change.
    - Revised plans/materials are required. Planning staff should be contacted to determine the number of sets needed.
    - All revised plans and materials must also be provided in an electronic format that contains pdf files of the revised information.

11. The Planning Board reviews the EAF to determine whether a Draft Environmental Impact Statement (DEIS) is required. The petitioner will be advised in the event that a DEIS is required and afforded the opportunity to prepare it. If the petitioner declines, the Planning Board will prepare the DEIS at the petitioner's expense. The public hearing will be held on the DEIS concurrently with the Planning Board hearing on the application.

12. Planning Board Meeting Procedures:

    The applicant or representative presents the project at the public hearing before the Planning Board and is available to answer any questions. The Planning Board may take any of the following actions:

    - Adjourn the hearing to a future Planning Board meeting (hearing remains open).
    - Close the hearing and table action on the site plan to a future Planning Board meeting. (The Planning Board may remove the item from the agenda until such time as all required information is provided.)
    - Close the hearing and make a decision on the site plan.

    All determinations on matters before the Planning Board are made after all public hearings on that meeting's agenda are completed.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

13. A copy of the Planning Board's determination will be provided to the applicant, his / her representative, the Building Commissioner and the Town Clerk approximately 1 week following the Planning Board meeting at which it was heard.

14. If the Planning Board approves a Site Plan with conditions, the Planning Department will work with the applicant to ensure that all conditions of the approval are satisfactorily addressed. When all conditions are satisfied, the applicant submits **seven (7) final copies** of the complete set of all site plan drawings, folded into 9" x 12". For site plans in the Mixed-Use zoning districts, building elevations will also be required.

    All 7 sets must have original wet seals and include the required 4 in. x 6 in area in the lower right hand corner for official Town use. These drawings will be stamped and signed "Approved" by the Planning Director and transmitted to Town Departments for their files and use.

15. A building permit will not be issued by the Building Department until the stamped and signed Site Plan is issued by the Planning Director.

NOTE: Please check with the Planning Department to determine the deadline date for filing applications. Due to the public hearing notice requirements and department reviews, no site plan application will be placed on the Planning Board agenda after the deadline for filing has closed. Scheduling may be delayed if an application is incomplete.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Major Site Plan Review

For Official Use

File #: _____ **Acreage** _____ **Fee $** _____

Address Verified by Assessor's Office _____ VERIFIED BY DATE

Materials Received by Planning Department _____ RECEIVED BY DATE

Fee Paid to Town Clerk _____ RECEIVED BY DATE

Site Plan Review		**Fill In Applicable Fees**
1 acre or less	$1,250.00	_____
Each additional acre or fraction thereof	$ 650.00/acre	_____
Amendments to Site Plans	$1,200.00	_____
Request for Relief of / Change to Conditions of Site Plan Approval	$1,200.00	_____
Request for Extension of Site Plan Approval	$ 450.00	_____
Stormwater Pollution Prevention Plan		
1 - 4.99 Acres	$ 500.00	_____
5 - 10 Acres	$ 750.00	_____
>10 Acres	$1,000.00	_____
Affidavit Fee for Public Hearing	$ 15.00	_____
	TOTAL FEE:	**$**_____

To Be Completed By Applicant

Petitioner:

Name: Benderson Development Company, LLC

Address: 570 Delaware Avenue

Buffalo , New York 14202

city state zip code

Phone: 716-878-9626 Fax: _____

E Mail: _____

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAJOR SITE PLAN APPLICATION (con't) ***Page 2***

Representative (Architect, Engineer, Landscape Architect, Surveyor, or Attorney)**:**

Name: James A. Boglioli

Address: 570 Delaware Avenue

Buffalo , New York 14202
city state zip code

Phone: 716-878-9626 Fax:

E Mail: jmb@benderson.com

Project Location (must be verified by Town Assessor's Office)**:**

Address: 6000 - 6040 North Bailey Avenue

SBL No(s): 54.14-1-12.211, 54.14-1-12.211/A, 54.14-1-12.211/B

Project Name: Two Building additions 5,441sf & 14,554sf

Project Description: Please see the attached letter of intent

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAJOR SITE PLAN APPLICATION (con't) ***Page 3***

If this petition is an amendment to a previously approved site plan, please describe the proposed changes (include type and size of existing structures and number of existing parking spaces):

Please see the attached letter of intent

	existing	proposed	total
Gross Floor Area (non-residential):	246,740	266,735	+19,995
Gross Floor Area Residential:	N/A	N/A	N/A
Number of Residential Units:	N/A	N/A	N/A
Number of Parking Spaces:	452	688	+236

Acreage of Parcel: 17.43

(list each parcel separately)

Frontage on Public Roads: Romney: 945'

(list each road separately) N. Bailey: 445.6'

Existing Zoning District(s) R-D

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Site Plan Submittal Requirements and Checklist

The following checklist outlines the information required by the Planning Department to accept a Site Plan application for review. ***It is strongly recommended that you make an appointment with Planning Staff to determine which items apply to your application***.

Item No.	Item	Submitted	Official use
I Basic Drawing Information			
1.0	**Drawing size not to exceed 24" x 36"**		
2.0	**Title of Drawing**		
3.0	**Name and address of Applicant**		
4.0	**Name of person preparing drawing**		
5.0	**Wet seal/raised seal and signature of NYS licensed architect, engineer, landscape architect, or surveyor (as applicable)**		
6.0	**Project address**		
7.0	**Zoning of subject property and adjacent parcels**		
8.0	**North point, scale, date, and revision date(s)**		
9.0	**4" x 6" reserved area in lower right hand corner for official Town use**		
II Structures, Paved Areas, & Open Space			
1.0	**Existing and Proposed Streets**		
1.1	Names of all existing and proposed streets		
1.2	Width and radii of proposed curb-cuts		
1.3	Existing curb-cuts on adjacent and opposite properties		
1.4	Show ROW width, pavement dimensions, lane widths, pavement markings, and proposed signage on proposed streets		
1.5	Show proposed ROW consistent with planned NYSDOT, Erie County, or Town road projects (if applicable)		
1.6	Show location of proposed cross access to adjacent parcels along with a draft easement		
1.7	Designation of Fire Lanes (if applicable)		
1.8	Fire apparatus access roads		
1.9	Label any proposed roads as public or private		
1.10	Location and dimensions of sidewalks		
1.11	Typical cross sections and profiles of proposed streets, pedestrian walkways, and bikeways		
2.0	**Proposed Structures**		
2.1	Location and complete dimensions of proposed structures		
2.2	Setback dimensions of structure(s) to all property lines		
2.3	Proposed use of structures		
2.4	Gross square feet area of each structure		
2.5	Location of all building entrances		
2.6	Indicate type of roof construction/materials		
2.7	Location, height, and design detail of existing and proposed fences and walls		
2.8	Location of light standards and building mounted lights		
2.9	Location of dumpster and detail of dumpster enclosure with gate		
2.10	Layout and dimensions of the lot(s) proposed for development		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.	Item	Submitted	Official use
II Structures, Paved Areas, & Open Space (cont'd)			
3.0	**Floor Plans with individual rooms and spaces labeled** (fully dimensioned)		
4.0	**Building elevations with height dimensions from finished grade to the highest point of the roof and to midpoint of gable or hip of a pitched roof.** (fully dimensioned)		
4.1	Show screening of mechanical equipment		
5.0	**Parking/Loading/Stacking Areas**		
5.1	Location and complete dimensions of all paved areas		
5.2	Setback dimensions of all paved areas to property lines		
5.3	Dimension of typical parking space and drive aisles		
5.4	Location and layout of handicapped parking spaces & access aisles		
5.5	Detail of vertical signage for handicapped parking and access aisles		
5.6	Indicate minimum parking requirement & number of spaces provided		
5.7	Proposed signage for directing and guiding traffic		
5.8	Curb cut permits from NYS, Erie County, or Town (if applicable)		
5.9	Pedestrian connections (from proposed structures to public sidewalk network)		
6.0	**Location and proposed development of all open spaces, including parks, playgrounds, and open reservations**		
III Utilities and Drainage			
1.0	**Engineers Report** (bound separately from the Stormwater Pollution Prevention Plan [SWPPP])		
1.1	Stamped/sealed and signed by NYS licensed architect or professional engineer		
1.2	Proposed water service sizing, RPZ pressure and fire safety flow and pressure calculations		
1.3	Proposed sanitary sewer facility load calculations (avg. & peak flows) including calculation of the peaking factor		
1.4	Proposed storm drainage facility calculations (see information included with this application)		
2.0	**Grading Plan**		
2.1	Existing and proposed grades indicated (proposed grades may not exceed 1 on 3)		
3.0	**Water Service**		
3.1	Location, size and material of existing and proposed facilities		
3.2	Location of existing and proposed fire hydrant location(s)		
3.3	Indicate use of sprinklers, location of Fire Department connection, and proposed fire protection systems		
3.4	Existing and proposed meter/RPZ size and location		
3.5	Applicable construction details		
4.0	**Sanitary Sewers**		
4.1	Locations, sizes, slopes, inverts, and materials of all existing and proposed facilities		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.		Submitted	Official use
III Utilities and Drainage (cont'd)			
4.2	Applicable construction details		
4.3	Proposed water/oil/grease interceptor sizing calculations by a professional engineer (if applicable)		
5.0	**Storm Drainage**		
5.1	Locations, sizes, slopes, inverts, and materials of existing and proposed storm drainage facilities		
5.2	Connection of roof drains to proposed drainage system		
5.3	Applicable Town Standard construction details		
5.4	Existing and proposed swales and ditches		
5.5	Detention area cross-section and high-level elevations		
5.6	County and State approval for tie-in to existing sewers		
6.0	**Stormwater Pollution Prevention Plan (SWPPP) as applicable** (bound separately from the Engineer's Report) **See attached checklist.**		
7.0	**Natural Gas Service**		
8.0	**Location of transformers, generators and other mechanical equipment; include detail drawings (if applicable)**		
9.0	**Downstream Sanitary Capacity Analysis (DSCA) Report** (must be submitted if proposed average flows are greater than 2,500 gallons per day)		
9.1	The DSCA Report must include a detailed downstream sewer capacity analysis and the calculations of and commitment to (via Developer commitment letter) the required financial contribution to the Town's I/I mitigation fund based on peak flow conditions. The contribution must be based on $250 per gallon per minute of mitigated flow		
IV Lighting Plan			
1.0	**Photometric plan showing light spread in foot candles at property lines**		
1.1	Detail of all light standards, including dimension of height from finished grade		
1.2	Detail of all exterior lighting fixtures		
V Landscape Plan			
1.0	**Wet/raised seal and signature of a licensed Landscape Architect**		
2.0	**Provide a calculation of the total Parking area and a calculation of interior parking area in square feet and as a percentage**		
3.0	**Indicate location, size, number and type of proposed landscape materials**		
4.0	**Indicate location, type and size of <u>all</u> existing trees 4" caliper or larger and indicate which will be removed or retained**		
VI Other Required Information/General Requirements			
1.0	**Complete boundary survey that includes all existing structures, acreage, legal description with reference to a property line, street, or other known feature, and easements plotted to scale by a NYS licensed land surveyor**		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.		Submitted	Official Use
VI Other Required Information/General Requirements (cont'd)			
1.1	Copies of all easements, reciprocal access agreement or similar leag documents		
2.0	**Topographic Survey with a 30 ft. buffer outside all property lines by a NYS licensed land surveyor**		
3.0	**Draft of any deed restrictions, covenants, provisions for home associations and common ownership, and reciprocal easement agreements (as applicable).**		
4.0	**For assessment purposes, state intent to apply for condominium status (if applicable).**		
5.0	**Completed and signed Environmental Assessment Form**		
5.1	Soil boring report and geotechnical report prepared by a qualified Professional Engineer (if applicable)		
5.2	Traffic Impact Study (if applicable)		
5.3	Archaeological survey (if applicable		
5.4	Wetland Delineation report (if applicable)		
6.0	**Show existing zoning(s) of both the subject property and adjacent parcels on the Site Plan and the Landscape Plan**		
7.0	**Location of NYSDEC wetlands (including buffer area) and/or federal wetlands; indicate jurisdictional status**		
8.0	**Location of Floodway and floodplain** (if applicable)		
9.0	**Documentation pertaining to any conditions of zonings, including copies of required deed restrictions; indicate date of rezoning and the parcel address under which it was rezoned (if applicable)**		
10.0	**Documentation related to any required variances granted by the ZBA**		
11.0	**For residential site plans, provide a statement from the appropriate school district that adequate school sites and facilities are available.**		
12.0	**8 1/2" X 11" reduction of primary site plan drawing (see appendix "B" of application package for specifications)**		
13.0	**A CD containing a PDF of all site plan drawings (Must also be provided with revised drawings)**		
VII Additional Required Information for Projects in the Mixed Use Districts			
1.0	**Design Advisory Board Application**		
1.1	Required for Major Site Plan		
1.2	Required at the Planning Directors Discretion for Minor Site Plans		
2.0	**Block & Street Network Plan**		
2.1	Designation of Core, Local & Alley streets		
2.2	Dimensions of Blocks		
3.0	**Block Usage Plan (as applicable)**		
3.1	Designation of site usage for each block including open space areas		
4.0	**Phasing Plan**		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
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For official use only:

_____
Approved/Date

X:\Current_Planning\Application Forms 2013 Working Doc\Major Site Plan\Site Plan Submittal Requirements and Checklist (3).doc

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
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TOWN OF AMHERST
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
-- ADDENDUM --

1. For each applicable category of proposed <u>new</u> structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   _____ Geotechnical report attached _____ Not applicable

3. Is your property located: On Youngs Road between Dodge and Klein Roads? □ Yes □ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? □ Yes □ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? □ Yes □ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   _____
   _____

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: □ Yes □ No

   Describe_____
   _____

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project_____
   Source: _____

8. Will blasting occur during construction? □ Yes □ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? □ Yes □ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
    _____ average flow _____ peak flow.

    (Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources,* is your property 'blue-rated' for historic significance? □ Yes □ No

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NY 14202
716.886.0211.P 716.886.2269.F

November 15, 2023

VIA HAND DELIVERY
Robert J. Gilmour., Chair
Members of the Planning Board
Town of Amherst
5583 Main Street
Williamsville, NY 14221

Re: Application for Site Plan Approval
6000 – 6040 North Bailey Ave, Amherst, New York (BDC: 1723)

Dear Chair Gilmour and Members of the Planning Board:

In connection with the above-referenced property, Benderson Development Company, LLC and Delta Sonic Carwash Systems, Inc. is seeking to relocate its office from downtown Buffalo to Amherst. As part of this relocation, both companies are seeking to relocate approximately 250 employes to Amherst. In addition, Delta Sonic is proposing to locate its various warehouse locations in Western New York to the property which includes, research and development, warehousing, fabrication, and soap blending uses.

The Subject Property

As the Planning Board is aware, Amherst Development Park is a business park located in the Research and Development (RD) zoning district. It maintains frontage on North Bailey Ave. and Romney Road and is improved with five buildings. An aerial photograph of the property is attached as **Exhibit A**. To the north, across Romney Road, is the Boulevard, a large shopping center in the SC zoning district. To the west, abutting the Subject Property, is the Boulevard South, another shopping center in the SC zoning district. To the east, across N. Bailey Road will be another large development anchored by Costco and Dick's and located in the SC zoning district. To the south is an office building and the Boulevard towers, located within the CTR-5 and MFR-5 zoning districts, respectively. The properties located to the north, east and west of the Subject Property are all owned by Benderson Development.

The Proposed Project

In order to accommodate the new offices and the Delta Sonic warehouse, Benderson is proposing the following changes:

- A 5,441 s.f. building expansion to connect the existing 26,709 s.f. and 35,826 s.f. buildings located along Romney Road in the northwest corner of the Subject Property to accommodate the new offices.
- A 14,554 s.f. building expansion to connect the existing 34,632 s.f. and 59,591 s.f. buildings located along rear of the property in the southwest corner of the Subject Property to accommodate Delta Sonic's warehouse uses.
- The reconfiguration of the parking field along Romney Road to add an additional row of parking against Romney Road and the reconfiguration of the parking to the south to add an extra row of parking along the southern property line.

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BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NY 14202
716.886.0211.P 716.886.2269.F

- The reconfiguration of the area between the two buildings (office and warehouse) to add outdoor greenspace, patio area and parking, as well as to re-work the loading docks to the southerly building.

- Additional site, utility, landscaping, sidewalk and other enhancements in connection with the above - referenced changes.

- Upgrading of the building façade to accommodate the new development.

Conclusion

We look forward to working with the Town on this project. We believe this project represents a great development opportunity for this area that is consistent with the previous development of the property. If there are any questions regarding this letter or the enclosed documentation, please feel free to contact me at (716) 878-9626 or jamesboglioli@benderson.com.

Thank you,
BENDERSON DEVELOPMENT COMPANY, LLC
James A. Boglioli
James A. Boglioli, Esq.
Director, Right to Build – Northeast US

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Exhibit A

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
-- ADDENDUM --

1. For each applicable category of proposed new structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Odessa silt loam	Severe	Severe	Severe	Severe	Severe

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   X Geotechnical report attached _____ Not applicable
   Report will be submitted as soon as it is completed

3. Is your property located: On Youngs Road between Dodge and Klein Roads? ☐ Yes ☑ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? ☐ Yes ☑ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? ☐ Yes ☑ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   Blvd Consumer Square; Amherst Commerce park; Maple Crossing; Blvd South (TJ Maxx Plaza);
   1401 - 1405 Niagara Falls Blvd; 3980 Maple Road; 50 Keph Drive; 1715 & 1721 Niagara Falls Blvd

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: ☐ Yes ☑ No

   Describe_____
   _____

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project 77 TOTAL TRIPS
   Source: ITE - Trip Generation Manual

8. Will blasting occur during construction? ☐ Yes ☑ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? ☐ Yes ☑ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
    2,000 GPD average flow 12.7 GPM peak flow.

    (Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources,* is your property 'blue-rated' for historic significance? ☐ Yes ☑ No

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:
Proposed Chipotle

Project Location (describe, and attach a location map):
160-190 Main Street, East Aurora, NY

Brief Description of Proposed Action:
The proposed project is to infill an existing 3,196 S.F. vacant space within an existing 15,775 S.F. building with associated utility infrastructure.

Name of Applicant or Sponsor:	Telephone: 716-878-9683
Benderson Development Company, LLC	E-Mail: davidzuppelli@benderson.com

Address:
570 Delaware Ave

City/PO:	State:	Zip Code:
Buffalo	New York	14202

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:	☐	☑

3. a. Total acreage of the site of the proposed action? 3.3 acres
   b. Total acreage to be physically disturbed? 0.03 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 3.34 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:
   ☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban)
   ☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

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	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?	NO	YES
If Yes, identify:	☑	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	NO	YES
	☐	☑
b. Are public transportation services available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑
9. Does the proposed action meet or exceed the state energy code requirements?	NO	YES
If the proposed action will exceed requirements, describe design features and technologies: Existing	☐	☑
10. Will the proposed action connect to an existing public/private water supply?	NO	YES
If No, describe method for providing potable water: Existing	☐	☑
11. Will the proposed action connect to existing wastewater utilities?	NO	YES
If No, describe method for providing wastewater treatment: Existing	☐	☑
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	NO	YES
	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☑	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	NO	YES
	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres:		

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14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☑ Urban ☐ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☐	☑
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☐	☑
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: Sheet drain to existing site storm infrastructure		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☑	☐

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: David Zuppelli Date: 9.6.24

Signature:  Title: Civil Engineer

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PRINT FORM

CARMINAWOOD
DESIGN

STORMWATER POLLUTION PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES

At

Amherst Development Park
6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

November 2023



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Table of Contents

Section 101 - Scope

Section 102 - Project Name and Location

Section 103 - Operator's Name and Address

Section 104 - Project Description

Section 105 - Runoff Coefficient, Soils and Rainfall Information

Section 106 - Name of Receiving Waters

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Section 111 - Wetlands and/or Other Surface Waters

Section 112 - Erosion and Sediment Controls

- **Section 112.1** - Stabilization Practices
- **Section 112.2** - Structural Practices
- **Section 112.3** - Sequence of Major Activities
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Section 113 - Other Controls

Section 114 - Compliance with Federal, State and Local Regulations

Section 115 - Inspection and Maintenance Procedures

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Section 118 - Spill Prevention Control and Countermeasures (SPCC) Plan

- **Section 118.1** - Materials Covered
- **Section 118.2** - Material Management Practices
- **Section 118.3** - Spill Prevention and Response Procedures

Section 119 - Control of Non-Storm Water Discharges

Section 120 – Storm Water Control Facility Maintenance

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Appendix A Site Location Maps

Appendix B NYSDEC Notice of Intent (NOI)

Appendix C MS4 SWPPP Acceptance Form

Appendix D Engineer's Report

Appendix E NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Appendix F Forms

- Contractor's Certification
- Owner/Operator Certification
- SWPPP Preparer Certification
- NYSDEC Letter of Acknowledgment

Appendix G NYSDEC Notice of Termination (NOT)

Town of Amherst Level 1 Inspection – Post Construction Stormwater Management

Appendix H Construction Documents

Appendix I Standard Erosion Control Details

Appendix J NYSDEC Stormwater Management Inspection Lists

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101 SCOPE

A. **PURPOSE:** Benderson Development Company, LLC has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by Benderson Development Company, LLC; and/or liquidated damages. This section provides a descriptive explanation of Benderson Development Company, LLC Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and electronically submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities. Once a copy of the SPDES permit is received from NYSDEC, a copy will be included in Appendix F of this report.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is not subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to

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comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **<u>General Construction Site Inspection and Maintenance Requirements</u>**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

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B. **Owner or operator Maintenance Inspection Requirements**

1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the **owner or operator** can stop conducting the maintenance inspections. The **owner or operator** shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of the General Permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

The **owner or operator** shall have a **qualified inspector** conduct site inspections in conformance with the following requirements:

Note: The **trained contractor** identified in Part III.A.6 of the General Permit **cannot** conduct the **qualified inspector** site inspections unless they meet the **qualified inspector** qualifications included in Appendix A of the General Permit. In order to perform these inspections, the trained contractor would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A **qualified inspector** shall conduct site inspections for all construction activities identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

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b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the **qualified inspector** shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the **qualified inspector** shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to **disturb greater than five (5) acres** of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been **temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas**, the **qualified inspector** shall conduct a site inspection at least once every thirty (30) calendar days. The **owner or operator** shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice” certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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3. At a minimum, the **qualified inspector** shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The **qualified inspector** shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;

   b. Name and title of person(s) performing inspection;

   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

   d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

   f. Identification of all erosion and sediment control practices that need repair or maintenance;

   g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

   i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

   j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

   k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The **qualified inspector** shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The **qualified inspector** shall attach paper color copies of the digital photographs to the

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inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the **qualified inspector** shall notify the **owner or operator** and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the **qualified inspector**. Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

I. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to submitting the NOT to the Department. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

The Town of Amherst - Notice of Termination Requirement: Prior to submitting the NOT, the Town of Amherst requires a Level 1 inspection of all stormwater management practices. See Appendix G: Town of Amherst Level 1 Inspection – Post Construction Stormwater Management.

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102 PROJECT NAME AND LOCATION

Amherst Development Park

6000-6040 North Bailey Ave

Town of Amherst, County of Erie, New York

42.996°N, 78.817°W

Estimated Area of Site ≈ 17.14 acres

Estimated Area to be Disturbed by Construction Activities ≈ 6.95+/- acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Benderson Development Company, LLC

570 Delaware Ave.

Buffalo, NY 14202

Contact Person: Matt Oates

Telephone: 716-878-9397

104 PROJECT DESCRIPTION

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.14 of which 6.95 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of stormwater management areas including topsoil & seed

D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and parking lot

G. Final grading & landscaping

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H. Construction of buildings

This project is owned by Benderson Development Company, LLC and will be developed by Benderson Development Company, LLC The work area consists of approximately 6.95+/- acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 85. The post-construction runoff curve number for the site will be "CN" = 95. Approximately 6.95+/- acres total will be disturbed by construction activities.

See soils information located in Appendix I.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to an unnamed open/closed drainage system north of the site that discharges to Ellicott Creek and ultimately the Niagara River.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above.

110 HISTORIC PLACES

No critical habitats have been determined to be on the site.

111 WETLANDS AND/OR OTHER SURFACE WATERS

No wetlands or other surface waters are located on the site

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

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B. Use of stabilization method for all slopes having a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

b. The **owner or operator** shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Construct temporary construction exits at locations shown on the Demolition & Erosion Control Plan Sheet.

B. Install perimeter silt fence/silt socks/silt sock in the locations shown on the Demolition & Erosion Control Plan Sheet.

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C. Clear & Grub site.

D. Installation of detention basin to act as sediment basins (do not install bioretention soil or underdrains until stabilized)

E. Commence site grading.

F. Disturbed areas of the site where construction activity has ceased for more than 14 days shall be temporarily seeded and watered.

G. Construction of buildings

H. Installation of proposed utilities

I. Finalize pavement subgrade preparation.

J. Construct all curb, drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all inlets.

K. Dust control.

L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.

M. Install base material as required for pavement.

N. Carry out final grading and seeding and planting.

O. Clean storm system following construction, clean detention basins of any silt and return to design grades.

P. Remove silt fencing/silt sock only after all paving is complete and exposed surfaces are stabilized.

Q. Remove temporary construction exits only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

Refer to Appendix D, Engineer's Report

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

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Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in designated areas which will have temporary erosion & sediment control measures installed. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used

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for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

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B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

The SWPPP for this site development project requires regulated MS4 approval from the Town of Amherst. All changes to the SWPPP must be approved by the Town of Amherst prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the

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filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

   - Inspect catch basins, storm manholes, treatment structures, storm piping and stormwater pond for debris and accumulation of sediment.
   - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
   - Flush piping with water if necessary to remove accumulated sediment.
   - Bioretention areas shall be maintained per the NYSDEC Maintenance and Management Checklist included in this SWPPP.
   - Check all stone outfall structures for erosion and re-stone if necessary to prevent further erosion.
   - Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
   - A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

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Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers

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- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.

2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

3. Products will be kept in their original containers with the original manufacturer's label in legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

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4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm

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water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Amherst. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

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118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These

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individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system

120 STORM WATER CONTROL FACILITY MAINTENANCE

The frequency of inspections for the bioretention areas shall match the frequencies listed on the “Bioretention Operation, Maintenance and Management Inspection Checklist” in Appendix J of the SWPPP.

The proposed catch basins, as per section 115, shall be inspected 4 times per year for removal of floatable debris. Any silt buildup over 6” in depth shall be removed and disposed of properly off-site.

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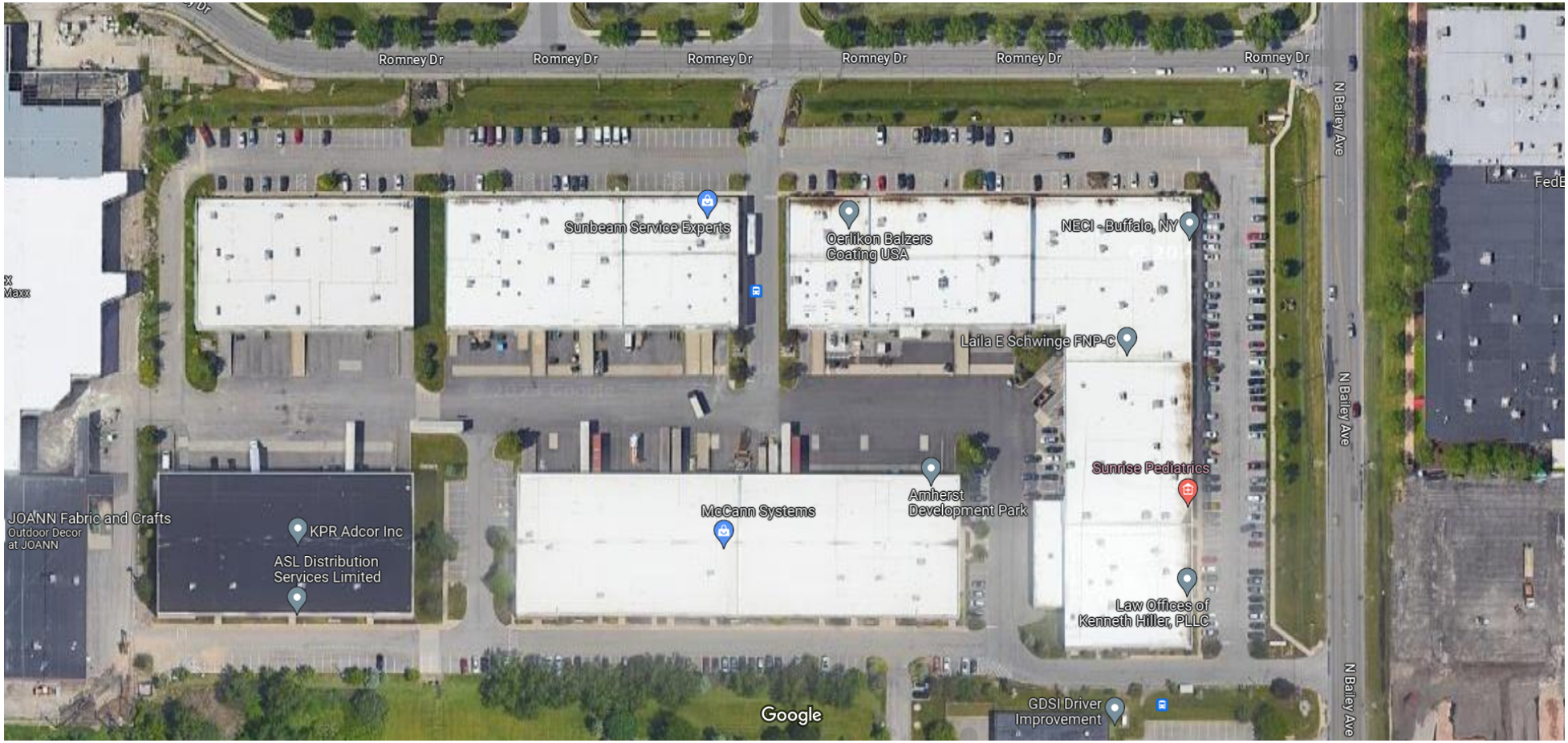
Appendix A

Site Location Maps

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

1.c

Google Maps romney road



Imagery ©2023 Airbus, CNES / Airbus, Maxar Technologies, New York GIS, U.S. Geological Survey, USDA/FPAC/GEO, Map data ©2023 100 ft

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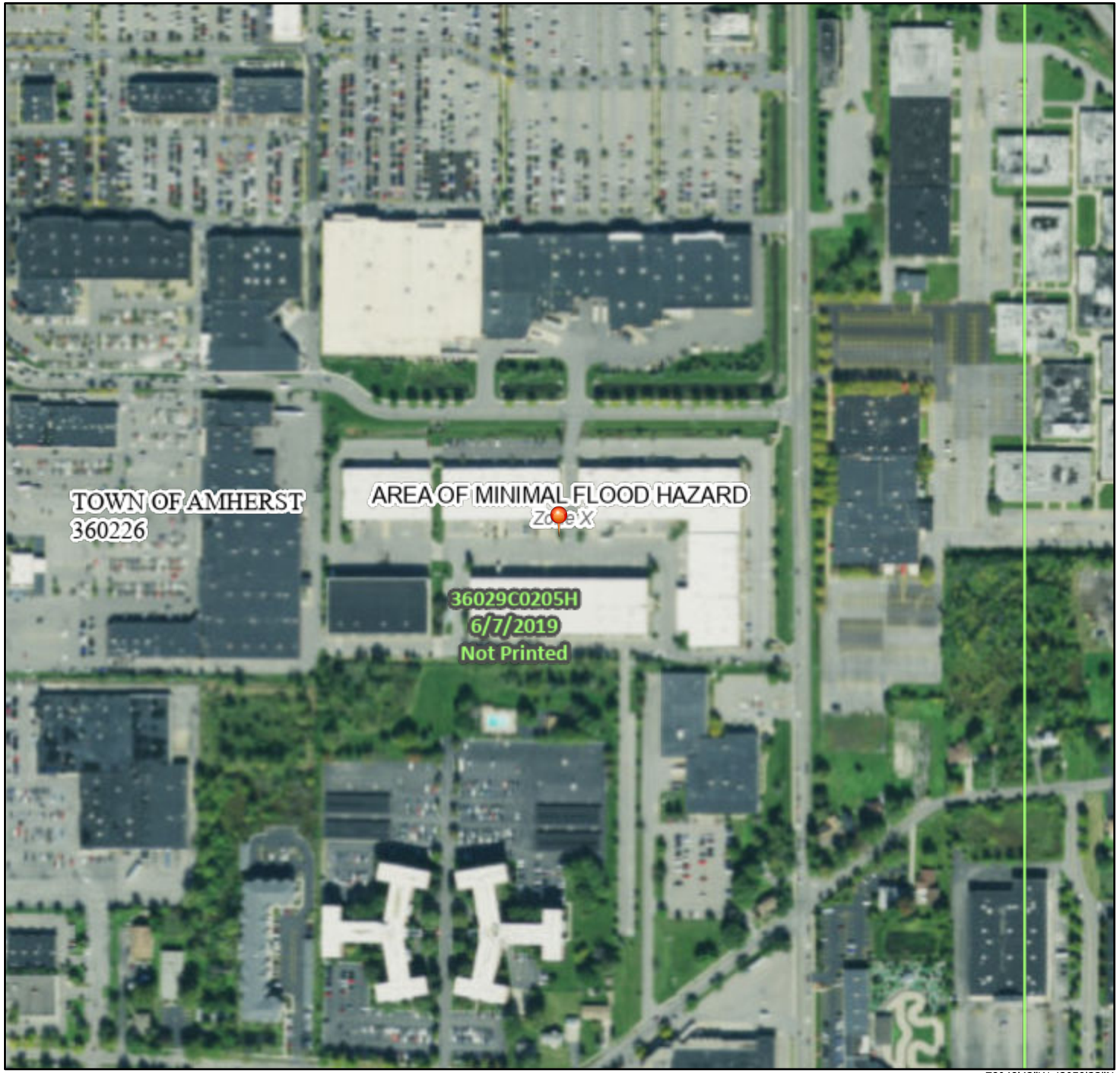
National Flood Hazard Layer FIRMette

78°49'19"W 43°N



78°48'42"W 42°59'33"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BF *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH,*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazar as of 1% annual chance flood with a depth less than one foot or with d areas of less than one square mil
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk du Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zo*
- Effective LOMRs
- Area of Undetermined Flood Haza

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Ch
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an appro point selected by the user and does not r an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This ma was exported on 11/13/2023 at 9:45 AM and does not reflect changes or amendments subsequent to this date an time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following n elements do not appear: basemap imagery, flood zone labe legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized area regulatory purposes.

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CRIS Cultural Resource Information System

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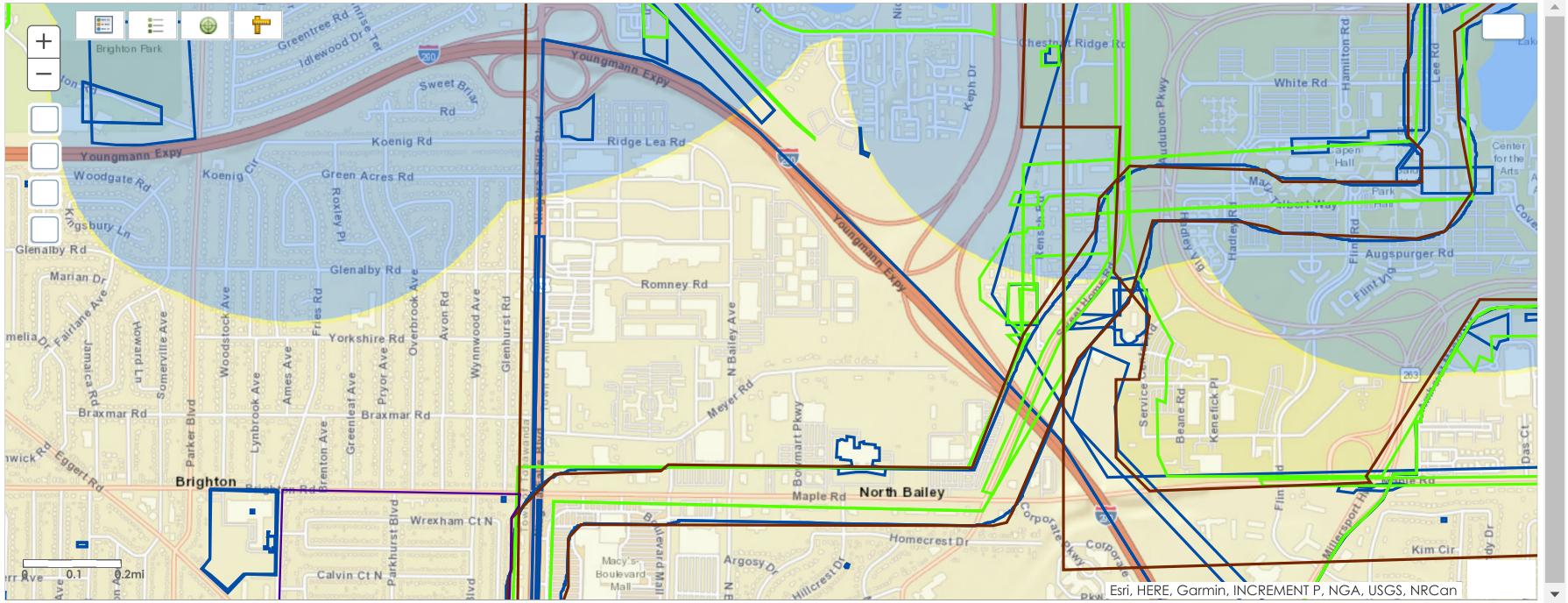

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Version 1.2.18

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Appendix B

NYSDEC Notice of Intent (NOI)

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NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Benderson Development Company

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Oates

Owner/Operator Contact Person First Name
Matt

Owner/Operator Mailing Address
570 Delaware Ave

City
Buffalo

State
NY

Zip
14202 -

Phone (Owner/Operator)
7168780397

Fax (Owner/Operator)
- -

Email (Owner/Operator)
MattOates@benderson.com

FED TAX ID
16-1549911 (not required for individuals)

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Project Site Information

Project/Site Name
Amherst Development Park

Street Address (NOT P.O. BOX)
6000-6040 North Bailey Ave

Side of Street
○ **North** ○ **South** ○ **East** ● **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Town of Amherst

State: NY
Zip: 14226-
County: Erie
DEC Region: 9

Name of Nearest Cross Street
Romney Road

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
○ **North** ● **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
54.14-1-19.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
-7 8817
Ex. -73.749

Y Coordinates (Northing)
42996
Ex. 42.652

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

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3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use	Post-Development Future Land Use
○ FOREST	○ SINGLE FAMILY HOME
○ PASTURE/OPEN LAND	○ SINGLE FAMILY SUBDIVISION
○ CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
○ SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
○ SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
○ TOWN HOME RESIDENTIAL	○ INDUSTRIAL
○ MULTIFAMILY RESIDENTIAL	● COMMERCIAL
○ INSTITUTIONAL/SCHOOL	○ MUNICIPAL
○ INDUSTRIAL	○ ROAD/HIGHWAY
● COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
○ ROAD/HIGHWAY	○ BIKE PATH/TRAIL
○ RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
○ BIKE PATH/TRAIL	○ PARKING LOT
○ LINEAR UTILITY	○ CLEARING/GRADING ONLY
○ PARKING LOT	○ DEMOLITION, NO REDEVELOPMENT
○ OTHER	○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
	○ OTHER

Number of Lots

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
17.1	7.0	3.9	5.9

5. Do you plan to disturb more than 5 acres of soil at any one time? ● **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
0 %	0 %	0 %	100 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
03/01/2024	01/01/2025

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9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name: Ellicott Creek

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ● Yes ○ No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ Yes ● No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ Yes ● No
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ Yes ● No
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ Yes ● No

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15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Town of Amherst & NYSDOT

open/closed stormwater drainage system

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

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24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer: Carmina Wood Design

Contact Name (Last, Space, First): Wood, Christopher

Mailing Address: 487 Main Street Suite 600

City: Buffalo

State: NY Zip: 14203-

Phone: 7168422165 Fax: - -

Email: cwood@carminawooddesign.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name: Christopher **MI**:

Last Name: Wood

Signature:

Date: 11/16/2023

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25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ● Rock Outlet Protection
- ○ Streambank Protection

Other

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Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ● **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.749 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

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7738089822

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)	
RR Techniques (Area Reduction)				
○ Conservation of Natural Areas (RR-1)		and/or		
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or		
○ Tree Planting/Tree Pit (RR-3)		and/or		
○ Disconnection of Rooftop Runoff (RR-4)		and/or		
RR Techniques (Volume Reduction)				
○ Vegetated Swale (RR-5)				
○ Rain Garden (RR-6)				
○ Stormwater Planter (RR-7)				
○ Rain Barrel/Cistern (RR-8)				
○ Porous Pavement (RR-9)				
○ Green Roof (RR-10)				
Standard SMPs with RRv Capacity				
○ Infiltration Trench (I-1)				
○ Infiltration Basin (I-2)				
○ Dry Well (I-3)				
○ Underground Infiltration System (I-4)				
○ Bioretention (F-5)			1.97	
○ Dry Swale (O-1)				
Standard SMPs				
○ Micropool Extended Detention (P-1)				
○ Wet Pond (P-2)				
○ Wet Extended Detention (P-3)				
○ Multiple Pond System (P-4)				
○ Pocket Pond (P-5)				
○ Surface Sand Filter (F-1)				
○ Underground Sand Filter (F-2)				
○ Perimeter Sand Filter (F-3)				
○ Organic Filter (F-4)				
○ Shallow Wetland (W-1)				
○ Extended Detention Wetland (W-2)				
○ Pond/Wetland System (W-3)				
○ Pocket Wetland (W-4)				
○ Wet Swale (O-2)				

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Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
● Other WQ Structure	3.92

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name: TBD

Manufacturer: TBD

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.094 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.056 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.655 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.749

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.230 **acre-feet**

CPv Provided

0.230 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

20.51 **CFS**

Post-development

13.54 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

41.10 **CFS**

Post-development

25.60 **CFS**

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37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Benderson Development Company

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

-RRv is required for any new impervious within a redevelopment project
-Onsite soils with slow infiltration rates (Hydrologic soil group "D")

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40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ● **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name: Matt

MI:

Print Last Name: Oates

Owner/Operator Signature:

Date: / /

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

MS4 SWPPP Acceptance Form

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Benderson Development, LLC
2. Contact Person:	Matt Oates
3. Street Address:	570 Delaware Ave
4. City/State/Zip:	Buffalo, NY 14202
II. Project Site Information	
5. Project/Site Name:	Amherst Development Park
6. Street Address:	6000-6040 North Bailey Ave
7. City/State/Zip:	Amherst, NY 14226
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	Town of Amherst
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

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MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix D

Engineer's Report

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

ENGINEER'S REPORT

for

Amherst Development Park

6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

November 2023



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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- Stormwater Runoff Summaries and Runoff Delineation Maps
- HydroCAD Analysis

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Section 1 – Location & Description

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.14 of which 6.95 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Section 2 – Stormwater Drainage System

The existing site is generally flat. An existing open/closed drainage system onsite drains north to an open swale along the north side of Romney Rd. Three existing 3'x5' arch stormwater conveyance pipes are also located onsite within a 30' wide Town of Amherst Drainage easement. These conveyance pipes flow from the south property line to north and discharge into the open swale along Romney Rd. The existing swale flows east along Romney Rd and north along North Bailey Ave and outlets to an existing stormwater management pond located adjacent to Interstate 290. Runoff from the pond is then conveyed north via open and closed drainage systems and discharges to Ellicott Creek and ultimately the Niagara River. All proposed stormwater runoff from the project site will continue to discharge to the existing stormwater system along Romney Road.

This project is subject to the Boulevard Central Special Stormwater Design Conditions adopted by the Town of Amherst. In addition to the requirements of the NYSDEC SPDES General Permit, the project must also provide the following criteria for Projected Growth Redevelopment Scenarios and Enhanced Phosphorus Removal:

- Provide 10% escalation of proposed peak flow when compared to existing conditions peak flows.
- Median curve number (CN) to compute existing conditions.
- Water Quality volume based on the 1-year, 24-hour storm according to Chapter 10 of the NYSDEC Stormwater Management Design Manual.

For purposes of the runoff analysis and the stormwater drainage system design, portions of the project site were classified as "Redevelopment" per NYSDEC Stormwater Management Design Manual Chapter 9 requirements. The nature of this construction project will be a "Redevelopment" with an increase in impervious area. The proposed stormwater management system was designed to attenuate proposed runoff to existing conditions prior to discharge.

The proposed stormwater drainage system will consist of a combination of overland sheet flow and HDPE pipe channel flow connected by a series of drainage inlets located throughout the project site. Proposed stormwater runoff will be collected and conveyed to an underground stormwater chamber detention area onsite and discharged via outlet control pipes to the existing stormwater system along Romney Road.

The bioretention areas will provide Runoff Reduction and Water Quality volume requirements for "New Development" areas. The filter area planting soil depth varies throughout the bioretention areas but maintains a minimum of at least 18 inches of soil. The 18 inches of soil is an acceptable deviation per the NYSDEC where existing grades prevent the full 2.5'-4' foot soil depth. A series of 6" underdrains below the planting soil will be located throughout the bioretention areas connected by overflow drainage inlets to convey runoff directly to the closed stormwater management system. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover: No existing natural features exist onsite.
2. Calculation of Water Quality Volume (WQv) for site. See "Storm Sewer Drainage Calculations".

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3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity. Bioretention areas were incorporated into the site design to provide required RRv and WQv for "New Development" areas. See "Storm Sewer Drainage Calculations".
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas. See "Storm Sewer Drainage Calculations".
5. Design of volume and peak rate control practices where required. See "Storm Sewer Drainage Calculations".

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality:
The NYSDEC requires water quality treatment prior to discharge. This will be achieved by the application of bioretention areas and water quality treatment structures. The total WQv provided was 0.749 ac-ft and equal to the required WQv of 0.749 ac-ft. The required water quality volume was calculated based on the proposed 6.95 acres of proposed development area.

Runoff Reduction Volume:
The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for contributing runoff areas in the WQv. The RRv provided was 0.094 ac-ft and greater than the required RRv min. of 0.056 ac-ft. The required runoff reduction volume was calculated based on 3.03 acres of proposed "new development" area that includes 1.97 acres of "new impervious" area.

100% of the required WQv was not reduced due to the followings site specific limitations: Drainage areas with impermeable soils, Type D. In addition, below is a summary of how each green infrastructure technique was evaluated and determined to be feasible or infeasible:

1. Conservation of natural areas: no natural existing features present onsite.
2. Sheetflow to riparian buffers or filter strips: no riparian buffers possible on the site; filter strips not feasible given the limited area for development.
3. Vegetated Open Swales: swales were not feasible given the limited area for development.
4. Tree Plantings: new trees were planted throughout the site.
5. Disconnection of Roof Top Runoff: disconnection not feasible for these types of projects.
6. Stream Daylighting: is not feasible given the limited area for development.
7. Rain Garden: bioretention areas installed throughout site.
8. Green Roof: the proposed use of the building makes this an unfeasible practice.
9. Stormwater Planter: this method is not recommended for these types of projects.
10. Rain Barrels & Cisterns: collected water would not be used for irrigation.
11. Porous Pavement: porous pavement is not recommended for areas with impermeable soils (Type D) and areas with sediment laden runoff (salting in winter months).

Channel Protection:
The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 10,004 cf will be accommodated in the stormwater detention areas onsite.

Overbank Flooding:
The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 13.54 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

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Extreme Storm Protection:
The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 25.60 cfs, which is below the existing peak 100-year runoff of 41.10 cfs.

Town of Amherst:
The Town requires that the 25-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event *under the 10% escalation scenario*. Storage of this storm will be provided within the onsite stormwater detention areas. At the 25-year storm event the stormwater drainage system will allow discharge of 19.34 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

Design Criteria:
Storm pipes: 10-year storm
RUNOFF ANALYSIS OF PROPOSED DEVELOPMENT AREA:

STORM EVENT	EXISTING RUNOFF (cfs)	PROPOSED RUNOFF (cfs)	10% ESCALATION (cfs)
1 YEAR	8.12	7.30	8.03
2 YEAR	11.64	9.40	10.34
5 YEAR	16.25	11.90	13.09
10 YEAR	20.51	13.54	14.89
25 YEAR	27.36	18.03	19.83
50 YEAR	33.68	21.83	24.01
100 YEAR	41.10	25.60	28.16

WATER QUALITY SUMMARY:
WQv REQUIRED = 0.749 AC-FT
RRv MIN. REQUIRED = 0.056 AC-FT
RRv PROVIDED WITHIN BIORETENTION AREAS = 0.094 AC-FT
WQv PROVIDED WITHIN BIORETENTION AREAS = 0.234 AC-FT
WQv PROVIDED BY TREATMENT STRUCTURES = 0.515 AC-FT
TOTAL WQv PROVIDED = 0.749 AC-FT

BIORETENTION FILTER AREA SUMMARY:
FILTER AREA = 9,266 SF

See attached “Storm Sewer Drainage Calculations” for additional information.

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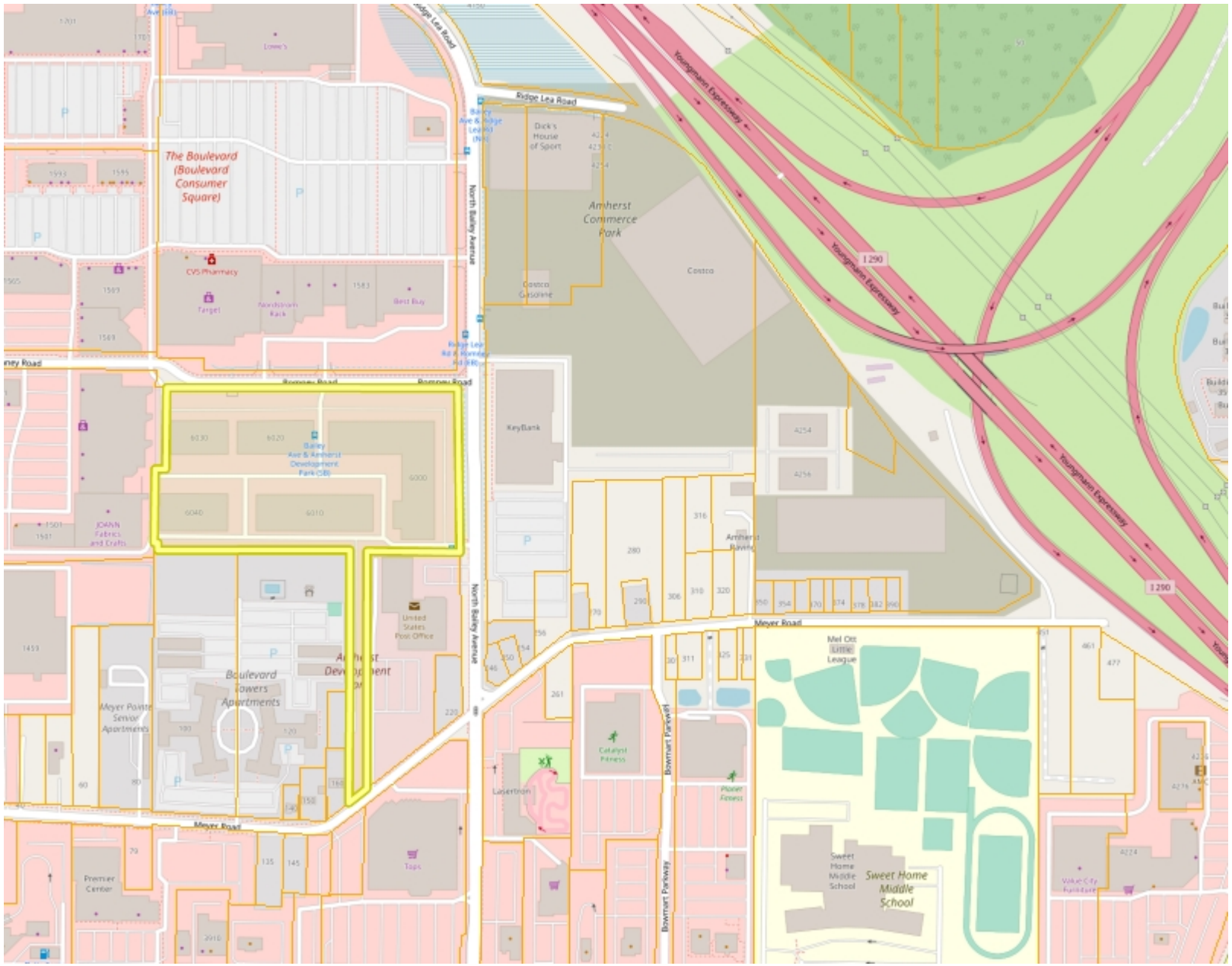
Appendix A

Location Maps

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Erie County On-Line Mapping Application





Legend

- Parcels

0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 9,028

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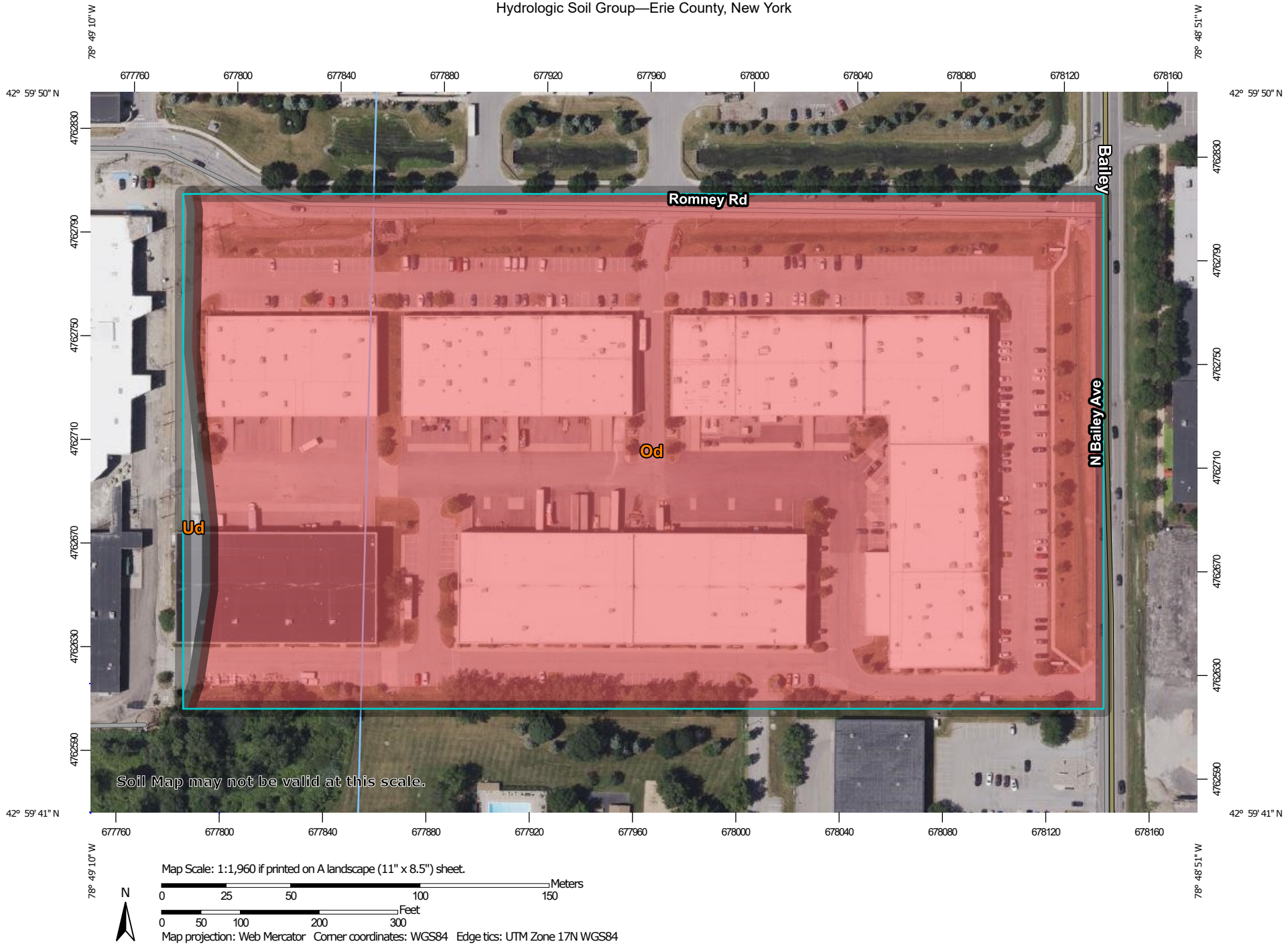
Appendix B

Web Soil Survey – Hydrologic Soils Group

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydrologic Soil Group—Erie County, New York



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MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Erie County, New York
Survey Area Data: Version 23, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 9, 2022—Aug 15, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Od	Odessa silt loam, 0 to 3 percent slopes	D	17.2	98.2%
Ud	Urban land		0.3	1.8%
Totals for Area of Interest			**17.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

Storm Sewer Drainage Calculations

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Water Quality and Runoff Reduction Calculations

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

WATER QUALITY REQUIRED FOR PROPOSED DEVELOPMENT AREA Area, Acres = 6.95

(Note: Reference Chap. 9 NYSDEC Stormwater Design Manual)

"Redevelopment Activity", Acres = 3.92 "New development", Acres = 3.03

(existing, disturbed impervious area)

Total proposed impervious, Acres = 5.89

"New" impervious, Acres = 1.97

Water Quality Volume (WQv) WQv Required = 1-Year, 24-Hour Design Storm

See Attached Worksheet & HydroCAD "WQ1" & "WQ2":

WQ1, Proposed Overall Development Area, ac-ft = 0.749

WQ2, Redevelopment Area, ac-ft = 0.515

Flow Through Alt. Practice = 100% WQv for Redevelopment, ac-ft = 0.515

WQ3, New Development Area, ac-ft = 0.234

Total WQv Required, ac-ft = 0.749

Note: Runoff Reduction Volume (RRv) sizing criteria not required for "Redevelopment Activity" portion of project.

See attached Bioretention Worksheet for RRv sizing for "New Development" portion of project.

RRv PROVIDED FOR PROPOSED DEVELOPMENT AREA (See NYSDEC worksheets)

		WQv, cf	RRv, cf
Min. RRv Req'd, cf = 2,446	Bioretention Area	10,193	4,077
Min. RRv Req'd, ac-ft = 0.056	WQ Treatment Structure(s)	22,433	0
(P=1 yr storm event =1.80 in)	TOTAL, cf	32626.45	4077
	TOTAL, ac-ft	0.749	0.094

WQ & RR SUMMARY (ac-ft):

TOTAL WATER QUALITY PROVIDED FOR PROPOSED DEVELOPMENT AREA 0.749

IS WATER QUALITY VOLUME REQUIREMENT MET? Yes

(WQv provided equal to or greater than WQv required)

IS RUNOFF REDUCTION VOLUME REQUIREMENT MET? Yes

(RRv provided equal to or greater than Min. RRv required)

Revised_/_/_

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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24-4099 AMHERST DEVELOPMENT PARK 11/14/23

WATER QUALITY VOLUME FOR ENHANCED PHOSPHORUS REMOVAL

* WQ_v = 1-YR, 24-HR DESIGN STORM (HYDROCAD)

① PROPOSED OVERALL DEVELOPMENT AREA = 6.95 AC

GREENSPACE =
IMPERVIOUS =
$T_c \leq 5.0$ MIN

→ 1-YR, 24-HR HYDROCAD RUNOFF VOLUME

WQ_1 = 0.749 AC-FT
(SEE ATTACHED "WQ1" HYDROCAD)

② REDEVELOPMENT AREA = 3.92 AC (EXISTING IMPERVIOUS)

1-YR, 24-HR HYDROCAD RUNOFF VOLUME = 0.515 AC-FT
(SEE ATTACHED "WQ2" HYDROCAD)

PER NYSDEC STORMWATER DESIGN MANUAL 10.3.6
* PERFORMANCE CRITERIA: OPTIONS
1. USE 25% WQ_v OF REDEVELOPMENT AREA FOR SMP'S
2. USE 75% WQ_v OF REDEVELOPMENT AREA FOR VOLUME BASED ALTERNATIVE PRACTICE
3. USE 100% WQ_v OF REDEVELOPMENT AREA FOR FLOW THROUGH ALT. PRACTICE

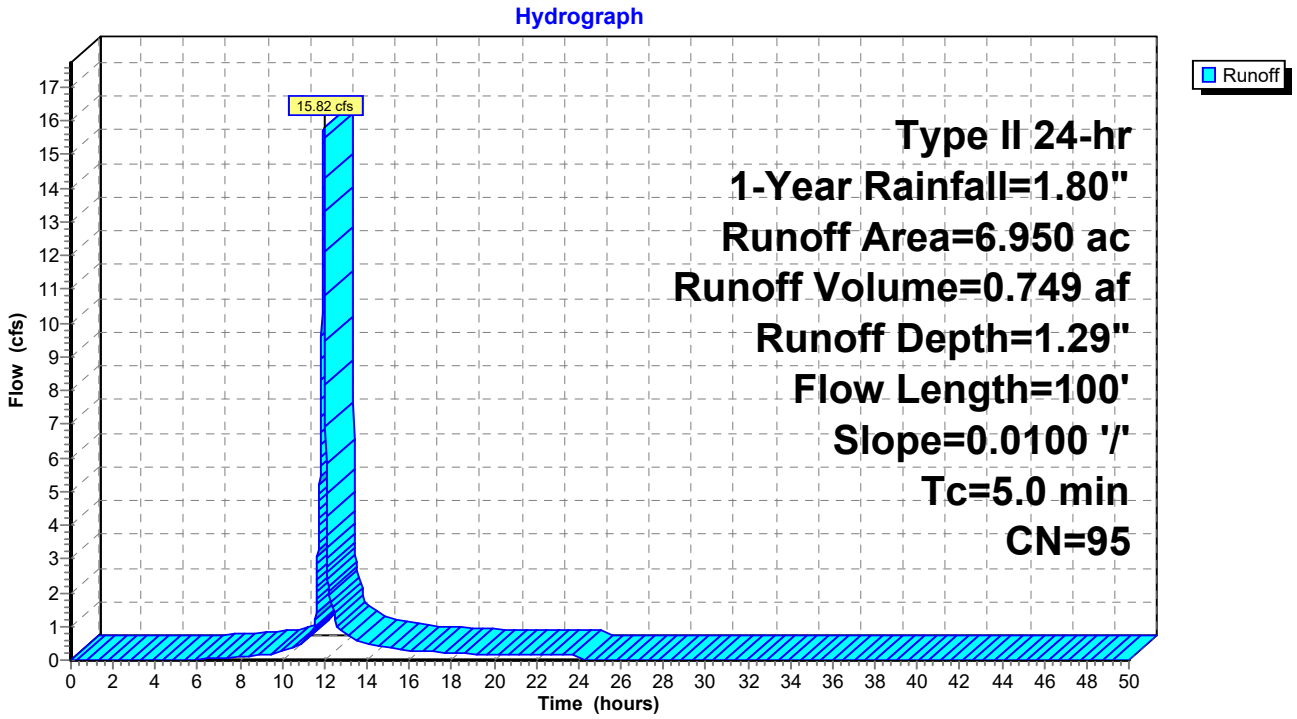
USE OPTION ③
WQ_2 = 0.515 AC-FT

③ NEW DEVELOPMENT AREA =

WQ_3 = 0.749 AC-FT − 0.515 AC-FT = 0.234 AC-FT

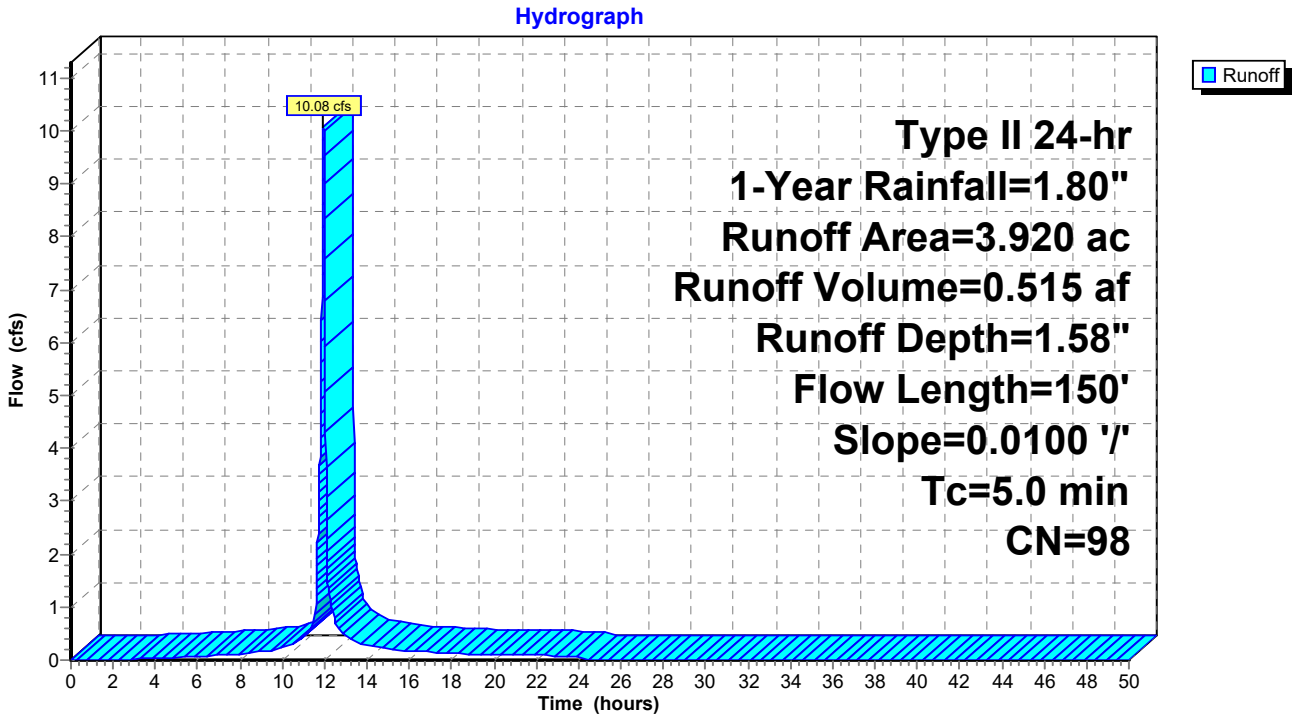
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Subcatchment WQ1: Proposed Site - Overall Area



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Subcatchment 2S: Proposed Site - Redevelopment Area



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

WATER QUALITY TREATMENT STRUCTURE SIZING CALCULATIONS

Area, Acres = 3.92

Water Quality Volume (WQv)

WQv (ac-ft)= 0.515

WQv (cf)= 22,433

Water Quality Peak Flow Calculation for Flow Through Practices

Q, WQv in Watershed Inches = (WQv/A)x12 = 1.577

P = 1.8

"Rational Method" CN Value = $1000/[10 + 5P + 10Q - 10(Q^2 + 1.25\,QP)^{1/2}]$

CN= 98

Initial Abstration: Table 4-I, Ia = 0.041

Ia/P Ratio = 0.023

Tc (HydroCAD), min.= 5

Tc (HydroCAD), hr.= 0.1

Unit Peak Discharge, qu (csm/in) 1000

Peak Discharge (Qp) = qu * A * WQv

Where: A = drainage area, in square miles

WQv = Water Quality Volume, in watershed inches

qu = the unit peak discharge, in cfs/mi²/inch

Qp, (cfs) = 9.656

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Chapter 4 Graphical Peak Discharge Method

This chapter presents the Graphical Peak Discharge method for computing peak discharge from rural and urban areas. The Graphical method was developed from hydrograph analyses using TR-20, "Computer Program for Project Formulation—Hydrology" (SCS 1983). The peak discharge equation used is:

$$q_p = q_u A_m Q F_p \qquad \text{[eq. 4-1]}$$

where:

q_p = peak discharge (cfs)
q_u = unit peak discharge (csm/in)
A_m = drainage area (mi^2)
Q = runoff (in)
F_p = pond and swamp adjustment factor

The input requirements for the Graphical method are as follows: (1) T_c (hr), (2) drainage area (mi^2), (3) appropriate rainfall distribution (I, IA, II, or III), (4) 24-hour rainfall (in), and (5) CN. If pond and swamp areas are spread throughout the watershed and are not considered in the T_c computation, an adjustment for pond and swamp areas is also needed.

Peak discharge computation

For a selected rainfall frequency, the 24-hour rainfall (P) is obtained from appendix B or more detailed local precipitation maps. CN and total runoff (Q) for the watershed are computed according to the methods outlined in chapter 2. The CN is used to determine the initial abstraction (I_a) from table 4-1. I_a / P is then computed.

If the computed I_a / P ratio is outside the range in exhibit 4 (4-I, 4-IA, 4-II, and 4-III) for the rainfall distribution of interest, then the limiting value should be used. If the ratio falls between the limiting values, use linear interpolation. Figure 4-1 illustrates the sensitivity of I_a / P to CN and P.

Peak discharge per square mile per inch of runoff (q_u) is obtained from exhibit 4-I, 4-IA, 4-II, or 4-III by using T_c (chapter 3), rainfall distribution type, and I_a / P ratio. The pond and swamp adjustment factor is obtained from table 4-2 (rounded to the nearest table value). Use worksheet 4 in appendix D to aid in computing the peak discharge using the Graphical method.

Figure 4-1 Variation of I_a / P for P and CN

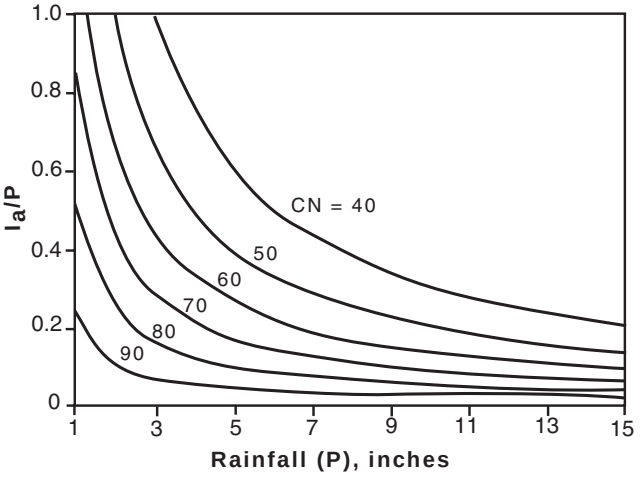
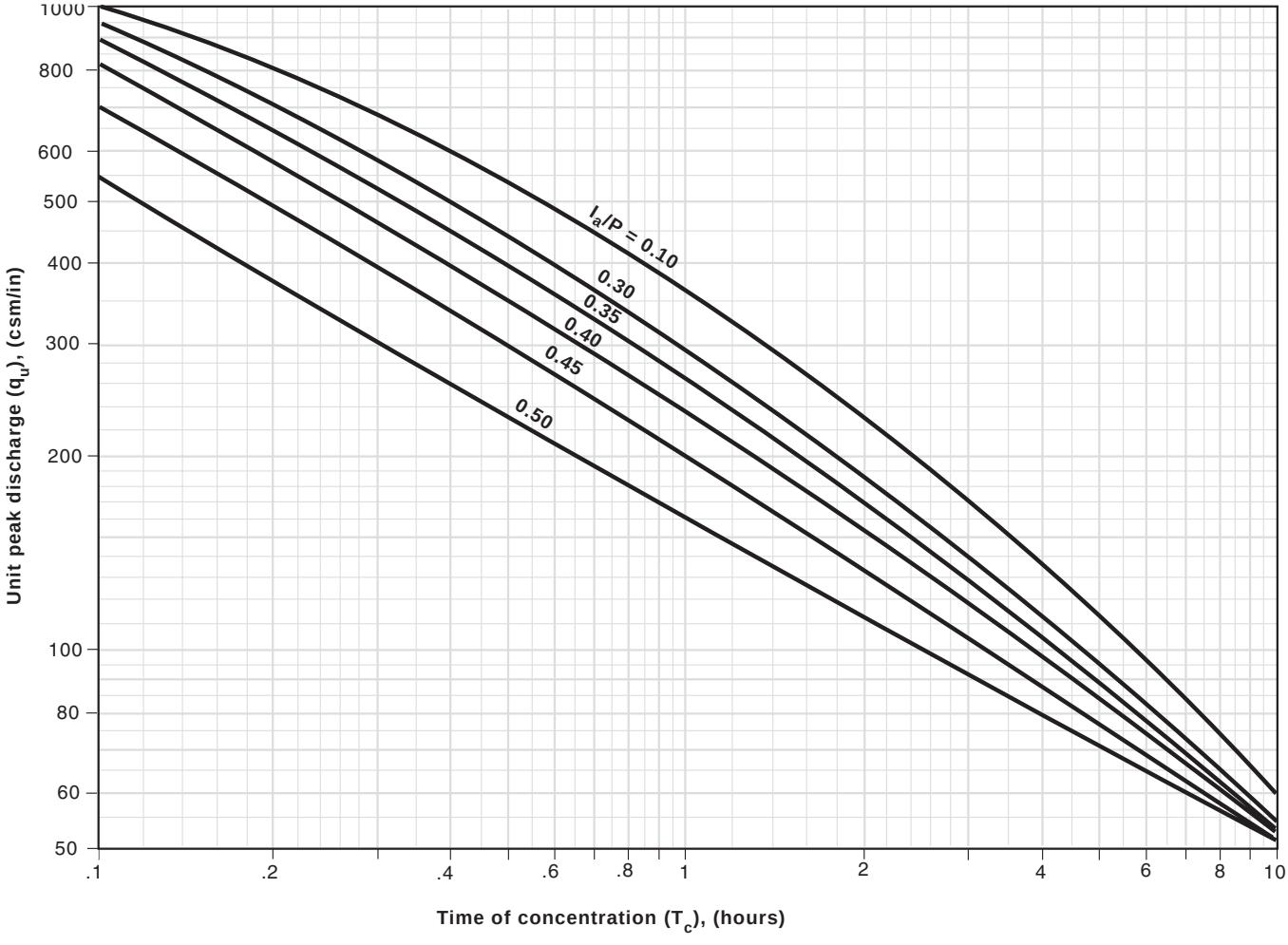


Table 4-1 I_a values for runoff curve numbers

Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Exhibit 4-II Unit peal discharge (q_u) for NRCS (SCS) type II rainfall distribution



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	No

Design Point:		
P=	1.80	*inch*

Manually enter P, Total Area and Impervious Cover.

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	3.03	1.97	65%	0.64	12,575	
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	3.03	1.97	65%	0.64	**12,575**	**Subtotal 1**
Total	3.03	1.97	65%	0.64	**12,575**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

Technique	Total Contributing Area *(Acre)*	Contributing Impervious Area *(Acre)*	Notes
Conservation of Natural Areas	0.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to 150 feet*
Filter Strips	0.00	0.00	
Tree Planting	3.03	1.97	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**3.03**	**1.97**	

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	3.03	1.97	65%	0.64	12,575
Subtract Area	-3.03	-1.97			
WQv adjusted after Area Reductions	**0.00**	**0.00**	0%	0.05	0
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	0.00	0.00	0%	0.05	**0**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**3.03**	20%
Total Area	3.03	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	1.97	*acre*
Precipitation	1.8	*in*
Rv	0.95	
Minimum RRv	**2,446**	***ft3***
	0.06	af

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	3.03	1.97	0.65	0.64	12574.68	1.80	
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	65%	0.64	12,575	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate		*in/hour*	
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		12,575	*ft^3*	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.25	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**11432**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	96.25	*ft*	
Filter Length	96.27	*ft*	
Filter Area	9265.9875	*ft^2*	
Actual Volume Provided	10193	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?		No	Select Practice	N/A
RRv	4,077			
RRv applied	**4,077**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	8,498	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	Error		*Check to be sure Area provided ≥ Af*	

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Stormwater Runoff Summaries and Runoff Delineation Maps

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New York
Location	New York, United States
Latitude	42.996 degrees North
Longitude	78.817 degrees West
Elevation	170 feet
Date/Time	Mon Nov 13 2023 09:29:03 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.41	0.50	0.66	0.82	1.00	**1yr**	0.71	0.93	1.13	1.34	1.56	1.80	2.09	**1yr**	1.60	2.01	2.42	2.91	3.39	**1yr**
2yr	0.30	0.47	0.58	0.77	0.96	1.18	**2yr**	0.83	1.08	1.34	1.59	1.87	2.18	2.46	**2yr**	1.93	2.36	2.78	3.31	3.80	**2yr**
5yr	0.36	0.56	0.70	0.94	1.20	1.48	**5yr**	1.03	1.35	1.67	1.98	2.30	2.65	3.00	**5yr**	2.34	2.89	3.37	3.97	4.54	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.76	**10yr**	1.22	1.61	1.98	2.34	2.70	3.07	3.49	**10yr**	2.72	3.36	3.90	4.56	5.19	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.20	**25yr**	1.53	2.01	2.48	2.90	3.32	3.73	4.27	**25yr**	3.30	4.10	4.74	5.48	6.20	**25yr**
50yr	0.54	0.87	1.11	1.55	2.09	2.60	**50yr**	1.81	2.39	2.94	3.42	3.88	4.33	4.97	**50yr**	3.83	4.78	5.49	6.30	7.10	**50yr**
100yr	0.61	0.99	1.28	1.82	2.48	3.10	**100yr**	2.14	2.84	3.49	4.04	4.55	5.03	5.79	**100yr**	4.45	5.57	6.36	7.24	8.13	**100yr**
200yr	0.71	1.15	1.49	2.14	2.95	3.68	**200yr**	2.54	3.39	4.14	4.77	5.33	5.84	6.75	**200yr**	5.17	6.49	7.37	8.32	9.31	**200yr**
500yr	0.85	1.39	1.82	2.64	3.70	4.62	**500yr**	3.19	4.27	5.19	5.93	6.57	7.13	8.26	**500yr**	6.31	7.95	8.96	10.01	11.14	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.35	0.42	0.57	0.70	0.87	**1yr**	0.61	0.85	0.86	1.15	1.44	1.62	1.90	**1yr**	1.44	1.83	2.08	2.63	3.10	**1yr**
2yr	0.29	0.45	0.55	0.75	0.92	1.06	**2yr**	0.80	1.04	1.16	1.42	1.71	2.10	2.35	**2yr**	1.86	2.26	2.67	3.19	3.66	**2yr**
5yr	0.33	0.51	0.63	0.86	1.10	1.26	**5yr**	0.95	1.23	1.38	1.67	2.01	2.43	2.71	**5yr**	2.15	2.60	3.03	3.61	4.08	**5yr**
10yr	0.36	0.55	0.68	0.95	1.23	1.42	**10yr**	1.06	1.39	1.56	1.87	2.26	2.71	3.01	**10yr**	2.40	2.89	3.32	3.95	4.41	**10yr**
25yr	0.41	0.62	0.77	1.10	1.45	1.67	**25yr**	1.25	1.64	1.81	2.18	2.64	3.12	3.44	**25yr**	2.76	3.31	3.73	4.42	4.84	**25yr**
50yr	0.45	0.68	0.84	1.21	1.63	1.88	**50yr**	1.41	1.84	2.02	2.43	2.95	3.47	3.82	**50yr**	3.07	3.67	4.05	4.82	5.18	**50yr**
100yr	0.49	0.74	0.92	1.33	1.83	2.12	**100yr**	1.58	2.07	2.25	2.70	3.31	3.88	4.21	**100yr**	3.43	4.05	4.39	5.25	5.53	**100yr**
200yr	0.53	0.80	1.02	1.47	2.06	2.40	**200yr**	1.77	2.34	2.49	2.99	3.69	4.34	4.65	**200yr**	3.84	4.47	4.74	5.69	5.88	**200yr**
500yr	0.60	0.90	1.16	1.68	2.39	2.81	**500yr**	2.06	2.74	2.83	3.40	4.23	5.08	5.31	**500yr**	4.50	5.11	5.18	6.32	6.32	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.30	0.46	0.56	0.75	0.93	1.07	**1yr**	0.80	1.05	1.20	1.41	1.70	1.93	2.33	**1yr**	1.71	2.24	2.61	3.09	3.63	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.16	**2yr**	0.86	1.13	1.28	1.56	1.86	2.28	2.58	**2yr**	2.02	2.48	2.95	3.48	4.03	**2yr**
5yr	0.39	0.60	0.74	1.02	1.30	1.53	**5yr**	1.12	1.50	1.68	2.06	2.44	2.88	3.31	**5yr**	2.55	3.18	3.75	4.36	5.04	**5yr**
10yr	0.46	0.71	0.88	1.22	1.58	1.89	**10yr**	1.37	1.84	2.09	2.55	3.01	3.45	4.01	**10yr**	3.05	3.86	4.52	5.17	6.02	**10yr**
25yr	0.58	0.89	1.10	1.58	2.07	2.51	**25yr**	1.79	2.45	2.79	3.39	3.98	4.40	5.18	**25yr**	3.89	4.98	5.84	6.52	7.63	**25yr**
50yr	0.69	1.05	1.31	1.88	2.53	3.11	**50yr**	2.18	3.04	3.47	4.22	4.91	5.28	6.28	**50yr**	4.68	6.04	7.10	7.79	9.17	**50yr**
100yr	0.83	1.25	1.56	2.26	3.10	3.85	**100yr**	2.68	3.77	4.33	5.24	6.07	6.33	7.62	**100yr**	5.60	7.33	8.59	9.30	10.98	**100yr**
200yr	0.99	1.48	1.88	2.72	3.80	4.78	**200yr**	3.28	4.67	5.42	6.54	7.50	7.57	9.24	**200yr**	6.70	8.88	10.46	11.13	13.20	**200yr**
500yr	1.25	1.87	2.40	3.49	4.96	6.37	**500yr**	4.28	6.22	7.30	8.75	9.94	9.62	11.94	**500yr**	8.52	11.48	13.59	14.13	16.77	**500yr**

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CARMINAWOOD
DESIGN

24-4099 AMHERST DEVELOPMENT PARK 11/15/23

STORMWATER DRAINAGE ANALYSIS

-PROJECTED GROWTH REDEVELOPMENT SCENARIO-

- USE MEDIAN CURVE NUMBER (CN) FOR EXISTING RUNOFF AREAS

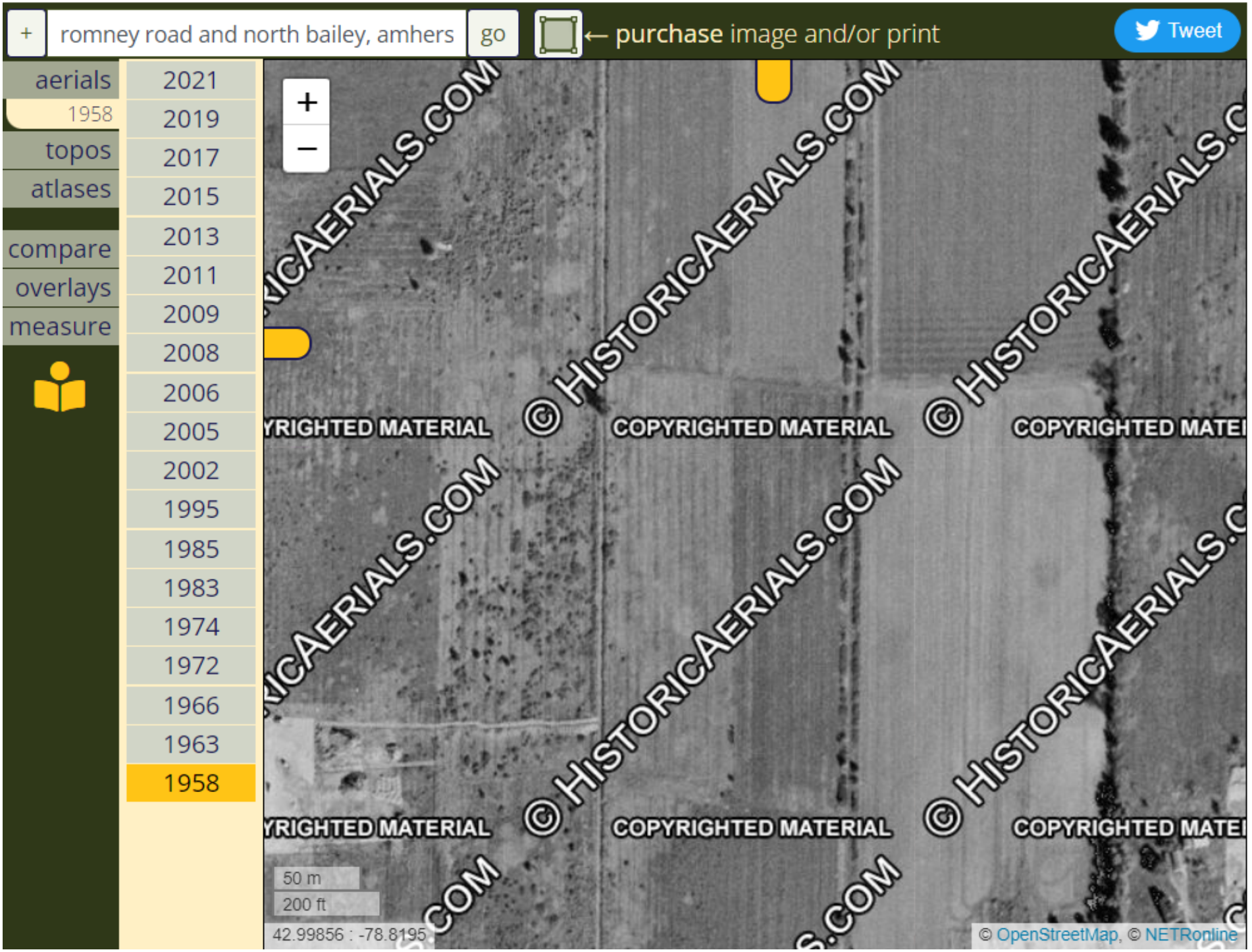
  50% RUNOFF RATE EXISTING LAND COVER
  50% PRIOR TO DEVELOPMENT (1958 HISTORIC AERIAL)
  MEADOW / FARM FIELD

- TOTAL EXISTING AREA = 6.95 AC.

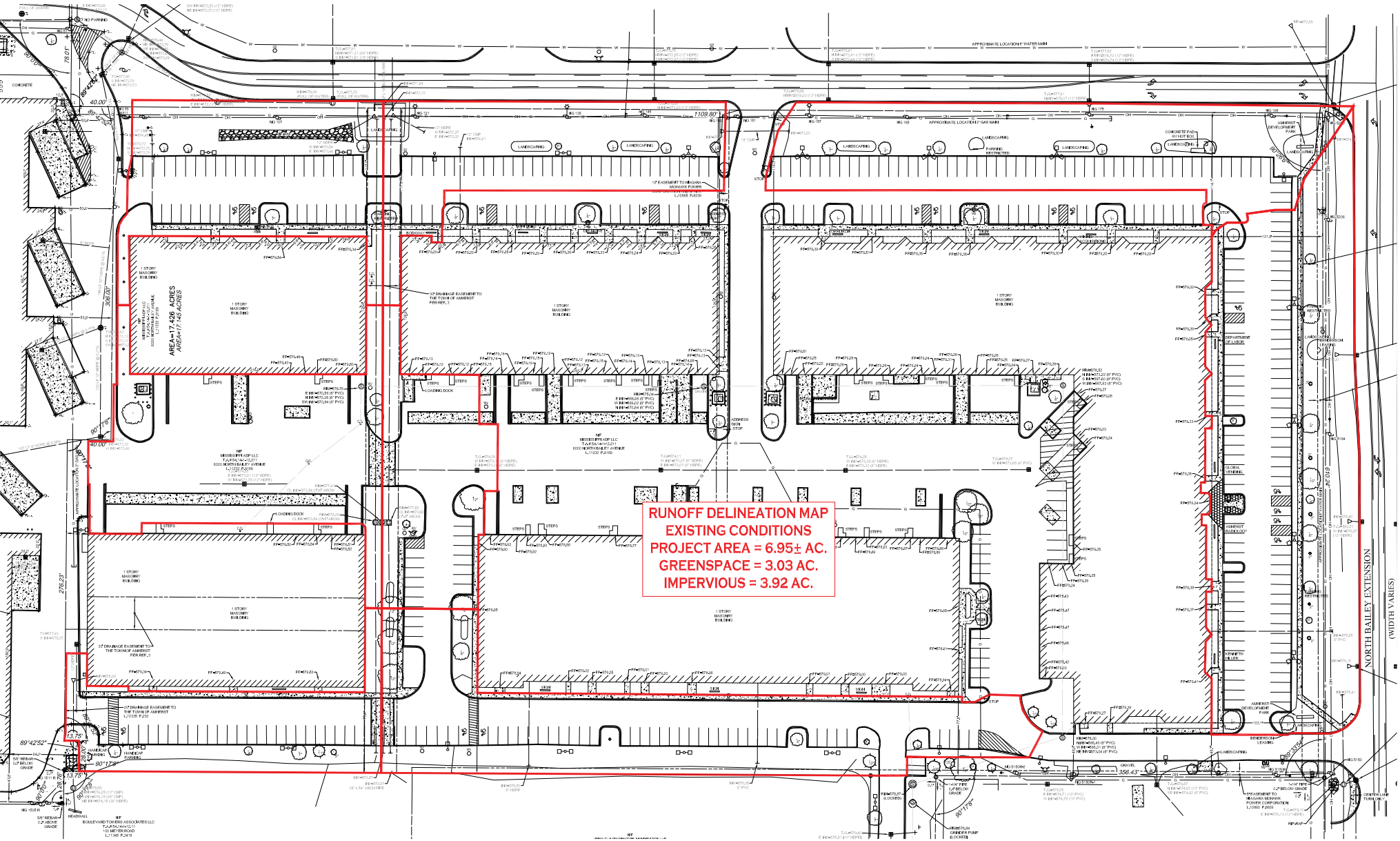
  GRASS/LANDSCAPED = 3.03 AC.
  IMPERVIOUS = 3.92 AC.

(15) APPLY MEDIAN CN: MEADOW/FARM FIELD = 3.48 AC.
GRASS/LANDSCAPED = 1.52 AC.
IMPERVIOUS = 1.95 AC.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey

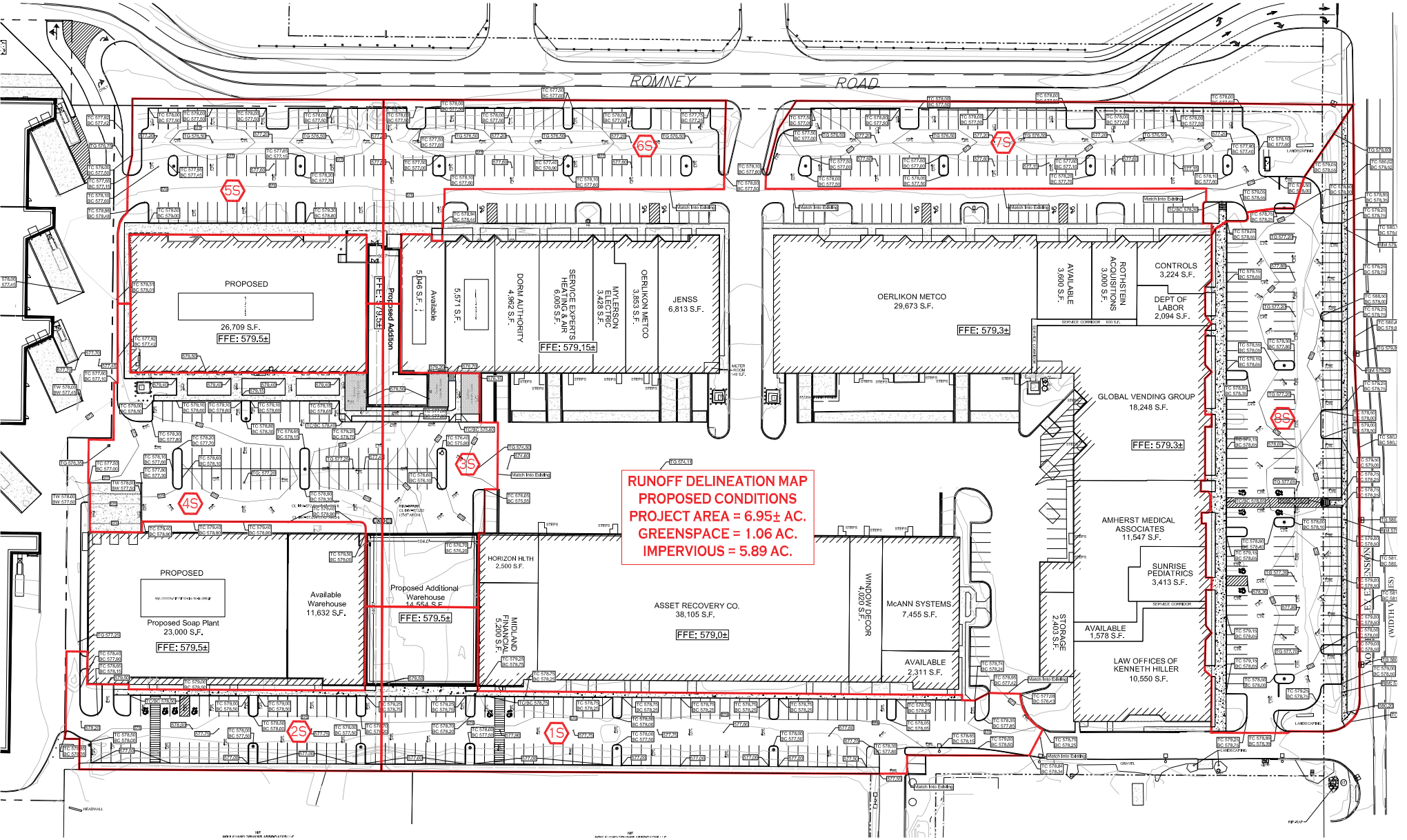


Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey

Events for Subcatchment 1S: Existing Site

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	1.80	8.12	0.378	0.65
2-Year	2.18	11.64	0.538	0.93
5-Year	2.65	16.25	0.752	1.30
10-Year	3.07	20.51	0.954	1.65
25-Year	3.73	27.36	1.285	2.22
50-Year	4.33	33.68	1.595	2.75
100-Year	**5.03**	**41.10**	**1.967**	**3.40**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey

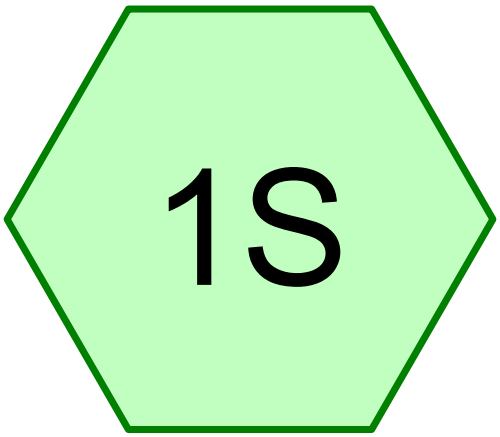
Events for Pond 1P: Detention Storage & Outlet

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)	10% Escalation (cfs)
1-Year	15.93	7.30	572.35	10,004	8.03
2-Year	20.03	9.40	572.49	12,348	10.34
5-Year	25.06	11.90	572.66	15,215	13.09
10-Year	29.54	13.54	572.83	17,843	14.89
25-Year	36.53	18.03	573.09	21,706	19.83
50-Year	42.86	21.83	573.37	25,076	24.01
100-Year	**50.20**	**25.60**	**573.83**	**29,010**	28.16

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

HydroCAD Analysis

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Existing Site

Subcat Reach Pond Link

Routing Diagram for 23-4099 Existing
Prepared by Carmina Wood Morris, PC, Printed 11/15/2023
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Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.520	84	50-75% Grass cover, Fair, HSG D (1S)
1.950	98	Impervious (1S)
3.480	78	Meadow, non-grazed, HSG D (1S)
6.950	**85**	**TOTAL AREA**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
5.000	HSG D	1S
1.950	Other	1S
6.950		**TOTAL AREA**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchmen Numbers
0.000	0.000	0.000	1.520	0.000	1.520	50-75% Grass cover, Fair	1S
0.000	0.000	0.000	0.000	1.950	1.950	Impervious	1S
0.000	0.000	0.000	3.480	0.000	3.480	Meadow, non-grazed	1S
0.000	**0.000**	**0.000**	**5.000**	**1.950**	**6.950**	**TOTAL AREA**	

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=0.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=8.12 cfs 0.378 af

Total Runoff Area = 6.950 ac Runoff Volume = 0.378 af Average Runoff Depth = 0.65"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

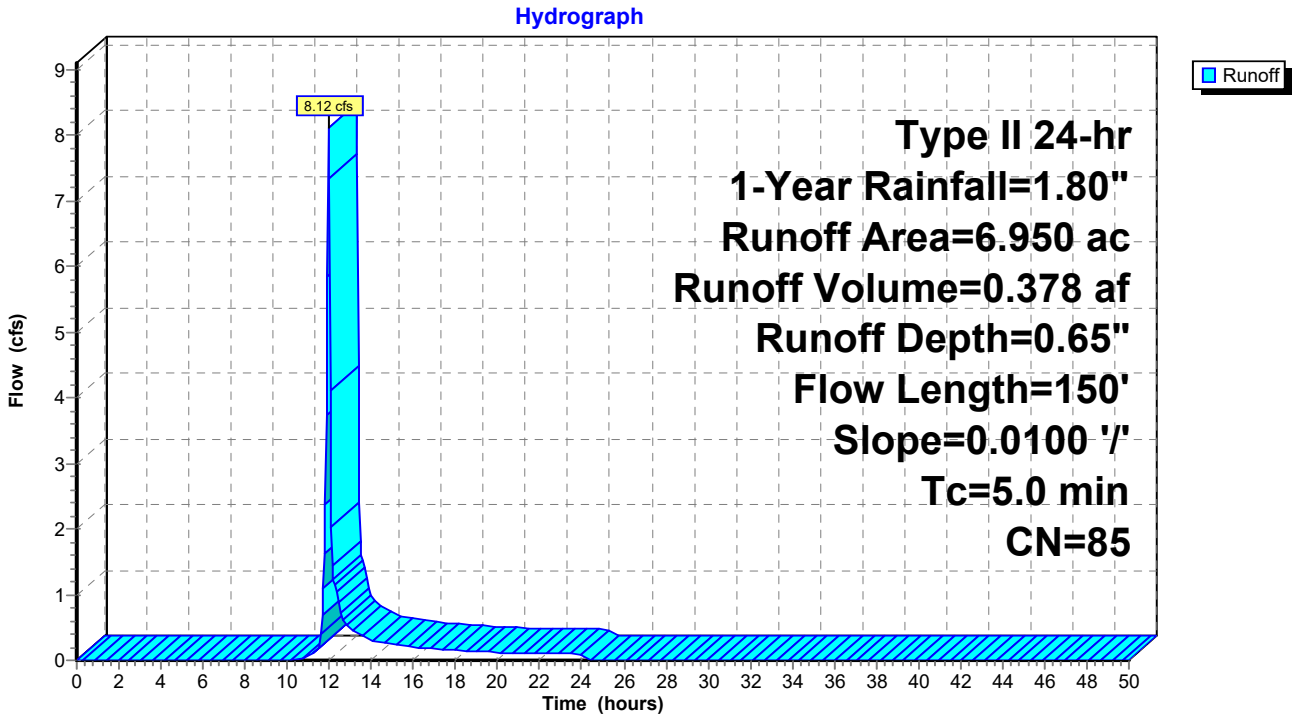
Runoff = 8.12 cfs @ 11.96 hrs, Volume= 0.378 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=1.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=20.51 cfs 0.954 af

Total Runoff Area = 6.950 ac Runoff Volume = 0.954 af Average Runoff Depth = 1.65"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

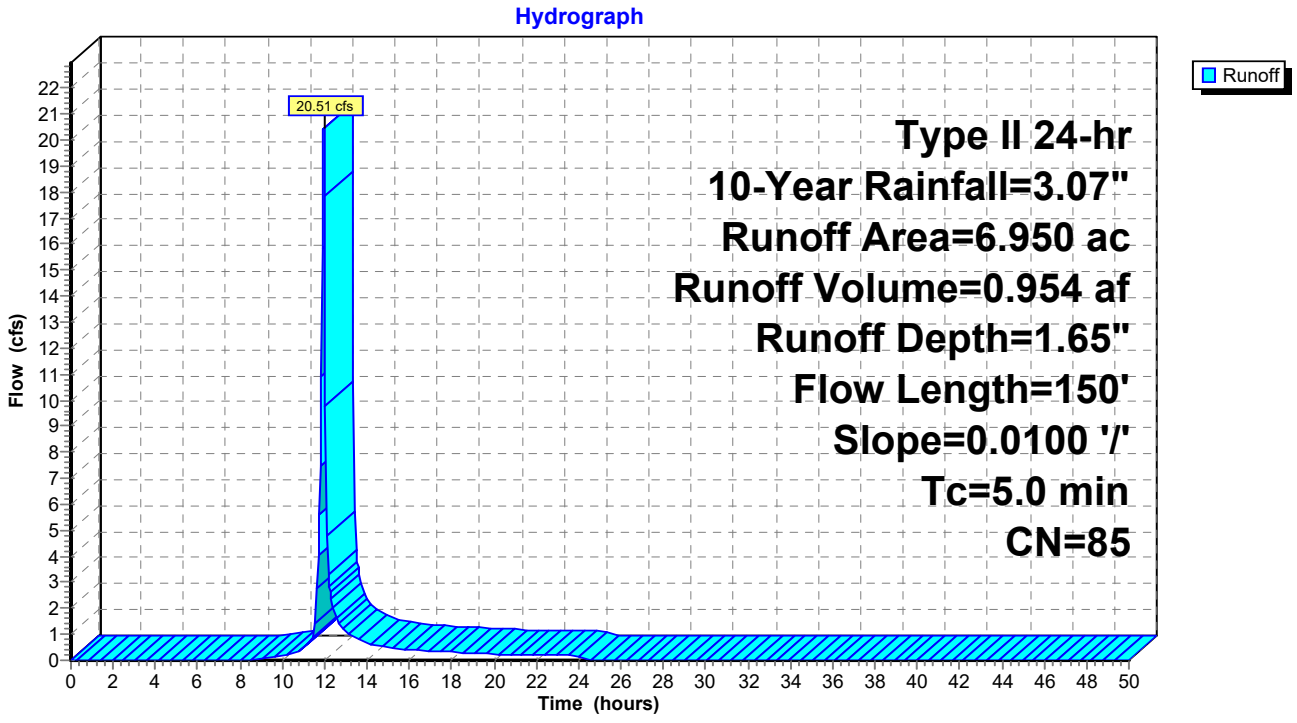
Runoff = 20.51 cfs @ 11.96 hrs, Volume= 0.954 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=2.22"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=27.36 cfs 1.285 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.285 af Average Runoff Depth = 2.22"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

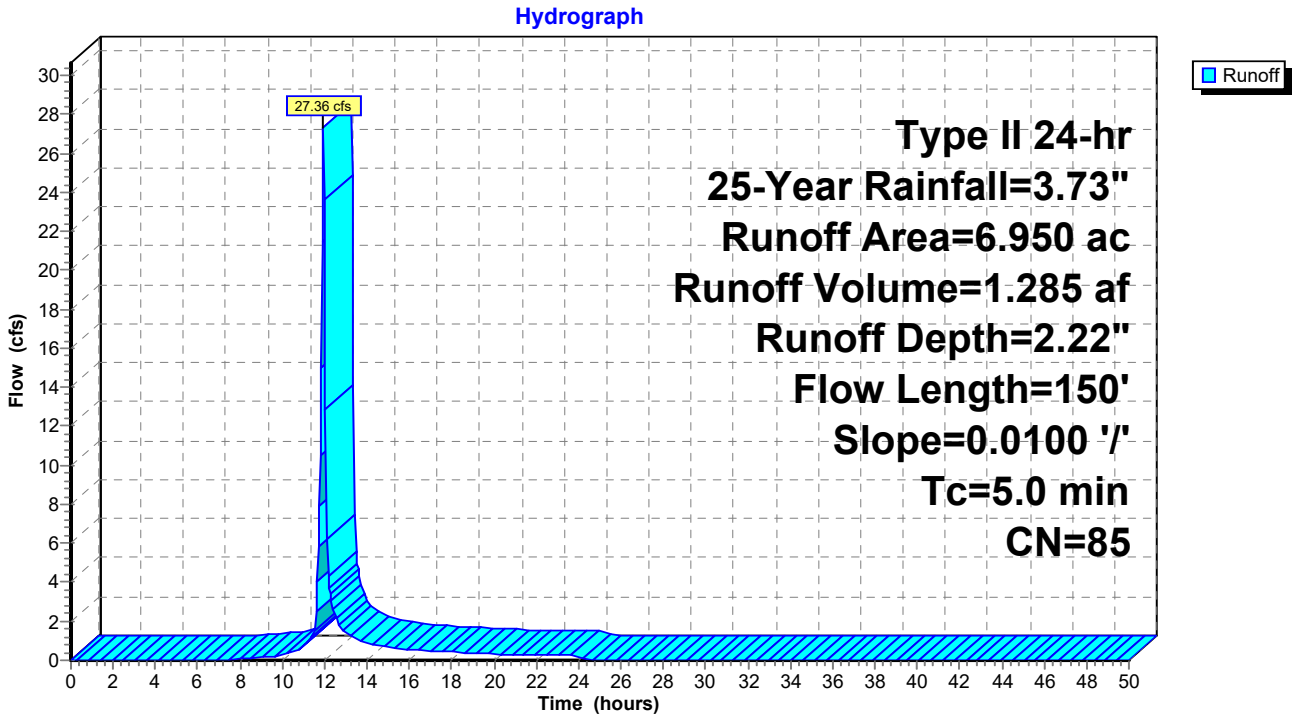
Runoff = 27.36 cfs @ 11.96 hrs, Volume= 1.285 af, Depth= 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=6.950 ac 28.06% Impervious Runoff Depth=3.40"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=41.10 cfs 1.967 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.967 af Average Runoff Depth = 3.40"
71.94% Pervious = 5.000 ac 28.06% Impervious = 1.950 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site

[49] Hint: Tc<2dt may require smaller dt

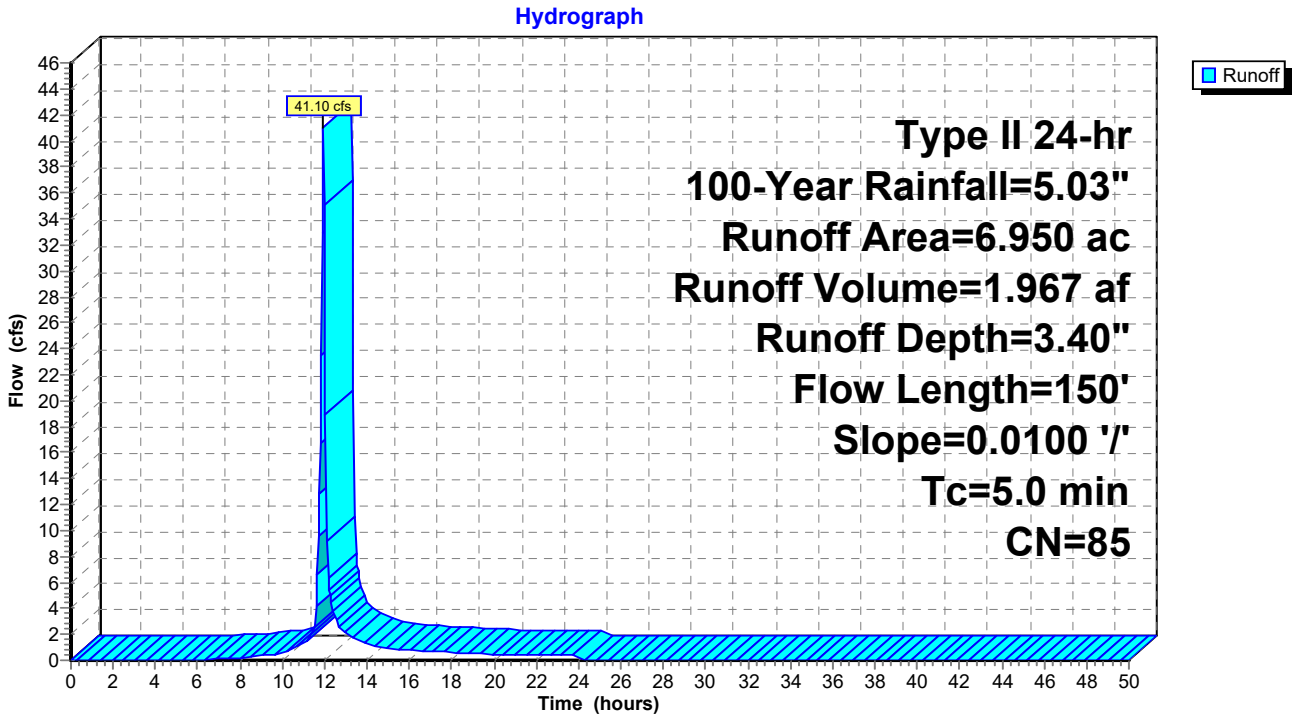
Runoff = 41.10 cfs @ 11.95 hrs, Volume= 1.967 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.03"

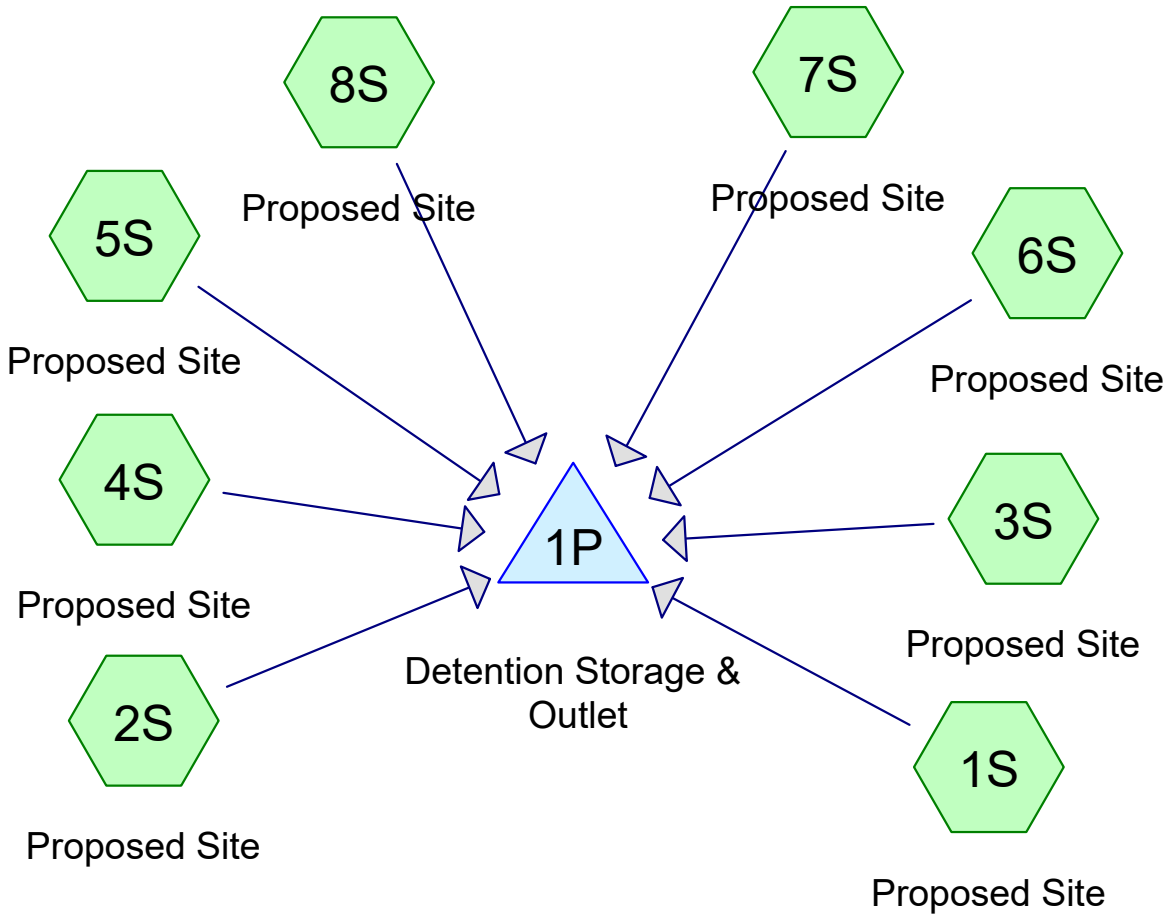
	Area (ac)	CN	Description
	3.480	78	Meadow, non-grazed, HSG D
	1.520	84	50-75% Grass cover, Fair, HSG D
*	1.950	98	Impervious
	6.950	85	Weighted Average
	5.000		71.94% Pervious Area
	1.950		28.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Subcat Reach Pond Link

Routing Diagram for 23-4099 Proposed
Prepared by Carmina Wood Morris, PC, Printed 11/15/2023
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Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.060	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S)
5.890	98	Impervious, HSG D (1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S)
6.950	**95**	**TOTAL AREA**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
6.950	HSG D	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	Other	
6.950		**TOTAL AREA**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	1.060	0.000	1.060	>75% Grass cover, Good	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	0.000	0.000	5.890	0.000	5.890	Impervious	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0.000	**0.000**	**0.000**	**6.950**	**0.000**	**6.950**	**TOTAL AREA**	

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	571.50	571.50	10.0	0.0000	0.013	0.0	12.0	0.0

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=2.67 cfs 0.129 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=1.21 cfs 0.057 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=1.48"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=1.22 cfs 0.060 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=2.12 cfs 0.102 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=1.69 cfs 0.082 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=1.53 cfs 0.072 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=1.21"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=2.10 cfs 0.098 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=1.21"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=3.40 cfs 0.158 af

Pond 1P: Detention Storage & Outlet Peak Elev=572.35' Storage=10,004 cf Inflow=15.93 cfs 0.759 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=7.30 cfs 0.756 af

Total Runoff Area = 6.950 ac Runoff Volume = 0.759 af Average Runoff Depth = 1.31"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

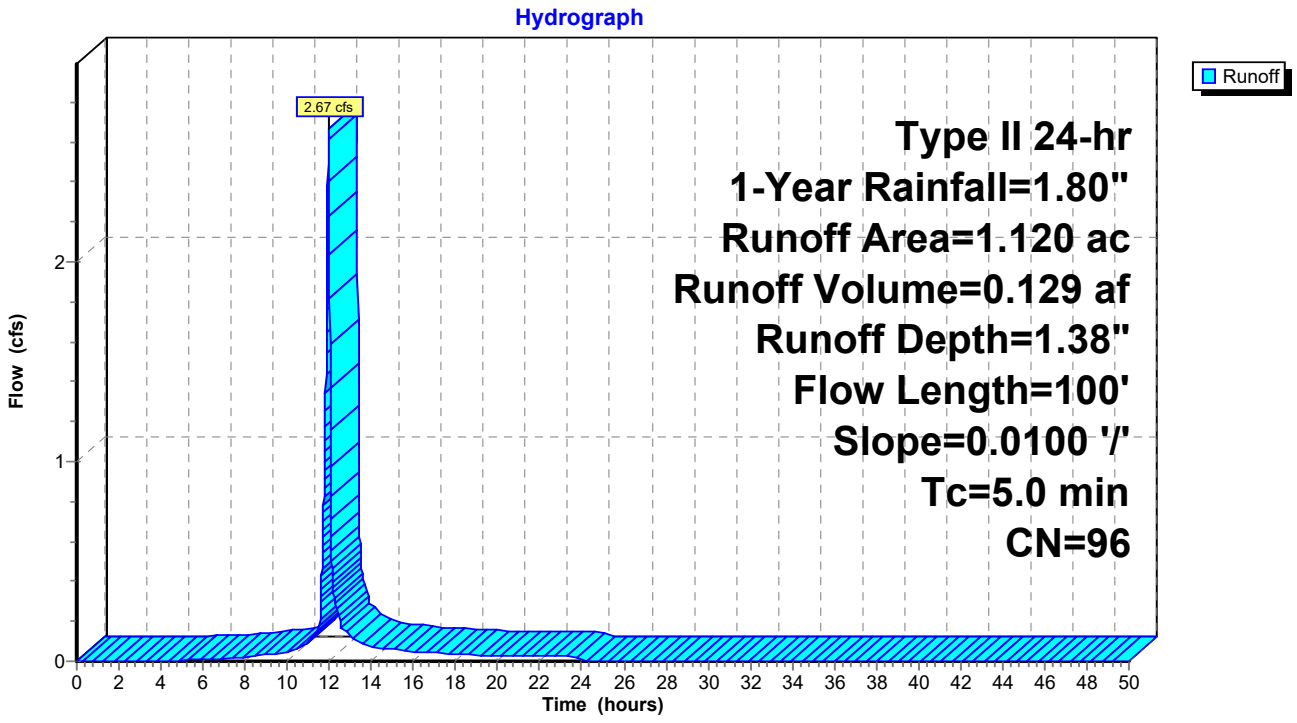
Runoff = 2.67 cfs @ 11.96 hrs, Volume= 0.129 af, Depth= 1.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

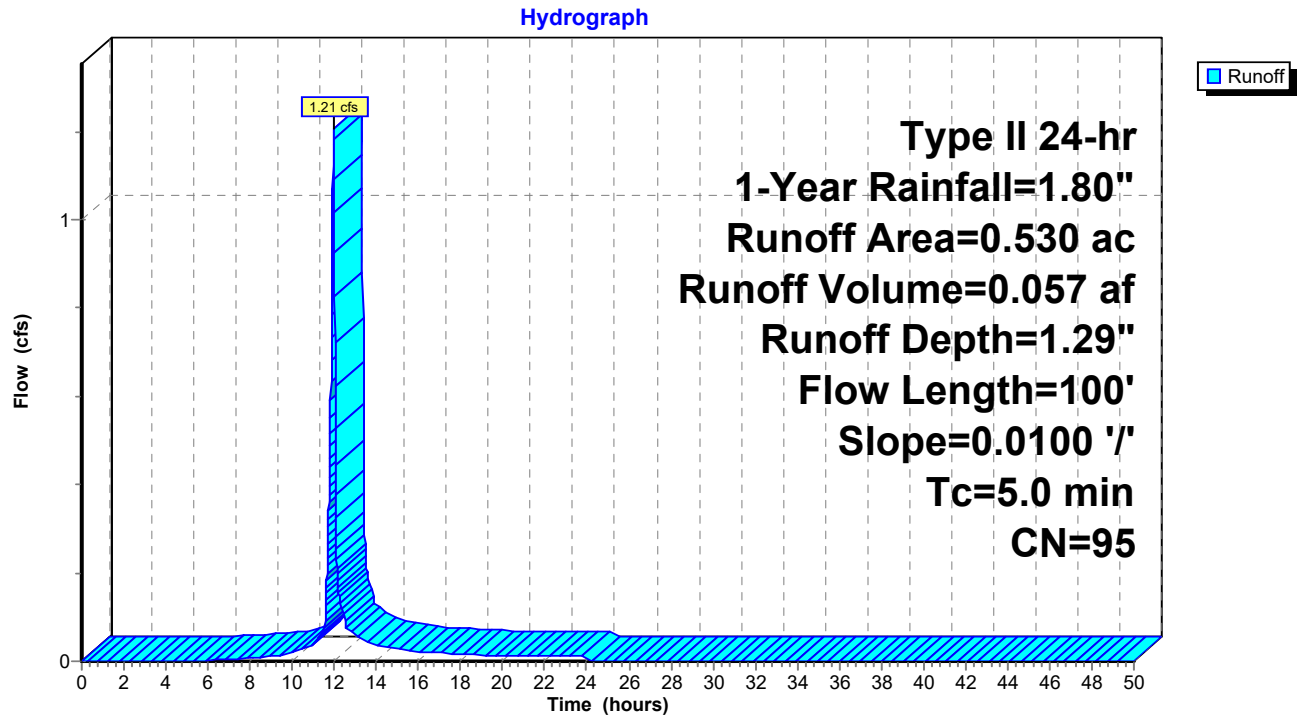
Runoff = 1.21 cfs @ 11.96 hrs, Volume= 0.057 af, Depth= 1.29"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

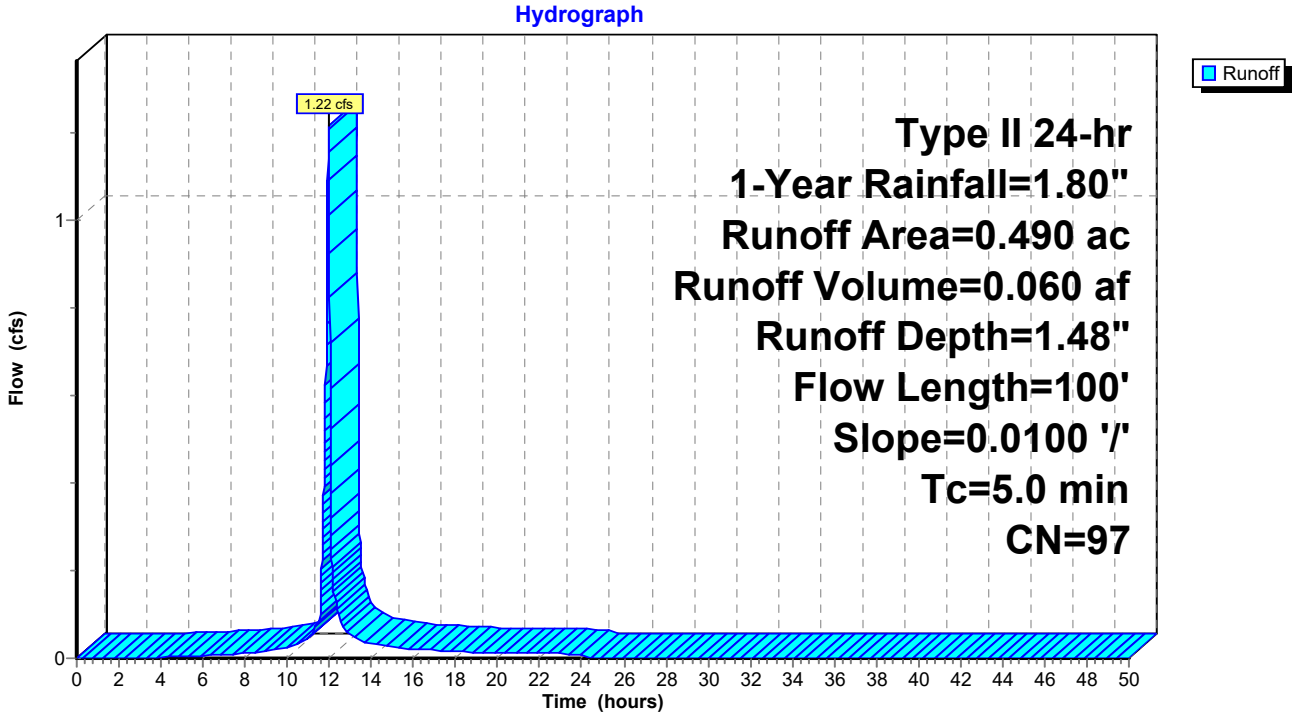
Runoff = 1.22 cfs @ 11.96 hrs, Volume= 0.060 af, Depth= 1.48"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

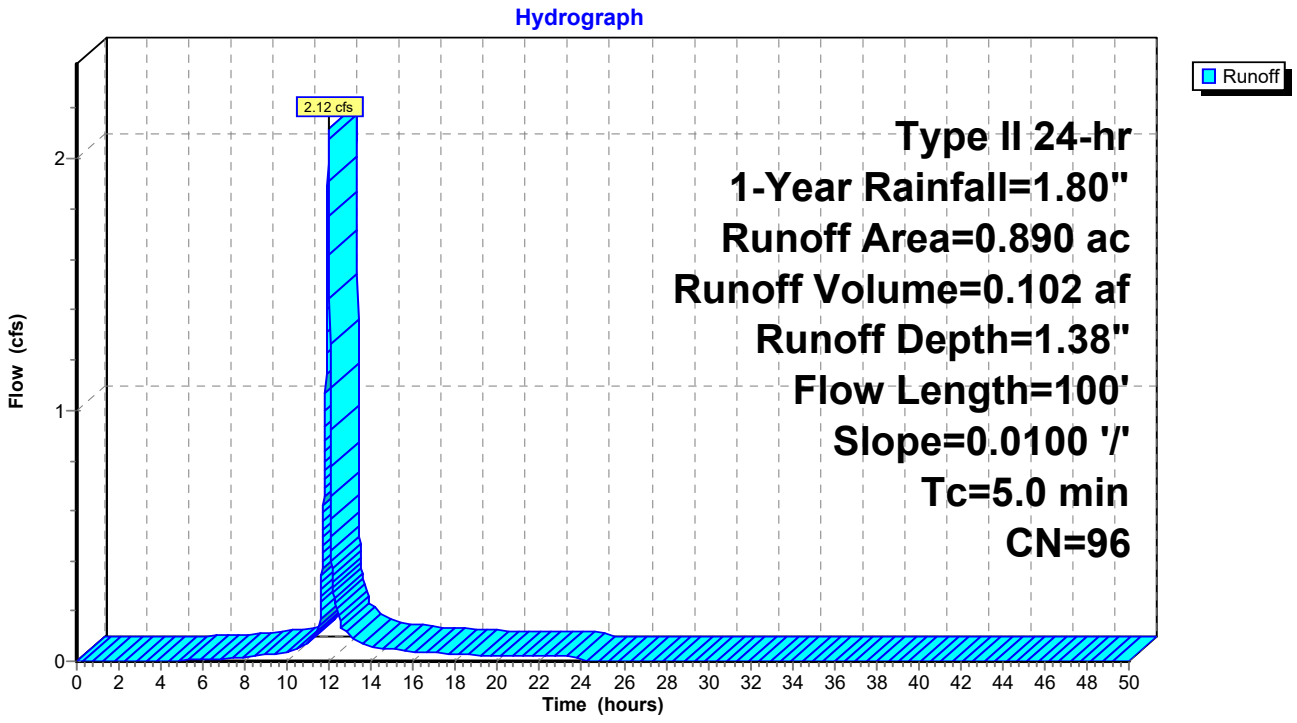
Runoff = 2.12 cfs @ 11.96 hrs, Volume= 0.102 af, Depth= 1.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

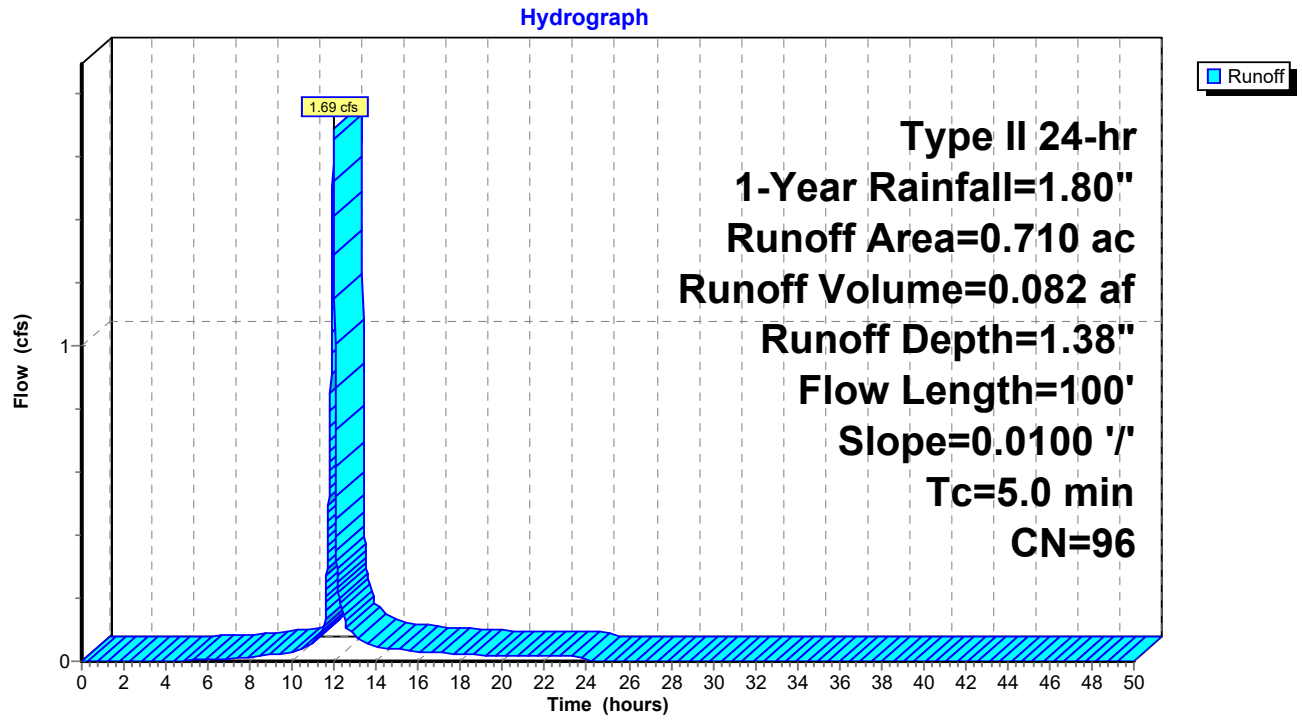
Runoff = 1.69 cfs @ 11.96 hrs, Volume= 0.082 af, Depth= 1.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

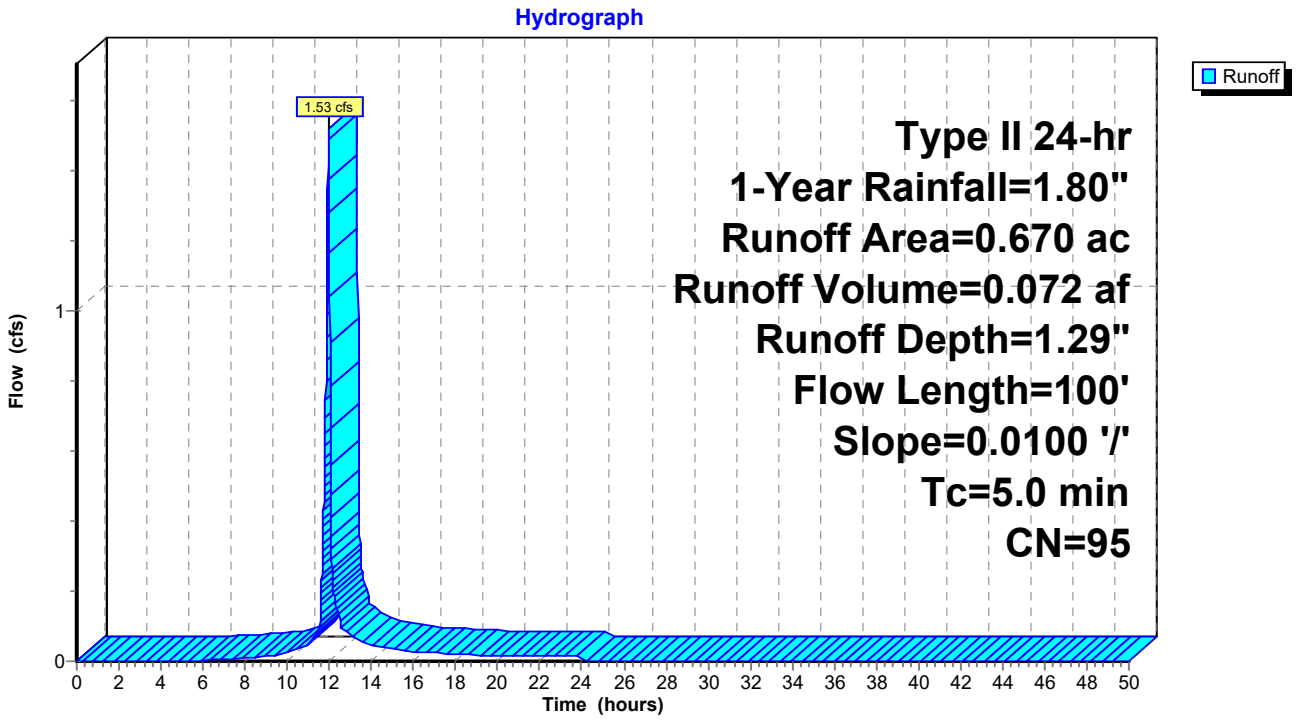
Runoff = 1.53 cfs @ 11.96 hrs, Volume= 0.072 af, Depth= 1.29"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

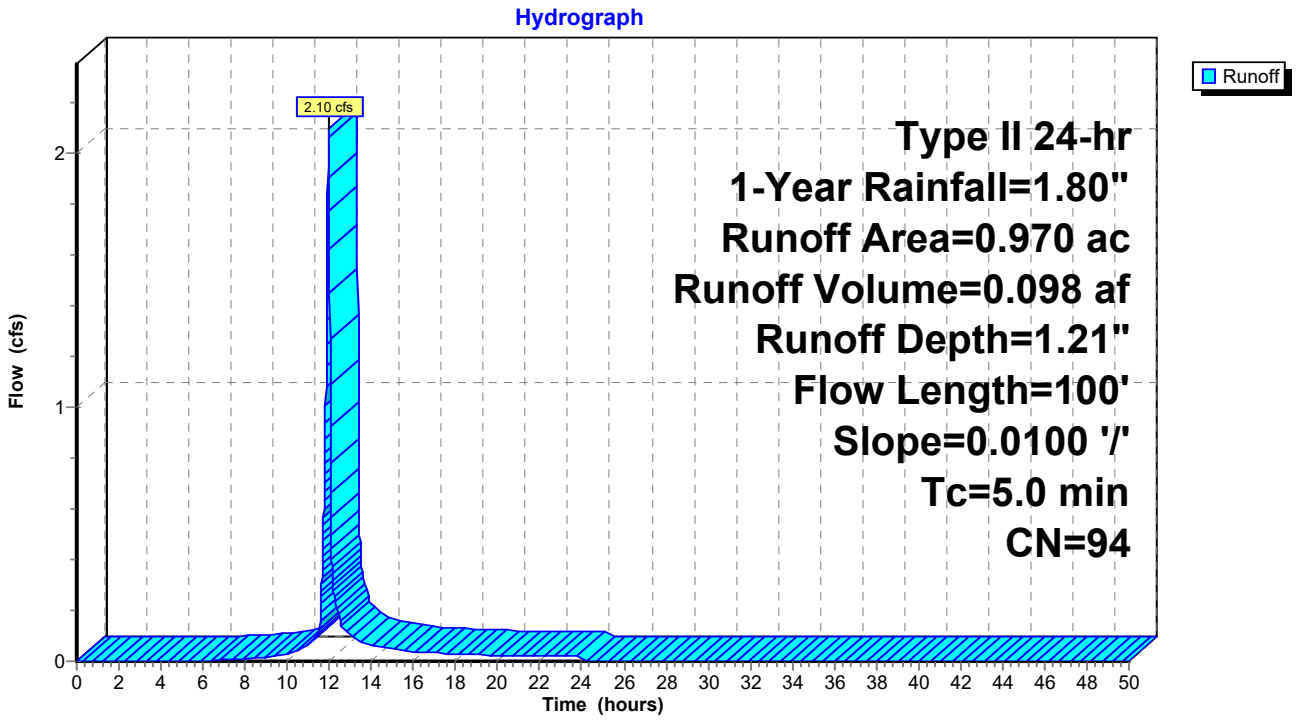
Runoff = 2.10 cfs @ 11.96 hrs, Volume= 0.098 af, Depth= 1.21"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

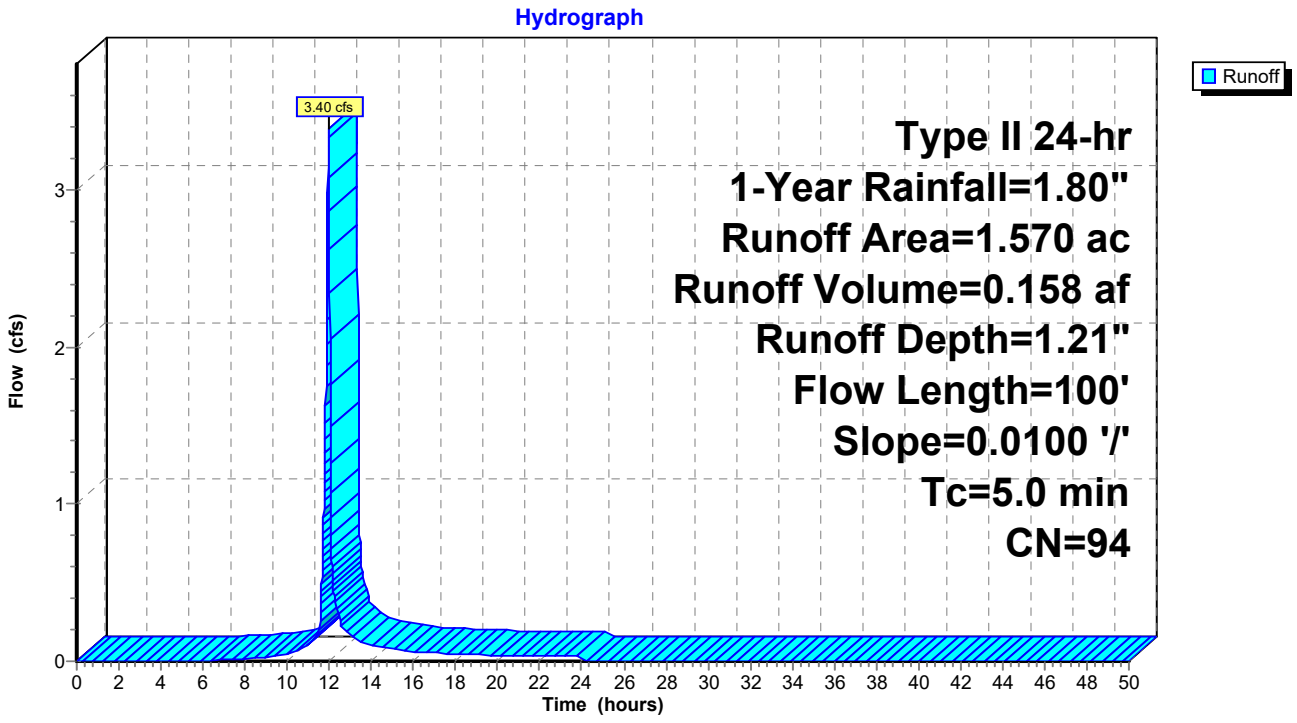
Runoff = 3.40 cfs @ 11.96 hrs, Volume= 0.158 af, Depth= 1.21"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 1.31" for 1-Year event
Inflow = 15.93 cfs @ 11.96 hrs, Volume= 0.759 af
Outflow = 7.30 cfs @ 12.05 hrs, Volume= 0.756 af, Atten= 54%, Lag= 5.3 min
Primary = 7.30 cfs @ 12.05 hrs, Volume= 0.756 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 572.35' @ 12.05 hrs Surf.Area= 20,584 sf Storage= 10,004 cf

Plug-Flow detention time= 55.9 min calculated for 0.756 af (100% of inflow)
Center-of-Mass det. time= 53.4 min (847.4 - 793.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=7.30 cfs @ 12.05 hrs HW=572.35' (Free Discharge)
↑—**1=Outlet Pipe** (Barrel Controls 7.30 cfs @ 2.78 fps)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

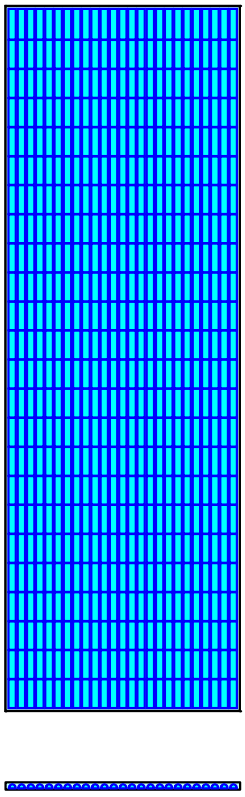
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

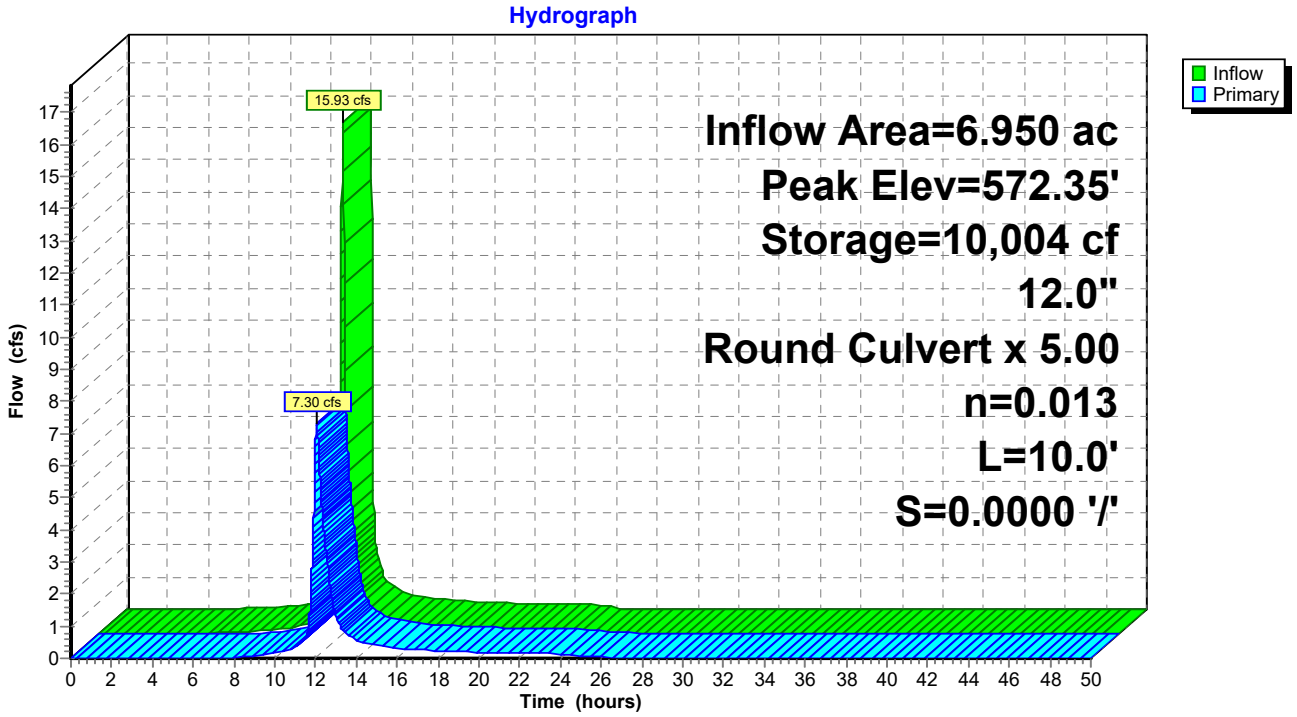
Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=4.85 cfs 0.245 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.25 cfs 0.111 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=2.73"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=2.16 cfs 0.111 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=3.86 cfs 0.194 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=3.08 cfs 0.155 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.84 cfs 0.141 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=2.42"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=4.01 cfs 0.195 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=2.42"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=6.50 cfs 0.316 af

Pond 1P: Detention Storage & Outlet Peak Elev=572.83' Storage=17,843 cf Inflow=29.54 cfs 1.469 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=13.54 cfs 1.466 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.469 af Average Runoff Depth = 2.54"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

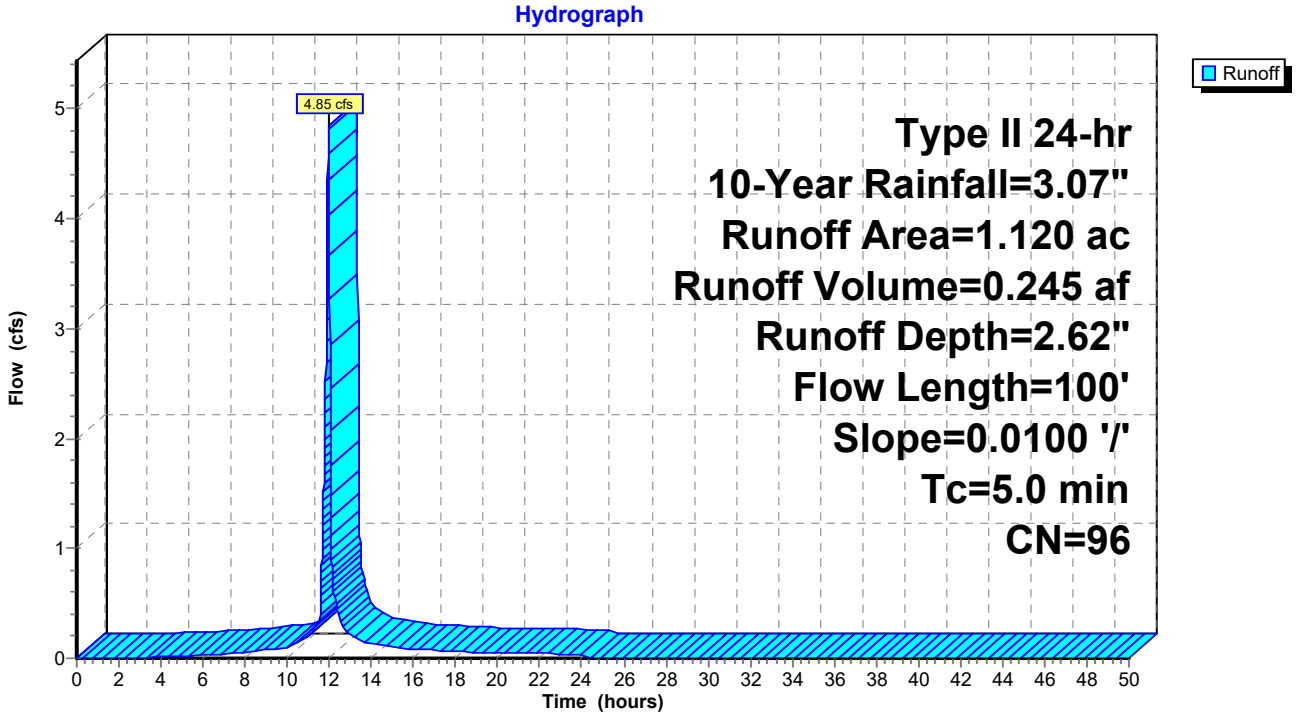
Runoff = 4.85 cfs @ 11.96 hrs, Volume= 0.245 af, Depth= 2.62"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

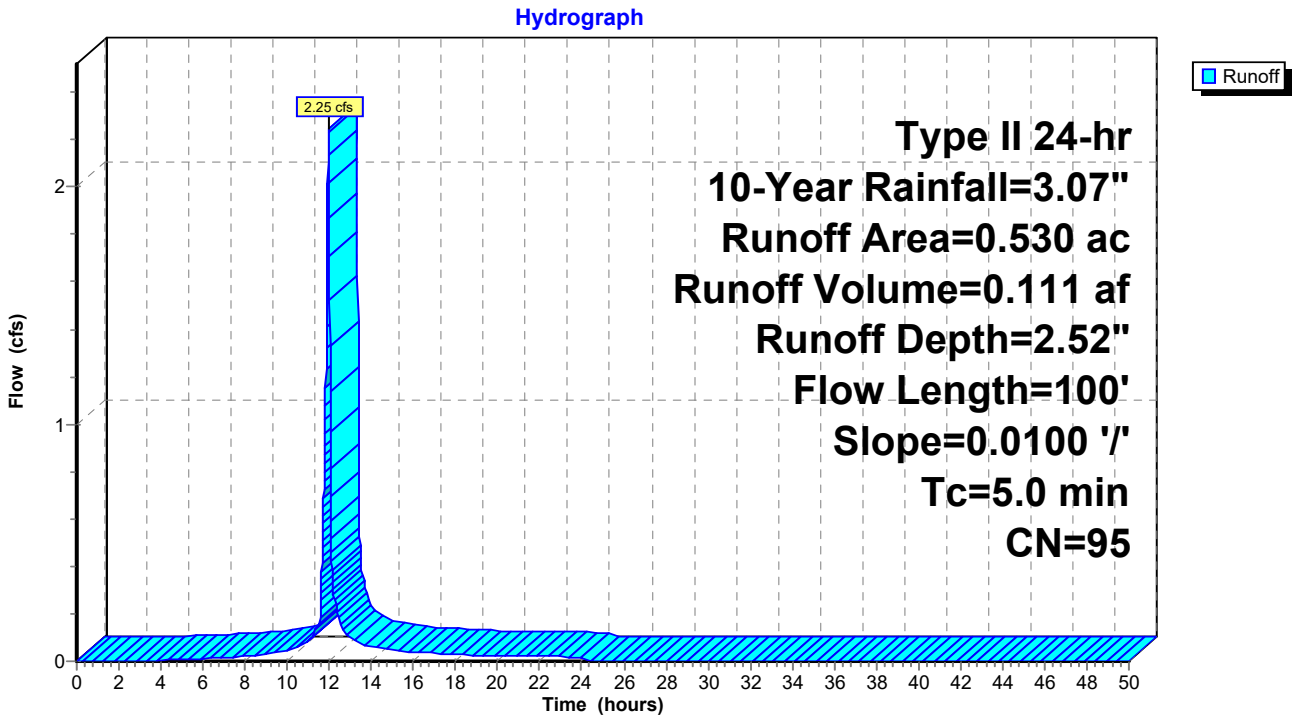
Runoff = 2.25 cfs @ 11.96 hrs, Volume= 0.111 af, Depth= 2.52"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

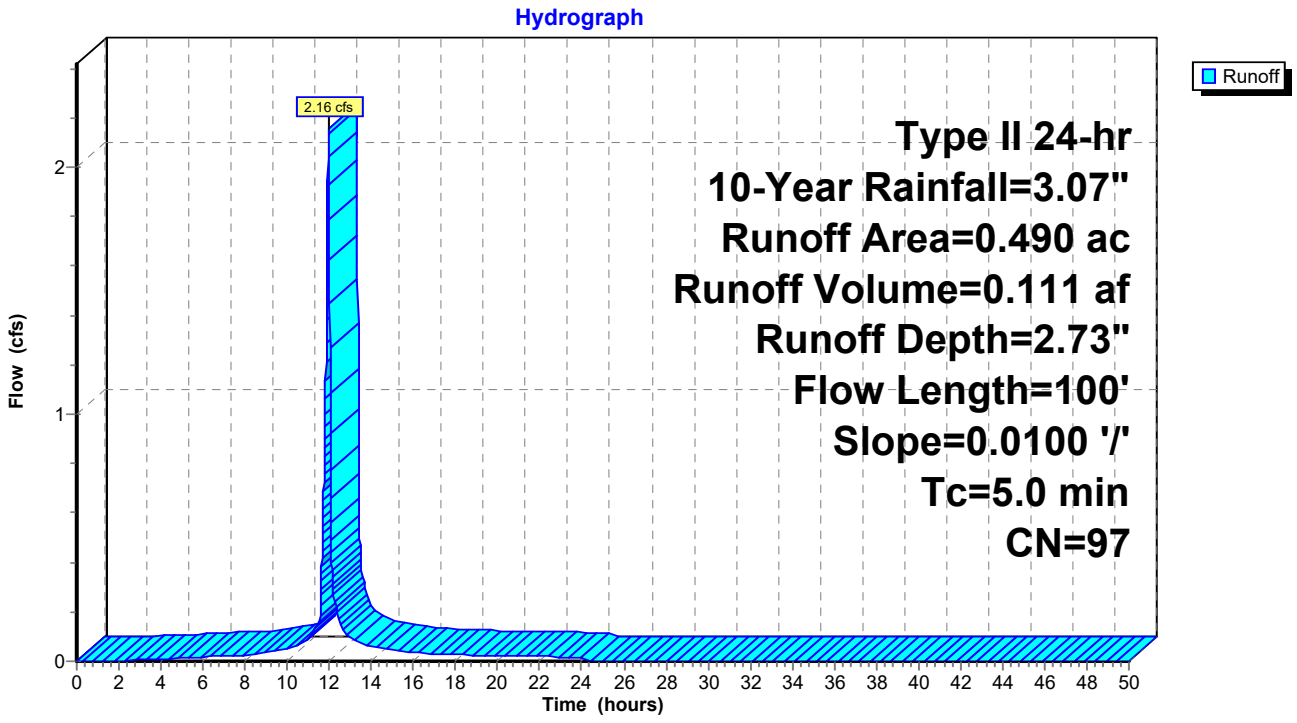
Runoff = 2.16 cfs @ 11.96 hrs, Volume= 0.111 af, Depth= 2.73"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

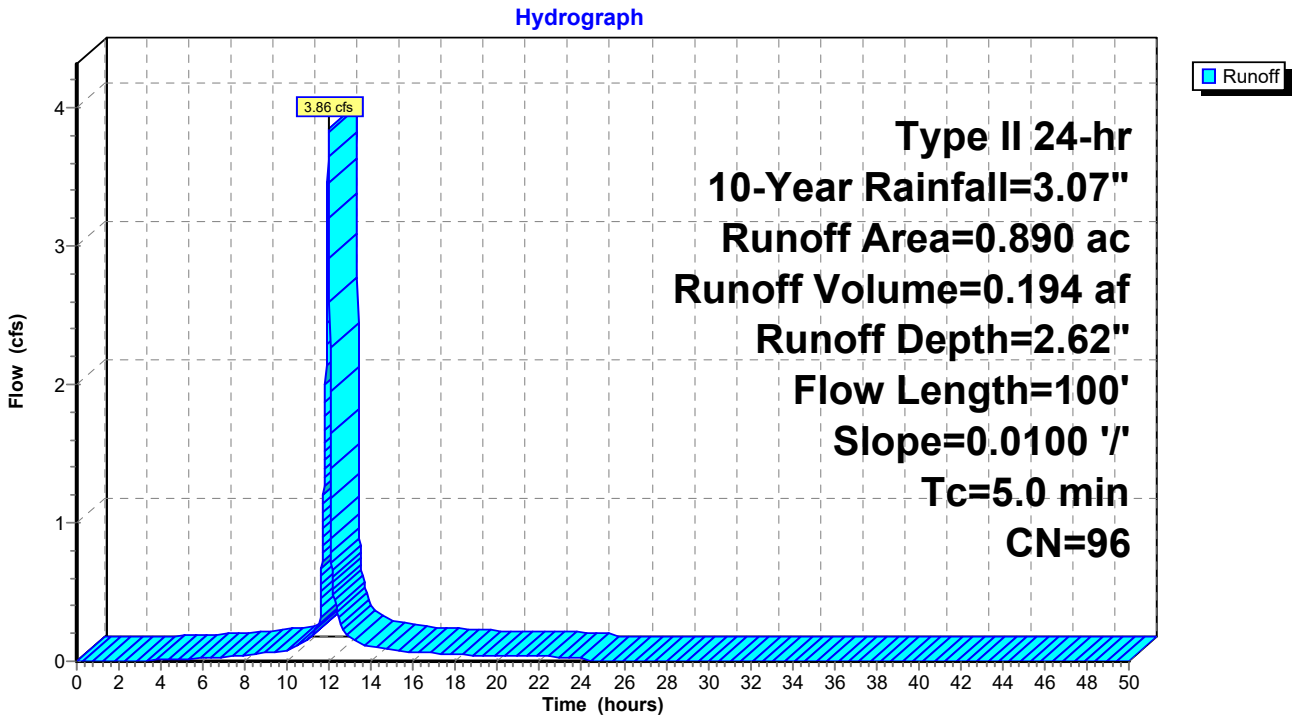
Runoff = 3.86 cfs @ 11.96 hrs, Volume= 0.194 af, Depth= 2.62"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

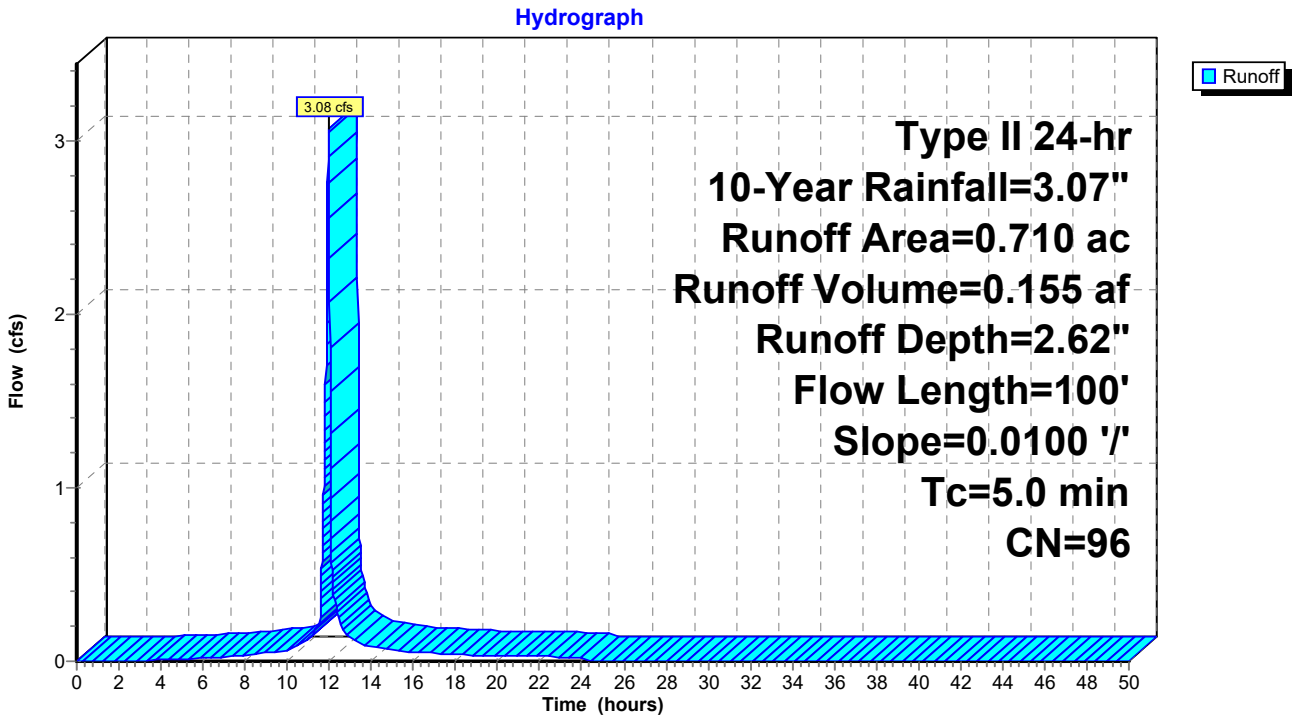
Runoff = 3.08 cfs @ 11.96 hrs, Volume= 0.155 af, Depth= 2.62"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

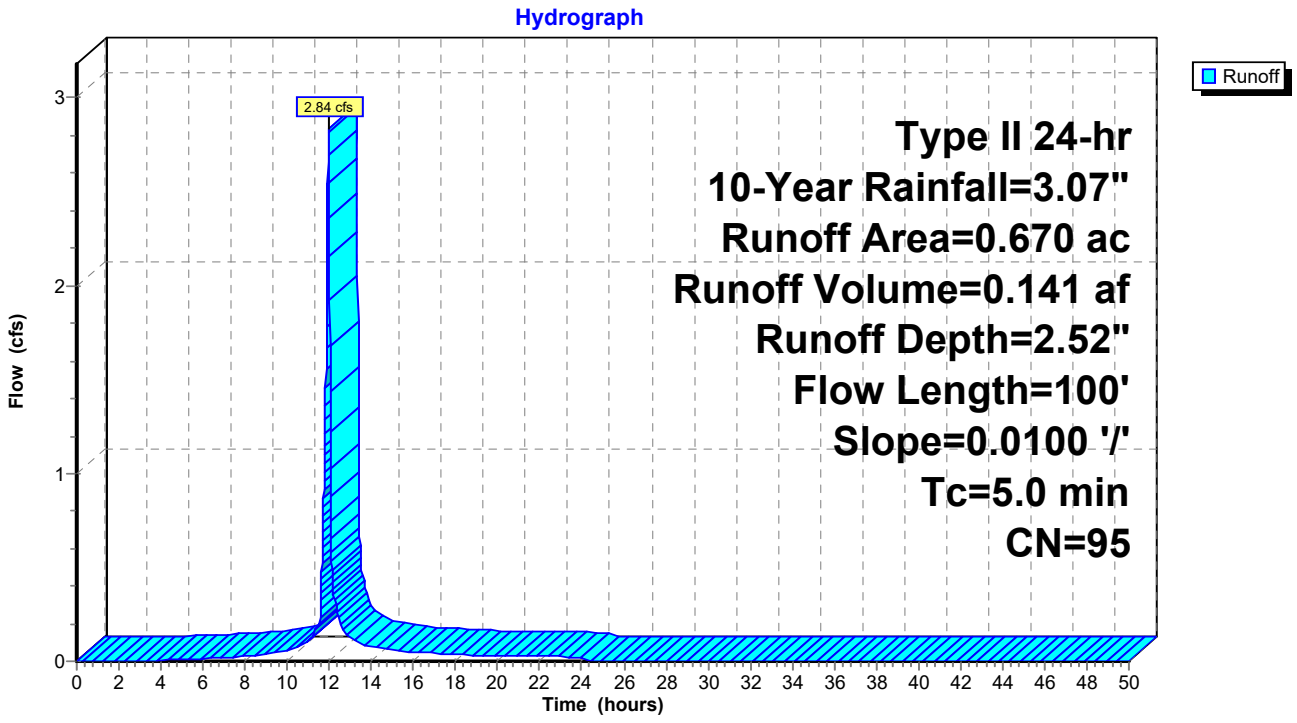
Runoff = 2.84 cfs @ 11.96 hrs, Volume= 0.141 af, Depth= 2.52"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

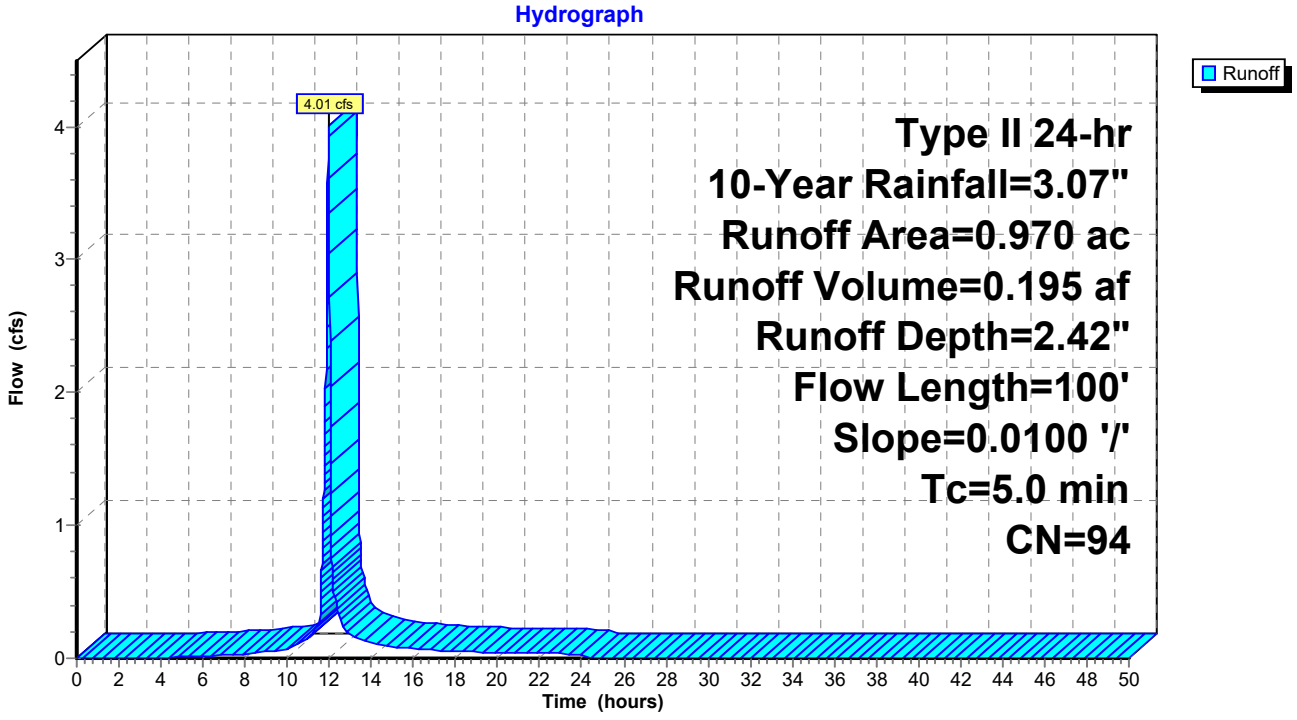
Runoff = 4.01 cfs @ 11.96 hrs, Volume= 0.195 af, Depth= 2.42"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

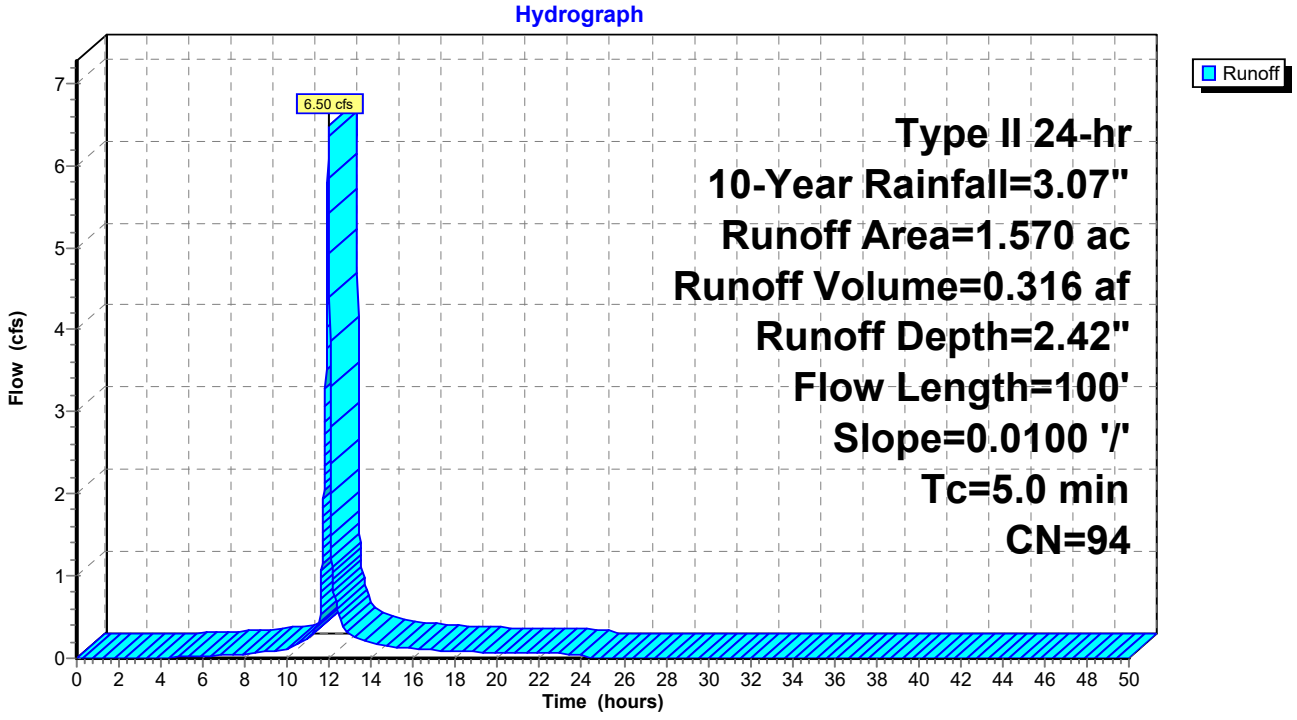
Runoff = 6.50 cfs @ 11.96 hrs, Volume= 0.316 af, Depth= 2.42"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 2.54" for 10-Year event
Inflow = 29.54 cfs @ 11.96 hrs, Volume= 1.469 af
Outflow = 13.54 cfs @ 12.04 hrs, Volume= 1.466 af, Atten= 54%, Lag= 5.3 min
Primary = 13.54 cfs @ 12.04 hrs, Volume= 1.466 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 572.83' @ 12.05 hrs Surf.Area= 20,584 sf Storage= 17,843 cf

Plug-Flow detention time= 42.6 min calculated for 1.466 af (100% of inflow)
Center-of-Mass det. time= 41.5 min (817.6 - 776.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=13.54 cfs @ 12.04 hrs HW=572.83' (Free Discharge)
↑—**1=Outlet Pipe** (Barrel Controls 13.54 cfs @ 3.45 fps)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

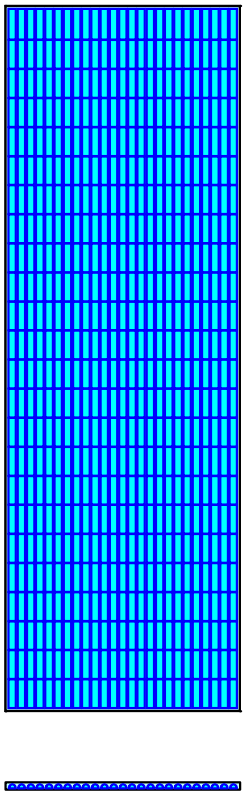
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

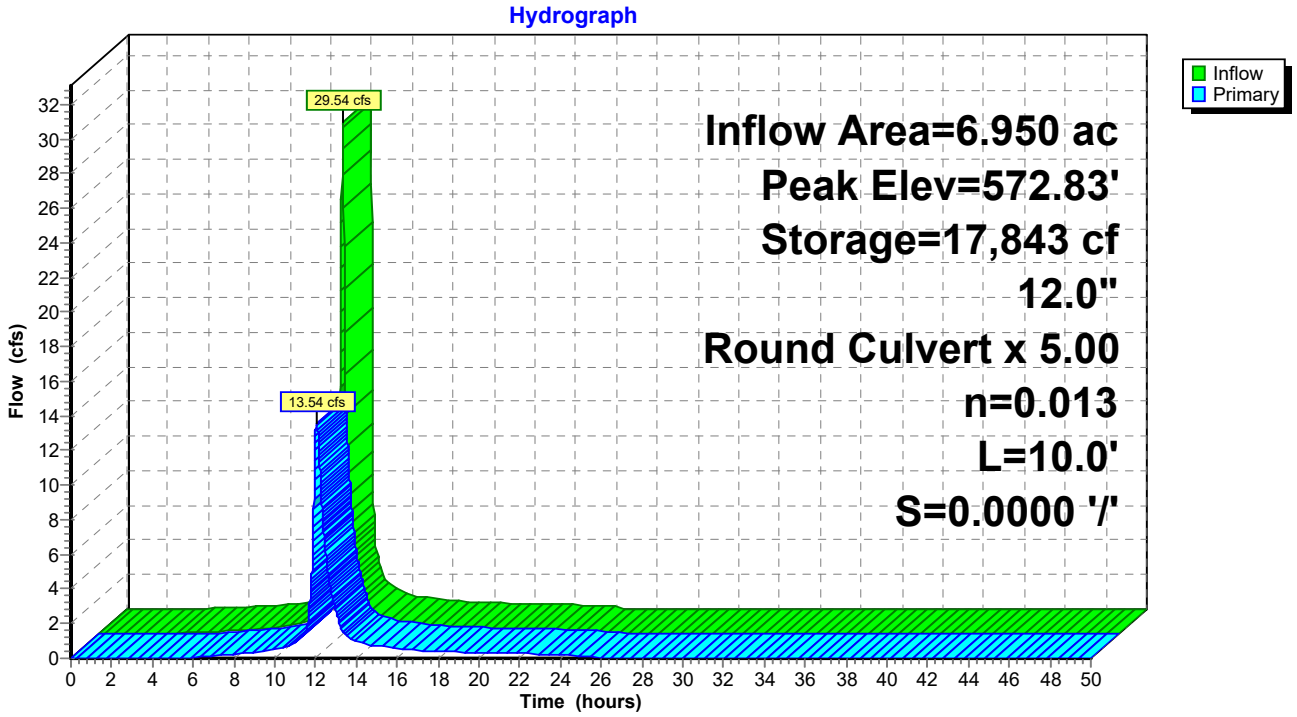
Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=5.97 cfs 0.305 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.78 cfs 0.140 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=3.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=2.65 cfs 0.138 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=4.75 cfs 0.243 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=3.79 cfs 0.194 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=3.52 cfs 0.177 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=3.06"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=5.00 cfs 0.247 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=3.06"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=8.09 cfs 0.400 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.09' Storage=21,706 cf Inflow=36.53 cfs 1.844 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=18.03 cfs 1.841 af

Total Runoff Area = 6.950 ac Runoff Volume = 1.844 af Average Runoff Depth = 3.18"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

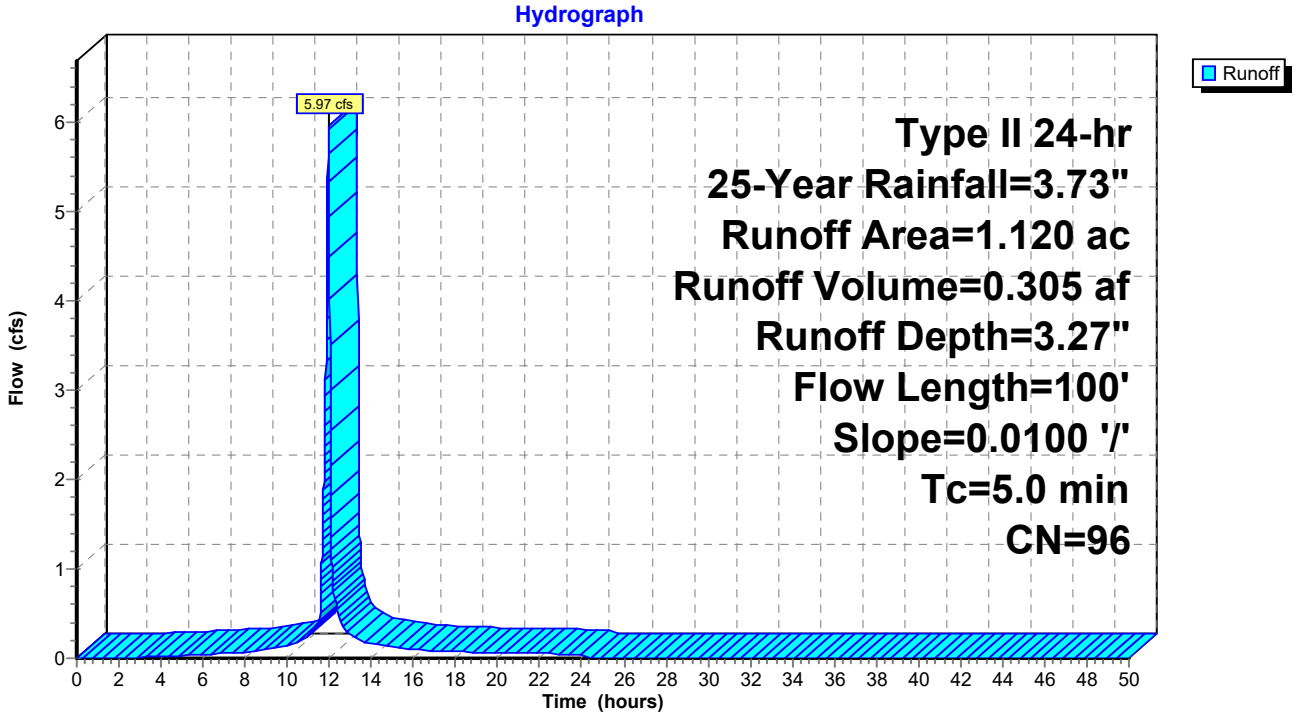
Runoff = 5.97 cfs @ 11.96 hrs, Volume= 0.305 af, Depth= 3.27"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

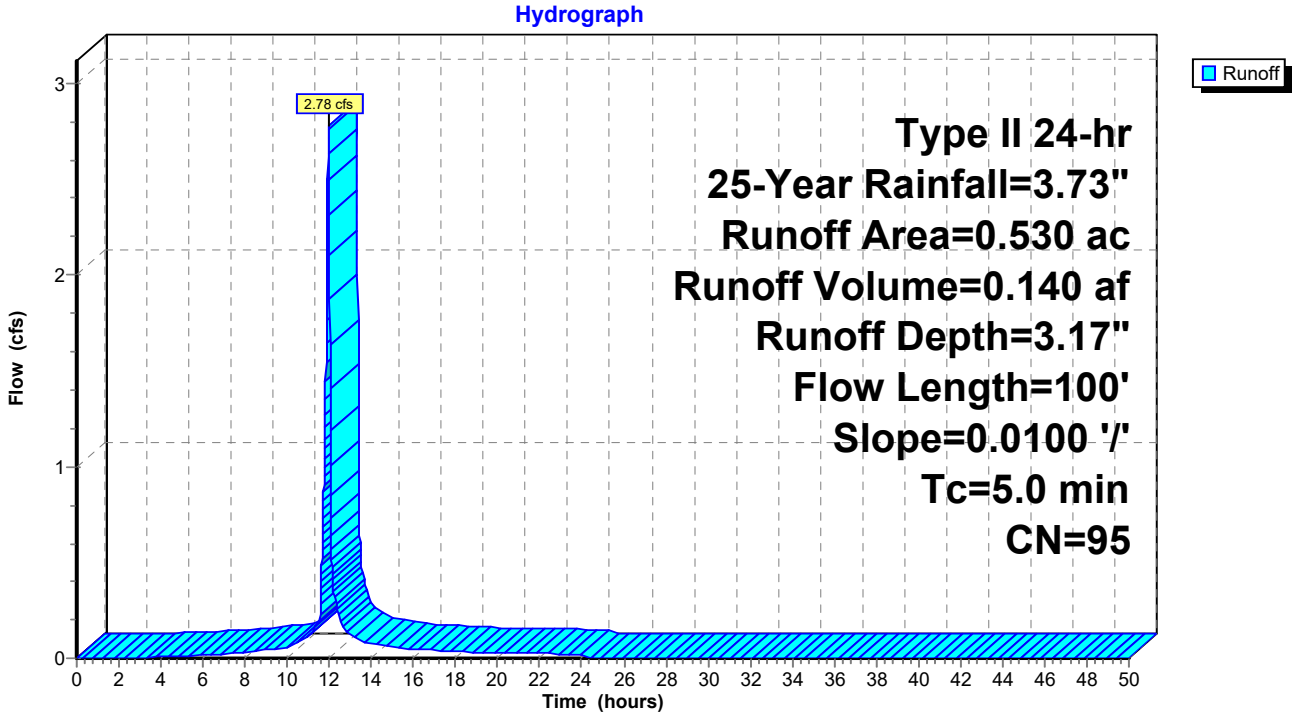
Runoff = 2.78 cfs @ 11.96 hrs, Volume= 0.140 af, Depth= 3.17"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

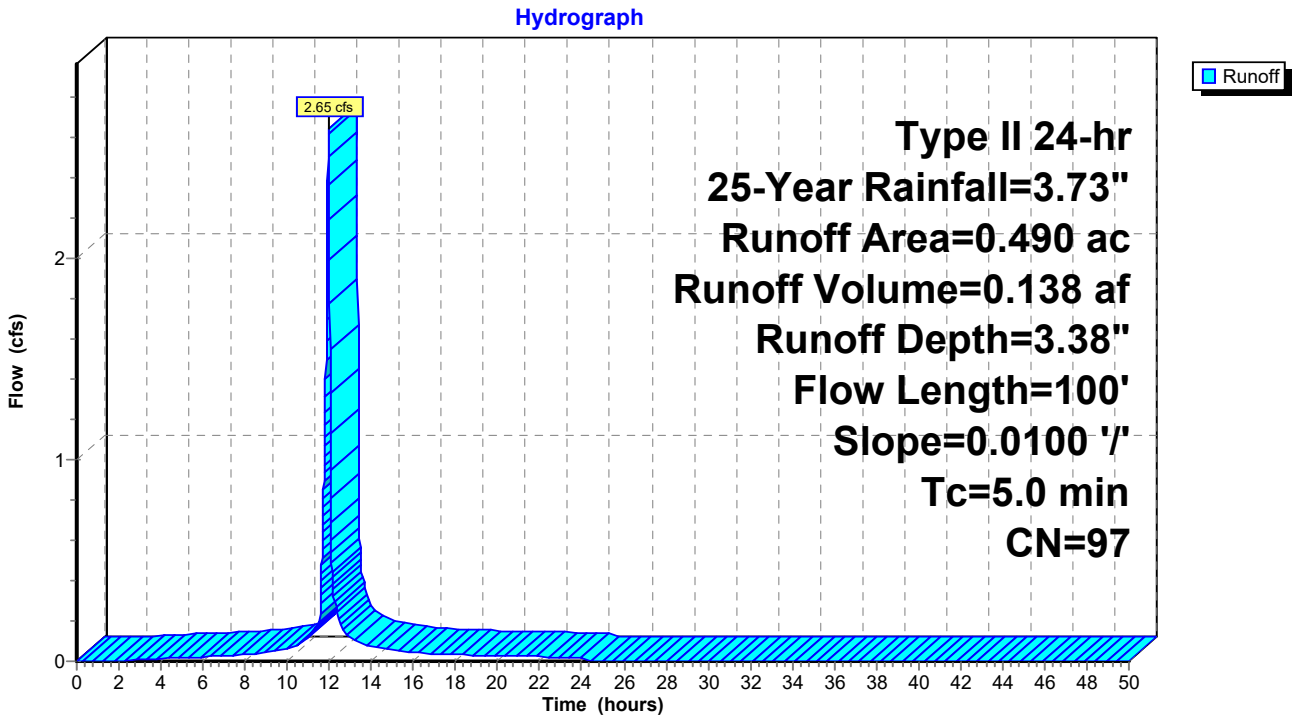
Runoff = 2.65 cfs @ 11.96 hrs, Volume= 0.138 af, Depth= 3.38"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

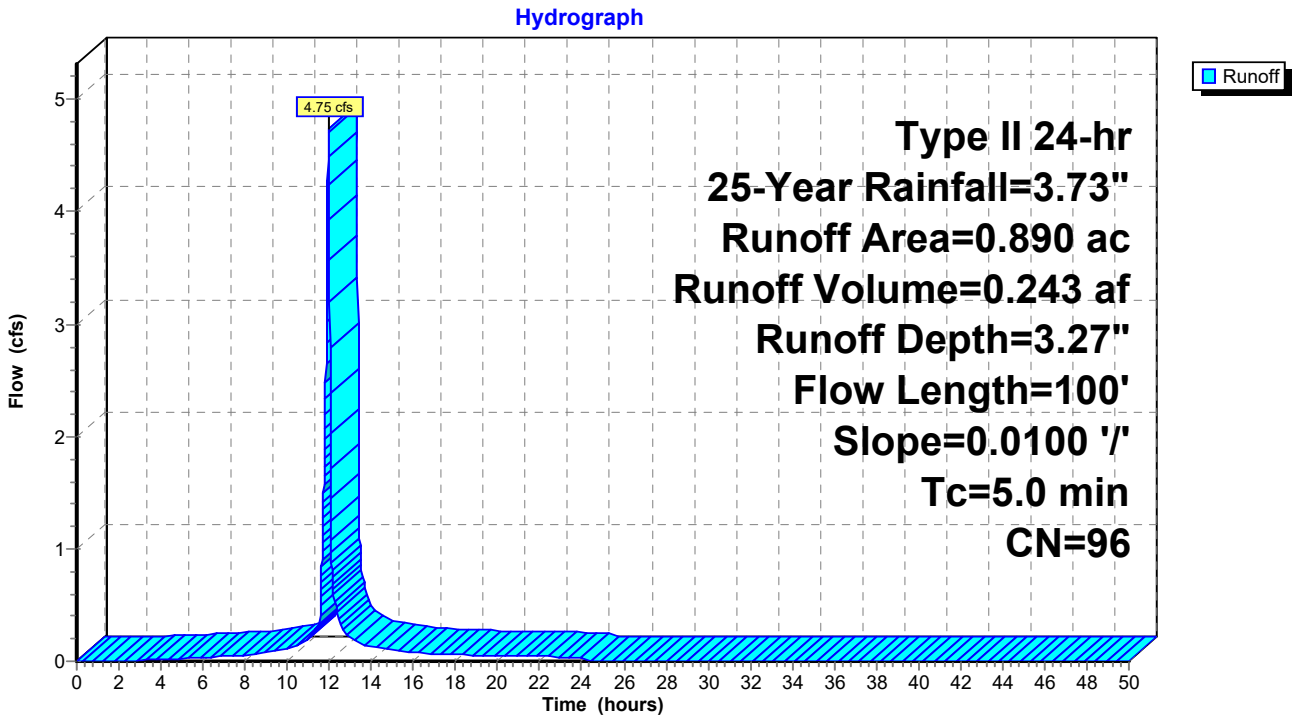
Runoff = 4.75 cfs @ 11.96 hrs, Volume= 0.243 af, Depth= 3.27"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

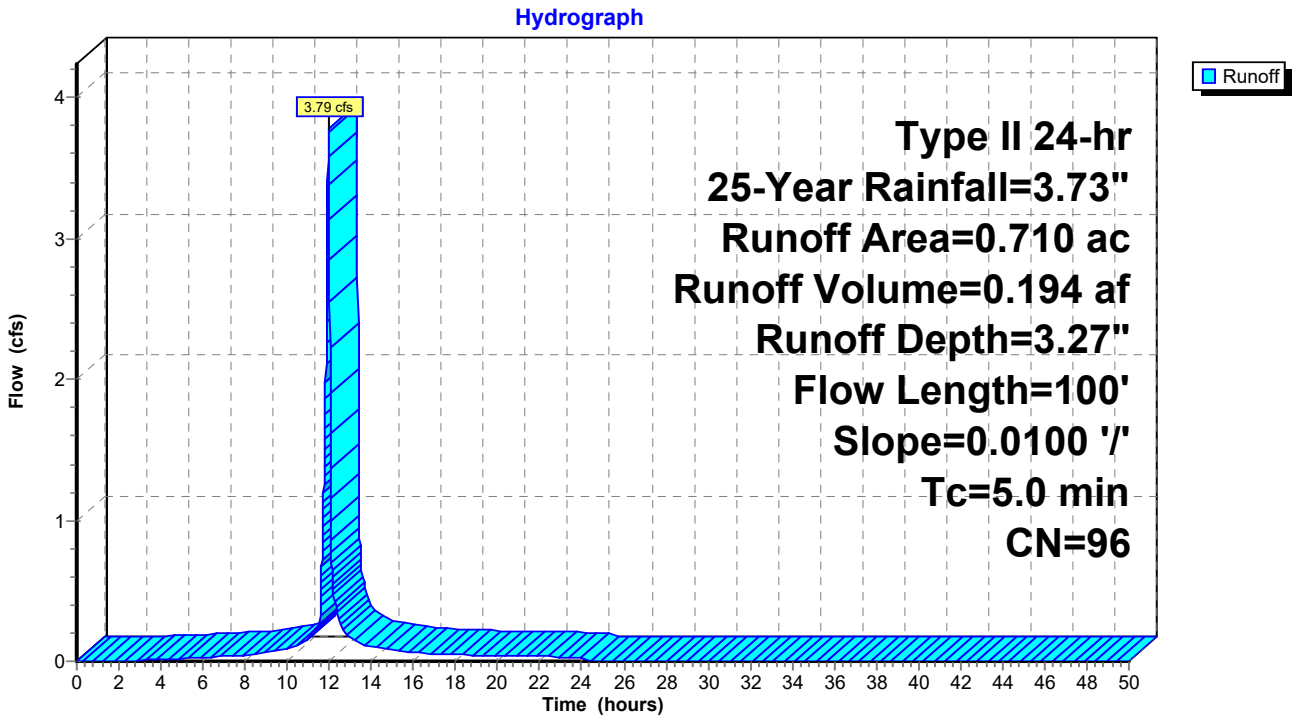
Runoff = 3.79 cfs @ 11.96 hrs, Volume= 0.194 af, Depth= 3.27"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

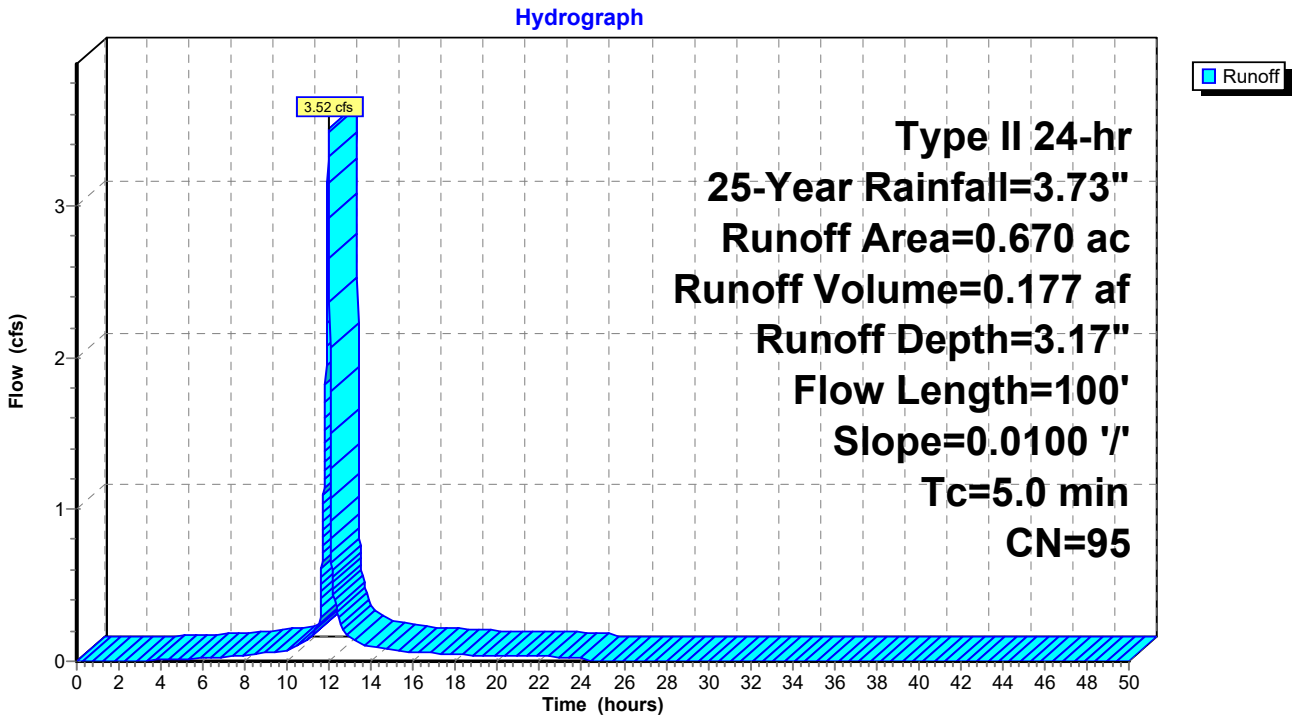
Runoff = 3.52 cfs @ 11.96 hrs, Volume= 0.177 af, Depth= 3.17"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

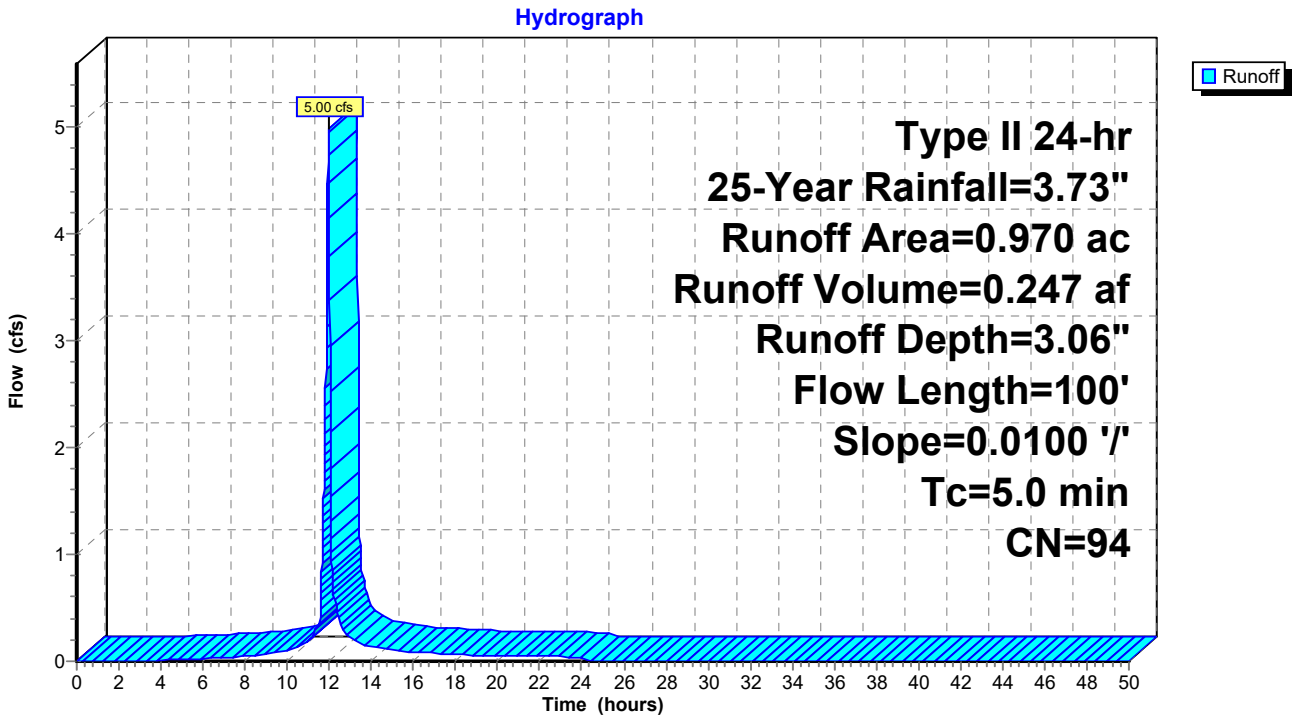
Runoff = 5.00 cfs @ 11.96 hrs, Volume= 0.247 af, Depth= 3.06"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

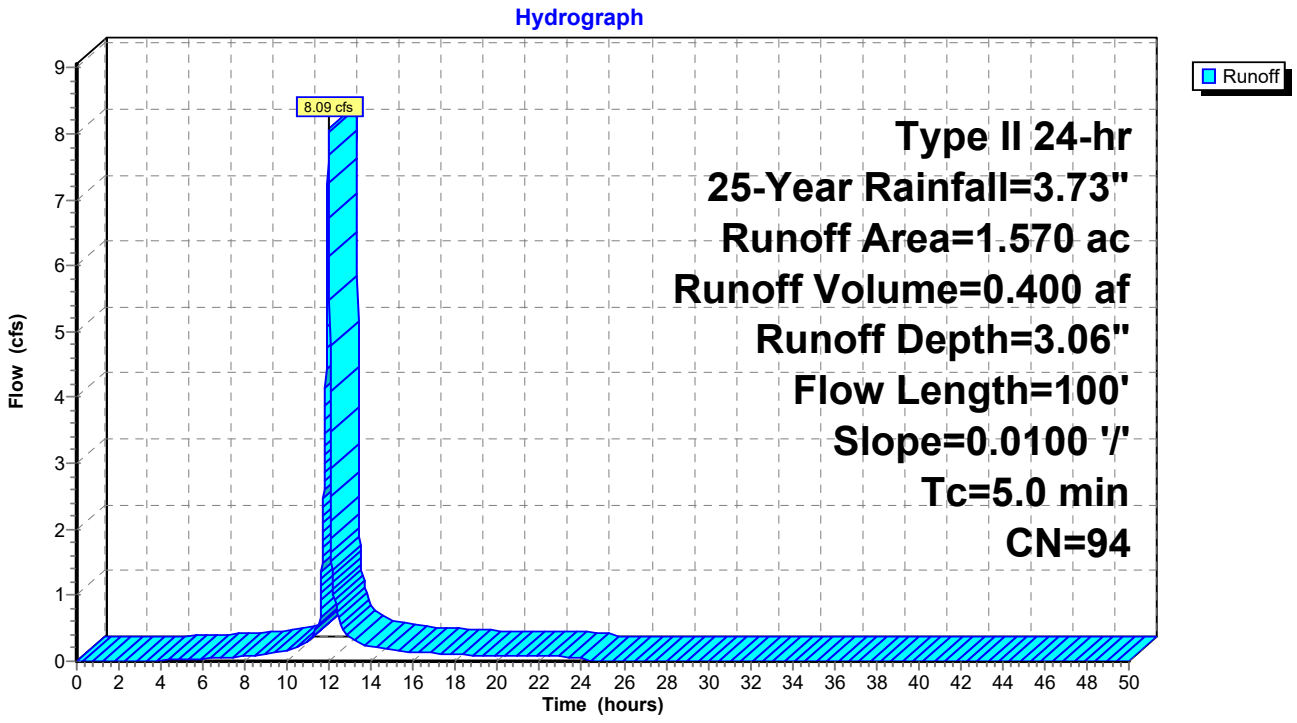
Runoff = 8.09 cfs @ 11.96 hrs, Volume= 0.400 af, Depth= 3.06"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 3.18" for 25-Year event
Inflow = 36.53 cfs @ 11.96 hrs, Volume= 1.844 af
Outflow = 18.03 cfs @ 12.04 hrs, Volume= 1.841 af, Atten= 51%, Lag= 5.1 min
Primary = 18.03 cfs @ 12.04 hrs, Volume= 1.841 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.09' @ 12.04 hrs Surf.Area= 20,584 sf Storage= 21,706 cf

Plug-Flow detention time= 39.0 min calculated for 1.841 af (100% of inflow)
Center-of-Mass det. time= 38.1 min (808.4 - 770.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=18.02 cfs @ 12.04 hrs HW=573.09' (Free Discharge)
↑—**1=Outlet Pipe** (Barrel Controls 18.02 cfs @ 4.59 fps)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

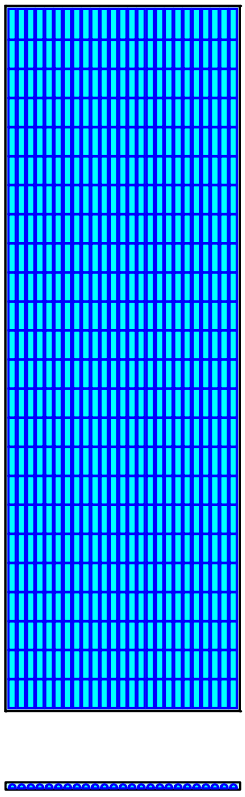
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

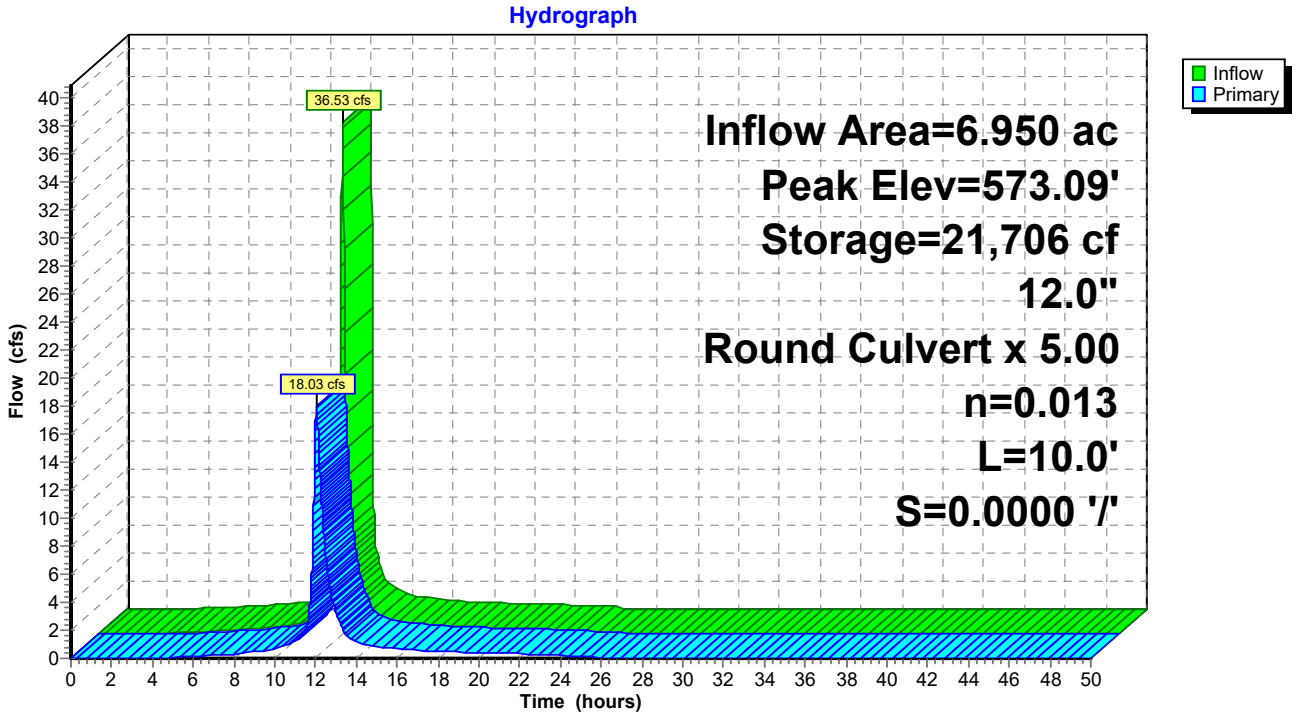
Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.120 ac 89.29% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=8.16 cfs 0.426 af

Subcatchment2S: Proposed Site Runoff Area=0.530 ac 84.91% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=3.82 cfs 0.197 af

Subcatchment3S: Proposed Site Runoff Area=0.490 ac 93.88% Impervious Runoff Depth=4.68"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=3.60 cfs 0.191 af

Subcatchment4S: Proposed Site Runoff Area=0.890 ac 87.64% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=6.49 cfs 0.338 af

Subcatchment5S: Proposed Site Runoff Area=0.710 ac 87.32% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=5.17 cfs 0.270 af

Subcatchment6S: Proposed Site Runoff Area=0.670 ac 85.07% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=4.83 cfs 0.248 af

Subcatchment7S: Proposed Site Runoff Area=0.970 ac 77.32% Impervious Runoff Depth=4.34"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=6.92 cfs 0.351 af

Subcatchment8S: Proposed Site Runoff Area=1.570 ac 80.25% Impervious Runoff Depth=4.34"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=11.20 cfs 0.567 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.83' Storage=29,010 cf Inflow=50.20 cfs 2.588 af
12.0" Round Culvert x 5.00 n=0.013 L=10.0' S=0.0000 '/' Outflow=25.60 cfs 2.585 af

Total Runoff Area = 6.950 ac Runoff Volume = 2.588 af Average Runoff Depth = 4.47"
15.25% Pervious = 1.060 ac 84.75% Impervious = 5.890 ac

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

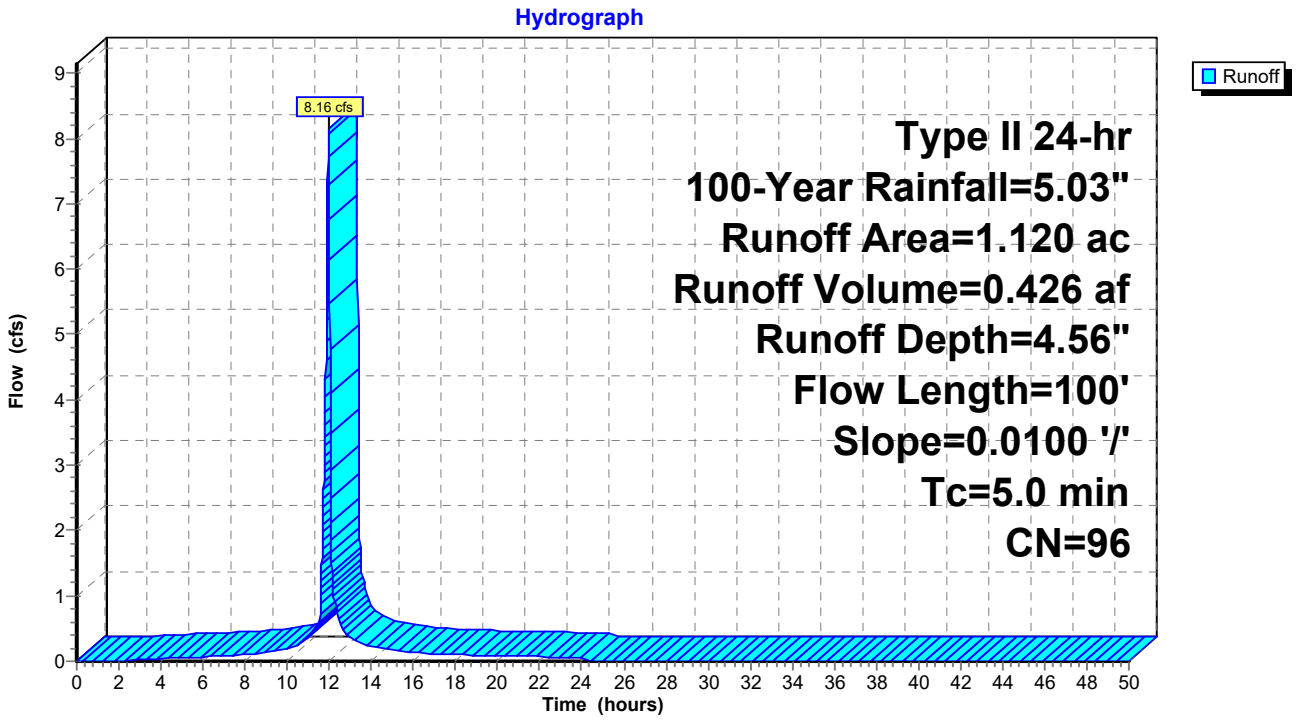
Runoff = 8.16 cfs @ 11.96 hrs, Volume= 0.426 af, Depth= 4.56"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.120	80	>75% Grass cover, Good, HSG D
*	1.000	98	Impervious, HSG D
	1.120	96	Weighted Average
	0.120		10.71% Pervious Area
	1.000		89.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

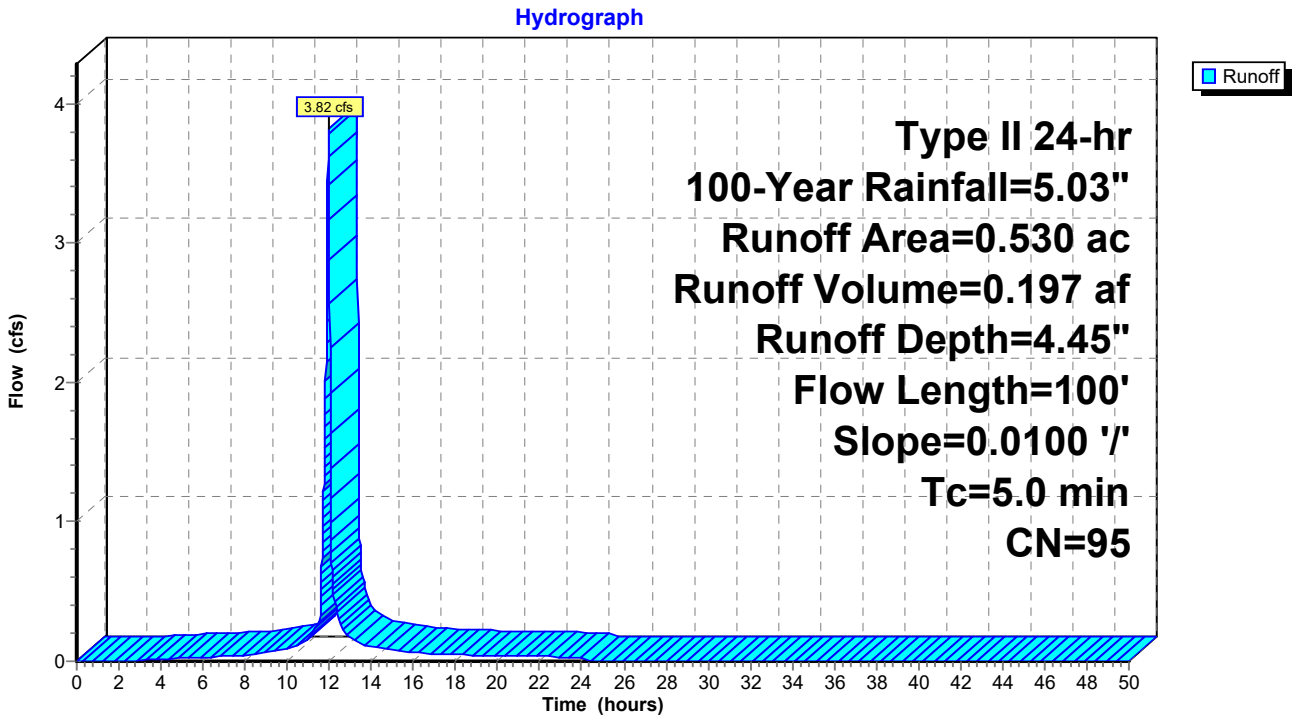
Runoff = 3.82 cfs @ 11.96 hrs, Volume= 0.197 af, Depth= 4.45"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.080	80	>75% Grass cover, Good, HSG D
*	0.450	98	Impervious, HSG D
	0.530	95	Weighted Average
	0.080		15.09% Pervious Area
	0.450		84.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

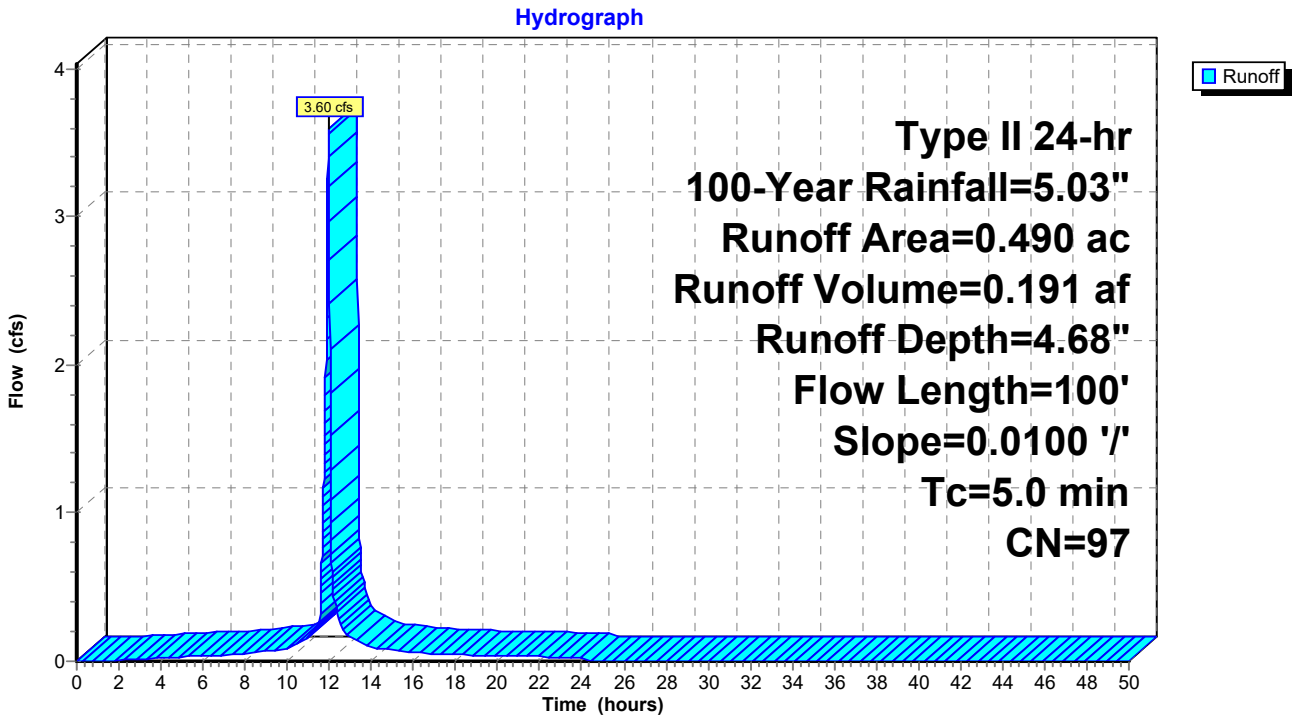
Runoff = 3.60 cfs @ 11.96 hrs, Volume= 0.191 af, Depth= 4.68"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.030	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.490	97	Weighted Average
	0.030		6.12% Pervious Area
	0.460		93.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

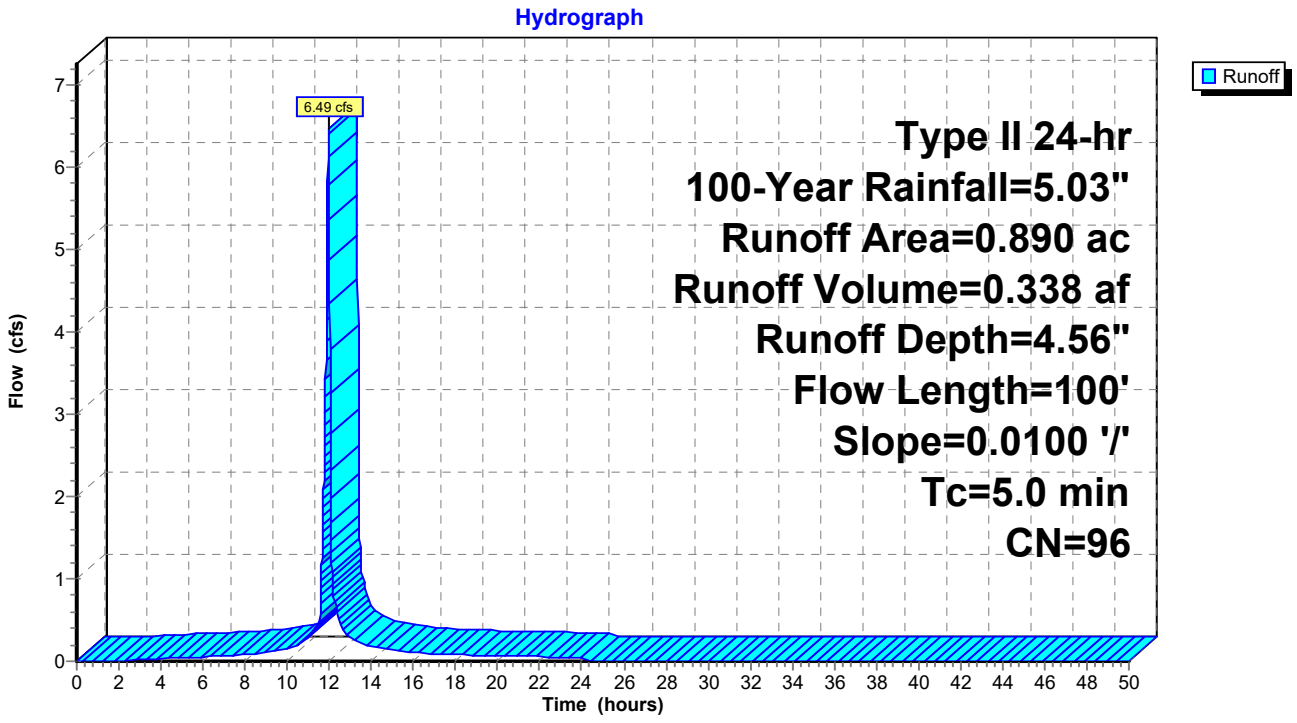
Runoff = 6.49 cfs @ 11.96 hrs, Volume= 0.338 af, Depth= 4.56"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.110	80	>75% Grass cover, Good, HSG D
*	0.780	98	Impervious, HSG D
	0.890	96	Weighted Average
	0.110		12.36% Pervious Area
	0.780		87.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

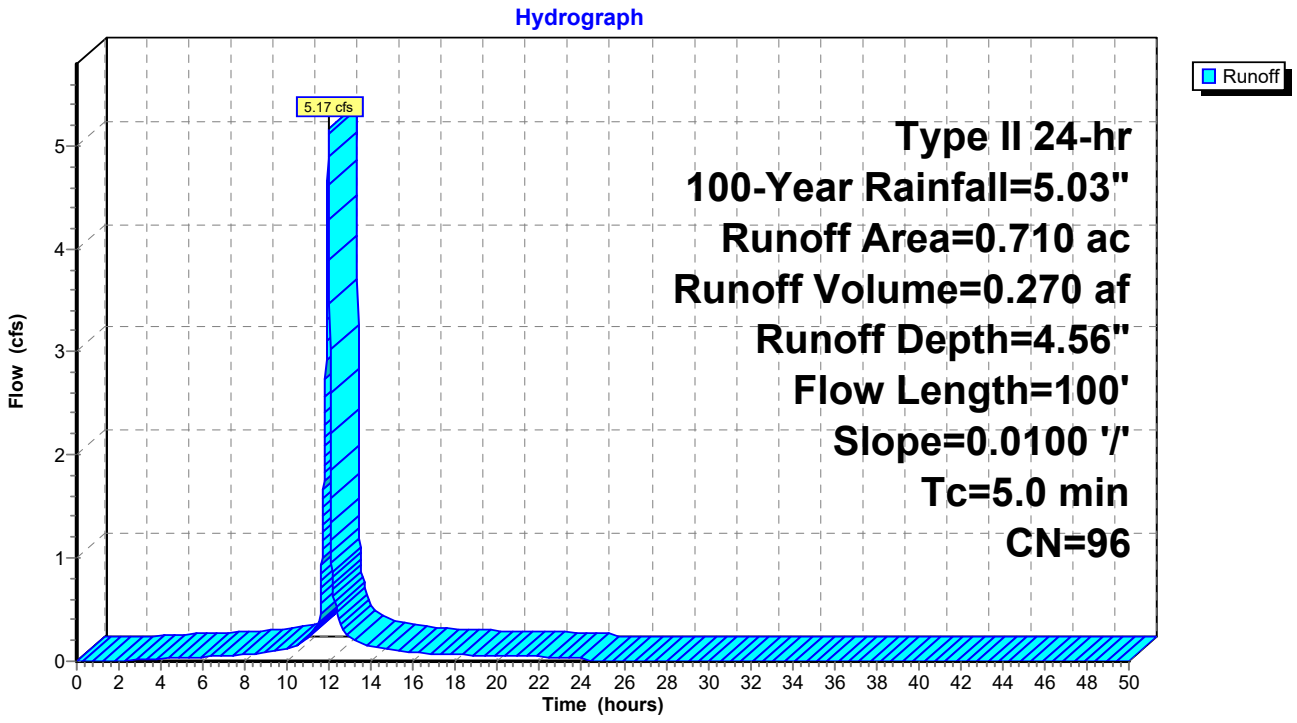
Runoff = 5.17 cfs @ 11.96 hrs, Volume= 0.270 af, Depth= 4.56"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.090	80	>75% Grass cover, Good, HSG D
*	0.620	98	Impervious, HSG D
	0.710	96	Weighted Average
	0.090		12.68% Pervious Area
	0.620		87.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 6S: Proposed Site

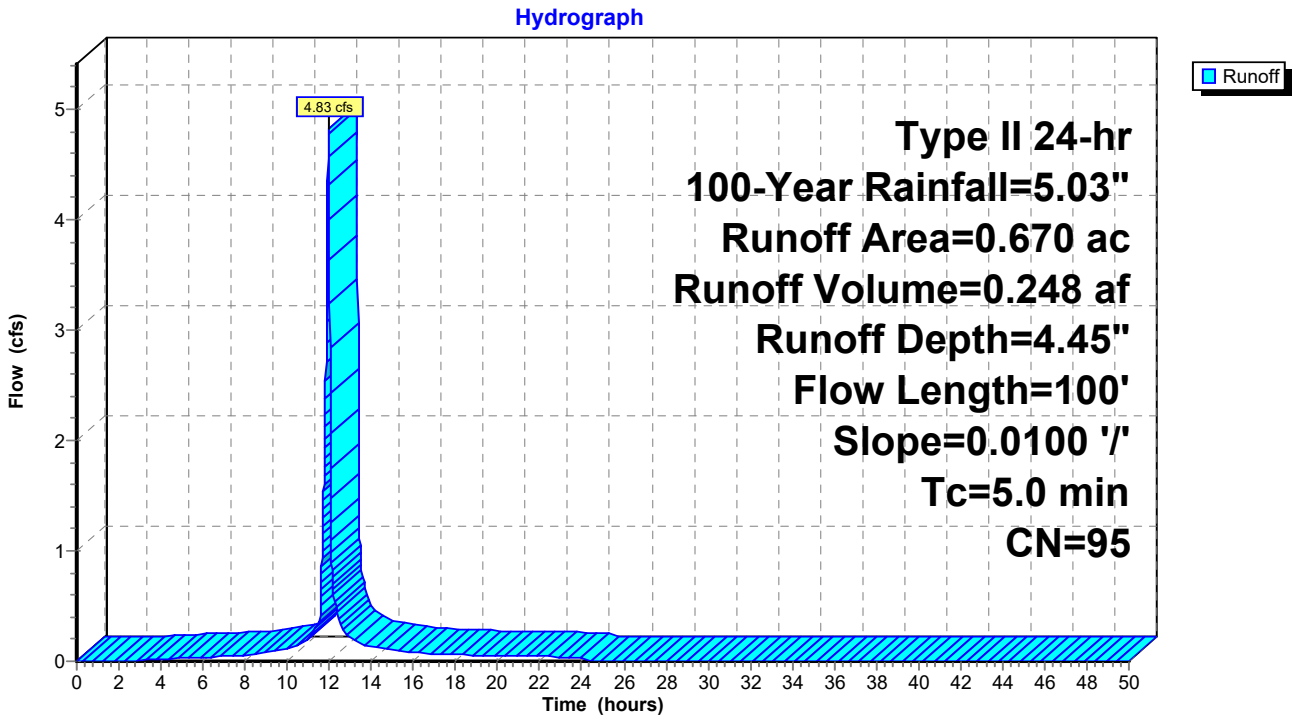
Runoff = 4.83 cfs @ 11.96 hrs, Volume= 0.248 af, Depth= 4.45"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.570	98	Impervious, HSG D
	0.670	95	Weighted Average
	0.100		14.93% Pervious Area
	0.570		85.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 6S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 7S: Proposed Site

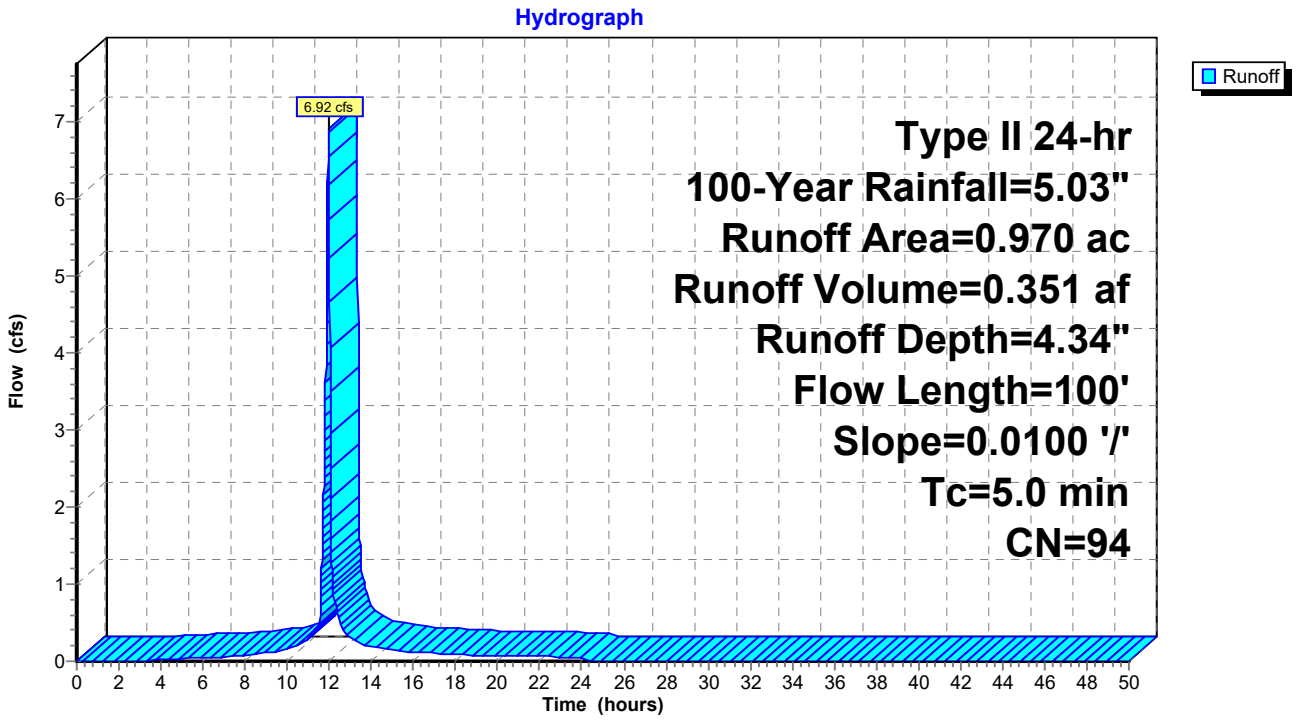
Runoff = 6.92 cfs @ 11.96 hrs, Volume= 0.351 af, Depth= 4.34"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.220	80	>75% Grass cover, Good, HSG D
*	0.750	98	Impervious, HSG D
	0.970	94	Weighted Average
	0.220		22.68% Pervious Area
	0.750		77.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 7S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 8S: Proposed Site

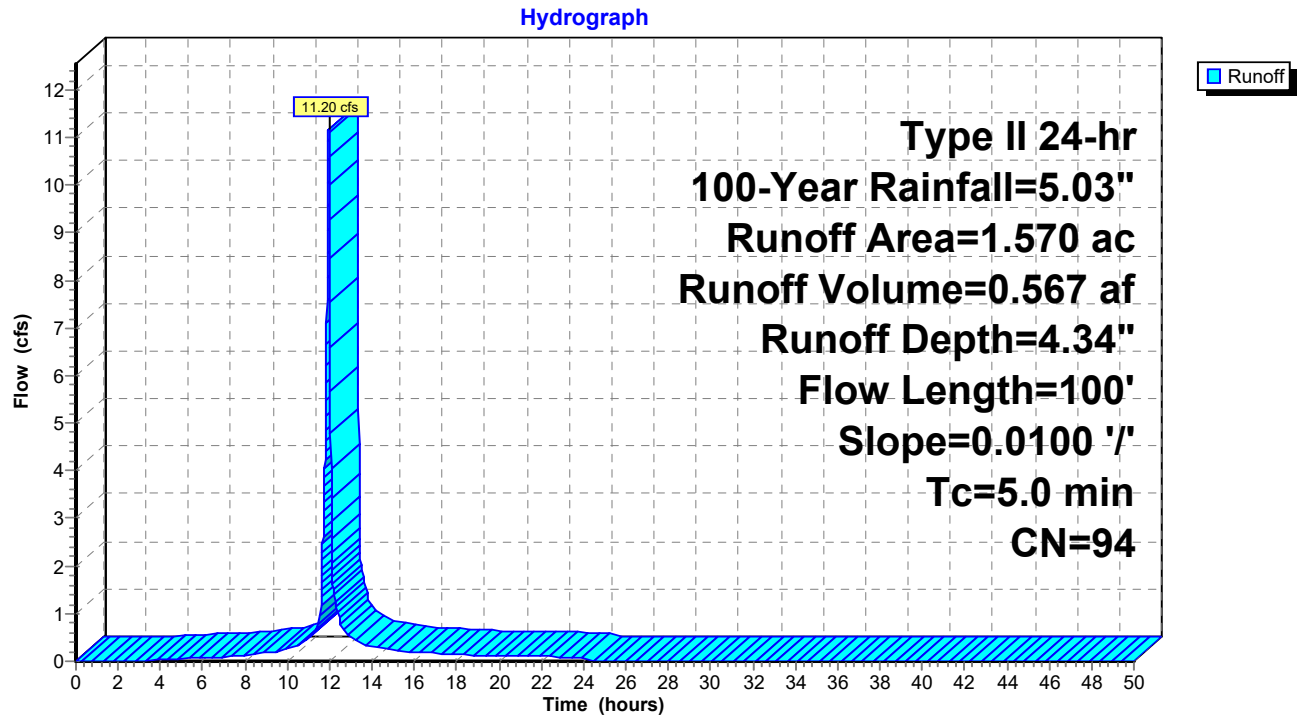
Runoff = 11.20 cfs @ 11.96 hrs, Volume= 0.567 af, Depth= 4.34"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.310	80	>75% Grass cover, Good, HSG D
*	1.260	98	Impervious, HSG D
	1.570	94	Weighted Average
	0.310		19.75% Pervious Area
	1.260		80.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: Proposed Site



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 6.950 ac, 84.75% Impervious, Inflow Depth = 4.47" for 100-Year event
Inflow = 50.20 cfs @ 11.96 hrs, Volume= 2.588 af
Outflow = 25.60 cfs @ 12.04 hrs, Volume= 2.585 af, Atten= 49%, Lag= 5.0 min
Primary = 25.60 cfs @ 12.04 hrs, Volume= 2.585 af
Routed to nonexistent node 1L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.83' @ 12.04 hrs Surf.Area= 20,584 sf Storage= 29,010 cf

Plug-Flow detention time= 34.5 min calculated for 2.585 af (100% of inflow)
Center-of-Mass det. time= 33.7 min (795.7 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	571.50'	14,391 cf	**82.75'W x 248.75'L x 2.54'H Field A** 52,318 cf Overall - 16,341 cf Embedded = 35,977 cf x 40.0% Voids
#2A	572.00'	16,341 cf	**Cultec R-150XLHD** x 600 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 25 rows
		30,732 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Outlet Pipe X 5.00** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=25.59 cfs @ 12.04 hrs HW=573.83' (Free Discharge)
↑—**1=Outlet Pipe** (Inlet Controls 25.59 cfs @ 6.52 fps)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 25 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

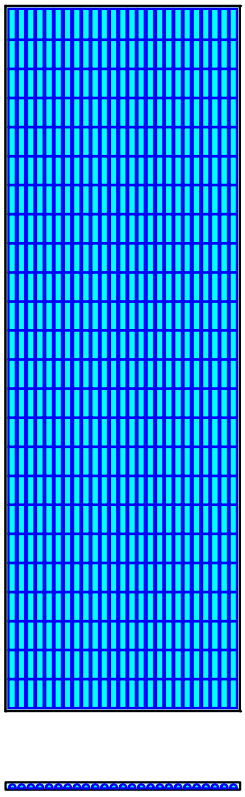
24 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 246.75' Row Length +12.0" End Stone x 2 = 248.75' Base Length
25 Rows x 33.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 82.75' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

600 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 25 Rows = 16,341.0 cf Chamber Storage

52,317.8 cf Field - 16,341.0 cf Chambers = 35,976.8 cf Stone x 40.0% Voids = 14,390.7 cf Stone Storage

Chamber Storage + Stone Storage = 30,731.7 cf = 0.706 af
Overall Storage Efficiency = 58.7%
Overall System Size = 248.75' x 82.75' x 2.54'

600 Chambers
1,937.7 cy Field
1,332.5 cy Stone



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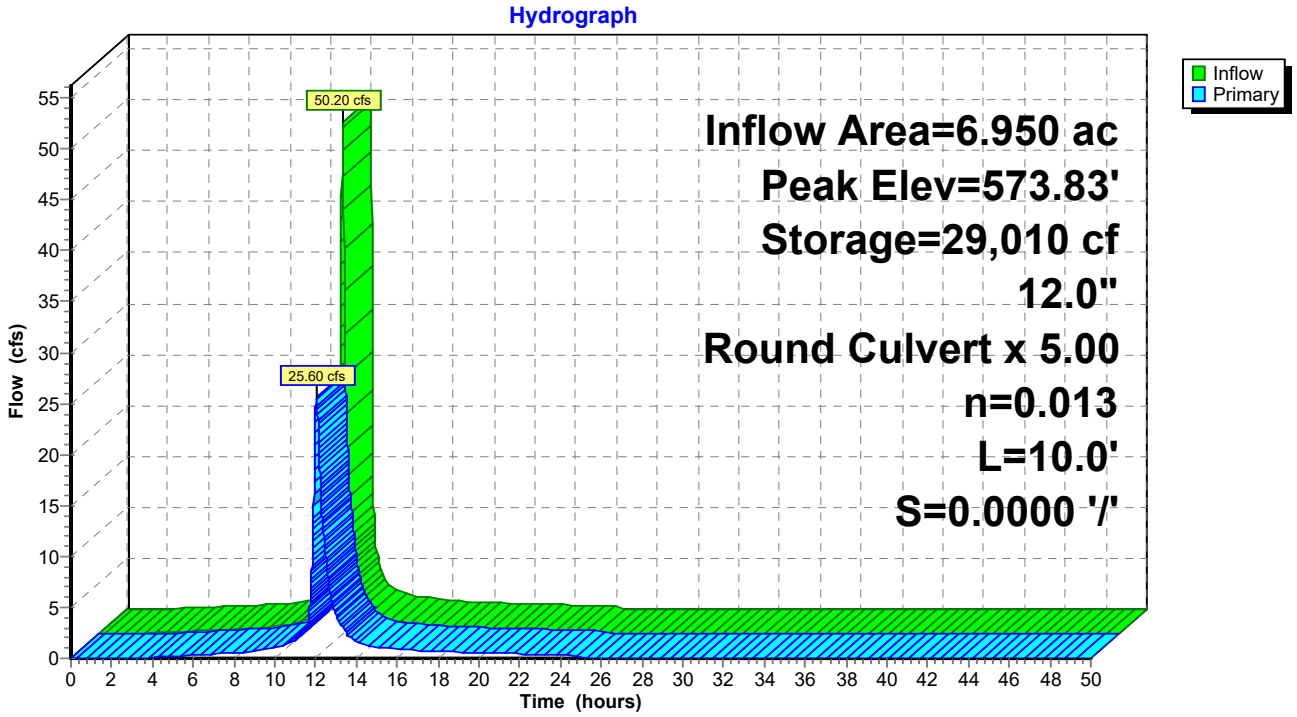
Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix E

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

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(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

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calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

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E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

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8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

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B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

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must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

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b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

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use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

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b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

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the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

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b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

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b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

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begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

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d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

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(Part IV.C.4.a)

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

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b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

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b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

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E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

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(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

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include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

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3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

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(Part VII.R)

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

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Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

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and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

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Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

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New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

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Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

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SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

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Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

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training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

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APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

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Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

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Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

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Appendix C

Figure 1 - New York City Watershed East of the Hudson

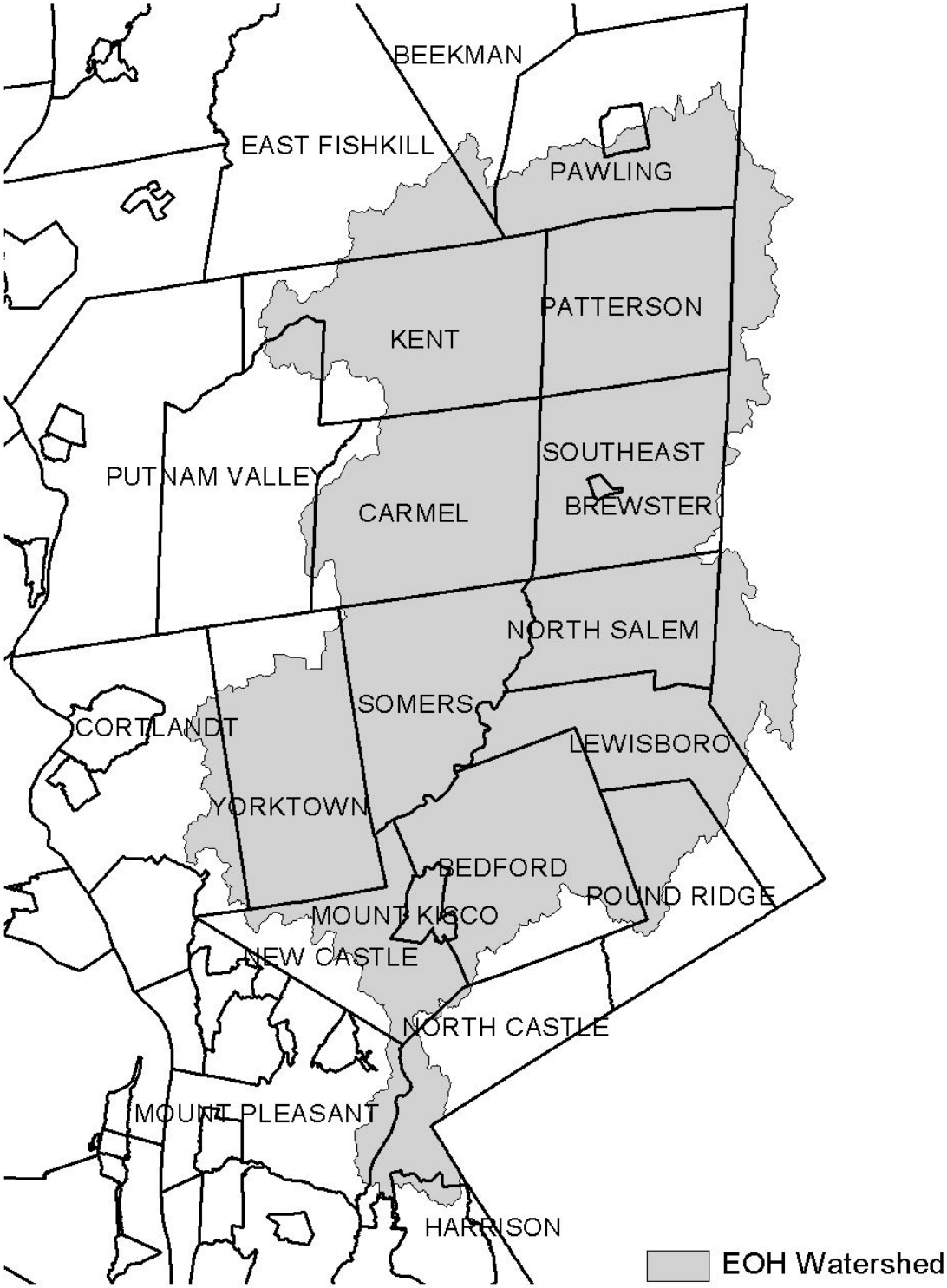

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Figure 2 - Onondaga Lake Watershed



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Figure 3 - Greenwood Lake Watershed

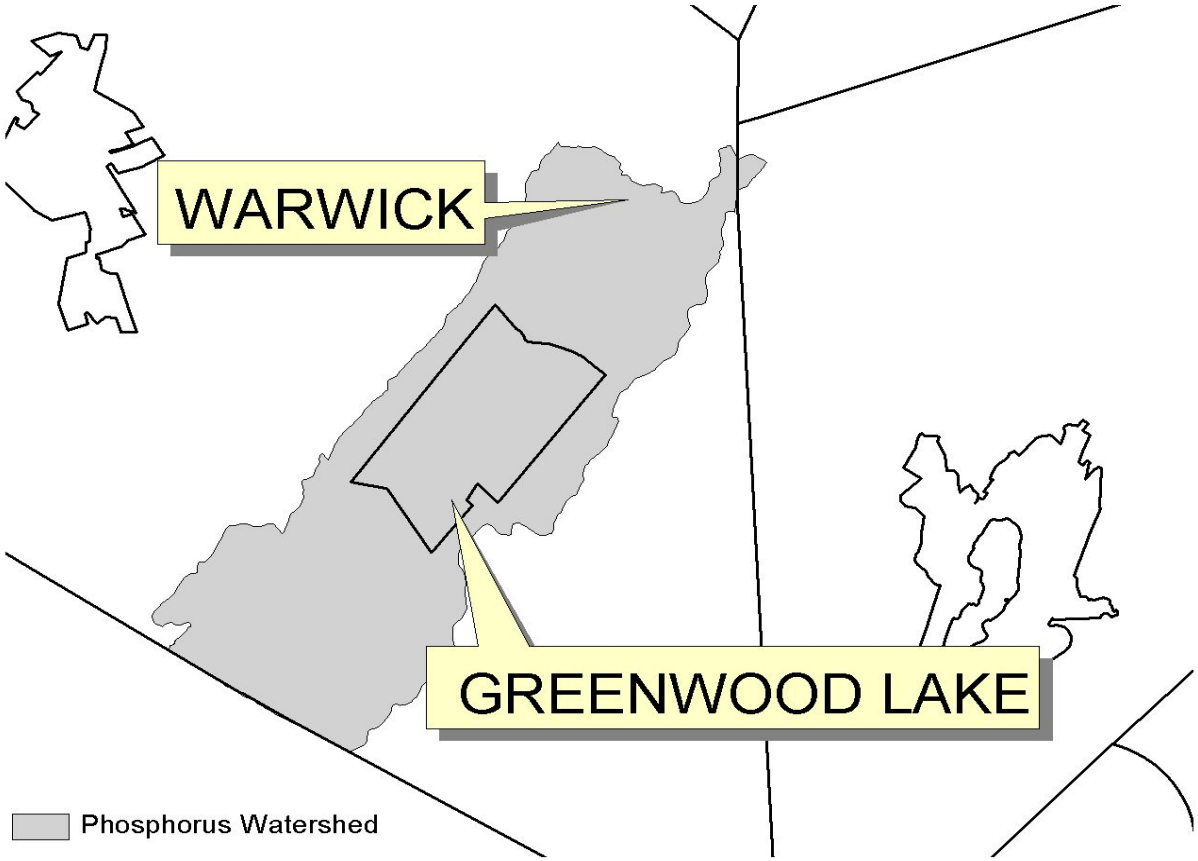

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Figure 4 - Oscawana Lake Watershed

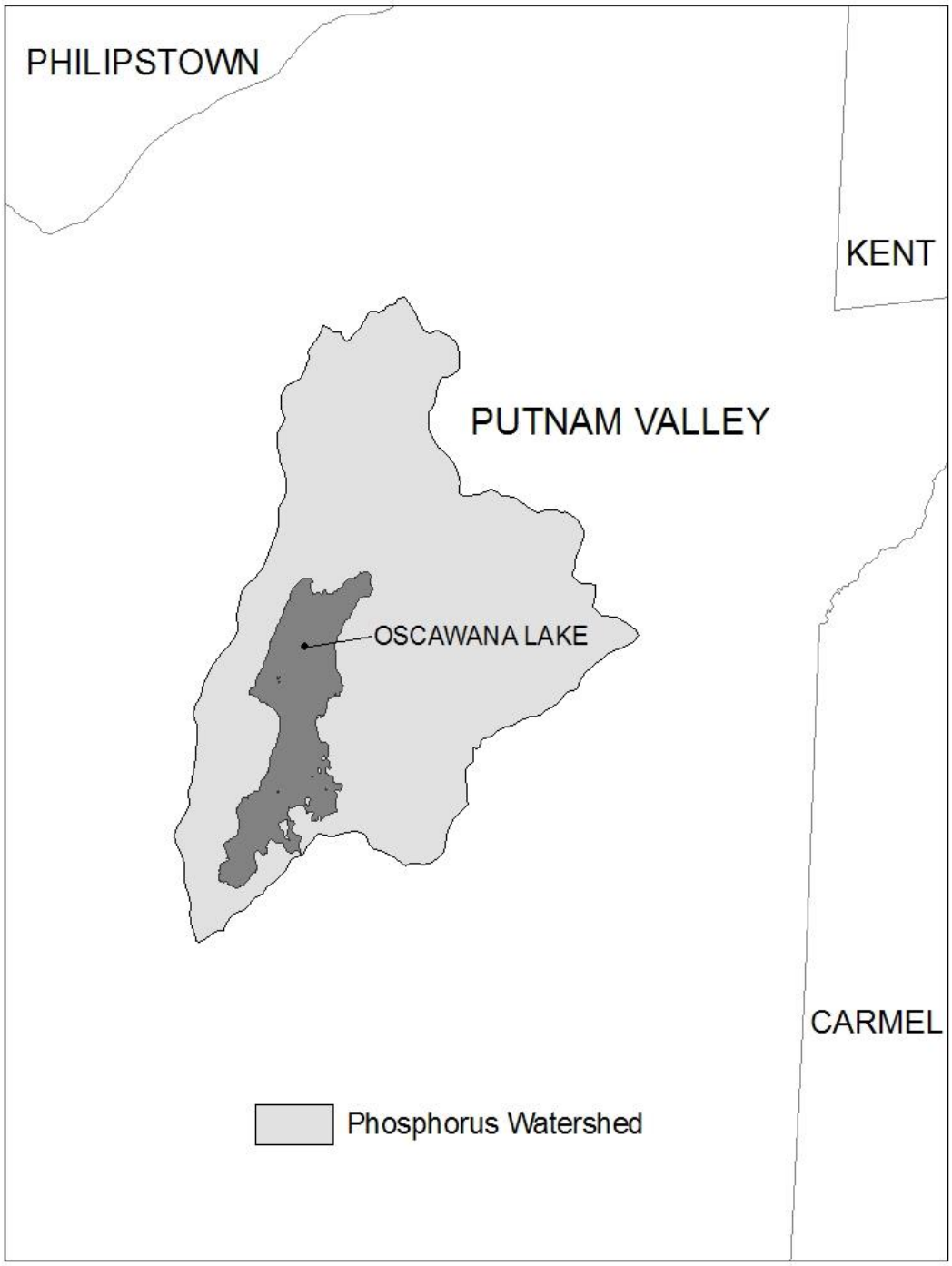

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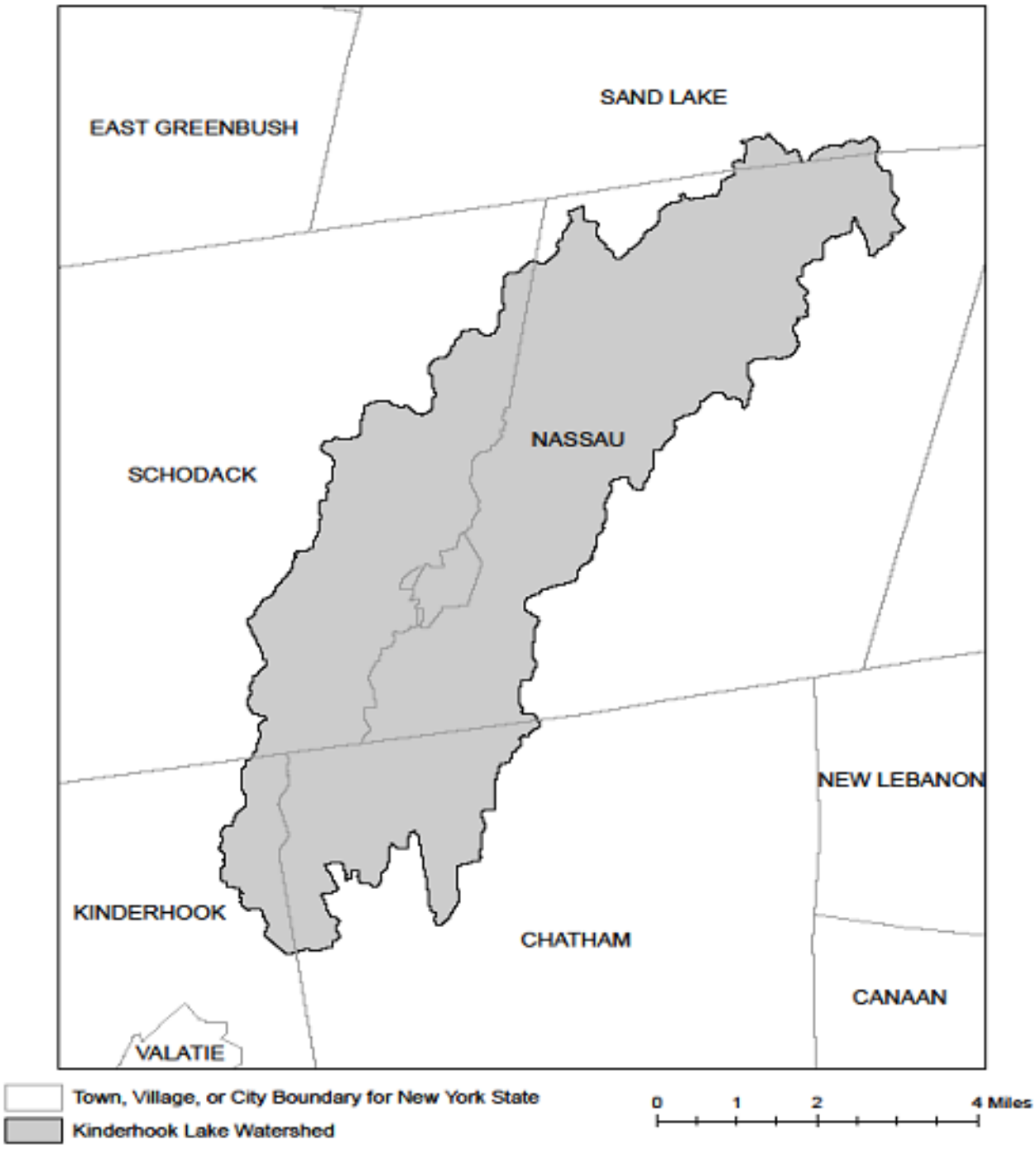
Figure 5 - Kinderhook Lake Watershed



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APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

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APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

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303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix F

Forms

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Amherst Development Park
6000-6040 North Bailey Ave
Amherst, NY 14226

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of Amherst.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

eNOI Submission Number: _____

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Benderson Development Company, LLC - 570 Delaware Ave - Buffalo, NY 14202

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher		Wood
First name	MI	Last Name

11-26-23

Signature Date

Revised: January 2020

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix G

NYSDEC Notice of Termination (NOT)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

Facility Certification Form Cover Sheet

A. General Information

Use only one Cover Sheet per site with as many specific structural BMP Inspection Report attachments as needed. Please attach digital photographs of the site and structural BMPs as applicable.

Development Name:_____ Inspection Date:_____

BMP Owner:_____ Inspection Company:_____

Owner Address:_____ Company Address:_____

Owner Phone #:_____ Inspector Name:_____

Owner Email:_____ Inspector Phone #:_____

Inspector Email:_____

B. Inspection Report Attachments

The listed stormwater controls are the Structural BMPs who's Inspection Reports are to be completed per the NYS Stormwater Design Manual for this site. Please use one inspection report per BMP inspected and submit all forms together with this Cover Sheet as one single report. Also, please document the number of each structural BMP found at this site in the space below.

BMP	# of BMP	BMP	# of BMP
Micropool Extended Detention Pond (P-1)		Infiltration Basin (I-2)	
Wet Pond (P-2)		Dry Well (I-3)	
Wet Extended Detention Pond (P-3)		Surface Sand Filter (F-1)	
Multiple Pond System (P-4)		Underground Sand Filter (F-2)	
Shallow Wetland (W-1)		Perimeter Sand Filter (F-3)	
Extended Detention Wetland (W-2)		Organic Filter (F-4)	
Pond/ Wetland System (W-3)		Bioretention (F-5)	
Pocket Wetland (W-4)		Dry Swale (O-1)	
Infiltration Trench (I-1)		Wet Swale (O-2)	
Alternate Stormwater Management Practices			

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

C. Inspection Results

FAIL*

*** If any one item on the inspection form is coded as "Work needed", then the entire BMP fails inspection.**

***If a site has multiple BMPs and on fails inspection, this cover sheet is marked as fail until all items on all BMPs pass inspection.**

NOTE: Applicable BMP Inspection Reports and confirmatory digital photographs summarizing required repairs must be submitted to the Town following completion of the preliminary inspection. A re-inspection and certification must be completed within 30 days of the failed preliminary report.

PASS

NOTE: A passing inspection form should be signed below by the appropriate professional and submitted to the Town on or before the established inspection due date. Attach all applicable BMP Inspection Reports and confirmatory digital photographs accordingly.

D. Professional Certification

To be completed only when all structural BMPs at this site are functional with no outstanding maintenance issues.

I,_____, as a duly registered _____ attest that a thorough inspection has been completed for all structural BMPsthat are associated with this particular site. All inspected structural BMPs are performing properly and are in compliance with the terms and conditions of the recorded maintenance agreement for the site.

Signature:_____

Date:_____

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix H

Construction Documents

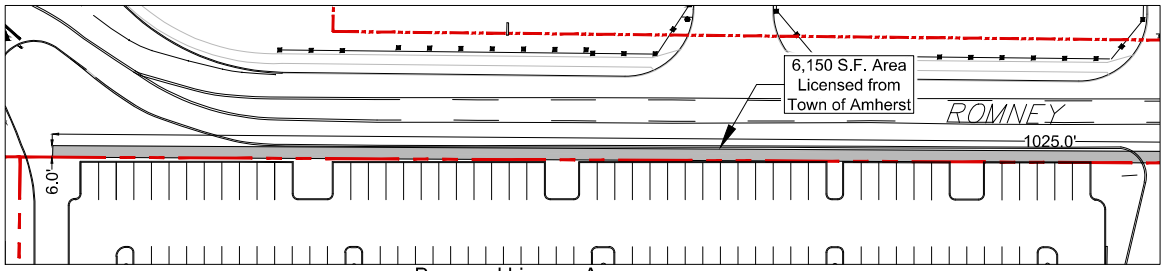
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST, NY ZONING ANALYSIS		
	REQUIRED	PROVIDED
ZONED (RD)	R-D	R-D
MIN LOT AREA	1 AC	17.14 AC
MAX. BUILDING HEIGHT	65'	<30'
BUILDING SETBACKS:		
FRONT YARD	40'	102.3'
SIDE YARD	15'	16.7'
REAR YARD	15'	48.4'
PARKING / ROAD/AUX SETBACKS:		
FRONT - PROPERTY LINE	*25'	**0'
SIDE YARD	*10'	0'
REAR YARD	10'	**6.0'

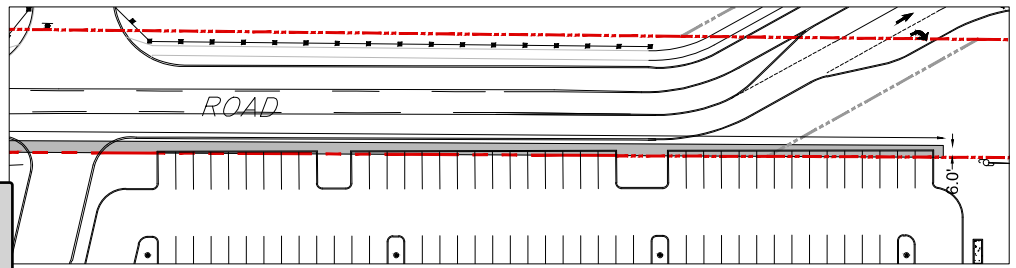
* Area to be determined to be licensed from Town of Amherst
** - Variance Required
- Curb Island Dimensions are measured from the inside of curb.

PROPOSED PARKING ANAYLSIS				
USE	CODE	S.F. USAGE	REQUIRED	PROVIDED
WAREHOUSE	1 / 1000 S.F.	181,343 SF	182 Spaces	
MEDICAL	1 / 150 S.F.	14,960 SF	100 Spaces	
RETAIL/OFFICE	1 / 200 S.F.	66,106 SF	331 Spaces	
TOTAL		262,409 SF	613 Spaces	688 Spaces
STALL SIZE			9' X 19'	9' X 19'

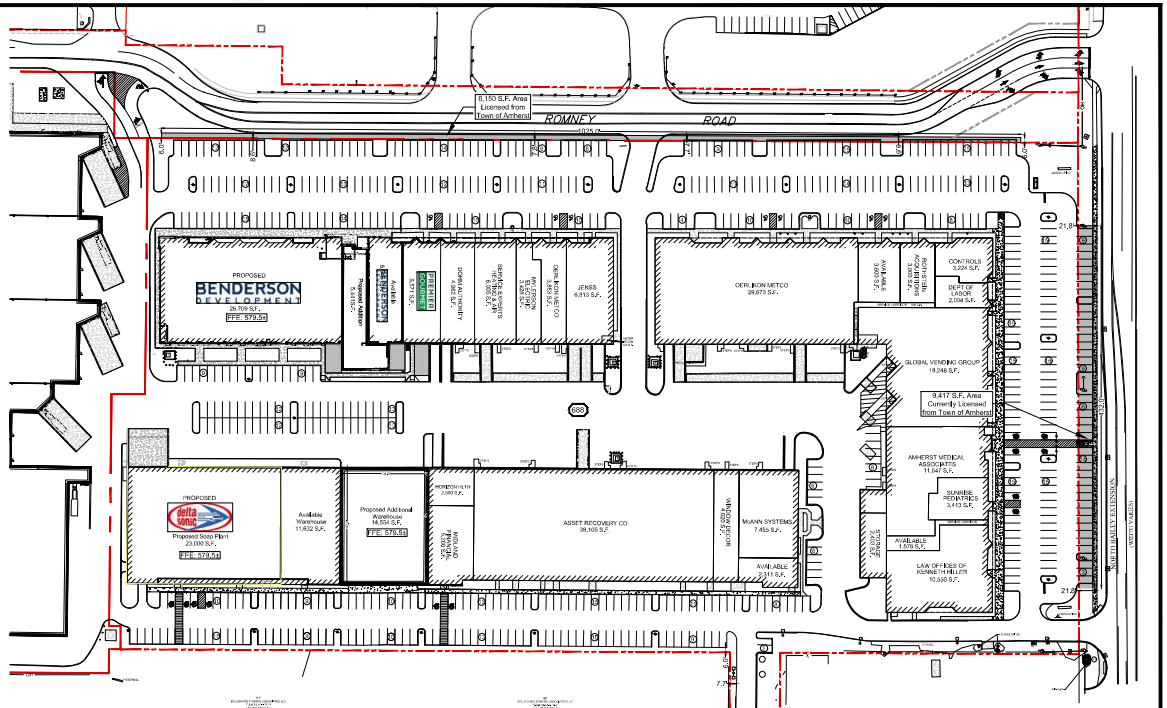
*Refer alternative parking study for site required parking



Proposed Licence Area
(1" = 30')



Proposed Licence Area
(1" = 30')



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:
ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE
UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION 7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

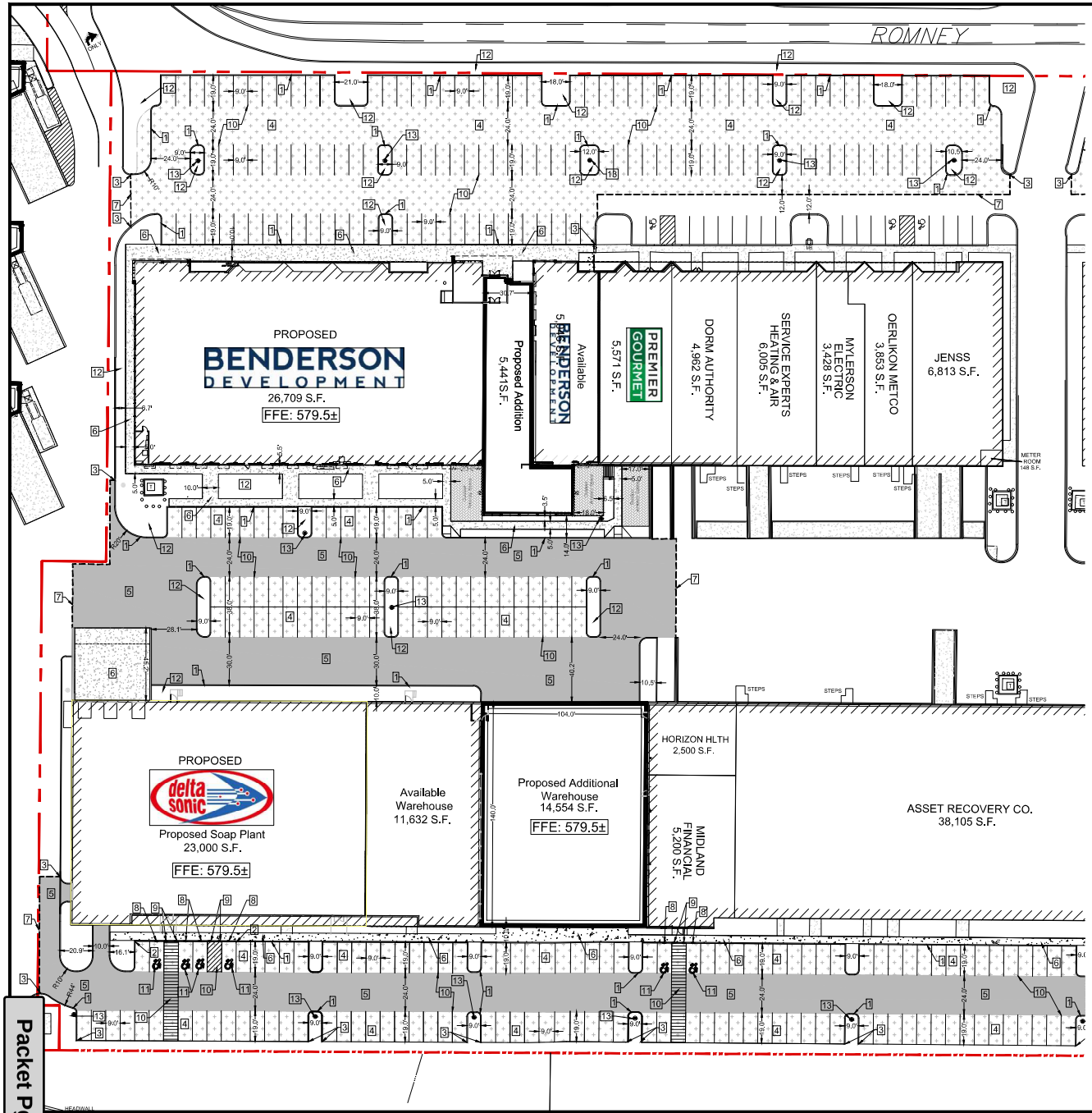
TITLE:
Overall Site Plan

SCALE: 1:70
DRAWN BY: DMZ
DRAWING NO.: C4.0
CHECKED BY: MAO
DATE: 11.06.2023

Packet Pg. 561

1.c

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE, NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE, REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE, REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN.
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES).
    1) L GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN (HRS) AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
    2) ALL COLORED CONCRETE SIDEWALKS SHALL HAVE ONE (#1) COAT: CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PROCURE/ANSWING THE RELEASE AGENT OFF, APPLY 10 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (1) COAT OF: CHEMMASTERS - POLYSEAL EC.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE, SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES:

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement

NB: All curb Radii to be 3' unless otherwise noted.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

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Know what's below. Call before you dig

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AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

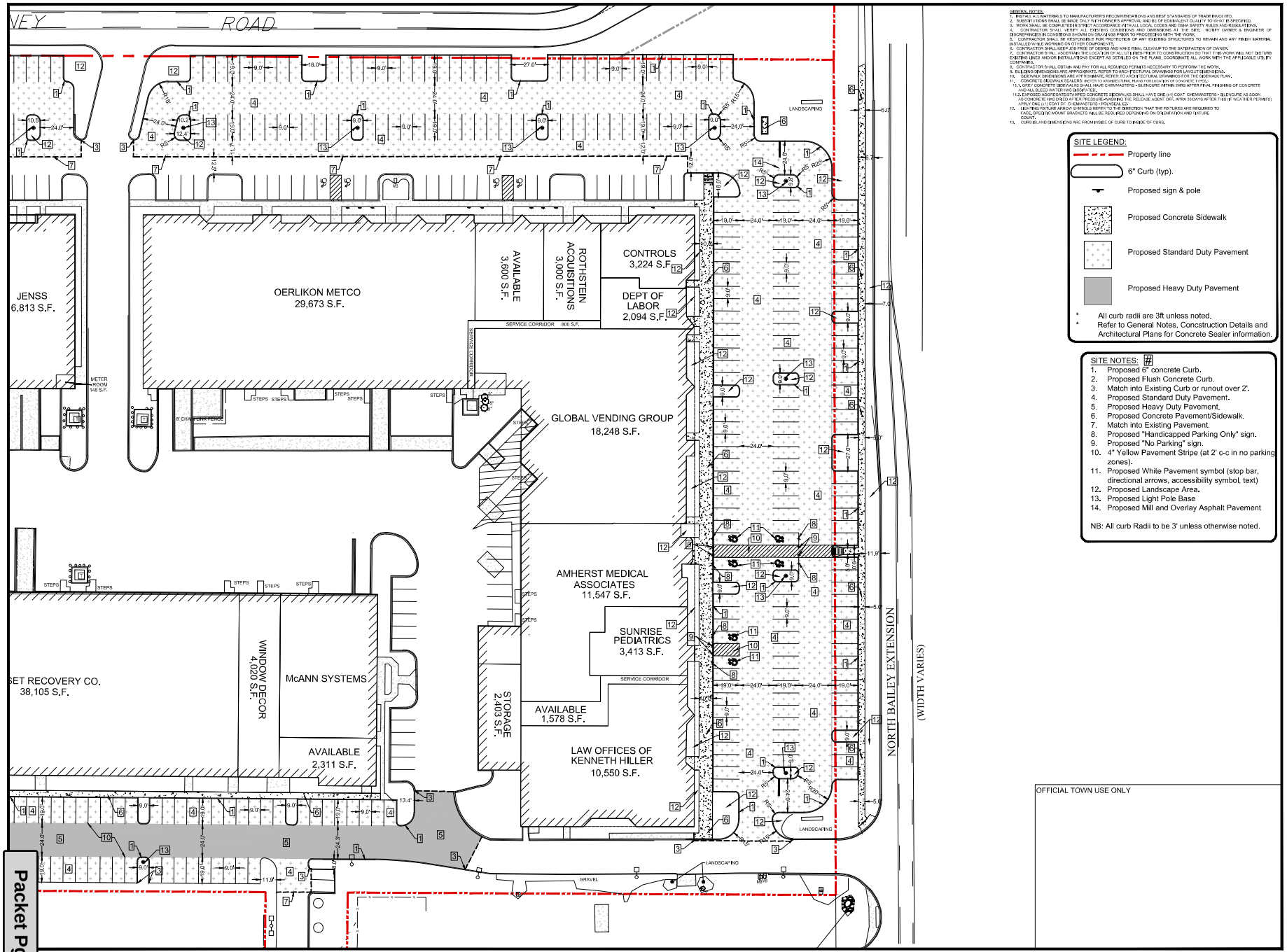
CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Detailed Site Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.: C4.
CHECKED BY: MAO
DATE: 08.16.2023



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN.
11. CONCRETE SIDEWALK SEALERS: REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN (HRS) AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISPARTED.
    11.2. COLORED CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED BY PER PROCEDURE ABOVE USING THE RELEASE AGENT OPT, APPLY 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (1) COAT OF: CHEMMASTERS - POLYSEAL EC.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
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- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES:

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement

NB: All curb Radii to be 3' unless otherwise noted.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:

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NOTICE

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NORTH

811 Know what's below. Call before you dig

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

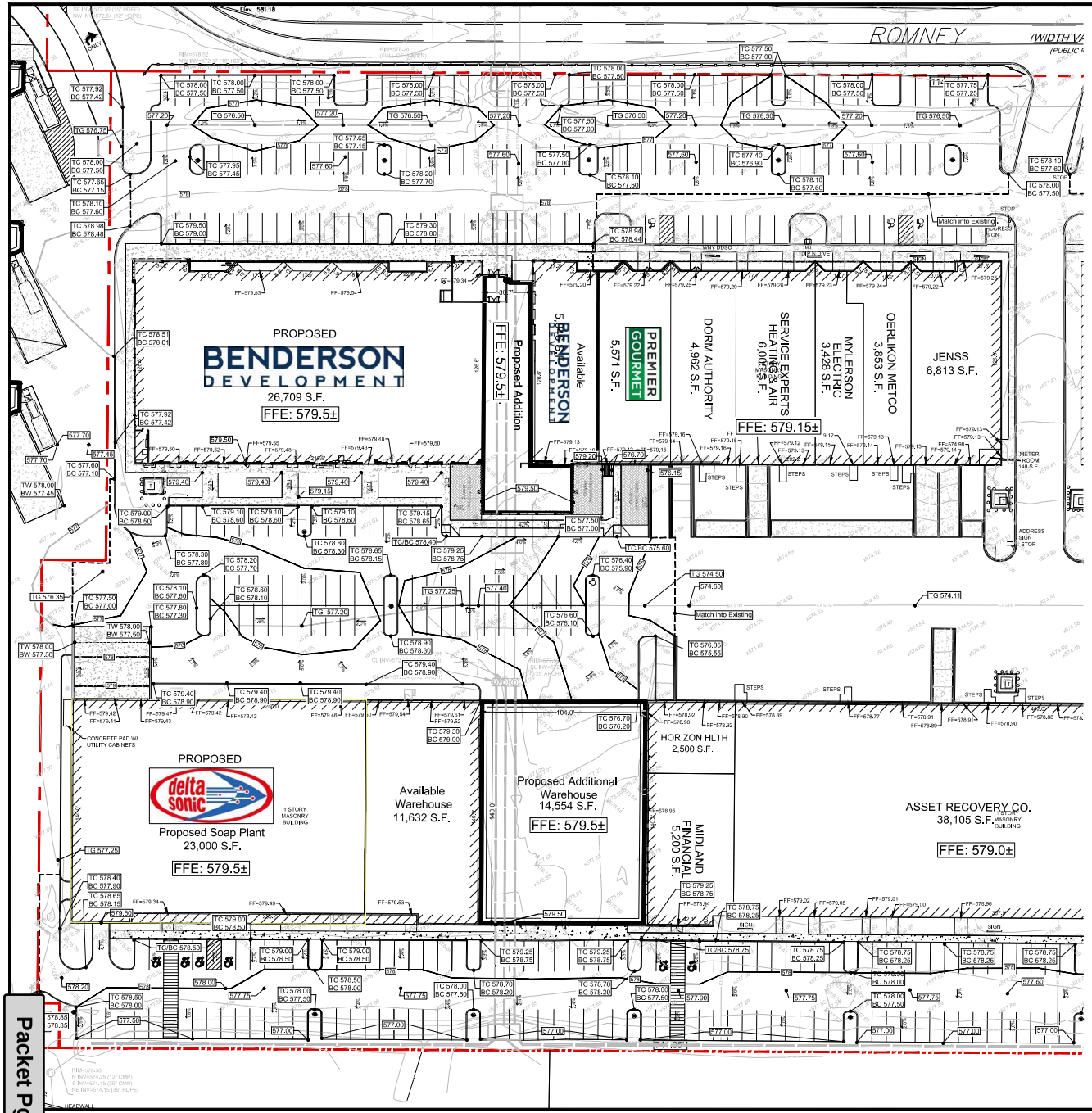
SEAL

TITLE:
Detailed Site Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.
CHECKED BY: MAO
DATE: 08.16.2023
C4.

Packet Pg. 563

1.c



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN.
11. CONCRETE SIDEWALK SEALERS: REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS +28 ENCURE WITHIN THREE AFTER FINAL FINISHING OF CONCRETE AND ALL BUILD WATER HAS DISAPPEARED.
    11.2. COLORED CONCRETE SIDEWALKS - COLORED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PROCEDURE AMONG THE RELEASE AGENT OFF, APPLY 28 DAYS AFTER TO THIS (IF WEATHER PERMITS) APPLY ONE (1) COAT OF: CHEMMASTERS • POLYSEAL EC.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

GRADING LEGEND:

- Property Line
- 6" Curb (typ).
- TG ## — Catch Basin - Top of Grade
- ### — Proposed Contour Line
- ##% — Slope Direction

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

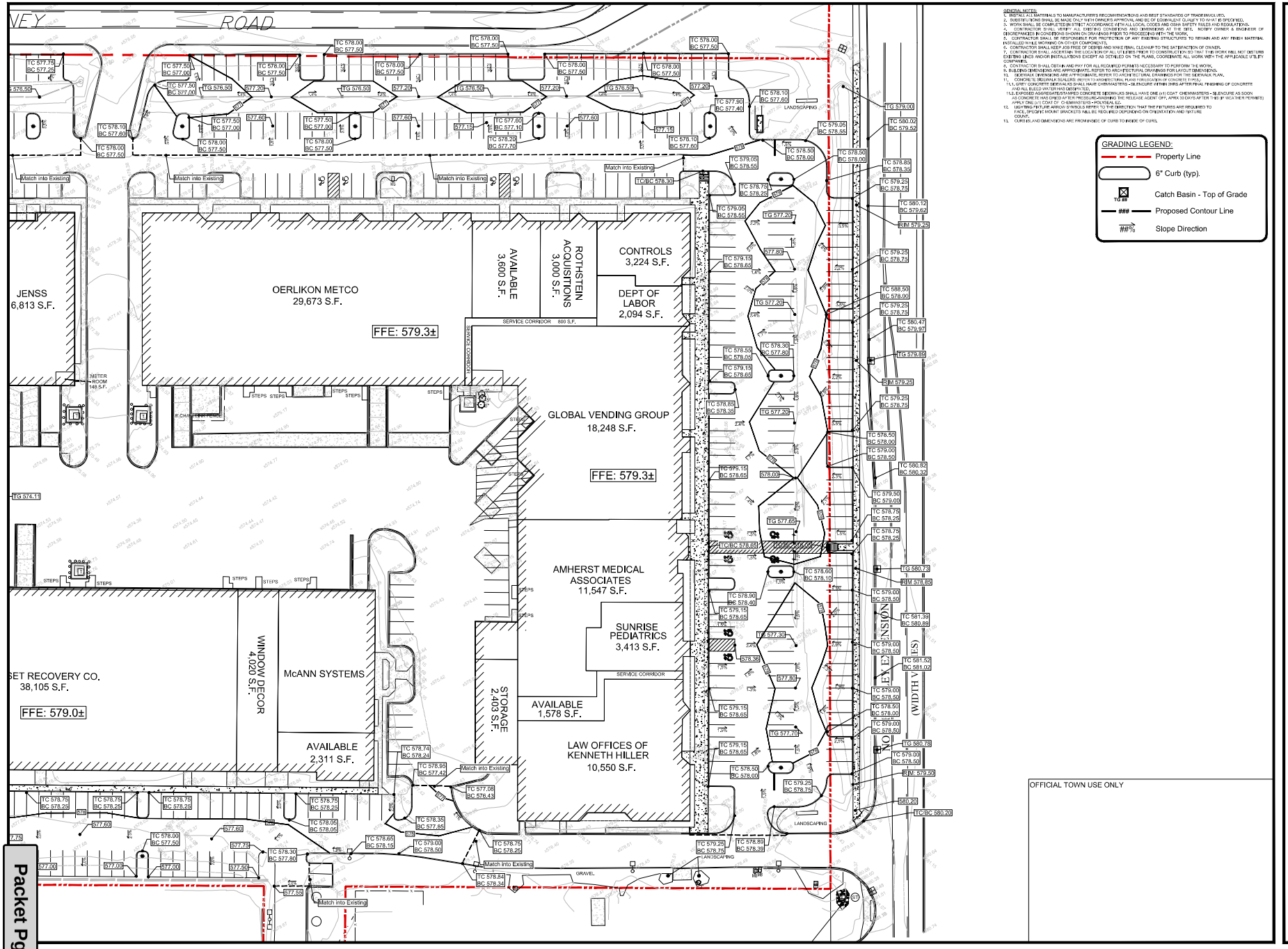
TITLE: Grading Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.: C5.0
CHECKED BY: MAO
DATE: 11.08.2023

Packet Pg. 564

1.c

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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11. CONCRETE SIDEWALK SEALERS: REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 24HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BUGGI WATER HAS DISSIPATED.
    11.2. COLORED CONCRETE SIDEWALKS - ALL CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT: CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PROCURING/ANSWERING THE RELEASE AGENT OFF, APPLY 28 DAYS AFTER TO THIS (IF WEATHER PERMITS) APPLY ONE (1) COAT OF: CHEMMASTERS - POLYSEAL EC.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

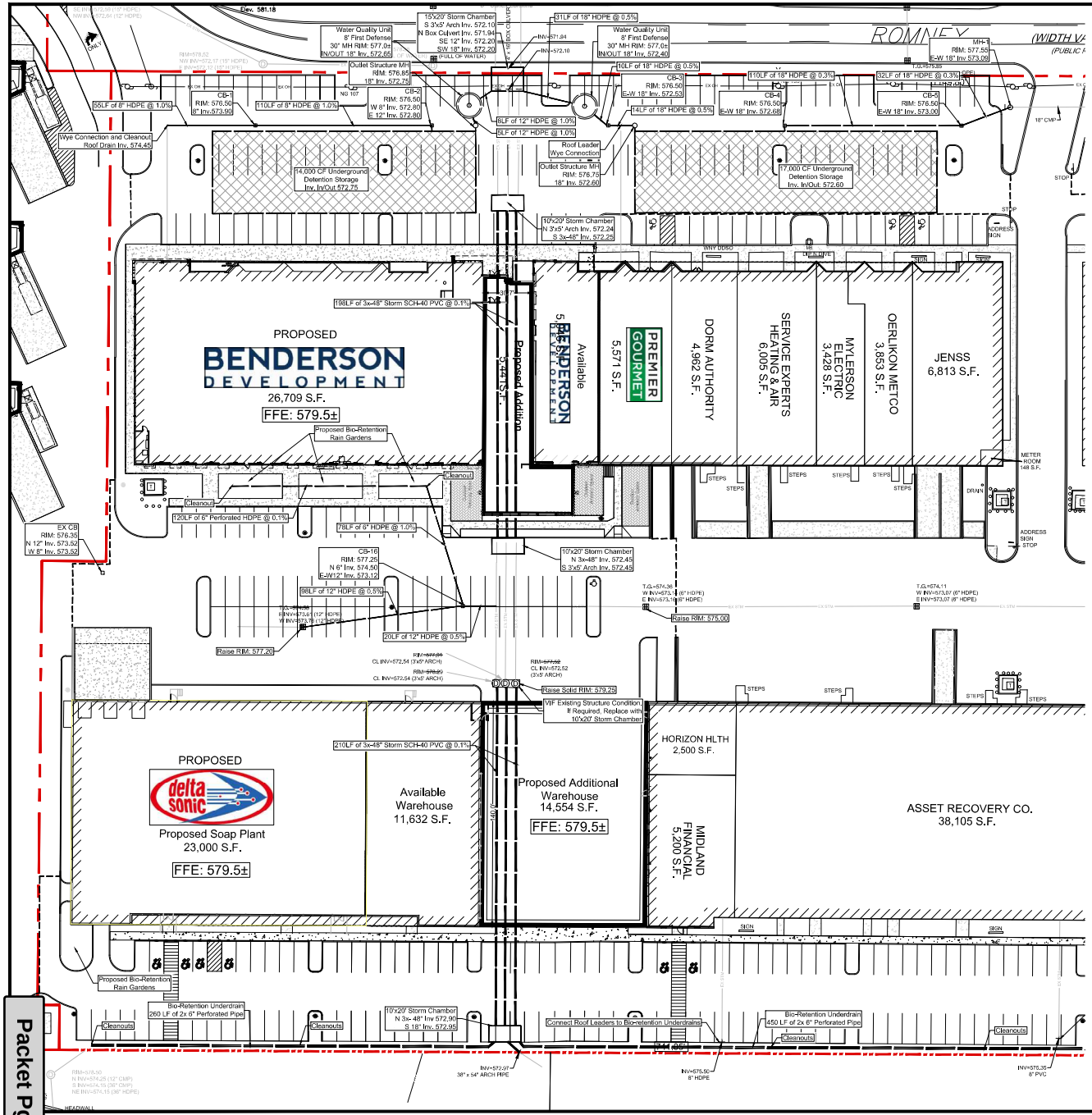
CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Grading Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.0



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No.	DATE	BY	REMARKS

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Amherst, NY 14226

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CONSULTANT

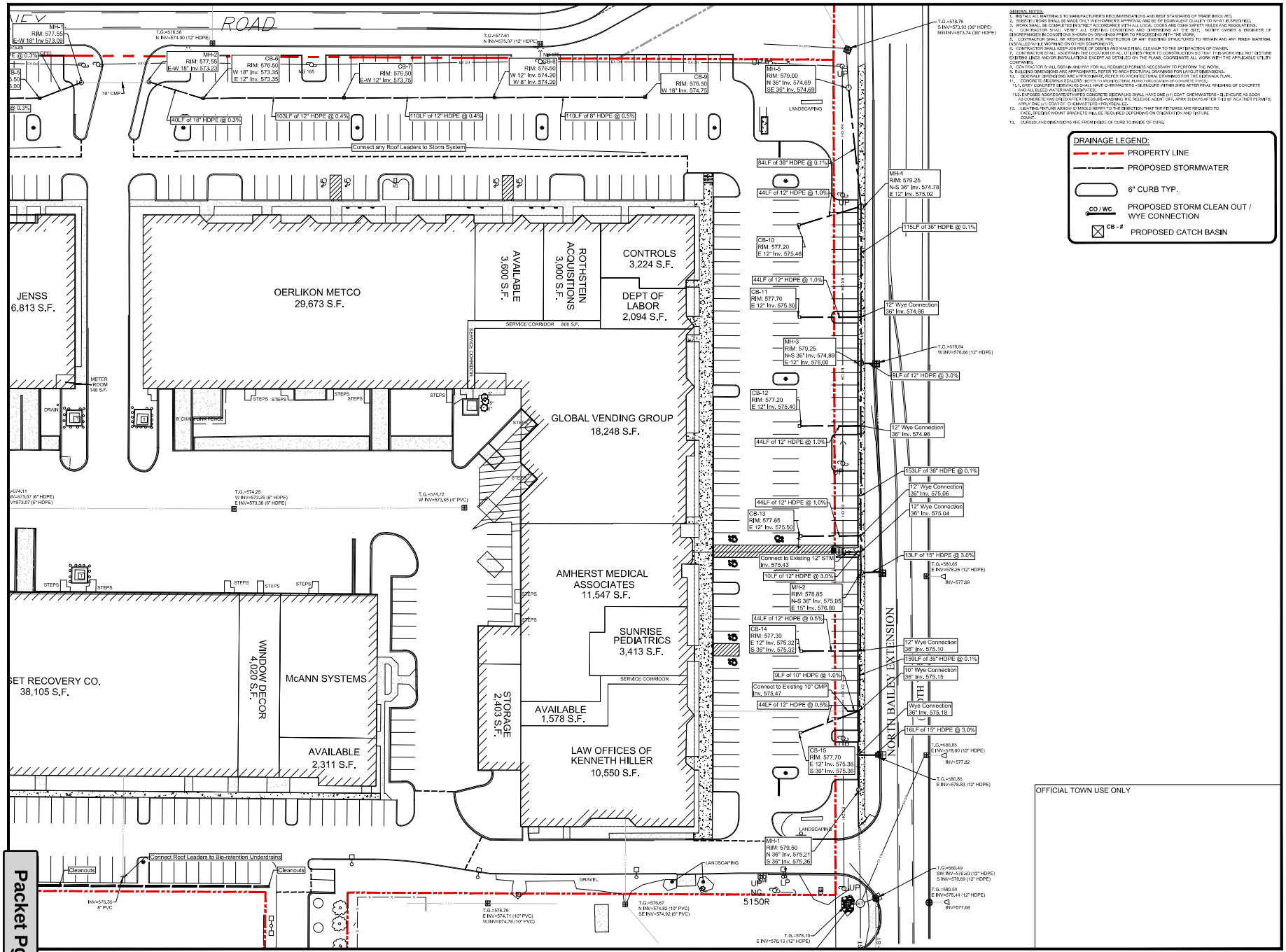
JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE: Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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Amherst Development Park
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Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Drainage Plan (East)

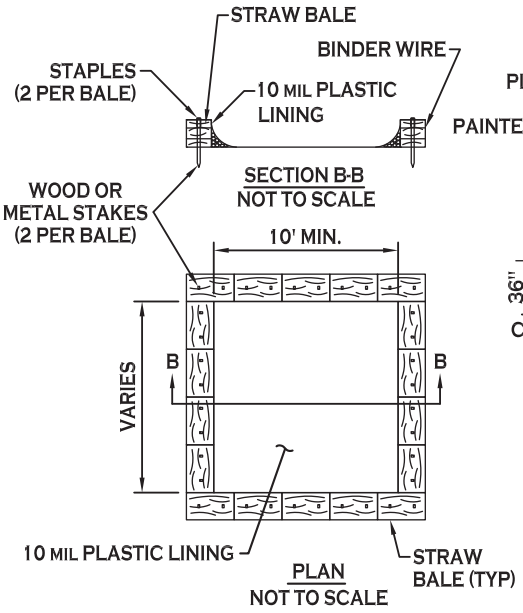
SCALE: 1:30
DRAWN BY: DMZ
DRAWING NO.: C5.
CHECKED BY: MAO
DATE: 11.08.2023

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

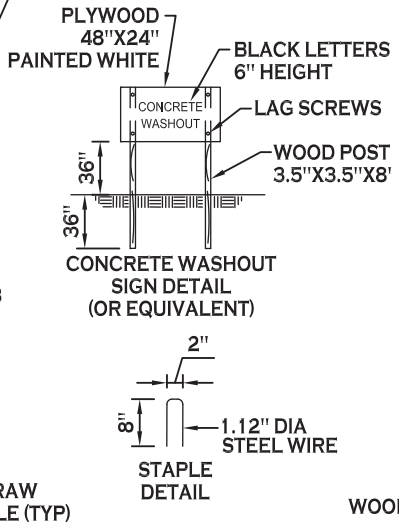
Appendix I

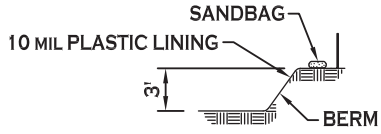
Standard Erosion Control Details

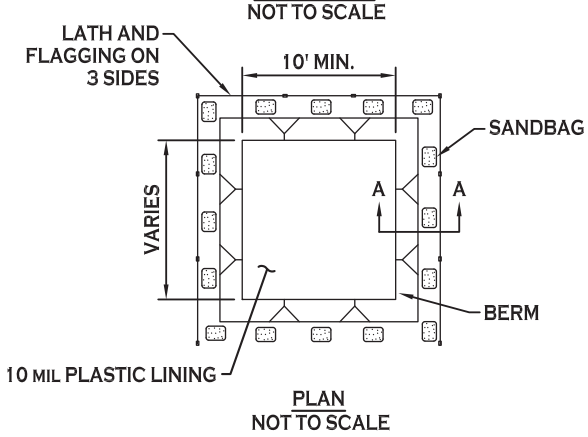
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



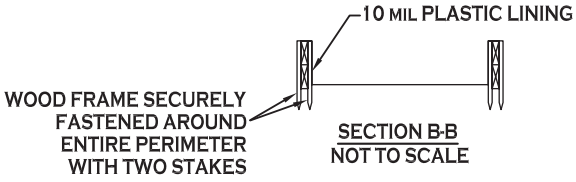
TYPE "ABOVE GRADE" WITH STRAW BALES

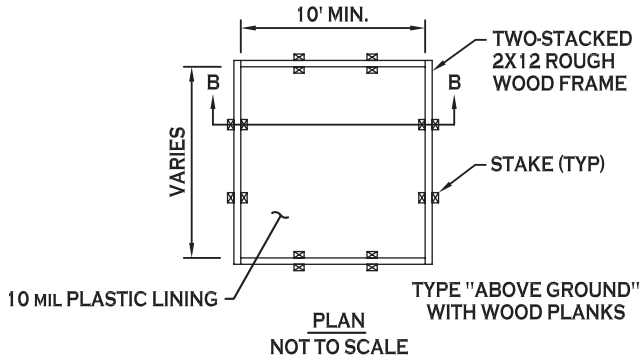






TYPE "BELOW GRADE"



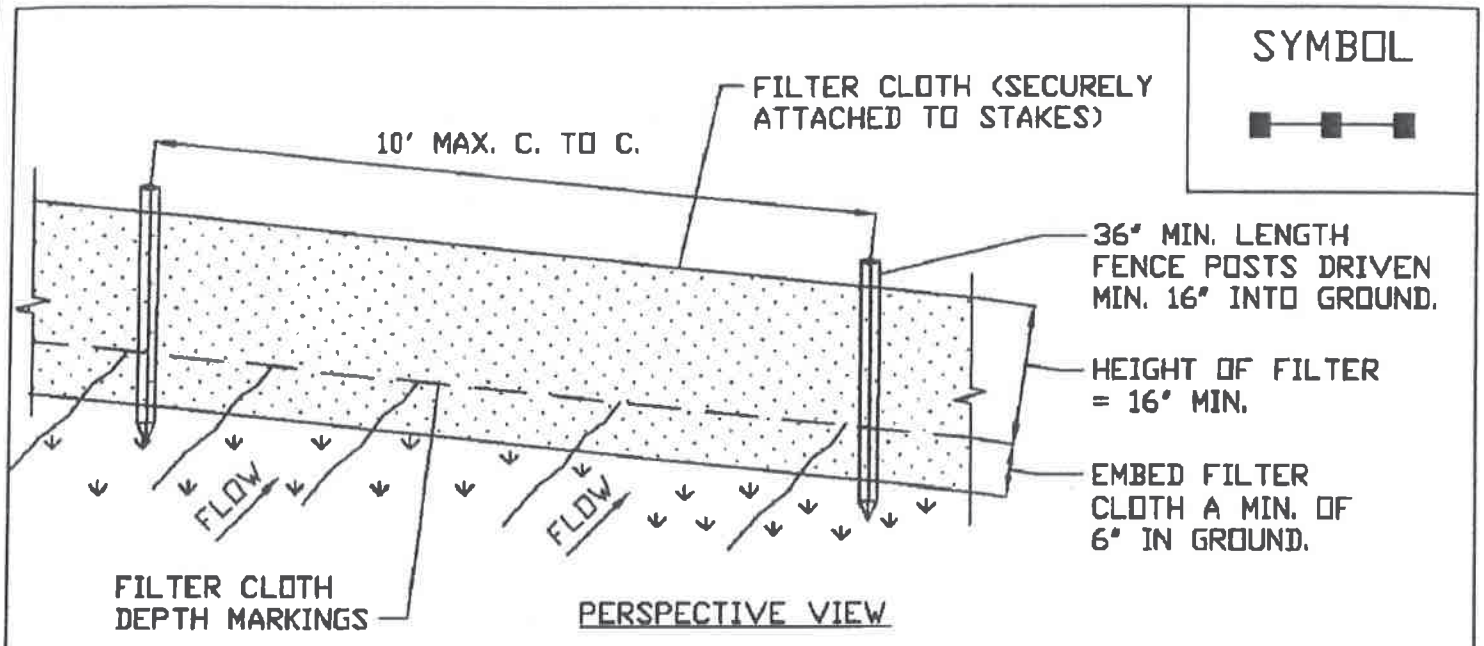


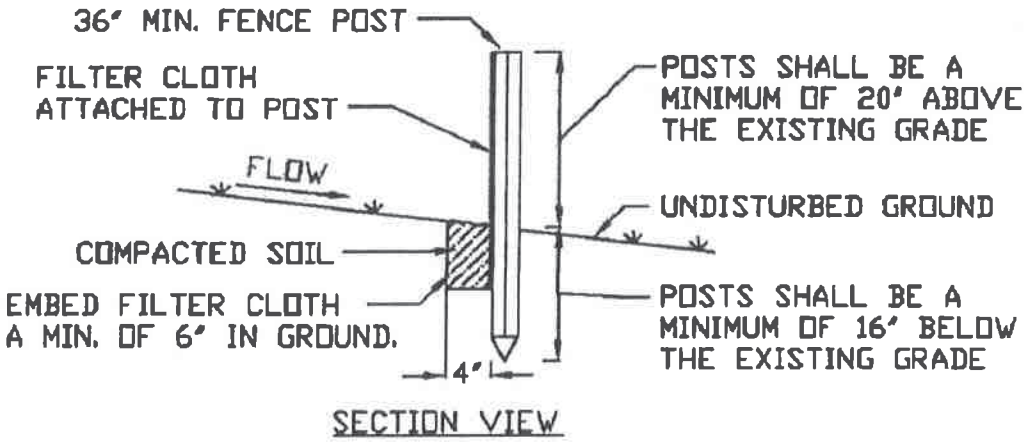
NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL

NOT TO SCALE



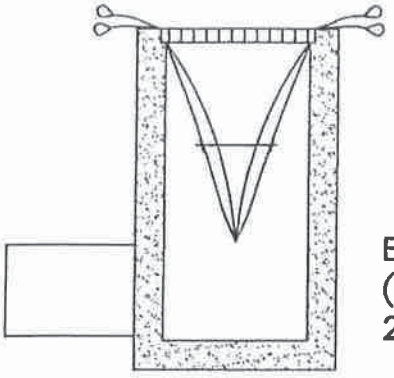


CONSTRUCTION SPECIFICATIONS

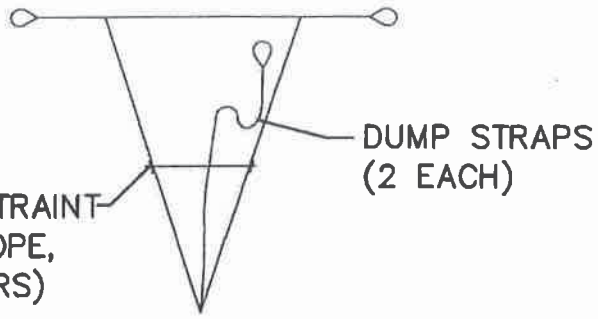
1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE (WITHOUT WIRE MESH BACKING)

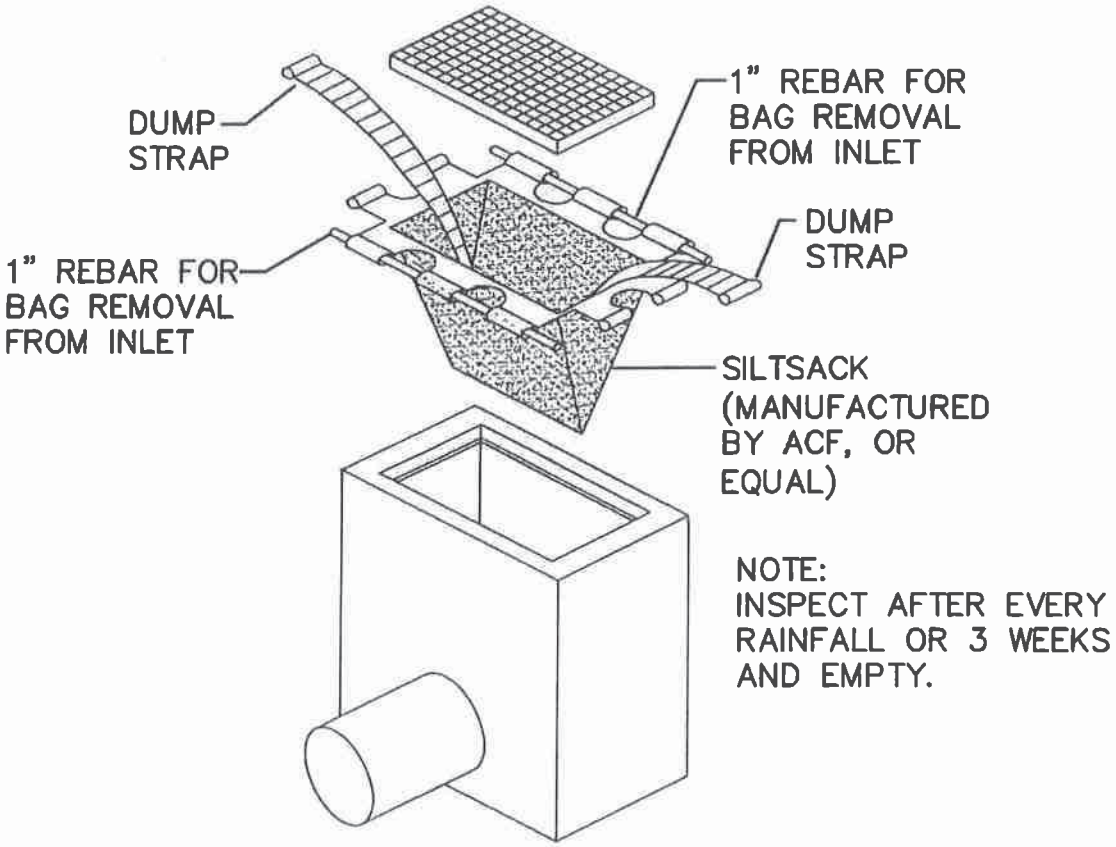
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



INSTALLATION DETAIL



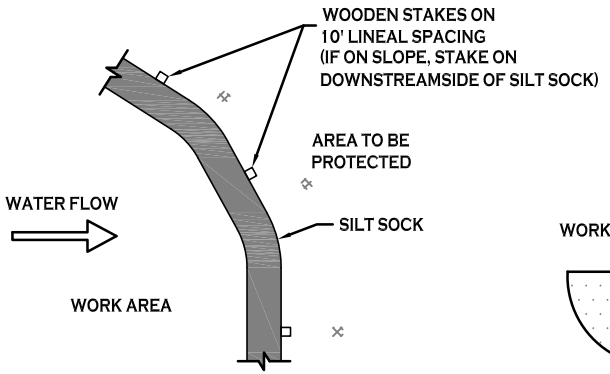
BAG DETAIL



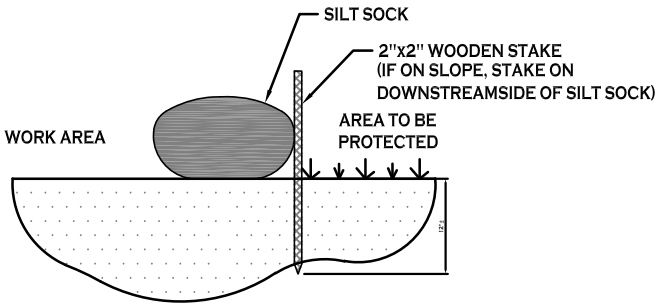
SILT SACK DETAIL

NOT TO SCALE

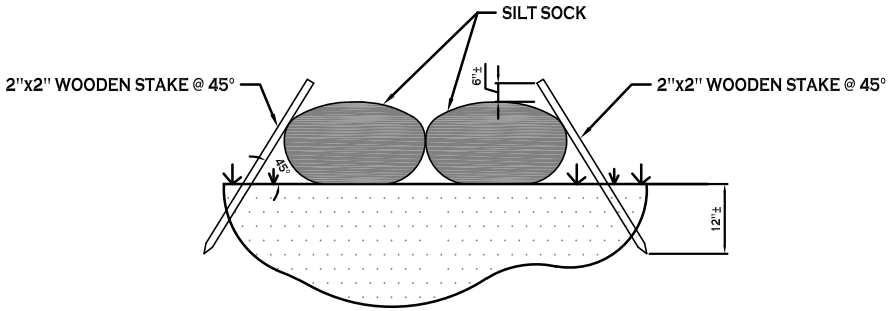
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



PLAN VIEW



SECTION VIEW



SECTION VIEW @ JOINT OVERLAP

NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK SHALL BE OVERLAPPED 12" AT JOINTS AND STAKED ON EACH SIDE OF THE SOCK AT A 45° ANGLE

SILT SOCK DETAIL

N.T.S.

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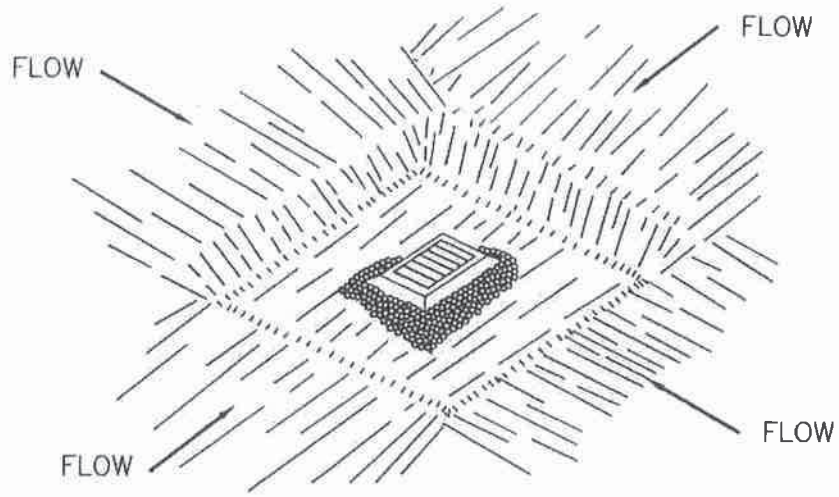
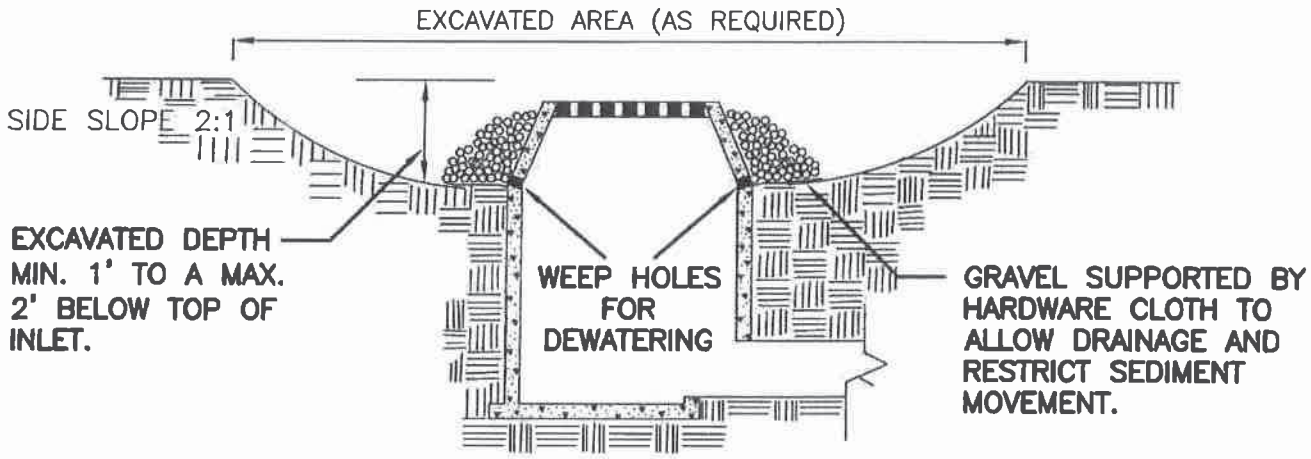




CONSTRUCTION SPECIFICATIONS

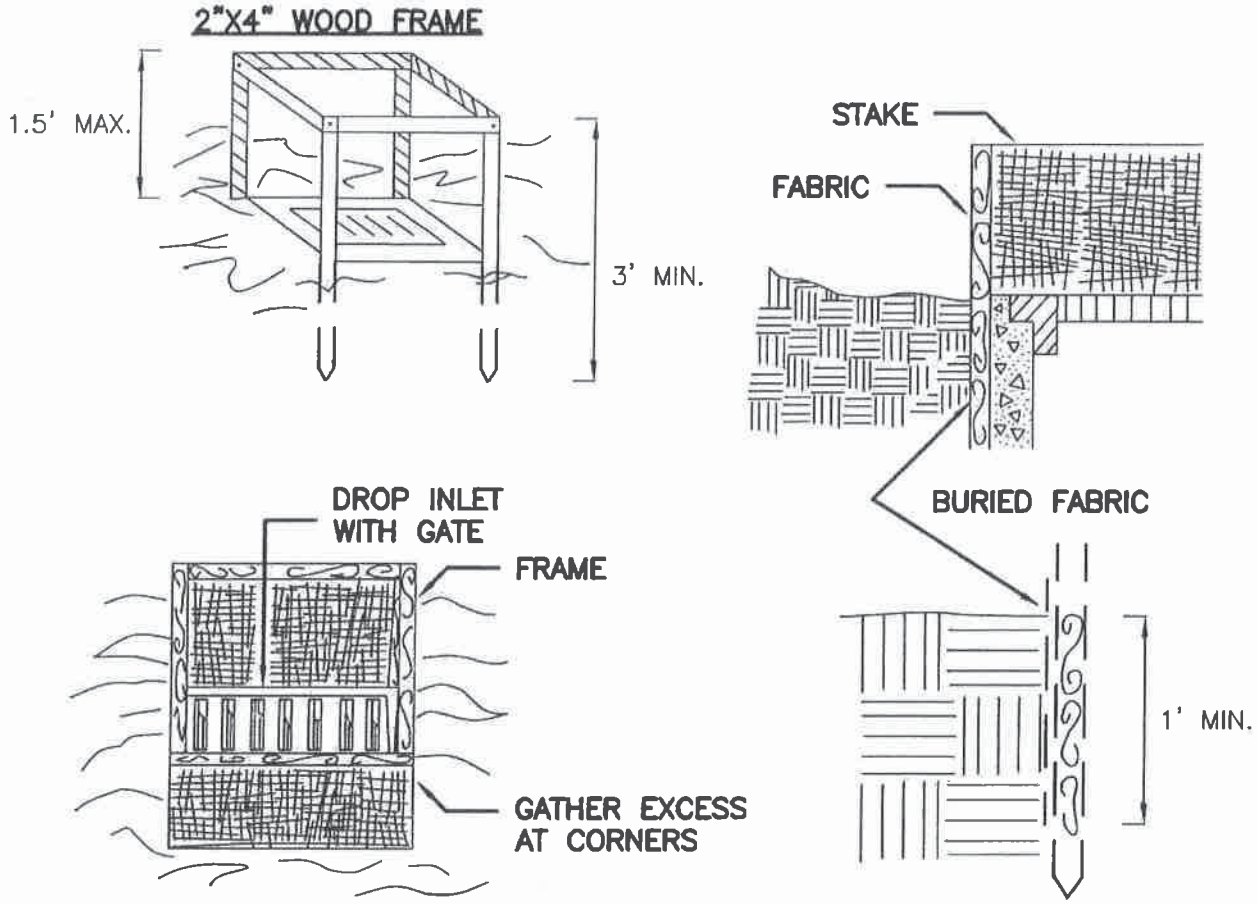
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



CONSTRUCTION SPECIFICATIONS

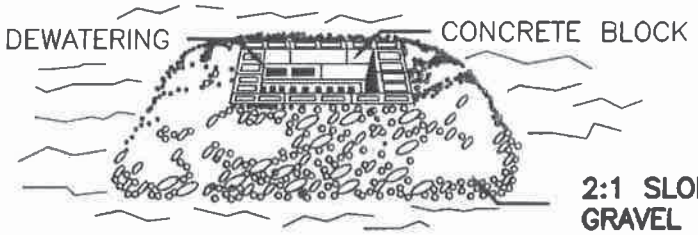
1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

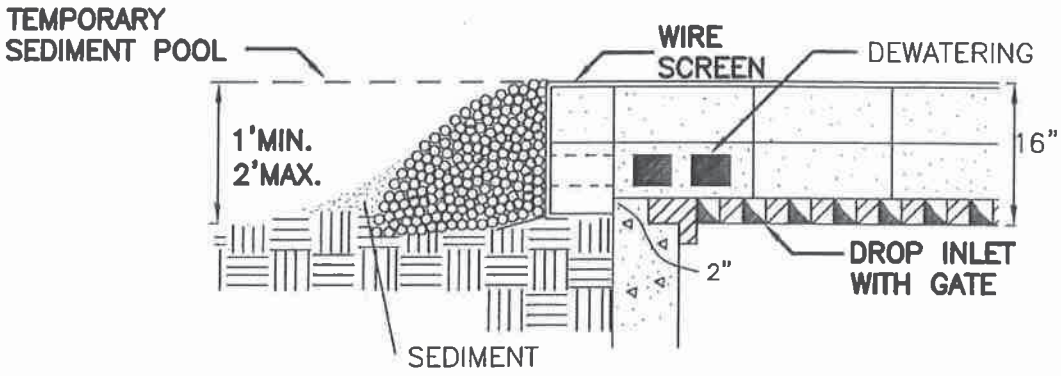
INLET PROTECTION DETAIL 2

NOT TO SCALE

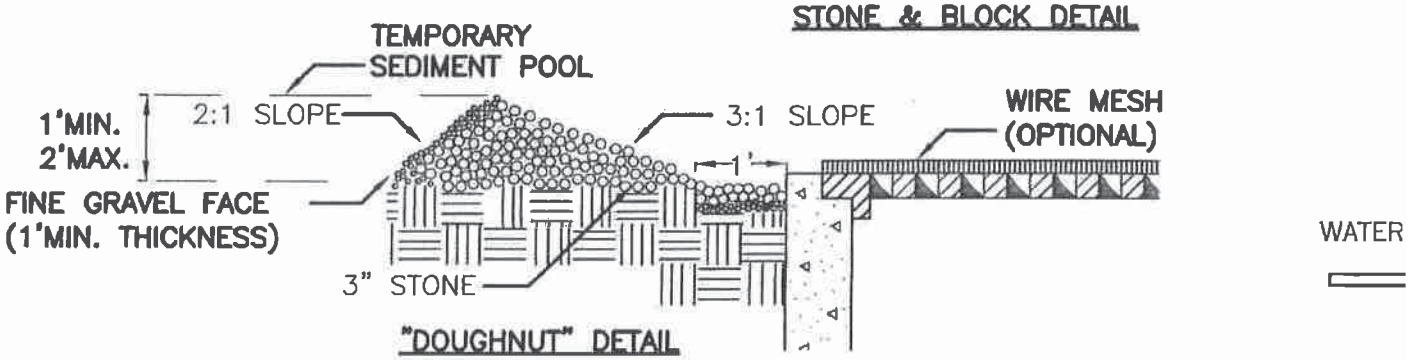
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2–3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

NOT TO SCALE

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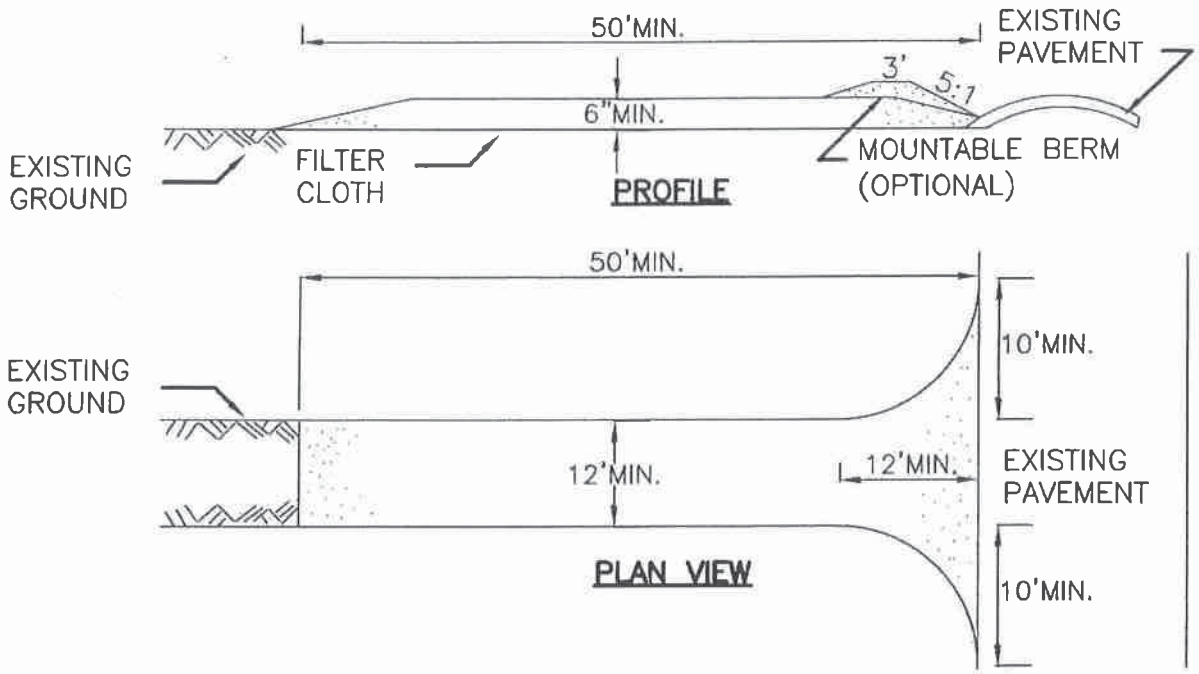

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

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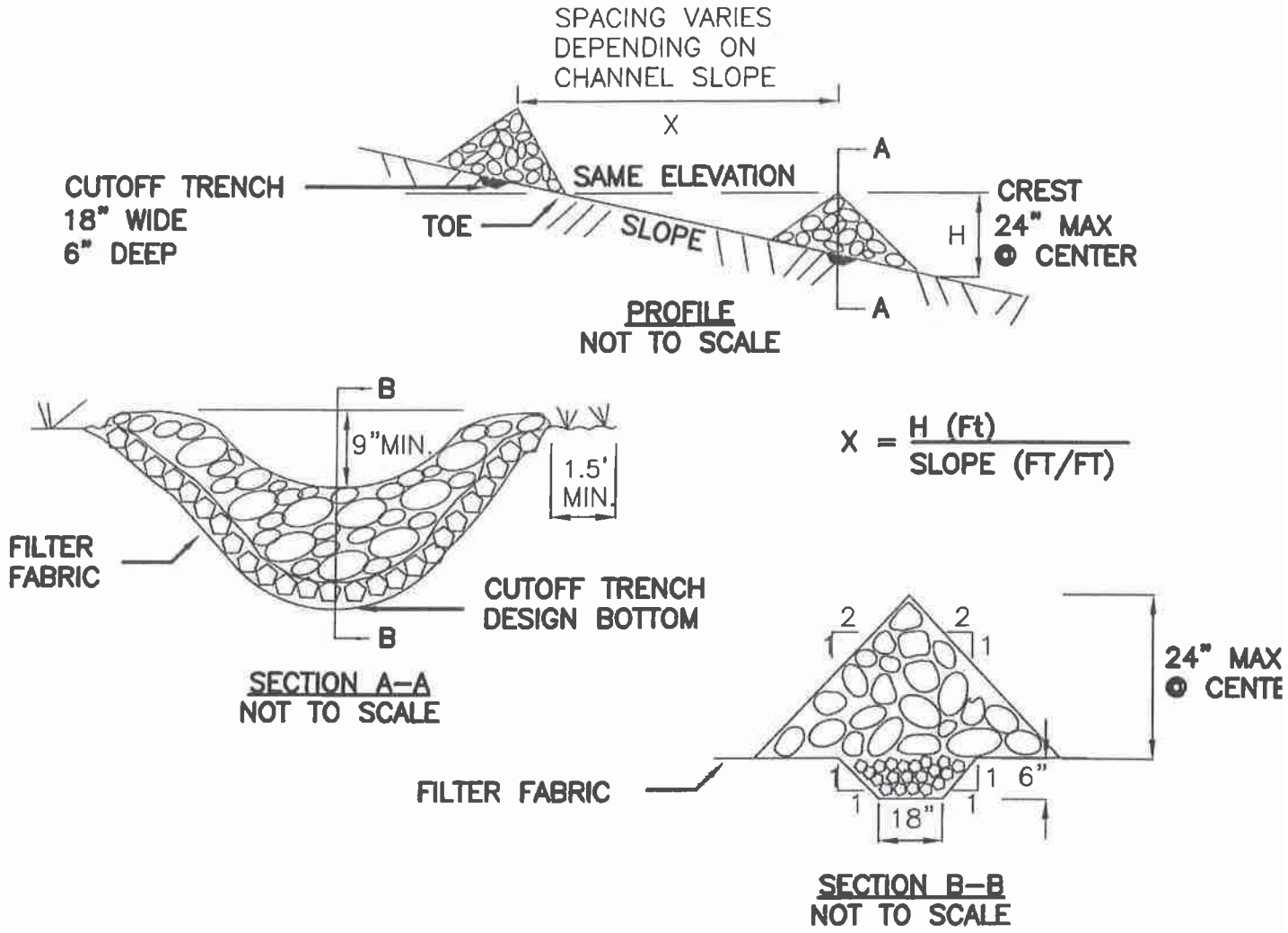

CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

STONE CHECK DAM DETAIL

NOT TO SCALE

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix J

NYSDEC Stormwater Management Inspection Lists

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORMWATER CONTROL FACILITY
MAINTENANCE AGREEMENT

Stormwater Management Facility Inspection Procedures

Post Construction Operation & Maintenance:

1. On a quarterly basis, perform the following:
   a. Inspect catch basins, manholes and storm piping for debris and accumulation of sediment.
   b. Remove and properly dispose of any collected debris from structures.
   c. Flush storm sewers with water, if necessary, to remove accumulated sediment.
   d. Check all rip rap stone for erosion and re-stone, if necessary, to prevent further erosion.
   e. Inspect grass and landscaped areas for un-vegetated areas or areas with less than 80% healthy stand of grass and reseed and mulch as necessary. Water areas daily if reseeded between July and August.

2. Maintain all lawn areas by regular mowing, including the grass slopes of the detention basins. Any eroded areas shall be re-graded, seeded and mulched immediately.

3. Inspect detention basins for debris and sediment accumulation two times per year (spring and fall). Debris and sediment accumulation should be removed from the basin every five to six years or with sediment buildup over 6" in depth. Remove and properly dispose of any collected debris and sediment.

4. The bioretention area shall be maintained as required in the NYSDEC Stormwater Management Design Manual and as a component of the property landscaping and shall be maintained on a regular basis. Sediment must be removed when accumulation depth exceeds on inch. Any erosion of the bioretention berm must be repaired as soon as possible to prevent diversion around the bioretention area.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Comments:

Actions to be Taken:

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

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MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Comments:

Actions to be Taken:

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



ENGINEER'S REPORT
FOR
PROPOSED SITE REDEVELOPMENT
6000-6040 NORTH BAILEY AVE
TOWN OF AMHERST, NEW YORK
PROP # 1723

November 17, 2023
(Updated August 23, 2024)

GENERAL

This project is a redevelopment of a 17.426-acre parcel of land currently occupied with five (5) multitenant buildings (26,709 S.F., 35,678 S.F., 90,130 S.F., 59,591 S.F., and 34,632 S.F.) with associated loading docks, parking, utility, and drainage infrastructure. It is located at the Southwest corner of North Bailey Ave and Romney Road in the Town of Amherst. The property abuts general commercial properties along all property boundaries.

Existing Conditions:

The site is currently occupied by five (5) buildings and associated parking lot and loading docks. The site currently is sheet draining any runoff from pavement surface existing on-site drainage structures.

The site contains existing domestic and fire water services. The existing Domestic water service is tapped off the 8" Masin along North Bailey Ave and enters the site at the Southeast corner of property. The existing Fire water service is tapped of the 8" Main along North Bailey Road and enters the site near the Northeast corner of property.

Existing Sanitary Sewers connection for the property is located South of property that discharges into the existing Town of Amherst sewer district.

PROJECT OVERVIEW

The proposed project *(Figure 1)* consists of; clearing of land and relocation of existing utilities; Construct building addition of 10,069 S.F. between the Two Southern Buildings. Site improvements including improvements to the associated parking lot, drainage infrastructure and sites grading and utilities.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PROPOSED FACILITIES

Storm Water

SWPPP Engineer's Report prepared by Carmina, Wood, Morris DPC dated November 2023

Water System

The existing water service to the site is to reuse for this proposed project. The existing service is tapped off the existing 8" water main along North Bailey Ave R.O.W. The proposed development will reuse the existing domestic and fire water services, which each have their own dedicated hot box enclosure with meter and backflow devices. The existing 8" Fire service enters the site near the NE corner of property and the existing 3" domestic service enters the site near the SE corner of property.

Disinfection of the water services following installation will be continuous feed, according to AWWA C-651, latest revision.

Summary: *(Refer to Figure 2)*

Proposed Building Increased:	10,069 S.F.
Operating Demand Increase:	1.86 gpm
Peak Demand Increase:	3.36 gpm
Water Main:	8" main along North Bailey Ave
Static Pressure:	96
Head Loss Friction:	0 psi
Loss through meter/RPZ:	13.0 psi per service
Elevation Loss:	0.9 psi
Bends Loss:	0 psi
Required Pressure after RPZ:	20 psi
Proposed Pressure after RPZ:	**82.1 psi**

Sanitary Sewer:

Sanitary services will reuse building connection which will discharge into the existing sanitary sewer lateral that discharges along sanitary main along Meyer Road. The proposed building additions will reuse the existing lateral sanitary connections.

Summary:

Proposed New Building S.F.:	10,069 S.F.
Existing Buildings S.F.:	246,740 S.F.
Proposed Flow:	0.1 * 10,069 = 1,007 GPD
Additional GPD =	1,007 GPD
Total Increased Sanitary Flow:	**1,007 GPD**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURES:

1 *Site Location Plan & Engineering Plan*

2 *Sanitary & Water Calculations*

3 *SWPPP Stormwater Report*

4 *Water Quality Unit Detail*

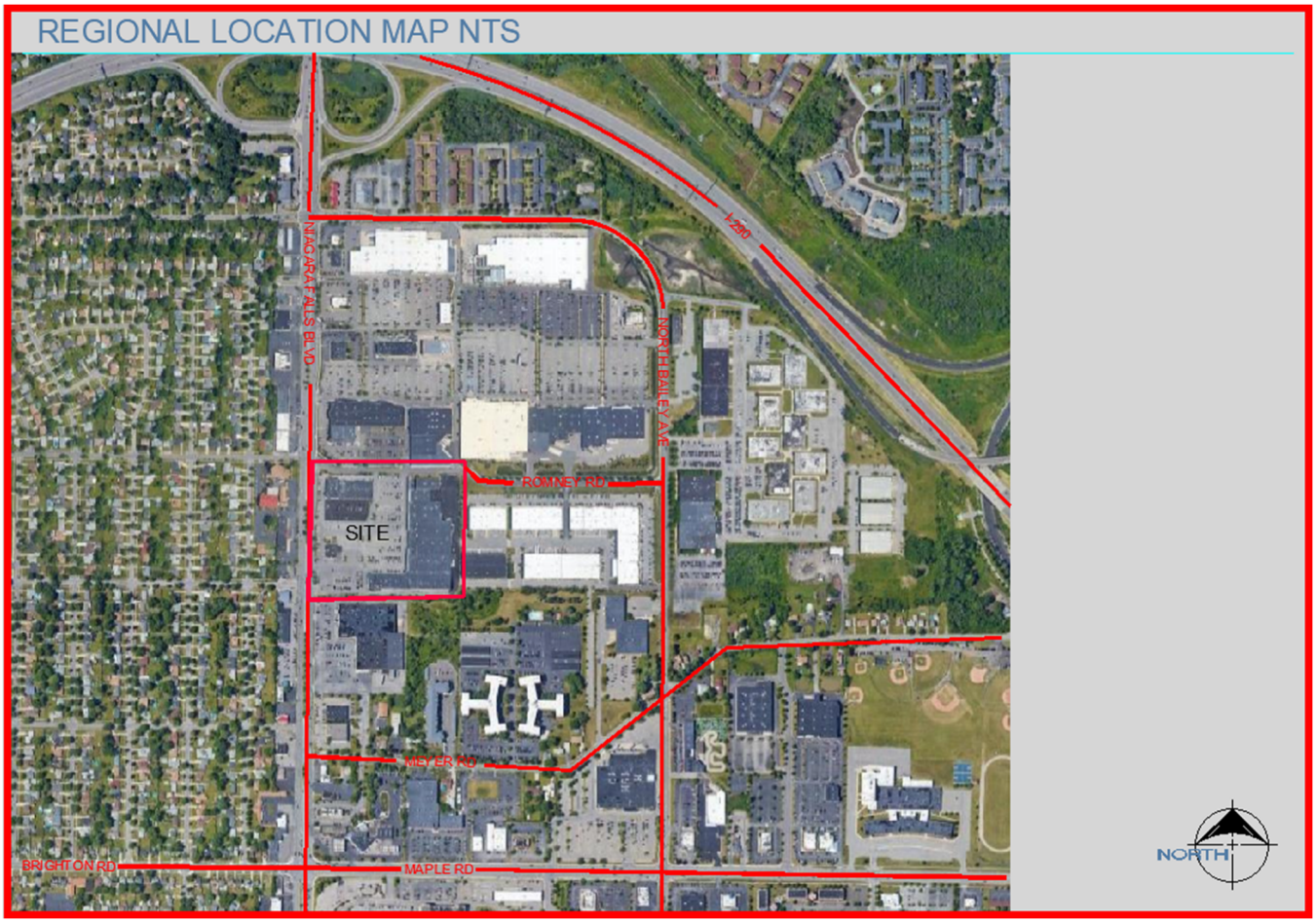
APPENDICES:

A *FEMA Flood Areas*

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURE 1

SITE LOCATION PLAN
ENGINEERING PLANS



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURE 2

SANITARY & WATER CALCULATIONS

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NEW YORK 14202
716.886.0211.P : : 716.886.1026.F

JOB NAME: Amherst Development
DESCRIPTION: SANITARY & WATER CALCULATIONS
PROPERTY # 1723 DATE: 8.23.24
CALCULATED BY: DMZ SHEET: 1 OF 2

SANITARY SEWER CALCULATIONS:

PROPOSED NEW BUILDING: **10,069 S.F.**

Required GPD = 0.1 GPD / S.F. *NYSDEC Design standard for WWTS

Proposed = 10,069 * 0.1 GOPD = 1,007 GPD

INCREASED SANITARY FLOW = **1,007 GPD**

PEAK SANITARY DEMAND

Total Demand = 1007 GPD x 1.1 = 1,108 GPD
Per Population = 30 Per Capita

Peak Factor: $(18+\sqrt{P}) / (4+\sqrt{P})$ P in Thousands

Peak Factor = 4

Peak Sanitary Demand = 1108 x 4.38 = 4,853 gpd
0.005 MGD

WATER CALCULATIONS:

Demand: = 1,007 GPD
GPM: = GPD / 9hr / 60min
ASSUMED 9HR SHIFT = 1,007 / 9 / 60
= **1.86 GPM**

PEAK FACTOR: = GPM X 1.8
= 1.86 X 1.8
Q = **3.36 GPM PEAK**

HEADLOSS FRICTION: = $\frac{(10.44) X (L) X (Q)^{1.85}}{(C)^{1.85} X (D)^{4.866}}$

Q = GPMin
L = LENGTH OF PIPE = $\frac{(10.44) X (50) X (3.36)^{1.85}}{(140)^{1.85} X (2)^{4.866}}$
C = DESIGN COEF OF PIPE
D = PIPE DIAMETER

= **0 PSI**

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NEW YORK 14202
716.886.0211.P : : 716.886.1026.F

JOB NAME: Amherst Development
DESCRIPTION: SANITARY & WATER CALCULATIONS
PROPERTY # 1723 DATE: 8.23.24
CALCULATED BY: DMZ SHEET: 2 OF 2

ELEVATION LOSS: = (BUILDING INTAKE - HYDRANT HEIGHT) X 0.433
= (579.5 - 577.5) X 0.433
= **0.9 PSI**

LOSS THROUGH RPZ & METER:

RPZ = 12 PSI (STANDARD)
METER = 1 PSI (STANDARD)
= **13 PSI After Hotbox**

LOSS DUE TO BENDS:
RESISTANCE EQUIVALENT LENGTH METHOD)

TOTAL = **0 FT ADDITIONAL PIPE**

STATIC PRESSURE @ HYDRANT:
= **96 psi**

PRESSURE AFTER RPZ / METER / BENDS / ELEVATION / HEADLOSS:

= 96 - 13 PSI - 0.9 PSI
(HYD) (RPZ) (FRICTION)
= **82.1 psi**

REQUIRED RESIDUAL PRESSURE = 20 PSI

PROPOSED RESIDUAL PRESSURE = 82.1 PSI

THEREFORE PROPOSED > REQUIRED
82 PSI (GREATER) 20 PSI

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURE 3

SWPPP Report

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

ENGINEER'S REPORT

for

Amherst Development Park

6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

November 2023



Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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Section 1 - Location & Description

Section 2 - Stormwater Drainage System

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Appendix A - Location Maps – Erie County GIS

Appendix B - Web Soil Survey – Hydrologic Soils Groups

Appendix C - Storm Sewer Drainage Calculations

- Water Quality and Runoff Reduction Calculations
- Stormwater Runoff Summaries and Runoff Delineation Maps
- HydroCAD Analysis

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Section 1 – Location & Description

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.14 of which 6.95 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Section 2 – Stormwater Drainage System

The existing site is generally flat. An existing open/closed drainage system onsite drains north to an open swale along the north side of Romney Rd. Three existing 3'x5' arch stormwater conveyance pipes are also located onsite within a 30' wide Town of Amherst Drainage easement. These conveyance pipes flow from the south property line to north and discharge into the open swale along Romney Rd. The existing swale flows east along Romney Rd and north along North Bailey Ave and outlets to an existing stormwater management pond located adjacent to Interstate 290. Runoff from the pond is then conveyed north via open and closed drainage systems and discharges to Ellicott Creek and ultimately the Niagara River. All proposed stormwater runoff from the project site will continue to discharge to the existing stormwater system along Romney Road.

This project is subject to the Boulevard Central Special Stormwater Design Conditions adopted by the Town of Amherst. In addition to the requirements of the NYSDEC SPDES General Permit, the project must also provide the following criteria for Projected Growth Redevelopment Scenarios and Enhanced Phosphorus Removal:

- Provide 10% escalation of proposed peak flow when compared to existing conditions peak flows.
- Median curve number (CN) to compute existing conditions.
- Water Quality volume based on the 1-year, 24-hour storm according to Chapter 10 of the NYSDEC Stormwater Management Design Manual.

For purposes of the runoff analysis and the stormwater drainage system design, portions of the project site were classified as "Redevelopment" per NYSDEC Stormwater Management Design Manual Chapter 9 requirements. The nature of this construction project will be a "Redevelopment" with an increase in impervious area. The proposed stormwater management system was designed to attenuate proposed runoff to existing conditions prior to discharge.

The proposed stormwater drainage system will consist of a combination of overland sheet flow and HDPE pipe channel flow connected by a series of drainage inlets located throughout the project site. Proposed stormwater runoff will be collected and conveyed to an underground stormwater chamber detention area onsite and discharged via outlet control pipes to the existing stormwater system along Romney Road.

The bioretention areas will provide Runoff Reduction and Water Quality volume requirements for "New Development" areas. The filter area planting soil depth varies throughout the bioretention areas but maintains a minimum of at least 18 inches of soil. The 18 inches of soil is an acceptable deviation per the NYSDEC where existing grades prevent the full 2.5'-4' foot soil depth. A series of 6" underdrains below the planting soil will be located throughout the bioretention areas connected by overflow drainage inlets to convey runoff directly to the closed stormwater management system. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover: No existing natural features exist onsite.
2. Calculation of Water Quality Volume (WQv) for site. See "Storm Sewer Drainage Calculations".

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity. Bioretention areas were incorporated into the site design to provide required RRv and WQv for "New Development" areas. See "Storm Sewer Drainage Calculations".
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas. See "Storm Sewer Drainage Calculations".
5. Design of volume and peak rate control practices where required. See "Storm Sewer Drainage Calculations".

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality:
The NYSDEC requires water quality treatment prior to discharge. This will be achieved by the application of bioretention areas and water quality treatment structures. The total WQv provided was 0.749 ac-ft and equal to the required WQv of 0.749 ac-ft. The required water quality volume was calculated based on the proposed 6.95 acres of proposed development area.

Runoff Reduction Volume:
The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for contributing runoff areas in the WQv. The RRv provided was 0.094 ac-ft and greater than the required RRv min. of 0.056 ac-ft. The required runoff reduction volume was calculated based on 3.03 acres of proposed "new development" area that includes 1.97 acres of "new impervious" area.

100% of the required WQv was not reduced due to the followings site specific limitations: Drainage areas with impermeable soils, Type D. In addition, below is a summary of how each green infrastructure technique was evaluated and determined to be feasible or infeasible:

1. Conservation of natural areas: no natural existing features present onsite.
2. Sheetflow to riparian buffers or filter strips: no riparian buffers possible on the site; filter strips not feasible given the limited area for development.
3. Vegetated Open Swales: swales were not feasible given the limited area for development.
4. Tree Plantings: new trees were planted throughout the site.
5. Disconnection of Roof Top Runoff: disconnection not feasible for these types of projects.
6. Stream Daylighting: is not feasible given the limited area for development.
7. Rain Garden: bioretention areas installed throughout site.
8. Green Roof: the proposed use of the building makes this an unfeasible practice.
9. Stormwater Planter: this method is not recommended for these types of projects.
10. Rain Barrels & Cisterns: collected water would not be used for irrigation.
11. Porous Pavement: porous pavement is not recommended for areas with impermeable soils (Type D) and areas with sediment laden runoff (salting in winter months).

Channel Protection:
The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 10,004 cf will be accommodated in the stormwater detention areas onsite.

Overbank Flooding:
The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 13.54 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Extreme Storm Protection:
The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 25.60 cfs, which is below the existing peak 100-year runoff of 41.10 cfs.

Town of Amherst:
The Town requires that the 25-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event *under the 10% escalation scenario*. Storage of this storm will be provided within the onsite stormwater detention areas. At the 25-year storm event the stormwater drainage system will allow discharge of 19.34 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

Design Criteria:
Storm pipes: 10-year storm
RUNOFF ANALYSIS OF PROPOSED DEVELOPMENT AREA:

STORM EVENT	EXISTING RUNOFF (cfs)	PROPOSED RUNOFF (cfs)	10% ESCALATION (cfs)
1 YEAR	8.12	7.30	8.03
2 YEAR	11.64	9.40	10.34
5 YEAR	16.25	11.90	13.09
10 YEAR	20.51	13.54	14.89
25 YEAR	27.36	18.03	19.83
50 YEAR	33.68	21.83	24.01
100 YEAR	41.10	25.60	28.16

WATER QUALITY SUMMARY:
WQv REQUIRED = 0.749 AC-FT
RRv MIN. REQUIRED = 0.056 AC-FT
RRv PROVIDED WITHIN BIORETENTION AREAS = 0.094 AC-FT
WQv PROVIDED WITHIN BIORETENTION AREAS = 0.234 AC-FT
WQv PROVIDED BY TREATMENT STRUCTURES = 0.515 AC-FT
TOTAL WQv PROVIDED = 0.749 AC-FT

BIORETENTION FILTER AREA SUMMARY:
FILTER AREA = 9,266 SF

See attached “Storm Sewer Drainage Calculations” for additional information.

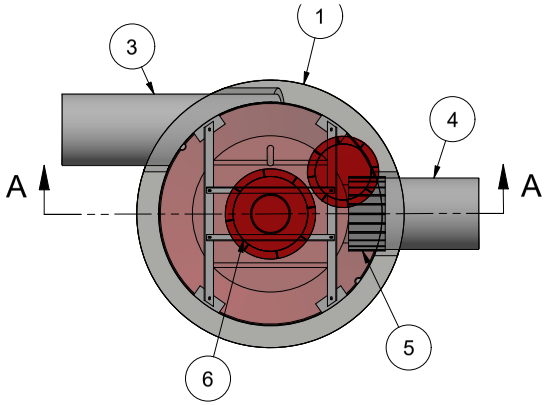
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

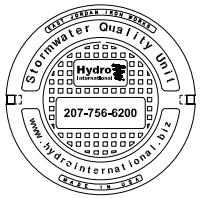
FIGURE 4

Water Quality Unit Detail

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

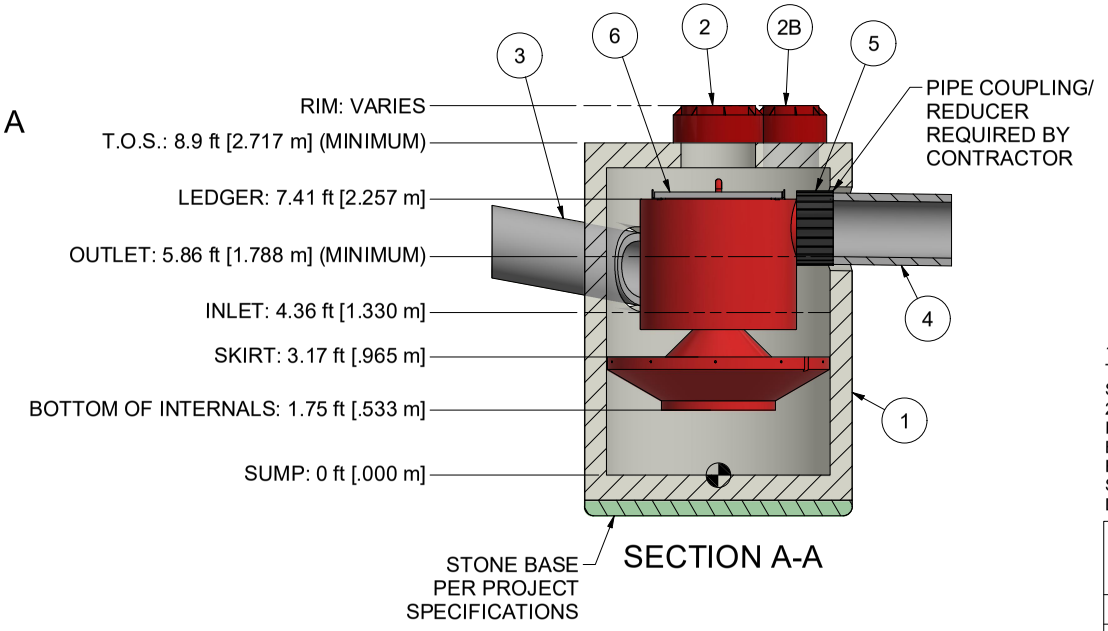
Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





HYDRO FRAME AND COVER (INLCUDED)

GRADE RINGS BY OTHERS AS REQUIRED



SECTION A-A

NOTE: NOT FOR CONSTRUCTION. CONTACT HYDRO FOR SITE SPECIFIC DETAIL

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

1. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
2. Peak Hydraulic Capacity: 8.0 cfs (227 l/s)
3. Sediment Storage Capacity: 2.10 cu. yd. (1.59 cu. m)
4. Continuous Oil Storage Capacity: 216 gal. (818 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reintrainment by a benching skirt.
6. For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/downstream-defender

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	72	1800	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)
2	3	24	600	FRAME AND COVER
2B	1	18	450	FRAME AND COVER
3	1	18 (MAX)	450 (MAX)	MAX INLET PIPE (BY OTHERS)
4	1	18 (MAX)	450 (MAX)	MAX OUTLET PIPE (BY OTHERS)
5	1			PIPE COUPLING (BY OTHERS)
6	1			INTERNAL COMPONENTS (PRE-INTALLED)

PROJECTION

IF IN DOUBT ASK

DATE:	SCALE:
10/8/2019	1 / 50

DRAWN BY:	CHECKED BY:	APPROVED BY
ER	MRJ	

Title: 6ft-DIAMETER

GENERAL ARRANGEMENT

Hydro International
A CRH COMPANY
hydro-int.com
HYDRO INTERNATIONAL

WEIGHT:	MATERIAL:
N/A	

STOCK NUMBER: NEXT ASSY

DRAWING NO.: DD GA-10

SHEET SIZE:	SHEET:	Rev:
B	1 OF 1	A

APPENDIX A

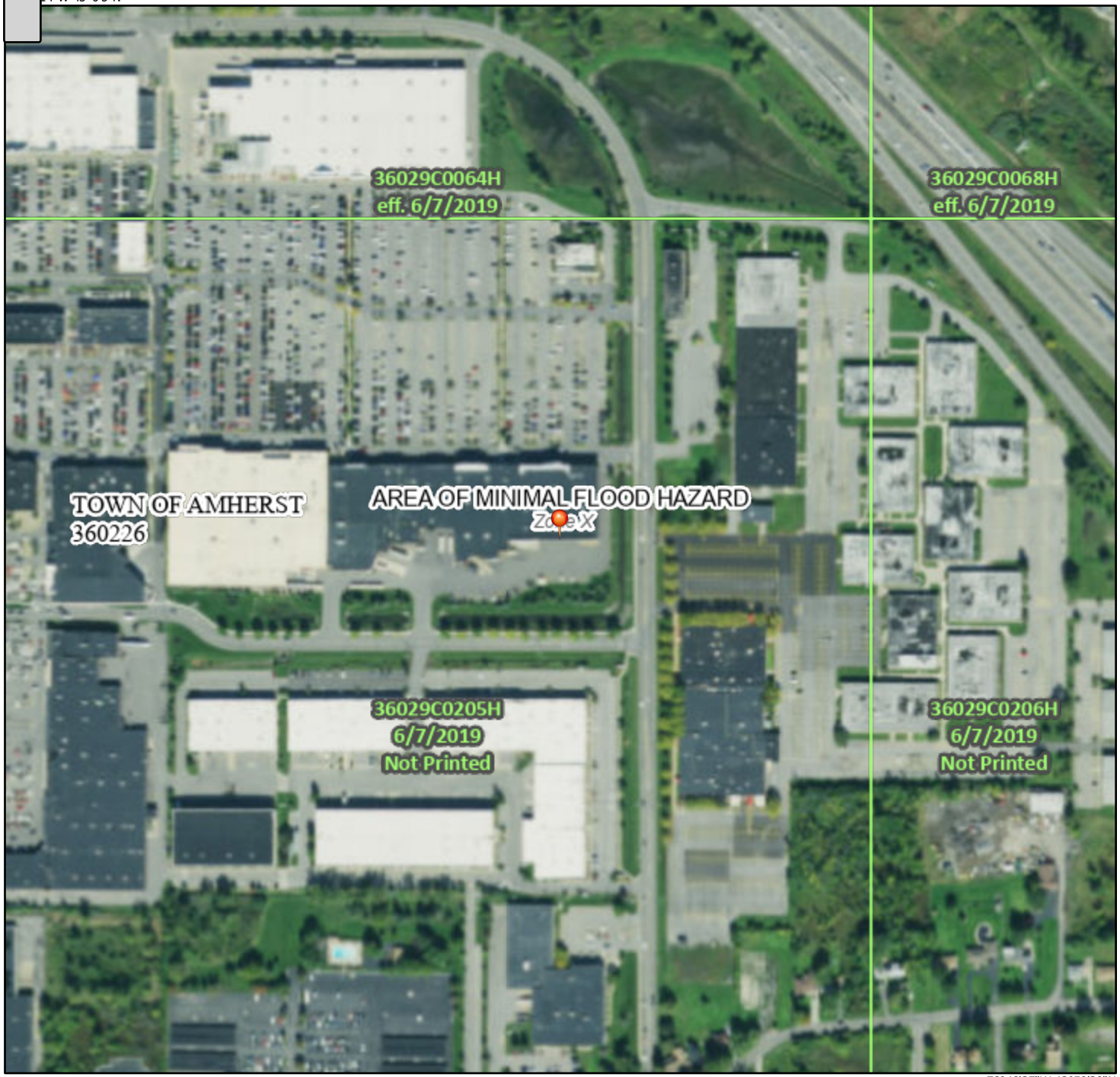
FEMA Flood Areas

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Attachment: SP-1988-11P_application updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

ati... Flood Hazard Layer FIRMette

14"W 43°0'5"N



78°48'37"W 42°59'39"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL L

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BF... *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, V*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/17/2023 at 9:20 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

PROPOSED SITE MODIFICATIONS

Amherst Development Park
6000 - 6040 N.Bailey Ave, Amherst, NY
BDC Property # 1723
SITE DEVELOPMENT DRAWINGS

INDEX OF DRAWINGS

DWG. #	DRAWING NAME	REVISION	DATE
C1.0	COVER SHEET	6	08.30.2024
C2.0	EXISTING SURVEY		
C3.00	DEMOLITION & EROSION CONTROL PLAN WEST	6	08.30.2024
C3.01	DEMOLITION & EROSION CONTROL PLAN EAST	6	08.30.2024
C3.10	DEMOLITION & EROSION CONTROL PLAN DETAILS	6	08.30.2024
C4.0	OVERALL SITE PLAN	5	08.12.2024
C4.01	FIRE TRUCK TURNING PLAN		
C4.10	DETAILED SITE PLAN WEST	5	08.12.2024
C4.11	DETAILED SITE PLAN EAST	4	07.31.2024
C4.20	CONSTRUCTION DETAILS	1	12.13.2023
C5.00	GRADING PLAN WEST	5	08.12.2024
C5.01	GRADING PLAN EAST	4	07.31.2024
C5.10	DRAINAGE PLAN WEST	6	08.30.2024
C5.11	DRAINAGE PLAN EAST	6	08.30.2024
C5.20	DRAINAGE DETAILS	1	12.13.2023
C5.21	DRAINAGE DETAILS		
C6.00	UTILITY PLAN WEST	5	08.12.2024
C6.01	UTILITY PLAN EAST	4	07.31.2024
C6.10	UTILITY DETAILS	1	12.13.2023
C7.0 - C7.4	LANDSCAPING PLANS	1	08.21.2024
C8.0	SITE LIGHTING PLAN	5	08.12.2024
C8.10	LIGHTING DETAILS		

OWNER/DEVELOPER:

NAME: BENDERSON DEVELOPMENT COMPANY, LLC
ADDRESS: 570 DELAWARE AVENUE, BUFFALO, NY 14202
CONTACT: DAVID ZUPPELLI
PHONE: 716 - 878 - 9683

BENDERSON DEVELOPMENT COMPANY, LLC
570 Delaware Ave.
Buffalo, New York 14202

SURVEYOR

NAME: KHEOPS ARCHITECTURE, ENGINEERING & SURVEY, DCP
ADDRESS: 300 PEARL STREET, BUFFALO, NY 14202
CONTACT: -
PHONE: 716-849-8739

UTILITIES:

NATURAL GAS
NAME/TITLE: WILLIAM SCHNEIDER
COMPANY/DEPT: NATURAL FUEL GAS
ADDRESS: -
PHONE: 716 - 696 - 6460

TELEPHONE COMPANY
NAME/TITLE: JOHN HECKMAN
COMPANY/DEPT: VERIZON
ADDRESS: -
PHONE: 716 - 840 - 8603

ELECTRIC
NAME/TITLE: -
COMPANY/DEPT: NATIONAL GRID
ADDRESS: -
PHONE: -

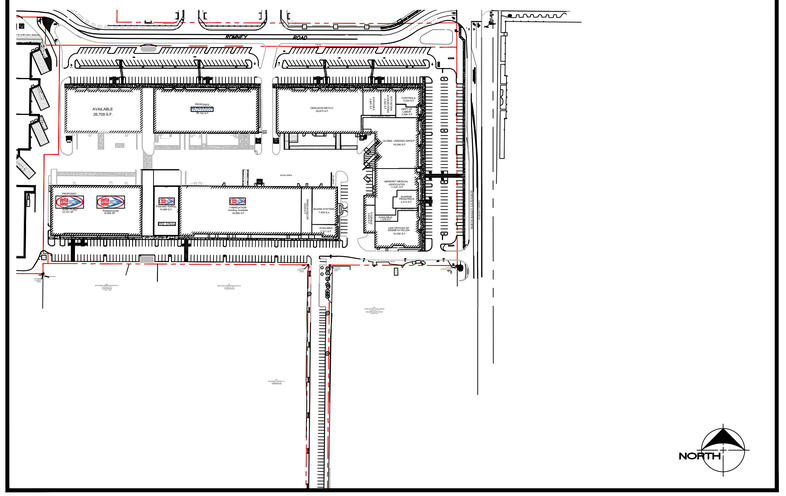
DIG SAFELY NEW YORK
PHONE: 1 - 800 - 962 - 7962 OR (811)

AGENCIES:

ENGINEERING DEPARTMENT
NAME/TITLE: JEFF BURROUGHS
COMPANY/DEPT: TOWN OF AMHERST, NY - ENGINEERING DPT
ADDRESS: 1100 NORTH FOREST RD, WILLIAMSVILLE, NY
PHONE: 716 - 631 - 7154 EX 7418

BUILDING & PLUMBING DEPARTMENT
NAME/TITLE: -
COMPANY/DEPT: TOWN OF AMHERST, NY - BUILDING DPT
ADDRESS: 5583 MAIN STREET, WILLIAMSVILLE, NY 14221
PHONE: 716 - 631 - 7080

SITE LOCATION MAP 1:200



REGIONAL LOCATION MAP NTS



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
3	06.12.2024	DZ	Site Updates
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

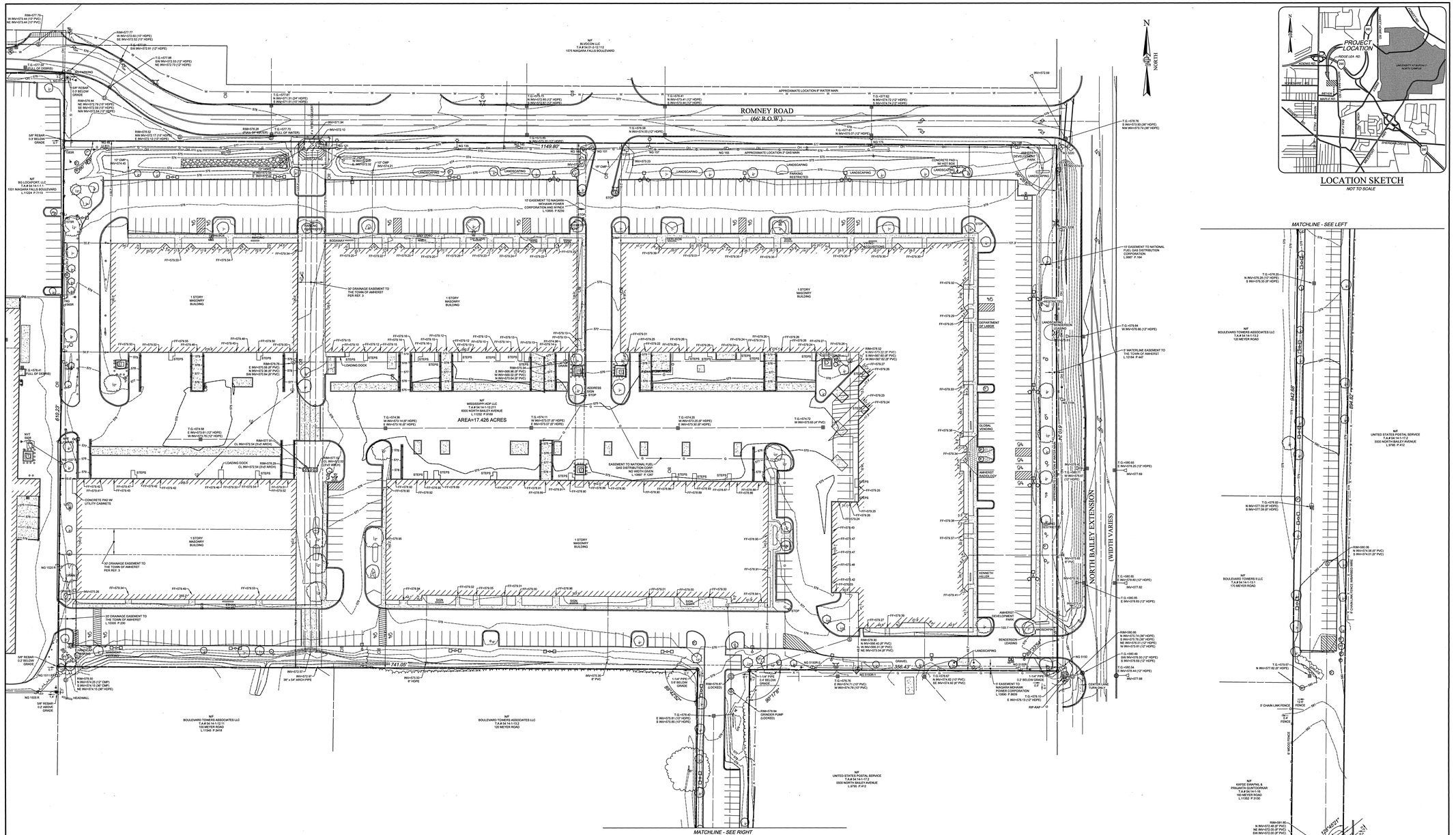
SEAL



TITLE: COVER SHEET

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.16.2023
DRAWING NO. C1.0

Attachment: SP-1988-11P drawings updated 090924 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



LOCATION SKETCH

NOT TO SCALE

LINE LEGEND

- SECTION/PARCEL BOUNDARY
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST. RIGHT-OF-WAY LINE
- EXIST. EDGE OF PAVEMENT
- EXISTING WATER MAIN, VALVE, & HYDRANT.
- EXISTING SANITARY SEWER, & MANHOLE.
- EXISTING DRAINAGE SEWER, FIELD INLET, INLET MANHOLE, MANHOLE, & END SECTION.
- EXISTING OVERHEAD UTILITIES
- EXISTING TELEPHONE
- EXISTING UNDERGROUND UTILITIES
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING GUARD RAIL
- TREE,HEDGE,EDGE OF WOODS
- EXISTING SWALE
- BARBED WIRE,STOCKADE,CHAIN LINKED FENCE
- EXISTING CONTOUR
- x 420.4 — EXISTING SPOT ELEVATION @ X
- CONCRETE PAD/ CONCRETE SIDEWALK

SYMBOL LEGEND

DRAINAGE MANHOLE		ELECTRIC MANHOLE	
INLET DRAINAGE MANHOLE		ELECTRIC METER	
CATCH BASIN		TELEPHONE MANHOLE	
END SECTION		TELEPHONE PEDESTAL	
END OF PIPE		PHONE BOOTH	
MANHOLE		PEDESTRIAN POLE	
SANITARY MANHOLE		TRAFFIC CONTROL CABINET	
CLEAN OUT		LAMP POST	
GAS VALVE		LIGHT POLE	
GAS SERVICE		UTILITY POLE WITH LIGHT	
GAS METER		FLAG POLE	
WATER VALVE		MAILBOX	
WATER SERVICE		BOLLARD	
HYDRANT		POST	
WATER METER		SIGN	
CABLE TV PEDESTAL		SIGN	
SIGNAL POLE		SIGN	
UTILITY POLE		TURNING ARROW	
GUY WIRE		HANDICAP	
PULL BOX		STOP BAR	
ELECTRIC PULL BOX		TREE DECIDUOUS	
TELEPHONE PULL BOX		TREE CONIFEROUS	
TRAFFIC PULL BOX		BUSH	
TRANSFORMER			

EASEMENT NOTES
T.A.# 54.14-1-12.211

1. EASEMENT MADE BY BOULEVARD POWER CO. TO NEW YORK TELEPHONE COMPANY RECORDED OCTOBER 30, 1968 IN LIBER 7527 OF DEEDS, PAGE 543. (NOT PLOTTABLE)
2. EASEMENT MADE BY MARIET DEVELOPMENT CORPORATION OF NEW YORK TO NIAGARA MOHAWK POWER CORPORATION RECORDED SEPTEMBER 11, 1967 IN LIBER 7302 OF DEEDS, PAGE 474. (DOES NOT AFFECT PREMISES)
3. RIGHT OF WAY MADE BY MARIET DEVELOPMENT CORPORATION OF NEW YORK TO IROQUOIS GAS CORPORATION RECORDED SEPTEMBER 29, 1967 IN LIBER 7309 OF DEEDS, PAGE 98. (NOT PLOTTABLE)
4. EASEMENT FROM NIAGARA BOULEVARD TOWERS, INC TO NIAGARA MOHAWK POWER CORPORATION AND NEW YORK TELEPHONE CO. RECORDED ON AUGUST 29, 1969 IN LIBER 7506 OF DEEDS, PAGE 503. (NOT PLOTTABLE)
5. EASEMENT RESERVED BY BOULEVARD TOWERS CO. CONTAINED IN DEED RECORDED ON JULY 29, 1969 AT LIBER 9695 OF DEEDS, PAGE 528.

SURVEY NOTES

1. TOPOGRAPHY SHOWN FROM A FIELD SURVEY BY COSTICH ENGINEERING ON 5/4/2021 HORIZONTAL AND VERTICAL DATA OBTAINED THROUGH NYSDOT CORS NETWORK REFERENCED TO THE FOLLOWING MONUMENT

HAMBURG CORS STATION
-LATITUDE: 42-43-37.92029 (N) } NAD 83 (CORS)
-LONGITUDE: 078-54-54.28856 (W)
-ELLIP HEIGHT: 212.508 METERS } NAVD 88 (CORS)

REFERENCES

1. THE DEEDS AS SHOWN ON FILE AT THE ERIE COUNTY CLERKS OFFICE.
2. ALTA/NSPS LAND TITLE SURVEY PREPARED FOR DDR - PROJECT SABRE PROJECT, PREPARED BY BOCK & CLARK, HAVING PROJECT NO. 20150423S-003, DATED 1/26/2015.
3. ALTA/NSPS LAND TITLE SURVEY 6000-6040 NORTH BAILEY AVENUE, PREPARED BY TVGA CONSULTANTS, HAVING JOB NO. 2006.0095.00, DATED 6/12/2006.

UTILITY INFORMATION

UTILITY INFORMATION PER UFPO DESIGN TICKET # 04261-000-825-00 DATED APRIL 29, 2021

1. CHARTER COMMUNICATIONS BUFFALO	317-575-7800 X2	NO CONFLICT
2. ERIE COUNTY WATER AUTHORITY	716-665-8207	UTILITIES PLOTTED
3. LIGHTOWER FIBER TECHNOLOGIES	888-632-0931 X2	NO RESPONSE
4. NATIONAL FUEL GAS - TONAWANDA	716-857-7431	UTILITIES PLOTTED
5. NATIONAL GRID - WEST - ELECTRIC	315-428-6319	NO CONFLICT
6. SUNOCO PIPELINE LP	713-989-7079	NO RESPONSE
7. TOWN OF AMHERST	716-631-7413	UTILITIES PLOTTED
8. VERIZON / BUFFALO	315-937-2515	UTILITIES PLOTTED

SITE DATA

T.A.# 54.14-1-12.211

1. EXISTING ZONING: RD - RESEARCH AND DEVELOPMENT DISTRICT
2. BULK REQUIREMENTS:

	REQUIRED
MIN. LOT AREA (SF)	1 ACRE
MAX LOT COVERAGE	NONE REQUIRED
MIN. LOT WIDTH (FT)	35
MAX. BUILDING HEIGHT (FT)	65 FEET
MIN. FRONT YARD SETBACK (FT)	20 FEET FOR BUILDINGS UP TO 35 FEET IN HEIGHT; 30 FEET FOR BUILDINGS GREATER THAN 35 FEET IN HEIGHT
MIN. SIDE YARD SETBACK (FT)	0 TO 15 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET
MIN. REAR YARD SETBACK (FT)	15 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET

CERTIFICATION

WE, COSTICH ENGINEERING, D.P.C., HEREBY CERTIFY TO:

THIS MAP WAS PREPARED FROM NOTES OF AN INSTRUMENT SURVEY COMPLETED ON MAY 12, 2021 AND FROM THE REFERENCE(S) LISTED HEREON. NO SEARCH OF RECORDS, OTHER THAN THOSE REFERENCED, WAS MADE FOR EASEMENTS OR ENCUMBRANCES AFFECTING THIS PARCEL.

By: Daniel T. Hicks, N.Y.S. L.S., No. 050449 Date: 6-7-2021

Dig Safely. New York Call811 before you dig

EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

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COSTICH ENGINEERING, D.P.C.

IT IS A VIOLATION OF LAWFOR ANY PERSON, UNLESS THEY ARE UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR, ARCHITECT OR LANDSCAPE ARCHITECT, TO ALTER AN ITEM ON THIS DOCUMENT. IN ANY WAY. ANY LICENSED WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION, TO THE DOCUMENT.

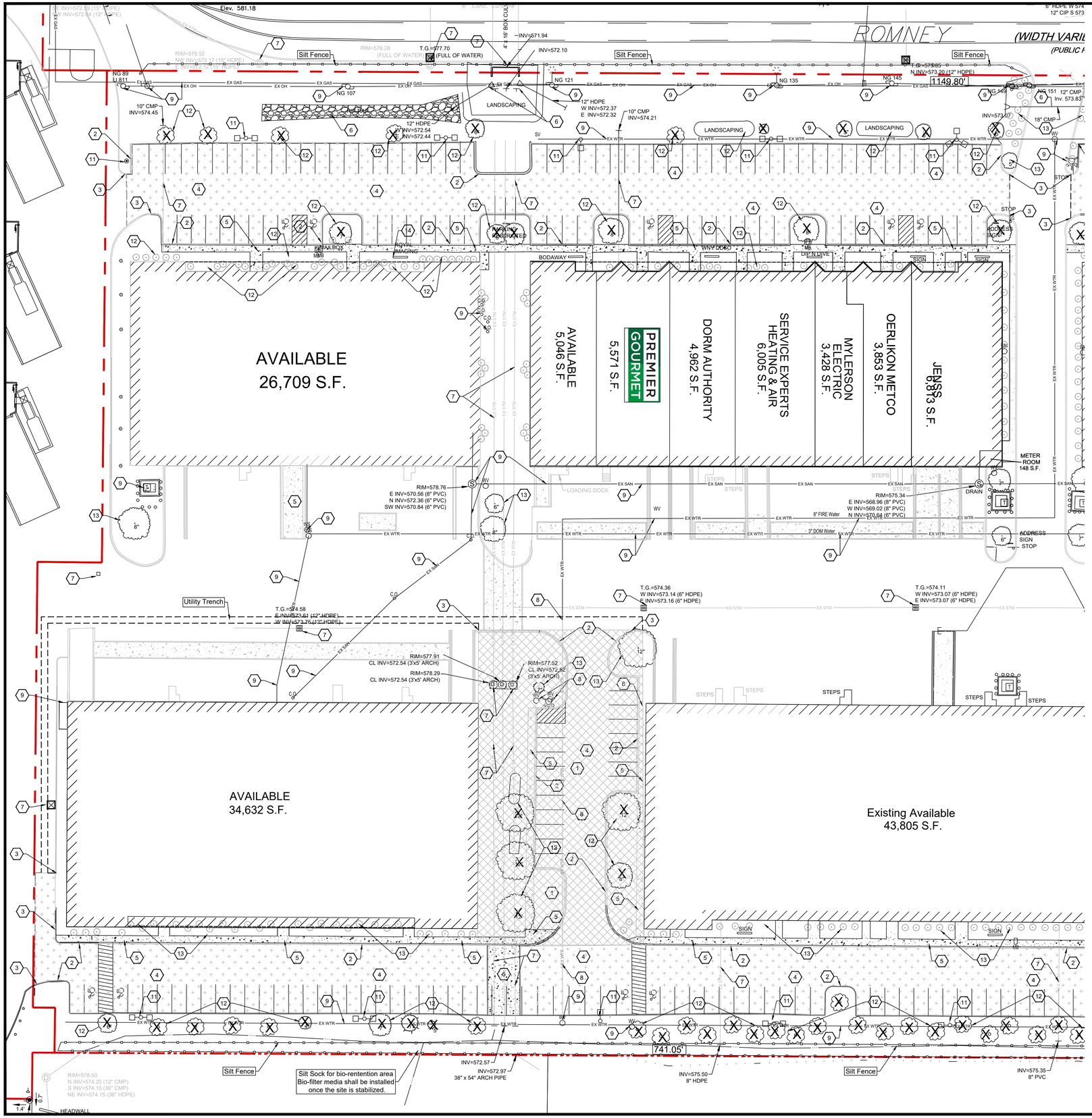
STATE OF NEW YORK — DANIEL T. HICKS — No. 050449 — LICENSED LAND SURVEYOR

PROJECT ENGINEER	M.O.R.
DRAWN BY	G.M.S.
BOUNDARY	G.M.S.
TOPOGRAPHY	G.L.K.
DATE	6/1/2021
SCALE	1"=40'

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE ROCHESTER, NY 14608 (585) 4583020

TITLE OF PROJECT: 1723/5256 AMHERST DEVELOPMENT
TITLE OF DRAWING: EXISTING FEATURES
LOCATION OF PROJECT: TAX PARCEL NO. 54.14-1-12.211 TOWN LOT 81, TOWNSHIP 13, RANGE 7, HOLLAND LAND COMPANY'S SURVEY, TOWN OF AMHERST, COUNTY OF ERIE, STATE OF NEW YORK
CLIENT: BENDERSON DEVELOPMENT CO., INC. 570 DELAWARE AVENUE BUFFALO, NEW YORK 14202
DWG # 5084 VA110 SHEET 1 OF 1

Attachment: SP-1988-11P drawings updated 090924, 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

DEMOLITION LEGEND:

- Property Line
- EX ELEC — Existing Electric
- EX GAS — Existing Gas
- EX WTR — Existing Water
- EX OH — Existing Overhead Utility
- EX SAN — Existing Sanitary
- EX STM — Existing Storm
- EX TC — Existing Telecoms
- Saw Cut Line
- Silt Fence/Sock
- Inlet Protection
- X — Tree Removal
- Existing area to be removed.
- Existing Asphalt Pavement to be Removed. Sub-base to Remain.

DEMOLITION NOTES: (#)

1. Existing Area to be Cleared.
2. Existing Curb to be removed.
3. Limits of Curb Removal.
4. Existing Asphalt Pavement to be removed.
5. Existing Concrete Sidewalk/ Pavement/ Ramps to be removed.
6. Existing Storm Drainage/CB to be removed.
7. Existing Storm Drainage/CB to remain and be protected during Construction.
8. Existing Utility Structure to be removed.
9. Existing Utility Structure to remain and be protected during Construction.
10. Existing Pylon Sign to remain and be protected during Construction.
11. Existing Light Pole Base to be Relocated
12. Existing Landscaping to be Removed
13. Existing Landscaping to remain and be protected during construction.
14. Existing Bollard/Signage to be removed.

Project Disturbance
Sub-Surface Disturbance: 3.92 Acres
Surface Disturbance: 3.03 Acres
Total Disturbance: 6.95 Acres.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
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4	07.31.2024	DZ	Site Updates
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6	08.30.2024	DZ	Town Comments

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PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

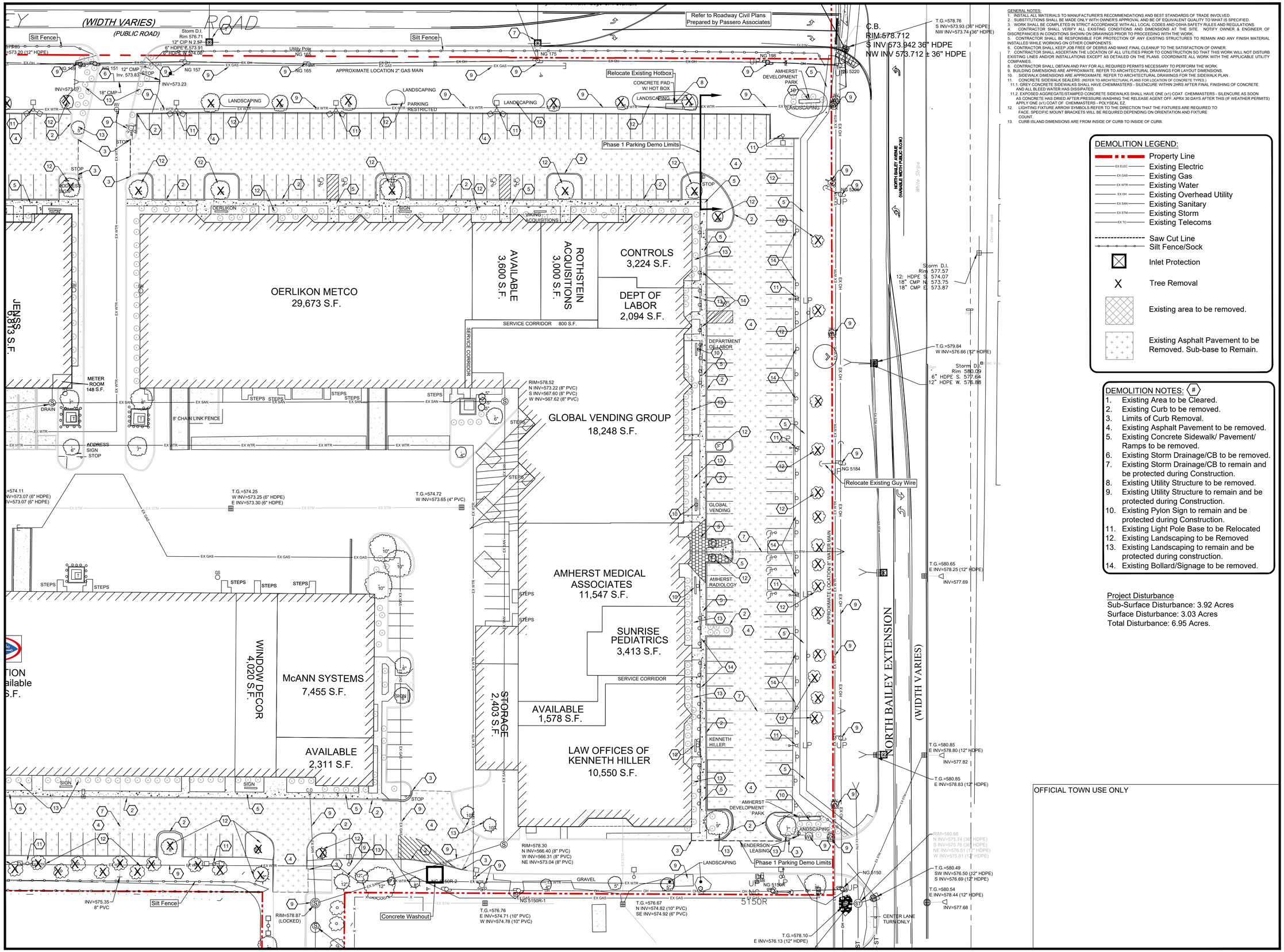
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:
Demolition and Erosion Control Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C3.00

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)


(WIDTH VARIES)
(PUBLIC ROAD)
Refer to Roadway Civil Plans Prepared by Passero Associates
Silt Fence
Storm D.I. Rim 576.71 12" CIP N 2.57 6" HDPE E 573.91 6" HDPE W 574.06
Utility Pole NG 165
APPROXIMATE LOCATION 2" GAS MAIN
Relocate Existing Hotbox
CONCRETE PAD W/ HOT BOX
AMHERST DEVELOPMENT PARK
LANDSCAPING
PARKING RESTRICTED
Phase 1 Parking Demo Limits
NG 5220
NG 5184
Relocate Existing Guy Wire
NG 5150R
NG 5150R-1
NG 5150R-2
NG 5150
NG 5180
NG 5179
NG 5178
NG 5177
NG 5176
NG 5175
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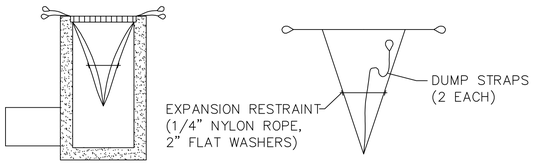
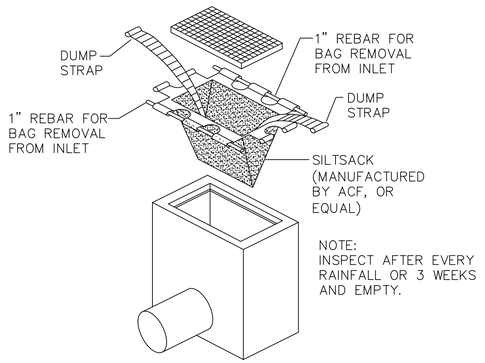
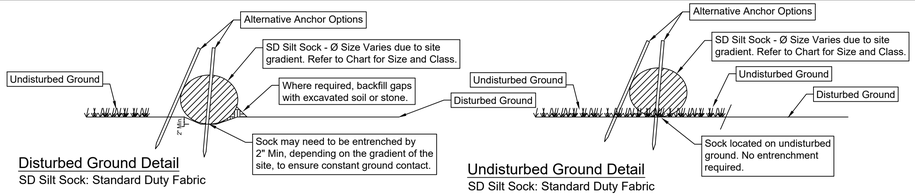


INSTALLATION DETAIL BAG DETAIL



SILT SACK DETAIL

N.T.S.

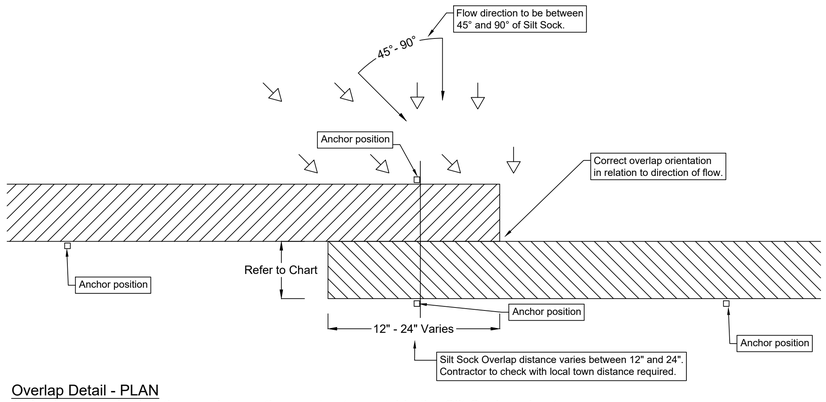


Disturbed Ground Detail

SD Silt Sock: Standard Duty Fabric

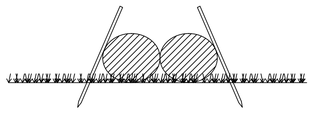
Undisturbed Ground Detail

SD Silt Sock: Standard Duty Fabric



Overlap Detail - PLAN

1) Anchors required at the overlap section are to stay outside the Silt Sock and not pierce through the material. See alternative anchor positons in details above.

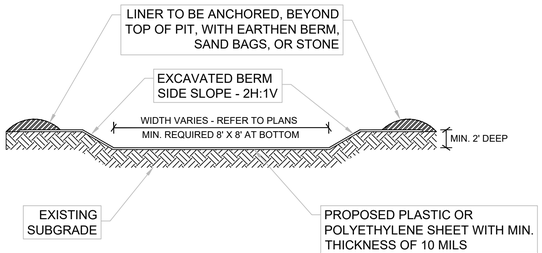


Anchor at Overlaped Ends - SECTION

Size & Class Chart			
	Diameter		
Gradient	8"	12"	18"
0 - 2%	30	55	75
2.1 - 5%	25	40	55
5.1 - 10%	15	30	40
10.1 - 33%	10	15	20
> 33%	5	10	15

SD SILT SOCK DETAIL

SD Silt Sock: Standard Duty Fabric



TYPICAL CONCRETE WASH OUT DETAIL

NOTES:
1. CONSTRUCT TO 2016 NYSDEC BLUE BOOK DESIGN CRITERIA

Notes:

1 - Do not use sock below the normal watermark or perpendicular to flow in river and where the maximum incline is greater than 50%.
2 - Contractors should be aware of federal, state and local laws, rules regulations or permit requirements for the use of Silt Socks on site.
3 - Sock should be positioned on the outline of the area to be protected, but must be installed between 45° to 90° from directions of flow.
4 - Sock may be required to be entrenched a minimum of 2" on disturbed ground to ensure constant ground contact.
5 - All gaps and ruts must be backfilled with soil or sock material.
6 - Sock overlap should be in the direction of the flow. Overlap amount will be between 12" and 24". Contractor to check with local town for requirements.
7 - If sediment collects to 1/2 the height of the sock, then a second sock may be stacked immediately up slope of the original instead of removing the sediment.
8 - Sock joint is where two sock sections meet on a level grade, overlap and adjoining ends, tightening the ends together, and anchoring through each end. Where two sections meet on un-level ground, j-hook higher elevated end, anchor, and begin new section just below. Back fill any gaps.
9 - Sock should be inspected and repaired as needed.
10 - If ruts begin under the sock they should be backfilled with soil and compacted so that the ground and sock have continuous contact.
11 - If sock rolls out of place, the sock should be repositioned and secured with additional anchors.
12 - Tears in the Sock fabric may be repaired by wrapping a new piece of fabric over the sock and securing, or by place a second sock immediately up slope with the required overlap beyond deformation.
13 - A section of sock should be replaced whenever it has weakened to such an extent that the efficiency is reduced or diminished. Weakening can occur because the natural mesh fabric breaks down over time of from being moved/dragged on site.
14 - Sock should be replaced when sediment has built up and has been removed three times.
15 - All sediment in disturbed area next to sock must be removed and correctly disposed of before the sock can be removed.
16 - When removing, cut sock open and spread the filler material around. The netting should be removed from site.
17 - Sock should be installed before works commence on site.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
6	08.30.2024	DZ	Town Comments

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Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL



TITLE: Demolition and Erosion Control Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023

DRAWING NO. C3.10

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST, NY ZONING ANALYSIS

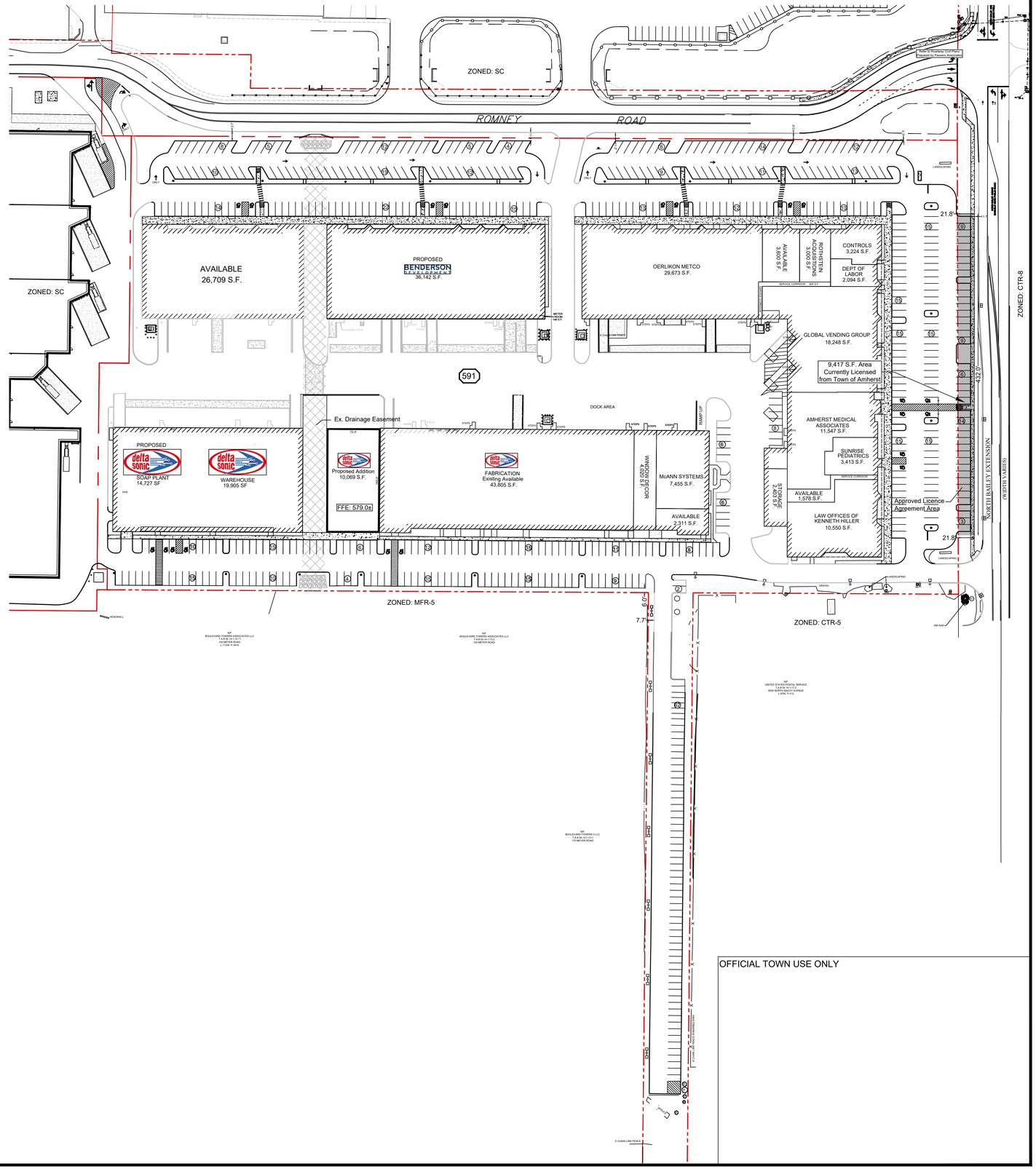
	REQUIRED	PROVIDED
ZONED (RD)	R-D	R-D
MIN LOT AREA	1 AC	17.14 AC
MAX. BUILDING HEIGHT	65'	<30'
BUILDING SETBACKS:		
FRONT YARD	40'	102.3'
SIDE YARD	15'	16.7'
REAR YARD	15'	48.4'
PARKING / ROAD/AUX SETBACKS:		
FRONT - ROMNEY ROAD	25'	0.3'
FRONT - N BAILEY	25'	*0'
REAR YARD	10'	6.0'

* Setback variance previously granted along North Bailey Road
- License Agreement along North Bailey has been previously granted
- Romney Road Pavement/Parking Setback - 14.5'
- N. Bailey Pavement/Parking Setback - 11.7'

PROPOSED PARKING ANAYLSIS

USE	CODE	S.F. USAGE	REQUIRED	PROVIDED
WAREHOUSE	1 / 1000 S.F.	177,407 SF	178 Spaces	
MEDICAL	1 / 150 S.F.	14,960 SF	100 Spaces	
RETAIL/OFFICE	1 / 200 S.F.	62,106 SF	311 Spaces	
TOTAL		254,252 SF	589 Spaces	591 Spaces
STALL SIZE			9' X 19'	9' X 19'

*Refer alternative parking study for site required parking



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(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 13703 STATE OF NEW YORK

TITLE:

Overall Site Plan

SCALE: 1:70

DRAWN BY: DMZ

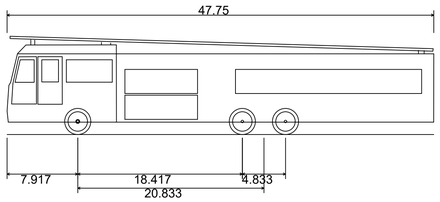
CHECKED BY: MAO

DATE: 11.06.2023

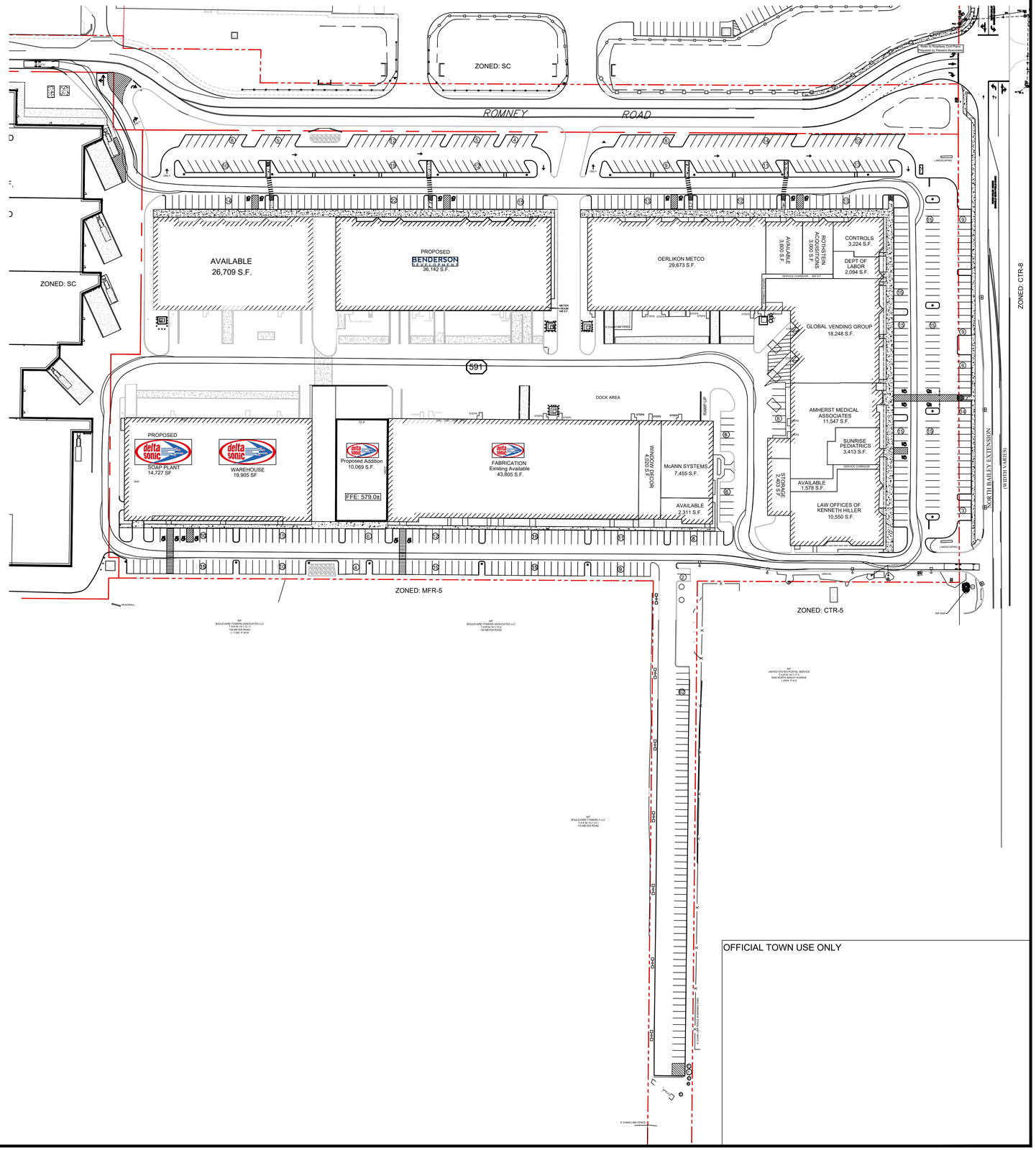
DRAWING NO.

C4.0

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



E-ONE HP95 Mid Mount	
Overall Length	47.750ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°



OFFICIAL TOWN USE ONLY

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570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL



TITLE:

Fire Truck Turning Plan

SCALE: 1:70

DRAWN BY: DMZ

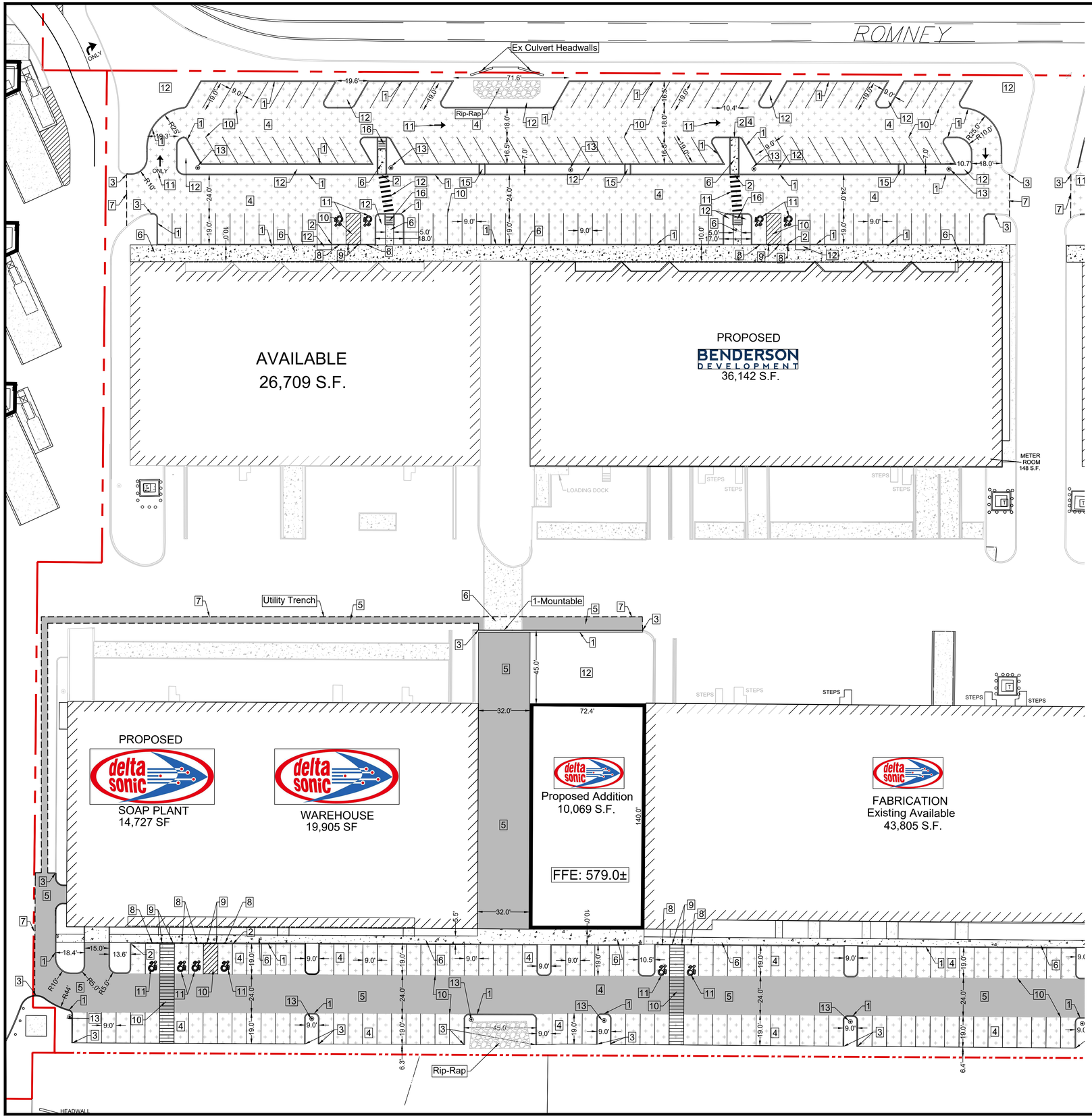
CHECKED BY: MAO

DATE: 08.30.2024

DRAWING NO.

C4.01

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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SITE LEGEND:
- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES: #
1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement
15. Proposed 3' Wide Curb Opening
16. Proposed Curb Return Ramp

NB: All curb Radii to be 3' unless otherwise noted.

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(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 037703 STATE OF NEW YORK

TITLE:
Detailed Site Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C4.10

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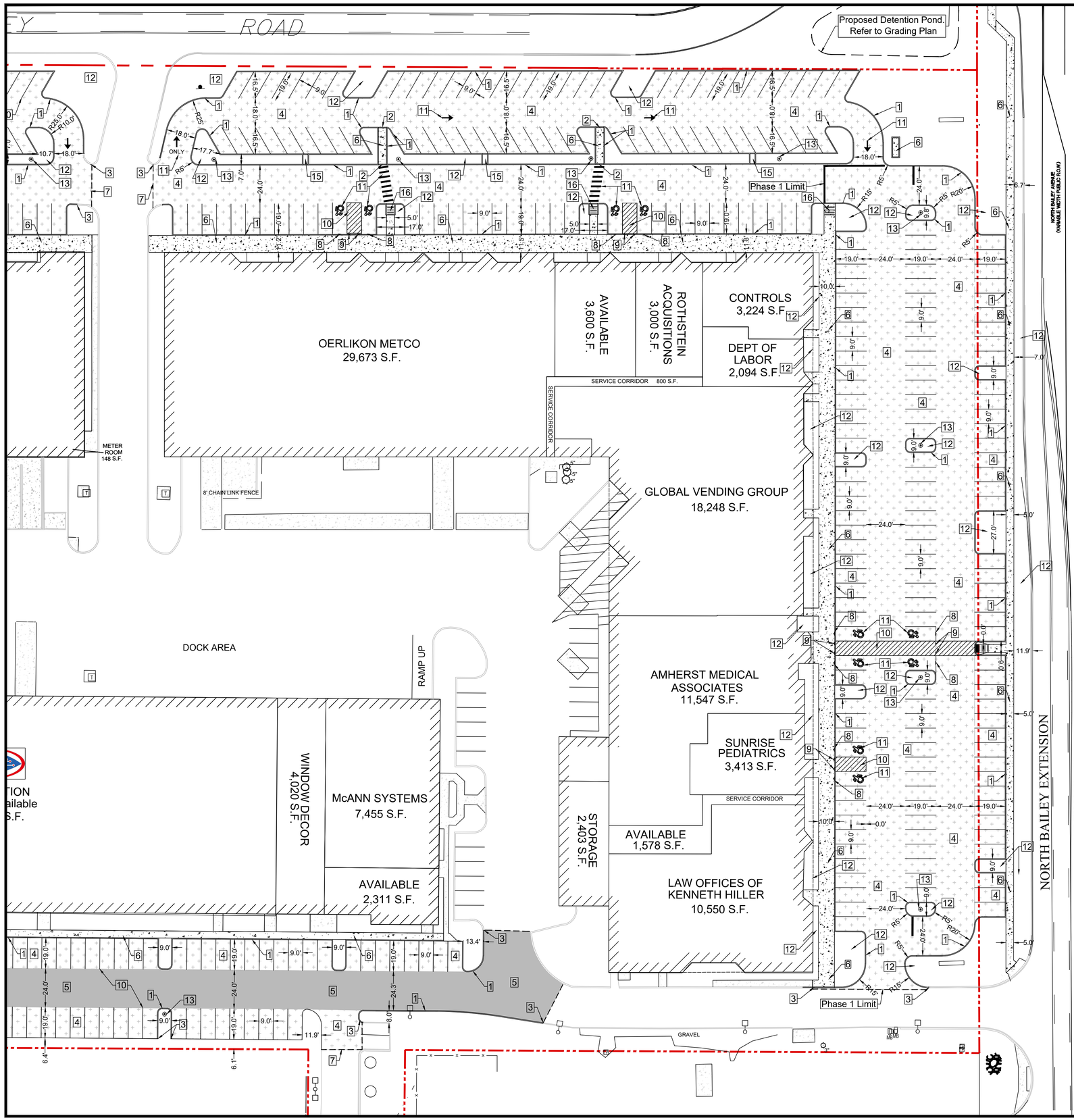

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- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES: #

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement
15. Proposed 3' Wide Curb Opening
16. Proposed Curb Return Ramp

NB: All curb Radii to be 3' unless otherwise noted.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
4	07.31.2024	DZ	Site Updates

SPECIAL INFORMATION:

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SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

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Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

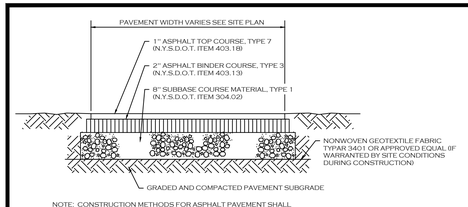
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 037103 STATE OF NEW YORK

TITLE: Detailed Site Plan (East)

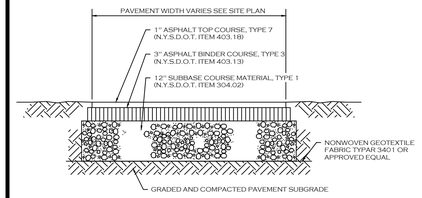
SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C4.11

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



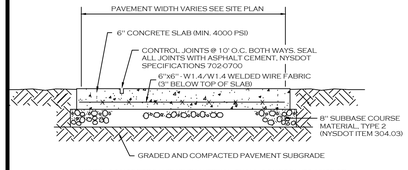
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION



NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

HEAVY DUTY ASPHALT SECTION

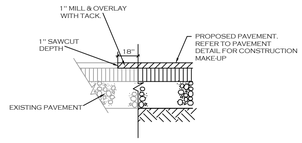


NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

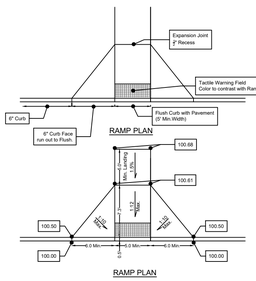
CONCRETE SIDEWALK SEALERS:
1. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
1.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
1.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.

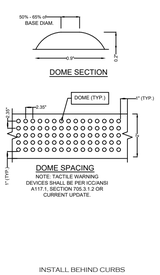
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.

CONCRETE PAVEMENT (INC DUMPSTER)



PAVEMENT TRANSITION DETAIL
(ASPHALT PAVEMENT)







SIDEWALK CURB RAMP DETAIL

NOTES:
1. (1.5% SIDEWALK) GRADES ARE FOR REPRESENTATION ONLY. REFER TO LAYOUT FOR PROPOSED GRADES.

NOTES:
1. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3
2. BUTT JOINTS TO BE AT 5'-0" O.C. BOTH WAYS- SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.

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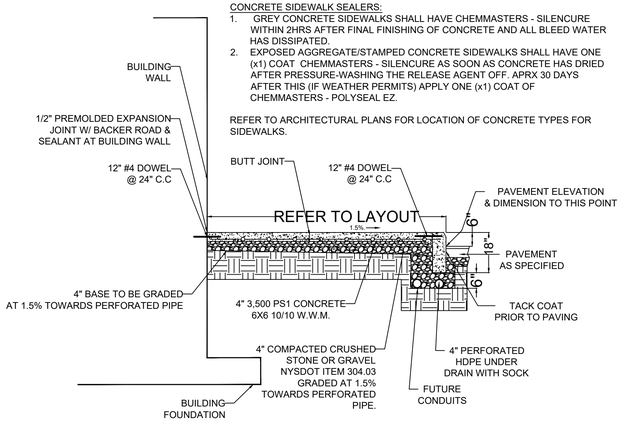
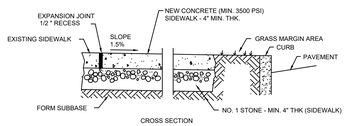


BUILDING SIDEWALK DETAIL

CONTRACTOR TO VERIFY WITH OWNER ON CURB DETAIL



NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.

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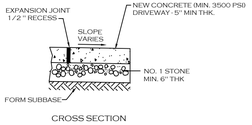
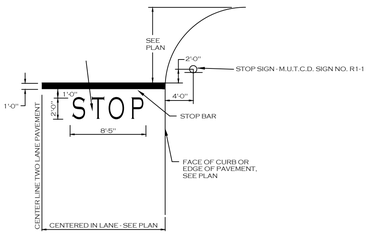
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.

STANDARD CONCRETE SIDEWALK

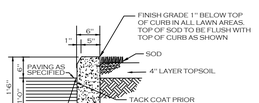


NOTES:
1. CONTROL JOINTS TO BE AT 10'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.

RPZ ENCLOSURE PAD

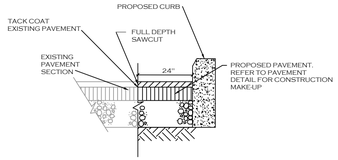


STOP BAR DETAIL

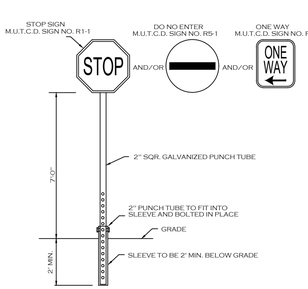


NOTE: CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700

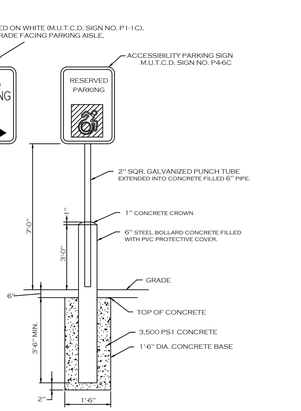
TYPE "A" CONCRETE CURB



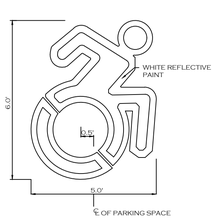
CURB AND PAVEMENT TRANISTION DETAIL



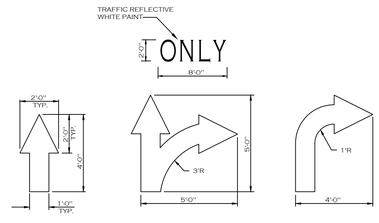
"STOP" / "NO ENTRY" / "ONE WAY" SIGNS



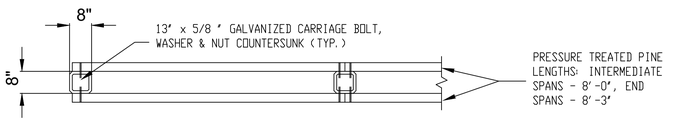
HANDICAP / NO PARKING SIGNS



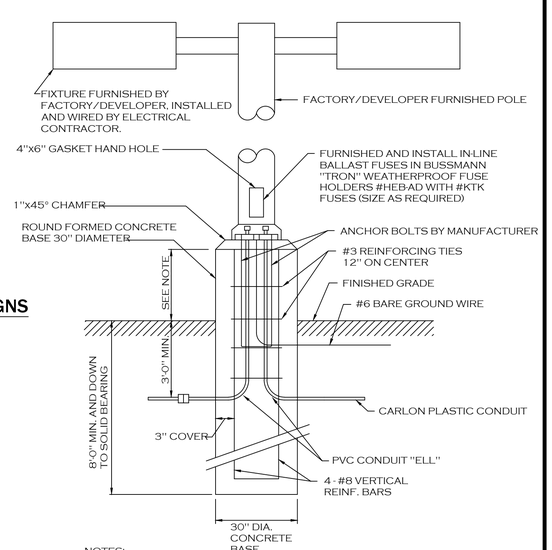
INTERNATIONAL ACCESSIBILITY SYMBOL



PAINTED TRAFFIC ARROWS



WOODEN GUIDE RAIL



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
IN PAVEMENT: 30" ABOVE GRADE
IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

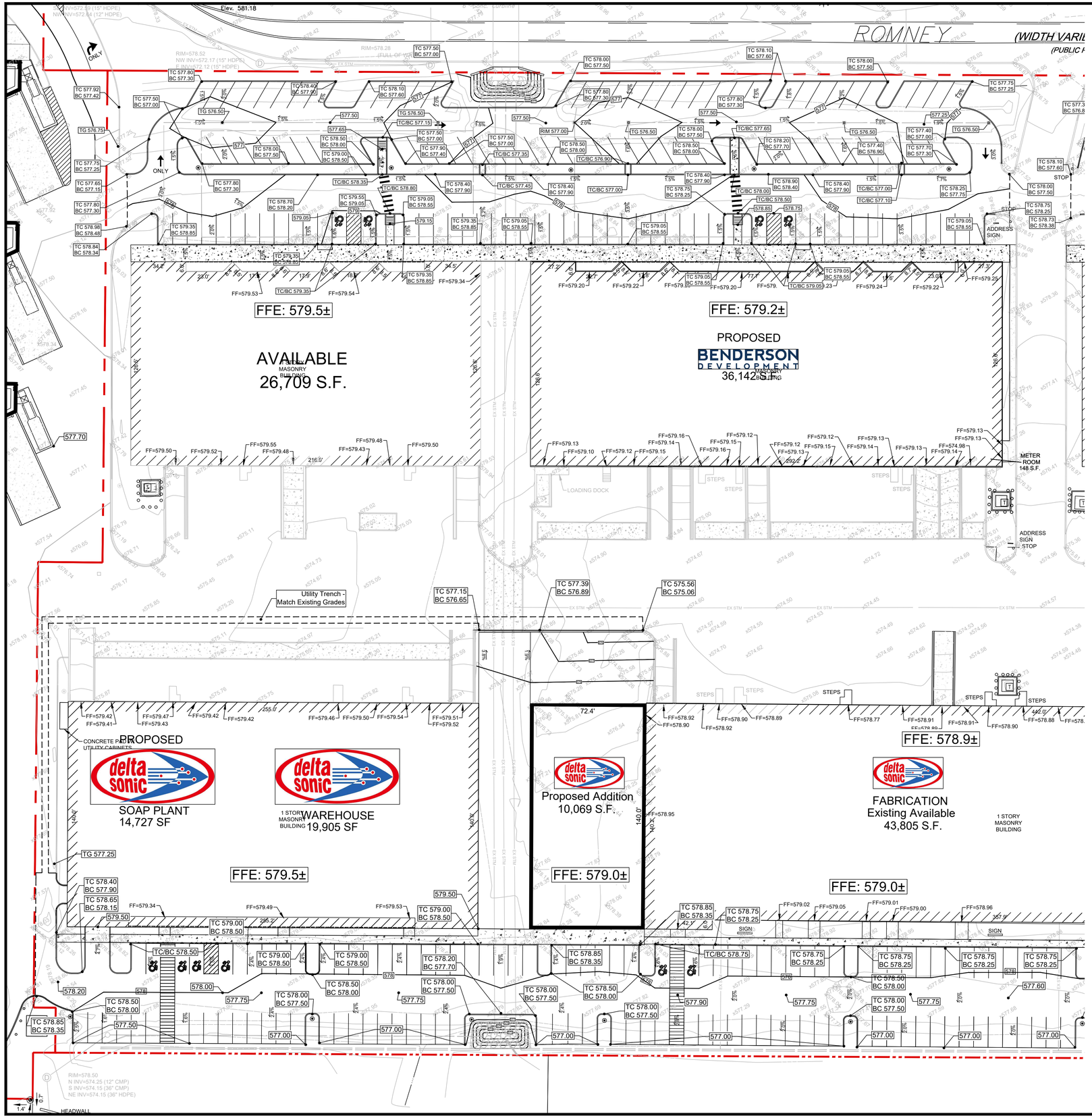
SEAL



TITLE: Construction Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C4.20

Attachment: SP-1988-11P_drawings updated 090924, 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
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3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

GRADING LEGEND:

- Property Line
- 6" Curb (typ).
- TG ## — Catch Basin - Top of Grade
- ### — Proposed Contour Line
- ##% — Slope Direction

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates

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BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Grading Plan (West)

SCALE: 1:30

DRAWN BY: DMZ

CHECKED BY: MAO

DATE: 11.08.2023

DRAWING NO. C5.00

Attachment: SP-1988-11P_drawings updated 090924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

ROAD

Detention Pond
~6,000 CF Storage

LANDSCAPING

ONLY

OERLIKON METCO
29,673 S.F.

1 STORY
MASONRY
BUILDING

FFE: 579.4±

AVAILABLE
3,600 S.F.

FFE: 579.3±

CONTROLS
3,224 S.F.

DEPT OF
LABOR
2,094 S.F.

SERVICE CORRIDOR 800 S.F.

SERVICE CORRIDOR

METER
ROOM
148 S.F.

8' CHAIN LINK FENCE

GLOBAL VENDING GROUP
18,248 S.F.

FFE: 579.3±

AMHERST MEDICAL
ASSOCIATES
11,547 S.F.

SUNRISE
PEDIATRICS
3,413 S.F.

SERVICE CORRIDOR

AVAILABLE
1,578 S.F.

LAW OFFICES OF
KENNETH HILLER
10,550 S.F.

DOCK AREA

RAMP UP

1 STORY
MASONRY
BUILDING

WINDOW DECOR
4,020 S.F.

McANN SYSTEMS
7,455 S.F.

AVAILABLE
2,311 S.F.

STORAGE
2,403 S.F.

Match into Existing

GRAVEL

LANDSCAPING

LANDSCAPING

NO. EXTENSION (WIDTH VARIES)

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- 6" Curb (typ.)
- TG ## — Catch Basin - Top of Grade
- ### — Proposed Contour Line
- ##% — Slope Direction

Refer to Roadway Civil Plans
Prepared by Passero Associates

Detention Pond
~6,000 CF Storage

POI 2

Detention Pond 1" = 20'

OFFICIAL TOWN USE ONLY

NORTH

Know what's below. Call before you dig. 811

PROPERTY NUMBER: #1723
AREA: -

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
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PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

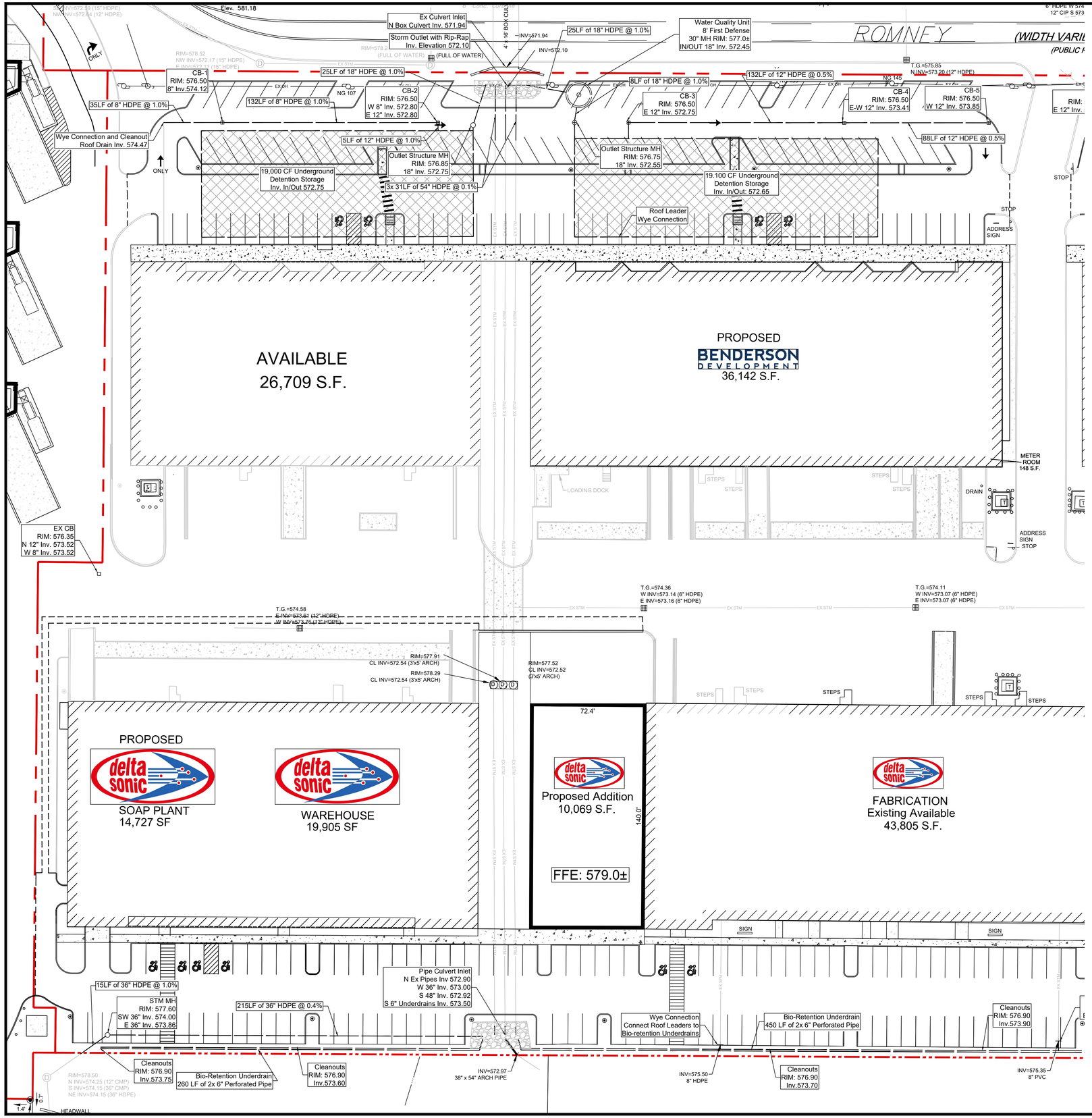
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 039709 STATE OF NEW YORK

TITLE:
Grading Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.01

Attachment: SP-1988-11P_drawings updated 090924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

DRAINAGE LEGEND:

- PROPERTY LINE
- PROPOSED STORMWATER
- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.10

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

(WIDTH VARIES) ROAD
(PUBLIC ROAD)

Storm D.I.
Rim 576.71
12" CIP N 2.57
6" HDPE E 573.91
6" HDPE W 574.06

Utility Pole
NG 165

CB-6
RIM: 576.50
E 12" Inv. 574.85

CB-7
RIM: 576.50
E-W 12" Inv. 574.45

CB-8
RIM: 576.50
N 15" Inv. 574.18
W 12" Inv. 574.18

Water Quality Unit
8' First Defense
30" MH RIM: 577.5±
IN/OUT 15" Inv. 574.10

18 LF of 12" HDPE @ 0.5%
12" Inlet Inv. 574.00
41LF of 36" HDPE @ 0.5%
35 LF of 15" HDPE @ 0.2%
197LF of 12" HDPE @ 0.2%
133LF of 12" HDPE @ 0.2%
@ 0.5%
ONLY

OERLIKON METCO
29,673 S.F.

AVAILABLE
3,600 S.F.

ROTHSTEIN ACQUISITIONS
3,000 S.F.

CONTROLS
3,224 S.F.

DEPT OF LABOR
2,094 S.F.

SERVICE CORRIDOR 800 S.F.

SERVICE CORRIDOR

METER ROOM
148 S.F.

8' CHAIN LINK FENCE

RIM=578.52
N INV=573.22 (8" PVC)
S INV=567.60 (8" PVC)
W INV=567.62 (8" PVC)

GLOBAL VENDING GROUP
18,248 S.F.

T.G.=574.25
W INV=573.25 (6" HDPE)
E INV=573.30 (6" HDPE)

T.G.=574.72
W INV=573.65 (4" PVC)

DOCK AREA

RAMP UP

WINDOW DECOR
4,020 S.F.

McANN SYSTEMS
7,455 S.F.

AVAILABLE
2,311 S.F.

AMHERST MEDICAL ASSOCIATES
11,547 S.F.

SUNRISE PEDIATRICS
3,413 S.F.

SERVICE CORRIDOR

STORAGE
2,403 S.F.

AVAILABLE
1,578 S.F.

LAW OFFICES OF KENNETH HILLER
10,550 S.F.

Cleanouts
RIM: 576.90
Inv.573.90

Wye Connection
Connect Roof Leaders to
Bio-retention Underdrains

Cleanouts
RIM: 576.90
Inv.574.00

INV=575.35
8" PVC

0.1"

1-1/4" PIPE
0.6' BELOW GRADE

RIM=578.87
(LOCKED)

1-1/4" PIPE
0.4' BELOW GRADE

T.G.=576.76
E INV=574.71 (10" PVC)
W INV=574.78 (10" PVC)

RIM=578.30
N INV=566.40 (8" PVC)
W INV=566.31 (8" PVC)
NE INV=573.04 (8" PVC)

T.G.=576.67
N INV=574.82 (10" PVC)
SE INV=574.92 (6" PVC)

MH-1
RIM: 579.50
N 36" Inv. 575.21
S 36" Inv. 575.36

1-1/4" PIPE
0.2' BELOW GRADE

T.G.=578.10
E INV=576.13 (12" HDPE)

6' MH-6 (D-14)
RIM: 578.79
NW 36" Inv. 573.98
S 36" Inv. 573.98
NE 15" 574.57

34LF of 36" HDPE @ 0.5%
B4LF of 36" HDPE @ 0.5%
44LF of 12" HDPE @ 1.0%

CB-10
RIM: 577.20
E 12" Inv. 575.46

44LF of 12" HDPE @ 1.0%

CB-11
RIM: 577.70
E 12" Inv. 575.30

MH-3
RIM: 579.25
N-S 36" Inv. 574.80
E 12" Inv. 576.00

CB-12
RIM: 577.20
E 12" Inv. 575.40

44LF of 12" HDPE @ 1.0%

CB-13
RIM: 577.65
E 12" Inv. 575.50

44LF of 12" HDPE @ 1.0%

Connect to Existing 12" STM
Inv. 575.43

10LF of 12" HDPE @ 3.0%

MH-2
RIM: 578.85
N-S 36" Inv. 575.10
E 15" Inv. 576.80

44LF of 12" HDPE @ 0.5%

CB-14
RIM: 577.30
E 12" Inv. 575.32

9LF of 10" HDPE @ 1.0%

Connect to Existing 10" CMP
Inv. 575.47

44LF of 12" HDPE @ 0.5%

CB-15
RIM: 577.70
E 12" Inv. 575.36

T.G.=578.76
S INV=573.99 (36" HDPE)
NW INV=573.74 (36" HDPE)

MH-5
RIM: 579.00
N 36" Inv. 574.15
S 36" Inv. 574.15

NORTH BAILEY AVENUE
(PUBLIC ROW)

MH-4
RIM: 579.25
N-S 36" Inv. 574.57
E 12" Inv. 575.02

115LF of 36" HDPE @ 0.2%

Storm D.I.
Rim 577.57
12" HDPE S. 574.07
18" CMP N. 573.75
18" CMP E. 573.87

12" Wye Connection
36" Inv. 574.73

T.G.=579.84
W INV=576.66 (12" HDPE)

Storm D.I.
Rim 580.09
6" HDPE S. 577.64
12" HDPE W. 576.88

9LF of 12" HDPE @ 3.0%

12" Wye Connection
36" Inv. 574.89

153LF of 36" HDPE @ 0.2%

12" Wye Connection
36" Inv. 575.06

12" Wye Connection
36" Inv. 575.07

13LF of 15" HDPE @ 3.0%

T.G.=580.65
E INV=578.25 (12" HDPE)
INV=577.69

159LF of 36" HDPE @ 0.2%

12" Wye Connection
36" Inv. 575.21

10" Wye Connection
36" Inv. 575.29

Wye Connection
36" Inv. 575.36

16LF of 15" HDPE @ 3.0%

T.G.=580.85
E INV=578.80 (12" HDPE)
INV=577.82

T.G.=580.85
E INV=578.83 (12" HDPE)

RIM=580.66
N INV=575.74 (36" HDPE)
S INV=575.76 (36" HDPE)
NE INV=576.51 (12" HDPE)
W INV=575.81 (12" HDPE)

T.G.=580.49
SW INV=576.50 (12" HDPE)
S INV=576.69 (12" HDPE)

T.G.=580.54
E INV=578.44 (12" HDPE)
INV=577.68

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- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

36" Outlet Inv. 572.25

RELOCATED 30 MPH SPEED LIMIT SIGN

6" SPRUCE

Refer to Roadway Civil Plans Prepared by Passero Associates

100LF of 36" HDPE @ 1.5%

MH-7
RIM: 578.5±
N 36" Inv. 573.75
SE 36" Inv. 573.77
SW 12" Inv. 573.80

10 LF of 12" HDPE @ 1.0%

12" Outlet Inv. 573.90

POLE 2

18 LF of 12" HDPE @ 0.5%

12" Inlet Inv. 574.00

41LF of 36" HDPE @ 0.5%

6' MH-6 (D-14)
RIM: 578.79
NW 36" Inv. 573.98
S 36" Inv. 573.98
NE 15" 574.57

CB-8
RIM: 576.50
N 15" Inv. 574.18
W 12" Inv. 574.18

34LF of 36" HDPE @ 0.5%

Detention Pond 1" = 20'

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

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PREPARED FOR
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(716) 886-0211

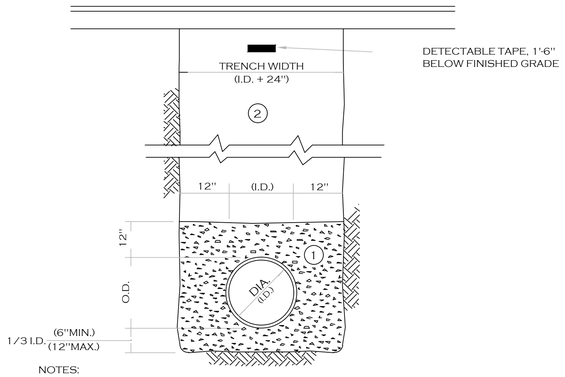
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:
Drainage Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.11

Attachment: SP-1988-11P drawings updated 090924, 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

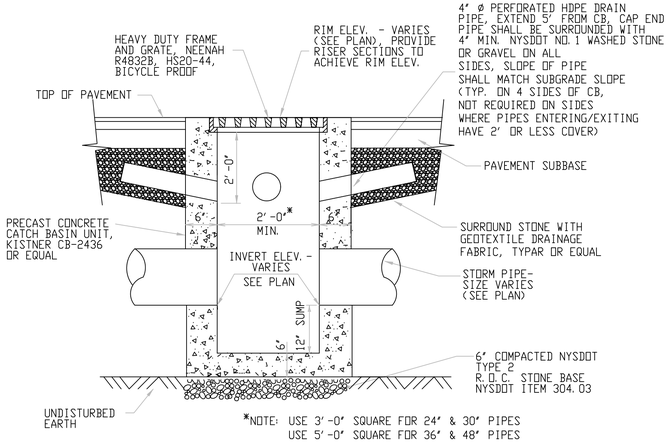
(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

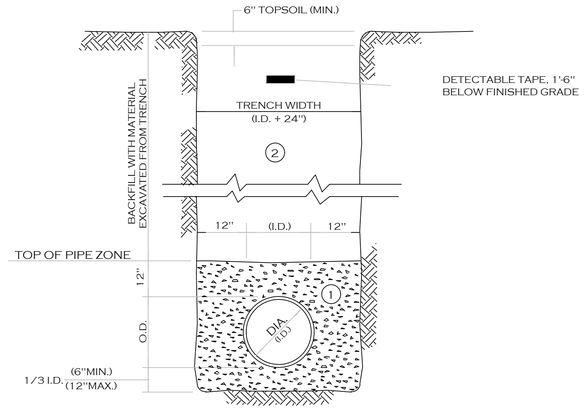
(2) TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERAIL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

TRENCH SECTION IN PAVED AREAS



TYPICAL PRECAST CATCH BASIN



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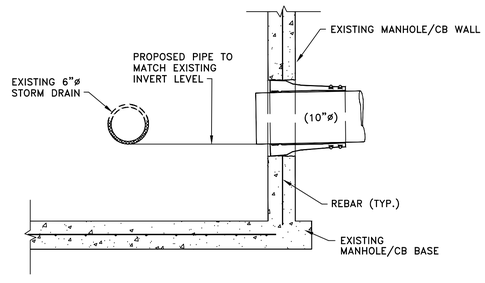
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

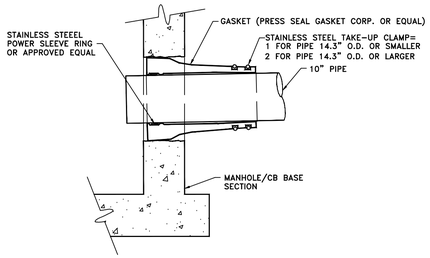
(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

TRENCH SECTION IN UNPAVED AREAS

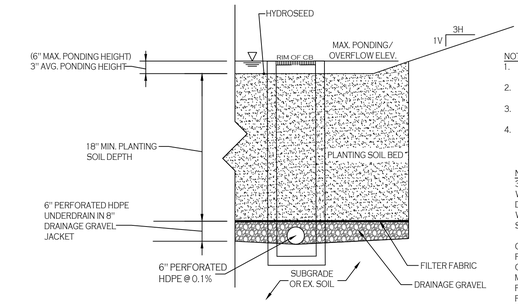


NOTES:

1. CORE DRILL ENTRANCE HOLE IN PRECAST MANHOLE BARREL, BASE AND/OR BENCH FOR REQUIRED PIPE CLEARANCE. PER MANUFACTURERS RECOMMENDATIONS.
2. DOES NOT APPLY TO HOUSE LATERALS.
3. WATERTIGHT PIPE TO MANHOLE BOOT SEAL REQUIRED FOR ALL CORE DRILLED ENTRANCE HOLES IN MANHOLE BARREL AS SHOWN BELOW.



CONNECTION TO EXISTING MANHOLE/CB



BIORETENTION AREA - TYPICAL SECTION

NOTES:

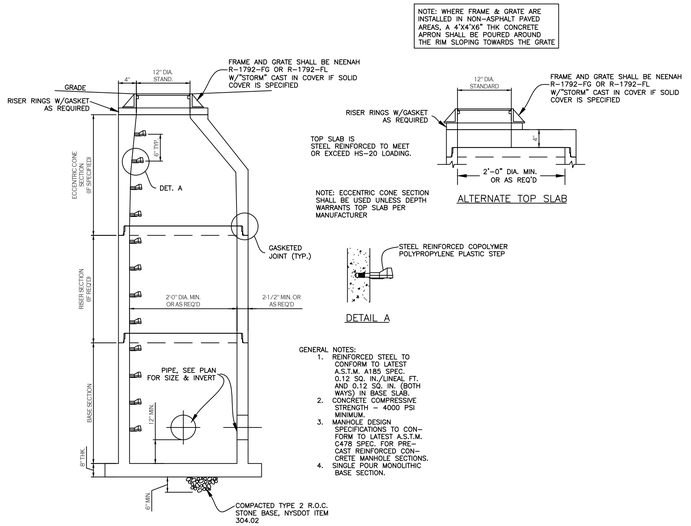
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43, NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 1.0 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5



TYPICAL STORM MANHOLE DETAIL

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES

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(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 029109 STATE OF NEW YORK

TITLE: Drainage Details

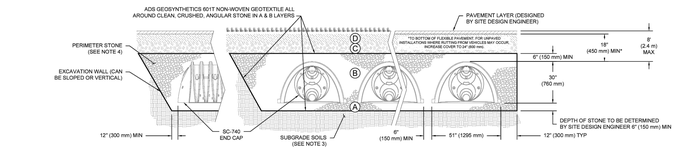
SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C5.20

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145* A-1, A-2-4, A-3 OR AASHTO M43* 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

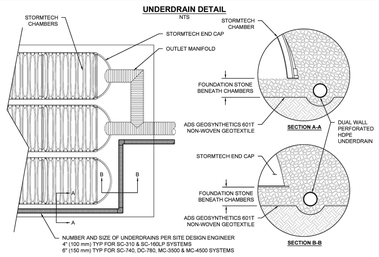


NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a. "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

UNDERDRAIN DETAIL

NTS



SC-740 TECHNICAL SPECIFICATION

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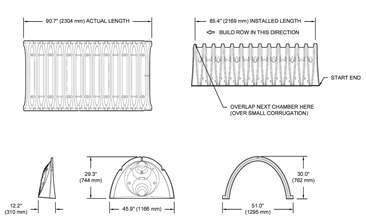
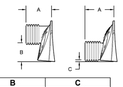


NOMINAL CHAMBER SPECIFICATIONS

SIZE (W x H x INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1296 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



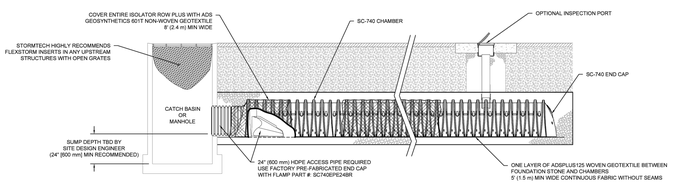
PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	—
SC740EPE06B / SC740EPE06BPC				0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (418 mm)	—
SC740EPE08B / SC740EPE08BPC			—	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	—
SC740EPE10B / SC740EPE10BPC			—	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	—
SC740EPE12B / SC740EPE12BPC			—	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	—
SC740EPE15B / SC740EPE15BPC			—	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	—
SC740EPE18B / SC740EPE18BPC			—	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)
SC740EPE24BR*	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B/SC740EPE24BR ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B/SC740EPE24BR THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



SC-740 ISOLATOR ROW PLUS DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. OPEN DOWNSTREAM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

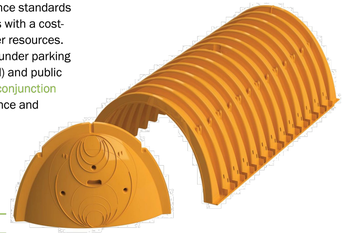
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

StormTech SC-740 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



StormTech SC-740 Chamber (not to scale)

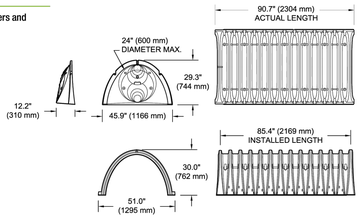
Nominal Chamber Specifications

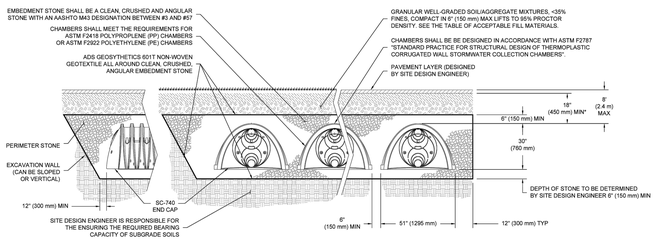
Size (L x W x H)	85.4" x 51.0" x 30.0" (2,170 x 1,295 x 762 mm)
Chamber Storage	45.9 ft³ (1.30 m³)
Min. Installed Storage*	74.9 ft³ (2.12 m³)
Weight	74.0 lbs (33.6 kg)

*Assumes 6" (150 mm) stone above, below and between chambers and 40% stone porosity.

Shipping

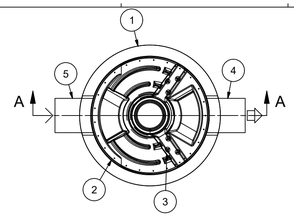
30 chambers/pallet
60 end caps/pallet
12 pallets/truck





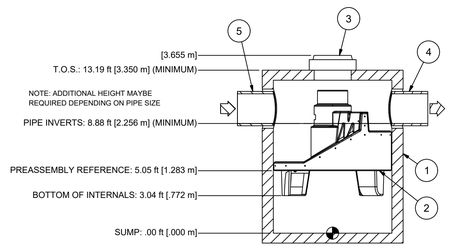
*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 24" (600 mm).

THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.



PLAN VIEW

HYDRO FRAME AND COVER (INCLUDED)
GRADE RINGS BY OTHERS AS REQUIRED



SECTION A-A

PRODUCT SPECIFICATION:

1. Peak Hydraulic Flow: 50.0 cfs (1415 l/s)
2. Min Sediment Storage Capacity: 2.8 cu. yd. (2.1 cu. m.)
3. Oil Storage Capacity: 1002 gal. (3793 liters)
4. Maximum Inlet/Outlet Pipe Diameters: 48 in. (1200 mm)
5. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
6. For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/first-defense

GENERAL NOTES:

1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 48".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plan.s)
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PARTS LIST				
ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	96	2400	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	48 (MAX)	1200 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	48 (MAX)	1200 (MAX)	INLET PIPE (BY OTHERS)

ANY WARRANTY GIVEN BY HYDRO INTERNATIONAL WILL APPLY ONLY TO THOSE ITEMS SUPPLIED BY IT. ACCORDINGLY HYDRO INTERNATIONAL CANNOT ACCEPT ANY RESPONSIBILITY FOR ANY STRUCTURE, PLANT, OR EQUIPMENT, (OR THE PERFORMANCE THEREOF) DESIGNED, BUILT, MANUFACTURED, OR SUPPLIED BY ANY THIRD PARTY. HYDRO INTERNATIONAL HAVE A POLICY OF CONTINUOUS DEVELOPMENT AND RESERVE THE RIGHT TO AMEND THE SPECIFICATION. HYDRO INTERNATIONAL CANNOT ACCEPT LIABILITY FOR PERFORMANCE OF ITS EQUIPMENT, (OR ANY PART THEREOF), IF THE EQUIPMENT IS SUBJECT TO CONDITIONS OUTSIDE ANY DESIGN SPECIFICATION. HYDRO INTERNATIONAL OWNS THE COPYRIGHT OF THIS DRAWING, WHICH IS SUPPLIED IN CONFIDENCE. IT MUST NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED AND MUST NOT BE REPRODUCED, IN WHOLE OR IN PART, WITHOUT PRIOR PERMISSION IN WRITING FROM HYDRO INTERNATIONAL.

PROJECTION

IF IN DOUBT ASK

COMMENTS:

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.

2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

DATE: 10/7/2019 | SCALE: 1:50
DRAWN BY: ER | CHECKED BY: MRJ | APPROVED BY:
Title: 8-ft DIAMETER FIRST DEFENSE HIGH CAPACITY GENERAL ARRANGEMENT

Hydro International
hydro-int.com
HYDRO INTERNATIONAL

DO NOT SCALE DRAWING
STEEL FABRICATION TOLERANCES
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.

LINEAR	ANGULAR
000 - 012in = ±0.04in	000 - 120in = ±1°
012 - 024in = ±0.06in	120 - 240in = ±0.5°
024 - 048in = ±0.09in	240in >>>> = ±0.25°
048 - 120in = ±0.12in	
120in >>>> = ±0.20in	

WEIGHT: N/A | MATERIAL:
STOCK NUMBER:
DRAWING NO.: FDHC GA-8
SHEET SIZE: B | SHEET: 1 OF 1 | Rev: -

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723 | AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

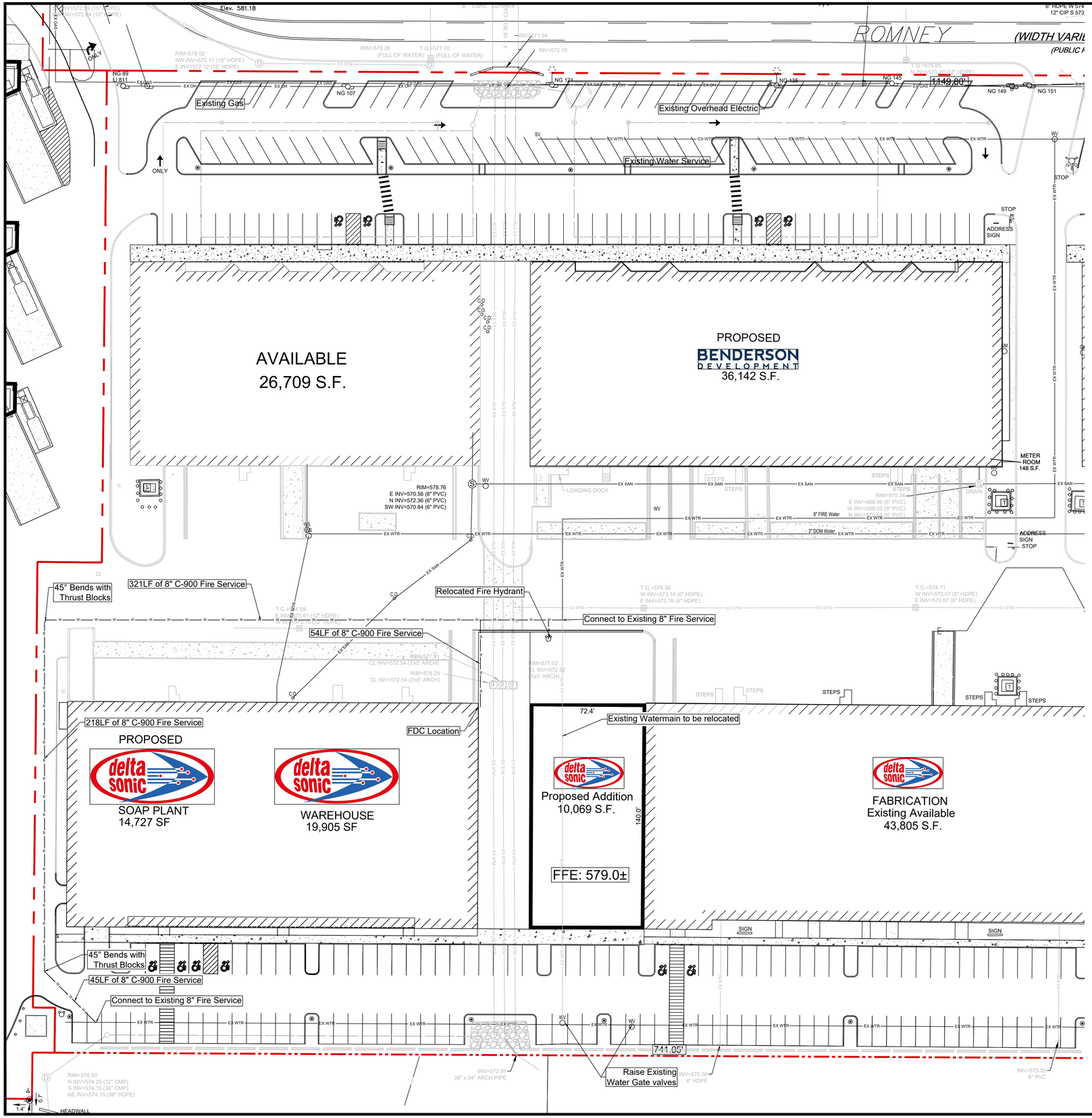
SEAL



TITLE: Drainage Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.30.2023
DRAWING NO.: C5.21

Attachment: SP-1988-11P_drawings updated 090924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
 11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
 11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SANITARY SEWER NOTES:
1. THE CONTRACTOR IS ADVISED THAT A TRENCH SHIELD AND/OR SHORING DESIGNED IN ACCORDANCE WITH OSHA STANDARDS SHALL BE USED IN ALL OPEN TRENCH EXCAVATIONS.
2. ANY CONTRACTOR AND/OR PLUMBER PERFORMING WORKING IN A CONFINED SPACE (ie MANHOLES, WETWELLS, CHAMBERS) OWNED BY THE TOWN MUST CERTIFY TO THE TOWN THAT THEY HAVE THEIR OWN CONFINED SPACE ENTRY PROGRAM THAT MEETS OR EXCEEDS OSHA'S REGULATIONS. CERTIFICATION MUST BE NOTARIZED BY A NOTARY PUBLIC.
3. CONSTRUCTION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE TOWN AND NEW YORK STATE CODES.
4. IF ANY PROPOSED SEWER LATERAL RUNS UNDER PAVED AREA AND HAS LESS THAN 4' COVER, CONCRETE ENCASEMENT IS REQUIRED. IF MORE THAN 4' COVER IS PROVIDED IN PAVED AREAS SELECT FILL IS REQUIRED.
5. THE CONTRACTOR MUST NOTIFY THE TOWN ENGINEER OFFICE AND THE PLUMBING INSPECTOR 24 HOURS IN ADVANCE OF CONSTRUCTION.
6. CLEANOUTS ARE REQUIRED EVERY 100' AND AT CHANGE IN DIRECTION.
7. ABANDONED SANITARY SEWER CONNECTIONS FROM THE SITE, IF ANY, REQUIRE PROOF OF A DISTRICT PERMIT FOR DISCONNECTION PRIOR TO THE NEW CONNECTION BEING MADE.

UTILITY NOTES:
1. PROVIDE FITTINGS AND BLOCKING AS NECESSARY AT ALL BENDS IN WATER LINES.
2. WHERE UTILITIES ARE INSTALLED IN EXISTING PAVEMENT, LANDSCAPED AREA ETC. ANY ITEMS REMOVED/DAMAGED SHALL BE REPLACED IN KIND.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS NECESSARY: STATE, COUNTY, AND TOWN.
4. WATER MAINS TO HAVE MINIMUM 5FT COVER,

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments

SPECIAL INFORMATION:

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NOTICE

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Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 013703 STATE OF NEW YORK

TITLE:
Utility Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.
C6.00

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

(WIDTH VARIES) ROAD
(PUBLIC ROAD)

Utility Pole NG 165
NG 149 NG 151 NG 167 NG 165 NG 175 NG 198 NG 5220
APPROXIMATE LOCATION 2" GAS MAIN
8" Fire Service Relocation
LANDSCAPING
Relocated Existing Fire Service Hot Box
NG 5205
Relocated Existing Guy Wire
Adjust Water Valve to Grade
Relocated Existing Guy Wire
NG 5184
NG 5150
NG 5150R-2
NG 5150R-1
5150R
Existing Hot Box Enclosure
ONLY
NORTH BAILEY AVENUE (VARIABLE WIDTH PUBLIC ROW)
White Stripe
Concrete Walk
Asphalt
NORTH BAILEY EXTENSION (WIDTH VARIES)

OERLIKON METCO
29,673 S.F.

AVAILABLE
3,600 S.F.

ROTHSTEIN ACQUISITIONS
3,000 S.F.

CONTROLS
3,224 S.F.

DEPT OF LABOR
2,094 S.F.

SERVICE CORRIDOR 800 S.F.

SERVICE CORRIDOR

METER ROOM
148 S.F.

8' CHAIN LINK FENCE

RIM=578.52
N INV=573.22 (8" PVC)
S INV=567.60 (8" PVC)
W INV=567.62 (8" PVC)

GLOBAL VENDING GROUP
18,248 S.F.

STEPS

DOCK AREA

RAMP UP

AMHERST MEDICAL ASSOCIATES
11,547 S.F.

SUNRISE PEDIATRICS
3,413 S.F.

SERVICE CORRIDOR

AVAILABLE
1,578 S.F.

LAW OFFICES OF KENNETH HILLER
10,550 S.F.

STORAGE
2,403 S.F.

WINDOW DECOR
4,020 S.F.

McANN SYSTEMS
7,455 S.F.

AVAILABLE
2,311 S.F.

FDC Location

RIM=578.30
N INV=566.40 (8" PVC)
W INV=566.31 (8" PVC)
NE INV=573.04 (8" PVC)

GRAVEL

1-1/4" PIPE
0.6' BELOW GRADE

RIM=578.87
(LOCKED)

1-1/4" PIPE
0.4' BELOW GRADE

1-1/4" PIPE
0.2' BELOW GRADE

GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURERS RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.

SANITARY SEWER NOTES:
1. THE CONTRACTOR IS ADVISED THAT A TRENCH SHIELD AND/OR SHORING DESIGNED IN ACCORDANCE WITH OSHA STANDARDS SHALL BE USED IN ALL OPEN TRENCH EXCAVATIONS.
2. ANY CONTRACTOR AND/OR PLUMBER PERFORMING WORKING IN A CONFINED SPACE (ie MANHOLES, WETWELLS, CHAMBERS) OWNED BY THE TOWN MUST CERTIFY TO THE TOWN THAT THEY HAVE THEIR OWN CONFINED SPACE ENTRY PROGRAM THAT MEETS OR EXCEEDS OSHA'S REGULATIONS. CERTIFICATION MUST BE NOTARIZED BY A NOTARY PUBLIC.
3. CONSTRUCTION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE TOWN AND NEW YORK STATE CODES.
4. IF ANY PROPOSED SEWER LATERAL RUNS UNDER PAVED AREA AND HAS LESS THAN 4' COVER, CONCRETE ENCASEMENT IS REQUIRED. IF MORE THAN 4' COVER IS PROVIDED IN PAVED AREAS SELECT FILL IS REQUIRED.
5. THE CONTRACTOR MUST NOTIFY THE TOWN ENGINEER OFFICE AND THE PLUMBING INSPECTOR 24 HOURS IN ADVANCE OF CONSTRUCTION.
6. CLEANOUTS ARE REQUIRED EVERY 100' AND AT CHANGE IN DIRECTION.
7. ABANDONED SANITARY SEWER CONNECTIONS FROM THE SITE, IF ANY, REQUIRE PROOF OF A DISTRICT PERMIT FOR DISCONNECTION PRIOR TO THE NEW CONNECTION BEING MADE.

UTILITY NOTES:
1. PROVIDE FITTINGS AND BLOCKING AS NECESSARY AT ALL BENDS IN WATER LINES.
2. WHERE UTILITIES ARE INSTALLED IN EXISTING PAVEMENT, LANDSCAPED AREA ETC. ANY ITEMS REMOVED/DAMAGED SHALL BE REPLACED IN KIND.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS NECESSARY: STATE, COUNTY, AND TOWN.
4. WATER MAINS TO HAVE MINIMUM 5FT COVER,

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
4	07.31.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments

SPECIAL INFORMATION:

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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

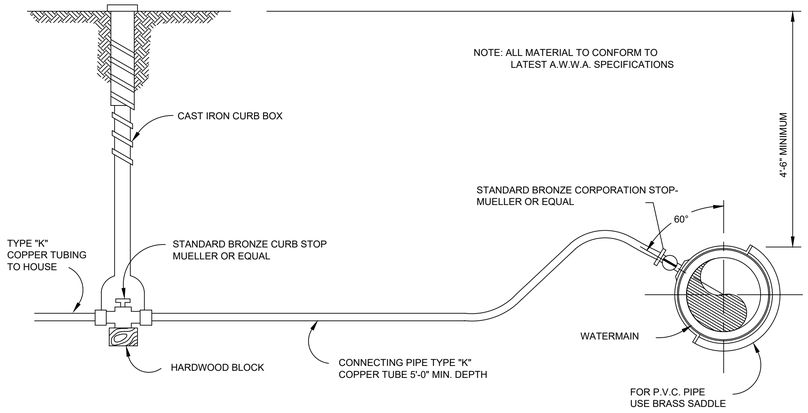
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 027109 STATE OF NEW YORK

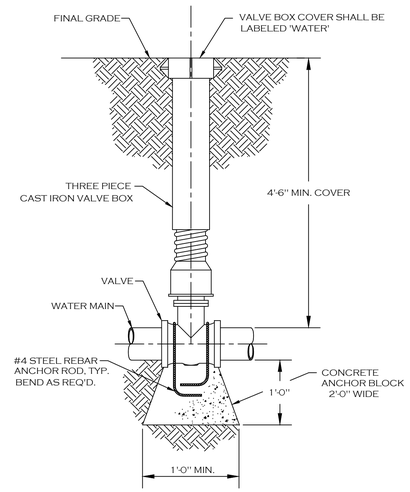
TITLE:
Utility Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C6.01

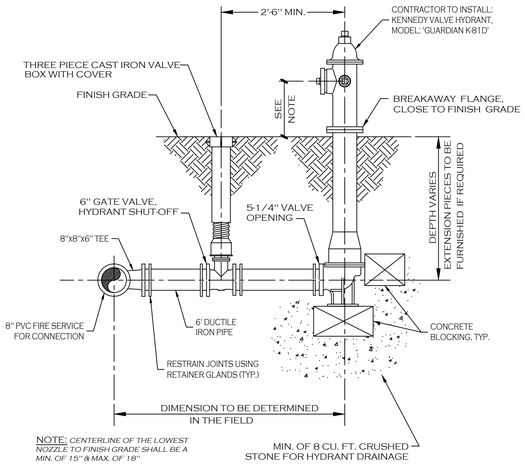
Attachment: SP-1988-11P_drawings updated 090924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



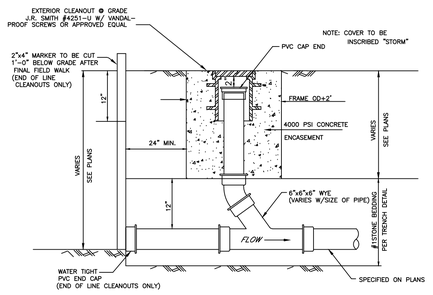
TYPICAL WATER SERVICE LINE INSTALLATION



TYPICAL GATE VALVE DETAIL

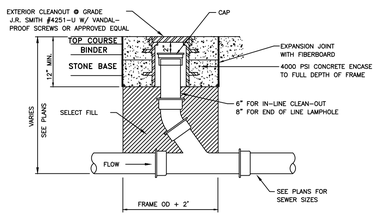


TYPICAL FIRE HYDRANT ASSEMBLY DETAIL



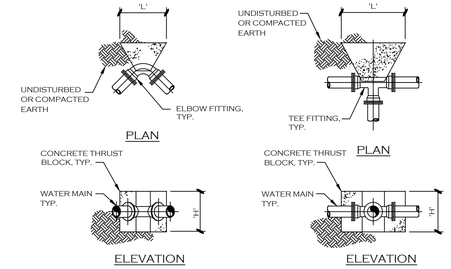
CLEANOUT IN LANDSCAPED AREAS

NOT TO SCALE



CLEANOUT IN PAVED AREAS

NOT TO SCALE



DIMENSION SCHEDULE								
PIPE SIZE	90° ELBOW		45° ELBOW		22.5° ELBOW		11.25° ELBOW	
	'H'	'L'	'H'	'L'	'H'	'L'	'H'	'L'
4"	1.5'	2.0'	1.0'	2.0'	1.0'	1.0'	1.0'	1.0'
6"	2.0'	2.5'	1.5'	2.0'	1.0'	1.5'	1.0'	1.5'
8"	2.5'	3.5'	2.0'	2.5'	1.5'	1.5'	1.0'	2.0'
10"	3.0'	4.5'	2.5'	3.0'	1.5'	3.0'	1.0'	2.5'
12"	3.5'	5.0'	3.0'	3.5'	2.5'	2.5'	1.5'	2.5'

DIMENSION SCHEDULE		
PIPE SIZE	TEE OR TAP SLEEVE	
—	'H'	'L'
4"	1.5'	1.0'
6"	1.5'	2.5'
8"	1.5'	3.5'
10"	2.5'	3.5'
12"	3.5'	3.5'

THRUST BLOCK SCHEDULE

WATER MAIN

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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(716) 886-0211

SEAL

REGISTERED ARCHITECT
JAMES ALLEN RUMSEY
109
STATE OF NEW YORK

TITLE:
Utility Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.
C6.10

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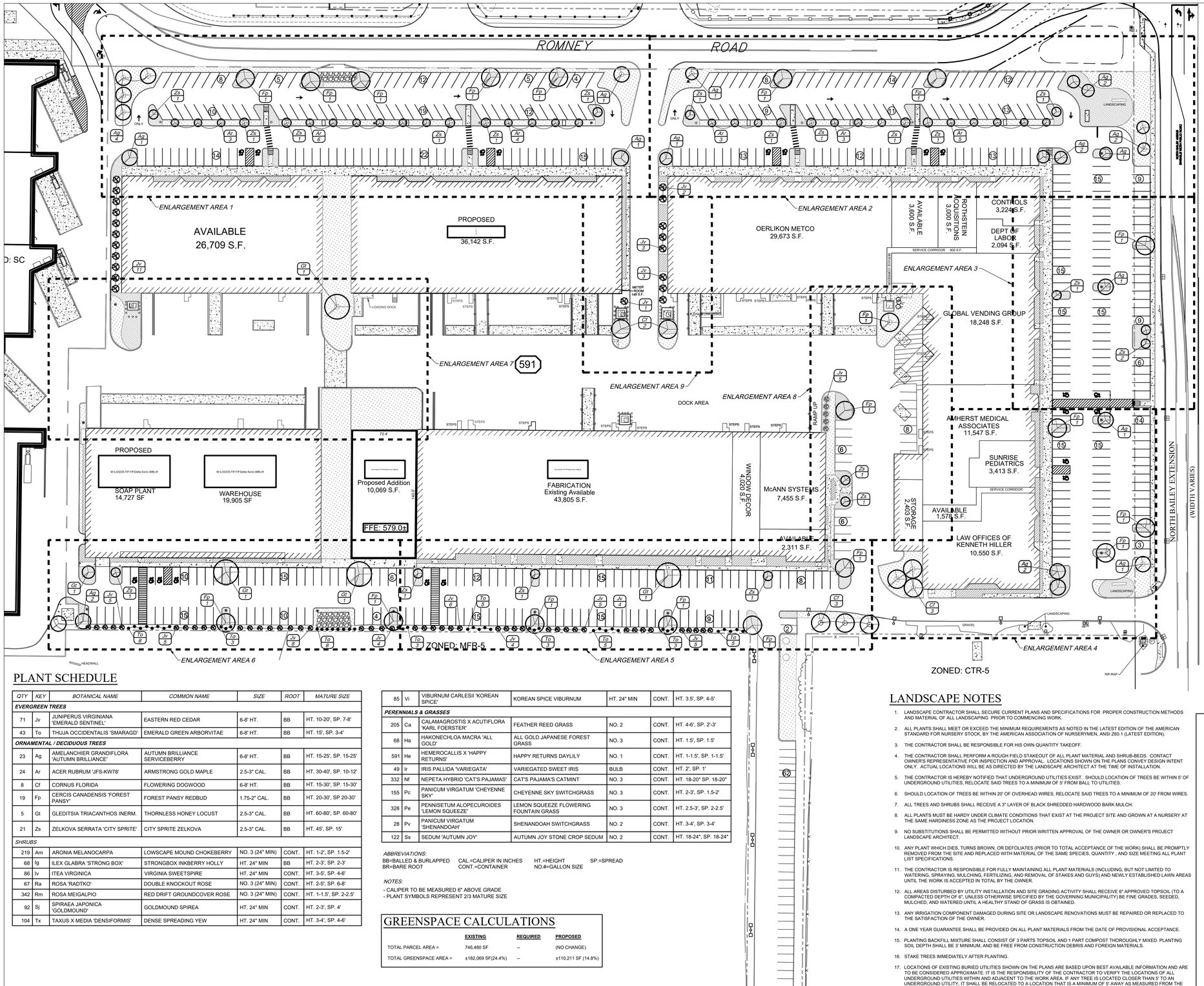

PLANT SCHEDULE

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE
EVERGREEN TREES						
71	Jv	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	EASTERN RED CEDAR	6-8' HT.	BB	HT. 10-20', SP. 7-8'
43	To	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6-8' HT.	BB	HT. 15', SP. 3-4'
ORNAMENTAL / DECIDUOUS TREES						
23	Ag	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	6-8' HT.	BB	HT. 15-25', SP. 15-25'
24	Ar	ACER RUBRUM 'JFS-KW78'	ARMSTRONG GOLD MAPLE	2.5-3" CAL.	BB	HT. 30-40', SP. 10-12'
8	Cf	CORNUS FLORIDA	FLOWERING DOGWOOD	6-8' HT.	BB	HT. 15-30', SP. 15-30'
19	Fp	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	1.75-2" CAL.	BB	HT. 20-30', SP 20-30'
5	Gt	GLEDITSIA TRIACANTHOS INERM.	THORNLESS HONEY LOCUST	2.5-3" CAL.	BB	HT. 60-80', SP. 60-80'
21	Zs	ZELKOVA SERRATA 'CITY SPRITE'	CITY SPRITE ZELKOVA	2.5-3" CAL.	BB	HT. 45', SP. 15'
SHRUBS						
219	Am	ARONIA MELANOCARPA	LOWSCAPE MOUND CHOKEBERRY	NO. 3 (24" MIN)	CONT.	HT. 1-2', SP. 1.5-2'
68	Ig	ILEX GLABRA 'STRONG BOX'	STRONGBOX INKBERRY HOLLY	HT. 24" MIN	BB	HT. 2-3', SP. 2-3'
86	Iv	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	HT. 24" MIN	CONT.	HT. 3-5', SP. 4-6'
67	Ra	ROSA 'RADTKO'	DOUBLE KNOCKOUT ROSE	NO. 3 (24" MIN)	CONT.	HT. 2-5', SP. 6-8'
342	Rm	ROSA MEIGALPIO	RED DRIFT GROUNDCOVER ROSE	NO. 3 (24" MIN)	CONT.	HT. 1-1.5', SP. 2-2.5'
92	Sj	SPIRAEA JAPONICA 'GOLDMOUND'	GOLDMOUND SPIREA	HT. 24" MIN	CONT.	HT. 2-3', SP. 4'
104	Tx	TAXUS X MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	HT. 24" MIN	CONT.	HT. 3-4', SP. 4-6'
85	Vi	VIBURNUM CARLESII 'KOREAN SPICE'	KOREAN SPICE VIBURNUM	HT. 24" MIN	CONT.	HT. 3.5', SP. 4-5'
PERENNIALS & GRASSES						
205	Ca	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	NO. 2	CONT.	HT. 4-6', SP. 2'-3'
68	Ha	HAKONECHLOA MACRA 'ALL GOLD'	ALL GOLD JAPANESE FOREST GRASS	NO. 3	CONT.	HT. 1.5', SP. 1.5'
591	He	HEMEROCALLIS X 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	NO. 1	CONT.	HT. 1-1.5', SP. 1-1.5'
49	Ir	IRIS PALLIDA 'VARIEGATA'	VARIEGATED SWEET IRIS	BULB	CONT.	HT. 2', SP. 1'
332	Nf	NEPETA HYBRID 'CAT'S PAJAMAS'	CAT'S PAJAMA'S CATMINT	NO. 3	CONT.	HT. 18-20" SP. 18-20"
155	Pc	PANICUM VIRGATUM 'CHEYENNE SKY'	CHEYENNE SKY SWITCHGRASS	NO. 3	CONT.	HT. 2-3', SP. 1.5-2'
328	Pe	PENNISETUM ALOPECUROIDES 'LEMON SQUEEZE'	LEMON SQUEEZE FLOWERING FOUNTAIN GRASS	NO. 3	CONT.	HT. 2.5-3', SP. 2-2.5'
28	Pv	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	NO. 2	CONT.	HT. 3-4', SP. 3-4'
122	Ss	SEDUM 'AUTUMN JOY'	AUTUMN JOY STONE CROP SEDUM	NO. 2	CONT.	HT. 18-24", SP. 18-24"

ABBREVIATIONS:
BB=BALLED & BURLAPPED CAL.=CALIPER IN INCHES HT.=HEIGHT SP.=SPREAD
BR=BARE ROOT CONT.=CONTAINER NO.#=GALLON SIZE

NOTES:
- CALIPER TO BE MEASURED 6" ABOVE GRADE
- PLANT SYMBOLS REPRESENT 2/3 MATURE SIZE

GREENSPACE CALCULATIONS

	EXISTING	REQUIRED	PROPOSED
TOTAL PARCEL AREA =	746,480 SF	--	(NO CHANGE)
TOTAL GREENSPACE AREA =	±182,069 SF(24.4%)	--	±110,211 SF (14.8%)

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL SECURE CURRENT PLANS AND SPECIFICATIONS FOR PROPER CONSTRUCTION METHODS AND MATERIAL OF ALL LANDSCAPING PRIOR TO COMMENCING WORK.
2. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS AS NOTED IN THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN ASSOCIATION OF NURSERYMEN, ANSI Z60.1 (LATEST EDITION).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY TAKEOFF.
4. THE CONTRACTOR SHALL PERFORM A ROUGH FIELD STAKEOUT OF ALL PLANT MATERIAL AND SHRUB-BEDS. CONTACT OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL. LOCATIONS SHOWN ON THE PLANS CONVEY DESIGN INTENT ONLY. ACTUAL LOCATIONS WILL BE AS DIRECTED BY THE LANDSCAPE ARCHITECT AT THE TIME OF INSTALLATION.
5. THE CONTRACTOR IS HEREBY NOTIFIED THAT UNDERGROUND UTILITIES EXIST. SHOULD LOCATION OF TREES BE WITHIN 5' OF UNDERGROUND UTILITIES, RELOCATE SAID TREES TO A MINIMUM OF 5' FROM BALL TO UTILITIES.
6. SHOULD LOCATION OF TREES BE WITHIN 20' OF OVERHEAD WIRES, RELOCATE SAID TREES TO A MINIMUM OF 20' FROM WIRES.
7. ALL TREES AND SHRUBS SHALL RECEIVE A 3" LAYER OF BLACK SHREDDED HARDWOOD BARK MULCH.
8. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY AT THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
9. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR OWNER'S PROJECT LANDSCAPE ARCHITECT.
10. ANY PLANT WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY , AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS (INCLUDING, BUT NOT LIMITED TO WATERING, SPRAYING, MULCHING, FERTILIZING, AND REMOVAL OF STAKES AND GUYS) AND NEWLY ESTABLISHED LAWN AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE OWNER.
12. ALL AREAS DISTURBED BY UTILITY INSTALLATION AND SITE GRADING ACTIVITY SHALL RECEIVE 6" APPROVED TOPSOIL (TO A COMPACTED DEPTH OF 6", UNLESS OTHERWISE SPECIFIED BY THE GOVERNING MUNICIPALITY) BE FINE GRADES, SEEDED, MULCHED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
13. ANY IRRIGATION COMPONENT DAMAGED DURING SITE OR LANDSCAPE RENOVATIONS MUST BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.
14. A ONE YEAR GUARANTEE SHALL BE PROVIDED ON ALL PLANT MATERIALS FROM THE DATE OF PROVISIONAL ACCEPTANCE.
15. PLANTING BACKFILL MIXTURE SHALL CONSIST OF 3 PARTS TOPSOIL AND 1 PART COMPOST THOROUGHLY MIXED. PLANTING SOIL DEPTH SHALL BE 3' MINIMUM, AND BE FREE FROM CONSTRUCTION DEBRIS AND FOREIGN MATERIALS.
16. STAKE TREES IMMEDIATELY AFTER PLANTING.
17. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE WORK AREA. IF ANY TREE IS LOCATED CLOSER THAN 5' TO AN UNDERGROUND UTILITY, IT SHALL BE RELOCATED TO A LOCATION THAT IS A MINIMUM OF 5' AWAY AS MEASURED FROM THE ROOTBALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, AND SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.

LEGEND

- AREAS TO RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDRO SEED MIX
- PARKING LOT LANDSCAPE AREAS
- FOUNDATION LANDSCAPE AREAS

NOTE:
ALL DISTURBED LAWN AREAS SHALL RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDROSEED MIX.

SEED MIX:

PURITY %GERM	LBS/ACRE	%BY
'Pennfine' Perennial Rye Grass 85	35	85
'Pennlawn' Red Fescue 80	35	97
'Baron' and 'Midnight' Kentucky Bluegrass 80	30	85

SEEDING RATE: 6.0 POUNDS PER 1,000 SQUARE FEET

MULCH: STRAW OR WOOD FIBER MULCH APPLIED AT THE RATE OF TWO TONS PER ACRE

STARTING FERTILIZER: 5:10:10 AT 20 POUNDS PER 1,000 SQUARE FEET

FOR FALL OR EARLY WINTER, SEED WITH CERTIFIED "AROOSTOCK" WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE.

No.	Revision/Issue	Date
01	Revised based on site plan changes	2024-08-21

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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Applicant
BENDERSON DEVELOPMENT
570 DELAWARE AVE, BUFFALO, NY 14202
PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO.:1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH 002574 STATE OF NEW YORK

Landscape Architect
COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE ROCHESTER, NY 14608
(585) 458-3020

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS

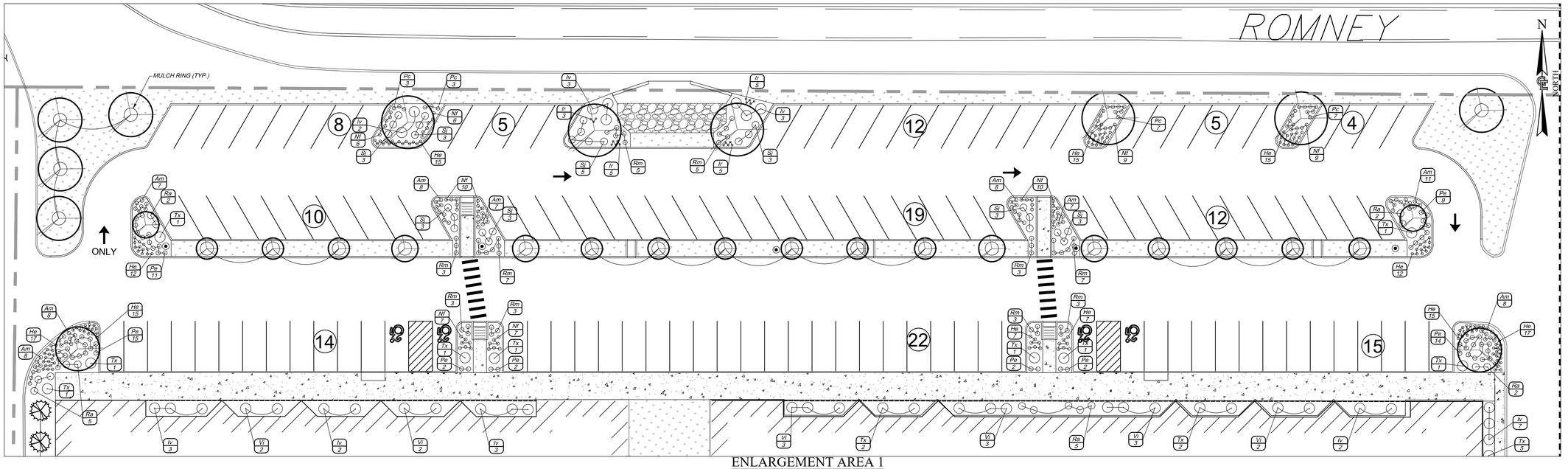
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

OVERALL LANDSCAPE PLAN

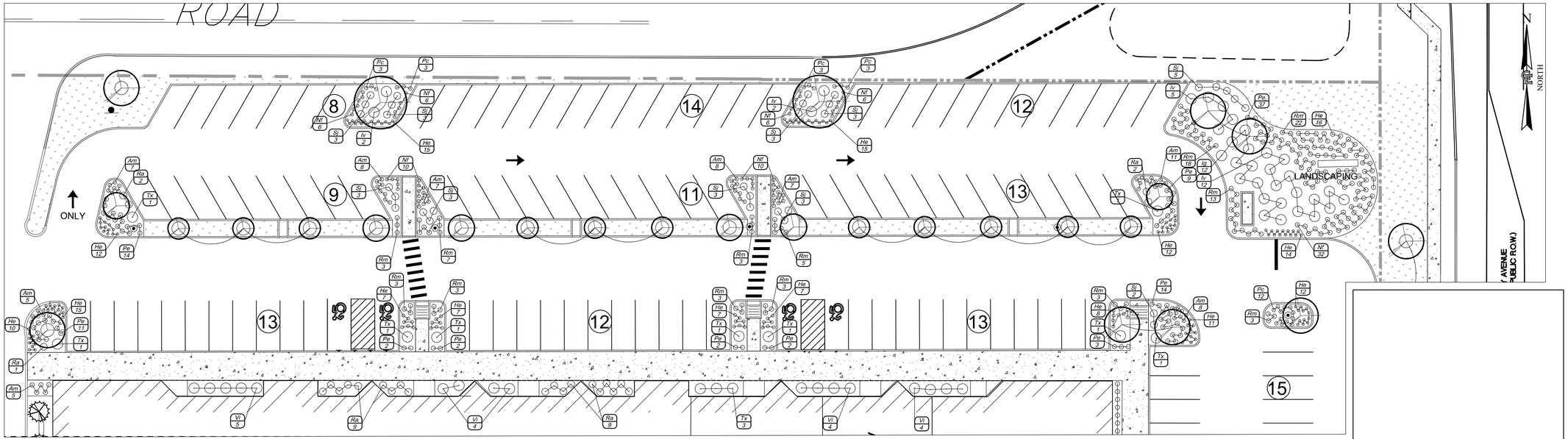
Sheet	Drawing Number
1 OF 5	C-7.0
Date: 06/12/2024	
Scale: 1"=50'	

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



ENLARGEMENT AREA 1

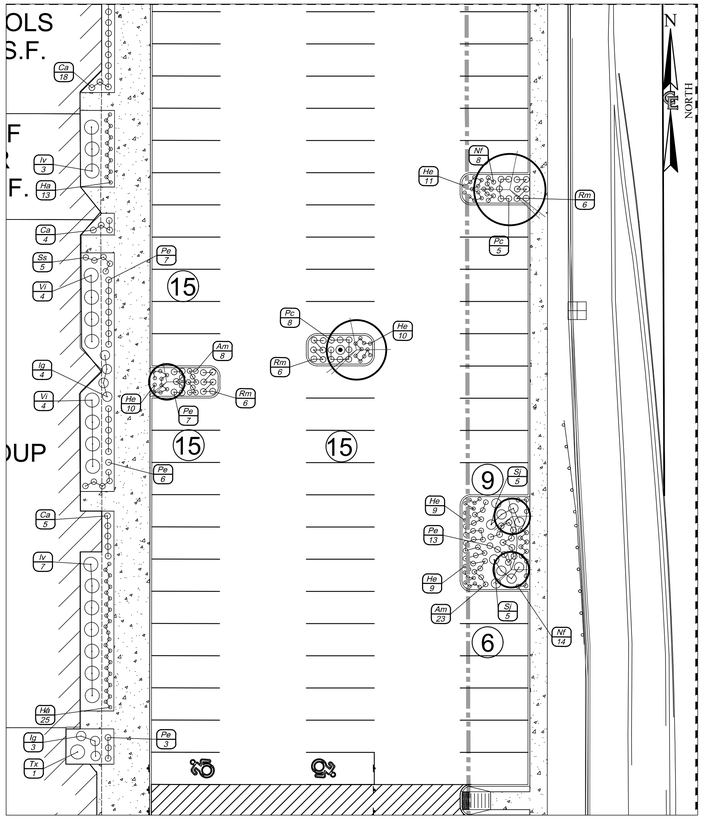
SCALE: 1" = 20'



ENLARGEMENT AREA 2

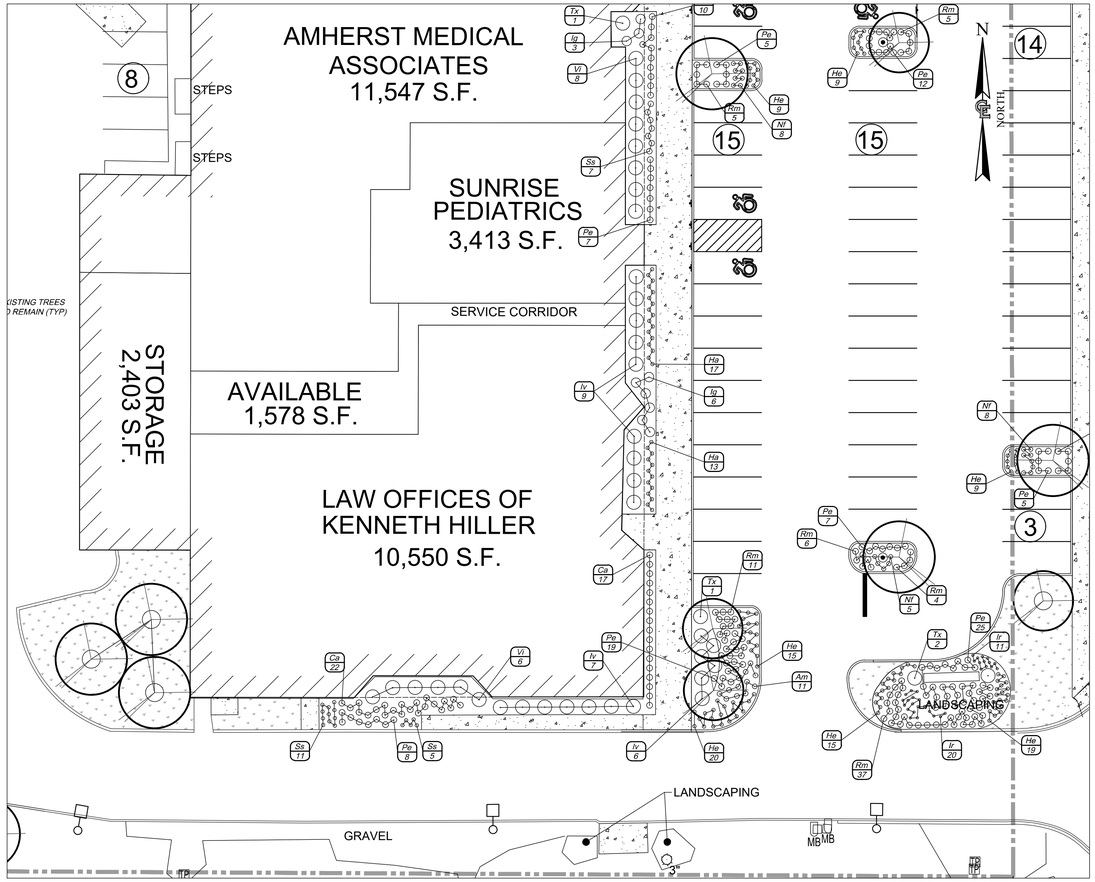
SCALE: 1" = 20'

| Revisions | | |



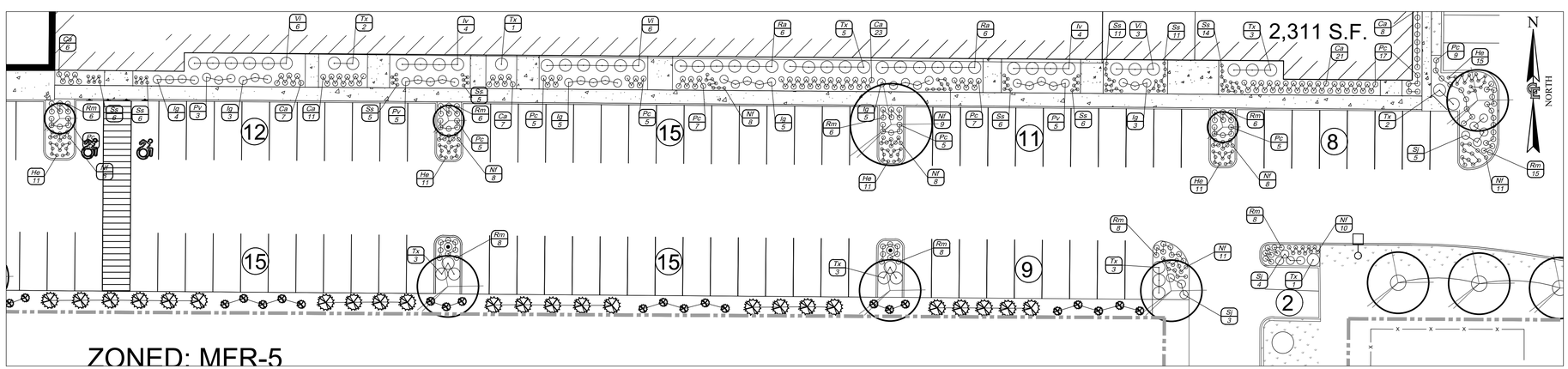
ENLARGEMENT AREA 3

SCALE: 1" = 20'



ENLARGEMENT AREA 4

SCALE: 1" = 20'



ENLARGEMENT AREA 5

SCALE: 1" = 20'

MATCHLINE (SEE SHEET C-7.0)

No.	Revision/Issue	Date
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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Applicant

BENDERSON DEVELOPMENT
570 DELAWARE AVE, BUFFALO, NY 14202
PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO.:1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT
SARAH COSTICH KING
002574
STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE
ROCHESTER, NY 14608
(585) 458-3020

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS

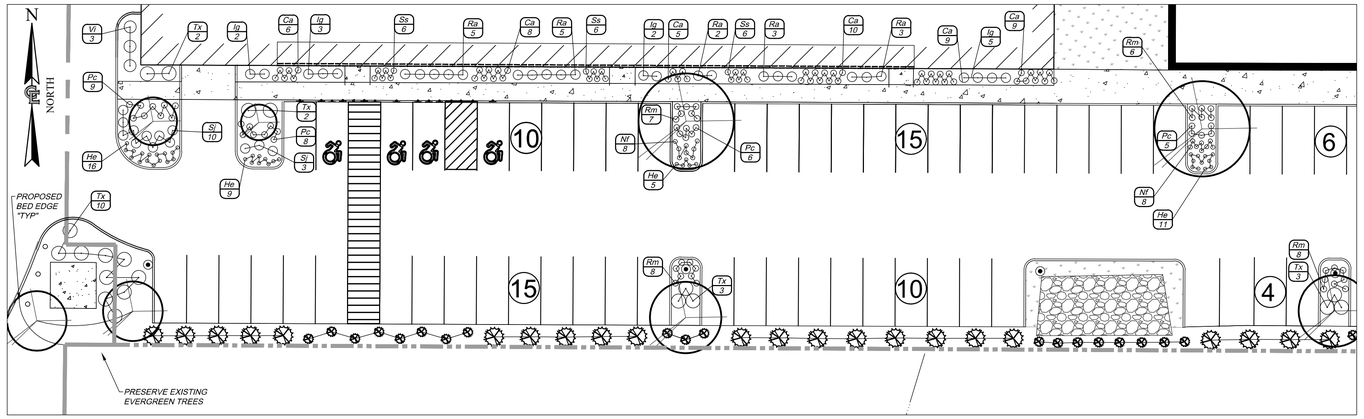
Sheet: 3 OF 5

Date: 6/12/2024

Scale: 1"=20'

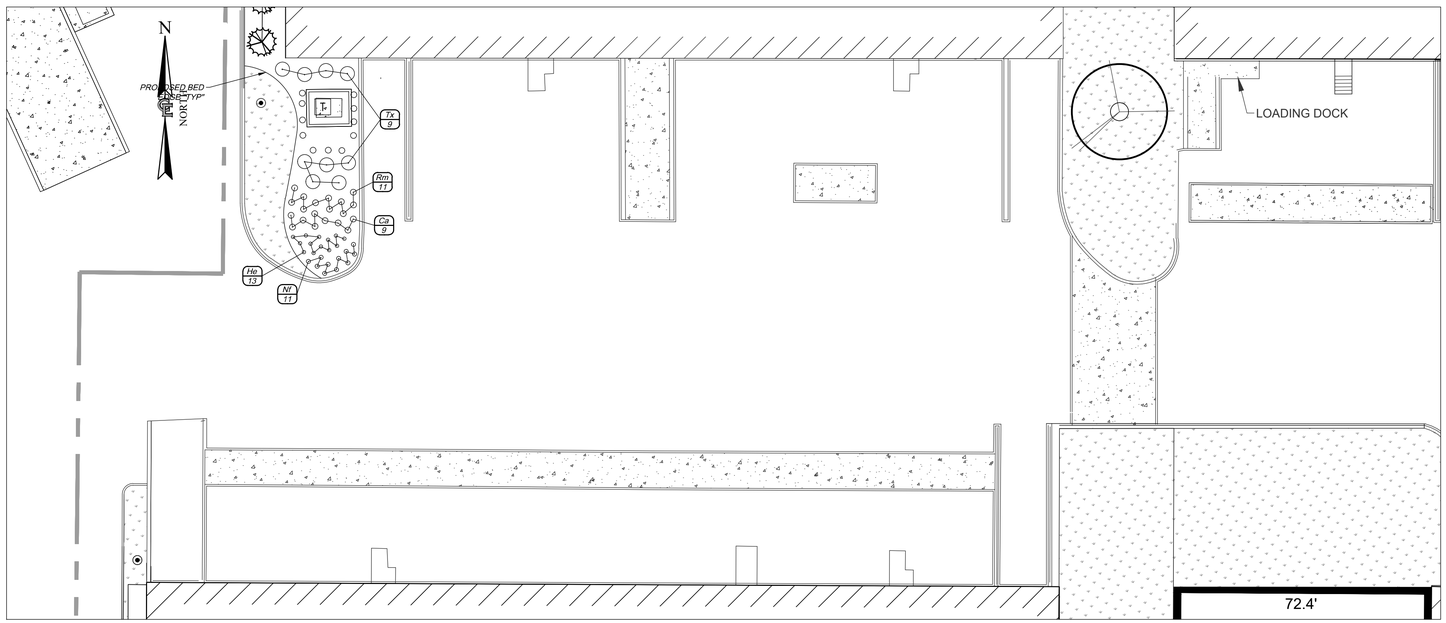
Drawing Number: C-7.2

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



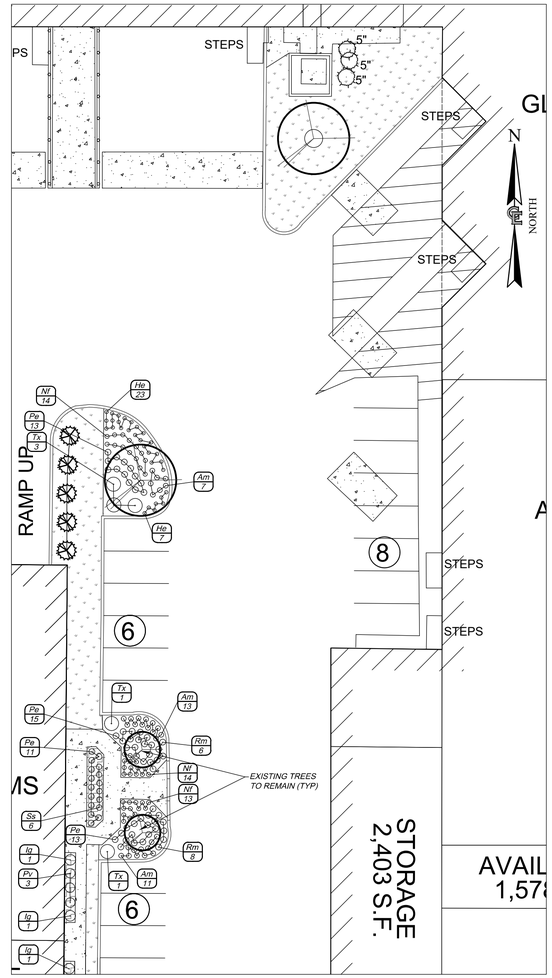
ENLARGEMENT AREA 6

SCALE: 1" = 20'



ENLARGEMENT AREA 7

SCALE: 1" = 20'



ENLARGEMENT AREA 8

SCALE: 1" = 20'

No.	Revision/Issue	Date
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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BENDERSON DEVELOPMENT
570 DELAWARE AVE, BUFFALO, NY 14202
PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO. 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH 002574 STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE ROCHESTER, NY 14608
(585) 458-3020

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

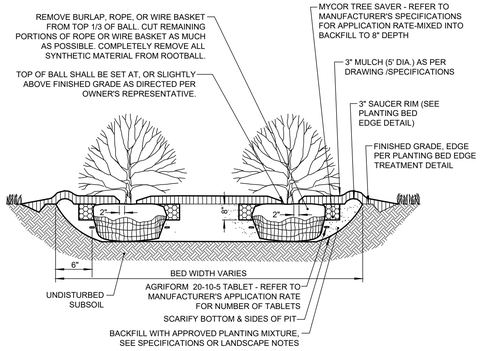
LANDSCAPE PLAN ENLARGEMENT AREAS

Sheet	Drawing Number
4 OF 5	C-7.3
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P drawings updated 090924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

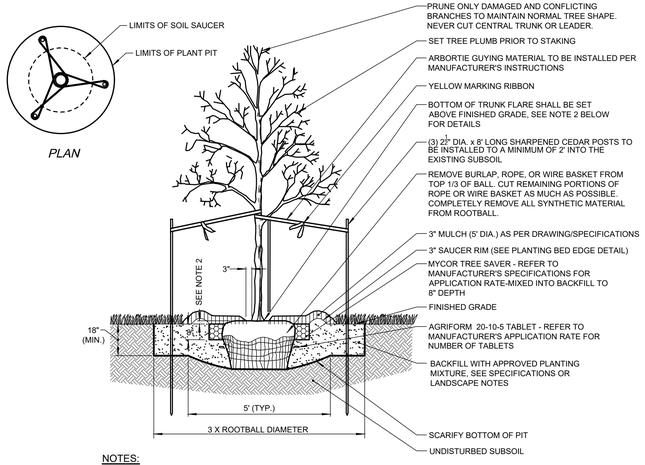
NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. PLANTING BED DEPTH IN LAWN AREAS SHALL BE A MINIMUM OF 18" DEEP AND/OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
3. ALL PLANTING BEDS SHALL BE FREE OF CONSTRUCTION DEBRIS.
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.



SHRUB PLANTING DETAIL

NOT TO SCALE

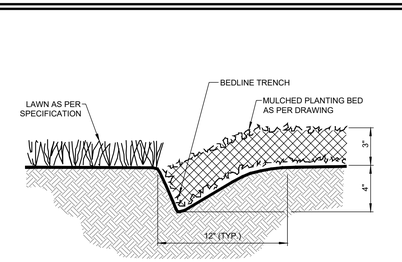


NOTES:

1. MAINTAIN A 3" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   FOR SANDY OR LOAMY SOILS: 1"
   FOR CLAY OR POORLY DRAINED SOILS: 3"
   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.

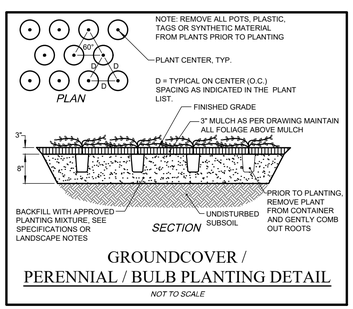
DECIDUOUS TREE PLANTING LESS THAN 4" CAL. DETAIL

NOT TO SCALE



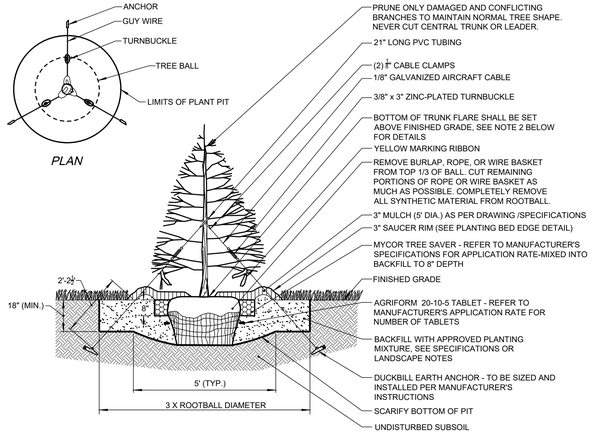
PLANTING BED EDGE TREATMENT DETAIL

NOT TO SCALE



GROUNDCOVER / PERENNIAL / BULB PLANTING DETAIL

NOT TO SCALE

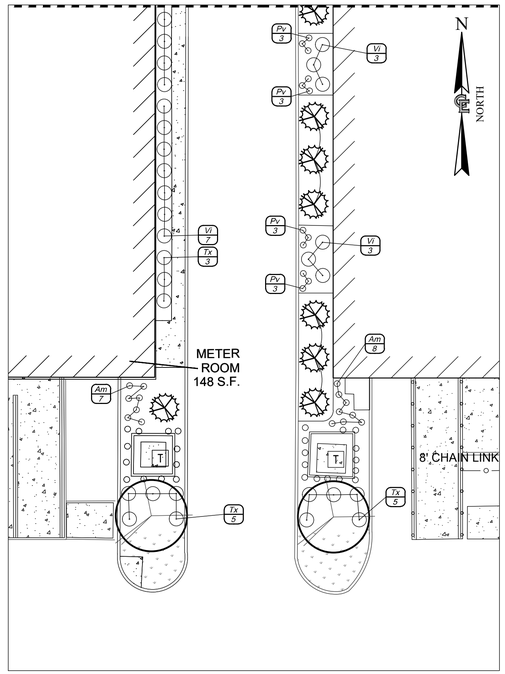


NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   FOR SANDY OR LOAMY SOILS: 1"
   FOR CLAY OR POORLY DRAINED SOILS: 3"
   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.

EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



ENLARGEMENT AREA 9

SCALE: 1" = 20'

No.	Revision/Issue	Date
01	Revised based on site plan changes	2024-08-21

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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Applicant

BENDERSON DEVELOPMENT
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PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO. 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH ON 00257A STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE ROCHESTER, NY 14608 (585) 458-3020

Project Name and Address

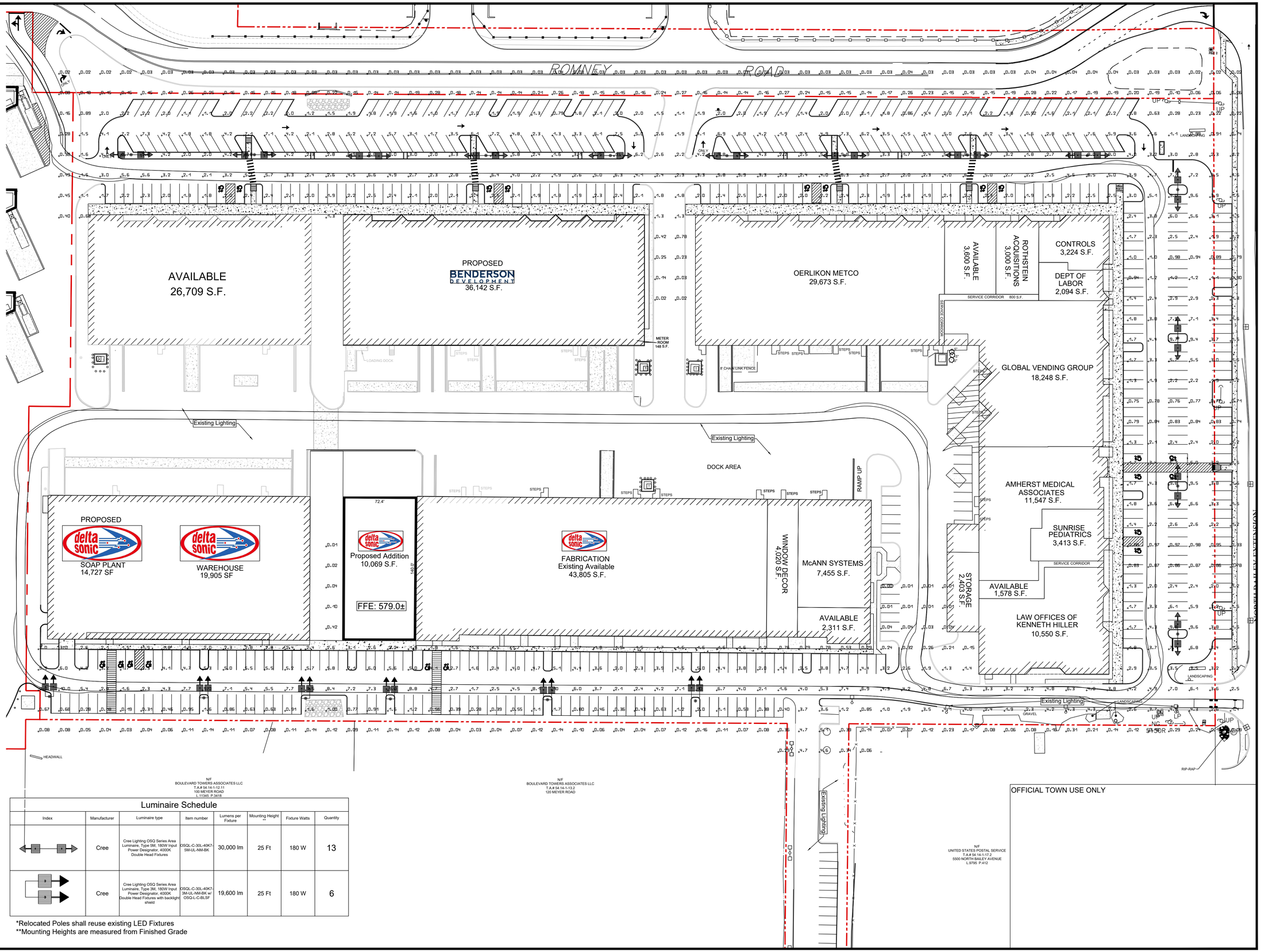
AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS & DETAILS

Sheet	Drawing Number
5 OF 5	C-7.4
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Luminaire Schedule

Index	Manufacturer	Luminaire type	Item number	Lumens per Fixture	Mounting Height **	Fixture Watts	Quantity
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 5M, 180W Input Power Designator, 4000K Double Head Fixtures	OSQL-C-30L-40K7-5M-UL-NM-BK	30,000 lm	25 Ft	180 W	13
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 3M, 180W Input Power Designator, 4000K Double Head Fixtures with backlight shield	OSQL-C-30L-40K7-3M-UL-NM-BK w/ OSQ-L-C-BLSF	19,600 lm	25 Ft	180 W	6

*Relocated Poles shall reuse existing LED Fixtures
**Mounting Heights are measured from Finished Grade

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Site Lighting Plan

SCALE: 1:70

DRAWN BY: DMZ

CHECKED BY: MAO

DATE: 08.16.2023

DRAWING NO. C8.00

Attachment: SP-1988-11P_drawings updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

OSQ Series

OSQ™ LED Area/Flood Luminaire featuring Patented NanoComfort™ Technology – Version C

Rev. Date: V3 04/17/2023

Product Description

The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. Medium is suitable upgrade for HID applications up to 400 Watts. Large is suitable upgrade for HID applications up to 1000 Watts. Extra Large is suitable upgrade for HID applications up to multiple 1000 Watts.

Applications: Parking lots, walkways, campuses, car dealerships, office complexes, high-mast and internal roadways

Performance Summary

Utilizes Patented NanoComfort™ Technology

Utilizes Cree TrueWhite® Technology on 5000K Luminaires

Assembled in the USA by Cree Lighting from US and imported parts

Initial Delivered Lumens: 4,000 - 75,000

Efficacy: Up to 171 LPW

CRI: Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)

CCT: 3000K, 4000K, 5000K, 5700K

Limited Warranty*: 10 years for luminaire; 10 years for Colorfast DeltaGuard® finish; 5 years for BML sensor; up to 5 years for Synapse® accessories; 1 year for luminaire accessories

*See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

Ordering Information

Fully assembled Luminaire is composed of two components that must be ordered separately:
Example: **Mount:** OSQ-ML-C-AA-BK + **Luminaire:** OSQM-C-4L-30K7-2M-UL-NM-BK

Mount (Luminaire must be ordered separately)*

OSQ-

Medium/Large Mounts
OSQ-ML-C-AA Adjustable Arm
OSQ-ML-C-DA Direct Arm
OSQ-ML-C-TM Trunnion Mount

Extra Large Mounts
OSQ-X-C-AA Adjustable Arm
OSQ-X-C-DA Direct Arm

Color Options: **SV** Silver, **BK** Black, **BZ** Bronze, **WH** White

* Reference fixture mounting drill pattern, EPA, and pole configuration suitability data beginning on page 14.

Luminaire (Must must be ordered separately)

OSQ | **C**

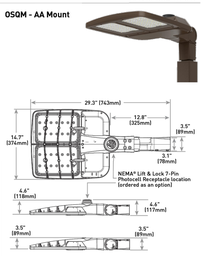
Family	Size	Series	Lumen Package*	CCT/ CRI	Optic	Voltage	Mount	Color Options	Controls*	Options
OSQ	**M** Medium **L** Large **X** Extra Large	**C**	**Medium** **4L** 4,000 Lumens **6L** 6,000 Lumens **9L** 9,200 Lumens **11L** 11,000 Lumens **16L** 16,000 Lumens **Large** **22L** 22,000 Lumens **30L** 30,000 Lumens **40L** 40,000 Lumens **Extra Large** **50L** 50,000 Lumens **65L** 65,000 Lumens **75L** 75,000 Lumens	**30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K7** 5000K, 70 CRI **57K7** 5700K, 70 CRI	**Asymmetric** **2M** Type II Mid Type II Mid w/ Factory-Installed Backlight Shield **3M** Type III Mid **4M** Type III Mid w/ Factory-Installed Backlight Shield **5M** Type V Mid **5N** Type V Narrow **4B** Type IV Mid w/ Factory-Installed Backlight Shield **AF** Automotive FrontlineOptic™ **AB** Automotive FrontlineOptic™ w/Factory-Installed Backlight Shield **Symmetric** **33** NEMA® 3x3 **44** NEMA® 4x4 **55** NEMA® 5x5 **66** NEMA® 6x6 **7X** NEMA® 7x5	**UL** Universal: 120-277V **UH** Universal: 347-480V - Not available with 4L, 40L or 75L lumen packages **UE** Universal: 277-480V - Available with 40L and 75L lumen packages	**NM** No Mount - Must specify mount from table above - Mount ordered separately	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**BML** **Bluetooth® Technology Enabled Multi-Level Sensor** - Utilizes a multifunction sensor - Refer to BML spec sheet for details - 20-40' sensor lens installed on luminaire; 8-20' sensor lens and aisle shroud included - Intended for downlight applications - Not UL - Not available with Q or X options or Synapse TLT-B2 or TLT-HVO accessories **0V/0R/0T/10A/0D/0A/0J/02/01 Field Adjustable Output** - Must select 0R, 0R, 0T, 0A, 0J, 02, or 01 - Offers full range adjustability - Refer to pages 15-25 for power and lumen values - Not available with BML or X options or Synapse TLT-B2 or TLT-HVO accessories **XB/X7/XA/X5/X4/X3/X2/X1 Locked Lumen Output** - Must select XB, X7, X6, X5, X4, X3, X2, or X1 - Not available with BML or Q options - X7 option not available with the following lumen package/voltage offerings: 9L/UL, 16L/UL, 16L/UH, 30L/UL, 30L/UH, 40L/UL, 65L/UH - X2 option not available 9L/UL lumen package/voltage - Lumen output is permanently locked to the setting selected - Refer to pages 15-25 for power and lumen values	**20KV** **20kV/10kA Surge Suppression** - Replaces standard 10kV/5kA surge protection **F** **Fuse** - Compatible with 120V, 277V or 347V (phase to neutral) - Consult factory if fusing is required for 208V, 240V or 480V (phase to phase) - When code dictates fusing, use time delay fuse **N** **Photocell and NEMA® Lift & Lock 7-Pin Photocell Receptacle** - External utility label per ANSI C136.15-2020 - 7-pin receptacle per ANSI C136.41 - Available only with OSQM & OSQL luminaires - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - Requires photocell or shorting cap by others **R** **NEMA® Lift & Lock 7-Pin Photocell Receptacle** - Available only with OSQM & OSQL luminaires - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - Requires photocell or shorting cap by others - Refer to page 2 for compatible Synapse control offerings **RL** **Rotate Left** - LED and optic are rotated to the left - Refer to RR/RL configuration diagram on page 26 for optic directionality - Not for use with symmetric optics **RR** **Rotate Right** - LED and optic are rotated to the right - Refer to RR/RL configuration diagram on page 26 for optic directionality - Not for use with symmetric optics

* Lumen Package codes identify approximate light output only. Actual lumen output levels vary by CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values
* Luminaire comes standard with 0-10V dimming

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

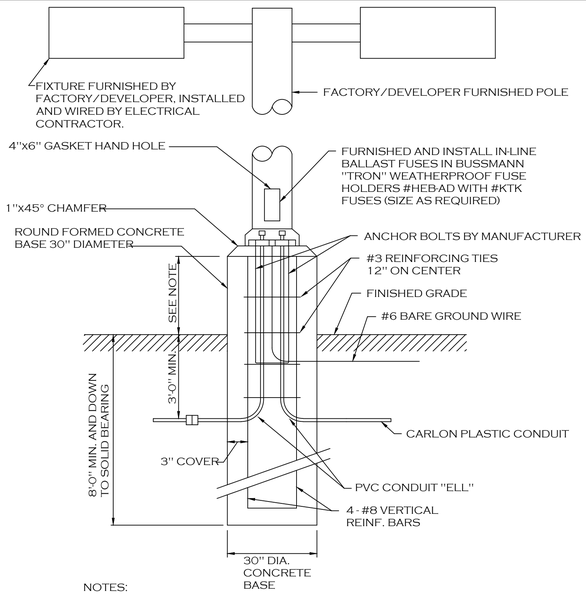
CREE ⇕ LIGHTING®

OSQM - AA Mount



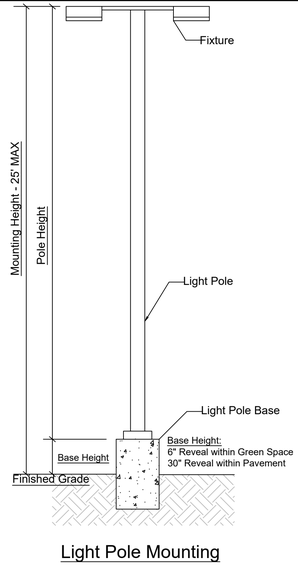
Luminaire	Weight
OSQM	19.3 lbs. (8.8kg)

Note: For OSQL, OSQX and additional mounts, refer to drawings beginning on page 26.



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
   IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
   IN PAVEMENT: 30" ABOVE GRADE
   IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION



Light Pole Mounting

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
4	07.31.2024	DZ	Site Updates

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Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

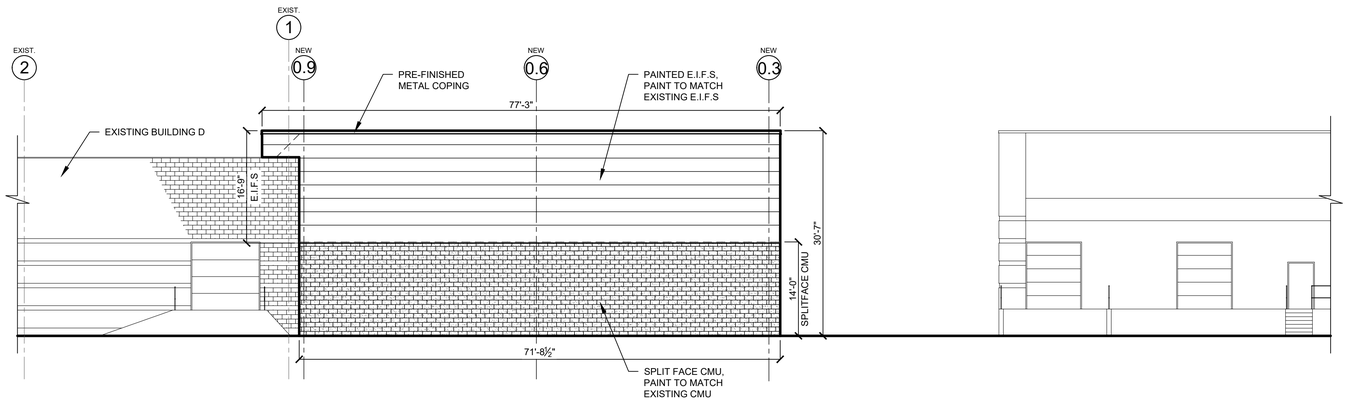


TITLE:
Lighting Details

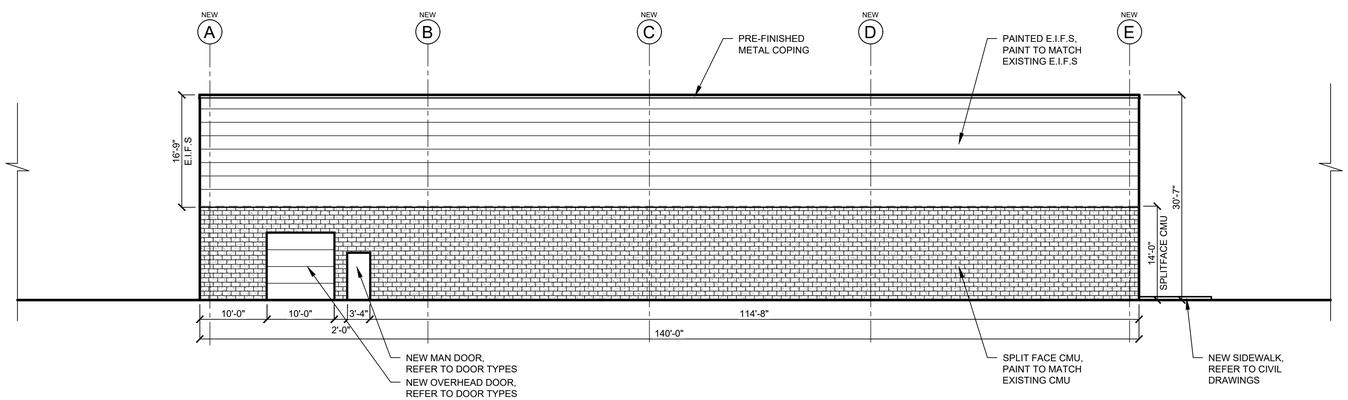
SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C8.10

OFFICIAL TOWN USE ONLY

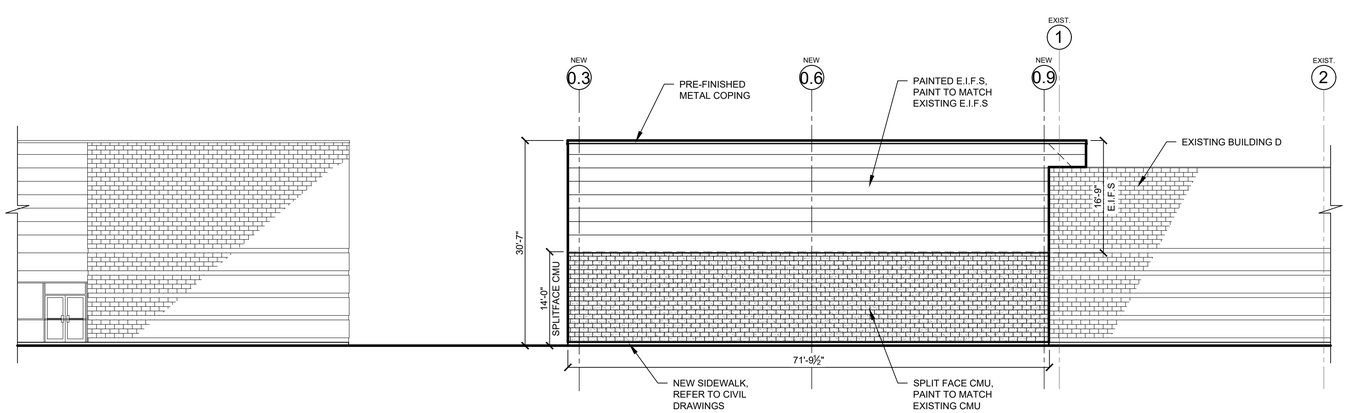
Attachment: SP-1988-11P_drawings updated 090924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave) updated 090924_091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



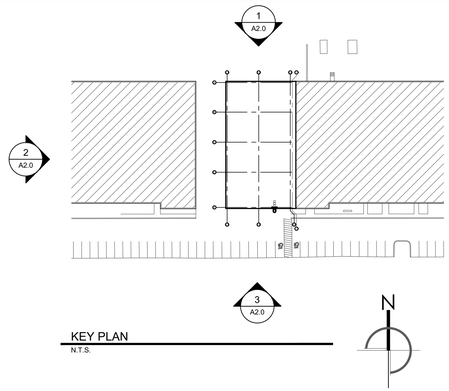
1 SOUTH ELEVATION
SCALE: 3/32"=1'-0"



2 WEST ELEVATION
SCALE: 3/32"=1'-0"



3 NORTH ELEVATION
SCALE: 3/32"=1'-0"



KEY PLAN
N.T.S.

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
-	-	-	-

SPECIAL INFORMATION:

THIS DRAWING PREPARED FOR TENANT IMPROVEMENTS TO AN EXISTING BUILDING OR BUILDING CONSTRUCTED BY OTHERS IT IS UNDERSTOOD THAT ANY WARRANTY INFORMATION CONCERNING EQUIPMENT INSTALLED MUST BE FORWARDED TO THE OWNER AND THAT ANY AND ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

PROPERTY NUMBER: -

AREA: - SF

AMHERST DEVELOPMENT PARK
6000 - 6040 NORTH BAILEY AVE
AMHERST, NY 14226

BUILDING D EXPANSION

CONSULTANT:

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:

EXTERIOR ELEVATIONS

DRAWN BY: RKT
CHECKED BY: JAR
DATE: 00.00.00

DRAWING NO.
A2.0

Attachment: SP-1988-11P drawings updated 090924 091924 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST

APPLICATION & REVIEW PROCEDURE

MAJOR SITE PLAN

MATERIALS MUST BE PROVIDED IN AN ELECTRONIC FORMAT THAT CONTAINS PDF FILES OF THE APPLICATION, EAF, SITE PLAN DRAWING SET SURVEY, LANDSCAPE PLAN, PRELIMINARY BUILDING FLOO PLANS / ELEVATIONS & ANY OTHER SUPPORTING INFORMATION. THIS MUST BE SUBMITTED WITH YOUR APPLICATION. APPLICATIONS WILL NOT BE TRANSMITTED WITHOUT THIS ELECTRONIC INFORMATION.

THIS ALSO APPLIES TO REVISED MATERIALS THAT AR SUBMITTED.

This application package includes the following:

- Application Procedures
- Application Form & Checklist
- Stormwater Pollution Prevention Plan Checklist
- Appendix A Town of Amherst EAF Addendum
- Appendix B Criteria for Required 8½" x 11" Sketches
- Appendix C Erie Sewer District No. 5 – Commercial / Industrial New & Existing Buildings Requirements

- IMPORTANT-

1. A pre-submittal consultation with Planning Department staff is *strongly recommended* prior to submitting an application. The pre-submittal meeting gives the applicant an opportunity to discuss with staff such items as:
   - classifying the action as a major site plan, minor site plan, or minor site plan adjustment;
   - determining what specific information will be required to be submitted with the application;
   - identifying and discussing issues that must be addressed as part of the SEQR review;
   - identifying any potential variances required to implement the project as proposed.

   An appointment is required for all meetings with Planning Department staff.

2. This site plan petition is subject to the requirements of 6 NYCRR Part 617, State Environmental Quality Review Act (SEQR), and Chapter 104 of the Town of Amherst Code, as amended. The Planning Board cannot make a SEQR determination unless a complete Environmental Assessment Form (EAF), including Town of Amherst EAF Addendum, and any required supplementary information such as traffic impact studies, archaeological reports, wetland delineations or geotechnical reports, are submitted. SEQR issues may be discussed with Planning Department staff at a recommended pre-submittal meeting. Unlisted Actions require a Short EAF; Type I Actions require a Full EAF. The following is a link to the NYSDEC website and fillable forms with instructions*:*
   http://www.dec.ny.gov/permits/6191.html.

3. **Review by the Town Design Advisory Board (DAB) is required for Major Site Plans located in the following Mixed-Use zoning districts:**

   Traditional Infill 2.5 (TI-2.5)
   Traditional Infill 4 (TI-4)
   Shallow Corridor 3 (SC-3)
   Deep Corridor 3 (DC-3)
   Deep Corridor 5 (DC-5)
   Center 2.5 (CTR-2.5)
   Center 5 (CTR-5)
   Center 8 (CTR-8)

   The application for DAB review is required to be filed in conjunction with the major site plan application.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

4. The application shall be executed or consented to in writing by the owner of the property.

5. **Any variances from the Zoning Board of Appeals, or any decision from the Town Board (e.g. removal of deed restrictions) must be obtained prior to action by the Planning Board on a Site Plan application.**

6. Submittal of an application grants permission to Town staff and Planning Board members to access the parcel(s) under consideration.

7. All site plan drawings must be prepared by a Registered Architect, Professional Engineer, Landscape Architect, or Land Surveyor (as applicable) licensed to practice in New York State.

8. If you wish to include a Coordinated Sign Plan application with the site plan petition, a separate application must be completed. Contact the Planning Department for a copy of a Coordinated Sign Plan application package.

9. All drawings should be no larger than 24 in. x 36 in. If site characteristics warrant larger plan sheets, they may be accepted subject to Planning Department concurrence. All drawings must also reserve a 4 in. x 6 in. area in the lower right hand corner for official Town use.

APPLICATION PROCEDURES

1. Applicant secures application package from the Planning Department, 5583 Main Street, Williamsville, NY 14221. (716) 631-7051. Forms are also available online at: www.amherst.ny.us, (keyword: Planning).

2. Applicant prepares information as required on the Site Plan Submittal Checklist, attached. NOTE: Some proposals may not require all items on the checklist; please verify with the Planning Department.

3. Applicant schedules an appointment with the Planning Department to review the following:
   - a complete set of site plan drawings, preliminary building elevations and floor plans (no larger than 24" x 36" in size)
   - Environmental Assessment Form (EAF) & Town EAF Addendum
   - any supporting reports and materials
   - verification from the Town Assessor that the address in the application is correct

4. Applicant schedules an application submittal appointment with the Planning Department. NO SITE PLAN WILL BE ACCEPTED FOR REVIEW WITHOUT A PRE-SET SUBMITTAL APPOINTMENT.

5. At the submittal appointment, applicant provides fourteen (14) complete and collated sets of drawings and application information to the Planning Department **(materials will not be accepted unless folded into 9" x 12" in size),** including**:**
   - application form
   - Environmental Assessment Form (EAF)
   - supporting reports / materials
   - complete set of site plan drawings, preliminary building elevations and floor plans (**at least one (1) set of drawings must bear a raised or wet seal and signature of the design professional** who prepared the plans; the remaining copies may be submitted with a facsimile of the seal and signature)
   - digital files of all materials in pdf format
   - an 8½" x 11" reduction of the sketch plan or plat drawing (see Appendix B)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

6. After approval for filing by the Planning Department, applicant submits all necessary fees to the Town Clerk. **(See Schedule of Fees on first page of application and make checks payable to: Town of Amherst.)**

7. The applicant returns a copy of the filing receipt to the Planning Department.

8. The Planning Department transmits remaining thirteen (13) copies of the application and supporting materials to:
   - Assessor
   - Commissioner of Building
   - Town Engineer
   - Superintendent of Highways
   - Traffic/Safety Board
   - Fire Chiefs' Association
   - Plumbing Division
   - Right-of-Way Agent
   - Police Department (if applicable)
   - Zoning Enforcement Officer
   - Other Town and outside agencies, as applicable

9. Within 30 days of its receipt of the complete application for Site Plan approval, each agency completes its review and notifies the Planning Department in writing of its comments or recommendations as required by Ordinance.

10. The applicant may be required to submit revised plans, reports, or materials to address review agency comments. The procedures for submittal of revised plans are as follows:

    - A cover letter addressing all comments received to date is required.
    - "Highlight" the area of change on the drawings and provide a notation describing the change.
    - Revised plans/materials are required. Planning staff should be contacted to determine the number of sets needed.
    - All revised plans and materials must also be provided in an electronic format that contains pdf files of the revised information.

11. The Planning Board reviews the EAF to determine whether a Draft Environmental Impact Statement (DEIS) is required. The petitioner will be advised in the event that a DEIS is required and afforded the opportunity to prepare it. If the petitioner declines, the Planning Board will prepare the DEIS at the petitioner's expense. The public hearing will be held on the DEIS concurrently with the Planning Board hearing on the application.

12. Planning Board Meeting Procedures:

    The applicant or representative presents the project at the public hearing before the Planning Board and is available to answer any questions. The Planning Board may take any of the following actions:

    - Adjourn the hearing to a future Planning Board meeting (hearing remains open).
    - Close the hearing and table action on the site plan to a future Planning Board meeting. (The Planning Board may remove the item from the agenda until such time as all required information is provided.)
    - Close the hearing and make a decision on the site plan.

    All determinations on matters before the Planning Board are made after all public hearings on that meeting's agenda are completed.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

13. A copy of the Planning Board's determination will be provided to the applicant, his / her representative, the Building Commissioner and the Town Clerk approximately 1 week following the Planning Board meeting at which it was heard.

14. If the Planning Board approves a Site Plan with conditions, the Planning Department will work with the applicant to ensure that all conditions of the approval are satisfactorily addressed. When all conditions are satisfied, the applicant submits **seven (7) final copies** of the complete set of all site plan drawings, folded into 9" x 12". For site plans in the Mixed-Use zoning districts, building elevations will also be required.

    All 7 sets must have original wet seals and include the required 4 in. x 6 in area in the lower right hand corner for official Town use. These drawings will be stamped and signed "Approved" by the Planning Director and transmitted to Town Departments for their files and use.

15. A building permit will not be issued by the Building Department until the stamped and signed Site Plan is issued by the Planning Director.

NOTE: Please check with the Planning Department to determine the deadline date for filing applications. Due to the public hearing notice requirements and department reviews, no site plan application will be placed on the Planning Board agenda after the deadline for filing has closed. Scheduling may be delayed if an application is incomplete.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Major Site Plan Review

For Official Use

File #: _____ **Acreage** _____ **Fee $** _____

Address Verified by Assessor's Office _____ VERIFIED BY DATE

Materials Received by Planning Department _____ RECEIVED BY DATE

Fee Paid to Town Clerk _____ RECEIVED BY DATE

Site Plan Review		**Fill In Applicable Fees**
1 acre or less	$1,250.00	_____
Each additional acre or fraction thereof	$ 650.00/acre	_____
Amendments to Site Plans	$1,200.00	_____
Request for Relief of / Change to Conditions of Site Plan Approval	$1,200.00	_____
Request for Extension of Site Plan Approval	$ 450.00	_____
Stormwater Pollution Prevention Plan		
1 - 4.99 Acres	$ 500.00	_____
5 - 10 Acres	$ 750.00	_____
>10 Acres	$1,000.00	_____
Affidavit Fee for Public Hearing	$ 15.00	_____
	TOTAL FEE:	**$**_____

To Be Completed By Applicant

Petitioner:

Name: Benderson Development Company, LLC

Address: 570 Delaware Avenue

Buffalo , New York 14202

city state zip code

Phone: 716-878-9626 Fax: _____

E Mail: _____

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAJOR SITE PLAN APPLICATION (con't) ***Page 2***

Representative (Architect, Engineer, Landscape Architect, Surveyor, or Attorney)**:**

Name: James A. Boglioli

Address: 570 Delaware Avenue

Buffalo , New York 14202
city state zip code

Phone: 716-878-9626 Fax:

E Mail: jmb@benderson.com

Project Location (must be verified by Town Assessor's Office)**:**

Address: 6000 - 6040 North Bailey Avenue

SBL No(s): 54.14-1-12.211, 54.14-1-12.211/A, 54.14-1-12.211/B

Project Name: Two Building additions 5,441sf & 14,554sf

Project Description: Please see the attached letter of intent

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAJOR SITE PLAN APPLICATION (con't) ***Page 3***

If this petition is an amendment to a previously approved site plan, please describe the proposed changes (include type and size of existing structures and number of existing parking spaces):

Please see the attached letter of intent

	existing	proposed	total
Gross Floor Area (non-residential):	246,740	266,735	+19,995
Gross Floor Area Residential:	N/A	N/A	N/A
Number of Residential Units:	N/A	N/A	N/A
Number of Parking Spaces:	452	688	+236

Acreage of Parcel: 17.43

(list each parcel separately)

Frontage on Public Roads: Romney: 945'

(list each road separately) N. Bailey: 445.6'

Existing Zoning District(s) R-D

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Site Plan Submittal Requirements and Checklist

The following checklist outlines the information required by the Planning Department to accept a Site Plan application for review. ***It is strongly recommended that you make an appointment with Planning Staff to determine which items apply to your application***.

Item No.	Item	Submitted	Official use
I Basic Drawing Information			
1.0	**Drawing size not to exceed 24" x 36"**		
2.0	**Title of Drawing**		
3.0	**Name and address of Applicant**		
4.0	**Name of person preparing drawing**		
5.0	**Wet seal/raised seal and signature of NYS licensed architect, engineer, landscape architect, or surveyor (as applicable)**		
6.0	**Project address**		
7.0	**Zoning of subject property and adjacent parcels**		
8.0	**North point, scale, date, and revision date(s)**		
9.0	**4" x 6" reserved area in lower right hand corner for official Town use**		
II Structures, Paved Areas, & Open Space			
1.0	**Existing and Proposed Streets**		
1.1	Names of all existing and proposed streets		
1.2	Width and radii of proposed curb-cuts		
1.3	Existing curb-cuts on adjacent and opposite properties		
1.4	Show ROW width, pavement dimensions, lane widths, pavement markings, and proposed signage on proposed streets		
1.5	Show proposed ROW consistent with planned NYSDOT, Erie County, or Town road projects (if applicable)		
1.6	Show location of proposed cross access to adjacent parcels along with a draft easement		
1.7	Designation of Fire Lanes (if applicable)		
1.8	Fire apparatus access roads		
1.9	Label any proposed roads as public or private		
1.10	Location and dimensions of sidewalks		
1.11	Typical cross sections and profiles of proposed streets, pedestrian walkways, and bikeways		
2.0	**Proposed Structures**		
2.1	Location and complete dimensions of proposed structures		
2.2	Setback dimensions of structure(s) to all property lines		
2.3	Proposed use of structures		
2.4	Gross square feet area of each structure		
2.5	Location of all building entrances		
2.6	Indicate type of roof construction/materials		
2.7	Location, height, and design detail of existing and proposed fences and walls		
2.8	Location of light standards and building mounted lights		
2.9	Location of dumpster and detail of dumpster enclosure with gate		
2.10	Layout and dimensions of the lot(s) proposed for development		

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.	Item	Submitted	Official use
II Structures, Paved Areas, & Open Space (cont'd)			
3.0	**Floor Plans with individual rooms and spaces labeled** (fully dimensioned)		
4.0	**Building elevations with height dimensions from finished grade to the highest point of the roof and to midpoint of gable or hip of a pitched roof.** (fully dimensioned)		
4.1	Show screening of mechanical equipment		
5.0	**Parking/Loading/Stacking Areas**		
5.1	Location and complete dimensions of all paved areas		
5.2	Setback dimensions of all paved areas to property lines		
5.3	Dimension of typical parking space and drive aisles		
5.4	Location and layout of handicapped parking spaces & access aisles		
5.5	Detail of vertical signage for handicapped parking and access aisles		
5.6	Indicate minimum parking requirement & number of spaces provided		
5.7	Proposed signage for directing and guiding traffic		
5.8	Curb cut permits from NYS, Erie County, or Town (if applicable)		
5.9	Pedestrian connections (from proposed structures to public sidewalk network)		
6.0	**Location and proposed development of all open spaces, including parks, playgrounds, and open reservations**		
III Utilities and Drainage			
1.0	**Engineers Report** (bound separately from the Stormwater Pollution Prevention Plan [SWPPP])		
1.1	Stamped/sealed and signed by NYS licensed architect or professional engineer		
1.2	Proposed water service sizing, RPZ pressure and fire safety flow and pressure calculations		
1.3	Proposed sanitary sewer facility load calculations (avg. & peak flows) including calculation of the peaking factor		
1.4	Proposed storm drainage facility calculations (see information included with this application)		
2.0	**Grading Plan**		
2.1	Existing and proposed grades indicated (proposed grades may not exceed 1 on 3)		
3.0	**Water Service**		
3.1	Location, size and material of existing and proposed facilities		
3.2	Location of existing and proposed fire hydrant location(s)		
3.3	Indicate use of sprinklers, location of Fire Department connection, and proposed fire protection systems		
3.4	Existing and proposed meter/RPZ size and location		
3.5	Applicable construction details		
4.0	**Sanitary Sewers**		
4.1	Locations, sizes, slopes, inverts, and materials of all existing and proposed facilities		

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.		Submitted	Official use
III Utilities and Drainage (cont'd)			
4.2	Applicable construction details		
4.3	Proposed water/oil/grease interceptor sizing calculations by a professional engineer (if applicable)		
5.0	**Storm Drainage**		
5.1	Locations, sizes, slopes, inverts, and materials of existing and proposed storm drainage facilities		
5.2	Connection of roof drains to proposed drainage system		
5.3	Applicable Town Standard construction details		
5.4	Existing and proposed swales and ditches		
5.5	Detention area cross-section and high-level elevations		
5.6	County and State approval for tie-in to existing sewers		
6.0	**Stormwater Pollution Prevention Plan (SWPPP) as applicable** (bound separately from the Engineer's Report) **See attached checklist.**		
7.0	**Natural Gas Service**		
8.0	**Location of transformers, generators and other mechanical equipment; include detail drawings (if applicable)**		
9.0	**Downstream Sanitary Capacity Analysis (DSCA) Report** (must be submitted if proposed average flows are greater than 2,500 gallons per day)		
9.1	The DSCA Report must include a detailed downstream sewer capacity analysis and the calculations of and commitment to (via Developer commitment letter) the required financial contribution to the Town's I/I mitigation fund based on peak flow conditions. The contribution must be based on $250 per gallon per minute of mitigated flow		
IV Lighting Plan			
1.0	**Photometric plan showing light spread in foot candles at property lines**		
1.1	Detail of all light standards, including dimension of height from finished grade		
1.2	Detail of all exterior lighting fixtures		
V Landscape Plan			
1.0	**Wet/raised seal and signature of a licensed Landscape Architect**		
2.0	**Provide a calculation of the total Parking area and a calculation of interior parking area in square feet and as a percentage**		
3.0	**Indicate location, size, number and type of proposed landscape materials**		
4.0	**Indicate location, type and size of <u>all</u> existing trees 4" caliper or larger and indicate which will be removed or retained**		
VI Other Required Information/General Requirements			
1.0	**Complete boundary survey that includes all existing structures, acreage, legal description with reference to a property line, street, or other known feature, and easements plotted to scale by a NYS licensed land surveyor**		

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Item No.		Submitted	Official Use
VI Other Required Information/General Requirements (cont'd)			
1.1	Copies of all easements, reciprocal access agreement or similar leag documents		
2.0	**Topographic Survey with a 30 ft. buffer outside all property lines by a NYS licensed land surveyor**		
3.0	**Draft of any deed restrictions, covenants, provisions for home associations and common ownership, and reciprocal easement agreements (as applicable).**		
4.0	**For assessment purposes, state intent to apply for condominium status (if applicable).**		
5.0	**Completed and signed Environmental Assessment Form**		
5.1	Soil boring report and geotechnical report prepared by a qualified Professional Engineer (if applicable)		
5.2	Traffic Impact Study (if applicable)		
5.3	Archaeological survey (if applicable		
5.4	Wetland Delineation report (if applicable)		
6.0	**Show existing zoning(s) of both the subject property and adjacent parcels on the Site Plan and the Landscape Plan**		
7.0	**Location of NYSDEC wetlands (including buffer area) and/or federal wetlands; indicate jurisdictional status**		
8.0	**Location of Floodway and floodplain** (if applicable)		
9.0	**Documentation pertaining to any conditions of zonings, including copies of required deed restrictions; indicate date of rezoning and the parcel address under which it was rezoned (if applicable)**		
10.0	**Documentation related to any required variances granted by the ZBA**		
11.0	**For residential site plans, provide a statement from the appropriate school district that adequate school sites and facilities are available.**		
12.0	**8 1/2" X 11" reduction of primary site plan drawing (see appendix "B" of application package for specifications)**		
13.0	**A CD containing a PDF of all site plan drawings (Must also be provided with revised drawings)**		
VII Additional Required Information for Projects in the Mixed Use Districts			
1.0	**Design Advisory Board Application**		
1.1	Required for Major Site Plan		
1.2	Required at the Planning Directors Discretion for Minor Site Plans		
2.0	**Block & Street Network Plan**		
2.1	Designation of Core, Local & Alley streets		
2.2	Dimensions of Blocks		
3.0	**Block Usage Plan (as applicable)**		
3.1	Designation of site usage for each block including open space areas		
4.0	**Phasing Plan**		

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

For official use only:

_____
Approved/Date

X:\Current_Planning\Application Forms 2013 Working Doc\Major Site Plan\Site Plan Submittal Requirements and Checklist (3).doc

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

TOWN OF AMHERST
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
-- ADDENDUM --

1. For each applicable category of proposed <u>new</u> structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   _____ Geotechnical report attached _____ Not applicable

3. Is your property located: On Youngs Road between Dodge and Klein Roads? □ Yes □ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? □ Yes □ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? □ Yes □ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   _____
   _____

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: □ Yes □ No

   Describe_____
   _____

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project_____
   Source: _____

8. Will blasting occur during construction? □ Yes □ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? □ Yes □ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
    _____ average flow _____ peak flow.

    (Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources,* is your property 'blue-rated' for historic significance? □ Yes □ No

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

Name of Action or Project:
Proposed Building Additions & Site Modifications

Project Location (describe, and attach a location map):
6000-6040 North Bailey Ave, Town of Amherst, Erie County

Brief Description of Proposed Action:
The proposed action consists of two building additions (5,441 SF and 14,554 SF) to connect the western most buildings on the north and south sides of the site, replacement of existing Town of Amherst storm pipes, expansion of the existing parking field, new drainage improvements, paving, landscaping and site lighting. The existing loading area between the new additions will be modified to provide at grade pedestrian access points, additional parking and outdoor amenity areas.

Name of Applicant or Sponsor:	Telephone: 716-878-9626
Benderson Development Company, LLC	E-Mail: jamesboglioli@benderson.com

Address:
570 Delaware Ave

City/PO:	State:	Zip Code:
Buffalo	New York	14202

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: Town of Amherst Planning Board; Town of Amherst Zoning Board of Appeals; Town of Amherst Building Permit; NYSDEC Stormwater Permit	☐	☑

3.a. Total acreage of the site of the proposed action? 17.43 acres
b. Total acreage to be physically disturbed? 3.29 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 31.64 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____
☐ Parkland

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	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☑	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation service(s) available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	☐	☑
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: N/A Utilize existing services	☐	☑
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: Connect to existing on-site water services	☐	☑
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: Connect to existing on-site sanitary service	☐	☑
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	☑	☐
b. Is the proposed action located in an archeological sensitive area?	☑	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____	☑	☐

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☐ Wetland ☑ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100 year flood plain?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☑ NO ☐ YES	☐	☑
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☐ NO ☑ YES On-site storm management through a series of catch basins		

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	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: On-site stormwater runoff to underground detention system (31,000 CF)	☐	☑
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☑	☐

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: David Zuppelli Date: 11.15.2023

Signature: David Zuppelli

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TOWN OF AMHERST
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
-- ADDENDUM --

1. For each applicable category of proposed new structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Odessa silt loam	Severe	Severe	Severe	Severe	Severe

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   X Geotechnical report attached _____ Not applicable
   Report will be submitted as soon as it is completed

3. Is your property located: On Youngs Road between Dodge and Klein Roads? ☐ Yes ☑ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? ☐ Yes ☑ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? ☐ Yes ☑ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   Blvd Consumer Square; Amherst Commerce park; Maple Crossing; Blvd South (TJ Maxx Plaza);
   1401 - 1405 Niagara Falls Blvd; 3980 Maple Road; 50 Keph Drive; 1715 & 1721 Niagara Falls Blvd

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: ☐ Yes ☑ No

   Describe_____
   _____

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project 77 TOTAL TRIPS
   Source: ITE - Trip Generation Manual

8. Will blasting occur during construction? ☐ Yes ☑ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? ☐ Yes ☑ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
    2,000 GPD average flow 12.7 GPM peak flow.

    (Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources,* is your property 'blue-rated' for historic significance? ☐ Yes ☑ No

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CARMINA WOOD DESIGN

STORMWATER POLLUTION PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES

At

Amherst Development Park
6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

80 Silo City Suite 100
Buffalo, NY 14203

Telephone: (716) 842-3165

November 2023

Revised 12/3/2024



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101 SCOPE

A. **PURPOSE:** Benderson Development Company, LLC has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by Benderson Development Company, LLC; and/or liquidated damages. This section provides a descriptive explanation of Benderson Development Company, LLC Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and electronically submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities. Once a copy of the SPDES permit is received from NYSDEC, a copy will be included in Appendix F of this report.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is not subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to

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comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **<u>General Construction Site Inspection and Maintenance Requirements</u>**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

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B. **Owner or operator Maintenance Inspection Requirements**

1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the **owner or operator** can stop conducting the maintenance inspections. The **owner or operator** shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of the General Permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

The **owner or operator** shall have a **qualified inspector** conduct site inspections in conformance with the following requirements:

Note: The **trained contractor** identified in Part III.A.6 of the General Permit **cannot** conduct the **qualified inspector** site inspections unless they meet the **qualified inspector** qualifications included in Appendix A of the General Permit. In order to perform these inspections, the trained contractor would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A **qualified inspector** shall conduct site inspections for all construction activities identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

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b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the **qualified inspector** shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the **qualified inspector** shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to **disturb greater than five (5) acres** of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been **temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas**, the **qualified inspector** shall conduct a site inspection at least once every thirty (30) calendar days. The **owner or operator** shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice” certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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3. At a minimum, the **qualified inspector** shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The **qualified inspector** shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;

   b. Name and title of person(s) performing inspection;

   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

   d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

   f. Identification of all erosion and sediment control practices that need repair or maintenance;

   g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

   i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

   j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

   k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The **qualified inspector** shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The **qualified inspector** shall attach paper color copies of the digital photographs to the

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inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the **qualified inspector** shall notify the **owner or operator** and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the **qualified inspector**. Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

I. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to submitting the NOT to the Department. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

The Town of Amherst - Notice of Termination Requirement: Prior to submitting the NOT, the Town of Amherst requires a Level 1 inspection of all stormwater management practices. See Appendix G: Town of Amherst Level 1 Inspection – Post Construction Stormwater Management.

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102 PROJECT NAME AND LOCATION

Amherst Development Park

6000-6040 North Bailey Ave

Town of Amherst, County of Erie, New York

42.996°N, 78.817°W

Estimated Area of Site ≈ 17.34 acres

Estimated Area to be Disturbed by Construction Activities ≈ 7.29+/- acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Benderson Development Company, LLC

570 Delaware Ave.

Buffalo, NY 14202

Contact Person: Matt Oates

Telephone: 716-878-9397

104 PROJECT DESCRIPTION

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.34 of which 7.29 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of stormwater management areas including topsoil & seed

D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and parking lot

G. Final grading & landscaping

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H. Construction of buildings

This project is owned by Benderson Development Company, LLC and will be developed by Benderson Development Company, LLC. The work area consists of approximately 7.29+/- acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 92. The post-construction runoff curve number for the site will be "CN" = 95. Approximately 7.29+/- acres total will be disturbed by construction activities.

See soils information located in Appendix I.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to an unnamed open/closed drainage system north of the site that discharges to Ellicott Creek and ultimately the Niagara River.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above.

110 HISTORIC PLACES

No critical habitats have been determined to be on the site.

111 WETLANDS AND/OR OTHER SURFACE WATERS

No wetlands or other surface waters are located on the site

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

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B. Use of stabilization method for all slopes having a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

b. The **owner or operator** shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Construct temporary construction exits at locations shown on the Demolition & Erosion Control Plan Sheet.

B. Install perimeter silt fence/silt sock in the locations shown on the Demolition & Erosion Control Plan Sheet.

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C. Clear & Grub site.

D. Installation of detention basin to act as sediment basins (do not install bioretention soil or underdrains until stabilized).

E. Commence site grading.

F. Disturbed areas of the site where construction activity has ceased for more than 14 days shall be temporarily seeded and watered.

G. Construction of buildings.

H. Installation of proposed utilities.

I. Finalize pavement subgrade preparation.

J. Construct all curb, drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all inlets.

K. Dust control.

L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.

M. Install base material as required for pavement.

N. Carry out final grading and seeding and planting.

O. Clean storm system following construction, clean detention basins of any silt and return to design grades.

P. Remove silt fencing/silt sock only after all paving is complete and exposed surfaces are stabilized.

Q. Remove temporary construction exits only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

Refer to Appendix D, Engineer's Report

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

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Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in designated areas which will have temporary erosion & sediment control measures installed. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used

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for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

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B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

The SWPPP for this site development project requires regulated MS4 approval from the Town of Amherst. All changes to the SWPPP must be approved by the Town of Amherst prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the

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filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

   - Inspect catch basins, storm manholes, treatment structures, storm piping and stormwater pond for debris and accumulation of sediment.
   - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
   - Flush piping with water if necessary to remove accumulated sediment.
   - Bioretention areas shall be maintained per the NYSDEC Maintenance and Management Checklist included in this SWPPP.
   - Check all stone outfall structures for erosion and re-stone if necessary to prevent further erosion.
   - Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
   - A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

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Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers

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- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.

2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

3. Products will be kept in their original containers with the original manufacturer's label in legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

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4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm

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water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Amherst. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

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118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These

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individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system

120 STORM WATER CONTROL FACILITY MAINTENANCE

The frequency of inspections for the bioretention areas shall match the frequencies listed on the “Stormwater Management Maintenance” in Appendix J of the SWPPP.

The proposed catch basins, as per section 115, shall be inspected 4 times per year for removal of floatable debris. Any silt buildup over 6” in depth shall be removed and disposed of properly off-site.

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Appendix A

Site Location Maps

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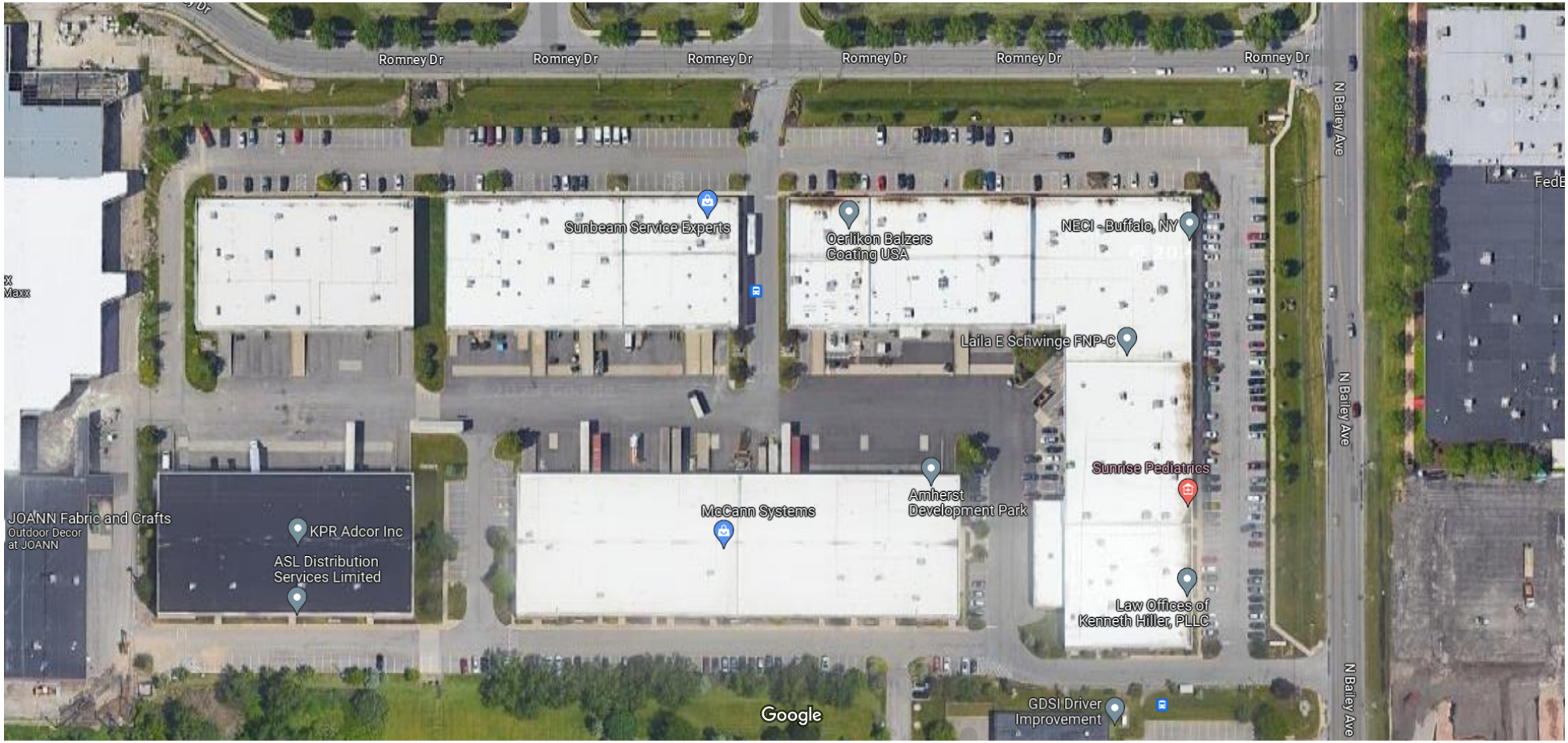
1.e

Google Maps romney road



Imagery ©2023 Airbus, CNES / Airbus, Maxar Technologies, New York GIS, U.S. Geological Survey, USDA/FPAC/GEO, Map data ©2023 100 ft

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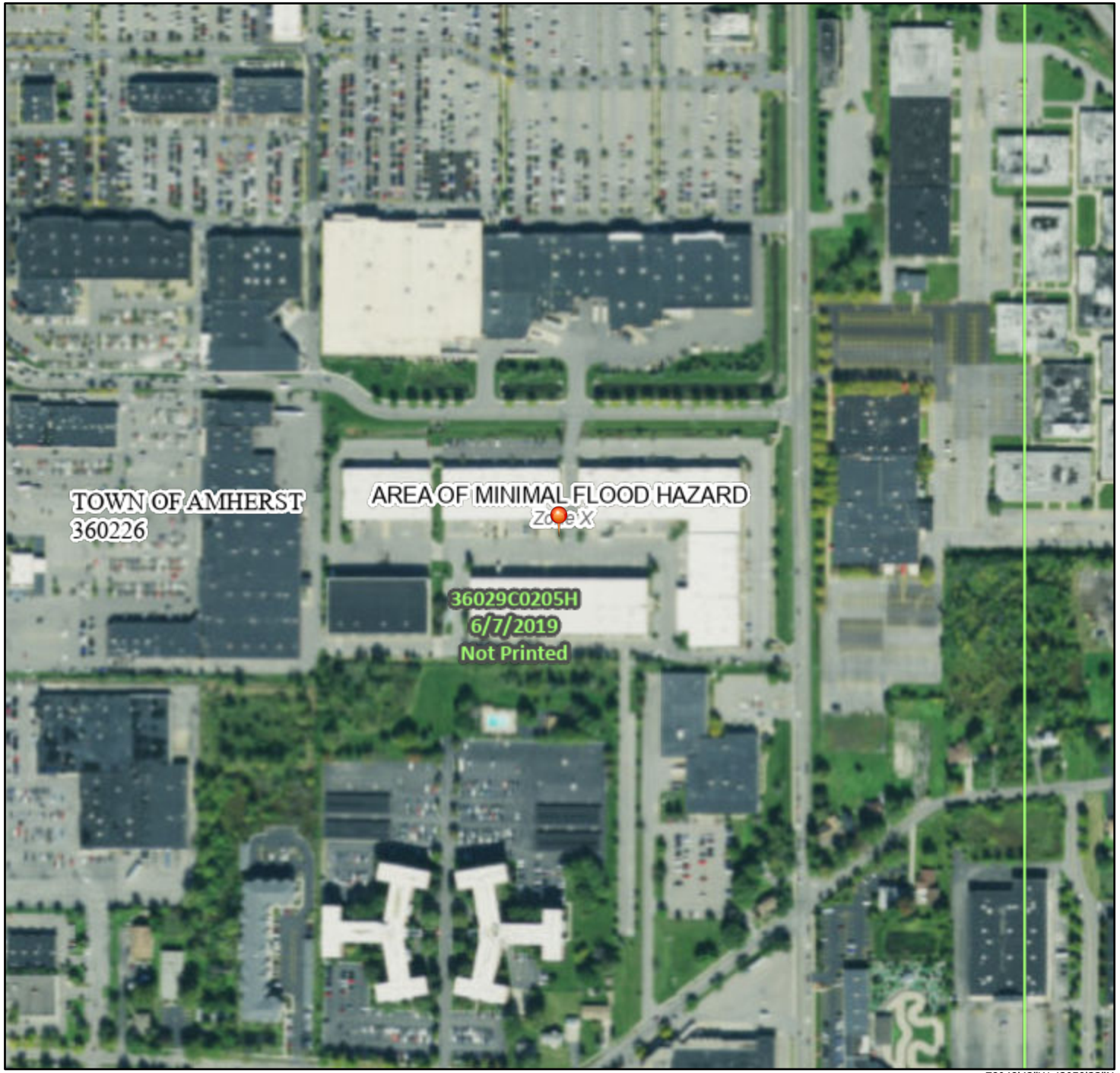
National Flood Hazard Layer FIRMette

78°49'19"W 43°N



78°48'42"W 42°59'33"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BF *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, V*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazar as of 1% annual chance flood with a depth less than one foot or with d areas of less than one square mil
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk du Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee
- **OTHER AREAS**
  - NO SCREEN Area of Minimal Flood Hazard *Zo*
  - Effective LOMRs
  - Area of Undetermined Flood Haza
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 Cross Sections with 1% Annual Ch
  - 17.5 Water Surface Elevation
  - Coastal Transect
  - Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an appro point selected by the user and does not r an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This ma was exported on 11/13/2023 at 9:45 AM and does not reflect changes or amendments subsequent to this date an time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following n elements do not appear: basemap imagery, flood zone labe legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized area regulatory purposes.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CRIS Cultural Resource Information System

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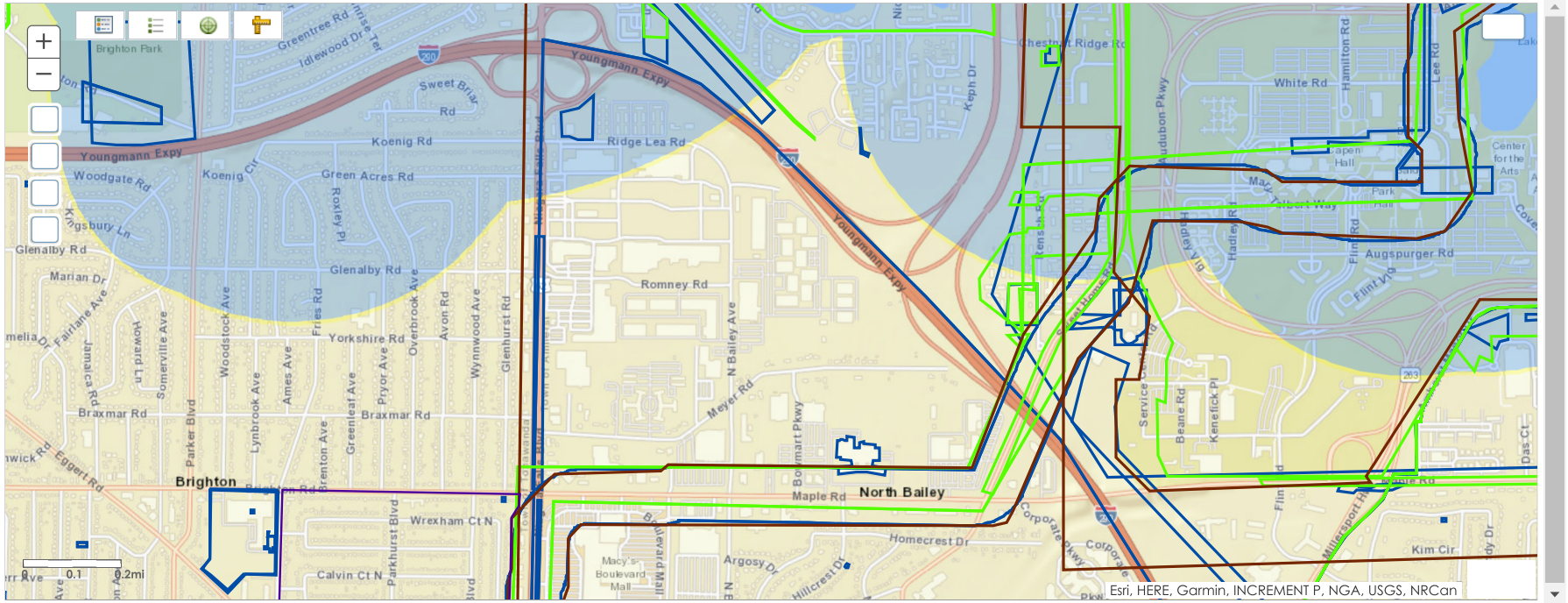

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Version 1.2.18

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix B

NYSDEC Notice of Intent (NOI)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Benderson Development Company

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Oates

Owner/Operator Contact Person First Name
Matt

Owner/Operator Mailing Address
570 Delaware Ave

City
Buffalo

State: NY
Zip: 14202 -

Phone (Owner/Operator): 716 - 878 - 9397
Fax (Owner/Operator): ___ - ___ - ____

Email (Owner/Operator)
MattOates@benderson.com

FED TAX ID
16 - 1549911 (not required for individuals)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Project Site Information

Project/Site Name

Amherst Development Park

Street Address (NOT P.O. BOX)

6000-6040 North Bailey Ave

Side of Street

○ **North** ○ **South** ○ **East** ● **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Town of Amherst

State: NY

Zip: 14226-

County: Erie

DEC Region: 9

Name of Nearest Cross Street

Romney Road

Distance to Nearest Cross Street (Feet)

0

Project In Relation to Cross Street

○ **North** ● **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel

54.14-1-19.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

-7 8817

Ex. -73.749

Y Coordinates (Northing)

42996

Ex. 42.652

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use	Post-Development Future Land Use
○ FOREST	○ SINGLE FAMILY HOME
○ PASTURE/OPEN LAND	○ SINGLE FAMILY SUBDIVISION
○ CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
○ SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
○ SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
○ TOWN HOME RESIDENTIAL	○ INDUSTRIAL
○ MULTIFAMILY RESIDENTIAL	● COMMERCIAL
○ INSTITUTIONAL/SCHOOL	○ MUNICIPAL
○ INDUSTRIAL	○ ROAD/HIGHWAY
● COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
○ ROAD/HIGHWAY	○ BIKE PATH/TRAIL
○ RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
○ BIKE PATH/TRAIL	○ PARKING LOT
○ LINEAR UTILITY	○ CLEARING/GRADING ONLY
○ PARKING LOT	○ DEMOLITION, NO REDEVELOPMENT
○ OTHER	○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
	○ OTHER

Number of Lots

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
17.3	7.3	4.4	5.5

5. Do you plan to disturb more than 5 acres of soil at any one time? ● **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
0 %	0 %	0 %	100 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 06/01/2025 – **End Date** 06/01/2026

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Ellicott Creek

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ● **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ● **No**
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Town of Amherst & NYSDOT

open/closed stormwater drainage system

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer

Carmina Wood Design

Contact Name (Last, Space, First)

Wood, Christopher

Mailing Address

80 Silo City Row Ste 100

City

Buffalo

State NY Zip 14203-

Phone 716-842-3165

Fax --

Email

cwood@carminawooddesign.com

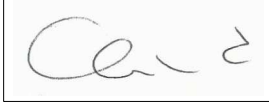
SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name Christopher **MI**

Last Name Wood

Signature



Date 12/04/2024

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ● Rock Outlet Protection
- ○ Streambank Protection

Other

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ● **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.645 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
○ Underground Infiltration System (I-4)			
○ Bioretention (F-5)			1.17
○ Dry Swale (O-1)			
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
● Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other [ ]	3.26

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name: HydroStorm

Manufacturer: HydroWorks

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.072 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.033 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.655 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.573

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ◉ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.207 **acre-feet**

CPv Provided

0.207 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

64.87 **CFS**

Post-development

57.81 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

115.36 **CFS**

Post-development

97.46 **CFS**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Benderson Development Company

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

-RRv is required for any new impervious within a redevelopment project
-Onsite soils with slow infiltration rates (Hydrologic soil group "D")

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ● **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

Matt

MI

Print Last Name

Oates

Owner/Operator Signature

Date

/ /

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

MS4 SWPPP Acceptance Form

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Benderson Development, LLC
2. Contact Person:	Matt Oates
3. Street Address:	570 Delaware Ave
4. City/State/Zip:	Buffalo, NY 14202
II. Project Site Information	
5. Project/Site Name:	Amherst Development Park
6. Street Address:	6000-6040 North Bailey Ave
7. City/State/Zip:	Amherst, NY 14226
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	Town of Amherst
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix D

Engineer's Report

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINA WOOD DESIGN

ENGINEER'S REPORT

for

Amherst Development Park

6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

80 Silo City Suite 100
Buffalo, NY 14203

Telephone: (716) 842-3165

November 2023

Revised 12/3/2024



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Section 1 – Location & Description

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Romney Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed site construction will include one 10,069 sf building addition and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.34 of which 7.29 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Section 2 – Stormwater Drainage System

The existing site is generally flat. An existing open/closed drainage system onsite drains north to an open swale along the north side of Romney Rd. Three existing 3'x5' arch stormwater conveyance pipes are also located onsite within a 30' wide Town of Amherst Drainage easement. These conveyance pipes flow from the south property line to north and discharge into the open swale along Romney Rd. The existing swale flows east along Romney Rd and north along North Bailey Ave and outlets to an existing stormwater management pond located adjacent to Interstate 290. Runoff from the pond is then conveyed north via open and closed drainage systems and discharges to Ellicott Creek and ultimately the Niagara River. All proposed stormwater runoff from the project site will continue to discharge to the existing stormwater system along Romney Road.

This project is subject to the Boulevard Central Special Stormwater Design Conditions adopted by the Town of Amherst. In addition to the requirements of the NYSDEC SPDES General Permit, the project must also provide the following criteria for Projected Growth Redevelopment Scenarios and Enhanced Phosphorus Removal:

- Provide 10% escalation of proposed peak flow when compared to existing conditions peak flows.
- Median curve number (CN) to compute existing conditions.
- Water Quality volume based on the 1-year, 24-hour storm according to Chapter 10 of the NYSDEC Stormwater Management Design Manual.

For purposes of the runoff analysis and the stormwater drainage system design, portions of the project site were classified as "Redevelopment" per NYSDEC Stormwater Management Design Manual Chapter 9 requirements. The nature of this construction project will be a "Redevelopment" with an increase in impervious area. The proposed stormwater management system was designed to attenuate proposed runoff to existing conditions prior to discharge.

The proposed stormwater drainage system will consist of a combination of overland sheet flow and HDPE pipe channel flow connected by a series of drainage inlets located throughout the project site. Proposed stormwater runoff will be collected and conveyed to underground stormwater chamber detention areas onsite and discharged via outlet control pipes to the existing stormwater system along Romney Road.

The bioretention areas will provide Runoff Reduction and Water Quality volume requirements for "New Development" areas. The filter area planting soil depth varies throughout the bioretention areas but maintains a minimum of at least 18 inches of soil. The 18 inches of soil is an acceptable deviation per the NYSDEC where existing grades prevent the full 2.5'-4' foot soil depth. A series of 6" underdrains below the planting soil will be located throughout the bioretention areas connected by overflow drainage inlets to convey runoff directly to the closed stormwater management system. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover: No existing natural features exist onsite.
2. Calculation of Water Quality Volume (WQv) for site. See "Storm Sewer Drainage Calculations".

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity. Bioretention areas were incorporated into the site design to provide required RRv and WQv for "New Development" areas. See "Storm Sewer Drainage Calculations".
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas. See "Storm Sewer Drainage Calculations".
5. Design of volume and peak rate control practices where required. See "Storm Sewer Drainage Calculations".

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality:
The NYSDEC requires water quality treatment prior to discharge. This will be achieved by the application of bioretention areas and water quality treatment structures. The total WQv provided was 0.645 ac-ft and equal to the required WQv of 0.645 ac-ft. The required water quality volume was calculated based on the proposed 7.29 acres of proposed development area.

Runoff Reduction Volume:
The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for contributing runoff areas in the WQv. The RRv provided was 0.072 ac-ft and greater than the required RRv min. of 0.033 ac-ft. The required runoff reduction volume was calculated based on 2.94 acres of proposed "new development" area that includes 1.17 acres of "new impervious" area.

100% of the required WQv was not reduced due to the followings site specific limitations: Drainage areas with impermeable soils, Type D. In addition, below is a summary of how each green infrastructure technique was evaluated and determined to be feasible or infeasible:

1. Conservation of natural areas: no natural existing features present onsite.
2. Sheetflow to riparian buffers or filter strips: no riparian buffers possible on the site; filter strips not feasible given the limited area for development.
3. Vegetated Open Swales: swales were not feasible given the limited area for development.
4. Tree Plantings: new trees were planted throughout the site.
5. Disconnection of Roof Top Runoff: disconnection not feasible for these types of projects.
6. Stream Daylighting: is not feasible given the limited area for development.
7. Rain Garden: bioretention areas installed throughout site.
8. Green Roof: the proposed use of the building makes this an unfeasible practice.
9. Stormwater Planter: this method is not recommended for these types of projects.
10. Rain Barrels & Cisterns: collected water would not be used for irrigation.
11. Porous Pavement: porous pavement is not recommended for areas with impermeable soils (Type D) and areas with sediment laden runoff (salting in winter months).

Channel Protection:
The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 9,008 cf will be accommodated in the stormwater detention areas onsite.

Overbank Flooding:
The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 57.81 cfs, which is below the existing peak 10-year runoff of 64.87 cfs.

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Extreme Storm Protection:
The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 97.46 cfs, which is below the existing peak 100-year runoff of 115.36 cfs.

Town of Amherst Requirements:
The Town requires that the 25-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event *under the 10% escalation scenario*. Storage of this storm will be provided within the onsite stormwater detention areas. At the 25-year storm event the stormwater drainage system will allow discharge of 19.89 cfs, which is below the existing peak 10-year runoff of 21.51 cfs.

Town of Amherst - Existing North Bailey Ditch:
The existing drainage ditch along the west side of North Bailey Ave. will be filled for a parking lot expansion on the east side of the site. A new 36" pipe will be installed to convey runoff to the north. The existing ditch provided approximately 21,348 cf of storage as part of the overall open drainage system along Romney Rd and North Bailey Ave. Two new detention pond areas will be installed at the Romney Rd and North Bailey Ave. intersection to compensate for the filling of the existing ditch. Proposed pond storage will be approximately 23,323 cf and greater than the existing ditch storage removed.

See attached "Storm Sewer Drainage Calculations" for additional information.

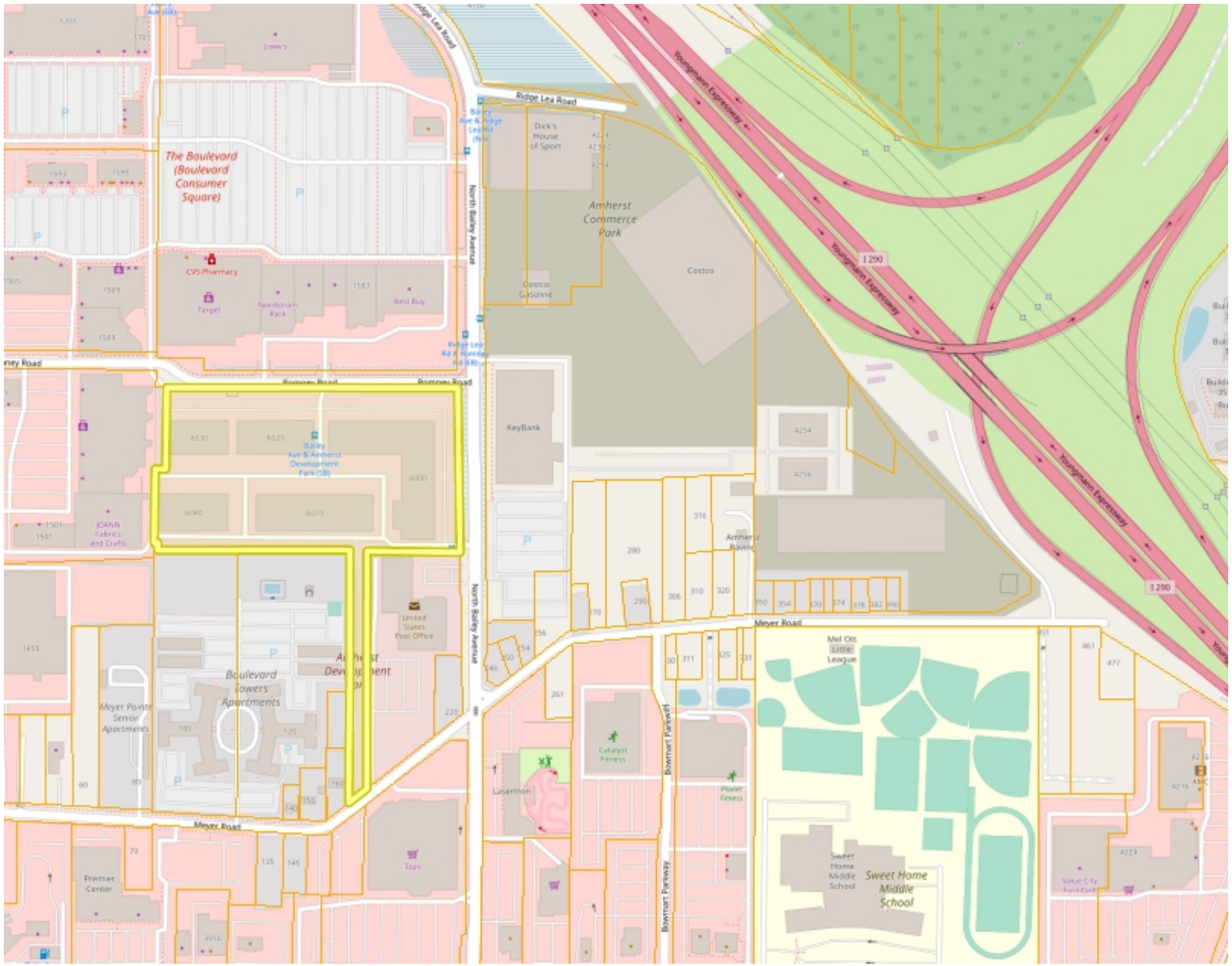
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix A

Location Maps

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Erie County On-Line Mapping Application





Legend

- Parcels

0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 9,028

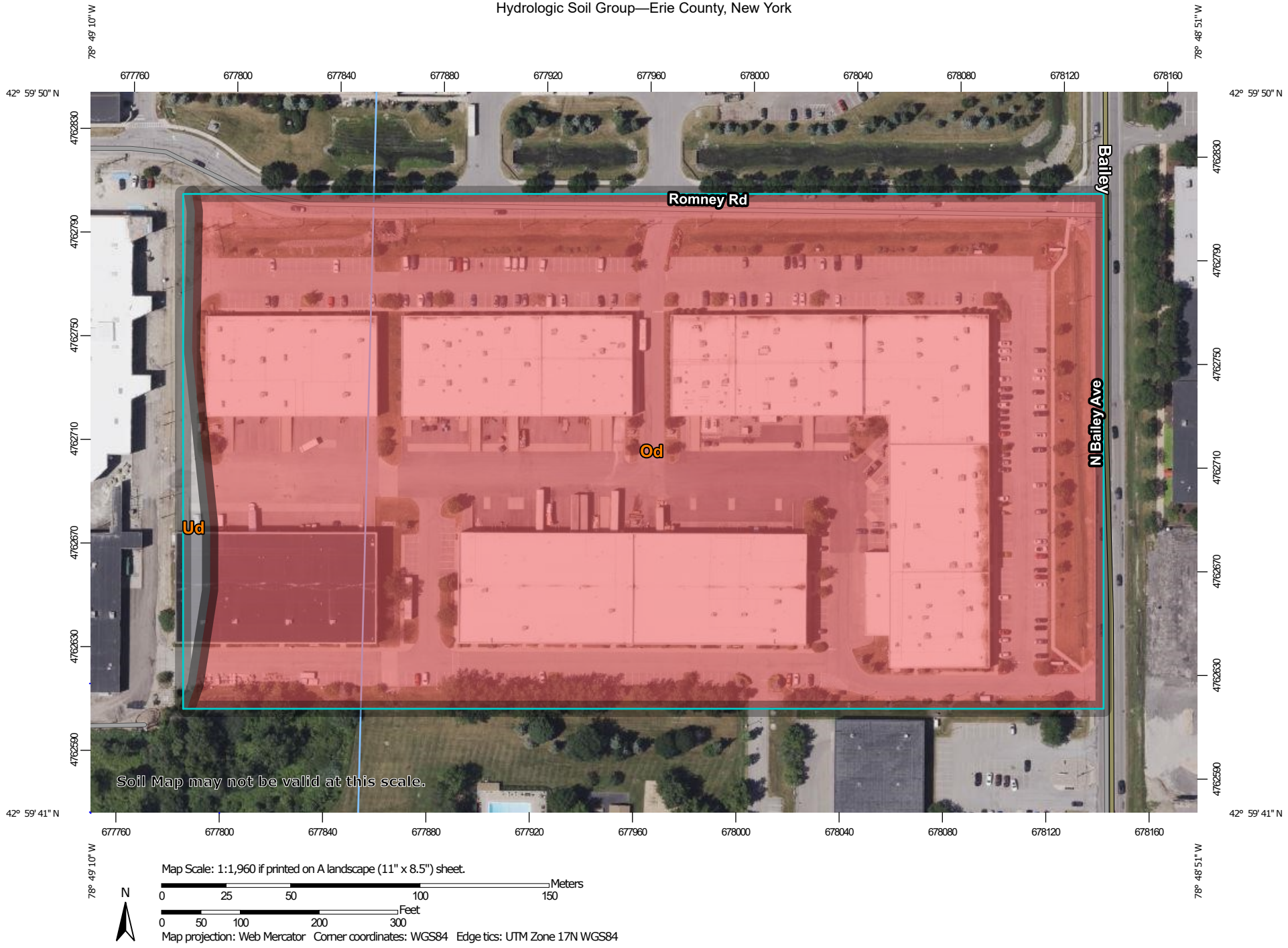
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix B

Web Soil Survey – Hydrologic Soils Group

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydrologic Soil Group—Erie County, New York



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Erie County, New York
Survey Area Data: Version 23, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 9, 2022—Aug 15, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Od	Odessa silt loam, 0 to 3 percent slopes	D	17.2	98.2%
Ud	Urban land		0.3	1.8%
Totals for Area of Interest			**17.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

Storm Sewer Drainage Calculations

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Water Quality and Runoff Reduction Calculations

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

WATER QUALITY REQUIRED FOR PROPOSED DEVELOPMENT AREA

Area, Acres = 7.29

"Redevelopment Activity", Acres = 4.35 (existing, disturbed impervious area)

**Adjusted "Redevelopment Area", Acres = 3.26

Total proposed impervious, Acres = 5.52

"New development", Acres = 2.94

"New" impervious, Acres = 1.17

Water Quality Volume (WQv)

Enhanced Phosphorus Removal: WQv Required = 1-yr 24-hr Design Storm per NYSDEC SWMDM Section 4.3
(See attached worksheets, P = 1.80)

	Water Quality	SMP Description
Drainage Area #1: New Development Area, cf =	7,841	Filtration Bioretention*
Drainage Area #2: Redevelopment Area, cf =	20,236	Flow Based Alt. Practices**
Total WQv Required, cf =	28,077	
Total WQv Required, ac-ft =	0.645	

Per NYSDEC SWMDM Section 9.2.1.B: Runoff Reduction Volume (RRv) sizing criteria not required for "Redevelopment Activity" portion of project.

****Per NYSDEC SWMDM Section 9.2.1.A.IV*** : The plan proposes that 100% WQv is captured and treated, for a minimum of 75% of the disturbed, redevelopment impervious area, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm.

RRv PROVIDED FOR PROPOSED DEVELOPMENT AREA (See NYSDEC worksheets)

Min. RRv Req'd, cf = 1,437

Min. RRv Req'd, ac-ft = 0.033

	WQv, cf	RRv, cf
Filtration Bioretention	7,841	3,136
Flow Based Alt. Practices	20,236	N/A
TOTAL, cf	28077	3136
TOTAL, ac-ft	0.645	0.072

WQ & RR SUMMARY (ac-ft):

TOTAL WATER QUALITY PROVIDED FOR PROPOSED DEVELOPMENT AREA 0.645

IS WATER QUALITY VOLUME REQUIREMENT MET? Yes
(WQv provided equal to or greater than WQv required)

IS RUNOFF REDUCTION VOLUME REQUIREMENT MET? Yes
(RRv provided equal to or greater than Min. RRv required)

Revised_/_/_

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 1 - Site Planning

	Practice	Description	Applicable	Project Specific Evaluation
Preservation of Natural Features and Conservation Design	**Preservation of Undisturbed Areas**	Delineate and protect undisturbed forests, native vegetated areas, riparian corridors, water bodies, wetlands, and natural terrain.	N/A	EXAMPLES - Approximately XX+/- Acres of land will remain undisturbed, in its natural state, which accounts for XX% of the total project parcel. **OR** The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Delineate and protect naturally vegetated buffers along perennial streams, rivers, shorelines, and wetlands.	N/A	EXAMPLES - There is a stream/river/shorline/wetland located on the project site. For the area adjacent to this water body, a XX-ft naturally vegetated buffer will be applied. No disturbance will occur within this buffer. **OR** The only disturbance that will occur within this buffer will include XX. This disturbance is necessary because XX. **OR** There are no water bodies located on or adjacent to the project site.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	N/A	EXAMPLES - Clearing and grading will be limited to the area of disturbance and will be minimized to the greatest extent practical. The limits of all proposed clearing will be demarcated in the field with orange construction fencing, prior to construction, to prevent unnecessary removal of trees.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Yes	EXAMPLES - The site has been designed to avoid sensitive resource areas to the greatest extent practical. Include project specific information for the various sensitive resources. **OR** There are no floodplains, steep slopes, erodible soils, wetlands, mature forests or critical habitats located on the project site.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	N/A	EXAMPLES - The site layout has been designed to maximize open space. Impervious surfaces have been minimized to the greatest extent practical and approximately XX+/- Acres will be maintained as vegetated open space.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Yes	EXAMPLES - All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual. **OR** Compacted areas were considered as impervious cover when calculating the WQv Required and the compacted areas were assigned a post-construction HSG designation that is one level less permeable than existing conditions for the hydrology analysis.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 1 - Site Planning

Reduction of Impervious Cover	**Roadway Reduction**	Minimize roadway widths and lengths, below local requirements, to reduce site impervious area	N/A	EXAMPLES - Proposed roadways will be constructed with a porous XX surface, in order to minimize the overall impervious surface. **OR** The project proposes to reduce the roadway width to XX-ft, from the required XX-ft. **OR** Reducing the roadway width is not feasible for the project's intended use. **OR** No new roadways are proposed as part of this project.
	Sidewalk Reduction	Minimize sidewalk lengths and widths, below local requirements, to reduce site impervious area	N/A	EXAMPLES - All pedestrian walkways will be constructed with a porous XX surface. **OR** Sidewalk widths have been minimized to X-ft and quantity of sidewalk has been reduced to that required to ensure safe pedestrian access throughout the site. **OR** Reducing the sidewalk width/length is not feasible for the project's intended use. **OR** No new sidewalks are proposed as part of this project.
	Driveway Reduction	Minimize driveway lengths and widths, below local requirements, to reduce site impervious area	N/A	EXAMPLES - All driveways on-site will be constructed with a permeable XX surface, where feasible, in order to minimize the overall impervious surface. **OR** The project proposes to reduce the driveway width to XX-ft, instead of the required XX-ft. **OR** Reducing the driveway width is not feasible for the intended use. **OR** No new driveways are proposed as part of this project.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	N/A	EXAMPLES - Proposed cul-de-sacs will utilize a landscaped island to reduce impervious cover. **OR** No cul-de-sacs are proposed as part of this project.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	N/A	EXAMPLES - All new building area has been allocated to efficiently implement the intended use. **OR** No new buildings are proposed as part of this project. **OR** The current proposal involves the renovation and reuse of XX existing buildings on-site.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, reducing stall dimensions below local requirements, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	N/A	EXAMPLES - All parking lots will be constructed of a porous XX surface, to reduce overall impervious surfaces. **OR** The project proposes to reduce the parking stall dimensions to X-ft wide by XX-ft long, instead of the required XX-ft by XX-ft stall. **OR** The project proposes to reduce the number of parking stalls proposed to XX, instead of the required XX, resulting in an approximate XX% reduction in impervious. **OR** Reducing the parking stall dimensions or number of stalls is not feasible for the intended use. **OR** No new parking stalls are proposed as part of this project.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	Yes
What is the nature of this construction project?	

Design Point:			
P=	1.80	inches	*Enter 1 Year 24 Hour Design Storm as P*

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	2.94	1.17	40	0.41	7,841	Filtration Bioretention
2	3.26	3.26	100	0.95	20,236	Flow Based Alternative Practice
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	6.20	4.43	71	0.69	**28077**	**Required WQv**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Practice	Description	Applicable	Project Specific Evaluation
RR Techniques	**Conservation of Natural Areas (RR-1)**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas by permanently conserving these areas on a site. Undisturbed natural areas include: forest retention areas; reforestation areas; stream and river corridors; shorelines; wetlands, vernal pools, and associated vegetated buffers; and undisturbed open space.	N/A	EXAMPLES - The project site does not contain any significant natural resources. **OR** As a Redevelopment Project, the proposed site layout has been designed to limit land disturbance to the greatest extent practical. **OR** Approximately XX+/- Acres will be placed into permanent conservation, which accounts for XX% of the total property. **OR** The project does not propose permanent conservation of these areas at this time.
	Sheet Flow to Riparian Buffer/Filter Strip (RR-2)	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	N/A	EXAMPLES - The project site does not contain any riparian buffers. **OR** Sheet flow to riparian buffers or grass filter strips is not proposed at this time. The project proposes treatment by RR techniques, Standard SMPs with RRv capacity, or Standard SMPs without RRv capacity. **OR** The project proposes sheet flow to riparian buffers to reduce runoff from XX. Calculations have been provided in the SWPPP. **OR** The project proposes sheet flow to grass filter strips to reduce runoff from XX. Calculations have been provided in the SWPPP.
	Tree Planting/Tree Pit/Tree Trench (RR-3)	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	N/A	EXAMPLES - The project proposes the preservation of existing mature trees, as well as the planting of numerous trees throughout the site, in order to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. **OR** The project proposes new tree plantings/tree pits/tree trenches, adjacent to impervious surfaces, Calculations have been provided in the SWPPP. **OR** Tree plantings/tree pits/tree trenches are proposed on site. However, credit for these trees will not be taken toward area reduction/volume reduction in the RRv calculations.
	Disconnection of Rooftop Runoff (RR-4)	Direct runoff from rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	N/A	EXAMPLES - The building roof(s) will be directed to downspouts with splash blocks and discharge over a grassed filter. Calculations have been provided in the SWPPP. **OR** The building roof(s) will be directed to downspouts with splash blocks and vegetated areas, which will promote sheet flow and filtering. However, credit for rooftop disconnect will not be taken toward an impervious area reduction in the RRv calculations. **OR** Due to the size/use/layout of the proposed building(s), rooftop disconnect is not proposed at this time.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

RR Techniques

Vegetated Swale (RR-5)	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	N/A	EXAMPLES - Due to flat topography/steep topography/etc., vegetated swales are not feasible for use on the project site. **OR** Vegetated swale(s) will be used to treat XX. Calculations have been provided in the SWPPP.
Rain Garden (RR-6)	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	N/A	EXAMPLES - Due to the size of contributing area/tributary driveway/tributary roadway, a bioretention facility will be implemented instead of rain gardens. **OR** Due to XXX,rain gardens are not feasible for use on the project site. **OR** Rain gardens will be used to treat roof runoff at the source for the building(s). Calculations have been provided in the SWPPP.
Stormwater Planter (RR-7)	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	N/A	EXAMPLES - Due to XXX, a bioretention facility will be implemented instead of stormwater planter(s). **OR** Due to XXX,stormwater planters are not feasible for use on the project site. **OR** Stormwater planters will be used to treat roof runoff at the source for the building(s). Calculations have been provided in the SWPPP.
Rainwater Harvesting System (RR-8)	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	N/A	EXAMPLES - Rainwater harvesting is not proposed on-site due to XXX. **OR** A below-grade cistern will be implemented for reuse as XXX. The system has been sized to provide adequate storage capacity for the entire WQv & RRv calculated for the tributary area. Calculations have been provided in the SWPPP. An above-grade rain barrel/cistern will be implemented for reuse as XXX. The system has been sized to provide adequate storage capacity for the entire WQv & RRv calculated for the tributary area. Calculations have been provided in the SWPPP.
Porous Pavement (RR-9)	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	N/A	EXAMPLES - Due to XXX, porous pavement is not feasible for use on the project site. **OR** Porous asphalt will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP. **OR** Porous concrete will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP. **OR** Porous pavers will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Green Roof (RR-10)	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	N/A	EXAMPLES - Due to XX, a green roof is not feasible for use on the project site. **OR** An extensive/intensive green roof is proposed on-site. Calculations have been provided in the SWPPP.
	Stream Daylighting (RR-11)	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	N/A	EXAMPLES - No stream daylighting opportunities are present on the site. **OR** Although stream daylighting opportunities are present, due to XX, stream daylighting is not proposed on this site. **OR** The project proposes stream daylighting for an XX-ft length of stream.
Standard SMPs with RRv Capacity	**Infiltration Trench (I-1)**	An infiltration practice that stores the water quality volume in the void spaces of a gravel trench before it is infiltrated into the ground.	N/A	EXAMPLES - Due to XX, infiltration trenches are not feasible for use on the project site. **OR** Infiltration trench(es) are proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Infiltration Basin (I-2)	An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.	N/A	EXAMPLES - Due to XX, infiltration basins are not feasible for use on the project site. **OR** An infiltration basin(s) is proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Dry Well (I-3)	An infiltration practice similar in design to the infiltration trench, and best suited for treatment of rooftop runoff.	N/A	EXAMPLES - Due to XX, dry wells are not feasible for use on the project site. **OR** Dry well(s) are proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Underground Infiltration System (I-4)	An infiltration practice below grade that stores the water quality volume in pre-manufactured pipes, vaults or other modular structures, before it is infiltrated into the ground.	N/A	EXAMPLES - Due to XX, underground infiltration systems are not feasible for use on the project site. **OR** An underground infiltration system(s) is proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Infiltration Bioretention (F-4)	A shallow depression that treats stormwater as it flows through a soil matrix, before it is infiltrated into the ground.	N/A	EXAMPLES - Due to XXX, a filtration bioretention will be implemented, instead of an infiltration bioretention. **OR** Due to XXX, bioretention is not feasible for use on the project site. **OR** Infiltration bioretention will be used to treat XX. Calculations have been provided in the SWPPP.
	Filtration Bioretention (F-5)	A shallow depression that treats stormwater as it flows through a soil matrix and is returned to the storm drain system.	Yes	EXAMPLES - Due to XXX, an infiltration bioretention will be implemented, instead of a filtration bioretention. **OR** Due to XXX, bioretention is not feasible for use on the project site. **OR** Filtration bioretention will be used to treat XX. Calculations have been provided in the SWPPP.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Bioslope (F-6)	Permeable engineered soil media that is installed along embankments or other slopes, designed to capture and treat stormwater runoff from adjacent paved areas.	N/A	EXAMPLES - Due to XXX, bioslopes are not feasible for use on the project site. **OR** Bioslope(s) will be used to treat XX. Calculations have been provided in the SWPPP.
	Dry Swale (O-1)	An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.	N/A	EXAMPLES - Due to XXX, dry swales are not feasible for use on the project site. **OR** A dry swale(s) will be used to treat XX. Calculations have been provided in the SWPPP.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A		55%
B		40%
C		30%
D	1.17	20%
Total Area	1.17	

Impervious Area (ac.)

Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	1.17	*acres*
Precipitation	1.80	*inches*
Rv	0.95	
Minimum RRv	**0.033**	***af***
	1437	cf

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Steps 3 and 5 - Apply RR Techniques and Standard SMPs

Runoff Reduction Volume and Treated Volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**(cf)**	**(cf)**
RR Techniques	Conservation of Natural Areas	RR-1	0.00		0	
	Sheet Flow to Riparian Buffer/Filter Strip	RR-2	0.00	0.00	0	
	Tree Planting/Tree Pit/Tree Trench	RR-3	0.00	0.00	0	
	Disconnection of Rooftop Runoff	RR-4		0.00	0	
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rainwater Harvesting Systems	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Extensive & Intensive)	RR-10	0.00	0.00	0	
	Stream Daylighting	RR-11				
Standard SMPs w/ RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Infiltration Bioretention	F-4	0.00	0.00	0	0
	Filtration Bioretention	F-5	2.94	1.17	3,136	4,705
	Bioslope	F-6	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention	P-1	0.00	0.00		0
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention	P-3	0.00	0.00		0
	Multiple Pond System	P-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Gravel Wetland	W-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Wet Swale	O-2	0.00	0.00		0
Alt. SMPs	Flow Based Alternative Practice	-	3.26	3.26		20,236
	Volume Based Alternative Practice	-				
	Totals by RR Technique	→	0.00	0.00	0	
	Totals by Standard SMP w/RRV	→	2.94	1.17	3,136	4,705
	Totals by Standard SMP	→	0.00	0.00		0
	Totals by Alternative SMP	→	3.26	3.26		20,236
	Totals (RR Techniques + all SMPs)	→	6.20	4.43	3,136	24,941

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	28077	0.645
30	Total RRV Provided	3136	0.072
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	1437	0.033
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	24941	0.573
34	Sum of Volume Reduced & Treated	28077	0.645
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	2.94	1.17	40	0.41	7,841	1.80	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0.05	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	7	
Enter depth to bedrock (ft)	10	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.25	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	3564	sf	
Enter Provided Filter Area	Af	3564	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	7840.8	cf	

Calculate Runoff Reduction			
RRv Provided	**3,136**	***cf***	
WQv Treated	4705	cf	This is the portion of the WQv that is not reduced in the practice.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

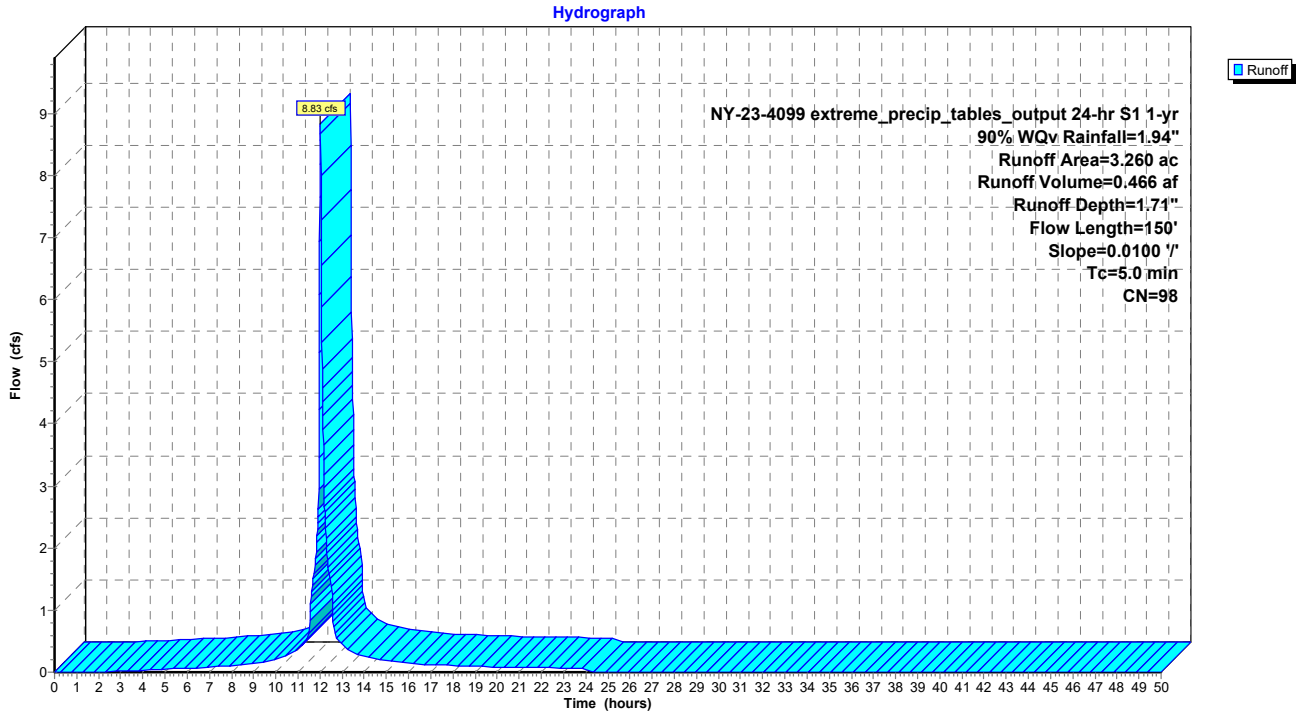
Water Quality Peak Flow Rate

Step 2 - Determine the Water Quality Treatment Volume				
		Value	Units	Notes
Water Quality Volume Required	WQv	0.4646	af	

Step 3 - Solve for the Calculated P90 Value				
		Value	Units	Notes
Subcatchment Area - 1	A1	3.26	acres	
Area 1 Curve Number	CN1	98		
Subcatchment Area - 2	A2		acres	
Area 2 Curve Number	CN2			
Subcatchment Area - 3	A3		acres	
Area 3 Curve Number	CN3			
Subcatchment Area - 4	A4		acres	
Area 4 Curve Number	CN4			
Subcatchment Area - 5	A5		acres	
Area 5 Curve Number	CN5			
Subcatchment Area - 6	A6		acres	
Area 6 Curve Number	CN6			
Subcatchment Area - 7	A7		acres	
Area 7 Curve Number	CN7			
Subcatchment Area - 8	A8		acres	
Area 8 Curve Number	CN8			
Subcatchment Area - 9	A9		acres	
Area 9 Curve Number	CN9			
Subcatchment Area - 10	A10		acres	
Area 10 Curve Number	CN10			
Weighted Curve Number	CNw	98.00		
Maximum Basin Retention	S	0.20	inches	
Runoff	Q	0.14	ft	
	Q	1.71	inches	
Calculated Rainfall Value	**P90**	**1.94**	**inches**	

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Subcatchment WQ: Drainage Area #2 - Redevelopment Area - WQ Peak Flow Rate



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Flow Based Alternative Practice

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (ft^3)	**Precipitation** (in)	**Description**
2	3.26	3.26	100	0.95	20,236	1.80	Flow Based Alternative Practice

Design Criteria		
Is the alternative practice included in the NJCAT Verification Database, NJDEP list of approved Manufactured Treatment Devices or TAPE list of Approved Technologies for General Use Level?	Yes	
Is the flow based practice proposed for area of new development?	No	
If proposed for new development, is the practice included on NYSDEC list for Verified Proprietary Practices for New Development?		
Is the practice being designed off-line?	No	Practice must have adequate bypass capacity
If designed off-line, has flow diversion been included?		Not applicable
Enter Extreme Flood peak flow rate (cfs)		
Enter alternative practice bypass capacity (cfs)		
Enter name and manufacturer of alternative practice		

Sizing Criteria				
		Value	Units	Notes
Water Quality Peak Flow Rate	WQf	8.83	cfs	Taken from hydrologic modeling
Enter Maximum Treatment Flow Rate (MTFR) of Alternative Practice	Q	8.83	cfs	
Determine the Water Quality Volume Treated				
Water Quality Volume Treated		**20,236**	**cf**	

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Stormwater Runoff Summaries and Runoff Delineation Maps

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New York
Location	New York, United States
Latitude	42.996 degrees North
Longitude	78.817 degrees West
Elevation	170 feet
Date/Time	Mon Nov 13 2023 09:29:03 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.41	0.50	0.66	0.82	1.00	**1yr**	0.71	0.93	1.13	1.34	1.56	1.80	2.09	**1yr**	1.60	2.01	2.42	2.91	3.39	**1yr**
2yr	0.30	0.47	0.58	0.77	0.96	1.18	**2yr**	0.83	1.08	1.34	1.59	1.87	2.18	2.46	**2yr**	1.93	2.36	2.78	3.31	3.80	**2yr**
5yr	0.36	0.56	0.70	0.94	1.20	1.48	**5yr**	1.03	1.35	1.67	1.98	2.30	2.65	3.00	**5yr**	2.34	2.89	3.37	3.97	4.54	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.76	**10yr**	1.22	1.61	1.98	2.34	2.70	3.07	3.49	**10yr**	2.72	3.36	3.90	4.56	5.19	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.20	**25yr**	1.53	2.01	2.48	2.90	3.32	3.73	4.27	**25yr**	3.30	4.10	4.74	5.48	6.20	**25yr**
50yr	0.54	0.87	1.11	1.55	2.09	2.60	**50yr**	1.81	2.39	2.94	3.42	3.88	4.33	4.97	**50yr**	3.83	4.78	5.49	6.30	7.10	**50yr**
100yr	0.61	0.99	1.28	1.82	2.48	3.10	**100yr**	2.14	2.84	3.49	4.04	4.55	5.03	5.79	**100yr**	4.45	5.57	6.36	7.24	8.13	**100yr**
200yr	0.71	1.15	1.49	2.14	2.95	3.68	**200yr**	2.54	3.39	4.14	4.77	5.33	5.84	6.75	**200yr**	5.17	6.49	7.37	8.32	9.31	**200yr**
500yr	0.85	1.39	1.82	2.64	3.70	4.62	**500yr**	3.19	4.27	5.19	5.93	6.57	7.13	8.26	**500yr**	6.31	7.95	8.96	10.01	11.14	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.35	0.42	0.57	0.70	0.87	**1yr**	0.61	0.85	0.86	1.15	1.44	1.62	1.90	**1yr**	1.44	1.83	2.08	2.63	3.10	**1yr**
2yr	0.29	0.45	0.55	0.75	0.92	1.06	**2yr**	0.80	1.04	1.16	1.42	1.71	2.10	2.35	**2yr**	1.86	2.26	2.67	3.19	3.66	**2yr**
5yr	0.33	0.51	0.63	0.86	1.10	1.26	**5yr**	0.95	1.23	1.38	1.67	2.01	2.43	2.71	**5yr**	2.15	2.60	3.03	3.61	4.08	**5yr**
10yr	0.36	0.55	0.68	0.95	1.23	1.42	**10yr**	1.06	1.39	1.56	1.87	2.26	2.71	3.01	**10yr**	2.40	2.89	3.32	3.95	4.41	**10yr**
25yr	0.41	0.62	0.77	1.10	1.45	1.67	**25yr**	1.25	1.64	1.81	2.18	2.64	3.12	3.44	**25yr**	2.76	3.31	3.73	4.42	4.84	**25yr**
50yr	0.45	0.68	0.84	1.21	1.63	1.88	**50yr**	1.41	1.84	2.02	2.43	2.95	3.47	3.82	**50yr**	3.07	3.67	4.05	4.82	5.18	**50yr**
100yr	0.49	0.74	0.92	1.33	1.83	2.12	**100yr**	1.58	2.07	2.25	2.70	3.31	3.88	4.21	**100yr**	3.43	4.05	4.39	5.25	5.53	**100yr**
200yr	0.53	0.80	1.02	1.47	2.06	2.40	**200yr**	1.77	2.34	2.49	2.99	3.69	4.34	4.65	**200yr**	3.84	4.47	4.74	5.69	5.88	**200yr**
500yr	0.60	0.90	1.16	1.68	2.39	2.81	**500yr**	2.06	2.74	2.83	3.40	4.23	5.08	5.31	**500yr**	4.50	5.11	5.18	6.32	6.32	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.30	0.46	0.56	0.75	0.93	1.07	**1yr**	0.80	1.05	1.20	1.41	1.70	1.93	2.33	**1yr**	1.71	2.24	2.61	3.09	3.63	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.16	**2yr**	0.86	1.13	1.28	1.56	1.86	2.28	2.58	**2yr**	2.02	2.48	2.95	3.48	4.03	**2yr**
5yr	0.39	0.60	0.74	1.02	1.30	1.53	**5yr**	1.12	1.50	1.68	2.06	2.44	2.88	3.31	**5yr**	2.55	3.18	3.75	4.36	5.04	**5yr**
10yr	0.46	0.71	0.88	1.22	1.58	1.89	**10yr**	1.37	1.84	2.09	2.55	3.01	3.45	4.01	**10yr**	3.05	3.86	4.52	5.17	6.02	**10yr**
25yr	0.58	0.89	1.10	1.58	2.07	2.51	**25yr**	1.79	2.45	2.79	3.39	3.98	4.40	5.18	**25yr**	3.89	4.98	5.84	6.52	7.63	**25yr**
50yr	0.69	1.05	1.31	1.88	2.53	3.11	**50yr**	2.18	3.04	3.47	4.22	4.91	5.28	6.28	**50yr**	4.68	6.04	7.10	7.79	9.17	**50yr**
100yr	0.83	1.25	1.56	2.26	3.10	3.85	**100yr**	2.68	3.77	4.33	5.24	6.07	6.33	7.62	**100yr**	5.60	7.33	8.59	9.30	10.98	**100yr**
200yr	0.99	1.48	1.88	2.72	3.80	4.78	**200yr**	3.28	4.67	5.42	6.54	7.50	7.57	9.24	**200yr**	6.70	8.88	10.46	11.13	13.20	**200yr**
500yr	1.25	1.87	2.40	3.49	4.96	6.37	**500yr**	4.28	6.22	7.30	8.75	9.94	9.62	11.94	**500yr**	8.52	11.48	13.59	14.13	16.77	**500yr**

Powered by ACIS Northeast Regional Climate Center

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORMWATER DRAINAGE ANALYSIS - Boulevard Central Special Stormwater Design Conditions

PROJECTED GROWTH REDEVELOPMENT SCENARIO

Use Median Curve Number (CN) for Existing Runoff Areas:

50% Runoff Rate Existing Land Cover

50% Prior to Development (1958 Historic Aerial: Meadow/Farm Field)

Overall Existing Runoff Area = 17.34 ac.

Greenspace = 3.65 ac

Impervious = 13.69 ac

Project Disturbance Area = 7.29 ac (42%)

Greenspace = 2.94 ac

Impervious = 4.35 ac

Apply Median CN to Project Disturbance Area:

Meadow/Farm Field = 3.64 ac

Greenspace = 1.47 ac

Impervious = 2.18 ac

Non-Disturbance Area = 10.05 ac (58%)

Greenspace = 0.71 ac

Impervious = 9.34 ac

Adjusted Overall Existing Runoff Area: 17.34 ac

Meadow/Farm Field = 3.64 ac

Greenspace = 1.47 ac + 0.71 ac = 2.18 ac

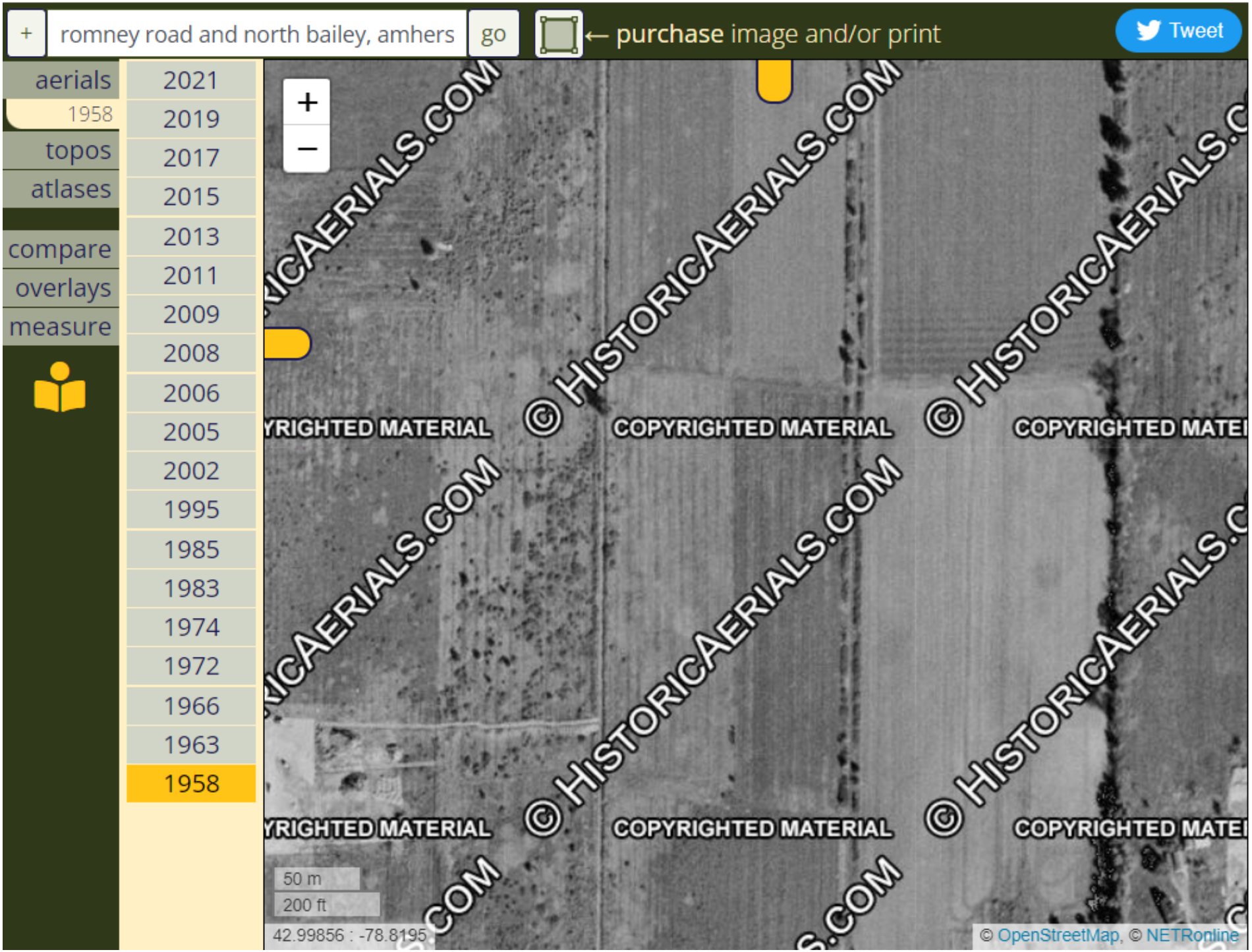
Impervious = 2.18 ac + 9.34 ac = 11.52 ac

10% ESCALATION OF PROPOSED PEAK FLOW

Storm Event	Existing Runoff (cfs)	Proposed Runoff (cfs)
1-Year	32.88	31.64
2-Year	42.30	39.55
5-Year	54.15	49.19
10-Year	64.87	57.81
25-Year	81.82	71.24
50-Year	97.29	83.37
100-Year	115.36	97.46

Storm Event	Ex. Runoff "Non-Disturbance Area" (cfs)	Adjusted Proposed Runoff (cfs)	10% Escalation (cfs)	Ex. Runoff "Disturbance Area" (cfs)
1-Year	24.42	7.22	7.94	8.52
2-Year	30.14	9.41	10.35	12.21
5-Year	37.16	12.03	13.23	17.04
10-Year	43.40	14.41	15.85	21.51
25-Year	53.16	18.08	19.89	28.70
50-Year	62.00	21.37	23.51	35.33
100-Year	72.28	25.18	27.70	43.11

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Link 1L: Overall Existing Site

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-Year	32.88	32.88	**0.00**
2-Year	42.30	42.30	0.00
5-Year	54.15	54.15	0.00
10-Year	64.87	64.87	0.00
25-Year	81.82	81.82	0.00
50-Year	97.29	97.29	0.00
100-Year	**115.36**	**115.36**	0.00

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

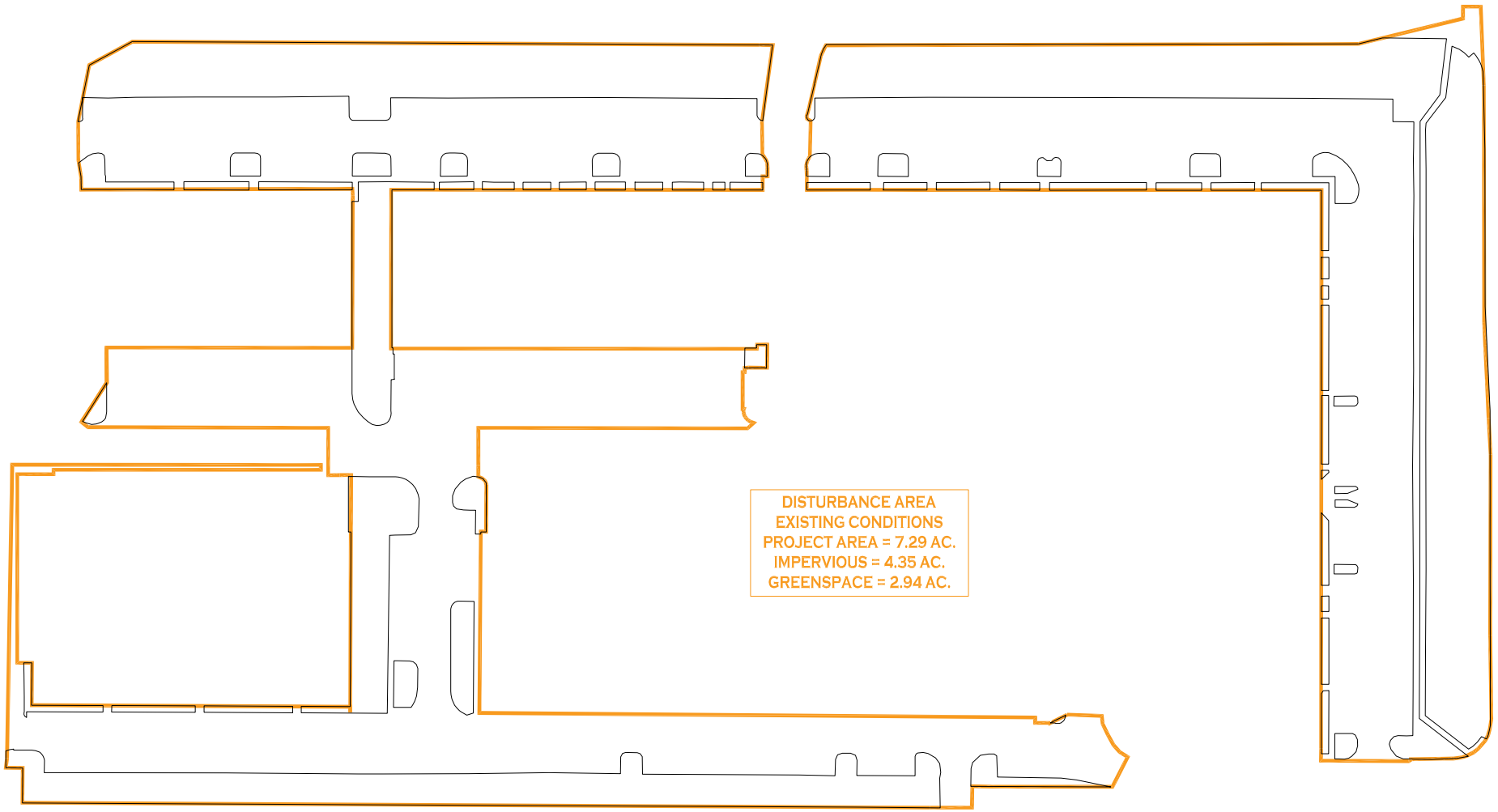
Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	1.80	8.52	0.396	0.65
2-Year	2.18	12.21	0.565	0.93
5-Year	2.65	17.04	0.789	1.30
10-Year	3.07	21.51	1.001	1.65
25-Year	3.73	28.70	1.347	2.22
50-Year	4.33	35.33	1.673	2.75
100-Year	**5.03**	**43.11**	**2.063**	**3.40**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

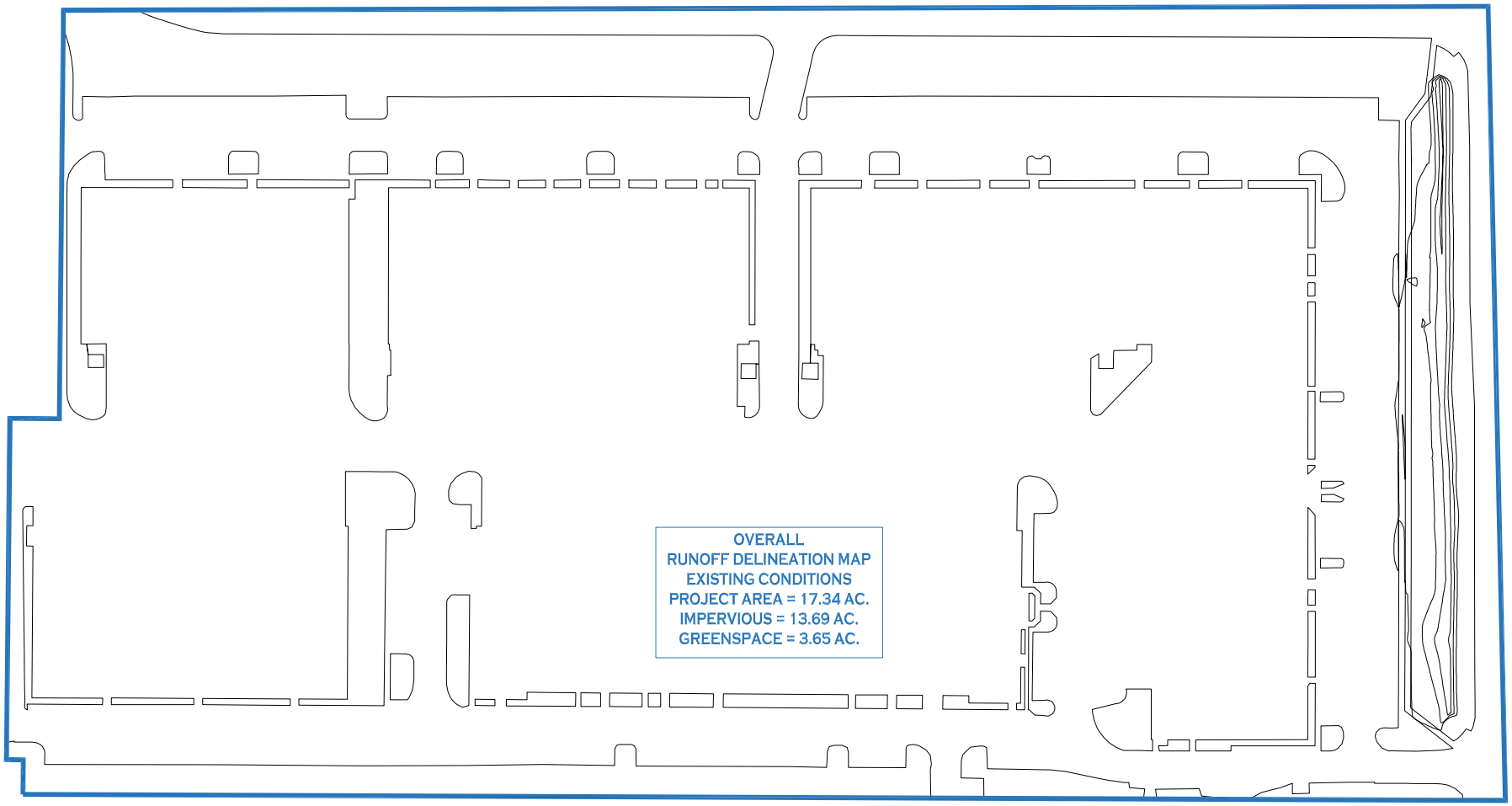
Events for Subcatchment 2S: Existing Site (Non-Disturbance Area)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	1.80	24.42	1.236	1.48
2-Year	2.18	30.14	1.548	1.85
5-Year	2.65	37.16	1.936	2.31
10-Year	3.07	43.40	2.284	2.73
25-Year	3.73	53.16	2.833	3.38
50-Year	4.33	62.00	3.333	3.98
100-Year	**5.03**	**72.28**	**3.917**	**4.68**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

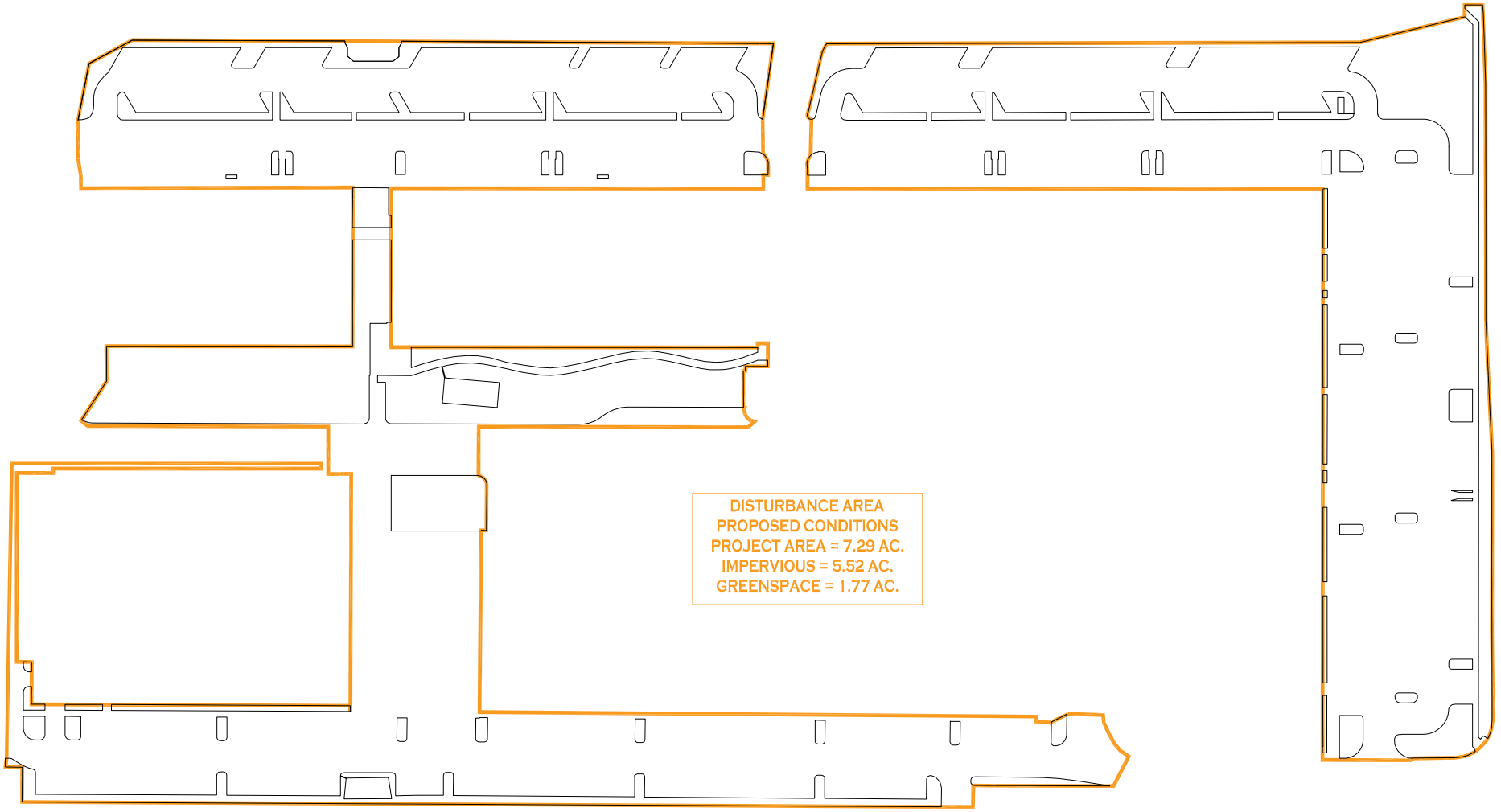


Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

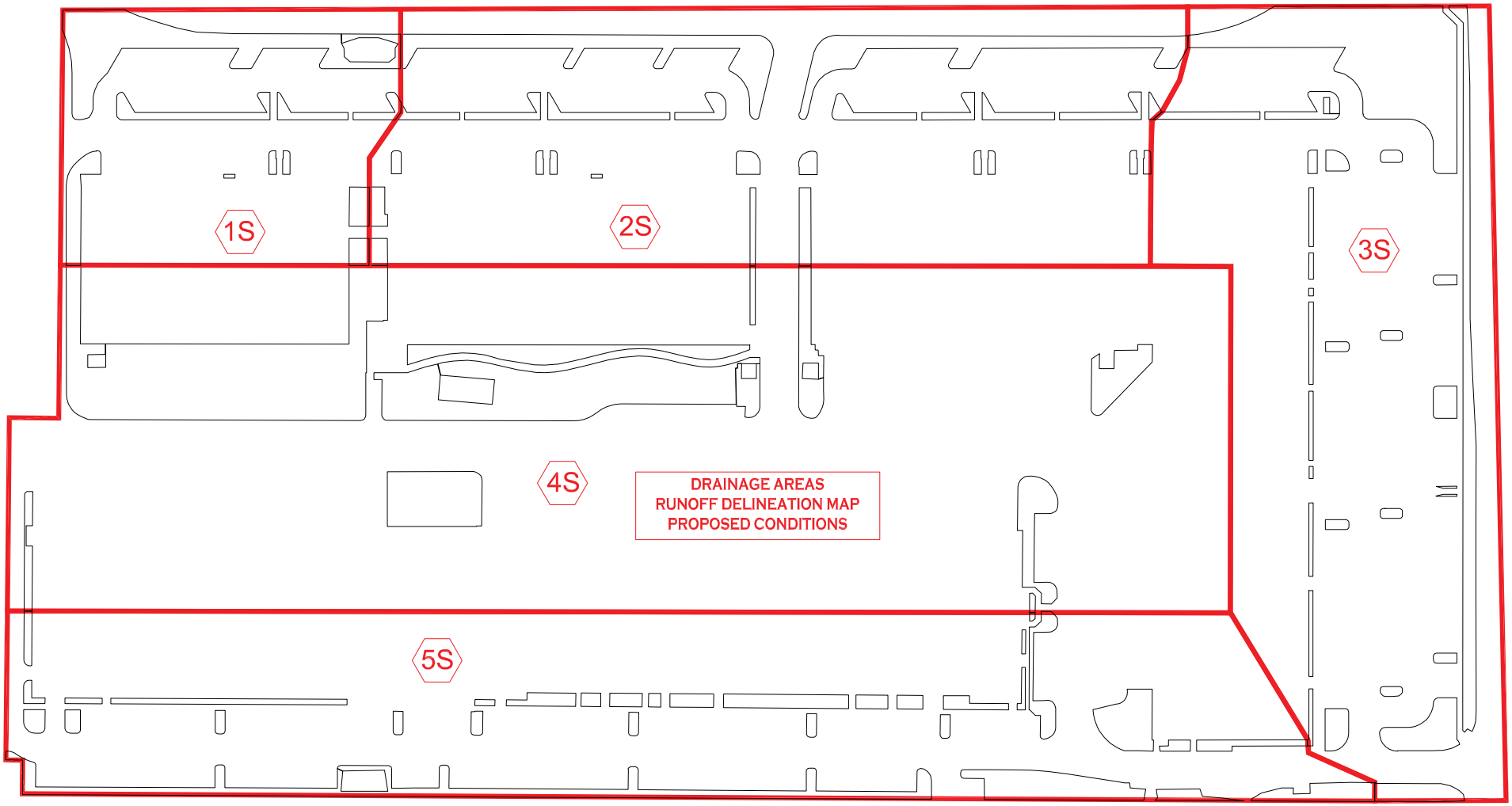
Events for Link 1L: Romney Rd Drainage System

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-Year	31.64	31.64	**0.00**
2-Year	39.55	39.55	0.00
5-Year	49.19	49.19	0.00
10-Year	57.81	57.81	0.00
25-Year	71.24	71.24	0.00
50-Year	83.37	83.37	0.00
100-Year	**97.46**	**97.46**	0.00

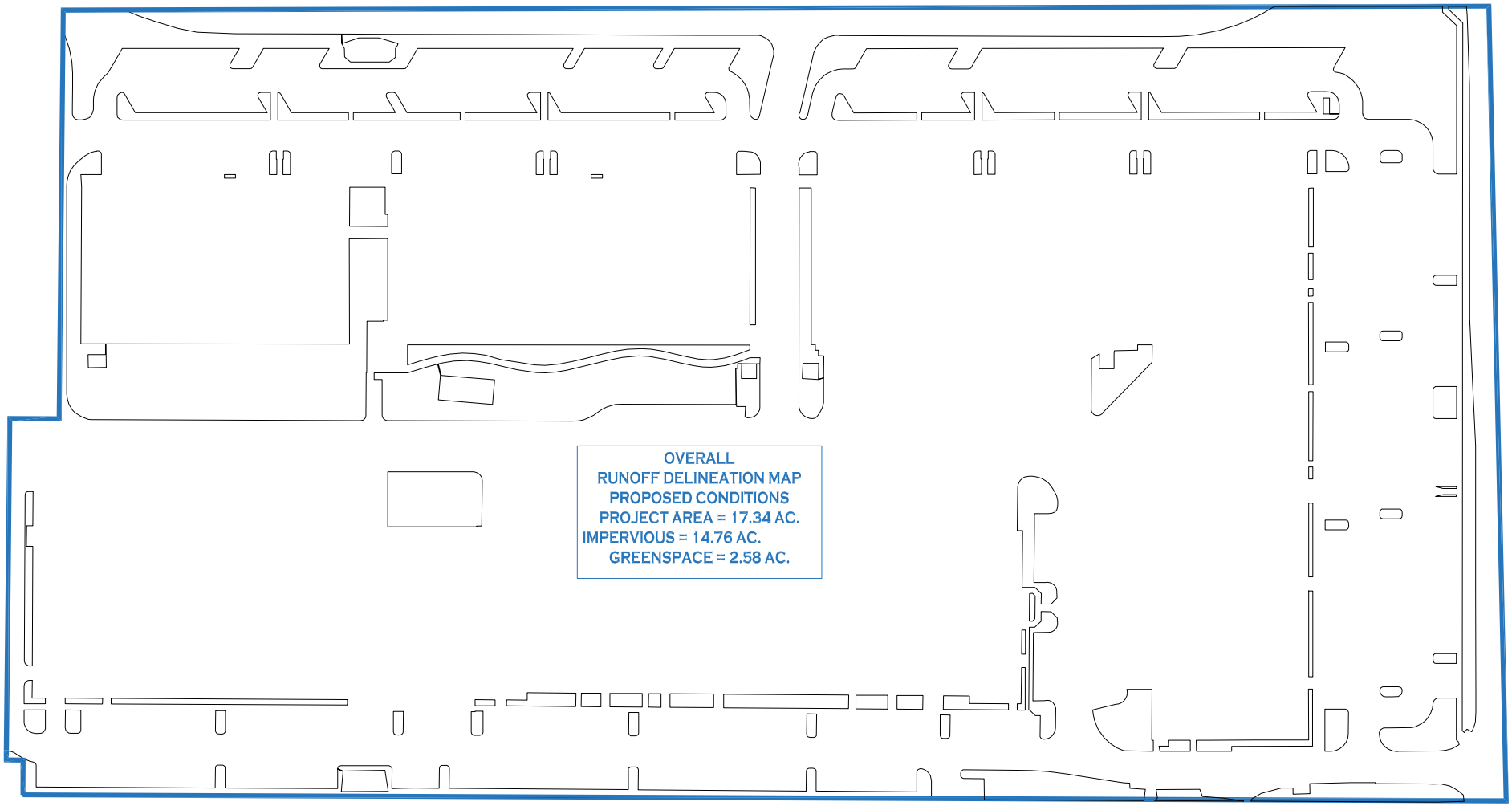
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PROPOSED STORM DRAINAGE PIPE SIZING:

*Assume Time of Concentration ≤ 5.0 min.
and i=5.5 in/hr per Intensity/Duration/Frequency curve
**Assume C=0.8 for typical commercial development area

CB10-Pond	Drainage Area, A (ac) =	2.33
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	10.25
	Per Mannings Equation:	use 24" HDPE @ 0.2% = 13.19 cfs

CB8-Pond	Drainage Area, A (ac) =	0.57
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	2.51
	Mannings Equation:	use 12" HDPE @ 0.5% = 3.28 cfs

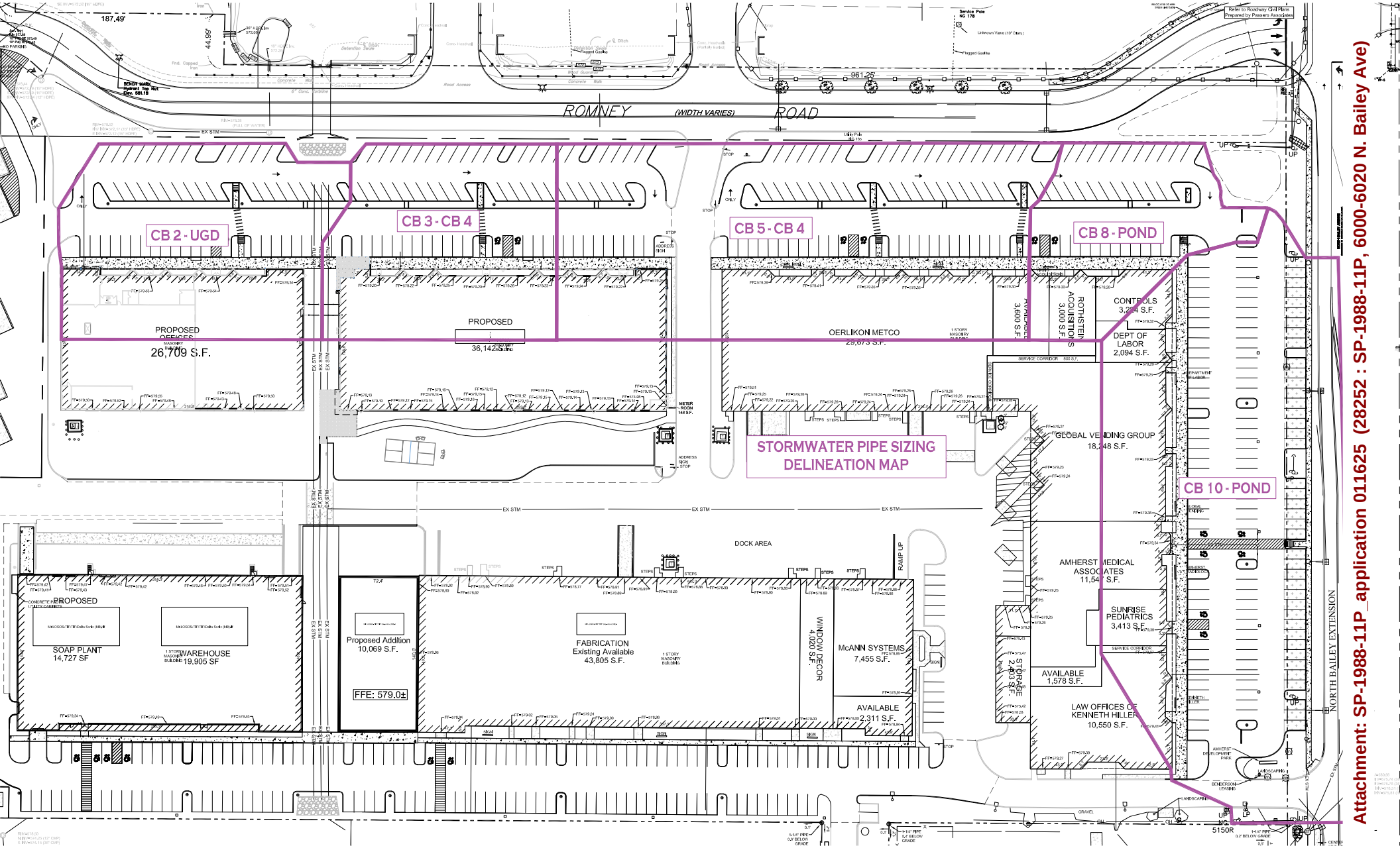
CB4-UGD	Drainage Area, A (ac) =	2.53
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	11.13
	Mannings Equation:	use 24" HDPE @ 0.5% = 20.85 cfs

CB3-CB4	Drainage Area, A (ac) =	0.80
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	3.52
	Mannings Equation:	use 15" HDPE @ 0.5% = 5.95 cfs

CB5-CB4	Drainage Area, A (ac) =	1.73
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	7.61
	Mannings Equation:	use 18" HDPE @ 0.5% = 9.68 cfs

CB2-UGD	Drainage Area, A (ac) =	0.94
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	4.14
	Mannings Equation:	use 12" HDPE @ 1.0% = 4.64 cfs

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Existing N. Bailey Ave Ditch (South of Romney Rd)

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	574.80'	21,648 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.80	9	0	0
575.00	149	16	16
576.00	3,398	1,774	1,789
577.00	8,214	5,806	7,595
578.00	19,891	14,053	21,648

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Proposed Storage to Replace Ditch (South of Romney Rd)

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	573.84'	4,135 cf	**36.0" Round 36" Pipe Storage** L= 585.0' S= 0.0026 '/'
#2	574.00'	5,327 cf	**Pond 1 (Prismatic)**Listed below (Recalc)
#3	573.50'	13,861 cf	**Pond 2 (Prismatic)**Listed below (Recalc)
		23,323 cf	Total Available Storage

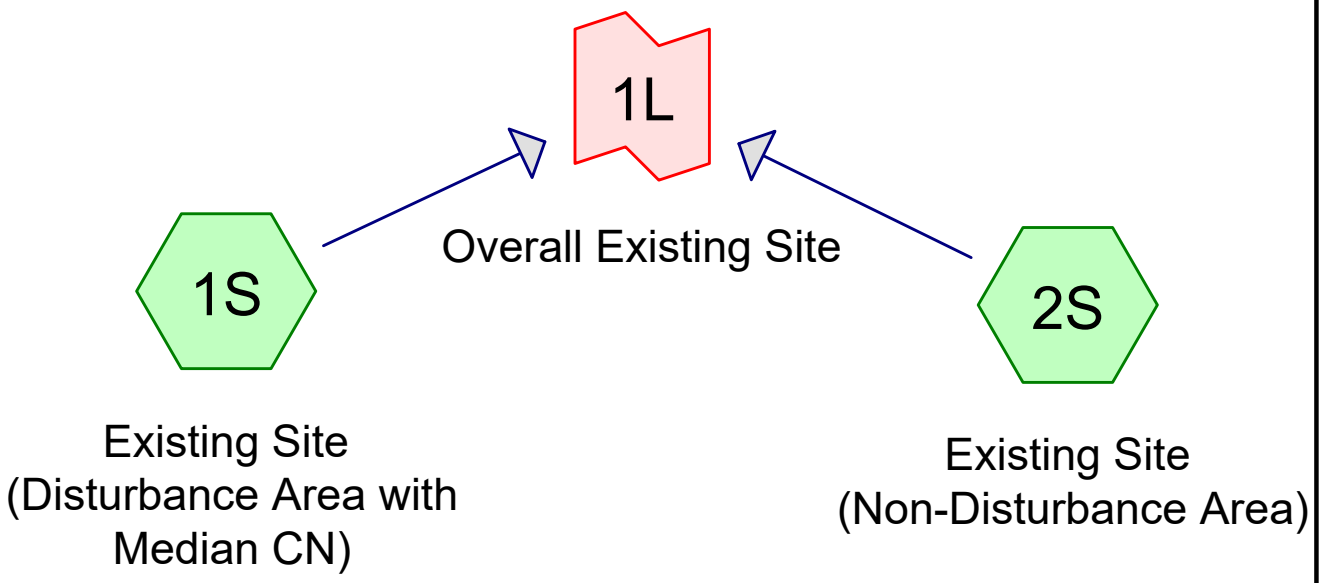
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	556	0	0
575.00	881	719	719
576.00	1,281	1,081	1,800
577.00	1,749	1,515	3,315
578.00	2,275	2,012	5,327

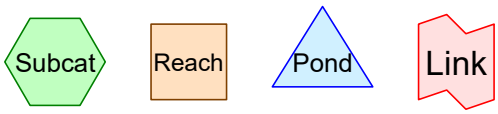
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.50	1,340	0	0
574.00	1,675	754	754
575.00	2,339	2,007	2,761
576.00	3,184	2,762	5,522
577.00	4,147	3,666	9,188
578.00	5,200	4,674	13,861

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

HydroCAD Analysis

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





Routing Diagram for 23-4099 Existing
Prepared by Carmina Wood Morris, PC, Printed 11/15/2024
HydroCAD® 10.20-2g s/n 05019 © 2022 HydroCAD Software Solutions LLC

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.180	84	50-75% Grass cover, Fair, HSG D (1S, 2S)
11.520	98	Impervious (1S, 2S)
3.640	78	Meadow, non-grazed, HSG D (1S)
17.340	**92**	**TOTAL AREA**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
5.820	HSG D	1S, 2S
11.520	Other	1S, 2S
17.340		**TOTAL AREA**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.180	0.000	2.180	50-75% Grass cover, Fair	1S, 2S
0.000	0.000	0.000	0.000	11.520	11.520	Impervious	1S, 2S
0.000	0.000	0.000	3.640	0.000	3.640	Meadow, non-grazed	1S
0.000	**0.000**	**0.000**	**5.820**	**11.520**	**17.340**	**TOTAL AREA**	

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=0.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=8.52 cfs 0.396 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=1.48"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=24.42 cfs 1.236 af

Link 1L: Overall Existing Site Inflow=32.88 cfs 1.632 af
Primary=32.88 cfs 1.632 af

Total Runoff Area = 17.340 ac Runoff Volume = 1.632 af Average Runoff Depth = 1.13"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

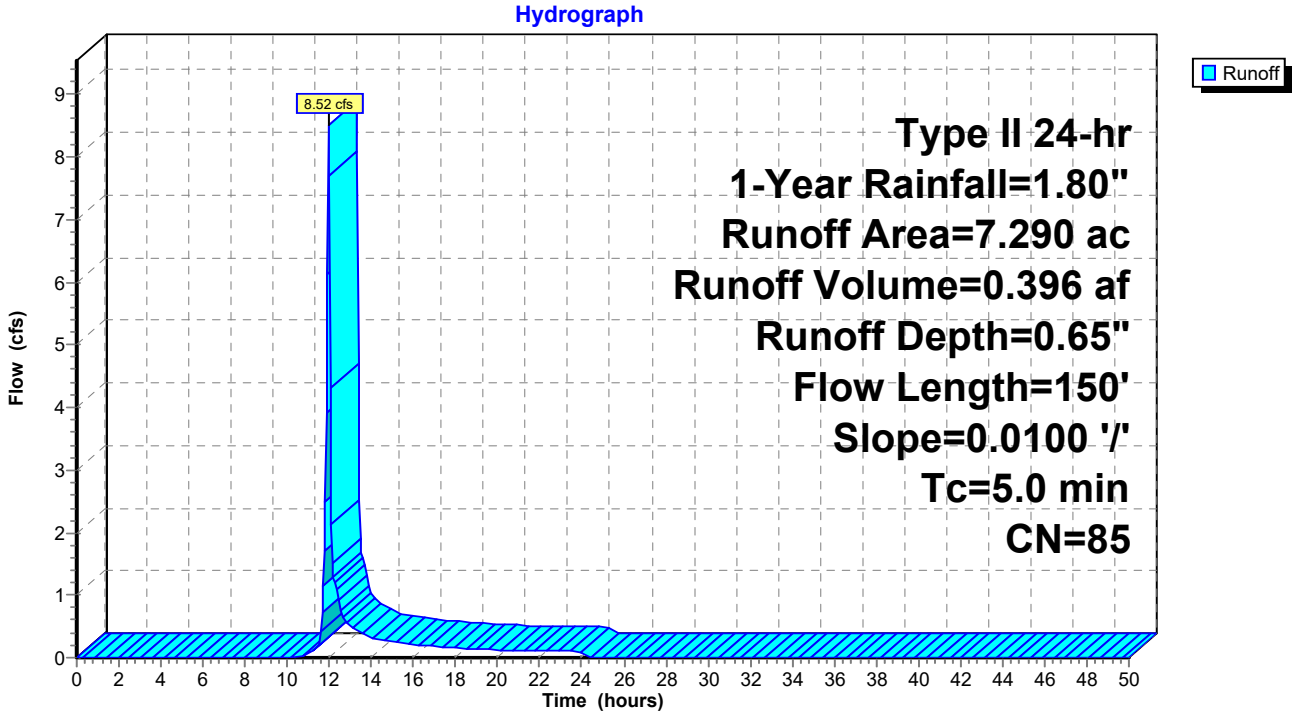
Runoff = 8.52 cfs @ 11.96 hrs, Volume= 0.396 af, Depth= 0.65"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

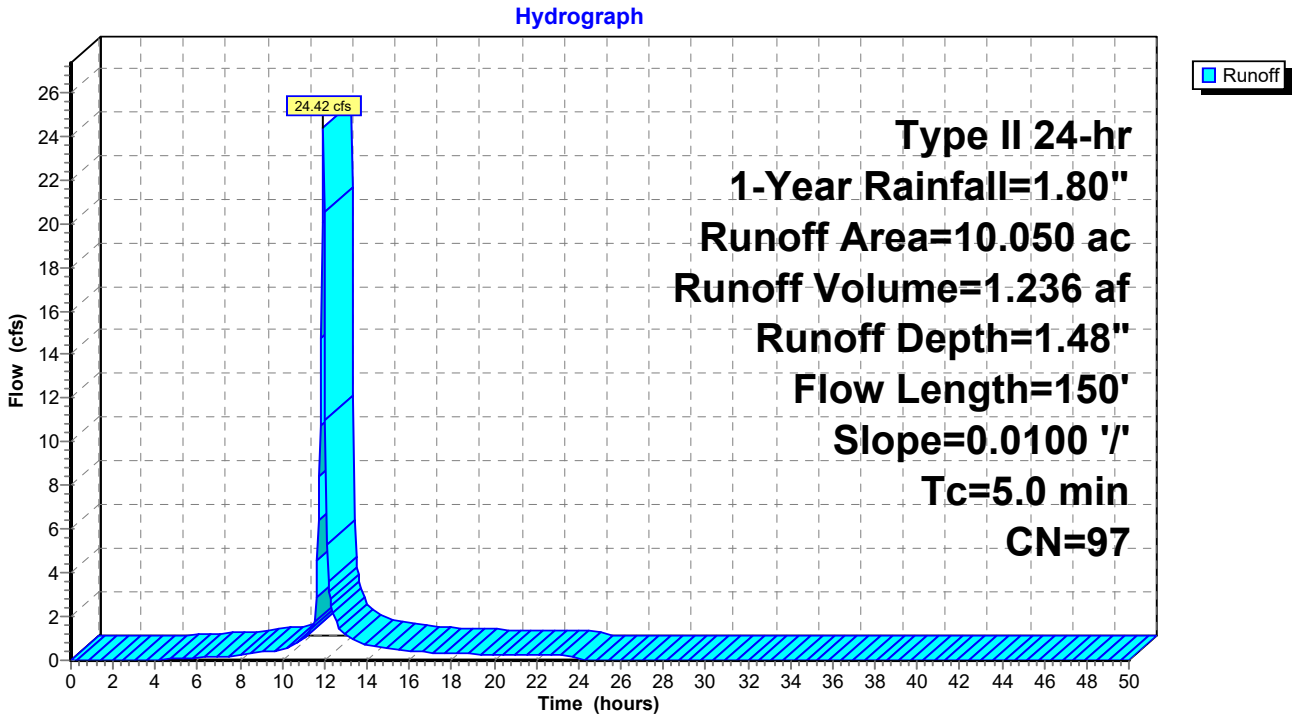
Runoff = 24.42 cfs @ 11.95 hrs, Volume= 1.236 af, Depth= 1.48"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



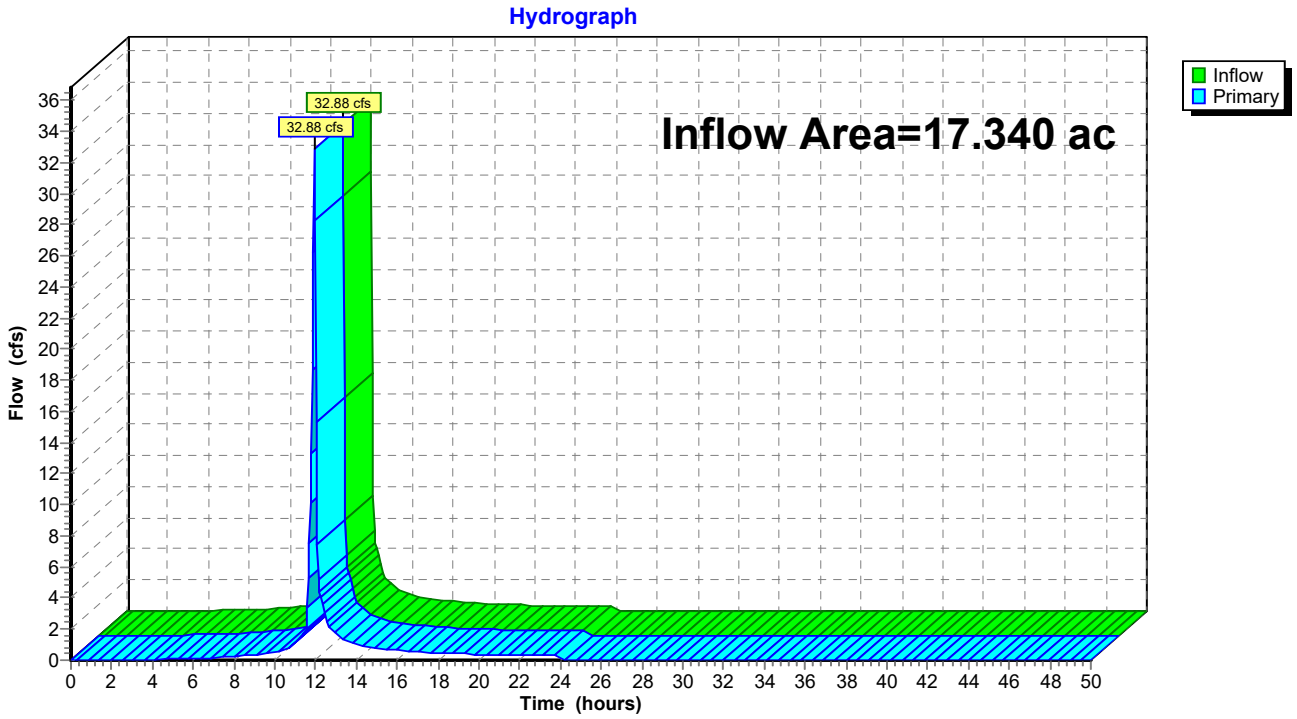
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 1.13" for 1-Year event
Inflow = 32.88 cfs @ 11.95 hrs, Volume= 1.632 af
Primary = 32.88 cfs @ 11.95 hrs, Volume= 1.632 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=1.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=21.51 cfs 1.001 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=2.73"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=43.40 cfs 2.284 af

Link 1L: Overall Existing Site Inflow=64.87 cfs 3.285 af
Primary=64.87 cfs 3.285 af

Total Runoff Area = 17.340 ac Runoff Volume = 3.285 af Average Runoff Depth = 2.27"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

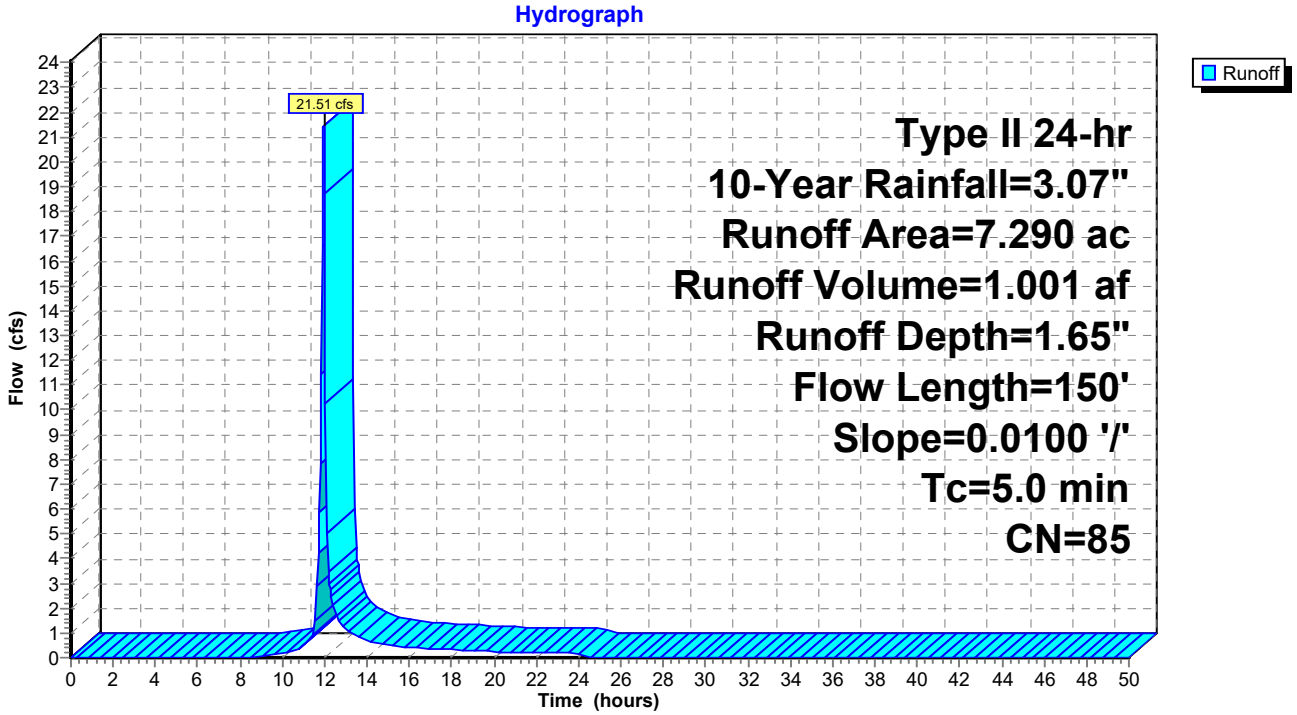
Runoff = 21.51 cfs @ 11.96 hrs, Volume= 1.001 af, Depth= 1.65"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

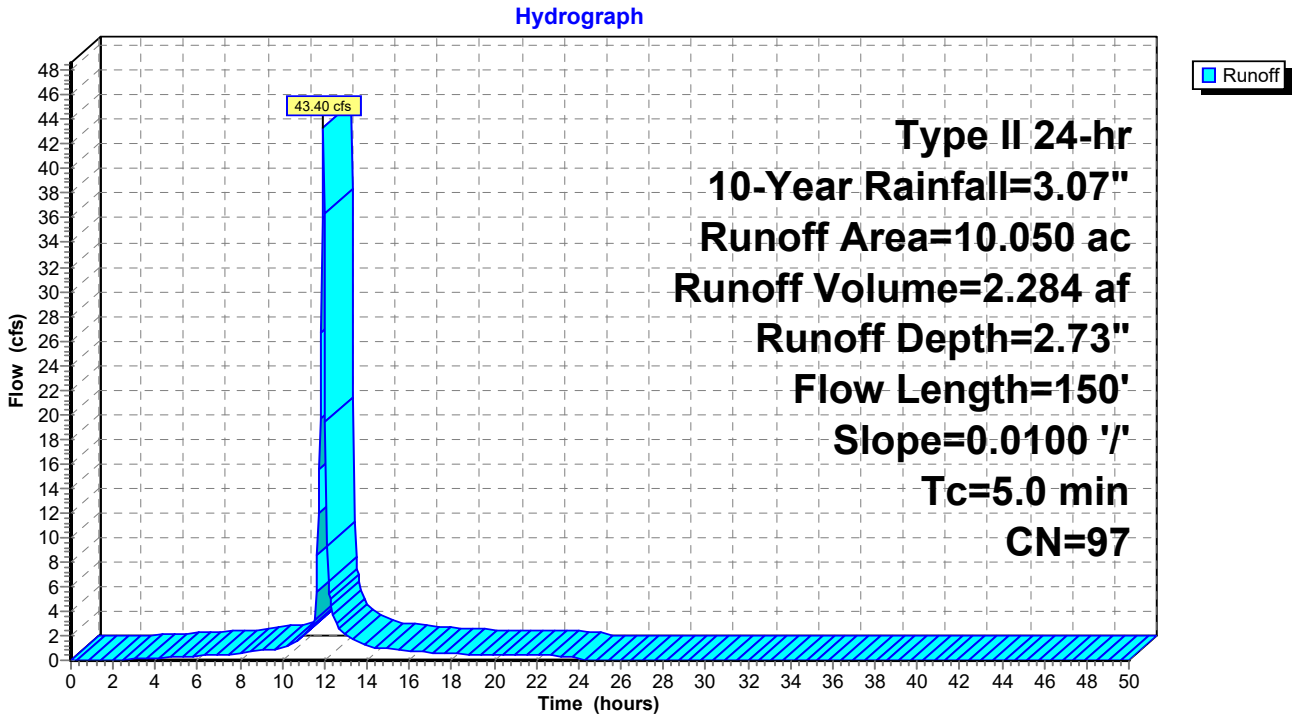
Runoff = 43.40 cfs @ 11.95 hrs, Volume= 2.284 af, Depth= 2.73"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



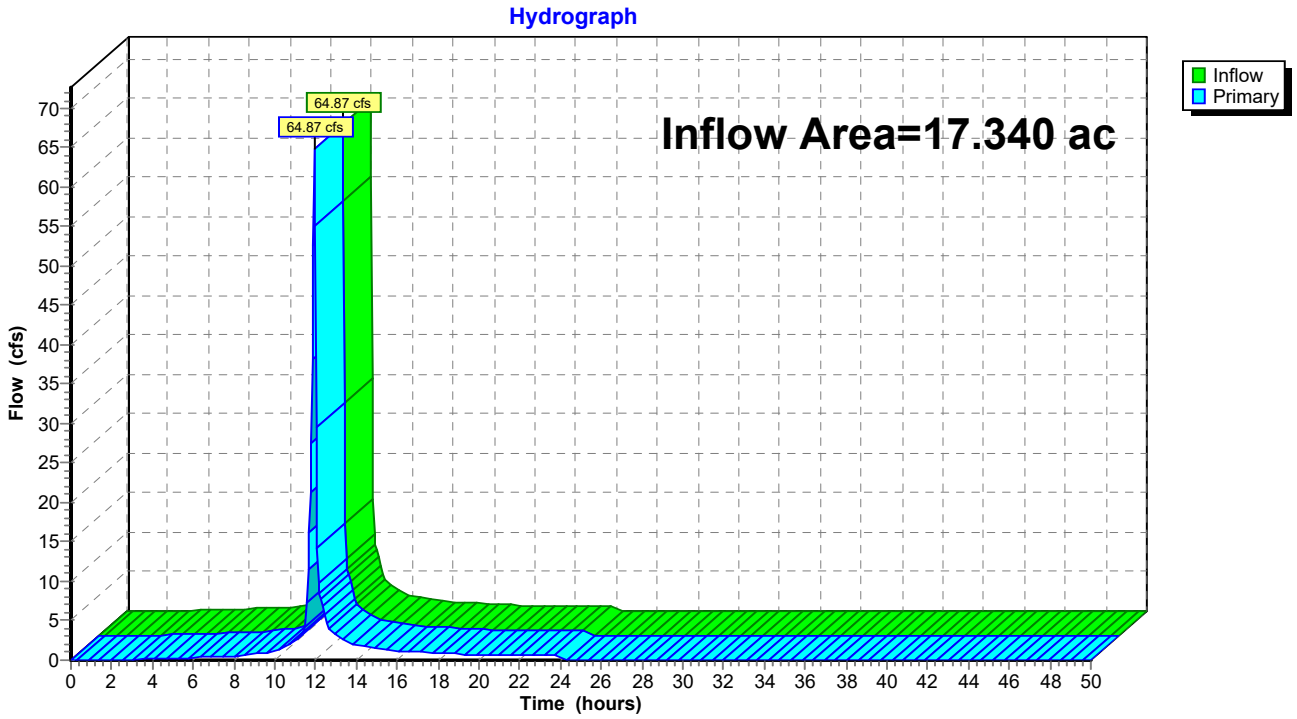
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 2.27" for 10-Year event
Inflow = 64.87 cfs @ 11.95 hrs, Volume= 3.285 af
Primary = 64.87 cfs @ 11.95 hrs, Volume= 3.285 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=2.22"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=28.70 cfs 1.347 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=3.38"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=53.16 cfs 2.833 af

Link 1L: Overall Existing Site Inflow=81.82 cfs 4.181 af
Primary=81.82 cfs 4.181 af

Total Runoff Area = 17.340 ac Runoff Volume = 4.181 af Average Runoff Depth = 2.89"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

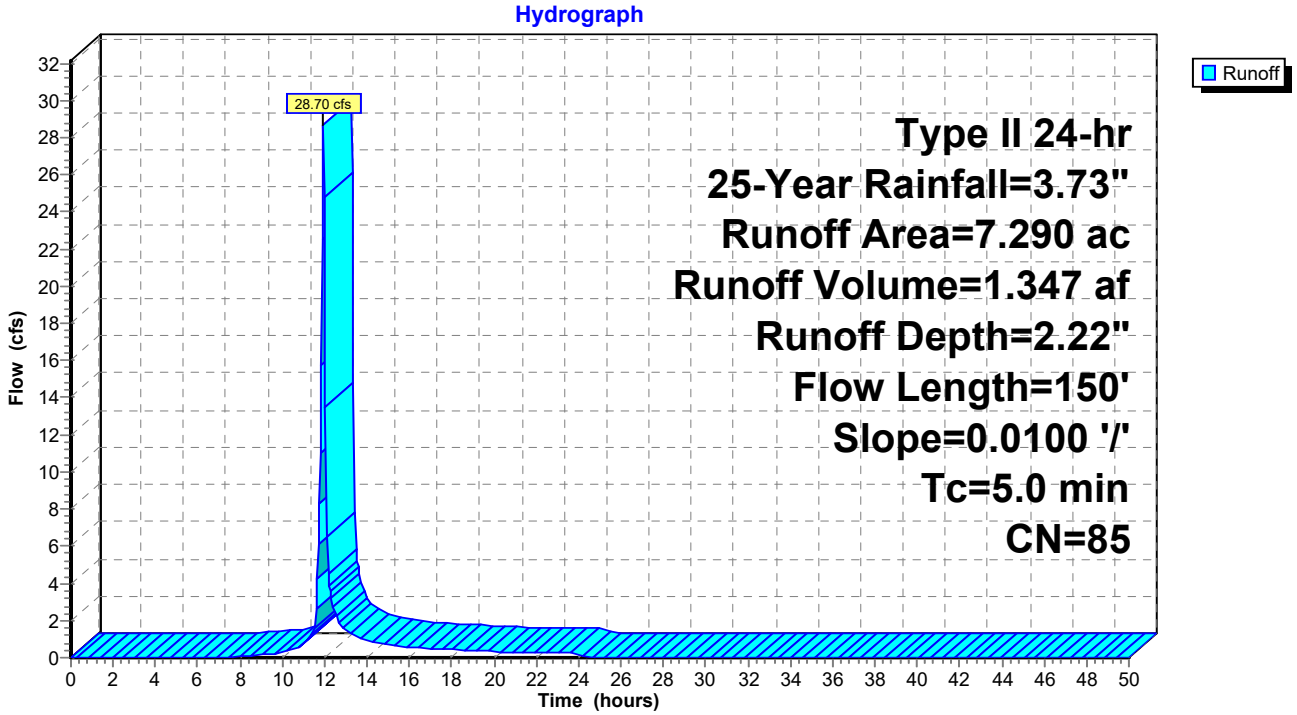
Runoff = 28.70 cfs @ 11.96 hrs, Volume= 1.347 af, Depth= 2.22"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

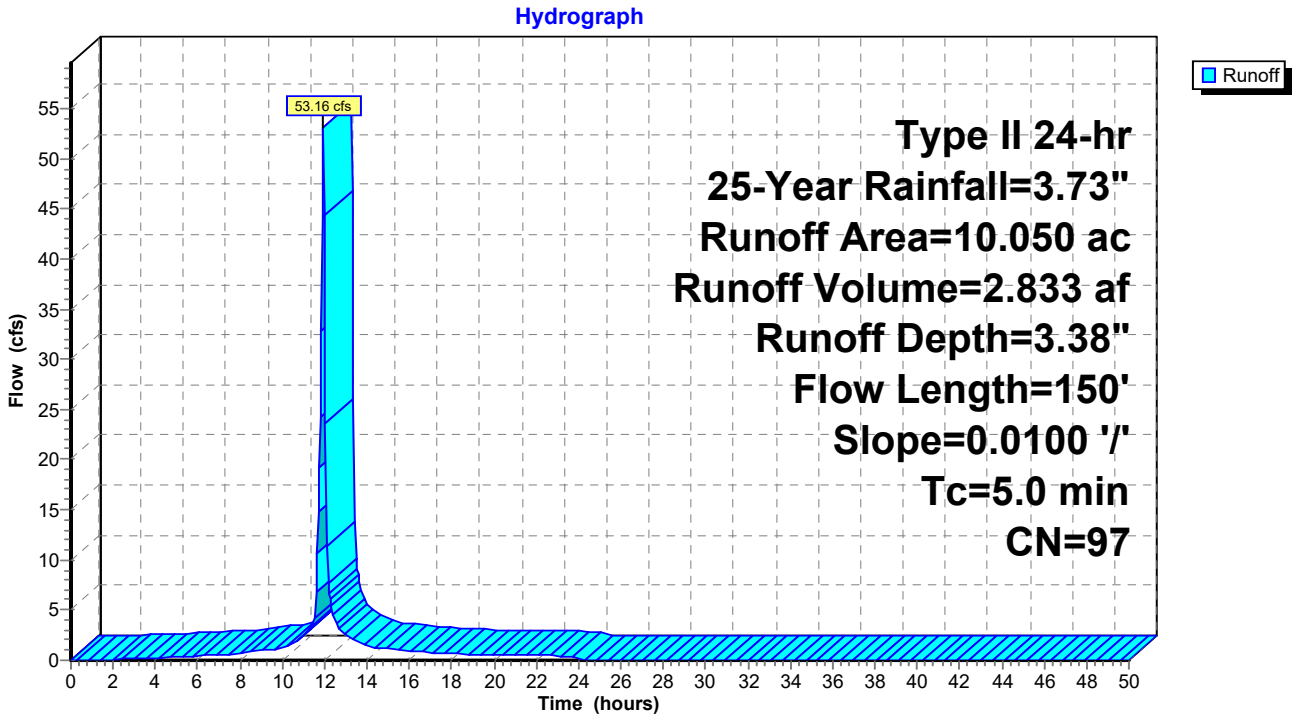
Runoff = 53.16 cfs @ 11.95 hrs, Volume= 2.833 af, Depth= 3.38"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



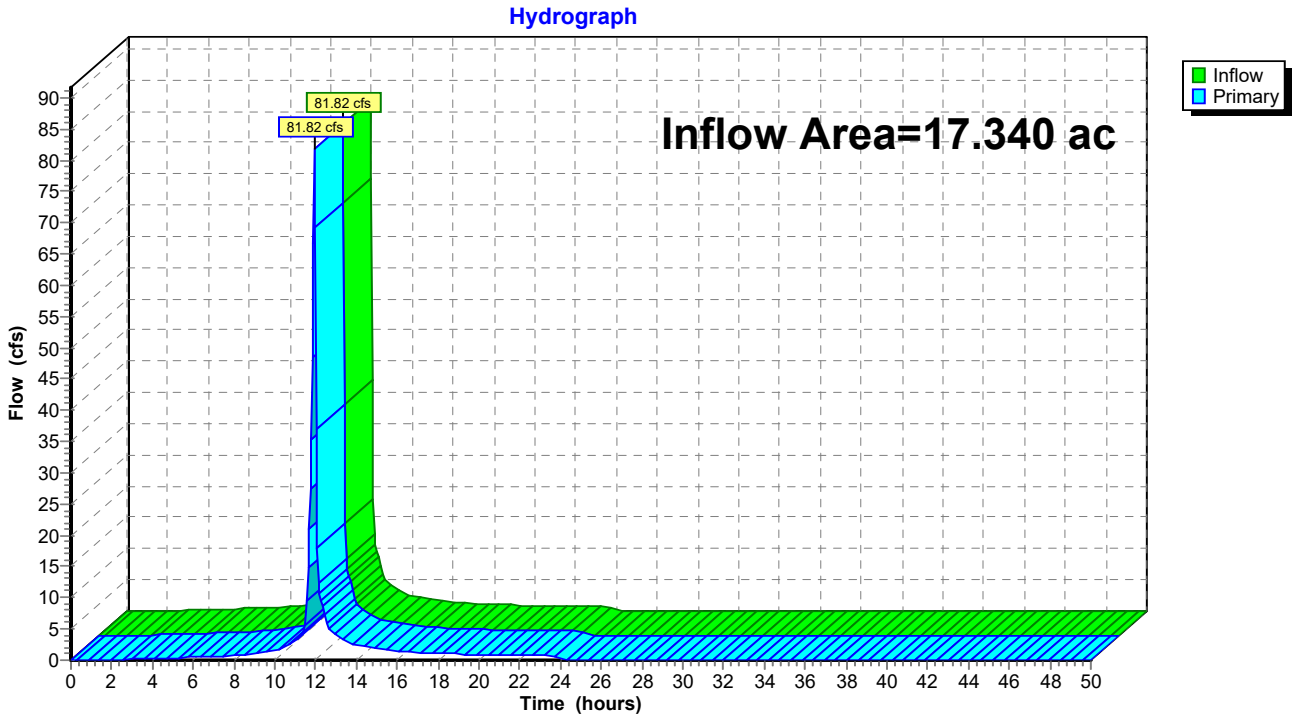
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 2.89" for 25-Year event
Inflow = 81.82 cfs @ 11.95 hrs, Volume= 4.181 af
Primary = 81.82 cfs @ 11.95 hrs, Volume= 4.181 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=3.40"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=43.11 cfs 2.063 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=4.68"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=72.28 cfs 3.917 af

Link 1L: Overall Existing Site Inflow=115.36 cfs 5.980 af
Primary=115.36 cfs 5.980 af

Total Runoff Area = 17.340 ac Runoff Volume = 5.980 af Average Runoff Depth = 4.14"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

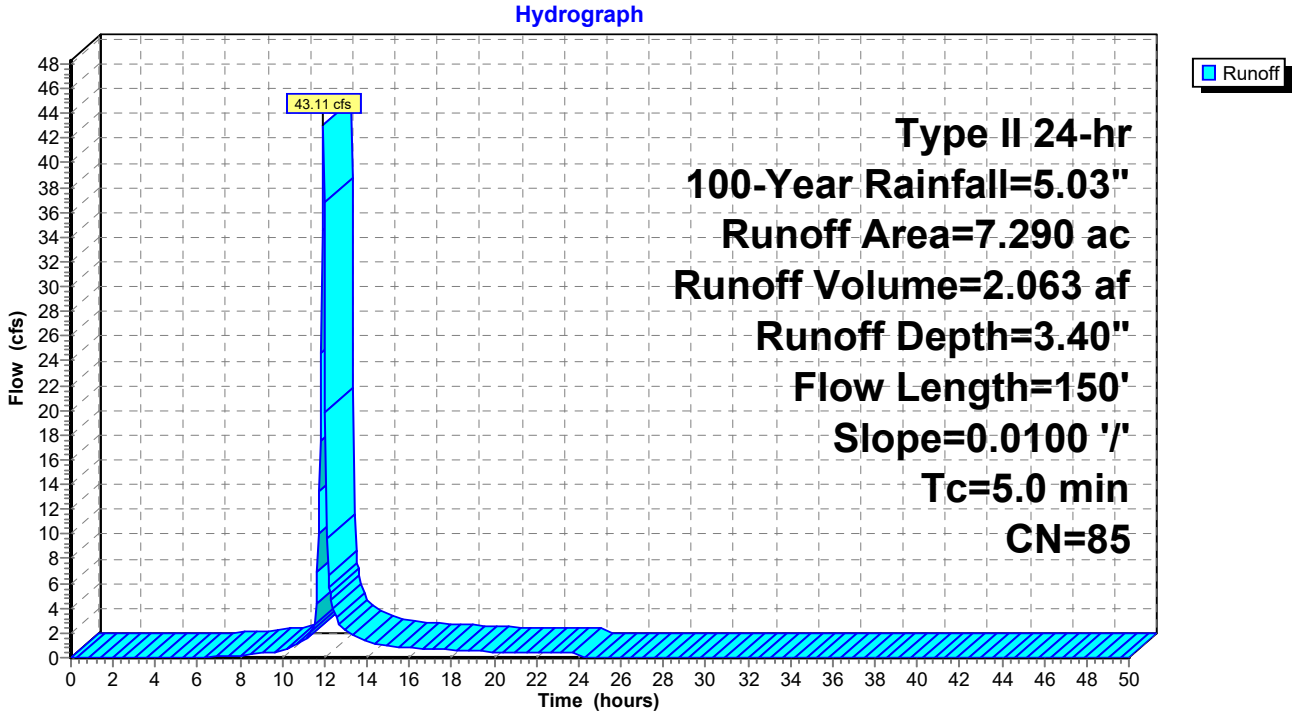
Runoff = 43.11 cfs @ 11.95 hrs, Volume= 2.063 af, Depth= 3.40"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

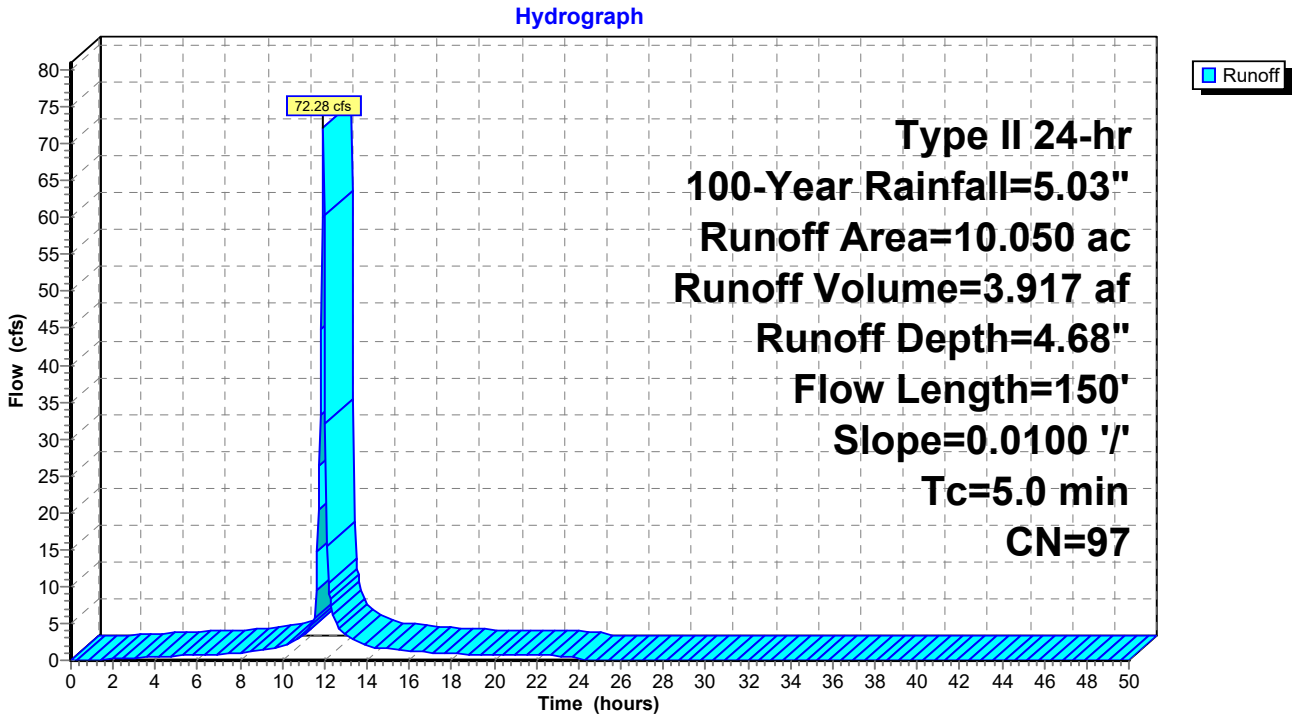
Runoff = 72.28 cfs @ 11.95 hrs, Volume= 3.917 af, Depth= 4.68"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



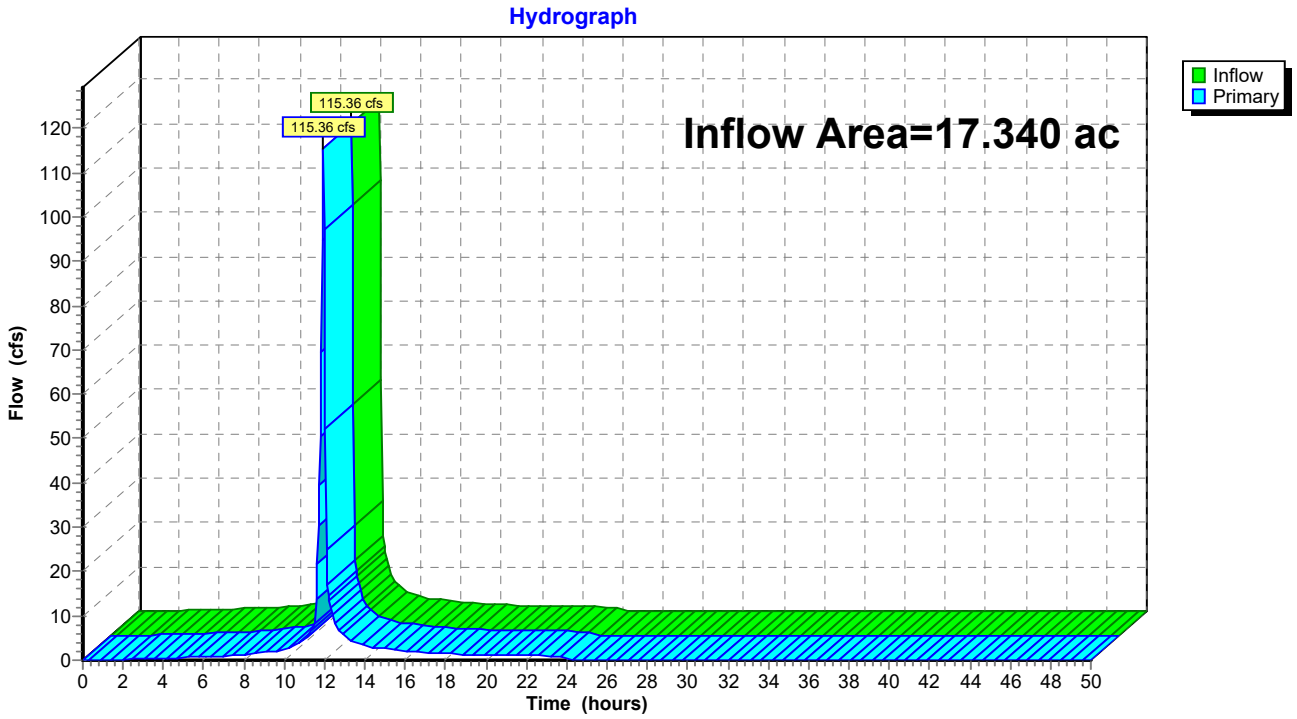
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

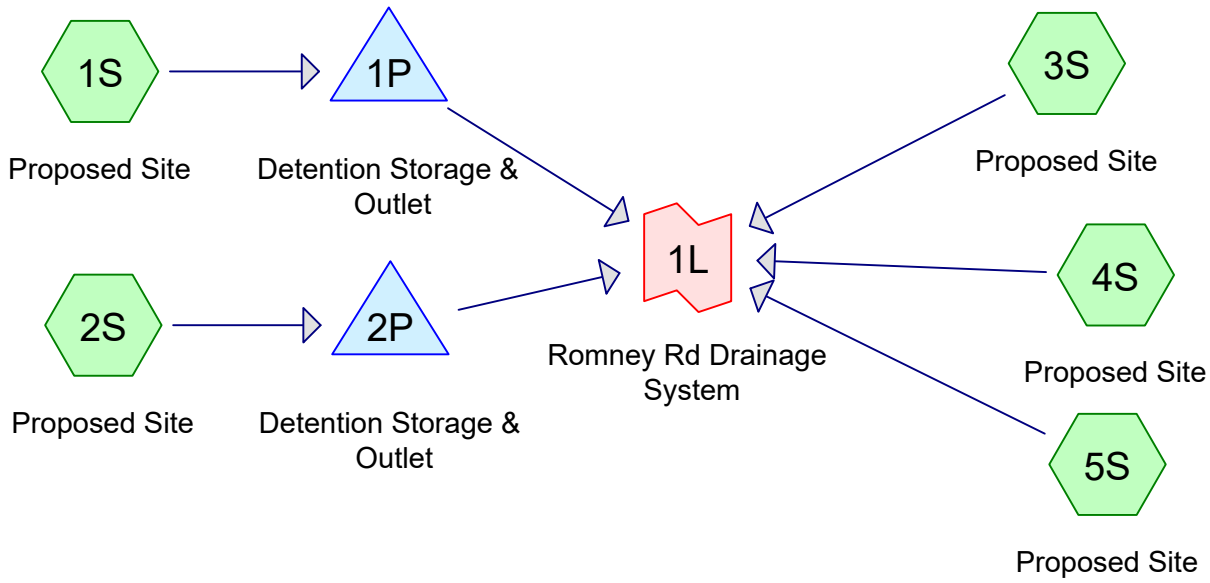
Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 4.14" for 100-Year event
Inflow = 115.36 cfs @ 11.95 hrs, Volume= 5.980 af
Primary = 115.36 cfs @ 11.95 hrs, Volume= 5.980 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Subcat Reach Pond Link

Routing Diagram for 23-4099 Proposed
Prepared by Carmina Wood Morris, PC, Printed 11/15/2024
HydroCAD® 10.20-2g s/n 05019 © 2022 HydroCAD Software Solutions LLC

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.580	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 5S)
14.750	98	Impervious, HSG D (1S, 2S, 3S, 4S, 5S)
17.330	**95**	**TOTAL AREA**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
17.330	HSG D	1S, 2S, 3S, 4S, 5S
0.000	Other	
17.330		**TOTAL AREA**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.580	0.000	2.580	>75% Grass cover, Good	1S, 2S, 3S, 4S, 5S
0.000	0.000	0.000	14.750	0.000	14.750	Impervious	1S, 2S, 3S, 4S, 5S
0.000	**0.000**	**0.000**	**17.330**	**0.000**	**17.330**	**TOTAL AREA**	

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	572.25	572.00	25.0	0.0100	0.013	0.0	6.0	0.0
2	2P	572.25	572.00	25.0	0.0100	0.013	0.0	8.0	0.0

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=1.21"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=2.68 cfs 0.125 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=7.18 cfs 0.346 af

Subcatchment3S: Proposed Site Runoff Area=3.270 ac 82.87% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=7.44 cfs 0.352 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=14.21 cfs 0.672 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=8.51 cfs 0.411 af

Pond 1P: Detention Storage & Outlet Peak Elev=572.99' Storage=2,104 cf Inflow=2.68 cfs 0.125 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=0.59 cfs 0.125 af

Pond 2P: Detention Storage & Outlet Peak Elev=573.06' Storage=6,904 cf Inflow=7.18 cfs 0.346 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.13 cfs 0.344 af

Link 1L: Romney Rd Drainage System Inflow=31.64 cfs 1.904 af
Primary=31.64 cfs 1.904 af

Total Runoff Area = 17.330 ac Runoff Volume = 1.907 af Average Runoff Depth = 1.32"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

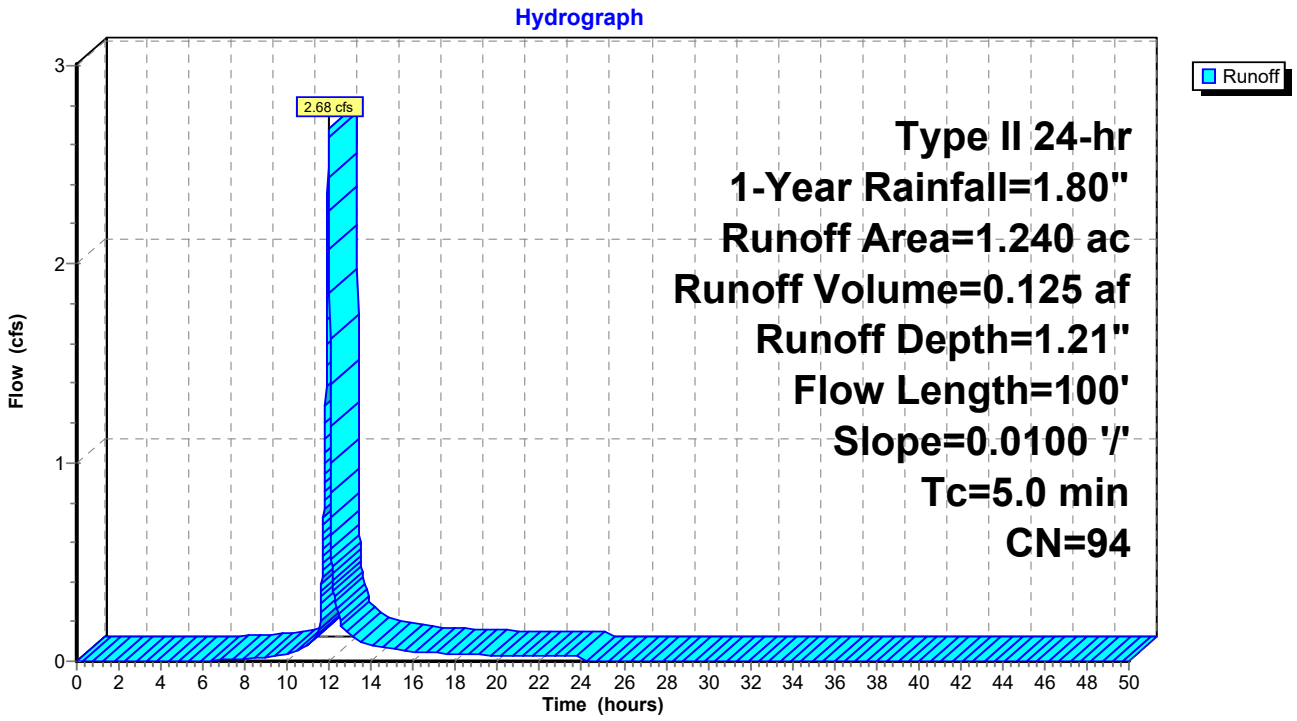
Runoff = 2.68 cfs @ 11.96 hrs, Volume= 0.125 af, Depth= 1.21"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

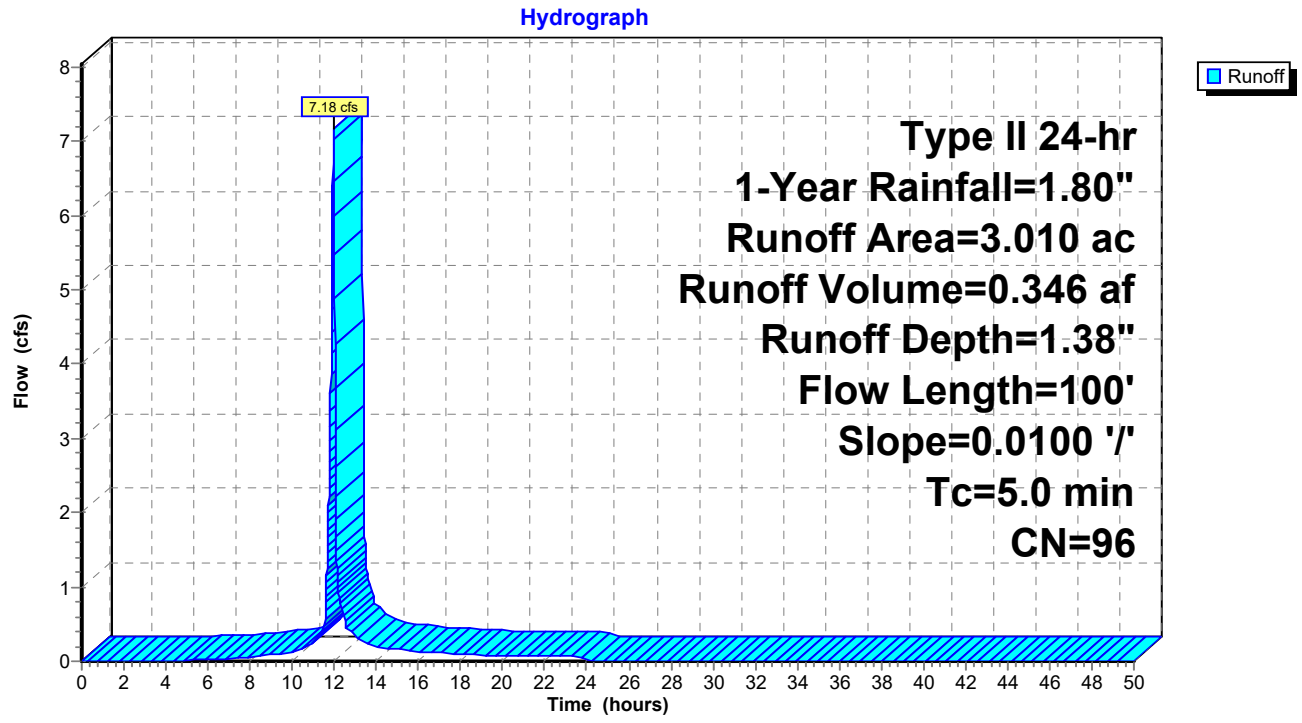
Runoff = 7.18 cfs @ 11.96 hrs, Volume= 0.346 af, Depth= 1.38"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

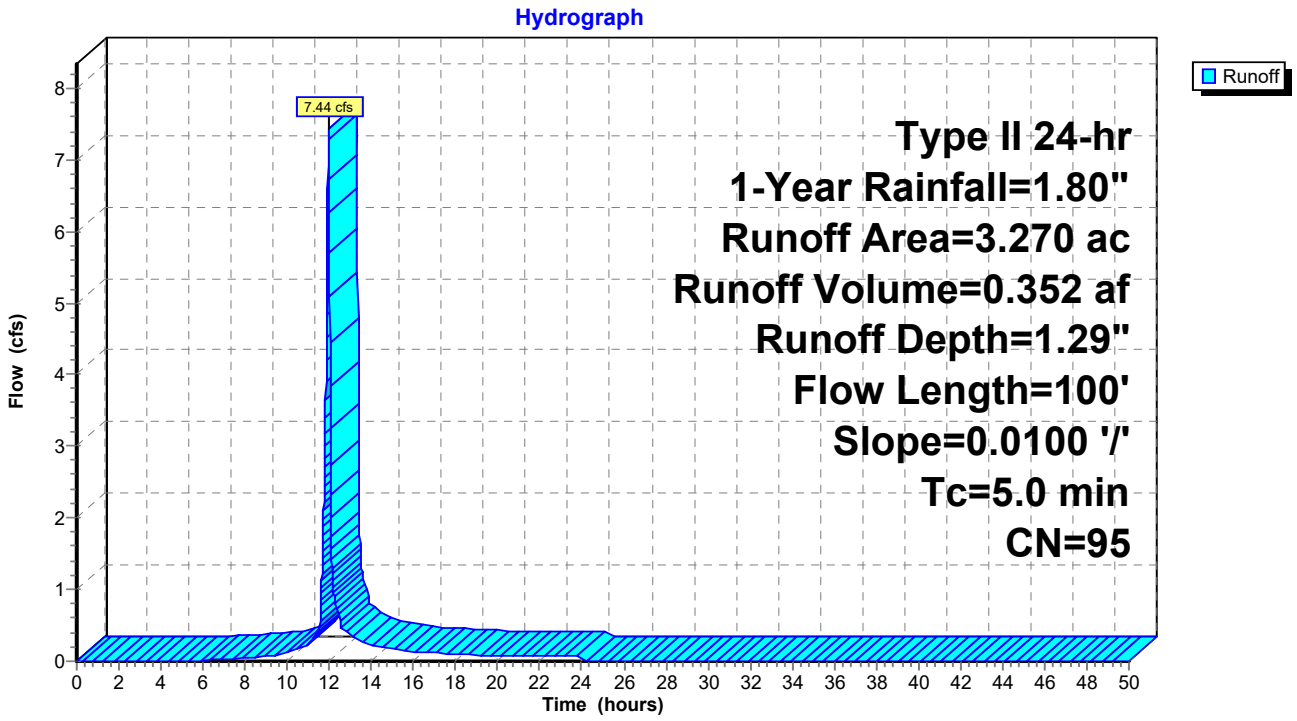
Runoff = 7.44 cfs @ 11.96 hrs, Volume= 0.352 af, Depth= 1.29"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.560	80	>75% Grass cover, Good, HSG D
*	2.710	98	Impervious, HSG D
	3.270	95	Weighted Average
	0.560		17.13% Pervious Area
	2.710		82.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

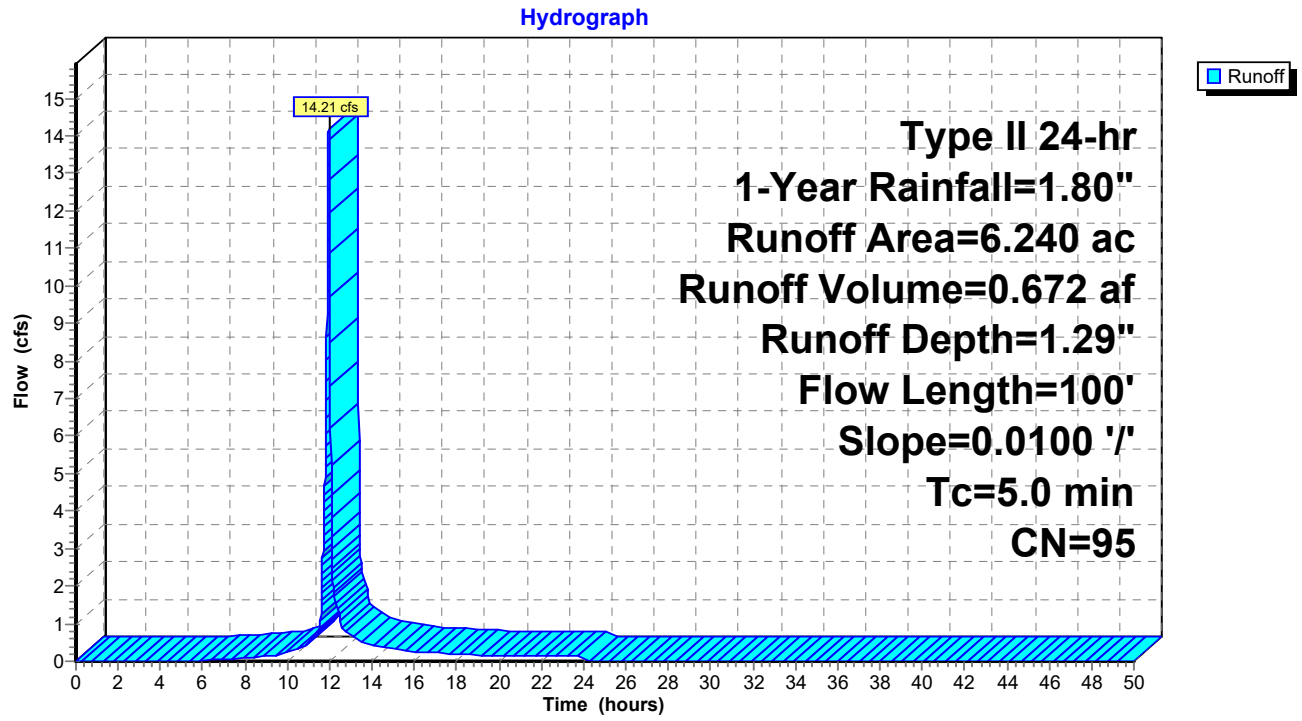
Runoff = 14.21 cfs @ 11.96 hrs, Volume= 0.672 af, Depth= 1.29"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

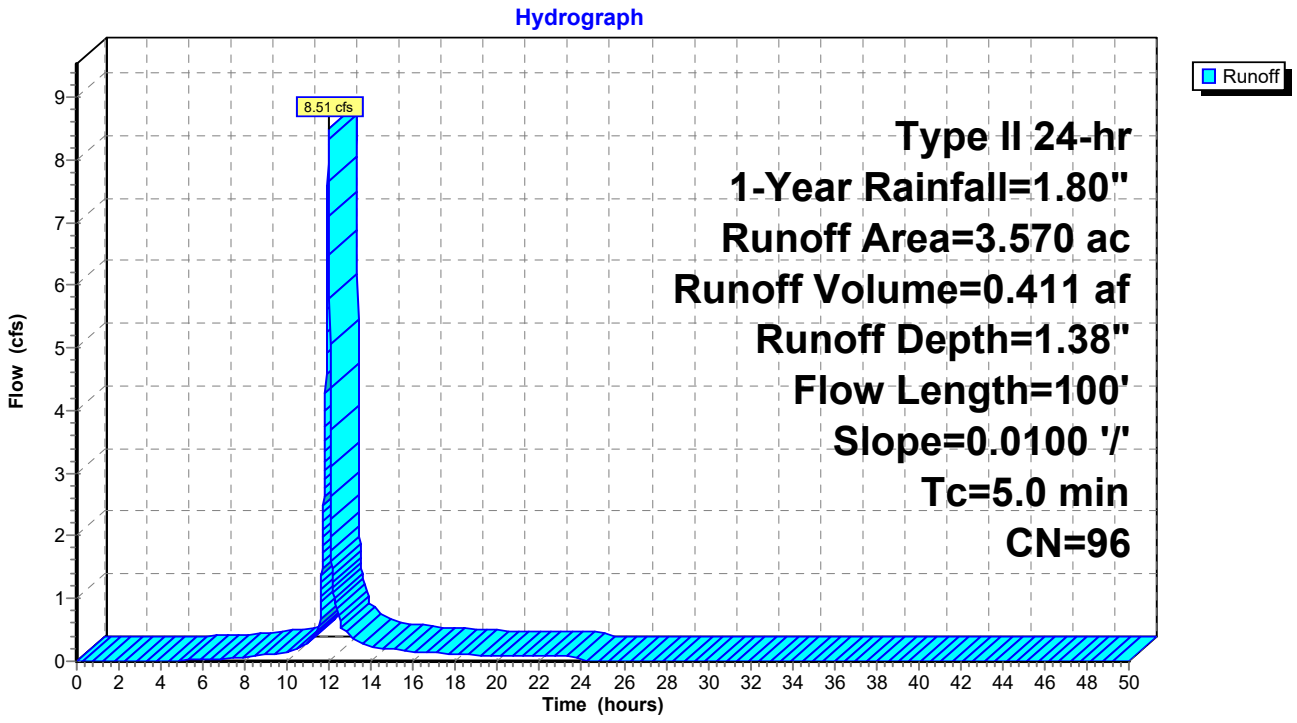
Runoff = 8.51 cfs @ 11.96 hrs, Volume= 0.411 af, Depth= 1.38"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 1.21" for 1-Year event
Inflow = 2.68 cfs @ 11.96 hrs, Volume= 0.125 af
Outflow = 0.59 cfs @ 12.10 hrs, Volume= 0.125 af, Atten= 78%, Lag= 8.2 min
Primary = 0.59 cfs @ 12.10 hrs, Volume= 0.125 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 572.99' @ 12.10 hrs Surf.Area= 5,289 sf Storage= 2,104 cf

Plug-Flow detention time= 76.0 min calculated for 0.125 af (100% of inflow)
Center-of-Mass det. time= 73.7 min (877.4 - 803.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.59 cfs @ 12.10 hrs HW=572.99' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 0.59 cfs @ 3.02 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

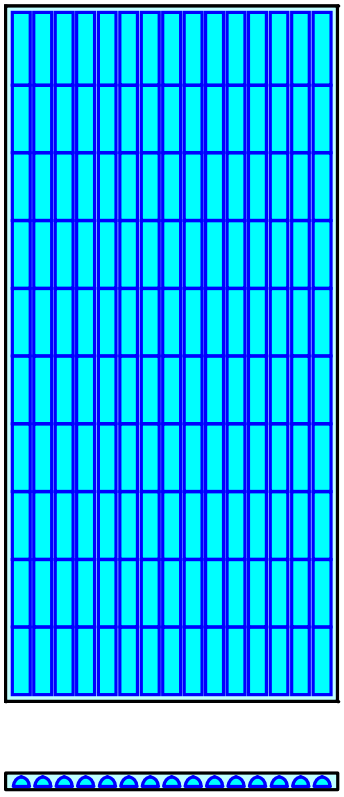
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

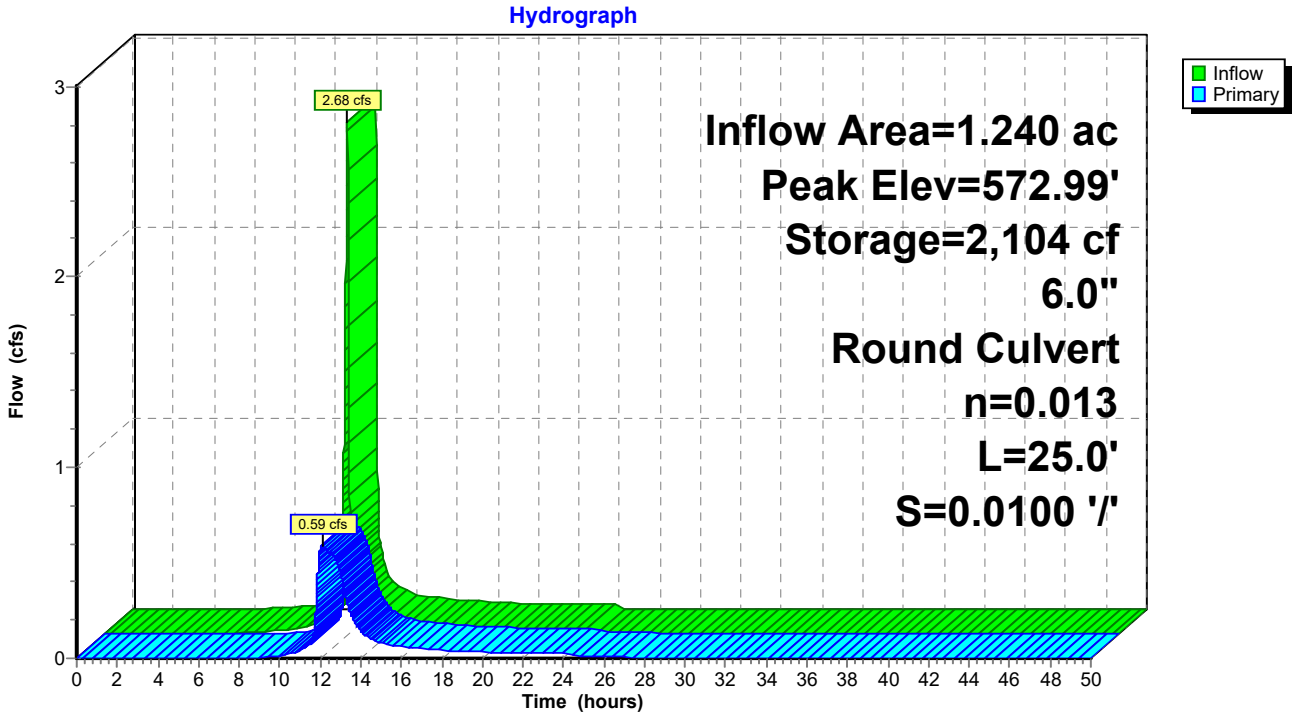
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 1.38" for 1-Year event
Inflow = 7.18 cfs @ 11.96 hrs, Volume= 0.346 af
Outflow = 1.13 cfs @ 12.14 hrs, Volume= 0.344 af, Atten= 84%, Lag= 10.6 min
Primary = 1.13 cfs @ 12.14 hrs, Volume= 0.344 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.06' @ 12.14 hrs Surf.Area= 15,085 sf Storage= 6,904 cf

Plug-Flow detention time= 130.1 min calculated for 0.344 af (99% of inflow)
Center-of-Mass det. time= 125.3 min (913.3 - 788.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.13 cfs @ 12.14 hrs HW=573.06' TW=0.00' (Dynamic Tailwater)
↑**1=Outlet Pipe** (Barrel Controls 1.13 cfs @ 3.36 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

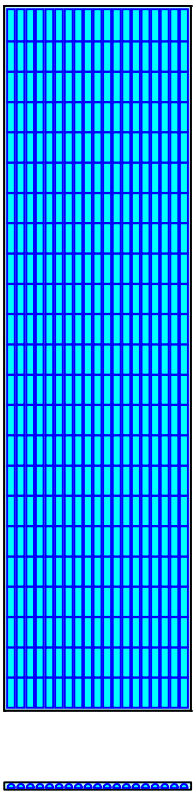
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

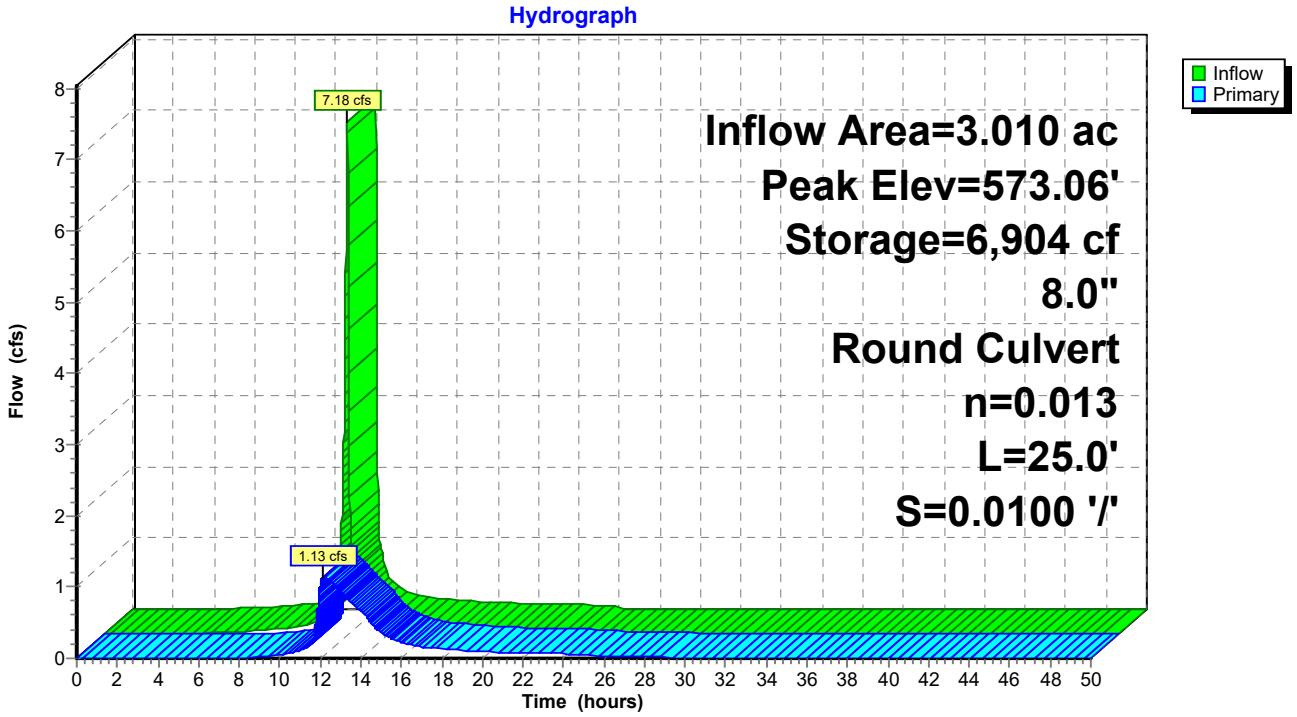
Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet



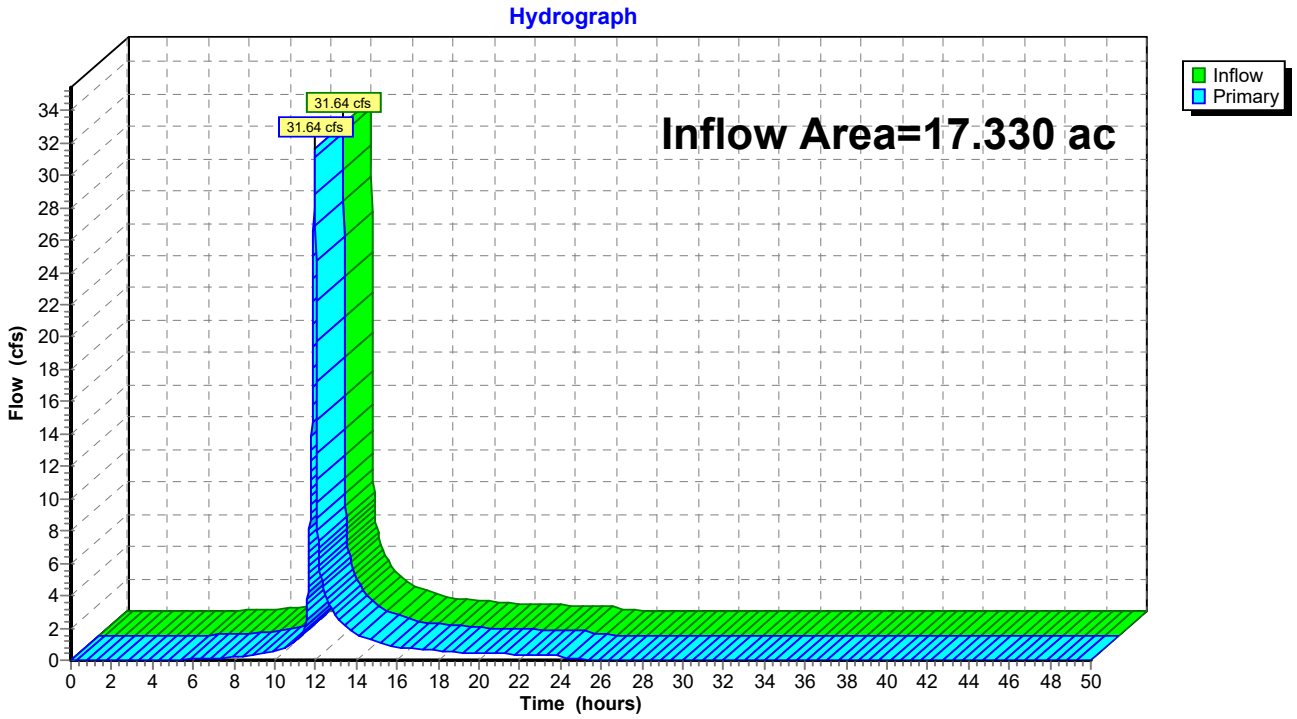
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 1.32" for 1-Year event
Inflow = 31.64 cfs @ 11.96 hrs, Volume= 1.904 af
Primary = 31.64 cfs @ 11.96 hrs, Volume= 1.904 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=2.42"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=5.13 cfs 0.250 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=13.04 cfs 0.657 af

Subcatchment3S: Proposed Site Runoff Area=3.270 ac 82.87% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=13.86 cfs 0.686 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=26.46 cfs 1.309 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=15.47 cfs 0.780 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.52' Storage=4,303 cf Inflow=5.13 cfs 0.250 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=0.85 cfs 0.249 af

Pond 2P: Detention Storage & Outlet Peak Elev=573.57' Storage=12,975 cf Inflow=13.04 cfs 0.657 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.58 cfs 0.655 af

Link 1L: Romney Rd Drainage System Inflow=57.81 cfs 3.679 af
Primary=57.81 cfs 3.679 af

Total Runoff Area = 17.330 ac Runoff Volume = 3.682 af Average Runoff Depth = 2.55"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

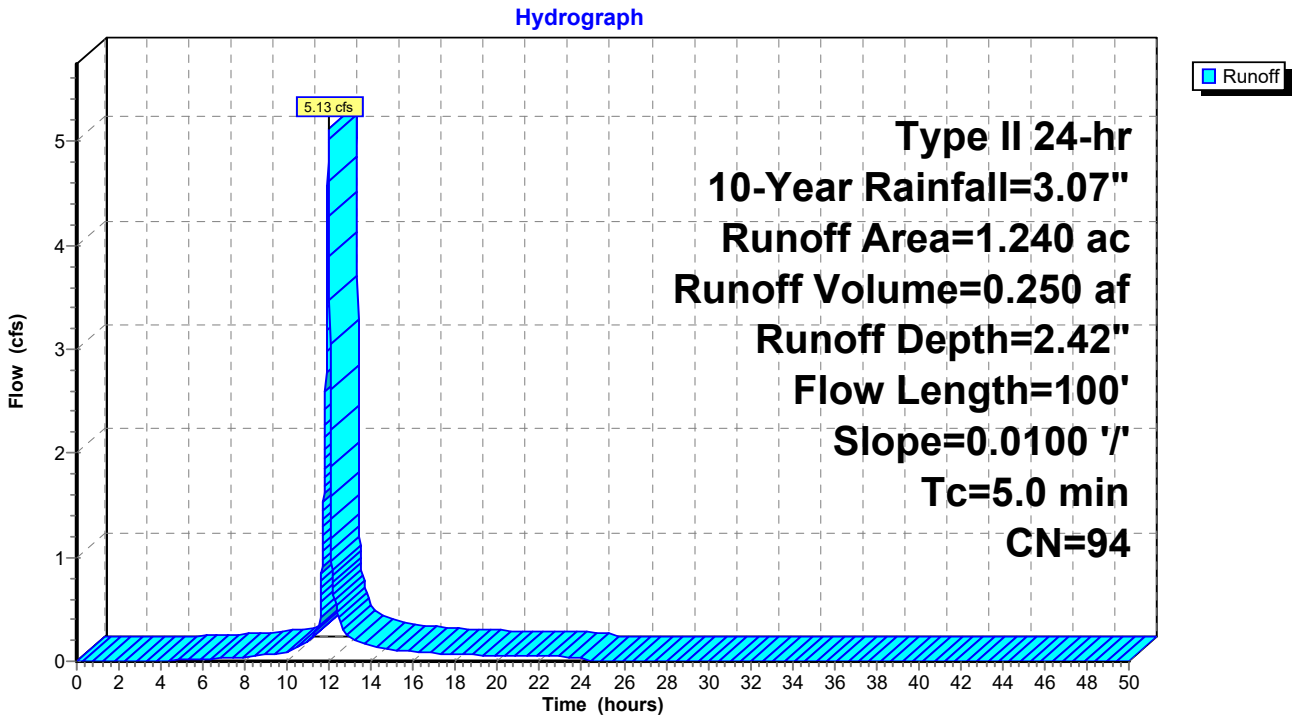
Runoff = 5.13 cfs @ 11.96 hrs, Volume= 0.250 af, Depth= 2.42"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

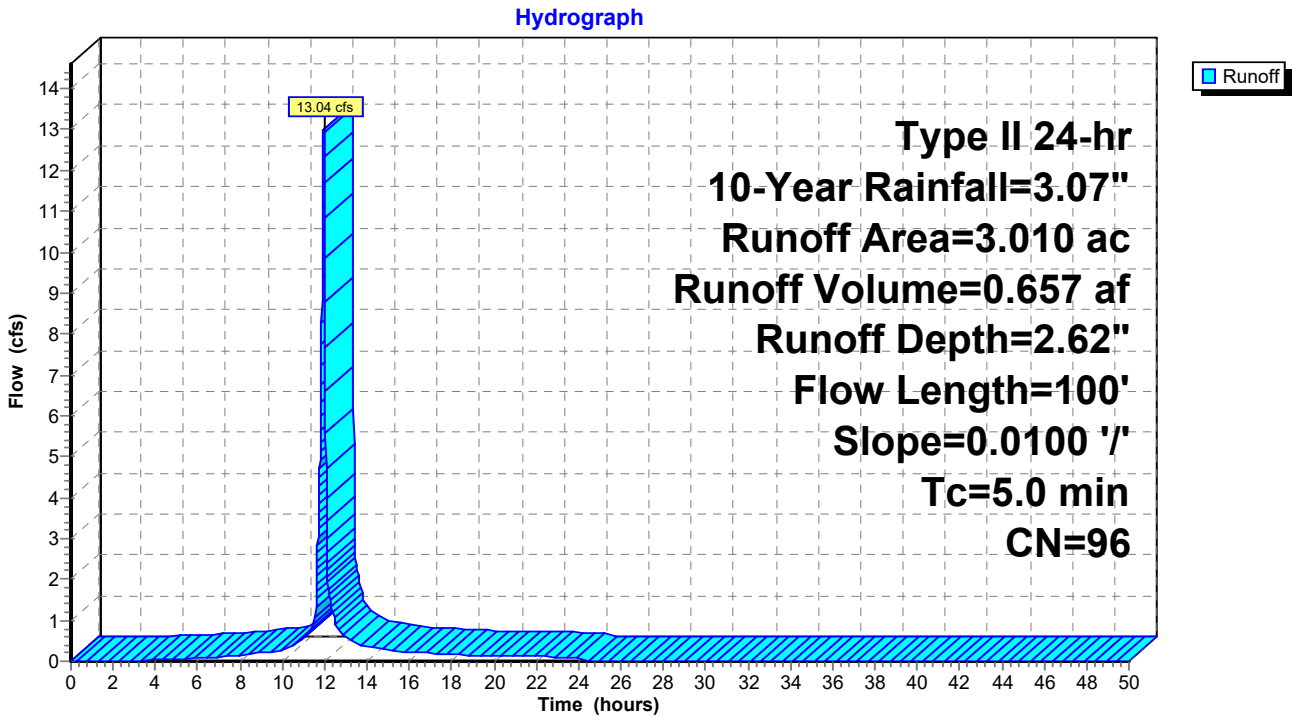
Runoff = 13.04 cfs @ 11.96 hrs, Volume= 0.657 af, Depth= 2.62"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

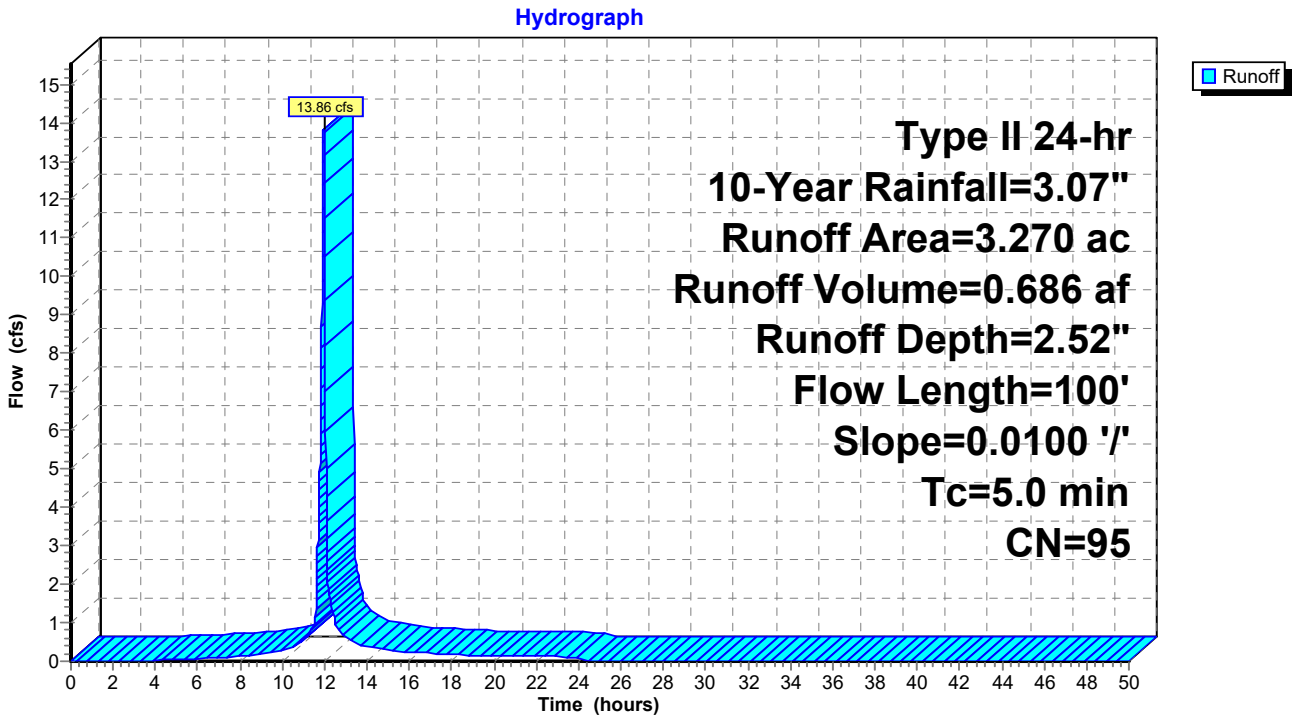
Runoff = 13.86 cfs @ 11.96 hrs, Volume= 0.686 af, Depth= 2.52"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.560	80	>75% Grass cover, Good, HSG D
*	2.710	98	Impervious, HSG D
	3.270	95	Weighted Average
	0.560		17.13% Pervious Area
	2.710		82.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

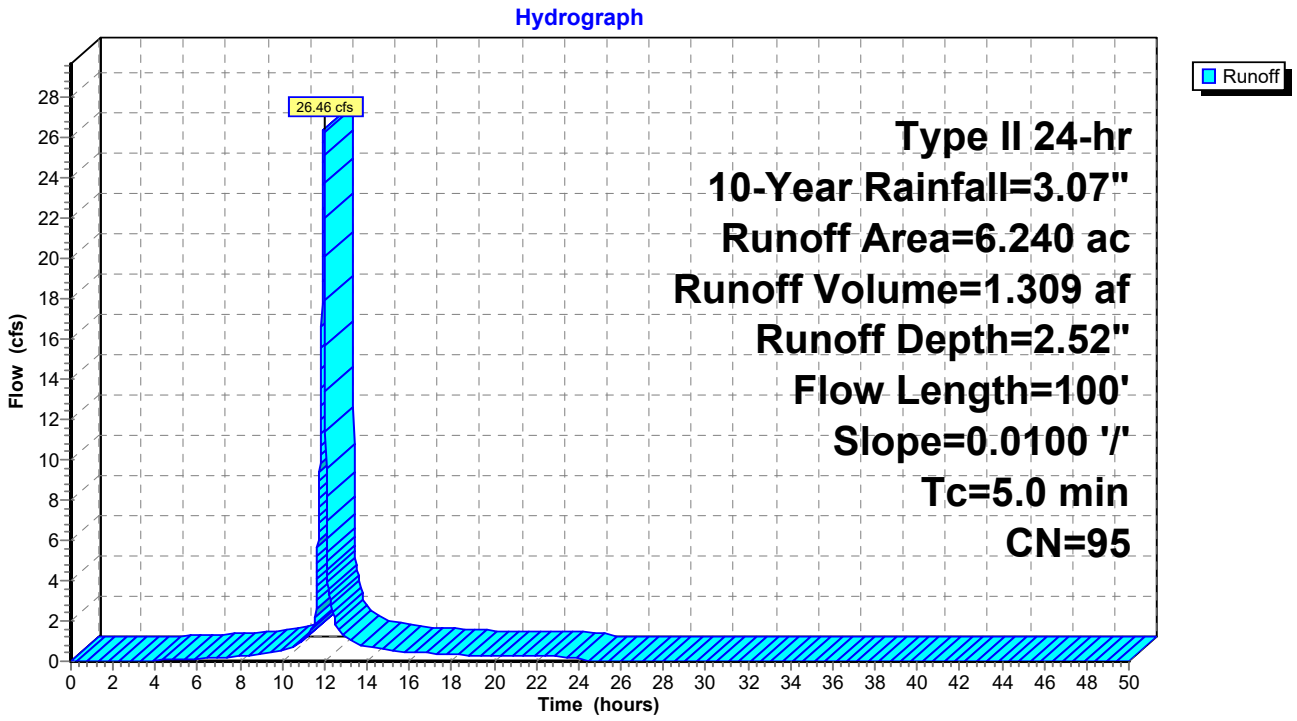
Runoff = 26.46 cfs @ 11.96 hrs, Volume= 1.309 af, Depth= 2.52"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

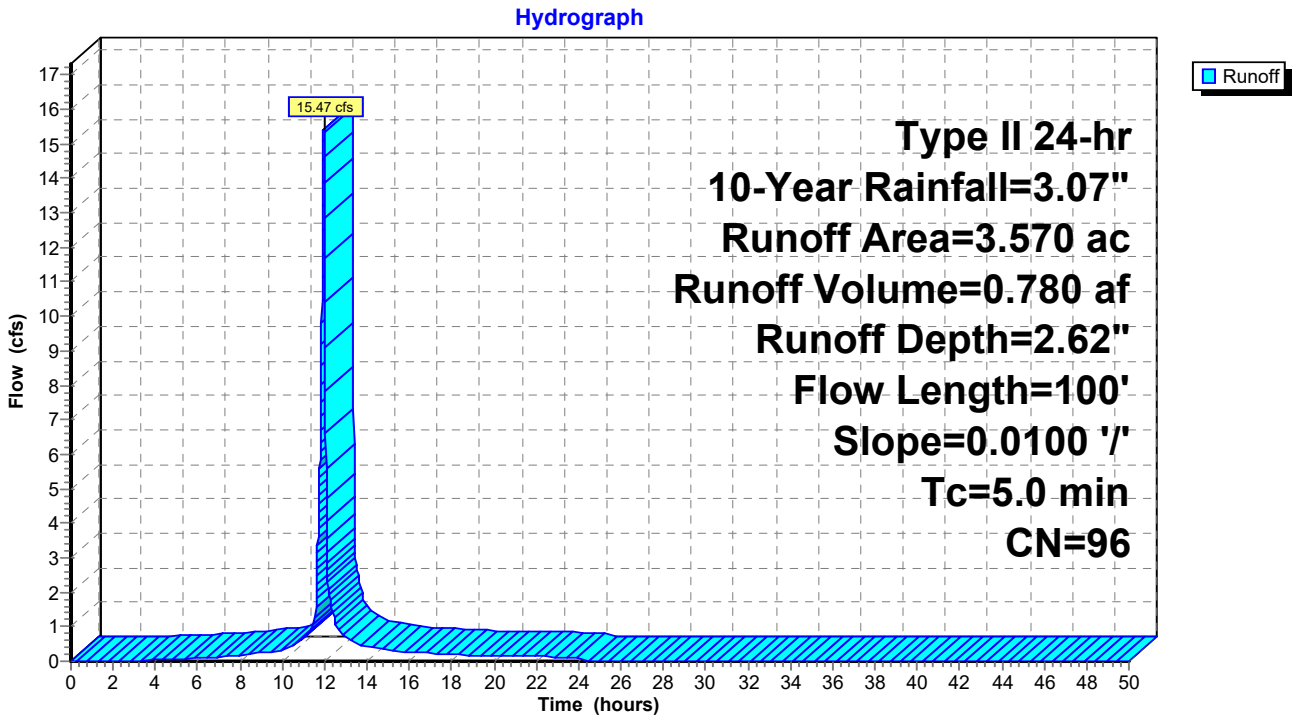
Runoff = 15.47 cfs @ 11.96 hrs, Volume= 0.780 af, Depth= 2.62"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 2.42" for 10-Year event
Inflow = 5.13 cfs @ 11.96 hrs, Volume= 0.250 af
Outflow = 0.85 cfs @ 12.13 hrs, Volume= 0.249 af, Atten= 83%, Lag= 10.1 min
Primary = 0.85 cfs @ 12.13 hrs, Volume= 0.249 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.52' @ 12.13 hrs Surf.Area= 5,289 sf Storage= 4,303 cf

Plug-Flow detention time= 73.5 min calculated for 0.249 af (100% of inflow)
Center-of-Mass det. time= 72.6 min (856.9 - 784.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.85 cfs @ 12.13 hrs HW=573.52' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 0.85 cfs @ 4.34 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

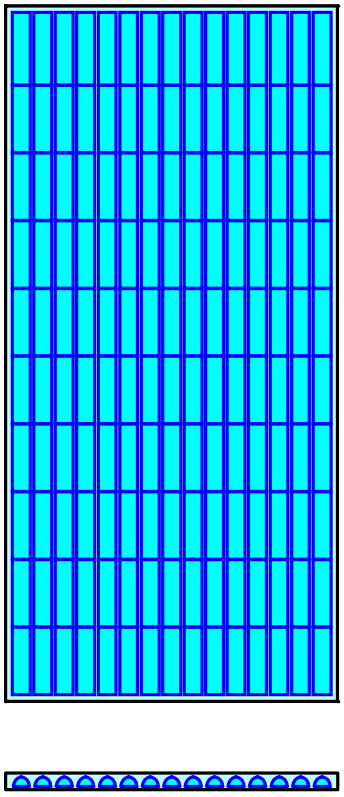
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

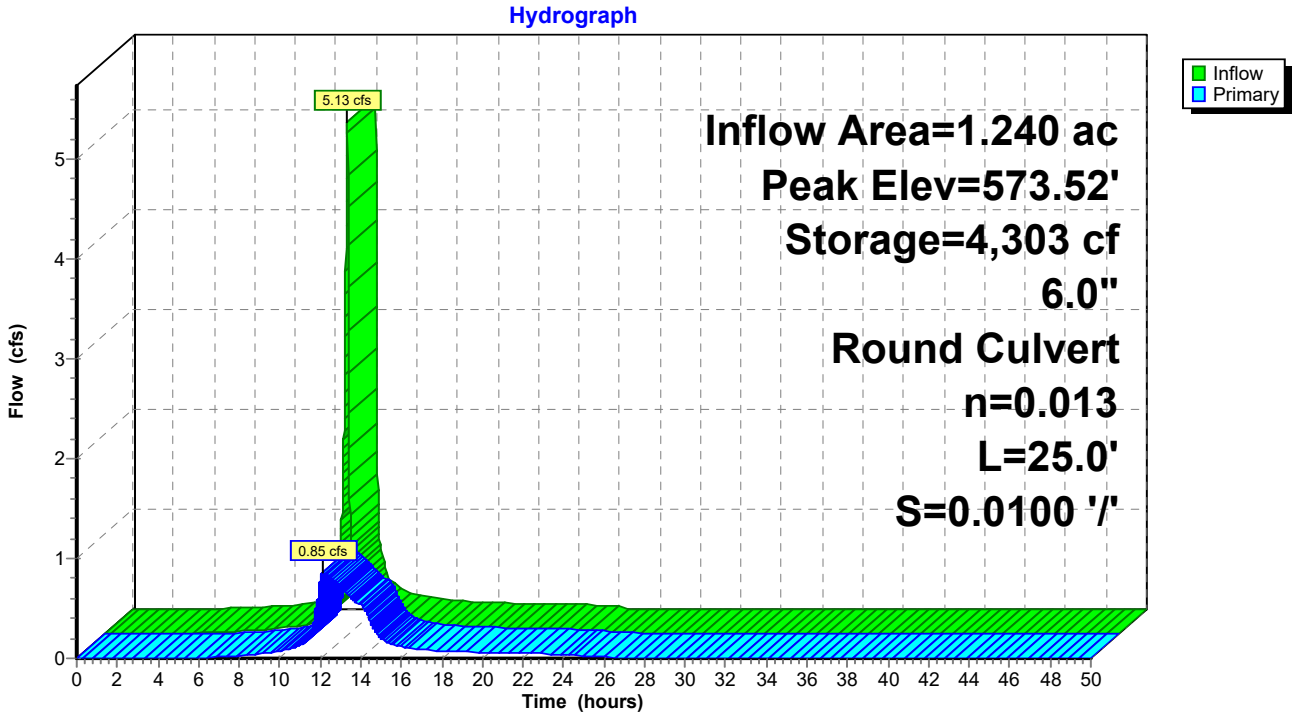
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 2.62" for 10-Year event
Inflow = 13.04 cfs @ 11.96 hrs, Volume= 0.657 af
Outflow = 1.58 cfs @ 12.21 hrs, Volume= 0.655 af, Atten= 88%, Lag= 14.9 min
Primary = 1.58 cfs @ 12.21 hrs, Volume= 0.655 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.57' @ 12.21 hrs Surf.Area= 15,085 sf Storage= 12,975 cf

Plug-Flow detention time= 126.4 min calculated for 0.654 af (100% of inflow)
Center-of-Mass det. time= 123.8 min (894.6 - 770.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.58 cfs @ 12.21 hrs HW=573.57' TW=0.00' (Dynamic Tailwater)
↑**1=Outlet Pipe** (Barrel Controls 1.58 cfs @ 4.53 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

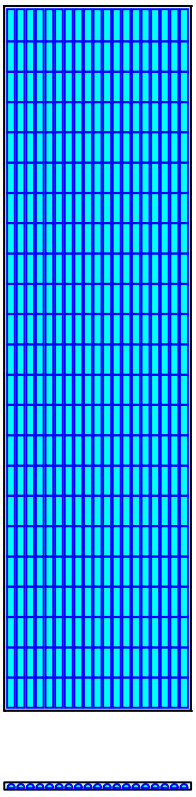
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

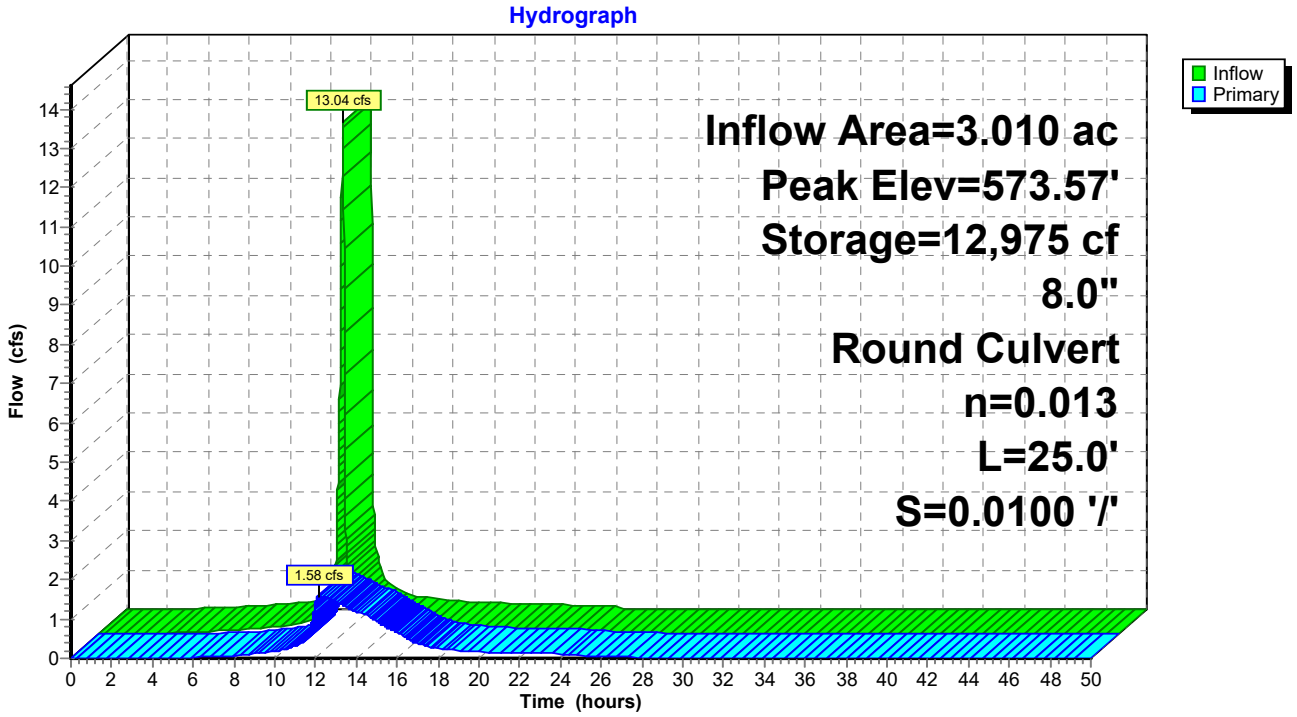
Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet



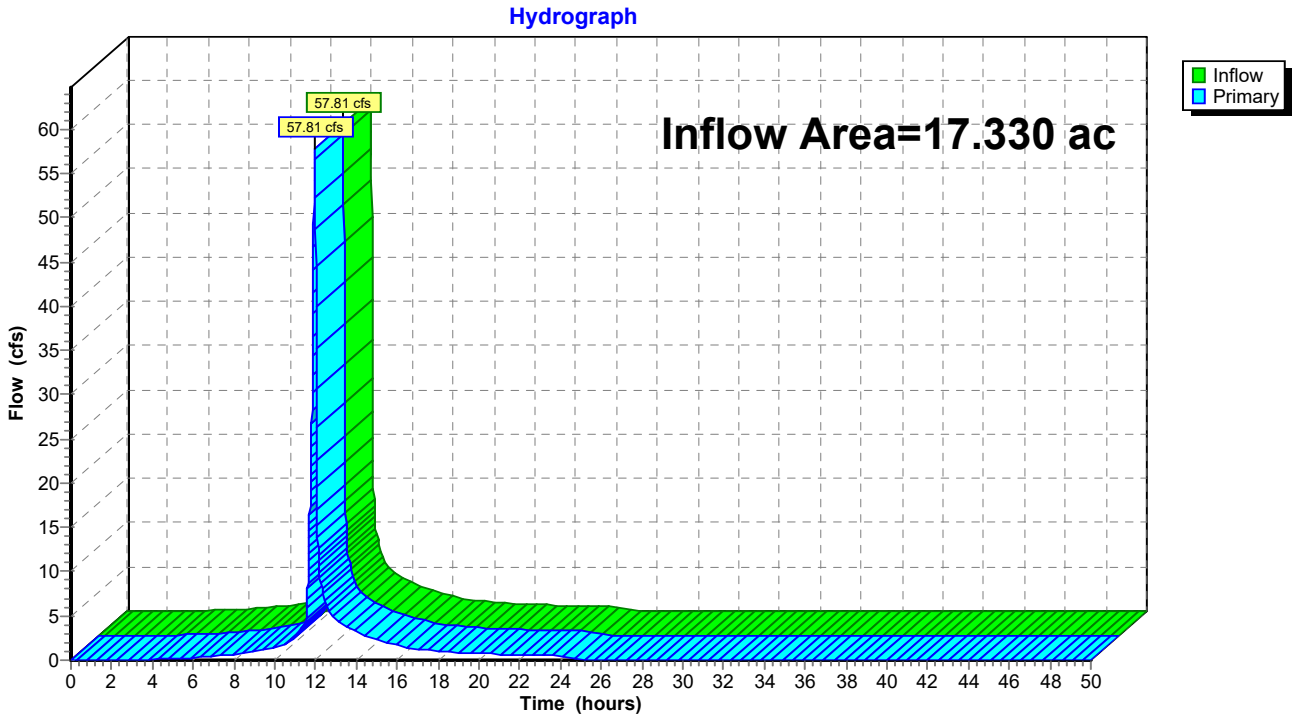
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 2.55" for 10-Year event
Inflow = 57.81 cfs @ 11.96 hrs, Volume= 3.679 af
Primary = 57.81 cfs @ 11.96 hrs, Volume= 3.679 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=3.06"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=6.39 cfs 0.316 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=16.05 cfs 0.821 af

Subcatchment3S: Proposed Site Runoff Area=3.270 ac 82.87% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=17.16 cfs 0.863 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=32.75 cfs 1.646 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=19.04 cfs 0.974 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.83' Storage=5,481 cf Inflow=6.39 cfs 0.316 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=0.97 cfs 0.316 af

Pond 2P: Detention Storage & Outlet Peak Elev=573.87' Storage=16,140 cf Inflow=16.05 cfs 0.821 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.82 cfs 0.818 af

Link 1L: Romney Rd Drainage System Inflow=71.24 cfs 4.616 af
Primary=71.24 cfs 4.616 af

Total Runoff Area = 17.330 ac Runoff Volume = 4.619 af Average Runoff Depth = 3.20"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

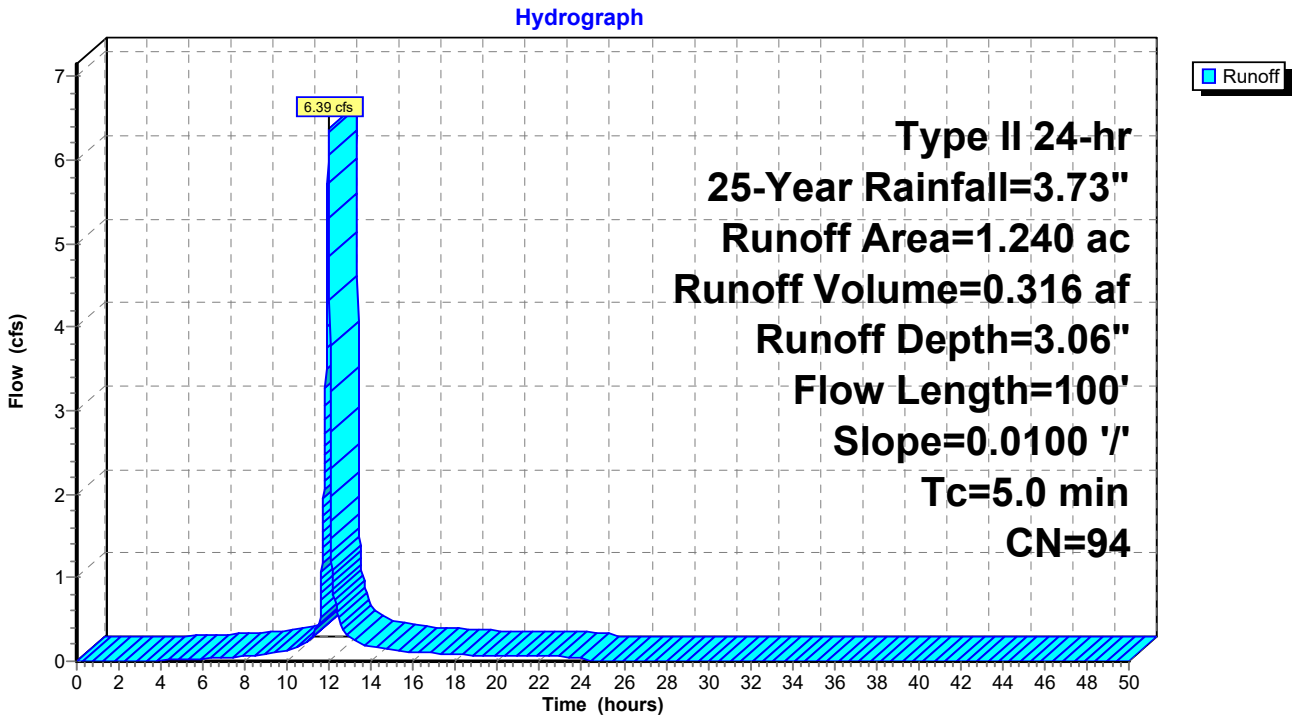
Runoff = 6.39 cfs @ 11.96 hrs, Volume= 0.316 af, Depth= 3.06"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

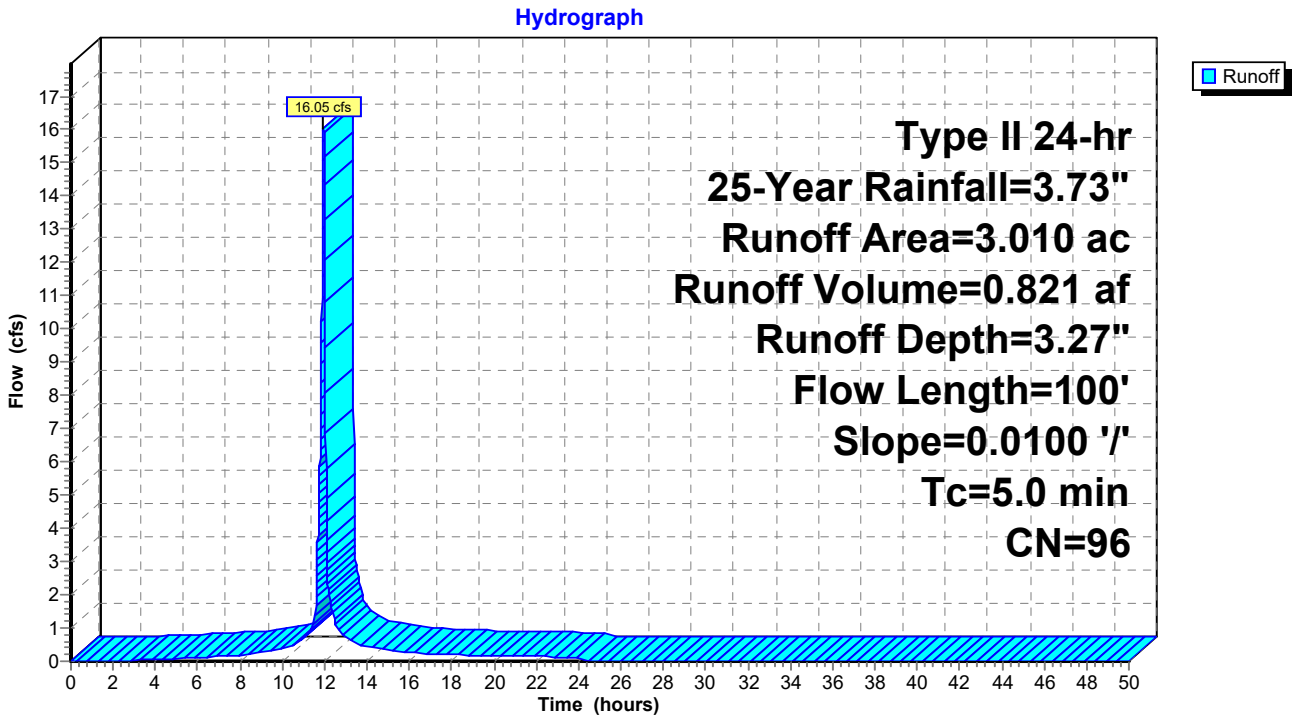
Runoff = 16.05 cfs @ 11.96 hrs, Volume= 0.821 af, Depth= 3.27"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

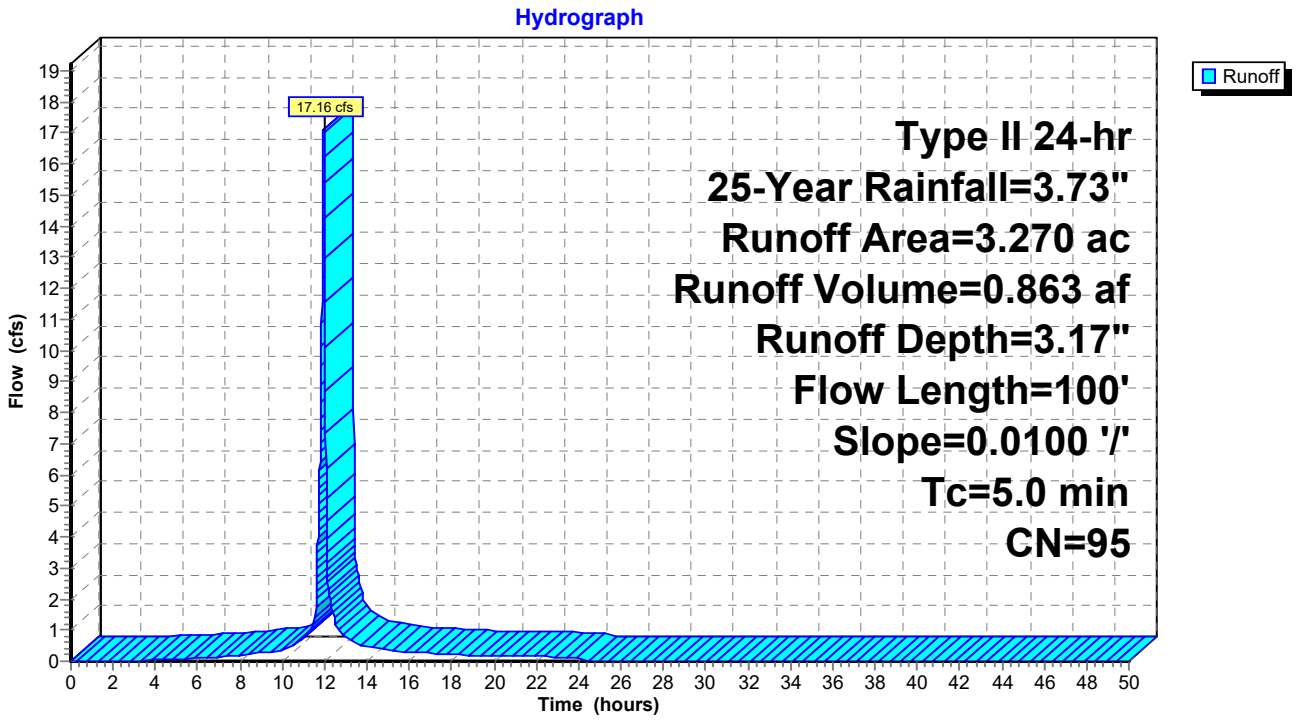
Runoff = 17.16 cfs @ 11.96 hrs, Volume= 0.863 af, Depth= 3.17"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.560	80	>75% Grass cover, Good, HSG D
*	2.710	98	Impervious, HSG D
	3.270	95	Weighted Average
	0.560		17.13% Pervious Area
	2.710		82.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

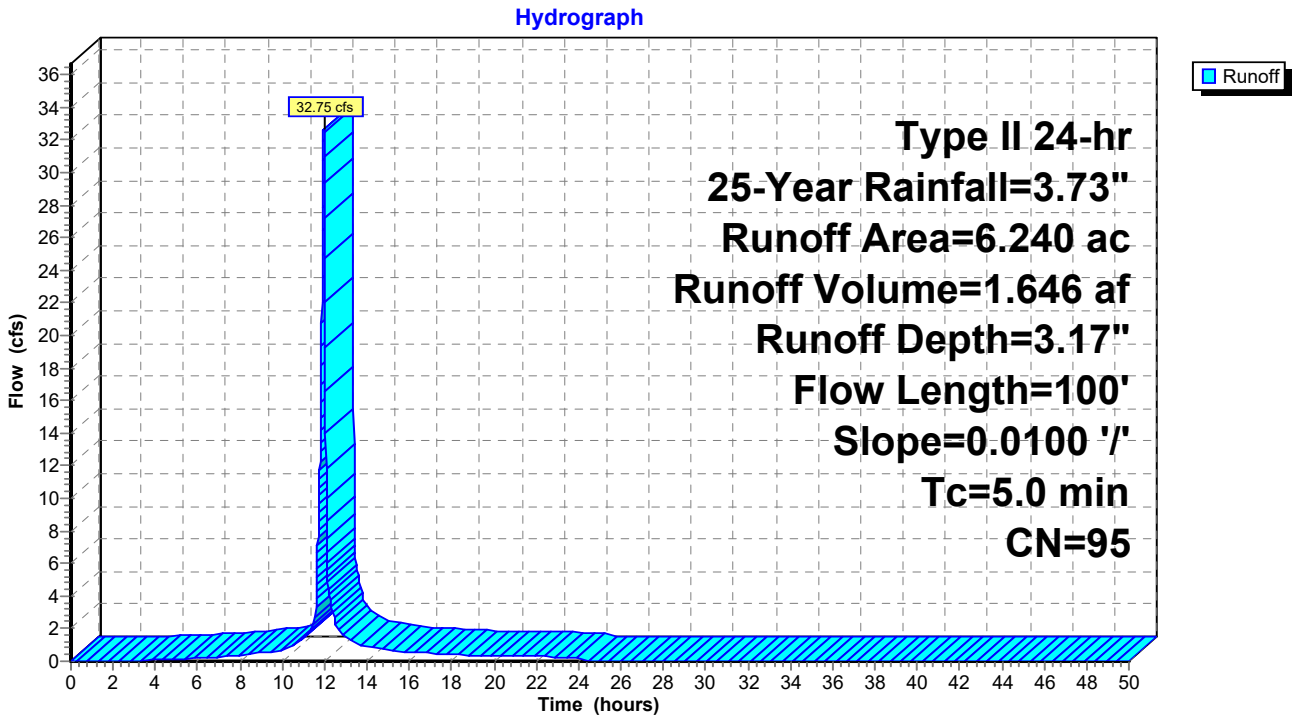
Runoff = 32.75 cfs @ 11.96 hrs, Volume= 1.646 af, Depth= 3.17"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

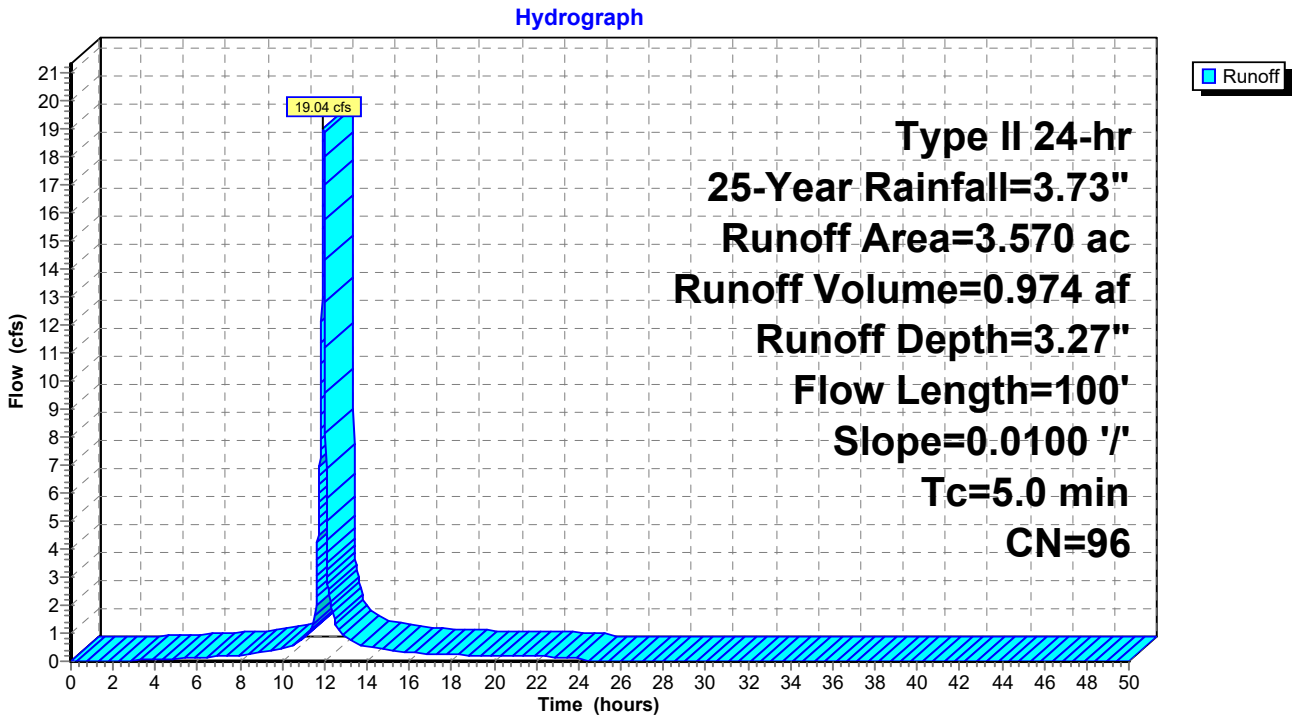
Runoff = 19.04 cfs @ 11.96 hrs, Volume= 0.974 af, Depth= 3.27"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 3.06" for 25-Year event
Inflow = 6.39 cfs @ 11.96 hrs, Volume= 0.316 af
Outflow = 0.97 cfs @ 12.14 hrs, Volume= 0.316 af, Atten= 85%, Lag= 10.9 min
Primary = 0.97 cfs @ 12.14 hrs, Volume= 0.316 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.83' @ 12.14 hrs Surf.Area= 5,289 sf Storage= 5,481 cf

Plug-Flow detention time= 75.4 min calculated for 0.316 af (100% of inflow)
Center-of-Mass det. time= 74.5 min (852.4 - 777.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.97 cfs @ 12.14 hrs HW=573.83' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 0.97 cfs @ 4.96 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

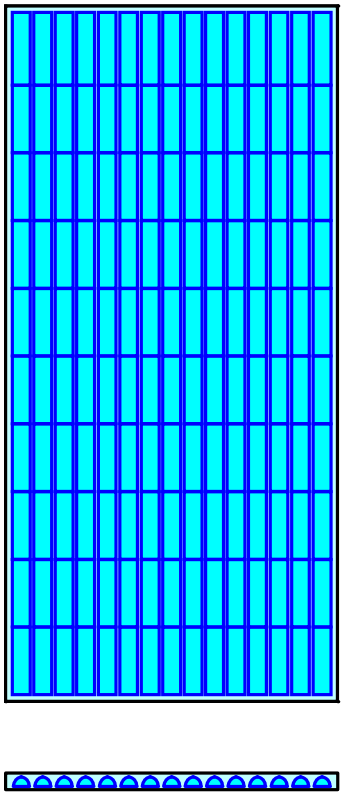
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

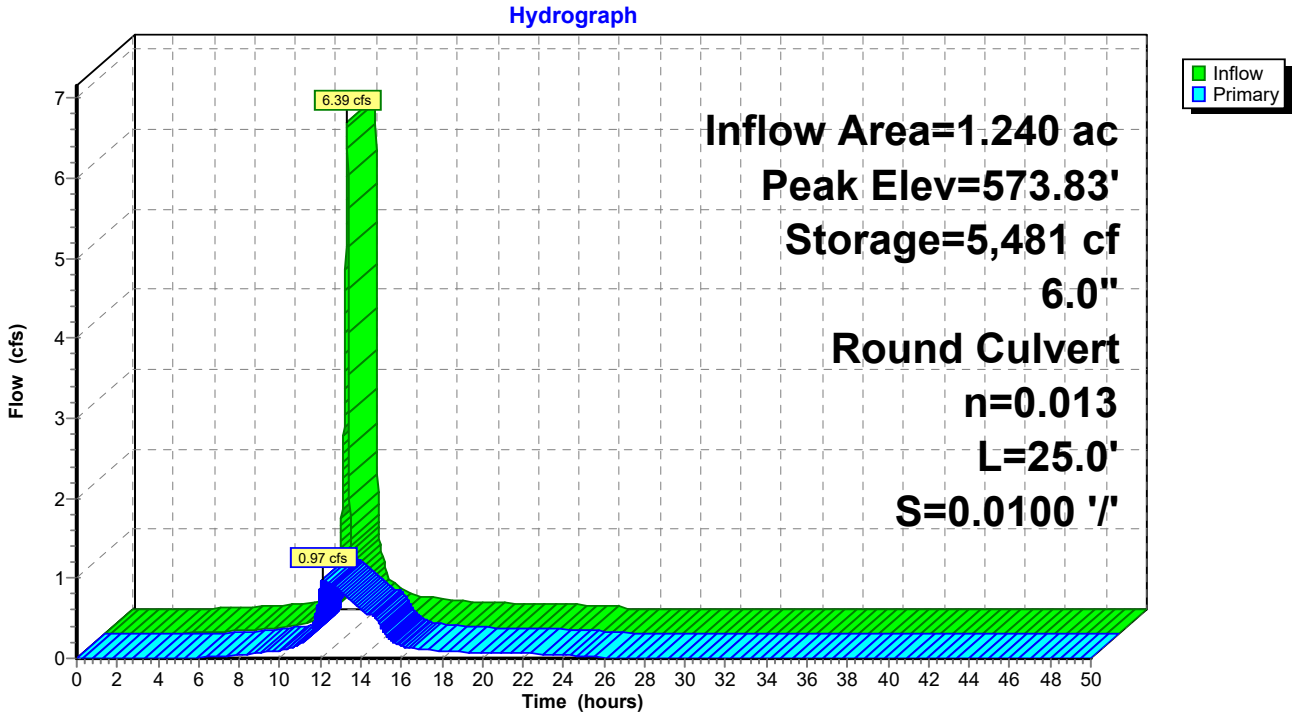
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 3.27" for 25-Year event
Inflow = 16.05 cfs @ 11.96 hrs, Volume= 0.821 af
Outflow = 1.82 cfs @ 12.24 hrs, Volume= 0.818 af, Atten= 89%, Lag= 17.1 min
Primary = 1.82 cfs @ 12.24 hrs, Volume= 0.818 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.87' @ 12.24 hrs Surf.Area= 15,085 sf Storage= 16,140 cf

Plug-Flow detention time= 128.2 min calculated for 0.818 af (100% of inflow)
Center-of-Mass det. time= 125.8 min (891.1 - 765.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.82 cfs @ 12.24 hrs HW=573.87' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 1.82 cfs @ 5.22 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

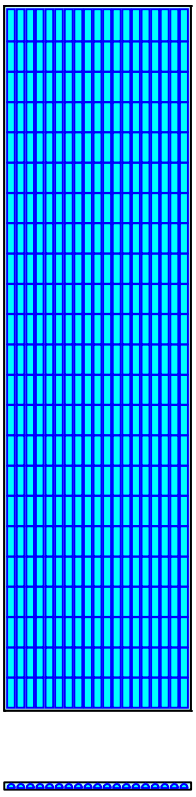
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

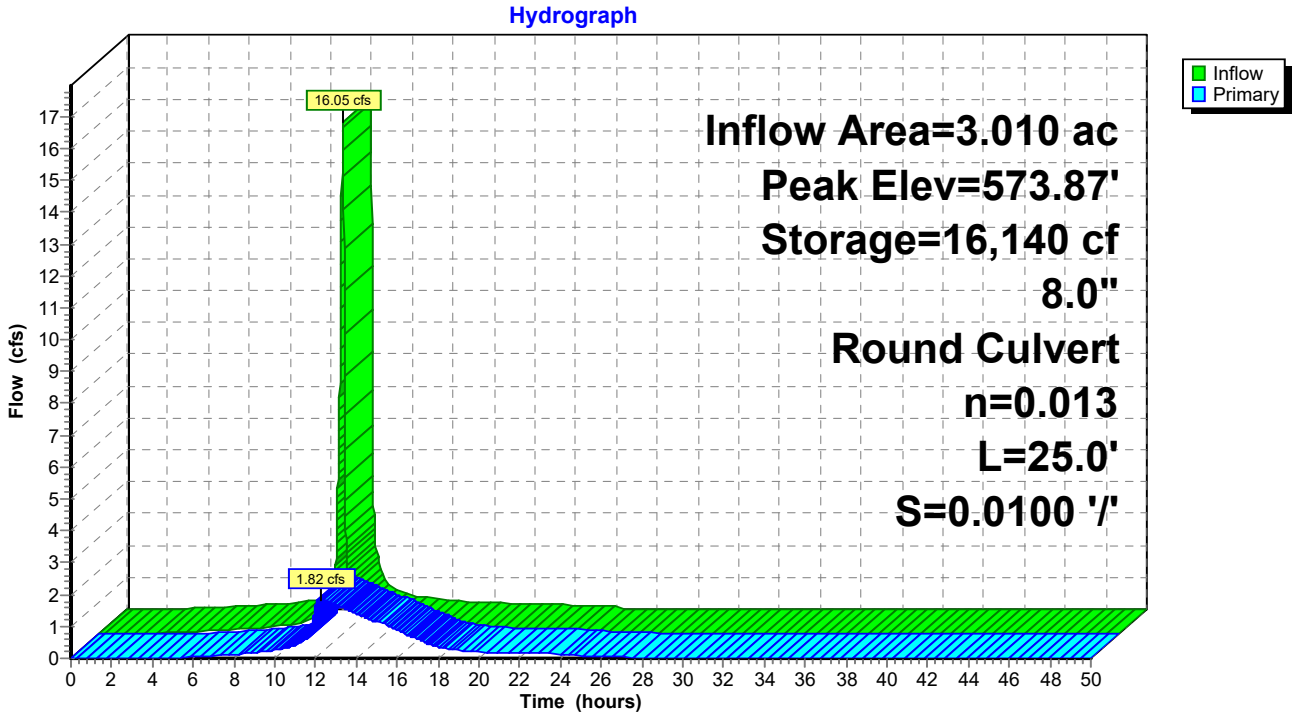
Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet



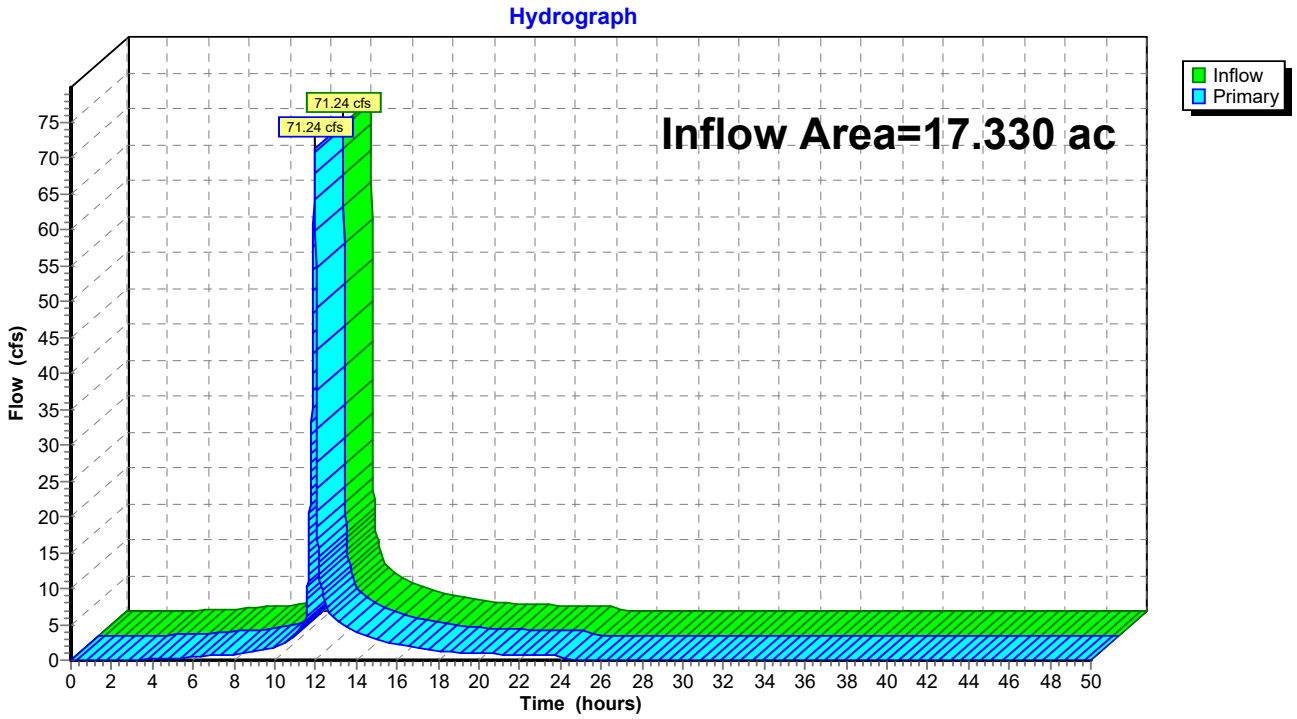
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 3.20" for 25-Year event
Inflow = 71.24 cfs @ 11.96 hrs, Volume= 4.616 af
Primary = 71.24 cfs @ 11.96 hrs, Volume= 4.616 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=4.34"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=8.85 cfs 0.448 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=21.93 cfs 1.144 af

Subcatchment3S: Proposed Site Runoff Area=3.270 ac 82.87% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=23.60 cfs 1.212 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=45.03 cfs 2.314 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=26.01 cfs 1.357 af

Pond 1P: Detention Storage & Outlet Peak Elev=574.77' Storage=7,797 cf Inflow=8.85 cfs 0.448 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.27 cfs 0.448 af

Pond 2P: Detention Storage & Outlet Peak Elev=574.77' Storage=22,375 cf Inflow=21.93 cfs 1.144 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=2.41 cfs 1.142 af

Link 1L: Romney Rd Drainage System Inflow=97.46 cfs 6.473 af
Primary=97.46 cfs 6.473 af

Total Runoff Area = 17.330 ac Runoff Volume = 6.476 af Average Runoff Depth = 4.48"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

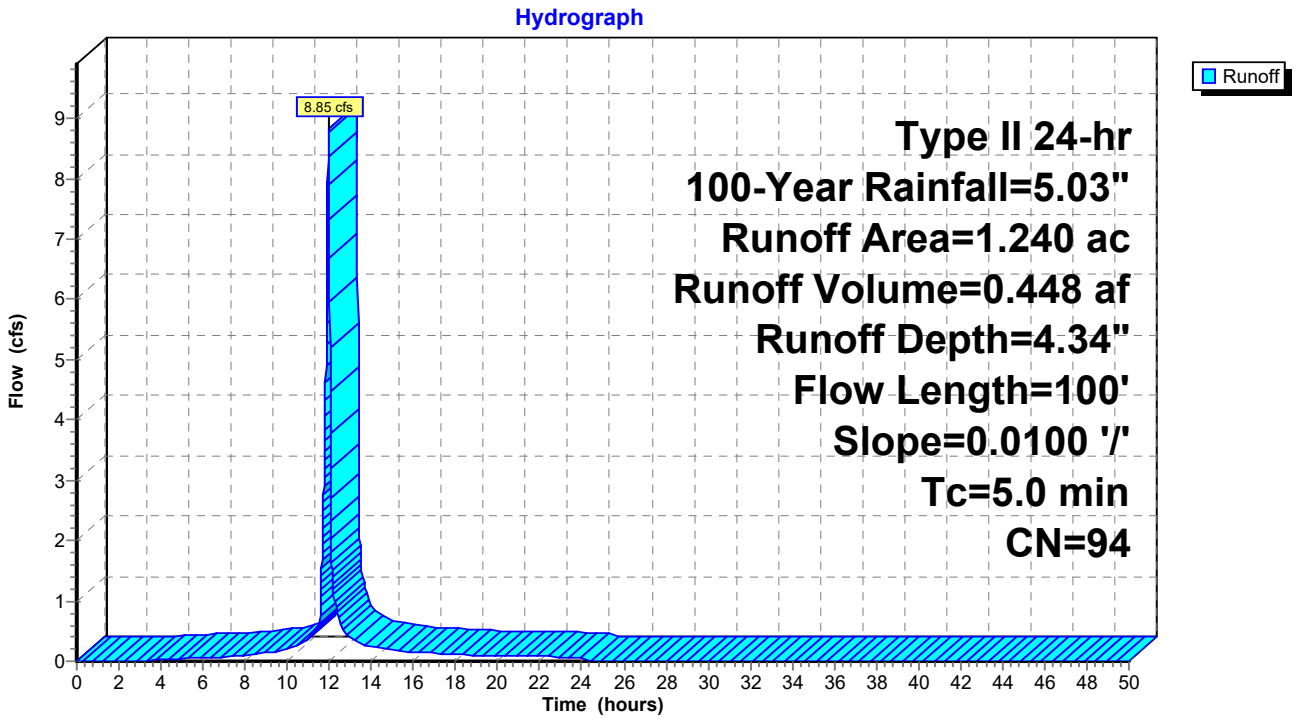
Runoff = 8.85 cfs @ 11.96 hrs, Volume= 0.448 af, Depth= 4.34"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

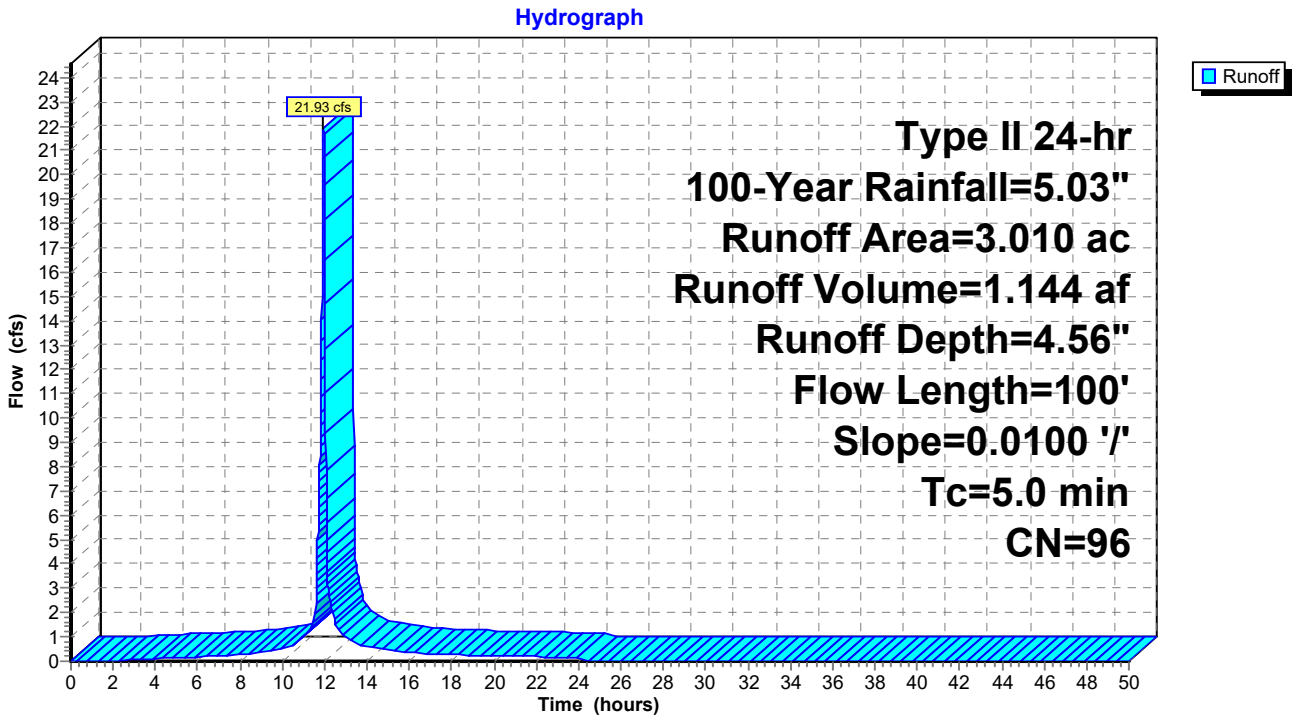
Runoff = 21.93 cfs @ 11.96 hrs, Volume= 1.144 af, Depth= 4.56"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S: Proposed Site

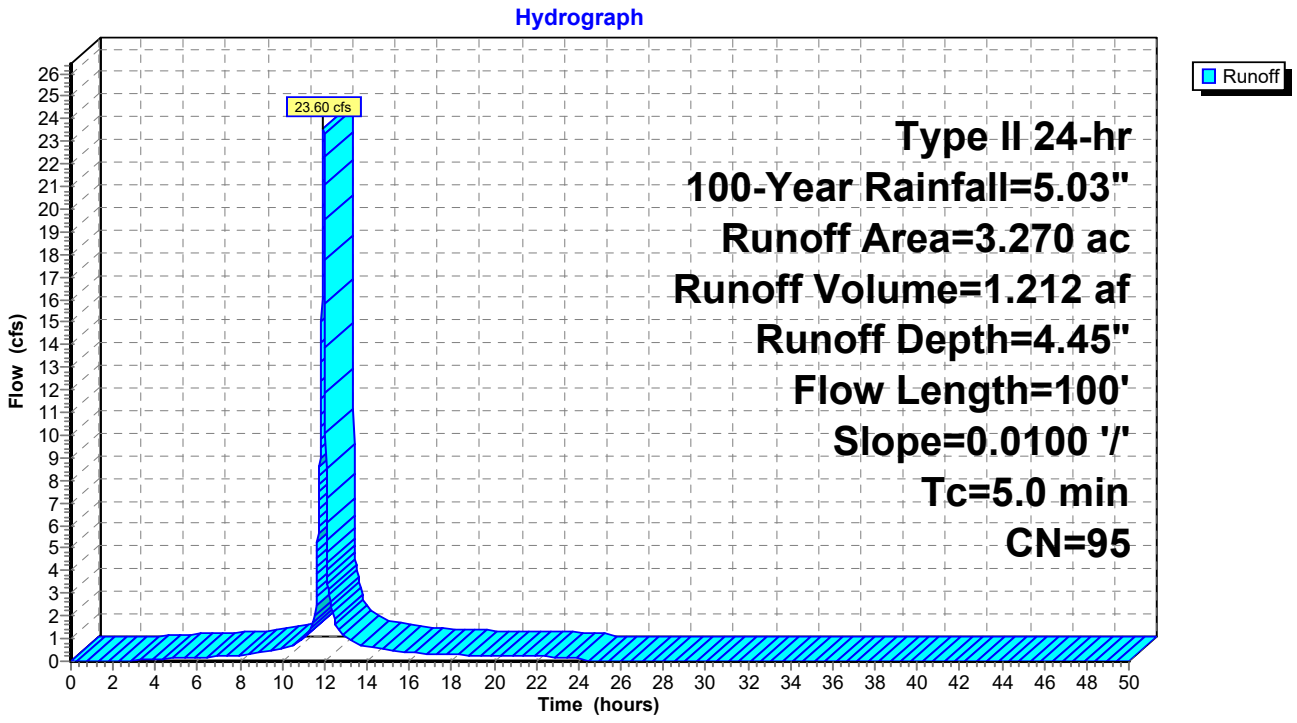
Runoff = 23.60 cfs @ 11.96 hrs, Volume= 1.212 af, Depth= 4.45"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.560	80	>75% Grass cover, Good, HSG D
*	2.710	98	Impervious, HSG D
	3.270	95	Weighted Average
	0.560		17.13% Pervious Area
	2.710		82.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

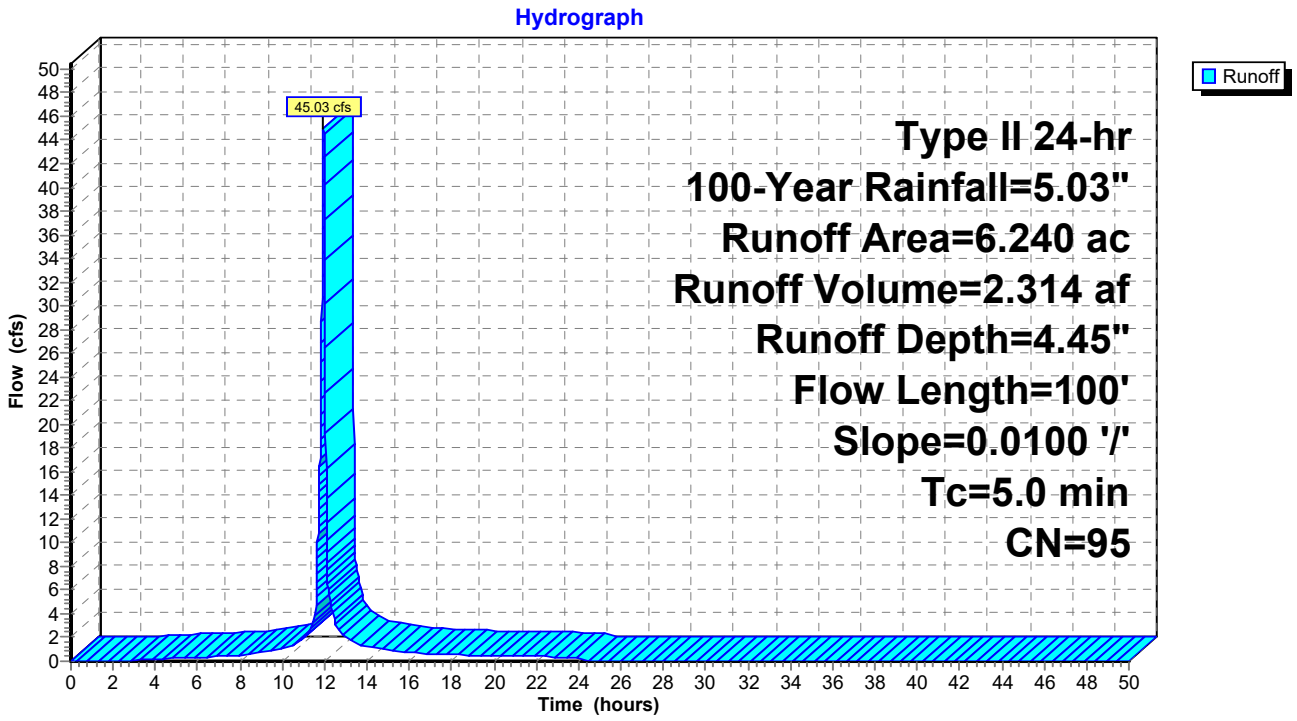
Runoff = 45.03 cfs @ 11.96 hrs, Volume= 2.314 af, Depth= 4.45"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

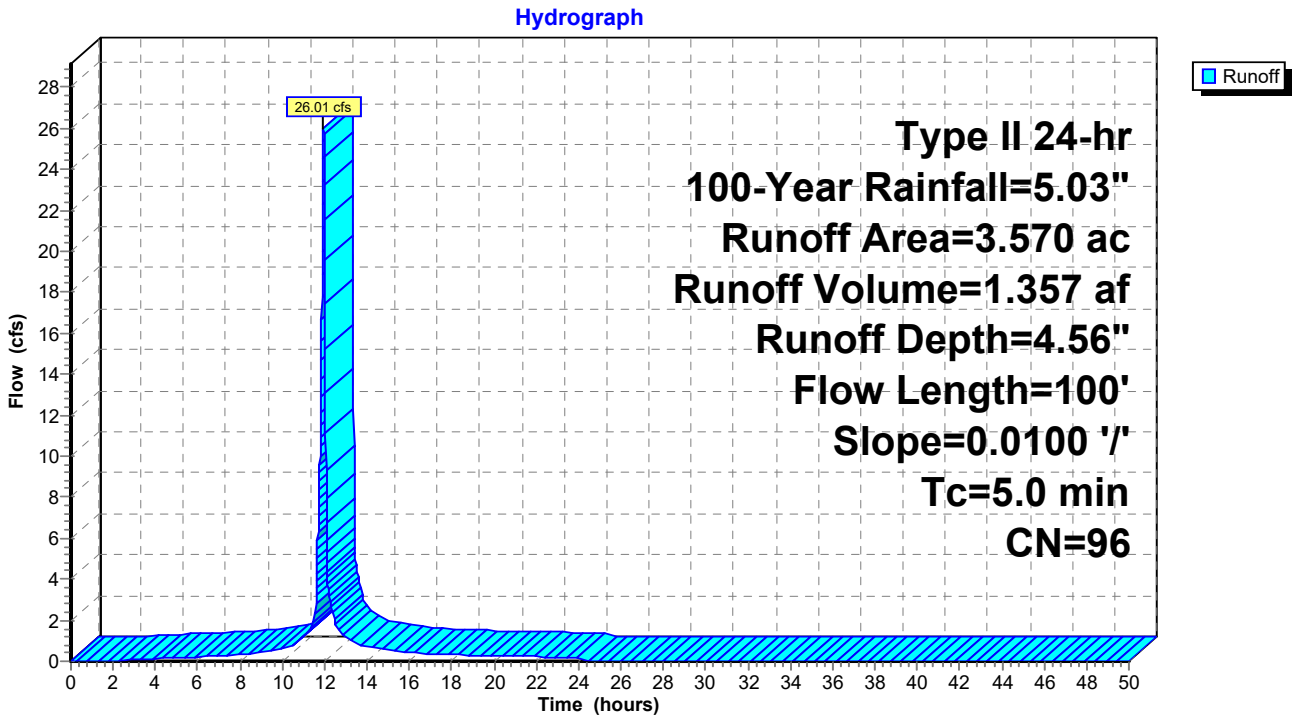
Runoff = 26.01 cfs @ 11.96 hrs, Volume= 1.357 af, Depth= 4.56"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 4.34" for 100-Year event
Inflow = 8.85 cfs @ 11.96 hrs, Volume= 0.448 af
Outflow = 1.27 cfs @ 12.15 hrs, Volume= 0.448 af, Atten= 86%, Lag= 11.5 min
Primary = 1.27 cfs @ 12.15 hrs, Volume= 0.448 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 574.77' @ 12.15 hrs Surf.Area= 5,289 sf Storage= 7,797 cf

Plug-Flow detention time= 78.6 min calculated for 0.448 af (100% of inflow)
Center-of-Mass det. time= 77.9 min (846.8 - 768.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=1.27 cfs @ 12.15 hrs HW=574.77' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 1.27 cfs @ 6.49 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

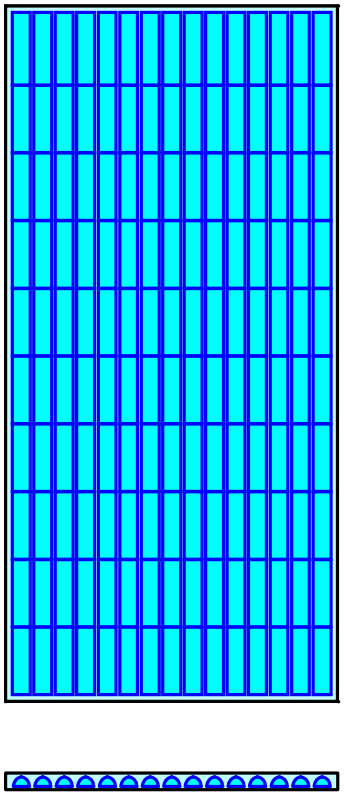
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



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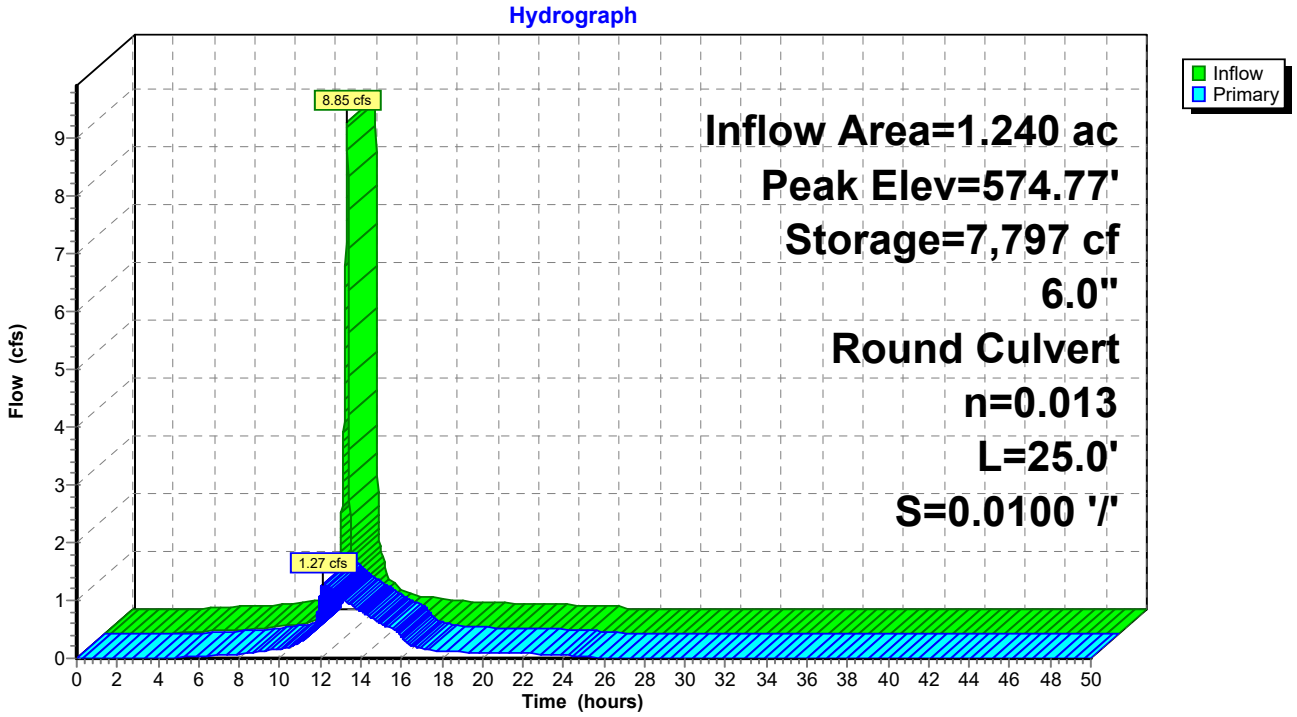
Pond 1P: Detention Storage & Outlet



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 4.56" for 100-Year event
Inflow = 21.93 cfs @ 11.96 hrs, Volume= 1.144 af
Outflow = 2.41 cfs @ 12.26 hrs, Volume= 1.142 af, Atten= 89%, Lag= 18.2 min
Primary = 2.41 cfs @ 12.26 hrs, Volume= 1.142 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 574.77' @ 12.26 hrs Surf.Area= 15,085 sf Storage= 22,375 cf

Plug-Flow detention time= 131.0 min calculated for 1.141 af (100% of inflow)
Center-of-Mass det. time= 129.6 min (887.1 - 757.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=2.41 cfs @ 12.26 hrs HW=574.77' TW=0.00' (Dynamic Tailwater)
↳**1=Outlet Pipe** (Barrel Controls 2.41 cfs @ 6.90 fps)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

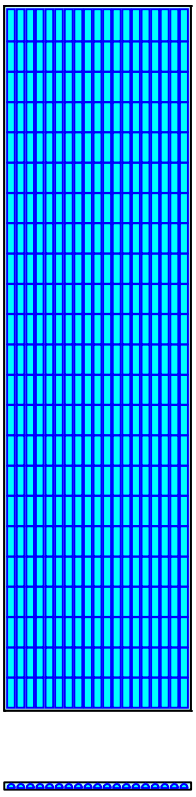
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



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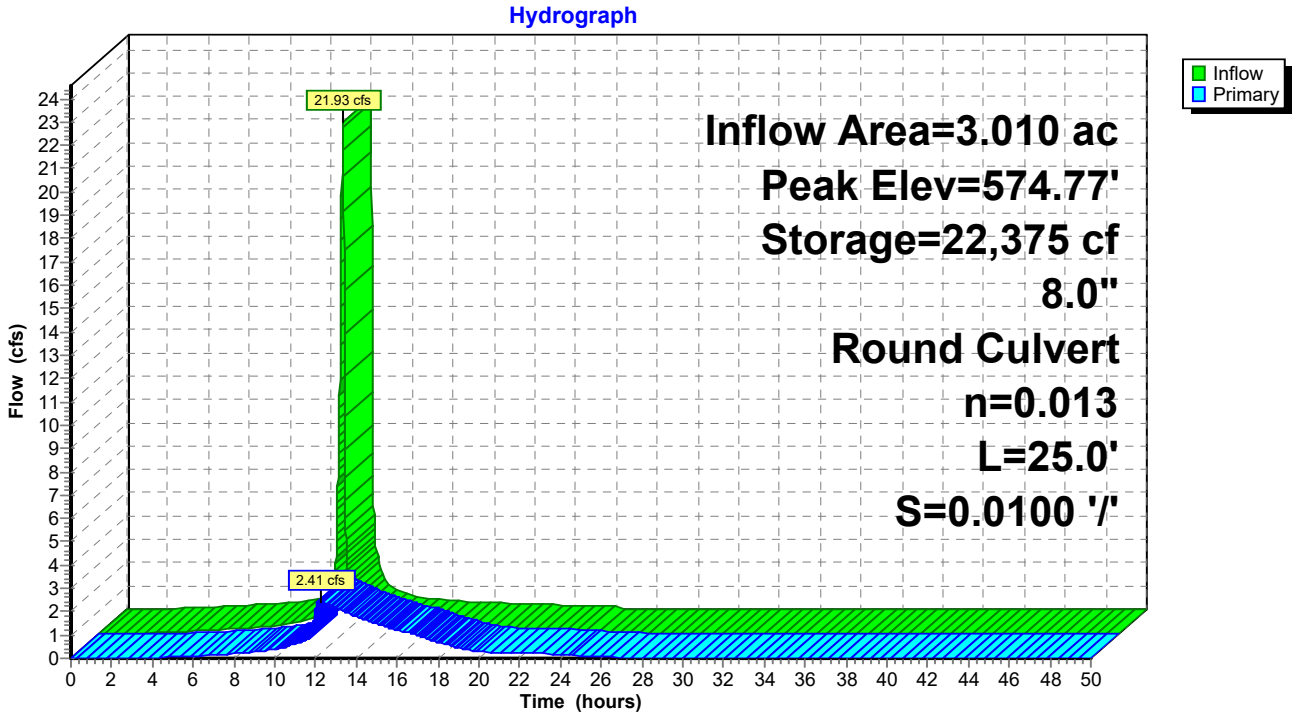
Pond 2P: Detention Storage & Outlet



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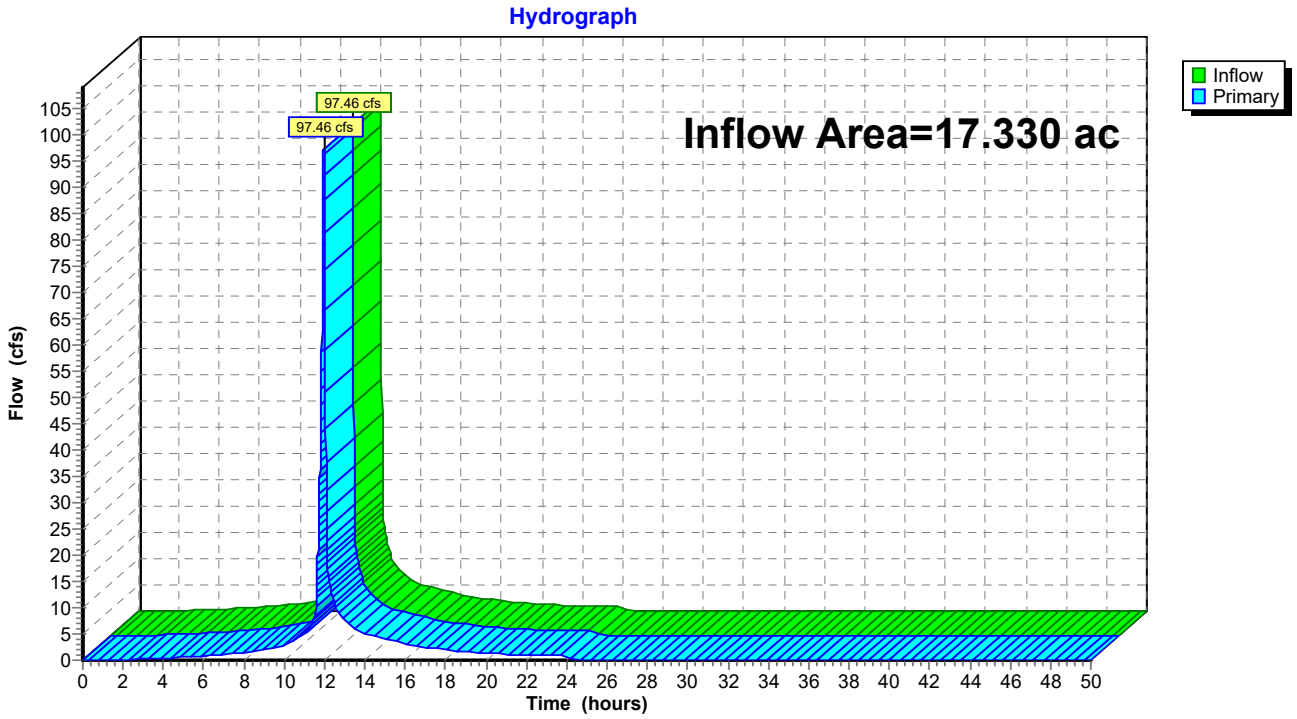
Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 4.48" for 100-Year event
Inflow = 97.46 cfs @ 11.96 hrs, Volume= 6.473 af
Primary = 97.46 cfs @ 11.96 hrs, Volume= 6.473 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix E

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

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(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

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calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

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E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

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8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

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B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

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must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

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b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

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use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

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b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

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the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project

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b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

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b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

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begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

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d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

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(Part IV.C.4.a)

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

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b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

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b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

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E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

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(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

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include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

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3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

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(Part VII.R)

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

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Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

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and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

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Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

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New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

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Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

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SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

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Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

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training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

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APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

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Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

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Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

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Appendix C

Figure 1 - New York City Watershed East of the Hudson

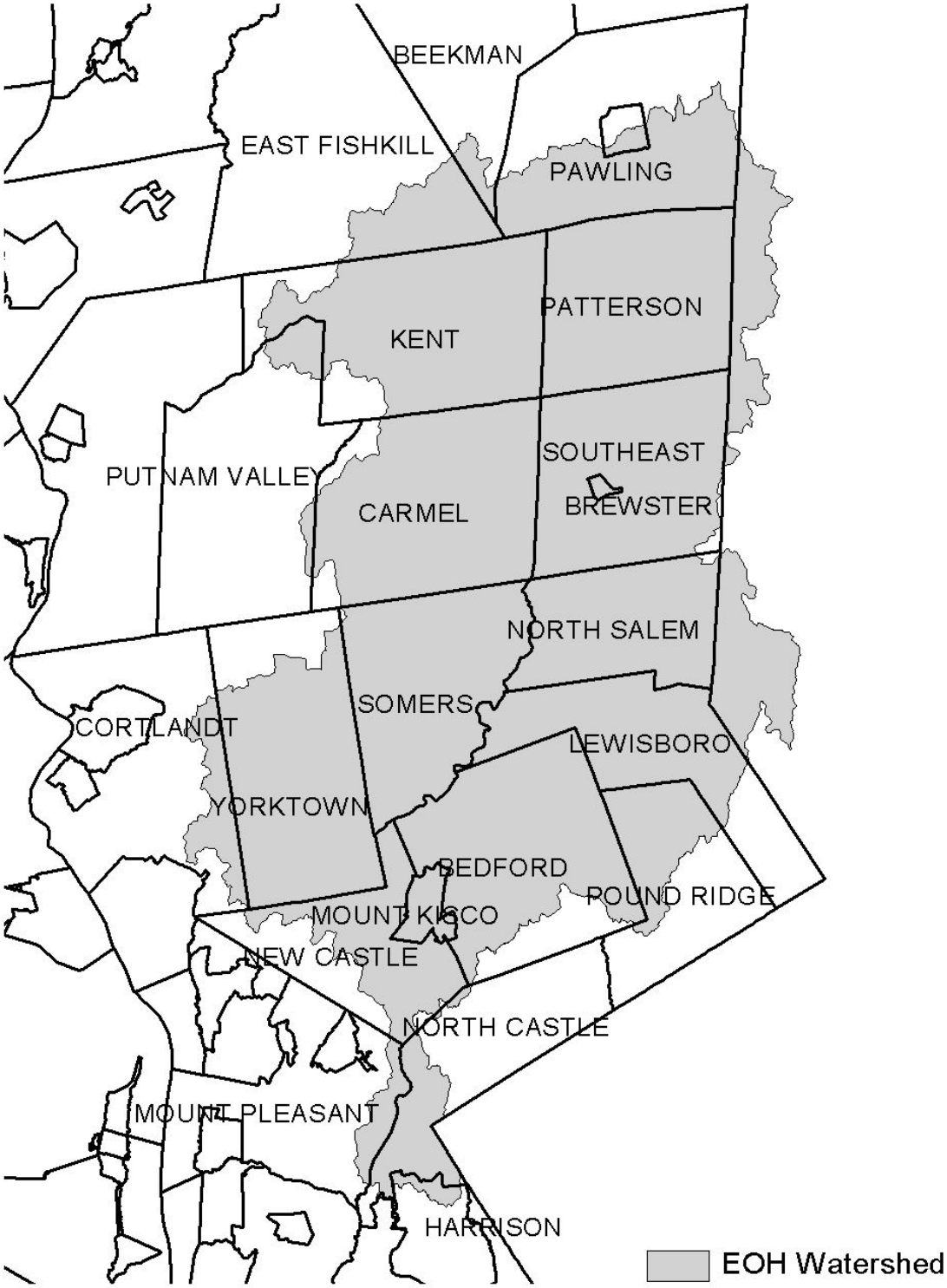

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Figure 2 - Onondaga Lake Watershed



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Figure 3 - Greenwood Lake Watershed

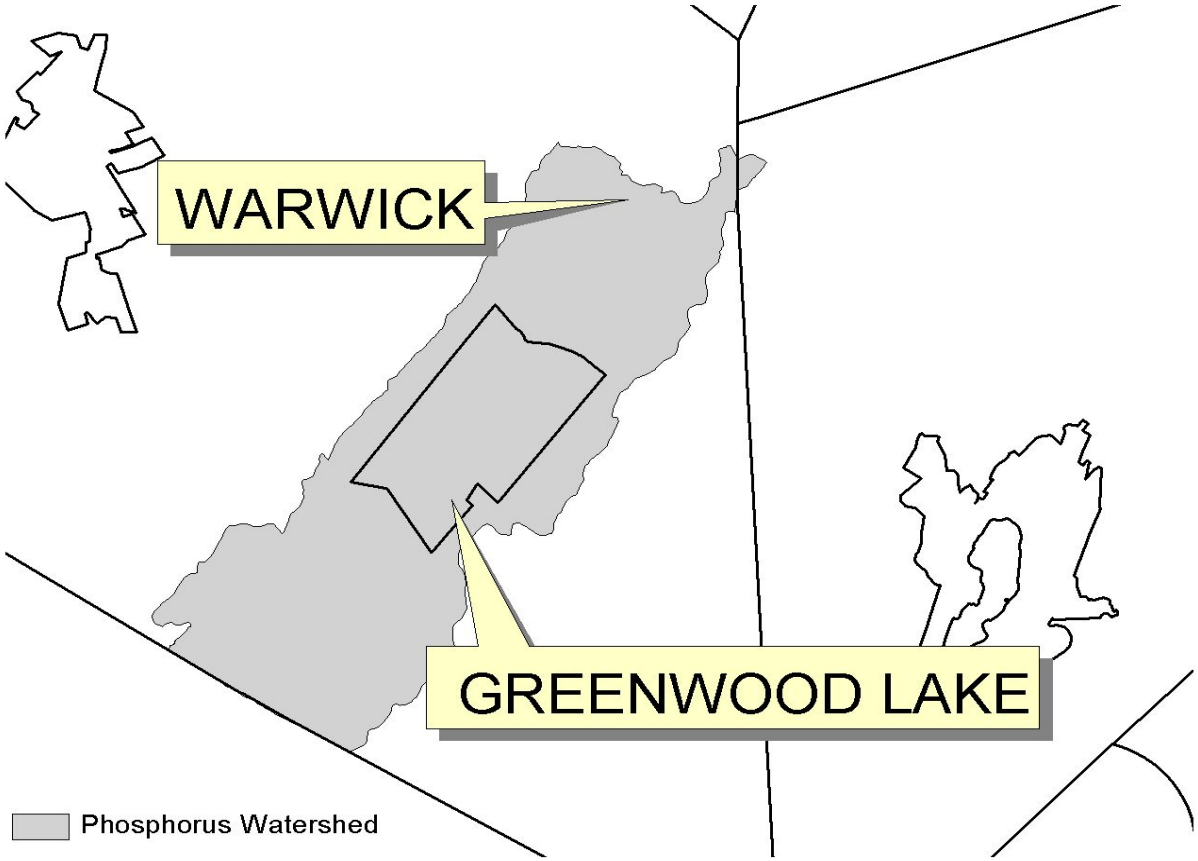

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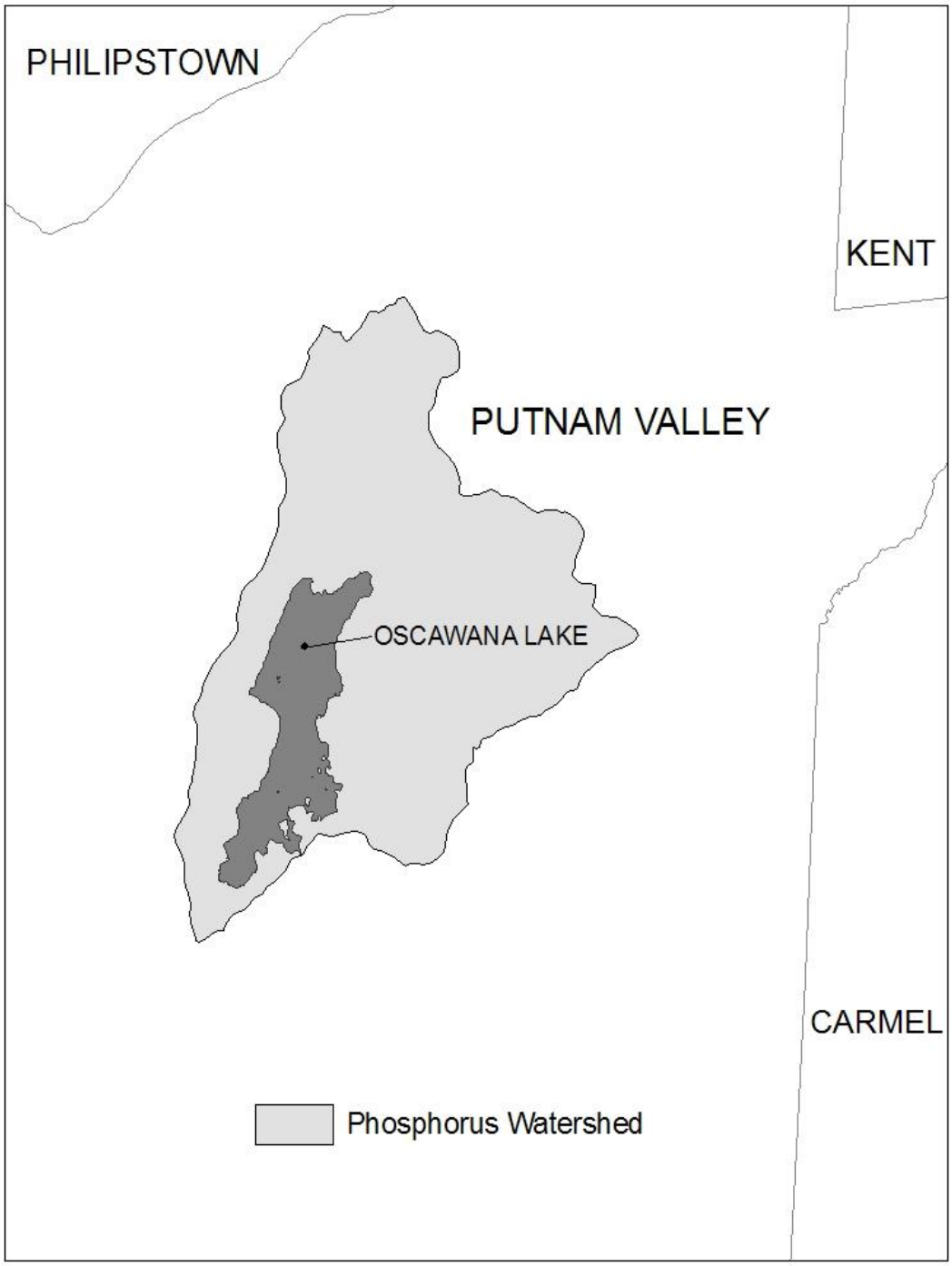
Figure 4 - Oscawana Lake Watershed



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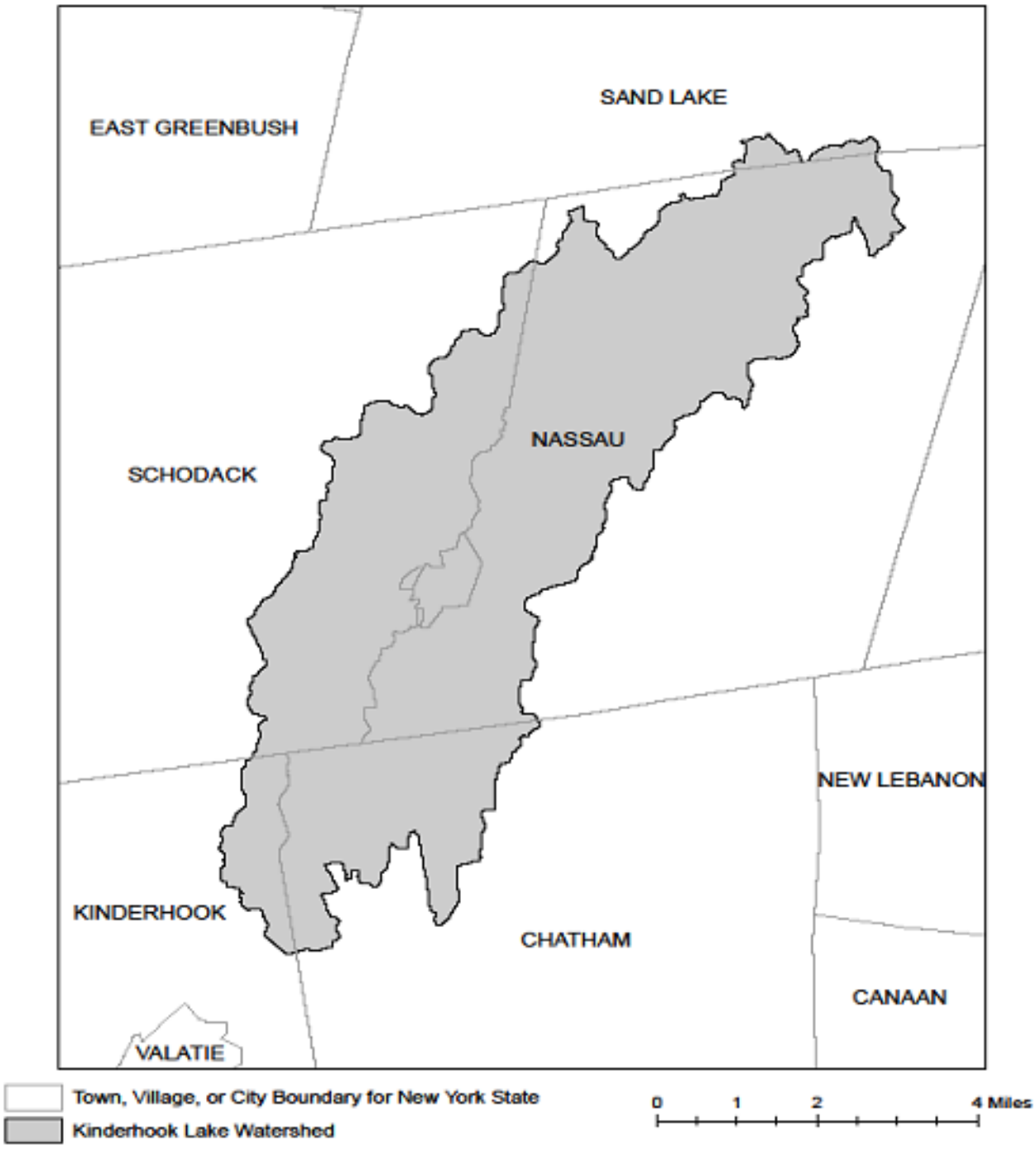
Appendix C

Figure 5 - Kinderhook Lake Watershed



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APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

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APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

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303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

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APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix F

Forms

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Amherst Development Park
6000-6040 North Bailey Ave
Amherst, NY 14226

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of Amherst.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

eNOI Submission Number: _____

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Benderson Development Company, LLC - 570 Delaware Ave - Buffalo, NY 14202

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher		Wood
First name	MI	Last Name



Signature

12/4/2024

Date

Revised: January 2020

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix G

NYSDEC Notice of Termination (NOT)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

Facility Certification Form Cover Sheet

A. General Information

Use only one Cover Sheet per site with as many specific structural BMP Inspection Report attachments as needed. Please attach digital photographs of the site and structural BMPs as applicable.

Development Name:_____ Inspection Date:_____

BMP Owner:_____ Inspection Company:_____

Owner Address:_____ Company Address:_____

Owner Phone #:_____ Inspector Name:_____

Owner Email:_____ Inspector Phone #:_____

Inspector Email:_____

B. Inspection Report Attachments

The listed stormwater controls are the Structural BMPs who's Inspection Reports are to be completed per the NYS Stormwater Design Manual for this site. Please use one inspection report per BMP inspected and submit all forms together with this Cover Sheet as one single report. Also, please document the number of each structural BMP found at this site in the space below.

BMP	# of BMP	BMP	# of BMP
Micropool Extended Detention Pond (P-1)		Infiltration Basin (I-2)	
Wet Pond (P-2)		Dry Well (I-3)	
Wet Extended Detention Pond (P-3)		Surface Sand Filter (F-1)	
Multiple Pond System (P-4)		Underground Sand Filter (F-2)	
Shallow Wetland (W-1)		Perimeter Sand Filter (F-3)	
Extended Detention Wetland (W-2)		Organic Filter (F-4)	
Pond/ Wetland System (W-3)		Bioretention (F-5)	
Pocket Wetland (W-4)		Dry Swale (O-1)	
Infiltration Trench (I-1)		Wet Swale (O-2)	
Alternate Stormwater Management Practices			

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

C. Inspection Results

FAIL*

*** If any one item on the inspection form is coded as "Work needed", then the entire BMP fails inspection.**

***If a site has multiple BMPs and on fails inspection, this cover sheet is marked as fail until all items on all BMPs pass inspection.**

NOTE: Applicable BMP Inspection Reports and confirmatory digital photographs summarizing required repairs must be submitted to the Town following completion of the preliminary inspection. A re-inspection and certification must be completed within 30 days of the failed preliminary report.

PASS

NOTE: A passing inspection form should be signed below by the appropriate professional and submitted to the Town on or before the established inspection due date. Attach all applicable BMP Inspection Reports and confirmatory digital photographs accordingly.

D. Professional Certification

To be completed only when all structural BMPs at this site are functional with no outstanding maintenance issues.

I,_____, as a duly registered _____ attest that a thorough inspection has been completed for all structural BMPsthat are associated with this particular site. All inspected structural BMPs are performing properly and are in compliance with the terms and conditions of the recorded maintenance agreement for the site.

Signature:_____

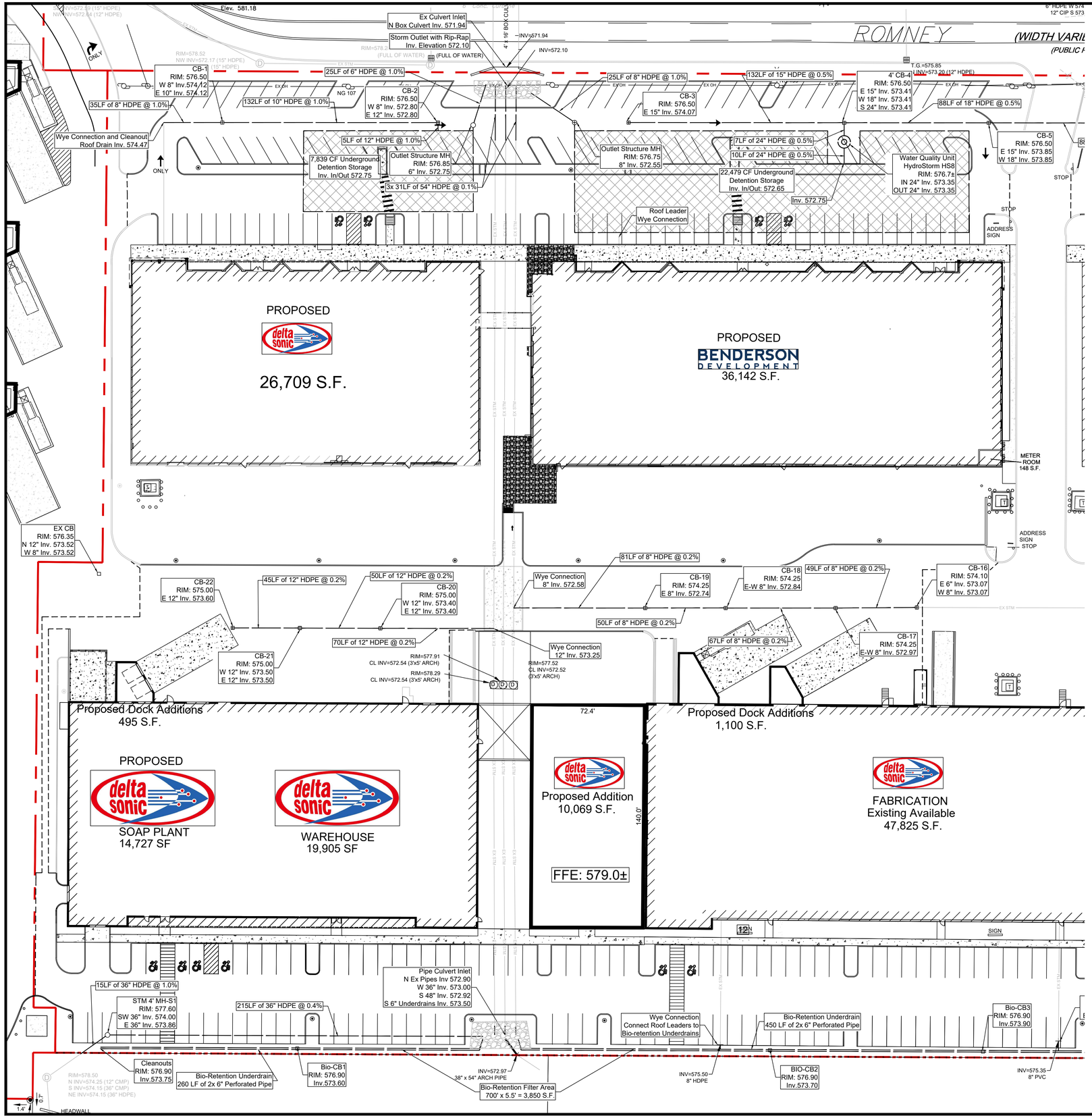
Date:_____

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix H

Construction Documents

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREP CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALL WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
 11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
 11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCR HAS DRIED AFTER PRESSURE WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) CO CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTI BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIM PAVEMENT AND THEN A NEW TOP COAT. REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE. A COMBI

DRAINAGE LEGEND:

- PROPERTY LINE
- PROPOSED STORMWATER
- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

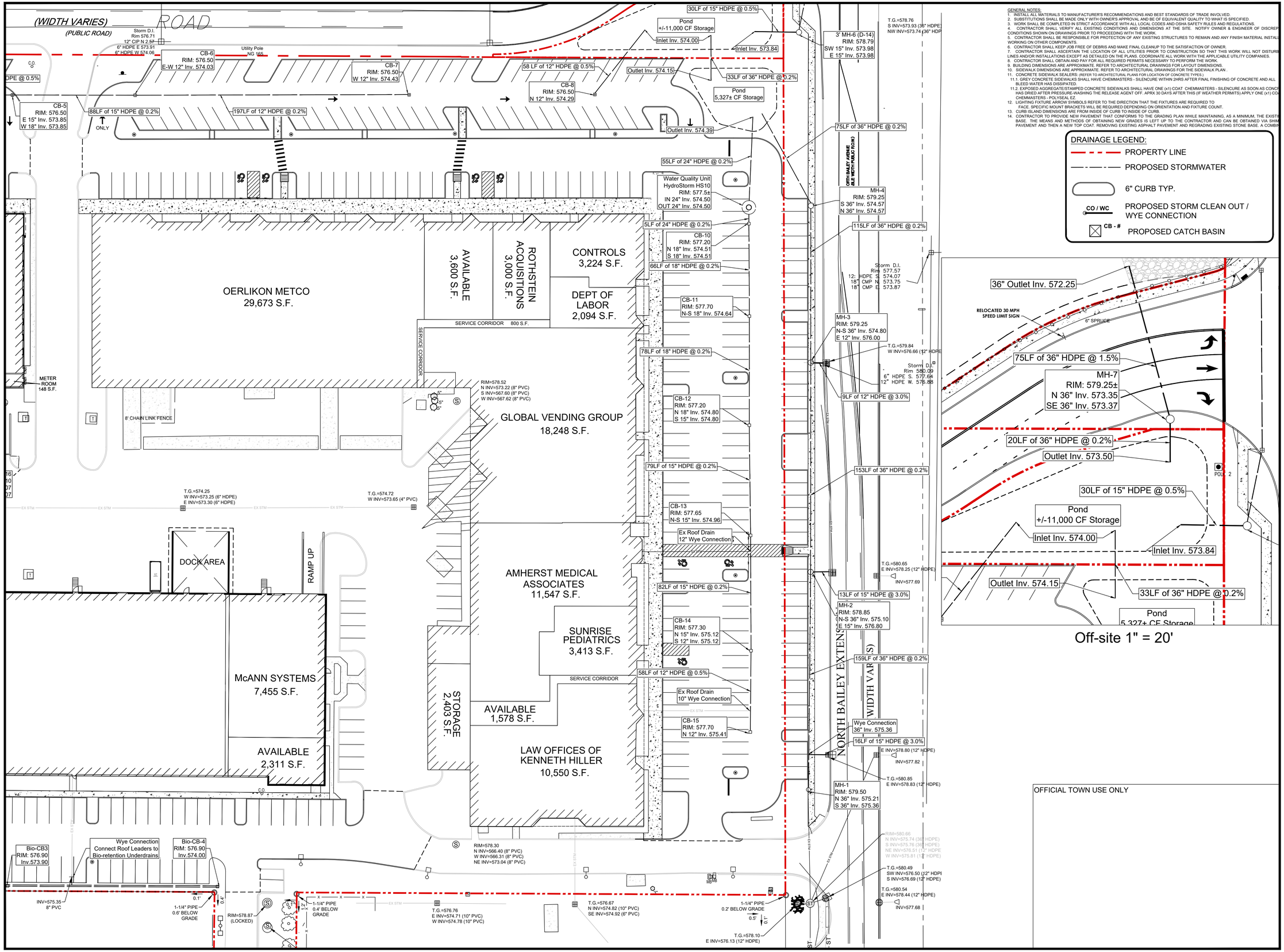
JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.10

Attachment: SP-1988-11P application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Off-site 1" = 20'

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- PROPOSED STORMWATER
- 6" CURB TYP.
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Know what's below. Call before you dig.

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PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:
Drainage Plan (East)

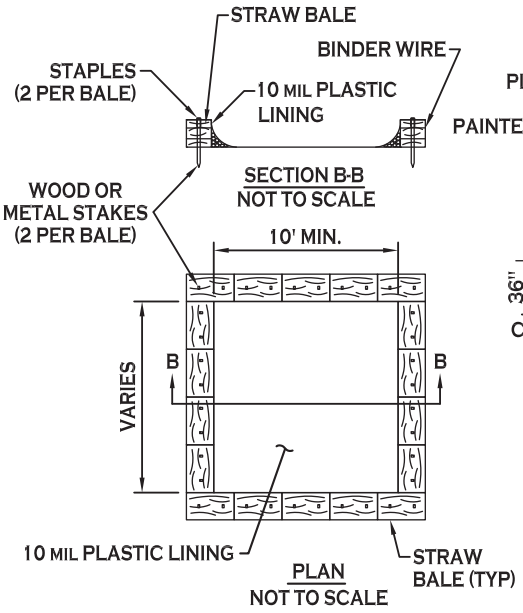
SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.11

Attachment: SP-1988-11P application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix I

Standard Erosion Control Details

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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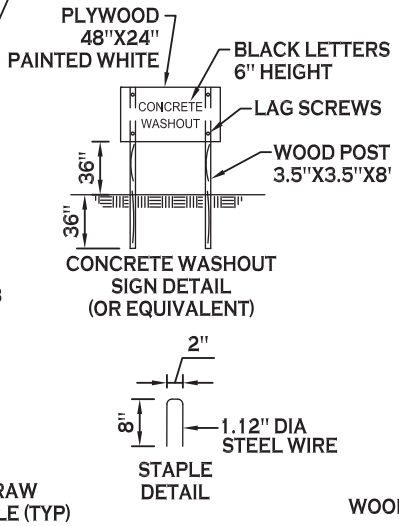

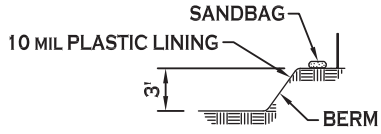

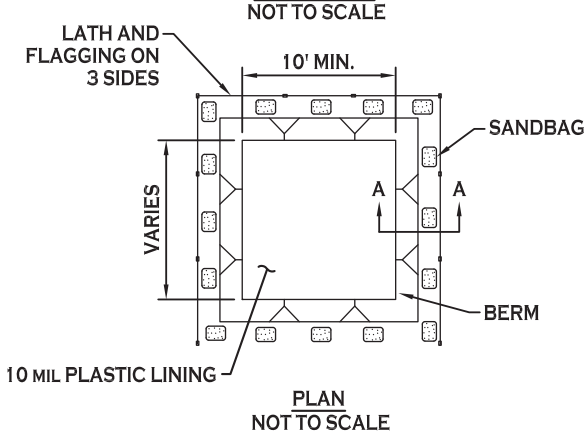

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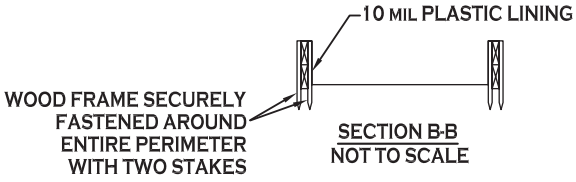
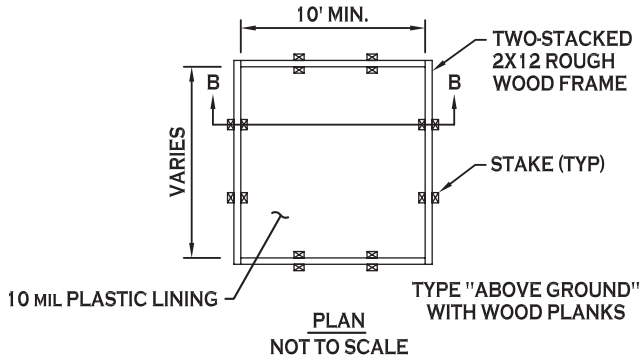


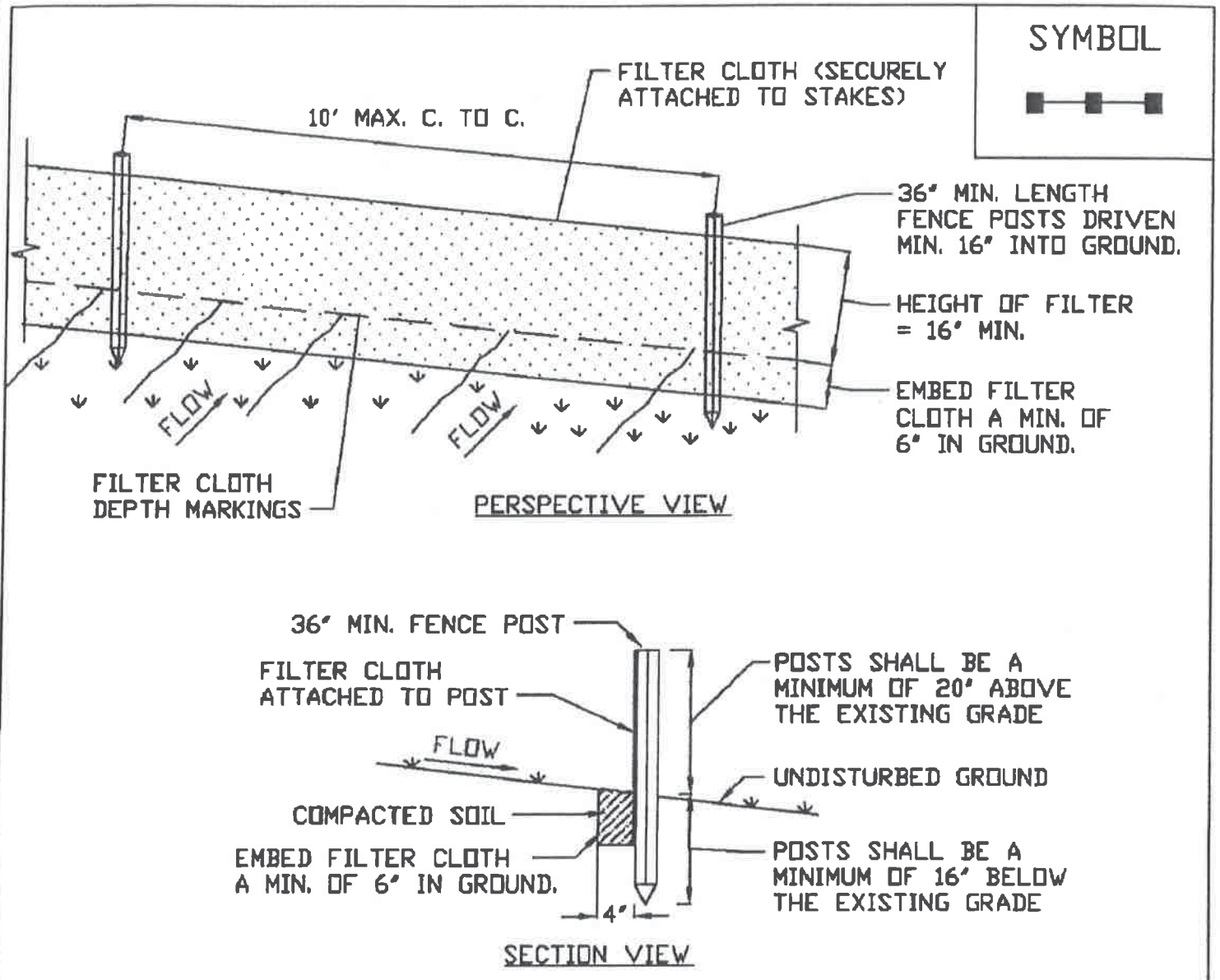


NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL

NOT TO SCALE

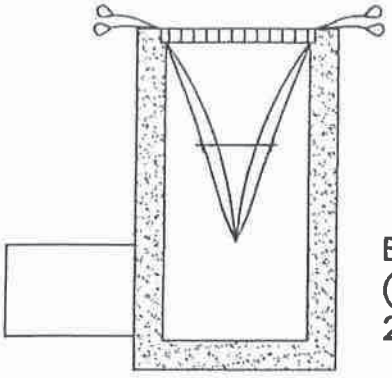


CONSTRUCTION SPECIFICATIONS

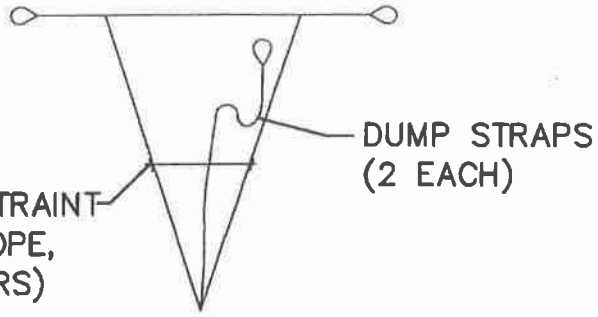
1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE (WITHOUT WIRE MESH BACKING)

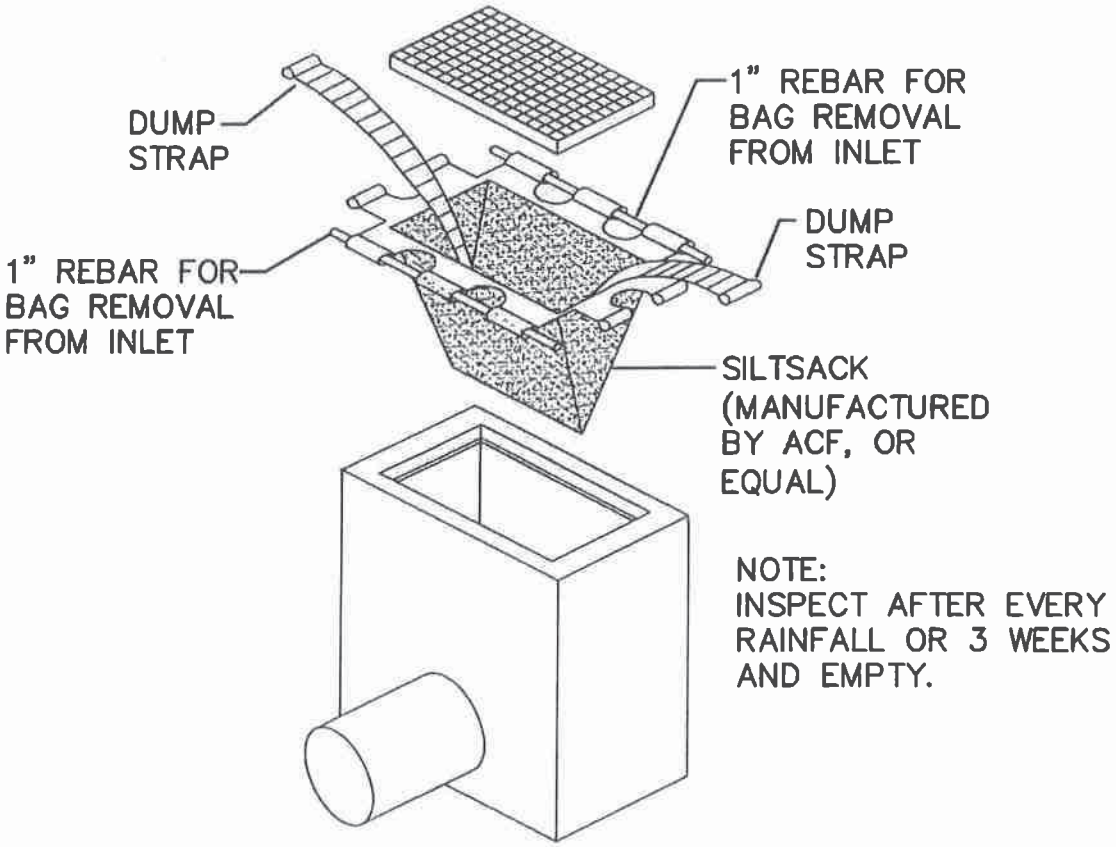
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



INSTALLATION DETAIL



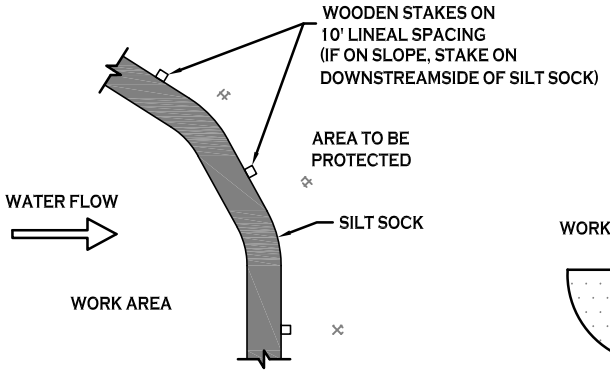
BAG DETAIL



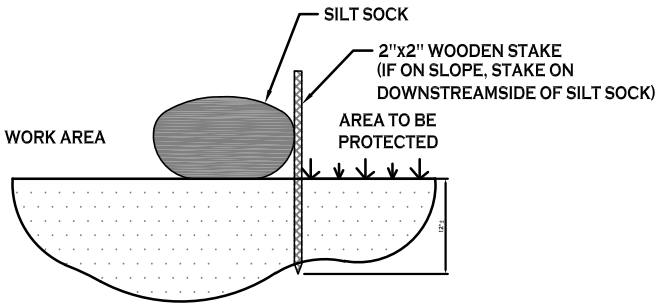
SILT SACK DETAIL

NOT TO SCALE

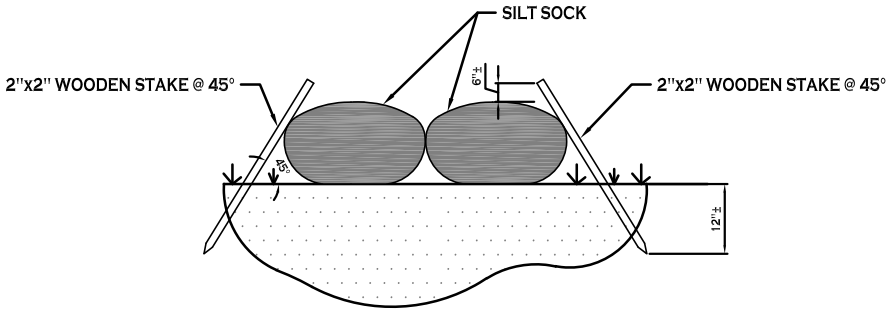
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



PLAN VIEW



SECTION VIEW



SECTION VIEW @ JOINT OVERLAP

NOTES:

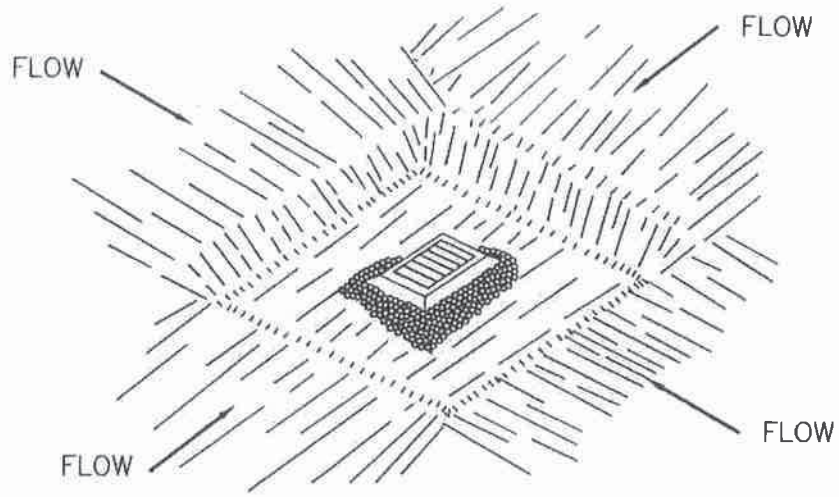
CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

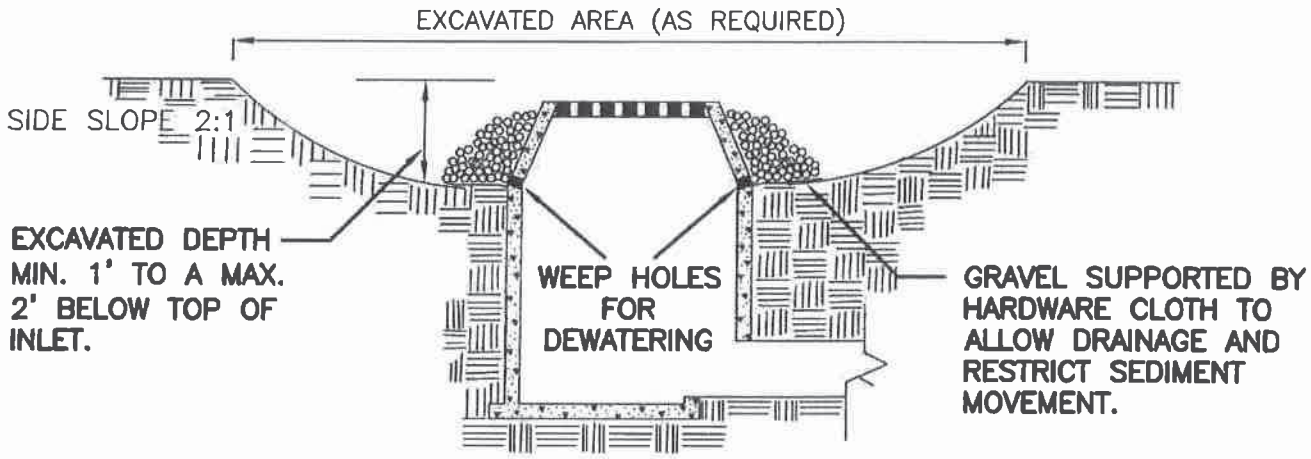
CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK SHALL BE OVERLAPPED 12" AT JOINTS AND STAKED ON EACH SIDE OF THE SOCK AT A 45° ANGLE

SILT SOCK DETAIL

N.T.S.





CONSTRUCTION SPECIFICATIONS

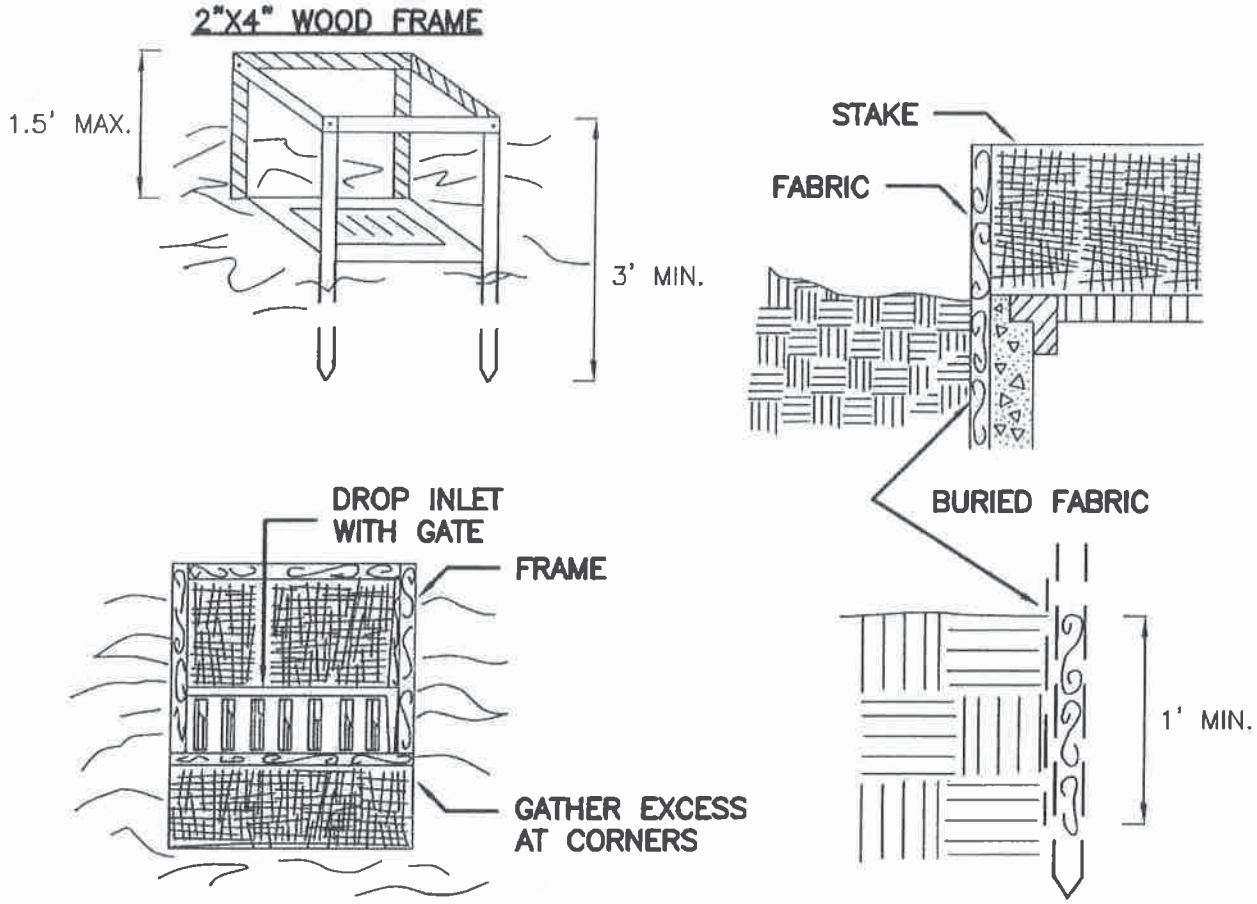
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



CONSTRUCTION SPECIFICATIONS

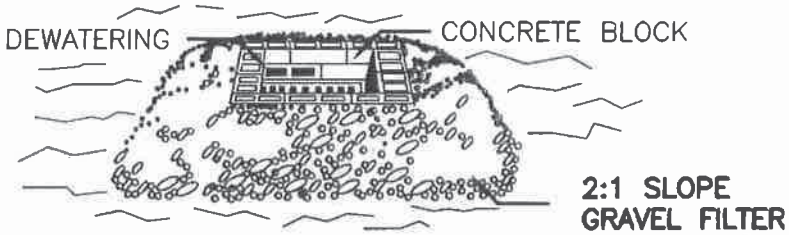
1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

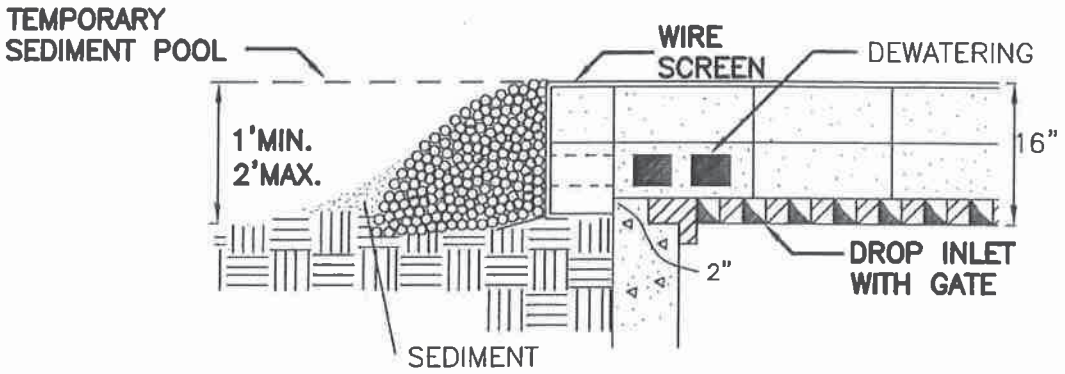
INLET PROTECTION DETAIL 2

NOT TO SCALE

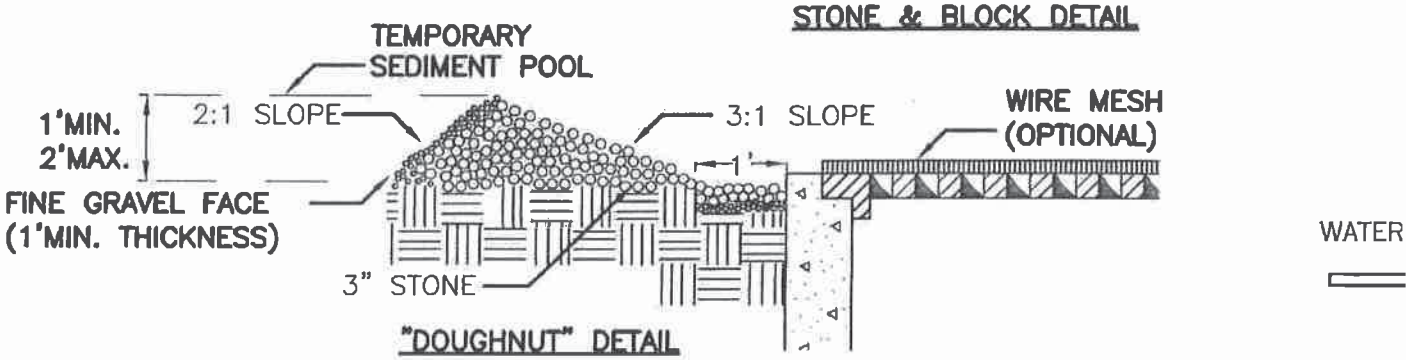
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

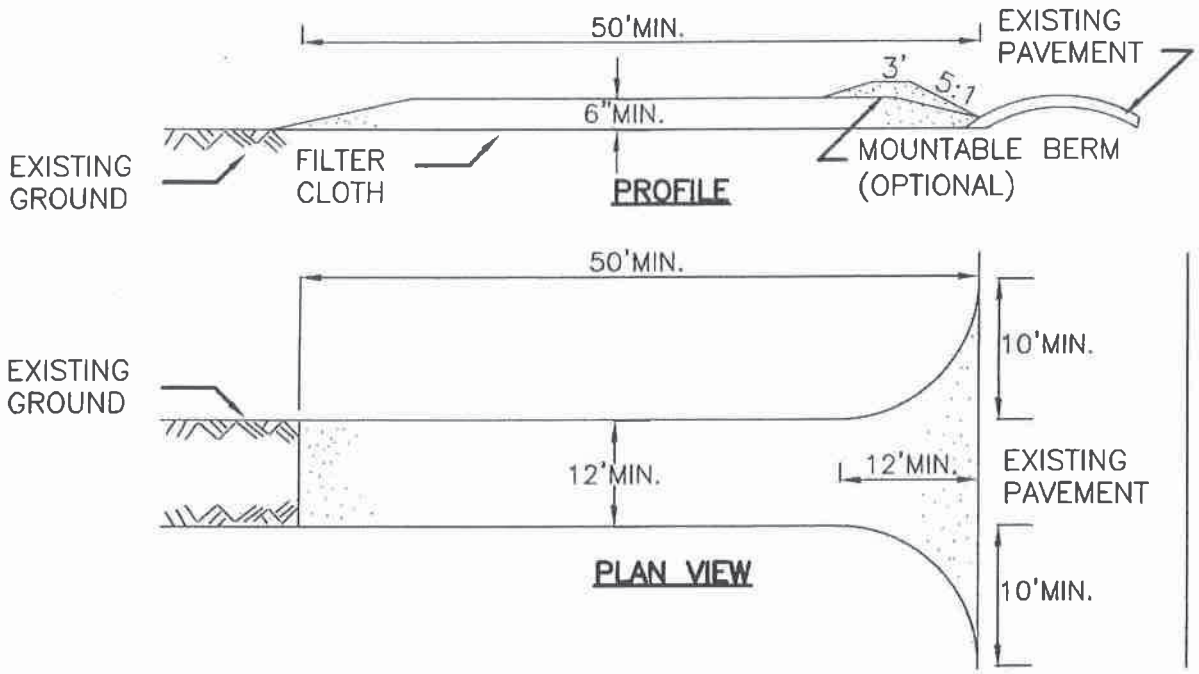
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2–3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

NOT TO SCALE

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



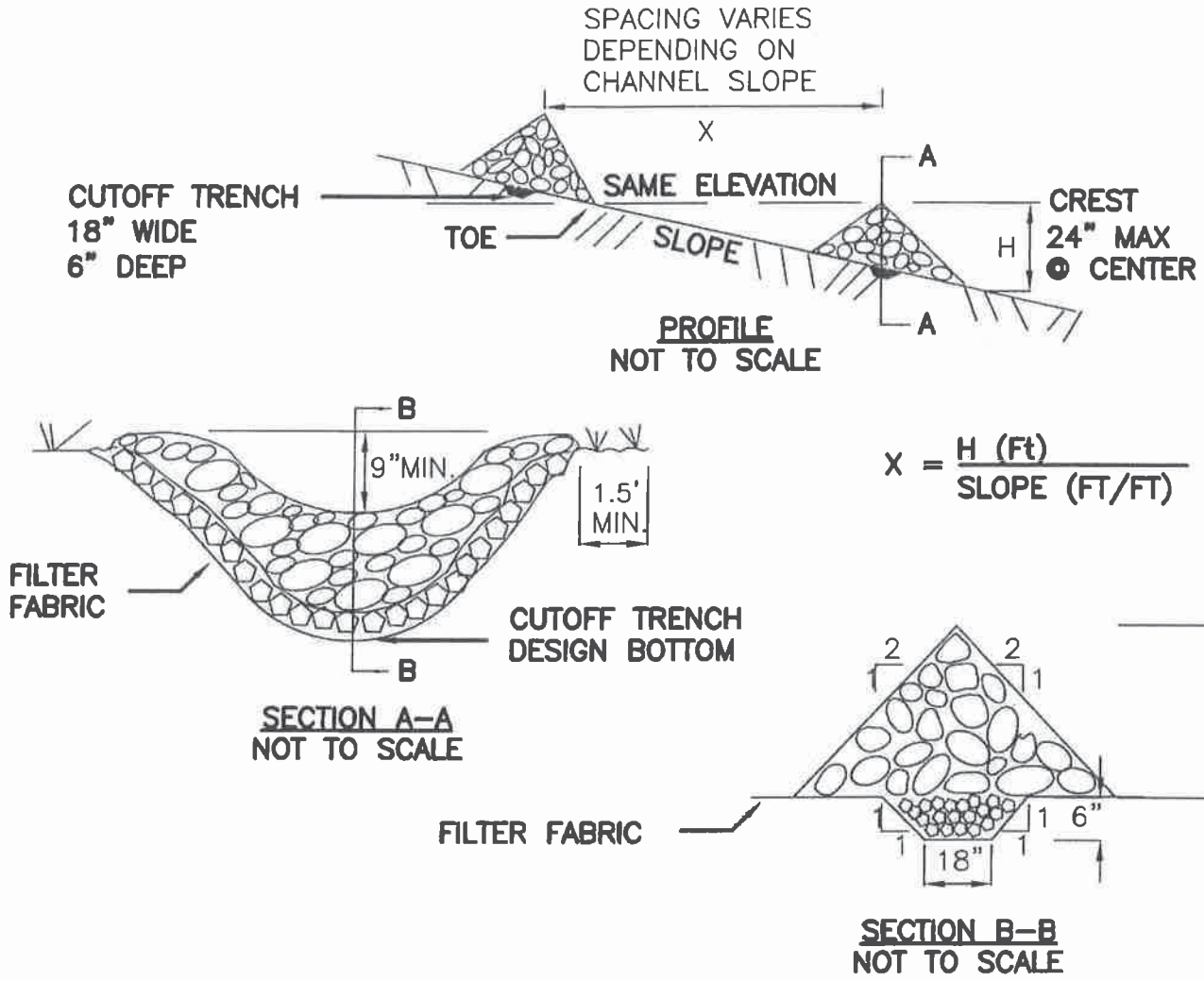
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

STONE CHECK DAM DETAIL

NOT TO SCALE

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix J

Stormwater Management Maintenance

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORMWATER CONTROL FACILITY
MAINTENANCE AGREEMENT

Stormwater Management Facility Inspection Procedures

Post Construction Operation & Maintenance:

1. On a quarterly basis, perform the following:
   a. Inspect catch basins, manholes and storm piping for debris and accumulation of sediment.
   b. Remove and properly dispose of any collected debris from structures.
   c. Flush storm sewers with water, if necessary, to remove accumulated sediment.
   d. Check all rip rap stone for erosion and re-stone, if necessary, to prevent further erosion.
   e. Inspect grass and landscaped areas for un-vegetated areas or areas with less than 80% healthy stand of grass and reseed and mulch as necessary. Water areas daily if reseeded between July and August.

2. Maintain all lawn areas by regular mowing, including the grass slopes of the detention basins. Any eroded areas shall be re-graded, seeded and mulched immediately.

3. Inspect detention basins for debris and sediment accumulation two times per year (spring and fall). Debris and sediment accumulation should be removed from the basin every five to six years or with sediment buildup over 6" in depth. Remove and properly dispose of any collected debris and sediment.

4. The bioretention area shall be maintained as required in the NYSDEC Stormwater Management Design Manual and as a component of the property landscaping and shall be maintained on a regular basis. Sediment must be removed when accumulation depth exceeds on inch. Any erosion of the bioretention berm must be repaired as soon as possible to prevent diversion around the bioretention area.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

12.2.4 Bioretention

Includes: Tree Pits (RR-3), Tree Trench (RR-3), Rain Gardens (RR-6), Stormwater Planters (RR-7), Infiltration Bioretention (F-4), Filtration Bioretention (F-5), Bioslope (F-6), Dry Swales (O-1)

Note: For the purposes of this Chapter, the term "Bioretention" will be used to generally describe all of these practices.

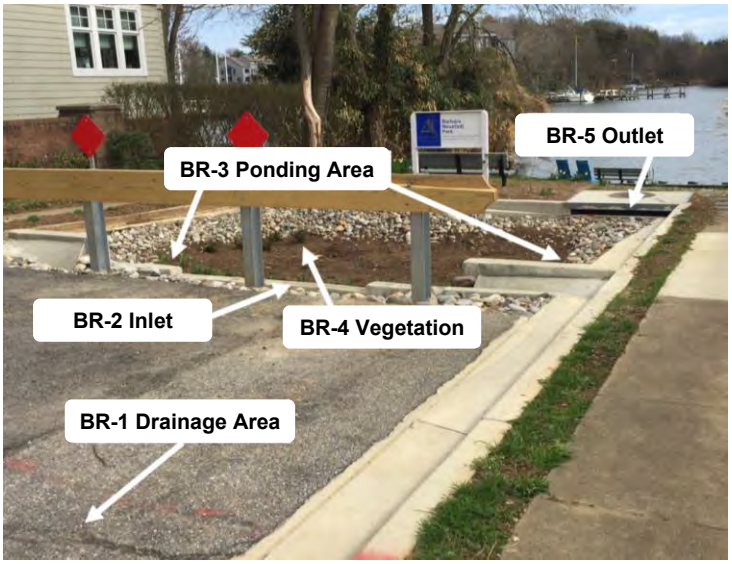


Figure 12.7 Key Areas for Level 1 Inspection of Bioretention

Components

Key components to inspect for Bioretention include the following:

- **BR-1 Drainage Area:** The drainage area sends runoff to and is uphill from the Bioretention. When it rains, water runs off and flows to the Bioretention and ponds within the filter temporarily (usually for no more than 48 hours). Sometimes, the runoff will contain dirt, grit, grass clippings, oil, or other substances that SHOULD NOT be directed to the practice.
- **BR-2 Inlets:** The inlets to a Bioretention are where water flows into the filter. Depending on the design, water can flow in through: curb cuts, pipes, ditches, or sheet flow.
- **BR-3 Ponding Area:** The ponding area fills up with water during a rainstorm. If you picture the Bioretention as a bathtub, there is the *bottom* (usually flat surface), *side slopes* (areas that slope down to the bottom from the surrounding ground), and *berms or structures that control the depth to which water ponds.*
- **BR-4 Vegetation:** The health of vegetation within the Bioretention is perhaps the most critical maintenance item for the Owner/Operator. Many Bioretention become overgrown, and "desirable" vegetation becomes choked out by weeds and invasive plants. Weeding and watering are essential the first year and can be minimized with the use of a weed-free mulch layer. It is important to know what the practice is supposed to look like, and what plants seem to be thriving or doing poorly.
- **BR-5 Outlets:** Outlets are where water leaves the Bioretention when stormwater exceeds the storage capacity.

Level 1 Inspections

Inspection Frequency: *4 times per year during the growing season. During the first 6 months of operation, it is recommended that bioretention practices be inspected at least twice, and after each storm event greater than 0.5".*

Maintenance Frequency: *At least 4 times during the growing season, bioretention should be pruned, weeded, and mowed around; have sediment, trash, and debris removed; and have dead and damaged plants replaced, as needed. In the spring and fall, the practices should have rills, gullies, dead or diseased trees and shrubs repaired or replaced; have bare areas reseeded if applicable; and have mulch replenished to required depth. In the winter months, planting material should be trimmed, and the practice should be inspected for snow accumulation. Once per year, soils should be tested for appropriate pH levels. Finally, every 2 to 3 years, damaged or compromised structures within the practice should be replaced, perennials should be trimmed and divided, and infiltration rates should be checked to ensure proper drainage.*

Maintenance Frequency (Design F-6): In addition to the above, Bioslopes should be inspected after snow events to ensure that the added weight from accumulated snow did not compact the filter media. On a monthly basis, stabilize eroded areas, ensure that flow is not bypassing the facility, and mow the slope using a retractable arm mower to a height of 6 to 15 inches. Recommend performing a flow test on the cleanouts annually to check for clogging, and to remove accumulated sediment that exceeds three inches in depth.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Curb Inlet #1: flow enters through curb channel.



Curb Inlet #2: flow enters through drop curb.



Pea Gravel Diaphragm: sheet flow enters and is evenly distributed along the practice length.



Grass filter strip: sheet flow enters and is evenly distributed along the practice length.

Figure 12.8 Bioretention Filter Inlets

Triggers for Level 2 Inspection

The most likely triggers for Level 2 Inspection of BR practices are:

- Water ponding on surface of practice for more than 72 hours after a storm event
- Bioslope does not drain properly
- Sparse or out of control vegetation
- Practice deviates from original design
- Erosion of inlets, filter bed or outlets
- Significant sediment accumulation

Triggers for Level 3 Inspection

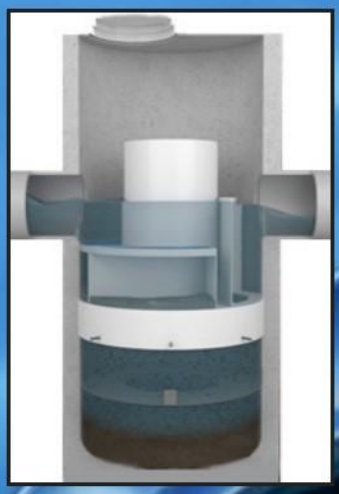
The most likely triggers for Level 3 Inspection of BR practices are:

- Standing water caused by clogged or over compacted media
- Vegetation management needed
- Bioretention does not conform to original design plan in surface area or storage.
- Severe erosion especially when caused by subsurface defect
- Widespread significant and persistent sediment accumulation

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

HydroStorm

Hydrodynamic Separator



Product Info

HydroStorm efficiently removes oil, trash, and TSS (suspended solids and their associated metals, nutrients, bacteria), from stormwater runoff which is required in NDPES permits and the Clean Water Act.

Applications

HydroStorm is used as a standalone treatment solution for urban retrofit and redevelopment applications; as part of a treatment train for new developments; and as a pretreatment device for infiltration, underground storage, and bio-retention.



Features

- Internal high flow bypass prevents scour at high flows
- Designed to accommodate multiple inlet pipes
- Captures oil spills, TSS and trash
- Lower cost compared to other competitors
- Reduced sump depths to minimize excavation
- Small footprint to avoid conflicts with other services
- Engineered for traffic loading
- Can be used as a inlet, bend, or junction structure
- Sized based on independent TSS removal results
- Low Headloss (K= 1.04) to minimize impact to drainage system
- Minimum elevation drop from inlet to outlet

Sizing & Design

Sized based on independent laboratory testing results. Approved and/or certified by numerous agencies (NJDEP, 2018; NJCAT, 2018; ETV Canada, 2018)

Hydroworks LLC
888-290-7900
www.hydroworks.com
info@hydroworks.com

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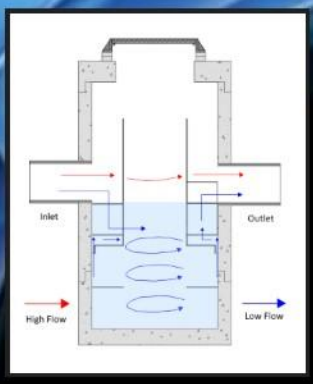
HydroStorm

Hydrodynamic Separator





HYDROSTORM WATER QUALITY FLOW RATES (cfs)					
Model	NJDEP* (67 um)	ConnDOT** (100 um)	NH*** (OK110)	150 um***	200 um***
HS 4/HS 4i	0.9	1.1	0.9	1.6	2.0
HS 5	1.4	2.0	1.5	2.5	3.2
HS 6	2.0	3.1	2.1	3.6	4.5
HS 7	2.7	4.5	2.9	4.9	6.2
HS 8	3.5	6.1	3.8	6.3	8.1
HS 10	5.5	11.3	5.9	9.9	12.6
HS 12	7.9	18.9	8.5	14.3	18.2

*50% Annual TSS Removal **60% Annual TSS Removal ***80% TSS Removal at WQF

Hydroworks will design a unit for you or you can download our free design software at www.hydroworks.com

Hydroworks LLC
888-290-7900
www.hydroworks.com
info@hydroworks.com

For more information, call your local Hydroworks representative:

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Specifications

1. Must be independently tested to the 2013 NJDEP Laboratory Protocol and 2013 ETV Canada protocol (ISO 14024:2016). Separator must be sized based on this data.

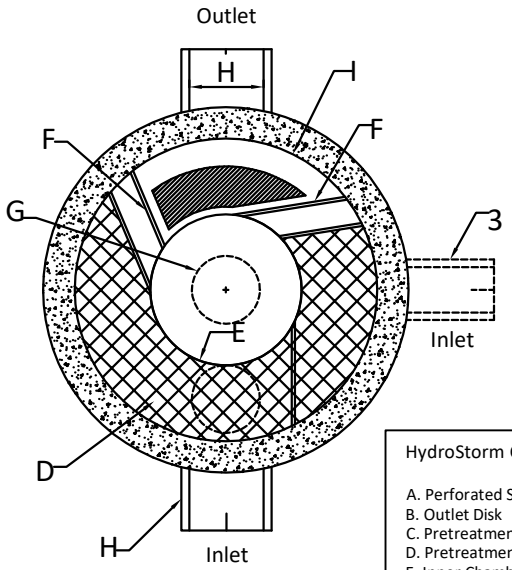
2. Any testing performed by the manufacturer is unacceptable to demonstrate an alternate equal.

3. Field Testing is unreliable, site and storm specific, and subject to compounding equipment and analytical errors and therefore is unacceptable as verification of an alternate equal. TARP verfication as per NJDEP is testing consistent with the 2013 NJDEP laboratory protocol.

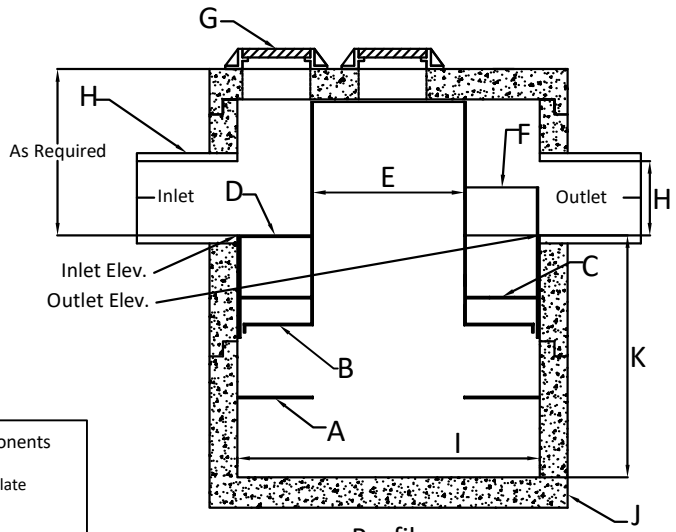
4. The separator must be designed based on the following criteria:

Flow Criteria	
Water Quality FLow Rate cfs (L/s)	
Peak Design Flow Rate cfs (L/s)	

TSS Removal Criteria	
Annual TSS Removal (%)	
NJDEP/ETV Canada TSS	
OK110 Sand	
City of Toronto	
Other	



Plan



Profile

HydroStorm Components

A. Perforated Scour Plate
B. Outlet Disk
C. Pretreatment Disk
D. Pretreatment Grate
E. Inner Chamber
F. By-Pass Weirs
G. Frame and Cover (1-2)
H. Inlet and Outlet Pipes
I. Structure Diameter
J. Base Extension (HS4 - HS6)
K. Sump Depth

HydroStorm by Hydroworks, LLC
US Patent No. 10,710,907
www.hydroworks.com
888-290-7900

HydroStorm Dimensions / Capacities

Model	Diameter ft (m) (9)	Sump Depth ft (m) (11)	Inner Chamber Diam. ft (m) (5)	Max. Pipe in (mm) (8)	Oil Spill Volume gal (L)	Sediment Volume ft3 (m3)	Total Volume gal (L)
HS 3	3 (0.9)	3 (0.9)	1.5 (0.45)	18 (450)	40 (155)	10 (0.35)	155 (600)
HS 4	4 (1.2)	4 (1.2)	2 (0.6)	24 (600)	95 (375)	30 (0.85)	375 (1420)
HS 5	5 (1.5)	5 (1.5)	2.5 (0.8)	30 (750)	165 (635)	60 (1.8)	730 (2780)
HS 6	6 (1.8)	6 (1.8)	3 (0.9)	36 (900)	270 (1030)	110 (3.2)	1265 (4800)
HS 7	7 (2.1)	6.5 (2.0)	3.5 (1.0)	42 (1050)	410 (1560)	160 (4.6)	1870 (7080)
HS 8	8 (2.4)	7 (2.1)	4 (1.2)	48 (1200)	615 (2330)	220 (6.2)	2630 (9960)
HS 10	10 (3.0)	9 (2.7)	5 (1.5)	60 (1500)	1130 (4285)	465 (13.1)	5285 (20015)
HS 12	12 (3.6)	11 (3.3)	6 (1.8)	72 (1800)	1875 (7100)	835 (23.7)	9305 (35225)

Notes:

1. Headloss K factor of 1.04 for hydraulic gradeline calculations

2. Sump depths shown are typical. Additional depth can be added as required

3. Multiple inlet pipes allowed

4. Drops allowed

5. Inlet invert elevations should be the same or higher than the outlet invert elevation. Inlet can be up to 12" (300 mm) lower than outlet if pretreatment area is omitted but 12" (300 mm) must be added to sump depth to maintain overall treatment volume.

6. Solid Cover shown. HydroStorm can be desiged with an inlet grate if required.

7. Oil capacities given are spill capacities.

8. Sediment depths are maximum holding capacities and not recommended capacities for regular maintenance.

9. Capacities are rounded down to nearest 5 gal or ft3 (1L or 0.1 m3 for metric units)

10. Base Extensions not provided on standard units larger than the HS 6. Extensions can be provided if required due to groundwater/buoyancy concerns at the request of the engineer of record.

11. HS4 to HS6 models require one frame and cover. HS7 to HS12 models require two covers

Hydroworks HydroStorm

PROJECT:

LOCATION:

REVISION DATE: 08/07/2020

Hydroworks

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Hydroworks® HydroStorm

Operations & Maintenance Manual

Version 1.2

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Please call Hydroworks at 888-290-7900 or email us at support@hydroworks.com if you have any questions regarding the Inspection Checklist. Please email a copy of the completed checklist to Hydroworks at for our records.

Introduction

The HydroStorm is a state-of-the-art hydrodynamic separator. Hydrodynamic separators remove solids, debris and lighter than water (oil, trash, floating debris) pollutants from stormwater. Hydrodynamic separators and other water quality measures are mandated by regulatory agencies (Town/City, State, Federal Government) to protect storm water quality from pollution generated by urban development (traffic, people) as part of new development permitting requirements.

As storm water treatment structures fill up with pollutants they become less and less effective in removing new pollution. Therefore, it is important that storm water treatment structures be maintained on a regular basis to ensure that they are operating at optimum performance. The HydroStorm is no different in this regard and this manual has been assembled to provide the owner/operator with the necessary information to inspect and coordinate maintenance of their HydroStorm.

Hydroworks® HydroStorm Operation

The Hydroworks HydroStorm (HS) separator is a unique hydrodynamic by-pass separator. It incorporates a protected submerged pretreatment zone to collect larger solids, a treatment tank to remove finer solids, and a dual set of weirs to create a high flow bypass. High flows are conveyed directly to the outlet and do not enter the treatment area, however, the submerged pretreatment area still allows removal of coarse solids during high flows.

Under normal or low flows, water enters an inlet area with a horizontal grate. The area underneath the grate is submerged with openings to the main treatment area of the separator. Coarse solids fall through the grate and are either trapped in the pretreatment area or conveyed into the main treatment area depending on the flow rate. Fines are transported into the main treatment area. Openings and weirs in the pretreatment area allow entry of water and solids into the main treatment area and cause water to rotate in the main treatment area creating a vortex motion. Water in the main treatment area is forced to rise along the walls of the separator to discharge from the treatment area to the downstream pipe.

The vortex motion forces solids and floatables to the middle of the inner chamber. Floatables are trapped since the inlet to the treatment area is submerged. The design maximizes the retention of settled solids since solids are forced to the center of the inner chamber by the vortex motion of water while water must flow up the walls of the separator to discharge into the downstream pipe.

A set of high flow weirs near the outlet pipe create a high flow bypass over both the pretreatment area and main treatment chamber. The rate of flow into the treatment area is regulated by the number and size of openings into the treatment chamber and the height of by-pass weirs. High flows flow over the weirs directly to the outlet pipe preventing the scour and resuspension of any fines collected in the treatment chamber.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

A central access tube is located in the structure to provide access for cleaning. The arrangement of the inlet area and bypass weirs near the outlet pipe facilitate the use of multiple inlet pipes.

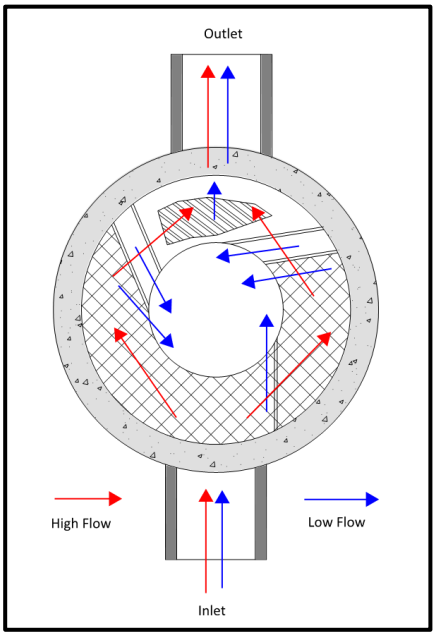


Figure 1. Hydroworks HydroStorm Operation – Plan View

Figure 2 is a profile view of the HydroStorm separator showing the flow patterns for low and high flows.

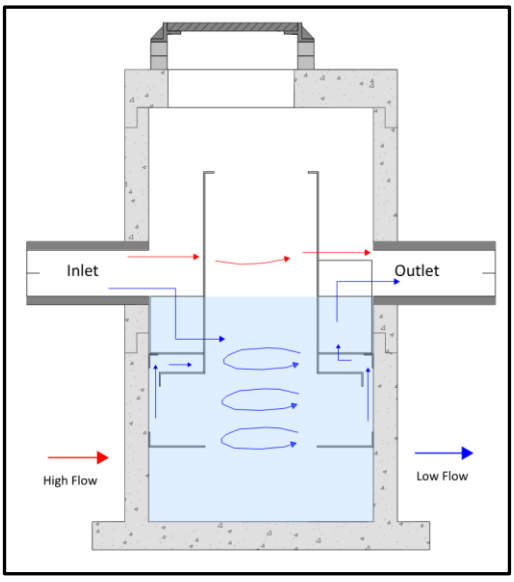


Figure 2. Hydroworks HydroStorm Operation – Profile View

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

The HS 4i is an inlet version of the HS 4 separator. There is a catch-basin grate on top of the HS 4i. A funnel sits sits underneath the grate on the frame and directs the water to the inlet side of the separator to ensure all lows flows are properly treated. The whole funnel is removed for inspection and cleaning.

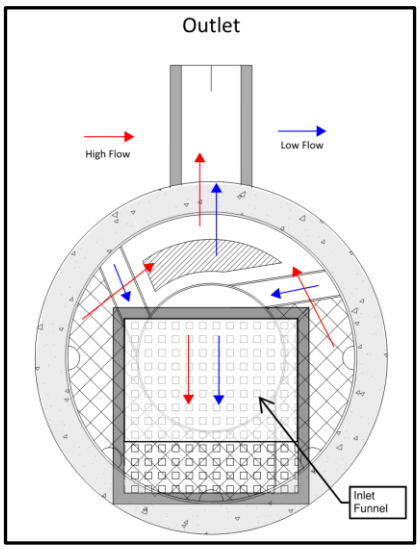


Figure 3. Hydroworks HS 4i Funnel

Construction Materials

The inner chamber and outlet baffle are made out of a copolymer plastic. The shell of the structure is pre-cast concrete. Pre-cast concrete is readily accepted by all municipalities since it has the following advantages:

- long service life
- ease of installation (less dependent on backfill (contractor proficiency) for structural integrity)
- concrete structures are designed for both anti-buoyancy and traffic loading without any field requirements (such as structural loading slabs in traffic areas and anti-buoyancy slabs to prevent groundwater uplift).
- low maintenance requirements

Hydroworks HS Separator Dimensions and Capacities

The HS separator is manufactured in a variety of sizes from 4 ft inside diameter to 12 ft inside diameter as shown in Table 1. Larger sizes may not be available in all areas. Please check with Hydroworks to ensure availability of the larger model sizes.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table 1. Hydroworks HS Separator Dimensions*					
Model	Structure Inside Diam. (SID) (mm)	Structure Depth (mm)*	Sediment/ Sinking Trash Volume (L)	Oil/Floating Trash Volume (L)	Permanent Pool Wet Volume (L)
HS 3	900	1050	420	150	700
HS 4	1200	1200	845	355	1420
HS 5	1500	1500	1695	620	2775
HS 6	1800	1800	3110	1020	4800
HS 7	2100	1950	4530	1550	7080
HS 8	2400	2100	6225	2325	9960
HS 9	2700	2400	9200	3195	14410
HS 10	3000	2700	13025	4275	20015
HS 12	3600	3000	20525	7095	30535

*Dimensions vary with project requirements

The volumes provided in Table 1 for oil and sediment are to full capacity and not indicative of recommended depths/volumes for maintenance.

Headloss

Any water quality system implemented in a storm drain network will create headloss in the system. In general, depending on the configuration of the by-pass, systems designed to treat high flows or all of the flow will have a higher headloss impact on the storm drain network than systems that by-pass high flows.

The headloss created by the HS separator was measured in an independent laboratory (Alden Research Laboratory) for a full-scale HS 4. The K value ($h = K\, v^2/(2g)$) for headloss calculations was determined to be 1.04 as shown in Figure 3.

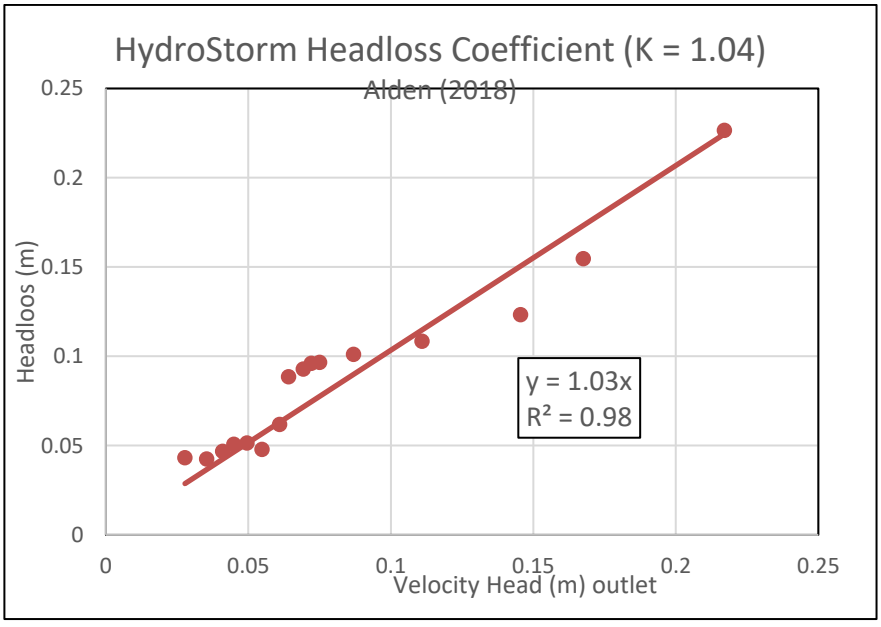


Figure 3. HydroStorm Headloss K Factor (1.04)

Hydroworks

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Inspection

Procedure

Floatables

A visual inspection can be conducted for floatables by removing the covers and looking down into the center access tube of the separator. Separators with an inlet grate (HS 4i or custom separator) will have a plastic funnel located under the grate that must be removed from the frame prior to inspection or maintenance. If you are missing a funnel please contact Hydroworks at the numbers provided at the end of this document.

TSS/Sediment

Inspection for TSS build-up can be conducted using a Sludge Judge®, Core Pro®, AccuSludge® or equivalent sampling device that allows the measurement of the depth of TSS/sediment in the unit. These devices typically have a ball valve at the bottom of the tube that allows water and TSS to flow into the tube when lowering the tube into the unit. Once the unit touches the bottom of the device, it is quickly pulled upward such that the water and TSS in the tube forces the ball valve closed allowing the user to see a full core of water/TSS in the unit. The unit should be inspected for TSS through each of the access covers. Several readings (2 or 3) should be made at each access cover to ensure that an accurate TSS depth measurement is recorded.

Frequency

Construction Period

The HydroStorm separator should be inspected every four weeks and after every large storm (over 0.5” (12.5 mm) of rain) during the construction period.

Post-Construction Period

The Hydroworks HydroStorm separator should be inspected during the first year of operation for normal stabilized sites (grassed or paved areas). If the unit is subject to oil spills or runoff from unstabilized (storage piles, exposed soils) areas the HydroStorm separator should be inspected more frequently (4 times per year). The initial annual inspection will indicate the required future frequency of inspection and maintenance if the unit was maintained after the construction period.

Reporting

Reports should be prepared as part of each inspection and include the following information:

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

1. Date of inspection
2. GPS coordinates of Hydroworks unit
3. Time since last rainfall
4. Date of last inspection
5. Installation deficiencies (missing parts, incorrect installation of parts)
6. Structural deficiencies (concrete cracks, broken parts)
7. Operational deficiencies (leaks, blockages)
8. Presence of oil sheen or depth of oil layer
9. Estimate of depth/volume of floatables (trash, leaves) captured
10. Sediment depth measured
11. Recommendations for any repairs and/or maintenance for the unit
12. Estimation of time before maintenance is required if not required at time of inspection

A sample inspection checklist is provided at the end of this manual.

Maintenance

Procedure

The Hydroworks HydroStorm unit is typically maintained using a vacuum truck. There are numerous companies that can maintain the HydroStorm separator. Maintenance with a vacuum truck involves removing all of the water and sediment together. The water is then separated from the sediment on the truck or at the disposal facility.

A central access opening (24” (600 mm) or greater) is provided to the gain access to the lower treatment tank of the unit. This is the primary location to maintain by vacuum truck. The pretreatment area can also be vacuumed and/or flushed into the lower treatment tank of the separator for cleaning via the central access once the water level is lowered below the pretreatment floor.

In instances where a vacuum truck is not available other maintenance methods (i.e. clamshell bucket) can be used, but they will be less effective. If a clamshell bucket is used the water must be decanted prior to cleaning since the sediment is under water and typically fine in nature.

The local municipality should be consulted for the allowable disposal options for both water and sediments prior to any maintenance operation. Once the water is decanted the sediment can be removed with the clamshell bucket.

Disposal of the contents of the separator depend on local requirements. Maintenance of a Hydroworks HydroStorm unit will typically take 1 to 2 hours based on a vacuum truck and longer for other cleaning methods (i.e. clamshell bucket).

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

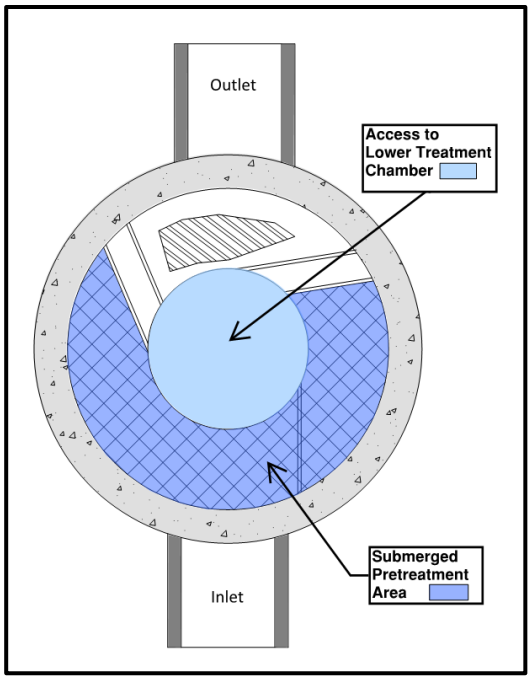


Figure 3. Maintenance Access

Frequency

Construction Period

A HydroStorm separator can fill with construction sediment quickly during the construction period. The HydroStorm must be maintained during the construction period when the depth of TSS/sediment reaches 24” (600 mm). It must also be maintained during the construction period if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the area of the separator

The HydroStorm separator should be maintained at the end of the construction period, prior to operation for the post-construction period.

Post-Construction Period

The HydroStorm was independently tested by Alden Research Laboratory in 2017. A HydroStorm HS 4 was tested for scour with a 50% sediment depth of 0.5 ft.(150 mm). The sump depths given in Table 1 are scaled larger than required based on standard scaling requirements (NJDEP, ETV Canada). Accordingly maintenance depths for units larger than the HS 4 will be larger than 300 mm.

There will be designs with increased sediment storage based on specifications or site-specific criteria. A measurement of the total depth in the separator through the central access tube should be taken and compared to sump depth given in Table 1.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

The standard sump depth from Table 1 should be subtracted from the measured depth and the resulting extra depth should be added to the values given in Table 2 to determine the site-specific sediment maintenance depth for that separator.

For example, if the measured sump depth in the HS-7 is 7.5 feet, then the sediment maintenance depth for that HS-7 is 2.25 ft (= 0.5 + 1.75) and the separator does not need to be cleaned for sediment accumulation until the measure sediment depth is 2.25 ft.

The HydroStorm separator must also be maintained if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the water surface of the separator.

Table 2 Standard Maintenance Depths for HydroStorm Models

Model	Diameter ft (mm)	Sediment Maintenance Depth for Total Water Depth ft (mm)*
HS-3	3 (900)	1 (300)
HS-4	4 (1200)	1 (300)
HS-5	5 (1500)	1.75 (530)
HS-6	6 (1800)	2 (610)
HS-7	7 (2100)	1.75 (535)
HS-8	8 (2400)	1.5 (465)
HS-9	9 (2700)	1.75 (540)
HS-10	10 (3000)	2 (615)
HS-12	12 (3600)	1.5 (470)

*based on standard sump depths in Table 1

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

HYDROSTORM INSPECTION SHEET

Date _____
Date of Last Inspection _____

Site _____
City _____
State _____
Owner _____

GPS Coordinates _____

Date of last rainfall _____

Site Characteristics	**Yes**	**No**
Soil erosion evident	☐	☐
Exposed material storage on site	☐	☐
Large exposure to leaf litter (lots of trees)	☐	☐
High traffic (vehicle) area	☐	☐

HydroStorm	**Yes**	**No**
Obstructions in the inlet or outlet	☐ *	☐
Missing internal components	☐ **	☐
Improperly installed inlet or outlet pipes	☐ ***	☐
Internal component damage (cracked, broken, loose pieces)	☐ **	☐
Floating debris in the separator (oil, leaves, trash)	☐	☐
Large debris visible in the separator	☐ *	☐
Concrete cracks/deficiencies	☐ ***	☐
Exposed rebar	☐ **	☐
Water seepage (water level not at outlet pipe invert)	☐ ***	☐

Water level depth below outlet pipe invert _____"

Routine Measurements

Floating debris depth	**< 0.5" (13mm)**	☐	**>0.5" 13mm)**	☐ *
Floating debris coverage	**< 50% of surface area**	☐	**> 50% surface area**	☐ *
Sludge depth	**< 12" (300mm)**	☐	**> 12" (300mm)**	☐ *****

* Maintenance required
** Repairs required
*** Further investigation is required

Hydroworks

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Other Comments:

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydroworks

Hydroworks® HydroStorm

One Year Limited Warranty

Hydroworks, LLC warrants, to the purchaser and subsequent owner(s) during the warranty period subject to the terms and conditions hereof, the Hydroworks HydroStorm to be free from defects in material and workmanship under normal use and service, when properly installed, used, inspected and maintained in accordance with Hydroworks written instructions, for the period of the warranty. The standard warranty period is 1 year.

The warranty period begins once the separator has been manufactured and is available for delivery. Any components determined to be defective, either by failure or by inspection, in material and workmanship will be repaired, replaced or remanufactured at Hydroworks' option provided, however, that by doing so Hydroworks, LLC will not be obligated to replace an entire insert or concrete section, or the complete unit. This warranty does not cover shipping charges, damages, labor, any costs incurred to obtain access to the unit, any costs to repair/replace any surface treatment/cover after repair/replacement, or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to any material that has been disassembled or modified without prior approval of Hydroworks, LLC, that has been subjected to misuse, misapplication, neglect, alteration, accident or act of God, or that has not been installed, inspected, operated or maintained in accordance with Hydroworks, LLC instructions and is in lieu of all other warranties expressed or implied. Hydroworks, LLC does not authorize any representative or other person to expand or otherwise modify this limited warranty.

The owner shall provide Hydroworks, LLC with written notice of any alleged defect in material or workmanship including a detailed description of the alleged defect upon discovery of the defect. Hydroworks, LLC should be contacted at 136 Central Ave., Clark, NJ 07066 or any other address as supplied by Hydroworks, LLC. (888-290-7900).

This limited warranty is exclusive. There are no other warranties, express or implied, or merchantability or fitness for a particular purpose and none shall be created whether under the uniform commercial code, custom or usage in the industry or the course of dealings between the parties. Hydroworks, LLC will replace any goods that are defective under this warranty as the sole and exclusive remedy for breach of this warranty.

Subject to the foregoing, all conditions, warranties, terms, undertakings or liabilities (including liability as to negligence), expressed or implied, and howsoever arising, as to the condition, suitability, fitness, safety, or title to the Hydroworks HydroStorm are hereby negated and excluded and Hydroworks, LLC gives and makes no such representation, warranty or undertaking except as expressly set forth herein. Under no circumstances shall Hydroworks, LLC be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the HydroStorm, or the cost of other goods or services related to the purchase and installation of the HydroStorm. For this Limited Warranty to apply, the HydroStorm must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Hydroworks' written installation instructions.

Hydroworks, LLC expressly disclaims liability for special, consequential or incidental damages (even if it has been advised of the possibility of the same) or breach of expressed or implied warranty. Hydroworks, LLC shall not be liable for penalties or liquidated damages, including loss of production and profits; labor and materials; overhead costs; or other loss or expense incurred by the purchaser or any third party. Specifically excluded from limited warranty coverage are damages to the HydroStorm arising from ordinary wear and tear; alteration, accident, misuse, abuse or neglect; improper maintenance, failure of the product due to improper installation of the concrete sections or improper sizing; or any other event not caused by Hydroworks, LLC. This limited warranty represents Hydroworks' sole liability to the purchaser for claims related to the HydroStorm, whether the claim is based upon contract, tort, or other legal basis.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



ENGINEER'S REPORT
FOR
PROPOSED SITE REDEVELOPMENT
6000-6040 NORTH BAILEY AVE
TOWN OF AMHERST, NEW YORK
PROP # 1723

November 17, 2023
(Updated August 23, 2024)

GENERAL

This project is a redevelopment of a 17.426-acre parcel of land currently occupied with five (5) multitenant buildings (26,709 S.F., 35,678 S.F., 90,130 S.F., 59,591 S.F., and 34,632 S.F.) with associated loading docks, parking, utility, and drainage infrastructure. It is located at the Southwest corner of North Bailey Ave and Romney Road in the Town of Amherst. The property abuts general commercial properties along all property boundaries.

Existing Conditions:

The site is currently occupied by five (5) buildings and associated parking lot and loading docks. The site currently is sheet draining any runoff from pavement surface existing on-site drainage structures.

The site contains existing domestic and fire water services. The existing Domestic water service is tapped off the 8" Masin along North Bailey Ave and enters the site at the Southeast corner of property. The existing Fire water service is tapped of the 8" Main along North Bailey Road and enters the site near the Northeast corner of property.

Existing Sanitary Sewers connection for the property is located South of property that discharges into the existing Town of Amherst sewer district.

PROJECT OVERVIEW

The proposed project *(Figure 1)* consists of; clearing of land and relocation of existing utilities; Construct building addition of 10,069 S.F. between the Two Southern Buildings. Site improvements including improvements to the associated parking lot, drainage infrastructure and sites grading and utilities.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PROPOSED FACILITIES

Storm Water

SWPPP Engineer's Report prepared by Carmina, Wood, Morris DPC dated November 2023

Water System

The existing water service to the site is to reuse for this proposed project. The existing service is tapped off the existing 8" water main along North Bailey Ave R.O.W. The proposed development will reuse the existing domestic and fire water services, which each have their own dedicated hot box enclosure with meter and backflow devices. The existing 8" Fire service enters the site near the NE corner of property and the existing 3" domestic service enters the site near the SE corner of property.

Disinfection of the water services following installation will be continuous feed, according to AWWA C-651, latest revision.

Summary: *(Refer to Figure 2)*

Proposed Building Increased:	10,069 S.F.
Operating Demand Increase:	1.86 gpm
Peak Demand Increase:	3.36 gpm
Water Main:	8" main along North Bailey Ave
Static Pressure:	96
Head Loss Friction:	0 psi
Loss through meter/RPZ:	13.0 psi per service
Elevation Loss:	0.9 psi
Bends Loss:	0 psi
Required Pressure after RPZ:	20 psi
Proposed Pressure after RPZ:	**82.1 psi**

Sanitary Sewer:

Sanitary services will reuse building connection which will discharge into the existing sanitary sewer lateral that discharges along sanitary main along Meyer Road. The proposed building additions will reuse the existing lateral sanitary connections.

Summary:

Proposed New Building S.F.:	10,069 S.F.
Existing Buildings S.F.:	246,740 S.F.
Proposed Flow:	0.1 * 10,069 = 1,007 GPD
Additional GPD =	1,007 GPD
Total Increased Sanitary Flow:	**1,007 GPD**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURES:

1 *Site Location Plan & Engineering Plan*

2 *Sanitary & Water Calculations*

3 *SWPPP Stormwater Report*

4 *Water Quality Unit Detail*

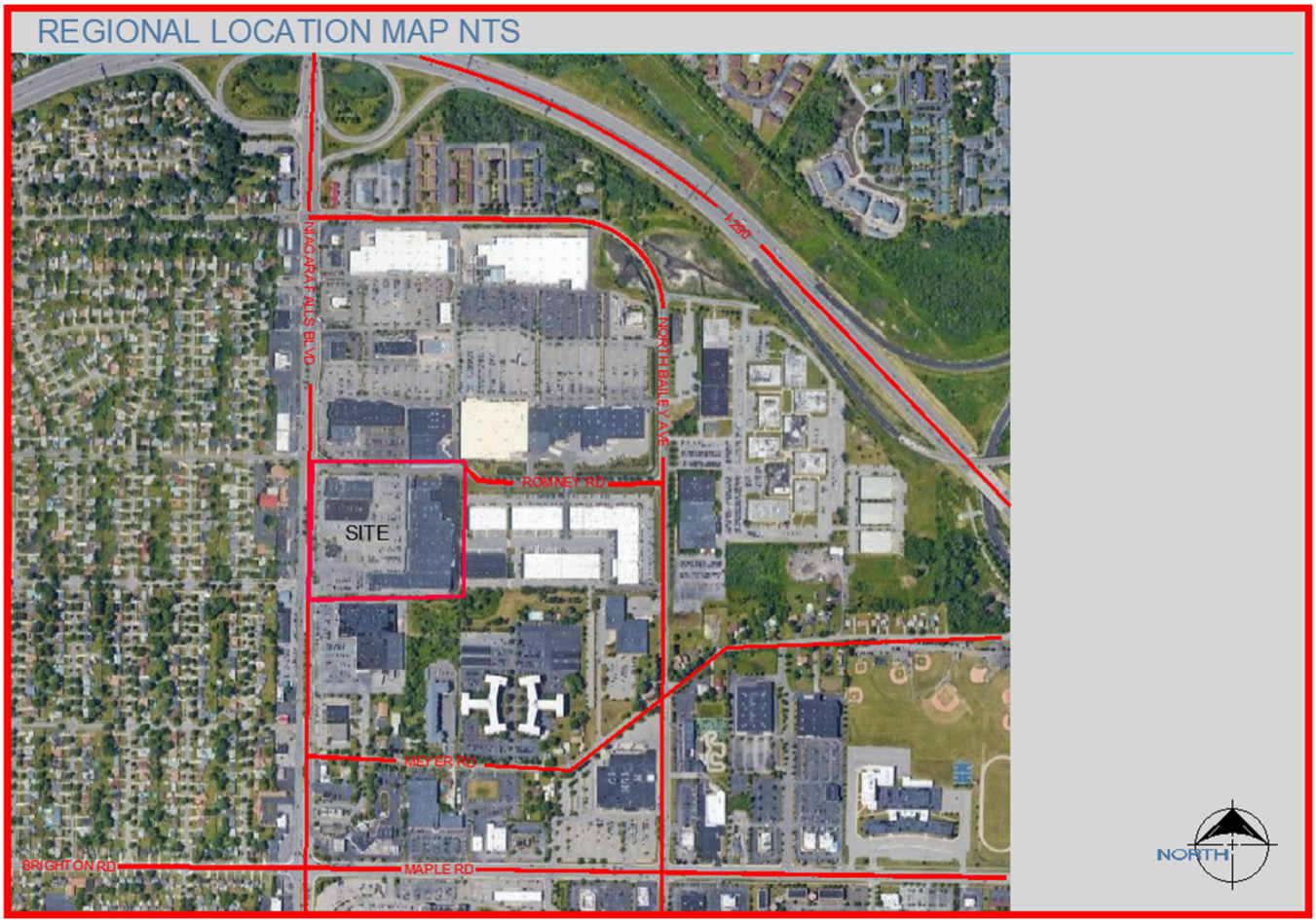
APPENDICES:

A *FEMA Flood Areas*

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURE 1

SITE LOCATION PLAN
ENGINEERING PLANS



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURE 2

SANITARY & WATER CALCULATIONS

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NEW YORK 14202
716.886.0211.P : : 716.886.1026.F

JOB NAME: Amherst Development
DESCRIPTION: SANITARY & WATER CALCULATIONS
PROPERTY # 1723 DATE: 8.23.24
CALCULATED BY: DMZ SHEET: 1 OF 2

SANITARY SEWER CALCULATIONS:

PROPOSED NEW BUILDING: **10,069 S.F.**

Required GPD = 0.1 GPD / S.F. *NYSDEC Design standard for WWTS

Proposed = 10,069 * 0.1 GOPD = 1,007 GPD

INCREASED SANITARY FLOW = **1,007 GPD**

PEAK SANITARY DEMAND

Total Demand = 1007 GPD x 1.1 = 1,108 GPD
Per Population = 30 Per Capita

Peak Factor: $(18+\sqrt{P}) / (4+\sqrt{P})$ P in Thousands

Peak Factor = 4

Peak Sanitary Demand = 1108 x 4.38 = 4,853 gpd
0.005 MGD

WATER CALCULATIONS:

Demand: = 1,007 GPD
GPM: = GPD / 9hr / 60min
ASSUMED 9HR SHIFT = 1,007 / 9 / 60
= **1.86 GPM**

PEAK FACTOR: = GPM X 1.8
= 1.86 X 1.8
Q = **3.36 GPM PEAK**

HEADLOSS FRICTION: = $\frac{(10.44) X (L) X (Q)^{1.85}}{(C)^{1.85} X (D)^{4.866}}$

Q = GPMin
L = LENGTH OF PIPE = $\frac{(10.44) X (50) X (3.36)^{1.85}}{(140)^{1.85} X (2)^{4.866}}$
C = DESIGN COEF OF PIPE
D = PIPE DIAMETER

= **0 PSI**

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

BENDERSON DEVELOPMENT
570 DELAWARE AVENUE
BUFFALO, NEW YORK 14202
716.886.0211.P : : 716.886.1026.F

JOB NAME: Amherst Development
DESCRIPTION: SANITARY & WATER CALCULATIONS
PROPERTY # 1723 DATE: 8.23.24
CALCULATED BY: DMZ SHEET: 2 OF 2

ELEVATION LOSS: = (BUILDING INTAKE - HYDRANT HEIGHT) X 0.433
= (579.5 - 577.5) X 0.433
= **0.9 PSI**

LOSS THROUGH RPZ & METER:

RPZ = 12 PSI (STANDARD)
METER = 1 PSI (STANDARD)
= **13 PSI After Hotbox**

LOSS DUE TO BENDS:
RESISTANCE EQUIVALENT LENGTH METHOD)

TOTAL = **0 FT ADDITIONAL PIPE**

STATIC PRESSURE @ HYDRANT:
= **96 psi**

PRESSURE AFTER RPZ / METER / BENDS / ELEVATION / HEADLOSS:

= 96 - 13 PSI - 0.9 PSI
(HYD) (RPZ) (FRICTION)
= **82.1 psi**

REQUIRED RESIDUAL PRESSURE = 20 PSI

PROPOSED RESIDUAL PRESSURE = 82.1 PSI

THEREFORE PROPOSED > REQUIRED
82 PSI (GREATER) 20 PSI

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FIGURE 3

SWPPP Report

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINAWOOD
DESIGN

ENGINEER'S REPORT

for

Amherst Development Park

6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

November 2023



Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table of Contents

Written Engineer's Report

Section 1 - Location & Description

Section 2 - Stormwater Drainage System

Appendices

Appendix A - Location Maps – Erie County GIS

Appendix B - Web Soil Survey – Hydrologic Soils Groups

Appendix C - Storm Sewer Drainage Calculations

- Water Quality and Runoff Reduction Calculations
- Stormwater Runoff Summaries and Runoff Delineation Maps
- HydroCAD Analysis

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Section 1 – Location & Description

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.14 of which 6.95 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Section 2 – Stormwater Drainage System

The existing site is generally flat. An existing open/closed drainage system onsite drains north to an open swale along the north side of Romney Rd. Three existing 3'x5' arch stormwater conveyance pipes are also located onsite within a 30' wide Town of Amherst Drainage easement. These conveyance pipes flow from the south property line to north and discharge into the open swale along Romney Rd. The existing swale flows east along Romney Rd and north along North Bailey Ave and outlets to an existing stormwater management pond located adjacent to Interstate 290. Runoff from the pond is then conveyed north via open and closed drainage systems and discharges to Ellicott Creek and ultimately the Niagara River. All proposed stormwater runoff from the project site will continue to discharge to the existing stormwater system along Romney Road.

This project is subject to the Boulevard Central Special Stormwater Design Conditions adopted by the Town of Amherst. In addition to the requirements of the NYSDEC SPDES General Permit, the project must also provide the following criteria for Projected Growth Redevelopment Scenarios and Enhanced Phosphorus Removal:

- Provide 10% escalation of proposed peak flow when compared to existing conditions peak flows.
- Median curve number (CN) to compute existing conditions.
- Water Quality volume based on the 1-year, 24-hour storm according to Chapter 10 of the NYSDEC Stormwater Management Design Manual.

For purposes of the runoff analysis and the stormwater drainage system design, portions of the project site were classified as "Redevelopment" per NYSDEC Stormwater Management Design Manual Chapter 9 requirements. The nature of this construction project will be a "Redevelopment" with an increase in impervious area. The proposed stormwater management system was designed to attenuate proposed runoff to existing conditions prior to discharge.

The proposed stormwater drainage system will consist of a combination of overland sheet flow and HDPE pipe channel flow connected by a series of drainage inlets located throughout the project site. Proposed stormwater runoff will be collected and conveyed to an underground stormwater chamber detention area onsite and discharged via outlet control pipes to the existing stormwater system along Romney Road.

The bioretention areas will provide Runoff Reduction and Water Quality volume requirements for "New Development" areas. The filter area planting soil depth varies throughout the bioretention areas but maintains a minimum of at least 18 inches of soil. The 18 inches of soil is an acceptable deviation per the NYSDEC where existing grades prevent the full 2.5'-4' foot soil depth. A series of 6" underdrains below the planting soil will be located throughout the bioretention areas connected by overflow drainage inlets to convey runoff directly to the closed stormwater management system. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover: No existing natural features exist onsite.
2. Calculation of Water Quality Volume (WQv) for site. See "Storm Sewer Drainage Calculations".

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity. Bioretention areas were incorporated into the site design to provide required RRv and WQv for "New Development" areas. See "Storm Sewer Drainage Calculations".
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas. See "Storm Sewer Drainage Calculations".
5. Design of volume and peak rate control practices where required. See "Storm Sewer Drainage Calculations".

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality:
The NYSDEC requires water quality treatment prior to discharge. This will be achieved by the application of bioretention areas and water quality treatment structures. The total WQv provided was 0.749 ac-ft and equal to the required WQv of 0.749 ac-ft. The required water quality volume was calculated based on the proposed 6.95 acres of proposed development area.

Runoff Reduction Volume:
The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for contributing runoff areas in the WQv. The RRv provided was 0.094 ac-ft and greater than the required RRv min. of 0.056 ac-ft. The required runoff reduction volume was calculated based on 3.03 acres of proposed "new development" area that includes 1.97 acres of "new impervious" area.

100% of the required WQv was not reduced due to the followings site specific limitations: Drainage areas with impermeable soils, Type D. In addition, below is a summary of how each green infrastructure technique was evaluated and determined to be feasible or infeasible:

1. Conservation of natural areas: no natural existing features present onsite.
2. Sheetflow to riparian buffers or filter strips: no riparian buffers possible on the site; filter strips not feasible given the limited area for development.
3. Vegetated Open Swales: swales were not feasible given the limited area for development.
4. Tree Plantings: new trees were planted throughout the site.
5. Disconnection of Roof Top Runoff: disconnection not feasible for these types of projects.
6. Stream Daylighting: is not feasible given the limited area for development.
7. Rain Garden: bioretention areas installed throughout site.
8. Green Roof: the proposed use of the building makes this an unfeasible practice.
9. Stormwater Planter: this method is not recommended for these types of projects.
10. Rain Barrels & Cisterns: collected water would not be used for irrigation.
11. Porous Pavement: porous pavement is not recommended for areas with impermeable soils (Type D) and areas with sediment laden runoff (salting in winter months).

Channel Protection:
The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 10,004 cf will be accommodated in the stormwater detention areas onsite.

Overbank Flooding:
The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 13.54 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Extreme Storm Protection:
The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 25.60 cfs, which is below the existing peak 100-year runoff of 41.10 cfs.

Town of Amherst:
The Town requires that the 25-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event *under the 10% escalation scenario*. Storage of this storm will be provided within the onsite stormwater detention areas. At the 25-year storm event the stormwater drainage system will allow discharge of 19.34 cfs, which is below the existing peak 10-year runoff of 20.51 cfs.

Design Criteria:
Storm pipes: 10-year storm
RUNOFF ANALYSIS OF PROPOSED DEVELOPMENT AREA:

STORM EVENT	EXISTING RUNOFF (cfs)	PROPOSED RUNOFF (cfs)	10% ESCALATION (cfs)
1 YEAR	8.12	7.30	8.03
2 YEAR	11.64	9.40	10.34
5 YEAR	16.25	11.90	13.09
10 YEAR	20.51	13.54	14.89
25 YEAR	27.36	18.03	19.83
50 YEAR	33.68	21.83	24.01
100 YEAR	41.10	25.60	28.16

WATER QUALITY SUMMARY:
WQv REQUIRED = 0.749 AC-FT
RRv MIN. REQUIRED = 0.056 AC-FT
RRv PROVIDED WITHIN BIORETENTION AREAS = 0.094 AC-FT
WQv PROVIDED WITHIN BIORETENTION AREAS = 0.234 AC-FT
WQv PROVIDED BY TREATMENT STRUCTURES = 0.515 AC-FT
TOTAL WQv PROVIDED = 0.749 AC-FT

BIORETENTION FILTER AREA SUMMARY:
FILTER AREA = 9,266 SF

See attached “Storm Sewer Drainage Calculations” for additional information.

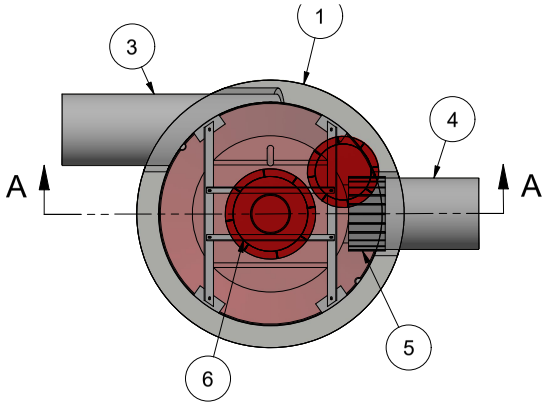
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

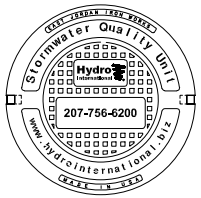
FIGURE 4

Water Quality Unit Detail

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

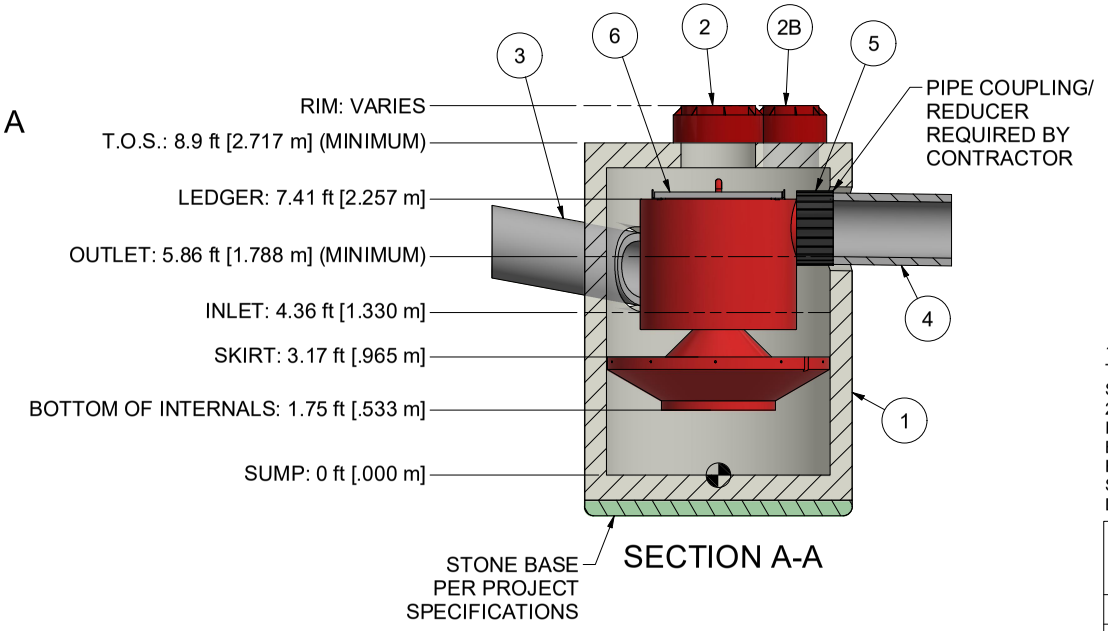
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





HYDRO FRAME AND COVER (INLCUDED)

GRADE RINGS BY OTHERS AS REQUIRED



SECTION A-A

NOTE: NOT FOR CONSTRUCTION. CONTACT HYDRO FOR SITE SPECIFIC DETAIL

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.

PROJECTION

IF IN DOUBT ASK

DATE: 10/8/2019	SCALE: 1 / 50
DRAWN BY: ER	CHECKED BY: MRJ
APPROVED BY	

Title: 6ft-DIAMETER

GENERAL ARRANGEMENT

Hydro International
A CRH COMPANY
hydro-int.com
HYDRO INTERNATIONAL

WEIGHT: N/A	MATERIAL:
STOCK NUMBER: NEXT ASSY	
DRAWING NO.: DD GA-10	
SHEET SIZE: B	SHEET: 1 OF 1
Rev: A	

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

1. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
2. Peak Hydraulic Capacity: 8.0 cfs (227 l/s)
3. Sediment Storage Capacity: 2.10 cu. yd. (1.59 cu. m)
4. Continuous Oil Storage Capacity: 216 gal. (818 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reintrainment by a benching skirt.
6. For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/downstream-defender

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	72	1800	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)
2	3	24	600	FRAME AND COVER
2B	1	18	450	FRAME AND COVER
3	1	18 (MAX)	450 (MAX)	MAX INLET PIPE (BY OTHERS)
4	1	18 (MAX)	450 (MAX)	MAX OUTLET PIPE (BY OTHERS)
5	1			PIPE COUPLING (BY OTHERS)
6	1			INTERNAL COMPONENTS (PRE-INTALLED)

APPENDIX A

FEMA Flood Areas

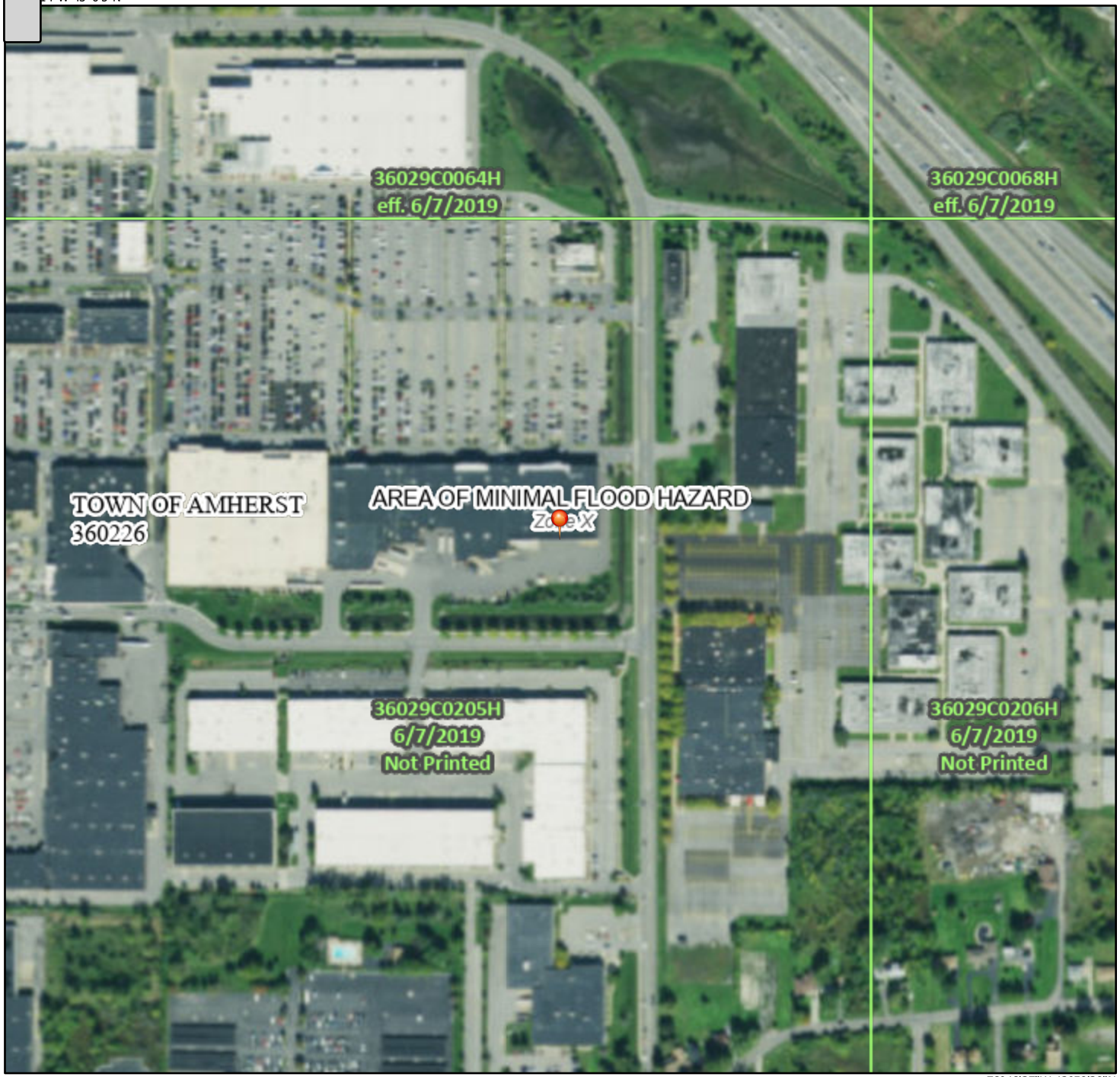
Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Attachment: SP-1988-11P_application 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

ati... Flood Hazard Layer Pathfinder

FEMA

14"W 43°0'5"N



78°48'37"W 42°59'39"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL L...

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BF... *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, V...*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/17/2023 at 9:20 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

PROPOSED SITE MODIFICATIONS

Amherst Development Park
6000 - 6040 N.Bailey Ave, Amherst, NY
BDC Property # 1723
SITE DEVELOPMENT DRAWINGS

INDEX OF DRAWINGS

DWG. #	DRAWING NAME	REVISION	DATE
C1.0	COVER SHEET	8	12.11.2024
C2.0	EXISTING SURVEY		
C3.00	DEMOLITION & EROSION CONTROL PLAN WEST	7	12.03.2024
C3.01	DEMOLITION & EROSION CONTROL PLAN EAST	7	12.03.2024
C3.10	DEMOLITION & EROSION CONTROL PLAN DETAILS	6	08.30.2024
C4.0	OVERALL SITE PLAN	8	12.11.2024
C4.01	FIRE TRUCK TURNING PLAN		
C4.10	DETAILED SITE PLAN WEST	8	12.11.2024
C4.11	DETAILED SITE PLAN EAST	8	12.11.2024
C4.20	CONSTRUCTION DETAILS	7	12.03.2024
C5.00	GRADING PLAN WEST	8	12.11.2024
C5.01	GRADING PLAN EAST	8	12.11.2024
C5.10	DRAINAGE PLAN WEST	7	12.03.2024
C5.11	DRAINAGE PLAN EAST	7	12.03.2024
C5.20	DRAINAGE DETAILS	1	12.13.2023
C5.21	DRAINAGE DETAILS	7	12.03.2024
C6.00	UTILITY PLAN WEST	7	12.03.2024
C6.01	UTILITY PLAN EAST	7	12.03.2024
C6.10	UTILITY DETAILS	7	12.03.2024
C7.0 - C7.4	LANDSCAPING PLANS	4	12.10.2024
C8.0	SITE LIGHTING PLAN	7	12.03.2024
C8.10	LIGHTING DETAILS		

OWNER/DEVELOPER:

NAME: BENDERSON DEVELOPMENT COMPANY, LLC
ADDRESS: 570 DELAWARE AVENUE, BUFFALO, NY 14202
CONTACT: DAVID ZUPPELLI
PHONE: 716 - 878 - 9683

BENDERSON DEVELOPMENT COMPANY, LLC
570 Delaware Ave.
Buffalo, New York 14202

SURVEYOR

NAME: KHEOPS ARCHITECTURE, ENGINEERING & SURVEY, DCP
ADDRESS: 300 PEARL STREET, BUFFALO, NY 14202
CONTACT: -
PHONE: 716-849-8739

UTILITIES:

NATURAL GAS
NAME/TITLE: WILLIAM SCHNEIDER
COMPANY/DEPT: NATURAL FUEL GAS
ADDRESS: -
PHONE: 716 - 696 - 6460

TELEPHONE COMPANY
NAME/TITLE: JOHN HECKMAN
COMPANY/DEPT: VERIZON
ADDRESS: -
PHONE: 716 - 840 - 8603

ELECTRIC
NAME/TITLE: -
COMPANY/DEPT: NATIONAL GRID
ADDRESS: -
PHONE: -

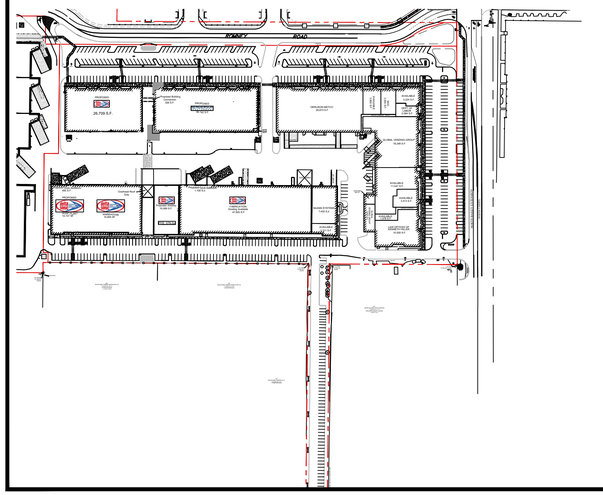
DIG SAFELY NEW YORK
PHONE: 1 - 800 - 962 - 7962 OR (811)

AGENCIES:

ENGINEERING DEPARTMENT
NAME/TITLE: JEFF BURROUGHS
COMPANY/DEPT: TOWN OF AMHERST, NY - ENGINEERING DPT
ADDRESS: 1100 NORTH FOREST RD, WILLIAMSVILLE, NY
PHONE: 716 - 631 - 7154 EX 7418

BUILDING & PLUMBING DEPARTMENT
NAME/TITLE: -
COMPANY/DEPT: TOWN OF AMHERST, NY - BUILDING DPT
ADDRESS: 5583 MAIN STREET, WILLIAMSVILLE, NY 14221
PHONE: 716 - 631 - 7080

SITE LOCATION MAP 1:200



REGIONAL LOCATION MAP NTS



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
3	06.12.2024	DZ	Site Updates
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments
8	12.11.2024	DZ	Updated Sidewalk

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

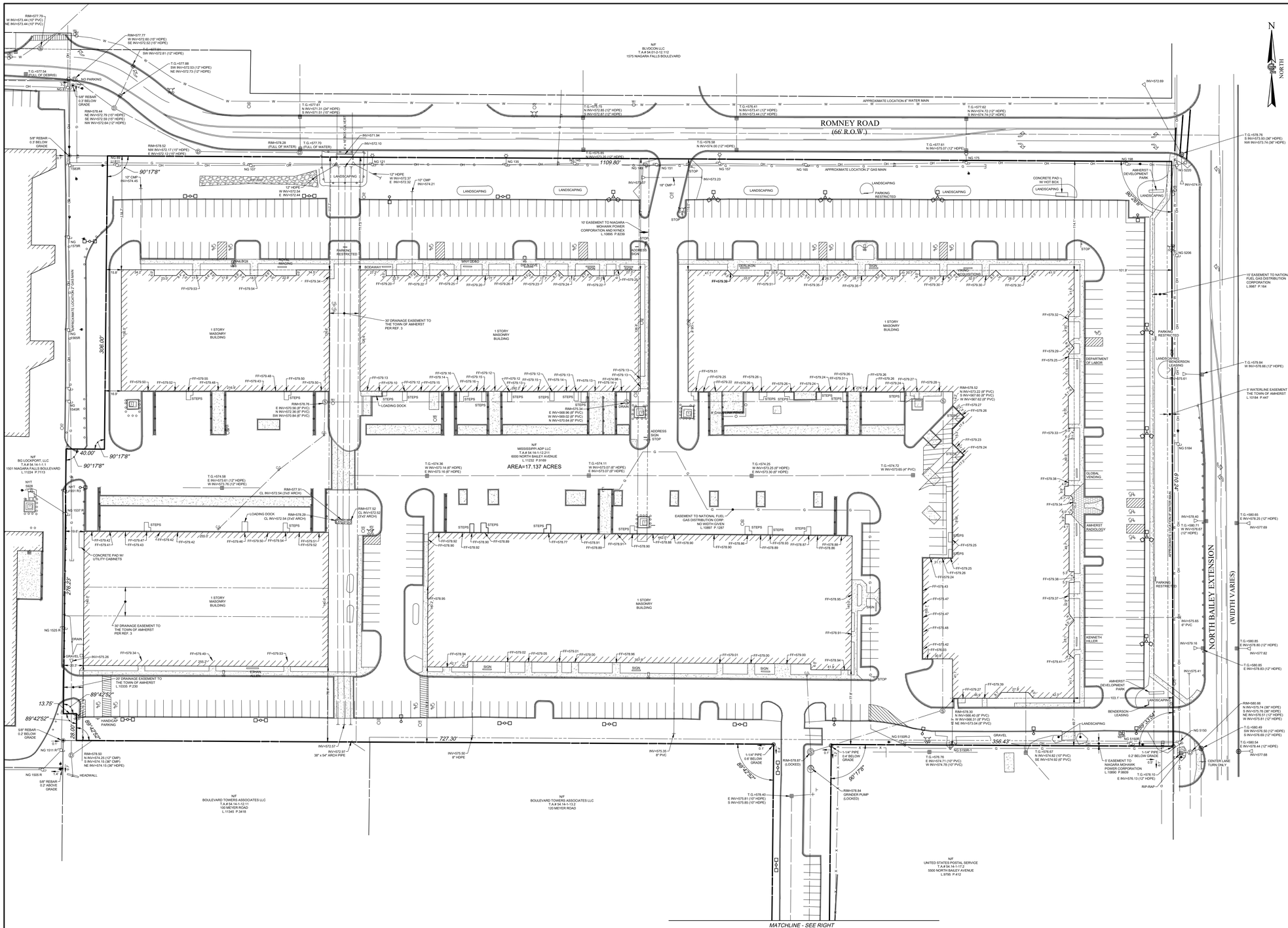
SEAL

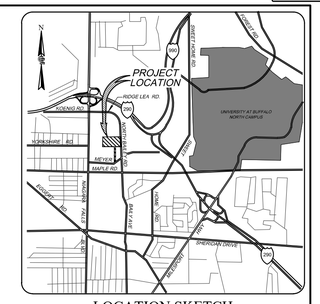


TITLE:
COVER SHEET

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.16.2023
DRAWING NO.
C1.0

Attachment: SP-1988-11P drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





LOCATION SKETCH

NOT TO SCALE

LINE LEGEND

- SECTION/PARCEL BOUNDARY
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST. RIGHT-OF-WAY LINE
- EXIST. EDGE OF PAVEMENT
- EXISTING WATER MAIN, VALVE, & HYDRANT.
- EXISTING SANITARY SEWER, & MANHOLE.
- EXISTING DRAINAGE SEWER, FIELD INLET, INLET MANHOLE, MANHOLE, & END SECTION.
- EXISTING OVERHEAD UTILITIES
- EXISTING TELEPHONE
- EXISTING UNDERGROUND UTILITIES
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING GUARD RAIL
- TREE,HEDGE,EDGE OF WOODS
- EXISTING SWALE
- BARBED WIRE,STOCKADE,CHAIN LINKED FENCE
- EXISTING CONTOUR
- EXISTING SPOT ELEVATION @ X
- CONCRETE PAD/ CONCRETE SIDEWALK

SYMBOL LEGEND

DMH	DRAINAGE MANHOLE	EMH	ELECTRIC MANHOLE
IMH	INLET DRAINAGE MANHOLE	EM	ELECTRIC METER
CB	CATCH BASIN	TMH	TELEPHONE MANHOLE
ES	END SECTION	TP	TELEPHONE PEDESTAL
EP	END OF PIPE	PB	PHONE BOOTH
MH	MANHOLE		PEDESTRIAN POLE
SMH	SANITARY MANHOLE	TRAF. CAB.	TRAFFIC CONTROL CABINET
w c.o.	CLEAN OUT		LAMP POST
GV	GAS VALVE		LIGHT POLE
GS	GAS SERVICE		UTILITY POLE WITH LIGHT
GM	GAS METER	FLAG POLE	FLAG POLE
WV	WATER VALVE	MB	MAILBOX
WS	WATER SERVICE		BOLLARD
HY	HYDRANT		POST
WM	WATER METER		SIGN
CTV	CABLE TV PEDESTAL		SIGN
SIG	SIGNAL POLE		SIGN
UP	UTILITY POLE		TURNING ARROW
GW	GUY WIRE		HANDICAP
PB	PULL BOX	STOP	STOP BAR
EPB	ELECTRIC PULL BOX		TREE DECIDUOUS
TPB	TELEPHONE PULL BOX		TREE CONIFEROUS
TRPB	TRAFFIC PULL BOX		BUSH
T	TRANSFORMER		

EASEMENT NOTES
T.A.# 54.14-1-12.211

1. EASEMENT MADE BY BOULEVARD POWER CO. TO NEW YORK TELEPHONE COMPANY RECORDED OCTOBER 30, 1968 IN LIBER 7527 OF DEEDS, PAGE 543. (NOT PLOTTABLE)
2. EASEMENT MADE BY MARET DEVELOPMENT CORPORATION OF NEW YORK TO NIAGARA MOHAWK POWER CORPORATION RECORDED SEPTEMBER 11, 1967 IN LIBER 7392 OF DEEDS, PAGE 474. (DOES NOT AFFECT PREMISES)
3. RIGHT OF WAY MADE BY MARET DEVELOPMENT CORPORATION OF NEW YORK TO IROQUOIS GAS CORPORATION RECORDED SEPTEMBER 29, 1967 IN LIBER 7399 OF DEEDS, PAGE 98. (NOT PLOTTABLE)
4. EASEMENT FROM NIAGARA BOULEVARD TOWERS, INC TO NIAGARA MOHAWK POWER CORPORATION AND NEW YORK TELEPHONE CO. RECORDED ON AUGUST 29, 1968 IN LIBER 7506 OF DEEDS, PAGE 503. (NOT PLOTTABLE)
5. EASEMENT RESERVED BY BOULEVARD TOWERS CO. CONTAINED IN DEED RECORDED ON JULY 28, 1988 AT LIBER 9895 OF DEEDS, PAGE 528.

SURVEY NOTES

1. TOPOGRAPHY SHOWN FROM A FIELD SURVEY BY COSTICH ENGINEERING ON 5/4/2021 HORIZONTAL AND VERTICAL DATA OBTAINED THROUGH NYSDOT CORS NETWORK REFERENCED TO THE FOLLOWING MONUMENT

   HAMBURG CORS STATION
   -LATITUDE: 42-43-02.66326 (N) } NAD 83 (CORS)
   -LONGITUDE: 078-50-47.27326 (W)
   -ELLIP HEIGHT: 212.494 METERS } NAVD 88 (CORS)

REFERENCES

1. THE DEEDS AS SHOWN ON FILE AT THE ERIE COUNTY CLERKS OFFICE.
2. ALTA/NSPS LAND TITLE SURVEY PREPARED FOR DDR - PROJECT SABRE PROJECT, PREPARED BY BOCK & CLARK, HAVING PROJECT NO. 2015043306-003, DATED 1/26/2016.
3. ALTA/NSPS LAND TITLE SURVEY 6000-6040 NORTH BAILEY AVENUE, PREPARED BY TVGA CONSULTANTS, HAVING JOB NO. 2006.0095.00, DATED 6/12/2006.
4. MAP ENTITLED "1723/5256 AMHERST DEVELOPMENT - EXISTING FEATURES", PREPARED BY COSTICH ENGINEERING, D.P.C., HAVING DRAWING NO. 8084-VA110, DATED 6/1/2021.
5. MAP ENTITLED "1723/5256 AMHERST DEVELOPMENT - LAND TRANSFER PLAN", PREPARED BY COSTICH ENGINEERING, D.P.C., HAVING DRAWING NO. 8084-VA200, DATED 4/14/2022.
6. MAP ENTITLED "1723/5256 AMHERST DEVELOPMENT - LAND TRANSFER PLAN FROM T.A.# 54.14-1-12.211 TO T.A.# 54.14-1-1.1", PREPARED BY COSTICH ENGINEERING, D.P.C., HAVING DRAWING NO. 8084-VA220, DATED 6/9/2022.

UTILITY INFORMATION

UTILITY INFORMATION PER UFPO DESIGN TICKET # 04261-000-825-00 DATED APRIL 29, 2021

1. CHARTER COMMUNICATIONS BUFFALO	317-575-7800 X2	NO CONFLICT
2. ERIE COUNTY WATER AUTHORITY	716-685-8207	UTILITIES PLOTTED
3. LIGHTOWER FIBER TECHNOLOGIES	888-632-0931 X2	NO RESPONSE
4. NATIONAL FUEL GAS - TONAWANDA	716-857-7431	UTILITIES PLOTTED
5. NATIONAL GRID - WEST - ELECTRIC	315-428-6319	NO CONFLICT
6. SUNOCO PIPELINE LP	713-989-7079	NO RESPONSE
7. TOWN OF AMHERST	716-631-7413	UTILITIES PLOTTED
8. VERIZON / BUFFALO	315-937-2515	UTILITIES PLOTTED

SITE DATA

T.A.# 54.14-1-12.211

1. EXISTING ZONING: RD - RESEARCH AND DEVELOPMENT DISTRICT
2. BULK REQUIREMENTS:

	REQUIRED
MIN. LOT AREA (SF)	1 ACRE
MAX LOT COVERAGE	NONE REQUIRED
MIN. LOT WIDTH (FT)	35
MAX. BUILDING HEIGHT (FT)	65 FEET
MIN. FRONT YARD SETBACK (FT)	20 FEET FOR BUILDINGS UP TO 35 FEET IN HEIGHT; 30 FEET FOR BUILDINGS GREATER THAN 35 FEET IN HEIGHT
MIN. SIDE YARD SETBACK (FT)	0 TO 10 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET
MIN. REAR YARD SETBACK (FT)	15 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET

CERTIFICATION

WE, COSTICH ENGINEERING, D.P.C., HEREBY CERTIFY TO:

THIS MAP WAS PREPARED FROM NOTES OF AN INSTRUMENT SURVEY COMPLETED ON MAY 25, 2022 AND FROM THE REFERENCE(S) LISTED HEREON. NO SEARCH OF RECORDS, OTHER THAN THOSE REFERENCED, WAS MADE FOR EASEMENTS OR ENCUMBRANCES AFFECTING THIS PARCEL.

By: Daniel T. Hickok Date: 6/1/2022
Daniel T. Hickok, N.Y.S. L.S., No. 050449

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EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHKD.	APVLS.

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COSTICH ENGINEERING, D.P.C.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR, ARCHITECT, OR LANDSCAPE ARCHITECT, TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS SEAL TO THE DOCUMENT AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION. TO THE DOCUMENT

STATE OF NEW YORK · DANIEL T. HICKOK · LICENSED LAND SURVEYOR · LS NO. 050449

PROJECT ENGINEER	M.O.R.
DRAWN BY	G.M.S.
BOUNDARY	G.M.S.
TOPO/BASE	G.L.R.
DATE	8/16/2022
SCALE	1"=40'

COSTICH ENGINEERING
- CIVIL ENGINEERING
- LAND SURVEYING
- LANDSCAPE ARCHITECTURE

217 LAKE AVENUE
ROCHESTER, NY 14608
(585) 458-3020

TITLE OF PROJECT
1723/5256 AMHERST DEVELOPMENT

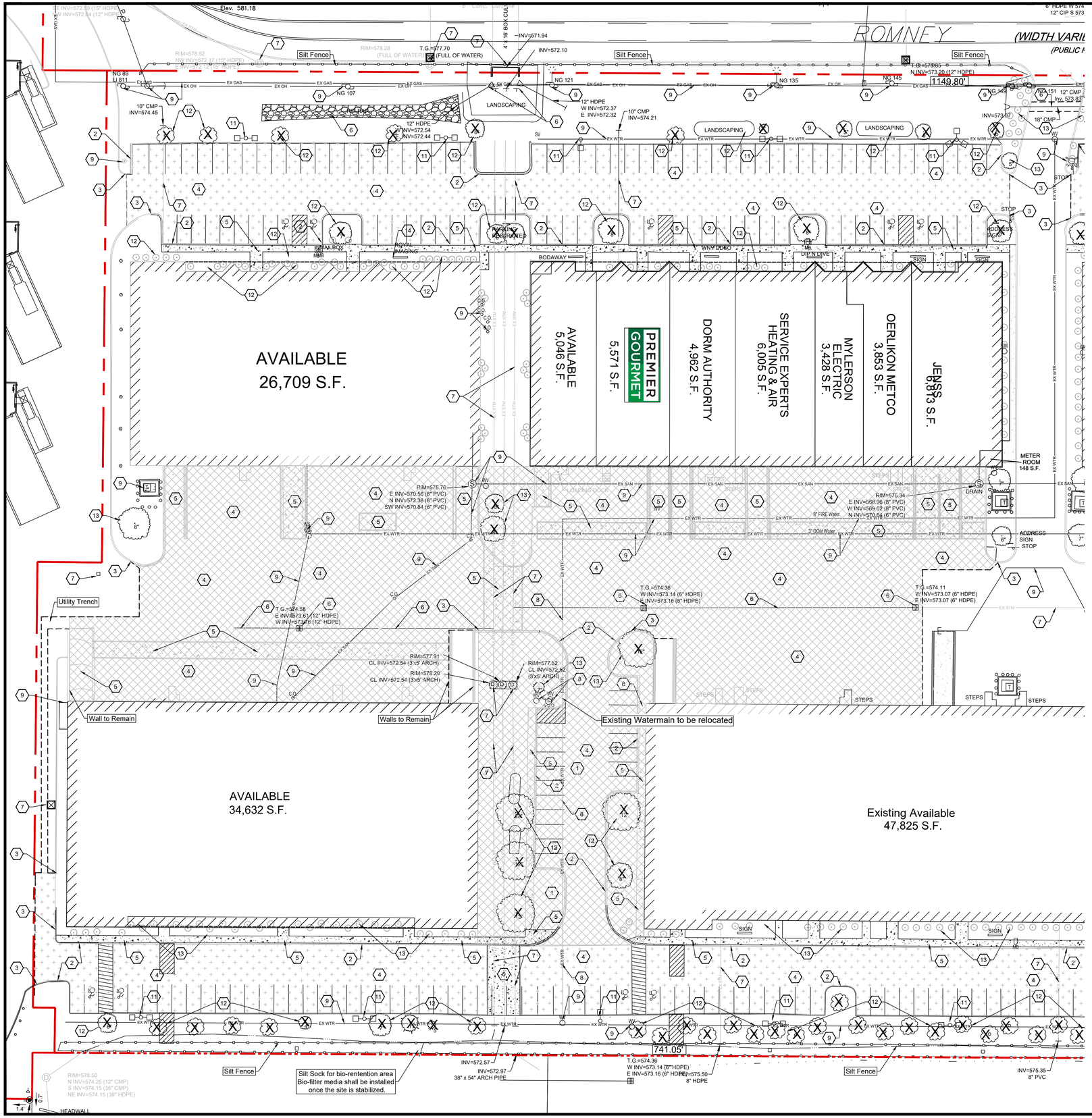
TITLE OF DRAWING
EXISTING FEATURES

LOCATION OF PROJECT: TAX PARCEL NO. 54.14-1-12.211; TOWN LOT 85, TOWNSHIP 12, RANGE 7, HOLLAND LAND COMPANY'S SURVEY, TOWN OF AMHERST, COUNTY OF ERIE, STATE OF NEW YORK

CLIENT: BENDERSON DEVELOPMENT CO., INC. 570 DELAWARE AVENUE BUFFALO, NEW YORK 14202

DWG. # 8084 VA310
SHEET 1 OF 1

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
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2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
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10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
    11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTING STONE BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIMMING THE PAVEMENT AND THEN A NEW TOP COAT, REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE, A COMBINATION OF THESE TWO OR ANOTHER METHOD OF THE CONTRACTORS CHOOSING. FINAL PAVEMENT WORK PLAN SHALL BE PROVIDED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL

DEMOLITION LEGEND:

- Property Line
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- EX GAS — Existing Gas
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- EX OH — Existing Overhead Utility
- EX SAN — Existing Sanitary
- EX STM — Existing Storm
- EX TC — Existing Telecoms
- Saw Cut Line
- Silt Fence/Sock
- Inlet Protection
- X — Tree Removal
- Existing area to be removed.
- Existing Asphalt Pavement to be Removed. Sub-base to Remain.

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2. Existing Curb to be removed.
3. Limits of Curb Removal.
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5. Existing Concrete Sidewalk/ Pavement/ Ramps to be removed.
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7. Existing Storm Drainage/CB to remain and be protected during Construction.
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Project Disturbance
Sub-Surface Disturbance: 4.03 Acres
Surface Disturbance: 3.26 Acres
Total Disturbance: 7.29 Acres.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments

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NORTH

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PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

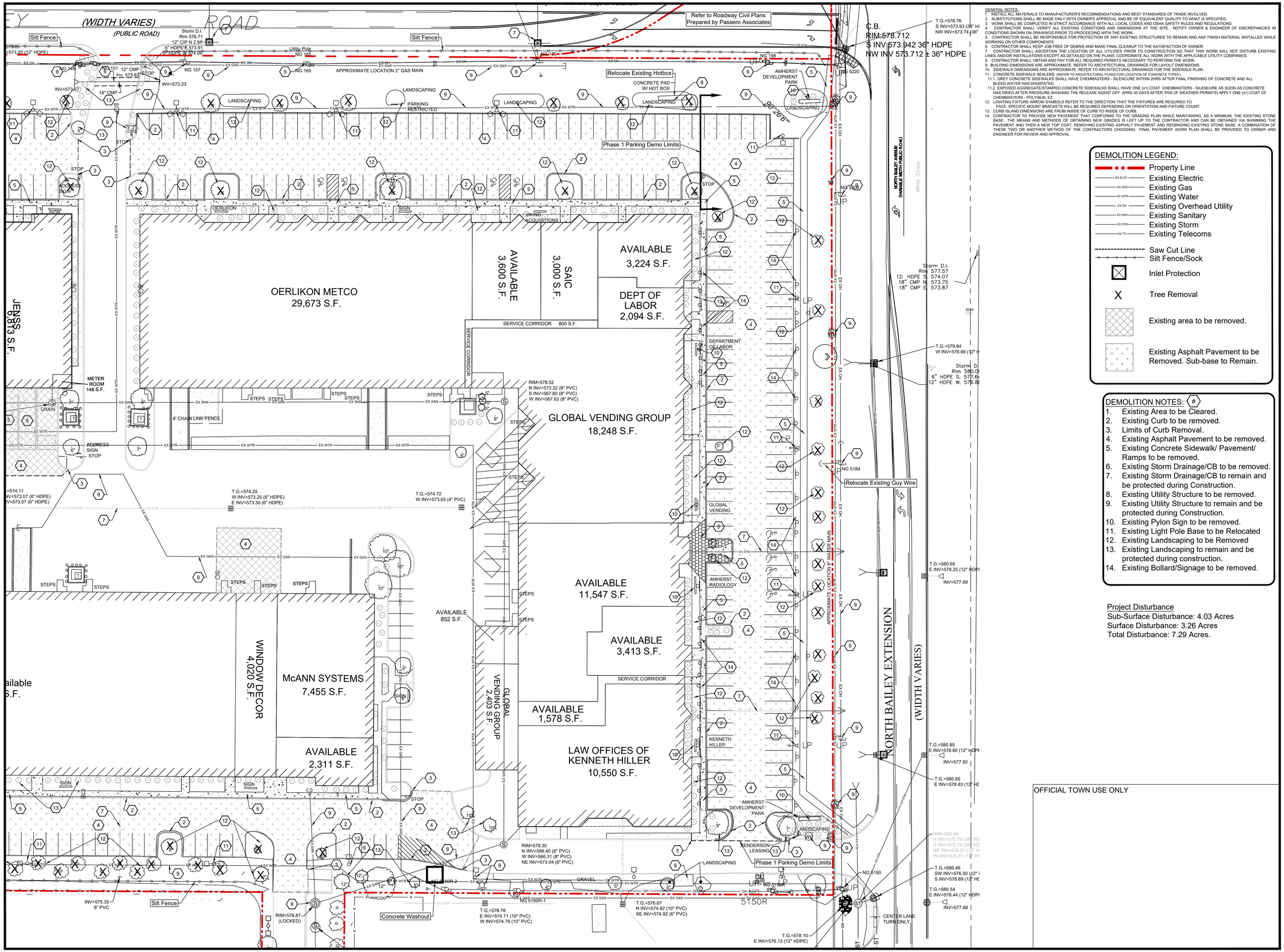
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031708 STATE OF NEW YORK

TITLE:
Demolition and Erosion Control Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C3.00

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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No.	DATE	BY	REMARKS
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CONSULTANT

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ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

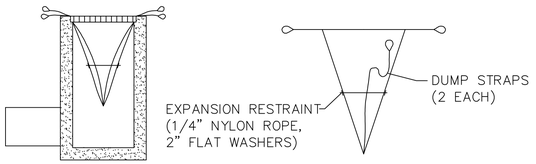
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

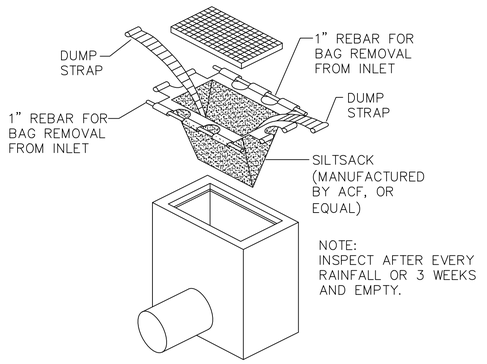
TITLE:
Demolition and Erosion Control Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C3.01

Attachment: SP-1988-11P drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

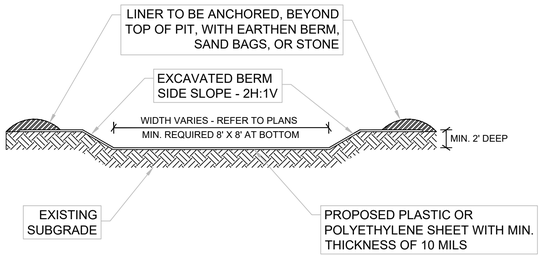


INSTALLATION DETAIL BAG DETAIL



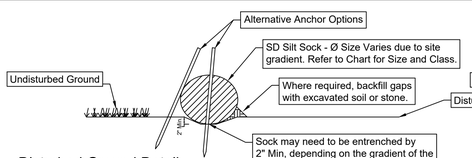
SILT SACK DETAIL

N.T.S.



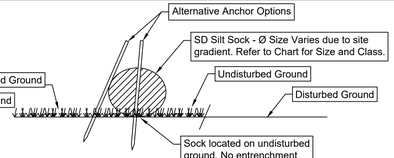
TYPICAL CONCRETE WASH OUT DETAIL

NOTES:
1. CONSTRUCT TO 2016 NYSDEC BLUE BOOK DESIGN CRITERIA



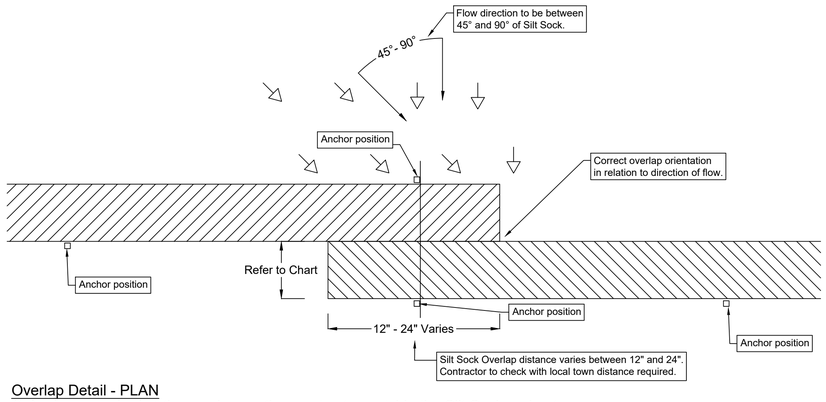
Disturbed Ground Detail

SD Silt Sock: Standard Duty Fabric



Undisturbed Ground Detail

SD Silt Sock: Standard Duty Fabric



Overlap Detail - PLAN

1) Anchors required at the overlap section are to stay outside the Silt Sock and not pierce through the material. See alternative anchor positons in details above.

Anchor at Overlaped Ends - SECTION

Size & Class Chart			
	Diameter		
Gradient	8"	12"	18"
0 - 2%	30	55	75
2.1 - 5%	25	40	55
5.1 - 10%	15	30	40
10.1 - 33%	10	15	20
> 33%	5	10	15

SD SILT SOCK DETAIL

SD Silt Sock: Standard Duty Fabric

Notes:

1 - Do not use sock below the normal watermark or perpendicular to flow in river and where the maximum incline is greater than 50%.
2 - Contractors should be aware of federal, state and local laws, rules regulations or permit requirements for the use of Silt Socks on site.
3 - Sock should be positioned on the outline of the area to be protected, but must be installed between 45° to 90° from directions of flow.
4 - Sock may be required to be entrenched a minimum of 2" on disturbed ground to ensure constant ground contact.
5 - All gaps and ruts must be backfilled with soil or sock material.
6 - Sock overlap should be in the direction of the flow. Overlap amount will be between 12" and 24". Contractor to check with local town for requirements.
7 - If sediment collects to 1/2 the height of the sock, then a second sock may be stacked immediately up slope of the original instead of removing the sediment.
8 - Sock joint is where two sock sections meet on a level grade, overlap and adjoining ends, tightening the ends together, and anchoring through each end. Where two sections meet on un-level ground, j-hook higher elevated end, anchor, and begin new section just below. Back fill any gaps.
9 - Sock should be inspected and repaired as needed.
10 - If ruts begin under the sock they should be backfilled with soil and compacted so that the ground and sock have continuous contact.
11 - If sock rolls out of place, the sock should be repositioned and secured with additional anchors.
12 - Tears in the Sock fabric may be repaired by wrapping a new piece of fabric over the sock and securing, or by place a second sock immediately up slope with the required overlap beyond deformation.
13 - A section of sock should be replaced whenever it has weakened to such an extent that the efficiency is reduced or diminished. Weakening can occur because the natural mesh fabric breaks down over time of from being moved/dragged on site.
14 - Sock should be replaced when sediment has built up and has been removed three times.
15 - All sediment in disturbed area next to sock must be removed and correctly disposed of before the sock can be removed.
16 - When removing, cut sock open and spread the filler material around. The netting should be removed from site.
17 - Sock should be installed before works commence on site.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
6	08.30.2024	DZ	Town Comments

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SEAL



TITLE: Demolition and Erosion Control Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C3.10

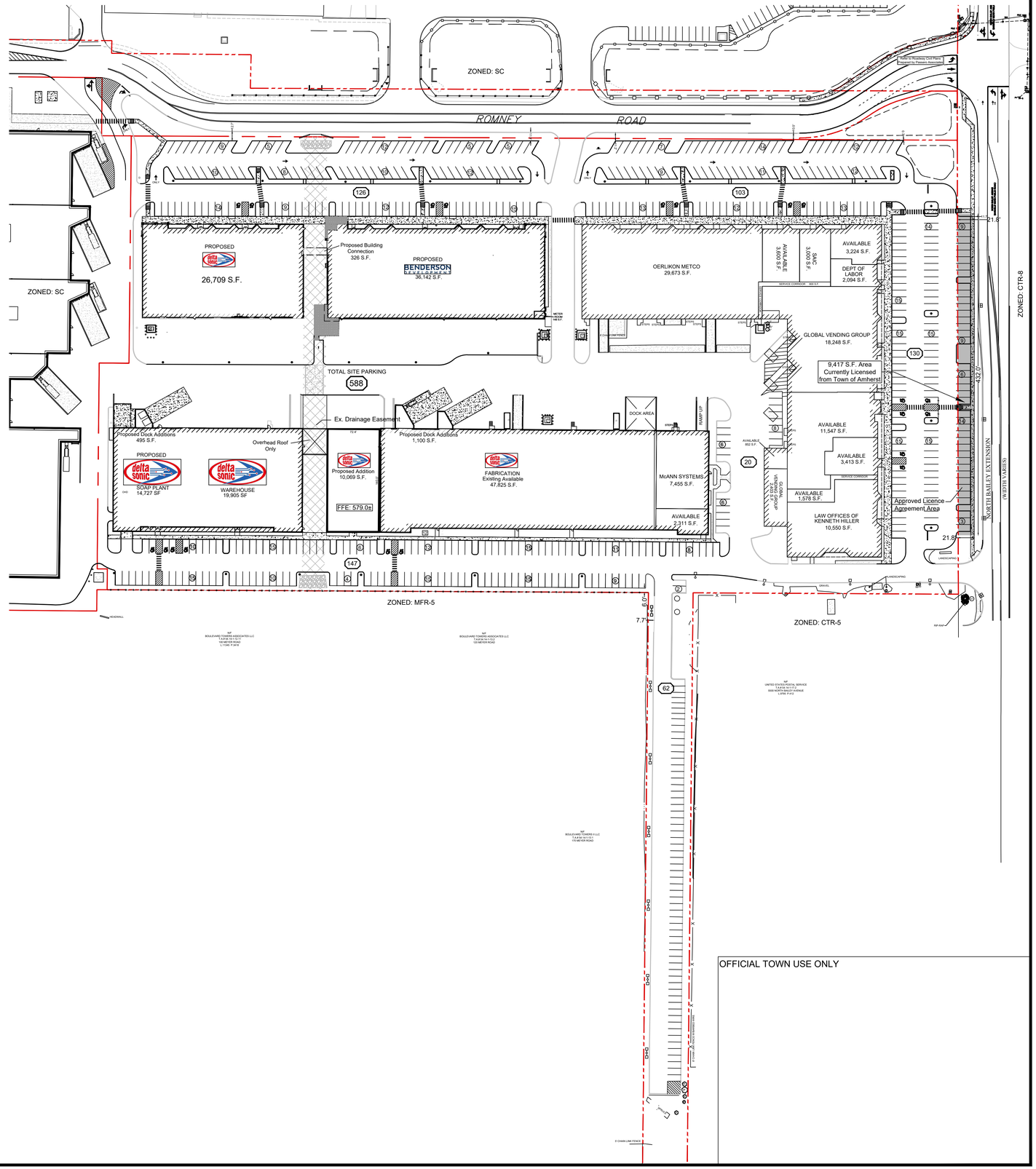
Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST, NY ZONING ANALYSIS		
	REQUIRED	PROVIDED
ZONED (RD)	R-D	R-D
MIN LOT AREA	1 AC	17.14 AC
MAX. BUILDING HEIGHT	65'	<30'
BUILDING SETBACKS:		
FRONT YARD	40'	102.3'
SIDE YARD	15'	16.7'
REAR YARD	15'	48.4'
PARKING / ROAD/AUX SETBACKS:		
FRONT - ROMNEY ROAD	25'	0.3'
FRONT - N BAILEY	25'	*0'
REAR YARD	10'	6.0'

* Setback variance previously granted along North Bailey Road
- License Agreement along North Bailey has been previously granted
- Romney Road Pavement/Parking Setback - 14.5'
- N. Bailey Pavement/Parking Setback - 11.7'

PROPOSED PARKING ANAYLSIS				
USE	CODE	S.F. USAGE	REQUIRED	PROVIDED
WAREHOUSE	1 / 1000 S.F.	180,573 SF	181 Spaces	
RETAIL/OFFICE	1 / 200 S.F.	75,495 SF	378 Spaces	
TOTAL		256,068 SF	559 Spaces	588 Spaces
STALL SIZE			9' X 19'	9' X 19'

*Refer alternative parking study for site required parking



OFFICIAL TOWN USE ONLY

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No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	11.15.2024	DZ	Site Updates
7	12.03.2024	DZ	Town Comments
8	12.11.2024	DZ	Updated Sidewalk

SPECIAL INFORMATION:

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Overall Site Plan

SCALE: 1:70

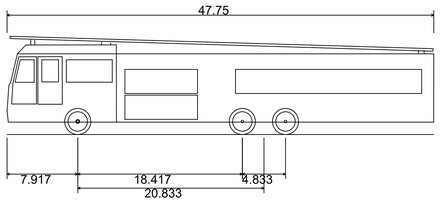
DRAWN BY: DMZ

CHECKED BY: MAO

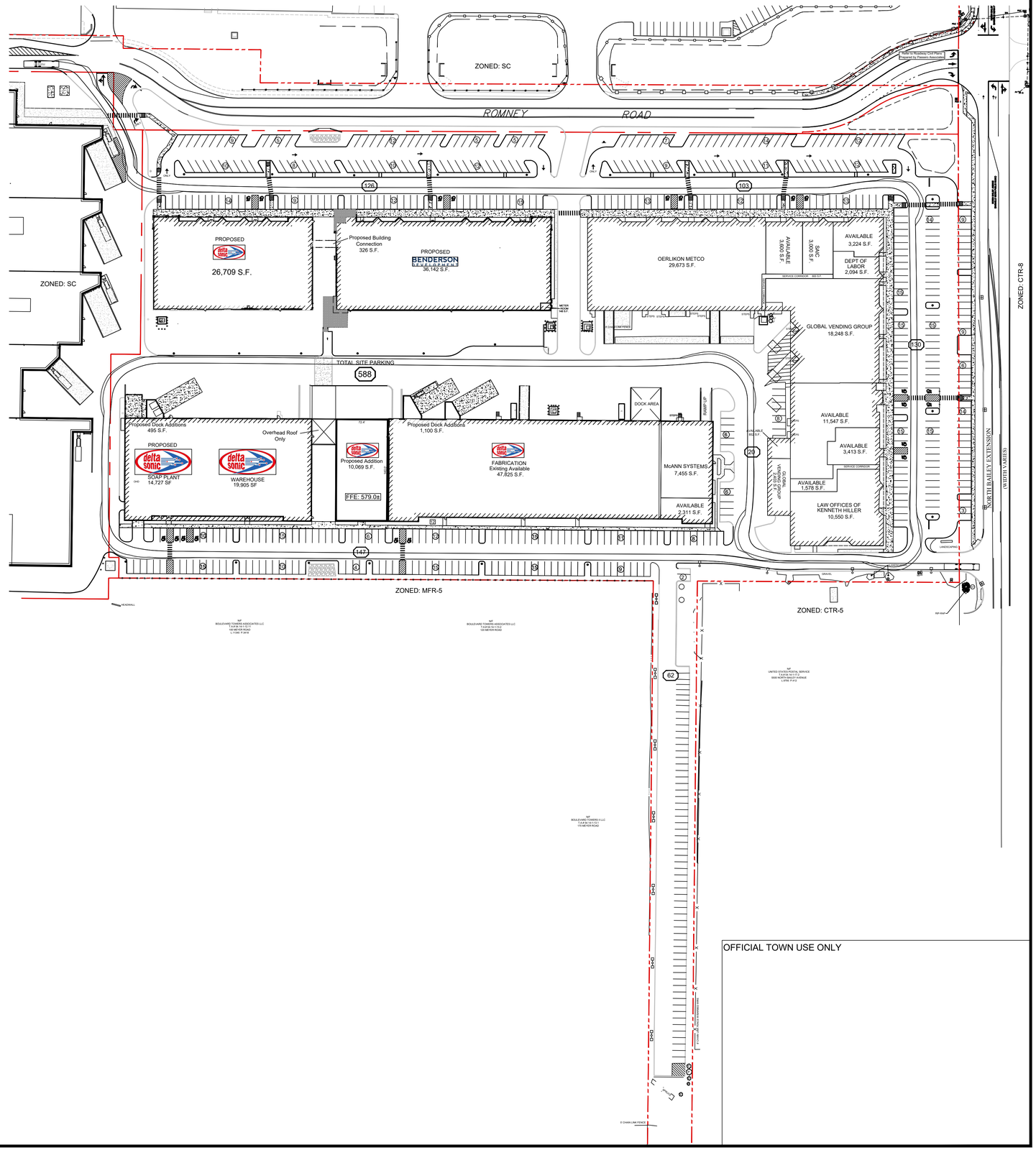
DATE: 11.06.2023

DRAWING NO. C4.0

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



E-ONE HP95 Mid Mount	
Overall Length	47.750ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL



TITLE:

Fire Truck Turning Plan

SCALE: 1:70

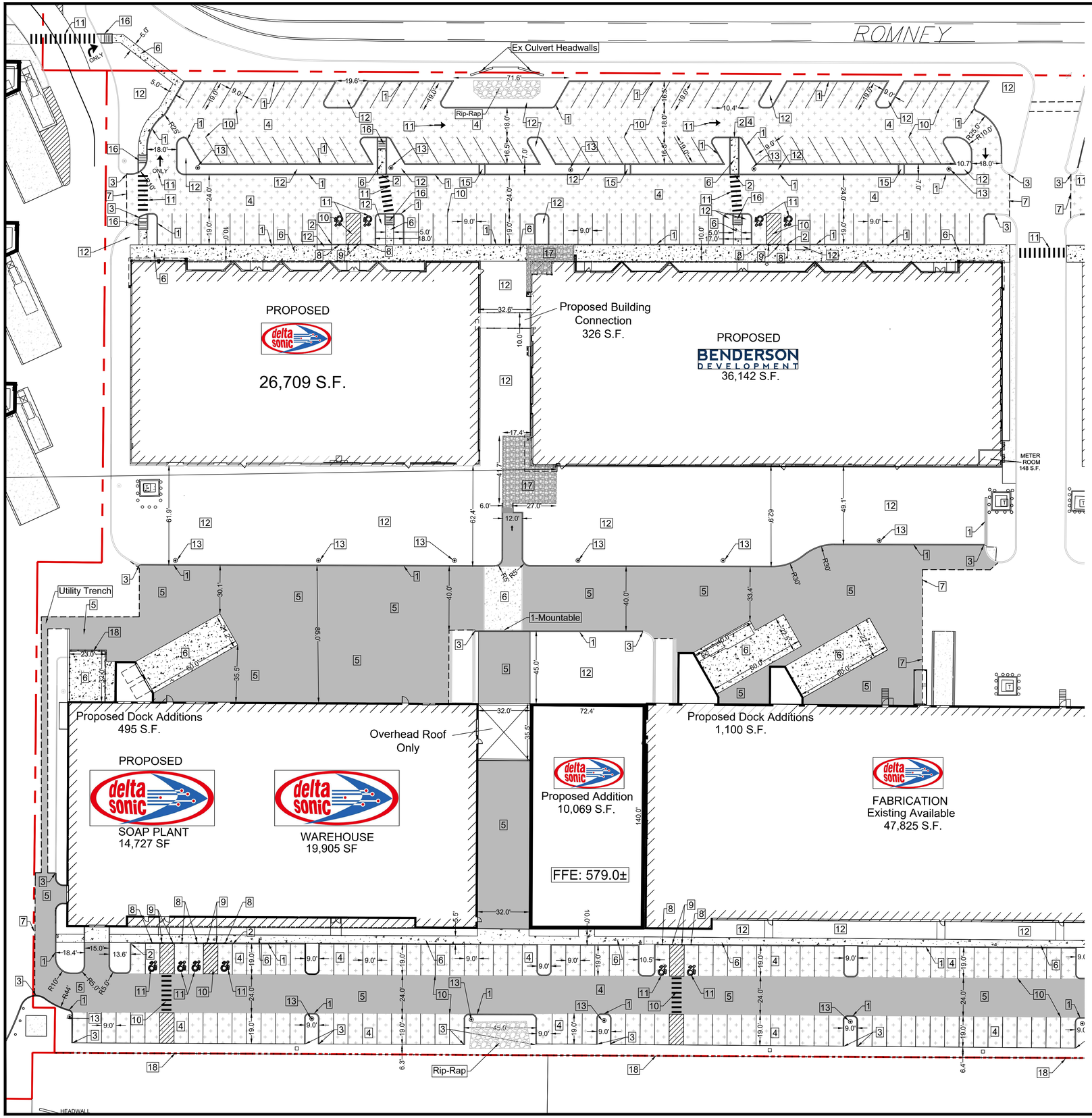
DRAWN BY: DMZ

CHECKED BY: MAO

DATE: 08.30.2024

DRAWING NO. C4.01

Attachment: SP-1988-11P_drawings 011625 (2825 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTING STONE BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIMMING THE PAVEMENT AND THEN A NEW TOP COAT, REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE, A COMBINATION OF THESE TWO OR ANOTHER METHOD OF THE CONTRACTORS CHOOSING. FINAL PAVEMENT WORK PLAN SHALL BE PROVIDED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement (Refer to General Note#14)
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES: #

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement
15. Proposed 3' Wide Curb Opening
16. Proposed Curb Return Ramp
17. Proposed Paver Sidewalk/Patio
18. Proposed Composite Fence

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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

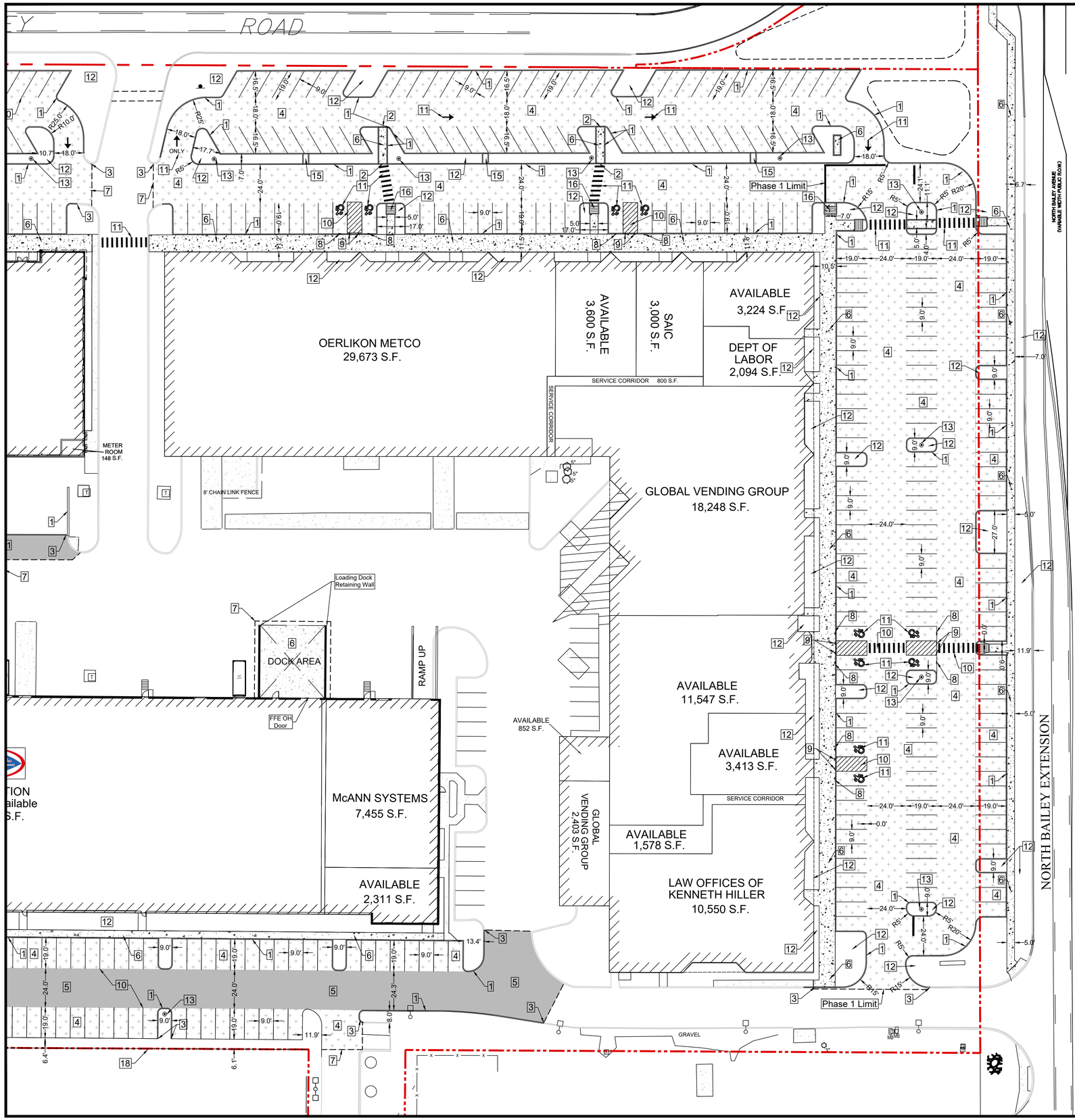
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:
Detailed Site Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C4.10

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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SITE LEGEND:

- Property line
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- Proposed sign & pole
- Proposed Concrete Sidewalk
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- Proposed Heavy Duty Pavement

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7. Match into Existing Pavement.
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9. Proposed "No Parking" sign.
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11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
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14. Proposed Mill and Overlay Asphalt Pavement
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ARCHITECT
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BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

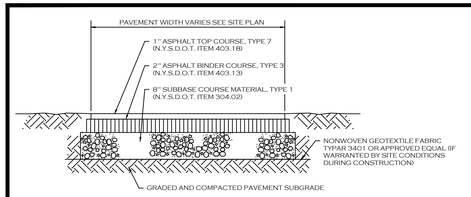
REGISTERED ARCHITECT JAMES ALLEN RUMSEY 039119 STATE OF NEW YORK

TITLE:

Detailed Site Plan (East)

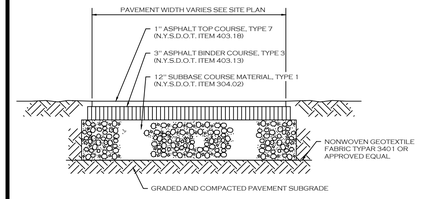
SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C4.11

Attachment: SP-1988-11P_drawings 011625 (2825Z : SP-1988-11P, 6000-6020 N. Bailey Ave)



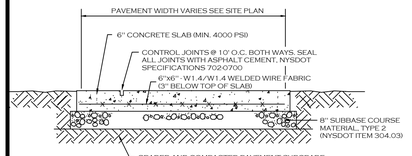
NOTE: CONSTRUCTION METHODOS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION



NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

HEAVY DUTY ASPHALT SECTION



NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

CONCRETE SIDEWALK SEALERS:
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1.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
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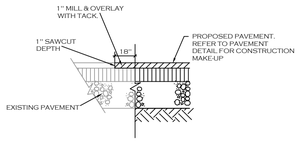
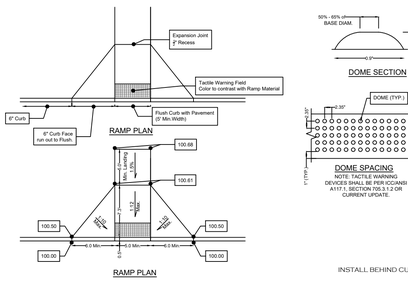
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.

CONCRETE PAVEMENT (INC DUMPSTER)



PAVEMENT TRANSITION DETAIL
(ASPHALT PAVEMENT)



SIDEWALK CURB RAMP DETAIL

NOTES:
1. (1.5% SIDEWALK) GRADES ARE FOR REPRESENTATION ONLY. REFER TO LAYOUT FOR PROPOSED GRADES.

NOTES:
1. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3
2. BUTT JOINTS TO BE AT 5'-0" O.C. BOTH WAYS- SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.

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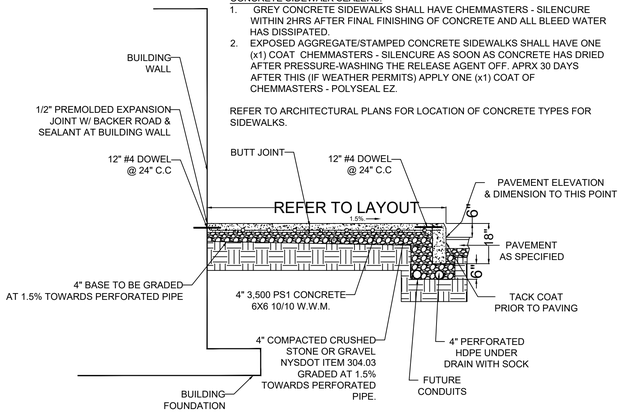
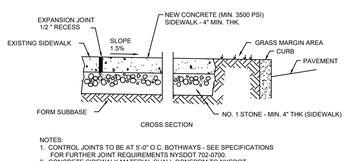
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.



BUILDING SIDEWALK DETAIL

CONTRACTOR TO VERIFY WITH OWNER ON CURB DETAIL



NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.

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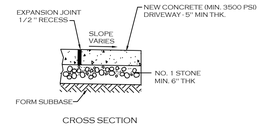
STANDARD CONCRETE SIDEWALK



NOTES:
1. CONTROL JOINTS TO BE AT 10'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
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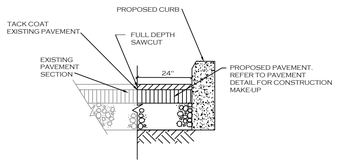
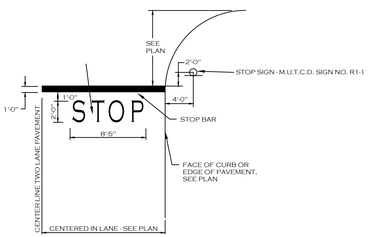
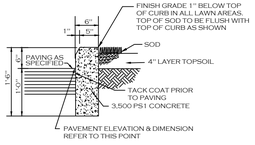
RPZ ENCLOSURE PAD



CURB AND PAVEMENT TRANISTION DETAIL

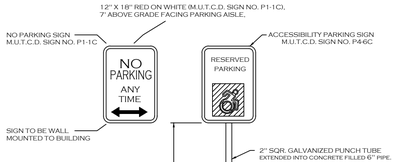


STOP BAR DETAIL

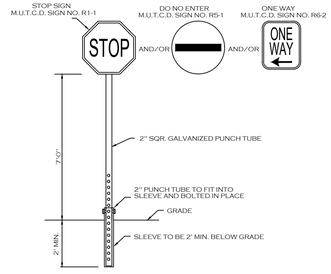


NOTE: CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700

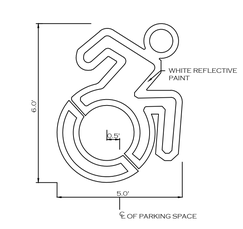
TYPE "A" CONCRETE CURB



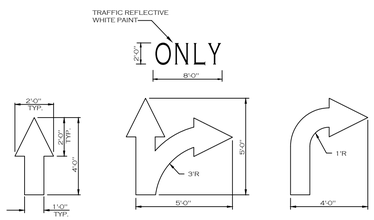
HANDICAP / NO PARKING SIGNS



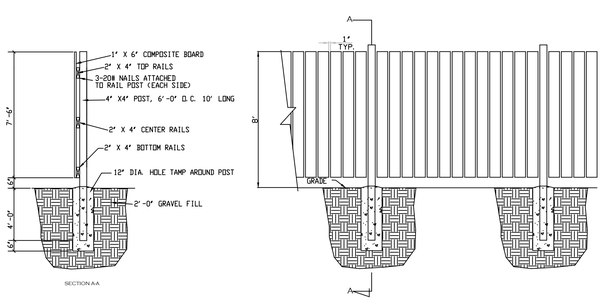
"STOP" / "NO ENTRY" / "ONE WAY" SIGNS



INTERNATIONAL ACCESSIBILITY SYMBOL



PAINTED TRAFFIC ARROWS



TYPICAL FENCE DETAIL
(Composite)

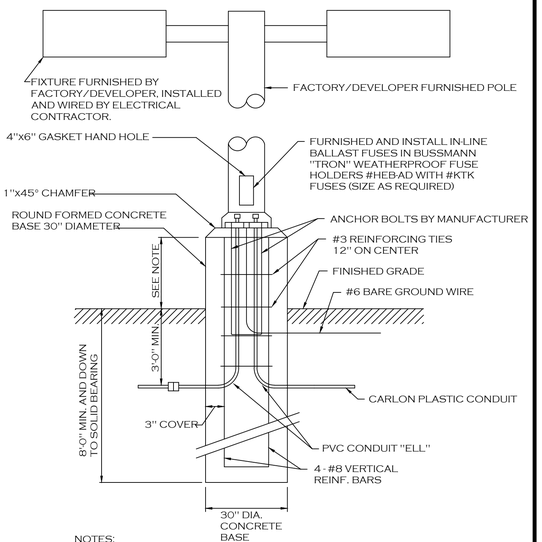
FENCE GATE NOTES:

1. GATE POST FOOTINGS TO BE MIN. 36" DEEP x (4x) POST DIAMETER, EXTEND POST TO WITHIN 6" OF BOTTOM.

2. GATE FRAMES TO BE 2" SQ. GALVANIZED STEEL, WEIGHING 2.60 LB/FT IN ACCORDANCE WITH ASTM F 900.

3. DOUBLE GATE LATCH TO BE FORKED TYPE CAPABLE OF RETAINING GATE IN CLOSED POSITION AND HAVE PROVISION FOR PAD LOCK. LATCH SHALL BE OPERABLE FROM EITHER SIDE OF GATE.

5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED STEEL TO SUIT GATE SIZE.



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
IN PAVEMENT: 30" ABOVE GRADE
IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
7	12.03.2024	DZ	Town Comments

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NORTH

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AREA: -

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6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

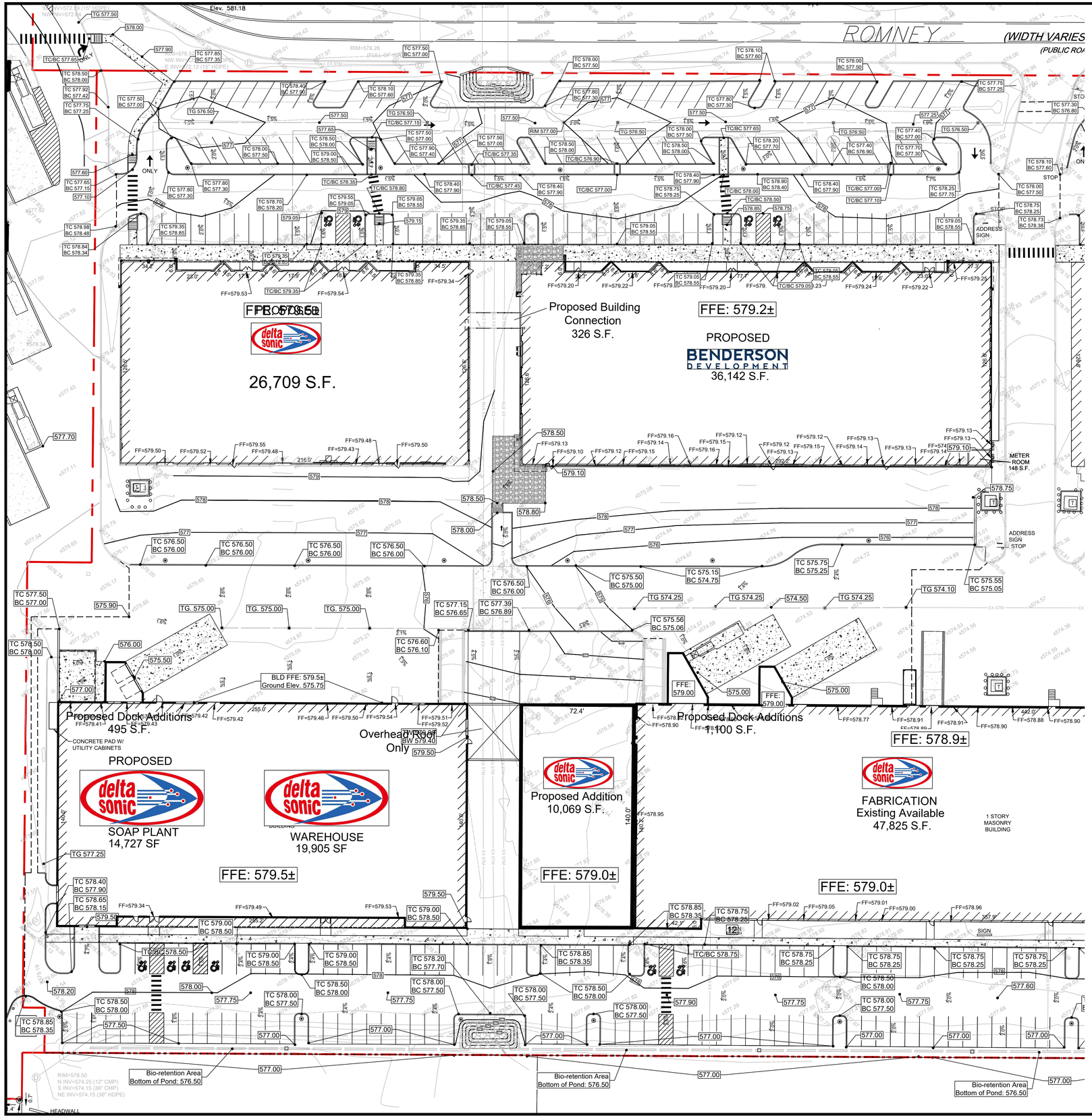


TITLE: Construction Details

SCALE: NTS
DRAWN BY: DMZ
DRAWING NO.: C4.20
CHECKED BY: MAO
DATE: 08.16.2023

OFFICIAL TOWN USE ONLY

Attachment: SP-1988-11P, drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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- 6" Curb (typ).
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- ### — Proposed Contour Line
- ##% — Slope Direction

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2	05.08.2024	DZ	Site Plan Update
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ARCHITECT
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BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

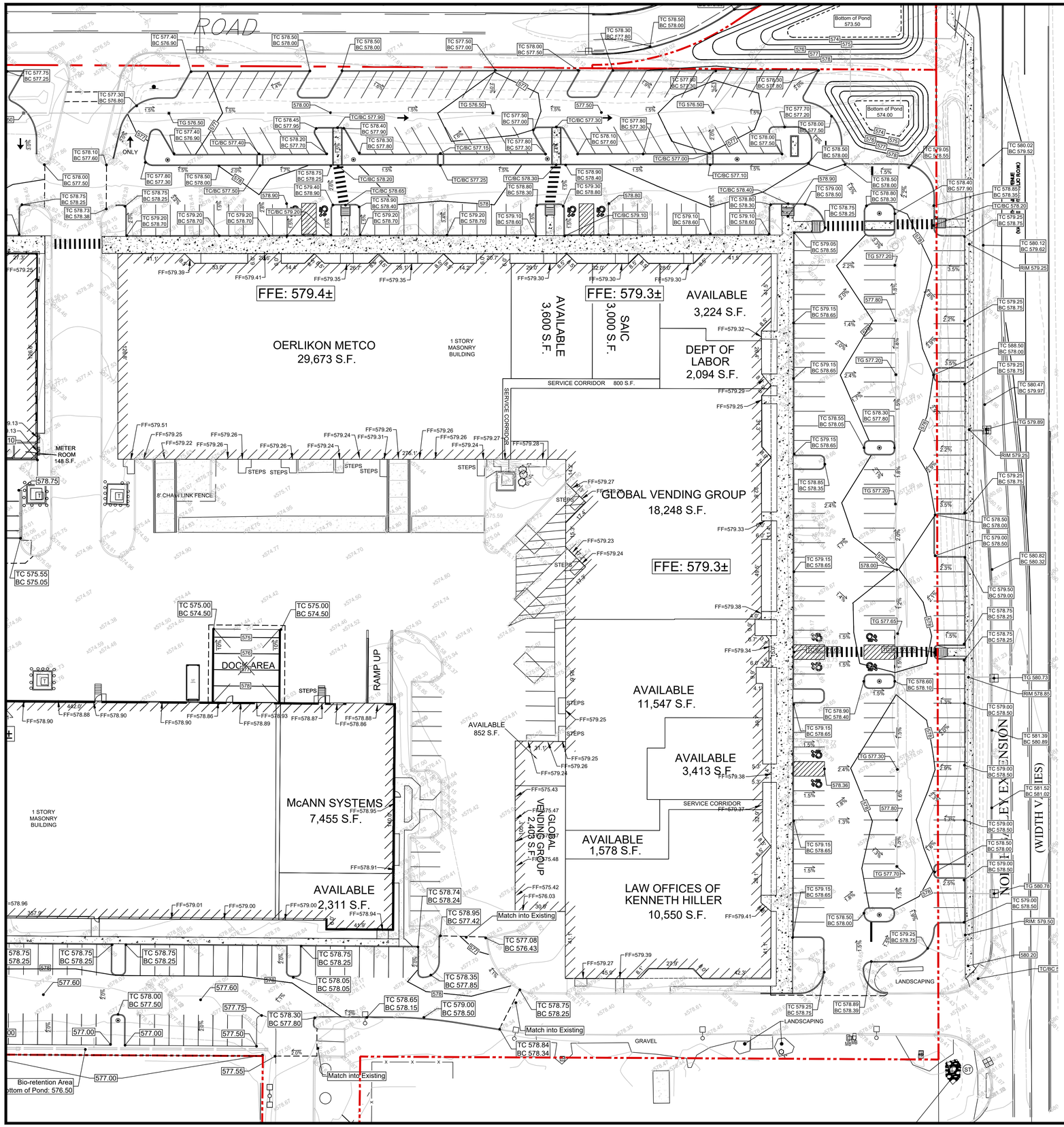
REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Grading Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.00

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P (6000-6020 N. Bailey Ave)



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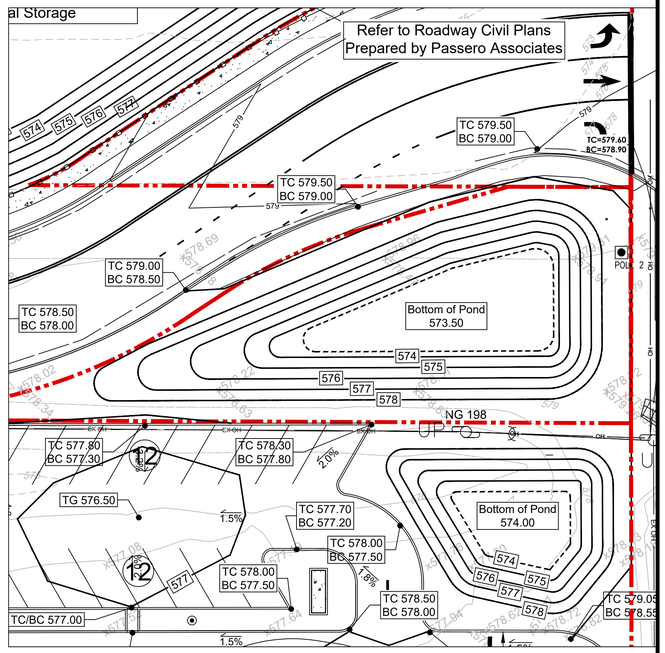

Off-site 1" = 20'

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(716) 886-0211

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REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Grading Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.01

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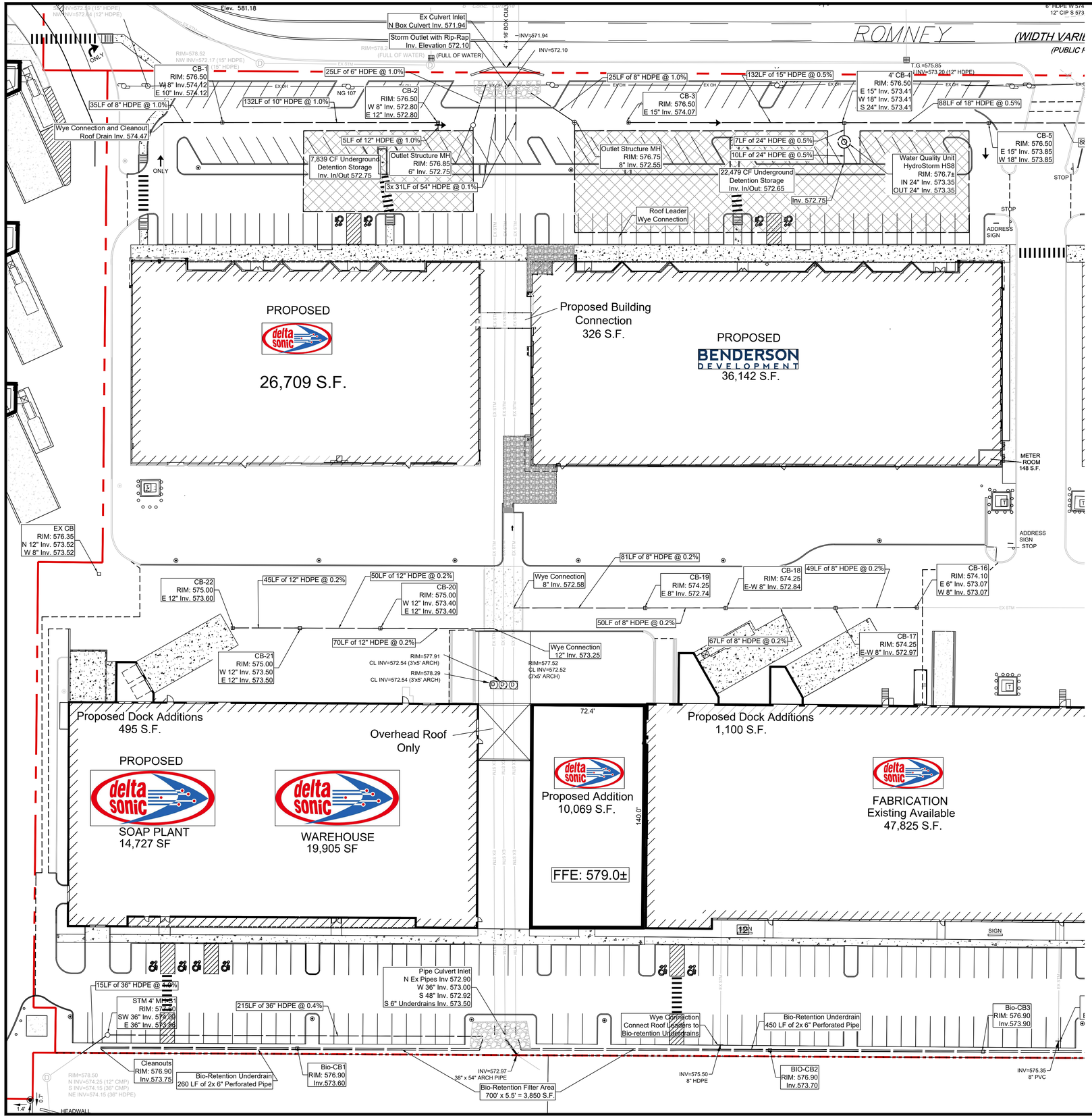

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DRAINAGE LEGEND:

- PROPERTY LINE
- PROPOSED STORMWATER
- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

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SEAL

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TITLE:

Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.10

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

(WIDTH VARIES) ROAD
(PUBLIC ROAD)
Storm D.I.
Rim 576.71
12" CIP N 2.57
6" HDPE E 573.91
6" HDPE W 574.06
Utility Pole
NG 185
CB-6
RIM: 576.50
E-W 12" Inv. 574.03
CB-7
RIM: 576.50
W 12" Inv. 574.43
CB-8
RIM: 576.50
N 12" Inv. 574.29
30LF of 15" HDPE @ 0.5%
Pond
+/-11,000 CF Storage
Inlet Inv. 574.00
Inlet Inv. 573.84
58 LF of 12" HDPE @ 0.5%
Outlet Inv. 574.15
33LF of 36" HDPE @ 0.2%
Pond
5,327± CF Storage
DPE @ 0.5%
CB-5
RIM: 576.50
E 15" Inv. 573.85
W 18" Inv. 573.85
88LF of 15" HDPE @ 0.2%
ONLY
197LF of 12" HDPE @ 0.2%
Outlet Inv. 574.39
55LF of 24" HDPE @ 0.2%
Water Quality Unit
HydroStorm HS10
RIM: 577.5±
IN 24" Inv. 574.50
OUT 24" Inv. 574.50
5LF of 24" HDPE @ 0.2%
CB-10
RIM: 577.20
N 18" Inv. 574.51
S 18" Inv. 574.51
66LF of 18" HDPE @ 0.2%
CB-11
RIM: 577.70
N-S 18" Inv. 574.64
78LF of 18" HDPE @ 0.2%
CB-12
RIM: 577.20
N 18" Inv. 574.80
S 15" Inv. 574.80
79LF of 15" HDPE @ 0.2%
CB-13
RIM: 577.65
N-S 15" Inv. 574.96
Ex Roof Drain
12" Wye Connection
82LF of 15" HDPE @ 0.2%
CB-14
RIM: 577.30
N 15" Inv. 575.12
S 12" Inv. 575.12
58LF of 12" HDPE @ 0.5%
Ex Roof Drain
10" Wye Connection
CB-15
RIM: 577.70
N 12" Inv. 575.41
OERLIKON METCO
29,673 S.F.
AVAILABLE
3,600 S.F.
SAIC
3,000 S.F.
AVAILABLE
3,224 S.F.
DEPT OF
LABOR
2,094 S.F.
SERVICE CORRIDOR 800 S.F.
SERVICE CORRIDOR
METER
ROOM
148 S.F.
8' CHAIN LINK FENCE
RIM=578.52
N INV=573.22 (8" PVC)
S INV=567.60 (8" PVC)
W INV=567.62 (8" PVC)
GLOBAL VENDING GROUP
18,248 S.F.
T.G.=574.25
W INV=573.25 (6" HDPE)
E INV=573.30 (6" HDPE)
T.G.=574.72
W INV=573.65 (4" PVC)
DOCK AREA
RAMP UP
McANN SYSTEMS
7,455 S.F.
AVAILABLE
2,311 S.F.
AVAILABLE
11,547 S.F.
AVAILABLE
852 S.F.
AVAILABLE
3,413 S.F.
SERVICE CORRIDOR
GLOBAL
VENDING GROUP
2,403 S.F.
AVAILABLE
1,578 S.F.
LAW OFFICES OF
KENNETH HILLER
10,550 S.F.
RIM=578.30
N INV=568.40 (8" PVC)
W INV=566.31 (8" PVC)
NE INV=573.04 (8" PVC)
Bio-CB3
RIM: 576.90
Inv.573.90
Wye Connection
Connect Roof Leaders to
Bio-retention Underdrains
Bio-CB-4
RIM: 576.90
Inv.574.00
INV=575.35
8" PVC
0.1'
1-1/4" PIPE
0.6' BELOW
GRADE
RIM=578.87
(LOCKED)
1-1/4" PIPE
0.4' BELOW
GRADE
T.G.=576.76
E INV=574.71 (10" PVC)
W INV=574.78 (10" PVC)
T.G.=576.67
N INV=574.82 (10" PVC)
SE INV=574.92 (6" PVC)
1-1/4" PIPE
0.2' BELOW GRADE
0.5'
T.G.=578.10
E INV=576.13 (12" HDPE)
T.G.=578.76
S INV=573.99 (36" HDPE)
NW INV=573.74 (36" HDP
3' MH-6 (D-14)
RIM: 578.79
SW 15" Inv. 573.98
E 15" Inv. 573.98
75LF of 36" HDPE @ 0.2%
NORTH BAILEY AVENUE
(VARIABLE WIDTH PUBLIC ROW)
MH-4
RIM: 579.25
S 36" Inv. 574.57
N 36" Inv. 574.57
115LF of 36" HDPE @ 0.2%
Storm D.I.
Rim 577.57
12" HDPE S. 574.07
18" CMP N. 573.75
18" CMP E. 573.87
MH-3
RIM: 579.25
N-S 36" Inv. 574.80
E 12" Inv. 576.00
T.G.=579.84
W INV=576.66 (12" HDPE
Storm D.I.
Rim 580.09
6" HDPE S. 577.64
12" HDPE W. 576.88
9LF of 12" HDPE @ 3.0%
153LF of 36" HDPE @ 0.2%
T.G.=580.65
E INV=578.25 (12" HDPE)
INV=577.69
13LF of 15" HDPE @ 3.0%
MH-2
RIM: 578.85
N-S 36" Inv. 575.10
E 15" Inv. 576.80
159LF of 36" HDPE @ 0.2%
NORTH BAILEY EXTENSION (S)
WIDTH VAR
Wye Connection
36" Inv. 575.36
16LF of 15" HDPE @ 3.0%
E INV=578.80 (12" HDPE)
INV=577.82
T.G.=580.85
E INV=578.83 (12" HDPE)
MH-1
RIM: 579.50
N 36" Inv. 575.21
S 36" Inv. 575.36
RIM=580.66
N INV=575.74 (36" HDPE)
S INV=575.76 (36" HDPE)
NE INV=576.51 (12" HDPE
W INV=575.81 (12" HDPE)
T.G.=580.49
SW INV=576.50 (12" HDPI
S INV=576.69 (12" HDPE)
T.G.=580.54
E INV=578.44 (12" HDPE)
INV=577.68

GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTING STONE BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIMMING THE PAVEMENT AND THEN A NEW TOP COAT, REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE, A COMBINATION OF THESE TWO OR ANOTHER METHOD OF THE CONTRACTORS CHOOSING. FINAL PAVEMENT WORK PLAN SHALL BE PROVIDED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL

DRAINAGE LEGEND:
- PROPERTY LINE
- PROPOSED STORMWATER
- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

36" Outlet Inv. 572.25
RELOCATED 30 MPH
SPEED LIMIT SIGN
6" SPRUCE
75LF of 36" HDPE @ 1.5%
MH-7
RIM: 579.25±
N 36" Inv. 573.35
SE 36" Inv. 573.37
20LF of 36" HDPE @ 0.2%
Outlet Inv. 573.50
POL 2
30LF of 15" HDPE @ 0.5%
Pond
+/-11,000 CF Storage
Inlet Inv. 574.00
Inlet Inv. 573.84
Outlet Inv. 574.15
33LF of 36" HDPE @ 0.2%
Pond
5,327± CF Storage

Off-site 1" = 20'

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
3	06.12.2024	DZ	Site Updates
4	07.31.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments

SPECIAL INFORMATION:

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SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

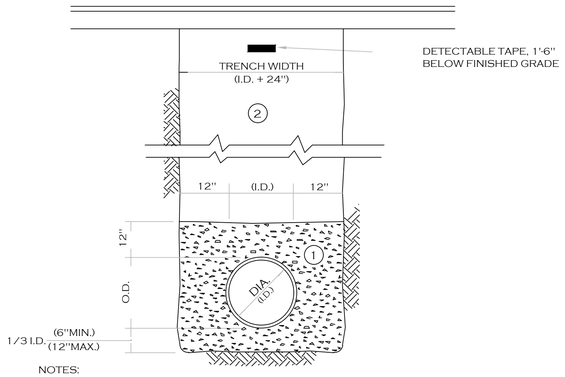
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 035903 STATE OF NEW YORK

TITLE:
Drainage Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.11

Attachment: SP-1988-11P_drawings 011625 (2825 : SP-1988-11P, 6000-6020 N. Bailey Ave)



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

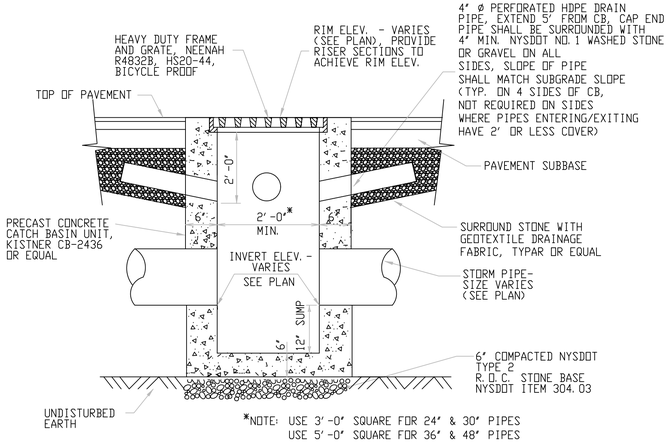
(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

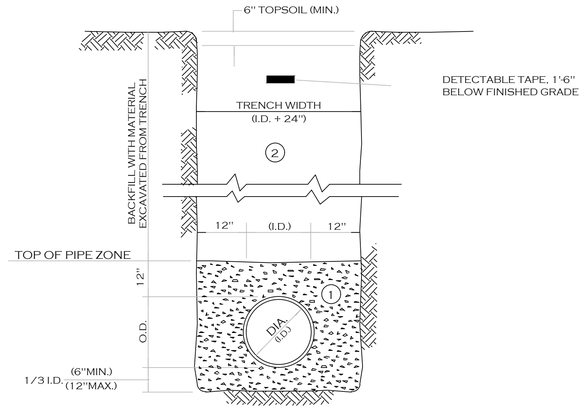
(2) TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERAIL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

TRENCH SECTION IN PAVED AREAS



TYPICAL PRECAST CATCH BASIN



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

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MATERIALS

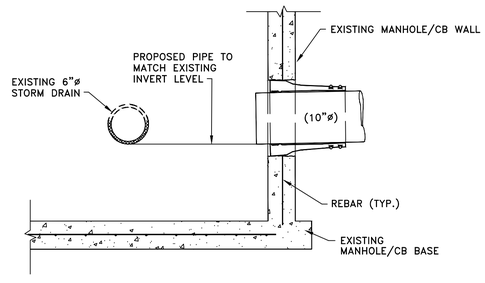
PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

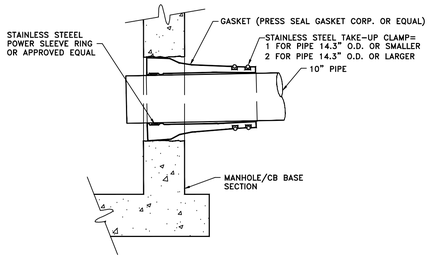
(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

TRENCH SECTION IN UNPAVED AREAS

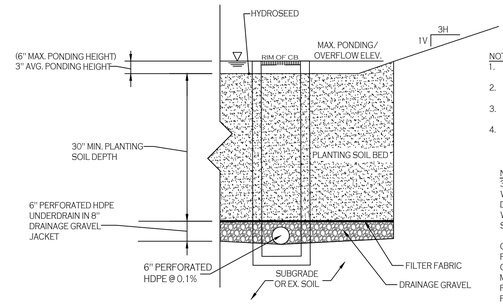


NOTES:

1. CORE DRILL ENTRANCE HOLE IN PRECAST MANHOLE BARREL, BASE AND/OR BENCH FOR REQUIRED PIPE CLEARANCE. PER MANUFACTURERS RECOMMENDATIONS.
2. DOES NOT APPLY TO HOUSE LATERALS.
3. WATERTIGHT PIPE TO MANHOLE BOOT SEAL REQUIRED FOR ALL CORE DRILLED ENTRANCE HOLES IN MANHOLE BARREL AS SHOWN BELOW.



CONNECTION TO EXISTING MANHOLE/CB



BIORETENTION AREA - TYPICAL SECTION

NOTES:

1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43, NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

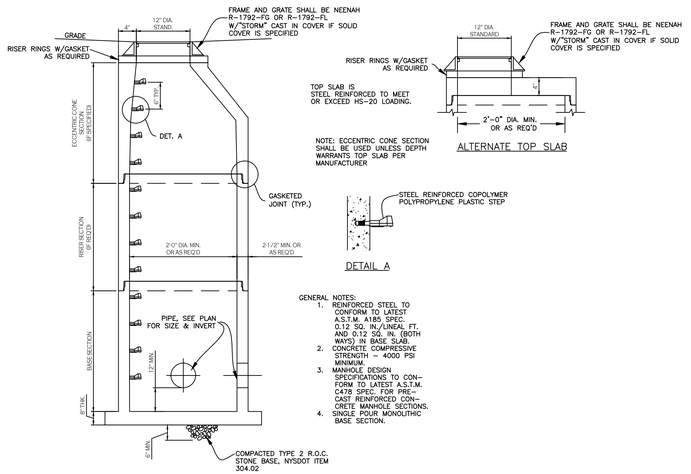
NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 1.0 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5

NOTE: WHERE FRAME & GRATE ARE INSTALLED IN NON-ASPHALT PAVED AREAS, A 4'X4'X6" THK CONCRETE APRON SHALL BE POURED AROUND THE RIM SLOPING TOWARDS THE GRATE



GENERAL NOTES:
1. REINFORCED STEEL TO CONFORM TO LATEST A.S.T.M. A185, SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) IN BASE SLAB.
2. CONCRETE COMPRESSIVE STRENGTH = 4000 PSI MINIMUM.
3. MANHOLE DESIGN SPECIFICATIONS TO CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
4. SINGLE POUR MONOLITHIC BASE SECTION.

TYPICAL STORM MANHOLE DETAIL

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES

SPECIAL INFORMATION:

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NOTICE

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031108 STATE OF NEW YORK

TITLE: Drainage Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C5.20

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CULTEC RECHARGER® 150XLHD STORMWATER CHAMBER

The Recharger® 150XLHD is an 18.5" (470 mm) tall, lower profile chamber and is typically used for installations with depth restrictions or when a larger infiltrative area is required. The Recharger® 150XLHD has the side portal internal manifold feature. HVLV® FC-24 Feed Connectors are inserted into the side portals to create the internal manifold.

Size (L x W x H)	11' x 33" x 18.5"
	3.35 m x 838 mm x 470 mm
Installed Length	10.25'
	3.12 m
Length Adjustment per Run	0.75'
	0.23 m
Chamber Storage	2.65 ft³/ft
	0.25 m³/m
	27.16 ft³/unit
	0.77 m³/unit
Min. Installed Storage	4.89 ft³/ft
	0.45 m³/m
	50.17 ft³/unit
	1.42 m³/unit
Min. Area Required	33.31 ft²
	3.09 m²
Chamber Weight	51.0 lbs
	23.13 kg
Shipping	34 chambers/skid
	1,860 lbs/skid
	12 skids/48' flatbed
Min. Center-to-Center Spacing	3.25'
	0.99 m
Max. Allowable Cover	12'
	3.66 m
Max. Inlet Opening in End Wall	12" HDPE, 15" PVC
	300 mm HDPE, 375 mm PVC
Max. Allowable O.D. in Side Portal	10" HDPE, 10" PVC
	250 mm HDPE, 250 mm PVC
Compatible Feed Connector	HVLV FC-24 Feed Connector

Calculations are based on installed chamber length.
All above values are nominal.
Min. installed storage includes 6" (152 mm) stone base, 6" (152 mm) stone above crown of chamber and typical stone surround at 39"(991 mm) center-to-center spacing.

	Stone Foundation Depth		
	6"	12"	18"
	152 mm	305 mm	457 mm
Chamber and Stone Storage Per Chamber	50.17 ft³	56.83 ft³	63.49 ft³
	1.42 m³	1.61 m³	1.80 m³
Min. Effective Depth	2.54'	3.04'	3.54'
	0.77 m	0.93 m	1.08 m
Stone Required Per Chamber	2.13 yd³	2.75 yd³	3.36 yd³
	1.63 m³	2.10 m³	2.57 m³

Calculations are based on installed chamber length.
Includes 6" (305 mm) stone above crown of chamber and typical stone surround at 39"(991 mm) center-to-center spacing and stone foundation as listed in table.
Stone void calculated at 40%.



Recharger® 150XLHD Bare Chamber Storage Volumes

Elevation		Incremental Storage Volume				Cumulative Storage	
in.	mm	ft³/ft	m³/m	ft³	m³	ft³	m³
18.5	470	0.006	0.001	0.062	0.002	27.193	0.770
18	457	0.010	0.001	0.103	0.003	27.132	0.768
17	432	0.032	0.003	0.328	0.009	27.029	0.765
16	406	0.077	0.007	0.789	0.022	26.701	0.756
15	381	0.102	0.009	1.046	0.030	25.912	0.734
14	356	0.119	0.009	1.220	0.035	24.867	0.704
13	330	0.134	0.011	1.374	0.039	23.647	0.670
12	305	0.146	0.012	1.497	0.042	22.273	0.631
11	279	0.156	0.014	1.599	0.045	20.777	0.588
10	254	0.165	0.015	1.691	0.048	19.178	0.543
9	229	0.172	0.016	1.763	0.050	17.487	0.495
8	203	0.179	0.017	1.835	0.052	15.724	0.445
7	178	0.184	0.017	1.886	0.053	13.889	0.393
6	152	0.188	0.017	1.927	0.055	12.003	0.340
5	127	0.191	0.018	1.958	0.055	10.076	0.285
4	102	0.193	0.018	1.978	0.056	8.118	0.230
3	76	0.195	0.018	1.999	0.057	6.140	0.174
2	51	0.197	0.018	2.019	0.057	4.141	0.117
1	25	0.207	0.019	2.122	0.060	2.122	0.060
Total		2.650	0.246	27.193	0.770	27.193	0.770

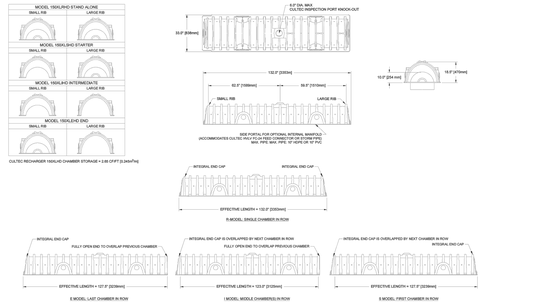
Calculations are based on installed chamber length.

Visit www.cultec.com/downloads.html for Product Downloads and CAD details.

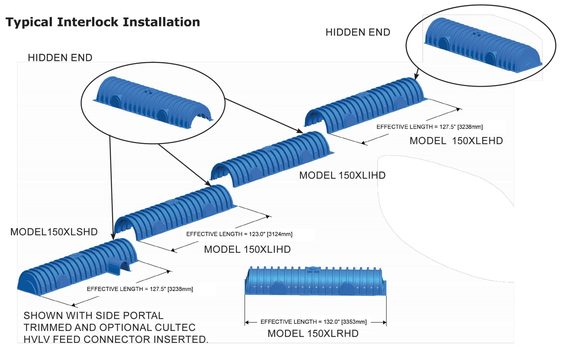
© CULTEC October 2024 SUB150XLHD 10-24

CULTEC RECHARGER® 150XLHD STORMWATER CHAMBER

Three View Drawing



Typical Interlock Installation



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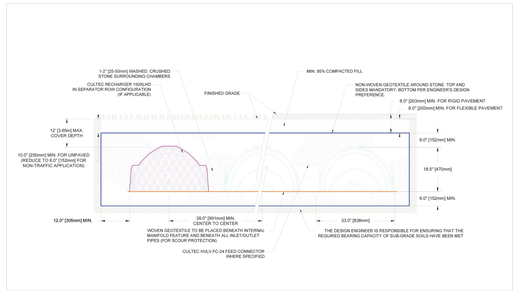
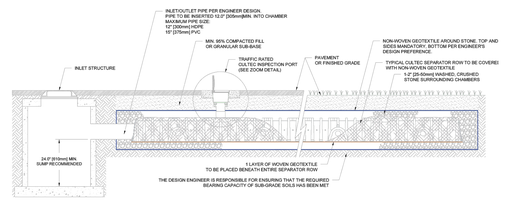
CULTEC RECHARGER® 150XLHD STORMWATER CHAMBER

Typical Cross Section for Traffic Application



Typical Profile View for Traffic Application



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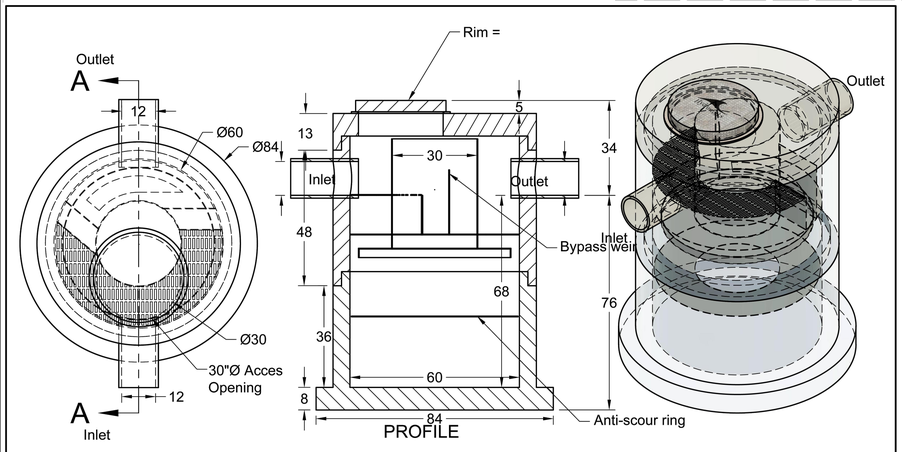

Invert in =
Invert out =

Contractor to Confirm Rim & Inverts

*Submit Shop drawings for Owner review and Approval

Independently tested & independently verified by NJCAT and ETV Canada

US Patent # 10,801,196
CDN Patent # 3,086,197

HydroStorm		
Project		
Location Amherst, NY		
Date	SCALE 1:30	REV 1.0

Hydroworks

Table 1. Hydroworks HS Separator Dimensions*

Model	Structure Inside Diam. (SID) (ft)	Structure Depth (ft)*	Sediment/ Sinking Trash Volume (ft³)	Oil/Floating Trash Volume (gal)	Permanent Pool Wet Volume (gal)
HS 4	4	4	30	95	375
HS 5	5	5	60	165	730
HS 6	6	6	110	270	1265
HS 7	7	6.5	160	410	1870
HS 8	8	7	220	615	2630
HS 10	10	9	465	1130	5285
HS 12	12	11	835	1875	9035

*Dimensions vary with project requirements

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
7	12.03.2024	DZ	Town Comments

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

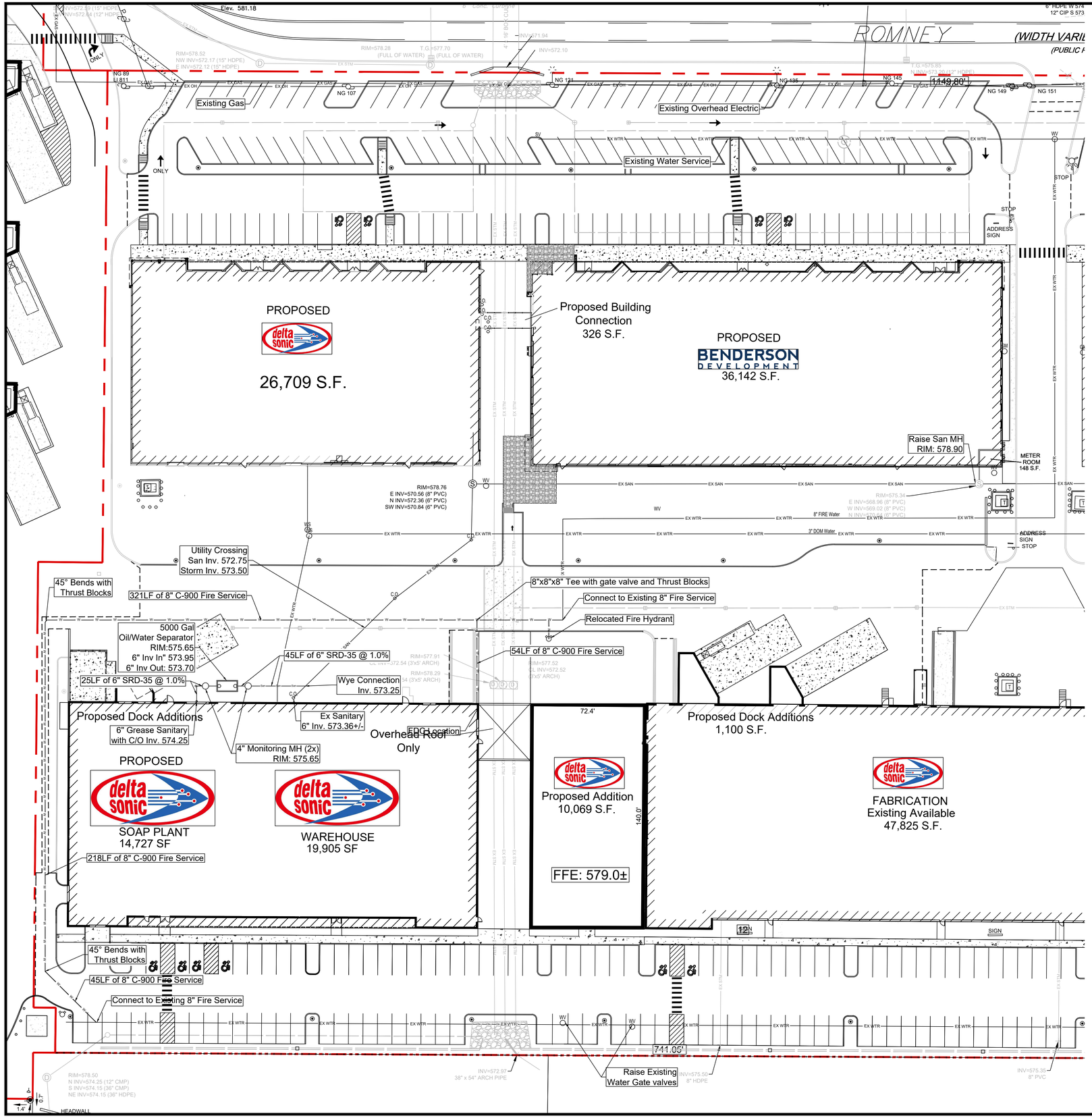
SEAL



TITLE:
Drainage Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.30.2023
DRAWING NO.
C5.21

Attachment: SP-1988-11P drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
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10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
    11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
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4. IF ANY PROPOSED SEWER LATERAL RUNS UNDER PAVED AREA AND HAS LESS THAN 4' COVER, CONCRETE ENCASEMENT IS REQUIRED. IF MORE THAN 4' COVER IS PROVIDED IN PAVED AREAS SELECT FILL IS REQUIRED.
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OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments

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ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

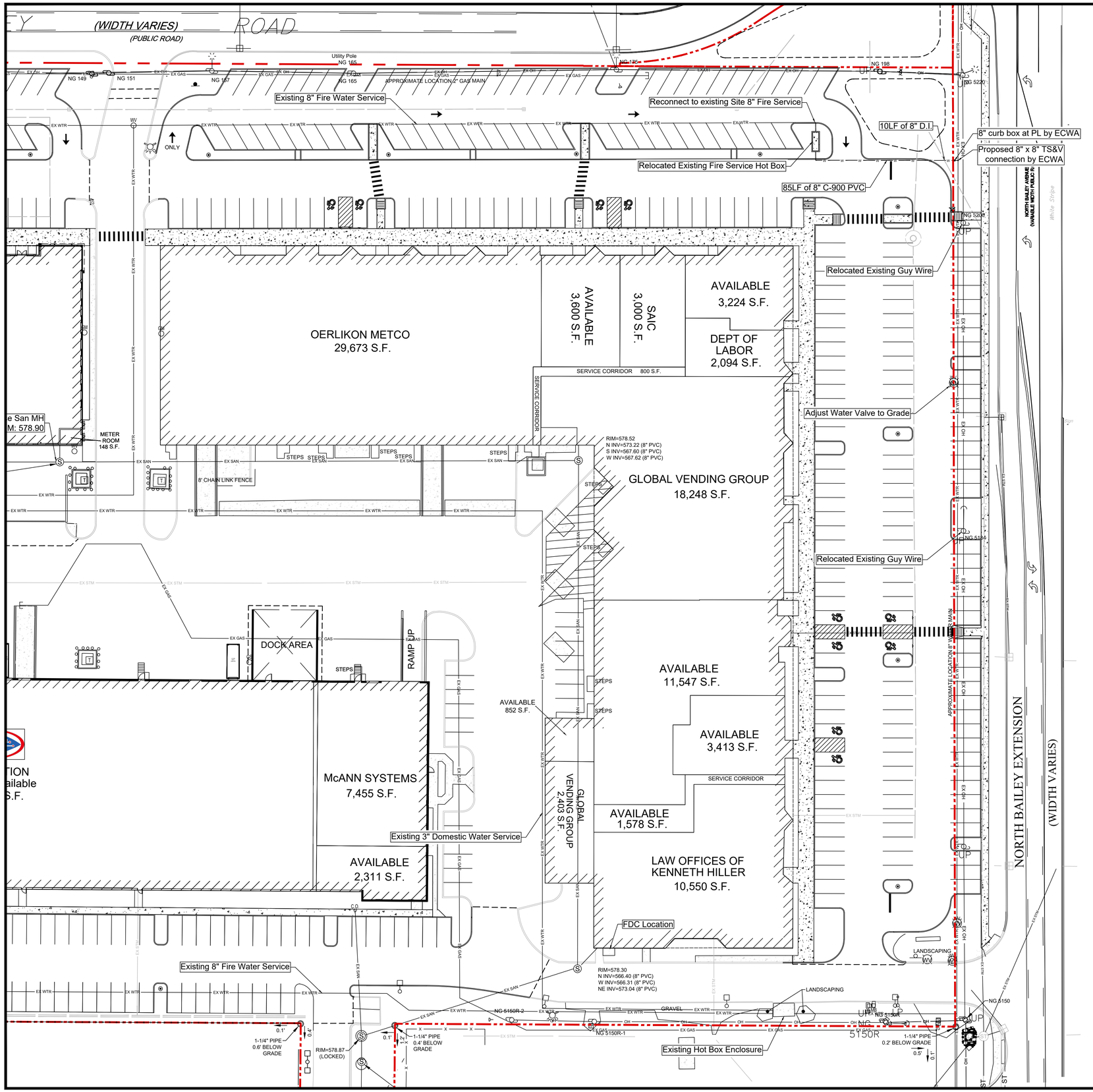
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 12705 STATE OF NEW YORK

TITLE:
Utility Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C6.00

Attachment: SP-1988-11P_drawings 011625 (2825 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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4	07.31.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments

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(716) 886-0211

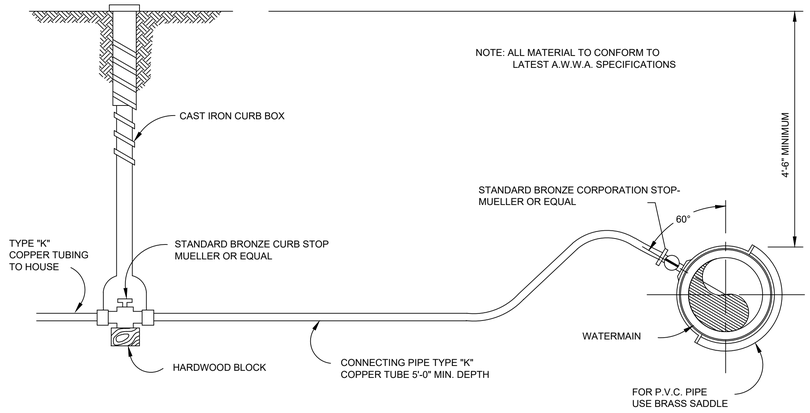
SEAL



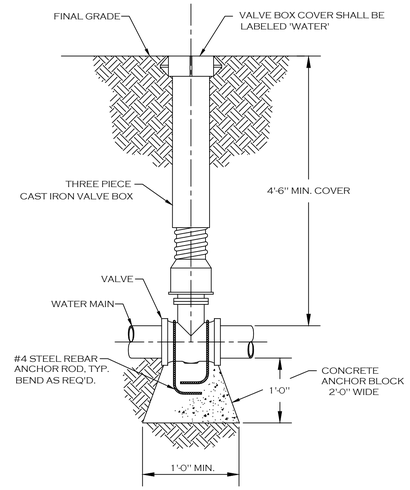
TITLE:
Utility Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C6.01

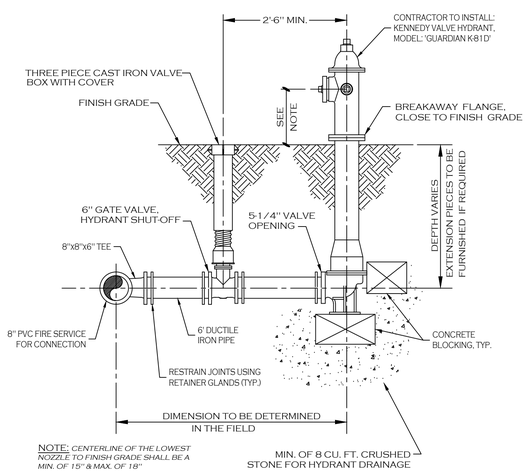
Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



TYPICAL WATER SERVICE LINE INSTALLATION

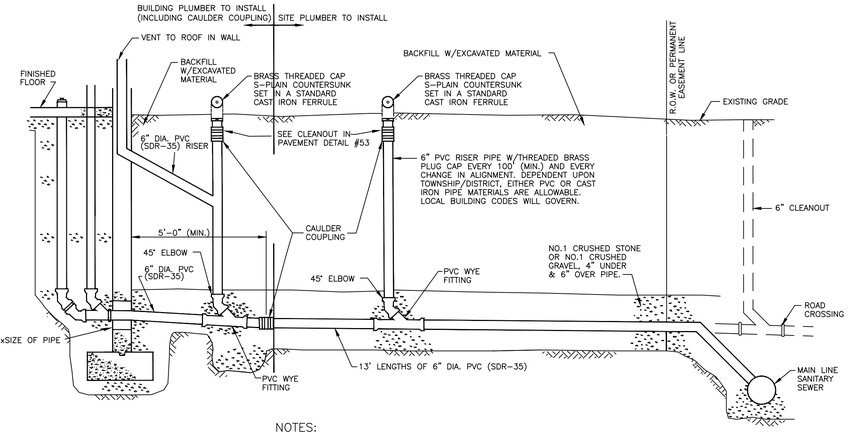


TYPICAL GATE VALVE DETAIL



NOTE: *CENTERLINE OF THE LOWEST NOZZLE TO FINISH GRADE SHALL BE A MIN. OF 15" & MAX. OF 18"*

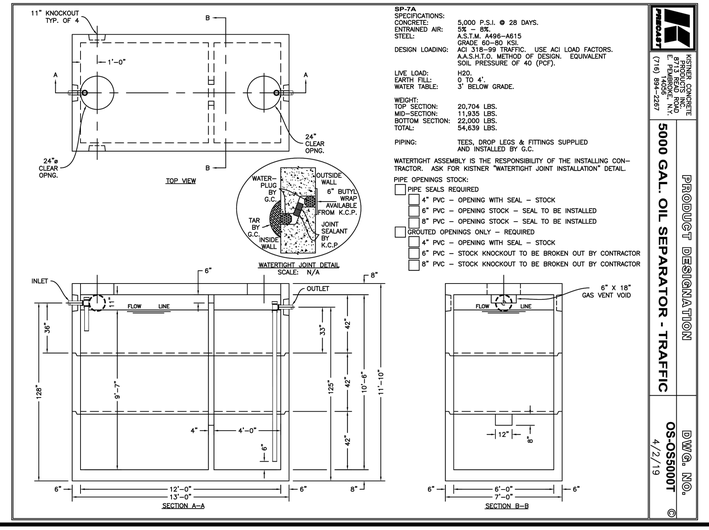
TYPICAL FIRE HYDRANT ASSEMBLY DETAIL



NOTES:

1. PVC PIPE MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST ASTM SPECIFICATION D-3033/D-3034.
2. SELECT BACKFILL REQUIRED UNDER PAVED AREAS.
3. CONCRETE ENCASEMENT IF COVER DEPTH IS LESS THAN 4'-0" UNDER PAVED AREAS
4. MIN. DEPTH OF COVER 3'-0"
5. A GREASE SEPARATOR AND OIL SEPARATOR REQUIRED WHERE APPLICABLE.

TYPICAL COMMERCIAL SERVICE WITHOUT BASEMENT DETAIL (DOMESTIC)



SP-7A
SPECIFICATIONS:
CONCRETE: 5,000 P.S.I. @ 28 DAYS.
ENTRAINED AIR: 5% – 8%
STEEL: A.S.T.M. A496–A615 GRADE 60–80 KSI.
DESIGN LOADING: ACI 318–99 TRAFFIC. USE ACI LOAD FACTORS. A.A.S.H.T.O. METHOD OF DESIGN. EQUIVALENT SOIL PRESSURE OF 40 (PCF).

LIVE LOAD: H20.
EARTH FILL: 0 TO 4'.
WATER TABLE: 3' BELOW GRADE.

WEIGHT:
TOP SECTION: 20,704 LBS.
MID-SECTION: 11,935 LBS.
BOTTOM SECTION: 22,000 LBS.
TOTAL: 54,639 LBS.

PIPING: TEES, DROP LEGS & FITTINGS SUPPLIED AND INSTALLED BY G.C.

WATERTIGHT ASSEMBLY IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. ASK FOR KISTNER "WATERTIGHT JOINT INSTALLATION" DETAIL.

PIPE OPENINGS STOCK:
- ☐ PIPE SEALS REQUIRED
  - 4" PVC – OPENING WITH SEAL – STOCK
  - 6" PVC – OPENING STOCK – SEAL TO BE INSTALLED
  - 8" PVC – OPENING STOCK – SEAL TO BE INSTALLED
- ☐ GROUTED OPENINGS ONLY – REQUIRED
  - 4" PVC – OPENING WITH SEAL – STOCK
  - 6" PVC – STOCK KNOCKOUT TO BE BROKEN OUT BY CONTRACTOR
  - 8" PVC – STOCK KNOCKOUT TO BE BROKEN OUT BY CONTRACTOR

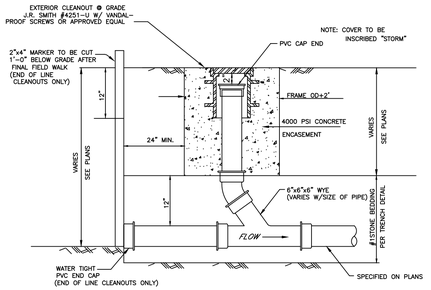
KISTNER CONCRETE PRODUCTS, INC. E. TAUNTON, MASS. (716) 694-2267

5000 GAL. OIL SEPARATOR - TRAFFIC

PRODUCT DESIGNATION

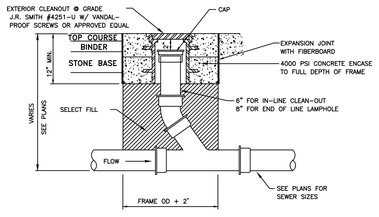
DWG. NO. OS-OS5000T

4/2/19



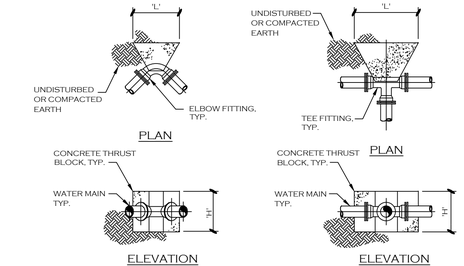
CLEANOUT IN LANDSCAPED AREAS

NOT TO SCALE



CLEANOUT IN PAVED AREAS

NOT TO SCALE



DIMENSION SCHEDULE								
PIPE SIZE	90° ELBOW		45° ELBOW		22.5° ELBOW		11.25° ELBOW	
	'H'	'L'	'H'	'L'	'H'	'L'	'H'	'L'
4"	1.5'	2.0'	1.0'	2.0'	1.0'	1.0'	1.0'	1.0'
6"	2.0'	2.5'	1.5'	2.0'	1.0'	1.5'	1.0'	1.5'
8"	2.5'	3.5'	2.0'	2.5'	1.5'	1.5'	1.0'	2.0'
10"	3.0'	4.5'	2.5'	3.0'	1.5'	3.0'	1.0'	2.5'
12"	3.5'	5.0'	3.0'	3.5'	2.5'	2.5'	1.5'	2.5'

DIMENSION SCHEDULE			
PIPE SIZE	TEE OR TAP SLEEVE		
—	'H'	'L'	
4"	1.5'	1.0'	
6"	1.5'	2.5'	
8"	1.5'	3.5'	
10"	2.5'	3.5'	
12"	3.5'	3.5'	

THRUST BLOCK SCHEDULE

WATER MAIN

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DRAWING REVISIONS:

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7	12.03.2024	DZ	Town Comments

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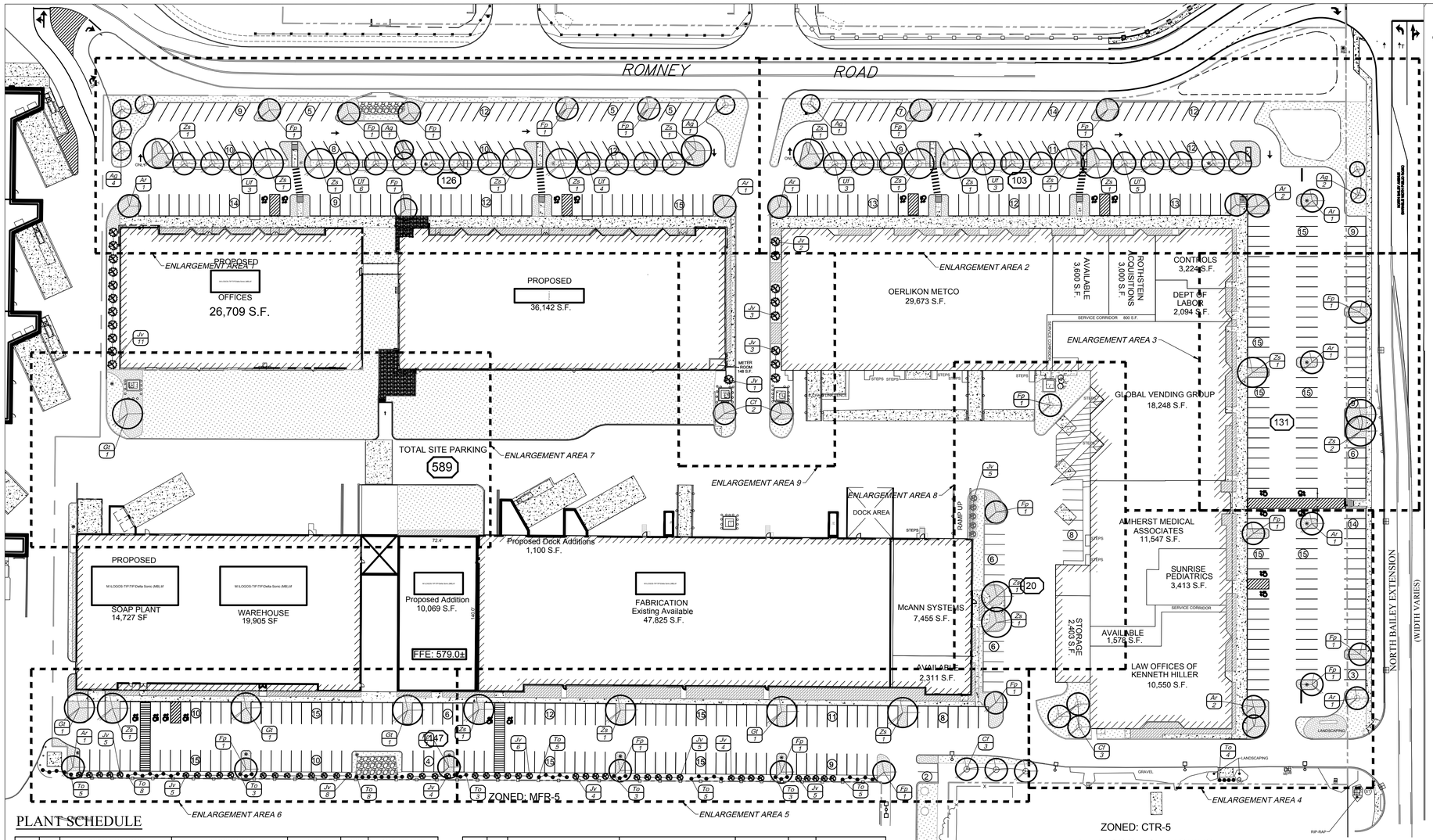
SEAL

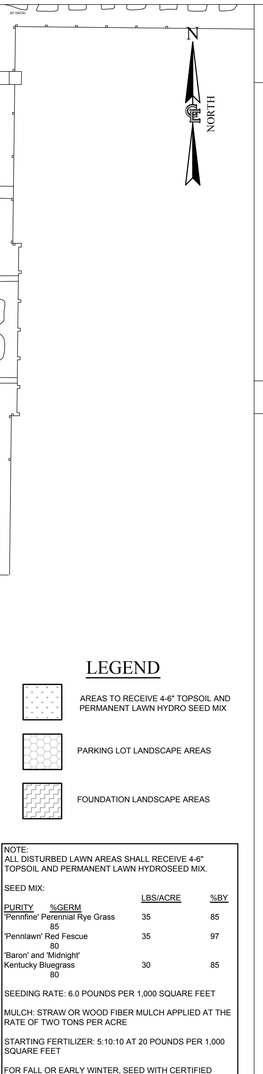


TITLE: Utility Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C6.10

Attachment: SP-1988-11P, drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





PLANT SCHEDULE

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE
EVERGREEN TREES						
71	Jv	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	EASTERN RED CEDAR	6-8' HT.	BB	HT. 10-20', SP. 7-8'
59	To	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6-8' HT.	BB	HT. 15', SP. 3-4'
ORNAMENTAL / DECIDUOUS TREES						
12	Ar	ACER RUBRUM 'FRANK JR.'	REDPOINTE RED MAPLE	2.5-3" CAL.	BB	HT. 45', SP. 30'
9	Ag	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY (ONE-BOLE)	1.75-2" CAL.	BB	HT. 15-25', SP. 15-25'
8	Cf	CORNUS FLORIDA	FLOWERING DOGWOOD (ONE-BOLE)	1.75-2" CAL.	BB	HT. 15-30', SP. 15-30'
20	Fp	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD (ONE-BOLE)	1.75-2" CAL.	BB	HT. 20-30', SP 20-30'
5	Gt	GLEDITSIA TRIACANTHOS INERM.	THORNLESS HONEY LOCUST	2.5-3" CAL.	BB	HT. 60-80', SP. 60-80'
24	Uf	ULMUS 'FRONTIER'	FRONTIER ELM	2.5-3" CAL.	BB	HT. 40', SP. 30'
20	Zs	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2.5-3" CAL.	BB	HT. 60', SP. 40'
SHRUBS						
217	Am	ARONIA MELANOCARPA	LOWSCAPE MOUND CHOKEBERRY	NO. 3 (24" MIN)	CONT.	HT. 1-2', SP. 1.5-2'
69	Ig	ILEX GLABRA 'STRONG BOX'	STRONGBOX INKBERRY HOLLY	HT. 24" MIN	BB	HT. 2-3', SP. 2-3'
72	Iv	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	HT. 24" MIN	CONT.	HT. 3-5', SP. 4-6'
78	Ra	ROSA 'RADTKO'	DOUBLE KNOCKOUT ROSE	NO. 3 (24" MIN)	CONT.	HT. 2-5', SP. 6-8'
298	Rm	ROSA MEIGALPIO	RED DRIFT GROUNDCOVER ROSE	NO. 3 (24" MIN)	CONT.	HT. 1-1.5', SP. 2-2.5'
89	Sj	SPIRAEA JAPONICA 'GOLDMOUND'	GOLDMOUND SPIREA	HT. 24" MIN	CONT.	HT. 2-3', SP. 4'
107	Tx	TAXUS X MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	HT. 24" MIN	CONT.	HT. 3-4', SP. 4-6'
88	Vi	VIBURNUM CARLESII 'KOREAN SPICE'	KOREAN SPICE VIBURNUM	HT. 24" MIN	CONT.	HT. 3.5', SP. 4-5'
PERENNIALS & GRASSES						
246	Ca	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	NO. 2	CONT.	HT. 4-6', SP. 2'-3'
68	Ha	HAKONECHLOA MACRA 'ALL GOLD'	ALL GOLD JAPANESE FOREST GRASS	NO. 3	CONT.	HT. 1.5', SP. 1.5'
560	He	HEMEROCALLIS X 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	NO. 1	CONT.	HT. 1-1.5', SP. 1-1.5'
54	Ir	IRIS PALLIDA 'VARIEGATA'	VARIEGATED SWEET IRIS	BULB	CONT.	HT. 2', SP. 1'
320	Nf	NEPETA HYBRID 'CAT'S PAJAMAS'	CAT'S PAJAMA'S CATMINT	NO. 3	CONT.	HT. 18-20" SP. 18-20"
158	Pc	PANICUM VIRGATUM 'CHEYENNE SKY'	CHEYENNE SKY SWITCHGRASS	NO. 3	CONT.	HT. 2-3', SP. 1.5-2'
292	Pe	PENNISETUM ALOPECUROIDES 'LEMON SQUEEZE'	LEMON SQUEEZE FLOWERING FOUNTAIN GRASS	NO. 3	CONT.	HT. 2.5-3', SP. 2-2.5'
33	Pv	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	NO. 2	CONT.	HT. 3-4', SP. 3-4'
116	Ss	SEDUM 'AUTUMN JOY'	AUTUMN JOY STONE CROP SEDUM	NO. 2	CONT.	HT. 18-24", SP. 18-24"

ABBREVIATIONS:
BB=BALLED & BURLAPPED — CAL.=CALIPER IN INCHES — HT.=HEIGHT — SP.=SPREAD
BR=BARE ROOT — CONT.=CONTAINER — NO.#=GALLON SIZE

NOTES:
- CALIPER TO BE MEASURED 6" ABOVE GRADE
- PLANT SYMBOLS REPRESENT 2/3 MATURE SIZE

GREENSPACE CALCULATIONS

	EXISTING	REQUIRED	PROPOSED
TOTAL PARCEL AREA =	746,480 SF	--	(NO CHANGE)
TOTAL GREENSPACE AREA =	±182,069 SF(24.4%)	--	±133,369 SF (17.9%)

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL SECURE CURRENT PLANS AND SPECIFICATIONS FOR PROPER CONSTRUCTION METHODS AND MATERIAL OF ALL LANDSCAPING PRIOR TO COMMENCING WORK.
2. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS AS NOTED IN THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN ASSOCIATION OF NURSERYMEN, ANSI Z60.1 (LATEST EDITION).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY TAKEOFF.
4. THE CONTRACTOR SHALL PERFORM A ROUGH FIELD STAKEOUT OF ALL PLANT MATERIAL AND SHRUB-BEDS. CONTACT OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL. LOCATIONS SHOWN ON THE PLANS CONVEY DESIGN INTENT ONLY. ACTUAL LOCATIONS WILL BE AS DIRECTED BY THE LANDSCAPE ARCHITECT AT THE TIME OF INSTALLATION.
5. THE CONTRACTOR IS HEREBY NOTIFIED THAT UNDERGROUND UTILITIES EXIST. SHOULD LOCATION OF TREES BE WITHIN 5' OF UNDERGROUND UTILITIES, RELOCATE SAID TREES TO A MINIMUM OF 5' FROM BALL TO UTILITIES.
6. SHOULD LOCATION OF TREES BE WITHIN 20' OF OVERHEAD WIRES, RELOCATE SAID TREES TO A MINIMUM OF 20' FROM WIRES.
7. ALL TREES AND SHRUBS SHALL RECEIVE A 3" LAYER OF BLACK SHREDDED HARDWOOD BARK MULCH.
8. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY AT THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
9. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR OWNER'S PROJECT LANDSCAPE ARCHITECT.
10. ANY PLANT WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY , AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS (INCLUDING, BUT NOT LIMITED TO WATERING, SPRAYING, MULCHING, FERTILIZING, AND REMOVAL OF STAKES AND GUYS) AND NEWLY ESTABLISHED LAWN AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE OWNER.
12. ALL AREAS DISTURBED BY UTILITY INSTALLATION AND SITE GRADING ACTIVITY SHALL RECEIVE 6" APPROVED TOPSOIL (TO A COMPACTED DEPTH OF 6", UNLESS OTHERWISE SPECIFIED BY THE GOVERNING MUNICIPALITY) BE FINE GRADES, SEEDED, MULCHED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
13. ANY IRRIGATION COMPONENT DAMAGED DURING SITE OR LANDSCAPE RENOVATIONS MUST BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.
14. A ONE YEAR GUARANTEE SHALL BE PROVIDED ON ALL PLANT MATERIALS FROM THE DATE OF PROVISIONAL ACCEPTANCE.
15. PLANTING BACKFILL MIXTURE SHALL CONSIST OF 3 PARTS TOPSOIL AND 1 PART COMPOST THOROUGHLY MIXED. PLANTING SOIL DEPTH SHALL BE 3' MINIMUM, AND BE FREE FROM CONSTRUCTION DEBRIS AND FOREIGN MATERIALS.
16. STAKE TREES IMMEDIATELY AFTER PLANTING.
17. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE WORK AREA. IF ANY TREE IS LOCATED CLOSER THAN 5' TO AN UNDERGROUND UTILITY IT SHALL BE RELOCATED TO A LOCATION THAT IS A MINIMUM OF 5' AWAY AS MEASURED FROM THE ROOTBALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, AND SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.

No.	Revision/Issue	Date
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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LEGEND

- AREAS TO RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDRO SEED MIX
- PARKING LOT LANDSCAPE AREAS
- FOUNDATION LANDSCAPE AREAS

NOTE:
ALL DISTURBED LAWN AREAS SHALL RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDROSEED MIX.

SEED MIX:

PURITY %GERM	LBS/ACRE	%BY
'Pennfine' Perennial Rye Grass 85	35	85
'Pennlawn' Red Fescue 80	35	97
'Baron' and 'Midnight' Kentucky Bluegrass 80	30	85

SEEDING RATE: 6.0 POUNDS PER 1,000 SQUARE FEET

MULCH: STRAW OR WOOD FIBER MULCH APPLIED AT THE RATE OF TWO TONS PER ACRE

STARTING FERTILIZER: 5:10:10 AT 20 POUNDS PER 1,000 SQUARE FEET

FOR FALL OR EARLY WINTER, SEED WITH CERTIFIED "AROOSTOCK" WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE.

Applicant

BENDERSON DEVELOPMENT
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WWW.BENDERSON.COM

PROJECT NO.: 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT — SARAH COSTICH — 002574 — STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
217 LAKE AVENUE ROCHESTER, NY 14608 (585) 458-3020

- CIVIL ENGINEERING
- LAND SURVEYING
- LANDSCAPE ARCHITECTURE

Project Name and Address

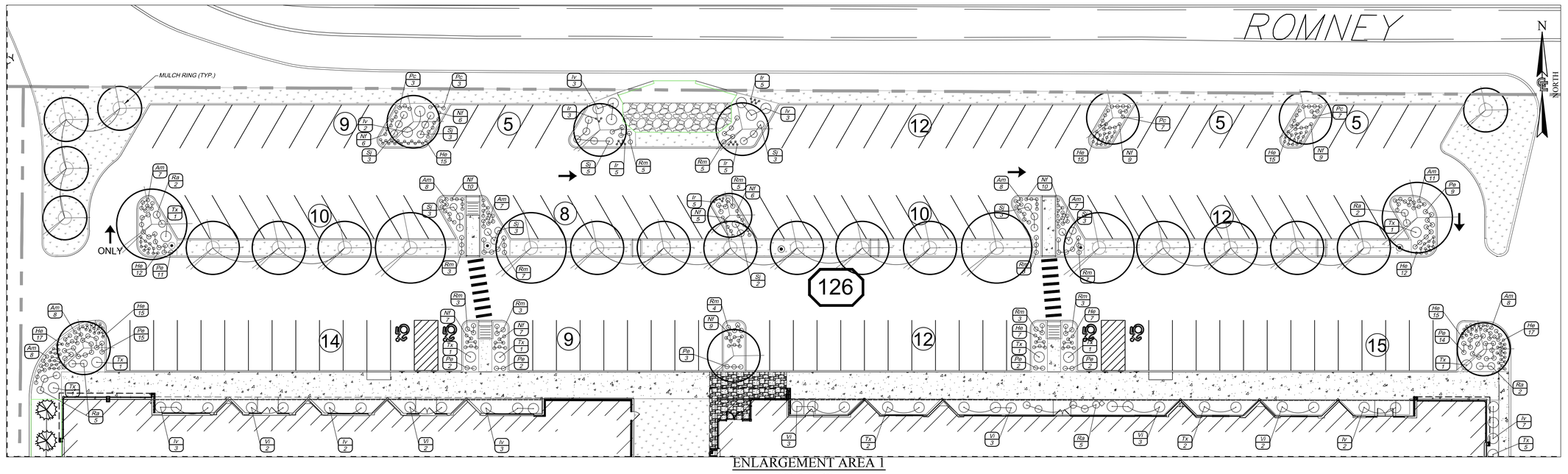
AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

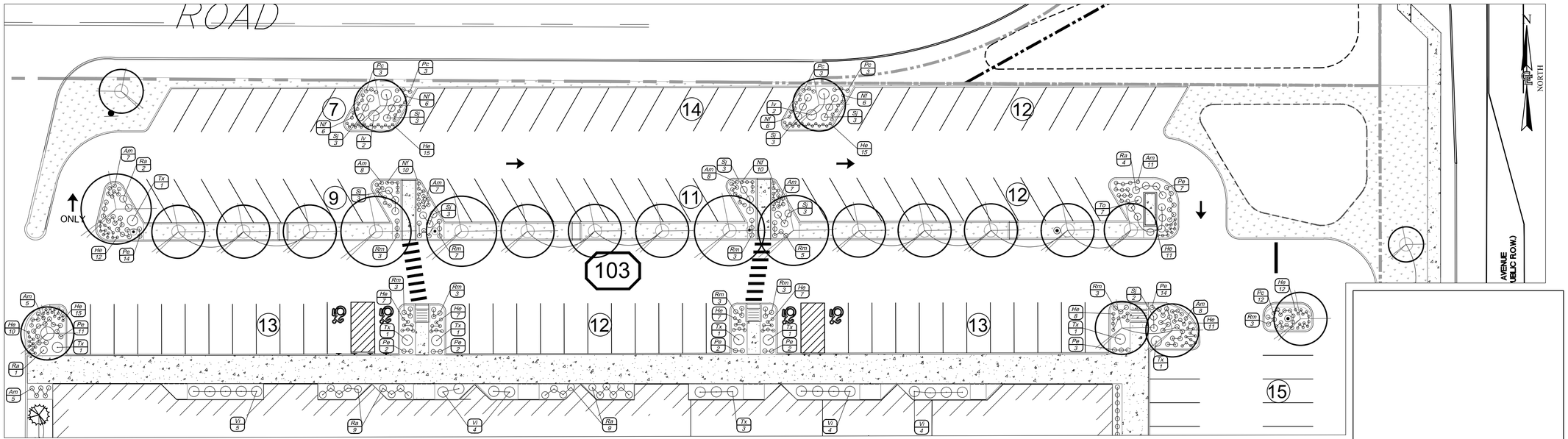
Drawing Name

OVERALL LANDSCAPE PLAN

Sheet	Drawing Number
1 OF 5	C-7.0
Date: 06/12/2024	
Scale: 1"=50'	

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





No.	Revision/Issue	Date
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

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PROJECT NO.: 1810

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Landscape Architect

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• LANDSCAPE ARCHITECTURE
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Project Name and Address

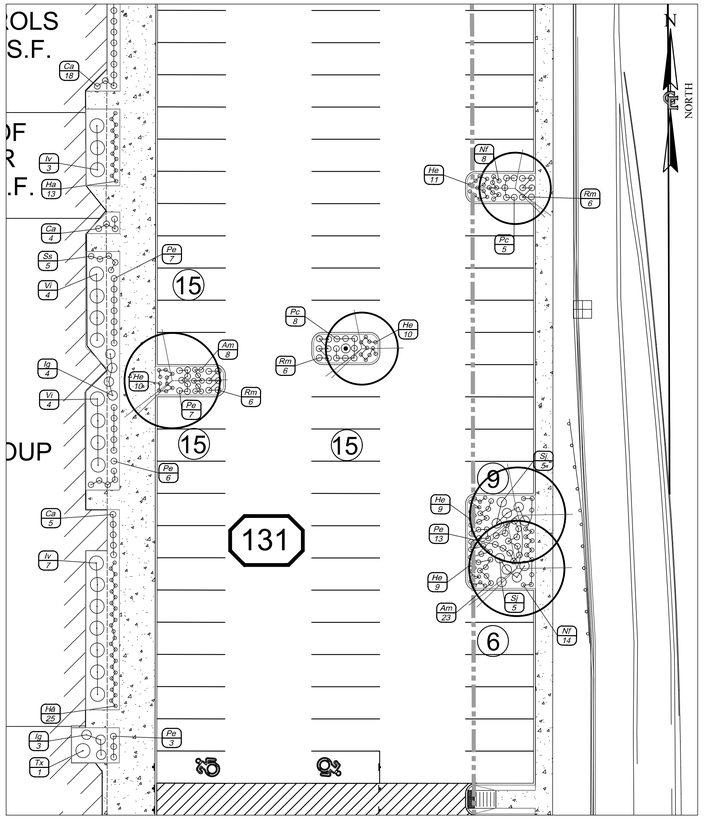
AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS

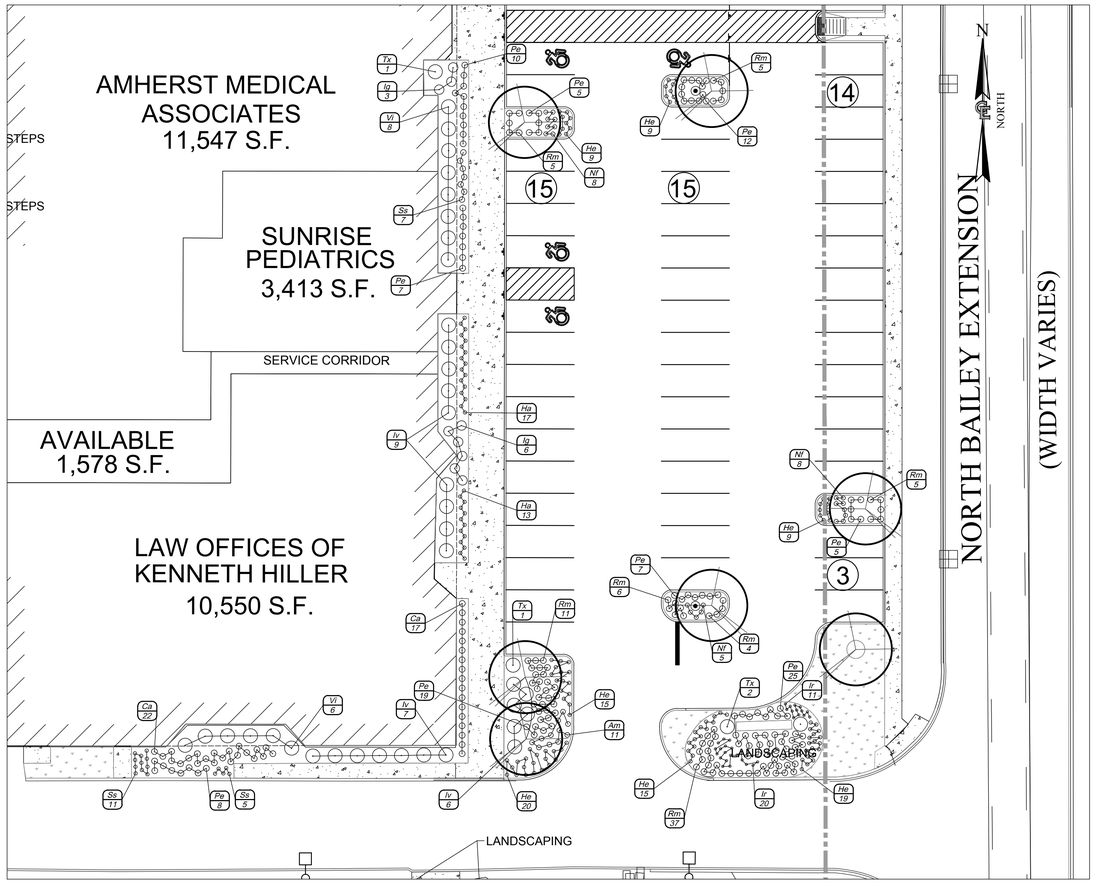
Sheet	Drawing Number
2 OF 5	C-7.1
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P, 6000-6020 N. Bailey Ave) SP-1988-11P, drawings 011625 (28252 : SP-1988-11P, 6



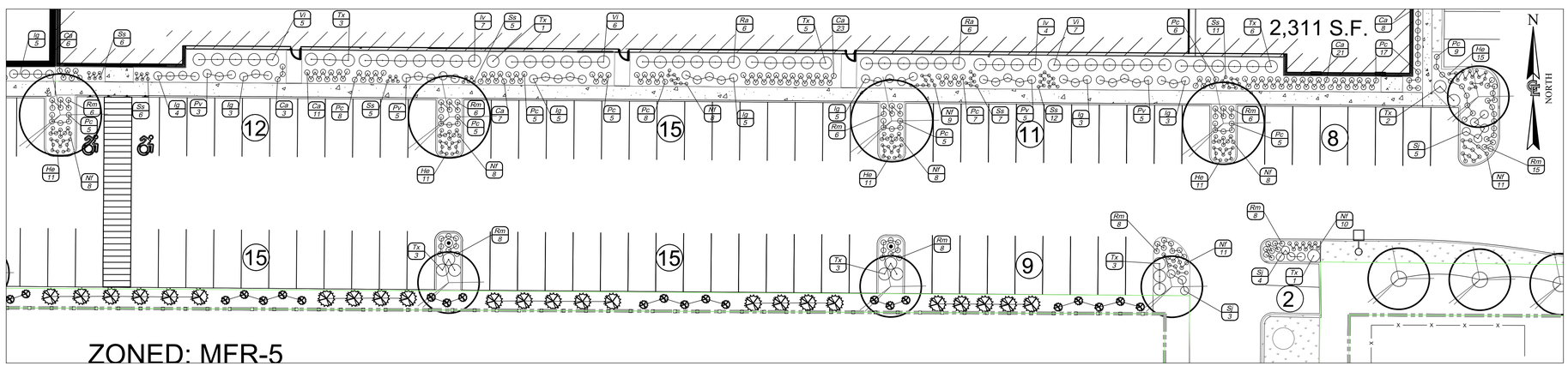
ENLARGEMENT AREA 3

SCALE: 1" = 20'



ENLARGEMENT AREA 4

SCALE: 1" = 20'



ENLARGEMENT AREA 5

SCALE: 1" = 20'

MATCHLINE (SEE SHEET C-7.0)

No.	Revision/Issue	Date
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

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BENDERSON DEVELOPMENT

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PROJECT NO.: 1810

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REGISTERED LANDSCAPE ARCHITECT
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002574
STATE OF NEW YORK

Landscape Architect

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- CIVIL ENGINEERING
- LAND SURVEYING
- LANDSCAPE ARCHITECTURE

217 LAKE AVENUE
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(585) 458-3020

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS

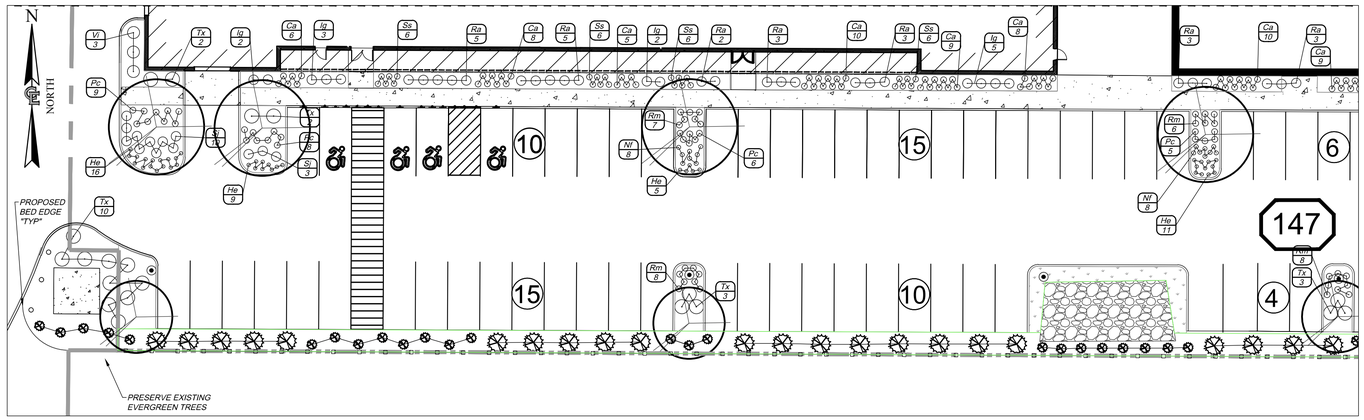
Sheet: 3 OF 5

Date: 6/12/2024

Scale: 1"=20'

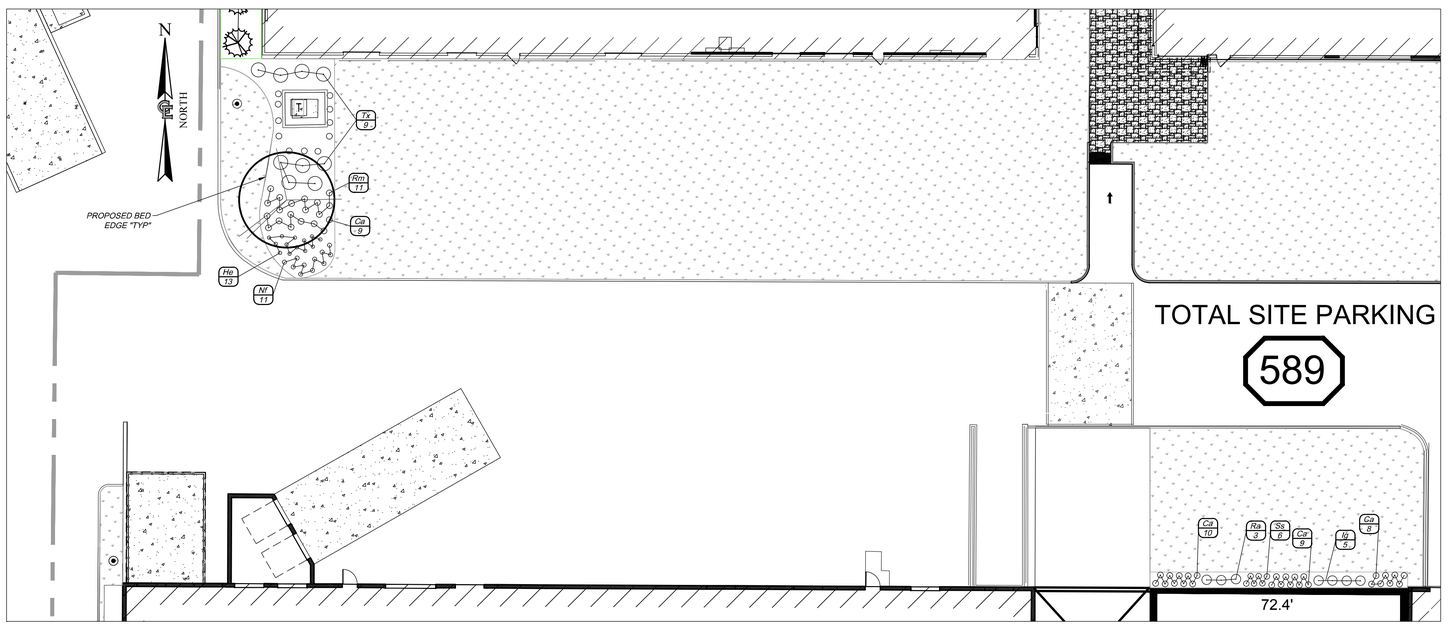
Drawing Number: C-7.2

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



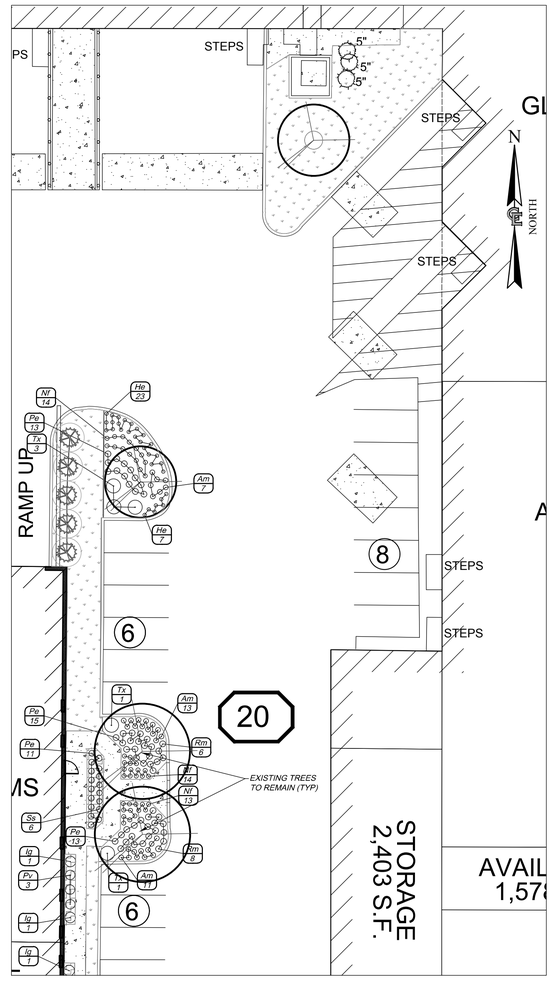
ENLARGEMENT AREA 6

SCALE: 1" = 20'



ENLARGEMENT AREA 7

SCALE: 1" = 20'



ENLARGEMENT AREA 8

SCALE: 1" = 20'

No.	Revision/Issue	Date
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

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PROJECT NO.: 1810

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- Land Surveying
- Landscape Architecture

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Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

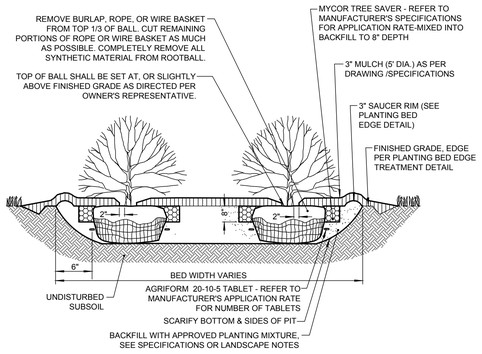
LANDSCAPE PLAN ENLARGEMENT AREAS

Sheet	Drawing Number
4 OF 5	C-7.3
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. PLANTING BED DEPTH IN LAWN AREAS SHALL BE A MINIMUM OF 18" DEEP AND/OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
3. ALL PLANTING BEDS SHALL BE FREE OF CONSTRUCTION DEBRIS.
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.



SHRUB PLANTING DETAIL

NOT TO SCALE

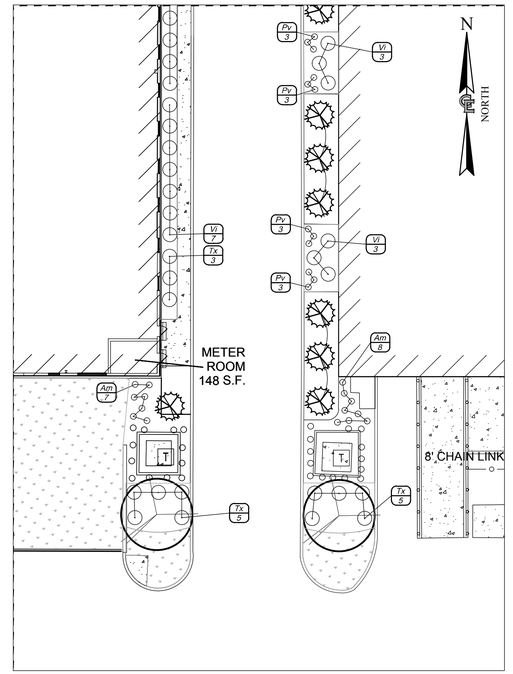


NOTES:

1. MAINTAIN A 3" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   FOR SANDY OR LOAMY SOILS: 1"
   FOR CLAY OR POORLY DRAINED SOILS: 3"
   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.

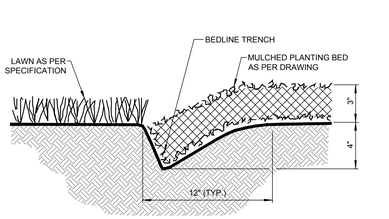
DECIDUOUS TREE PLANTING LESS THAN 4" CAL. DETAIL

NOT TO SCALE



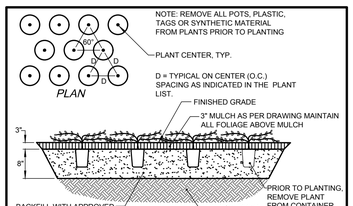
ENLARGEMENT AREA 9

SCALE: 1" = 20'



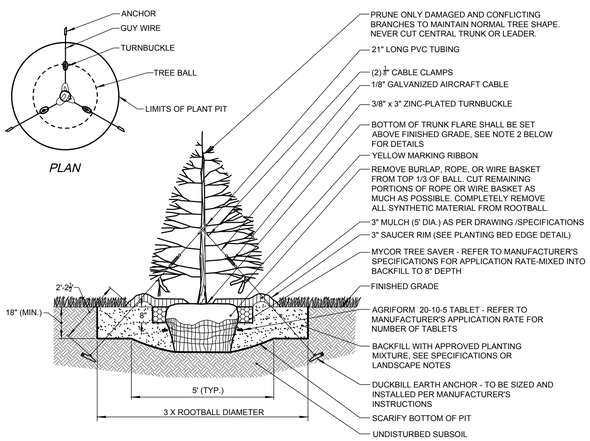
PLANTING BED EDGE TREATMENT DETAIL

NOT TO SCALE



GROUNDCOVER / PERENNIAL / BULB PLANTING DETAIL

NOT TO SCALE



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4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.

EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE

Revisions						Date
				04	Revised based on site plan changes	2024-12-10
				03	Revised based on site plan changes	2024-11-26
				02	Revised based on site plan changes	2024-10-14
				01	Revised based on site plan changes	2024-08-21
				No.	Revision/Issue	Date

Notes & References

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WWW.BENDERSON.COM

PROJECT NO.: 1810

Landscape Architect's Seal



Landscape Architect

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• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
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ROCHESTER, NY 14608
(585) 458-3020

Project Name and Address

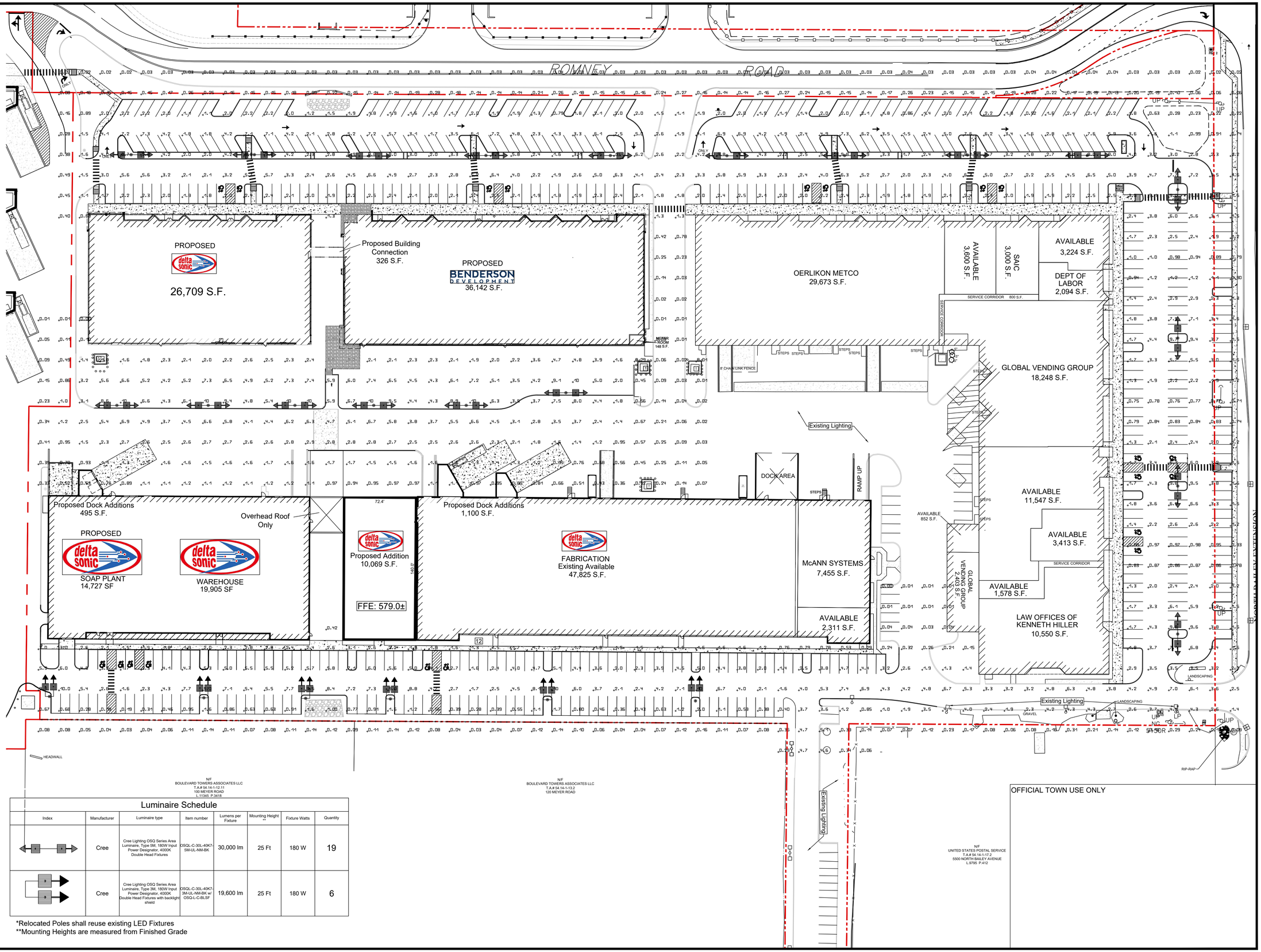
AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS & DETAILS

Sheet	Drawing Number
5 OF 5	C-7.4
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Luminaire Schedule

Index	Manufacturer	Luminaire type	Item number	Lumens per Fixture	Mounting Height **	Fixture Watts	Quantity
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 5M, 180W Input Power Designator, 4000K Double Head Fixtures	OSQL-C-30L-40K7-5M-UL-NM-BK	30,000 lm	25 Ft	180 W	19
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 3M, 180W Input Power Designator, 4000K Double Head Fixtures with backlight shield	OSQL-C-30L-40K7-3M-UL-NM-BK w/ OSQ-L-C-BLSF	19,600 lm	25 Ft	180 W	6

*Relocated Poles shall reuse existing LED Fixtures
**Mounting Heights are measured from Finished Grade

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
7	12.03.2024	DZ	Town Comments

SPECIAL INFORMATION:

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park

6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Site Lighting Plan

SCALE: 1:70

DRAWN BY: DMZ

CHECKED BY: MAO

DATE: 08.16.2023

DRAWING NO. C8.00

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

OSQ Series

OSQ™ LED Area/Flood Luminaire featuring Patented NanoComfort™ Technology – Version C

Rev. Date: V3 04/17/2023

Product Description

The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. Medium is suitable upgrade for HID applications up to 400 Watts. Large is suitable upgrade for HID applications up to 1000 Watts. Extra Large is suitable upgrade for HID applications up to multiple 1000 Watts.

Applications: Parking lots, walkways, campuses, car dealerships, office complexes, high-mast and internal roadways

Performance Summary

Utilizes Patented NanoComfort™ Technology

Utilizes Cree TrueWhite® Technology on 5000K Luminaires

Assembled in the USA by Cree Lighting from US and imported parts

Initial Delivered Lumens: 4,000 - 75,000

Efficacy: Up to 171 LPW

CRI: Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)

CCT: 3000K, 4000K, 5000K, 5700K

Limited Warranty*: 10 years for luminaire; 10 years for Colorfast DeltaGuard® finish; 5 years for BML sensor; up to 5 years for Synapse® accessories; 1 year for luminaire accessories

*See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:
Example: **Mount:** OSQ-ML-C-AA-BK + **Luminaire:** OSQM-C-4L-30K7-2M-UL-NM-BK

Mount (Luminaire must be ordered separately)*

OSQ-

Medium/Large Mounts
OSQ-ML-C-AA Adjustable Arm
OSQ-ML-C-DA Direct Arm
OSQ-ML-C-TM Trunnion Mount

Extra Large Mounts
OSQ-X-C-AA Adjustable Arm
OSQ-X-C-DA Direct Arm

Color Options: **SV** Silver, **BK** Black, **BZ** Bronze, **WH** White

* Reference fixture mounting drill pattern, EPA, and pole configuration suitability data beginning on page 14.

Luminaire (Must must be ordered separately)

OSQ **C**

Family	Size	Series	Lumen Package*	CCT/ CRI	Optic	Voltage	Mount	Color Options	Controls*	Options
OSQ	**M** Medium **L** Large **X** Extra Large	**C**	**Medium** **4L** 4,000 Lumens **6L** 6,000 Lumens **9L** 9,200 Lumens **11L** 11,000 Lumens **16L** 16,000 Lumens **Large** **22L** 22,000 Lumens **30L** 30,000 Lumens **40L** 40,000 Lumens **50L** 50,000 Lumens **Extra Large** **50L** 50,000 Lumens **65L** 65,000 Lumens **75L** 75,000 Lumens	**30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K7** 5000K, 70 CRI **57K7** 5700K, 70 CRI	**Asymmetric** **2M** Type II Mid Type II Mid w/ Factory-Installed Backlight Shield **3M** Type III Mid Type III Mid w/ Factory-Installed Backlight Shield **4M** Type IV Mid **Symmetric** **5M** Type V Mid **5N** Type V Narrow **4B** Type IV Mid w/ Factory-Installed Backlight Shield **AF** Automotive FrontlineOptic™ **AB** Automotive FrontlineOptic™ w/Factory-Installed Backlight Shield **33** NEMA® 3x3 **44** NEMA® 4x4 **55** NEMA® 5x5 **66** NEMA® 6x6 **77** NEMA® 7x5	**UL** Universal: 120-277V **UH** Universal: 347-480V - Not available with 4L, 40L or 75L lumen packages **UE** Universal: 277-480V - Available with 40L and 75L lumen packages	**NM** No Mount - Must specify mount from table above - Mount ordered separately	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**BML** **Bluetooth® Technology Enabled Multi-Level Sensor** - Utilizes a multifunction sensor - Refer to BML spec sheet for details - 20-40' sensor lens installed on luminaire; 8-20' sensor lens and aisle shroud included - Intended for downlight applications - Not UL - Not available with Q or X options or Synapse TLT-B2 or TLT-HVO accessories **09/08/07/06/05/04/03/02/01 Field Adjustable Output** - Must select 09, 08, 07, 06, 05, 04, 03, 02, or 01 - Others full range adjustability - Refer to pages 15-25 for power and lumen values - Not available with BML or X options or Synapse TLT-B2 or TLT-HVO accessories **XB/X7/X4/X5/X6/X3/X2/X1 Locked Lumen Output** - Must select XB, X7, X6, X5, X4, X3, X2, or X1 - Not available with BML or Q options - X7 option not available with the following lumen package/voltage offerings: 9L/UL, 16L/UL, 16L/UH, 30L/UL, 30L/UH, 40L/UL, 65L/UL, 65L/UH - X2 option not available 9L/UL lumen package/voltage - Lumen output is permanently locked to the setting selected - Refer to pages 15-25 for power and lumen values	**20KV** **20kV/10kA Surge Suppression** - Replaces standard 10kV/5kA surge protection **F** **Fuse** - Compatible with 120V, 277V or 347V (phase to neutral) - Consult factory if fusing is required for 208V, 240V or 480V (phase to phase) - When code dictates fusing, use time delay fuse **N** **Button Photocell NEMA® Lift & Lock 7-Pin Photocell Receptacle** - External utility label per ANSI C136.15-2020 - 7-pin receptacle per ANSI C136.41 - Available only with OSQM & OSQL luminaires - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - Requires photocell or shorting cap by others **R** **NEMA® Lift & Lock 7-Pin Photocell Receptacle** - Replaces standard TLT-B2 or TLT-HVO - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - Requires photocell or shorting cap by others - Refer to page 2 for compatible Synapse control offerings **RL** **Rotate Left** - LED and optic are rotated to the left - Refer to RR/RL configuration diagram on page 26 for optic directionality - Not for use with symmetric optics **RR** **Rotate Right** - LED and optic are rotated to the right - Refer to RR/RL configuration diagram on page 26 for optic directionality - Not for use with symmetric optics

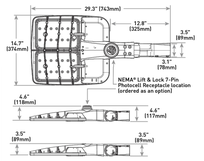
* Lumen Package codes identify approximate light output only. Actual lumen output levels vary by CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values
* Luminaire comes standard with 0-10V dimming

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

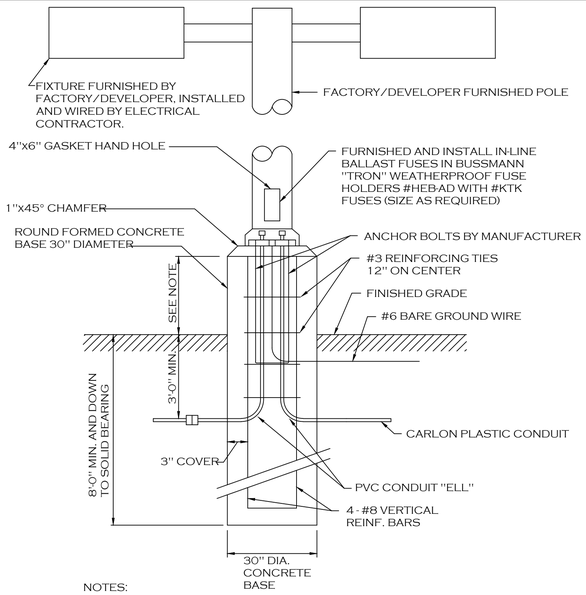
OSQM - AA Mount





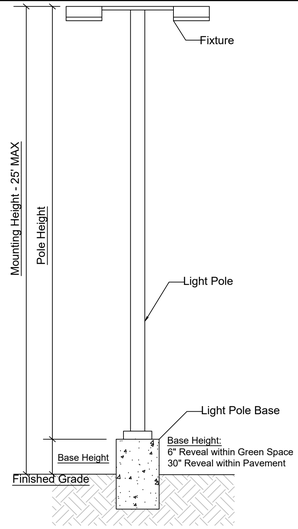
Luminaire	Weight
OSQM	19.3 lbs. (8.8kg)

Note: For OSQL, OSQX and additional mounts, refer to drawings beginning on page 26.



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
   IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
   IN PAVEMENT: 30" ABOVE GRADE
   IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION



Light Pole Mounting

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
4	07.31.2024	DZ	Site Updates

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Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

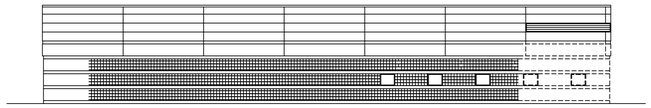
SEAL



TITLE:
Lighting Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C8.10

Attachment: SP-1988-11P_drawings 011625 (2825 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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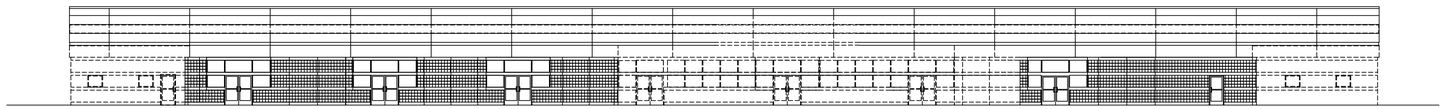

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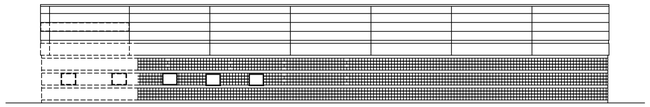

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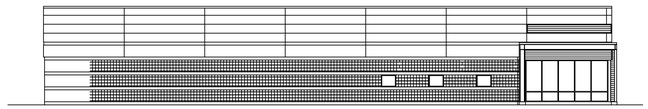

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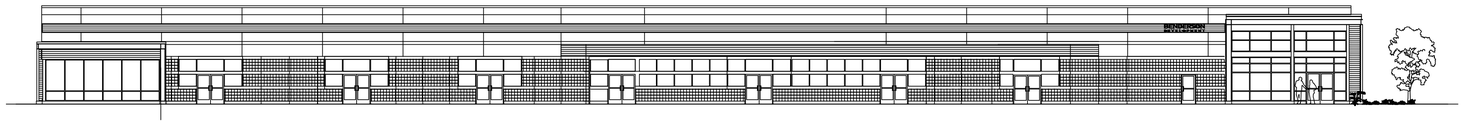

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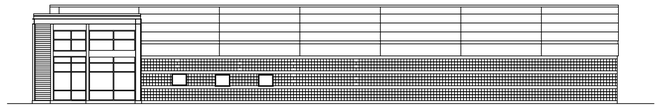

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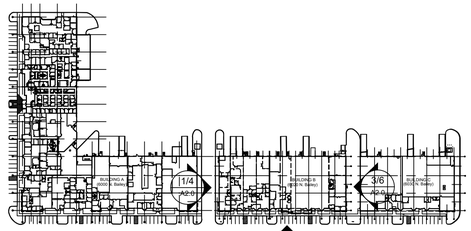

KEY PLAN
N.T.S.

N

DRAWING REVISIONS:			
No.	DATE	BY	REMARKS
-	-	-	-

SPECIAL INFORMATION:
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NOTICE
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JAMES ALLEN RUMSEY ARCHITECT

PREPARED FOR

BENDERSON DEVELOPMENT
570 DELAWARE AVE. BUFFALO, NY 14202
BUFFALO, NY 14202
(716) 886-0211

PROPERTY NUMBER: 1723
AREA: -

AMHERST DEVELOPMENT PARK
6000-6040 North Bailey Ave
Amherst, NY 14226

FACADE RENOVATION

SEAL:

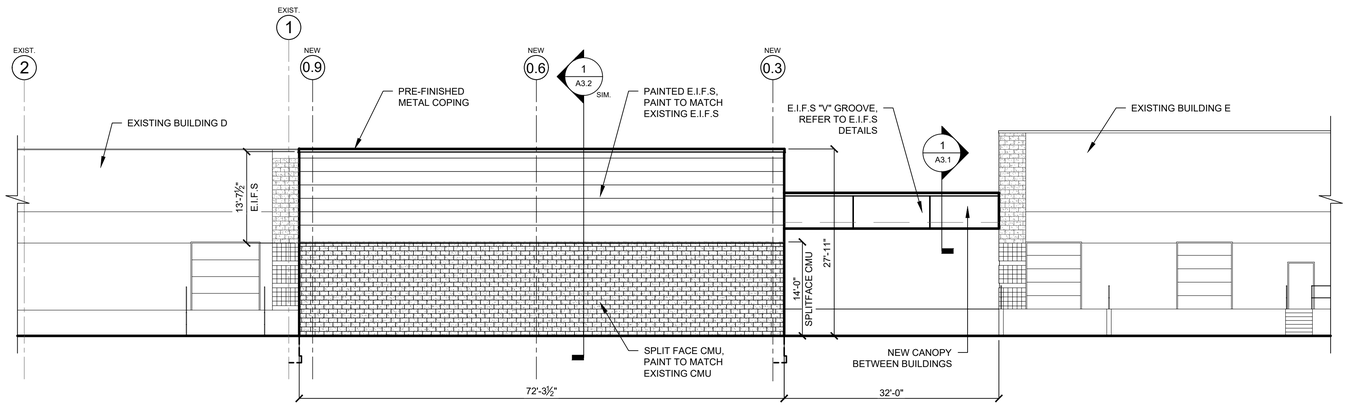
TITLE
EXTERIOR ELEVATIONS

CAR
JAR
12.15.20

DRAWING NO.
A2.0B

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

M:\BENDERSON\1723- AMHERST DVLP\SHELL\FACADE- A-B CLT\23 FACADE 2024 DWG LAYOUT A2.0 (2). 12/10/2024 3:23:44 PM



1 NORTH ELEVATION
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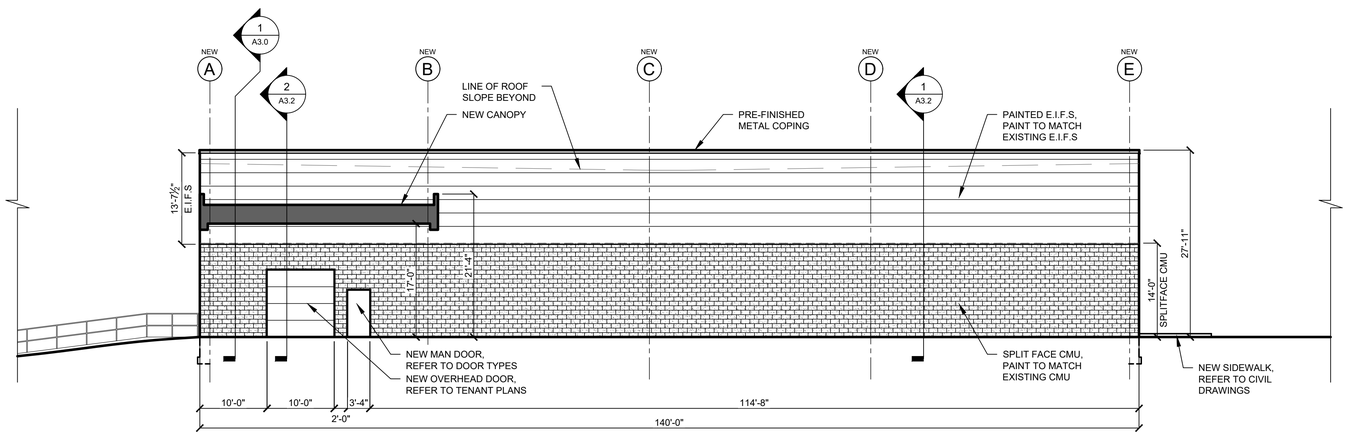

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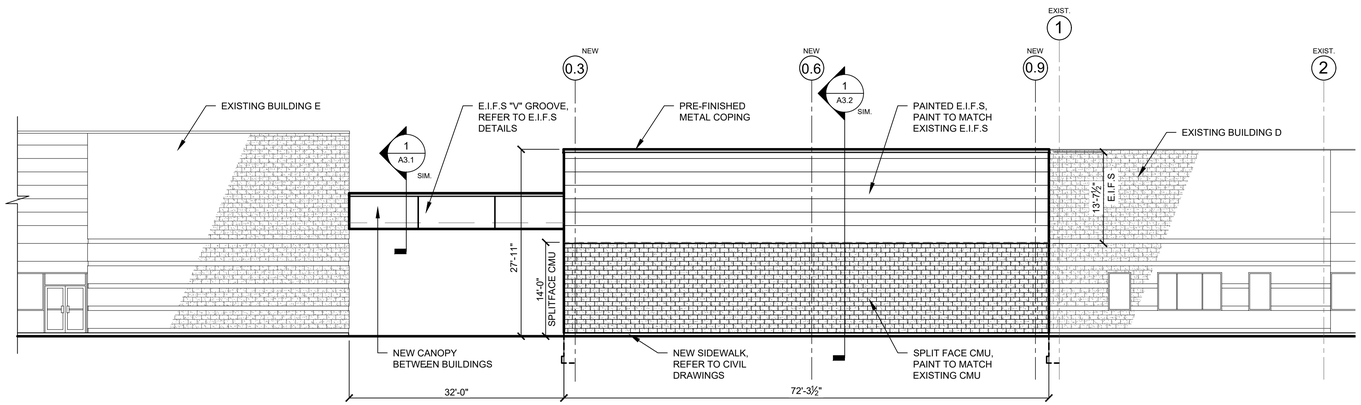

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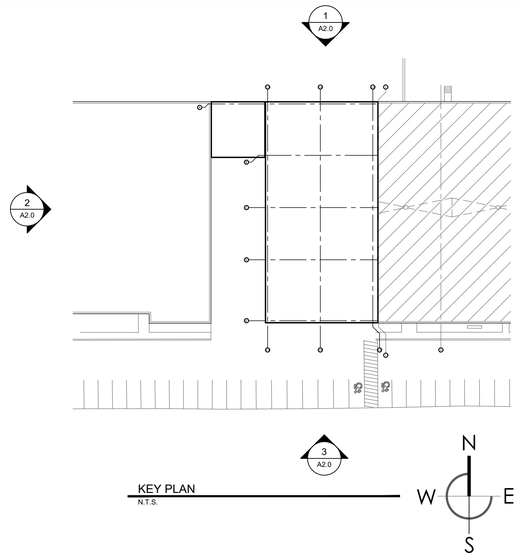

KEY PLAN
N.T.S.

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
-	-	-	-

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PROPERTY NUMBER: 1723

AREA: 9,522 SF

AMHERST DEVELOPMENT PARK
6000 - 6040 NORTH BAILEY AVE
AMHERST, NY 14226

BUILDING D EXPANSION

CONSULTANT:

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

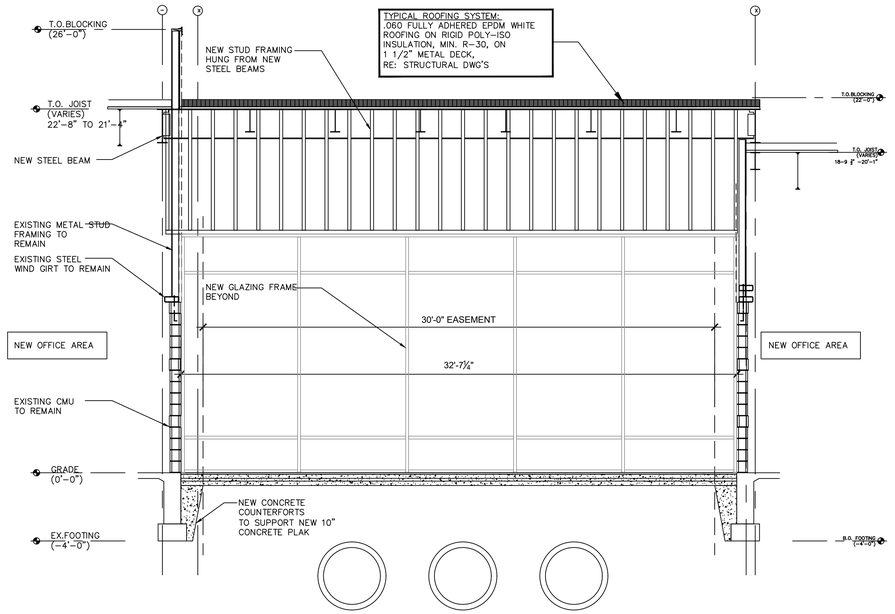
TITLE:

EXTERIOR ELEVATIONS

DRAWN BY: RKT
CHECKED BY: JAR
DATE: 07.08.24

DRAWING NO.
A2.0

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



OVERHEAD
CONNECTION
SECTION

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
–	–	–	–

SPECIAL INFORMATION:

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PROPERTY NUMBER: 1723

AREA: -

AMHERST DEVELOPMENT PARK
6000 - 6040 NORTH BAILEY AVE
AMHERST, NY 14226

BUILDING CONNECTION

CONSULTANT:

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR

BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:

EXTERIOR
ELEVATION

DRAWN BY: JM
CHECKED BY: JAR
DATE: 10.25.24

DRAWING NO.

A2.1

Attachment: SP-1988-11P_drawings 011625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINA WOOD DESIGN

STORMWATER POLLUTION PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES

At

Amherst Development Park
6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

80 Silo City Suite 100
Buffalo, NY 14203

Telephone: (716) 842-3165

November 2023

Revised 2/11/2025



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table of Contents

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Section 103 - Operator's Name and Address

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Section 106 - Name of Receiving Waters

Section 107 - Indian Country Lands

Section 108 - Endangered or Threatened Species

Section 109 - Critical Habitat

Section 110 - Historic Places

Section 111 - Wetlands and/or Other Surface Waters

Section 112 - Erosion and Sediment Controls

- **Section 112.1** - Stabilization Practices
- **Section 112.2** - Structural Practices
- **Section 112.3** - Sequence of Major Activities
- **Section 112.4** - Storm Water Management

Section 113 - Other Controls

Section 114 - Compliance with Federal, State and Local Regulations

Section 115 - Inspection and Maintenance Procedures

Section 116 - Inspection and Maintenance Report Forms

Section 117 - Other Record-Keeping Requirements

Section 118 - Spill Prevention Control and Countermeasures (SPCC) Plan

- **Section 118.1** - Materials Covered
- **Section 118.2** - Material Management Practices
- **Section 118.3** - Spill Prevention and Response Procedures

Section 119 - Control of Non-Storm Water Discharges

Section 120 – Storm Water Control Facility Maintenance

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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Appendix A Site Location Maps

Appendix B NYSDEC Notice of Intent (NOI)

Appendix C MS4 SWPPP Acceptance Form

Appendix D Stormwater Report

Appendix E NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Appendix F Forms

- Contractor's Certification
- Owner/Operator Certification
- SWPPP Preparer Certification
- NYSDEC Letter of Acknowledgment

Appendix G NYSDEC Notice of Termination (NOT)

Town of Amherst Level 1 Inspection – Post Construction Stormwater Management

Appendix H Construction Documents

Appendix I Standard Erosion Control Details

Appendix J Stormwater Management Maintenance

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

101 SCOPE

A. **PURPOSE:** Benderson Development Company, LLC has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by Benderson Development Company, LLC; and/or liquidated damages. This section provides a descriptive explanation of Benderson Development Company, LLC Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and electronically submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities. Once a copy of the SPDES permit is received from NYSDEC, a copy will be included in Appendix F of this report.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is not subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to

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comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **<u>General Construction Site Inspection and Maintenance Requirements</u>**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

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B. **Owner or operator Maintenance Inspection Requirements**

1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the **owner or operator** can stop conducting the maintenance inspections. The **owner or operator** shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of the General Permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

The **owner or operator** shall have a **qualified inspector** conduct site inspections in conformance with the following requirements:

Note: The **trained contractor** identified in Part III.A.6 of the General Permit **cannot** conduct the **qualified inspector** site inspections unless they meet the **qualified inspector** qualifications included in Appendix A of the General Permit. In order to perform these inspections, the trained contractor would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A **qualified inspector** shall conduct site inspections for all construction activities identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

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b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the **qualified inspector** shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the **qualified inspector** shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to **disturb greater than five (5) acres** of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been **temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas**, the **qualified inspector** shall conduct a site inspection at least once every thirty (30) calendar days. The **owner or operator** shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice” certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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3. At a minimum, the **qualified inspector** shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The **qualified inspector** shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;

   b. Name and title of person(s) performing inspection;

   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

   d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

   f. Identification of all erosion and sediment control practices that need repair or maintenance;

   g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

   i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

   j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

   k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The **qualified inspector** shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The **qualified inspector** shall attach paper color copies of the digital photographs to the

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inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the **qualified inspector** shall notify the **owner or operator** and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the **qualified inspector**. Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

I. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to submitting the NOT to the Department. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

The Town of Amherst - Notice of Termination Requirement: Prior to submitting the NOT, the Town of Amherst requires a Level 1 inspection of all stormwater management practices. See Appendix G: Town of Amherst Level 1 Inspection – Post Construction Stormwater Management.

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102 PROJECT NAME AND LOCATION

Amherst Development Park

6000-6040 North Bailey Ave

Town of Amherst, County of Erie, New York

42.996°N, 78.817°W

Estimated Area of Site ≈ 17.34 acres

Estimated Area to be Disturbed by Construction Activities ≈ 7.29+/- acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Benderson Development Company, LLC

570 Delaware Ave.

Buffalo, NY 14202

Contact Person: Matt Oates

Telephone: 716-878-9397

104 PROJECT DESCRIPTION

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Ridge Lea Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed construction will include two building additions and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.34 of which 7.29 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of stormwater management areas including topsoil & seed

D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and parking lot

G. Final grading & landscaping

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H. Construction of buildings

This project is owned by Benderson Development Company, LLC and will be developed by Benderson Development Company, LLC. The work area consists of approximately 7.29+/- acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 92. The post-construction runoff curve number for the site will be "CN" = 95. Approximately 7.29+/- acres total will be disturbed by construction activities.

See soils information located in Appendix I.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to an unnamed open/closed drainage system north of the site that discharges to Ellicott Creek and ultimately the Niagara River.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above.

110 HISTORIC PLACES

No critical habitats have been determined to be on the site.

111 WETLANDS AND/OR OTHER SURFACE WATERS

No wetlands or other surface waters are located on the site

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

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B. Use of stabilization method for all slopes having a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

b. The **owner or operator** shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Construct temporary construction exits at locations shown on the Demolition & Erosion Control Plan Sheet.

B. Install perimeter silt fence/silt sock in the locations shown on the Demolition & Erosion Control Plan Sheet.

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C. Clear & Grub site.

D. Installation of detention basin to act as sediment basins (do not install bioretention soil or underdrains until stabilized).

E. Commence site grading.

F. Disturbed areas of the site where construction activity has ceased for more than 14 days shall be temporarily seeded and watered.

G. Construction of buildings.

H. Installation of proposed utilities.

I. Finalize pavement subgrade preparation.

J. Construct all curb, drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all inlets.

K. Dust control.

L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.

M. Install base material as required for pavement.

N. Carry out final grading and seeding and planting.

O. Clean storm system following construction, clean detention basins of any silt and return to design grades.

P. Remove silt fencing/silt sock only after all paving is complete and exposed surfaces are stabilized.

Q. Remove temporary construction exits only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

Refer to Appendix D, Engineer's Report

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

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Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in designated areas which will have temporary erosion & sediment control measures installed. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used

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for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

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B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

The SWPPP for this site development project requires regulated MS4 approval from the Town of Amherst. All changes to the SWPPP must be approved by the Town of Amherst prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the

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filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

   - Inspect catch basins, storm manholes, treatment structures, storm piping and stormwater pond for debris and accumulation of sediment.
   - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
   - Flush piping with water if necessary to remove accumulated sediment.
   - Bioretention areas shall be maintained per the NYSDEC Maintenance and Management Checklist included in this SWPPP.
   - Check all stone outfall structures for erosion and re-stone if necessary to prevent further erosion.
   - Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
   - A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers

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- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.

2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

3. Products will be kept in their original containers with the original manufacturer's label in legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

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4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm

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water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Amherst. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

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118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 “Reportable Quantity Release Form” must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These

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individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system

120 STORM WATER CONTROL FACILITY MAINTENANCE

The frequency of inspections for the bioretention areas shall match the frequencies listed on the “Stormwater Management Maintenance” in Appendix J of the SWPPP.

The proposed catch basins, as per section 115, shall be inspected 4 times per year for removal of floatable debris. Any silt buildup over 6” in depth shall be removed and disposed of properly off-site.

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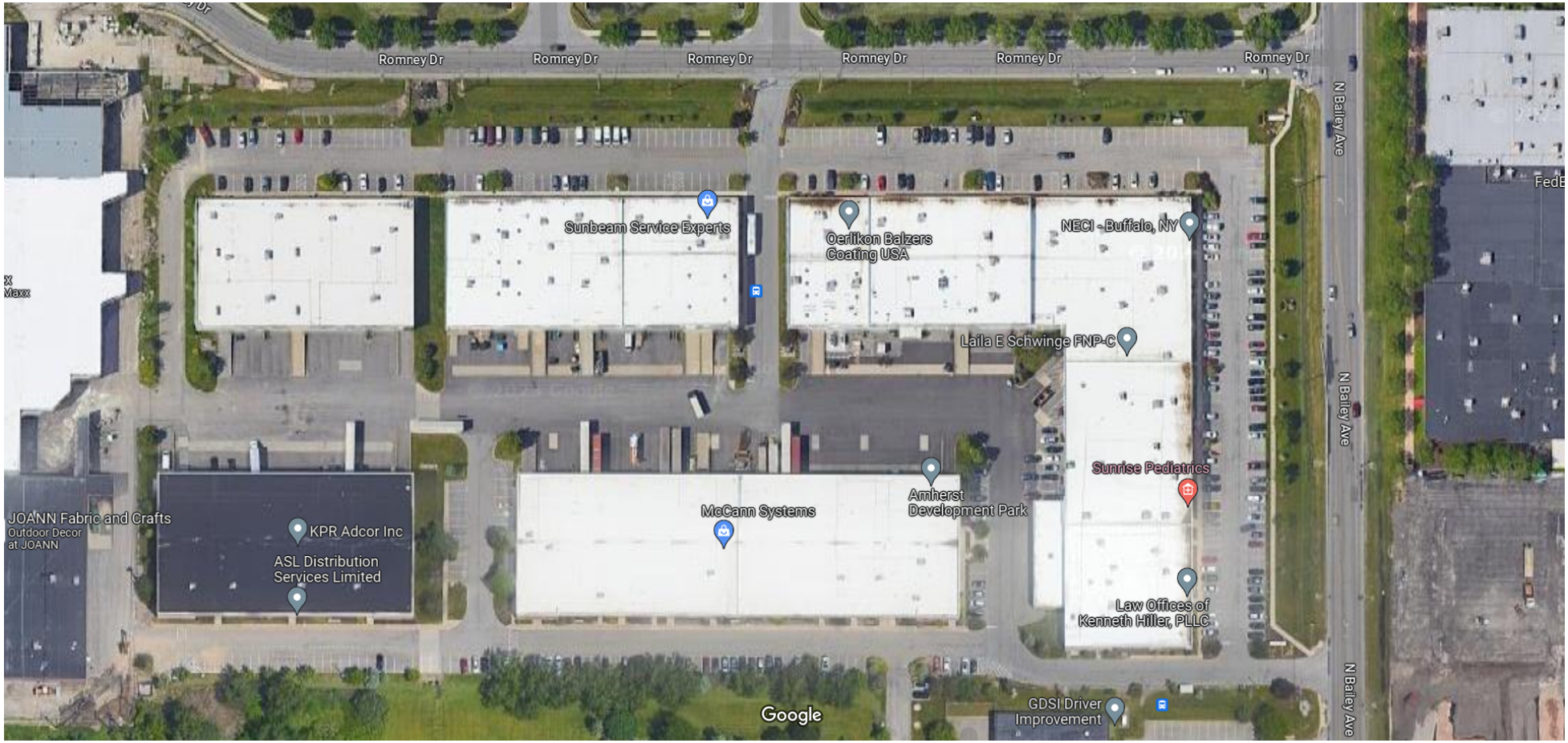
Appendix A

Site Location Maps

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Google Maps romney road



Imagery ©2023 Airbus, CNES / Airbus, Maxar Technologies, New York GIS, U.S. Geological Survey, USDA/FPAC/GEO, Map data ©2023 100 ft

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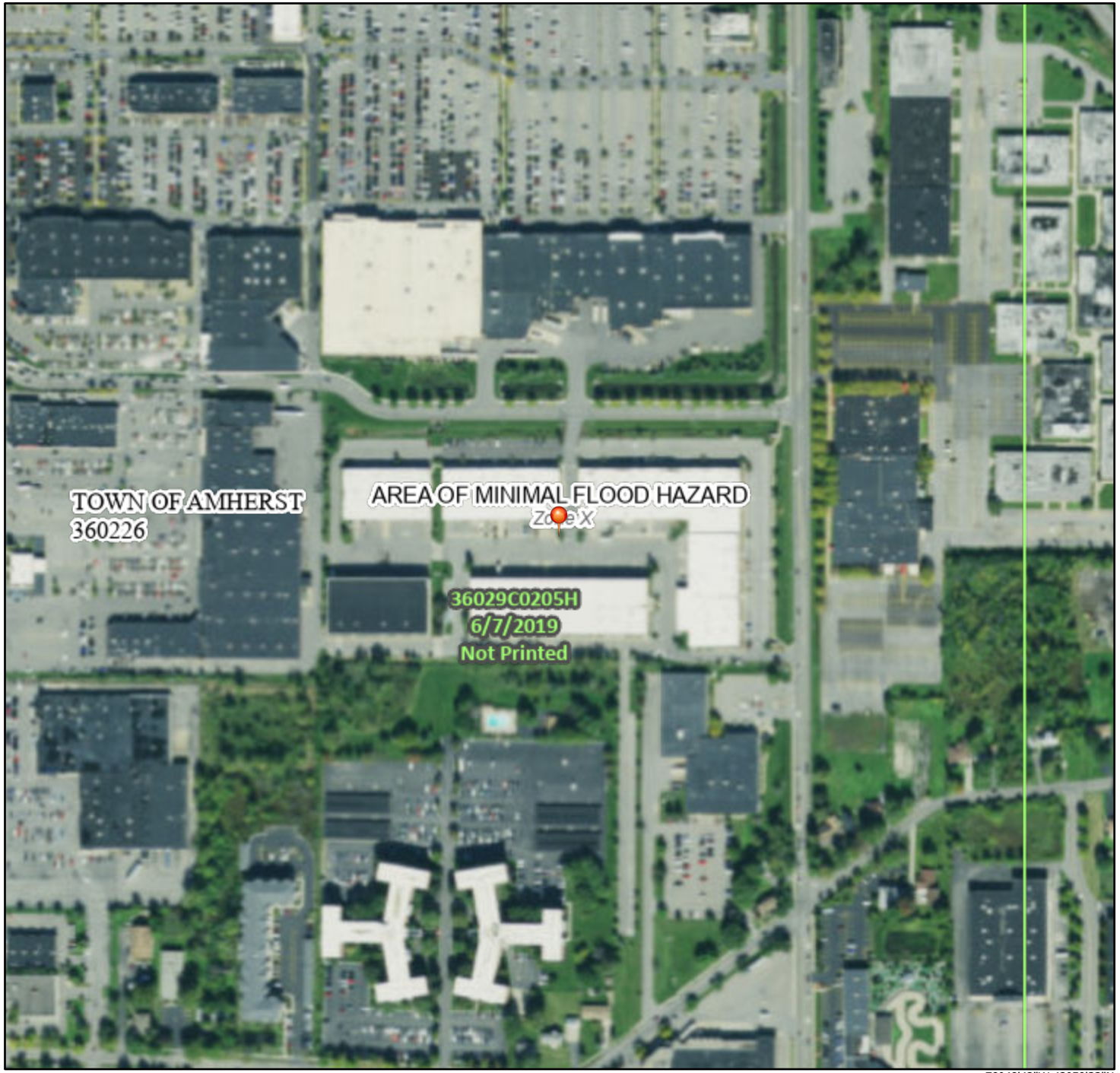
National Flood Hazard Layer FIRMette

78°49'19"W 43°N



78°48'42"W 42°59'33"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BF *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH,*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazar of 1% annual chance flood with a depth less than one foot or with d areas of less than one square mil
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk du Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zo*
- Effective LOMRs
- Area of Undetermined Flood Haza

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Ch
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an appro point selected by the user and does not r an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This ma was exported on 11/13/2023 at 9:45 AM and does not reflect changes or amendments subsequent to this date an time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following n elements do not appear: basemap imagery, flood zone labe legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized area regulatory purposes.

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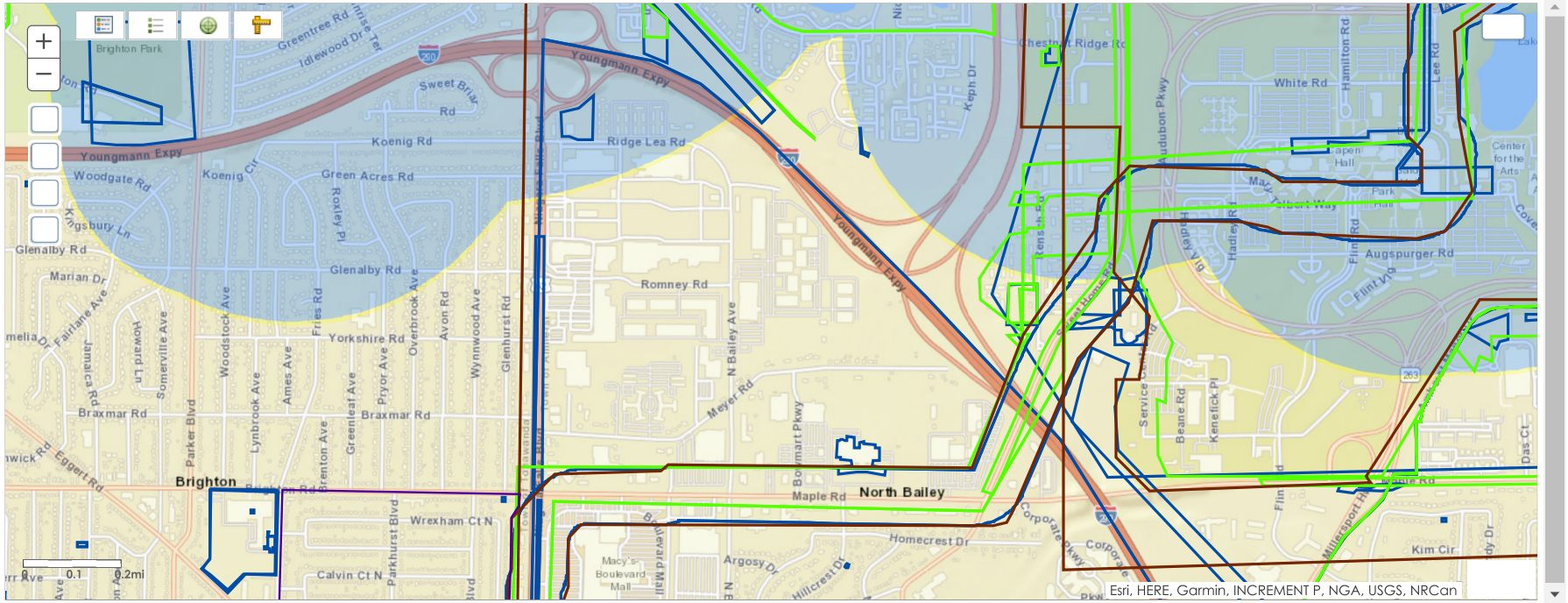
CRIS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE

Welcome Guest User | Contact Us | FAQ | Help | Sign Out



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Appendix B

NYSDEC Notice of Intent (NOI)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Benderson Development Company

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Oates

Owner/Operator Contact Person First Name
Matt

Owner/Operator Mailing Address
570 Delaware Ave

City
Buffalo

State: NY Zip: 14202 -

Phone (Owner/Operator): 716 - 878 - 9397 Fax (Owner/Operator): ___ - ___ - ____

Email (Owner/Operator)
MattOates@benderson.com

FED TAX ID
16 - 1549911 (not required for individuals)

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Project Site Information

Project/Site Name

Amherst Development Park

Street Address (NOT P.O. BOX)

6000-6040 North Bailey Ave

Side of Street

○ **North** ○ **South** ○ **East** ● **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Town of Amherst

State: NY

Zip: 14226-

County: Erie

DEC Region: 9

Name of Nearest Cross Street

Romney Road

Distance to Nearest Cross Street (Feet)

0

Project In Relation to Cross Street

○ **North** ● **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel

54.14-1-19.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

-7 8817

Ex. -73.749

Y Coordinates (Northing)

42996

Ex. 42.652

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

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3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use	Post-Development Future Land Use
○ FOREST	○ SINGLE FAMILY HOME
○ PASTURE/OPEN LAND	○ SINGLE FAMILY SUBDIVISION
○ CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
○ SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
○ SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
○ TOWN HOME RESIDENTIAL	○ INDUSTRIAL
○ MULTIFAMILY RESIDENTIAL	● COMMERCIAL
○ INSTITUTIONAL/SCHOOL	○ MUNICIPAL
○ INDUSTRIAL	○ ROAD/HIGHWAY
● COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
○ ROAD/HIGHWAY	○ BIKE PATH/TRAIL
○ RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
○ BIKE PATH/TRAIL	○ PARKING LOT
○ LINEAR UTILITY	○ CLEARING/GRADING ONLY
○ PARKING LOT	○ DEMOLITION, NO REDEVELOPMENT
○ OTHER	○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
	○ OTHER

Number of Lots

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
17.3	7.3	4.4	5.5

5. Do you plan to disturb more than 5 acres of soil at any one time? ● **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
0 %	0 %	0 %	100 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 06/01/2025 – **End Date** 06/01/2026

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9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Ellicott Creek

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ● **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ● **No**
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

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15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Town of Amherst & NYSDOT

open/closed stormwater drainage system

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

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24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer: Carmina Wood Design

Contact Name (Last, Space, First): Wood, Christopher

Mailing Address: 80 Silo City Row Ste 100

City: Buffalo

State: NY Zip: 14203-

Phone: 716-842-3165 Fax: --- --- ----

Email: cwood@carminawooddesign.com

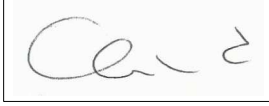
SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name Christopher **MI**

Last Name Wood

Signature



Date 12/04/2024

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25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ● Rock Outlet Protection
- ○ Streambank Protection

Other

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Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ● **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.645 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

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Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)	
RR Techniques (Area Reduction)				
○ Conservation of Natural Areas (RR-1)		and/or		
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or		
○ Tree Planting/Tree Pit (RR-3)		and/or		
○ Disconnection of Rooftop Runoff (RR-4)		and/or		
RR Techniques (Volume Reduction)				
○ Vegetated Swale (RR-5)				
○ Rain Garden (RR-6)				
○ Stormwater Planter (RR-7)				
○ Rain Barrel/Cistern (RR-8)				
○ Porous Pavement (RR-9)				
○ Green Roof (RR-10)				
Standard SMPs with RRv Capacity				
○ Infiltration Trench (I-1)				
○ Infiltration Basin (I-2)				
○ Dry Well (I-3)				
○ Underground Infiltration System (I-4)				
○ Bioretention (F-5)	1		1 7	
○ Dry Swale (O-1)				
Standard SMPs				
○ Micropool Extended Detention (P-1)				
○ Wet Pond (P-2)				
○ Wet Extended Detention (P-3)				
○ Multiple Pond System (P-4)				
○ Pocket Pond (P-5)				
○ Surface Sand Filter (F-1)				
○ Underground Sand Filter (F-2)				
○ Perimeter Sand Filter (F-3)				
○ Organic Filter (F-4)				
○ Shallow Wetland (W-1)				
○ Extended Detention Wetland (W-2)				
○ Pond/Wetland System (W-3)				
○ Pocket Wetland (W-4)				
○ Wet Swale (O-2)				

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Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
● Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other _____	3.26

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name: HydroStorm

Manufacturer: HydroWorks

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.072 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.033 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.655 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

0.573

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ◉ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.207 **acre-feet**

CPv Provided

0.207 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

64.87 **CFS**

Post-development

57.81 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

115.36 **CFS**

Post-development

97.46 **CFS**

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37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Benderson Development Company

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

-RRv is required for any new impervious within a redevelopment project
-Onsite soils with slow infiltration rates (Hydrologic soil group "D")

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40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ● **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

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Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

Matt

MI

Print Last Name

Oates

Owner/Operator Signature

Date

/ /

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix C

MS4 SWPPP Acceptance Form

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Benderson Development, LLC
2. Contact Person:	Matt Oates
3. Street Address:	570 Delaware Ave
4. City/State/Zip:	Buffalo, NY 14202
II. Project Site Information	
5. Project/Site Name:	Amherst Development Park
6. Street Address:	6000-6040 North Bailey Ave
7. City/State/Zip:	Amherst, NY 14226
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	Town of Amherst
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

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MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

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Appendix D

Engineer's Report

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CARMINA WOOD DESIGN

STORMWATER REPORT

for

Amherst Development Park

6000-6040 North Bailey Ave
Town of Amherst, Erie County, New York

Prepared for

Benderson Development Company, LLC

570 Delaware Avenue
Buffalo, NY 14202

Prepared by

Carmina Wood Design

80 Silo City Suite 100
Buffalo, NY 14203

Telephone: (716) 842-3165

November 2023

Revised 2/11/2025



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

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- Stormwater Runoff Summaries and Runoff Delineation Maps
- HydroCAD Analysis

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Section 1 – Location & Description

This project is a site redevelopment of the existing Amherst Development Park located on the south side of Romney Road and on the west side of North Bailey Ave in the Town of Amherst. The site is located north of Meyer Road and east of Niagara Falls Boulevard. The Boulevard Consumer Square is located north and west of the project site, Amherst Commerce Park is located east of the project site and Boulevard Towers Apartments are located south of the project site. The site is currently fully developed and occupied by existing commercial buildings that will remain. Proposed site construction will include one 10,069 sf building addition and parking lot/driveway expansions. Site construction will also include utility improvements and new stormwater management areas. The overall site is 17.34 of which 7.29 acres will be disturbed by construction activities. The project site is currently zoned R-D.

Section 2 – Stormwater Drainage System

The existing site is generally flat. An existing open/closed drainage system onsite drains north to an open swale along the north side of Romney Rd. Three existing 3'x5' arch stormwater conveyance pipes are also located onsite within a 30' wide Town of Amherst Drainage easement. These conveyance pipes flow from the south property line to north and discharge into the open swale along Romney Rd. The existing swale flows east along Romney Rd and north along North Bailey Ave and outlets to an existing stormwater management pond located adjacent to Interstate 290. Runoff from the pond is then conveyed north via open and closed drainage systems and discharges to Ellicott Creek and ultimately the Niagara River. All proposed stormwater runoff from the project site will continue to discharge to the existing stormwater system along Romney Road.

This project is subject to the Boulevard Central Special Stormwater Design Conditions adopted by the Town of Amherst. In addition to the requirements of the NYSDEC SPDES General Permit, the project must also provide the following criteria for Projected Growth Redevelopment Scenarios and Enhanced Phosphorus Removal:

- Provide 10% escalation of proposed peak flow when compared to existing conditions peak flows.
- Median curve number (CN) to compute existing conditions.
- Water Quality volume based on the 1-year, 24-hour storm according to Chapter 10 of the NYSDEC Stormwater Management Design Manual.

For purposes of the runoff analysis and the stormwater drainage system design, portions of the project site were classified as "Redevelopment" per NYSDEC Stormwater Management Design Manual Chapter 9 requirements. The nature of this construction project will be a "Redevelopment" with an increase in impervious area. The proposed stormwater management system was designed to attenuate proposed runoff to existing conditions prior to discharge.

The proposed stormwater drainage system will consist of a combination of overland sheet flow and HDPE pipe channel flow connected by a series of drainage inlets located throughout the project site. Proposed stormwater runoff will be collected and conveyed to detention ponds and underground stormwater chamber detention areas onsite and discharged via outlet control pipes to the existing stormwater system along Romney Road.

The bioretention areas will provide Runoff Reduction and Water Quality volume requirements for "New Development" areas. The filter area planting soil depth varies throughout the bioretention areas but maintains a minimum of at least 2.5 feet of soil. A series of 6" underdrains below the planting soil will be located throughout the bioretention areas connected by overflow drainage inlets to convey runoff directly to the closed stormwater management system. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas.

The NYSDEC Stormwater Management Design Manual requires a five-step process for Stormwater Management Planning as outlined in Chapter 3. The five steps include:

1. Site planning to preserve natural features and reduce impervious cover: No existing natural features exist onsite.
2. Calculation of Water Quality Volume (WQv) for site. See "Storm Sewer Drainage Calculations".

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3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity. Bioretention areas were incorporated into the site design to provide required RRv and WQv for "New Development" areas. See "Storm Sewer Drainage Calculations".
4. Use of standard SMPs where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMPs with RRv capacity. Water quality treatment structures will be installed onsite to address water quality requirements for "Redevelopment" areas. See "Storm Sewer Drainage Calculations".
5. Design of volume and peak rate control practices where required. See "Storm Sewer Drainage Calculations".

The NYSDEC Stormwater Management Design Manual requires (5) five different criteria be considered when designing a stormwater management system. Those criteria are Water Quality, Runoff Reduction Volume, Channel Protection, Overbank Flooding and Extreme Storm Protection. Below is a summary of each item and how it is incorporated into this project.

Water Quality:
The NYSDEC requires water quality treatment prior to discharge. This will be achieved by the application of bioretention areas and water quality treatment structures. The total WQv provided was 0.645 ac-ft and equal to the required WQv of 0.645 ac-ft. The required water quality volume was calculated based on the proposed 7.29 acres of proposed development area.

Runoff Reduction Volume:
The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMPs to replicate pre-development hydrology. Bioretention areas were incorporated into the site layout to provide the required RRv for contributing runoff areas in the WQv. The RRv provided was 0.072 ac-ft and greater than the required RRv min. of 0.033 ac-ft. The required runoff reduction volume was calculated based on 2.94 acres of proposed "new development" area that includes 1.17 acres of "new impervious" area.

100% of the required WQv was not reduced due to the followings site specific limitations: Drainage areas with impermeable soils, Type D. In addition, below is a summary of how each green infrastructure technique was evaluated and determined to be feasible or infeasible:

1. Conservation of natural areas: no natural existing features present onsite.
2. Sheetflow to riparian buffers or filter strips: no riparian buffers possible on the site; filter strips not feasible given the limited area for development.
3. Vegetated Open Swales: swales were not feasible given the limited area for development.
4. Tree Plantings: new trees were planted throughout the site.
5. Disconnection of Roof Top Runoff: disconnection not feasible for these types of projects.
6. Stream Daylighting: is not feasible given the limited area for development.
7. Rain Garden: bioretention areas installed throughout site.
8. Green Roof: the proposed use of the building makes this an unfeasible practice.
9. Stormwater Planter: this method is not recommended for these types of projects.
10. Rain Barrels & Cisterns: collected water would not be used for irrigation.
11. Porous Pavement: porous pavement is not recommended for areas with impermeable soils (Type D) and areas with sediment laden runoff (salting in winter months).

Channel Protection:
The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 12,134 cf will be accommodated in the stormwater detention areas onsite.

Overbank Flooding:
The NYSDEC requires that the 10-year proposed storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 52.15 cfs, which is below the existing peak 10-year runoff of 64.87 cfs.

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Extreme Storm Protection:
The NYSDEC requires that the 100-year proposed storm event be attenuated with detention and that the outlet be restricted to the 100-year existing storm event. Storage of this storm will be provided within the onsite stormwater detention areas. At this storm event the stormwater drainage system will allow discharge of 85.32 cfs, which is below the existing peak 100-year runoff of 115.36 cfs.

Town of Amherst Requirements:
The Town requires that the proposed 25-year storm event be attenuated with detention and that the outlet be restricted to the 10-year existing storm event *under the 10% escalation scenario*. Storage of this storm will be provided within the onsite stormwater detention areas. At the 25-year storm event the stormwater drainage system will allow discharge of 11.47 cfs, which is below the existing peak 10-year runoff of 21.51 cfs.

See attached "Storm Sewer Drainage Calculations" for additional information.

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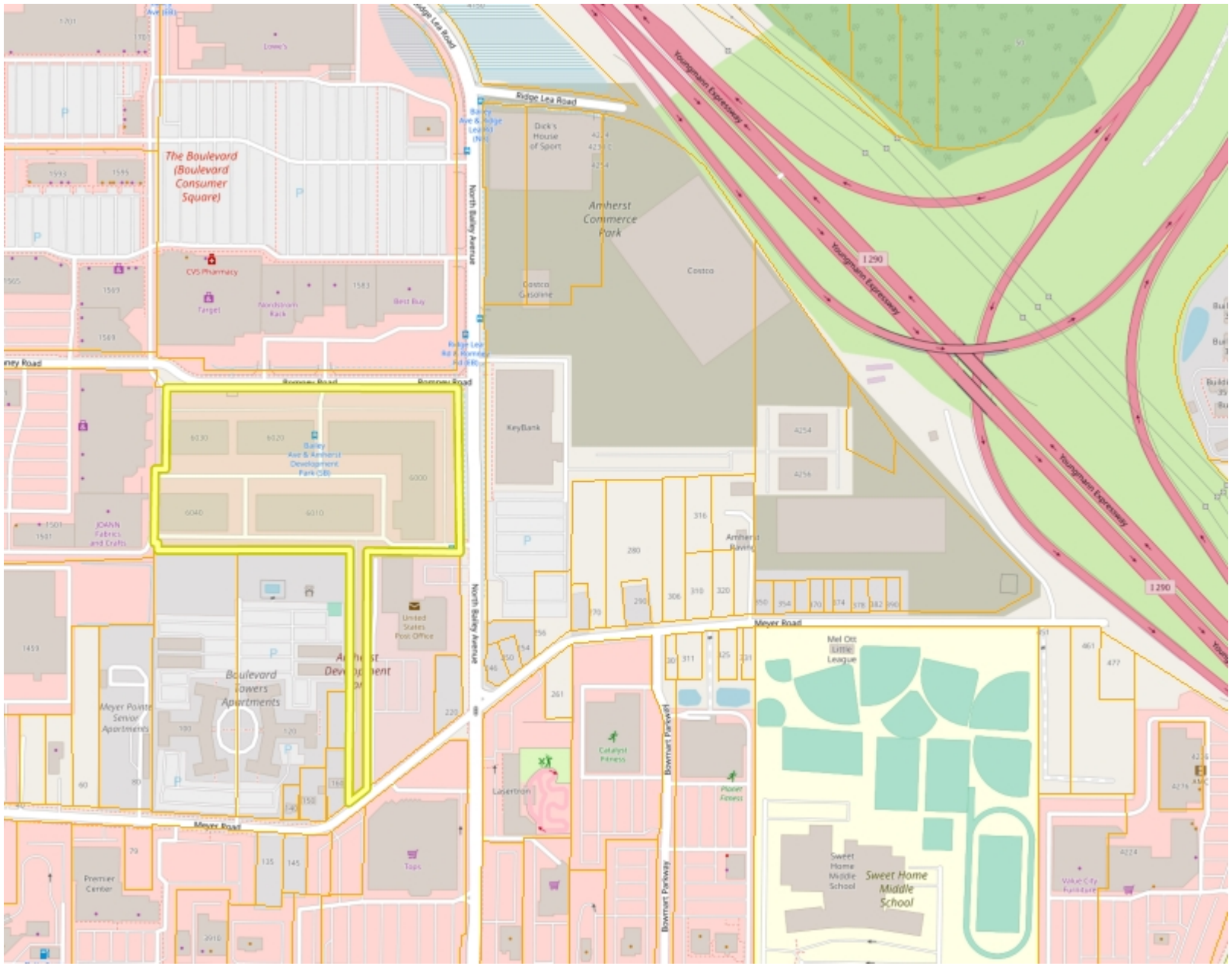
Appendix A

Location Maps

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Erie County On-Line Mapping Application





Legend

- Parcels

0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 9,028

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Appendix B

Web Soil Survey – Hydrologic Soils Group

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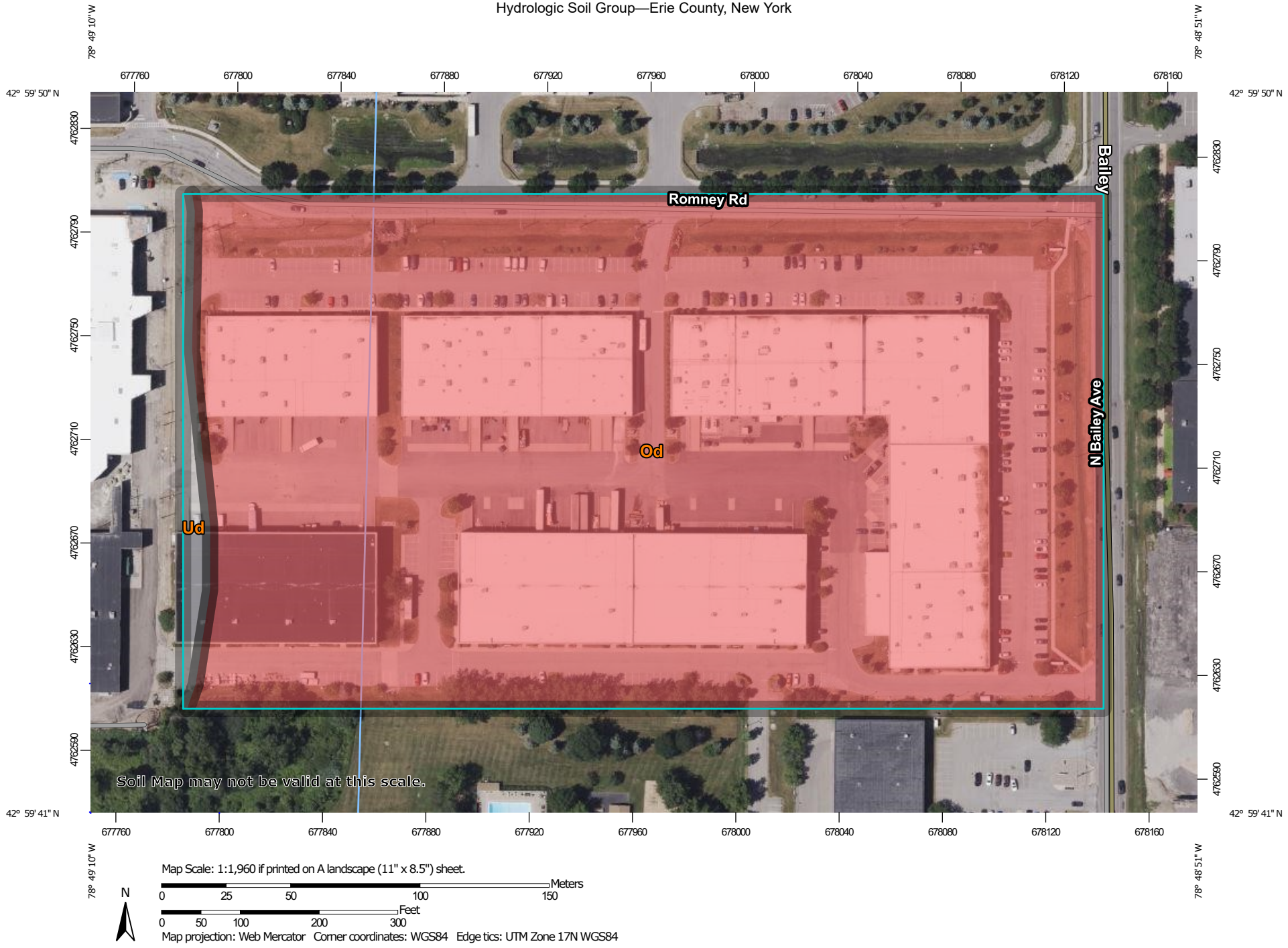
Hydrologic Soil Group—Erie County, New York



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MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Erie County, New York
Survey Area Data: Version 23, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 9, 2022—Aug 15, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Od	Odessa silt loam, 0 to 3 percent slopes	D	17.2	98.2%
Ud	Urban land		0.3	1.8%
Totals for Area of Interest			**17.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

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Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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Appendix C

Storm Sewer Drainage Calculations

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Water Quality and Runoff Reduction Calculations

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Manning Formula Uniform Trapezoidal Channel Flow at Given Slope and Depth

Existing Drainage Ditch - North Bailey Road

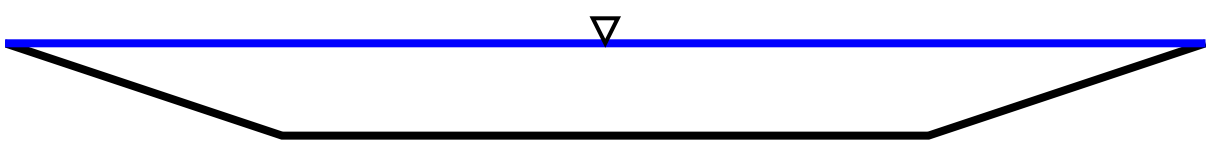
Max Flow

Inputs

Bottom width, b	7	ft
Side slope 1 (horiz./vert.)	3	
Side slope 2 (horiz./vert.)	3	
Manning roughness, n ? ○Strickler ○B/B (See notes)	0.03	
Channel slope, S	0.0012	rise/run
Flow depth, y	1.0	ft
Bend Angle ? (for riprap sizing)	0	
Rock specific gravity (2.65)	2.65	
Design rock size, D50 ○Isbash ○Maynord ○Searcy * 1.25 (See notes)	0.1	ft

Results

Flow area, a	10.0003	ft^2
Wetted perimeter, P_w	13.3246	ft
Hydraulic radius, R_h	9.0060	in
Velocity, v	1.4170	ft/sec
Flow, Q	14.1696	cfs
Velocity head, h_v	0.0312	ft
Top width, T	13.0000	ft
Froude number, F	0.28	
Average shear stress (tractive force), tau	0.0562	psf
n for design rock size per Strickler	0.0265	
n for design rock size per Blodgett	0.0364	
n for design rock size per Bathurst	0.0265	
Blodgett vs. Bathurst	Blodgett	
Required bottom angular rock size, D50 (Isbash & MC) ?	0.0232	ft
Required side slope 1 angular rock size, D50 (Isbash & MC) ?	0.0245	ft
Required side slope 2 angular rock size, D50 (Isbash & MC) ?	0.0245	ft
Required angular rock size, D50 (Maynord, Ruff, and Abt 1989)	0.0148	ft
Required angular rock size, D50 (Searcy 1967)	0.0135	ft



Notes:

Automated rock size and roughness design iteration
Choose a roughness radio button (BB recommended) and a design rock size radio button (Isbash recommended). Fine-tune depth and rock size safety factor to get your desired flow with an even rock size. Every time you change any input value, the following iteration cycle happens: 1. Roughness is calculated from design rock size. 2. The requested roughness calculation is copied to input roughness. 3. Channel flow and required rock size are calculated. 4. Design rock size is adjusted. 5. Repeat until error in the design rock size is very small.

Basic calculator (no iteration)
Enter your desired roughness value. Ignore the design rock size input area.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Manning Formula Uniform Pipe Flow at Given Slope and Depth

Proposed North Bailey Road 36" HDPE

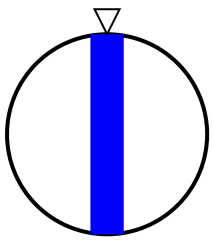
Max Flow

Inputs

Pipe diameter, d_0	36	in
Manning roughness, n	0.012	
Pressure slope (possibly ? equal to pipe slope), S_0	.002	rise/run
Relative flow depth, y/d_0	100	%

Results

Flow depth, y	36.0000	in
Flow area, a	7.0687	ft^2
Pipe area, a0	1017.8781	sq. in.
Relative area, a/a0	1.0000	fraction
Wetted perimeter, P_w	113.0973	in
Hydraulic radius, R_h	9.0000	in
Top width, T	0.0000	in
Velocity, v	4.5712	ft/sec
Velocity head, h_v	3.8972	in H2O
Froude number, F	0.00	
Average shear stress (tractive force), tau	0.0936	psf
Flow, Q (See notes)	32.3110	cfs
Full flow, Q0	14501.6605	gpm
Ratio to full flow, Q/Q0	1.0000	fraction



Notes:

This is the flow and depth inside an *infinitely long* pipe.
Getting the flow into the pipe may require significantly higher headwater depth. Add at least 1.5 times the velocity head to get the headwater depth or see my 2-minute tutorial for standard culvert headwater calculations using HY-8.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Manning Formula Uniform Trapezoidal Channel Flow at Given Slope and Depth

Existing Drainage Ditch - SW Corner to Arch Pipes

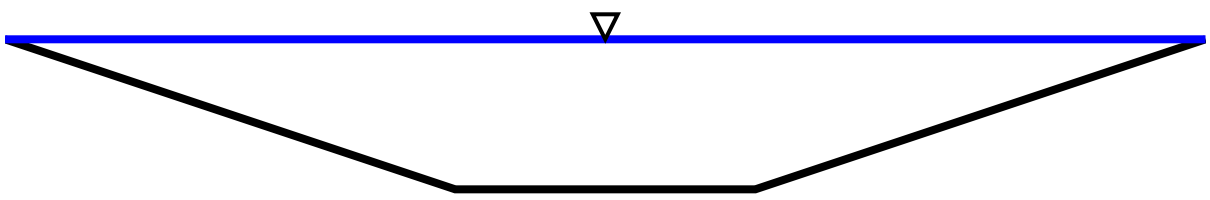
Max Flow

Inputs

Bottom width, b	2	ft
Side slope 1 (horiz./vert.)	3	
Side slope 2 (horiz./vert.)	3	
Manning roughness, n ? ○Strickler ○B/B (See notes)	0.03	
Channel slope, S	0.006	rise/run
Flow depth, y	1	ft
Bend Angle ? (for riprap sizing)	0	
Rock specific gravity (2.65)	2.65	
Design rock size, D50 ○Isbash ○Maynord ○Searcy * 1.25 (See notes)	0.1	ft

Results

Flow area, a	5.0002	ft^2
Wetted perimeter, P_w	8.3246	ft
Hydraulic radius, R_h	7.2077	in
Velocity, v	2.7312	ft/sec
Flow, Q	13.6559	cfs
Velocity head, h_v	0.1159	ft
Top width, T	8.0000	ft
Froude number, F	0.61	
Average shear stress (tractive force), tau	0.2250	psf
n for design rock size per Strickler	0.0265	
n for design rock size per Blodgett	0.0377	
n for design rock size per Bathurst	0.0241	
Blodgett vs. Bathurst	Blodgett	
Required bottom angular rock size, D50 (Isbash & MC) ?	0.0863	ft
Required side slope 1 angular rock size, D50 (Isbash & MC) ?	0.0910	ft
Required side slope 2 angular rock size, D50 (Isbash & MC) ?	0.0910	ft
Required angular rock size, D50 (Maynord, Ruff, and Abt 1989)	0.0764	ft
Required angular rock size, D50 (Searcy 1967)	0.0500	ft



Notes:

Automated rock size and roughness design iteration

Choose a roughness radio button (BB recommended) and a design rock size radio button (Isbash recommended). Fine-tune depth and rock size safety factor to get your desired flow with an even rock size. Every time you change any input value, the following iteration cycle happens: 1. Roughness is calculated from design rock size. 2. The requested roughness calculation is copied to input roughness. 3. Channel flow and required rock size are calculated. 4. Design rock size is adjusted. 5. Repeat until error in the design rock size is very small.

Basic calculator (no iteration)

Enter your desired roughness value. Ignore the design rock size input area.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Manning Formula Uniform Pipe Flow at Given Slope and Depth

Proposed SW Corner 36" HDPE

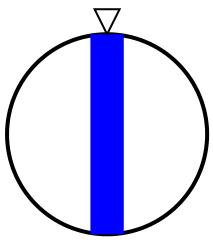
Max Flow

Inputs

Pipe diameter, d_0	36	in
Manning roughness, n	0.012	
Pressure slope (possibly ? equal to pipe slope), S_0	.004	rise/run
Relative flow depth, y/d_0	100	%

Results

Flow depth, y	36.0000	in
Flow area, a	7.0687	ft^2
Pipe area, a0	1017.8781	sq. in.
Relative area, a/a0	1.0000	fraction
Wetted perimeter, P_w	113.0973	in
Hydraulic radius, R_h	9.0000	in
Top width, T	0.0000	in
Velocity, v	6.4647	ft/sec
Velocity head, h_v	7.7943	in H2O
Froude number, F	0.00	
Average shear stress (tractive force), tau	0.1873	psf
Flow, Q (See notes)	45.6947	cfs
Full flow, Q0	20508.4450	gpm
Ratio to full flow, Q/Q0	1.0000	fraction



Notes:

This is the flow and depth inside an *infinitely long* pipe.
Getting the flow into the pipe may require significantly higher headwater depth. Add at least 1.5 times the velocity head to get the headwater depth or see my 2-minute tutorial for standard culvert headwater calculations using HY-8.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

WATER QUALITY REQUIRED FOR PROPOSED DEVELOPMENT AREA

Area, Acres = 7.29

"Redevelopment Activity", Acres = 4.35 (existing, disturbed impervious area)

**Adjusted "Redevelopment Area", Acres = 3.26

Total proposed impervious, Acres = 5.52

"New development", Acres = 2.94

"New" impervious, Acres = 1.17

Water Quality Volume (WQv)

Enhanced Phosphorus Removal: WQv Required = 1-yr 24-hr Design Storm per NYSDEC SWMDM Section 4.3 (See attached worksheets, P = 1.80)

	Water Quality	SMP Description
Drainage Area #1: New Development Area, cf =	7,841	Filtration Bioretention*
Drainage Area #2: Redevelopment Area, cf =	20,236	Flow Based Alt. Practices**
Total WQv Required, cf =	28,077	
Total WQv Required, ac-ft =	0.645	

Per NYSDEC SWMDM Section 9.2.1.B: Runoff Reduction Volume (RRv) sizing criteria not required for "Redevelopment Activity" portion of project.

****Per NYSDEC SWMDM Section 9.2.1.A.IV*** : The plan proposes that 100% WQv is captured and treated, for a minimum of 75% of the disturbed, redevelopment impervious area, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm.

RRv PROVIDED FOR PROPOSED DEVELOPMENT AREA (See NYSDEC worksheets)

Min. RRv Req'd, cf = 1,437

Min. RRv Req'd, ac-ft = 0.033

	WQv, cf	RRv, cf
Filtration Bioretention	7,841	3,136
Flow Based Alt. Practices	20,236	N/A
TOTAL, cf	28077	3136
TOTAL, ac-ft	0.645	0.072

WQ & RR SUMMARY (ac-ft):

TOTAL WATER QUALITY PROVIDED FOR PROPOSED DEVELOPMENT AREA 0.645

IS WATER QUALITY VOLUME REQUIREMENT MET? Yes
(WQv provided equal to or greater than WQv required)

IS RUNOFF REDUCTION VOLUME REQUIREMENT MET? Yes
(RRv provided equal to or greater than Min. RRv required)

Revised_/_/_

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Step 1 - Site Planning

	Practice	Description	Applicable	Project Specific Evaluation
Preservation of Natural Features and Conservation Design	**Preservation of Undisturbed Areas**	Delineate and protect undisturbed forests, native vegetated areas, riparian corridors, water bodies, wetlands, and natural terrain.	N/A	EXAMPLES - Approximately XX+/- Acres of land will remain undisturbed, in its natural state, which accounts for XX% of the total project parcel. **OR** The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Delineate and protect naturally vegetated buffers along perennial streams, rivers, shorelines, and wetlands.	N/A	EXAMPLES - There is a stream/river/shorline/wetland located on the project site. For the area adjacent to this water body, a XX-ft naturally vegetated buffer will be applied. No disturbance will occur within this buffer. **OR** The only disturbance that will occur within this buffer will include XX. This disturbance is necessary because XX. **OR** There are no water bodies located on or adjacent to the project site.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	N/A	EXAMPLES - Clearing and grading will be limited to the area of disturbance and will be minimized to the greatest extent practical. The limits of all proposed clearing will be demarcated in the field with orange construction fencing, prior to construction, to prevent unnecessary removal of trees.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Yes	EXAMPLES - The site has been designed to avoid sensitive resource areas to the greatest extent practical. Include project specific information for the various sensitive resources. **OR** There are no floodplains, steep slopes, erodible soils, wetlands, mature forests or critical habitats located on the project site.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	N/A	EXAMPLES - The site layout has been designed to maximize open space. Impervious surfaces have been minimized to the greatest extent practical and approximately XX+/- Acres will be maintained as vegetated open space.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Yes	EXAMPLES - All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual. **OR** Compacted areas were considered as impervious cover when calculating the WQv Required and the compacted areas were assigned a post-construction HSG designation that is one level less permeable than existing conditions for the hydrology analysis.

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Step 1 - Site Planning

Reduction of Impervious Cover	**Roadway Reduction**	Minimize roadway widths and lengths, below local requirements, to reduce site impervious area	N/A	EXAMPLES - Proposed roadways will be constructed with a porous XX surface, in order to minimize the overall impervious surface. **OR** The project proposes to reduce the roadway width to XX-ft, from the required XX-ft. **OR** Reducing the roadway width is not feasible for the project's intended use. **OR** No new roadways are proposed as part of this project.
	Sidewalk Reduction	Minimize sidewalk lengths and widths, below local requirements, to reduce site impervious area	N/A	EXAMPLES - All pedestrian walkways will be constructed with a porous XX surface. **OR** Sidewalk widths have been minimized to X-ft and quantity of sidewalk has been reduced to that required to ensure safe pedestrian access throughout the site. **OR** Reducing the sidewalk width/length is not feasible for the project's intended use. **OR** No new sidewalks are proposed as part of this project.
	Driveway Reduction	Minimize driveway lengths and widths, below local requirements, to reduce site impervious area	N/A	EXAMPLES - All driveways on-site will be constructed with a permeable XX surface, where feasible, in order to minimize the overall impervious surface. **OR** The project proposes to reduce the driveway width to XX-ft, instead of the required XX-ft. **OR** Reducing the driveway width is not feasible for the intended use. **OR** No new driveways are proposed as part of this project.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	N/A	EXAMPLES - Proposed cul-de-sacs will utilize a landscaped island to reduce impervious cover. **OR** No cul-de-sacs are proposed as part of this project.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	N/A	EXAMPLES - All new building area has been allocated to efficiently implement the intended use. **OR** No new buildings are proposed as part of this project. **OR** The current proposal involves the renovation and reuse of XX existing buildings on-site.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, reducing stall dimensions below local requirements, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	N/A	EXAMPLES - All parking lots will be constructed of a porous XX surface, to reduce overall impervious surfaces. **OR** The project proposes to reduce the parking stall dimensions to X-ft wide by XX-ft long, instead of the required XX-ft by XX-ft stall. **OR** The project proposes to reduce the number of parking stalls proposed to XX, instead of the required XX, resulting in an approximate XX% reduction in impervious. **OR** Reducing the parking stall dimensions or number of stalls is not feasible for the intended use. **OR** No new parking stalls are proposed as part of this project.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	Yes
What is the nature of this construction project?	

Design Point:			
P=	1.80	inches	*Enter 1 Year 24 Hour Design Storm as P*

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	2.94	1.17	40	0.41	7,841	Filtration Bioretention
2	3.26	3.26	100	0.95	20,236	Flow Based Alternative Practice
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	6.20	4.43	71	0.69	**28077**	**Required WQv**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Practice	Description	Applicable	Project Specific Evaluation
RR Techniques	**Conservation of Natural Areas (RR-1)**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas by permanently conserving these areas on a site. Undisturbed natural areas include: forest retention areas; reforestation areas; stream and river corridors; shorelines; wetlands, vernal pools, and associated vegetated buffers; and undisturbed open space.	N/A	EXAMPLES - The project site does not contain any significant natural resources. **OR** As a Redevelopment Project, the proposed site layout has been designed to limit land disturbance to the greatest extent practical. **OR** Approximately XX+/- Acres will be placed into permanent conservation, which accounts for XX% of the total property. **OR** The project does not propose permanent conservation of these areas at this time.
	Sheet Flow to Riparian Buffer/Filter Strip (RR-2)	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	N/A	EXAMPLES - The project site does not contain any riparian buffers. **OR** Sheet flow to riparian buffers or grass filter strips is not proposed at this time. The project proposes treatment by RR techniques, Standard SMPs with RRv capacity, or Standard SMPs without RRv capacity. **OR** The project proposes sheet flow to riparian buffers to reduce runoff from XX. Calculations have been provided in the SWPPP. **OR** The project proposes sheet flow to grass filter strips to reduce runoff from XX. Calculations have been provided in the SWPPP.
	Tree Planting/Tree Pit/Tree Trench (RR-3)	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	N/A	EXAMPLES - The project proposes the preservation of existing mature trees, as well as the planting of numerous trees throughout the site, in order to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. **OR** The project proposes new tree plantings/tree pits/tree trenches, adjacent to impervious surfaces, Calculations have been provided in the SWPPP. **OR** Tree plantings/tree pits/tree trenches are proposed on site. However, credit for these trees will not be taken toward area reduction/volume reduction in the RRv calculations.
	Disconnection of Rooftop Runoff (RR-4)	Direct runoff from rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	N/A	EXAMPLES - The building roof(s) will be directed to downspouts with splash blocks and discharge over a grassed filter. Calculations have been provided in the SWPPP. **OR** The building roof(s) will be directed to downspouts with splash blocks and vegetated areas, which will promote sheet flow and filtering. However, credit for rooftop disconnect will not be taken toward an impervious area reduction in the RRv calculations. **OR** Due to the size/use/layout of the proposed building(s), rooftop disconnect is not proposed at this time.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

RR Techniques

Vegetated Swale (RR-5)	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	N/A	EXAMPLES - Due to flat topography/steep topography/etc., vegetated swales are not feasible for use on the project site. **OR** Vegetated swale(s) will be used to treat XX. Calculations have been provided in the SWPPP.
Rain Garden (RR-6)	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	N/A	EXAMPLES - Due to the size of contributing area/tributary driveway/tributary roadway, a bioretention facility will be implemented instead of rain gardens. **OR** Due to XXX,rain gardens are not feasible for use on the project site. **OR** Rain gardens will be used to treat roof runoff at the source for the building(s). Calculations have been provided in the SWPPP.
Stormwater Planter (RR-7)	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	N/A	EXAMPLES - Due to XXX, a bioretention facility will be implemented instead of stormwater planter(s). **OR** Due to XXX,stormwater planters are not feasible for use on the project site. **OR** Stormwater planters will be used to treat roof runoff at the source for the building(s). Calculations have been provided in the SWPPP.
Rainwater Harvesting System (RR-8)	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	N/A	EXAMPLES - Rainwater harvesting is not proposed on-site due to XXX. **OR** A below-grade cistern will be implemented for reuse as XXX. The system has been sized to provide adequate storage capacity for the entire WQv & RRv calculated for the tributary area. Calculations have been provided in the SWPPP. An above-grade rain barrel/cistern will be implemented for reuse as XXX. The system has been sized to provide adequate storage capacity for the entire WQv & RRv calculated for the tributary area. Calculations have been provided in the SWPPP.
Porous Pavement (RR-9)	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	N/A	EXAMPLES - Due to XXX, porous pavement is not feasible for use on the project site. **OR** Porous asphalt will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP. **OR** Porous concrete will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP. **OR** Porous pavers will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Green Roof (RR-10)	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	N/A	EXAMPLES - Due to XX, a green roof is not feasible for use on the project site. **OR** An extensive/intensive green roof is proposed on-site. Calculations have been provided in the SWPPP.
	Stream Daylighting (RR-11)	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	N/A	EXAMPLES - No stream daylighting opportunities are present on the site. **OR** Although stream daylighting opportunities are present, due to XX, stream daylighting is not proposed on this site. **OR** The project proposes stream daylighting for an XX-ft length of stream.
Standard SMPs with RRv Capacity	**Infiltration Trench (I-1)**	An infiltration practice that stores the water quality volume in the void spaces of a gravel trench before it is infiltrated into the ground.	N/A	EXAMPLES - Due to XX, infiltration trenches are not feasible for use on the project site. **OR** Infiltration trench(es) are proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Infiltration Basin (I-2)	An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.	N/A	EXAMPLES - Due to XX, infiltration basins are not feasible for use on the project site. **OR** An infiltration basin(s) is proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Dry Well (I-3)	An infiltration practice similar in design to the infiltration trench, and best suited for treatment of rooftop runoff.	N/A	EXAMPLES - Due to XX, dry wells are not feasible for use on the project site. **OR** Dry well(s) are proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Underground Infiltration System (I-4)	An infiltration practice below grade that stores the water quality volume in pre-manufactured pipes, vaults or other modular structures, before it is infiltrated into the ground.	N/A	EXAMPLES - Due to XX, underground infiltration systems are not feasible for use on the project site. **OR** An underground infiltration system(s) is proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Infiltration Bioretention (F-4)	A shallow depression that treats stormwater as it flows through a soil matrix, before it is infiltrated into the ground.	N/A	EXAMPLES - Due to XXX, a filtration bioretention will be implemented, instead of an infiltration bioretention. **OR** Due to XXX, bioretention is not feasible for use on the project site. **OR** Infiltration bioretention will be used to treat XX. Calculations have been provided in the SWPPP.
	Filtration Bioretention (F-5)	A shallow depression that treats stormwater as it flows through a soil matrix and is returned to the storm drain system.	Yes	EXAMPLES - Due to XXX, an infiltration bioretention will be implemented, instead of a filtration bioretention. **OR** Due to XXX, bioretention is not feasible for use on the project site. **OR** Filtration bioretention will be used to treat XX. Calculations have been provided in the SWPPP.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Bioslope (F-6)	Permeable engineered soil media that is installed along embankments or other slopes, designed to capture and treat stormwater runoff from adjacent paved areas.	N/A	EXAMPLES - Due to XXX, bioslopes are not feasible for use on the project site. **OR** Bioslope(s) will be used to treat XX. Calculations have been provided in the SWPPP.
	Dry Swale (O-1)	An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.	N/A	EXAMPLES - Due to XXX, dry swales are not feasible for use on the project site. **OR** A dry swale(s) will be used to treat XX. Calculations have been provided in the SWPPP.

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Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A		55%
B		40%
C		30%
D	1.17	20%
Total Area	1.17	

Impervious Area (ac.)

Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	1.17	*acres*
Precipitation	1.80	*inches*
Rv	0.95	
Minimum RRv	**0.033**	***af***
	1437	cf

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Steps 3 and 5 - Apply RR Techniques and Standard SMPs

Runoff Reduction Volume and Treated Volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**(cf)**	**(cf)**
RR Techniques	Conservation of Natural Areas	RR-1	0.00		0	
	Sheet Flow to Riparian Buffer/Filter Strip	RR-2	0.00	0.00	0	
	Tree Planting/Tree Pit/Tree Trench	RR-3	0.00	0.00	0	
	Disconnection of Rooftop Runoff	RR-4		0.00	0	
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rainwater Harvesting Systems	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Extensive & Intensive)	RR-10	0.00	0.00	0	
	Stream Daylighting	RR-11				
Standard SMPs w/ RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Infiltration Bioretention	F-4	0.00	0.00	0	0
	Filtration Bioretention	F-5	2.94	1.17	3,136	4,705
	Bioslope	F-6	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention	P-1	0.00	0.00		0
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention	P-3	0.00	0.00		0
	Multiple Pond System	P-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Gravel Wetland	W-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Wet Swale	O-2	0.00	0.00		0
Alt. SMPs	Flow Based Alternative Practice	-	3.26	3.26		20,236
	Volume Based Alternative Practice	-				
	Totals by RR Technique	→	0.00	0.00	0	
	Totals by Standard SMP w/RRV	→	2.94	1.17	3,136	4,705
	Totals by Standard SMP	→	0.00	0.00		0
	Totals by Alternative SMP	→	3.26	3.26		20,236
	Totals (RR Techniques + all SMPs)	→	6.20	4.43	3,136	24,941

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NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	28077	0.645
30	Total RRV Provided	3136	0.072
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	1437	0.033
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	24941	0.573
34	Sum of Volume Reduced & Treated	28077	0.645
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	2.94	1.17	40	0.41	7,841	1.80	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0.05	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	7	
Enter depth to bedrock (ft)	10	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.25	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	3564	sf	
Enter Provided Filter Area	Af	3564	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	7840.8	cf	

Calculate Runoff Reduction			
RRv Provided	**3,136**	***cf***	
WQv Treated	4705	cf	This is the portion of the WQv that is not reduced in the practice.

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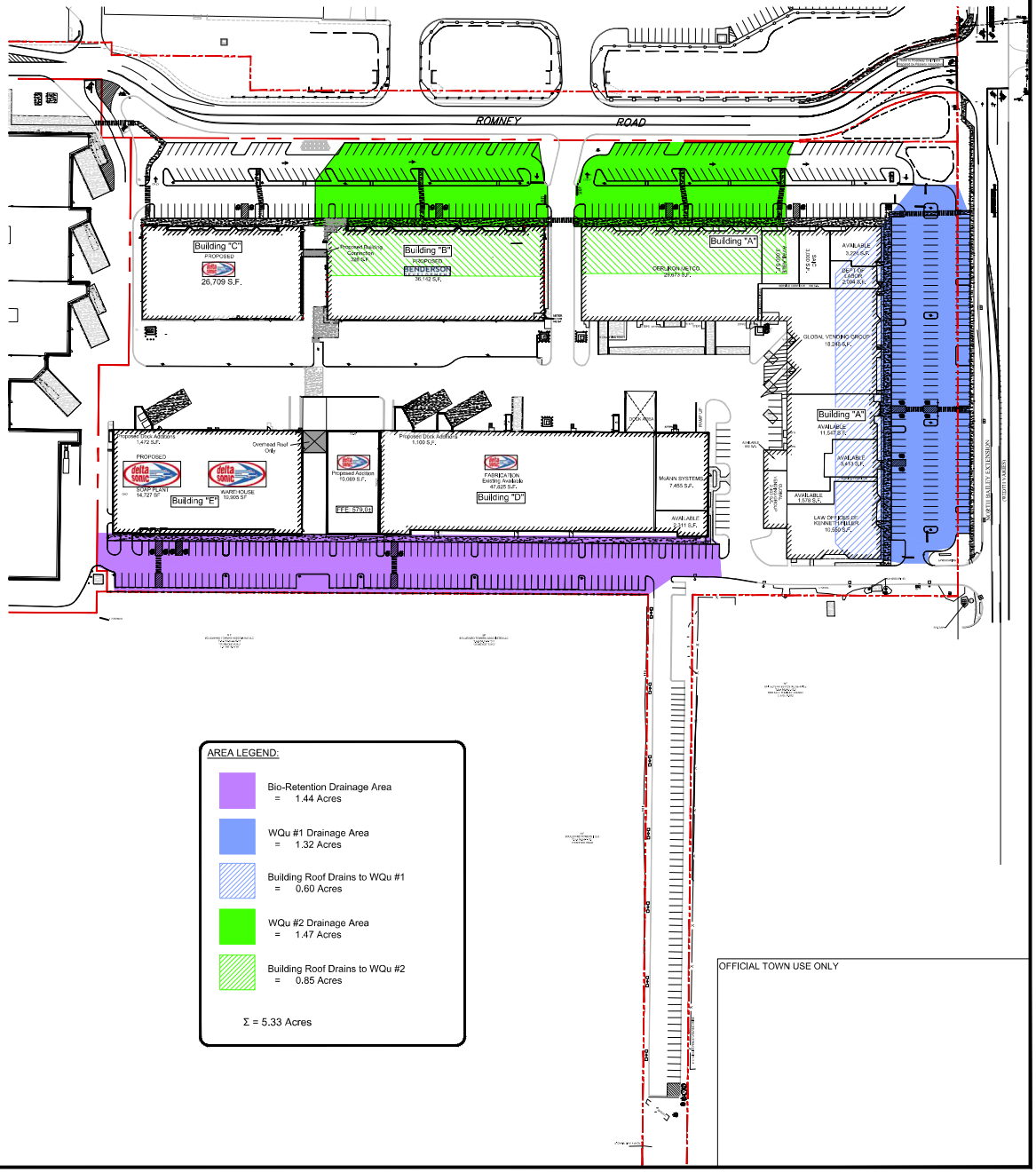

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SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEI FOR A PERIOD OF ONE YEAR FROM THE DATE OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCU IN VIOLATION OF SECTION 7209 OF THE STA EDUCATION LAW.

PROPERTY NUMBER: #1723

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED

CONSULTANT

JAMES ALLEN RUM
ARCHITECT
PREPARED FOR
BENDERSO
DEVELOPME
570 DELAWARE AVE., BUFFALO, N
(716) 886-0211

SEAL

TITLE:
Water Qualit
Delineation M

SCALE: 1:70
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 01.30.2025
DRAWING NO. C5.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	1.44	1.20	83	0.80	7,527	1.80	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0.05	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	7	
Enter depth to bedrock (ft)	10	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.25	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

WORKSHEET PROVIDED TO REFLECT DELINEATION MAP:

AREA TRIBUTARY TO BIORETENTION = 1.44 AC.

RRv PROVIDED = 3,136 CF

WQv PROVIDED = 7,841 CF

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	3421	sf	
Enter Provided Filter Area	Af	3564	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	7840.8	cf	

Calculate Runoff Reduction			
RRv Provided	**3,136**	***cf***	
WQv Treated	4391	cf	This is the portion of the WQv that is not reduced in the practice.

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Water Quality Peak Flow Rate

Step 2 - Determine the Water Quality Treatment Volume				
		Value	Units	Notes
Water Quality Volume Required	WQv	0.4646	af	

Step 3 - Solve for the Calculated P90 Value				
		Value	Units	Notes
Subcatchment Area - 1	A1	3.26	acres	
Area 1 Curve Number	CN1	98		
Subcatchment Area - 2	A2		acres	
Area 2 Curve Number	CN2			
Subcatchment Area - 3	A3		acres	
Area 3 Curve Number	CN3			
Subcatchment Area - 4	A4		acres	
Area 4 Curve Number	CN4			
Subcatchment Area - 5	A5		acres	
Area 5 Curve Number	CN5			
Subcatchment Area - 6	A6		acres	
Area 6 Curve Number	CN6			
Subcatchment Area - 7	A7		acres	
Area 7 Curve Number	CN7			
Subcatchment Area - 8	A8		acres	
Area 8 Curve Number	CN8			
Subcatchment Area - 9	A9		acres	
Area 9 Curve Number	CN9			
Subcatchment Area - 10	A10		acres	
Area 10 Curve Number	CN10			
Weighted Curve Number	CNw	98.00		
Maximum Basin Retention	S	0.20	inches	
Runoff	Q	0.14	ft	
	Q	1.71	inches	
Calculated Rainfall Value	**P90**	**1.94**	**inches**	

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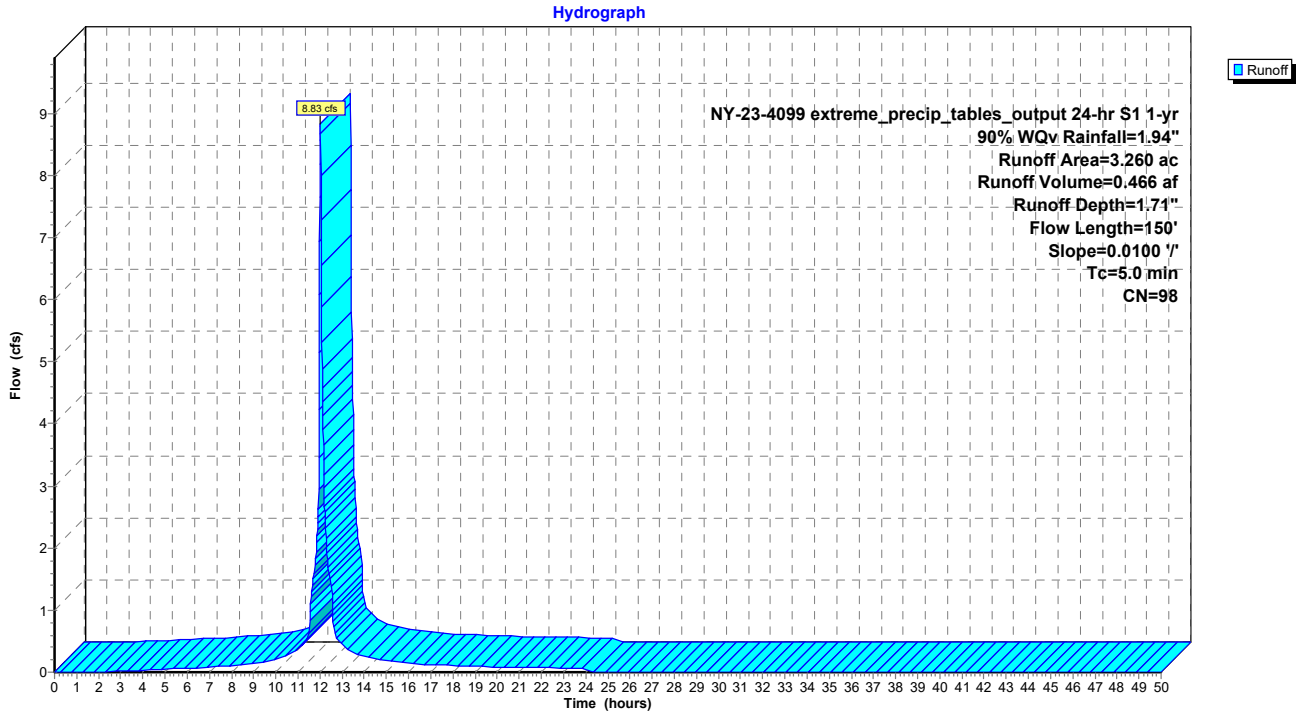
Subcatchment WQ: Drainage Area #2 - Redevelopment Area - WQ Peak Flow Rate



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Flow Based Alternative Practice

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (ft^3)	**Precipitation** (in)	**Description**
2	3.26	3.26	100	0.95	20,236	1.80	Flow Based Alternative Practice

Design Criteria		
Is the alternative practice included in the NJCAT Verification Database, NJDEP list of approved Manufactured Treatment Devices or TAPE list of Approved Technologies for General Use Level?	Yes	
Is the flow based practice proposed for area of new development?	No	
If proposed for new development, is the practice included on NYSDEC list for Verified Proprietary Practices for New Development?		
Is the practice being designed off-line?	No	Practice must have adequate bypass capacity
If designed off-line, has flow diversion been included?		Not applicable
Enter Extreme Flood peak flow rate (cfs)		
Enter alternative practice bypass capacity (cfs)		
Enter name and manufacturer of alternative practice		

Sizing Criteria				
		Value	Units	Notes
Water Quality Peak Flow Rate	WQf	8.83	cfs	Taken from hydrologic modeling
Enter Maximum Treatment Flow Rate (MTFR) of Alternative Practice	Q	8.83	cfs	
Determine the Water Quality Volume Treated				
Water Quality Volume Treated		**20,236**	**cf**	

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Stormwater Runoff Summaries and Runoff Delineation Maps

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New York
Location	New York, United States
Latitude	42.996 degrees North
Longitude	78.817 degrees West
Elevation	170 feet
Date/Time	Mon Nov 13 2023 09:29:03 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.41	0.50	0.66	0.82	1.00	**1yr**	0.71	0.93	1.13	1.34	1.56	1.80	2.09	**1yr**	1.60	2.01	2.42	2.91	3.39	**1yr**
2yr	0.30	0.47	0.58	0.77	0.96	1.18	**2yr**	0.83	1.08	1.34	1.59	1.87	2.18	2.46	**2yr**	1.93	2.36	2.78	3.31	3.80	**2yr**
5yr	0.36	0.56	0.70	0.94	1.20	1.48	**5yr**	1.03	1.35	1.67	1.98	2.30	2.65	3.00	**5yr**	2.34	2.89	3.37	3.97	4.54	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.76	**10yr**	1.22	1.61	1.98	2.34	2.70	3.07	3.49	**10yr**	2.72	3.36	3.90	4.56	5.19	**10yr**
25yr	0.48	0.76	0.96	1.33	1.77	2.20	**25yr**	1.53	2.01	2.48	2.90	3.32	3.73	4.27	**25yr**	3.30	4.10	4.74	5.48	6.20	**25yr**
50yr	0.54	0.87	1.11	1.55	2.09	2.60	**50yr**	1.81	2.39	2.94	3.42	3.88	4.33	4.97	**50yr**	3.83	4.78	5.49	6.30	7.10	**50yr**
100yr	0.61	0.99	1.28	1.82	2.48	3.10	**100yr**	2.14	2.84	3.49	4.04	4.55	5.03	5.79	**100yr**	4.45	5.57	6.36	7.24	8.13	**100yr**
200yr	0.71	1.15	1.49	2.14	2.95	3.68	**200yr**	2.54	3.39	4.14	4.77	5.33	5.84	6.75	**200yr**	5.17	6.49	7.37	8.32	9.31	**200yr**
500yr	0.85	1.39	1.82	2.64	3.70	4.62	**500yr**	3.19	4.27	5.19	5.93	6.57	7.13	8.26	**500yr**	6.31	7.95	8.96	10.01	11.14	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.35	0.42	0.57	0.70	0.87	**1yr**	0.61	0.85	0.86	1.15	1.44	1.62	1.90	**1yr**	1.44	1.83	2.08	2.63	3.10	**1yr**
2yr	0.29	0.45	0.55	0.75	0.92	1.06	**2yr**	0.80	1.04	1.16	1.42	1.71	2.10	2.35	**2yr**	1.86	2.26	2.67	3.19	3.66	**2yr**
5yr	0.33	0.51	0.63	0.86	1.10	1.26	**5yr**	0.95	1.23	1.38	1.67	2.01	2.43	2.71	**5yr**	2.15	2.60	3.03	3.61	4.08	**5yr**
10yr	0.36	0.55	0.68	0.95	1.23	1.42	**10yr**	1.06	1.39	1.56	1.87	2.26	2.71	3.01	**10yr**	2.40	2.89	3.32	3.95	4.41	**10yr**
25yr	0.41	0.62	0.77	1.10	1.45	1.67	**25yr**	1.25	1.64	1.81	2.18	2.64	3.12	3.44	**25yr**	2.76	3.31	3.73	4.42	4.84	**25yr**
50yr	0.45	0.68	0.84	1.21	1.63	1.88	**50yr**	1.41	1.84	2.02	2.43	2.95	3.47	3.82	**50yr**	3.07	3.67	4.05	4.82	5.18	**50yr**
100yr	0.49	0.74	0.92	1.33	1.83	2.12	**100yr**	1.58	2.07	2.25	2.70	3.31	3.88	4.21	**100yr**	3.43	4.05	4.39	5.25	5.53	**100yr**
200yr	0.53	0.80	1.02	1.47	2.06	2.40	**200yr**	1.77	2.34	2.49	2.99	3.69	4.34	4.65	**200yr**	3.84	4.47	4.74	5.69	5.88	**200yr**
500yr	0.60	0.90	1.16	1.68	2.39	2.81	**500yr**	2.06	2.74	2.83	3.40	4.23	5.08	5.31	**500yr**	4.50	5.11	5.18	6.32	6.32	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.30	0.46	0.56	0.75	0.93	1.07	**1yr**	0.80	1.05	1.20	1.41	1.70	1.93	2.33	**1yr**	1.71	2.24	2.61	3.09	3.63	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.16	**2yr**	0.86	1.13	1.28	1.56	1.86	2.28	2.58	**2yr**	2.02	2.48	2.95	3.48	4.03	**2yr**
5yr	0.39	0.60	0.74	1.02	1.30	1.53	**5yr**	1.12	1.50	1.68	2.06	2.44	2.88	3.31	**5yr**	2.55	3.18	3.75	4.36	5.04	**5yr**
10yr	0.46	0.71	0.88	1.22	1.58	1.89	**10yr**	1.37	1.84	2.09	2.55	3.01	3.45	4.01	**10yr**	3.05	3.86	4.52	5.17	6.02	**10yr**
25yr	0.58	0.89	1.10	1.58	2.07	2.51	**25yr**	1.79	2.45	2.79	3.39	3.98	4.40	5.18	**25yr**	3.89	4.98	5.84	6.52	7.63	**25yr**
50yr	0.69	1.05	1.31	1.88	2.53	3.11	**50yr**	2.18	3.04	3.47	4.22	4.91	5.28	6.28	**50yr**	4.68	6.04	7.10	7.79	9.17	**50yr**
100yr	0.83	1.25	1.56	2.26	3.10	3.85	**100yr**	2.68	3.77	4.33	5.24	6.07	6.33	7.62	**100yr**	5.60	7.33	8.59	9.30	10.98	**100yr**
200yr	0.99	1.48	1.88	2.72	3.80	4.78	**200yr**	3.28	4.67	5.42	6.54	7.50	7.57	9.24	**200yr**	6.70	8.88	10.46	11.13	13.20	**200yr**
500yr	1.25	1.87	2.40	3.49	4.96	6.37	**500yr**	4.28	6.22	7.30	8.75	9.94	9.62	11.94	**500yr**	8.52	11.48	13.59	14.13	16.77	**500yr**

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Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORMWATER DRAINAGE ANALYSIS - Boulevard Central Special Stormwater Design Conditions

PROJECTED GROWTH REDEVELOPMENT SCENARIO

Use Median Curve Number (CN) for Existing Runoff Areas:

50% Runoff Rate Existing Land Cover

50% Prior to Development (1958 Historic Aerial: Meadow/Farm Field)

Overall Existing Runoff Area = 17.34 ac.

Greenspace = 3.65 ac

Impervious = 13.69 ac

Project Disturbance Area = 7.29 ac (42%)

Greenspace = 2.94 ac

Impervious = 4.35 ac

Apply Median CN to Project Disturbance Area:

Meadow/Farm Field = 3.64 ac

Greenspace = 1.47 ac

Impervious = 2.18 ac

Non-Disturbance Area = 10.05 ac (58%)

Greenspace = 0.71 ac

Impervious = 9.34 ac

Adjusted Overall Existing Runoff Area: 17.34 ac

Meadow/Farm Field = 3.64 ac

Greenspace = 1.47 ac + 0.71 ac = 2.18 ac

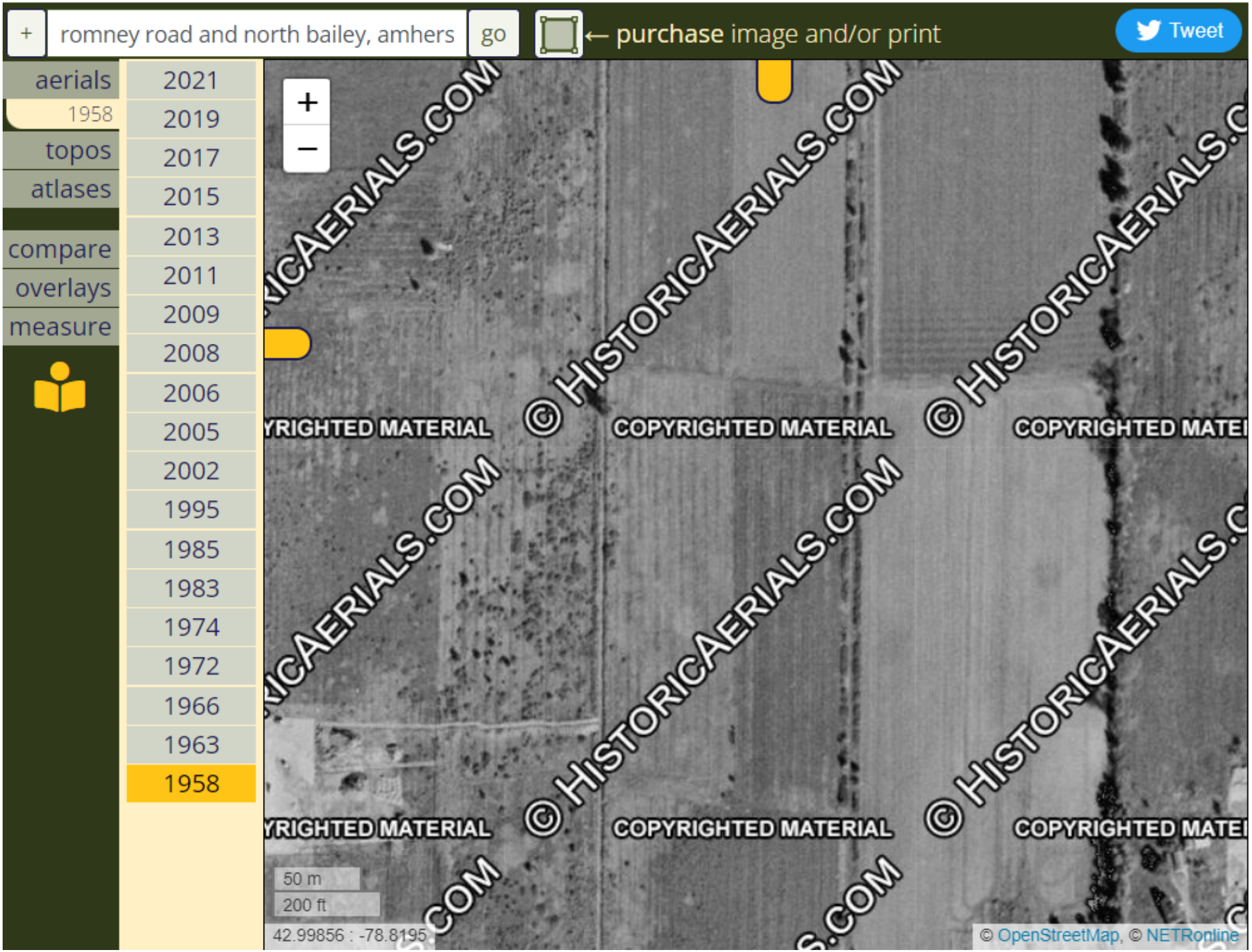
Impervious = 2.18 ac + 9.34 ac = 11.52 ac

10% ESCALATION OF PROPOSED PEAK FLOW

Storm Event	Existing Runoff (cfs)	Proposed Runoff (cfs)
1-Year	32.88	28.94
2-Year	42.30	36.19
5-Year	54.15	44.72
10-Year	64.87	52.15
25-Year	81.82	63.59
50-Year	97.29	73.71
100-Year	115.36	85.32

Storm Event	Ex. Runoff "Non-Disturbance Area" (cfs)	Adjusted Proposed Runoff (cfs)	10% Escalation (cfs)	Ex. Runoff "Disturbance Area" (cfs)
1-Year	24.42	4.52	4.97	8.52
2-Year	30.14	6.05	6.66	12.21
5-Year	37.16	7.56	8.32	17.04
10-Year	43.40	8.75	9.63	21.51
25-Year	53.16	10.43	11.47	28.70
50-Year	62.00	11.71	12.88	35.33
100-Year	72.28	13.04	14.34	43.11

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Link 1L: Overall Existing Site

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-Year	32.88	32.88	**0.00**
2-Year	42.30	42.30	0.00
5-Year	54.15	54.15	0.00
10-Year	64.87	64.87	0.00
25-Year	81.82	81.82	0.00
50-Year	97.29	97.29	0.00
100-Year	**115.36**	**115.36**	0.00

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

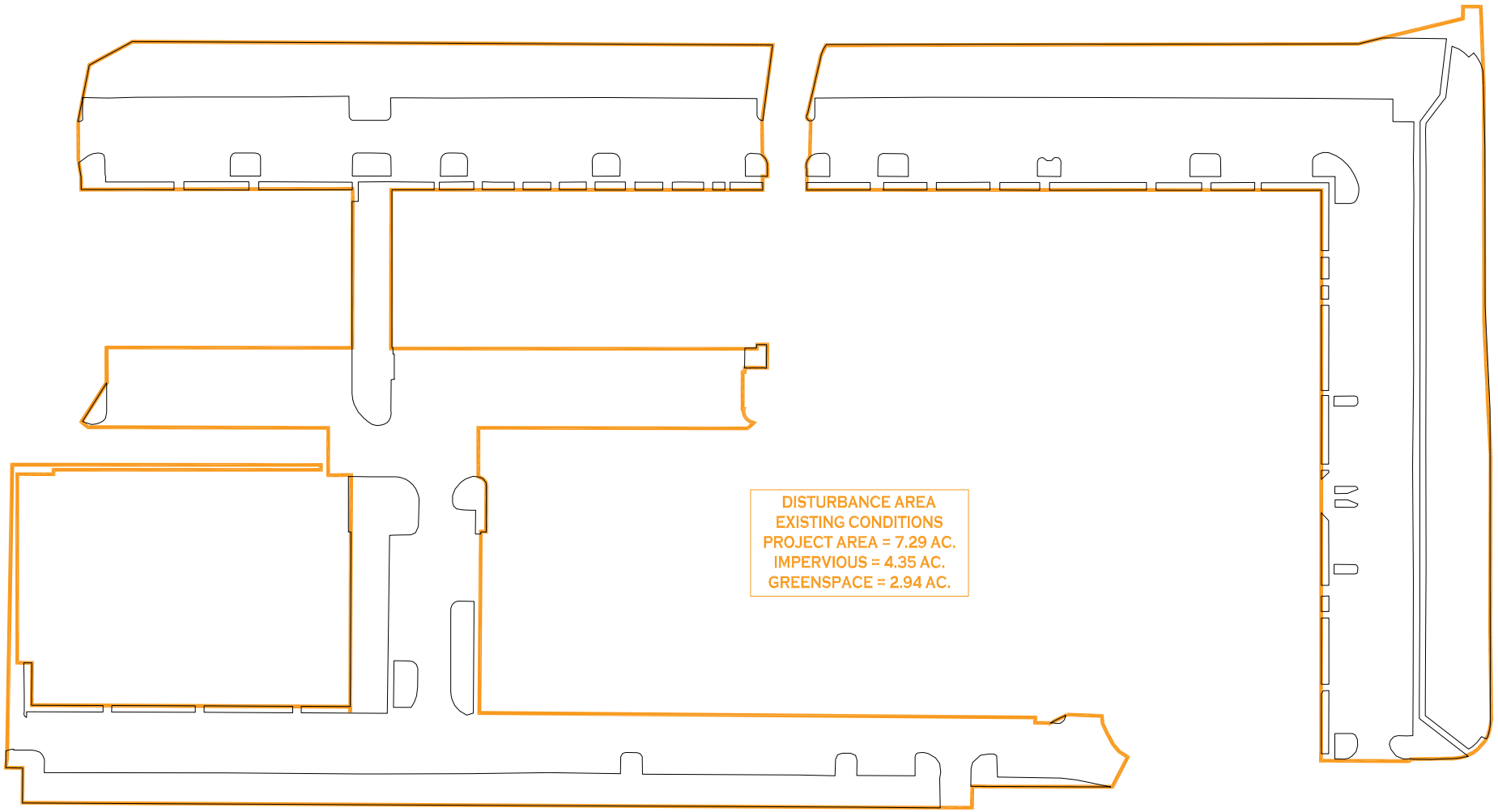
Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	1.80	8.52	0.396	0.65
2-Year	2.18	12.21	0.565	0.93
5-Year	2.65	17.04	0.789	1.30
10-Year	3.07	21.51	1.001	1.65
25-Year	3.73	28.70	1.347	2.22
50-Year	4.33	35.33	1.673	2.75
100-Year	**5.03**	**43.11**	**2.063**	**3.40**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Subcatchment 2S: Existing Site (Non-Disturbance Area)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	1.80	24.42	1.236	1.48
2-Year	2.18	30.14	1.548	1.85
5-Year	2.65	37.16	1.936	2.31
10-Year	3.07	43.40	2.284	2.73
25-Year	3.73	53.16	2.833	3.38
50-Year	4.33	62.00	3.333	3.98
100-Year	**5.03**	**72.28**	**3.917**	**4.68**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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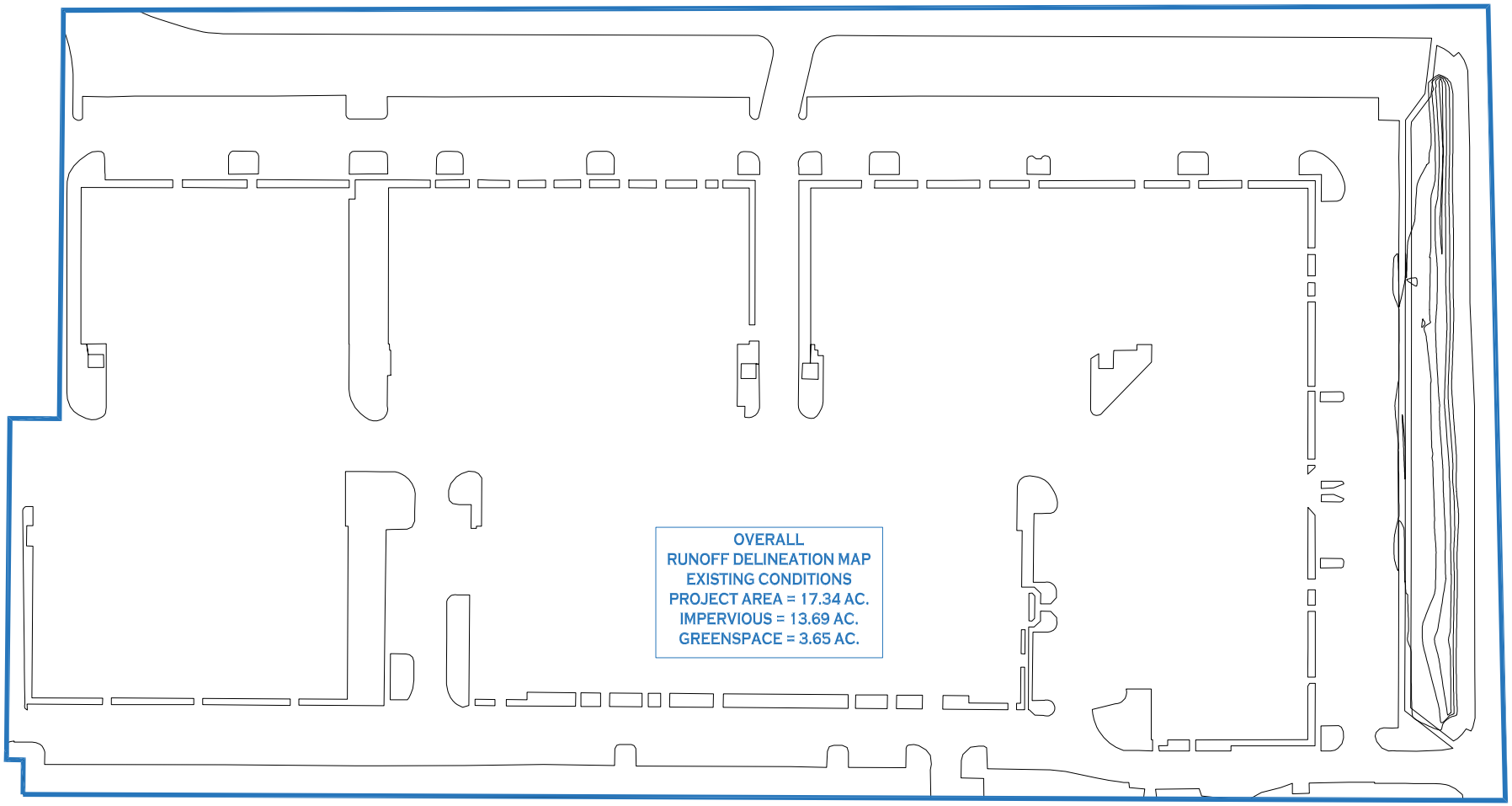
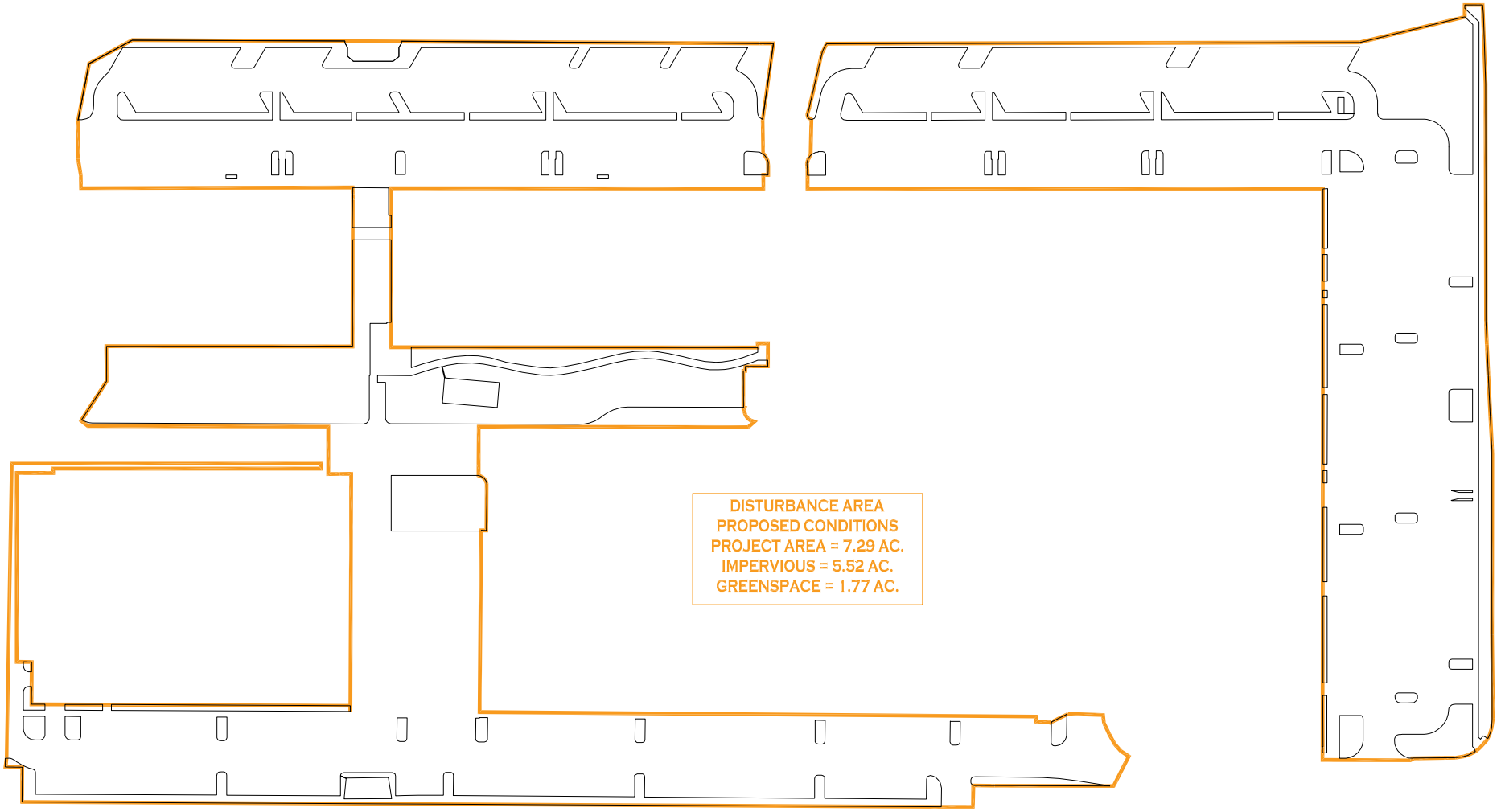


Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Events for Link 1L: Romney Rd Drainage System

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-Year	28.94	28.94	**0.00**
2-Year	36.19	36.19	0.00
5-Year	44.72	44.72	0.00
10-Year	52.15	52.15	0.00
25-Year	63.59	63.59	0.00
50-Year	73.71	73.71	0.00
100-Year	**85.32**	**85.32**	0.00

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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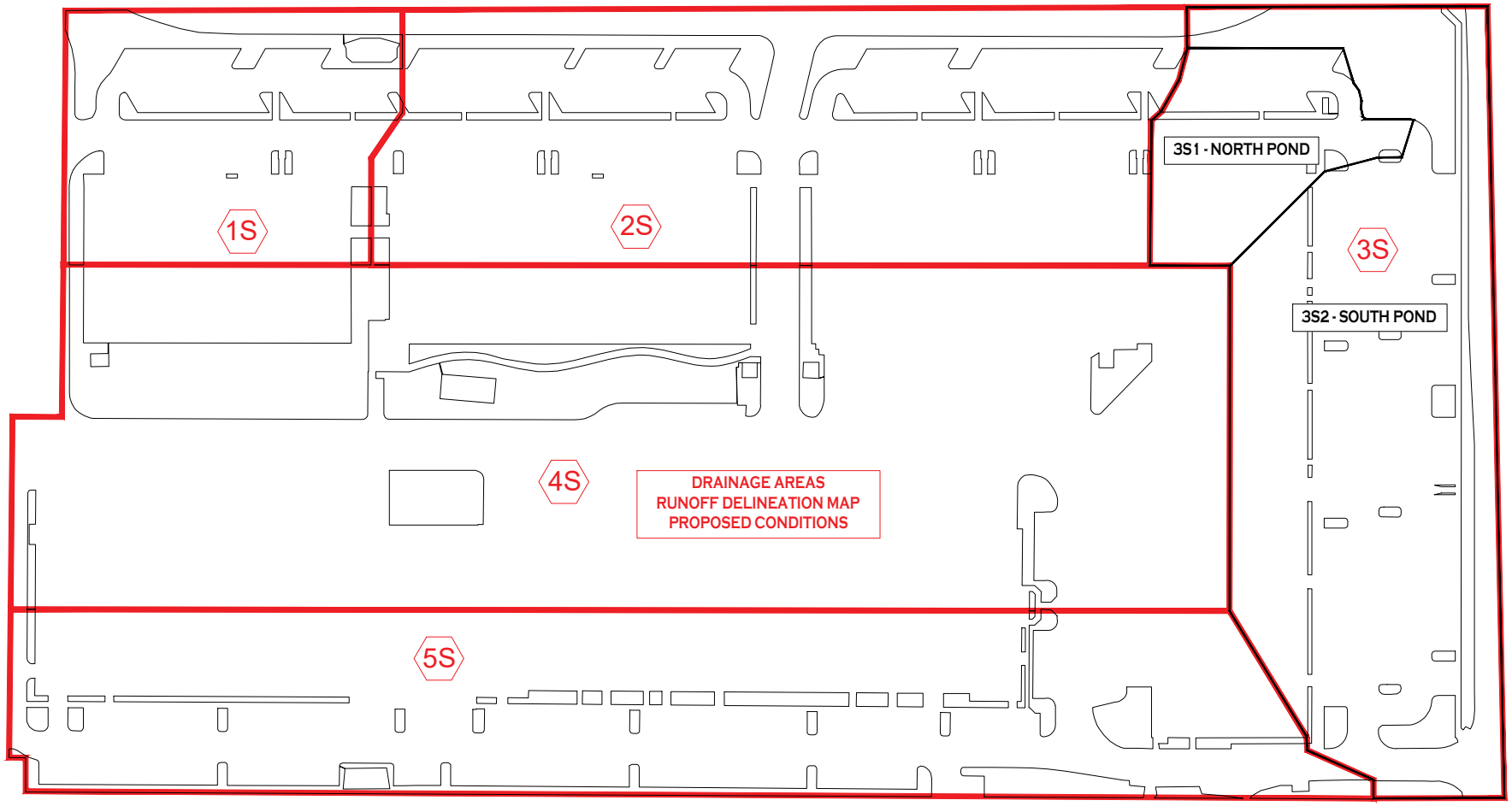

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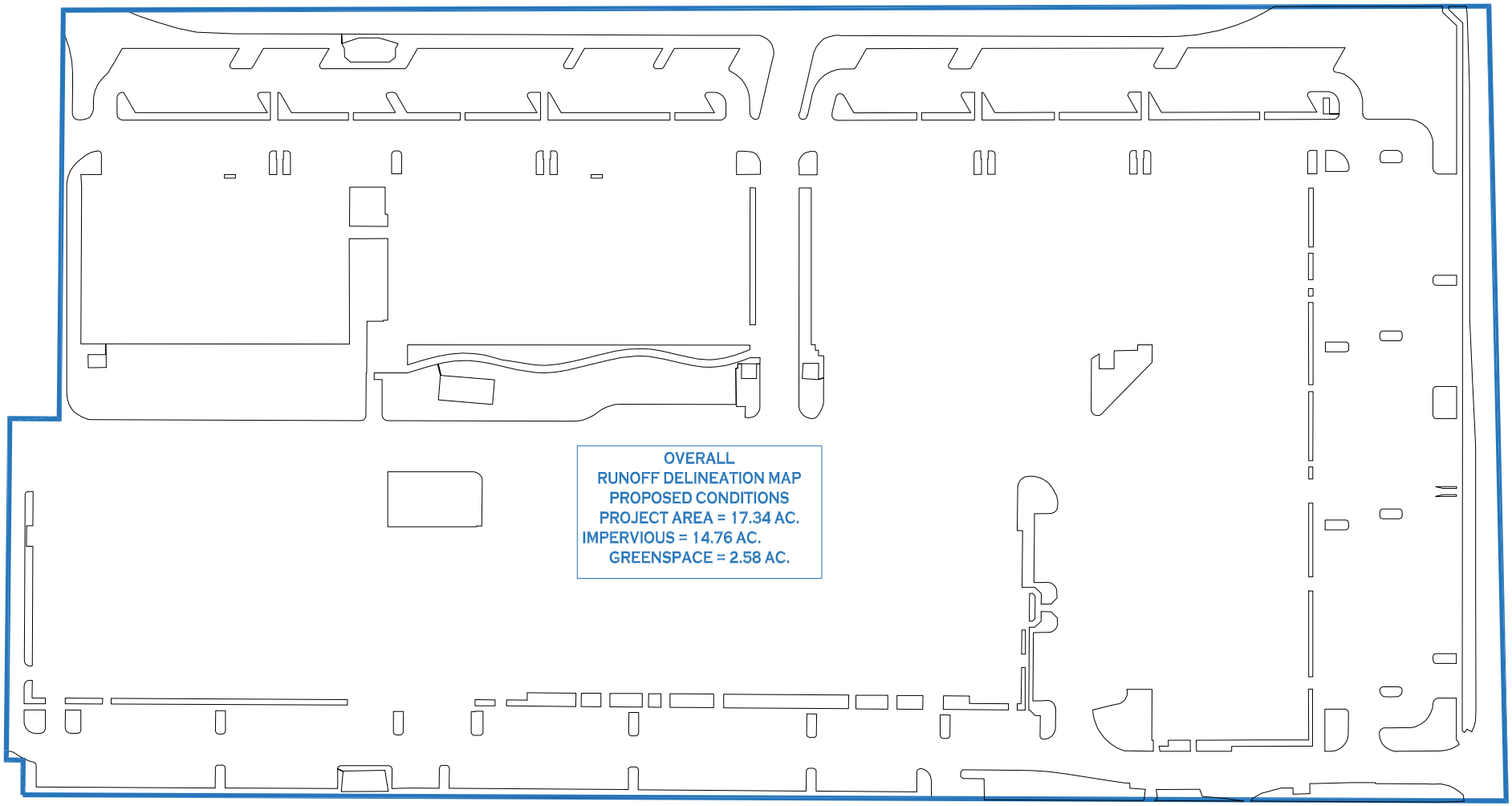


Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PROPOSED STORM DRAINAGE PIPE SIZING:

*Assume Time of Concentration ≤ 5.0 min.
and i=5.5 in/hr per Intensity/Duration/Frequency curve
**Assume C=0.8 for typical commercial development area

CB10-Pond	Drainage Area, A (ac) =	2.33
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	10.25
	Per Mannings Equation:	use 24" HDPE @ 0.2% = 13.19 cfs

CB8-Pond	Drainage Area, A (ac) =	0.57
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	2.51
	Mannings Equation:	use 12" HDPE @ 0.5% = 3.28 cfs

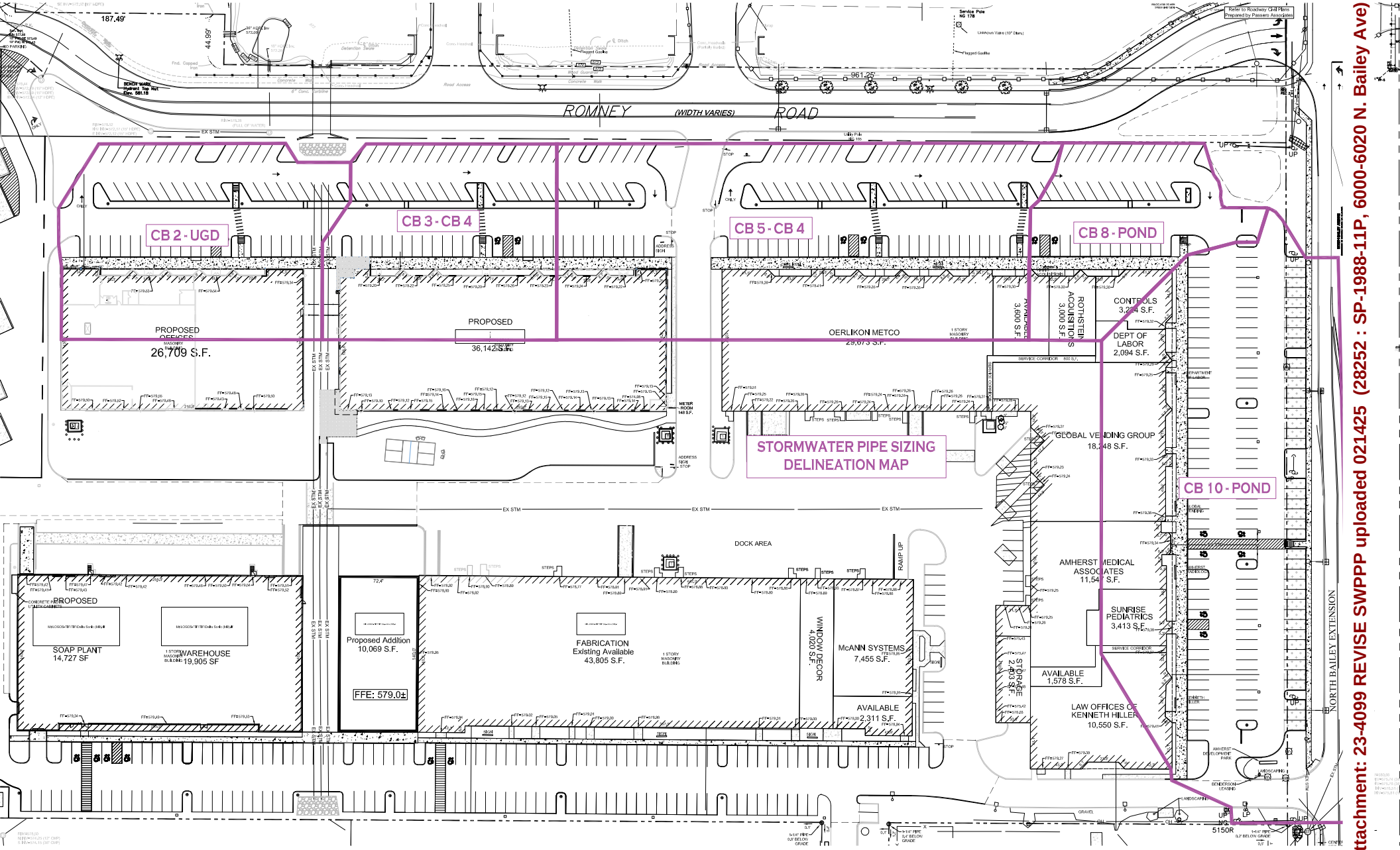
CB4-UGD	Drainage Area, A (ac) =	2.53
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	11.13
	Mannings Equation:	use 24" HDPE @ 0.5% = 20.85 cfs

CB3-CB4	Drainage Area, A (ac) =	0.80
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	3.52
	Mannings Equation:	use 15" HDPE @ 0.5% = 5.95 cfs

CB5-CB4	Drainage Area, A (ac) =	1.73
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	7.61
	Mannings Equation:	use 18" HDPE @ 0.5% = 9.68 cfs

CB2-UGD	Drainage Area, A (ac) =	0.94
	*10-Yr Rainfall Intensity, i (in/hr) =	5.50
	**Runoff Coefficient,c =	0.80
	Peak Discharge (cfs), Q=ciA =	4.14
	Mannings Equation:	use 12" HDPE @ 1.0% = 4.64 cfs

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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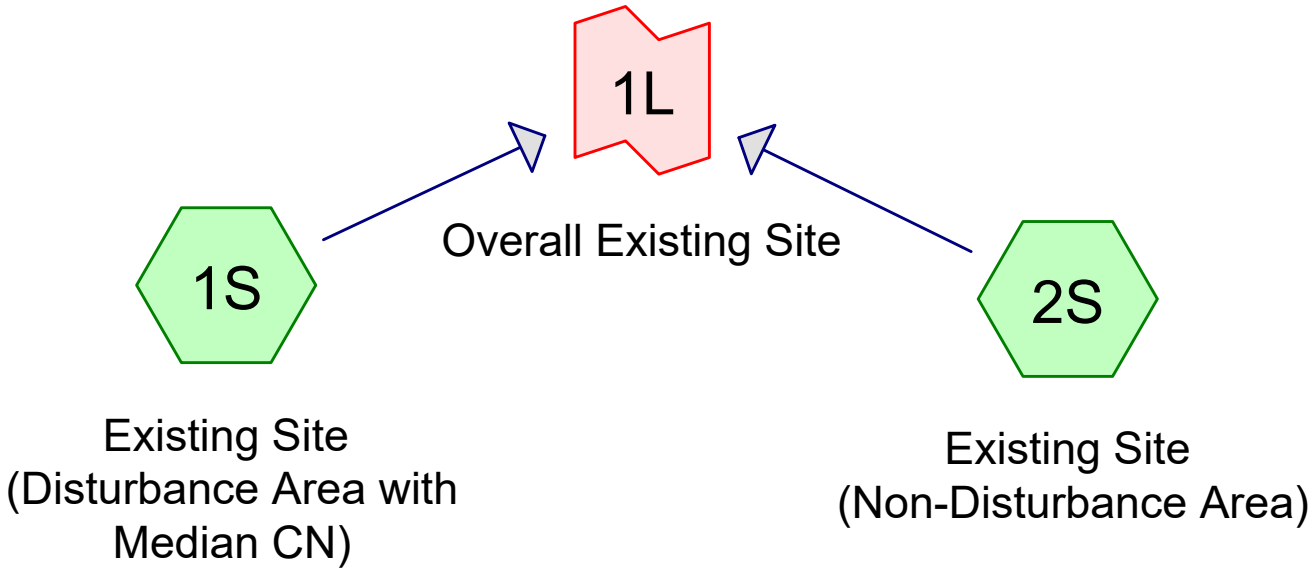
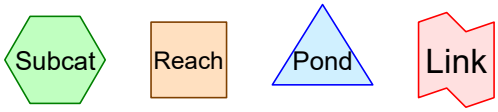
HydroCAD Analysis

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





Routing Diagram for 23-4099 Existing
Prepared by Carmina Wood Morris, PC, Printed 11/15/2024
HydroCAD® 10.20-2g s/n 05019 © 2022 HydroCAD Software Solutions LLC

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.180	84	50-75% Grass cover, Fair, HSG D (1S, 2S)
11.520	98	Impervious (1S, 2S)
3.640	78	Meadow, non-grazed, HSG D (1S)
17.340	**92**	**TOTAL AREA**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
5.820	HSG D	1S, 2S
11.520	Other	1S, 2S
17.340		**TOTAL AREA**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchmen Numbers
0.000	0.000	0.000	2.180	0.000	2.180	50-75% Grass cover, Fair	1S, 2S
0.000	0.000	0.000	0.000	11.520	11.520	Impervious	1S, 2S
0.000	0.000	0.000	3.640	0.000	3.640	Meadow, non-grazed	1S
0.000	**0.000**	**0.000**	**5.820**	**11.520**	**17.340**	**TOTAL AREA**	

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=0.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=8.52 cfs 0.396 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=1.48"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=24.42 cfs 1.236 af

Link 1L: Overall Existing Site Inflow=32.88 cfs 1.632 af
Primary=32.88 cfs 1.632 af

Total Runoff Area = 17.340 ac Runoff Volume = 1.632 af Average Runoff Depth = 1.13"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

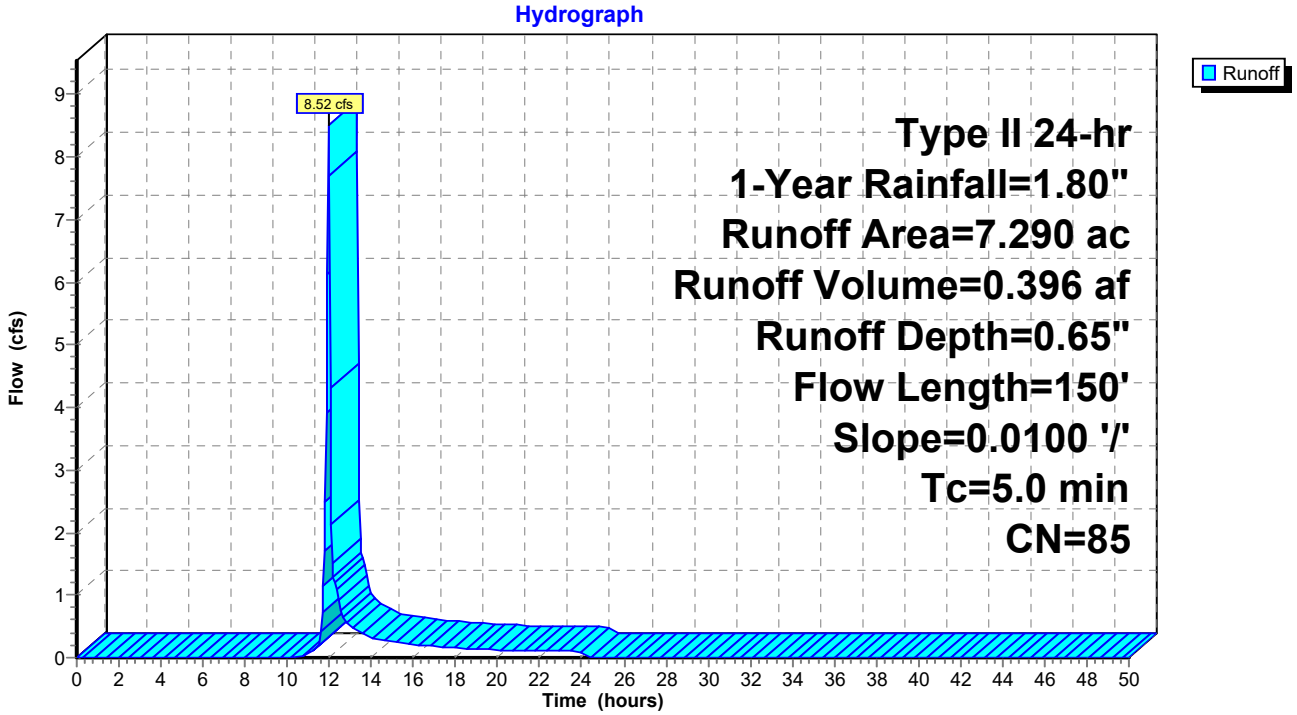
Runoff = 8.52 cfs @ 11.96 hrs, Volume= 0.396 af, Depth= 0.65"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

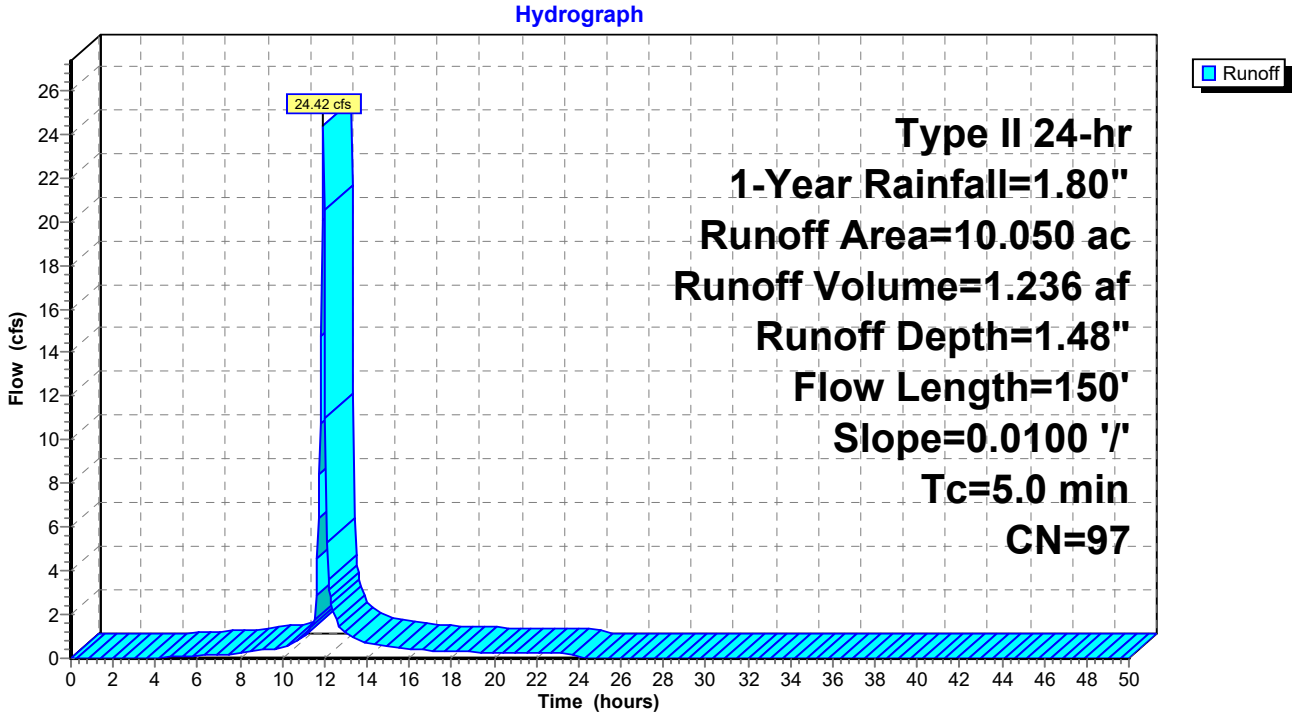
Runoff = 24.42 cfs @ 11.95 hrs, Volume= 1.236 af, Depth= 1.48"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



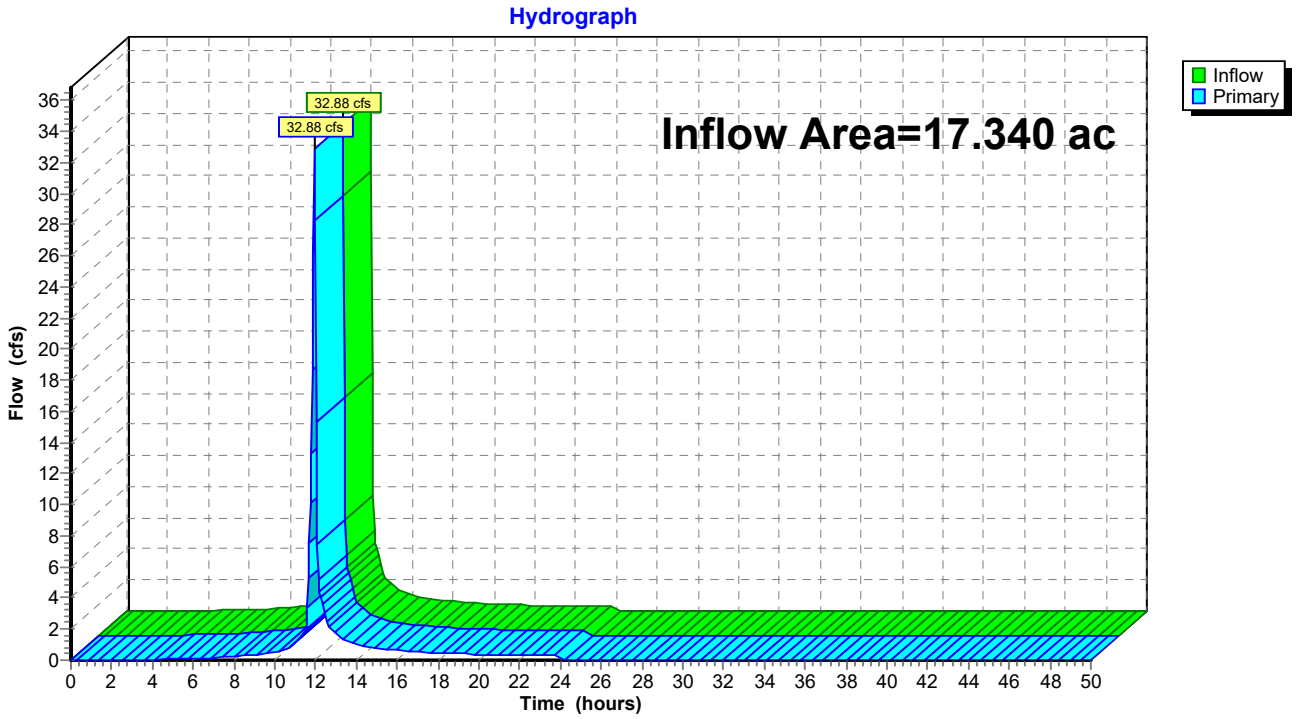
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 1.13" for 1-Year event
Inflow = 32.88 cfs @ 11.95 hrs, Volume= 1.632 af
Primary = 32.88 cfs @ 11.95 hrs, Volume= 1.632 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=1.65"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=21.51 cfs 1.001 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=2.73"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=43.40 cfs 2.284 af

Link 1L: Overall Existing Site Inflow=64.87 cfs 3.285 af
Primary=64.87 cfs 3.285 af

Total Runoff Area = 17.340 ac Runoff Volume = 3.285 af Average Runoff Depth = 2.27"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

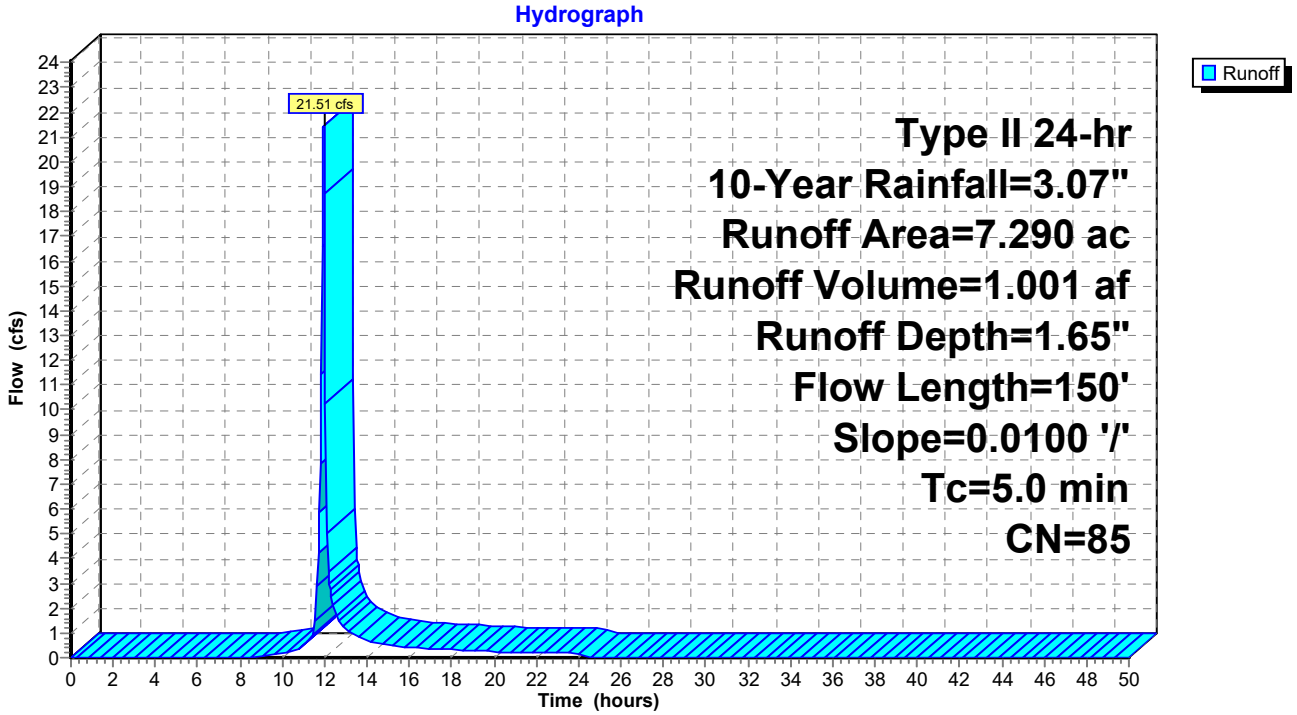
Runoff = 21.51 cfs @ 11.96 hrs, Volume= 1.001 af, Depth= 1.65"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

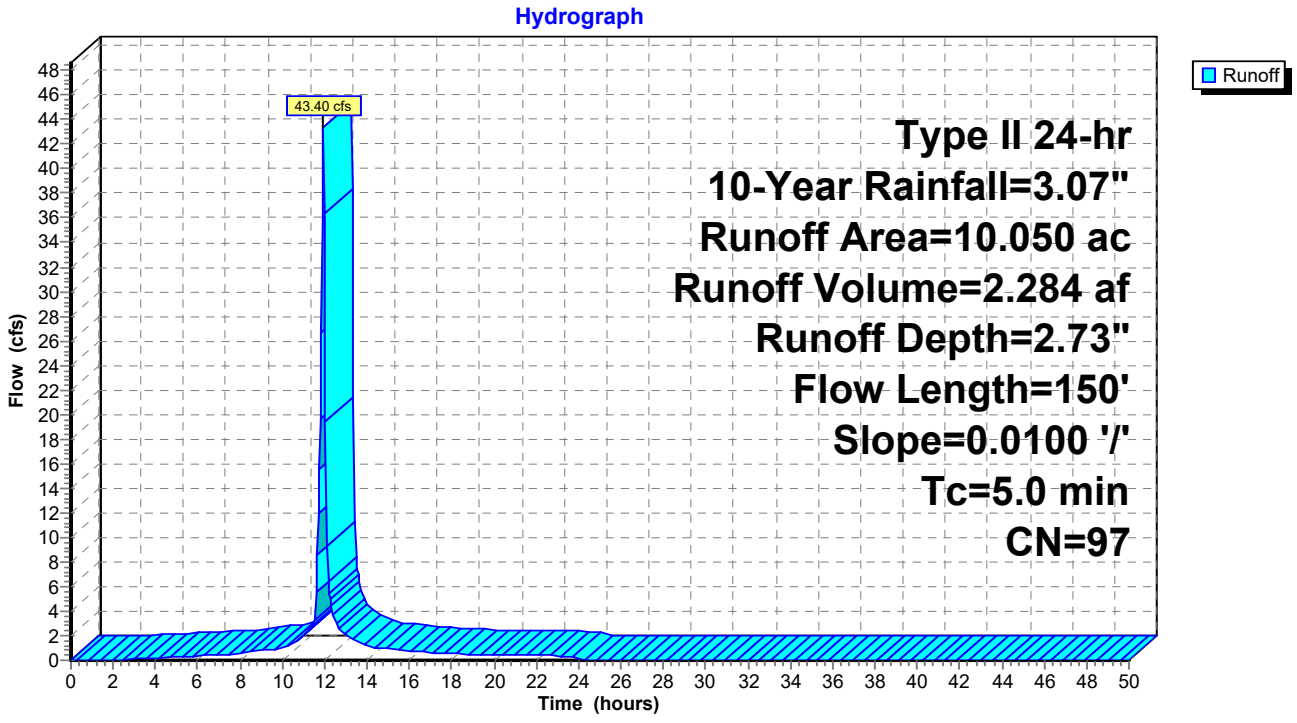
Runoff = 43.40 cfs @ 11.95 hrs, Volume= 2.284 af, Depth= 2.73"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



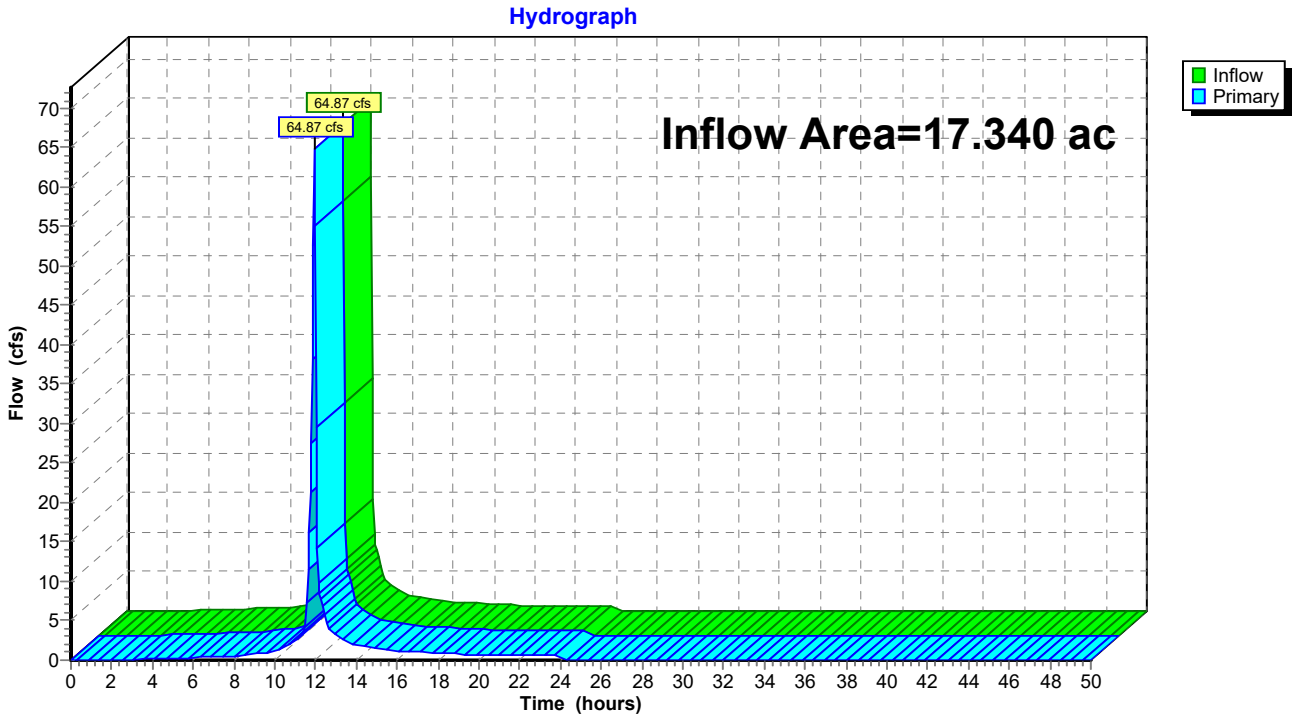
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 2.27" for 10-Year event
Inflow = 64.87 cfs @ 11.95 hrs, Volume= 3.285 af
Primary = 64.87 cfs @ 11.95 hrs, Volume= 3.285 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=2.22"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=28.70 cfs 1.347 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=3.38"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=53.16 cfs 2.833 af

Link 1L: Overall Existing Site Inflow=81.82 cfs 4.181 af
Primary=81.82 cfs 4.181 af

Total Runoff Area = 17.340 ac Runoff Volume = 4.181 af Average Runoff Depth = 2.89"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

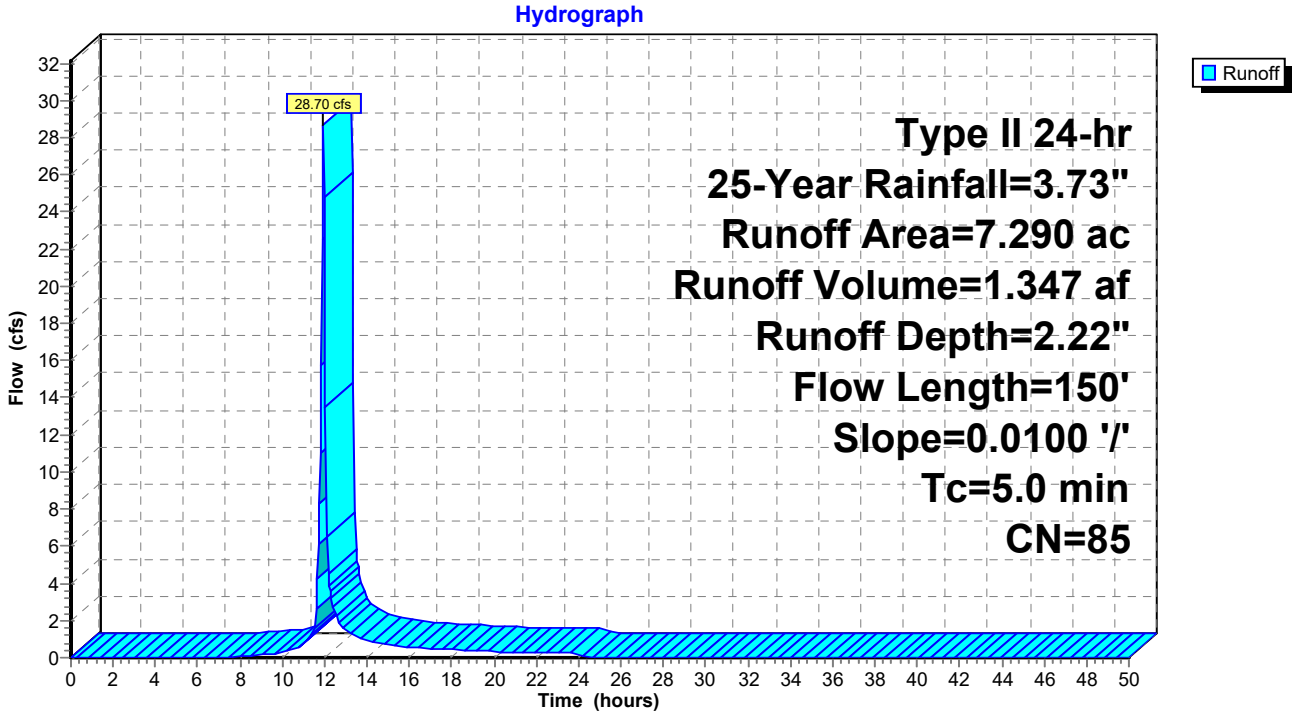
Runoff = 28.70 cfs @ 11.96 hrs, Volume= 1.347 af, Depth= 2.22"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

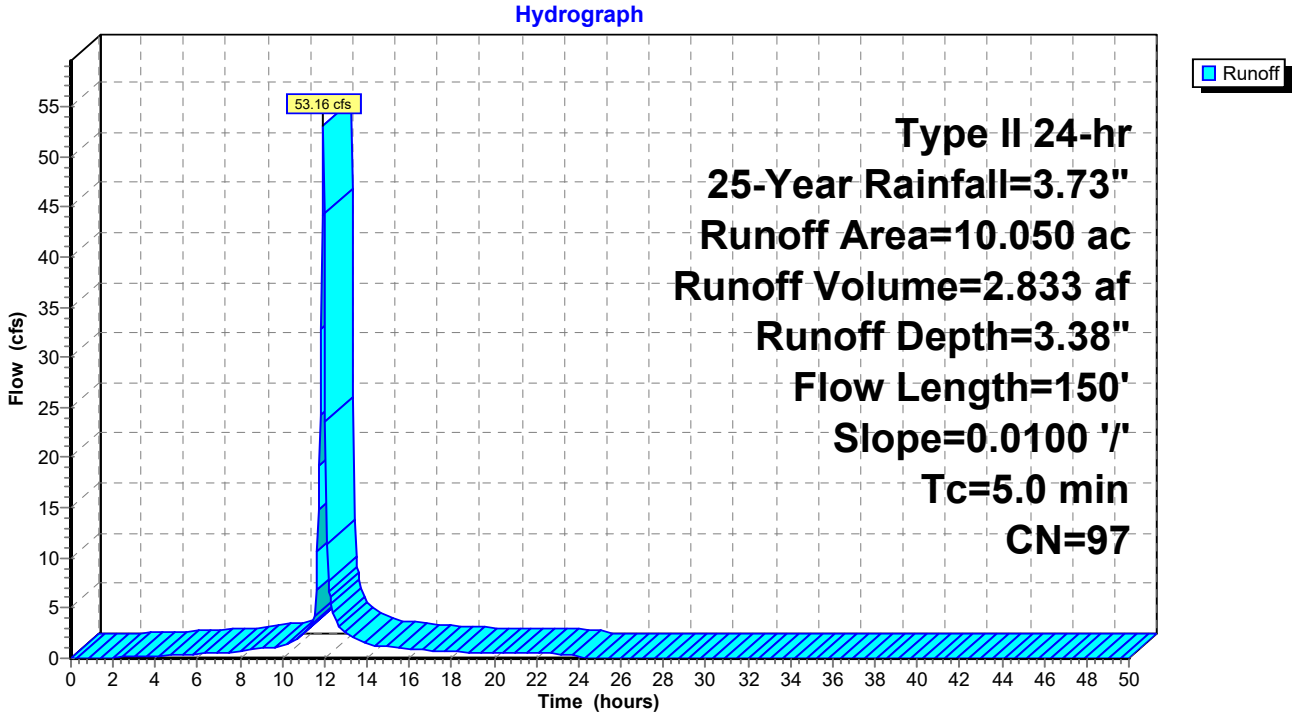
Runoff = 53.16 cfs @ 11.95 hrs, Volume= 2.833 af, Depth= 3.38"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



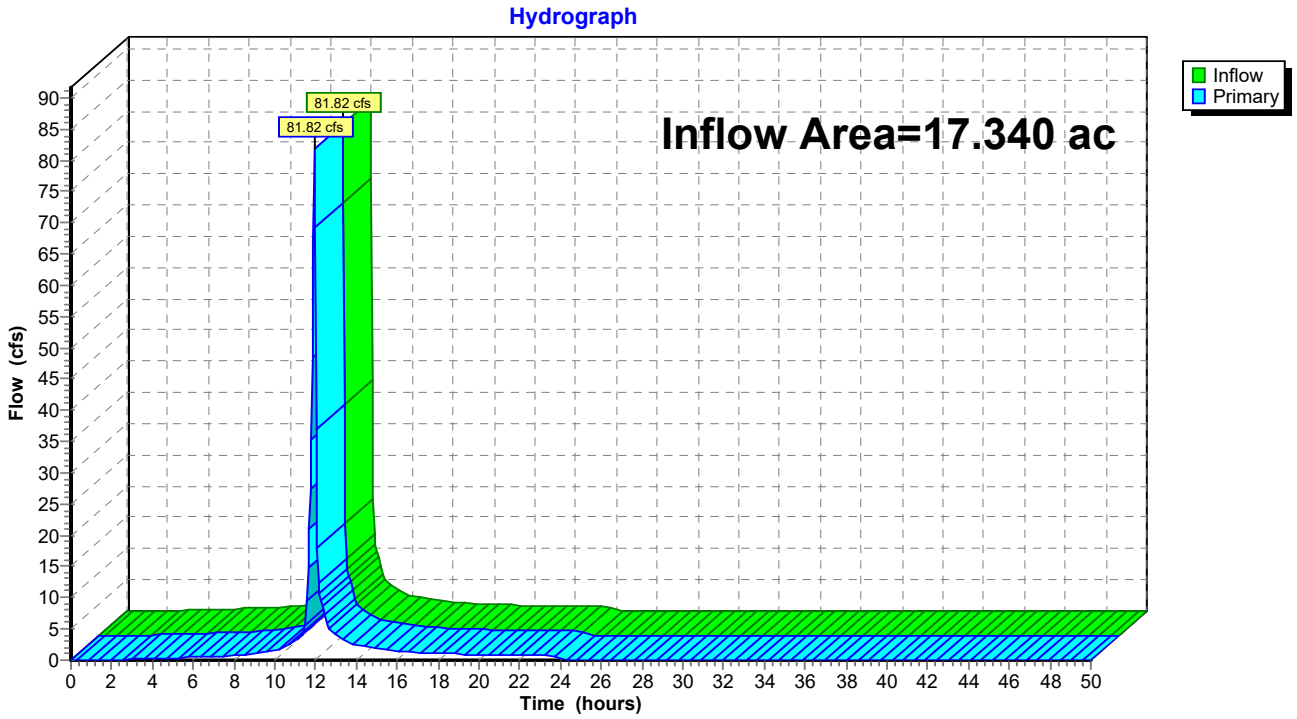
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 2.89" for 25-Year event
Inflow = 81.82 cfs @ 11.95 hrs, Volume= 4.181 af
Primary = 81.82 cfs @ 11.95 hrs, Volume= 4.181 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.05 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=7.290 ac 29.90% Impervious Runoff Depth=3.40"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=85 Runoff=43.11 cfs 2.063 af

Subcatchment2S: Existing Site Runoff Area=10.050 ac 92.94% Impervious Runoff Depth=4.68"
Flow Length=150' Slope=0.0100 '/' Tc=5.0 min CN=97 Runoff=72.28 cfs 3.917 af

Link 1L: Overall Existing Site Inflow=115.36 cfs 5.980 af
Primary=115.36 cfs 5.980 af

Total Runoff Area = 17.340 ac Runoff Volume = 5.980 af Average Runoff Depth = 4.14"
33.56% Pervious = 5.820 ac 66.44% Impervious = 11.520 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Existing Site (Disturbance Area with Median CN)

[49] Hint: Tc<2dt may require smaller dt

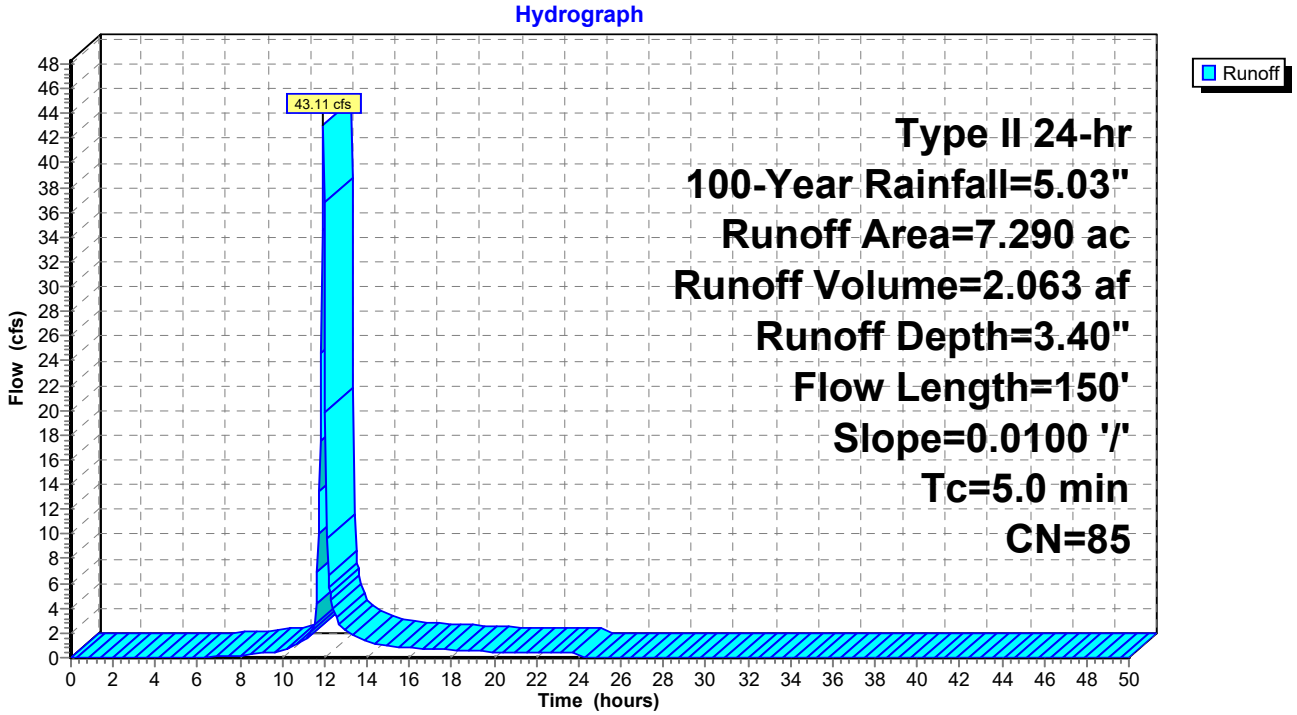
Runoff = 43.11 cfs @ 11.95 hrs, Volume= 2.063 af, Depth= 3.40"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	3.640	78	Meadow, non-grazed, HSG D
	1.470	84	50-75% Grass cover, Fair, HSG D
*	2.180	98	Impervious
	7.290	85	Weighted Average
	5.110		70.10% Pervious Area
	2.180		29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Existing Site (Disturbance Area with Median CN)



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Existing Site (Non-Disturbance Area)

[49] Hint: Tc<2dt may require smaller dt

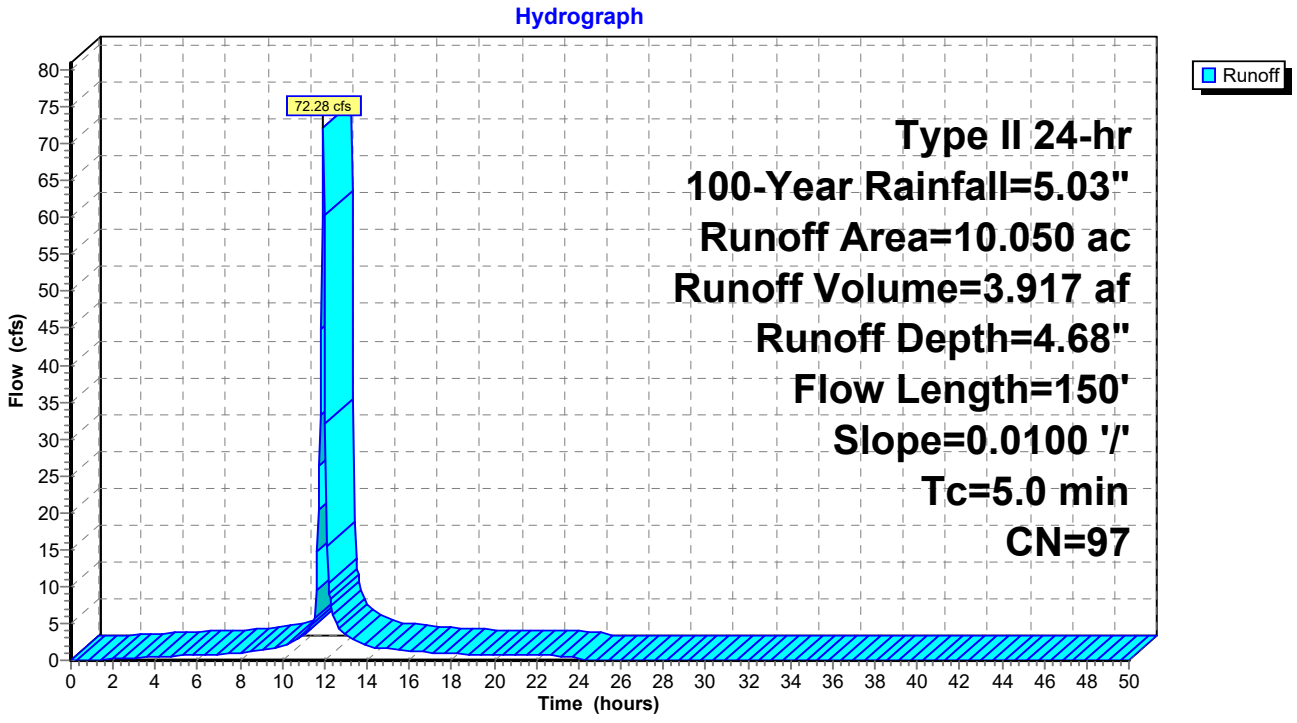
Runoff = 72.28 cfs @ 11.95 hrs, Volume= 3.917 af, Depth= 4.68"
Routed to Link 1L : Overall Existing Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.710	84	50-75% Grass cover, Fair, HSG D
*	9.340	98	Impervious
	10.050	97	Weighted Average
	0.710		7.06% Pervious Area
	9.340		92.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	150	0.0100	1.00		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
2.5	150	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Existing Site (Non-Disturbance Area)



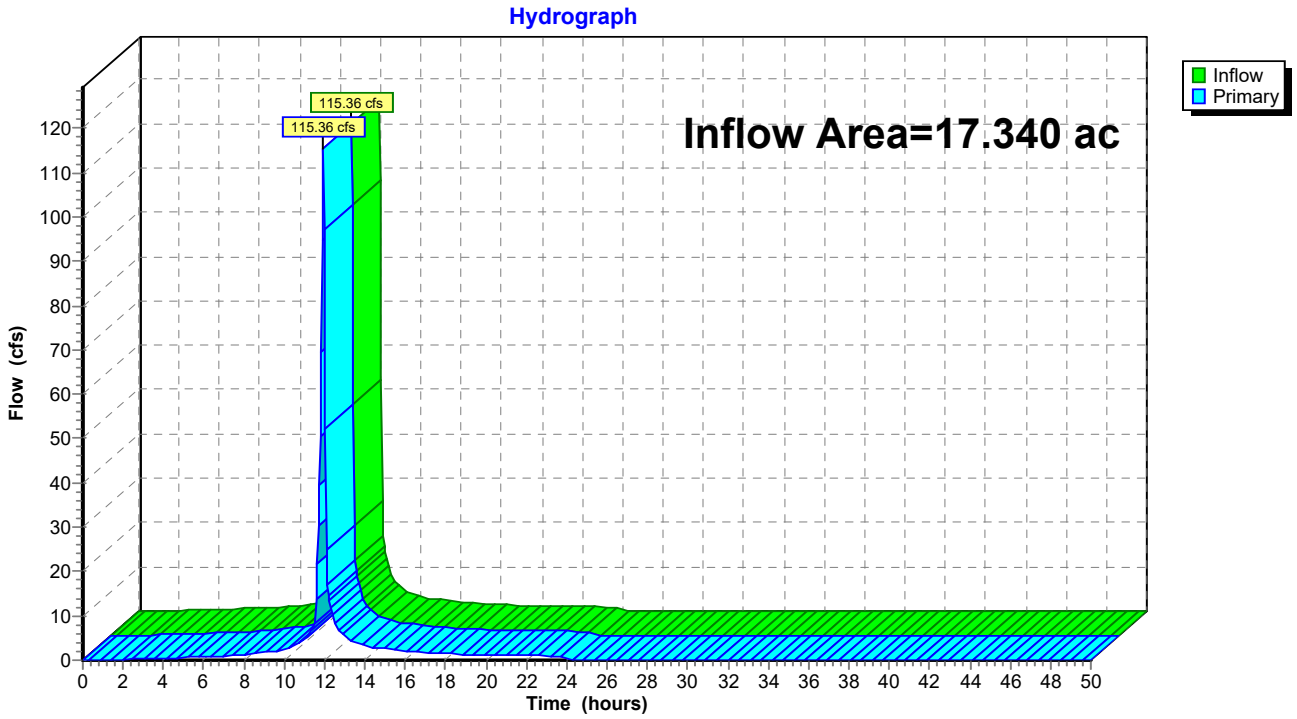
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Overall Existing Site

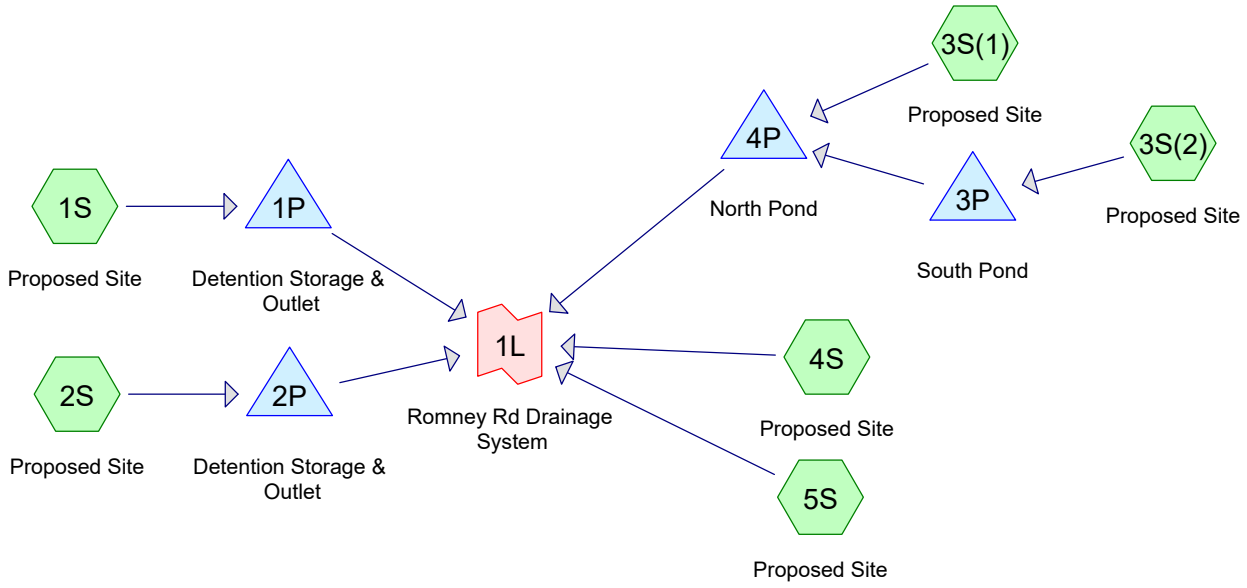
Inflow Area = 17.340 ac, 66.44% Impervious, Inflow Depth = 4.14" for 100-Year event
Inflow = 115.36 cfs @ 11.95 hrs, Volume= 5.980 af
Primary = 115.36 cfs @ 11.95 hrs, Volume= 5.980 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs

Link 1L: Overall Existing Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Subcat Reach Pond Link

Routing Diagram for 23-4099 Proposed
Prepared by Carmina Wood Morris, PC, Printed 2/11/2025
HydroCAD® 10.20-2h s/n 05019 © 2024 HydroCAD Software Solutions LLC

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	1.80	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.07	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.73	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.03	2

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.580	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S(1), 3S(2), 4S, 5S)
14.750	98	Impervious, HSG D (1S, 2S, 3S(1), 3S(2), 4S, 5S)
17.330	**95**	**TOTAL AREA**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
17.330	HSG D	1S, 2S, 3S(1), 3S(2), 4S, 5S
0.000	Other	
17.330		**TOTAL AREA**

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.580	0.000	2.580	>75% Grass cover, Good	1S, 2S, 3S(1), 3S(2), 4S, 5S
0.000	0.000	0.000	14.750	0.000	14.750	Impervious	1S, 2S, 3S(1), 3S(2), 4S, 5S
0.000	**0.000**	**0.000**	**17.330**	**0.000**	**17.330**	**TOTAL AREA**	

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1P	572.25	572.00	25.0	0.0100	0.013	0.0	6.0	0.0
2	2P	572.25	572.00	25.0	0.0100	0.013	0.0	8.0	0.0
3	3P	574.15	574.00	33.0	0.0045	0.013	0.0	30.0	0.0
4	4P	573.50	572.25	95.0	0.0132	0.013	0.0	18.0	0.0

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=1.21"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=2.68 cfs 0.125 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=7.18 cfs 0.346 af

Subcatchment3S(1): Proposed Site Runoff Area=0.560 ac 82.14% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=1.27 cfs 0.060 af

Subcatchment3S(2): Proposed Site Runoff Area=2.710 ac 83.03% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=6.17 cfs 0.292 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=1.29"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=14.21 cfs 0.672 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=1.38"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=8.51 cfs 0.411 af

Pond 1P: Detention Storage & Outlet Peak Elev=572.99' Storage=2,104 cf Inflow=2.68 cfs 0.125 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=0.59 cfs 0.125 af

Pond 2P: Detention Storage & Outlet Peak Elev=573.06' Storage=6,904 cf Inflow=7.18 cfs 0.346 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.13 cfs 0.344 af

Pond 3P: South Pond Peak Elev=575.31' Storage=1,010 cf Inflow=6.17 cfs 0.292 af
30.0" Round Culvert n=0.013 L=33.0' S=0.0045 '/' Outflow=5.81 cfs 0.290 af

Pond 4P: North Pond Peak Elev=574.71' Storage=2,116 cf Inflow=7.02 cfs 0.350 af
18.0" Round Culvert n=0.013 L=95.0' S=0.0132 '/' Outflow=5.74 cfs 0.350 af

Link 1L: Romney Rd Drainage System Inflow=28.94 cfs 1.902 af
Primary=28.94 cfs 1.902 af

Total Runoff Area = 17.330 ac Runoff Volume = 1.907 af Average Runoff Depth = 1.32"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

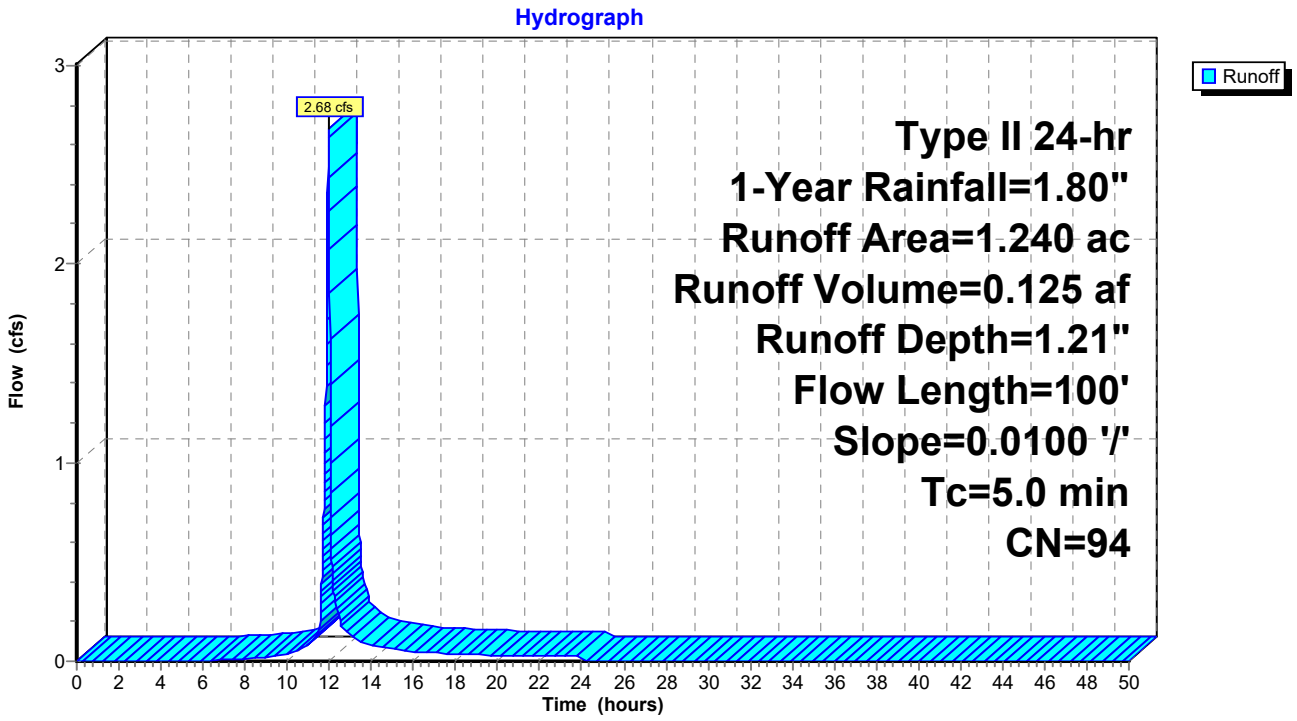
Runoff = 2.68 cfs @ 11.96 hrs, Volume= 0.125 af, Depth= 1.21"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

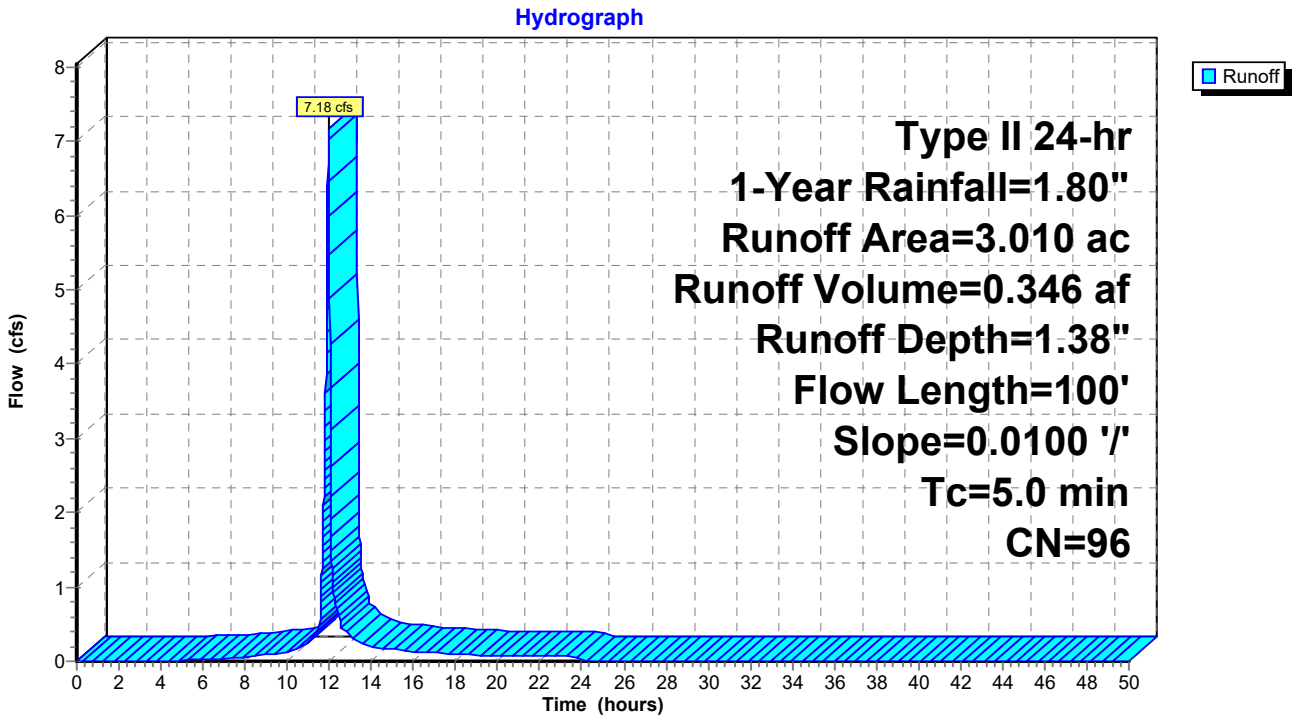
Runoff = 7.18 cfs @ 11.96 hrs, Volume= 0.346 af, Depth= 1.38"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(1): Proposed Site

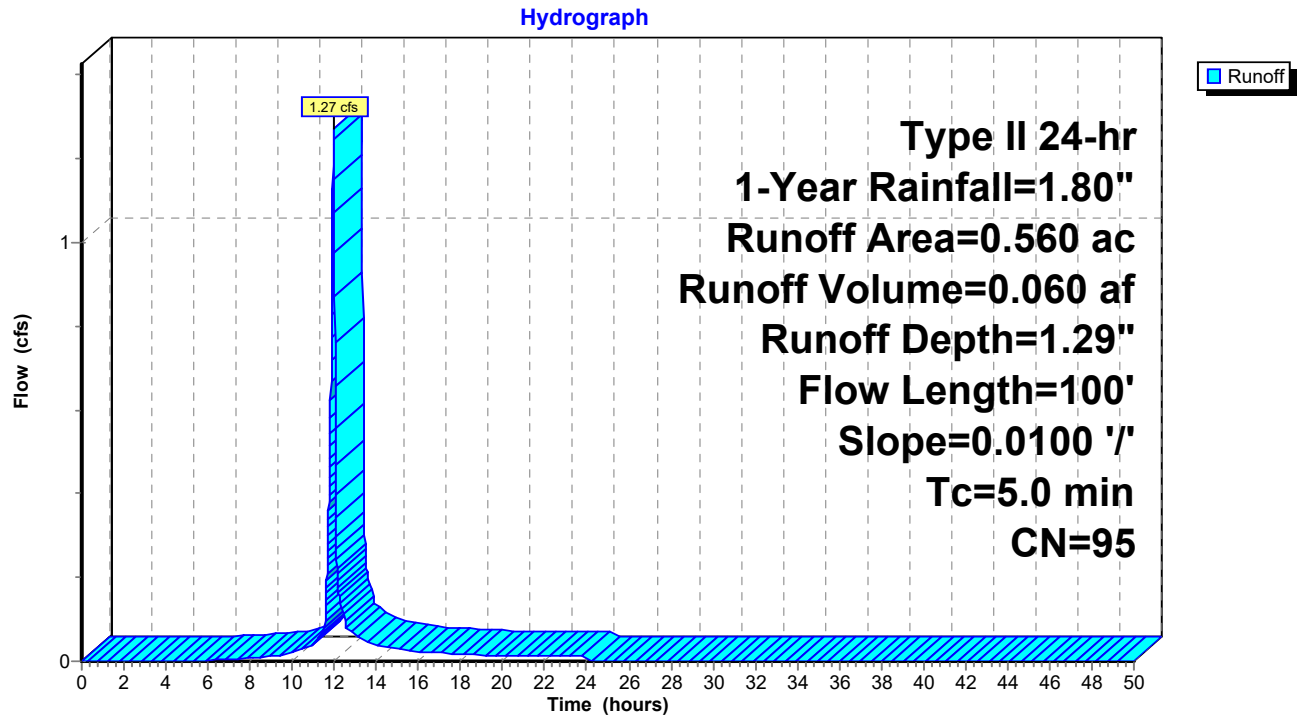
Runoff = 1.27 cfs @ 11.96 hrs, Volume= 0.060 af, Depth= 1.29"
Routed to Pond 4P : North Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.560	95	Weighted Average
	0.100		17.86% Pervious Area
	0.460		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(1): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(2): Proposed Site

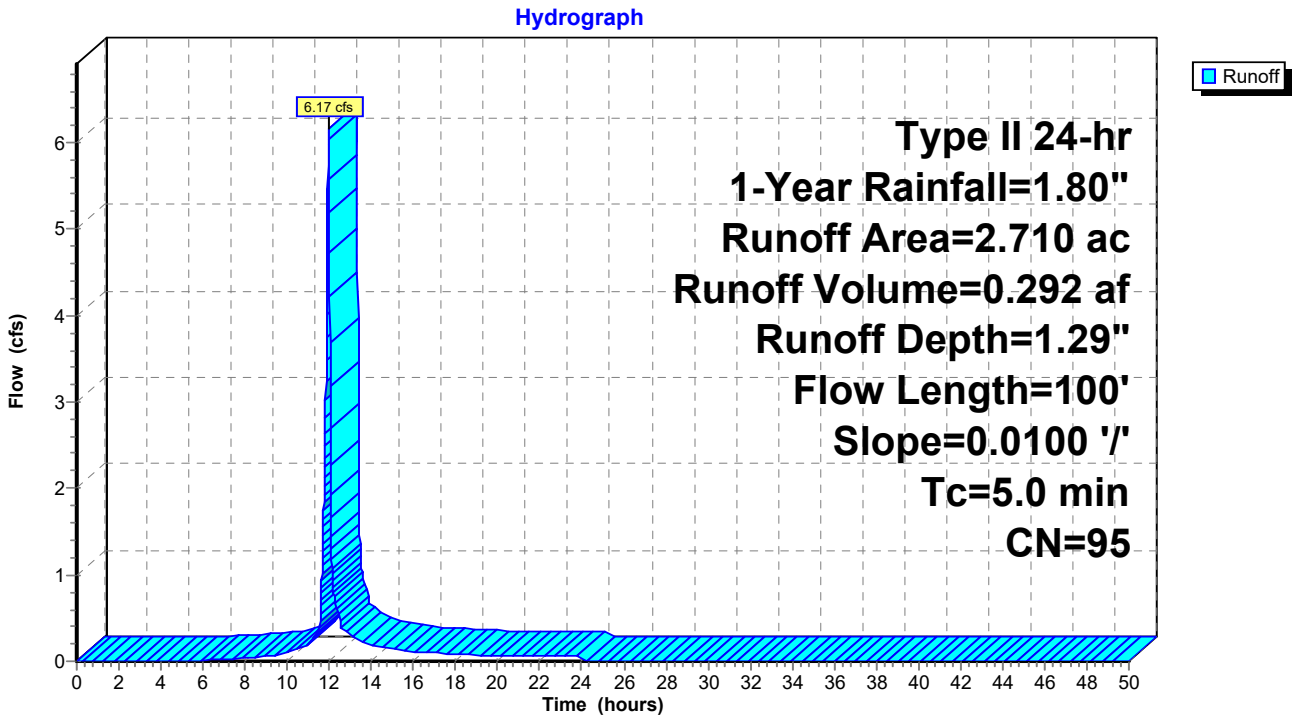
Runoff = 6.17 cfs @ 11.96 hrs, Volume= 0.292 af, Depth= 1.29"
Routed to Pond 3P : South Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.460	80	>75% Grass cover, Good, HSG D
*	2.250	98	Impervious, HSG D
	2.710	95	Weighted Average
	0.460		16.97% Pervious Area
	2.250		83.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(2): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

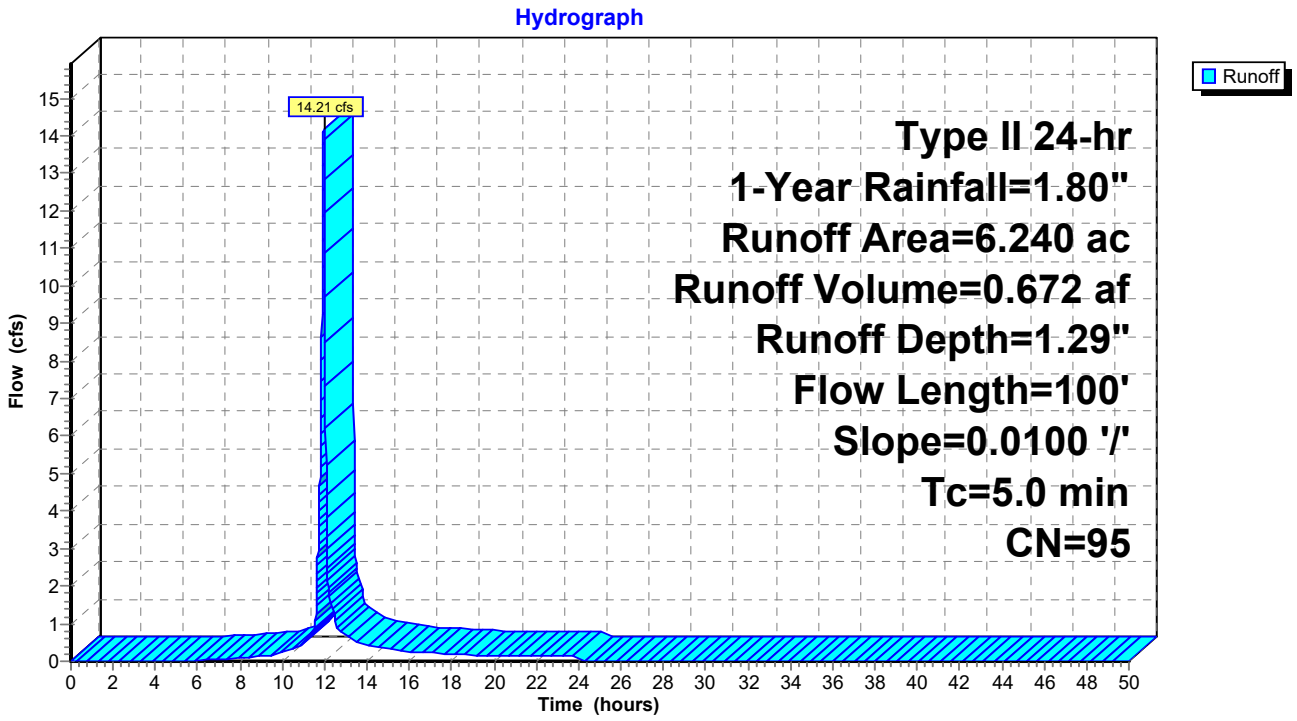
Runoff = 14.21 cfs @ 11.96 hrs, Volume= 0.672 af, Depth= 1.29"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

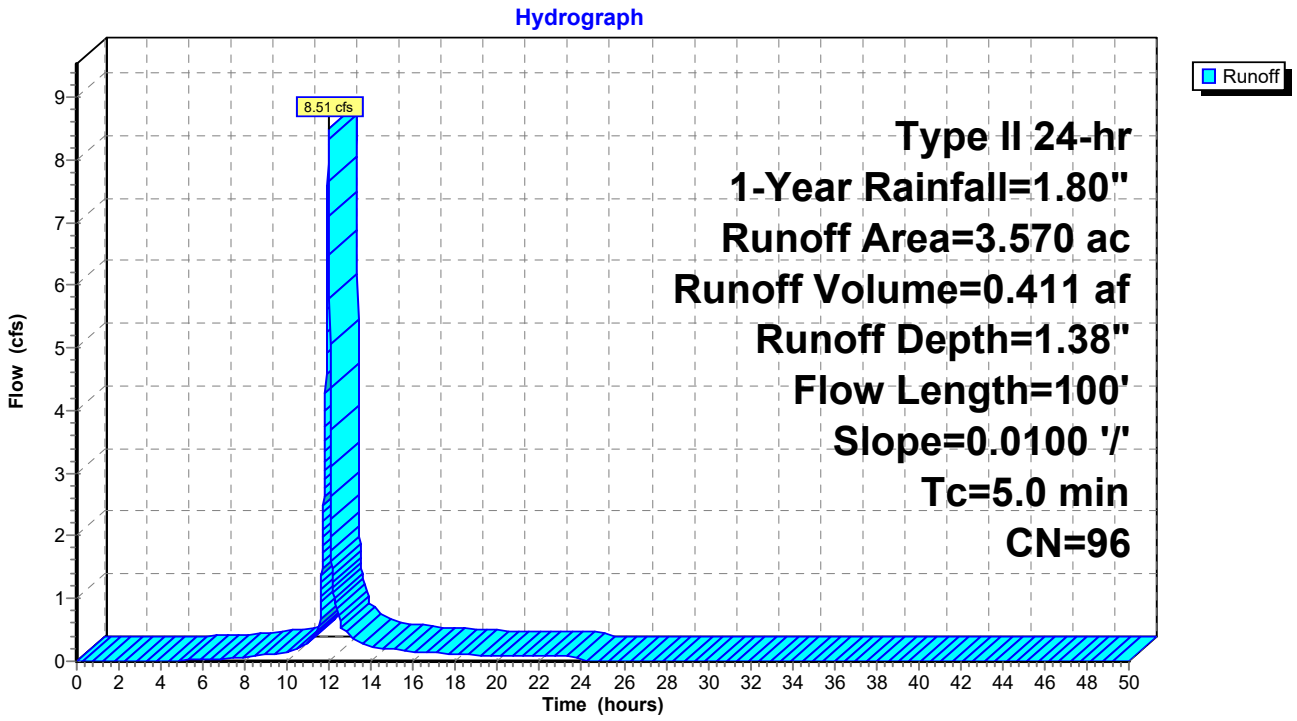
Runoff = 8.51 cfs @ 11.96 hrs, Volume= 0.411 af, Depth= 1.38"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.80"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 1.21" for 1-Year event
Inflow = 2.68 cfs @ 11.96 hrs, Volume= 0.125 af
Outflow = 0.59 cfs @ 12.10 hrs, Volume= 0.125 af, Atten= 78%, Lag= 8.2 min
Primary = 0.59 cfs @ 12.10 hrs, Volume= 0.125 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 572.99' @ 12.10 hrs Surf.Area= 5,289 sf Storage= 2,104 cf

Plug-Flow detention time= 76.0 min calculated for 0.125 af (100% of inflow)
Center-of-Mass det. time= 73.7 min (877.4 - 803.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.59 cfs @ 12.10 hrs HW=572.99' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 0.59 cfs @ 3.02 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

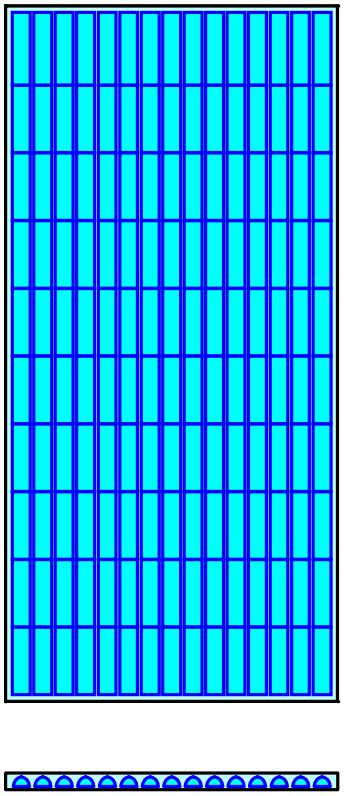
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

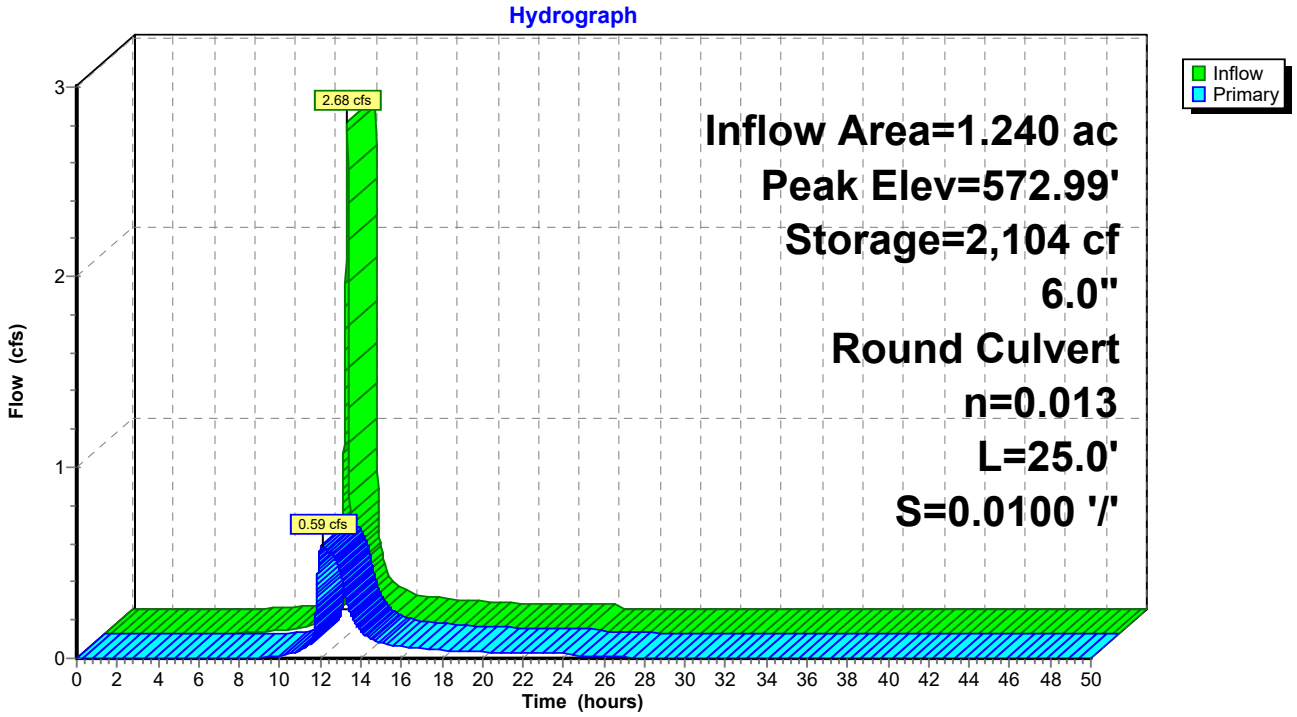
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 1.38" for 1-Year event
Inflow = 7.18 cfs @ 11.96 hrs, Volume= 0.346 af
Outflow = 1.13 cfs @ 12.14 hrs, Volume= 0.344 af, Atten= 84%, Lag= 10.6 min
Primary = 1.13 cfs @ 12.14 hrs, Volume= 0.344 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.06' @ 12.14 hrs Surf.Area= 15,085 sf Storage= 6,904 cf

Plug-Flow detention time= 130.1 min calculated for 0.344 af (99% of inflow)
Center-of-Mass det. time= 125.3 min (913.3 - 788.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.13 cfs @ 12.14 hrs HW=573.06' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 1.13 cfs @ 3.36 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

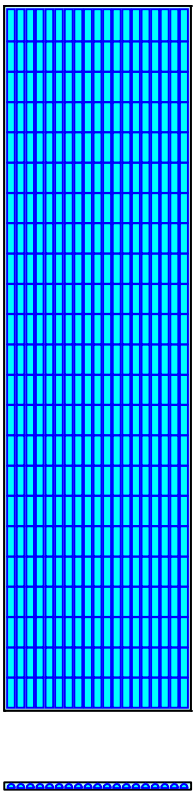
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

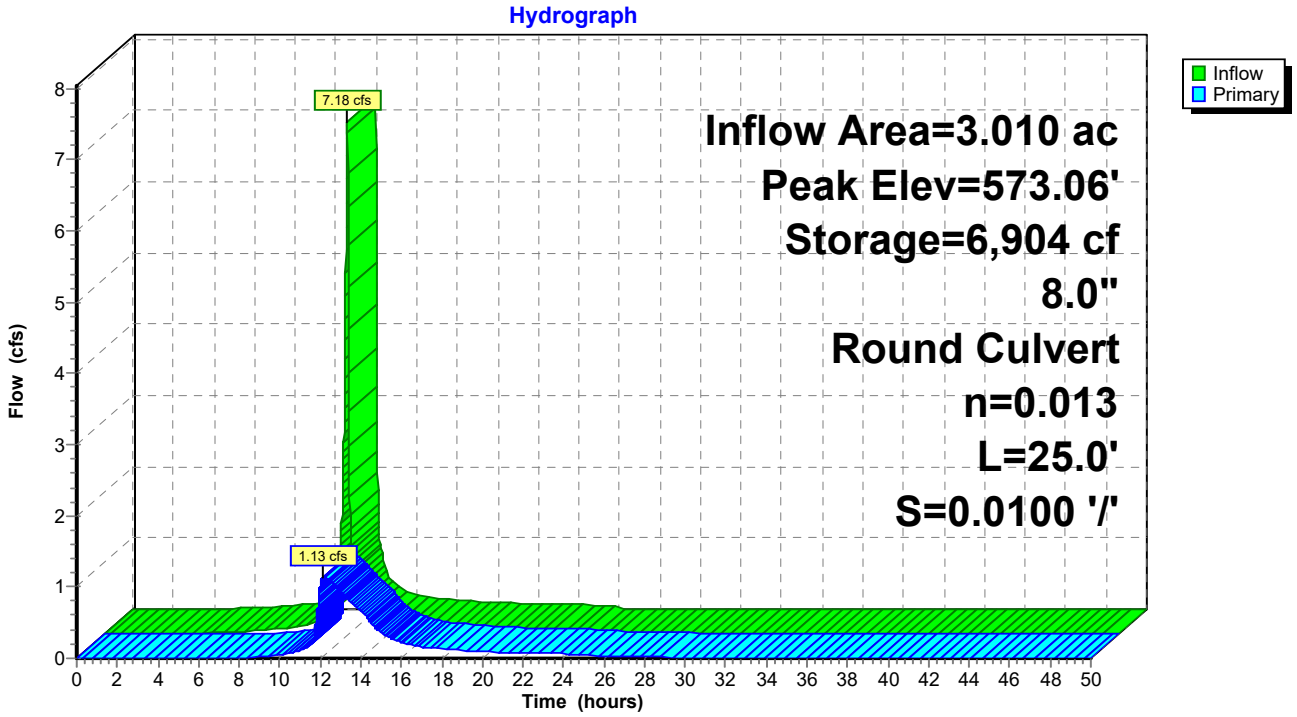
Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 3P: South Pond

Inflow Area = 2.710 ac, 83.03% Impervious, Inflow Depth = 1.29" for 1-Year event
Inflow = 6.17 cfs @ 11.96 hrs, Volume= 0.292 af
Outflow = 5.81 cfs @ 11.98 hrs, Volume= 0.290 af, Atten= 6%, Lag= 1.5 min
Primary = 5.81 cfs @ 11.98 hrs, Volume= 0.290 af
Routed to Pond 4P : North Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 575.31' @ 11.98 hrs Surf.Area= 1,005 sf Storage= 1,010 cf

Plug-Flow detention time= 16.2 min calculated for 0.290 af (99% of inflow)
Center-of-Mass det. time= 11.9 min (808.3 - 796.4)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	5,327 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

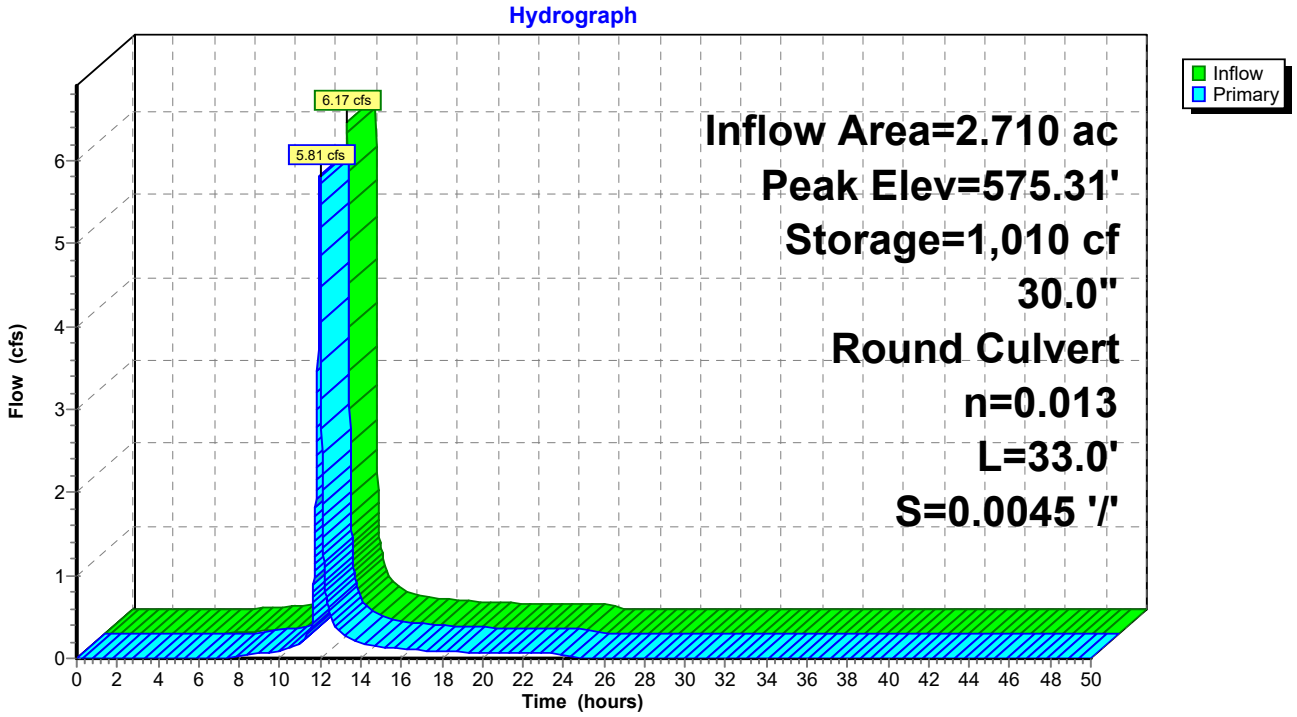
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	556	0	0
575.00	881	719	719
576.00	1,281	1,081	1,800
577.00	1,749	1,515	3,315
578.00	2,275	2,012	5,327

Device	Routing	Invert	Outlet Devices
#1	Primary	574.15'	**30.0" Round Outlet Pipe** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.15' / 574.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=5.80 cfs @ 11.98 hrs HW=575.31' TW=574.64' (Dynamic Tailwater)
↳**1=Outlet Pipe** (Barrel Controls 5.80 cfs @ 3.83 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 3P: South Pond



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 4P: North Pond

Inflow Area = 3.270 ac, 82.87% Impervious, Inflow Depth = 1.29" for 1-Year event
Inflow = 7.02 cfs @ 11.98 hrs, Volume= 0.350 af
Outflow = 5.74 cfs @ 12.03 hrs, Volume= 0.350 af, Atten= 18%, Lag= 3.0 min
Primary = 5.74 cfs @ 12.03 hrs, Volume= 0.350 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 574.71' @ 12.03 hrs Surf.Area= 2,148 sf Storage= 2,116 cf

Plug-Flow detention time= 17.8 min calculated for 0.350 af (100% of inflow)
Center-of-Mass det. time= 17.6 min (823.8 - 806.2)

Volume	Invert	Avail.Storage	Storage Description
#1	573.50'	13,861 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

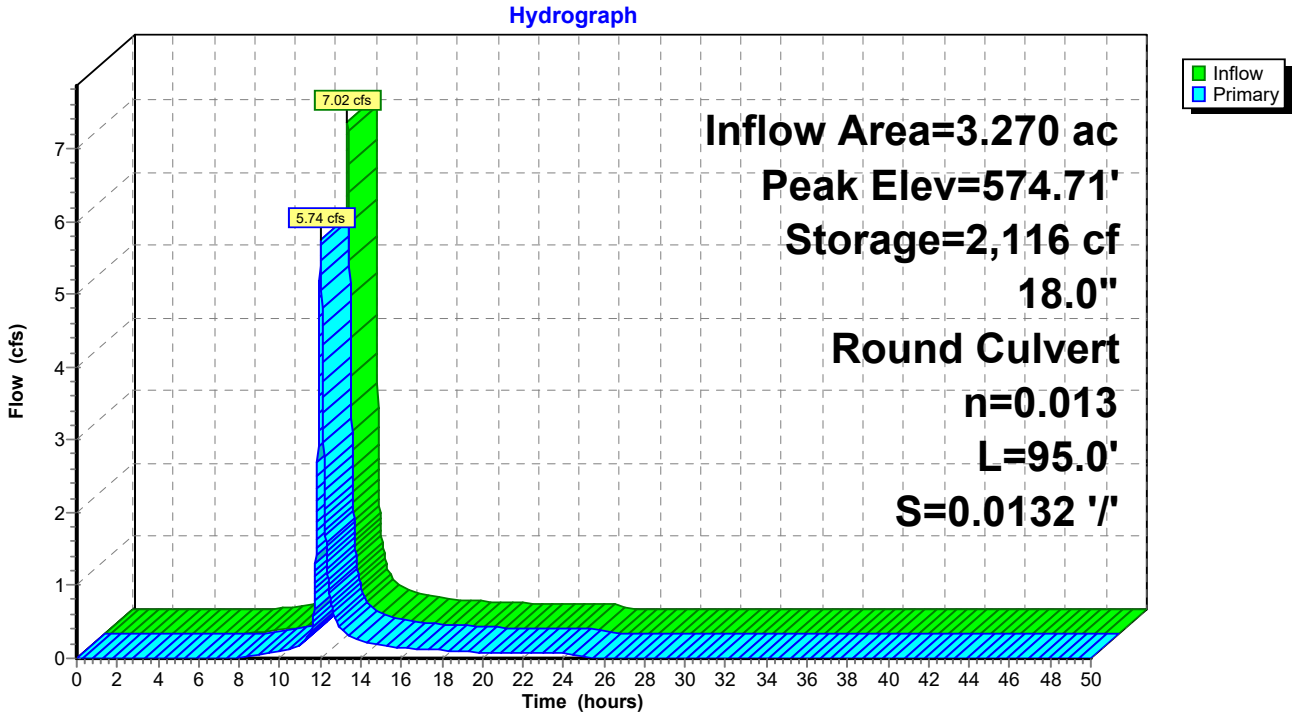
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.50	1,340	0	0
574.00	1,675	754	754
575.00	2,339	2,007	2,761
576.00	3,184	2,762	5,522
577.00	4,147	3,666	9,188
578.00	5,199	4,673	13,861

Device	Routing	Invert	Outlet Devices
#1	Primary	573.50'	**18.0" Round Outlet Pipe** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 573.50' / 572.25' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.73 cfs @ 12.03 hrs HW=574.71' TW=0.00' (Dynamic Tailwater)
↳**1=Outlet Pipe** (Inlet Controls 5.73 cfs @ 3.75 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 4P: North Pond



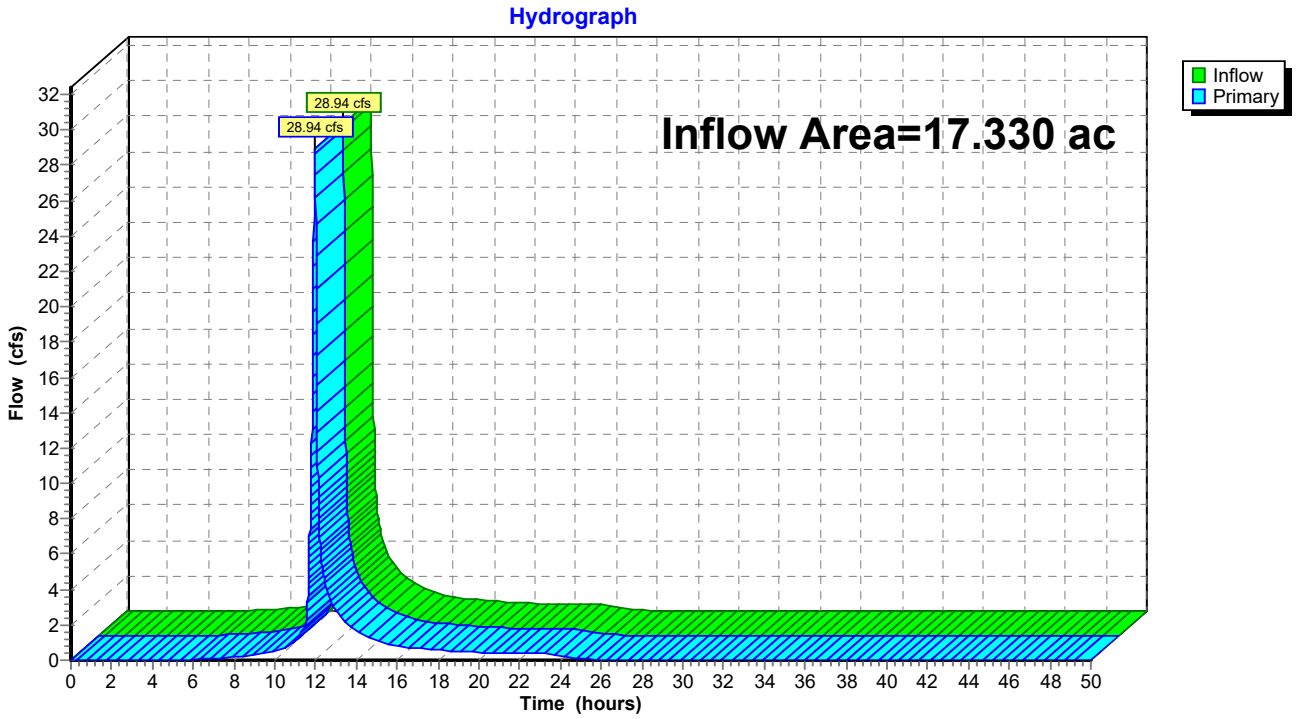
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 1.32" for 1-Year event
Inflow = 28.94 cfs @ 11.96 hrs, Volume= 1.902 af
Primary = 28.94 cfs @ 11.96 hrs, Volume= 1.902 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=2.42"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=5.13 cfs 0.250 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=13.04 cfs 0.657 af

Subcatchment3S(1): Proposed Site Runoff Area=0.560 ac 82.14% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.37 cfs 0.117 af

Subcatchment3S(2): Proposed Site Runoff Area=2.710 ac 83.03% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=11.49 cfs 0.569 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=2.52"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=26.46 cfs 1.309 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=2.62"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=15.47 cfs 0.780 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.52' Storage=4,303 cf Inflow=5.13 cfs 0.250 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=0.85 cfs 0.249 af

Pond 2P: Detention Storage & Outlet Peak Elev=573.57' Storage=12,975 cf Inflow=13.04 cfs 0.657 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.58 cfs 0.655 af

Pond 3P: South Pond Peak Elev=575.81' Storage=1,561 cf Inflow=11.49 cfs 0.569 af
30.0" Round Culvert n=0.013 L=33.0' S=0.0045 '/' Outflow=10.88 cfs 0.567 af

Pond 4P: North Pond Peak Elev=575.45' Storage=3,907 cf Inflow=13.15 cfs 0.684 af
18.0" Round Culvert n=0.013 L=95.0' S=0.0132 '/' Outflow=9.33 cfs 0.684 af

Link 1L: Romney Rd Drainage System Inflow=52.15 cfs 3.677 af
Primary=52.15 cfs 3.677 af

Total Runoff Area = 17.330 ac Runoff Volume = 3.682 af Average Runoff Depth = 2.55"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

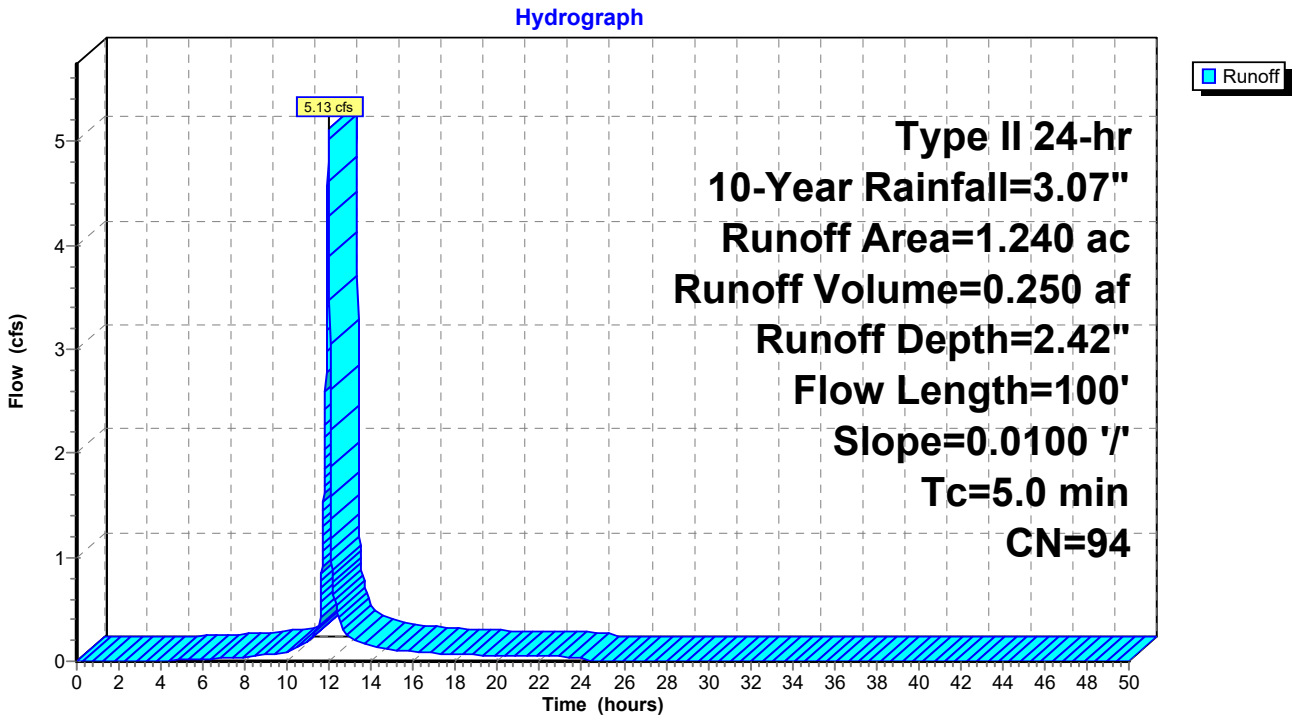
Runoff = 5.13 cfs @ 11.96 hrs, Volume= 0.250 af, Depth= 2.42"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

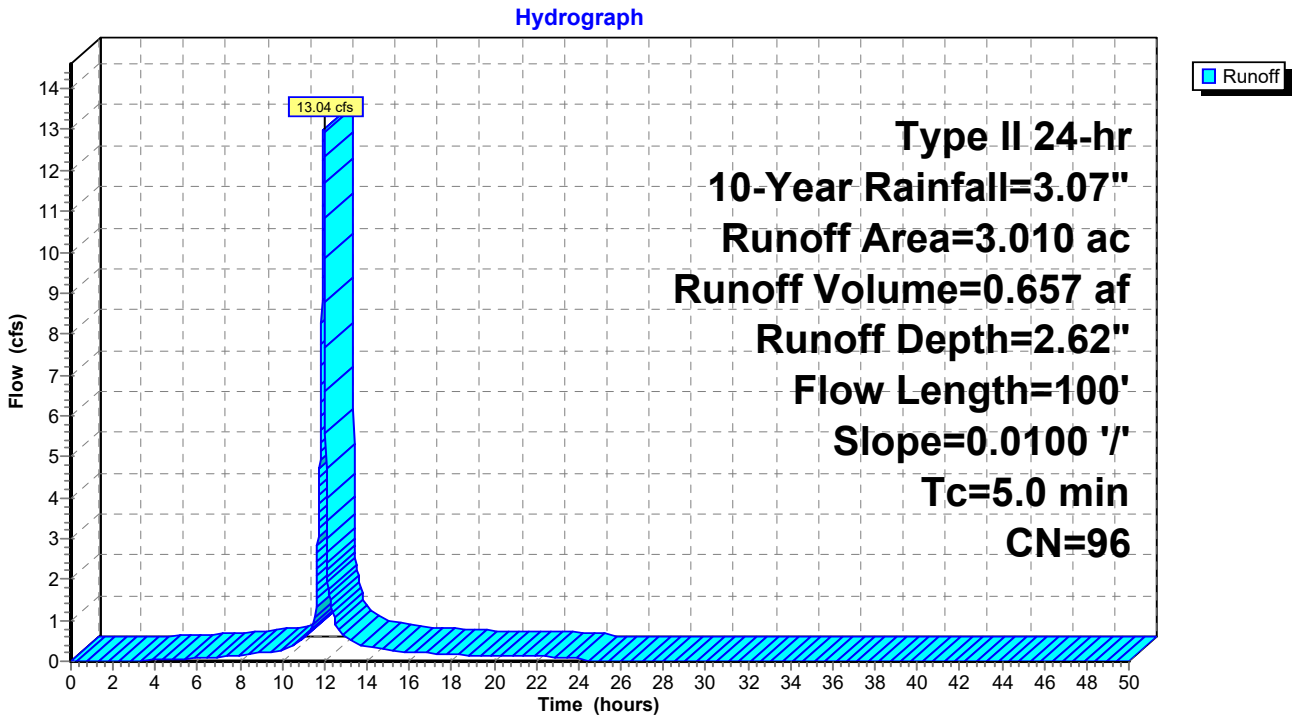
Runoff = 13.04 cfs @ 11.96 hrs, Volume= 0.657 af, Depth= 2.62"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(1): Proposed Site

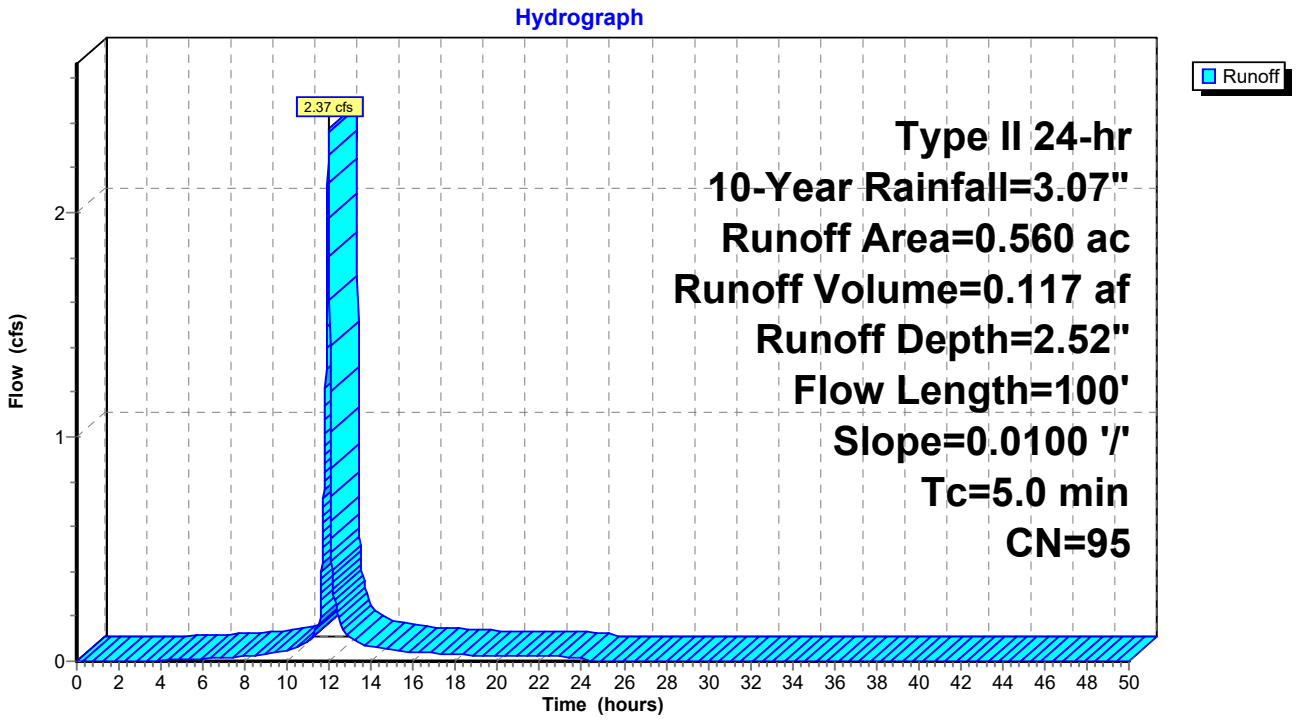
Runoff = 2.37 cfs @ 11.96 hrs, Volume= 0.117 af, Depth= 2.52"
Routed to Pond 4P : North Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.560	95	Weighted Average
	0.100		17.86% Pervious Area
	0.460		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(1): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(2): Proposed Site

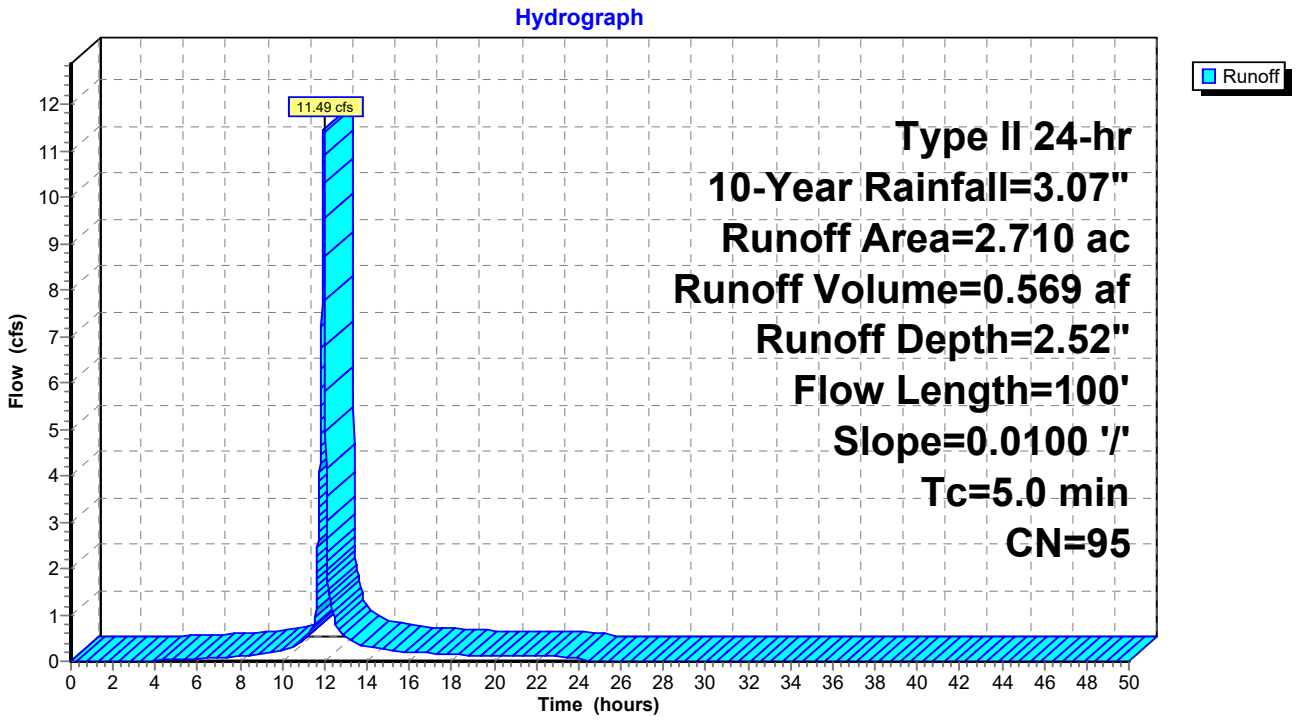
Runoff = 11.49 cfs @ 11.96 hrs, Volume= 0.569 af, Depth= 2.52"
Routed to Pond 3P : South Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.460	80	>75% Grass cover, Good, HSG D
*	2.250	98	Impervious, HSG D
	2.710	95	Weighted Average
	0.460		16.97% Pervious Area
	2.250		83.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(2): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

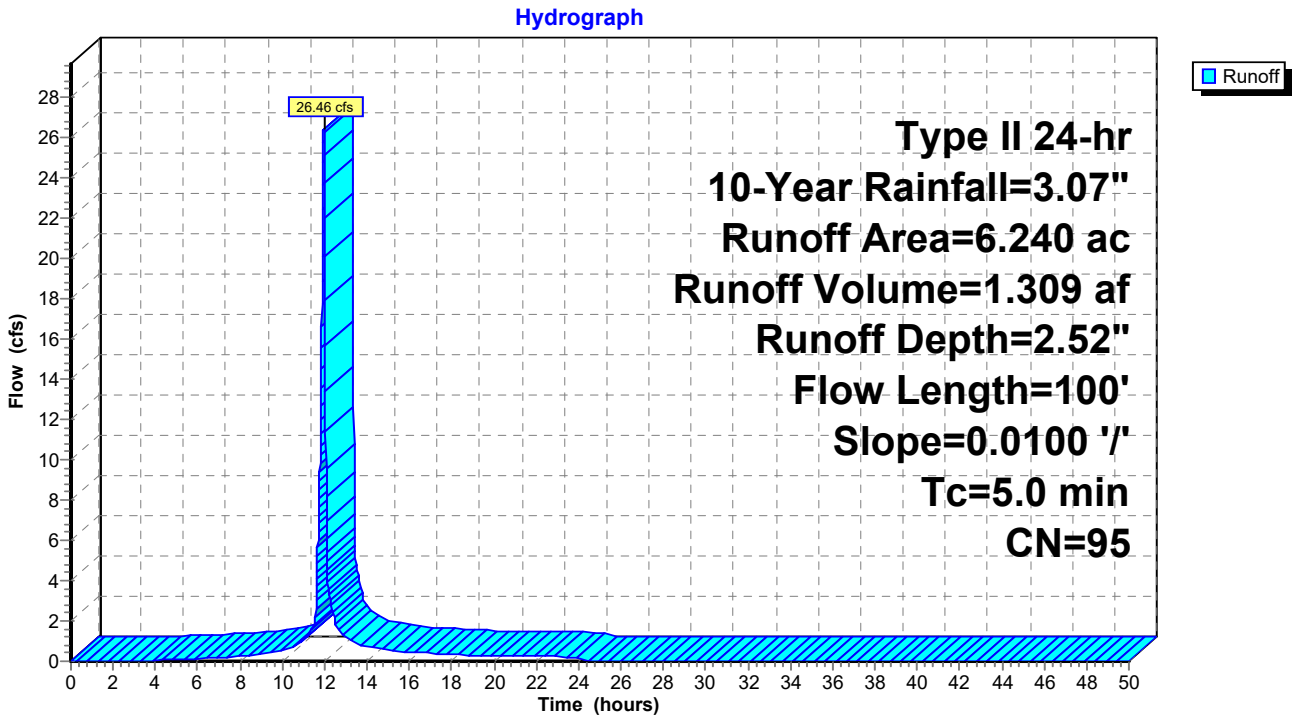
Runoff = 26.46 cfs @ 11.96 hrs, Volume= 1.309 af, Depth= 2.52"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

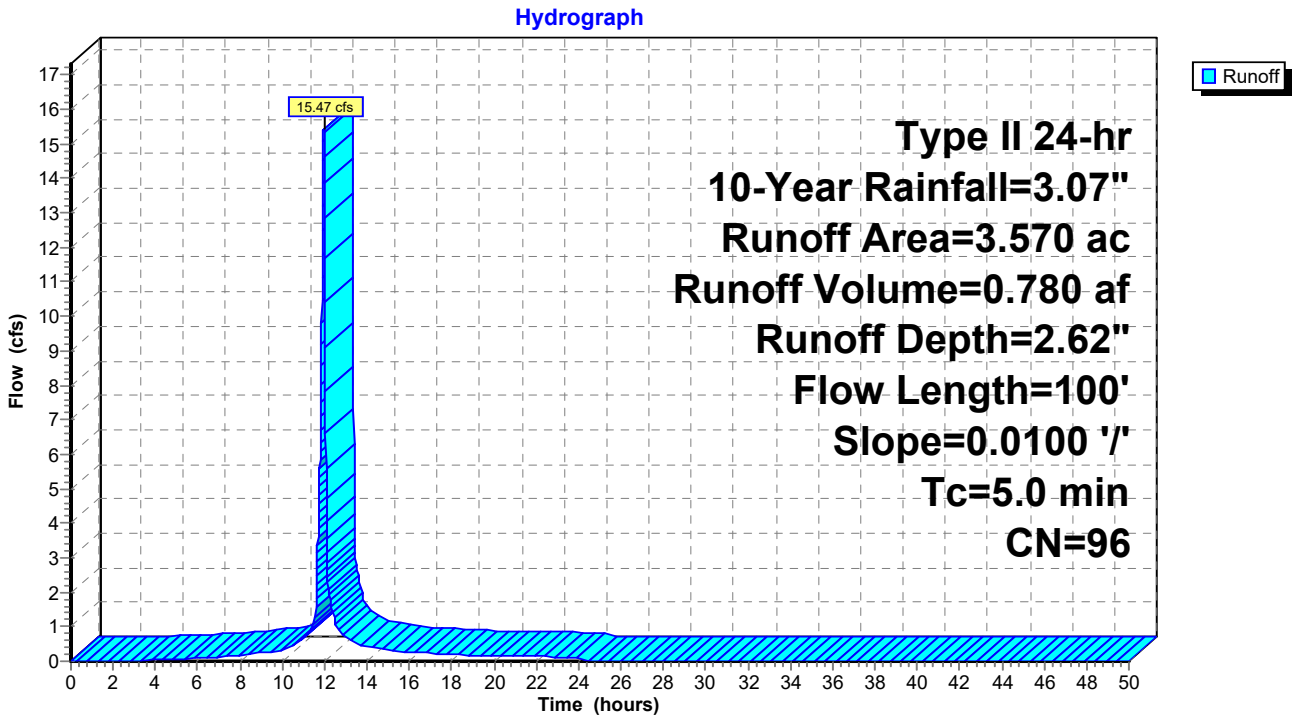
Runoff = 15.47 cfs @ 11.96 hrs, Volume= 0.780 af, Depth= 2.62"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.07"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 2.42" for 10-Year event
Inflow = 5.13 cfs @ 11.96 hrs, Volume= 0.250 af
Outflow = 0.85 cfs @ 12.13 hrs, Volume= 0.249 af, Atten= 83%, Lag= 10.1 min
Primary = 0.85 cfs @ 12.13 hrs, Volume= 0.249 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.52' @ 12.13 hrs Surf.Area= 5,289 sf Storage= 4,303 cf

Plug-Flow detention time= 73.5 min calculated for 0.249 af (100% of inflow)
Center-of-Mass det. time= 72.6 min (856.9 - 784.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.85 cfs @ 12.13 hrs HW=573.52' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 0.85 cfs @ 4.34 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

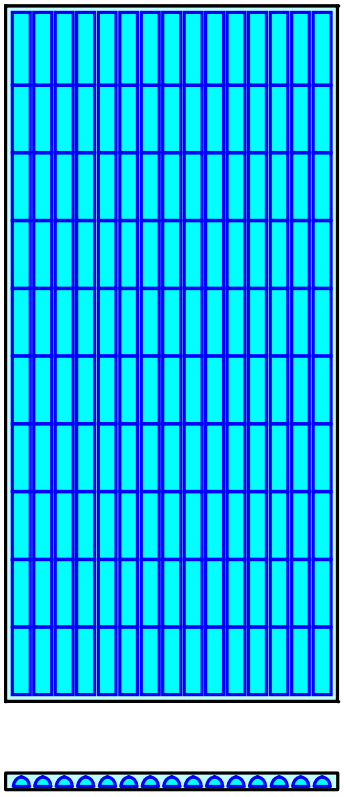
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

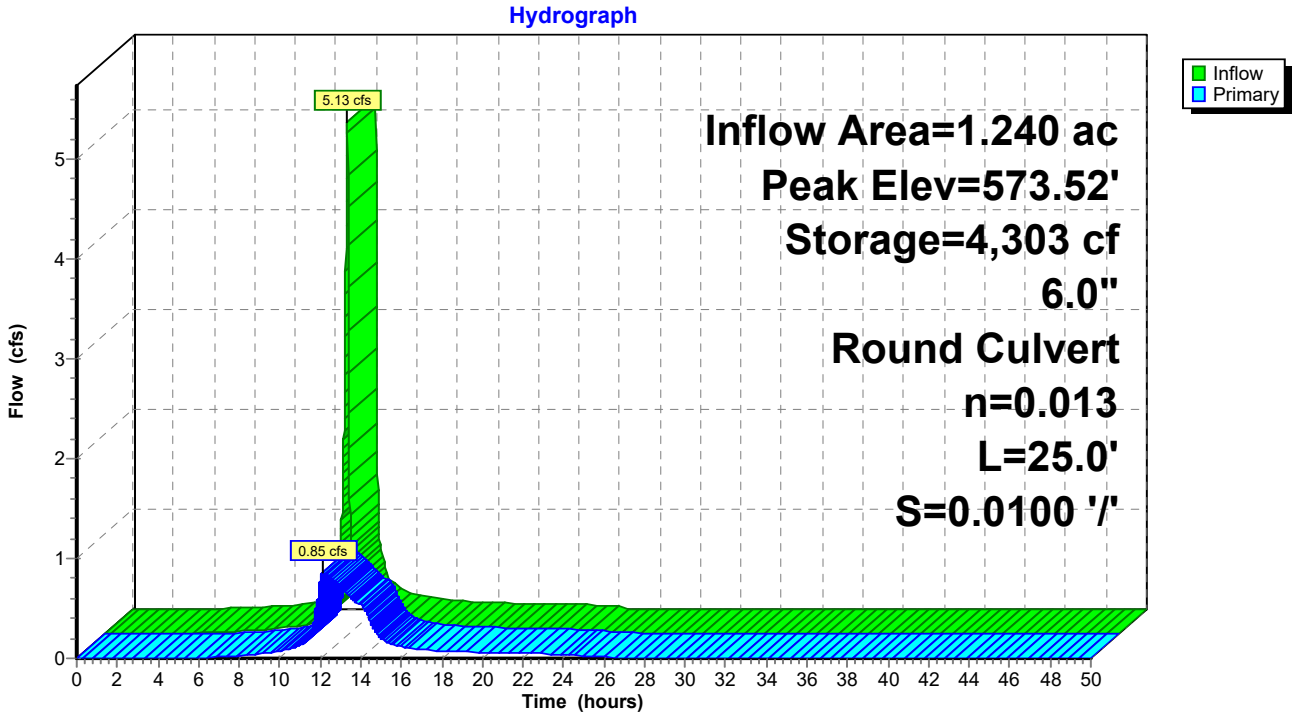
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 2.62" for 10-Year event
Inflow = 13.04 cfs @ 11.96 hrs, Volume= 0.657 af
Outflow = 1.58 cfs @ 12.21 hrs, Volume= 0.655 af, Atten= 88%, Lag= 14.9 min
Primary = 1.58 cfs @ 12.21 hrs, Volume= 0.655 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.57' @ 12.21 hrs Surf.Area= 15,085 sf Storage= 12,975 cf

Plug-Flow detention time= 126.4 min calculated for 0.654 af (100% of inflow)
Center-of-Mass det. time= 123.8 min (894.6 - 770.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.58 cfs @ 12.21 hrs HW=573.57' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 1.58 cfs @ 4.53 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

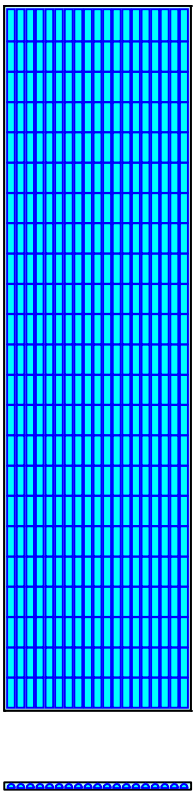
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

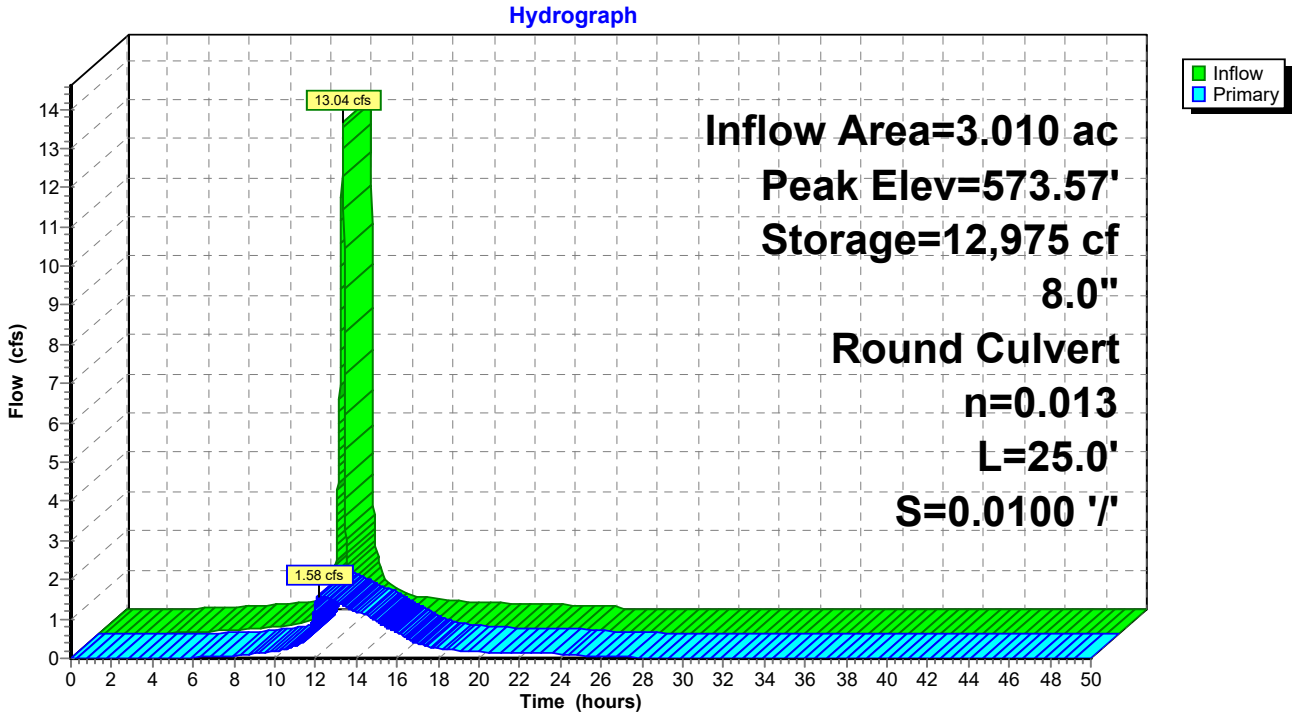
Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 3P: South Pond

Inflow Area = 2.710 ac, 83.03% Impervious, Inflow Depth = 2.52" for 10-Year event
Inflow = 11.49 cfs @ 11.96 hrs, Volume= 0.569 af
Outflow = 10.88 cfs @ 11.98 hrs, Volume= 0.567 af, Atten= 5%, Lag= 1.1 min
Primary = 10.88 cfs @ 11.98 hrs, Volume= 0.567 af
Routed to Pond 4P : North Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 575.81' @ 11.99 hrs Surf.Area= 1,204 sf Storage= 1,561 cf

Plug-Flow detention time= 11.2 min calculated for 0.566 af (100% of inflow)
Center-of-Mass det. time= 8.9 min (786.9 - 778.0)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	5,327 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

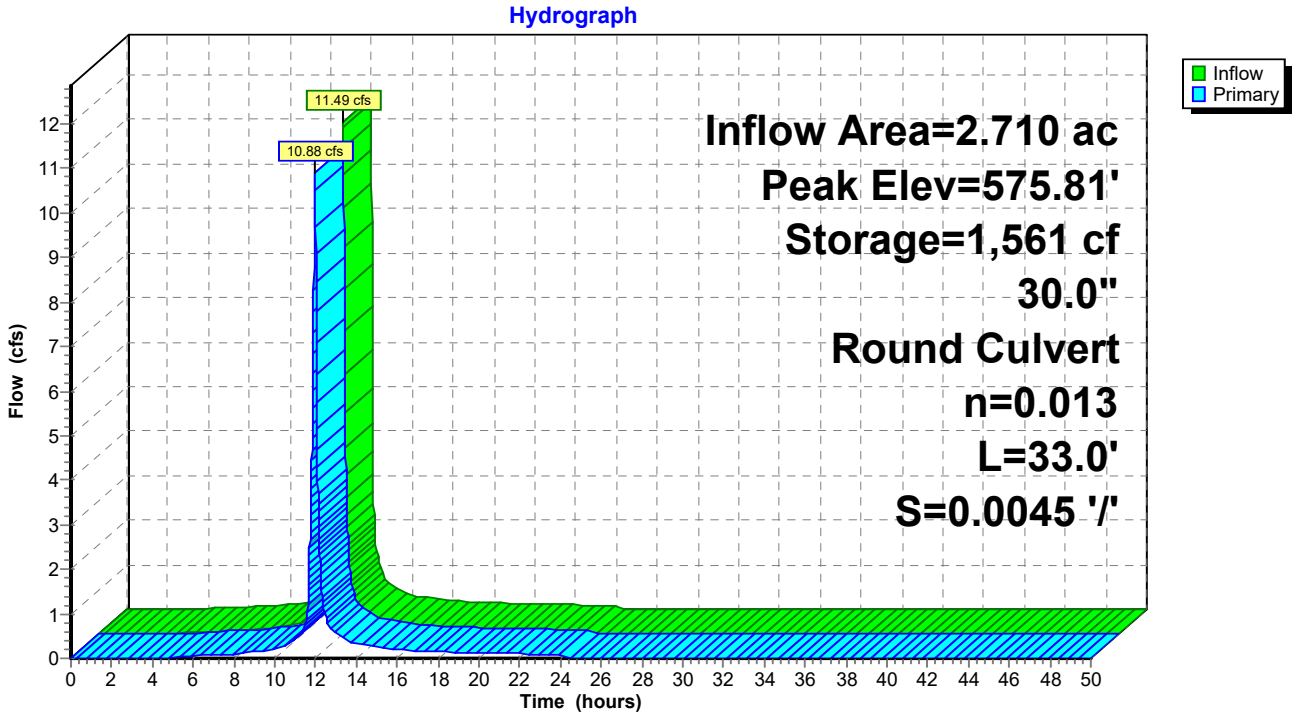
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	556	0	0
575.00	881	719	719
576.00	1,281	1,081	1,800
577.00	1,749	1,515	3,315
578.00	2,275	2,012	5,327

Device	Routing	Invert	Outlet Devices
#1	Primary	574.15'	**30.0" Round Outlet Pipe** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.15' / 574.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=10.42 cfs @ 11.98 hrs HW=575.80' TW=575.28' (Dynamic Tailwater)
↳**1=Outlet Pipe** (Outlet Controls 10.42 cfs @ 4.30 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 3P: South Pond



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 4P: North Pond

Inflow Area = 3.270 ac, 82.87% Impervious, Inflow Depth = 2.51" for 10-Year event
Inflow = 13.15 cfs @ 11.97 hrs, Volume= 0.684 af
Outflow = 9.33 cfs @ 12.03 hrs, Volume= 0.684 af, Atten= 29%, Lag= 3.4 min
Primary = 9.33 cfs @ 12.03 hrs, Volume= 0.684 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 575.45' @ 12.03 hrs Surf.Area= 2,722 sf Storage= 3,907 cf

Plug-Flow detention time= 14.2 min calculated for 0.684 af (100% of inflow)
Center-of-Mass det. time= 14.0 min (799.4 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	573.50'	13,861 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

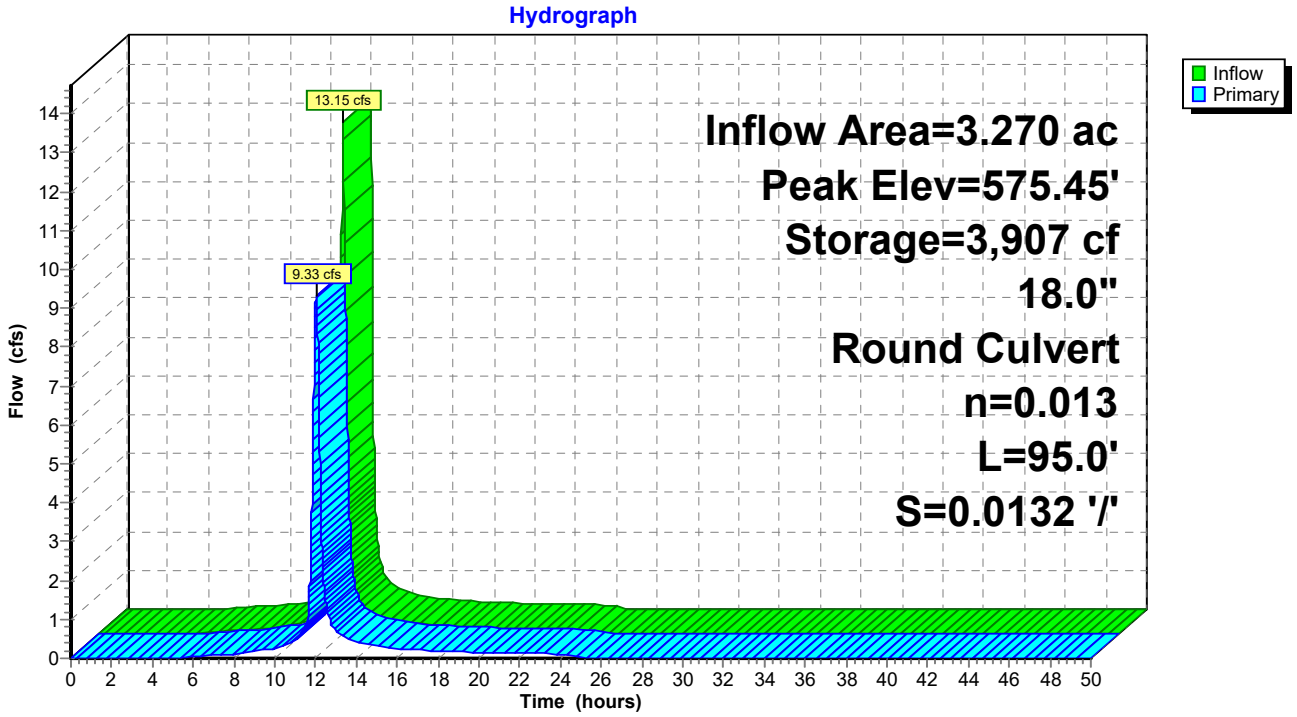
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.50	1,340	0	0
574.00	1,675	754	754
575.00	2,339	2,007	2,761
576.00	3,184	2,762	5,522
577.00	4,147	3,666	9,188
578.00	5,199	4,673	13,861

Device	Routing	Invert	Outlet Devices
#1	Primary	573.50'	**18.0" Round Outlet Pipe** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 573.50' / 572.25' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.33 cfs @ 12.03 hrs HW=575.45' TW=0.00' (Dynamic Tailwater)
↑**1=Outlet Pipe** (Inlet Controls 9.33 cfs @ 5.28 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 4P: North Pond



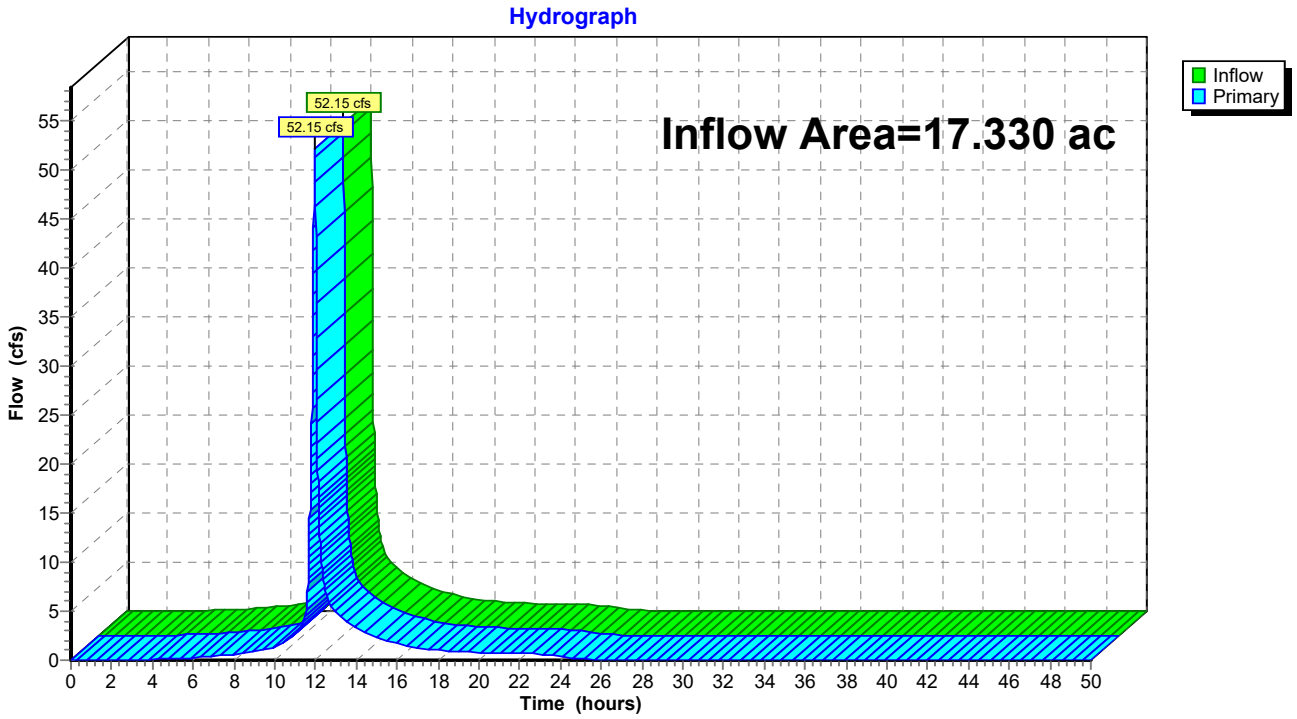
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 2.55" for 10-Year event
Inflow = 52.15 cfs @ 11.96 hrs, Volume= 3.677 af
Primary = 52.15 cfs @ 11.96 hrs, Volume= 3.677 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=3.06"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=6.39 cfs 0.316 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=16.05 cfs 0.821 af

Subcatchment3S(1): Proposed Site Runoff Area=0.560 ac 82.14% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=2.94 cfs 0.148 af

Subcatchment3S(2): Proposed Site Runoff Area=2.710 ac 83.03% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=14.22 cfs 0.715 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=3.17"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=32.75 cfs 1.646 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=3.27"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=19.04 cfs 0.974 af

Pond 1P: Detention Storage & Outlet Peak Elev=573.83' Storage=5,481 cf Inflow=6.39 cfs 0.316 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=0.97 cfs 0.316 af

Pond 2P: Detention Storage & Outlet Peak Elev=573.87' Storage=16,140 cf Inflow=16.05 cfs 0.821 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.82 cfs 0.818 af

Pond 3P: South Pond Peak Elev=576.12' Storage=1,950 cf Inflow=14.22 cfs 0.715 af
30.0" Round Culvert n=0.013 L=33.0' S=0.0045 '/' Outflow=12.76 cfs 0.713 af

Pond 4P: North Pond Peak Elev=575.83' Storage=4,987 cf Inflow=15.70 cfs 0.860 af
18.0" Round Culvert n=0.013 L=95.0' S=0.0132 '/' Outflow=10.69 cfs 0.860 af

Link 1L: Romney Rd Drainage System Inflow=63.59 cfs 4.614 af
Primary=63.59 cfs 4.614 af

Total Runoff Area = 17.330 ac Runoff Volume = 4.619 af Average Runoff Depth = 3.20"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

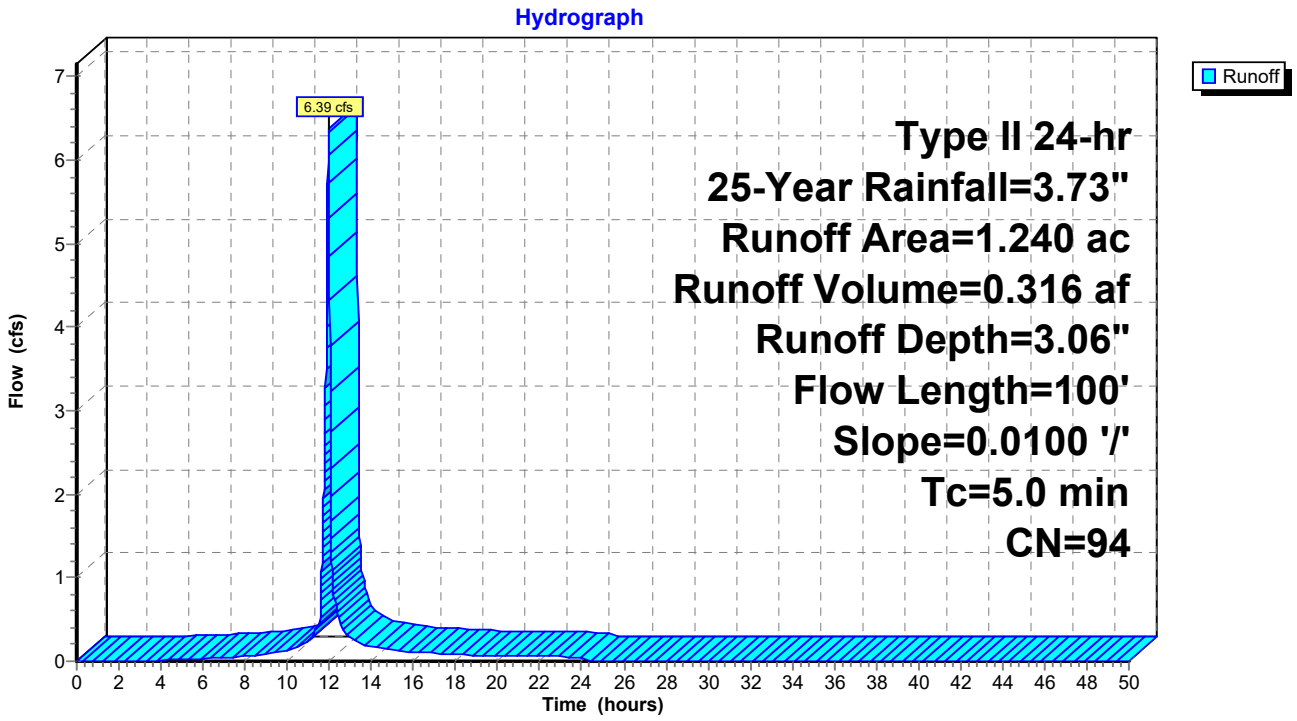
Runoff = 6.39 cfs @ 11.96 hrs, Volume= 0.316 af, Depth= 3.06"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

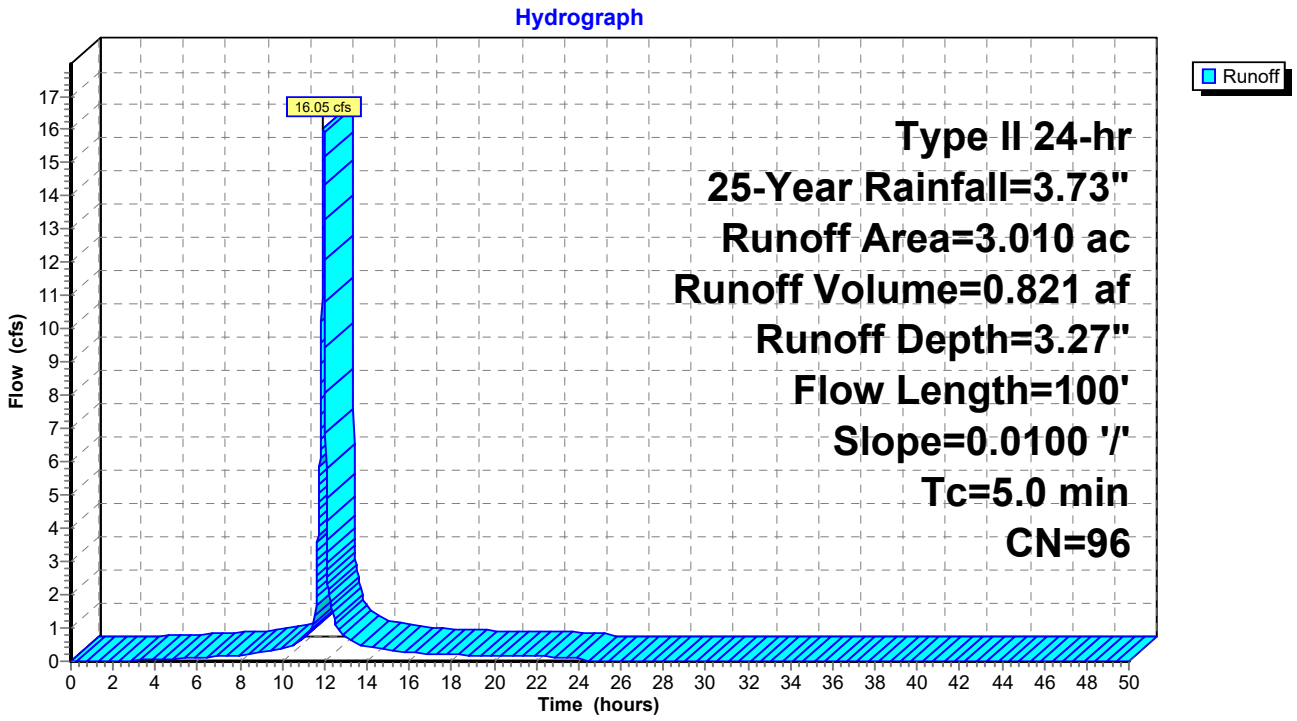
Runoff = 16.05 cfs @ 11.96 hrs, Volume= 0.821 af, Depth= 3.27"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(1): Proposed Site

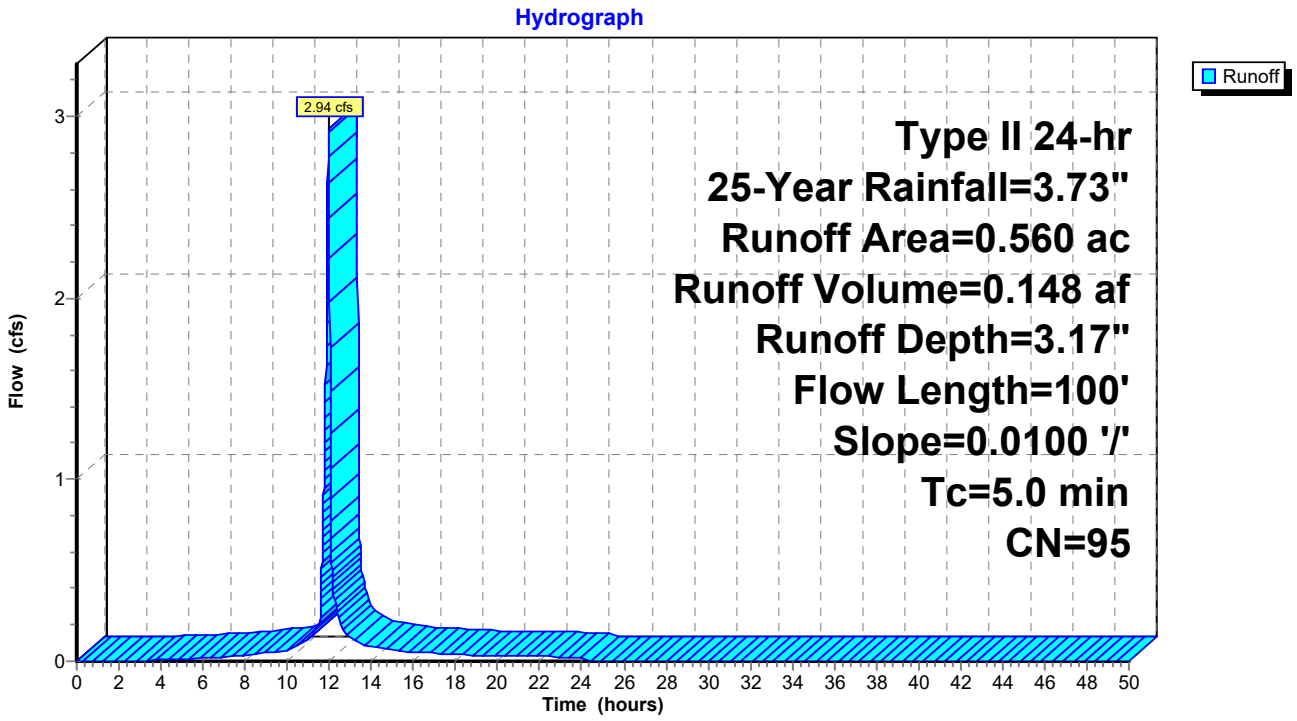
Runoff = 2.94 cfs @ 11.96 hrs, Volume= 0.148 af, Depth= 3.17"
Routed to Pond 4P : North Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.560	95	Weighted Average
	0.100		17.86% Pervious Area
	0.460		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(1): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(2): Proposed Site

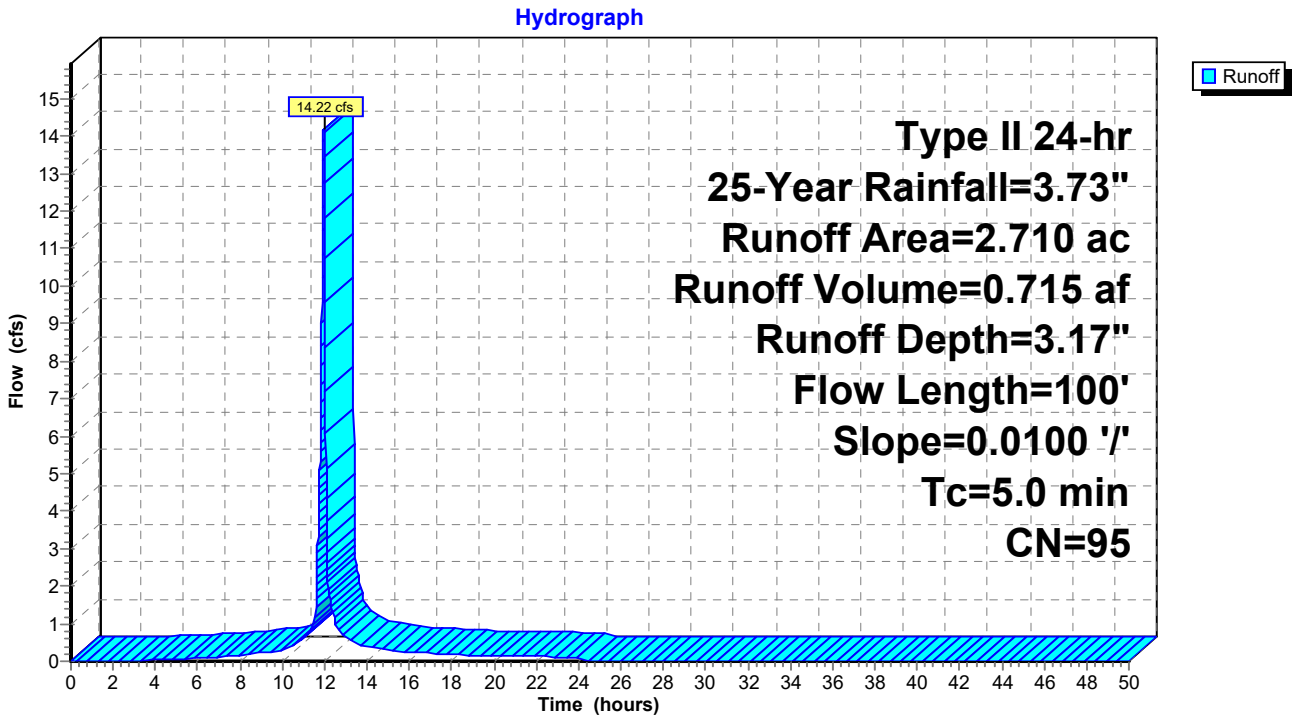
Runoff = 14.22 cfs @ 11.96 hrs, Volume= 0.715 af, Depth= 3.17"
Routed to Pond 3P : South Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.460	80	>75% Grass cover, Good, HSG D
*	2.250	98	Impervious, HSG D
	2.710	95	Weighted Average
	0.460		16.97% Pervious Area
	2.250		83.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(2): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

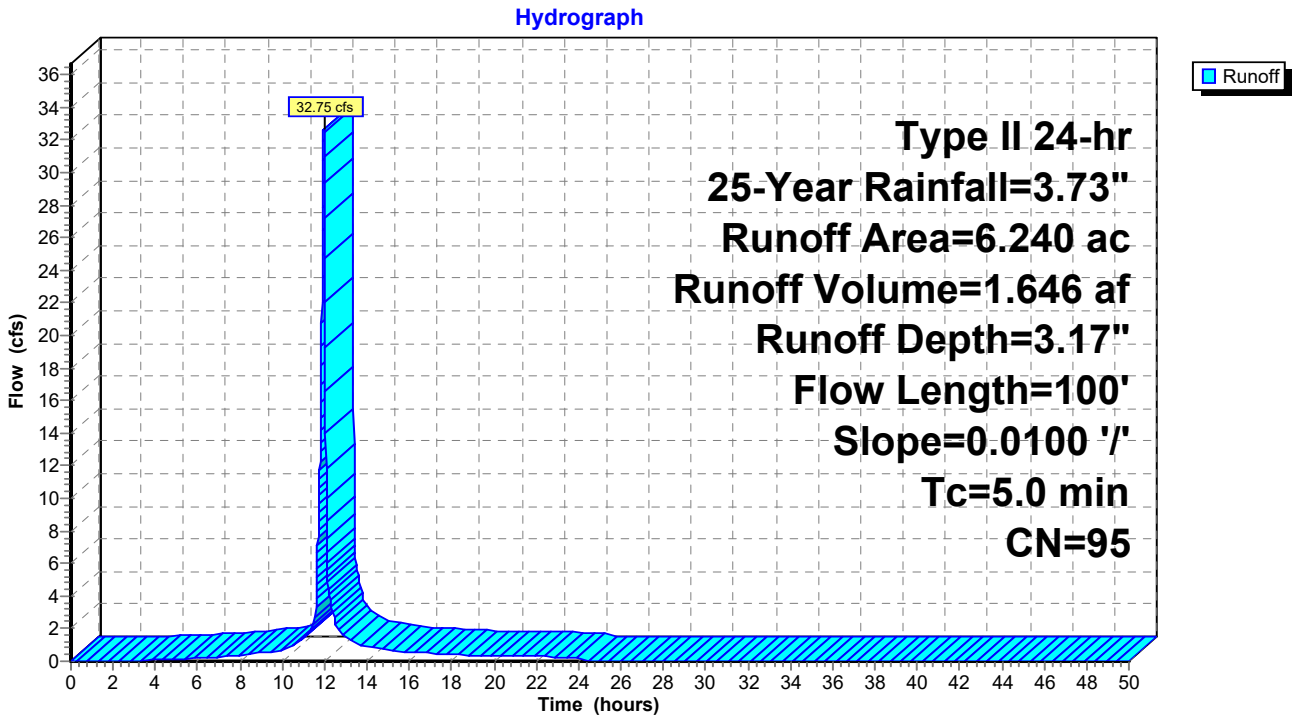
Runoff = 32.75 cfs @ 11.96 hrs, Volume= 1.646 af, Depth= 3.17"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

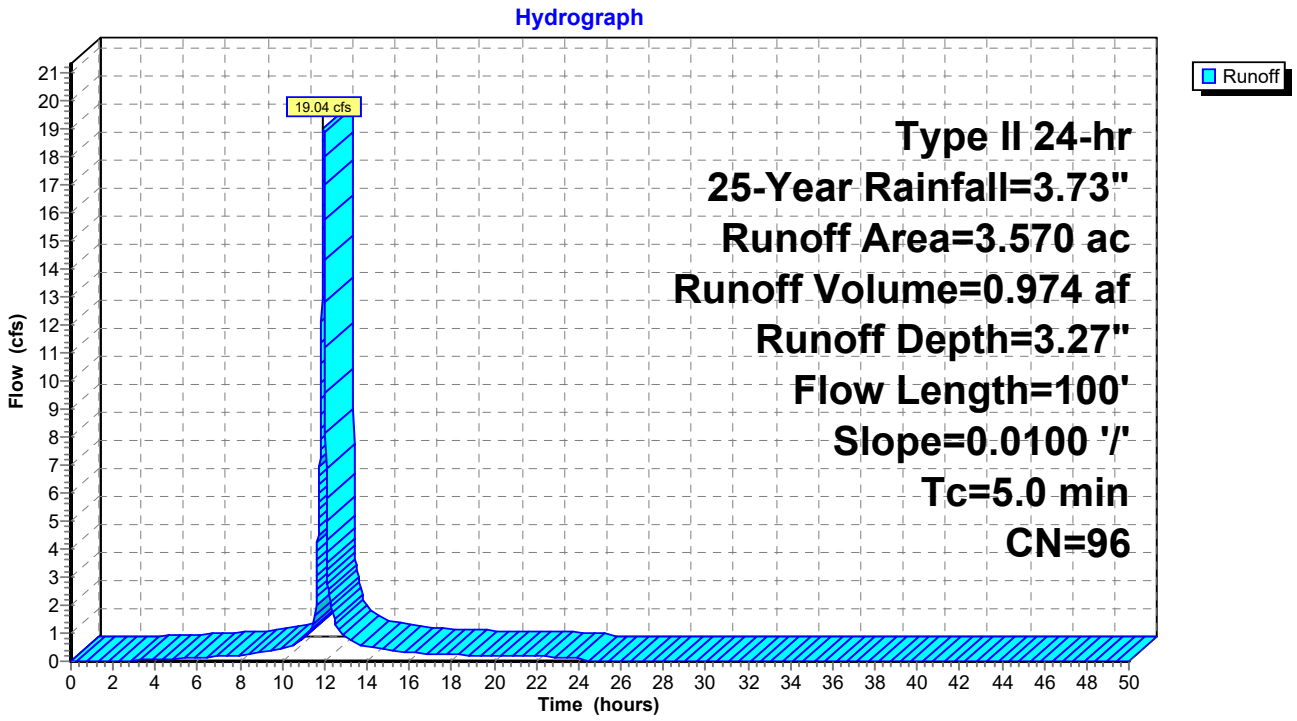
Runoff = 19.04 cfs @ 11.96 hrs, Volume= 0.974 af, Depth= 3.27"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.73"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 3.06" for 25-Year event
Inflow = 6.39 cfs @ 11.96 hrs, Volume= 0.316 af
Outflow = 0.97 cfs @ 12.14 hrs, Volume= 0.316 af, Atten= 85%, Lag= 10.9 min
Primary = 0.97 cfs @ 12.14 hrs, Volume= 0.316 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.83' @ 12.14 hrs Surf.Area= 5,289 sf Storage= 5,481 cf

Plug-Flow detention time= 75.4 min calculated for 0.316 af (100% of inflow)
Center-of-Mass det. time= 74.5 min (852.4 - 777.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.97 cfs @ 12.14 hrs HW=573.83' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 0.97 cfs @ 4.96 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

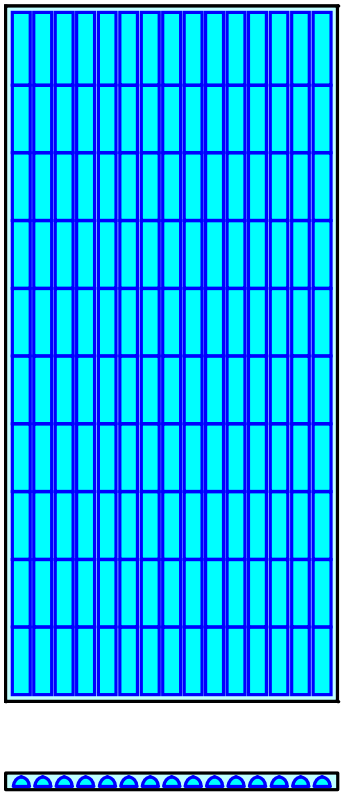
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

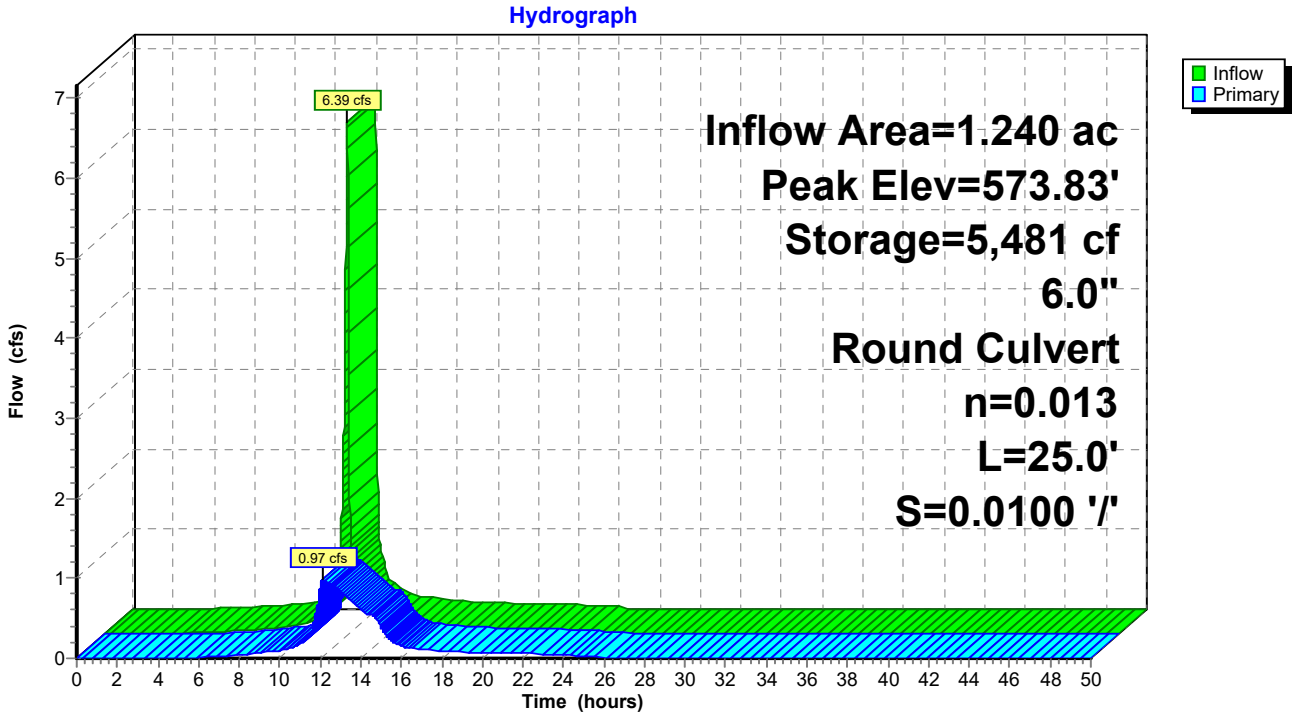
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 3.27" for 25-Year event
Inflow = 16.05 cfs @ 11.96 hrs, Volume= 0.821 af
Outflow = 1.82 cfs @ 12.24 hrs, Volume= 0.818 af, Atten= 89%, Lag= 17.1 min
Primary = 1.82 cfs @ 12.24 hrs, Volume= 0.818 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 573.87' @ 12.24 hrs Surf.Area= 15,085 sf Storage= 16,140 cf

Plug-Flow detention time= 128.2 min calculated for 0.818 af (100% of inflow)
Center-of-Mass det. time= 125.8 min (891.1 - 765.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.82 cfs @ 12.24 hrs HW=573.87' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 1.82 cfs @ 5.22 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

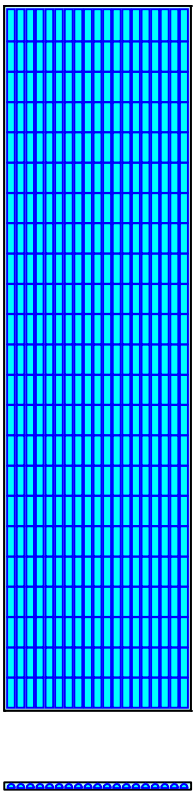
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



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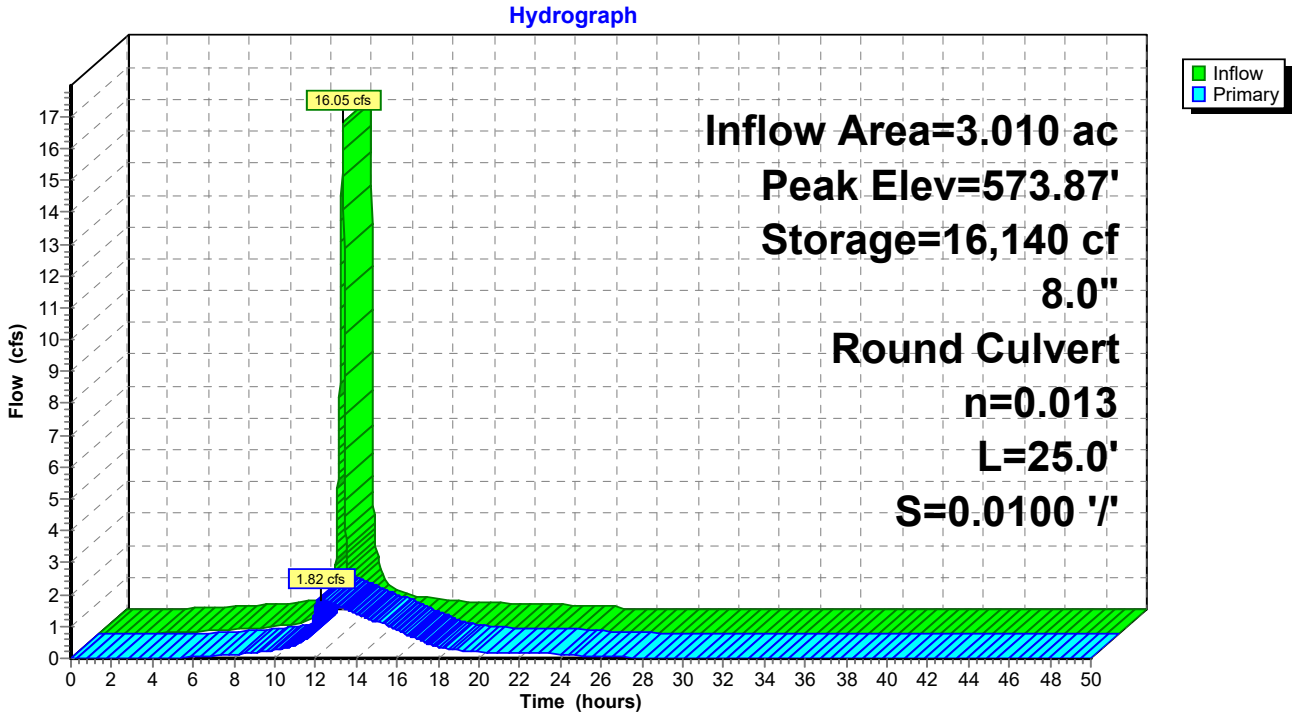
Pond 2P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 3P: South Pond

Inflow Area = 2.710 ac, 83.03% Impervious, Inflow Depth = 3.17" for 25-Year event
Inflow = 14.22 cfs @ 11.96 hrs, Volume= 0.715 af
Outflow = 12.76 cfs @ 11.96 hrs, Volume= 0.713 af, Atten= 10%, Lag= 0.1 min
Primary = 12.76 cfs @ 11.96 hrs, Volume= 0.713 af
Routed to Pond 4P : North Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 576.12' @ 12.01 hrs Surf.Area= 1,335 sf Storage= 1,950 cf

Plug-Flow detention time= 10.1 min calculated for 0.713 af (100% of inflow)
Center-of-Mass det. time= 8.1 min (780.1 - 772.0)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	5,327 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

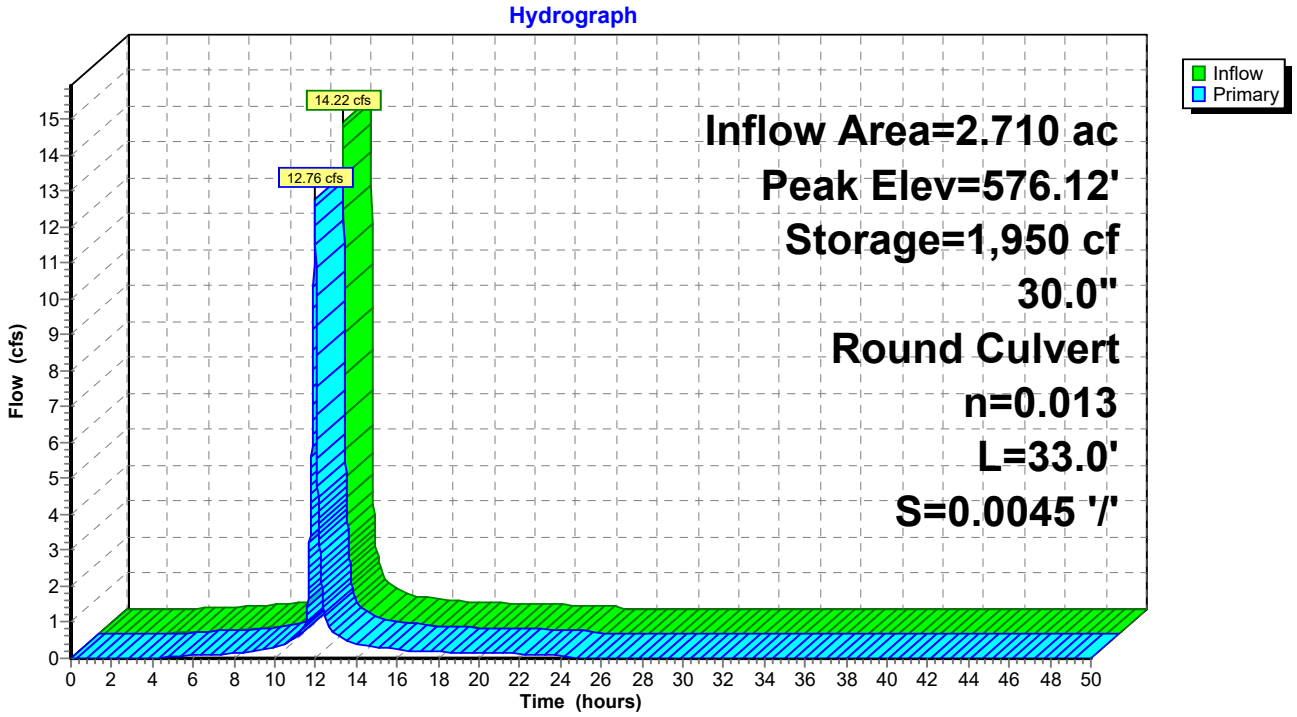
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	556	0	0
575.00	881	719	719
576.00	1,281	1,081	1,800
577.00	1,749	1,515	3,315
578.00	2,275	2,012	5,327

Device	Routing	Invert	Outlet Devices
#1	Primary	574.15'	**30.0" Round Outlet Pipe** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.15' / 574.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=11.83 cfs @ 11.96 hrs HW=575.99' TW=575.49' (Dynamic Tailwater)
↳**1=Outlet Pipe** (Outlet Controls 11.83 cfs @ 4.25 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 3P: South Pond



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 4P: North Pond

Inflow Area = 3.270 ac, 82.87% Impervious, Inflow Depth = 3.16" for 25-Year event
Inflow = 15.70 cfs @ 11.96 hrs, Volume= 0.860 af
Outflow = 10.69 cfs @ 12.03 hrs, Volume= 0.860 af, Atten= 32%, Lag= 4.5 min
Primary = 10.69 cfs @ 12.03 hrs, Volume= 0.860 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 575.83' @ 12.03 hrs Surf.Area= 3,039 sf Storage= 4,987 cf

Plug-Flow detention time= 13.3 min calculated for 0.860 af (100% of inflow)
Center-of-Mass det. time= 13.1 min (791.8 - 778.7)

Volume	Invert	Avail.Storage	Storage Description
#1	573.50'	13,861 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

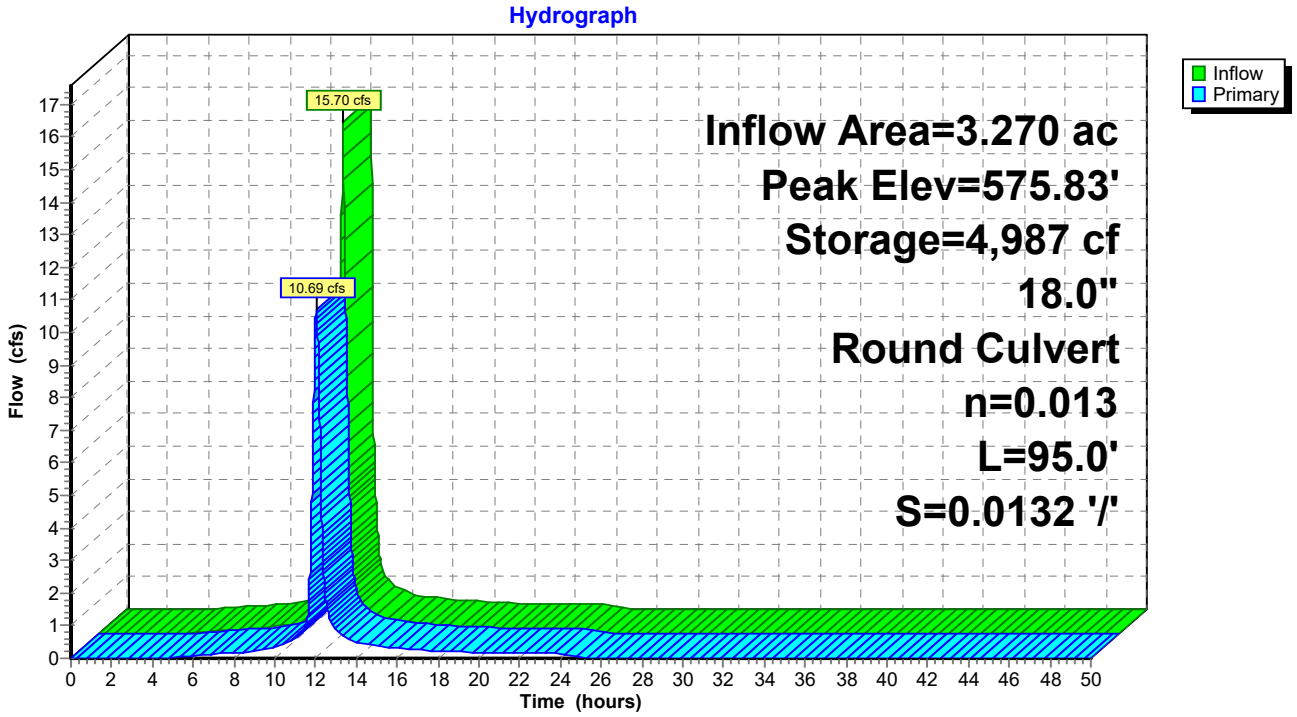
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.50	1,340	0	0
574.00	1,675	754	754
575.00	2,339	2,007	2,761
576.00	3,184	2,762	5,522
577.00	4,147	3,666	9,188
578.00	5,199	4,673	13,861

Device	Routing	Invert	Outlet Devices
#1	Primary	573.50'	**18.0" Round Outlet Pipe** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 573.50' / 572.25' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=10.68 cfs @ 12.03 hrs HW=575.83' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Inlet Controls 10.68 cfs @ 6.05 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 4P: North Pond



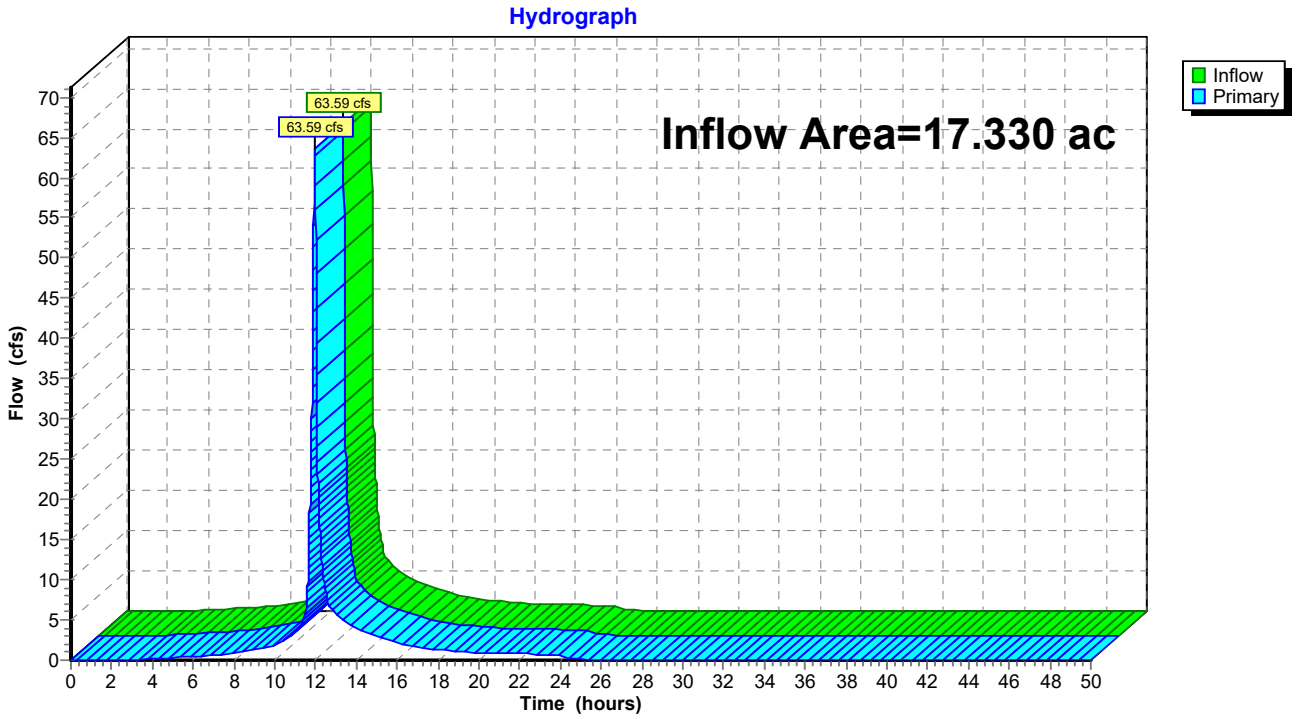
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 3.19" for 25-Year event
Inflow = 63.59 cfs @ 11.96 hrs, Volume= 4.614 af
Primary = 63.59 cfs @ 11.96 hrs, Volume= 4.614 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Proposed Site Runoff Area=1.240 ac 79.84% Impervious Runoff Depth=4.34"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=94 Runoff=8.85 cfs 0.448 af

Subcatchment2S: Proposed Site Runoff Area=3.010 ac 87.38% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=21.93 cfs 1.144 af

Subcatchment3S(1): Proposed Site Runoff Area=0.560 ac 82.14% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=4.04 cfs 0.208 af

Subcatchment3S(2): Proposed Site Runoff Area=2.710 ac 83.03% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=19.55 cfs 1.005 af

Subcatchment4S: Proposed Site Runoff Area=6.240 ac 85.26% Impervious Runoff Depth=4.45"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=95 Runoff=45.03 cfs 2.314 af

Subcatchment5S: Proposed Site Runoff Area=3.570 ac 86.83% Impervious Runoff Depth=4.56"
Flow Length=100' Slope=0.0100 '/' Tc=5.0 min CN=96 Runoff=26.01 cfs 1.357 af

Pond 1P: Detention Storage & Outlet Peak Elev=574.77' Storage=7,797 cf Inflow=8.85 cfs 0.448 af
6.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=1.27 cfs 0.448 af

Pond 2P: Detention Storage & Outlet Peak Elev=574.77' Storage=22,375 cf Inflow=21.93 cfs 1.144 af
8.0" Round Culvert n=0.013 L=25.0' S=0.0100 '/' Outflow=2.41 cfs 1.142 af

Pond 3P: South Pond Peak Elev=576.76' Storage=2,910 cf Inflow=19.55 cfs 1.005 af
30.0" Round Culvert n=0.013 L=33.0' S=0.0045 '/' Outflow=16.44 cfs 1.003 af

Pond 4P: North Pond Peak Elev=576.52' Storage=7,322 cf Inflow=20.43 cfs 1.210 af
18.0" Round Culvert n=0.013 L=95.0' S=0.0132 '/' Outflow=12.83 cfs 1.210 af

Link 1L: Romney Rd Drainage System Inflow=85.32 cfs 6.470 af
Primary=85.32 cfs 6.470 af

Total Runoff Area = 17.330 ac Runoff Volume = 6.476 af Average Runoff Depth = 4.48"
14.89% Pervious = 2.580 ac 85.11% Impervious = 14.750 ac

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 1S: Proposed Site

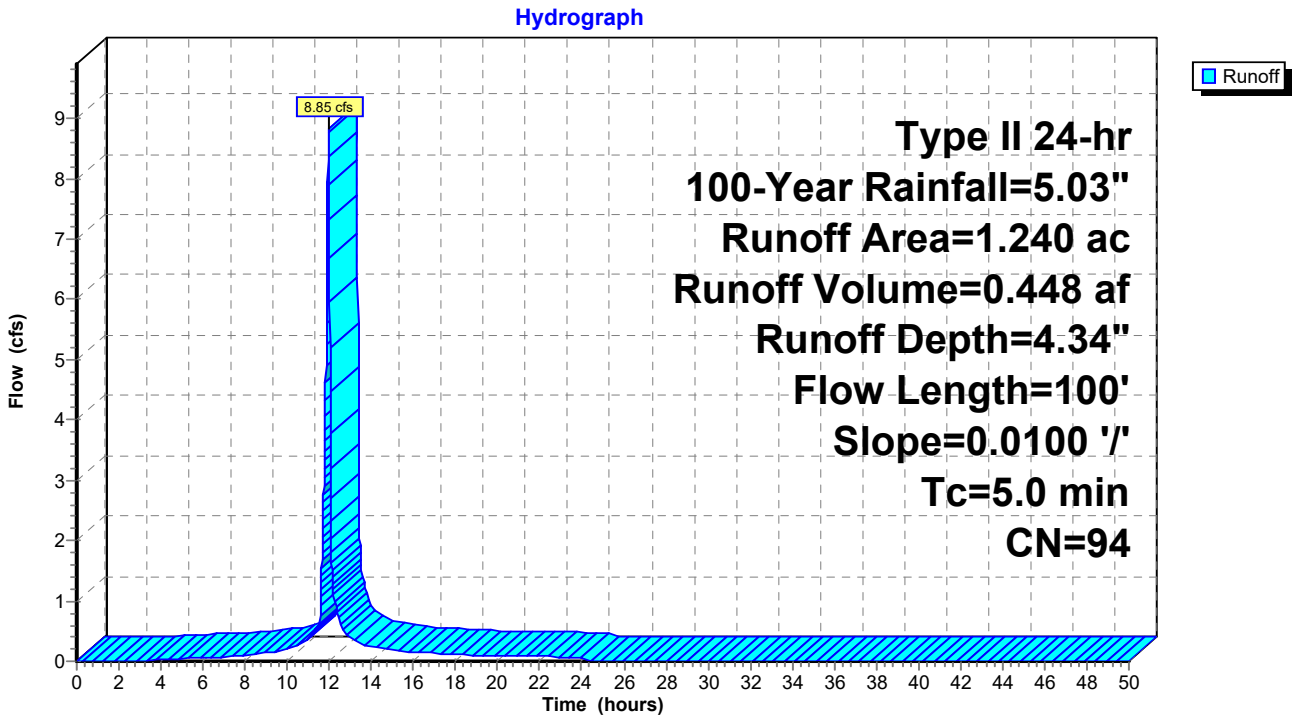
Runoff = 8.85 cfs @ 11.96 hrs, Volume= 0.448 af, Depth= 4.34"
Routed to Pond 1P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.250	80	>75% Grass cover, Good, HSG D
*	0.990	98	Impervious, HSG D
	1.240	94	Weighted Average
	0.250		20.16% Pervious Area
	0.990		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 1S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 2S: Proposed Site

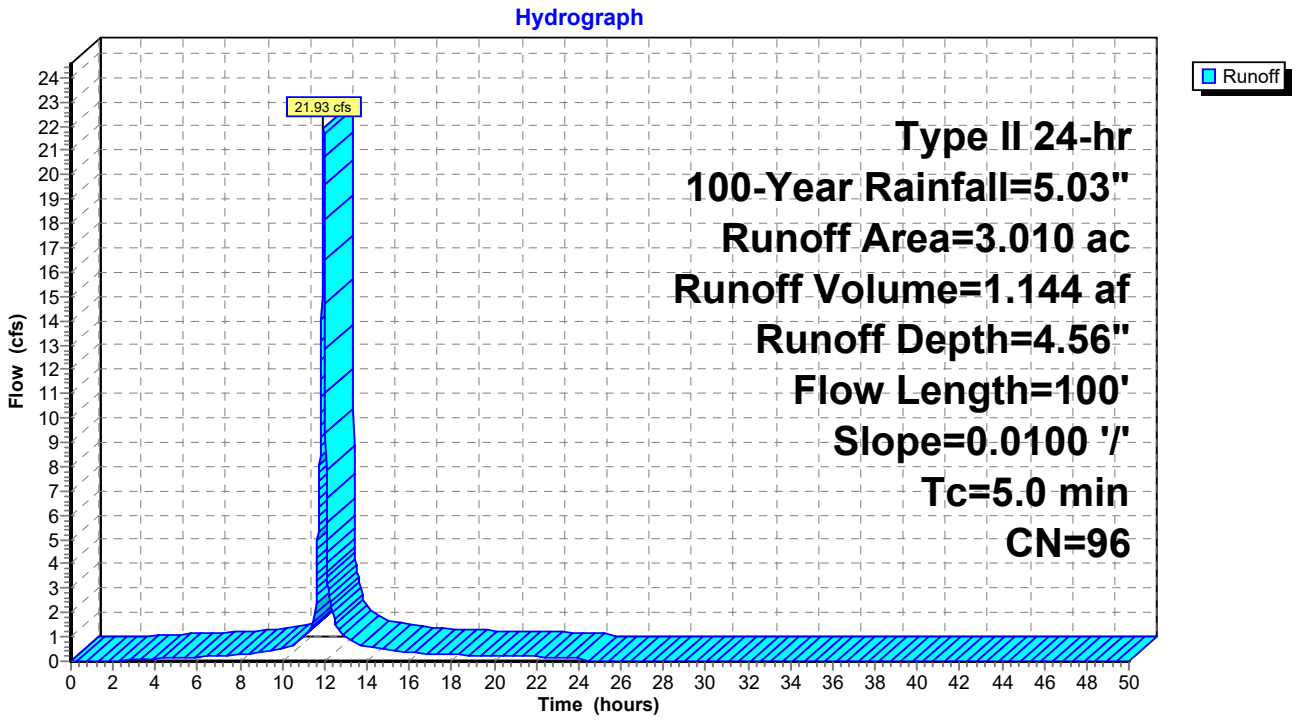
Runoff = 21.93 cfs @ 11.96 hrs, Volume= 1.144 af, Depth= 4.56"
Routed to Pond 2P : Detention Storage & Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.380	80	>75% Grass cover, Good, HSG D
*	2.630	98	Impervious, HSG D
	3.010	96	Weighted Average
	0.380		12.62% Pervious Area
	2.630		87.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(1): Proposed Site

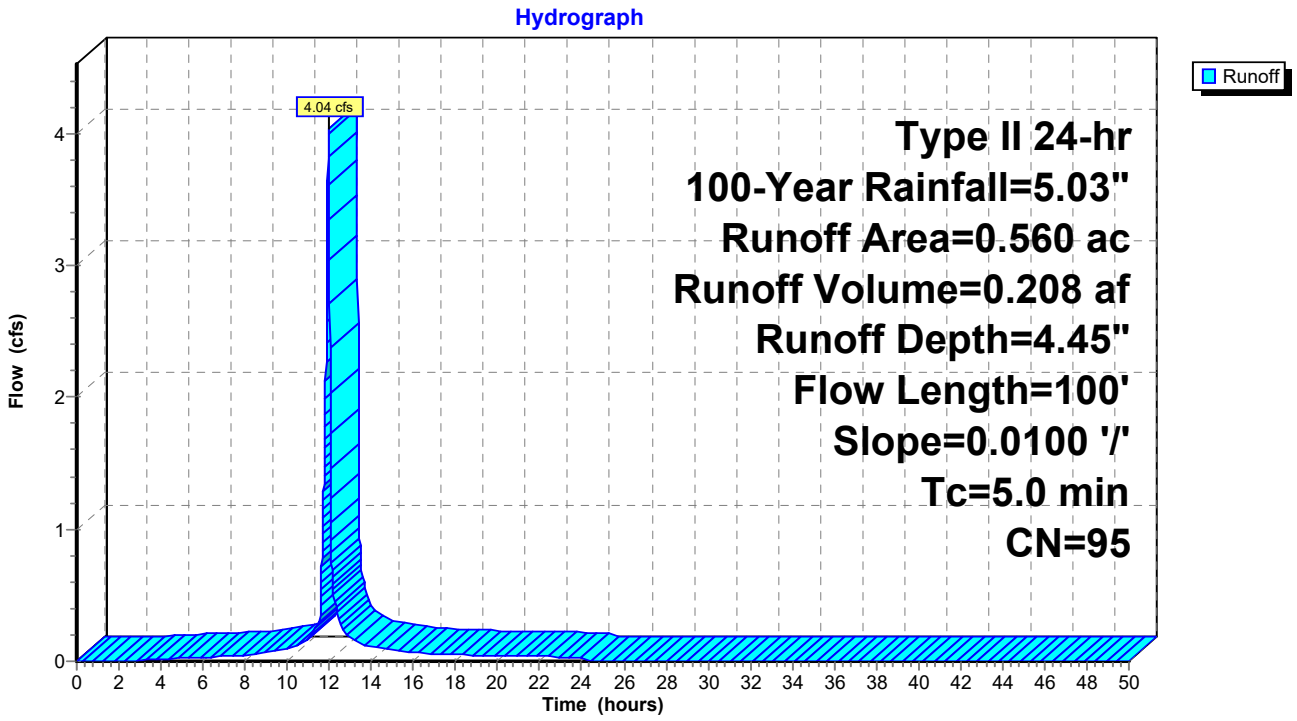
Runoff = 4.04 cfs @ 11.96 hrs, Volume= 0.208 af, Depth= 4.45"
Routed to Pond 4P : North Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.100	80	>75% Grass cover, Good, HSG D
*	0.460	98	Impervious, HSG D
	0.560	95	Weighted Average
	0.100		17.86% Pervious Area
	0.460		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(1): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 3S(2): Proposed Site

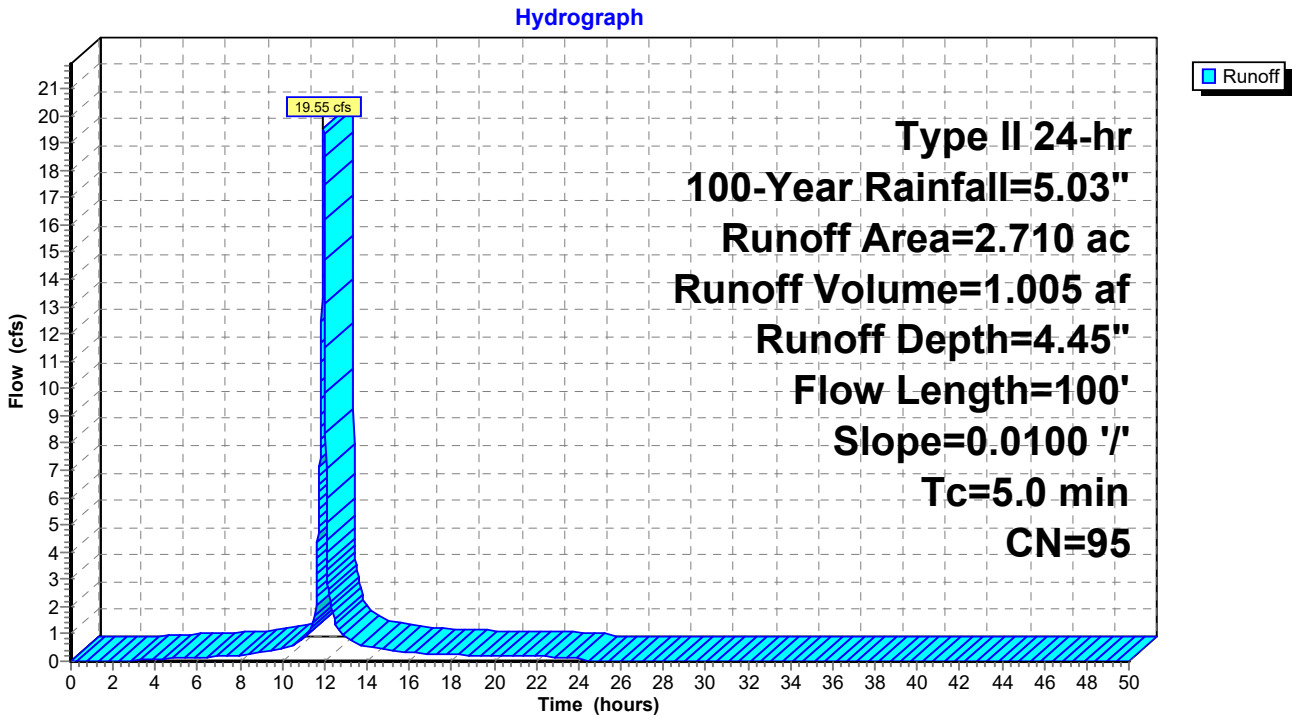
Runoff = 19.55 cfs @ 11.96 hrs, Volume= 1.005 af, Depth= 4.45"
Routed to Pond 3P : South Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.460	80	>75% Grass cover, Good, HSG D
*	2.250	98	Impervious, HSG D
	2.710	95	Weighted Average
	0.460		16.97% Pervious Area
	2.250		83.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 3S(2): Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 4S: Proposed Site

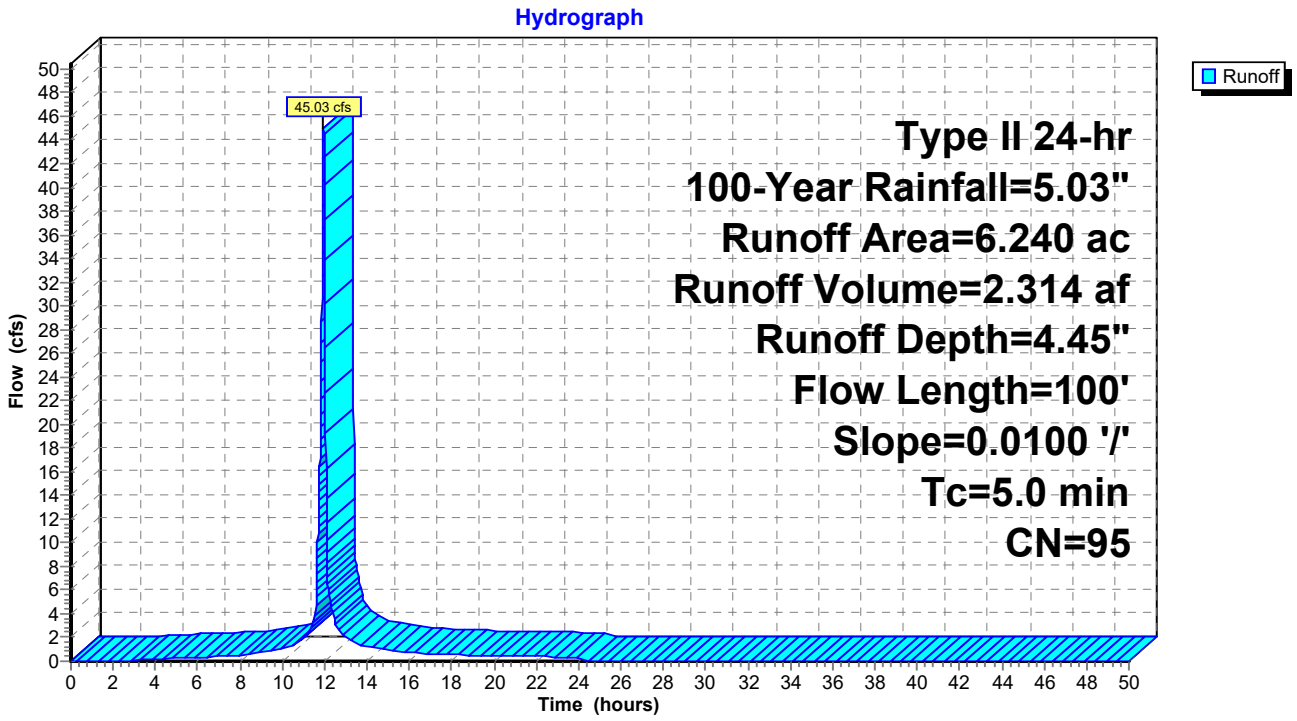
Runoff = 45.03 cfs @ 11.96 hrs, Volume= 2.314 af, Depth= 4.45"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.920	80	>75% Grass cover, Good, HSG D
*	5.320	98	Impervious, HSG D
	6.240	95	Weighted Average
	0.920		14.74% Pervious Area
	5.320		85.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 4S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Subcatchment 5S: Proposed Site

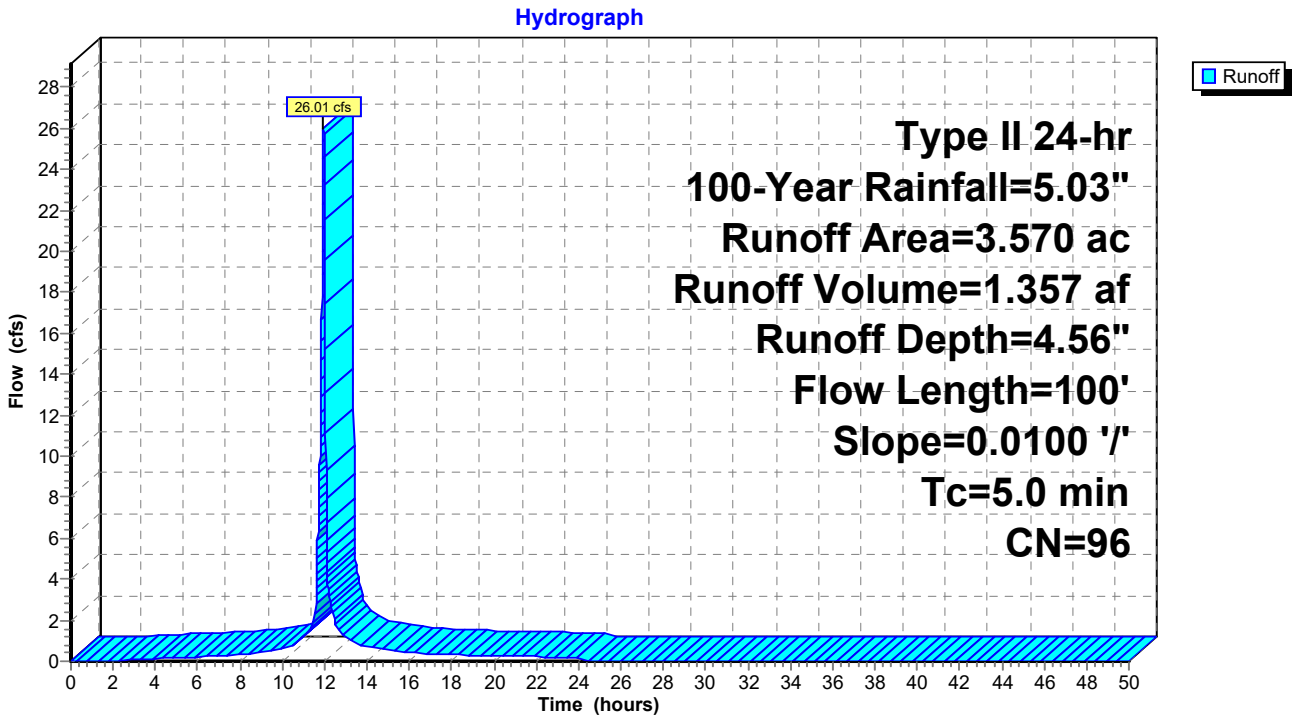
Runoff = 26.01 cfs @ 11.96 hrs, Volume= 1.357 af, Depth= 4.56"
Routed to Link 1L : Romney Rd Drainage System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.03"

	Area (ac)	CN	Description
	0.470	80	>75% Grass cover, Good, HSG D
*	3.100	98	Impervious, HSG D
	3.570	96	Weighted Average
	0.470		13.17% Pervious Area
	3.100		86.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	0.92		**Sheet Flow, Overland - Pvmt.** Smooth surfaces n= 0.011 P2= 2.50"
1.8	100	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: Proposed Site



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 1P: Detention Storage & Outlet

Inflow Area = 1.240 ac, 79.84% Impervious, Inflow Depth = 4.34" for 100-Year event
Inflow = 8.85 cfs @ 11.96 hrs, Volume= 0.448 af
Outflow = 1.27 cfs @ 12.15 hrs, Volume= 0.448 af, Atten= 86%, Lag= 11.5 min
Primary = 1.27 cfs @ 12.15 hrs, Volume= 0.448 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 574.77' @ 12.15 hrs Surf.Area= 5,289 sf Storage= 7,797 cf

Plug-Flow detention time= 78.6 min calculated for 0.448 af (100% of inflow)
Center-of-Mass det. time= 77.9 min (846.8 - 768.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	3,736 cf	**50.25'W x 105.25'L x 2.54'H Field A** 13,442 cf Overall - 4,103 cf Embedded = 9,340 cf x 40.0% Voids
#2A	572.75'	4,103 cf	**Cultec R-150XLHD** x 150 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 15 rows
		7,839 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**6.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=1.27 cfs @ 12.15 hrs HW=574.77' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 1.27 cfs @ 6.49 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 15 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

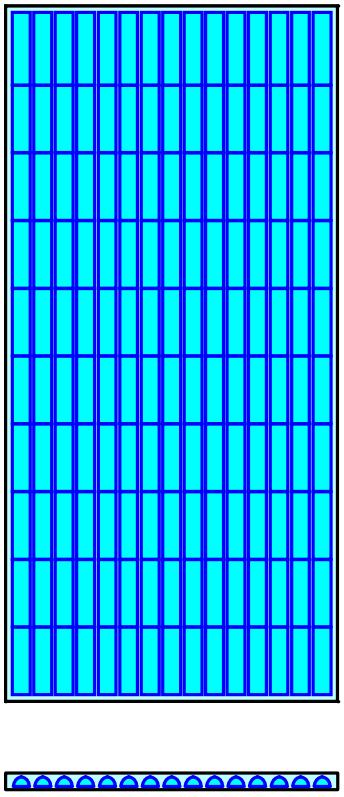
10 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 103.25' Row Length +12.0" End Stone x 2 = 105.25' Base Length
15 Rows x 33.0" Wide + 6.0" Spacing x 14 + 12.0" Side Stone x 2 = 50.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

150 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 15 Rows = 4,102.6 cf Chamber Storage

13,442.4 cf Field - 4,102.6 cf Chambers = 9,339.8 cf Stone x 40.0% Voids = 3,735.9 cf Stone Storage

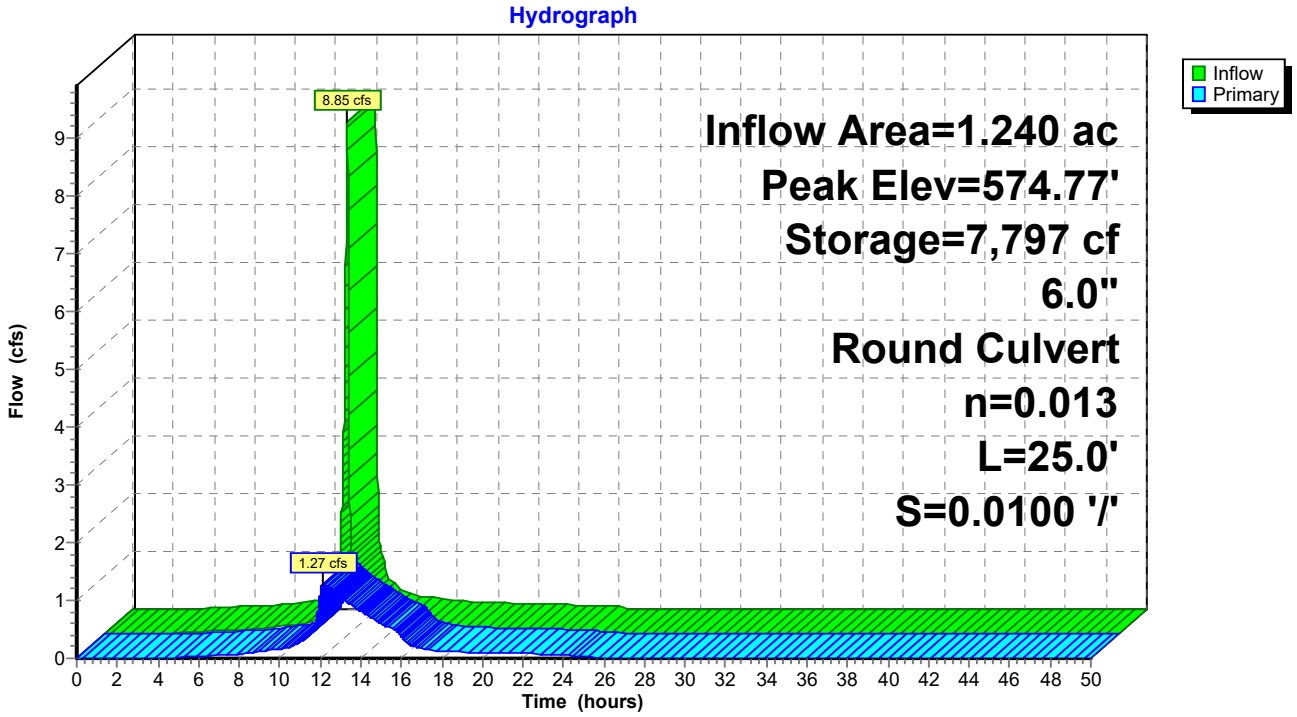
Chamber Storage + Stone Storage = 7,838.5 cf = 0.180 af
Overall Storage Efficiency = 58.3%
Overall System Size = 105.25' x 50.25' x 2.54'

150 Chambers
497.9 cy Field
345.9 cy Stone



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 1P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 2P: Detention Storage & Outlet

Inflow Area = 3.010 ac, 87.38% Impervious, Inflow Depth = 4.56" for 100-Year event
Inflow = 21.93 cfs @ 11.96 hrs, Volume= 1.144 af
Outflow = 2.41 cfs @ 12.26 hrs, Volume= 1.142 af, Atten= 89%, Lag= 18.2 min
Primary = 2.41 cfs @ 12.26 hrs, Volume= 1.142 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 574.77' @ 12.26 hrs Surf.Area= 15,085 sf Storage= 22,375 cf

Plug-Flow detention time= 131.0 min calculated for 1.141 af (100% of inflow)
Center-of-Mass det. time= 129.6 min (887.1 - 757.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	572.25'	10,575 cf	**63.25'W x 238.50'L x 2.54'H Field A** 38,341 cf Overall - 11,903 cf Embedded = 26,438 cf x 40.0% Voids
#2A	572.75'	11,903 cf	**Cultec R-150XLHD** x 437 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 19 rows
		22,479 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	572.25'	**8.0" Round Outlet Pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.25' / 572.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=2.41 cfs @ 12.26 hrs HW=574.77' TW=0.00' (Dynamic Tailwater)
↑—**1=Outlet Pipe** (Barrel Controls 2.41 cfs @ 6.90 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 2P: Detention Storage & Outlet - Chamber Wizard Field A

Chamber Model = Cultec R-150XLHD (Cultec Recharger®150XLHD)
Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf
Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap
Row Length Adjustment= +0.75' x 2.65 sf x 19 rows

33.0" Wide + 6.0" Spacing = 39.0" C-C Row Spacing

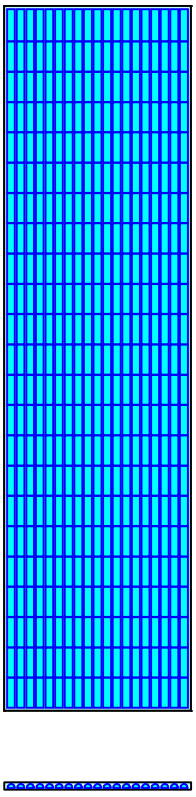
23 Chambers/Row x 10.25' Long +0.75' Row Adjustment = 236.50' Row Length +12.0" End Stone x 2 = 238.50' Base Length
19 Rows x 33.0" Wide + 6.0" Spacing x 18 + 12.0" Side Stone x 2 = 63.25' Base Width
6.0" Stone Base + 18.5" Chamber Height + 6.0" Stone Cover = 2.54' Field Height

437 Chambers x 27.2 cf +0.75' Row Adjustment x 2.65 sf x 19 Rows = 11,903.3 cf Chamber Storage

38,341.4 cf Field - 11,903.3 cf Chambers = 26,438.1 cf Stone x 40.0% Voids = 10,575.2 cf Stone Storage

Chamber Storage + Stone Storage = 22,478.5 cf = 0.516 af
Overall Storage Efficiency = 58.6%
Overall System Size = 238.50' x 63.25' x 2.54'

437 Chambers
1,420.1 cy Field
979.2 cy Stone



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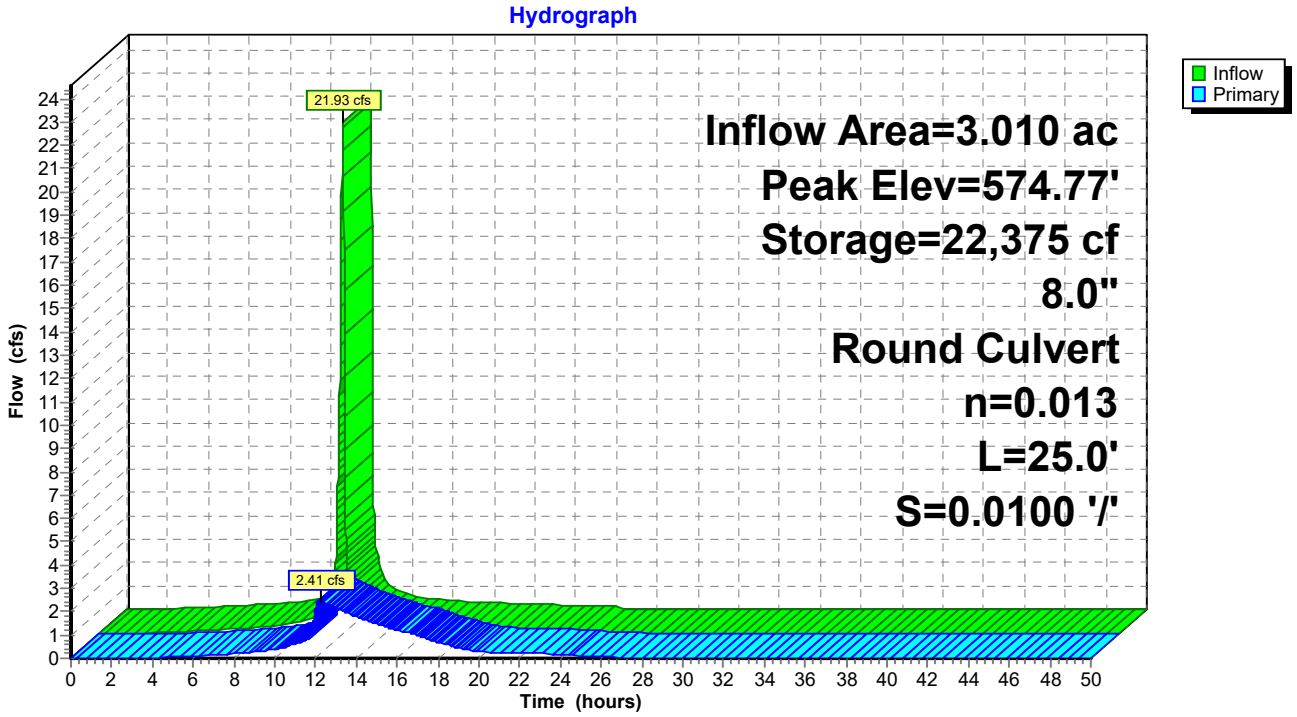
Pond 2P: Detention Storage & Outlet



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 3P: South Pond

Inflow Area = 2.710 ac, 83.03% Impervious, Inflow Depth = 4.45" for 100-Year event
Inflow = 19.55 cfs @ 11.96 hrs, Volume= 1.005 af
Outflow = 16.44 cfs @ 11.97 hrs, Volume= 1.003 af, Atten= 16%, Lag= 0.6 min
Primary = 16.44 cfs @ 11.97 hrs, Volume= 1.003 af
Routed to Pond 4P : North Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 576.76' @ 12.02 hrs Surf.Area= 1,637 sf Storage= 2,910 cf

Plug-Flow detention time= 8.7 min calculated for 1.003 af (100% of inflow)
Center-of-Mass det. time= 7.2 min (770.8 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	5,327 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

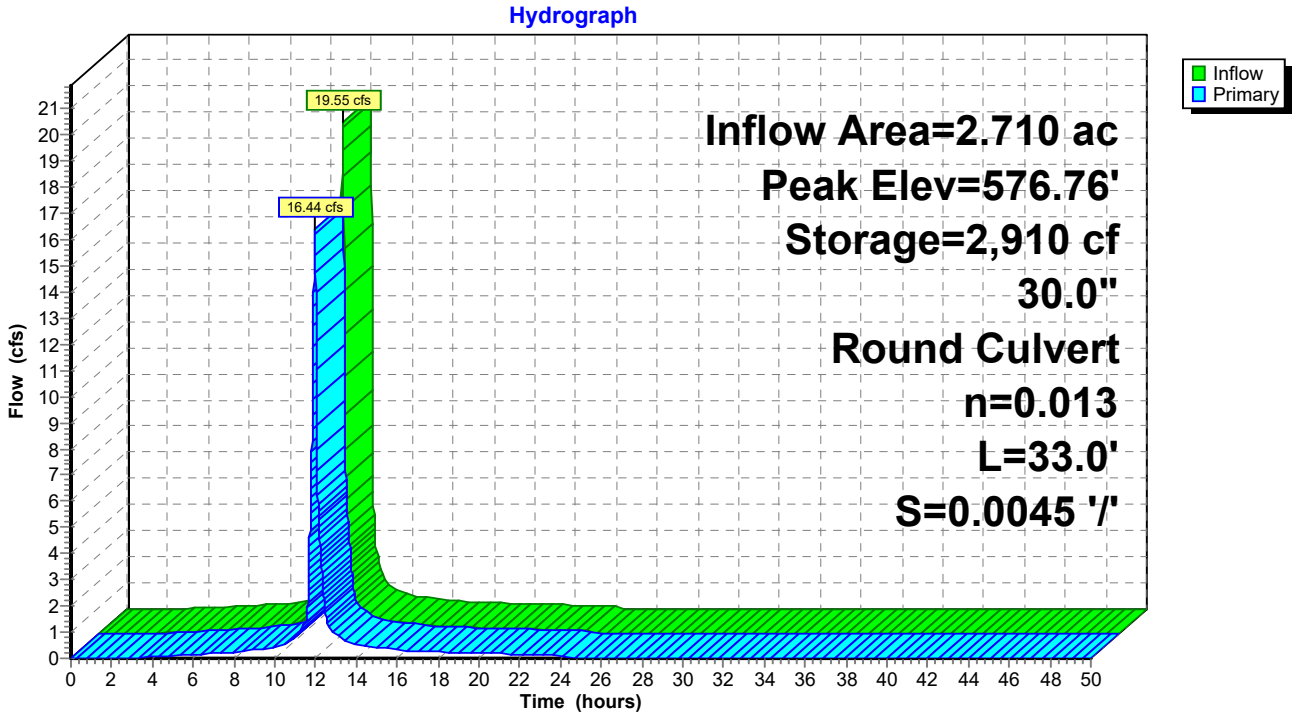
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	556	0	0
575.00	881	719	719
576.00	1,281	1,081	1,800
577.00	1,749	1,515	3,315
578.00	2,275	2,012	5,327

Device	Routing	Invert	Outlet Devices
#1	Primary	574.15'	**30.0" Round Outlet Pipe** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.15' / 574.00' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=14.75 cfs @ 11.97 hrs HW=576.55' TW=576.14' (Dynamic Tailwater)
↳**1=Outlet Pipe** (Outlet Controls 14.75 cfs @ 3.90 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 3P: South Pond



Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Pond 4P: North Pond

Inflow Area = 3.270 ac, 82.87% Impervious, Inflow Depth = 4.44" for 100-Year event
Inflow = 20.43 cfs @ 11.96 hrs, Volume= 1.210 af
Outflow = 12.83 cfs @ 12.04 hrs, Volume= 1.210 af, Atten= 37%, Lag= 4.7 min
Primary = 12.83 cfs @ 12.04 hrs, Volume= 1.210 af
Routed to Link 1L : Romney Rd Drainage System

Routing by Dyn-Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 576.52' @ 12.04 hrs Surf.Area= 3,688 sf Storage= 7,322 cf

Plug-Flow detention time= 12.3 min calculated for 1.210 af (100% of inflow)
Center-of-Mass det. time= 12.2 min (781.7 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1	573.50'	13,861 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

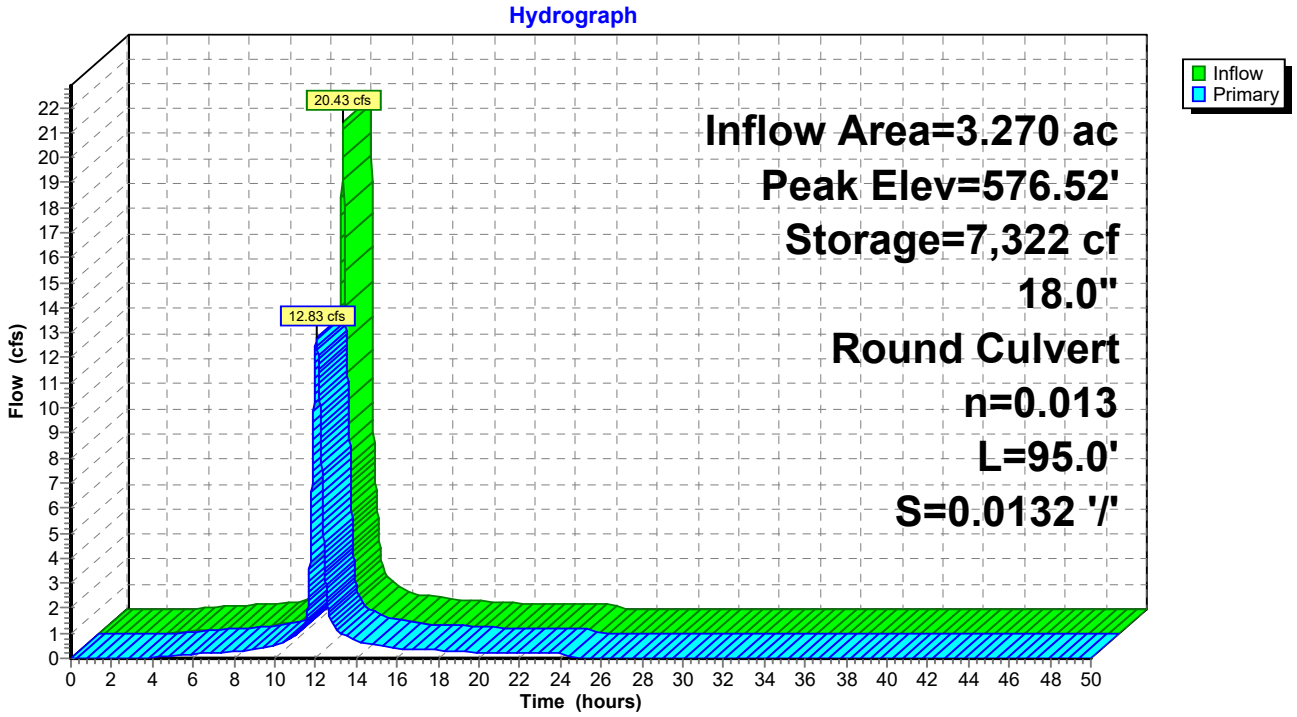
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.50	1,340	0	0
574.00	1,675	754	754
575.00	2,339	2,007	2,761
576.00	3,184	2,762	5,522
577.00	4,147	3,666	9,188
578.00	5,199	4,673	13,861

Device	Routing	Invert	Outlet Devices
#1	Primary	573.50'	**18.0" Round Outlet Pipe** L= 95.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 573.50' / 572.25' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=12.83 cfs @ 12.04 hrs HW=576.52' TW=0.00' (Dynamic Tailwater)
1=Outlet Pipe (Inlet Controls 12.83 cfs @ 7.26 fps)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Pond 4P: North Pond



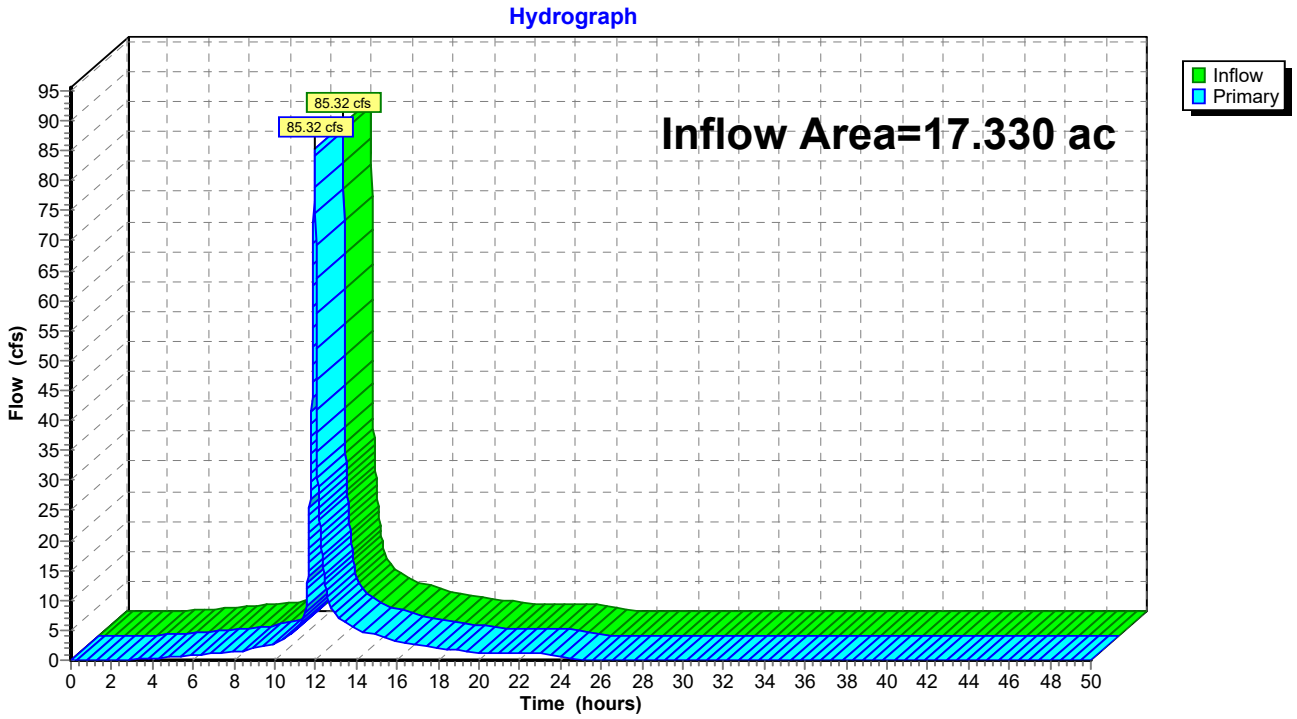
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Summary for Link 1L: Romney Rd Drainage System

Inflow Area = 17.330 ac, 85.11% Impervious, Inflow Depth = 4.48" for 100-Year event
Inflow = 85.32 cfs @ 11.96 hrs, Volume= 6.470 af
Primary = 85.32 cfs @ 11.96 hrs, Volume= 6.470 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs

Link 1L: Romney Rd Drainage System



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Appendix E

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

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PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

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(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

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calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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(Part I.C.2.c)

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

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E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

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(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

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B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

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must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

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b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

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use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

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b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

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the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project

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b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

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b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

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begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

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d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

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(Part IV.C.4.a)

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

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b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

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b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

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E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

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(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

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include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

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3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

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R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

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Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

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and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

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Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

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New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

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Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

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SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

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Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

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training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

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APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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Table 1 (Continued) Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

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Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

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Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

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Appendix C

Figure 1 - New York City Watershed East of the Hudson

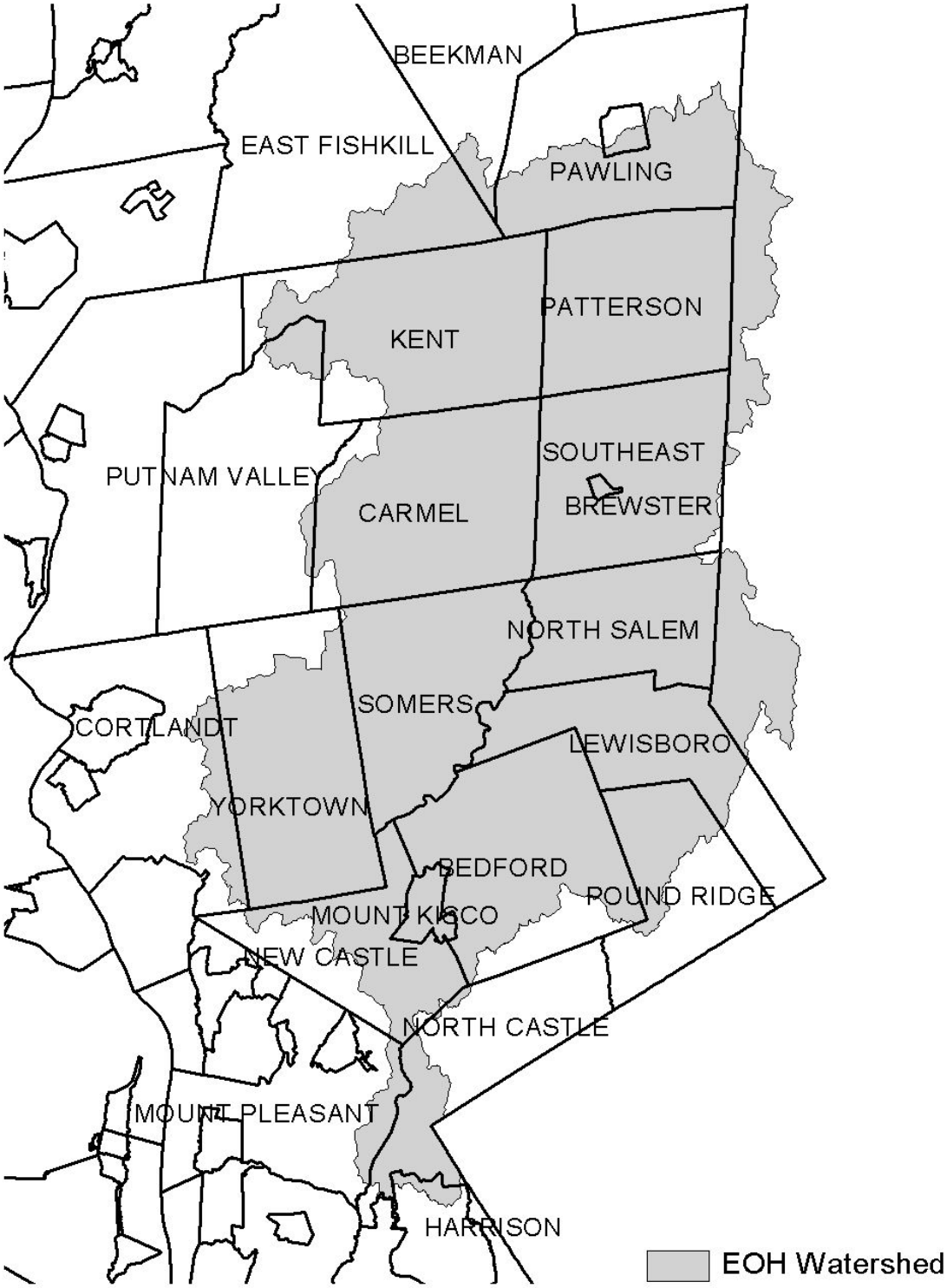

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Figure 2 - Onondaga Lake Watershed



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Figure 3 - Greenwood Lake Watershed

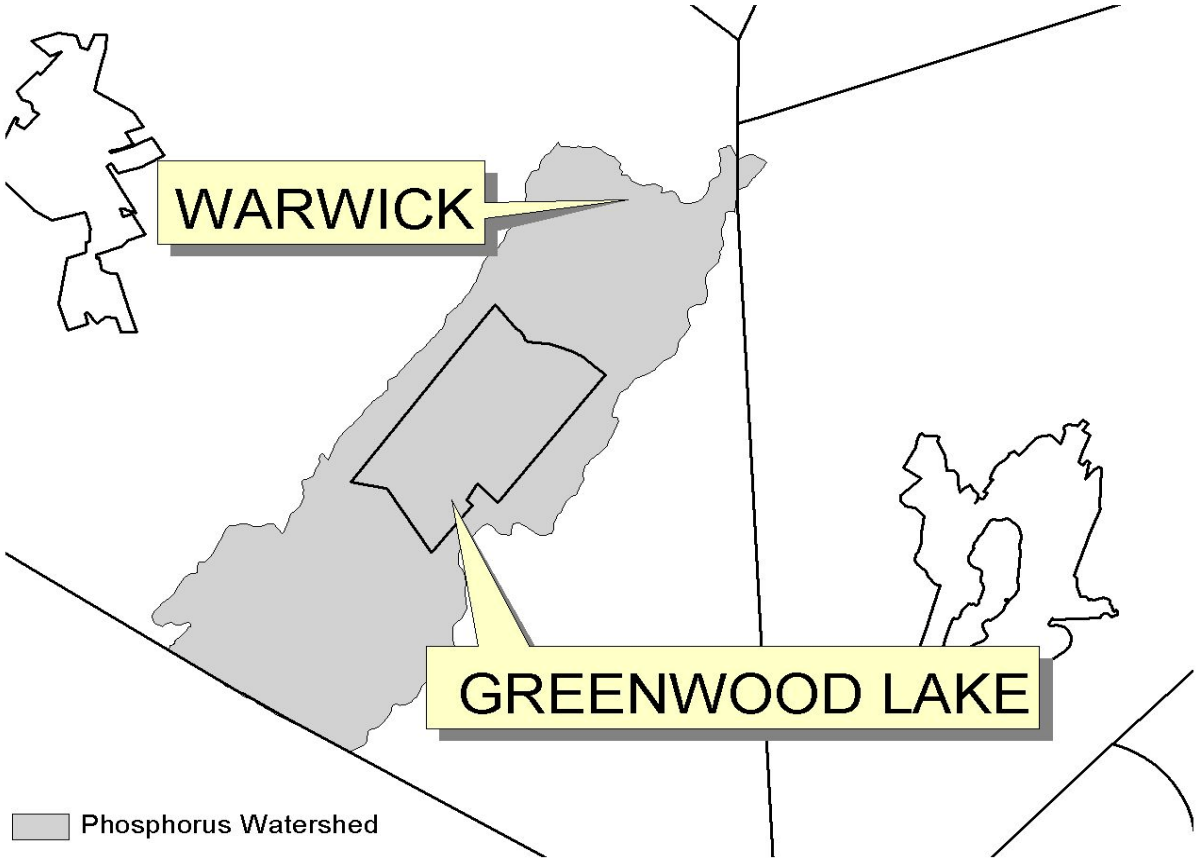

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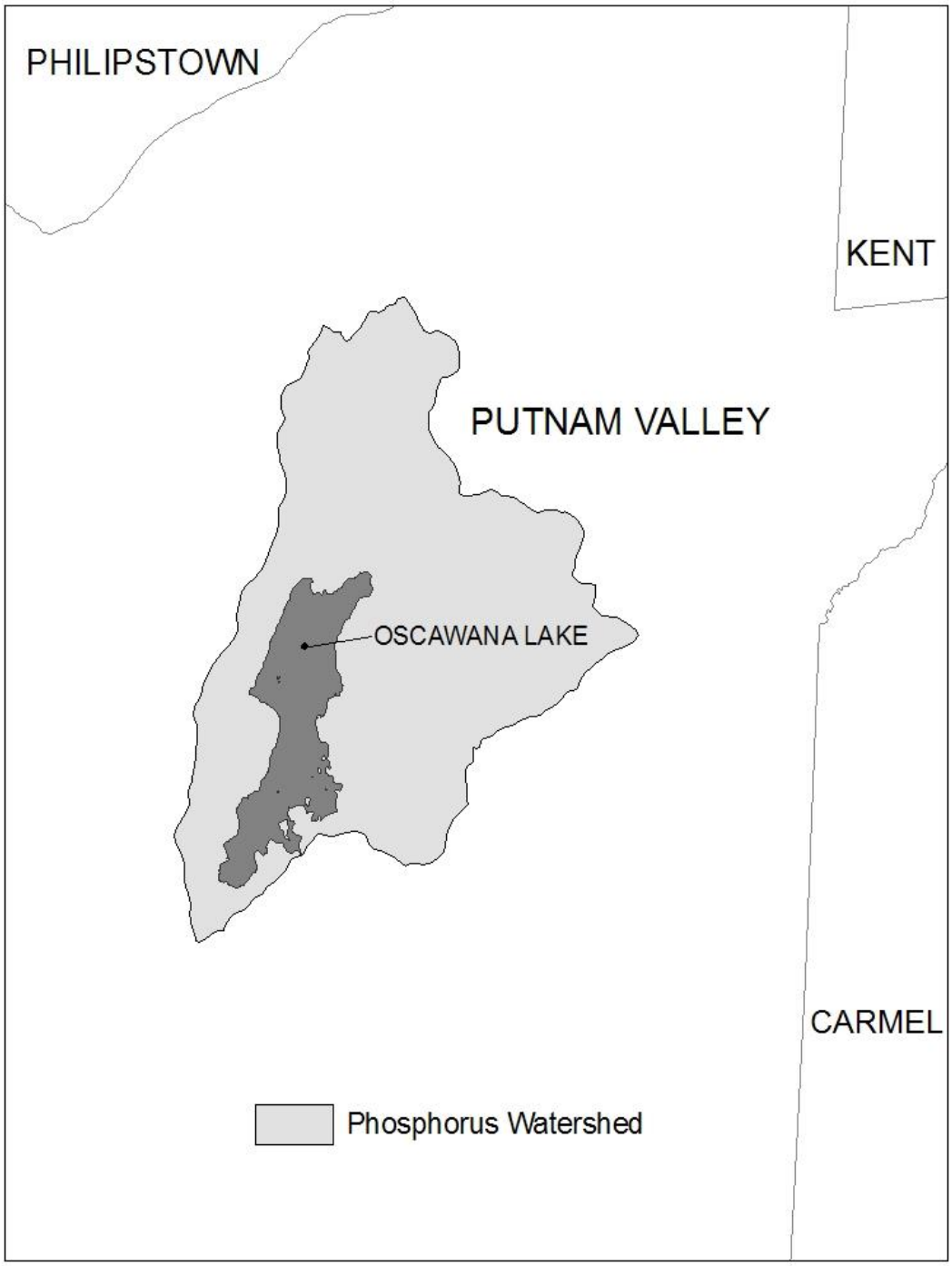
Figure 4 - Oscawana Lake Watershed



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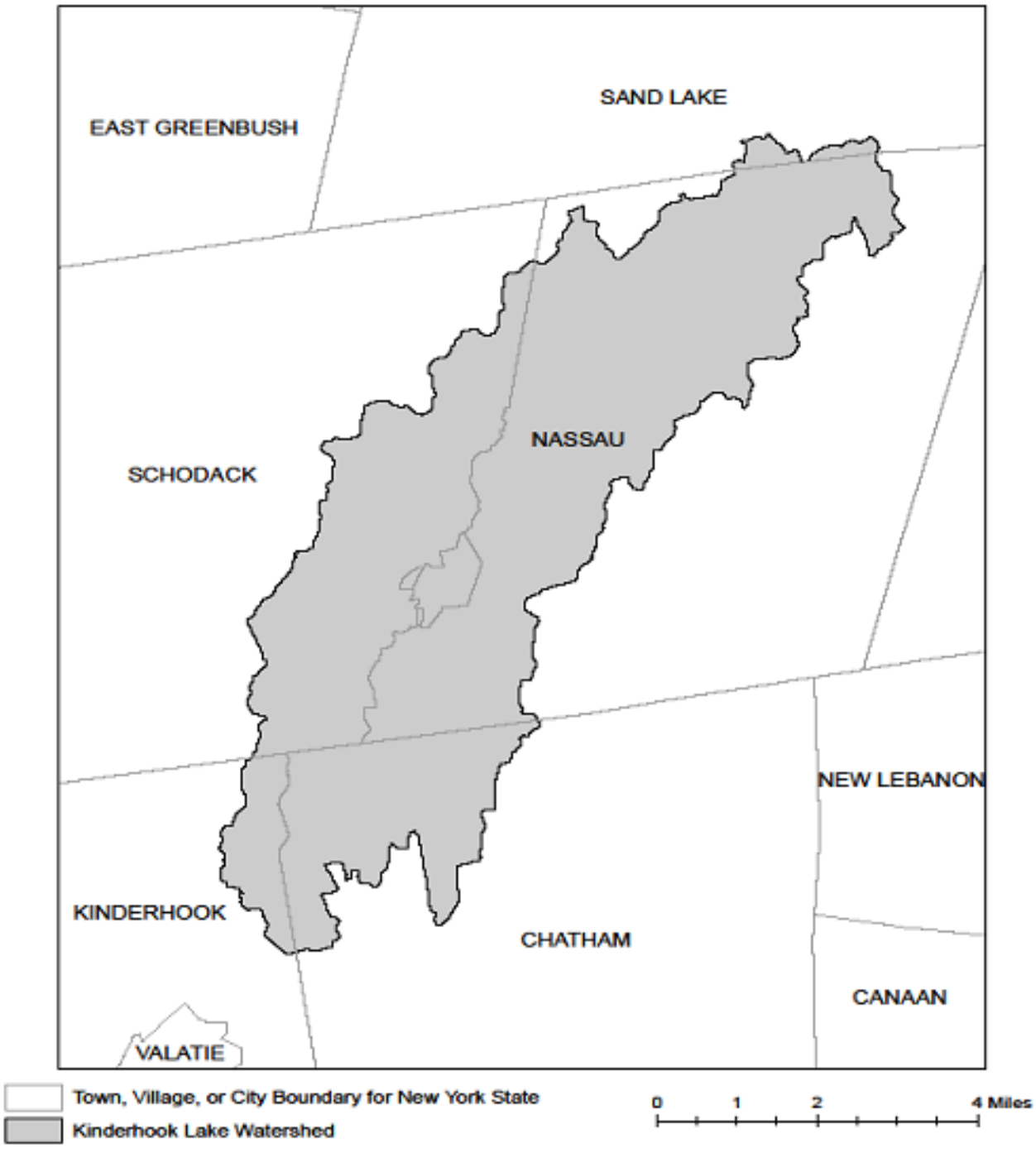
Appendix C

Figure 5 - Kinderhook Lake Watershed



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APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

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APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

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303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

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APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

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Appendix F

Forms

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Amherst Development Park
6000-6040 North Bailey Ave
Amherst, NY 14226

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of Amherst.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

eNOI Submission Number: _____

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Amherst Development Park - 6000-6040 North Bailey Ave, Amherst, NY 14226

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Benderson Development Company, LLC - 570 Delaware Ave - Buffalo, NY 14202

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher		Wood
First name	MI	Last Name



Signature

12/4/2024

Date

Revised: January 2020

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Appendix G

NYSDEC Notice of Termination (NOT)

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

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NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

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Post Construction Stormwater Management

Facility Certification Form Cover Sheet

A. General Information

Use only one Cover Sheet per site with as many specific structural BMP Inspection Report attachments as needed. Please attach digital photographs of the site and structural BMPs as applicable.

Development Name:_____ Inspection Date:_____

BMP Owner:_____ Inspection Company:_____

Owner Address:_____ Company Address:_____

Owner Phone #:_____ Inspector Name:_____

Owner Email:_____ Inspector Phone #:_____

Inspector Email:_____

B. Inspection Report Attachments

The listed stormwater controls are the Structural BMPs who's Inspection Reports are to be completed per the NYS Stormwater Design Manual for this site. Please use one inspection report per BMP inspected and submit all forms together with this Cover Sheet as one single report. Also, please document the number of each structural BMP found at this site in the space below.

BMP	# of BMP	BMP	# of BMP
Micropool Extended Detention Pond (P-1)		Infiltration Basin (I-2)	
Wet Pond (P-2)		Dry Well (I-3)	
Wet Extended Detention Pond (P-3)		Surface Sand Filter (F-1)	
Multiple Pond System (P-4)		Underground Sand Filter (F-2)	
Shallow Wetland (W-1)		Perimeter Sand Filter (F-3)	
Extended Detention Wetland (W-2)		Organic Filter (F-4)	
Pond/ Wetland System (W-3)		Bioretention (F-5)	
Pocket Wetland (W-4)		Dry Swale (O-1)	
Infiltration Trench (I-1)		Wet Swale (O-2)	
Alternate Stormwater Management Practices			

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Post Construction Stormwater Management

C. Inspection Results

FAIL*

*** If any one item on the inspection form is coded as "Work needed", then the entire BMP fails inspection.**

***If a site has multiple BMPs and on fails inspection, this cover sheet is marked as fail until all items on all BMPs pass inspection.**

NOTE: Applicable BMP Inspection Reports and confirmatory digital photographs summarizing required repairs must be submitted to the Town following completion of the preliminary inspection. A re-inspection and certification must be completed within 30 days of the failed preliminary report.

PASS

NOTE: A passing inspection form should be signed below by the appropriate professional and submitted to the Town on or before the established inspection due date. Attach all applicable BMP Inspection Reports and confirmatory digital photographs accordingly.

D. Professional Certification

To be completed only when all structural BMPs at this site are functional with no outstanding maintenance issues.

I,_____, as a duly registered _____ attest that a thorough inspection has been completed for all structural BMPsthat are associated with this particular site. All inspected structural BMPs are performing properly and are in compliance with the terms and conditions of the recorded maintenance agreement for the site.

Signature:_____

Date:_____

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Appendix H

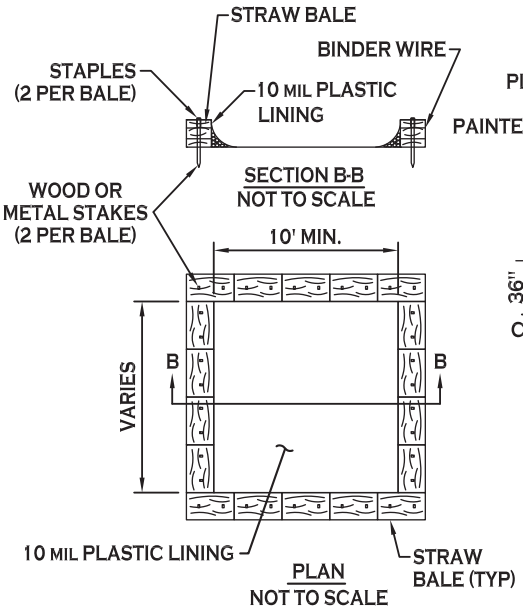
Construction Documents

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

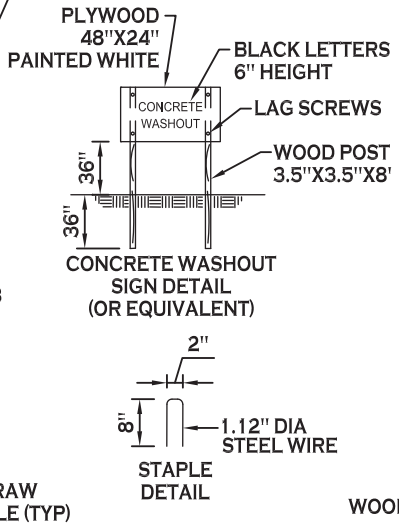
Appendix I

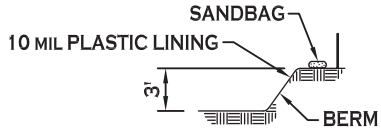
Standard Erosion Control Details

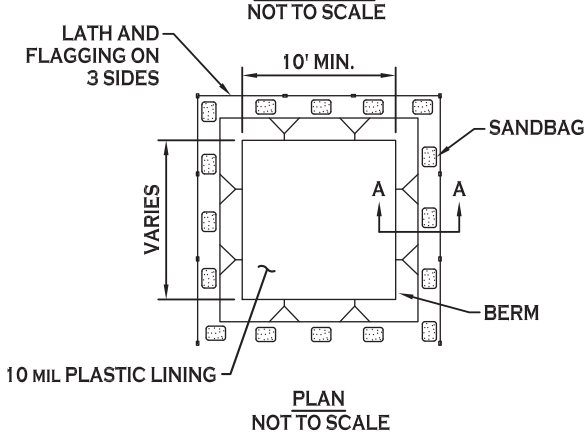
Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



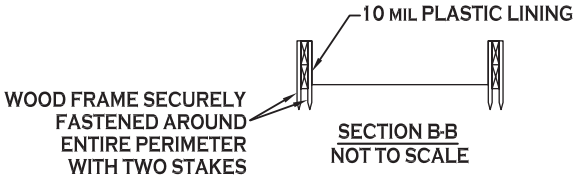
TYPE "ABOVE GRADE" WITH STRAW BALES

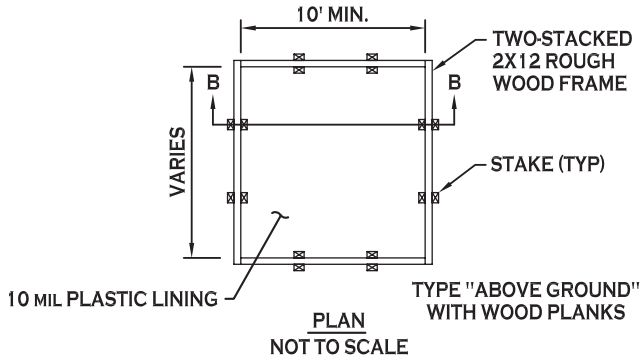






TYPE "BELOW GRADE"



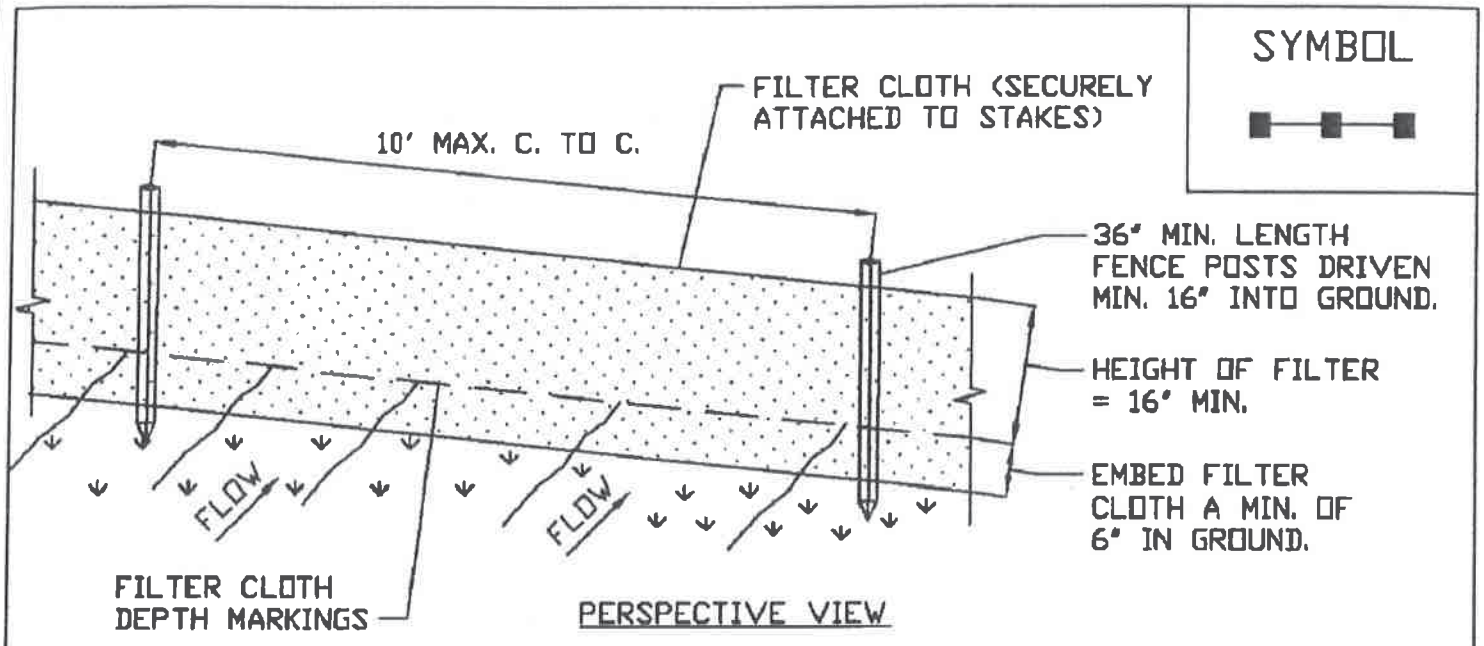


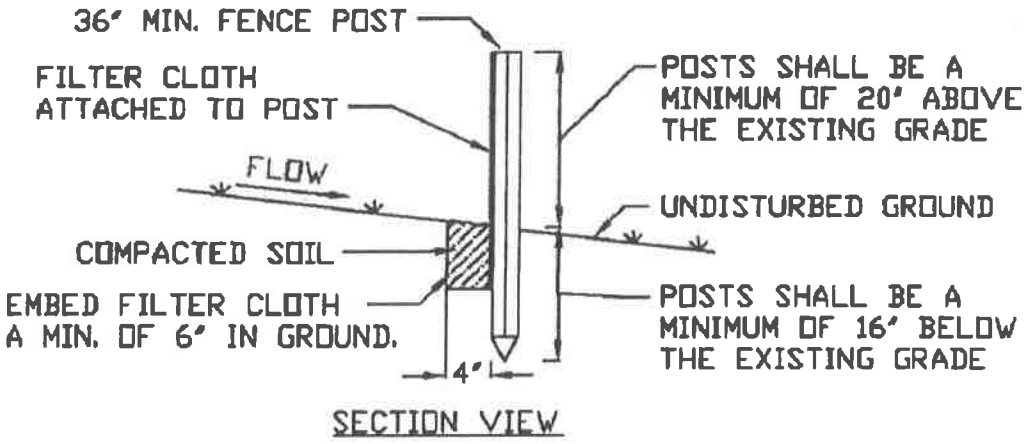
NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL

NOT TO SCALE





CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE (WITHOUT WIRE MESH BACKING)

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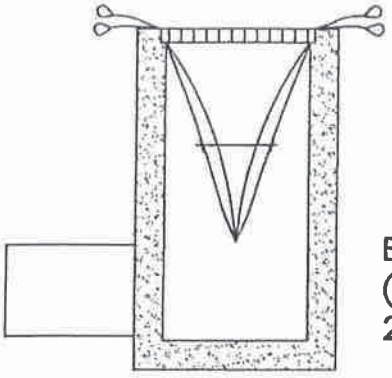
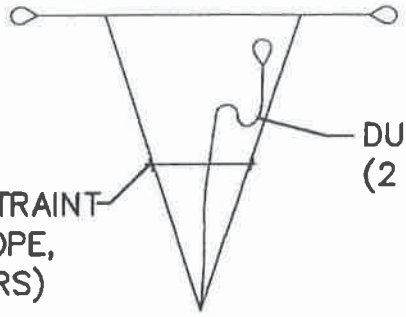
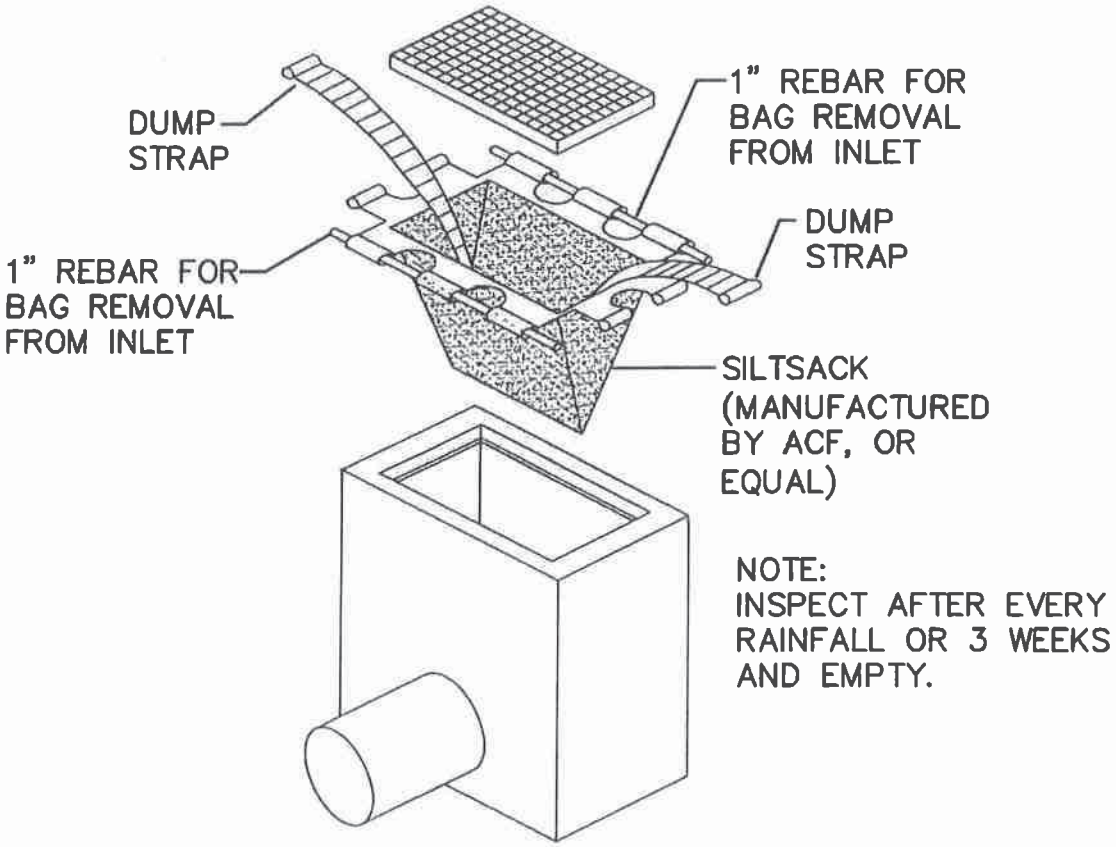


EXPANSION RESTRAINT
(1/4" NYLON ROPE,
2" FLAT WASHERS)

INSTALLATION DETAIL



BAG DETAIL



NOTE:
INSPECT AFTER EVERY
RAINFALL OR 3 WEEKS
AND EMPTY.

SILT SACK DETAIL

NOT TO SCALE

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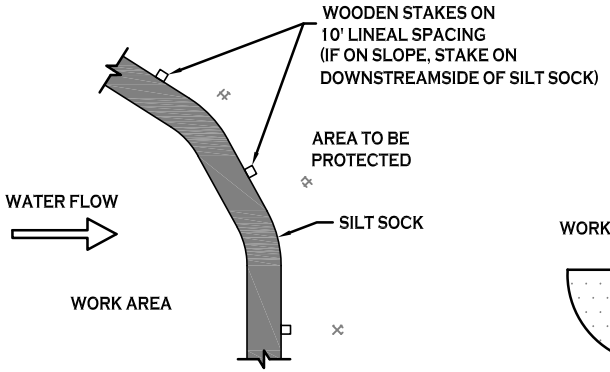
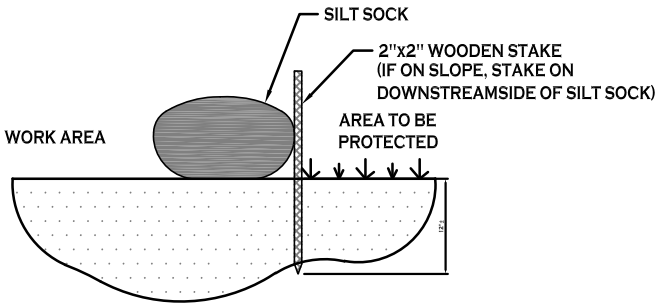
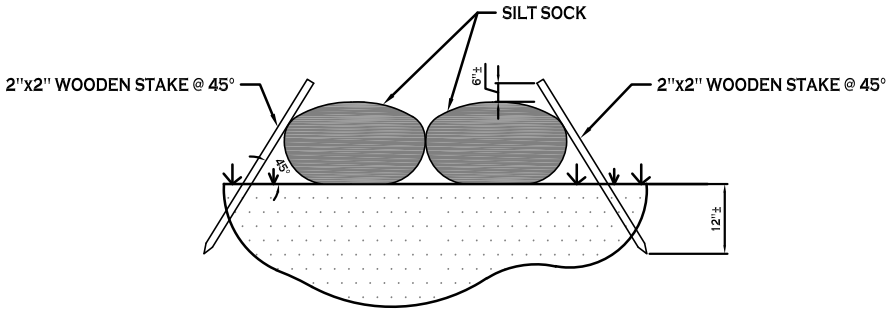


PLAN VIEW



SECTION VIEW



SECTION VIEW @ JOINT OVERLAP

NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK SHALL BE OVERLAPPED 12" AT JOINTS AND STAKED ON EACH SIDE OF THE SOCK AT A 45° ANGLE

SILT SOCK DETAIL

N.T.S.

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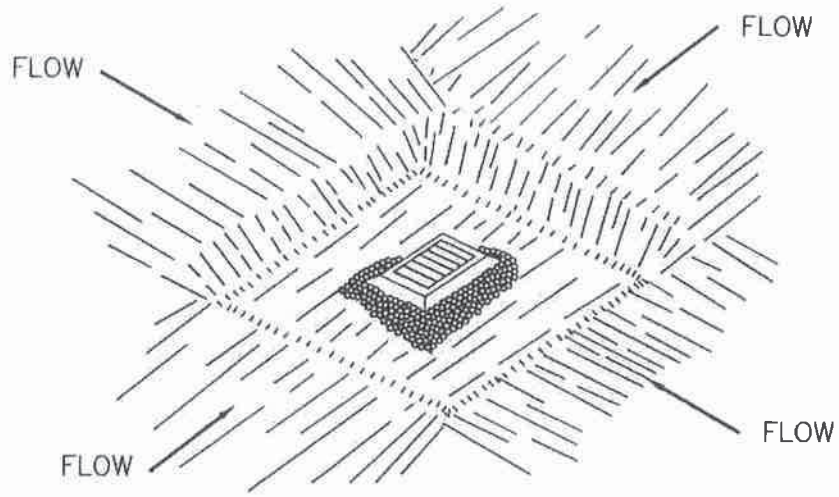

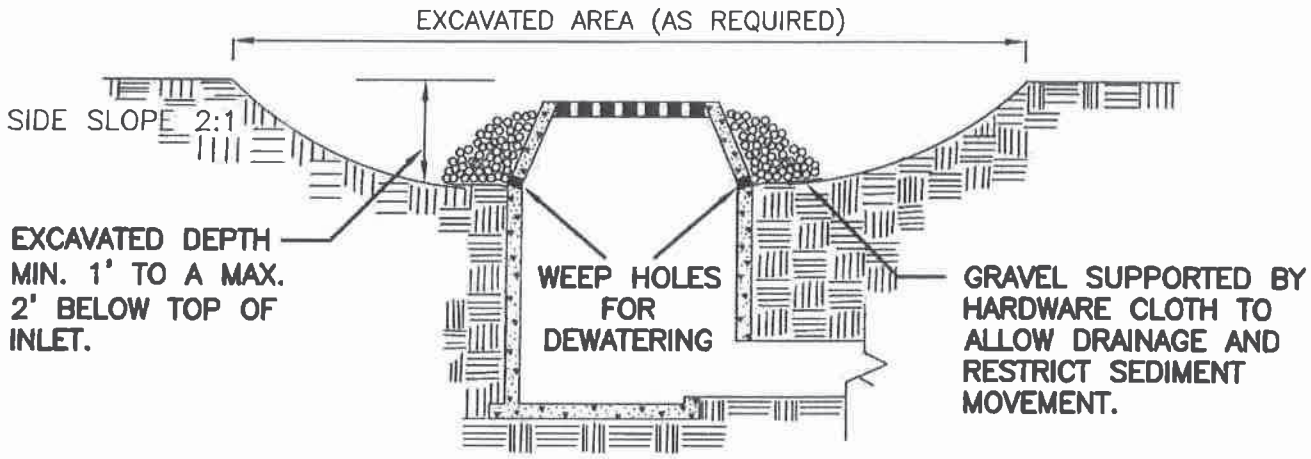

CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE

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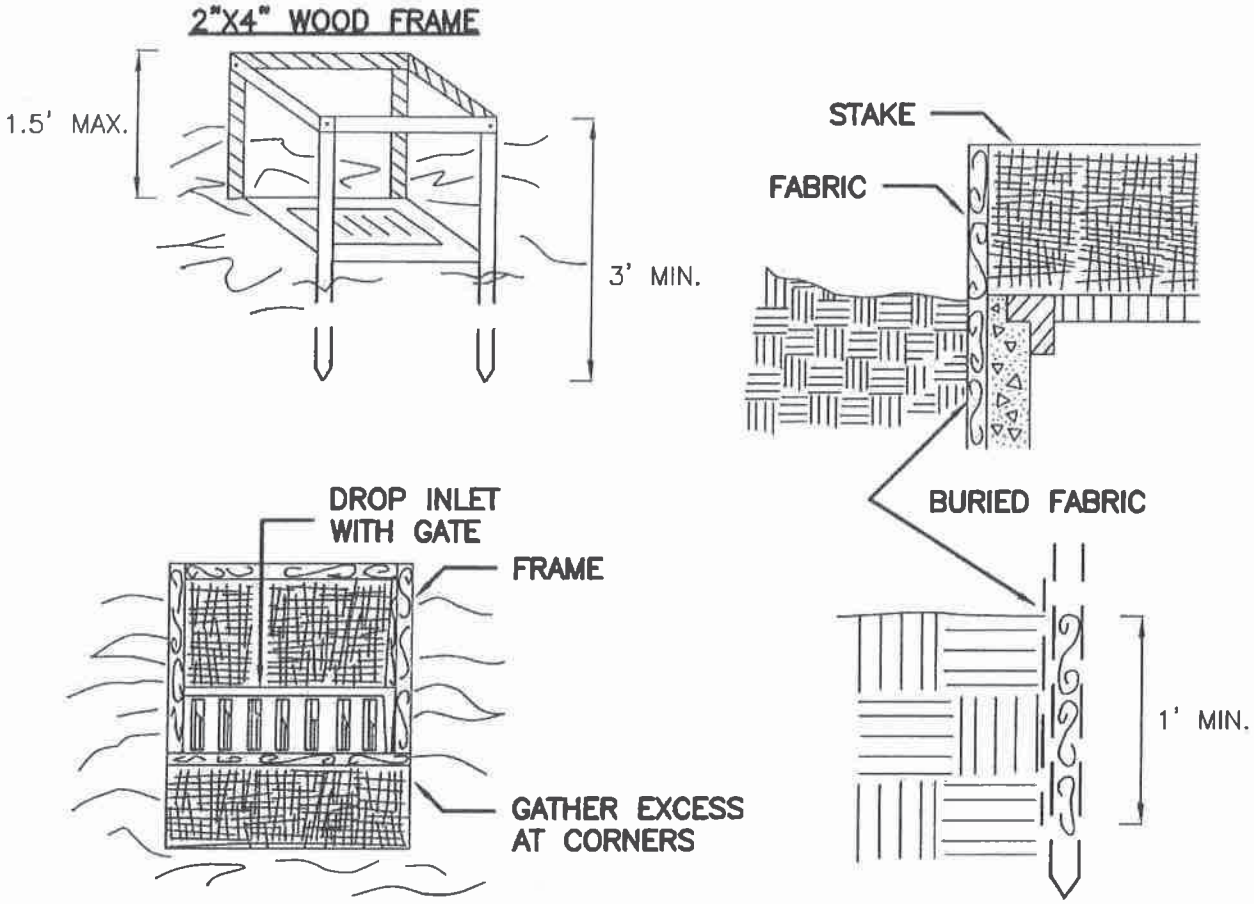

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2

NOT TO SCALE

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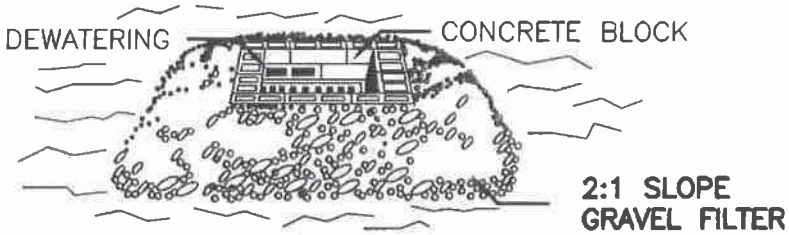
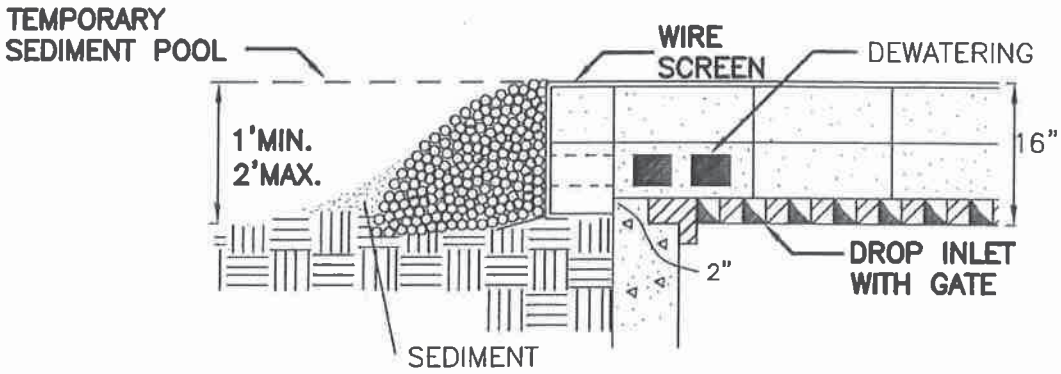
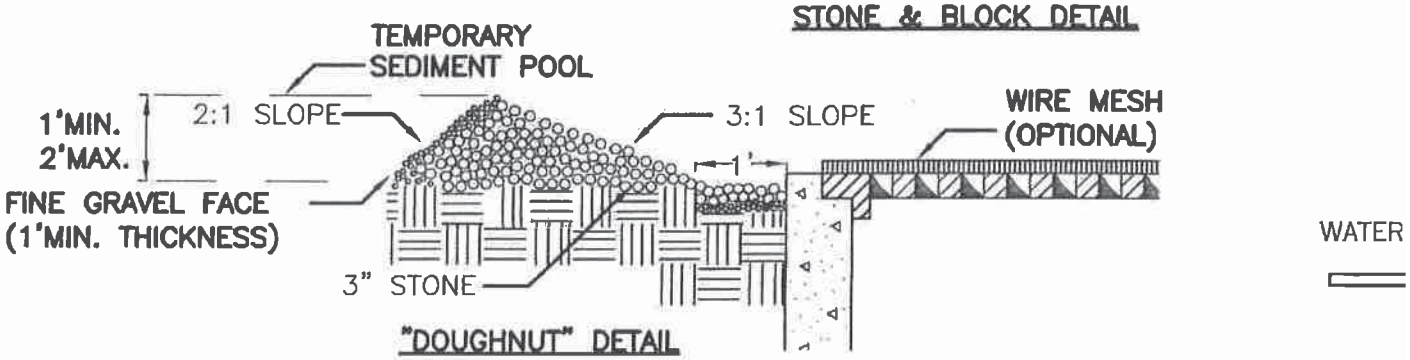


STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2–3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

NOT TO SCALE

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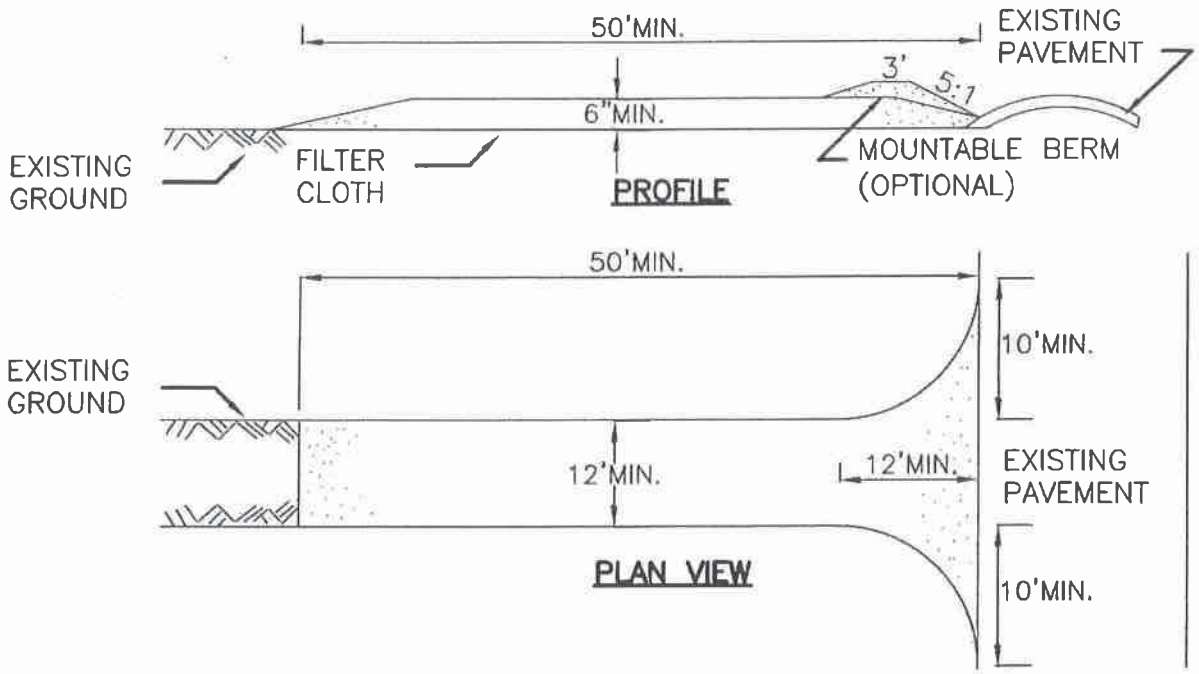

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

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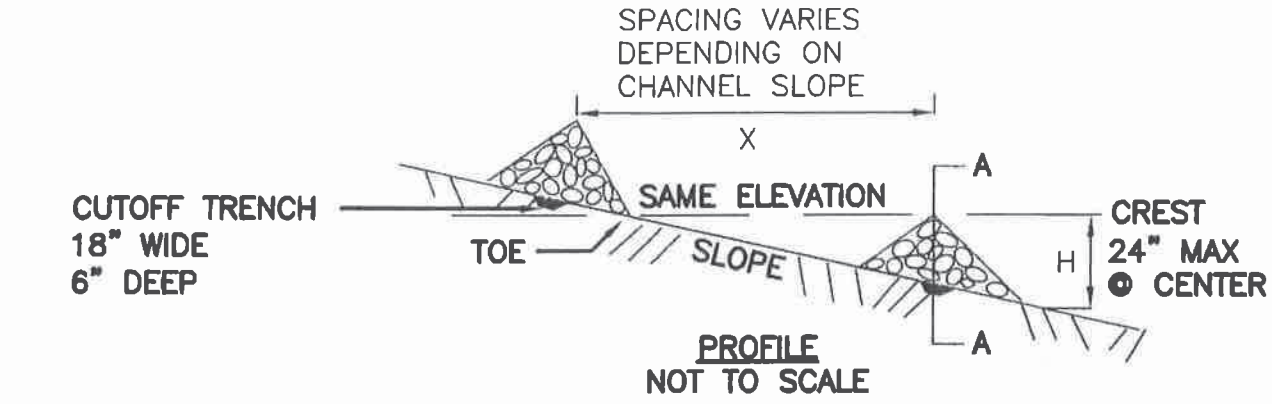
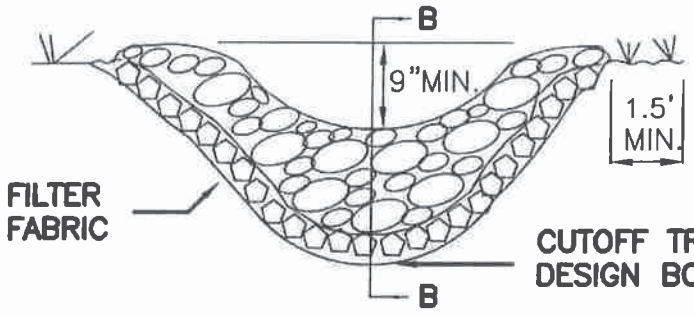
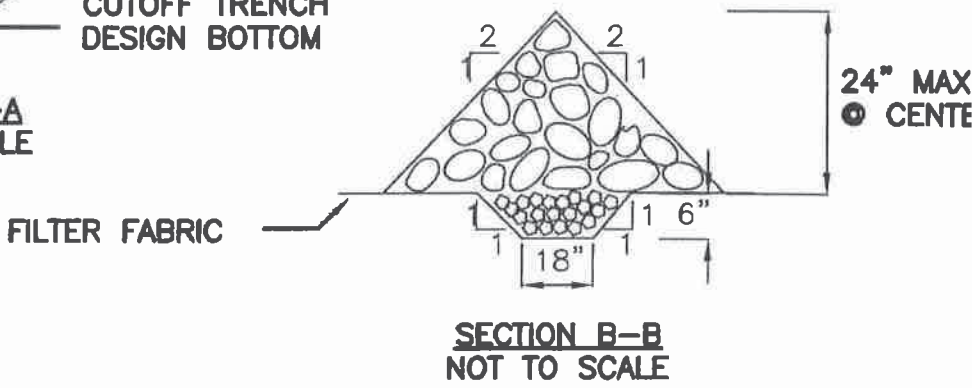




$$X = \frac{H\ (Ft)}{SLOPE\ (FT/FT)}$$



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

STONE CHECK DAM DETAIL

NOT TO SCALE

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Appendix J

Stormwater Management Maintenance

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STORMWATER CONTROL FACILITY
MAINTENANCE AGREEMENT

Stormwater Management Facility Inspection Procedures

Post Construction Operation & Maintenance:

1. On a quarterly basis, perform the following:
   a. Inspect catch basins, manholes and storm piping for debris and accumulation of sediment.
   b. Remove and properly dispose of any collected debris from structures.
   c. Flush storm sewers with water, if necessary, to remove accumulated sediment.
   d. Check all rip rap stone for erosion and re-stone, if necessary, to prevent further erosion.
   e. Inspect grass and landscaped areas for un-vegetated areas or areas with less than 80% healthy stand of grass and reseed and mulch as necessary. Water areas daily if reseeded between July and August.

2. Maintain all lawn areas by regular mowing, including the grass slopes of the detention basins. Any eroded areas shall be re-graded, seeded and mulched immediately.

3. Inspect detention basins for debris and sediment accumulation two times per year (spring and fall). Debris and sediment accumulation should be removed from the basin every five to six years or with sediment buildup over 6" in depth. Remove and properly dispose of any collected debris and sediment.

4. The bioretention area shall be maintained as required in the NYSDEC Stormwater Management Design Manual and as a component of the property landscaping and shall be maintained on a regular basis. Sediment must be removed when accumulation depth exceeds on inch. Any erosion of the bioretention berm must be repaired as soon as possible to prevent diversion around the bioretention area.

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12.2.4 Bioretention

Includes: Tree Pits (RR-3), Tree Trench (RR-3), Rain Gardens (RR-6), Stormwater Planters (RR-7), Infiltration Bioretention (F-4), Filtration Bioretention (F-5), Bioslope (F-6), Dry Swales (O-1)

Note: For the purposes of this Chapter, the term "Bioretention" will be used to generally describe all of these practices.

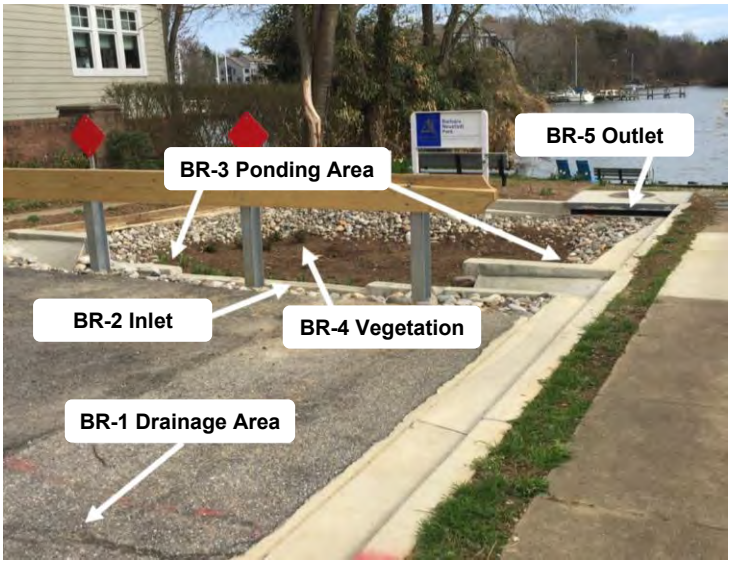

Figure 12.7 Key Areas for Level 1 Inspection of Bioretention

Components

Key components to inspect for Bioretention include the following:

- **BR-1 Drainage Area:** The drainage area sends runoff to and is uphill from the Bioretention. When it rains, water runs off and flows to the Bioretention and ponds within the filter temporarily (usually for no more than 48 hours). Sometimes, the runoff will contain dirt, grit, grass clippings, oil, or other substances that SHOULD NOT be directed to the practice.
- **BR-2 Inlets:** The inlets to a Bioretention are where water flows into the filter. Depending on the design, water can flow in through: curb cuts, pipes, ditches, or sheet flow.
- **BR-3 Ponding Area:** The ponding area fills up with water during a rainstorm. If you picture the Bioretention as a bathtub, there is the *bottom* (usually flat surface), *side slopes* (areas that slope down to the bottom from the surrounding ground), and *berms or structures that control the depth to which water ponds.*
- **BR-4 Vegetation:** The health of vegetation within the Bioretention is perhaps the most critical maintenance item for the Owner/Operator. Many Bioretention become overgrown, and "desirable" vegetation becomes choked out by weeds and invasive plants. Weeding and watering are essential the first year and can be minimized with the use of a weed-free mulch layer. It is important to know what the practice is supposed to look like, and what plants seem to be thriving or doing poorly.
- **BR-5 Outlets:** Outlets are where water leaves the Bioretention when stormwater exceeds the storage capacity.

Level 1 Inspections

Inspection Frequency: *4 times per year during the growing season. During the first 6 months of operation, it is recommended that bioretention practices be inspected at least twice, and after each storm event greater than 0.5".*

Maintenance Frequency: *At least 4 times during the growing season, bioretention should be pruned, weeded, and mowed around; have sediment, trash, and debris removed; and have dead and damaged plants replaced, as needed. In the spring and fall, the practices should have rills, gullies, dead or diseased trees and shrubs repaired or replaced; have bare areas reseeded if applicable; and have mulch replenished to required depth. In the winter months, planting material should be trimmed, and the practice should be inspected for snow accumulation. Once per year, soils should be tested for appropriate pH levels. Finally, every 2 to 3 years, damaged or compromised structures within the practice should be replaced, perennials should be trimmed and divided, and infiltration rates should be checked to ensure proper drainage.*

Maintenance Frequency (Design F-6): In addition to the above, Bioslopes should be inspected after snow events to ensure that the added weight from accumulated snow did not compact the filter media. On a monthly basis, stabilize eroded areas, ensure that flow is not bypassing the facility, and mow the slope using a retractable arm mower to a height of 6 to 15 inches. Recommend performing a flow test on the cleanouts annually to check for clogging, and to remove accumulated sediment that exceeds three inches in depth.

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Curb Inlet #1: flow enters through curb channel.



Curb Inlet #2: flow enters through drop curb.



Pea Gravel Diaphragm: sheet flow enters and is evenly distributed along the practice length.



Grass filter strip: sheet flow enters and is evenly distributed along the practice length.

Figure 12.8 Bioretention Filter Inlets

Triggers for Level 2 Inspection

The most likely triggers for Level 2 Inspection of BR practices are:

- Water ponding on surface of practice for more than 72 hours after a storm event
- Bioslope does not drain properly
- Sparse or out of control vegetation
- Practice deviates from original design
- Erosion of inlets, filter bed or outlets
- Significant sediment accumulation

Triggers for Level 3 Inspection

The most likely triggers for Level 3 Inspection of BR practices are:

- Standing water caused by clogged or over compacted media
- Vegetation management needed
- Bioretention does not conform to original design plan in surface area or storage.
- Severe erosion especially when caused by subsurface defect
- Widespread significant and persistent sediment accumulation

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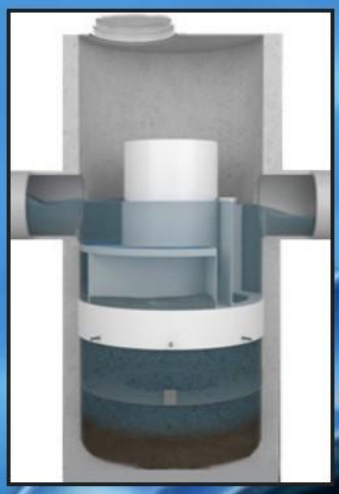
HydroStorm

Hydrodynamic Separator



Product Info

HydroStorm efficiently removes oil, trash, and TSS (suspended solids and their associated metals, nutrients, bacteria), from stormwater runoff which is required in NDPES permits and the Clean Water Act.

Applications

HydroStorm is used as a standalone treatment solution for urban retrofit and redevelopment applications; as part of a treatment train for new developments; and as a pretreatment device for infiltration, underground storage, and bio-retention.



Features

- Internal high flow bypass prevents scour at high flows
- Designed to accommodate multiple inlet pipes
- Captures oil spills, TSS and trash
- Lower cost compared to other competitors
- Reduced sump depths to minimize excavation
- Small footprint to avoid conflicts with other services
- Engineered for traffic loading
- Can be used as a inlet, bend, or junction structure
- Sized based on independent TSS removal results
- Low Headloss (K= 1.04) to minimize impact to drainage system
- Minimum elevation drop from inlet to outlet

Sizing & Design

Sized based on independent laboratory testing results. Approved and/or certified by numerous agencies (NJDEP, 2018; NJCAT, 2018; ETV Canada, 2018)

Hydroworks LLC
888-290-7900
www.hydroworks.com
info@hydroworks.com

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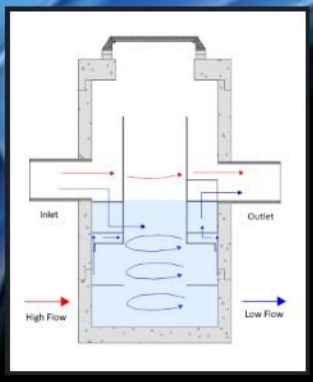
HydroStorm

Hydrodynamic Separator





HYDROSTORM WATER QUALITY FLOW RATES (cfs)					
Model	NJDEP* (67 um)	ConnDOT** (100 um)	NH*** (OK110)	150 um***	200 um***
HS 4/HS 4i	0.9	1.1	0.9	1.6	2.0
HS 5	1.4	2.0	1.5	2.5	3.2
HS 6	2.0	3.1	2.1	3.6	4.5
HS 7	2.7	4.5	2.9	4.9	6.2
HS 8	3.5	6.1	3.8	6.3	8.1
HS 10	5.5	11.3	5.9	9.9	12.6
HS 12	7.9	18.9	8.5	14.3	18.2

*50% Annual TSS Removal **60% Annual TSS Removal ***80% TSS Removal at WQF

Hydroworks will design a unit for you or you can download our free design software at www.hydroworks.com

Hydroworks LLC
888-290-7900
www.hydroworks.com
info@hydroworks.com

For more information, call your local Hydroworks representative:

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Specifications

1. Must be independently tested to the 2013 NJDEP Laboratory Protocol and 2013 ETV Canada protocol (ISO 14024:2016). Separator must be sized based on this data.

2. Any testing performed by the manufacturer is unacceptable to demonstrate an alternate equal.

3. Field Testing is unreliable, site and storm specific, and subject to compounding equipment and analytical errors and therefore is unacceptable as verification of an alternate equal. TARP verfication as per NJDEP is testing consistent with the 2013 NJDEP laboratory protocol.

4. The separator must be designed based on the following criteria:

Flow Criteria	
Water Quality FLow Rate cfs (L/s)	
Peak Design Flow Rate cfs (L/s)	

TSS Removal Criteria	
Annual TSS Removal (%)	
NJDEP/ETV Canada TSS	
OK110 Sand	
City of Toronto	
Other	

Notes:

1. Headloss K factor of 1.04 for hydraulic gradeline calculations

2. Sump depths shown are typical. Additional depth can be added as required

3. Multiple inlet pipes allowed

4. Drops allowed

5. Inlet invert elevations should be the same or higher than the outlet invert elevation. Inlet can be up to 12" (300 mm) lower than outlet if pretreatment area is omitted but 12" (300 mm) must be added to sump depth to maintain overall treatment volume.

6. Solid Cover shown. HydroStorm can be desiged with an inlet grate if required.

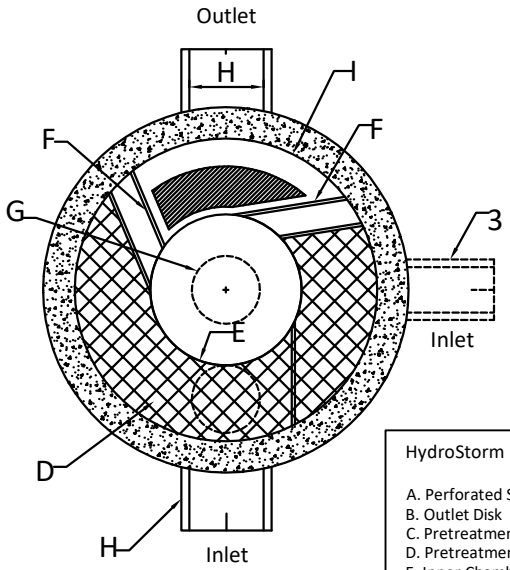
7. Oil capacities given are spill capacities.

8. Sediment depths are maximum holding capacities and not recommended capacities for regular maintenance.

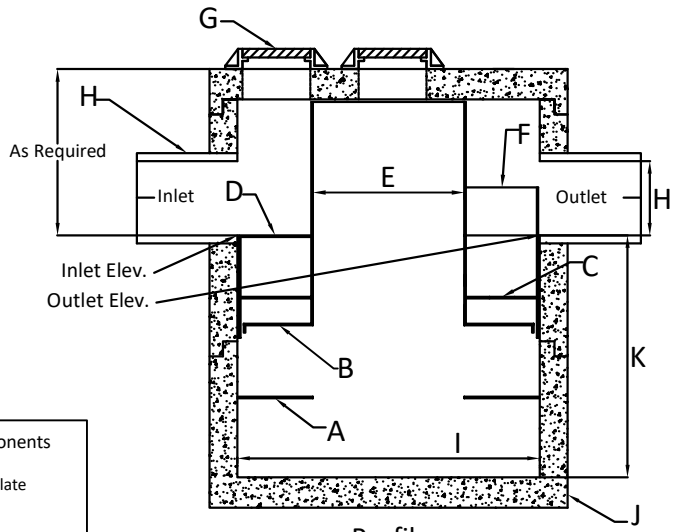
9. Capacities are rounded down to nearest 5 gal or ft3 (1L or 0.1 m3 for metric units)

10. Base Extensions not provided on standard units larger than the HS 6. Extensions can be provided if required due to groundwater/buoyancy concerns at the request of the engineer of record.

11. HS4 to HS6 models require one frame and cover. HS7 to HS12 models require two covers



Plan



Profile

HydroStorm Components

A. Perforated Scour Plate
B. Outlet Disk
C. Pretreatment Disk
D. Pretreatment Grate
E. Inner Chamber
F. By-Pass Weirs
G. Frame and Cover (1-2)
H. Inlet and Outlet Pipes
I. Structure Diameter
J. Base Extension (HS4 - HS6)
K. Sump Depth

HydroStorm by Hydroworks, LLC
US Patent No. 10,710,907
www.hydroworks.com
888-290-7900

HydroStorm Dimensions / Capacities

Model	Diameter ft (m) (9)	Sump Depth ft (m) (11)	Inner Chamber Diam. ft (m) (5)	Max. Pipe in (mm) (8)	Oil Spill Volume gal (L)	Sediment Volume ft3 (m3)	Total Volume gal (L)
HS 3	3 (0.9)	3 (0.9)	1.5 (0.45)	18 (450)	40 (155)	10 (0.35)	155 (600)
HS 4	4 (1.2)	4 (1.2)	2 (0.6)	24 (600)	95 (375)	30 (0.85)	375 (1420)
HS 5	5 (1.5)	5 (1.5)	2.5 (0.8)	30 (750)	165 (635)	60 (1.8)	730 (2780)
HS 6	6 (1.8)	6 (1.8)	3 (0.9)	36 (900)	270 (1030)	110 (3.2)	1265 (4800)
HS 7	7 (2.1)	6.5 (2.0)	3.5 (1.0)	42 (1050)	410 (1560)	160 (4.6)	1870 (7080)
HS 8	8 (2.4)	7 (2.1)	4 (1.2)	48 (1200)	615 (2330)	220 (6.2)	2630 (9960)
HS 10	10 (3.0)	9 (2.7)	5 (1.5)	60 (1500)	1130 (4285)	465 (13.1)	5285 (20015)
HS 12	12 (3.6)	11 (3.3)	6 (1.8)	72 (1800)	1875 (7100)	835 (23.7)	9305 (35225)

Hydroworks HydroStorm

PROJECT:

LOCATION:

REVISION DATE: 08/07/2020

Hydroworks

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Hydroworks® HydroStorm

Operations & Maintenance Manual

Version 1.2

Please call Hydroworks at 888-290-7900 or email us at support@hydroworks.com if you have any questions regarding the Inspection Checklist. Please email a copy of the completed checklist to Hydroworks at for our records.

Introduction

The HydroStorm is a state-of-the-art hydrodynamic separator. Hydrodynamic separators remove solids, debris and lighter than water (oil, trash, floating debris) pollutants from stormwater. Hydrodynamic separators and other water quality measures are mandated by regulatory agencies (Town/City, State, Federal Government) to protect storm water quality from pollution generated by urban development (traffic, people) as part of new development permitting requirements.

As storm water treatment structures fill up with pollutants they become less and less effective in removing new pollution. Therefore, it is important that storm water treatment structures be maintained on a regular basis to ensure that they are operating at optimum performance. The HydroStorm is no different in this regard and this manual has been assembled to provide the owner/operator with the necessary information to inspect and coordinate maintenance of their HydroStorm.

Hydroworks® HydroStorm Operation

The Hydroworks HydroStorm (HS) separator is a unique hydrodynamic by-pass separator. It incorporates a protected submerged pretreatment zone to collect larger solids, a treatment tank to remove finer solids, and a dual set of weirs to create a high flow bypass. High flows are conveyed directly to the outlet and do not enter the treatment area, however, the submerged pretreatment area still allows removal of coarse solids during high flows.

Under normal or low flows, water enters an inlet area with a horizontal grate. The area underneath the grate is submerged with openings to the main treatment area of the separator. Coarse solids fall through the grate and are either trapped in the pretreatment area or conveyed into the main treatment area depending on the flow rate. Fines are transported into the main treatment area. Openings and weirs in the pretreatment area allow entry of water and solids into the main treatment area and cause water to rotate in the main treatment area creating a vortex motion. Water in the main treatment area is forced to rise along the walls of the separator to discharge from the treatment area to the downstream pipe.

The vortex motion forces solids and floatables to the middle of the inner chamber. Floatables are trapped since the inlet to the treatment area is submerged. The design maximizes the retention of settled solids since solids are forced to the center of the inner chamber by the vortex motion of water while water must flow up the walls of the separator to discharge into the downstream pipe.

A set of high flow weirs near the outlet pipe create a high flow bypass over both the pretreatment area and main treatment chamber. The rate of flow into the treatment area is regulated by the number and size of openings into the treatment chamber and the height of by-pass weirs. High flows flow over the weirs directly to the outlet pipe preventing the scour and resuspension of any fines collected in the treatment chamber.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

A central access tube is located in the structure to provide access for cleaning. The arrangement of the inlet area and bypass weirs near the outlet pipe facilitate the use of multiple inlet pipes.

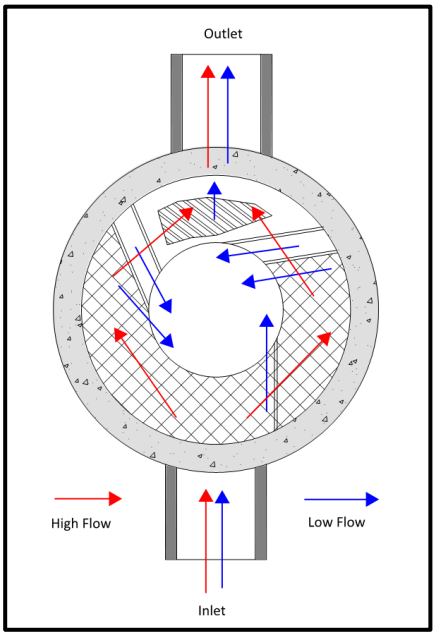

Figure 1. Hydroworks HydroStorm Operation – Plan View

Figure 2 is a profile view of the HydroStorm separator showing the flow patterns for low and high flows.

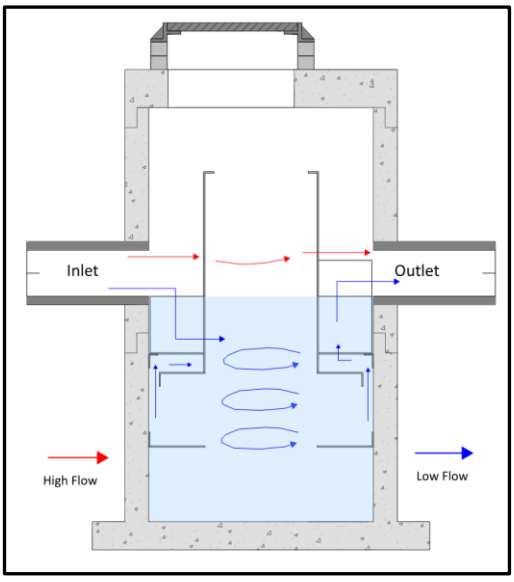

Figure 2. Hydroworks HydroStorm Operation – Profile View

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

The HS 4i is an inlet version of the HS 4 separator. There is a catch-basin grate on top of the HS 4i. A funnel sits sits underneath the grate on the frame and directs the water to the inlet side of the separator to ensure all lows flows are properly treated. The whole funnel is removed for inspection and cleaning.

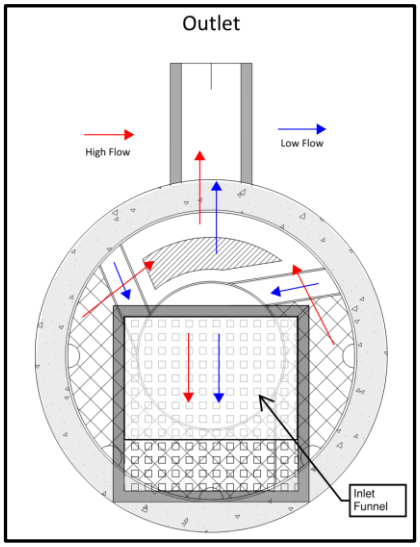

Figure 3. Hydroworks HS 4i Funnel

Construction Materials

The inner chamber and outlet baffle are made out of a copolymer plastic. The shell of the structure is pre-cast concrete. Pre-cast concrete is readily accepted by all municipalities since it has the following advantages:

- long service life
- ease of installation (less dependent on backfill (contractor proficiency) for structural integrity)
- concrete structures are designed for both anti-buoyancy and traffic loading without any field requirements (such as structural loading slabs in traffic areas and anti-buoyancy slabs to prevent groundwater uplift).
- low maintenance requirements

Hydroworks HS Separator Dimensions and Capacities

The HS separator is manufactured in a variety of sizes from 4 ft inside diameter to 12 ft inside diameter as shown in Table 1. Larger sizes may not be available in all areas. Please check with Hydroworks to ensure availability of the larger model sizes.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Table 1. Hydroworks HS Separator Dimensions*					
Model	Structure Inside Diam. (SID) (mm)	Structure Depth (mm)*	Sediment/ Sinking Trash Volume (L)	Oil/Floating Trash Volume (L)	Permanent Pool Wet Volume (L)
HS 3	900	1050	420	150	700
HS 4	1200	1200	845	355	1420
HS 5	1500	1500	1695	620	2775
HS 6	1800	1800	3110	1020	4800
HS 7	2100	1950	4530	1550	7080
HS 8	2400	2100	6225	2325	9960
HS 9	2700	2400	9200	3195	14410
HS 10	3000	2700	13025	4275	20015
HS 12	3600	3000	20525	7095	30535

*Dimensions vary with project requirements

The volumes provided in Table 1 for oil and sediment are to full capacity and not indicative of recommended depths/volumes for maintenance.

Headloss

Any water quality system implemented in a storm drain network will create headloss in the system. In general, depending on the configuration of the by-pass, systems designed to treat high flows or all of the flow will have a higher headloss impact on the storm drain network than systems that by-pass high flows.

The headloss created by the HS separator was measured in an independent laboratory (Alden Research Laboratory) for a full-scale HS 4. The K value (h = K v2/(2g)) for headloss calculations was determined to be 1.04 as shown in Figure 3.

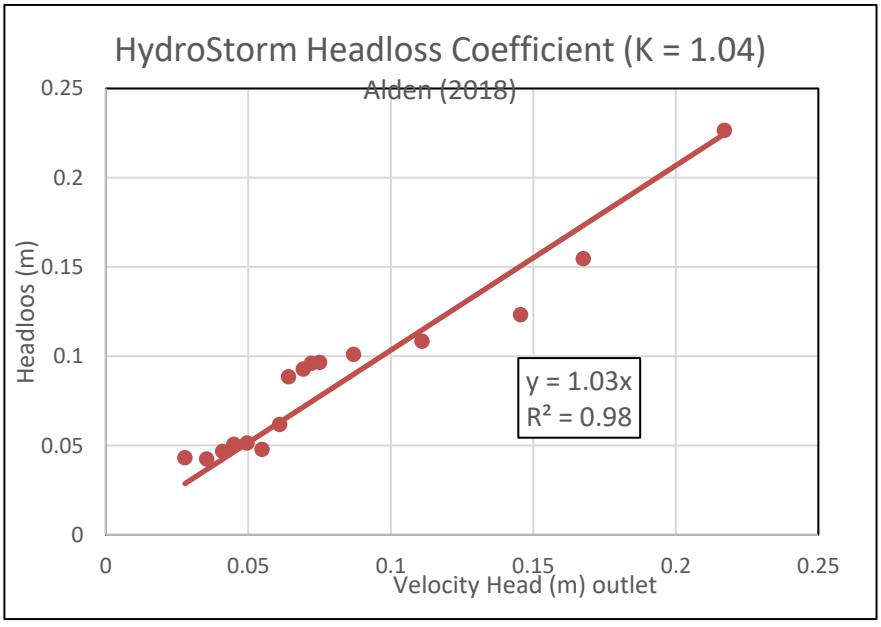

Figure 3. HydroStorm Headloss K Factor (1.04)

Hydroworks

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Inspection

Procedure

Floatables

A visual inspection can be conducted for floatables by removing the covers and looking down into the center access tube of the separator. Separators with an inlet grate (HS 4i or custom separator) will have a plastic funnel located under the grate that must be removed from the frame prior to inspection or maintenance. If you are missing a funnel please contact Hydroworks at the numbers provided at the end of this document.

TSS/Sediment

Inspection for TSS build-up can be conducted using a Sludge Judge®, Core Pro®, AccuSludge® or equivalent sampling device that allows the measurement of the depth of TSS/sediment in the unit. These devices typically have a ball valve at the bottom of the tube that allows water and TSS to flow into the tube when lowering the tube into the unit. Once the unit touches the bottom of the device, it is quickly pulled upward such that the water and TSS in the tube forces the ball valve closed allowing the user to see a full core of water/TSS in the unit. The unit should be inspected for TSS through each of the access covers. Several readings (2 or 3) should be made at each access cover to ensure that an accurate TSS depth measurement is recorded.

Frequency

Construction Period

The HydroStorm separator should be inspected every four weeks and after every large storm (over 0.5” (12.5 mm) of rain) during the construction period.

Post-Construction Period

The Hydroworks HydroStorm separator should be inspected during the first year of operation for normal stabilized sites (grassed or paved areas). If the unit is subject to oil spills or runoff from unstabilized (storage piles, exposed soils) areas the HydroStorm separator should be inspected more frequently (4 times per year). The initial annual inspection will indicate the required future frequency of inspection and maintenance if the unit was maintained after the construction period.

Reporting

Reports should be prepared as part of each inspection and include the following information:

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

1. Date of inspection
2. GPS coordinates of Hydroworks unit
3. Time since last rainfall
4. Date of last inspection
5. Installation deficiencies (missing parts, incorrect installation of parts)
6. Structural deficiencies (concrete cracks, broken parts)
7. Operational deficiencies (leaks, blockages)
8. Presence of oil sheen or depth of oil layer
9. Estimate of depth/volume of floatables (trash, leaves) captured
10. Sediment depth measured
11. Recommendations for any repairs and/or maintenance for the unit
12. Estimation of time before maintenance is required if not required at time of inspection

A sample inspection checklist is provided at the end of this manual.

Maintenance

Procedure

The Hydroworks HydroStorm unit is typically maintained using a vacuum truck. There are numerous companies that can maintain the HydroStorm separator. Maintenance with a vacuum truck involves removing all of the water and sediment together. The water is then separated from the sediment on the truck or at the disposal facility.

A central access opening (24” (600 mm) or greater) is provided to the gain access to the lower treatment tank of the unit. This is the primary location to maintain by vacuum truck. The pretreatment area can also be vacuumed and/or flushed into the lower treatment tank of the separator for cleaning via the central access once the water level is lowered below the pretreatment floor.

In instances where a vacuum truck is not available other maintenance methods (i.e. clamshell bucket) can be used, but they will be less effective. If a clamshell bucket is used the water must be decanted prior to cleaning since the sediment is under water and typically fine in nature.

The local municipality should be consulted for the allowable disposal options for both water and sediments prior to any maintenance operation. Once the water is decanted the sediment can be removed with the clamshell bucket.

Disposal of the contents of the separator depend on local requirements. Maintenance of a Hydroworks HydroStorm unit will typically take 1 to 2 hours based on a vacuum truck and longer for other cleaning methods (i.e. clamshell bucket).

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

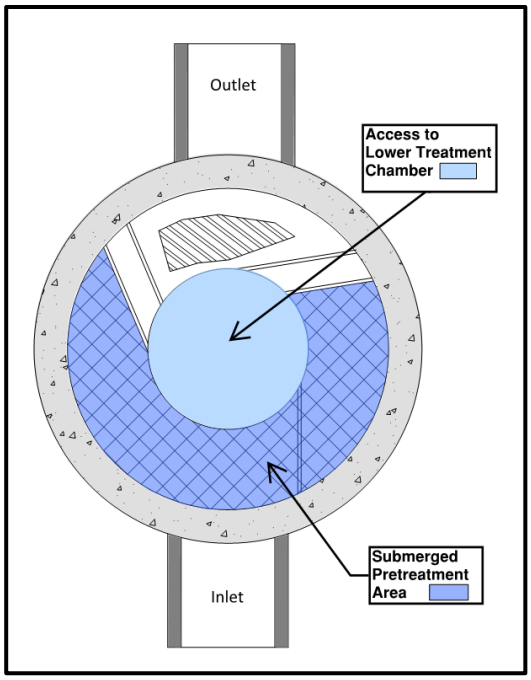

Figure 3. Maintenance Access

Frequency

Construction Period

A HydroStorm separator can fill with construction sediment quickly during the construction period. The HydroStorm must be maintained during the construction period when the depth of TSS/sediment reaches 24” (600 mm). It must also be maintained during the construction period if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the area of the separator

The HydroStorm separator should be maintained at the end of the construction period, prior to operation for the post-construction period.

Post-Construction Period

The HydroStorm was independently tested by Alden Research Laboratory in 2017. A HydroStorm HS 4 was tested for scour with a 50% sediment depth of 0.5 ft.(150 mm). The sump depths given in Table 1 are scaled larger than required based on standard scaling requirements (NJDEP, ETV Canada). Accordingly maintenance depths for units larger than the HS 4 will be larger than 300 mm.

There will be designs with increased sediment storage based on specifications or site-specific criteria. A measurement of the total depth in the separator through the central access tube should be taken and compared to sump depth given in Table 1.

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The standard sump depth from Table 1 should be subtracted from the measured depth and the resulting extra depth should be added to the values given in Table 2 to determine the site-specific sediment maintenance depth for that separator.

For example, if the measured sump depth in the HS-7 is 7.5 feet, then the sediment maintenance depth for that HS-7 is 2.25 ft (= 0.5 + 1.75) and the separator does not need to be cleaned for sediment accumulation until the measure sediment depth is 2.25 ft.

The HydroStorm separator must also be maintained if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the water surface of the separator.

Table 2 Standard Maintenance Depths for HydroStorm Models

Model	Diameter ft (mm)	Sediment Maintenance Depth for Total Water Depth ft (mm)*
HS-3	3 (900)	1 (300)
HS-4	4 (1200)	1 (300)
HS-5	5 (1500)	1.75 (530)
HS-6	6 (1800)	2 (610)
HS-7	7 (2100)	1.75 (535)
HS-8	8 (2400)	1.5 (465)
HS-9	9 (2700)	1.75 (540)
HS-10	10 (3000)	2 (615)
HS-12	12 (3600)	1.5 (470)

*based on standard sump depths in Table 1

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HYDROSTORM INSPECTION SHEET

Date _____
Date of Last Inspection _____

Site _____
City _____
State _____
Owner _____

GPS Coordinates _____

Date of last rainfall _____

Site Characteristics	**Yes**	**No**
Soil erosion evident	☐	☐
Exposed material storage on site	☐	☐
Large exposure to leaf litter (lots of trees)	☐	☐
High traffic (vehicle) area	☐	☐

HydroStorm	**Yes**	**No**
Obstructions in the inlet or outlet	☐ *	☐
Missing internal components	☐ **	☐
Improperly installed inlet or outlet pipes	☐ ***	☐
Internal component damage (cracked, broken, loose pieces)	☐ **	☐
Floating debris in the separator (oil, leaves, trash)	☐	☐
Large debris visible in the separator	☐ *	☐
Concrete cracks/deficiencies	☐ ***	☐
Exposed rebar	☐ **	☐
Water seepage (water level not at outlet pipe invert)	☐ ***	☐

Water level depth below outlet pipe invert _____"

Routine Measurements

Floating debris depth	**< 0.5" (13mm)**	☐	**>0.5" 13mm)**	☐ *
Floating debris coverage	**< 50% of surface area**	☐	**> 50% surface area**	☐ *
Sludge depth	**< 12" (300mm)**	☐	**> 12" (300mm)**	☐ *****

* Maintenance required
** Repairs required
*** Further investigation is required

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydroworks

Other Comments:

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

Hydroworks

Hydroworks® HydroStorm

One Year Limited Warranty

Hydroworks, LLC warrants, to the purchaser and subsequent owner(s) during the warranty period subject to the terms and conditions hereof, the Hydroworks HydroStorm to be free from defects in material and workmanship under normal use and service, when properly installed, used, inspected and maintained in accordance with Hydroworks written instructions, for the period of the warranty. The standard warranty period is 1 year.

The warranty period begins once the separator has been manufactured and is available for delivery. Any components determined to be defective, either by failure or by inspection, in material and workmanship will be repaired, replaced or remanufactured at Hydroworks' option provided, however, that by doing so Hydroworks, LLC will not be obligated to replace an entire insert or concrete section, or the complete unit. This warranty does not cover shipping charges, damages, labor, any costs incurred to obtain access to the unit, any costs to repair/replace any surface treatment/cover after repair/replacement, or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to any material that has been disassembled or modified without prior approval of Hydroworks, LLC, that has been subjected to misuse, misapplication, neglect, alteration, accident or act of God, or that has not been installed, inspected, operated or maintained in accordance with Hydroworks, LLC instructions and is in lieu of all other warranties expressed or implied. Hydroworks, LLC does not authorize any representative or other person to expand or otherwise modify this limited warranty.

The owner shall provide Hydroworks, LLC with written notice of any alleged defect in material or workmanship including a detailed description of the alleged defect upon discovery of the defect. Hydroworks, LLC should be contacted at 136 Central Ave., Clark, NJ 07066 or any other address as supplied by Hydroworks, LLC. (888-290-7900).

This limited warranty is exclusive. There are no other warranties, express or implied, or merchantability or fitness for a particular purpose and none shall be created whether under the uniform commercial code, custom or usage in the industry or the course of dealings between the parties. Hydroworks, LLC will replace any goods that are defective under this warranty as the sole and exclusive remedy for breach of this warranty.

Subject to the foregoing, all conditions, warranties, terms, undertakings or liabilities (including liability as to negligence), expressed or implied, and howsoever arising, as to the condition, suitability, fitness, safety, or title to the Hydroworks HydroStorm are hereby negated and excluded and Hydroworks, LLC gives and makes no such representation, warranty or undertaking except as expressly set forth herein. Under no circumstances shall Hydroworks, LLC be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the HydroStorm, or the cost of other goods or services related to the purchase and installation of the HydroStorm. For this Limited Warranty to apply, the HydroStorm must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Hydroworks' written installation instructions.

Hydroworks, LLC expressly disclaims liability for special, consequential or incidental damages (even if it has been advised of the possibility of the same) or breach of expressed or implied warranty. Hydroworks, LLC shall not be liable for penalties or liquidated damages, including loss of production and profits; labor and materials; overhead costs; or other loss or expense incurred by the purchaser or any third party. Specifically excluded from limited warranty coverage are damages to the HydroStorm arising from ordinary wear and tear; alteration, accident, misuse, abuse or neglect; improper maintenance, failure of the product due to improper installation of the concrete sections or improper sizing; or any other event not caused by Hydroworks, LLC. This limited warranty represents Hydroworks' sole liability to the purchaser for claims related to the HydroStorm, whether the claim is based upon contract, tort, or other legal basis.

Attachment: 23-4099 REVISE SWPPP uploaded 021425 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

PROPOSED SITE MODIFICATIONS

Amherst Development Park
6000 - 6040 N.Bailey Ave, Amherst, NY
BDC Property # 1723
SITE DEVELOPMENT DRAWINGS

INDEX OF DRAWINGS

DWG. #	DRAWING NAME	REVISION	DATE
C1.0	COVER SHEET	10	02.05.2025
C2.0	EXISTING SURVEY		
C3.00	DEMOLITION & EROSION CONTROL PLAN WEST	10	02.05.2025
C3.01	DEMOLITION & EROSION CONTROL PLAN EAST	10	02.05.2025
C3.10	DEMOLITION & EROSION CONTROL PLAN DETAILS	6	08.30.2024
C4.0	OVERALL SITE PLAN	10	02.05.2025
C4.01	FIRE TRUCK TURNING PLAN		
C4.10	DETAILED SITE PLAN WEST	10	02.05.2025
C4.11	DETAILED SITE PLAN EAST	10	02.05.2025
C4.20	CONSTRUCTION DETAILS	10	02.05.2025
C5.00	GRADING PLAN WEST	10	02.05.2025
C5.01	GRADING PLAN EAST	10	02.05.2025
C5.10	DRAINAGE PLAN WEST	10	02.05.2025
C5.11	DRAINAGE PLAN EAST	10	02.05.2025
C5.20	DRAINAGE DETAILS	10	02.05.2025
C5.21	DRAINAGE DETAILS	10	02.05.2025
C6.00	UTILITY PLAN WEST	10	02.05.2025
C6.01	UTILITY PLAN EAST	10	02.05.2025
C6.10	UTILITY DETAILS	7	12.03.2024
C7.0 - C7.4	LANDSCAPING PLANS	10	02.05.2025
C8.0	SITE LIGHTING PLAN	10	02.05.2025
C8.10	LIGHTING DETAILS	10	02.05.2025

OWNER/DEVELOPER:

NAME: BENDERSON DEVELOPMENT COMPANY, LLC
ADDRESS: 570 DELAWARE AVENUE, BUFFALO, NY 14202
CONTACT: DAVID ZUPPELLI
PHONE: 716 - 878 - 9683

BENDERSON DEVELOPMENT COMPANY, LLC
570 Delaware Ave.
Buffalo, New York 14202

SURVEYOR

NAME: COSTICH ENGINEERING
ADDRESS: 217 LAKE AVE ROCHESTER NY 14608
CONTACT: DAN HICKOK
PHONE: 585-485-3020

UTILITIES:

NATURAL GAS
NAME/TITLE: WILLIAM SCHNEIDER
COMPANY/DEPT: NATURAL FUEL GAS
ADDRESS: -
PHONE: 716 - 696 - 6460

TELEPHONE COMPANY
NAME/TITLE: JOHN HECKMAN
COMPANY/DEPT: VERIZON
ADDRESS: -
PHONE: 716 - 840 - 8603

ELECTRIC
NAME/TITLE: -
COMPANY/DEPT: NATIONAL GRID
ADDRESS: -
PHONE: -

DIG SAFELY NEW YORK
PHONE: 1 - 800 - 962 - 7962 OR (811)

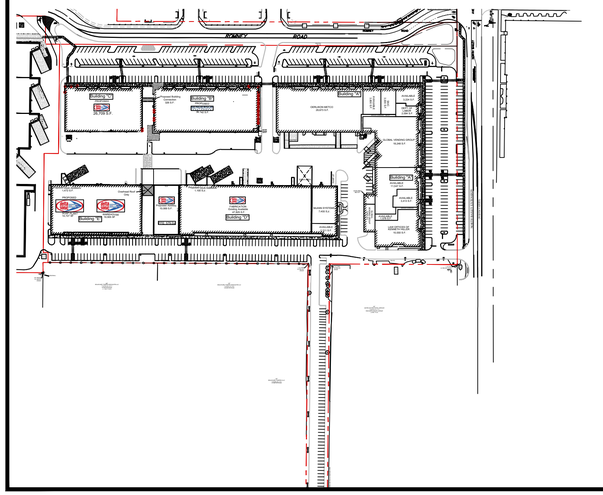
AGENCIES:

ENGINEERING DEPARTMENT
NAME/TITLE: JEFF BURROUGHS
COMPANY/DEPT: TOWN OF AMHERST, NY - ENGINEERING DPT
ADDRESS: 1100 NORTH FOREST RD, WILLIAMSVILLE, NY
PHONE: 716 - 631 - 7154 EX 7418

BUILDING & PLUMBING DEPARTMENT
NAME/TITLE: MARK BERKE
COMPANY/DEPT: TOWN OF AMHERST, NY - BUILDING DPT
ADDRESS: 5583 MAIN STREET, WILLIAMSVILLE, NY 14221
PHONE: 716 - 631 - 7080

PLANNING DEPARTMENT
NAME/TITLE: DAN HOWARD
COMPANY/DEPT: TOWN OF AMHERST, NY - PLANNING DPT
ADDRESS: 5583 MAIN STREET, WILLIAMSVILLE, NY 14221
PHONE: 716 - 631 - 7051

SITE LOCATION MAP 1:200



REGIONAL LOCATION MAP NTS



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
3	06.12.2024	DZ	Site Updates
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments
8	12.11.2024	DZ	Updated Sidewalk
10	02.05.2025	DZ	Town Comments

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

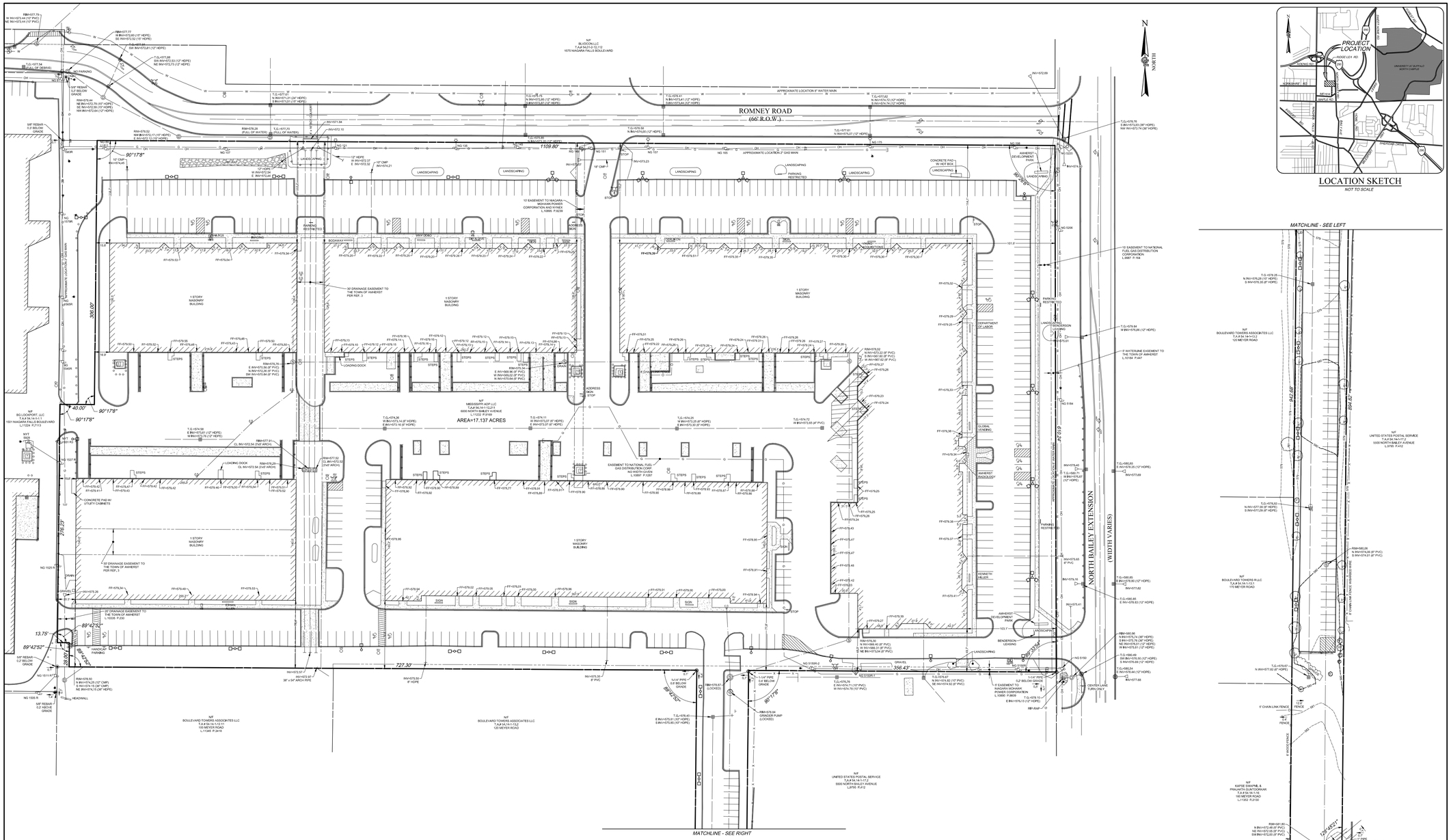
SEAL



TITLE:
COVER SHEET

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.16.2023
DRAWING NO.
C1.0

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N.Bailey Ave)



LINE LEGEND

- SECTION/PARCEL BOUNDARY
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST., RIGHT-OF-WAY LINE
- EXIST., EDGE OF PAVEMENT
- EXISTING WATER MAIN, VALVE, & HYDRANT,
- EXISTING SANITARY SEWER, & MANHOLE,
- EXISTING DRAINAGE SEWER, FIELD INLET, INLET MANHOLE, MANHOLE, & END SECTION,
- EXISTING OVERHEAD UTILITIES
- EXISTING TELEPHONE
- EXISTING UNDERGROUND UTILITIES
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING GUARD RAIL
- TREE,HEDGE,EDGE OF WOODS
- EXISTING SWALE
- BARBED WIRE,STOCKADE,CHAIN LINKED FENCE
- 410 EXISTING CONTOUR
- x 420.4 EXISTING SPOT ELEVATION @ X
- CONCRETE PAD/ CONCRETE SIDEWALK

SYMBOL LEGEND

	DRAINAGE MANHOLE		ELECTRIC MANHOLE
	INLET DRAINAGE MANHOLE		ELECTRIC METER
	CATCH BASIN	T	TELEPHONE MANHOLE
	END SECTION		TELEPHONE PEDESTAL
	END OF PIPE	PB	PHONE BOOTH
	MANHOLE		PEDESTRIAN POLE
S	SANITARY MANHOLE	TRAF. CAB.	TRAFFIC CONTROL CABINET
⊕ C.O.	CLEAN OUT		LAMP POST
	GAS VALVE		LIGHT POLE
	GAS SERVICE		UTILITY POLE WITH LIGHT
	GAS METER	FLAG POLE	FLAG POLE
	WATER VALVE	MB	MAILBOX
	WATER SERVICE		BOLLARD
	HYDRANT		POST
	WATER METER		SIGN
CTV	CABLE TV PEDESTAL		SIGN
	SIGNAL POLE		SIGN
	UTILITY POLE		TURNING ARROW
	GUY WIRE		HANDICAP
	PULL BOX	STOP	STOP BAR
	ELECTRIC PULL BOX		TREE DECIDUOUS
	TELEPHONE PULL BOX		TREE CONIFEROUS
	TRAFFIC PULL BOX		BUSH
T	TRANSFORMER		

EASEMENT NOTES
T.A.# 54.14-1-12.211

1. EASEMENT MADE BY BOULEVARD POWER CO, TO NEW YORK TELEPHONE COMPANY RECORDED OCTOBER 30, 1968 IN LIBER 7527 OF DEEDS, PAGE 543, (NOT PLOTTABLE)
2. EASEMENT MADE BY MARET DEVELOPMENT CORPORATION OF NEW YORK TO NIAGARA MOHAWK POWER CORPORATION RECORDED SEPTEMBER 11, 1967 IN LIBER 7392 OF DEEDS, PAGE 474, (DOES NOT AFFECT PREMISES)
3. RIGHT OF WAY MADE BY MARET DEVELOPMENT CORPORATION OF NEW YORK TO IROQUOIS GAS CORPORATION RECORDED SEPTEMBER 29, 1967 IN LIBER 7399 OF DEEDS, PAGE 99, (NOT PLOTTABLE)
4. EASEMENT FROM NIAGARA BOULEVARD TOWERS, INC TO NIAGARA MOHAWK POWER CORPORATION AND NEW YORK TELEPHONE CO, RECORDED ON AUGUST 29, 1968 IN LIBER 7506 OF DEEDS, PAGE 503, (NOT PLOTTABLE)
5. EASEMENT RESERVED BY BOULEVARD TOWERS CO, CONTAINED IN DEED RECORDED ON JULY 28, 1988 AT LIBER 9695 OF DEEDS, PAGE 528.

SURVEY NOTES

1. TOPOGRAPHY SHOWN FROM A FIELD SURVEY BY COSTICH ENGINEERING ON 5/4/2021 HORIZONTAL AND VERTICAL DATA OBTAINED THROUGH NYSDOT CORS NETWORK REFERENCED TO THE FOLLOWING MONUMENT

HAMBURG CORS STATION
-LATITUDE: 42-43-02.66326 (N)
-LONGITUDE: 078-50-47.27326 (W)
-ELLIP HEIGHT: 212.494 METERS

} NAD 83 (CORS)
NAVD 88 (CORS)

REFERENCES

1. THE DEEDS AS SHOWN ON FILE AT THE ERIE COUNTY CLERKS OFFICE,
2. ALTA/NSPS LAND TITLE SURVEY PREPARED FOR DDR - PROJECT SABRE PROJECT, PREPARED BY BOCK & CLARK, HAVING PROJECT NO. 2015043356-003, DATED 10/6/2016.
3. ALTA/NSPS LAND TITLE SURVEY 6000-6040 NORTH BAILEY AVENUE, PREPARED BY TVGA CONSULTANTS, HAVING JOB NO. 2006.0095.00, DATED 6/1/2006,
4. MAP ENTITLED "1723/5256 AMHERST DEVELOPMENT - EXISTING FEATURES", PREPARED BY COSTICH ENGINEERING, D.P.C., HAVING DRAWING NO. 8084-VA110, DATED 8/1/2021,
5. MAP ENTITLED "1723/5256 AMHERST DEVELOPMENT - LAND TRANSFER PLAN", PREPARED BY COSTICH ENGINEERING, D.P.C., HAVING DRAWING NO. 8084-VA200, DATED 4/14/2022,
6. MAP ENTITLED "1723/5256 AMHERST DEVELOPMENT - LAND TRANSFER PLAN FROM T.A.# 54.14-1-12.211 TO T.A.# 54.14-1-1.1", PREPARED BY COSTICH ENGINEERING, D.P.C., HAVING DRAWING NO. 8084-VA220, DATED 6/9/2022.

UTILITY INFORMATION

UTILITY INFORMATION PER UFPO DESIGN TICKET # 04261-000-825-00 DATED APRIL 29, 2021

1. CHARTER COMMUNICATIONS BUFFALO	317-575-7800 X2	NO CONFLICT
2. ERIE COUNTY WATER AUTHORITY	716-685-6207	UTILITIES PLOTTED
3. LIGHTOWER FIBER TECHNOLOGIES	888-632-0931 X2	NO RESPONSE
4. NATIONAL FUEL GAS - TONAWANDA	716-857-7431	UTILITIES PLOTTED
5. NATIONAL GRID - WEST - ELECTRIC	315-428-6319	NO CONFLICT
6. SUNOCO PIPELINE LP	713-989-7079	NO RESPONSE
7. TOWN OF AMHERST	716-631-7413	UTILITIES PLOTTED
8. VERIZON / BUFFALO	315-937-2515	UTILITIES PLOTTED

SITE DATA

T.A.# 54.14-1-12.211

1. EXISTING ZONING: RD - RESEARCH AND DEVELOPMENT DISTRICT
2. BULK REQUIREMENTS:

	REQUIRED
MIN. LOT AREA (SF)	1 ACRE
MAX LOT COVERAGE	NONE REQUIRED
MIN. LOT WIDTH (FT)	35
MAX. BUILDING HEIGHT (FT)	65 FEET
MIN. FRONT YARD SETBACK (FT)	20 FEET FOR BUILDINGS UP TO 35 FEET IN HEIGHT; 30 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT
MIN. SIDE YARD SETBACK (FT)	0 TO 10 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET
MIN. REAR YARD SETBACK (FT)	15 FEET FOR BUILDINGS UP TO 30 FEET IN HEIGHT; 25 FEET FOR BUILDINGS GREATER THAN 30 FEET IN HEIGHT; PLUS 3 FEET FOR EACH 1 FOOT OF HEIGHT OVER 35 FEET

CERTIFICATION

WE, COSTICH ENGINEERING, D.P.C., HEREBY CERTIFY TO:

THIS MAP WAS PREPARED FROM NOTES OF AN INSTRUMENT SURVEY COMPLETED ON MAY 25, 2022 AND FROM THE REFERENCE(S) LISTED HEREON, NO SEARCH OF RECORDS, OTHER THAN THOSE REFERENCED, WAS MADE FOR EASEMENTS OR ENCUMBRANCES AFFECTING THIS PARCEL.

By: _____ Date: 8/18/2022
Daniel T. Hickok, N.Y.S. L.S., No. 050449

Dig Safely New York Call811 before you dig

EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	CHKD	APVLS

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COSTICH ENGINEERING, D.P.C.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR, ARCHITECT OR LANDSCAPE ARCHITECT, TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSED ACTION TAKEN THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX THE SEAL OF THE LICENSEE AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION, TO THE DOCUMENT.

STATE OF NEW YORK DANIEL T. HICKOK 050449 LICENSED LAND SURVEYOR

PROJECT ENGINEER	M.O.R.
DRAWN BY	G.M.S.
IN/CHK'D BY	G.M.S.
TOPO/SVD BY	G.L.R.
DATE	8/16/2022
SCALE	1"=40'

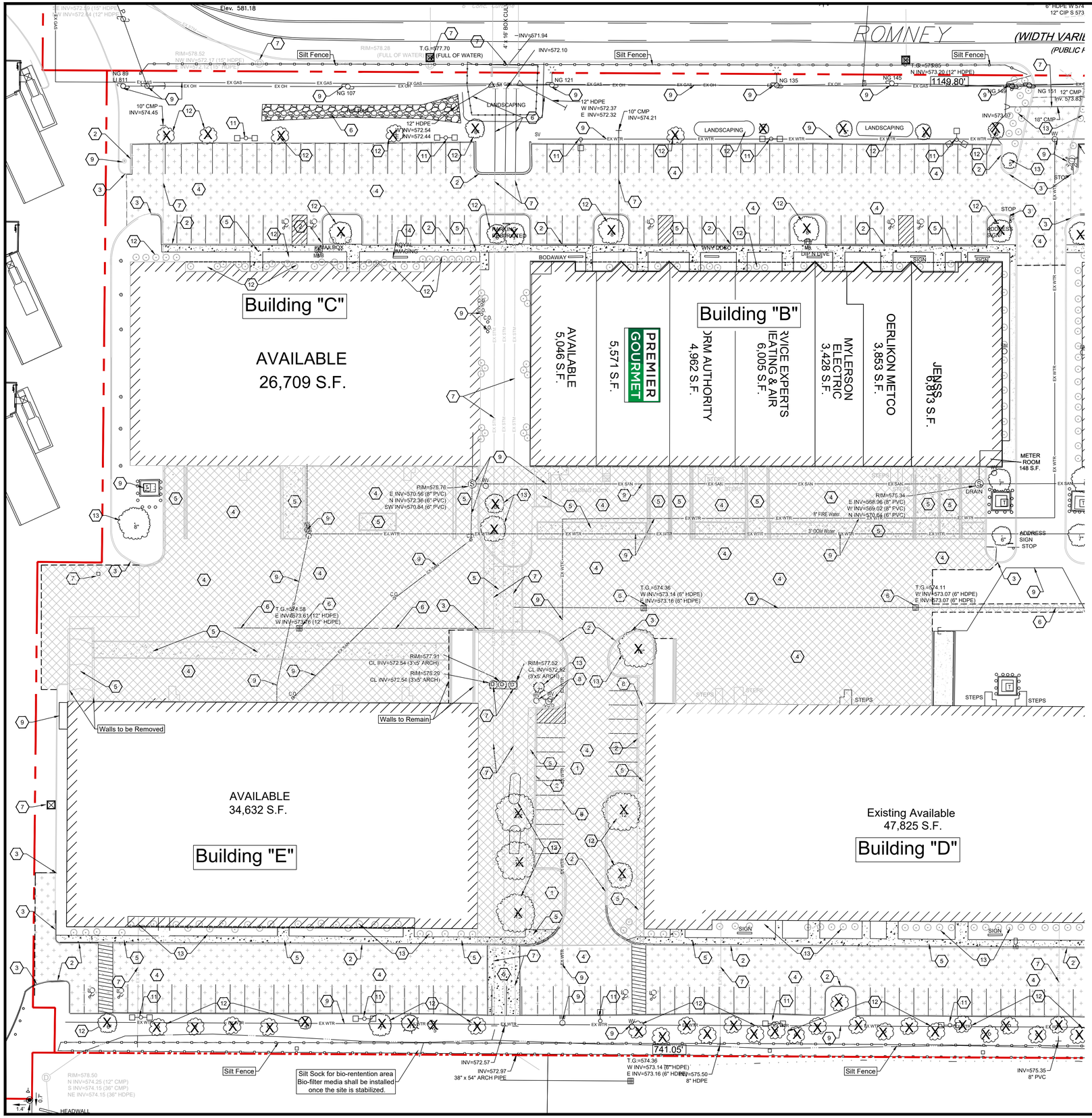
COSTICH ENGINEERING
217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

- CIVIL ENGINEERING
- LAND SURVEYING
- LANDSCAPE ARCHITECTURE

TITLE OF PROJECT	1723/5256 AMHERST DEVELOPMENT
TITLE OF DRAWING	EXISTING FEATURES
LOCATION OF PROJECT	TAX PARCEL NO. 54.14-1-12.211 TOWN 3 NORTH, TOWNSHIP 13, RANGE 7, HOLLAND LAND COMPANY'S SURVEY, TOWN OF AMHERST, COUNTY OF ERIE, STATE OF NEW YORK
CLIENT	BENDERSON DEVELOPMENT CO., INC. 570 DELAWARE AVENUE BUFFALO, NEW YORK 14202
DRWG #	80S4
	VA310 SHEET 1 OF 1

Packet Pg. 1284

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
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10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTING STONE BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIMMING THE PAVEMENT AND THEN A NEW TOP COAT, REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE, A COMBINATION OF THESE TWO OR ANOTHER METHOD OF THE CONTRACTORS CHOOSING. FINAL PAVEMENT WORK PLAN SHALL BE PROVIDED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL

DEMOLITION LEGEND:

- Property Line
- Existing Electric (EX ELEC)
- Existing Gas (EX GAS)
- Existing Water (EX WTR)
- Existing Overhead Utility (EX OH)
- Existing Sanitary (EX SAN)
- Existing Storm (EX STM)
- Existing Telecoms (EX TC)
- Saw Cut Line
- Silt Fence/Sock
- Inlet Protection
- X — Tree Removal
- Existing area to be removed. Subbase to be recycled, reused to regarde area.
- Existing Asphalt Pavement to be Removed. Sub-base to be recycled, and reused to regrade area.

DEMOLITION NOTES: (#)

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2. Existing Curb to be removed.
3. Limits of Curb Removal.
4. Existing Asphalt Pavement to be removed.
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7. Existing Storm Drainage/CB to remain and be protected during Construction.
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11. Existing Light Pole Base to be Relocated
12. Existing Landscaping to be Removed
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14. Existing Bollard/Signage to be removed.

Project Disturbance
Sub-Surface Disturbance: 4.03 Acres
Surface Disturbance: 3.26 Acres
Total Disturbance: 7.29 Acres.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

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NOTICE

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

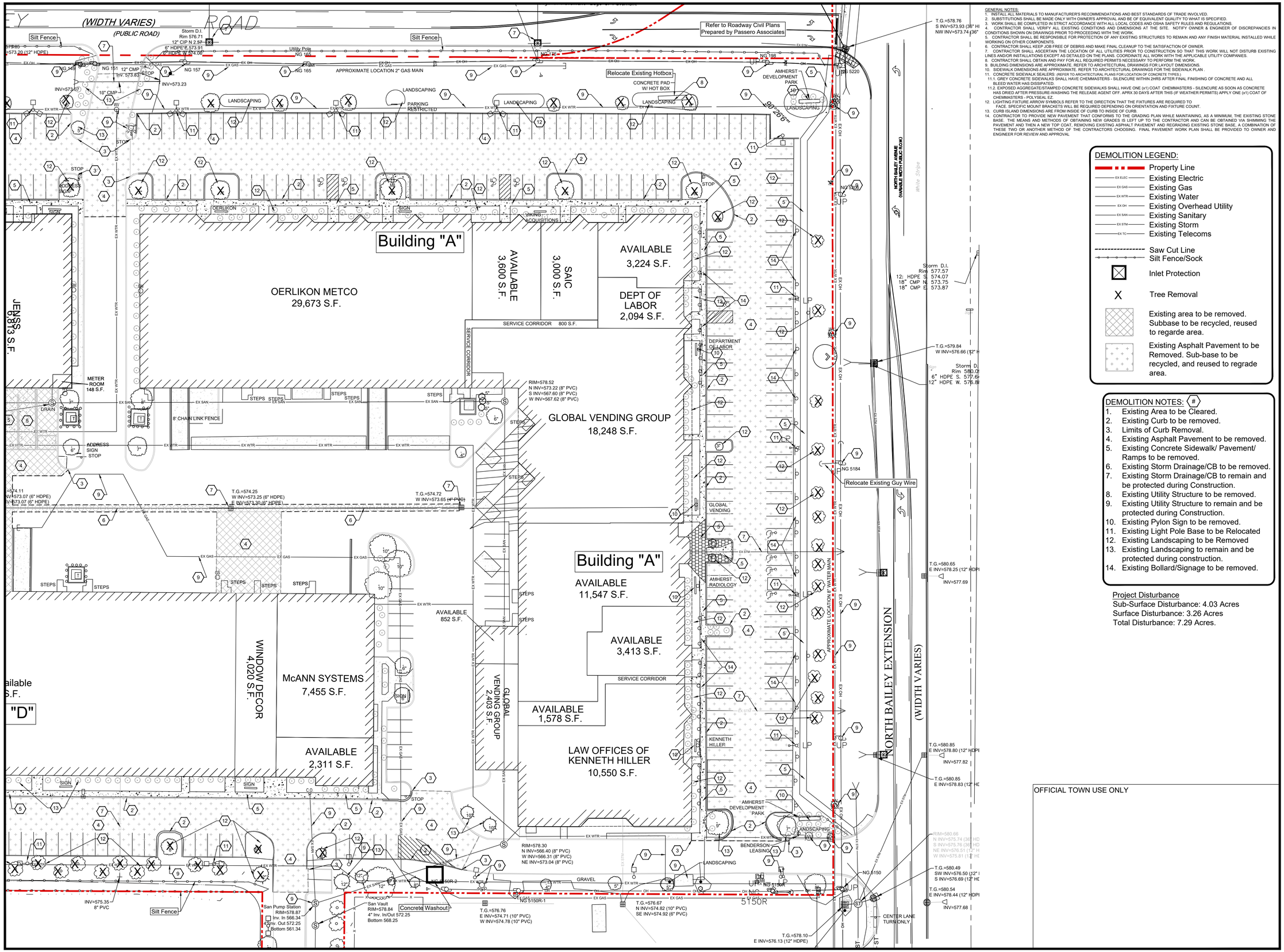
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031915 STATE OF NEW YORK

TITLE:
Demolition and Erosion Control Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C3.00

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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Surface Disturbance: 3.26 Acres
Total Disturbance: 7.29 Acres.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
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6	08.30.2024	DZ	Town Comments
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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

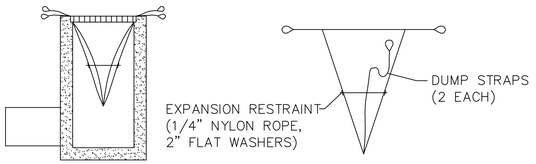
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 019 STATE OF NEW YORK

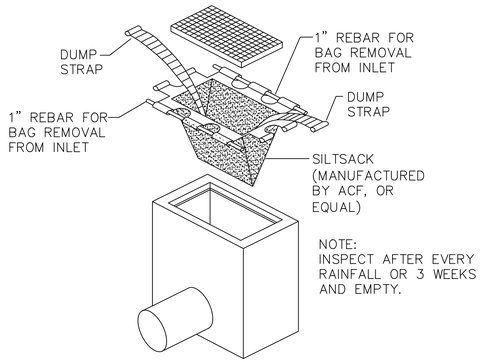
TITLE:
Demolition and Erosion Control Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C3.01

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

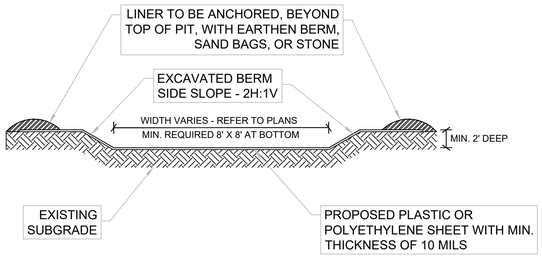


INSTALLATION DETAIL BAG DETAIL



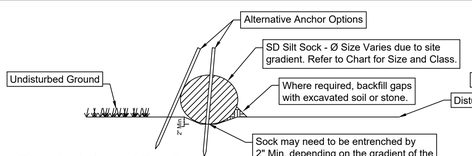
SILT SACK DETAIL

N.T.S.



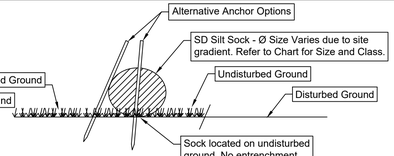
TYPICAL CONCRETE WASH OUT DETAIL

NOTES:
1. CONSTRUCT TO 2016 NYSDEC BLUE BOOK DESIGN CRITERIA



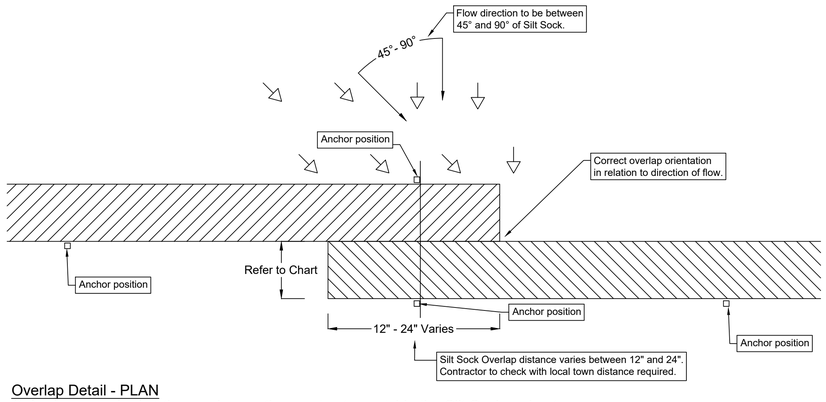
Disturbed Ground Detail

SD Silt Sock: Standard Duty Fabric



Undisturbed Ground Detail

SD Silt Sock: Standard Duty Fabric



Overlap Detail - PLAN

1) Anchors required at the overlap section are to stay outside the Silt Sock and not pierce through the material. See alternative anchor positons in details above.

Anchor at Overlaped Ends - SECTION

Size & Class Chart			
	Diameter		
Gradient	8"	12"	18"
0 - 2%	30	55	75
2.1 - 5%	25	40	55
5.1 - 10%	15	30	40
10.1 - 33%	10	15	20
> 33%	5	10	15

SD SILT SOCK DETAIL

SD Silt Sock: Standard Duty Fabric

Notes:

1 - Do not use sock below the normal watermark or perpendicular to flow in river and where the maximum incline is greater than 50%.
2 - Contractors should be aware of federal, state and local laws, rules regulations or permit requirements for the use of Silt Socks on site.
3 - Sock should be positioned on the outline of the area to be protected, but must be installed between 45° to 90° from directions of flow.
4 - Sock may be required to be entrenched a minimum of 2" on disturbed ground to ensure constant ground contact.
5 - All gaps and ruts must be backfilled with soil or sock material.
6 - Sock overlap should be in the direction of the flow. Overlap amount will be between 12" and 24". Contractor to check with local town for requirements.
7 - If sediment collects to 1/2 the height of the sock, then a second sock may be stacked immediately up slope of the original instead of removing the sediment.
8 - Sock joint is where two sock sections meet on a level grade, overlap and adjoining ends, tightening the ends together, and anchoring through each end. Where two sections meet on un-level ground, j-hook higher elevated end, anchor, and begin new section just below. Back fill any gaps.
9 - Sock should be inspected and repaired as needed.
10 - If ruts begin under the sock they should be backfilled with soil and compacted so that the ground and sock have continuous contact.
11 - If sock rolls out of place, the sock should be repositioned and secured with additional anchors.
12 - Tears in the Sock fabric may be repaired by wrapping a new piece of fabric over the sock and securing, or by place a second sock immediately up slope with the required overlap beyond deformation.
13 - A section of sock should be replaced whenever it has weakened to such an extent that the efficiency is reduced or diminished. Weakening can occur because the natural mesh fabric breaks down over time of from being moved/dragged on site.
14 - Sock should be replaced when sediment has built up and has been removed three times.
15 - All sediment in disturbed area next to sock must be removed and correctly disposed of before the sock can be removed.
16 - When removing, cut sock open and spread the filler material around. The netting should be removed from site.
17 - Sock should be installed before works commence on site.

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
6	08.30.2024	DZ	Town Comments

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 027109 STATE OF NEW YORK

TITLE: Demolition and Erosion Control Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023

DRAWING NO. C3.10

Attachment: SP-1988-11P_drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST, NY ZONING ANALYSIS

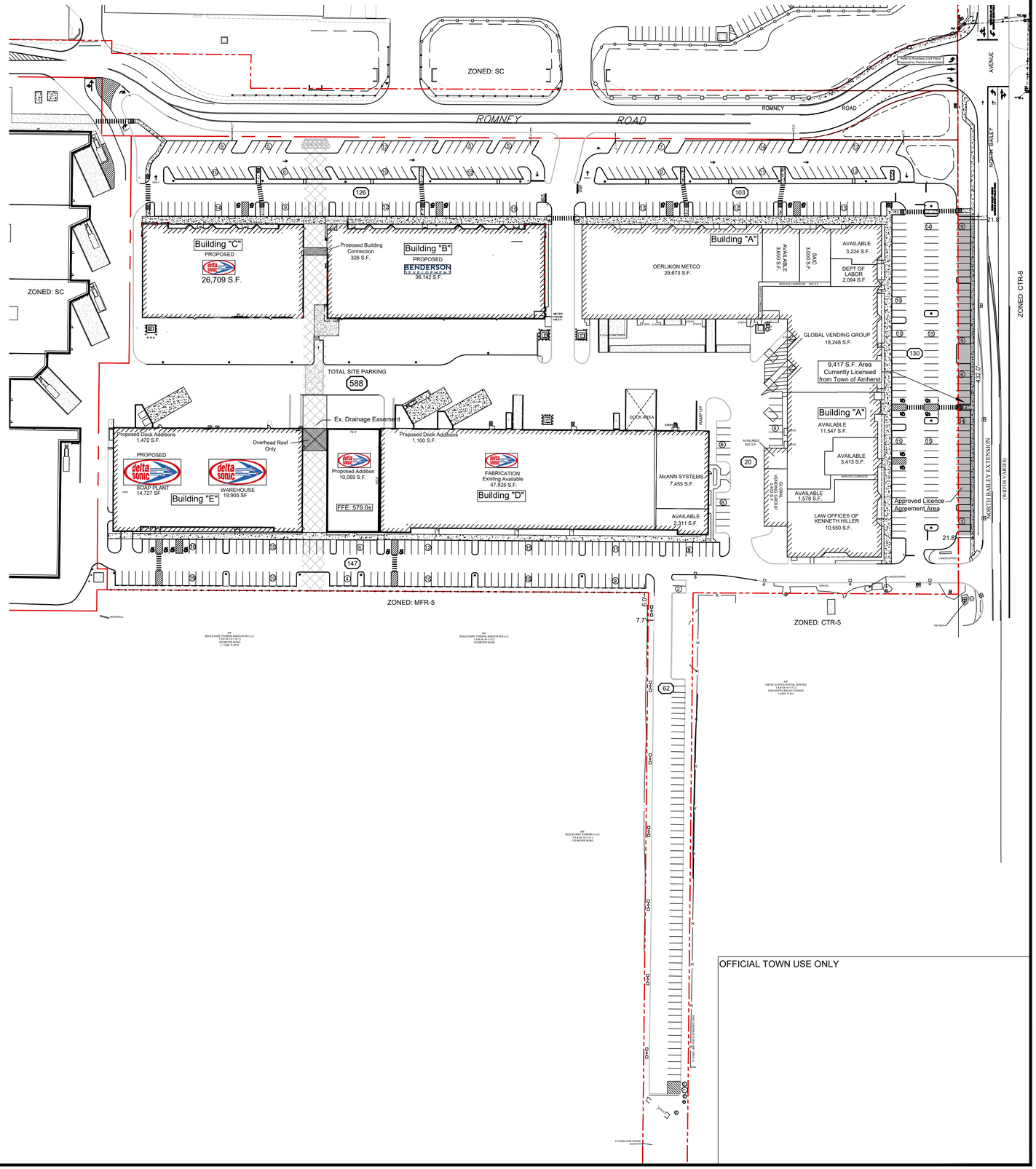
	REQUIRED	PROVIDED
ZONED (RD)	R-D	R-D
MIN LOT AREA	1 AC	17.14 AC
MAX. BUILDING HEIGHT	65'	<30'
BUILDING SETBACKS:		
FRONT YARD	40'	102.3'
SIDE YARD	15'	16.7'
REAR YARD	15'	48.4'
PARKING / ROAD/AUX SETBACKS:		
FRONT - ROMNEY ROAD	25'	0.3'
FRONT - N BAILEY	25'	*0'
REAR YARD	10'	6.0'

* Setback variance previously granted along North Bailey Road
- License Agreement along North Bailey has been previously granted
- Romney Road Pavement/Parking Setback - 14.5'
- N. Bailey Pavement/Parking Setback - 11.7'

PROPOSED PARKING ANAYLSIS

USE	CODE	S.F. USAGE	REQUIRED	PROVIDED
WAREHOUSE	1 / 1000 S.F.	180,573 SF	181 Spaces	
RETAIL/OFFICE	1 / 200 S.F.	75,495 SF	378 Spaces	
TOTAL		256,068 SF	559 Spaces	588 Spaces
STALL SIZE			9' X 19'	9' X 19'

*Refer alternative parking study for site required parking



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	11.15.2024	DZ	Site Updates
7	12.03.2024	DZ	Town Comments
8	12.11.2024	DZ	Updated Sidewalk
10	02.05.2025	DZ	Town Comments

SPECIAL INFORMATION:

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BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 036719 STATE OF NEW YORK

TITLE:

Overall Site Plan

SCALE: 1:70

DRAWN BY: DMZ

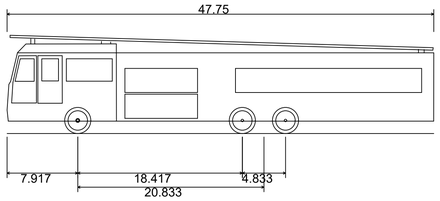
CHECKED BY: MAO

DATE: 11.06.2023

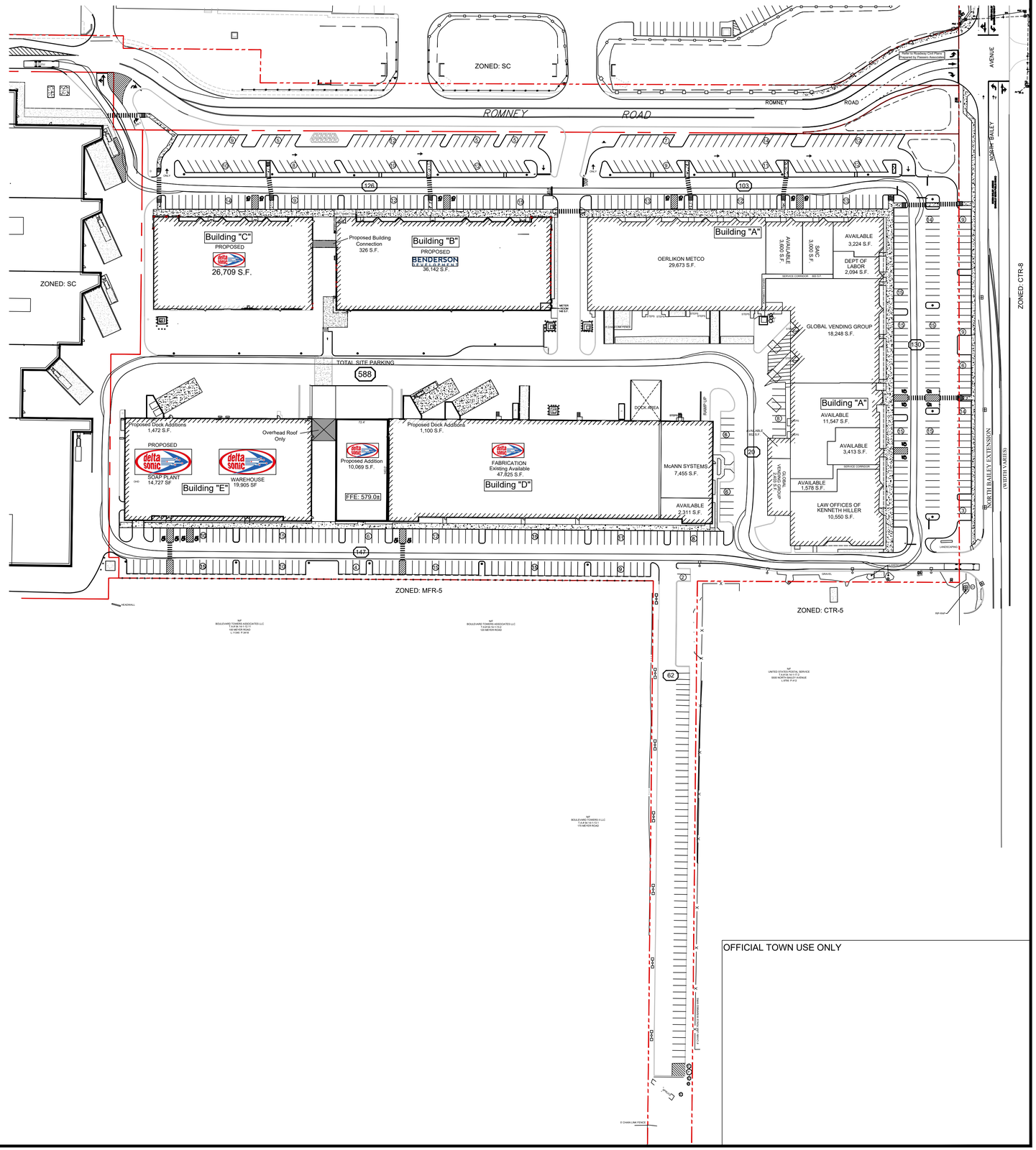
DRAWING NO.

C4.0

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



E-ONE HP95 Mid Mount	
Overall Length	47.750ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°



OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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(716) 886-0211

SEAL

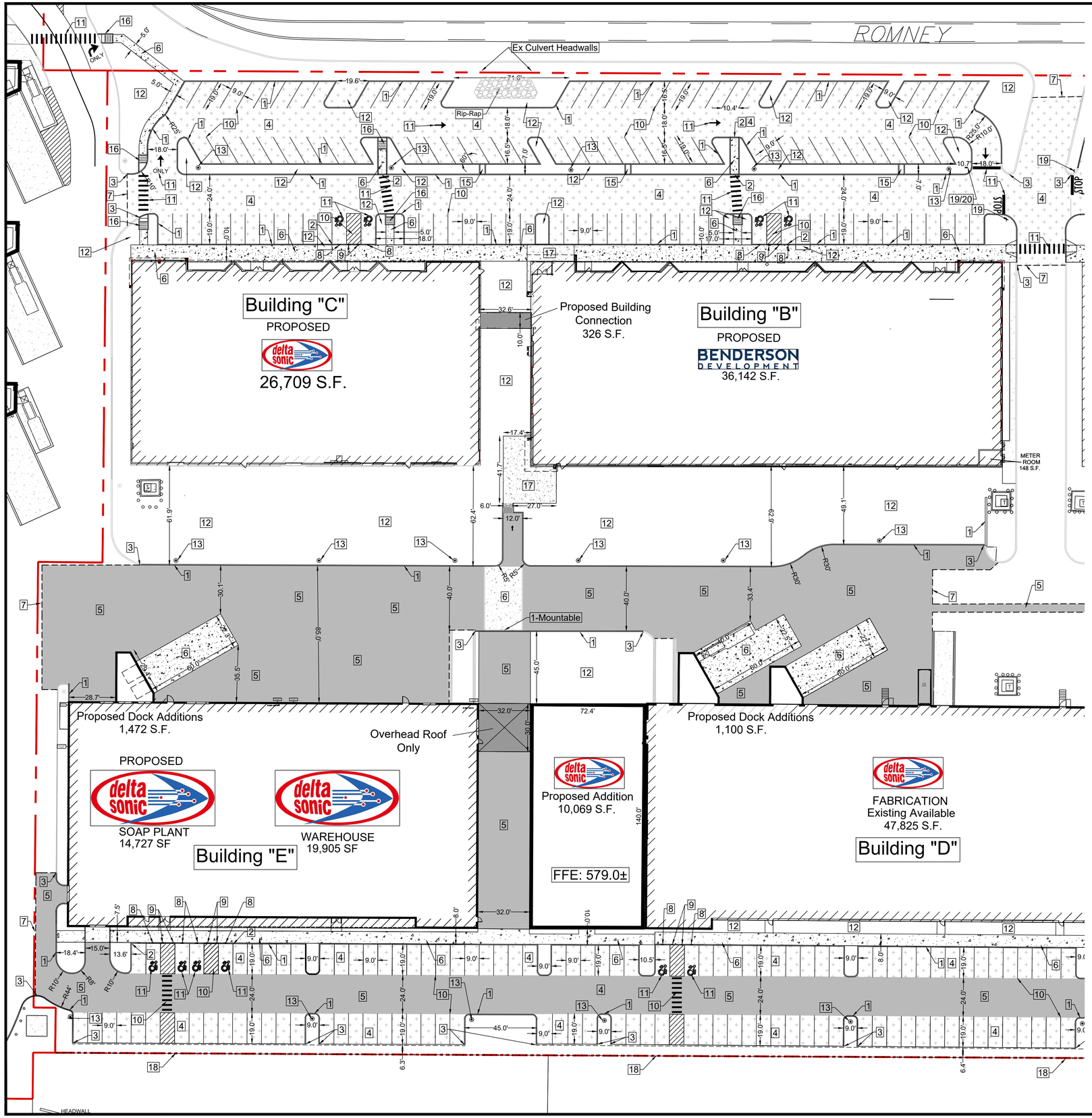


TITLE:

Fire Truck Turning Plan

SCALE: 1:70
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.30.2024
DRAWING NO.: C4.01

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.
9. BUILDING DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
    11.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
    11.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.
12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTING STONE BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIMMING THE PAVEMENT AND THEN A NEW TOP COAT, REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE, A COMBINATION OF THESE TWO OR ANOTHER METHOD OF THE CONTRACTORS CHOOSING. FINAL PAVEMENT WORK PLAN SHALL BE PROVIDED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL

SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement (Refer to General Note#14)
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES: #

1. Proposed 6" concrete Curb.
2. Proposed Flush Concrete Curb.
3. Match into Existing Curb or runout over 2'.
4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement
15. Proposed 3' Wide Curb Opening
16. Proposed Curb Return Ramp
17. Proposed Paver Sidewalk/Patio
18. Proposed Board on Board Fence
19. Proposed STOP Sign
20. Proposed Do Not Enter Sign

NB: All curb Radii to be 3' unless otherwise noted.

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BENDERSON DEVELOPMENT
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(716) 886-0211

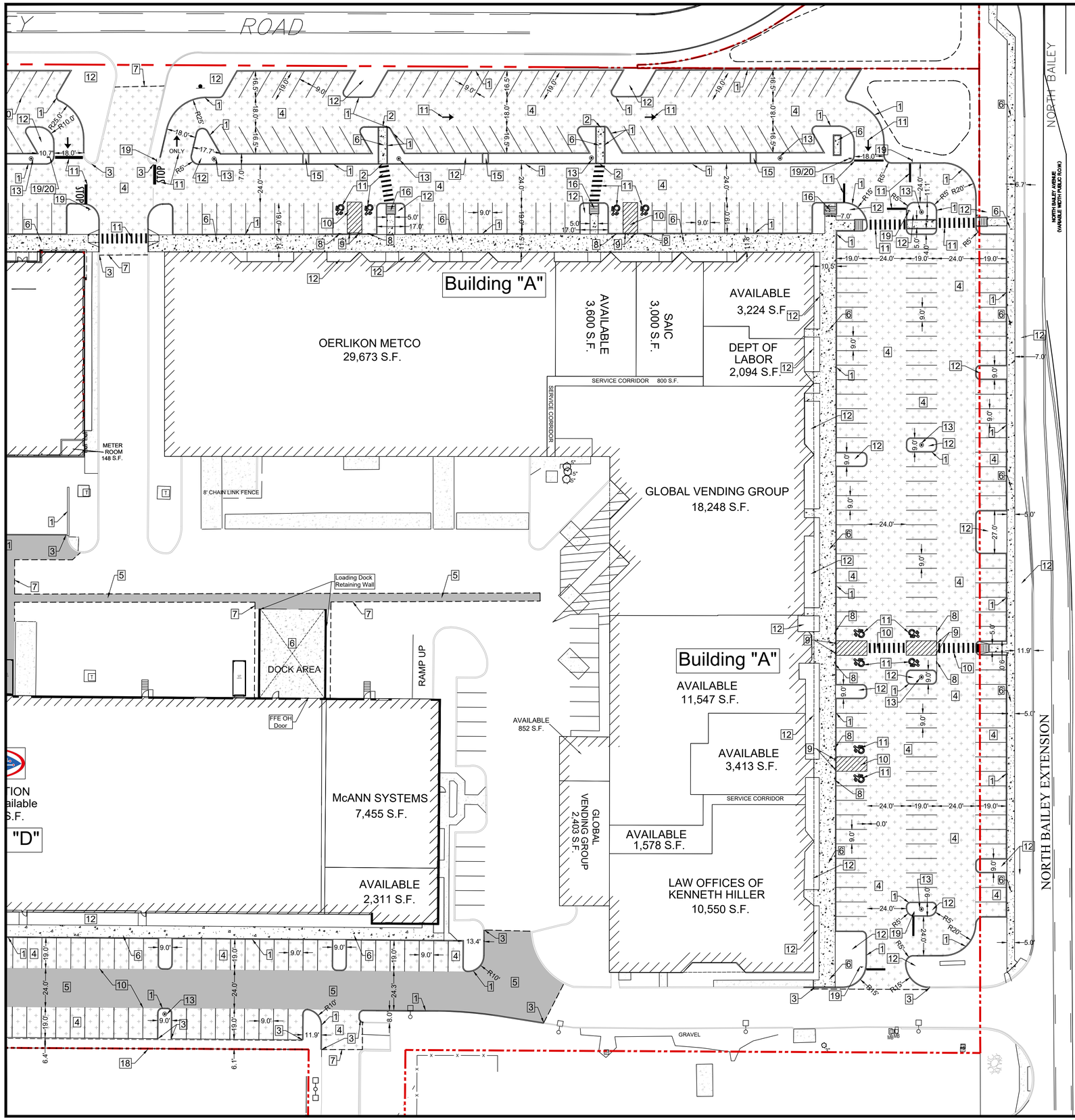
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:
Detailed Site Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C4.10

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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SITE LEGEND:

- Property line
- 6" Curb (typ).
- Proposed sign & pole
- Proposed Concrete Sidewalk
- Proposed Standard Duty Pavement (Refer to General Note#14)
- Proposed Heavy Duty Pavement

* All curb radii are 3ft unless noted.
* Refer to General Notes, Concstruction Details and Architectural Plans for Concrete Sealer information.

SITE NOTES:

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4. Proposed Standard Duty Pavement.
5. Proposed Heavy Duty Pavement.
6. Proposed Concrete Pavement/Sidewalk.
7. Match into Existing Pavement.
8. Proposed "Handicapped Parking Only" sign.
9. Proposed "No Parking" sign.
10. 4" Yellow Pavement Stripe (at 2' c-c in no parking zones).
11. Proposed White Pavement symbol (stop bar, directional arrows, accessibility symbol, text)
12. Proposed Landscape Area.
13. Proposed Light Pole Base
14. Proposed Mill and Overlay Asphalt Pavement
15. Proposed 3' Wide Curb Opening
16. Proposed Curb Return Ramp
17. Proposed Paver Sidewalk/Patio
18. Proposed Board on Board Fence
19. Proposed STOP Sign
20. Proposed Do Not Enter Sign

NB: All curb Radii to be 3' unless otherwise noted.

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SEAL

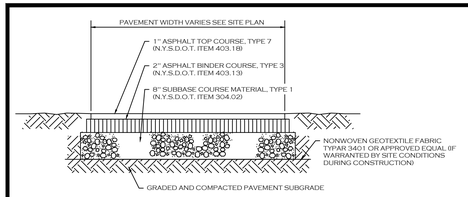
REGISTERED ARCHITECT JAMES ALLEN RUMSEY 029178 STATE OF NEW YORK

TITLE:

Detailed Site Plan (East)

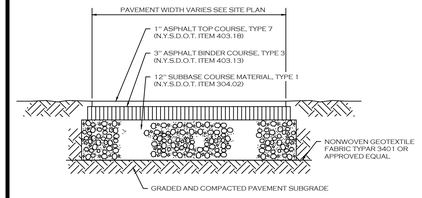
SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C4.11

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 ; SP-1988-11P, 6000-6020 N. Bailey Ave)



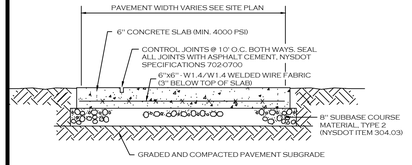
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION



NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

HEAVY DUTY ASPHALT SECTION



NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

CONCRETE SIDEWALK SEALERS:
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1.1. GREY CONCRETE SIDEWALKS SHALL HAVE CHEMMASTERS - SILENCURE WITHIN 2HRS AFTER FINAL FINISHING OF CONCRETE AND ALL BLEED WATER HAS DISSIPATED.
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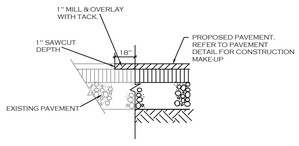
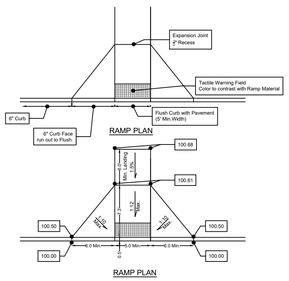
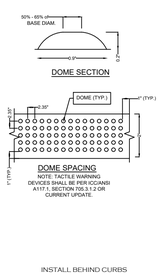
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.

CONCRETE PAVEMENT (INC DUMPSTER)



PAVEMENT TRANSITION DETAIL
(ASPHALT PAVEMENT)







SIDEWALK CURB RAMP DETAIL

NOTES:
1. (1.5% SIDEWALK) GRADES ARE FOR REPRESENTATION ONLY. REFER TO LAYOUT FOR PROPOSED GRADES.

NOTES:
1. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3
2. BUTT JOINTS TO BE AT 5'-0" O.C. BOTH WAYS- SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.

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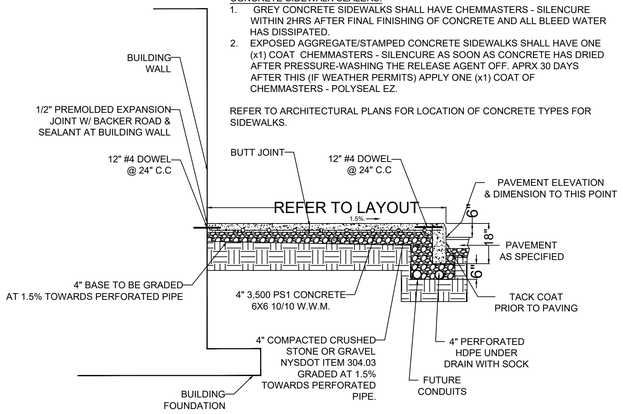
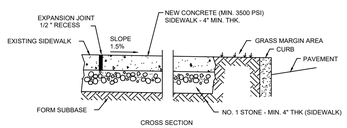


BUILDING SIDEWALK DETAIL

CONTRACTOR TO VERIFY WITH OWNER ON CURB DETAIL



NOTES:
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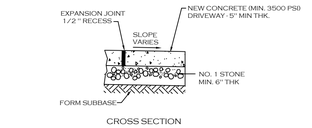
1.2. EXPOSED AGGREGATE/STAMPED CONCRETE SIDEWALKS SHALL HAVE ONE (x1) COAT CHEMMASTERS - SILENCURE AS SOON AS CONCRETE HAS DRIED AFTER PRESSURE-WASHING THE RELEASE AGENT OFF. APRX 30 DAYS AFTER THIS (IF WEATHER PERMITS) APPLY ONE (x1) COAT OF CHEMMASTERS - POLYSEAL EZ.

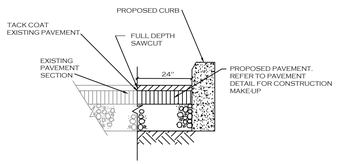
REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES FOR SIDEWALKS.

STANDARD CONCRETE SIDEWALK

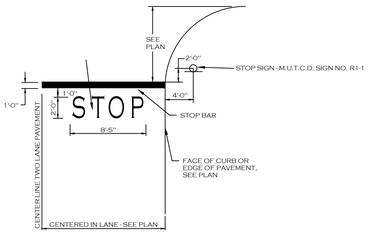


NOTES:
1. CONTROL JOINTS TO BE AT 10'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.

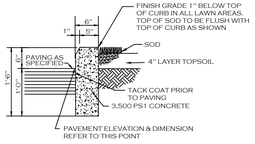
RPZ ENCLOSURE PAD



CURB AND PAVEMENT TRANISTION DETAIL

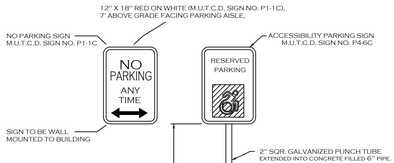


STOP BAR DETAIL

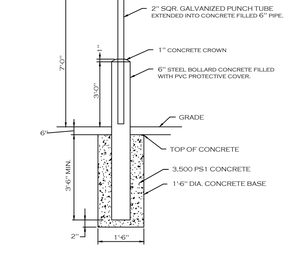


NOTE: CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. BOTHWAYS - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700

TYPE "A" CONCRETE CURB



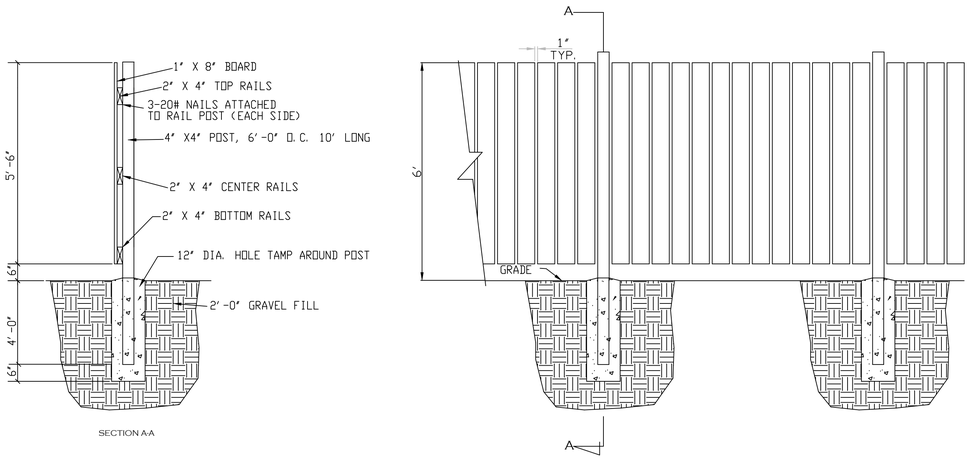
HANDICAP / NO PARKING SIGNS



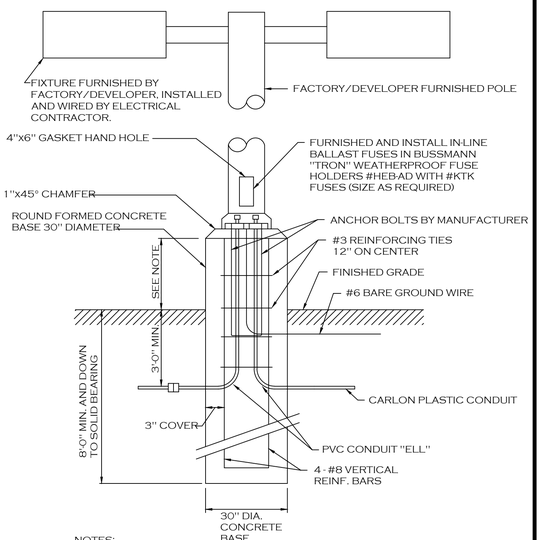
"STOP" / "NO ENTRY" / "ONE WAY" SIGNS

INTERNATIONAL ACCESSIBILITY SYMBOL

PAINTED TRAFFIC ARROWS



6FT BOARD ON BOARD FENCE DETAIL



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
IN PAVEMENT: 30" ABOVE GRADE
IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

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NORTH

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6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

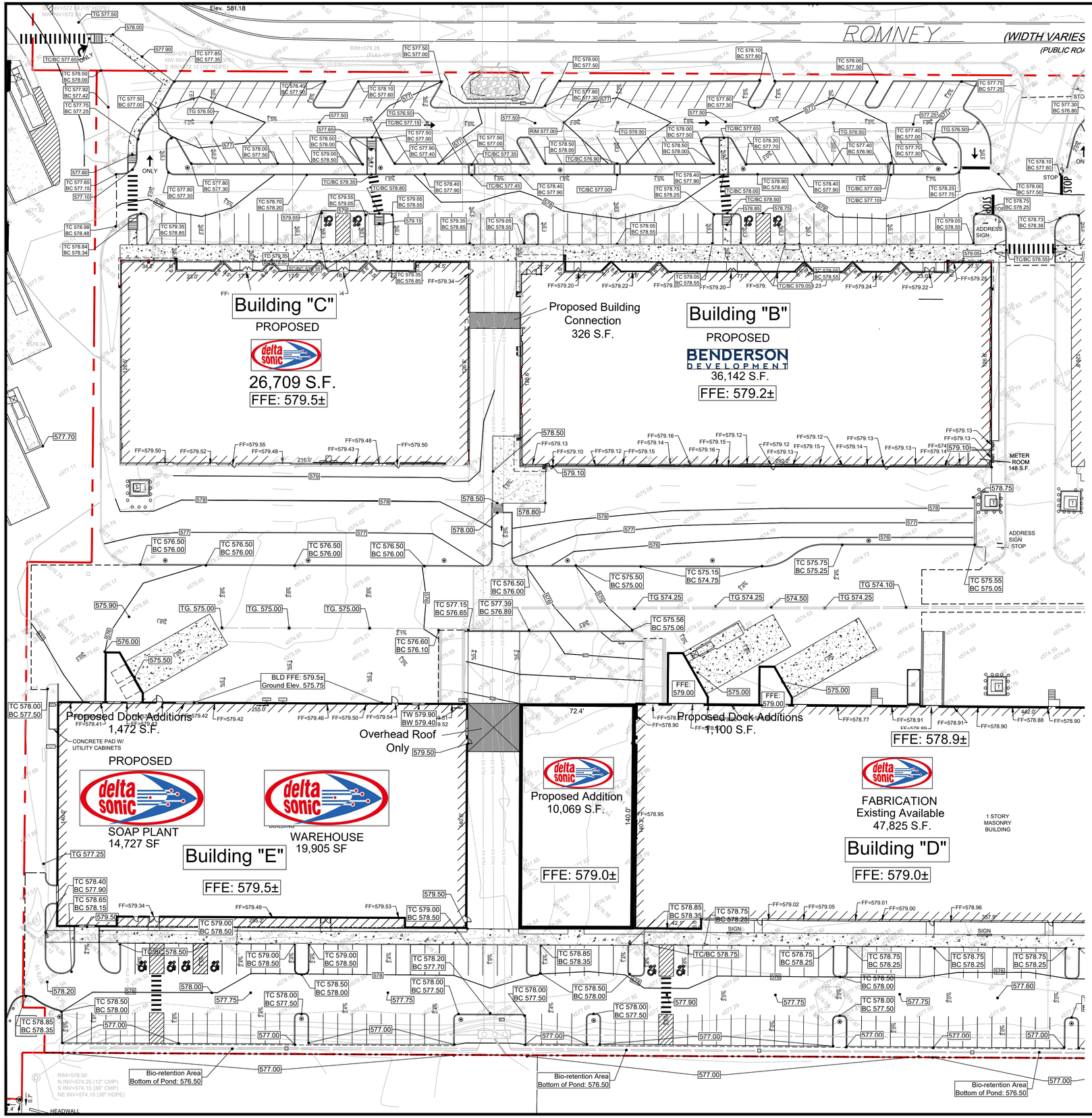
SEAL



TITLE: Construction Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C4.20

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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GRADING LEGEND:

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- 6" Curb (typ).
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- ### — Proposed Contour Line
- ##% — Slope Direction

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
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7	12.03.2024	DZ	Town Comments
8	12.11.2024	DZ	Updated Sidewalk
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JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

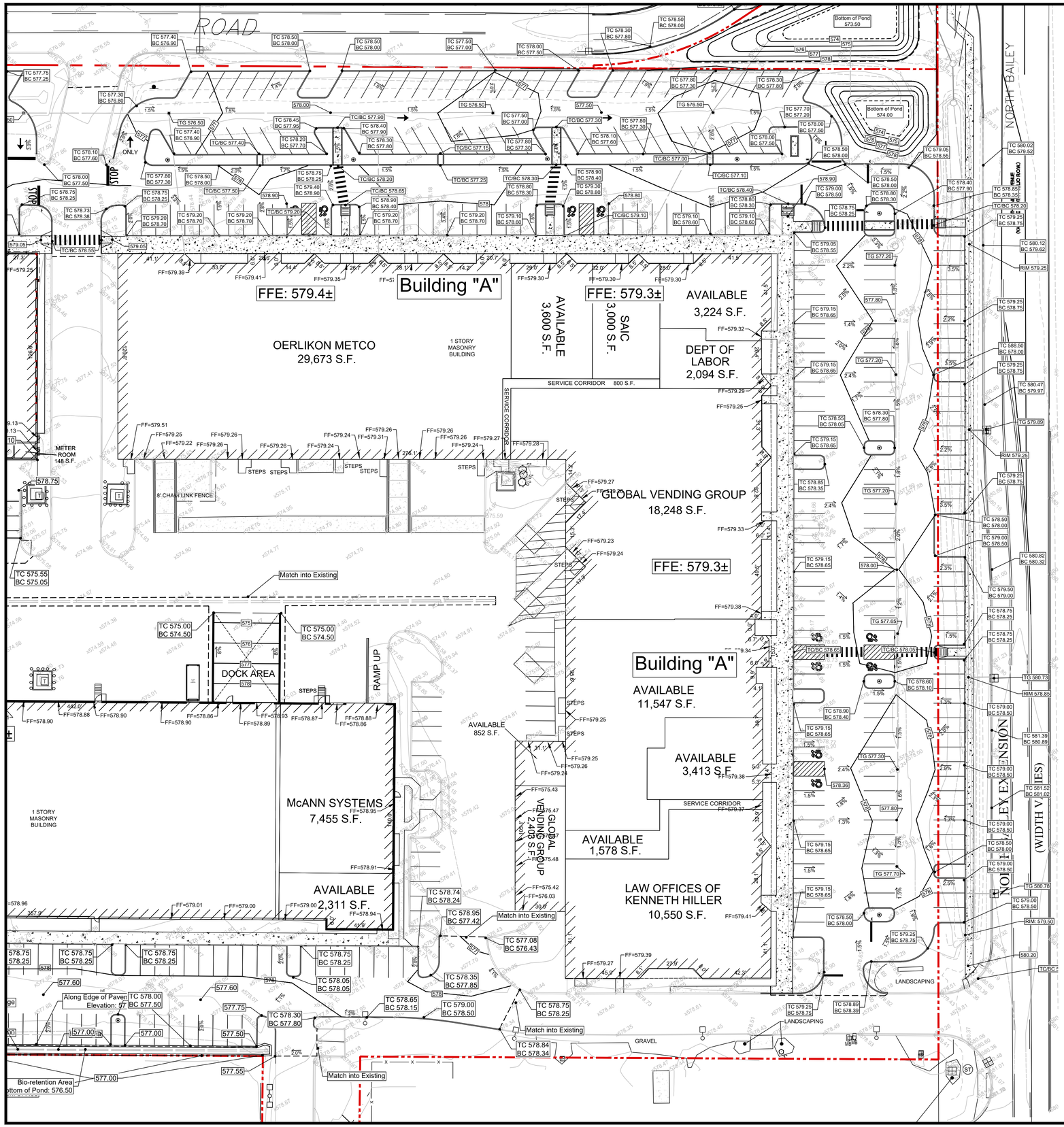
REGISTERED ARCHITECT JAMES ALLEN RUMSEY 029119 STATE OF NEW YORK

TITLE:

Grading Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.00

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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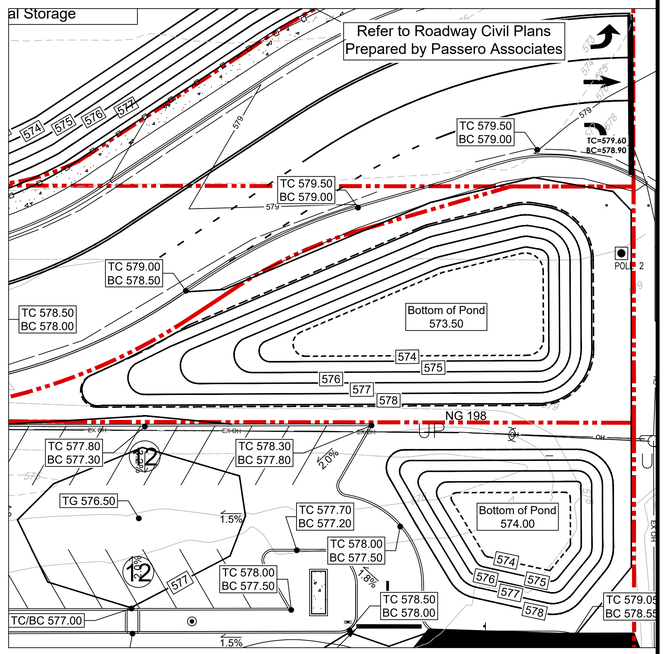
HOLD CRITCAL SLOPE - FINISHED FLOOR ELEVATION MUST BE VERIFED AT EACH ENTRY DOOR PRIOR TO SETTING OF CONCRETE CURB FORMS TO VERIFY THAT SIDEWALK SLOPE DOES NOT EXCEED 1.5%.



Off-site 1" = 20'

OFFICIAL TOWN USE ONLY

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(716) 886-0211

SEAL

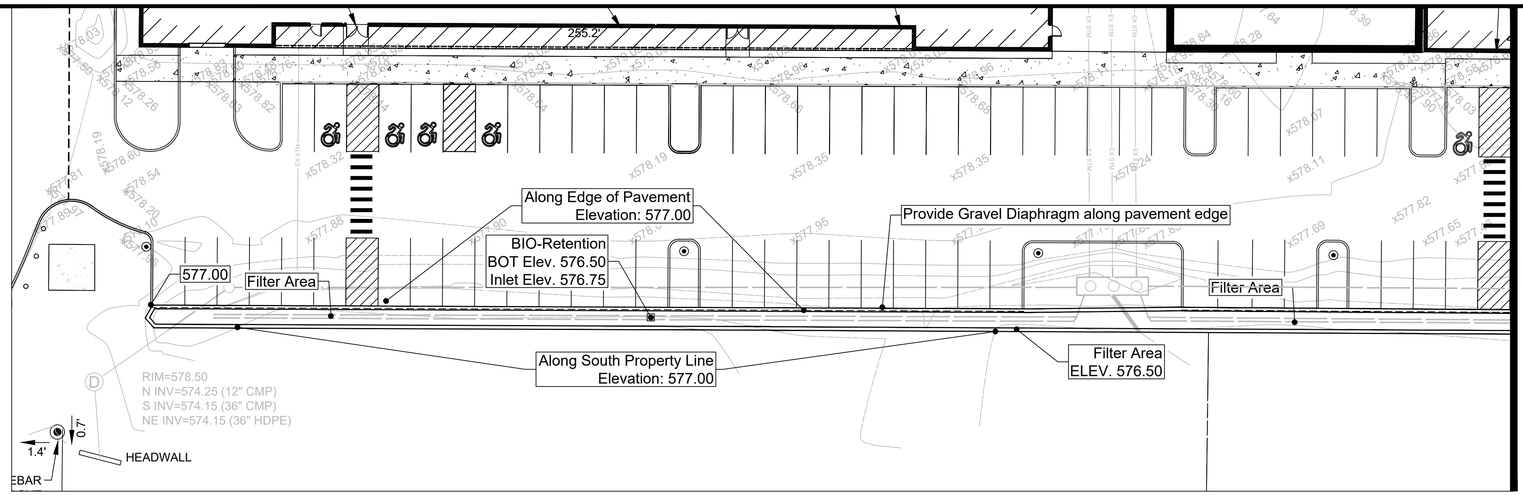
REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Grading Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO.: C5.01

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



MATCHLINE

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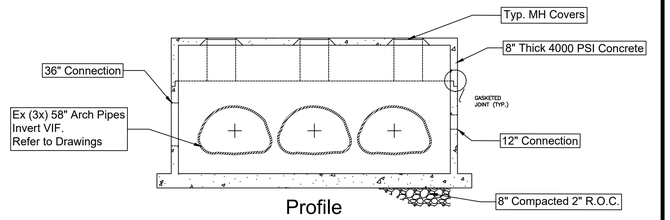
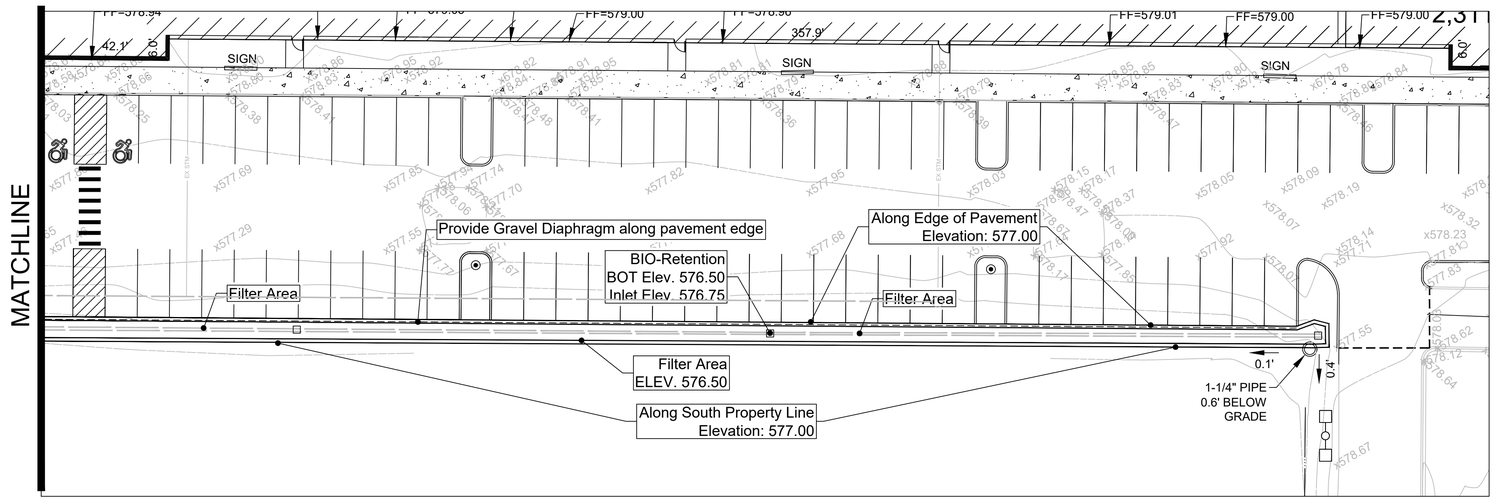
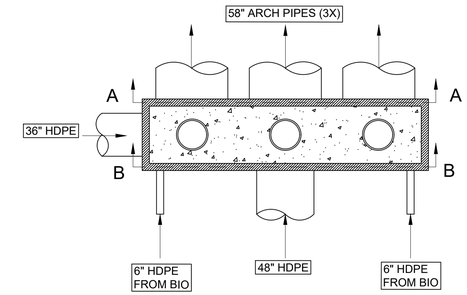


Storm Connection Vault A-A

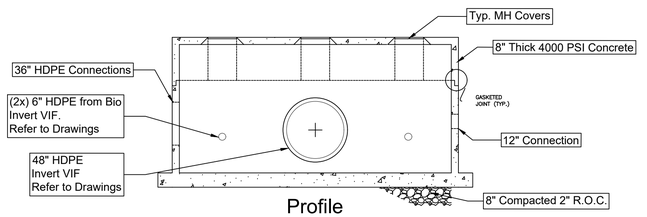
Note: Shop Drawings to be provided to verify inverts and structural design prior to construction





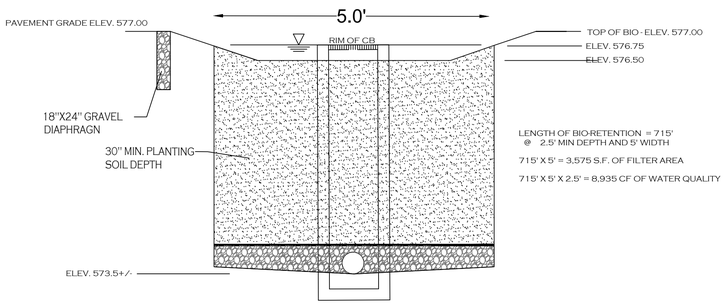
Storm Connection Vault (South)

Note: Shop Drawings to be provided to verify inverts and structural design prior to construction



Storm Connection Vault B-B

Note: Shop Drawings to be provided to verify inverts and structural design prior to construction



BIO-RETENTION AREA - SITE CROSS-SECTION

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS

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(716) 886-0211

SEAL



TITLE:

Grading Plan (Bio)

SCALE: 1" = 20'

DRAWN BY: DMZ

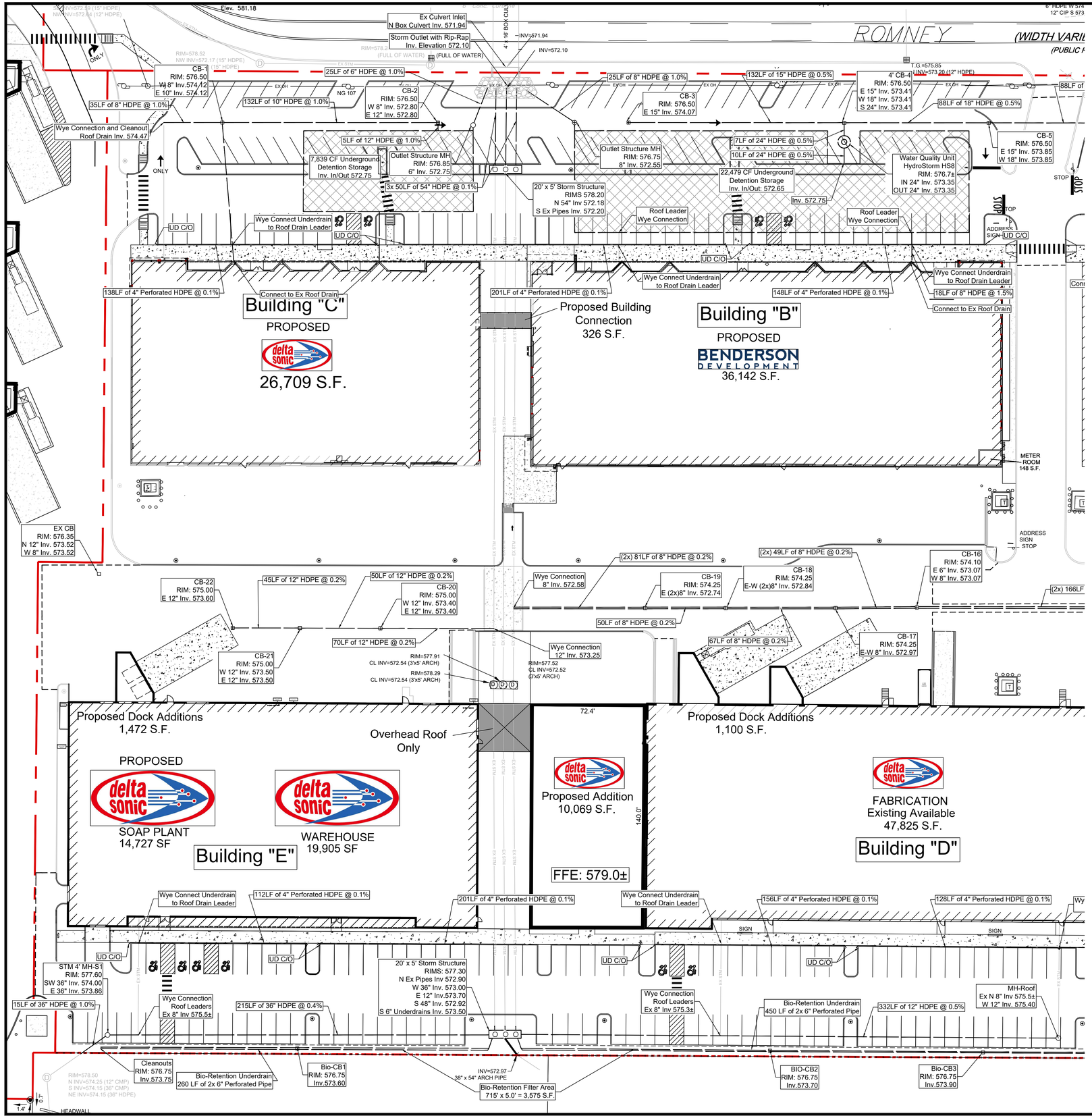
CHECKED BY: MAO

DATE: 02.05.2025

DRAWING NO.

C5.02

Attachment: SP-1988-11P_drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO THE SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS EXCEPT AS DETAILED ON THE PLANS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
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10. SIDEWALK DIMENSIONS ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR THE SIDEWALK PLAN .
11. CONCRETE SIDEWALK SEALERS: (REFER TO ARCHITECTURAL PLANS FOR LOCATION OF CONCRETE TYPES.)
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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
14. CONTRACTOR TO PROVIDE NEW PAVEMENT THAT CONFORMS TO THE GRADING PLAN WHILE MAINTAINING, AS A MINIMUM, THE EXISTING STONE BASE. THE MEANS AND METHODS OF OBTAINING NEW GRADES IS LEFT UP TO THE CONTRACTOR AND CAN BE OBTAINED VIA SHIMMING THE PAVEMENT AND THEN A NEW TOP COAT, REMOVING EXISTING ASPHALT PAVEMENT AND REGRADING EXISTING STONE BASE, A COMBINATION OF THESE TWO OR ANOTHER METHOD OF THE CONTRACTORS CHOOSING. FINAL PAVEMENT WORK PLAN SHALL BE PROVIDED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL

DRAINAGE LEGEND:

- PROPERTY LINE
- PROPOSED STORMWATER
- 6" CURB TYP.
- CO / WC — PROPOSED STORM CLEAN OUT / WYE CONNECTION
- CB - # — PROPOSED CATCH BASIN

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

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Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

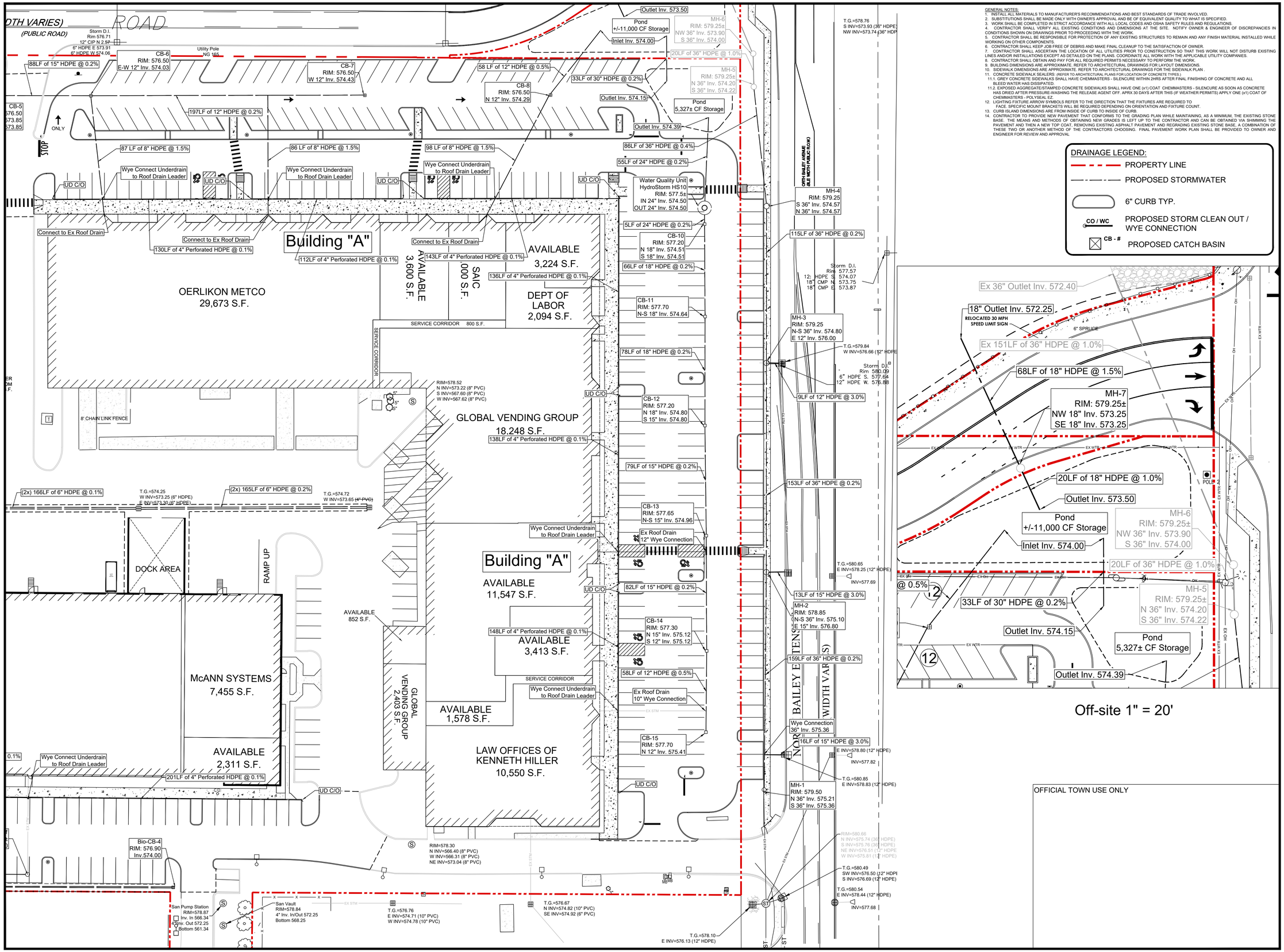
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 029109 STATE OF NEW YORK

TITLE:
Drainage Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.10

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



GENERAL NOTES:
1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUAVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
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- 6" CURB TYP.
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- CB - # — PROPOSED CATCH BASIN

OFFICIAL TOWN USE ONLY

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8	01.24.2025	DZ	Off-Site
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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

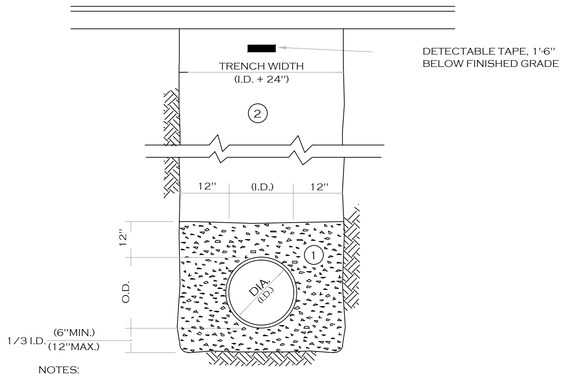
SEAL



TITLE:
Drainage Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 11.08.2023
DRAWING NO. C5.11

Attachment: SP-1988-11P_drawings updated 021425_022625 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

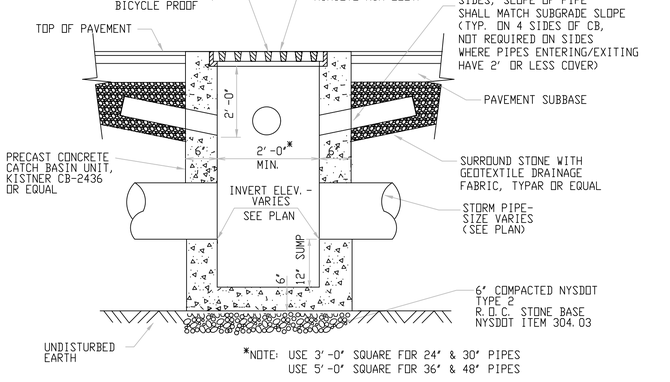
(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERAIL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

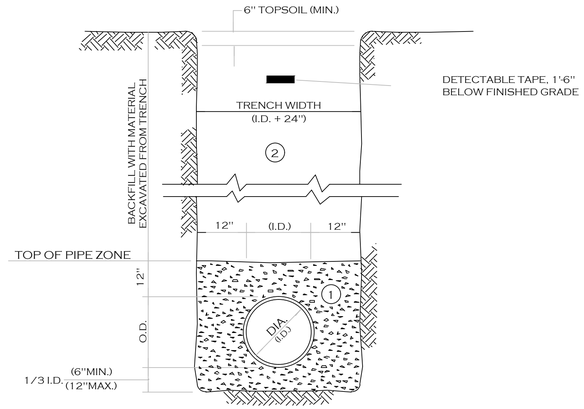
NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

TRENCH SECTION IN PAVED AREAS



*NOTE: USE 3'-0" SQUARE FOR 24" & 30" PIPES
USE 5'-0" SQUARE FOR 36" & 48" PIPES

TYPICAL PRECAST CATCH BASIN



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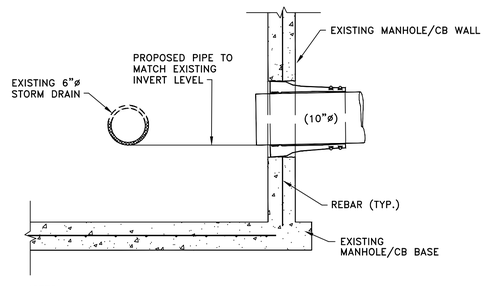
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

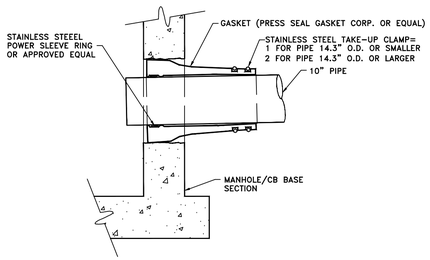
(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

TRENCH SECTION IN UNPAVED AREAS

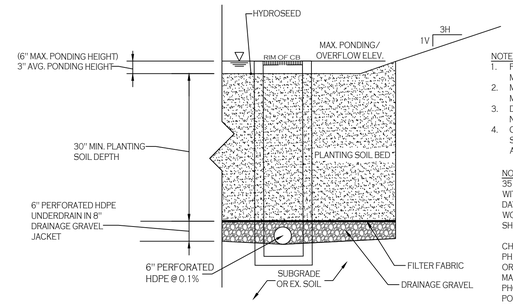


NOTES:

1. CORE DRILL ENTRANCE HOLE IN PRECAST MANHOLE BARREL, BASE AND/OR BENCH FOR REQUIRED PIPE CLEARANCE. PER MANUFACTURERS RECOMMENDATIONS.
2. DOES NOT APPLY TO HOUSE LATERALS.
3. WATERTIGHT PIPE TO MANHOLE BOOT SEAL REQUIRED FOR ALL CORE DRILLED ENTRANCE HOLES IN MANHOLE BARREL AS SHOWN BELOW.



CONNECTION TO EXISTING MANHOLE/CB



BIORETENTION AREA - TYPICAL SECTION

NOTES:

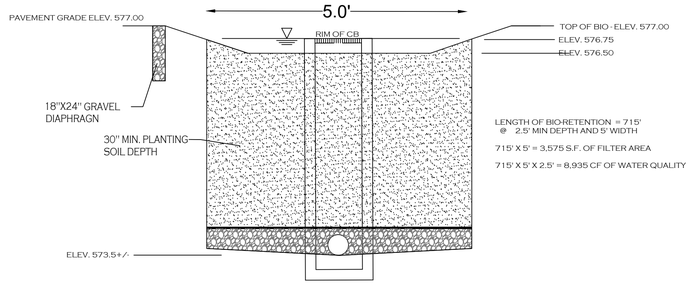
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M43. NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 1.0 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5



BIO-RETENTION AREA - SITE CROSS-SECTION

OFFICIAL TOWN USE ONLY

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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 037109 STATE OF NEW YORK

TITLE:
Drainage Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C5.20

Attachment: SP-1988-11P_drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

CULTEC RECHARGER® 150XLHD STORMWATER CHAMBER

The Recharger® 150XLHD is an 18.5" (470 mm) tall, lower profile chamber and is typically used for installations with depth restrictions or when a larger infiltrative area is required. The Recharger® 150XLHD has the side portal internal manifold feature. HVLV® FC-24 Feed Connectors are inserted into the side portals to create the internal manifold.



Size (L x W x H)	11' x 33" x 18.5" 3.35 m x 838 mm x 470 mm
Installed Length	10.25' 3.12 m
Length Adjustment per Run	0.75' 0.23 m
Chamber Storage	2.65 ft³/ft 0.25 m³/m 27.16 ft³/unit 0.77 m³/unit
Min. Installed Storage	4.89 ft³/ft 0.45 m³/m 50.17 ft³/unit 1.42 m³/unit
Min. Area Required	33.31 ft² 3.09 m²
Chamber Weight	51.0 lbs 23.13 kg
Shipping	34 chambers/skid 1,860 lbs/skid 12 skids/48' flatbed
Min. Center-to-Center Spacing	3.25' 0.99 m
Max. Allowable Cover	12' 3.66 m
Max. Inlet Opening in End Wall	12" HDPE, 15" PVC 300 mm HDPE, 375 mm PVC
Max. Allowable O.D. in Side Portal	10" HDPE, 10" PVC 250 mm HDPE, 250 mm PVC
Compatible Feed Connector	HVLV FC-24 Feed Connector

Calculations are based on installed chamber length.
All above values are nominal.
Min. installed storage includes 6" (152 mm) stone base, 6" (152 mm) stone above crown of chamber and typical stone surround at 39"(991 mm) center-to-center spacing.

	Stone Foundation Depth		
	6"	12"	18"
	152 mm	305 mm	457 mm
Chamber and Stone Storage Per Chamber	50.17 ft³ 1.42 m³	56.83 ft³ 1.61 m³	63.49 ft³ 1.80 m³
Min. Effective Depth	2.54' 0.77 m	3.04' 0.93 m	3.54' 1.08 m
Stone Required Per Chamber	2.13 yd³ 1.63 m³	2.75 yd³ 2.10 m³	3.36 yd³ 2.57 m³

Calculations are based on installed chamber length.
Includes 6" (305 mm) stone above crown of chamber and typical stone surround at 39"(991 mm) center-to-center spacing and stone foundation as listed in table.
Stone void calculated at 40%.

Recharger® 150XLHD Bare Chamber Storage Volumes

Elevation		Incremental Storage Volume				Cumulative Storage	
in.	mm	ft³/ft	m³/m	ft³	m³	ft³	m³
18.5	470	0.006	0.001	0.062	0.002	27.193	0.770
18	457	0.010	0.001	0.103	0.003	27.132	0.768
17	432	0.032	0.003	0.328	0.009	27.029	0.765
16	406	0.077	0.007	0.789	0.022	26.701	0.756
15	381	0.102	0.009	1.046	0.030	25.912	0.734
14	356	0.119	0.009	1.220	0.035	24.867	0.704
13	330	0.134	0.011	1.374	0.039	23.647	0.670
12	305	0.146	0.012	1.497	0.042	22.273	0.631
11	279	0.156	0.014	1.599	0.045	20.777	0.588
10	254	0.165	0.015	1.691	0.048	19.178	0.543
9	229	0.172	0.016	1.763	0.050	17.487	0.495
8	203	0.179	0.017	1.835	0.052	15.724	0.445
7	178	0.184	0.017	1.886	0.053	13.889	0.393
6	152	0.188	0.017	1.927	0.055	12.003	0.340
5	127	0.191	0.018	1.958	0.055	10.076	0.285
4	102	0.193	0.018	1.978	0.056	8.118	0.230
3	76	0.195	0.018	1.999	0.057	6.140	0.174
2	51	0.197	0.018	2.019	0.057	4.141	0.117
1	25	0.207	0.019	2.122	0.060	2.122	0.060
Total		2.650	0.246	27.193	0.770	27.193	0.770

Calculations are based on installed chamber length.

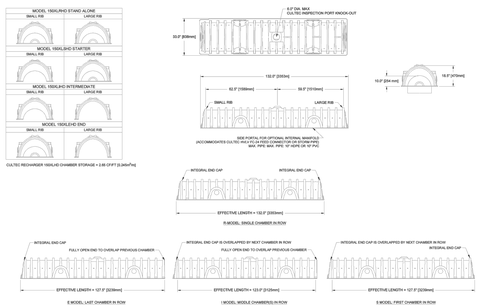
Visit www.cultec.com/downloads.html for Product Downloads and CAD details.

For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com. 1

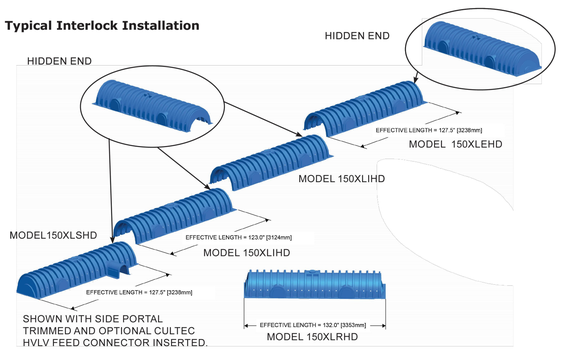
© CULTEC October 2024 SUB150XLHD 10-24

CULTEC RECHARGER® 150XLHD STORMWATER CHAMBER

Three View Drawing



Typical Interlock Installation



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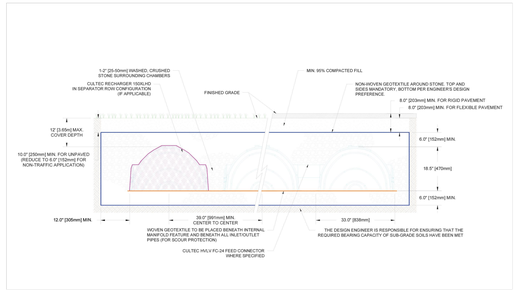
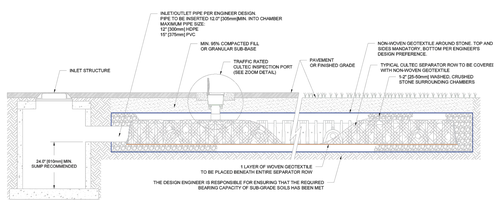
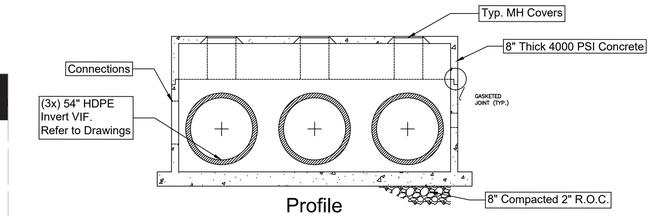
CULTEC RECHARGER® 150XLHD STORMWATER CHAMBER

Typical Cross Section for Traffic Application



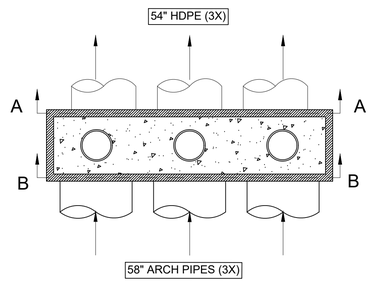
Typical Profile View for Traffic Application





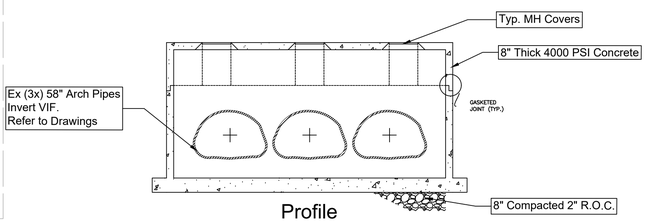
Storm Connection Vault

Note: Shop Drawings to be provided to verify inverts and structural design prior to construction



Storm Connection Vault (North)

Note: Shop Drawings to be provided to verify inverts and structural design prior to construction



Storm Connection Vault

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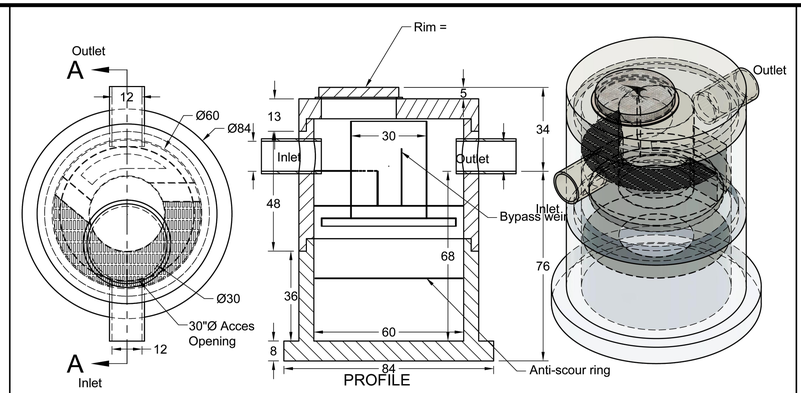


Invert in =
Invert out =

Contractor to Confirm Rim & Inverts

*Submit Shop drawings for Owner review and Approval

Independently tested & independently verified by NJCAT and ETV Canada

US Patent # 10,801,196
CDN Patent # 3,086,197

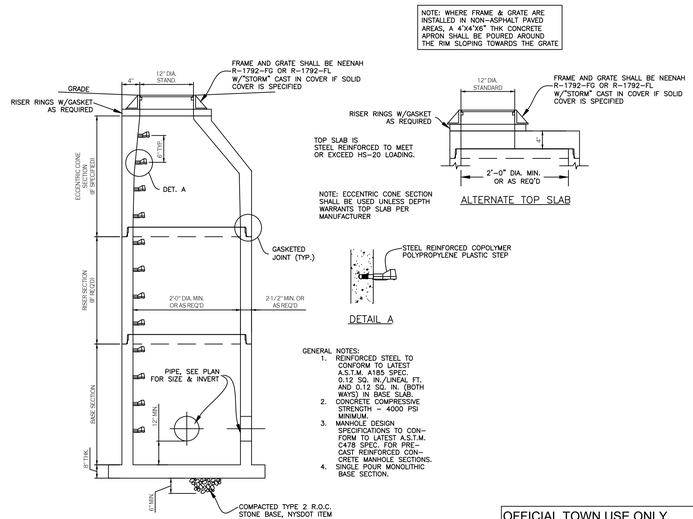
HydroStorm		
Project		
Location Amherst, NY		
Date	SCALE 1:30	REV 1.0

Hydroworks

Table 1. Hydroworks HS Separator Dimensions*

Model	Structure Inside Diam. (SID) (ft)	Structure Depth (ft)*	Sediment/ Sinking Trash Volume (ft^3)	Oil/Floating Trash Volume (gal)	Permanent Pool Wet Volume (gal)
HS 4	4	4	30	95	375
HS 5	5	5	60	165	730
HS 6	6	6	110	270	1265
HS 7	7	6.5	160	410	1870
HS 8	8	7	220	615	2630
HS 10	10	9	465	1130	5285
HS 12	12	11	835	1875	9035

*Dimensions vary with project requirements



GENERAL NOTES:
1. REINFORCED STEEL TO CONFORM TO LATEST A.S.T.M. A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) IN BASE SLAB.
2. CONCRETE COMPRESSIVE STRENGTH — 4000 PSI MINIMUM.
3. MANHOLE DESIGN SPECIFICATIONS TO CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
4. SINGLE POUR MONOLITHIC BASE SECTION.

TYPICAL STORM MANHOLE DETAIL

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

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NORTH

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PROPERTY NUMBER: #1723
AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

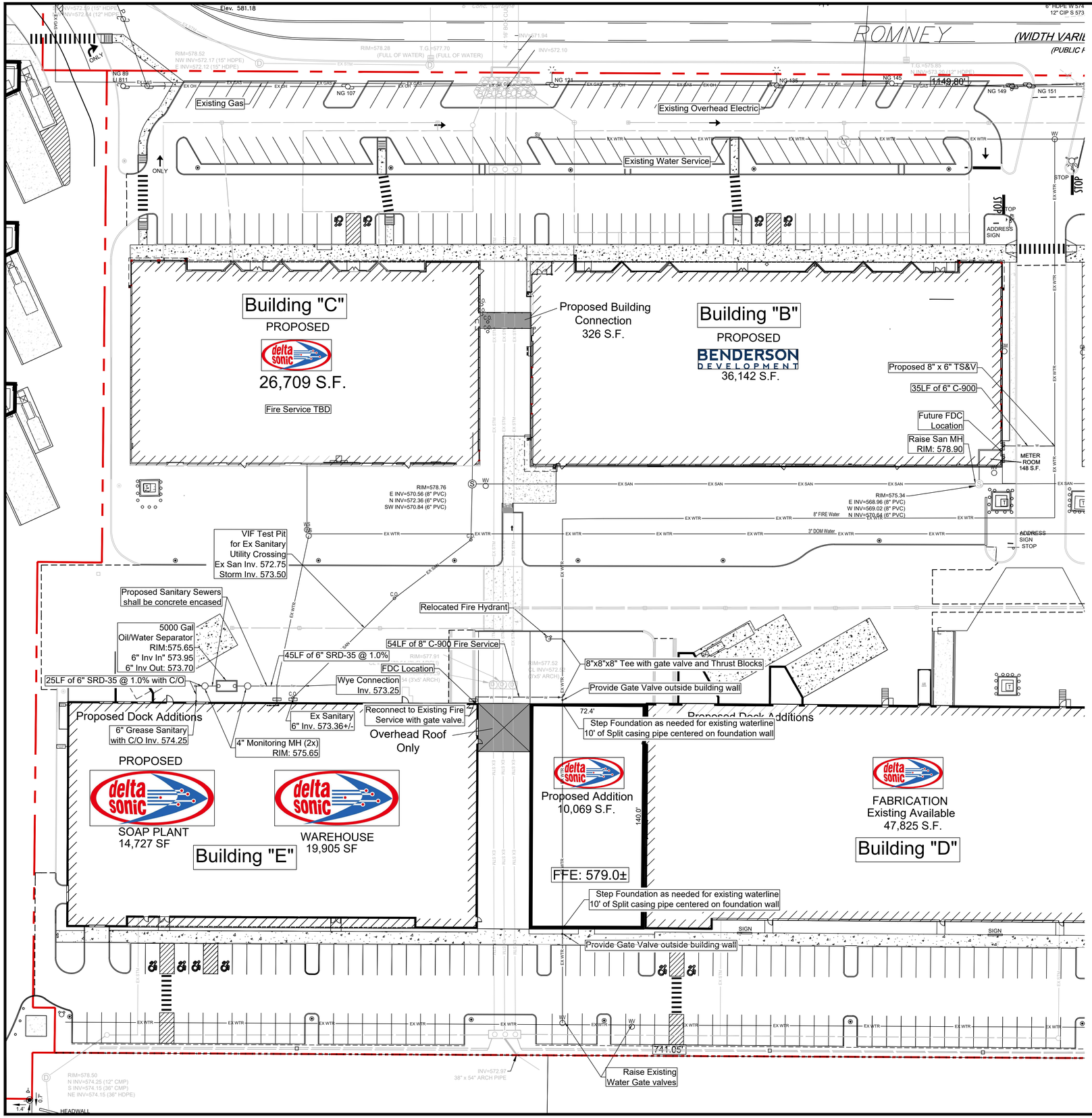
SEAL



TITLE: Drainage Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.30.2023
DRAWING NO.: C5.21

Attachment: SP-1988-11P drawings updated 021425 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



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12. LIGHTING FIXTURE ARROW SYMBOLS REFER TO THE DIRECTION THAT THE FIXTURES ARE REQUIRED TO FACE. SPECIFIC MOUNT BRACKETS WILL BE REQUIRED DEPENDING ON ORIENTATION AND FIXTURE COUNT.
13. CURB ISLAND DIMENSIONS ARE FROM INSIDE OF CURB TO INSIDE OF CURB.
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OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
6	08.30.2024	DZ	Town Comments
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

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CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL



TITLE:
Utility Plan (West)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C6.00

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

(WIDTH VARIES) ROAD
(PUBLIC ROAD)

Utility Pole NG 165
NG 149 NG 151 NG 167 NG 165 NG 176 NG 198 NG 5220
APPROXIMATE LOCATION 2" GAS MAIN
Existing 8" Fire Water Service
Reconnect to existing 8" Site Fire Service
Relocated Existing Fire Service Hot Box
8" Gate Valve at PL by ECWA
Proposed 8" x 8" Cut-In Tee connection by ECWA
95LF of 8" D.I.
NORTH BAILEY AVENUE (VARIABLE WIDTH) PUBLIC R/W
White Stripe
NG 5209
Relocated Existing Guy Wire
Adjust Water Valve to Grade
NG 5184
Relocated Existing Guy Wire
NG 5150
NG 5150R-1
NG 5150R-2
5150R
Existing Hot Box Enclosure
Ex 8 Fire Service
NORTH BAILEY EXTENSION (WIDTH VARIES)
APPROXIMATE LOCATION 8" WATER MAIN
ONLY
STOP
Building "A"
OERLIKON METCO
29,673 S.F.
AVAILABLE
3,600 S.F.
SAIC
3,000 S.F.
AVAILABLE
3,224 S.F.
DEPT OF LABOR
2,094 S.F.
SERVICE CORRIDOR 800 S.F.
SERVICE CORRIDOR
8" x 6" TS&V
F of 6" C-900
uture FDC Location
e San MH
M: 578.90
METER ROOM
148 S.F.
8' CHAIN LINK FENCE
RIM=578.52
N INV=573.22 (8" PVC)
S INV=567.60 (8" PVC)
W INV=567.62 (8" PVC)
GLOBAL VENDING GROUP
18,248 S.F.
DOCK AREA
RAMP UP
Ex Domestic Service
AVAILABLE
852 S.F.
McANN SYSTEMS
7,455 S.F.
Existing 3" Domestic Water Service
GLOBAL VENDING GROUP
2,403 S.F.
AVAILABLE
2,311 S.F.
Future FDC Location
65LF of 6" C-900
Existing 8" Fire Water Service
Proposed 8" x 6" TS&V
San Pump Station
RIM=578.87
Inv. In 566.34
Inv. Out 572.25
Bottom 561.34
San Vault
RIM=579.84
4" Inv. In/Out 572.25
Bottom 568.25
Building "A"
AVAILABLE
11,547 S.F.
AVAILABLE
3,413 S.F.
SERVICE CORRIDOR
AVAILABLE
1,578 S.F.
LAW OFFICES OF KENNETH HILLER
10,550 S.F.
FDC Location
Ex 3 Domestic Service
RIM=578.30
N INV=566.40 (8" PVC)
W INV=566.31 (8" PVC)
NE INV=573.04 (8" PVC)
LANDSCAPING
GRAVEL
LANDSCAPING
STEPS
RAMP UP
TION
ailable
S.F.
"D"

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(716) 886-0211

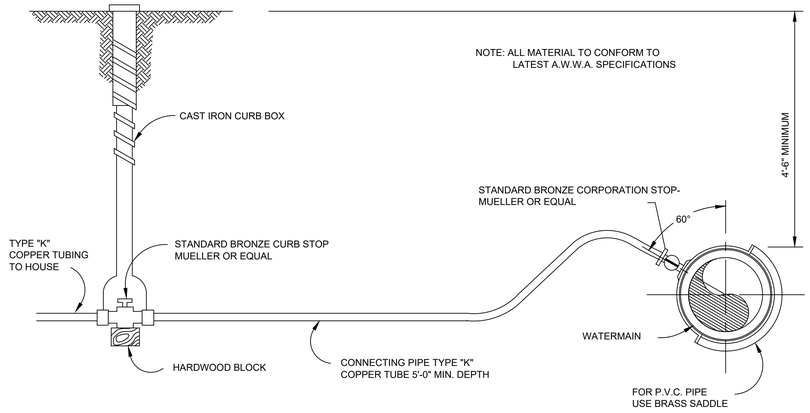
SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY 031705 STATE OF NEW YORK

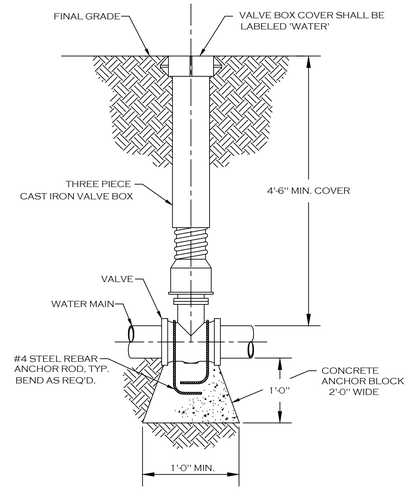
TITLE:
Utility Plan (East)

SCALE: 1:30
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C6.01

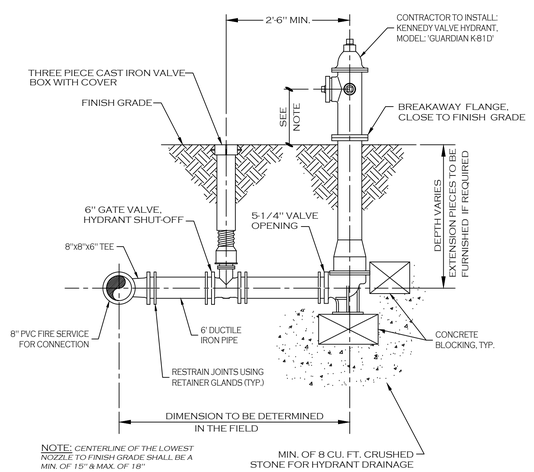
Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



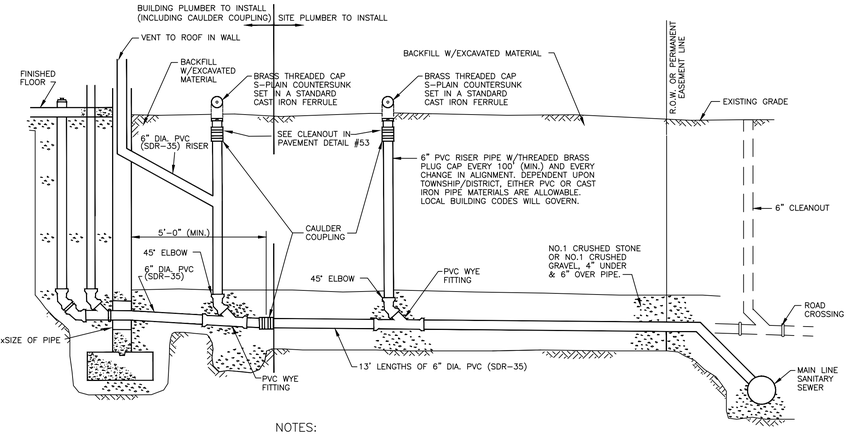
TYPICAL WATER SERVICE LINE INSTALLATION



TYPICAL GATE VALVE DETAIL



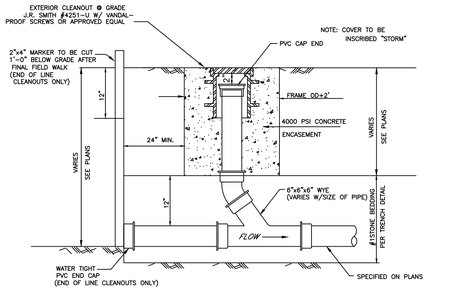
TYPICAL FIRE HYDRANT ASSEMBLY DETAIL



NOTES:

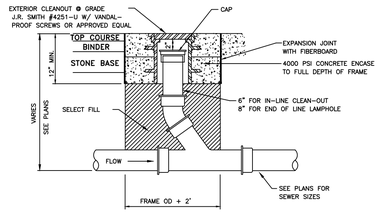
1. PVC PIPE MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST ASTM SPECIFICATION D-3033/D-3034.
2. SELECT BACKFILL REQUIRED UNDER PAVED AREAS.
3. CONCRETE ENCASEMENT IF COVER DEPTH IS LESS THAN 4'-0" UNDER PAVED AREAS
4. MIN. DEPTH OF COVER 3'-0"
5. A GREASE SEPARATOR AND OIL SEPARATOR REQUIRED WHERE APPLICABLE.

TYPICAL COMMERCIAL SERVICE WITHOUT BASEMENT DETAIL (DOMESTIC)



CLEANOUT IN LANDSCAPED AREAS

NOT TO SCALE



CLEANOUT IN PAVED AREAS

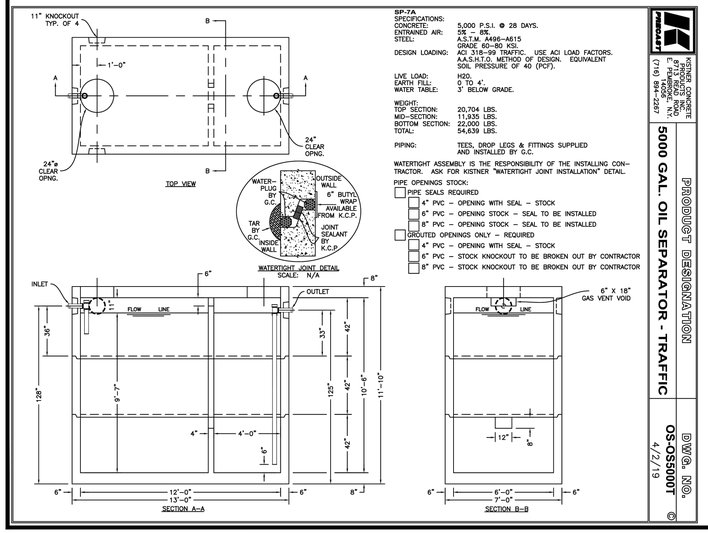
NOT TO SCALE

DIMENSION SCHEDULE								
PIPE SIZE	90° ELBOW		45° ELBOW		22.5° ELBOW		11.25° ELBOW	
	'H'	'L'	'H'	'L'	'H'	'L'	'H'	'L'
4"	1.5'	2.0'	1.0'	2.0'	1.0'	1.0'	1.0'	1.0'
6"	2.0'	2.5'	1.5'	2.0'	1.0'	1.5'	1.0'	1.5'
8"	2.5'	3.5'	2.0'	2.5'	1.5'	1.5'	1.0'	2.0'
10"	3.0'	4.5'	2.5'	3.0'	1.5'	3.0'	1.0'	2.5'
12"	3.5'	5.0'	3.0'	3.5'	2.5'	2.5'	1.5'	2.5'

DIMENSION SCHEDULE		
PIPE SIZE	TEE OR TAP SLEEVE	
—	'H'	'L'
4"	1.5'	1.0'
6"	1.5'	2.5'
8"	1.5'	3.5'
10"	2.5'	3.5'
12"	3.5'	3.5'

THRUST BLOCK SCHEDULE

WATER MAIN



SP-7A
SPECIFICATIONS:
CONCRETE: 5,000 P.S.I. @ 28 DAYS.
ENTRAINED AIR: 5% - 8%.
STEEL: A.S.T.M. A496-A615 GRADE 60-80 KSI.
DESIGN LOADING: ACI 318-99 TRAFFIC. USE ACI LOAD FACTORS. AA.S.H.T.O. METHOD OF DESIGN. EQUIVALENT SOIL PRESSURE OF 40 (PCF).
LIVE LOAD: H20.
EARTH FILL: 0 TO 4'.
WATER TABLE: 3' BELOW GRADE.
WEIGHT:
TOP SECTION: 20,704 LBS.
MID-SECTION: 11,935 LBS.
BOTTOM SECTION: 22,000 LBS.
TOTAL: 54,639 LBS.
PIPING: TEES, DROP LEGS & FITTINGS SUPPLIED AND INSTALLED BY G.C.

WATERTIGHT ASSEMBLY IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. ASK FOR KISTNER "WATERTIGHT JOINT INSTALLATION" DETAIL.

PIPE OPENINGS STOCK:
- ☐ PIPE SEALS REQUIRED
  - ☐ 4" PVC - OPENING WITH SEAL - STOCK
  - ☐ 6" PVC - OPENING STOCK - SEAL TO BE INSTALLED
  - ☐ 8" PVC - OPENING STOCK - SEAL TO BE INSTALLED
- ☐ GROUTED OPENINGS ONLY - REQUIRED
  - ☐ 4" PVC - OPENING WITH SEAL - STOCK
  - ☐ 6" PVC - STOCK KNOCKOUT TO BE BROKEN OUT BY CONTRACTOR
  - ☐ 8" PVC - STOCK KNOCKOUT TO BE BROKEN OUT BY CONTRACTOR

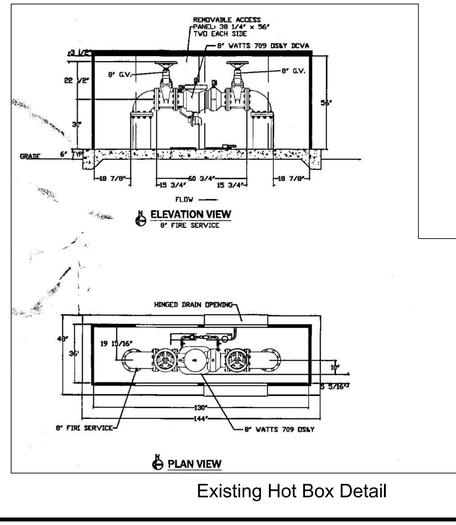
KISTNER CONCRETE PRODUCTS, INC. 5120 BUFFALO ROAD ROANOKE, NY 14589 (716) 599-2327

5000 GAL. OIL SEPARATOR - TRAFFIC

PRODUCT DESIGNATION

DWG. NO. OS-QS5000T 4/2/19

© KISTNER CONCRETE PRODUCTS, INC.



1. Drawing NOT TO SCALE.
2. BFP dimensions furnished by WATTS
3. All dimensions are in inches.
4. Wall and insulation thickness is 1-1/2".
5. Roof and insulation thickness is 3".
6. MODEL 400TDS-ALC03-2 ENCLOSURE.
7. Enclosure inside dimensions: 36"w x 130"L x 55"H
8. Concrete pad is 48"W x 144"L

Existing Hot Box Detail

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

SPECIAL INFORMATION:

ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ANY AND ALL STRUCTURES.

NOTICE

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

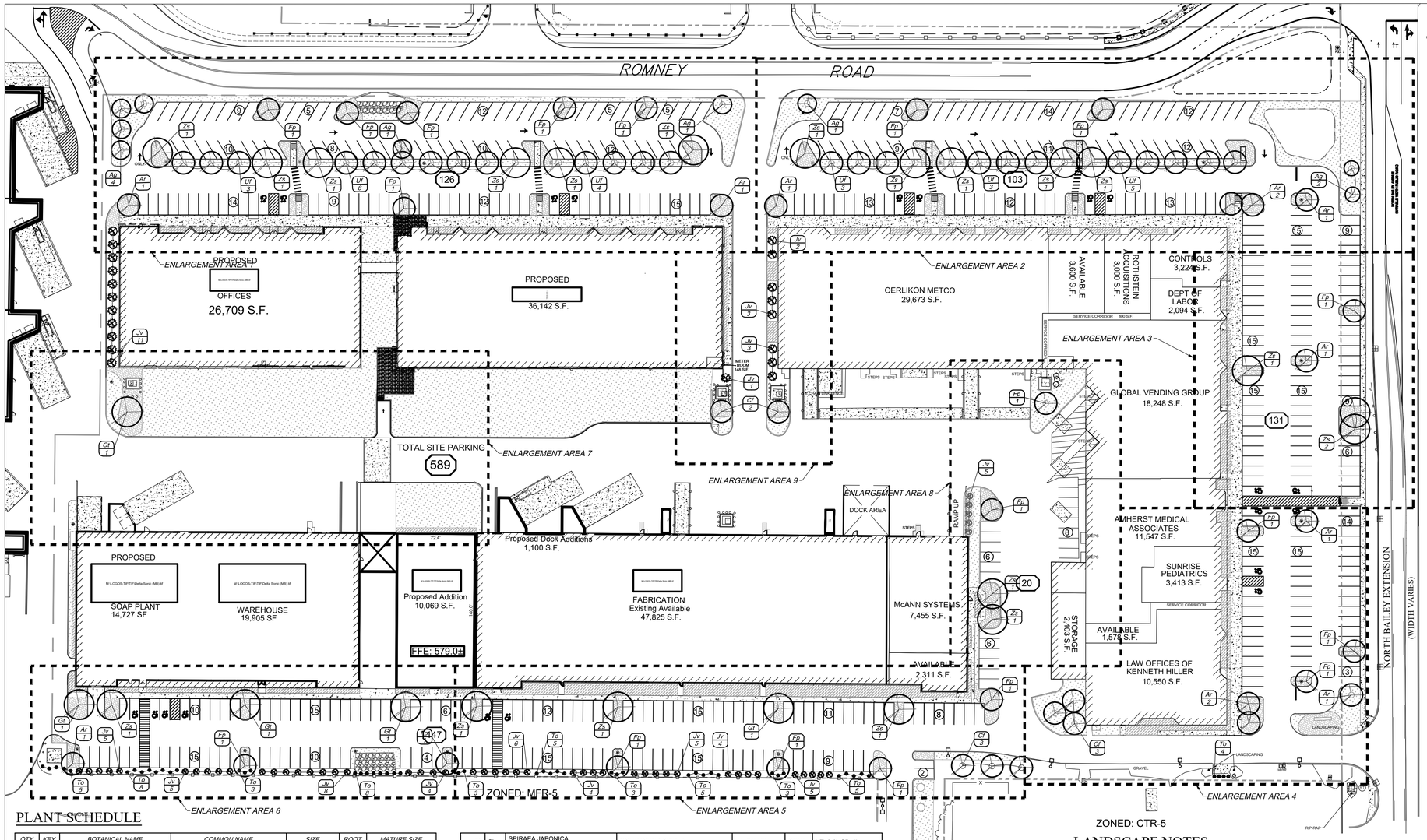
SEAL



TITLE: Utility Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO. C6.10

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 ; SP-1988-11P, 6000-6020 N. Bailey Ave)



No.	Revision/Issue	Date
05	Revised based on Town Comments	2025-02-05
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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LEGEND

- AREAS TO RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDRO SEED MIX
- PARKING LOT LANDSCAPE AREAS
- FOUNDATION LANDSCAPE AREAS

NOTE:
ALL DISTURBED LAWN AREAS SHALL RECEIVE 4-6" TOPSOIL AND PERMANENT LAWN HYDROSEED MIX.

SEED MIX:

PURITY %GERM	LBS/ACRE	%BY
'Pennfine' Perennial Rye Grass 85	35	85
'Pennlawn' Red Fescue 80	35	97
'Baron' and 'Midnight' Kentucky Bluegrass 80	30	85

SEEDING RATE: 6.0 POUNDS PER 1,000 SQUARE FEET

MULCH: STRAW OR WOOD FIBER MULCH APPLIED AT THE RATE OF TWO TONS PER ACRE

STARTING FERTILIZER: 5:10:10 AT 20 POUNDS PER 1,000 SQUARE FEET

FOR FALL OR EARLY WINTER, SEED WITH CERTIFIED "AROOSTOCK" WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE.

Applicant

BENDERSON DEVELOPMENT
570 DELAWARE AVE, BUFFALO, NY 14202
PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO.: 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT — SARAH COSTICH — 002574 — STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
217 LAKE AVENUE ROCHESTER, NY 14608 (585) 458-3020
- CIVIL ENGINEERING
- LAND SURVEYING
- LANDSCAPE ARCHITECTURE

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

OVERALL LANDSCAPE PLAN

Sheet	Drawing Number
1 OF 5	C-7.0
Date: 06/12/2024	
Scale: 1"=50'	

PLANT SCHEDULE

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE
EVERGREEN TREES						
71	Jv	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	EASTERN RED CEDAR	6-8' HT.	BB	HT. 10-20', SP. 7-8'
63	To	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6-8' HT.	BB	HT. 15', SP. 3-4'
ORNAMENTAL / DECIDUOUS TREES						
12	Ar	ACER RUBRUM 'FRANK JR.'	REDPOINTE RED MAPLE	2.5-3" CAL.	BB	HT. 45', SP. 30'
9	Ag	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY (ONE-BOLE)	1.75-2" CAL.	BB	HT. 15-25', SP. 15-25'
8	Cf	CORNUS FLORIDA	FLOWERING DOGWOOD (ONE-BOLE)	1.75-2" CAL.	BB	HT. 15-30', SP. 15-30'
20	Fp	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD (ONE-BOLE)	1.75-2" CAL.	BB	HT. 20-30', SP 20-30'
5	Gt	GLEDITSIA TRIACANTHOS INERM.	THORNLESS HONEY LOCUST	2.5-3" CAL.	BB	HT. 60-80', SP. 60-80'
24	Uf	ULMUS 'FRONTIER'	FRONTIER ELM	2.5-3" CAL.	BB	HT. 40', SP. 30'
20	Zs	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2.5-3" CAL.	BB	HT. 60', SP. 40'
SHRUBS						
217	Am	ARONIA MELANOCARPA	LOWSCAPE MOUND CHOKEBERRY	NO. 3 (24" MIN)	CONT.	HT. 1-2', SP. 1.5-2'
69	Ig	ILEX GLABRA 'STRONG BOX'	STRONGBOX INKBERRY HOLLY	HT. 24" MIN	BB	HT. 2-3', SP. 2-3'
72	Iv	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	HT. 24" MIN	CONT.	HT. 3-5', SP. 4-6'
74	Ra	ROSA 'RADTKO'	DOUBLE KNOCKOUT ROSE	NO. 3 (24" MIN)	CONT.	HT. 2-5', SP. 6-8'
298	Rm	ROSA MEIGALPIO	RED DRIFT GROUNDCOVER ROSE	NO. 3 (24" MIN)	CONT.	HT. 1-1.5', SP. 2-2.5'
89	Sj	SPIRAEA JAPONICA 'GOLDMOUND'	GOLDMOUND SPIREA	HT. 24" MIN	CONT.	HT. 2-3', SP. 4'
107	Tx	TAXUS X MEDIA 'DENSIFORMIS'	DENSE SPREADING YEW	HT. 24" MIN	CONT.	HT. 3-4', SP. 4-6'
88	Vi	VIBURNUM CARLESII 'KOREAN SPICE'	KOREAN SPICE VIBURNUM	HT. 24" MIN	CONT.	HT. 3.5', SP. 4-5'
PERENNIALS & GRASSES						
246	Ca	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	NO. 2	CONT.	HT. 4-6', SP. 2'-3'
68	Ha	HAKONECHLOA MACRA 'ALL GOLD'	ALL GOLD JAPANESE FOREST GRASS	NO. 3	CONT.	HT. 1.5', SP. 1.5'
560	He	HEMEROCALLIS X 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	NO. 1	CONT.	HT. 1-1.5', SP. 1-1.5'
54	Ir	IRIS PALLIDA 'VARIEGATA'	VARIEGATED SWEET IRIS	BULB	CONT.	HT. 2', SP. 1'
320	Nf	NEPETA HYBRID 'CAT'S PAJAMAS'	CAT'S PAJAMA'S CATMINT	NO. 3	CONT.	HT. 18-20" SP. 18-20"
158	Pc	PANICUM VIRGATUM 'CHEYENNE SKY'	CHEYENNE SKY SWITCHGRASS	NO. 3	CONT.	HT. 2-3', SP. 1.5-2'
292	Pe	PENNISETUM ALOPECUROIDES 'LEMON SQUEEZE'	LEMON SQUEEZE FLOWERING FOUNTAIN GRASS	NO. 3	CONT.	HT. 2.5-3', SP. 2-2.5'
33	Pv	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	NO. 2	CONT.	HT. 3-4', SP. 3-4'
116	Ss	SEDUM 'AUTUMN JOY'	AUTUMN JOY STONE CROP SEDUM	NO. 2	CONT.	HT. 18-24", SP. 18-24"

ABBREVIATIONS:
BB=BALLED & BURLAPPED
BR=BARE ROOT
CAL.=CALIPER IN INCHES
CONT.=CONTAINER
HT.=HEIGHT
NO.#=GALLON SIZE
SP.=SPREAD

NOTES:
- CALIPER TO BE MEASURED 6" ABOVE GRADE
- PLANT SYMBOLS REPRESENT 2/3 MATURE SIZE

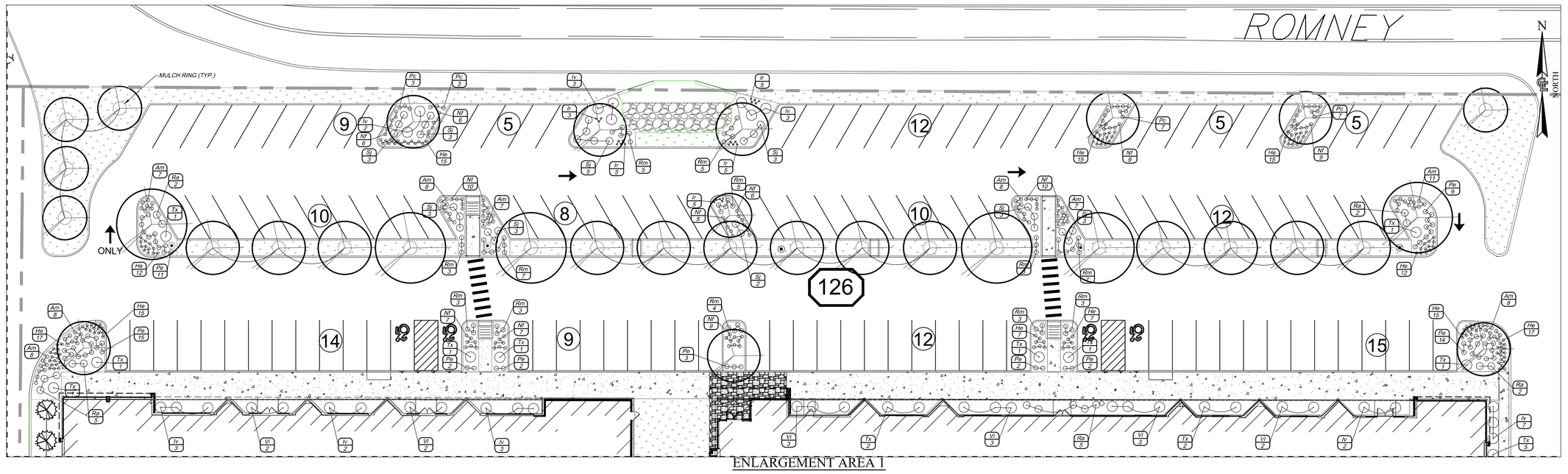
GREENSPACE CALCULATIONS

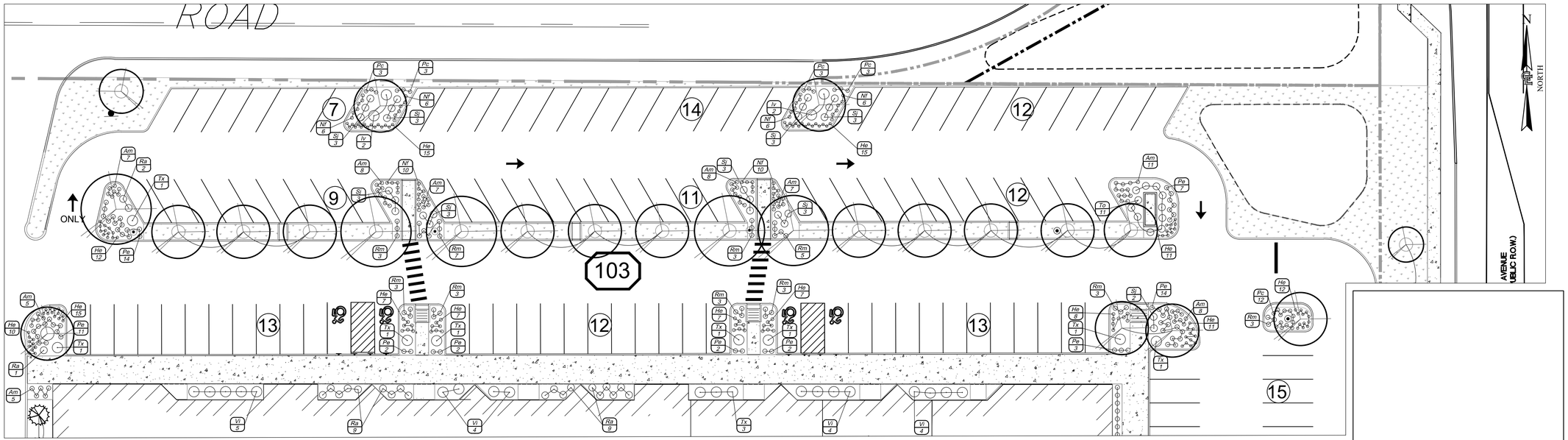
	EXISTING	REQUIRED	PROPOSED
TOTAL PARCEL AREA =	746,480 SF	--	(NO CHANGE)
TOTAL GREENSPACE AREA =	±182,069 SF(24.4%)	--	±133,369 SF (17.9%)

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL SECURE CURRENT PLANS AND SPECIFICATIONS FOR PROPER CONSTRUCTION METHODS AND MATERIAL OF ALL LANDSCAPING PRIOR TO COMMENCING WORK.
2. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS AS NOTED IN THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN ASSOCIATION OF NURSERYMEN, ANSI Z60.1 (LATEST EDITION).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY TAKEOFF.
4. THE CONTRACTOR SHALL PERFORM A ROUGH FIELD STAKEOUT OF ALL PLANT MATERIAL AND SHRUB-BEDS. CONTACT OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL. LOCATIONS SHOWN ON THE PLANS CONVEY DESIGN INTENT ONLY. ACTUAL LOCATIONS WILL BE AS DIRECTED BY THE LANDSCAPE ARCHITECT AT THE TIME OF INSTALLATION.
5. THE CONTRACTOR IS HEREBY NOTIFIED THAT UNDERGROUND UTILITIES EXIST. SHOULD LOCATION OF TREES BE WITHIN 5' OF UNDERGROUND UTILITIES, RELOCATE SAID TREES TO A MINIMUM OF 5' FROM BALL TO UTILITIES.
6. SHOULD LOCATION OF TREES BE WITHIN 20' OF OVERHEAD WIRES, RELOCATE SAID TREES TO A MINIMUM OF 20' FROM WIRES.
7. ALL TREES AND SHRUBS SHALL RECEIVE A 3" LAYER OF BLACK SHREDDED HARDWOOD BARK MULCH.
8. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY AT THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
9. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR OWNER'S PROJECT LANDSCAPE ARCHITECT.
10. ANY PLANT WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY , AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS (INCLUDING, BUT NOT LIMITED TO WATERING, SPRAYING, MULCHING, FERTILIZING, AND REMOVAL OF STAKES AND GUYS) AND NEWLY ESTABLISHED LAWN AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE OWNER.
12. ALL AREAS DISTURBED BY UTILITY INSTALLATION AND SITE GRADING ACTIVITY SHALL RECEIVE 6" APPROVED TOPSOIL (TO A COMPACTED DEPTH OF 6", UNLESS OTHERWISE SPECIFIED BY THE GOVERNING MUNICIPALITY) BE FINE GRADES, SEEDED, MULCHED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
13. ANY IRRIGATION COMPONENT DAMAGED DURING SITE OR LANDSCAPE RENOVATIONS MUST BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.
14. A ONE YEAR GUARANTEE SHALL BE PROVIDED ON ALL PLANT MATERIALS FROM THE DATE OF PROVISIONAL ACCEPTANCE.
15. PLANTING BACKFILL MIXTURE SHALL CONSIST OF 3 PARTS TOPSOIL AND 1 PART COMPOST THOROUGHLY MIXED. PLANTING SOIL DEPTH SHALL BE 3' MINIMUM, AND BE FREE FROM CONSTRUCTION DEBRIS AND FOREIGN MATERIALS.
16. STAKE TREES IMMEDIATELY AFTER PLANTING.
17. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE WORK AREA. IF ANY TREE IS LOCATED CLOSER THAN 5' TO AN UNDERGROUND UTILITY, IT SHALL BE RELOCATED TO A LOCATION THAT IS A MINIMUM OF 5' AWAY AS MEASURED FROM THE ROOTBALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, AND SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION.

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)





No.	Revision/Issue	Date
05	Revised based on Town Comments	2025-02-05
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

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Applicant

BENDERSON DEVELOPMENT
570 DELAWARE AVE, BUFFALO, NY 14202
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WWW.BENDERSON.COM

PROJECT NO.: 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH 00257A STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE ROCHESTER, NY 14608 (585) 458-3020

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS

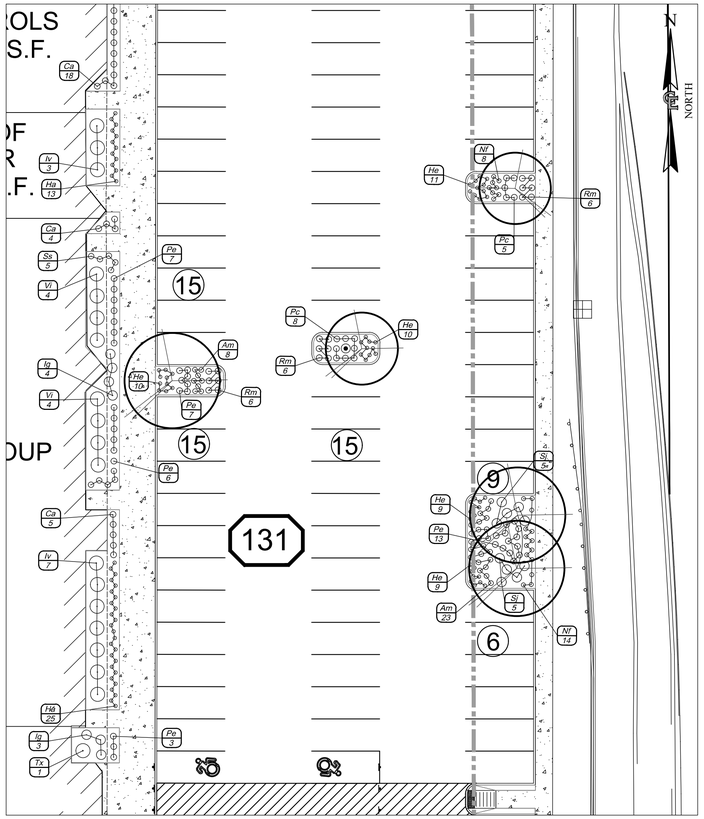
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS

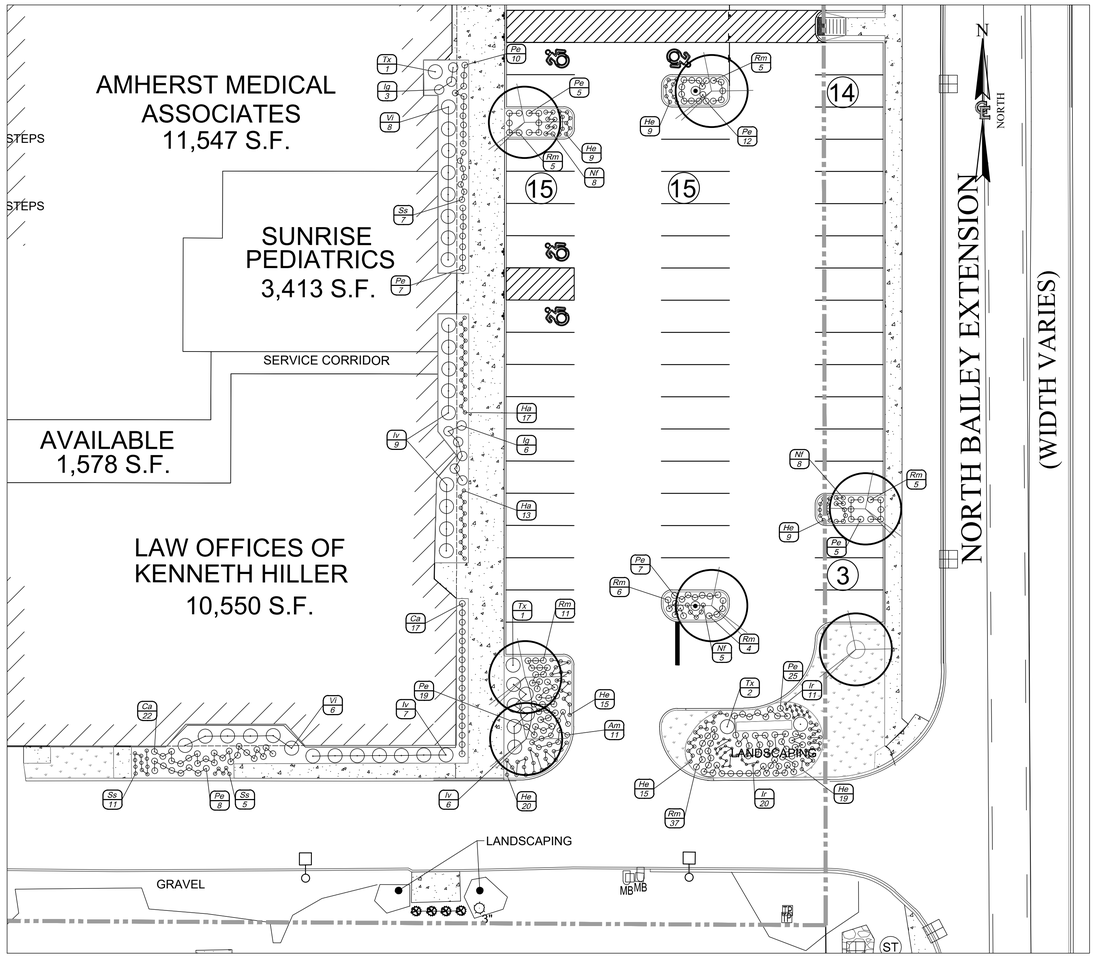
Sheet	Drawing Number
2 OF 5	C-7.1
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



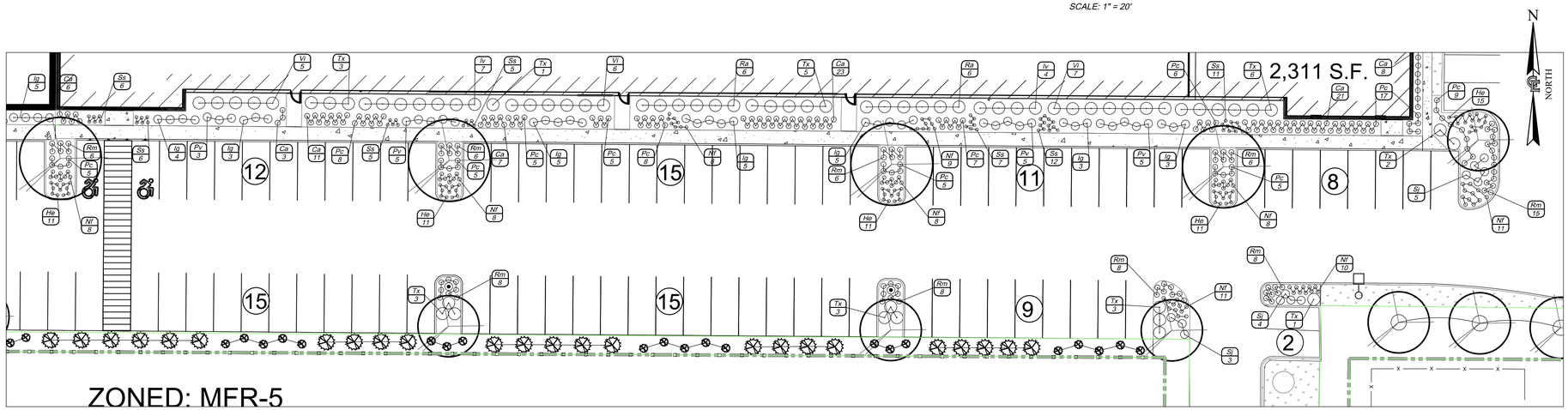
ENLARGEMENT AREA 3

SCALE: 1" = 20'



ENLARGEMENT AREA 4

SCALE: 1" = 20'



ENLARGEMENT AREA 5

SCALE: 1" = 20'

No.	Revision/Issue	Date
05	Revised based on Town Comments	2025-02-05
04	Revised based on site plan changes	2024-12-10
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Applicant

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PHONE (716) 886-0211 FAX (716)-856-7791
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PROJECT NO.: 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH 002574 STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
• Civil Engineering
• Land Surveying
• Landscape Architecture
217 Lake Avenue Rochester, NY 14608 (585) 458-3020

Project Name and Address

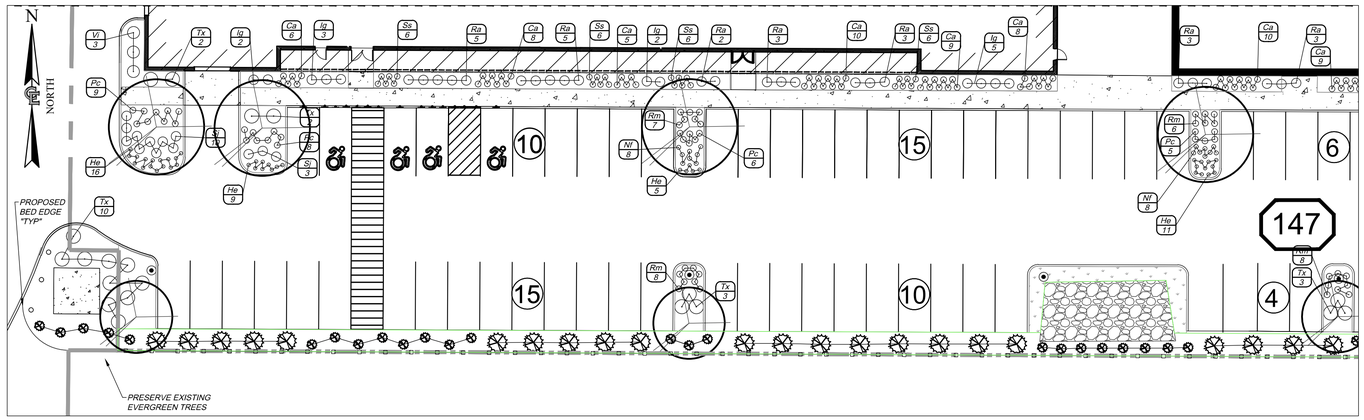
AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS

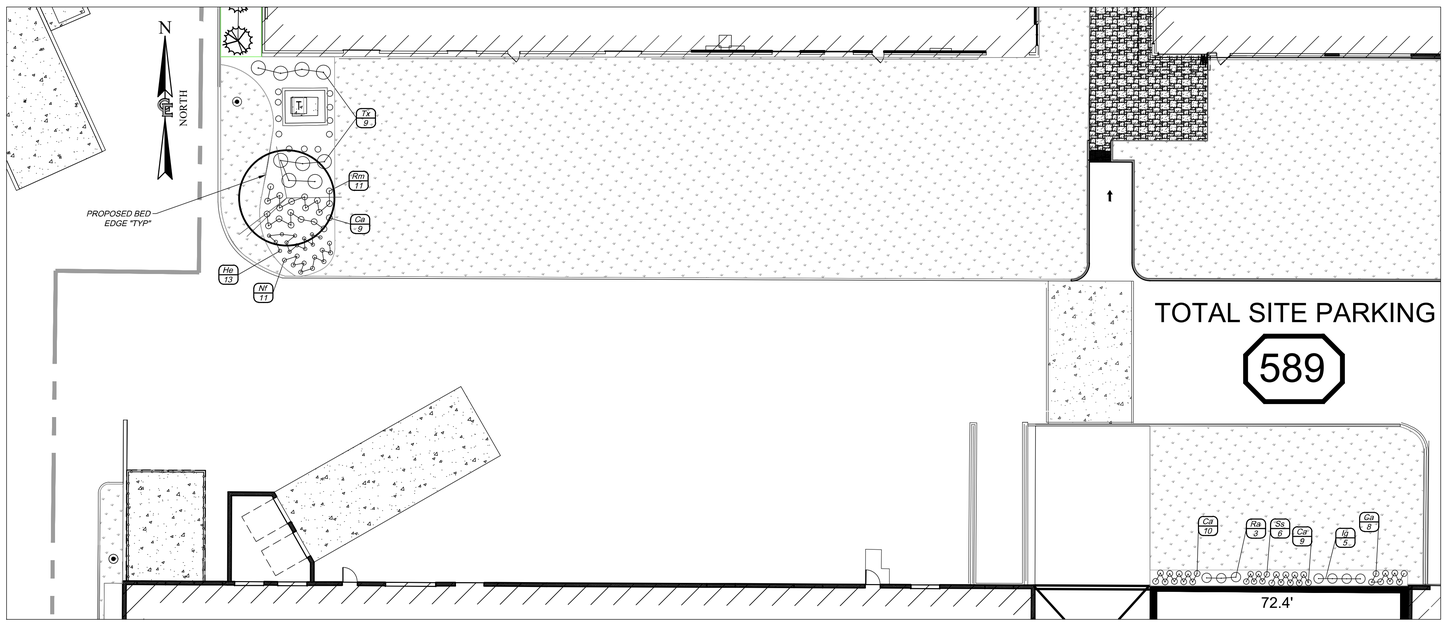
Sheet	Drawing Number
3 OF 5	C-7.2
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



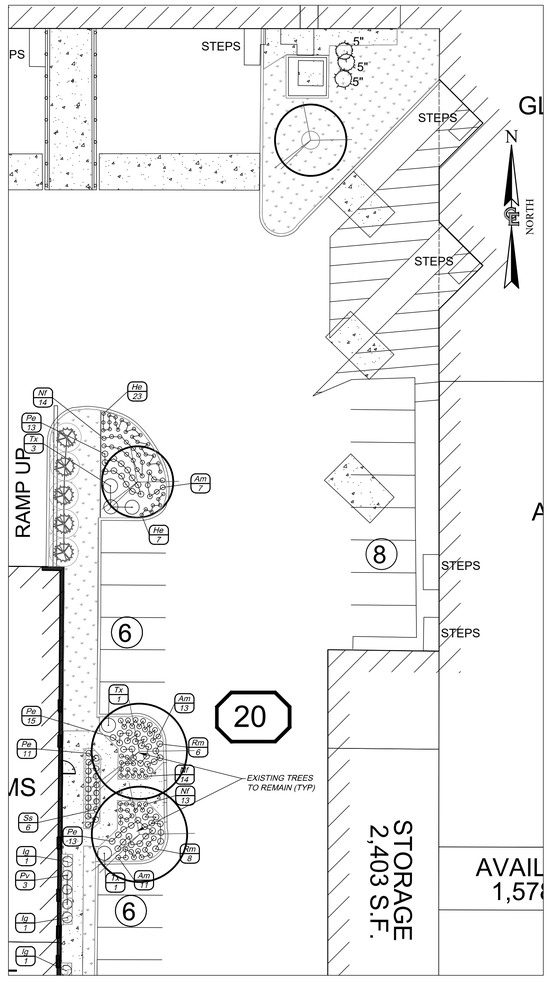
ENLARGEMENT AREA 6

SCALE: 1" = 20'



ENLARGEMENT AREA 7

SCALE: 1" = 20'



ENLARGEMENT AREA 8

SCALE: 1" = 20'

No.	Revision/Issue	Date
05	Revised based on Town Comments	2025-02-05
04	Revised based on site plan changes	2024-12-10
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Revisions

Notes & References

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BENDERSON DEVELOPMENT

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PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO.: 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH 00257 STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING

- Civil Engineering
- Land Surveying
- Landscape Architecture

217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

Project Name and Address

AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

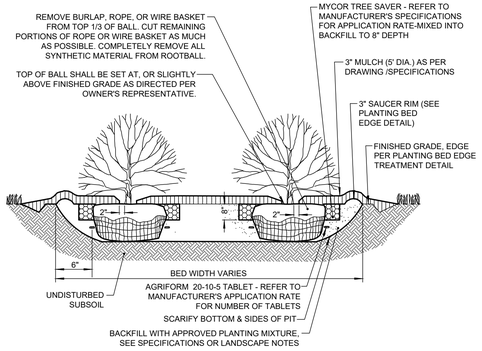
LANDSCAPE PLAN ENLARGEMENT AREAS

Sheet	Drawing Number
4 OF 5	C-7.3
Date: 6/12/2024	
Scale: 1"=20'	

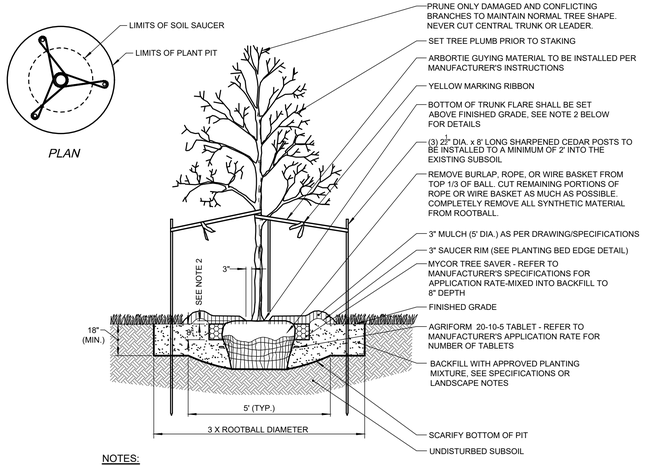
Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. PLANTING BED DEPTH IN LAWN AREAS SHALL BE A MINIMUM OF 18" DEEP AND/OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
3. ALL PLANTING BEDS SHALL BE FREE OF CONSTRUCTION DEBRIS.
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.



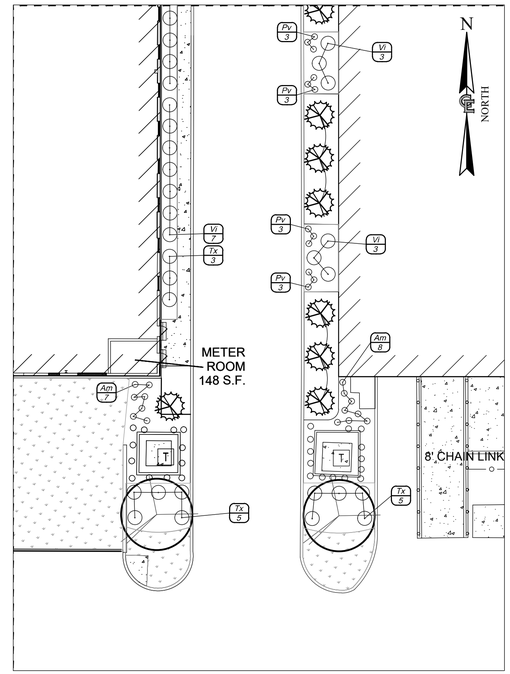
SHRUB PLANTING DETAIL
NOT TO SCALE



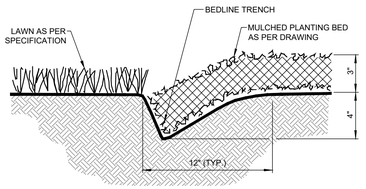
NOTES:

1. MAINTAIN A 3" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   FOR SANDY OR LOAMY SOILS: 1"
   FOR CLAY OR POORLY DRAINED SOILS: 3"
   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.

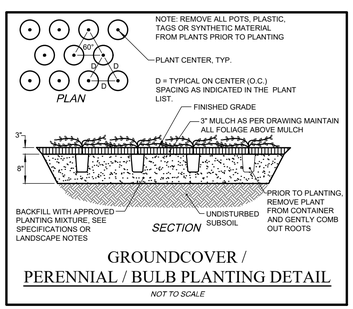
DECIDUOUS TREE PLANTING LESS THAN 4" CAL. DETAIL
NOT TO SCALE



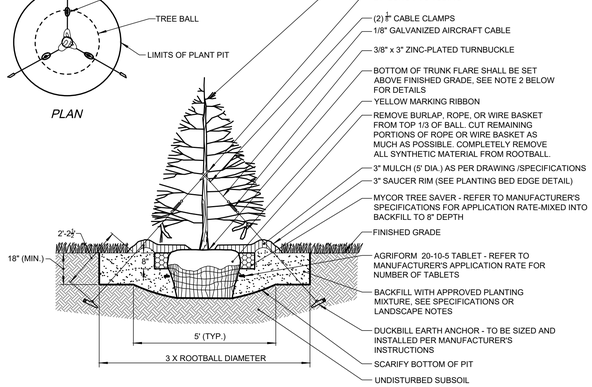
ENLARGEMENT AREA 9
SCALE: 1" = 20'



PLANTING BED EDGE TREATMENT DETAIL
NOT TO SCALE



GROUNDCOVER / PERENNIAL / BULB PLANTING DETAIL
NOT TO SCALE



NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   FOR SANDY OR LOAMY SOILS: 1"
   FOR CLAY OR POORLY DRAINED SOILS: 3"
   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE
4. IF BARE ROOT PLANT MATERIAL IS SPECIFIED IN THE PLANT SCHEDULE, SEE LANDSCAPE NOTES ON SHEET LA100 FOR ADDITIONAL INFORMATION.

EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

No.	Revision/Issue	Date
05	Revised based on Town Comments	2025-02-05
04	Revised based on site plan changes	2024-12-10
03	Revised based on site plan changes	2024-11-26
02	Revised based on site plan changes	2024-10-14
01	Revised based on site plan changes	2024-08-21

Revisions

Notes & References

CONTRACTOR SHALL CONTACT "DIG SAFELY" NEW YORK @ 1-800-962-7962 FOR LOCATION OF ALL UTILITIES, AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION

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Applicant

BENDERSON DEVELOPMENT
570 DELAWARE AVE, BUFFALO, NY 14202
PHONE (716) 886-0211 FAX (716)-856-7791
WWW.BENDERSON.COM

PROJECT NO. 1810

Landscape Architect's Seal

REGISTERED LANDSCAPE ARCHITECT SARAH COSTICH ON 00257A STATE OF NEW YORK

Landscape Architect

COSTICH ENGINEERING
• CIVIL ENGINEERING
• LAND SURVEYING
• LANDSCAPE ARCHITECTURE
217 LAKE AVENUE ROCHESTER, NY 14608 (585) 458-3020

Project Name and Address

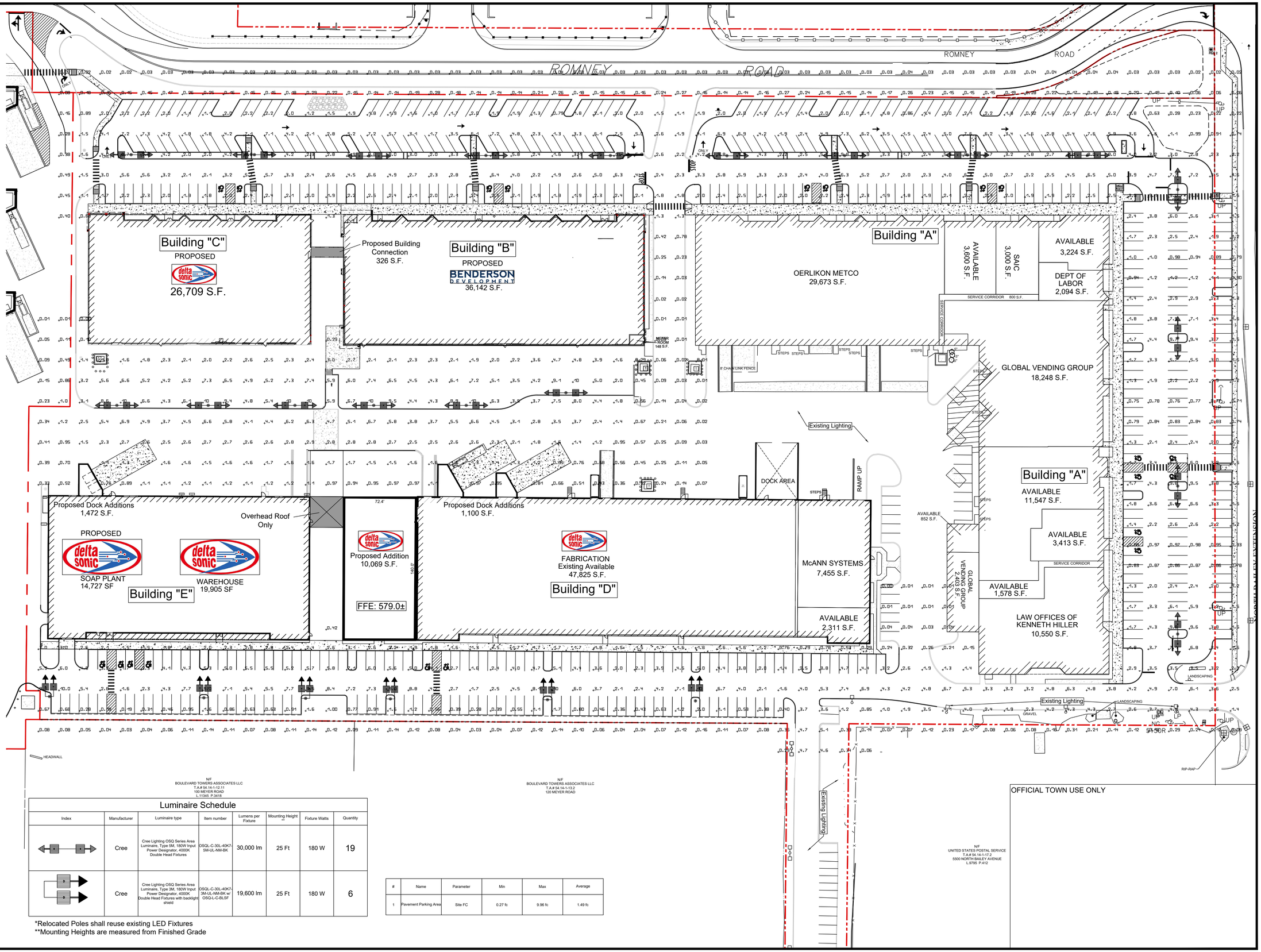
AMHERST DEVELOPMENT PARK - BUILDING ADDITIONS
6000-6040 N. Bailey Avenue
Amherst, New York 14226

Drawing Name

LANDSCAPE PLAN ENLARGEMENT AREAS & DETAILS

Sheet	Drawing Number
5 OF 5	C-7.4
Date: 6/12/2024	
Scale: 1"=20'	

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



Luminaire Schedule

Index	Manufacturer	Luminaire type	Item number	Lumens per Fixture	Mounting Height **	Fixture Watts	Quantity
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 5M, 180W Input Power Designator, 4000K Double Head Fixtures	OSQL-C-30L-40K7-5M-UL-NM-BK	30,000 lm	25 Ft	180 W	19
	Cree	Cree Lighting OSQ Series Area Luminaire, Type 3M, 180W Input Power Designator, 4000K Double Head Fixtures with backlight shield	OSQL-C-30L-40K7-3M-UL-NM-BK w/ OSQ-L-C-BLSF	19,600 lm	25 Ft	180 W	6

*Relocated Poles shall reuse existing LED Fixtures
**Mounting Heights are measured from Finished Grade

#	Name	Parameter	Min	Max	Average
1	Pavement Parking Area	Site FC	0.27 fc	9.96 fc	1.49 fc

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
2	05.08.2024	DZ	Site Plan Update
4	07.31.2024	DZ	Site Updates
5	08.12.2024	DZ	Site Updates
7	12.03.2024	DZ	Town Comments
10	02.05.2025	DZ	Town Comments

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NORTH

811 Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

REGISTERED ARCHITECT JAMES ALLEN RUMSEY STATE OF NEW YORK

TITLE:

Site Lighting Plan

SCALE: 1:70

DRAWN BY: DMZ

CHECKED BY: MAO

DATE: 08.16.2023

DRAWING NO. C8.00

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

OSQ Series

OSQ™ LED Area/Flood Luminaire featuring Patented NanoComfort™ Technology – Version C

Rev. Date: V3 04/17/2023

Product Description

The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. Medium is suitable upgrade for HID applications up to 400 Watts. Large is suitable upgrade for HID applications up to 1000 Watts. Extra Large is suitable upgrade for HID applications up to multiple 1000 Watts.

Applications: Parking lots, walkways, campuses, car dealerships, office complexes, high-mast and internal roadways

Performance Summary

Utilizes Patented NanoComfort™ Technology

Utilizes Cree TrueWhite® Technology on 5000K Luminaires

Assembled in the USA by Cree Lighting from US and imported parts

Initial Delivered Lumens: 4,000 - 75,000

Efficacy: Up to 171 LPW

CRI: Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)

CCT: 3000K, 4000K, 5000K, 5700K

Limited Warranty*: 10 years for luminaire; 10 years for Colorfast DeltaGuard® finish; 5 years for BML sensor; up to 5 years for Synapse® accessories; 1 year for luminaire accessories

*See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:
Example: **Mount:** OSQ-ML-C-AA-BK + **Luminaire:** OSQM-C-4L-30K7-2M-UL-NM-BK

Mount (Luminaire must be ordered separately)*

OSQ-

Medium/Large Mounts
OSQ-ML-C-AA Adjustable Arm
OSQ-ML-C-DA Direct Arm
OSQ-ML-C-TM Trunnion Mount

Extra Large Mounts
OSQ-X-C-AA Adjustable Arm
OSQ-X-C-DA Direct Arm

Color Options: **SV** Silver, **BK** Black, **BZ** Bronze, **WH** White

* Reference fixture mounting drill pattern, EPA, and pole configuration suitability data beginning on page 14.

Luminaire (Must must be ordered separately)

OSQ **C**

Family	Size	Series	Lumen Package*	CCT/ CRI	Optic	Voltage	Mount	Color Options	Controls*	Options
OSQ	**M** Medium **L** Large **X** Extra Large	**C**	**Medium** **4L** 4,000 Lumens **6L** 6,000 Lumens **9L** 9,200 Lumens **11L** 11,000 Lumens **16L** 16,000 Lumens **Large** **22L** 22,000 Lumens **30L** 30,000 Lumens **40L** 40,000 Lumens **Extra Large** **50L** 50,000 Lumens **65L** 65,000 Lumens **75L** 75,000 Lumens	**30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K7** 5000K, 70 CRI **57K7** 5700K, 70 CRI	**Asymmetric** **2M** Type II Mid **2S** Type II Mid w/ Factory-Installed Backlight Shield **3M** Type III Mid **3S** Type III Mid w/ Factory-Installed Backlight Shield **4M** Type IV Mid **Symmetric** **5M** Type V Mid **5N** Type V Narrow **4B** Type IV Mid w/ Factory-Installed Backlight Shield **AF** Automotive FrontlineOptic™ **AB** Automotive FrontlineOptic™ w/Factory-Installed Backlight Shield **33** NEMA® 3x3 **44** NEMA® 4x4 **55** NEMA® 5x5 **66** NEMA® 6x6 **77** NEMA® 7x5	**UL** Universal, 120-277V **UH** Universal, 347-480V - Not available with 4L, 40L or 75L lumen packages **UE** Universal, 277-480V - Available with 40L and 75L lumen packages	**NM** No Mount - Must specify mount from table above **XX** Mount ordered separately	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**BML** **Bluetooth® Technology Enabled Multi-Level Sensor** - Utilizes a multifunction sensor - Refer to BML spec sheet for details - 20-40' sensor lens installed on luminaire; 8-20' sensor lens and aisle shroud included - Intended for downlight applications - Not UL - Not available with Q or X options or Synapse TLT-B2 or TLT-HVO accessories **0V/0R/1T/1N/0D/0A/0J/02/01 Field Adjustable Output** - Must select 0R, 0B, 0T, 0N, 0A, 0J, Q2, or Q1 - Offers full range adjustability - Refer to pages 15-25 for power and lumen values - Not available with BML or X options or Synapse TLT-B2 or TLT-HVO accessories **XB/X7/YA/Y5/X4/X3/X2/X1 Locked Lumen Output** - Must select XB, X7, X6, X5, X4, X3, X2, or X1 - Not available with BML or Q options - X7 option not available with the following lumen package/voltage offerings: 9L/UL, 16L/UL, 16L/UH, 30L/UL, 30L/UH, 40L/UL, 65L/UL, 65L/UH - X2 option not available 9L/UL lumen package/voltage - Lumen output is permanently locked to the setting selected - Refer to pages 15-25 for power and lumen values	**20KV** **20kV/10kA Surge Suppression** - Replaces standard 10kV/5kA surge protection **F** **Fuse** - Compatible with 120V, 277V or 347V (phase to neutral) - Consult factory if fusing is required for 208V, 240V or 480V (phase to phase) - When code dictates fusing, use time delay fuse **N** **Nema® Twist-Lock and NEMA® Lift & Lock 7-Pin Photocell Receptacle** - External utility label per ANSI C136.15-2020 - 7-pin receptacle per ANSI C136.41 - Available only with OSQM & OSQL luminaires - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - Requires photocell or shorting cap by others **R** **NEMA® Lift & Lock 7-Pin Photocell Receptacle** - Available only with OSQM & OSQL luminaires - Intended for downlight applications with maximum 45° tilt - Factory connected 0-10V dim leads - Requires photocell or shorting cap by others - Refer to page 2 for compatible Synapse control offerings **RL** **Rotate Left** - LED and optic are rotated to the left - Refer to RR/RL configuration diagram on page 26 for optic directionality - Not for use with symmetric optics **RR** **Rotate Right** - LED and optic are rotated to the right - Refer to RR/RL configuration diagram on page 26 for optic directionality - Not for use with symmetric optics

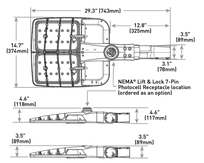
* Lumen Package codes identify approximate light output only. Actual lumen output levels vary by CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values
* Luminaire comes standard with 0-10V dimming

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE ⇕ LIGHTING®

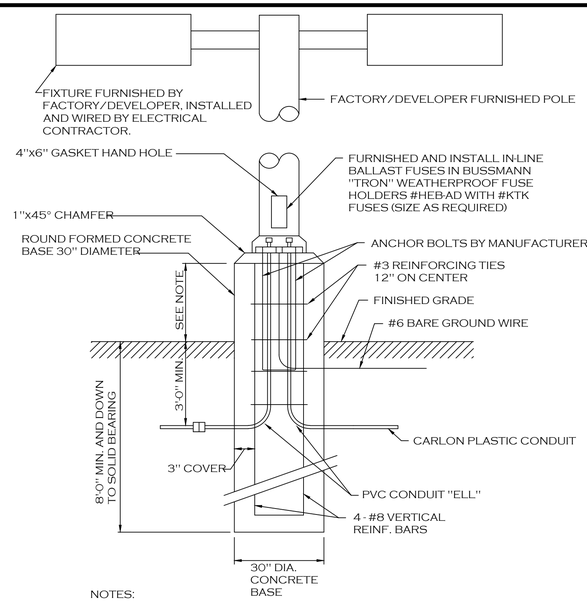
OSQM - AA Mount





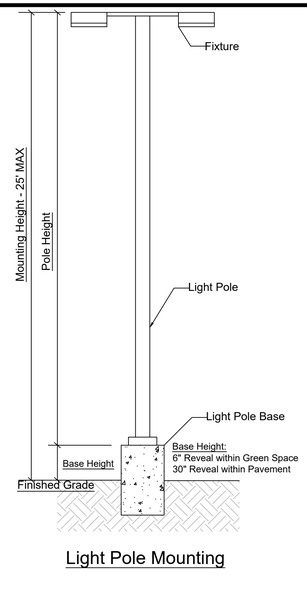
Luminaire	Weight
OSQM	19.3 lbs. (8.8kg)

Note: For OSQL, OSQX and additional mounts, refer to drawings beginning on page 26.



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
   IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
   IN PAVEMENT: 30" ABOVE GRADE
   IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION



Light Pole Mounting

OFFICIAL TOWN USE ONLY

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
1	12.13.2023	DZ	POND UPDATES
4	07.31.2024	DZ	Site Updates
10	02.05.2025	DZ	Town Comments

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Know what's below. Call before you dig.

PROPERTY NUMBER: #1723

AREA: -

Amherst Development Park
6000 - 6040 North Bailey Ave
Amherst, NY 14226

PROPOSED SITE MODIFICATIONS

CONSULTANT

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

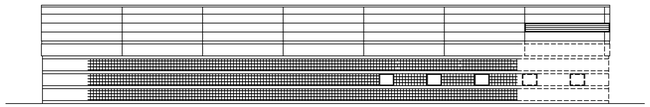
SEAL



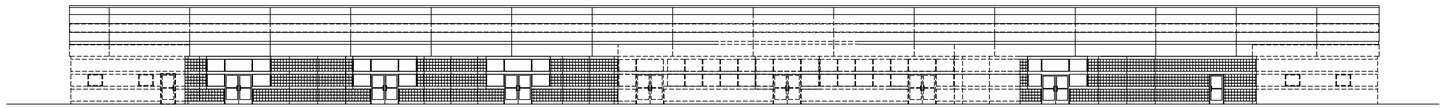
TITLE:
Lighting Details

SCALE: NTS
DRAWN BY: DMZ
CHECKED BY: MAO
DATE: 08.16.2023
DRAWING NO.: C8.10

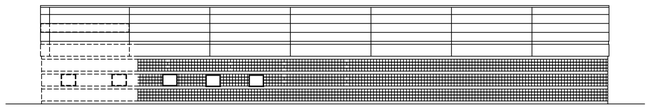
Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



1 ELEVATION EAST DEMOLITION
SCALE: 1/16"=1'-0"



2 ELEVATION NORTH DEMOLITION
SCALE: 1/16"=1'-0"



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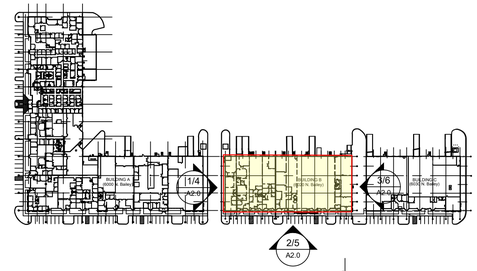
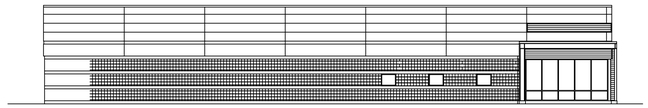
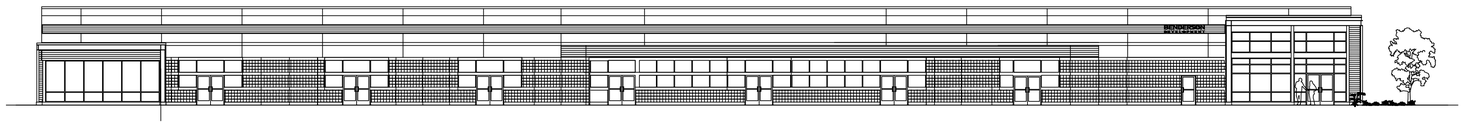


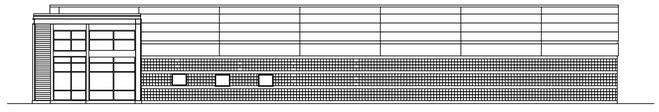
KEY PLAN
N.T.S.



4 ELEVATION EAST
SCALE: 1/16"=1'-0"



5 ELEVATION NORTH
SCALE: 1/16"=1'-0"



6 ELEVATION WEST
SCALE: 1/16"=1'-0"

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
-	-	-	-

SPECIAL INFORMATION:
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JAMES ALLEN RUMSEY ARCHITECT

PREPARED FOR

BENDERSON DEVELOPMENT
570 DELAWARE AVE. BUFFALO, NY 14202
BUFFALO, NY 14202
(716) 886-0211

PROPERTY NUMBER: 1723
AREA: -

AMHERST DEVELOPMENT PARK
6000-6040 North Bailey Ave
Amherst, NY 14226

FACADE RENOVATION

SEAL:

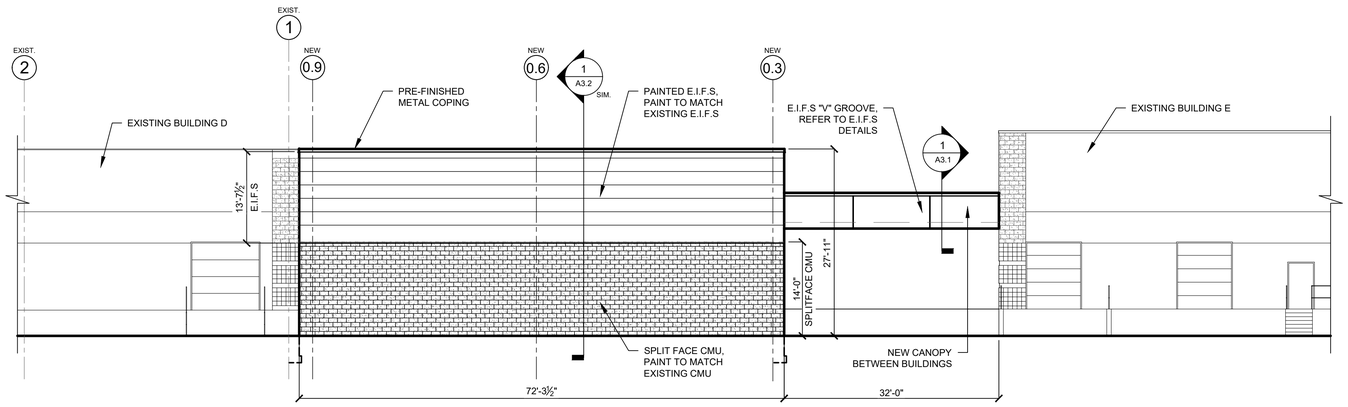
TITLE
EXTERIOR ELEVATIONS

CAR
JAR
12.15.20

DRAWING NO.
A2.0B

Attachment: SP-1988-11P_drawings updated 021425, 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

M:\BENDERSON\1723- AMHERST DVLP\SHELL\FACADE - A B C\1723 FACADE 2024.DWG, LAYOUT: A2.0 (2), 12/10/2024 3:23:44 PM



1 NORTH ELEVATION
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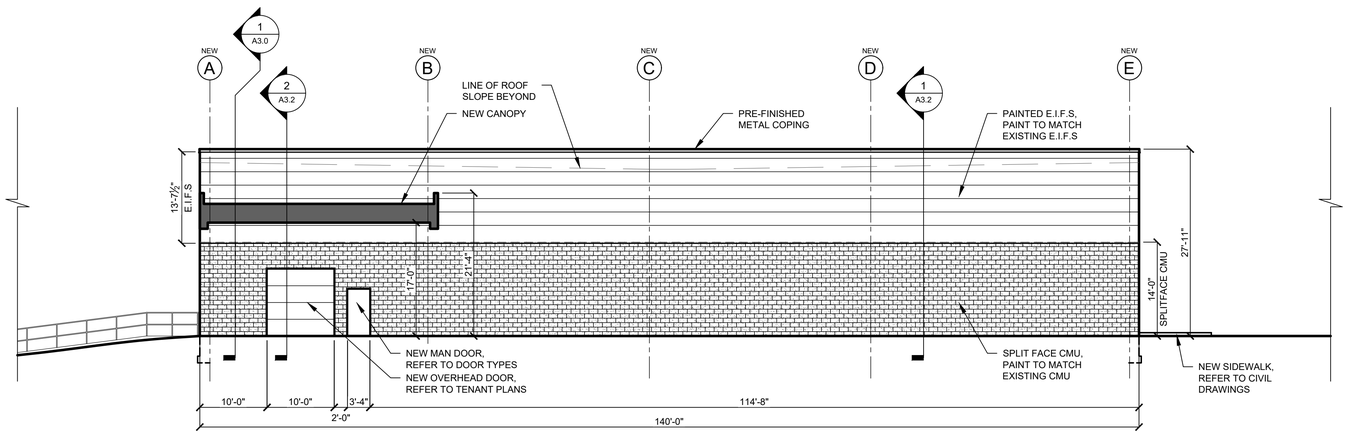
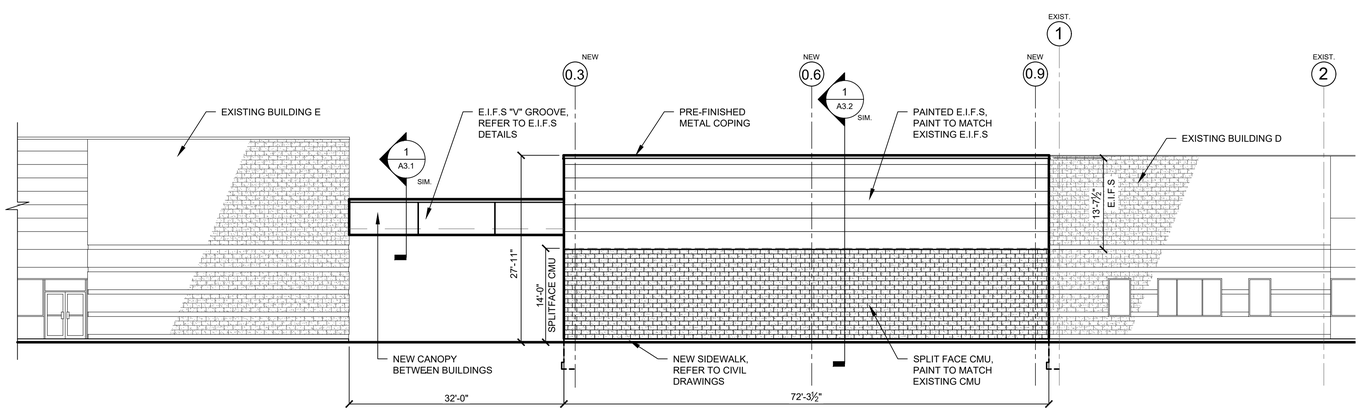


2 EAST ELEVATION
SCALE: 3/32"=1'-0"



3 SOUTH ELEVATION
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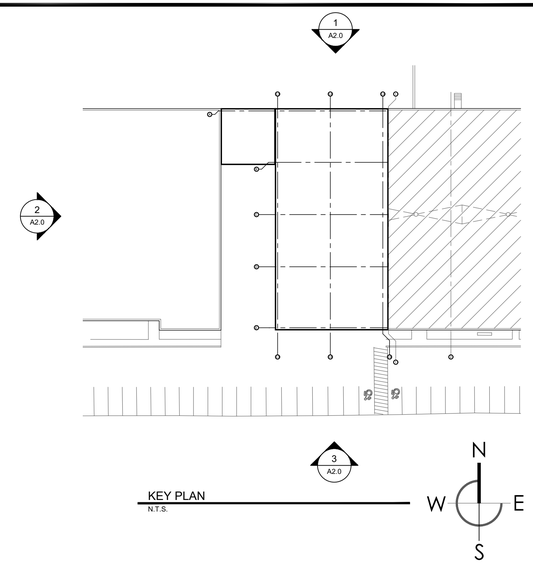

KEY PLAN
N.T.S.

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
-	-	-	-

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UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

PROPERTY NUMBER: 1723

AREA: 9,522 SF

AMHERST DEVELOPMENT PARK
6000 - 6040 NORTH BAILEY AVE
AMHERST, NY 14226

BUILDING D EXPANSION

CONSULTANT:

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR
BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

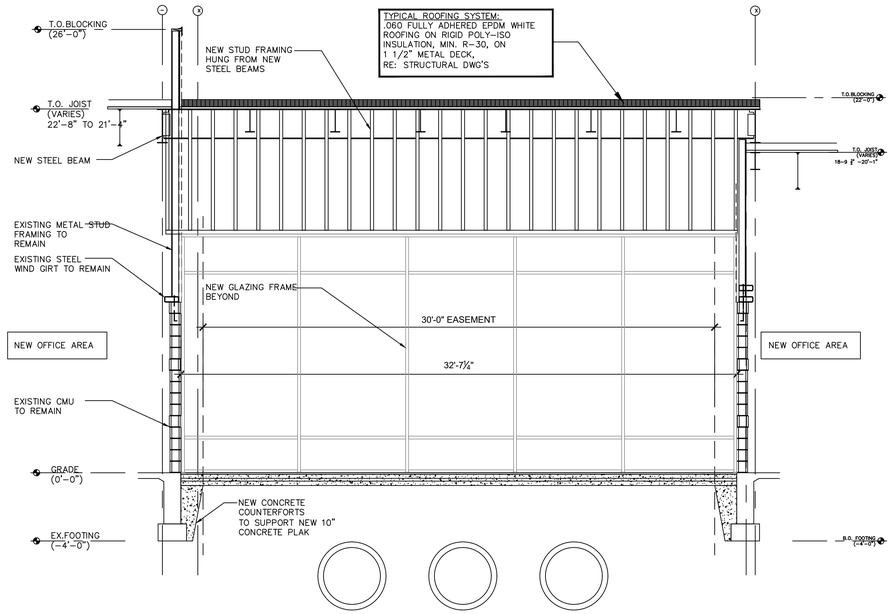
TITLE:

EXTERIOR ELEVATIONS

DRAWN BY: RKT
CHECKED BY: JAR
DATE: 07.08.24

DRAWING NO.
A2.0

Attachment: SP-1988-11P drawings updated 021425 022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)



OVERHEAD
CONNECTION
SECTION

DRAWING REVISIONS:

No.	DATE	BY	REMARKS
–	–	–	–

SPECIAL INFORMATION:

THIS DRAWING PREPARED FOR TENANT IMPROVEMENTS TO AN EXISTING BUILDING OR BUILDING CONSTRUCTED BY OTHERS IT IS UNDERSTOOD THAT ANY WARRANTY INFORMATION CONCERNING EQUIPMENT INSTALLED MUST BE FORWARDED TO THE OWNER AND THAT ANY AND ALL CONTRACTORS SHALL GUARANTEE THEIR WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNERS ACCEPTANCE.

NOTICE

UNAUTHORIZED ALTERATIONS OF THIS DOCUMENT ARE IN VIOLATION OF SECTION #7209 OF THE STATE EDUCATION LAW.

PROPERTY NUMBER: 1723

AREA: -

AMHERST DEVELOPMENT PARK
6000 - 6040 NORTH BAILEY AVE
AMHERST, NY 14226

BUILDING CONNECTION

CONSULTANT:

JAMES ALLEN RUMSEY
ARCHITECT
PREPARED FOR

BENDERSON DEVELOPMENT
570 DELAWARE AVE., BUFFALO, NY 14202
(716) 886-0211

SEAL

TITLE:

EXTERIOR
ELEVATION

DRAWN BY: JM
CHECKED BY: JAR
DATE: 10.25.24

DRAWING NO.

A2.1

Attachment: SP-1988-11P_drawings updated 021425_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-1988-11_P

PETITIONER

Benderson Development
57-0 Delaware Avenue
Buffalo, New York 14202

PROPERTY LOCATION

6000-6020 North Bailey Avenue (BCD)

WHEREAS, the Town of Amherst Planning Board on Thursday, September 19, 2024, October 17, 2024, January 16, and February 20, 2025 held public hearings on a Site Plan for a 10,069 square foot building addition and reconfiguration / expansion to the parking area to provide an additional 136 parking spaces, and

WHEREAS, the Planning Board reviewed the plans and specifications for the proposed project, and

WHEREAS, the Site Plan was referred to the Town's various review agencies, and

WHEREAS, in accordance with Section 8-7-9 of the Zoning Ordinance, the Planning Board finds that:

A. The proposed site plan is consistent with the development plan if one is required.

B. The proposed site plan is consistent with the purpose and specific requirements of the Zoning Ordinance and generally consistent with the policies of the Comprehensive Plan.

C. Adequate services and utilities will be available prior to occupancy.

D. The site plan is consistent with all other applicable laws.

E. Pursuant to Local Law #3-82, as amended, the Planning Board has determined that the requirements of SEQR are complete and that the subject proposal is not expected to have a significant adverse effect on the environment.

F. Review by the US Army Corps of Engineers under Section 404 of the Clean Water Act may be waived because the parcel is developed.

NOW THEREFORE BE IT RESOLVED that in accordance with 6 NYCRR, Part 617 and Local Law #3-82, as amended, the Planning Board finds that the project is consistent with the statement of findings adopted on January 6, 2020 for the Boulevard Central District for which a FGEIS has been accepted, and

NOW THEREFORE BE IT FURTHER RESOLOVED that the Planning Board, in accordance with Part II, Chapter 83, Part IX, Section 1-2 of Town Law waives sidewalks required along the Romney Road frontage of the parcel until required at some future time by the Town Board, and

Attachment: SP-1988-11_P_Resolution_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FEB 28 2025 PM 12:04

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-1988-11_P

PETITIONER	PROPERTY LOCATION
Benderson Development	6000-6020 North Bailey Avenue (BCD)

NOW THEREFORE BE IT FURTHER RESOLVED that the Planning Board, in accordance with Section 8-7 of the Zoning Ordinance approves said Site Plan subject to the following conditions:

1. That the consideration of signs is specifically excluded from this approval as they require a separate review and approval by the Town.

2. That all dumpsters/trash containers and all mechanical equipment, utility structures, multiple meter boards, generators, and similar appurtenances, including those which are mounted on any part of a primary structure shall be appropriately screened with a fence, wall, and/or landscaping. Provide gate on dumpster enclosure that shall be closed whenever dumpster is not being serviced, enclosure shall be high enough to screen the dumpster(s) within.

3. That an as-built survey, including location of utilities, be provided to the Engineering Department prior to issuance of a Certificate of Occupancy by the Building Department.

4. That the concerns raised in the Town of Amherst Highway Department letter dated December 19, 2023 be addressed to the satisfaction of that department.

5. That the concerns raised in the Planning Department Staff review in the Town of Amherst Planning Department letter dated February 19, 2025 be addressed to the satisfaction of the staff.

6. That the concerns raised by the Town of Amherst Senior Deputy Town Attorney relative to Right-of-Way concerns in her letter of January 31, 2025 be addressed to the satisfaction of the Town Attorney's Office.

7. That the land swap between the Town of Amherst and the petitioner for the proposed stormwater facility located at the southwest corner of Romney Road and Bailey Avenue be finalized prior to the issuance of an approved site plan by the Planning Department.

8. That the amendment to the permanent easement to the Town of Amherst that runs north-south through the site and between buildings 6010 & 6020 and 6030 & 6040 be finalized and that recorded copies of the easement be provided to the Planning Department prior to the issuance of an approved site plan.

9. That the concerns raised by the Town of Amherst Stormwater Management Officers letter dated January 31, 2025 be addressed to the satisfaction of that officer.

Attachment: SP-1988-11_P_Resolution_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-1988-11_P

PETITIONER

Benderson Development

PROPERTY LOCATION

6000-6020 North Bailey Avenue (BCD)

10. That the concerns raised by the Amherst Fire Chiefs Association in their letter dated October 2, 2024 be addressed to the satisfaction of that association.

11. That the concerns raised by the Town of Amherst Engineering Department related to sanitary sewerage in their letter dated January 13, 2025 be addressed to the satisfaction of that department.

12. That the concerns raised by the Town of Amherst Engineering Department – Engineering Services Division in their letter dated January 31, 2025 be addressed to the satisfaction of that division.

13. That the Boulevard Central District Mitigation Costs be paid prior to the issuance of building permits by the Town of Amherst Building Department.

The foregoing resolution was adopted by the Town of Amherst Planning Board, February 20, 2025; moved by Gill; seconded by O'Rourke; ayes 5; noes 0; absent 2 (Davis, Raffaele).

Michael J. Chmiel, Planning Board Chair

2/27/25
Date

SM/ac
X:\Current_Planning\Files\Site Plans\1988\SP-1988-11_P_(6000-6020_Bailey_Ave)_2023\SP-1988-11_P_resolution_002025.doc

cc: Commissioner of Building
Town Engineer
Fire Chiefs
Traffic/Safety
Highway Superintendent
James Boglioli, Benderson Development, 570 Delaware Avenue, Buffalo, NY 14202

Approved Plan: James A. Rumsey, Architect
Received: February 13, 2025

Attachment: SP-1988-11_P_Resolution_022025 (28252 : SP-1988-11P, 6000-6020 N. Bailey Ave)

FEB 28 2025 PM 12:04

Application for Site Plan Amendment
50 Dodge Road
Proposed Mixed-Use Project - Site "A" of Muir Woods Property
Applicant: Sawyers Landing LLC
Date: November 25, 2024

Prepared By: Sean Hopkins, Esq.
Hopkins Sorgi & McCarthy PLLC
35 California Drive, Suite 100
Williamsvile, NY 14221
Tel: 510-4338
E-mail: shopkins@hsmlegal.com

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Major Site Plan Review

For Official Use

File #: _____ **Acreage** 17.42 **Fee $** $1,215.00

Address Verified by Assessor's Office _____ VERIFIED BY _____ DATE

Site Plan Review		**Fill In Applicable Fees**
1 acre or less	$1,250.00	
Each Additional acre or fraction thereof	$ 650.00/acre	
Amendments to Site Plans	$1,200.00	1,200.00
Request for Relief of / or Change to Conditions of Site Plan Approval	$1,200.00	
Request for Extension of Site Plan Approval	$ 450.00	
Stormwater Pollution Prevention Plan		
1-4.99 Acres	$ 500.00	
5-10 Acres	$ 750.00	
>10 Acres	$1,000.00	
Affidavit Fee for Public Hearing	$ 15.00	$15.00
	TOTAL FEE:	$ 1,215.00

Materials Received by Planning Department _____ RECEIVED BY _____ DATE

Materials Accepted by Town Clerk & Fee Paid _____ ACCEPTED BY _____ DATE

To Be Completed By Applicant

Petitioner: Name: Sawyers Landing LLC c/o Sean W. Hopkins, Esq.

Address: 35 California Drive, Suite 100

Williamsville, New York 14221

_____

_____ city _____ state _____ zip code

Phone: 510-4338 Fax: _____ E Mail: shopkins@hsmlegal.com

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Representative (Architect, Engineer, Landscape Architect, Surveyor, or Attorney)**:**

Name: Jon Barniak

Address: Carmina Wood Design

80 Silo City Row, Suite 100

Buffalo (city) New York (state) 14203 (zip code)

Phone: . 716.501.5766 Fax:

E Mail: jbarniak@carminawooddesign.com

Project Location (must be verified by Town Assessor's Office)**:**

Address: 50 Dodge Road

SBL No(s): 40.08-3-13.1/A

Project Name: Sawyers Landing Project

Project Description:

See attached Exhibit "2" for Project Description. The layout of the proposed mixed-use project to be located at 50 Dodge Road as depicted on the Overall Site Plan [Drawing C-100] prepared by Carmina Wood Design. A reduced size copy of the Overall Site Plan is provided at Exhibit "3". and a reduced size copy of the Site Plan [Drawing C-101] is provided at Exhibit "4". The proposed mixed-use project includes the subdivision of the 17.42 acre Project Site into four parcels as depicted on the Parcel Map [Drawing C-102] prepared by Carmina Wood Design. A reduced size copy of the Parcel Map [Drawing C-102] is provided at Exhibit "5".

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

If this petition is an amendment to a previously approved site plan, please describe the proposed changes (include type and size of existing structures and number of existing parking spaces):

The changes to the Site Plan approved by the Planning Board on September 22, 2022 include a reduction of the number of residential units from 258 units to 199 units including elimination of a four-story multifamily building with 48 units, an increase in the commercial square footage resulting from the ~~addition of a four-story climate controlled building and a reduction of the number of parking spaces~~.

Gross Floor Area (non-residential):	0 existing	131,464 sq. ft. proposed	131,464 sq. ft. total
Number of Residential Units:	0 existing	199 proposed	199 total
Number of Parking Spaces:	0 existing	401 proposed	401 total

Acreage of Parcel: 17.42 Acres

Frontage on Public Roads: The parcel has approximately 1,120 ft. on Dodge Road and approximately 120 ft. of frontage on Sweet Home Road.

Existing Zoning District(s) NCD

[Note: A completed Part 1 of the Full Environmental Assessment Form prepared pursuant to the State Environmental Quality Review Act ("SEQRA") with Page 5[a] and Attachments "A" and "B" is attached as Exhibit "1" of this Site Plan Amendment Application.]

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 1 – Part 1 of the Full Environmental Assessment Form prepared pursuant to the State Environmental Quality Review Act ("SEQRA") with attached Page 5[a] and Attachments "A" and "B"

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Full Environmental Assessment Form
Part 1 - Project and Setting

Prepared By: Sean Hopkins, Esq.
Hopkins Sorgi & McCarthy P
California Road, Suite 100
Williamsville, NY 14221
Tel: 716.510-4338
E-mail: shopkins@hsmlegal.com

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Proposed Mixed-Use Project - Site A of Muir Woods		
Project Location (describe, and attach a general location map): 50 Dodge Road - Town of Amherst - Erie County		
Brief Description of Proposed Action (include purpose or need): The proposed action consists of an amendment of the Site Plan approved by the Planning Board ("Planning Board on September 22, 2021 pto accommodate the updated layout for the proposed mixed-use project to be located at 50 Dodge Road. The layout of the mixed-use project is depicted on the Overall Site Plan [Drawing C-100] prepared by Carmina Wood Design. The action has been defined broadly to include all required discretionary approvals and permits as well as all site improvements including the two proposed mixed-use buildings, the climate controlled storage building, residential buildings, driveway connections, access aisles, parking spaces, driveways, 100 ft. Adjacent Area impacts for the recreational trail, lighting, landscaping, an on-site storm water management improvements, sanitary sewer and water lines and connections and all other required utility improvements. The project purpose is to develop 50 Dodge Road as a mixed-use project as depicted on Overall Site Plan for the project prepared by Carmina Wood Design. The project is a Type I action pursuant to SEQRA and the Town Board issued an Amended Findings Statement pursuant to SEQRA on October 5, 2024. The proposed use is consistent with the Town's adopted Comprehensive Plan.		
Name of Applicant/Sponsor: Sawyers Landing LLC c/o Sean Hopkins, Esq.	Telephone: 716.510-4338 E-Mail: shopkins@hsmlegal.com	
Address: 5500 Main Street, Suite 343		
City/PO: Williamsville, NY	State: NY	Zip Code: 14221
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board	PIPs
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Planning Board - Amended Site Plan Approval	November 25, 2024
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Building Department - Building Permits;	To be determined
e. County agencies ☑Yes ☐No	Highway Work Permit - ECDPW; Water - ECWA	To be determined
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC - Wetland Permit; DSCA Approval and SPDES Permit	Amended wetland permit issued on 07/02/24- DSCA & SPDES - To be determined
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

[**Note**: The Town has an adopted Waterfront Revitalization Program.]

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

NYS Heritage Areas:West Erie Canal Corridor [Note: The project will not have any impacts on the West Erie Canal Corridor.]

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Site "A" of the Muir Woods property is zoned New Community District pursuant to the Town of Amherst Zoning Map.

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? Sweet Home Central School District

b. What police or other public protection forces serve the project site?
Town of Amherst Police Department

c. Which fire protection and emergency medical services serve the project site?
Volunteer Fire Department

d. What parks serve the project site?
Various Town Parks including Nature View Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Mixed-use project consisting of commercial space and various residential unit types.

b. a. Total acreage of the site of the proposed action? 17.424 acres
b. Total acreage to be physically disturbed? 13.33 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 17.424 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
63 residential lots [2 family townhomes for sale]
ii. Is a cluster/conservation layout proposed? ☑ Yes ☐ No
iii. Number of lots proposed? 4 lots
iv. Minimum and maximum proposed lot sizes? Minimum 3 acres Maximum 7.

e. Will the proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated 3-4
- Anticipated commencement date of phase 1 (including demolition) Mar month 2025 year
- Anticipated completion date of final phase Mar month 2027 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

The infrastructure necessary for each phase will be installed to ensure compliance with applicable technical standards including those for stormwater management.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

f. Does the project include new residential uses? [**Note**: The 87 one-family units consist of attached townhome units for sale.] ☑ Yes ☐ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	87			56
At completion of all phases	87			112

The build-out of the residential components will be based on market conditions.

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes, There will be 15,000 sq. ft. of commercial space in each of the two mixed-use buildings.

i. Total number of structures 3

ii. Dimensions (in feet) of largest proposed structure: 55' height; 240' width; and 120' length

iii. Approximate extent of building space to be heated or cooled: 131,464 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑ Yes ☐ No

If Yes,

i. Purpose of the impoundment: Storm water management

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑ Other specify: Storm water runoff from impervious surfaces.

iii. If other than water, identify the type of impounded/contained liquids and their source.

N/A

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: 1.5 acres

v. Dimensions of the proposed dam or impounding structure: N/A height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): Impoundment area is an excavation consisting of earth fill.

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres: _____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No
If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:

i. Total anticipated water usage/demand per day: 49,265 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:

- Name of district or service area: ECWA Consolidated Water District
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:

i. Total anticipated liquid waste generation per day: 49,625 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): Sanitary wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: Tonawanda Creek Wastewater Treatment Plant
- Name of district: Town of Amherst Consolidated Sanitary Sewer District
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑ Yes ☐ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 8 acres (impervious surface)

_____ Square feet or 17.42 acres (parcel size)

ii. Describe types of new point sources. Parking lots and roof tops

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Stormwater runoff will be conveyed into the on-site stormwater management system to be installed per the applicable stringent stormwater quality and quantity standards of the NYS Department of Environmental Conservation ("NYSDEC")

- If to surface waters, identify receiving water bodies or wetlands: NYSDEC & Federal wetlands on the east portion of the Project Site after on-site stormwater management system.
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☑ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☑ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐ Yes ☑ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? [**Note:** An updated Traffic Impact Study prepared by Passero Associates dated June 24, 2024 has been submitted based on the current project layout.] ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: _____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

To be determined

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

National Grid

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7:00 to 7:00
- Saturday: 8:00 to 6:00
- Sunday: As needed
- Holidays: Not Applicable

ii. During Operations:

- Monday - Friday: 8:00 to 11:00
- Saturday: 8:00 to 11:00
- Sunday: 8:00 to 10:00
- Holidays: 8:00 to 10:00

The hours of operation during "During Operations" as listed above apply to the first floor commercial space in the two mixed-use buildings. The hours are estimates since the tenants that will lease the first floor commercial space including both office and retail tenants have not yet been identified.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Construction activities will include the use of construction equipment during daytime hours that will exceed ambient background noise levels. The construction related noise impacts are a temporary unavoidable impact.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Lighting will be installed in compliance with the lighting standards contained in the Town of Amherst Zoning Code. A

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

Potential use of lawn fertilizer and pesticides on maintained portions of property in accordance with applicable standards for application and use of lawn fertilizer and pesticides.

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☑ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 3 tons per week (unit of time)
- Operation : 3 tons per week (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: wood and metal waste may be recycled by the contract at their discretion
- Operation: Town of Amherst recycling program will be followed

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Approved NYSDEC landfill via contractor or private disposal company
- Operation: Approved NYSDEC landfill via private disposal company

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): Wetlands

ii. If mix of uses, generally describe:

There are mixture of uses in the vicinity of the Project Site including residential uses to the north in the Bucyrus Heights Subdivision, an elementary school, apartments and office buildings on Sweet Home Road and permanent open space to the east of the Project Site..

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	8.0	+ 8.0
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	17.4	0	-17.4
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: Greenspace, Landscaping, Pond	0	9.4	+9.4

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No
If Yes,
i. Identify Facilities:
1. Heritage Heights Elementary School (Sweet Home School District- 2545 Sweet Home Road); 2. Creative Play Learning Center (Private Day Care Facility- 647 Dodge Road); and 3. Four Seasons Child Care & Preschool (Private Day Care Facility- 1639 North French Road).

e. Does the project site contain an existing dam? ☐ Yes ☑ No
If Yes:
i. Dimensions of the dam and impoundment:
- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection:
_____
_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No
- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:
_____
_____
iii. Describe any development constraints due to the prior solid waste activities: _____
_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:
_____
_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No
☐ Yes – Spills Incidents database Provide DEC ID number(s): _____
☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____
_____
_____
iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No
If yes, provide DEC ID number(s): _____
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):
_____
_____

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Getzville silt loam	94 %
Swormville clay loam	6 %
	%

d. What is the average depth to the water table on the project site? Average: >5 feet

e. Drainage status of project site soils:

☐	Well Drained:	% of site
☐	Moderately Well Drained:	% of site
☑	Poorly Drained	100 % of site

f. Approximate proportion of proposed action site with slopes:

☑	0-10%:	100 % of site
☐	10-15%:	% of site
☐	15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, NYS Wetland Approximate Size NYS Wetland (in a...
- Wetland No. (if regulated by DEC) TE-33

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

m. Identify the predominant wildlife species that occupy or use the project site:
Typical suburban species

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation):
ii. Source(s) of description or evaluation:
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:
i. Species and listing (endangered or threatened):

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☑ Yes ☐ No

If Yes:
i. Species and listing:
Spiny Softshell - The Project Sponsor does not believe that Spiny Softshell is present on Site A of the Muir Woods property.

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name:
ii. Basis for designation:
iii. Designating agency and date:

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: Eligible property:Heritage Heights Elementary School

iii. Brief description of attributes on which listing is based:

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No [No impact letter issued by SHPO on October 10, 2001.]

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s):

ii. Basis for identification:

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource:

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.):

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation:

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Sawyers Landing LLC Date November 24, 2024

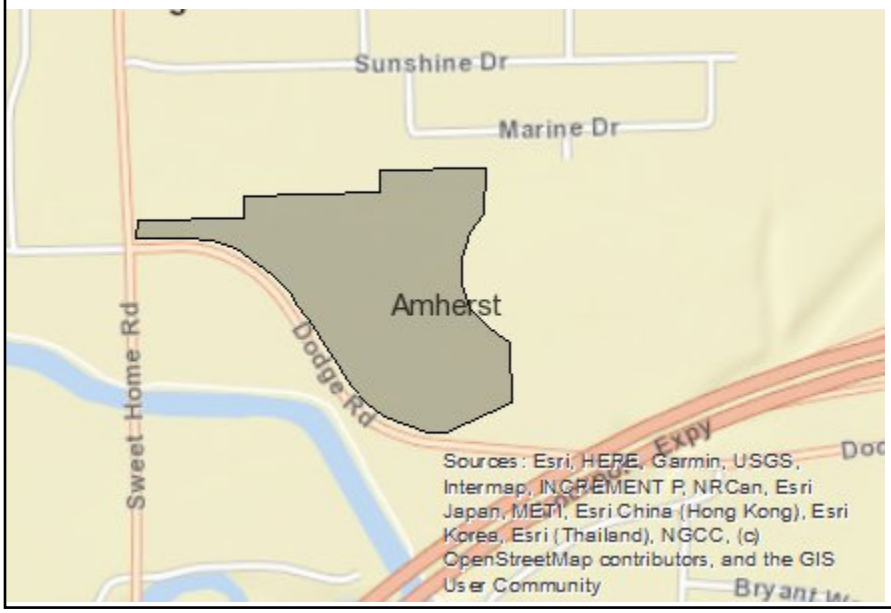
Signature Sean Hopkins Title Attorney for Project Sponsor

Sean W. Hopkins, Esq.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PRINT FORM

EAF Mapper Summary Report



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas:West Erie Canal Corridor
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters, NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):34.6
E.2.h.iv [Surface Water Features - DEC Wetlands Number]	TE-33
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	Yes
E.2.p. [Rare Plants or Animals - Name]	Spiny Softshell
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:Heritage Heights Elementary School
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST ATTACHMENT
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
Mixed-Use Project - 50 Dodge Road

1. For each applicable category of proposed new structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Getzville Silt Loam	Severe	Severe	Severe	Severe	Moderate
Swormville Clay Loam	Severe	Severe	Severe	Severe	Severe

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

_____ Geotechnical report attached __x___ Not applicable

3. Is your property located: On Youngs Road between Dodge and Klein Roads? □ Yes x No
On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? □ Yes x No

If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? □ Yes x No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
Not Applicable

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: Yes ☒ No

Describe_____
_____

(Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project__243 [Sat. Peak Hour]
Source: __Updated Traffic Impact Study prepared by Passero Associates dated June 23, 2024._____

8. Will blasting occur during construction? □ Yes ☒ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? ☒ Yes □ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
49,265 average flow 197,060 peak flow.
(Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources*, is your property 'blue-rated' for historic significance? x Yes □ No
[There are not any buildings located on the Project Site.]
[Note: A copy of the No Impact Determination letter issued by SHPO is provided at Attachment "B" of the Part 1 of the Full Environmental Assessment Form provided at Exhibit "1".]

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Attachment "A" of Part 1 of Full Environmental Assessment Form - Wetland Permit DEC ID 9-1422-00398] issued by the New York State Fepartment of Environmental Conservation dated July 25, 2024

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 9-1422-00398

PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
SAWYER'S LANDING LLC
43 Central Ave
LANCASTER, NY 14086
(716) 912-0969

CIMINELLI MUIR WOODS, LLC
50 Fountain Plz Ste 500
Buffalo, NY 14202
(716) 631-8000

Facility:
MUIR WOODS DEVELOPMENT
1121 N French Rd
Amherst, NY 14228

Facility Location: in AMHERST in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 191.586 NYTM-N: 4770.823
Latitude: 43°01'38.9" Longitude: 78°47'07.2"
Authorized Activity: Construction of a new bike path, measuring approximately 830 linear feet in length and permanently impacting approximately 0.58-acres of the regulated 100' wide adjacent area of NYSDEC Freshwater Wetland TE-33. No direct impact to Freshwater Wetland TE-33 itself is authorized as part of this project. The project is located at the facility location listed above.

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 9-1422-00398/00003
New Permit Effective Date: 7/25/2024 Expiration Date: 7/24/2027

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ, Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY 14209

Authorized Signature: Lisa M. Czechowicz Date 7 / 25 / 2024

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Distribution List

NYSDEC Region 9 Division of Law Enforcement
Chuck Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health
Molly Bebak, NYSDEC Region 9 Division of Water
Town of Amherst
Jody M. Celeste, Earth Dimensions, Inc.
Ciminelli Muir Woods, LLC

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by various, including pages 1-3 of Joint Application Form (3 pgs), "Overall Site Plan" (1 pg), "Grading Plan - Recreation Trail" (1 pg), and "Monument and Tree Planting Plan" (1 pg), 6 pages DEC date-stamped 3/1/24 attached to this permit.

2. **Conditions Prevail Over Plans** If any condition of this permit conflicts with the approved plans, the permit condition shall prevail over the plans.

3. **Notice of Intent to Commence Work** The Permittee shall notify the Department 3 to 5 days prior to the commencement of work on the project by emailing DEP.R9@dec.ny.gov, at attention to Matthew Smith, Environmental Analyst I, and Charles Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health. The email needs to include the permit number, permittee name and the project start date.

4. **Siltation Prevention Measures** Siltation prevention measures, such as silt fencing, sediment traps, settling basins and/or filter bags, as deemed necessary and appropriate for the situation, shall be installed and maintained during the project, to prevent movement of silt and turbid waters from the project site into NYS Freshwater Wetland TE-33, its associated 100' wide adjacent area, and/or any other watercourse, stream, water body or wetland.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

5. **Install Monuments** The permittee shall install a minimum of nine (9) monuments along the edge of the bike path as shown in the final NYSDEC approved site plan. The monuments shall be 30-inch long 5/8-inch rebar and cap embedded flush and in the center of the top exposed surface of concrete in a minimum 4-inch diameter, 4.5-foot long section of PVC Schedule 40 drain pipe filled with concrete, extending vertically 1.5 - 2 feet above existing grade at each location. The caps shall say "Wetland Conservation Area, Do Not Disturb, Survey Marker."

6. **Work Within Area Depicted on Plans** No impacts to Freshwater Wetland TE-33 or its 100' wide adjacent area located outside of monuments are authorized by this permit. Other than impacts directly associated with work authorized by this permit, Freshwater Wetland TE-33 and its regulated 100'-wide adjacent area must be left in an undisturbed condition.

7. **Minimize Adverse Impacts to Wetlands, Wildlife, Water** All work must be performed in a manner which minimizes adverse impacts to wetlands, wildlife, water quality and natural resources.

8. **Invasive Species (Non-native Vegetation)** To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment be cleaned of mud, seeds, vegetation and other debris before entering any approved construction areas within the 100' wide regulated wetland adjacent area of NYS Freshwater Wetland TE-33.

9. **Equipment Storage 100' from Wetland, Water Body** All equipment and machinery shall be stored, refueled, and safely contained greater than 100 feet landward of the regulated wetland or water body at the end of each work day. This will serve to avoid the inadvertent leakage of deleterious substances into the regulated area.

10. **Disposal of Material** All excess construction materials shall be immediately removed from the project area upon project completion. Materials may be used at another permitted site, recycled, disposed of at a NYSDEC-approved landfill, or disposed of at an upland site, as appropriate for the material and in accordance with all local, state and federal regulations. Disposal in wetlands and/or regulated 100' wide wetland adjacent areas (including regulated areas of NYS Freshwater Wetland TE-33), other surface waters, or in 100-year floodplains is strictly prohibited.

11. **Seed, Mulch Disturbed Areas** All areas of soil disturbance resulting from this project must be seeded with an appropriate erosion control seed mix and mulched with straw or hydro-mulched immediately upon completion of the project.

12. **Temporary Mulch, Final Seeding** If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth but not more than six months after project completion.

13. **Establish Vegetative Cover** The permittee must ensure the establishment of at least 90 percent vegetative cover across all project disturbed areas by the end of the first complete growing season after completion of construction.

14. **Long-term Plant Survival** The permittee must ensure a minimum of 85% survival of plantings by the end of five growing seasons. If this goal is not met, the permittee must re-evaluate the restoration project in order to determine how to meet the mitigation goal and submit plans to be approved to the NYSDEC Region 9 Bureau of Ecosystem Health via email at R9BEH@dec.ny.gov.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

15. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

16. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

17. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

18. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY14209

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Attachment "B" of Part 1 of Full Environmental Assessment Form - SHPO No Impact Determination Letter dated October 10, 2021

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

NEW YORK STATE
Bernadette Castro
Commissioner

October 10, 2001

Carolyn A. Pierce
CCRG
105 Robie Avenue
Buffalo, New York 14214

Dear Ms. Pierce:

Re: SEQRA
Muir Woods Mixed-Use Development
Amherst/Erie County
01PR0345

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:cmp

RECEIVED
OCT 16 2001
CIMINELLI DEVELOPMENT COMPANY, INC.

An Equal Opportunity/Affirmative Action Agency
printed on recycled paper

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 2 – Description of the Proposed Mixed-Use Project - 50 Dodge Road [Site "A" of the Muir Woods Property]

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

EXHIBIT 2 OF SITE PLAN AMENDMENT APPLICATION

DESCRIPTION OF PROPOSED SITE PLAN AMENDMENT
50 DODGE ROAD [SITE "A" OF MUIR WOODS PROPERTY]

The proposed project consists of a modifications of the mixed-use project that received Site Plan Approval from the Planning Board on September 22, 2022 to be located at 50 Dodge Road [Site "A" of Muir Woods Property] (the "Project Site"). The Project Site is properly zoned for the proposed mixed-use project. The mixed-use project consists of the following: two 4-story mixed use buildings [15,000 sq. ft. of 1st floor commercial space along with 5 1st floor apartments and 51 upper floor apartments], a 4-story climate-controlled storage building, 87 two-story townhomes for sale along with all related site improvements depicted on the engineered plans prepared by Carmina Wood Design submitted with this Site Plan Application. A reduced size copy of the Overall Site Plan [Drawing C-100] is provided at Exhibit "3". The fully engineered plans for the modified mixed-use project consist of the following:

- Cover Sheet;
- Topographic Survey;
- Demolition & Erosion Control Plan [Drawing C-001];
- Demolition & Erosion Control Details Plan [Drawing C-002];
- Overall Site Plan [Drawing C-100];
- Site Plan [Drawing C-101];
- Parcel Map [Drawing C-102];
- Site Details Plan [Drawing C-103];
- Site Details Plan [Drawing C-104];
- Site Details Plan [Drawing C-105];
- Site Details Plan [Drawing C-106];
- Grading Plan [Drawing C-200];
- Grading Plan [Drawing C-201];

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

- Storm Drainage Plan [Drawing C-300];
- Storm Drainage Details Plan [Drawing C-301];
- Storm Drainage Plan [Drawing C-302];
- Storm Drainage Details Plan [Drawing C-303];
- Utility Plan [Drawing C-400];
- Sanitary Sewer Details Plan [Drawing C-401];
- Sanitary Sewer Details Plan [Drawing C-402];
- Sanitary Sewer General Notes Plan [Drawing C-403];
- Sanitary Sewer Testing Notes Plan [Drawing C-404];
- Water Details Plan [Drawing C-404];
- Water Details Plan [Drawing C-405];
- Insulated Enclosure Detail Plan [Drawing C-408];
- Landscape Plan [Drawing L-100]
- Photometric Study [Drawing LP-100];
- Photometric Details Plan [Drawing LP-101];
- Fire Truck Plan [TT-100]

For purposes of the review process, the proposed mixed-use project has been defined broadly to include all required discretionary approvals and permits as well as all site improvements including the proposed driveway connections to Dodge Road, access aisles, parking spaces, driveways, wetland impacts, lighting, landscaping, on-site storm water management improvements, sanitary sewer and water lines and connections and all other required utility improvements.[1] The project purpose is to develop 50 Dodge Road as an innovative mixed-use project on property that has been designated for development for several decades. The proposed mixed-use project is a Type I action pursuant to SEQRA. The Town Board issued an Amended Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA") on

[1] A completed Part 1 of the Full Environmental Assessment Form with attached Page 5[a] and Attachments “A” and “B” is provided at Exhibit “1”.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

October 19, 2020 to allow mixed-use development of the Project Site.[2] Additionally, on October 19, 2020, the Town Board also adopted a resolution to amend the Town's Comprehensive to designate the Project Site as appropriate for mixed-use.[3]

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

[2] A copy Resolution 2024-773 as adopted by the Town of Amherst Town Board on October 15, 2024 for the purpose of Issuing an Amended Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA") for allowing updated mixed-use development on the Project Site is provided at Exhibit "10".

[3] A copy of Resolution 2020-792 as Adopted by the Town of Amherst Town Board on October 19, 2020 for the purpose of approving an Amendment to the Town of Amherst Comprehensive Plan to accommodate mixed-use development on the Project Site is provided at Exhibit "11".

Exhibit 3 – Reduced Size Copy of Overall Site Plan [Drawing C-100] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

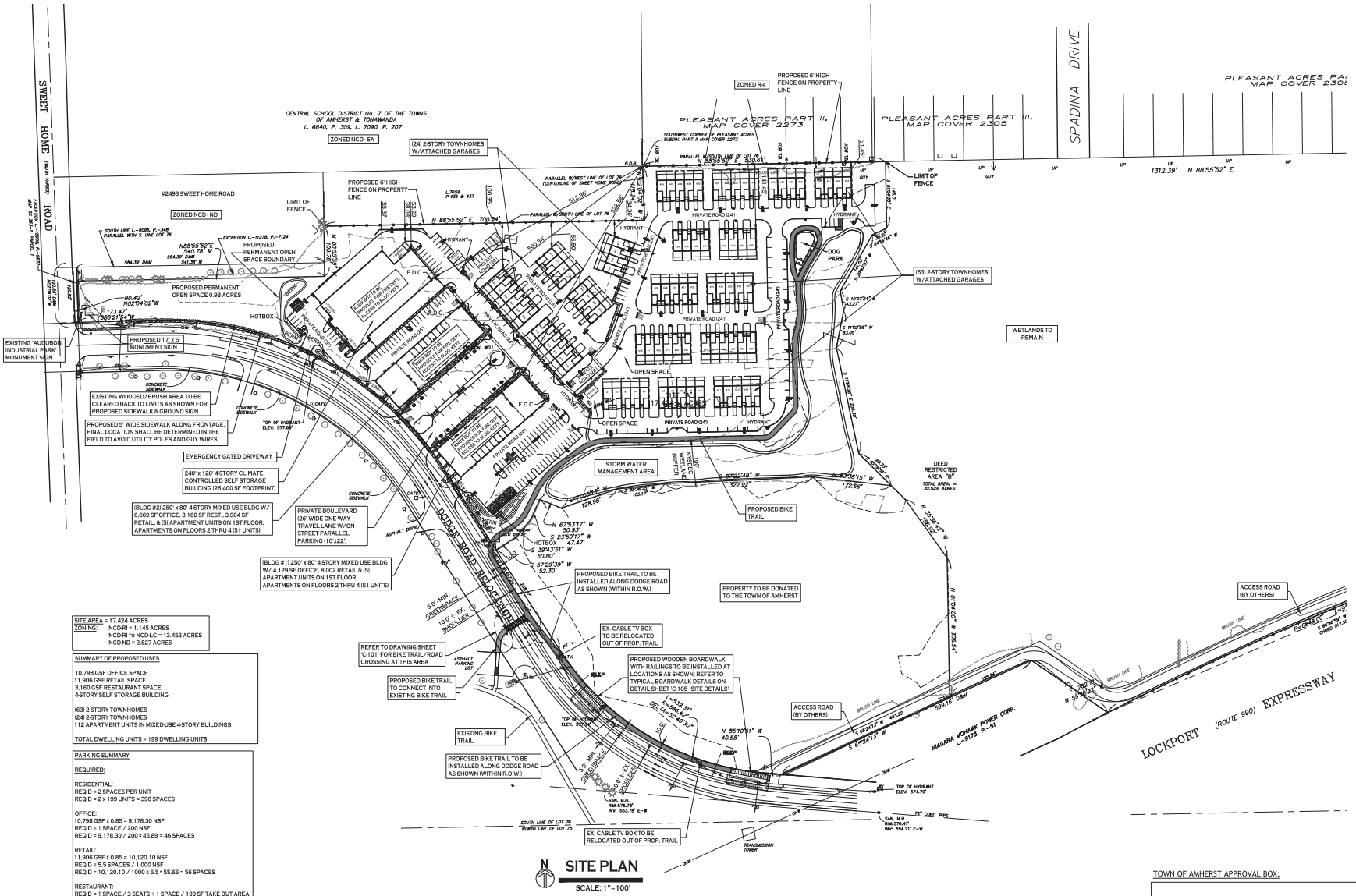

SWEET HOME ROAD (MAIN TOWARD)
#2493 SWEET HOME ROAD
ZONED NCD - ND
ZONED NCD - SA
CENTRAL SCHOOL DISTRICT No. 7 OF THE TOWNS OF AMHERST & TONAWANDA L. 6640, P. 309, L. 7090, P. 207
(24) 2-STORY TOWNHOMES W/ ATTACHED GARAGES
ZONED R-4
PROPOSED 6' HIGH FENCE ON PROPERTY LINE
SPADINA DRIVE
PLEASANT ACRES PART II, MAP COVER 2273
PLEASANT ACRES PART II, MAP COVER 2305
LIMIT OF FENCE
PROPOSED PERMANENT OPEN SPACE BOUNDARY
PROPOSED PERMANENT OPEN SPACE 0.98 ACRES
EXISTING 'AUDUBON INDUSTRIAL PARK' MONUMENT SIGN
PROPOSED 17' x 5' MONUMENT SIGN
EXISTING WOODED / BRUSH AREA TO BE CLEARED BACK TO LIMITS AS SHOWN FOR PROPOSED SIDEWALK & GROUND SIGN
PROPOSED 5' WIDE SIDEWALK ALONG FRONTAGE, FINAL LOCATION SHALL BE DETERMINED IN THE FIELD TO AVOID UTILITY POLES AND GUY WIRES
EMERGENCY GATED DRIVEWAY
240' x 120' 4-STORY CLIMATE CONTROLLED SELF STORAGE BUILDING (26,400 SF FOOTPRINT)
(BLDG #2) 250' x 80' 4-STORY MIXED USE BLDG W/ 6,669 SF OFFICE, 3,160 SF REST., 3,904 SF RETAIL, & (5) APARTMENT UNITS ON 1ST FLOOR, APARTMENTS ON FLOORS 2 THRU 4 (51 UNITS)
PRIVATE BOULEVARD (26' WIDE ONE-WAY TRAVEL LANE W/ ON STREET PARALLEL PARKING (10'x22')
(BLDG #1) 250' x 80' 4-STORY MIXED-USE BLDG W/ 4,129 SF OFFICE, 8,002 RETAIL & (5) APARTMENT UNITS ON 1ST FLOOR, APARTMENTS ON FLOORS 2 THRU 4 (51 UNITS)
DODGE ROAD RELOCATION
PROPOSED BIKE TRAIL TO BE INSTALLED ALONG DODGE ROAD AS SHOWN (WITHIN R.O.W.)
REFER TO DRAWING SHEET 'C-101' FOR BIKE TRAIL/ROAD CROSSING AT THIS AREA
PROPOSED BIKE TRAIL TO CONNECT INTO EXISTING BIKE TRAIL
EXISTING BIKE TRAIL
PROPOSED BIKE TRAIL TO BE INSTALLED ALONG DODGE ROAD AS SHOWN (WITHIN R.O.W.)
EX. CABLE TV BOX TO BE RELOCATED OUT OF PROP. TRAIL
EX. CABLE TV BOX TO BE RELOCATED OUT OF PROP. TRAIL
PROPOSED WOODEN BOARDWALK WITH RAILINGS TO BE INSTALLED AT LOCATIONS AS SHOWN; REFER TO TYPICAL BOARDWALK DETAILS ON DETAIL SHEET 'C-105 - SITE DETAILS'
PROPERTY TO BE DONATED TO THE TOWN OF AMHERST
STORM WATER MANAGEMENT AREA
PROPOSED BIKE TRAIL
DEED RESTRICTED AREA "B" TOTAL AREA: ± 32.52± ACRES
WETLANDS TO REMAIN
(63) 2-STORY TOWNHOMES W/ ATTACHED GARAGES
DOG PARK
OPEN SPACE
PRIVATE ROAD (24')
ACCESS ROAD (BY OTHERS)
NIAGARA MOHAWK POWER CORP. L.-9725, P.-51
LOCKPORT (ROUTE 990) EXPRESSWAY
TOP OF HYDRANT ELEV. 574.70'
72" CONC. PIPE
SAN. M.H. RIM-576.41' INV. 554.21' E-W
SAN. M.H. RIM-575.78' INV. 553.78' E-W
TRANSMISSION TOWER
LIMIT OF FENCE
HYDRANT
HOTBOX
F.D.C.
WELL
TOP OF HYDRANT ELEV. 577.69'
CONCRETE SIDEWALK
ASPHALT DRIVE
ASPHALT PARKING LOT
5.0' MIN. GREENSPACE
10.0' ± EX. SHOULDER
SOUTH LINE L.-8095, P.-348 PARALLEL WITH S. LINE LOT 76
EXCEPTION L.-11378, P.-7124
PARALLEL W/SOUTH LINE OF LOT 76
PARALLEL W/WEST LINE OF LOT 76 (CENTERLINE OF SWEET HOME ROAD)
SOUTH LINE OF LOT 76 NORTH LINE OF LOT 75
N 88°55'52" E 700.94'
N 88°55'52" E 540.78' M
584.39' DAM
541.39' M
N 02°04'02" W 90.42'
S 88°21'54" W 173.47'
N 88°55'52" E 530.6'
N 88°55'52" E 1312.39'
S 67°53'17" W 50.01'
S 23°01'17" W 47.47'
S 39°41'51" W 50.80'
S 57°29'39" W 52.30'
N 67°53'17" W 128.96'
S 23°01'17" W 105.17'
S 67°38'49" W 322.92'
N 67°38'15" W 172.66'
N 57°47'43" W 156.62'
N 85°07'01" W 40.58'
S 65°24'13" W 413.40'
N 58°40'43" E 539.16' D&M
L=459.37' R=586.40'+0' DEL.=44°52'40"+0'
L=459.37' R=586.40'+0' CHORD=N 67°38'15" W 447.70'
R=5845.00' CHORD=N 67°38'15" W 322.92'
N 57°47'43" W 156.62'
N 58°40'43" E 539.16' D&M
N 85°07'01" W 40.58'
S 65°24'13" W 413.40'
N 67°53'17" W 50.01'
S 23°01'17" W 47.47'
S 39°41'51" W 50.80'
S 57°29'39" W 52.30'
N 67°53'17" W 128.96'
S 23°01'17" W 105.17'
N 67°38'49" W 322.92'
N 67°38'15" W 172.66

Exhibit 4 – Reduced Size Copy of Site Plan [Drawing C- 101] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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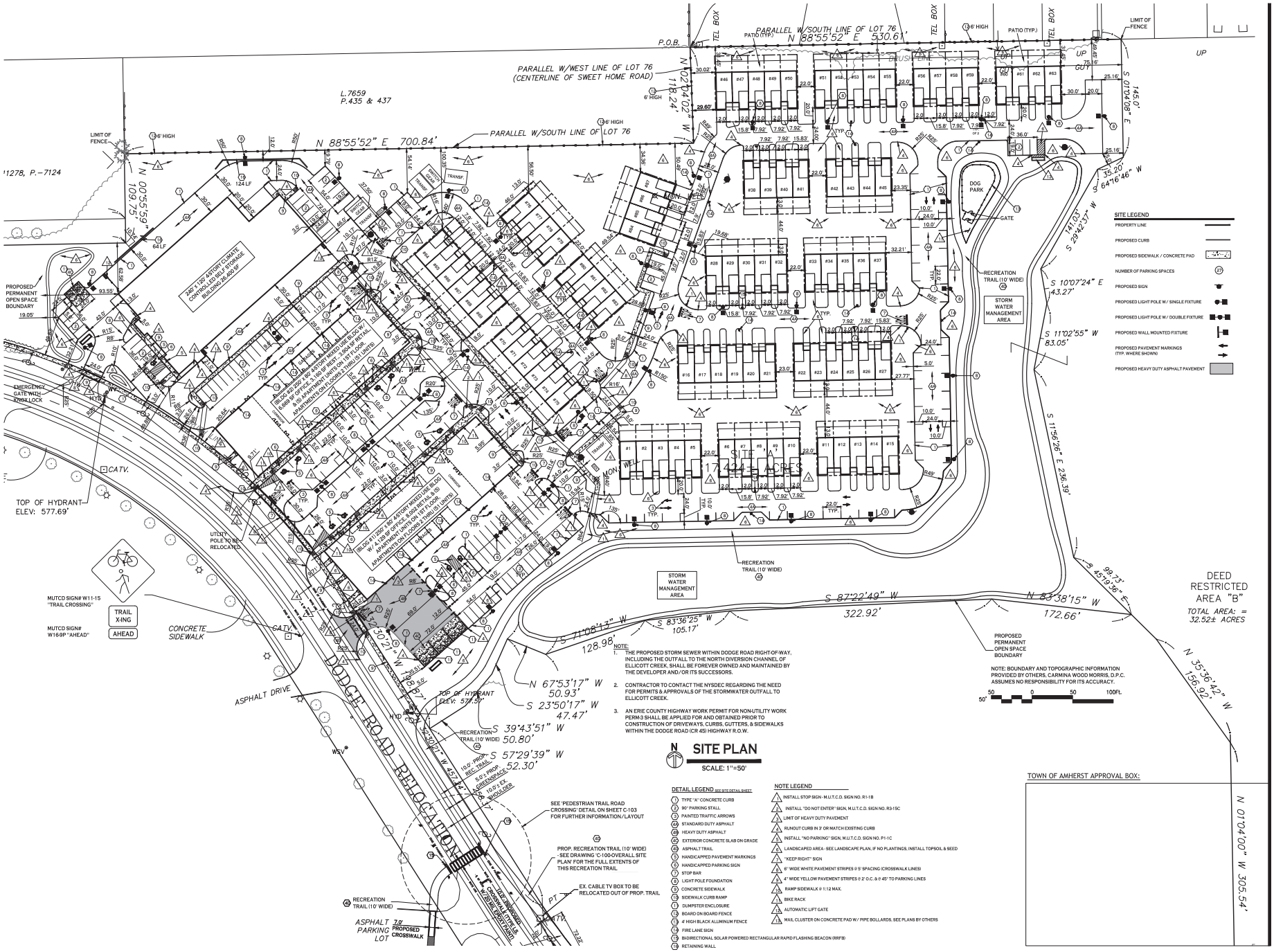
All rights reserved. Revisio of these documents without the expressed written permission of Carmina Wood Morris DPC is prohibited. WARNING: It is violation of article 145 sections 7209h and 7209 of the New York State education law for any person, unless acting under the direction of a registered architect, licensed engineer or land surveyor to alter this drawing. If altered each AIA, AIC or LLC shall affix his or her seal, together with the notation "altered by" and a specific description of the alteration.



SITE PLAN

SCALE: 1"=50'

NOTE:

1. THE PROPOSED STORM SEWER WITHIN DODGE ROAD RIGHT-OF-WAY, INCLUDING THE OUTFALL TO THE NORTH DIVERSION CHANNEL OF ELLICOTT CREEK, SHALL BE FOREVER OWNED AND MAINTAINED BY THE DEVELOPER AND/OR ITS SUCCESSORS.
2. CONTRACTOR TO CONTACT THE NYSDEC REGARDING THE NEED FOR PERMITS & APPROVALS OF THE STORMWATER OUTFALL TO ELLICOTT CREEK.
3. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR NON-UTILITY WORK PERM-3 SHALL BE APPLIED FOR AND OBTAINED PRIOR TO CONSTRUCTION OF DRIVEWAYS, CURBS, GUTTERS, & SIDEWALKS WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50 100FL

DETAIL LEGEND (SEE SITE DETAIL SHEET)

1. TYPE "A" CONCRETE CURB
2. 90° PARKING STALL
3. PAINTED TRAFFIC ARROWS
4. STANDARD DUTY ASPHALT
5. HEAVY DUTY ASPHALT
6. EXTERIOR CONCRETE SLAB ON GRADE
7. ASPHALT TRAIL
8. HANDICAPPED PAVEMENT MARKINGS
9. HANDICAPPED PARKING SIGN
10. STOP BAR
11. LIGHT POLE FOUNDATION
12. CONCRETE SIDEWALK
13. SIDEWALK CURB RAMP
14. DUMPSTER ENCLOSURE
15. BOARD ON BOARD FENCE
16. 4' HIGH BLACK ALUMINUM FENCE
17. FIRE LANE SIGN
18. BIDIRECTIONAL SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB)
19. RETAINING WALL

NOTE LEGEND

1. INSTALL STOP SIGN - M.U.T.C.D. SIGN NO. R1-1B
2. INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R3-15C
3. LIMIT OF HEAVY DUTY PAVEMENT
4. RUNOUT CURB IN 3' OR MATCH EXISTING CURB
5. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1C
6. LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
7. "KEEP RIGHT" SIGN
8. 6" WIDE WHITE PAVEMENT STRIPES @ 5' SPACING (CROSSWALK LINES)
9. 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & @ 45° TO PARKING LINES
10. RAMP SIDEWALK @ 1:12 MAX.
11. BIKE RACK
12. AUTOMATIC LIFT GATE
13. MAIL CLUSTER ON CONCRETE PAD W./ PIPE BOLLARDS, SEE PLANS BY OTHERS

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/08/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

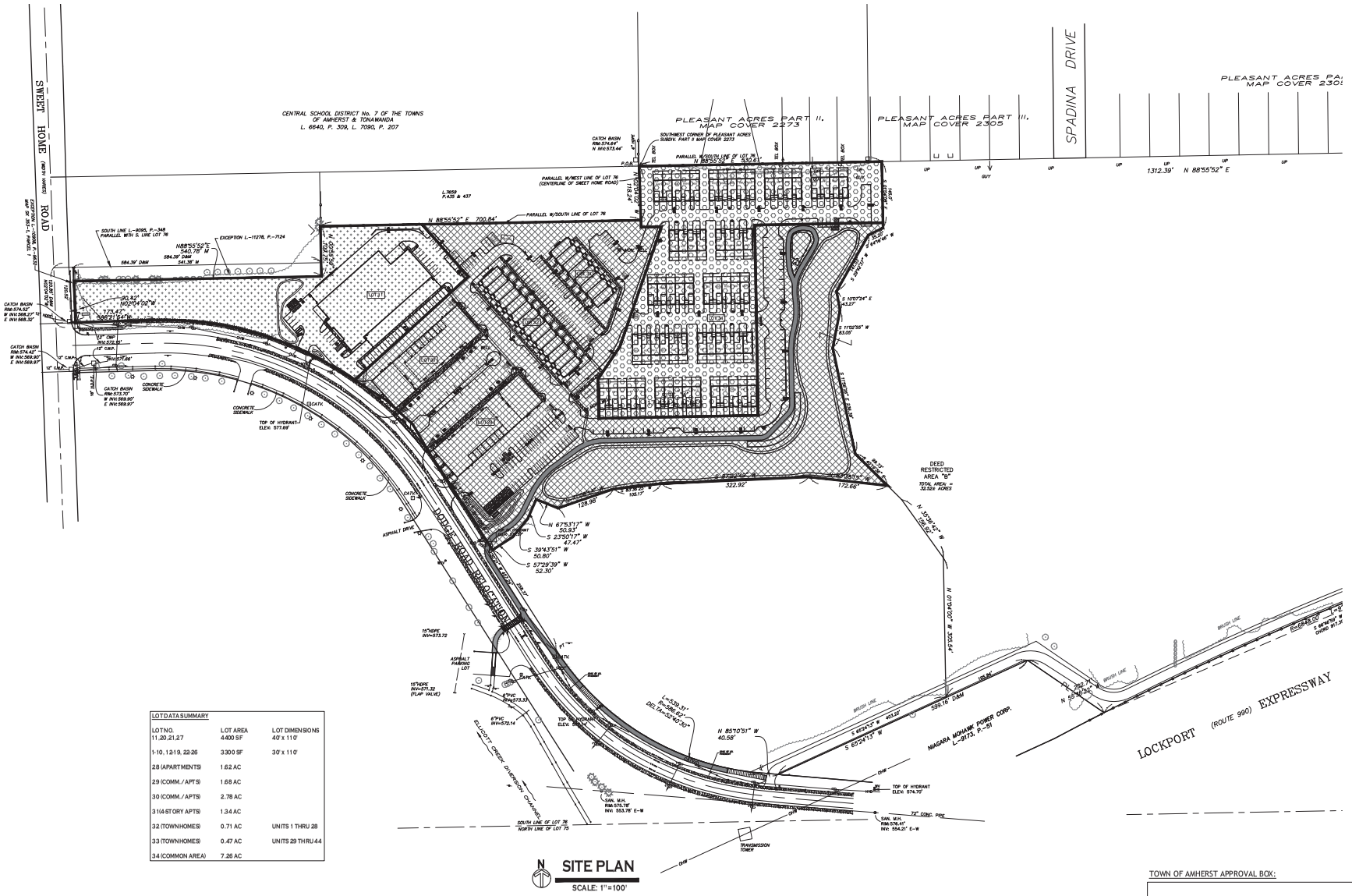
DRAWING NAME:
Site Plan

DRAWING NO.
C-101

Project no.: 21.011

Exhibit 5 – Reduced Size Copy of Parcel Map [Drawing C-102] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



LOT DATA SUMMARY		
LOT NO. 11,20,21,27	LOT AREA 4400 SF	LOT DIMENSIONS 40' x 110'
1-10, 12-19, 22-26	3300 SF	30' x 110'
28 (APARTMENTS)	1.62 AC	
29 (COMM./APTS)	1.68 AC	
30 (COMM./APTS)	2.78 AC	
31 (4 STORY APTS)	1.34 AC	
32 (TOWNHOMES)	0.71 AC	UNITS 1 THRU 28
33 (TOWNHOMES)	0.47 AC	UNITS 29 THRU 44
34 (COMMON AREA)	7.26 AC	

SITE PLAN
SCALE: 1"=100'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200FT.

TOWN OF AMHERST APPROVAL BOX:

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Carmina Wood Morris DPC
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Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per town 07/29/22 comments	03/27/23
4	Plan rev. per 09/13/23 Fire Safety comments	03/27/23
5	Plan rev. per 10/20/23 Town comments	10/31/23
6	Plan revised per Town/Client comments	05/28/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

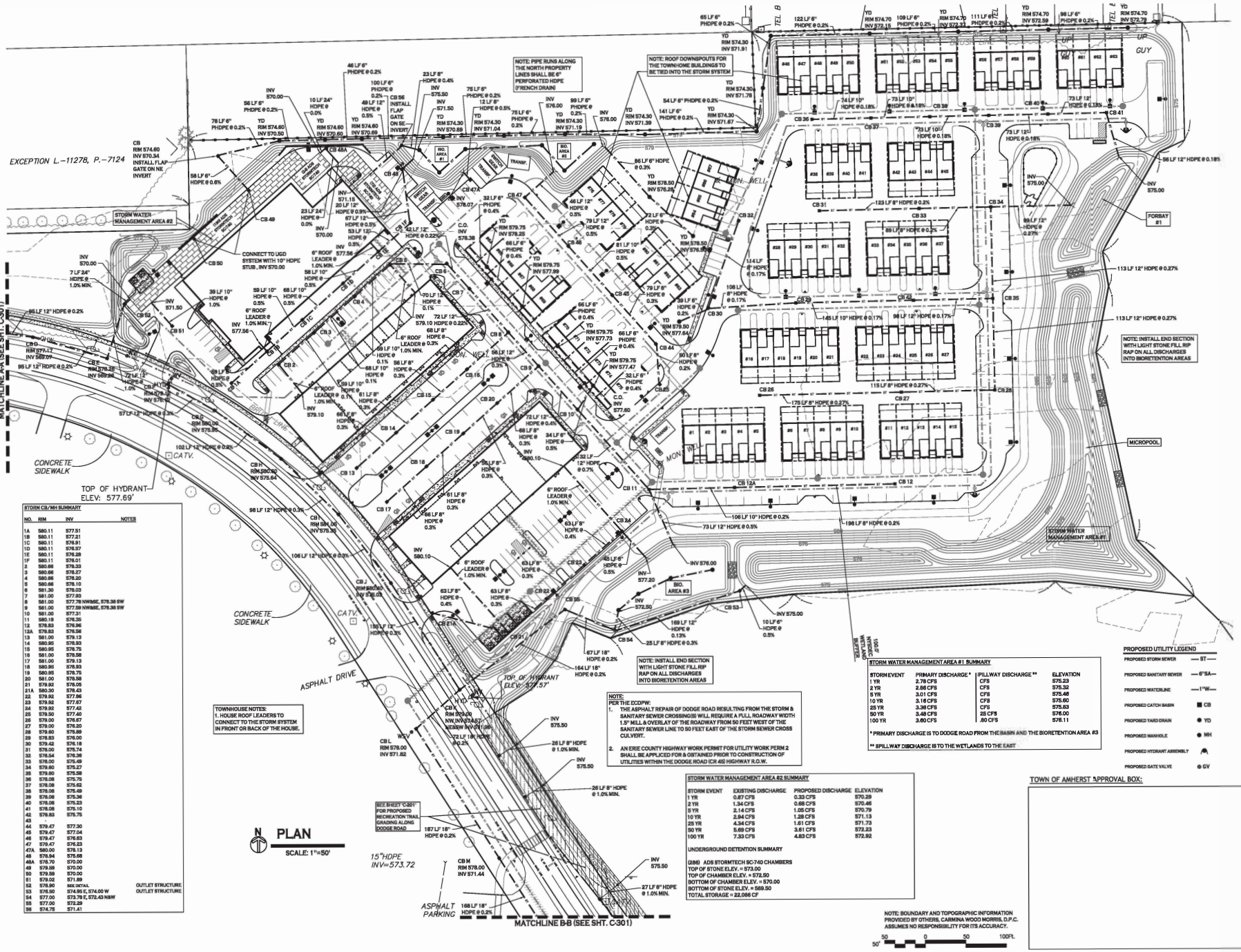
Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Parcel Map

DRAWING NO.
C-102
Project no.: 21.011

Exhibit 6 – Reduced Size Copy of Storm Drainage Plan [Drawing C-300] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



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STORM CB/MH SUMMARY			
NO.	RIM	INV	NOTES
1A	580.11	577.51	
1B	580.11	577.21	
1C	580.11	576.91	
1D	580.11	576.57	
1E	580.11	576.28	
1F	580.11	576.01	
2	580.66	578.33	
3	580.66	578.27	
4	580.66	578.20	
5	580.66	578.10	
6	581.30	578.03	
7	581.00	577.93	
8	581.00	577.78 NWBSE, 578.38 SW	
9	581.00	577.59 NWBSE, 578.38 SW	
10	581.00	577.31	
11	580.18	576.35	
12	578.83	576.96	
12A	578.83	576.56	
13	581.00	579.13	
14	580.95	578.93	
15	580.66	578.75	
16	581.00	578.58	
17	581.00	579.13	
18	580.95	578.93	
19	580.95	578.75	
20	581.00	578.58	
21	579.92	578.05	
21A	580.30	578.43	
22	579.92	577.86	
23	579.92	577.67	
24	579.92	577.42	
25	579.50	577.40	
26	579.00	576.67	
27	579.00	576.20	
28	579.60	575.89	
29	578.83	576.00	
30	579.42	576.18	
31	578.00	575.74	
32	578.54	575.36	
33	578.00	575.49	
34	579.60	575.27	
35	579.60	575.58	
36	578.08	575.75	
37	578.08	575.62	
38	578.08	575.49	
39	578.08	575.36	
40	578.08	575.23	
41	578.08	575.10	
42	578.83	575.75	
43			
44	579.47	577.30	
45	579.47	577.04	
46	579.47	576.63	
47	579.47	576.23	
47A	580.00	578.13	
48	578.94	575.68	
48A	578.70	570.00	
49	579.39	570.00	
50	579.59	570.00	
51	579.02	571.89	
52	578.90	SEE DETAIL	OUTLET STRUCTURE
53	576.50	574.95 E, 574.00 W	OUTLET STRUCTURE
54	577.00	573.78 E, 572.43 NW	
55	577.00	572.29	
56	574.75	571.41	

TOWNHOUSE NOTES:
1. HOUSE ROOF LEADERS TO CONNECT TO THE STORM SYSTEM IN FRONT OR BACK OF THE HOUSE.

NOTE:
PER THE ECDPW:
1. THE ASPHALT REPAIR OF DODGE ROAD RESULTING FROM THE STORM & SANITARY SEWER CROSSINGS WILL REQUIRE A FULL ROADWAY WIDTH 1.5" MILL & OVERLAY OF THE ROADWAY FROM 50 FEET WEST OF THE SANITARY SEWER LINE TO 50 FEET EAST OF THE STORM SEWER CROSS CULVERT.
2. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR UTILITY WORK PERM 2 SHALL BE APPLIED FOR & OBTAINED PRIOR TO CONSTRUCTION OF UTILITIES WITHIN THE DODGE ROAD ICR 400 HIGHWAY R.O.W.

STORM WATER MANAGEMENT AREA #2 SUMMARY			
STORM EVENT	EXISTING DISCHARGE	PROPOSED DISCHARGE	ELEVATION
1 YR	0.87 CFS	0.33 CFS	570.29
2 YR	1.34 CFS	0.68 CFS	570.46
5 YR	2.14 CFS	1.05 CFS	570.79
10 YR	2.94 CFS	1.28 CFS	571.13
25 YR	4.34 CFS	1.61 CFS	571.73
50 YR	5.69 CFS	3.61 CFS	572.23
100 YR	7.33 CFS	4.83 CFS	572.92

UNDERGROUND DETENTION SUMMARY

(286) ADS STORMTECH SC-740 CHAMBERS
TOP OF STONE ELEV. = 573.00
TOP OF CHAMBER ELEV. = 572.50
BOTTOM OF CHAMBER ELEV. = 570.00
BOTTOM OF STONE ELEV. = 569.50
TOTAL STORAGE = 22,086 CF

STORM WATER MANAGEMENT AREA #1 SUMMARY			
STORM EVENT	PRIMARY DISCHARGE *	PILLWAY DISCHARGE **	ELEVATION
1 YR	2.78 CFS	CFS	575.23
2 YR	2.86 CFS	CFS	575.32
5 YR	3.01 CFS	CFS	575.46
10 YR	3.16 CFS	CFS	575.60
25 YR	3.36 CFS	CFS	575.83
50 YR	3.48 CFS	25 CFS	576.00
100 YR	3.60 CFS	.60 CFS	576.11

* PRIMARY DISCHARGE IS TO DODGE ROAD FROM THE BASIN AND THE BIORETENTION AREA #3
** SPILLWAY DISCHARGE IS TO THE WETLANDS TO THE EAST

PROPOSED UTILITY LEGEND
PROPOSED STORM SEWER — ST —
PROPOSED SANITARY SEWER — 6"SA —
PROPOSED WATERLINE — 1"W —
PROPOSED CATCH BASIN ■ CB
PROPOSED YARD DRAIN ● YD
PROPOSED MANHOLE ● MH
PROPOSED HYDRANT ASSEMBLY
PROPOSED GATE VALVE ● GV

TOWN OF AMHERST APPROVAL BOX:

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

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REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	08/04/24
2	Rev. per Shop Drawing Review	10/09/24
3	Verify UGD Field Layout (SWM Area#2)	11/21/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

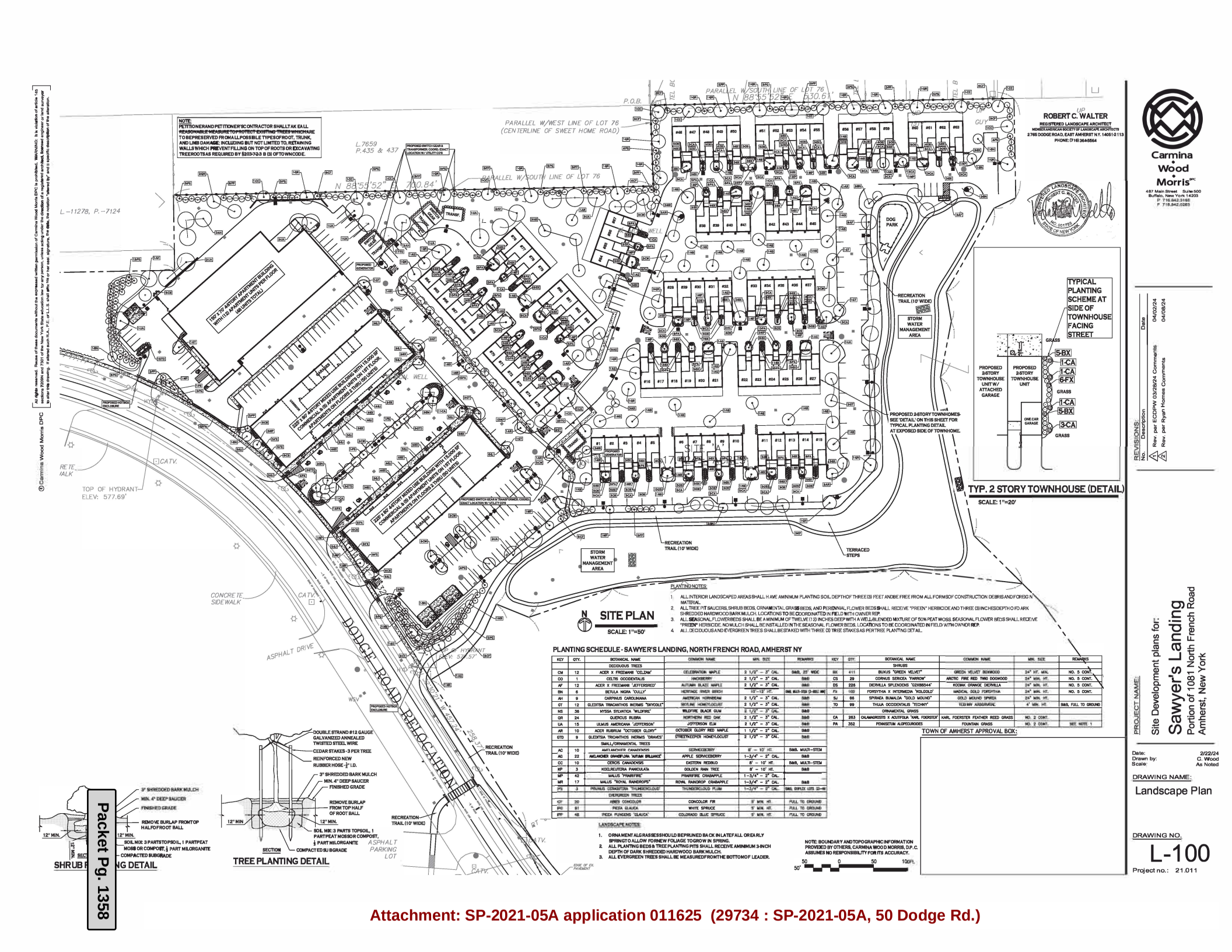
DRAWING NAME:
Storm Drainage Plan

DRAWING NO.
C-300

Project no.: 21.011

Exhibit 7 – Reduced Size Copy of Landscape Plan [Drawing L-100] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



PLANTING NOTES:

1. ALL INTERIOR LANDSCAPED AREAS SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.
2. ALL TREE PIT SAUCERS, SHRUB BEDS, ORNAMENTAL GRASS BEDS, AND PERENNIAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE AND THREE (3) INCHES DEPTH OF FINELY SHREDDED HARDWOOD BARK MULCH. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
3. ALL SEASONAL FLOWER BEDS SHALL BE A MINIMUM OF TWELVE (12) INCHES DEEP WITH A WELL BLENDED MIXTURE OF 50% PEAT MOSS. SEASONAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE. NO MULCH SHALL BE INSTALLED IN THE SEASONAL FLOWER BEDS. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
4. ALL DECIDUOUS AND EVERGREEN TREES SHALL BE STAKED WITH THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

PLANTING SCHEDULE - SAWYER'S LANDING, NORTH FRENCH ROAD, AMHERST NY

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		DECIDUOUS TREES			
CM	12	ACER X FREEMANII 'CELZAM'	CELEBRATION MAPLE	2 1/2" – 3" CAL.	B&B, 23' WIDE
CO	1	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" – 3" CAL.	B&B
AF	12	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2 1/2" – 3" CAL.	B&B
BN	6	BETULA NIGRA 'CULLY'	HERITAGE RIVER BIRCH	10'–12' HT.	B&B, MULTI-STEM (3-RIVER BIRCH)
AH	9	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2 1/2" – 3" CAL.	B&B
GT	12	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	SKYLINE HONEYLOCUST	2 1/2" – 3" CAL.	B&B
NS	36	NYSSA SYLVATICA 'WILDFIRE'	WILDFIRE BLACK GUM	2 1/2" – 3" CAL.	B&B
QR	24	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" – 3" CAL.	B&B
UA	15	ULMUS AMERICANA 'JEFFERSON'	JEFFERSON ELM	2 1/2" – 3" CAL.	B&B
AR	10	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	1 1/2" – 2" CAL.	B&B
GTD	9	GLEDITSIA TRICANTHOS INERMIS 'DRAVES'	STREETKEEPER HONEYLOCUST	2 1/2" – 3" CAL.	B&B
		SMALL/ORNAMENTAL TREES			
AC	10	AMELANCHIER CANADENSIS	SERVICEBERRY	8' – 10' HT.	B&B, MULTI-STEM
AG	22	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	APPLE SERVICEBERRY	1–3/4" – 2" CAL.	B&B
CC	10	CERCIS CANADENSIS	EASTERN REDBUD	8' – 10' HT.	B&B, MULTI-STEM
KP	3	KOELREUTERIA PANICULATA	GOLDEN RAIN TREE	8' – 10' HT.	B&B
MP	42	MALUS 'PRAIRIFIRE'	PRAIRIFIRE CRABAPPLE	1–3/4" – 2" CAL.	
MR	17	MALUS 'ROYAL RAINDROPS'	ROYAL RAINDROP CRABAPPLE	1–3/4" – 2" CAL.	B&B
PS	3	PRUNUS SERRULATA 'THUNDERCLOUD'	THUNDERCLOUD PLUM	1–3/4" – 2" CAL.	B&B, SPLIT LOW 32-48
		EVERGREEN TREES			
CF	20	ABIES CONCOLOR	CONCOLOR FIR	9' MIN. HT.	FULL TO GROUND
PG	91	PICEA GLAUCA	WHITE SPRUCE	9' MIN. HT.	FULL TO GROUND
PP	48	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	9' MIN. HT.	FULL TO GROUND

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		SHRUBS			
BX	411	BUXUS 'GREEN VELVET'	GREEN VELVET BOXWOOD	24" HT. MIN.	NO. 5 CONT.
CS	29	CORNUS SERICEA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	24" MIN. HT.	NO. 5 CONT.
DS	226	DEUTZIA SPLENDENS 'SZ0085544'	KOOMK ORANGE DEUTZIA	24" MIN. HT.	NO. 5 CONT.
FX	103	FORSYTHIA X INTERMEDIA 'KOLGOLD'	MAGICAL GOLD FORSYTHIA	24" MIN. HT.	NO. 5 CONT.
SJ	66	SPIRAEA BUMALDA 'GOLD MOUND'	GOLD MOUND SPIREA	24" MIN. HT.	
TO	99	THUJA OCCIDENTALIS 'TECHNY'	TECHNY ARBORVITAE	4' MIN. HT.	B&B, FULL TO GROUND
		ORNAMENTAL GRASS			
CA	353	CALAMAGROSTIS X ACUTIFLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	NO. 2 CONT.	
PA	352	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	NO. 2 CONT.	SEE NOTE 1

LANDSCAPE NOTES:

1. ORNAMENTAL GRASSES SHOULD BE PRUNED BACK IN LATE FALL OR EARLY SPRING TO ALLOW FOR NEW FOLIAGE TO GROW IN SPRING.
2. ALL PLANTING BEDS & TREE PLANTING PITS SHALL RECEIVE A MINIMUM 3-INCH DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.
3. ALL EVERGREEN TREES SHALL BE MEASURED FROM THE BOTTOM OF LEADER.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50 100FT.

TOWN OF AMHERST APPROVAL BOX:

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ROBERT C. WALTER
REGISTERED LANDSCAPE ARCHITECT
MEMBER AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
2765 DODGE ROAD, EAST AMHERST N.Y. 14051-2113
PHONE: (716) 3646564

Carmina Wood Morris DPC
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P 716.842.3156
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REGISTERED LANDSCAPE ARCHITECT ROBERT C. WALTER NO. 001755 STATE OF NEW YORK

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/08/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Landscape Plan

DRAWING NO.
L-100

Project no.: 21.011

Exhibit 8 – Reduced Size Copy of Survey of the Project Site

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

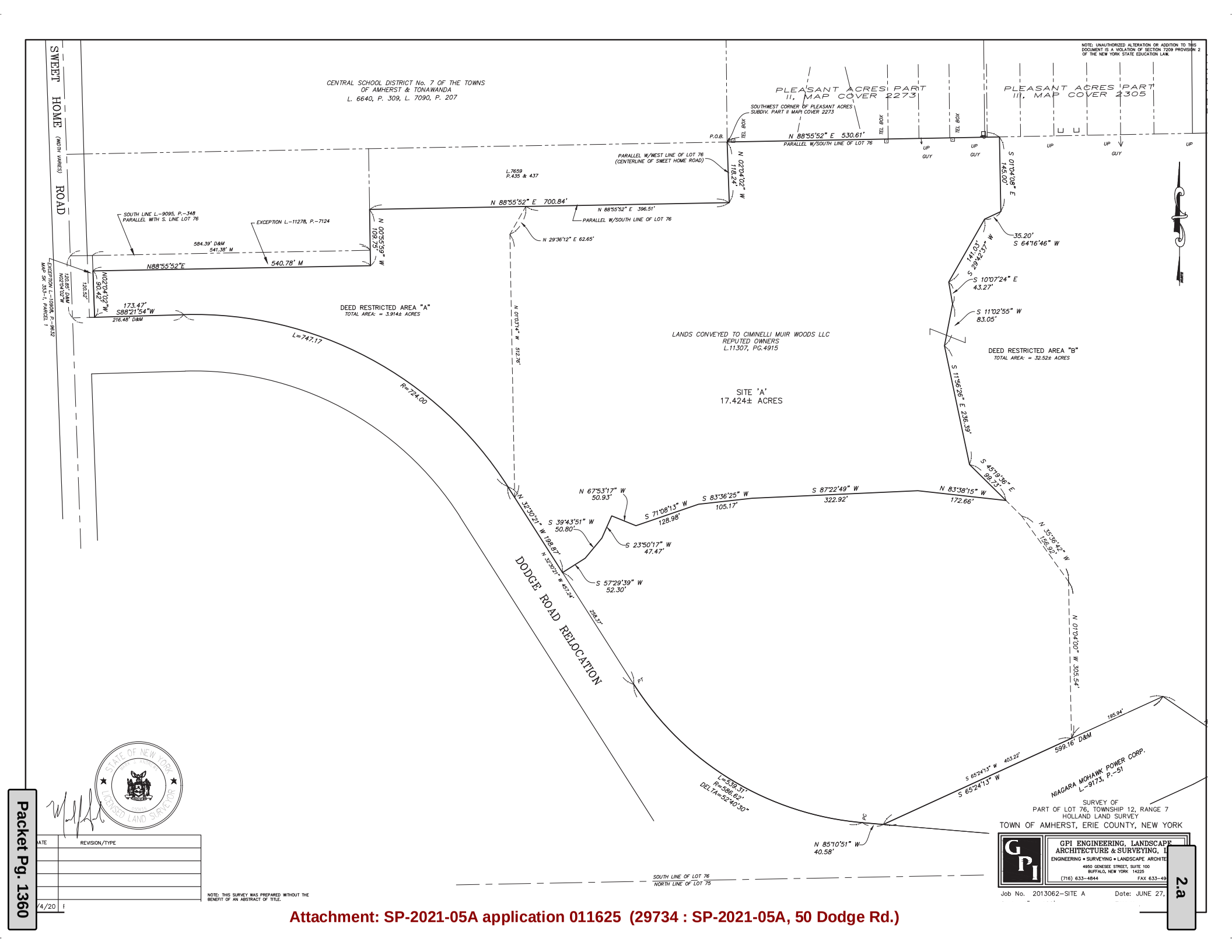
NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.
SWEET HOME (MOTH VARIES) ROAD
CENTRAL SCHOOL DISTRICT No. 7 OF THE TOWNS OF AMHERST & TONAWANDA
L. 6640, P. 309, L. 7090, P. 207
PLEASANT ACRES PART II, MAP COVER 2273
PLEASANT ACRES PART III, MAP COVER 2305
SOUTHWEST CORNER OF PLEASANT ACRES SUBDIV. PART II MAP COVER 2273
P.O.B.
TEL BOX
UP GUY
N 88°55'52" E 530.61'
PARALLEL W/SOUTH LINE OF LOT 76
PARALLEL W/WEST LINE OF LOT 76 (CENTERLINE OF SWEET HOME ROAD)
N 02°04'02" W 118.24'
L.7659 P.435 & 437
N 88°55'52" E 700.84'
N 88°55'52" E 396.51'
PARALLEL W/SOUTH LINE OF LOT 76
N 29°36'12" E 62.65'
S 01°04'08" E 145.00'
35.20'
S 64°16'46" W
141.03'
S 29°42'37" W
S 10°07'24" E 43.27'
S 11°02'55" W 83.05'
SOUTH LINE L.-9095, P.-348 PARALLEL WITH S. LINE LOT 76
EXCEPTION L.-11278, P.-7124
584.39' D&M
541.38' M
540.78' M
N88°55'52"E
N 00°55'52" W 109.75'
EXCEPTION L.-10908, P.-9632 MAP SK 353-1, PARCEL 1
120.85' D&M N02°04'02"W
120.23'
N02°04'02"W 120.74'
173.47'
S88°21'54"W
216.48' D&M
DEED RESTRICTED AREA "A"
TOTAL AREA: = 3.914± ACRES
L=747.17
R=724.00
N 01°03'14" W 512.76'
LANDS CONVEYED TO CIMINELLI MUIR WOODS LLC
REPUTED OWNERS
L.11307, PG.4915
SITE 'A'
17.424± ACRES
DEED RESTRICTED AREA "B"
TOTAL AREA: = 32.52± ACRES
S 11°56'26" E 236.39'
S 45°19'36" E 99.73'
N 67°53'17" W 50.93'
S 71°08'13" W 128.98'
S 83°36'25" W 105.17'
S 87°22'49" W 322.92'
N 83°38'15" W 172.66'
N 35°36'42" W 156.92'
N 32°30'21" W 198.87'
N 32°30'21" W 457.24'
S 39°43'51" W 50.80'
S 23°50'17" W 47.47'
S 57°29'39" W 52.30'
DODGE ROAD RELOCATION
PT
288.37'
N 01°04'00" W 305.54'
195.94'
599.16' D&M
S 65°24'13" W 403.22'
S 65°24'13" W
L=538.31'
R=586.62'
DELTA=52°40'30"
N 85°10'51" W 40.58'
NIAGARA MOHAWK POWER CORP. L.-9173, P.-51
SURVEY OF
PART OF LOT 76, TOWNSHIP 12, RANGE 7
HOLLAND LAND SURVEY
TOWN OF AMHERST, ERIE COUNTY, NEW YORK
GPI ENGINEERING, LANDSCAPE ARCHITECTURE & SURVEYING, L
ENGINEERING • SURVEYING • LANDSCAPE ARCHITE
4950 GENESEE STREET, SUITE 100
BUFFALO, NEW YORK 14225
(716) 633-4844 FAX 633-49
Job No. 2013062-SITE A Date: JUNE 27,
STATE OF NEW YORK LICENSED LAND SURVEYOR
DATE REVISION/TYPE
NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE.
SOUTH LINE OF LOT 76
NORTH LINE OF LOT 75

Exhibit 9 – Resolution Adopted by the Planning Board on September 22, 2024 granting Site Plan Approval for the Previously Approved Mixed-Use Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER

Sawyer's Landing LLC
c/o Sean Hopkins, Esq.
5500 Main Street, Suite 343
Williamsville, NY 14221

PROPERTY LOCATION

1081 North French Road (portion) (NCD)

'22 SEP 29 PM4:15

WHEREAS, the Town of Amherst Planning Board on Thursday, September 22, 2022 held a public hearing on a Site Plan for a mixed-use development, and

WHEREAS, the Planning Board reviewed the plans and specifications for the proposed project, and

WHEREAS, the Site Plan was referred to the Town's various review agencies, and

WHEREAS, in accordance with Section 8-7-8 of the Zoning Ordinance, the Planning Board finds that:

A. The site plan includes usable space for active and passive recreation, including pedestrian connections.

B. The site plan includes open space lands for public ownership and use offered for dedication or other disposition to the Town or other public entity.

C. School sites and facilities are adequate to accommodate the proposed site plan.

D. The site plan does not include the extension of roadways to adjacent property.

WHEREAS, in accordance with Section 8-7-9 of the Zoning Ordinance, the Planning Board finds that:

A. The proposed site plan is consistent with the development plan if one is required.

B. The proposed site plan is consistent with the purpose and specific requirements of the Zoning Ordinance and generally consistent with the policies of the Comprehensive Plan.

C. Adequate services and utilities will be available prior to occupancy.

D. The site plan is consistent with all other applicable laws.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER	PROPERTY LOCATION
Sawyer's Landing LLC	1081 North French Road (portion) (NCD)

'22 SEP 29 PM4:1

E. Pursuant to Local Law #3-82, as amended, the Planning Board has determined that the requirements of SEQR are complete and that the subject proposal is not expected to have a significant adverse effect on the environment. The previously undertaken SEQR process included a DEIS, FEIS and culminated in the Town Board's issuance of a SEQR Findings Statement on December 17, 2007. Lead Agency was re-established for review of the proposed amendment to the Findings Statement to allow the proposed mixed-use development, and the Findings Statement was revised on September 27, 2021.

F. Wetland permits were issued for this project by NYSDEC on December 17, 2019 and the US Army Corps of Engineers under Section 404 of the Clean Water Act on December 12, 2019. Both permits authorize work on the project until November 30, 2024.

NOW THEREFORE BE IT FURTHER RESOLVED that the Planning Board, in accordance with Section 8-7 of the Zoning Ordinance approves said Site Plan subject to the following conditions:

1. That the consideration of signs is specifically excluded from this approval as they will require a separate site plan review and approval by the Town.

2. That all dumpsters/trash containers and all mechanical equipment, utility structures, multiple meter boards, generators, and similar appurtenances, including those which are mounted on any part of a primary structure shall be appropriately screened with a fence, wall, and/or landscaping. Provide gate on dumpster enclosure that shall be closed whenever dumpster is not being serviced, enclosure shall be high enough to screen the dumpster(s) within.

3. That as-built record drawings, including location of utilities, be provided to the Engineering Department prior to issuance of a Certificate of Occupancy by the Building Department.

4. That the proposed 27 lots for 2 unit homes is excluded from this approval as it will require separate open development area and subdivision approvals.

5. That the petitioner obtain the required variances for remoteness of the secondary emergency access from the NYS Department of State prior to issuance of final approved site plan drawings by the Planning Department.

6. That the comments in the Amherst Fire Chief's Association Inc. communication dated June 8, 2022 be addressed to the satisfaction of the association.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER	PROPERTY LOCATION
Sawyer's Landing LLC	1081 North French Road (portion) (NCD)

'22 SEP 29 PM4:16

7. That the requirements outlined in the Engineering Department letter dated June 1, 2022 are adhered to or are addressed to the satisfaction of that department.

8. That the requirements outlined in the Stormwater Management Officers letter dated June 27, 2022 are adhered to or are addressed to the satisfaction of that officer.

9. That an address plan for the development be submitted and approved as indicated Assessor's review dated March 10, 2021.

10. That the Zoning Enforcement Officers comments in the Planning Department letter dated September 14, 2022 be addressed to the satisfaction of that officer.

11. That the departmental comments in the Planning Department letter dated September 14, 2022 be addressed to the satisfaction of that department.

12. That the Town's Landscape Architects comments in the Planning Department letter dated September 14, 2022 be addressed to the satisfaction of the architect.

13. That the properties as required by the Findings Statement be deeded over to the Town of Amherst prior to issuance of final approved site plan drawings for the development.

14. That the petitioner and or his contractor obtain any required permits for work with the Dodge Road right-of-way from the Erie County Department of Public Works Division of Highways.

15. That the petitioner and or his contractor obtain any required permits for work with the Sweet Home Road right-of-way from the New York State Department of Transportation.

16. That the petitioner is required to obtain a Floodplain Development Permit from the Building Department.

The foregoing resolution was adopted by the Town of Amherst Planning Board, September 22, 2022; moved by Chmiel; seconded by Giuliani; ayes 5, noes 0; absent 2 (Kahn, Raffaele).

Robert J. Gilmour, Planning Board Chair

9-29-22
Date

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER

Sawyer's Landing LLC

PROPERTY LOCATION

'22 SEP 29 PM4:1[illegible]

1081 North French Road (portion) (NCD)

SM/ac
X:\Current_Planning\Files\Site Plans\2021\SP-2021-05_(1081 N_FrenchRd_NCD)_2021\SP-2021-05_resolution_092222.doc

Approved Plan: July 26, 2022
Received: August 1, 2022
September 6, 2022

cc: Town Clerk
Commissioner of Building
Town Engineer
Fire Chiefs
Traffic/Safety
Highway Superintendent
ECDEP
NYSDOT
NYSDEC
Sean Hopkins, Hopkins Sorgi & McCarthy, 5500 Main St., Suite 343, Williamsville, NY 14221
William Severyn, Severyn Development, 43 Central Ave. Suite 300, Lancaster, NY 14086
Adam Faeth, Ciminelli Real Estate Corp., 50 Fountain Plaza, Suite 500, Buffalo, NY 14202
Chris Wood, Carmina Wood Morris, 487 Main St, Suite 500, Buffalo, NY 14203
David Sutton, Sutton Architects, 5409 Main St, 2nd Floor, Williamsville, NY 14221

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 10 – Resolution 2024 –773 as Adopted by the Town of Amherst Town Board on October 15, 2024 for the Purpose of Issuing an Amended Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA") for Mixed-Use Project at 50 Dodge Road [Site "A" of Muir Woods Property]

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Amherst Town Board
5583 Main Street
Williamsville, NY 14221
www.amherst.ny.us

Francina J. Spoth
Town Clerk

Meeting: 10/15/24 07:00 PM
Department: Town Clerk
Initiated by: **Timothy Koller**
Co-Sponsored by:

DOC ID: 29466 **RESOLUTION 2024-773** **ADOPTED AS AMENDED**

Amendment to the SEQR Certification of Findings and the Filed Declaration of Restrictions for "Muir Woods - Site A" and Adoption of a Local Law for Amendment #77 to the Audubon Development Plan and Zoning Map for 17.42± Acres of Land from NCD-RI to NCD-LC. [50 Dodge Road (Portion) (NCD); Z-2002-09_E]

RESOLVED, that pursuant to 6NYCRR Part 617 (SEQR) and Town Code Section 104, as amended, that the requirements of SEQR have been completed, and be it further

RESOLVED, that pursuant to NYS Town Law Sec.272-a, the Town Board concurs with the findings of the Planning Board as stated in their resolution of August 27, 2024 to amend the "Development Program" within the SEQR Findings Statement approved by the Town Board on September 27, 2021 to permit "Site A" located at the western end of the overall Muir Woods site located at 50 Dodge Road (NCD) to be developed as a mixed-use residential/commercial project consisting of a different mix of residential units than that outlined in the findings statement adopted on September 27, 2021, and be it further

RESOLVED, that the filed Declaration of Restrictions for "Muir Woods Site A" be amended, and be it further

RESOLVED, that pursuant to NYS Town Law Sec.272-a, the Town Board concurs with the findings of the Planning Board as stated in their resolution of August 27, 2024 that the proposed New Community District Local Center (NCD-LC) use classification at 50 Dodge Road (portion) is consistent with the adopted Bicentennial Comprehensive Plan, as amended, and be it further

RESOLVED, that in accordance with Section 203-8-3 and Section 203-8-15 of the Town Code (Zoning), the Town Board adopts Local Law (#___) to amend the Audubon Development Plan and Town Zoning Map.

10/1/2024
A motion to open the public hearing was made by Supervisor Kulpa, seconded by Councilmember Berger and unanimously approved 4-0. The public hearing was opened at 7:03 PM.

Attorney Sean Hopkins, presented.

The following speakers addressed the Town Board:
Tom Wesibeck, 48 Drawbridge Ct
Don Smith, 201 N Long St
John Trabert, 234 Mt Vernon Rd

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Kathy Aquilina, 215 Maple Rd

There were no further speakers from the public, therefore Supervisor Kulpa moved to close the hearing and set a decision date for the October 15th Town Board meeting, seconded by Councilmember Berger and unanimously approved 4-0. The public hearing was closed at 7:36 PM.

10/15/2024

A motion to approve was made by Supervisor Kulpa and seconded by Councilmember Berger. A motion was then made by Councilmember Berger to amend, seconded by Councilmember Marinucci and unanimously approved 4-0. Amendment adds the underlined language. A motion to approve as amended was made by Supervisor Kulpa, seconded by Councilmember Berger and unanimously approved 4-0.

RESULT:	**ADOPTED AS AMENDED [UNANIMOUS]**
MOVER:	Brian J. Kulpa, Supervisor
SECONDER:	Jacqualine Berger, Councilmember
AYES:	Kulpa, Berger, Szukala, Marinucci
ABSENT:	Lavin

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 11 – Resolution 2020-792 as Adopted by the Town of Amherst Town Board on October 19, 2020 for the Purpose of Approving an Amendment to the Town of Amherst Comprehensive Plan

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Amherst Town Board
5583 Main Street
Williamsville, NY 14221
www.amherst.ny.us

Francina J. Spoth
Town Clerk

Meeting: 10/19/20 07:00 PM
Department: Town Clerk
Initiated by: **Kathleen Cooper**
Co-Sponsored by:

DOC ID: 22366 **RESOLUTION 2020-792** **ROLL CALL VOTE (ADOPTED)**

Amendment to the Comprehensive Plan for "Muir Woods - Site A" (1081 N. French Road)

Amendment to the Comprehensive Plan for
"Muir Woods - Site A"
[1081 North French Road (NCD); BCPA-2020-02]

RESOLVED, that pursuant to 6NYCRR Part 617 (SEQR) and Town Code Section 104, as amended, that the requirements of SEQR have been completed, and be it further

RESOLVED, that pursuant to NYS Town Law Section 272-a and Section 11.6 of the Town Comprehensive Plan, the Town Board concurs with the findings of the Planning Board as stated in their resolution of August 20, 2020 to amend the Conceptual Land Use Plan (Figure 6) and the University Focal Planning Area (Figure 21) of the Comprehensive Plan for "Muir Woods - Site A" located at 1081 North French Road (NCD) to permit mixed-use residential/commercial use on Site A.

For additional information (copy & paste link):
https://share.amherst.ny.us:443/docman/doc_files_list.php?hash=uaaidrb0hpn0mkelzsuqvr62

10/06/2020
A motion to open the public hearing was made by Supervisor Kulpa, seconded by Councilmember Lavin and unanimously approved 4-0. The public hearing was opened at 7:51 PM.

Sean W. Hopkins, Esq., presented for both resolution #791 and #792 and answered questions from the Board.

There were no speakers from the public, therefore Supervisor Kulpa moved to adjourn the public hearing and set a Decision Date for October 19th. The motion was seconded by Councilmember Lavin and unanimously approved 4-0. The public hearing was adjourned at 8:13 PM.

10/19/2020
A motion to open the public hearing was made by Supervisor Kulpa, seconded by Deputy Supervisor Berger and unanimously approved 5-0. The public hearing was opened at 7:07 PM.

Sean W. Hopkins, Esq., presented.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

There were no speakers from the public, therefore Supervisor Kulpa moved to close the public hearing, seconded by Deputy Supervisor Berger and unanimously approved 5-0. The public hearing was closed at 7:18 PM.

A motion to approve the Negative Declaration was made by Supervisor Kulpa, seconded by Deputy Supervisor Berger and approved 4-1 (nay, Bucki). A motion to adopt the resolution was made by Supervisor Kulpa, seconded by Deputy Supervisor Berger and approved via Roll Call vote 4-1 (nay, Bucki).

RESULT:	**ROLL CALL VOTE (ADOPTED) [4 TO 1]**
MOVER:	Brian J. Kulpa, Supervisor
SECONDER:	Jacqualine Berger, Deputy Supervisor
AYES:	Kulpa, Berger, Lavin, Szukala
NAYS:	Bucki

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINAWOOD
DESIGN

STORMWATER POLLUTION PREVENTION PLAN for CONSTRUCTION ACTIVITIES

Sawyer's Landing

Dodge & Sweet Home Road
Town of Amherst, Erie County, New York

Prepared for

Sawyer's Landing LLC

c/o Severyn Development
43 Central Ave Suite #300
Lancaster, NY 14086

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165



August 2023
Revised 11/21/2024

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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Appendix O NYSDEC Stormwater Management Inspection Lists

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Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

101 SCOPE

A. **PURPOSE:** Sawyer's Landing LLC (SL) has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by SL; and/or liquidated damages. This section provides a descriptive explanation of SL's Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and electronically submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities. Once a copy of the SPDES permit is received from NYSDEC after filing, it will be included in Appendix L of this report.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is <u>not</u> subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first

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develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

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E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's Designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **<u>General Construction Site Inspection and Maintenance Requirements</u>**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. **<u>Owner or operator Maintenance Inspection Requirements</u>**

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1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the **owner or operator** can stop conducting the maintenance inspections. The **owner or operator** shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of the General Permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

The **owner or operator** shall have a **qualified inspector** conduct site inspections in conformance with the following requirements:

Note: The **trained contractor** identified in Part III.A.6 of the General Permit **cannot** conduct the **qualified inspector** site inspections unless they meet the **qualified inspector** qualifications included in Appendix A of the General Permit. In order to perform these inspections, the trained contractor would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape

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Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A **qualified inspector** shall conduct site inspections for all construction activities identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

   a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

   b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

   c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the **qualified inspector** shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the **qualified inspector** shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to **disturb greater than five (5) acres** of soil at any one time, the **qualified inspector**

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shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been **temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas**, the **qualified inspector** shall conduct a site inspection at least once every thirty (30) calendar days. The **owner or operator** shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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3. At a minimum, the **qualified inspector** shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The **qualified inspector** shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

    a. Date and time of inspection;

    b. Name and title of person(s) performing inspection;

    c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

    d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

    e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

    f. Identification of all erosion and sediment control practices that need repair or maintenance;

    g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

    h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

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i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The **qualified inspector** shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the **qualified inspector** shall notify the **owner or operator** and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the **qualified inspector**. Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

I. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant

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to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to signing and submitting the NOT to the Department. The local MS4/Stormwater Management Officer must also sign the NOT and may require a final site inspection to be completed prior to. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

102 PROJECT NAME AND LOCATION

Sawyer's Landing

Dodge Road

Town of Amherst, County of Erie, New York

Easting: 190681.1

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Northing: 4770798.8

Estimated Area of Site ≈ 17.4 acres

Estimated Area to be disturbed by Construction Activities ≈ 16.4 acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Sawyer's Landing LLC

c/o Severyn Development

43 Central Avenue

Lancaster, NY 14086

Contact Person: William Severyn

Telephone: 716–818-0207

104 PROJECT DESCRIPTION

This project is a development of a 17.4 acre site located on the north side of Dodge Road, west of Sweet Home Road in the Town of Amherst. Both Dodge Road and Sweet Home Road are Erie County roads. Proposed is the construction of a mixed-use development to include (2) 4-story mixed-use buildings with 112 apartment units total, (1) 4-story self-storage building and (87) 2-story townhomes. A bike trail will be constructed on site, this trail will connect to the existing Town of Amherst bike trail on the south side of Dodge Road. The approximately 1-acre westerly portion will remain undisturbed and be deed restricted as permanent open space. The site is currently undeveloped consisting of woods and overgrown brush/grass. NYSDEC and Federal wetlands were delineated on site by Earth Dimensions, Inc. Approximately 6.1 acres of Federal and 1.2 acres of NYSDEC wetlands have been permitted to be impacted. The proposed site development area to be disturbed for this project is approximately 16.4 acres.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of detention basins, bioretention areas including topsoil & seed

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D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and parking lot

G. Final grading & landscaping

H. Construction of building

This project is owned by Sawyer's Landing LLC and will be developed by the same. The work area consists of approximately 16.4 acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details.

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 78. The post-construction runoff curve number for the site will be "CN" = 91. The site is 17.4 acres of which approximately 16.4 acres will be disturbed by construction activities.

See soils information located in Appendix H.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to the storm system on Dodge Road which is tributary to Ellicott Creek.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above.

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110 HISTORIC PLACES

The assessed property is shown on the NYSHPO map as an archeologically sensitive area. A NYSHPO "no effect" letter is included in Appendix I.

111 WETLANDS AND/OR OTHER SURFACE WATERS

Federal and NYSDEC wetlands were delineated on site by Earth Dimensions, Inc. Approximately 6.1 acres of Federal and 1.2 acres of NYSDEC wetlands have been permitted to be impacted. The USACOE and NYSDEC wetland permits are included in Appendix K of this report.

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

B. Use of stabilization method for all slopes with a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

b. The **owner or operator** shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

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c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Construct temporary construction exits at locations shown on the Demolition & Erosion Control Plan Sheet.

B. Install perimeter silt fence/silt socks/silt sock in the locations shown on the Demolition & Erosion Control Plan Sheet.

C. Clear & Grub site.

D. Installation of detention basin to act as sediment basin.

E. Commence site grading.

F. If less than 5 acres of the site have been disturbed and construction activity has ceased for more than 14 days, temporarily seed and water to stabilize this area. If more than 5 acres of the site have been disturbed and construction activity has ceased for more than 7 days, temporarily seed and water to stabilize this area.

G. Installation of proposed utilities.

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H. Install base material as required for pavement/buildings.

I. Finalize pavement subgrade preparation.

J. Construction of buildings.

K. Construct all curb, drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all inlets.

L. Dust control.

L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.

N. Carry out final grading and seeding and planting.

O. Install bioretention areas (do not install bioretention soil or underdrains until surrounding area is stabilized).

P. Clean storm system following construction, clean detention basin of any silt and return to design grades.

Q. Remove silt fencing/silt sock only after all paving is complete and exposed surfaces are stabilized.

R. Remove temporary construction exits only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

The existing site is generally flat and slopes west with portions sloping east. The portion that slopes west settles in a low area and once the capacity of that area is exceeded, sheet flow continues towards Sweet Home Road and is collected by an existing 12" pipe on the north side of Dodge Road. This pipe flows to the Erie County system on Sweet Home Road. The portion that flows east flows to the offsite wetlands.

Currently Dodge Road does not have a drainage system. A series of catch basins and pipes will be installed in the green area on the north side of Dodge Road to collect the road drainage. The west portion of this system will connect to the existing closed drainage system on Sweet Home Road. The east portion will discharge to the Ellicott Creek diversion channel using and existing discharge point. This new system will also convey the proposed discharge from the site as described below.

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The proposed onsite storm sewer system consists of smooth interior and perforated HDPE pipes connected by a series of catch basins, manholes and yard drains. The site is split into a storm water management area on the east and west sides.

West Side

The west side of the site has (2) bioretention areas which portions of the westerly area will discharge to. These bioretention areas along with the remainder of the west portion of the site will discharge to the underground detention area. Note that the yard drains installed along the north property line discharge to the underground detention area. An outlet structure in the SW portion of this area will control runoff to at or below existing runoff flow rates. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Sweet Home Road system.

Underground Detention Summary

(286) ADS Stormtech SC-740 chambers
Top of stone elev. = 573.00
Top of chamber elev. = 572.50
Bottom of chamber elev. = 570.00
Bottom of stone elev. = 569.50
Total storage = 22,086 CF

Event	Ex. Discharge	Pro. Discharge	Elev.
1 yr	0.87 cfs	0.33 cfs	570.29
2 yr	1.34 cfs	0.68 cfs	570.46
5 yr	2.14 cfs	1.05 cfs	570.79
10 yr	2.94 cfs	1.28 cfs	571.13
25 yr	4.34 cfs	1.61 cfs	571.73
50 yr	5.69 cfs	3.61 cfs	572.23
100 yr	7.33 cfs	4.83 cfs	572.92

East Side

The east side of the site has a bioretention area and wet detention pond which this portion of the site discharges to. The NE portion of the site discharges to a forebay which spills into the main micropool portion of the wet detention basin. The SE portion of the site discharges to the bioretention area which also spills into the main micropool portion of the site. An outlet control structure is located in the SE portion of the micropool and controls the discharge from this storm water management area. Spillways are also located on the east portion of the micropool which will discharge to the existing wetlands to the east in order to not

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cut off all flow from this site into this area. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Ellicott Creek diversion channel.

The bioretention areas and wet detention pond for the project area are sized to provide 100% of the required Runoff Reduction Volume (RRv) and Water Quality Volume (WQv) treatment for the overall site in accordance with Chapter 4 of the NYSDEC Stormwater design manual. The soils in the vicinity of the bioretention areas are mainly USDA hydrologic group 'D' and therefore the system will be installed with underdrains per NYSDEC requirements. The bioretention areas will consist of 6" and 8" perforated HDPE underdrains in 12" of drainage gravel, followed by filter fabric and 18" minimum of planting soil. Overflow yard drains will be installed to allow 6" maximum temporary ponding for RRv treatment. The east bioretention area (area #3) spills into the wet detention pond and the underdrain pipe ties together with the pond discharge and flows to Dodge Road. The east bioretention areas (areas #1 & #2) have a catch basin to act as the spillway and this catch basin and the underdrain pipes discharge to the underground detention area.

Storm Water Management Area Summary

Forebay
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50
Bottom of basin elev. = 569.00

Micropool
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50
Bottom of basin elev. = 563.00

Overall Storm Water Summary

WQv Provided = 152,678 cf (pond)
WQv Provided = 6,948 cf (bioretention)
WQv Provided = 159,626 cf (total)

Bioretention Area Summary:

Area	Rim Elev.	Bottom Elev.	Area
1	574.50	574.00	2,300 sf
2	574.50	574.00	2,600 sf
3	575.50	575.00	11,000 sf
		Total Provided =	15,900 sf

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Water Quality Summary:
WQv req'd = 28,804 cf (0.661 ac-ft)
RRv min. req'd = 5,518 cf (0.127 ac-ft)
RRv provided = 8,662 cf (0.199 ac-ft)
WQv provided = 159,626 cf (3.665 ac-ft)
Total RRv + WQv provided = 8,662 cf + 159,626 cf = 168,287 cf (3.868 ac-ft)

Detention: Comparison of the existing 1-year vs. the proposed 1-year runoff
Comparison of the existing 10-year vs. the proposed 10-year runoff
Comparison of the existing 100-year vs. the proposed 100-year runoff

Storm pipes: 10-year storm

Refer to the engineer's report in Appendix N for additional details.

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in designated areas which will have temporary erosion & sediment control measures installed. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

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A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these

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practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder,

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brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

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The SWPPP for this site development project requires regulated MS4 approval from the Town of Amherst. All changes to the SWPPP must be approved by the Town of Amherst prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order.

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They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

    - Inspect catch basins, storm manholes, yard drains, storm piping and stormwater pond for debris and accumulation of sediment.
    - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
    - Flush piping with water if necessary to remove accumulated sediment.

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- Bioretention areas shall be maintained per the NYSDEC Maintenance and Management Checklist included in this SWPPP.
- Check all stone outfall structures for erosion and re-stone if necessary to prevent further erosion.
- Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
- A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

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117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers
- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

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A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.

2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

3. Products will be kept in their original containers with the original manufacturer's label in legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

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1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a

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containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to

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prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Amherst. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The

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location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these

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procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with

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the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system.

120 STORM WATER CONTROL FACILITY MAINTENANCE

Upon completion of construction, SL shall be responsible for maintenance of the storm sewer system and all ponds, bioretention areas, etc. per a Stormwater Maintenance Agreement to the Town of Amherst that shall be filed with the County of Erie.

The frequency of inspections for the bioretention areas shall match the frequencies listed on the "Bioretention Operation, Maintenance and Management Inspection Checklist" in Appendix O of the SWPPP.

The proposed catch basins, as per section 115, shall be inspected 4 times per year for removal of floatable debris. Any silt buildup over 6" in depth shall be removed and disposed of properly off-site.

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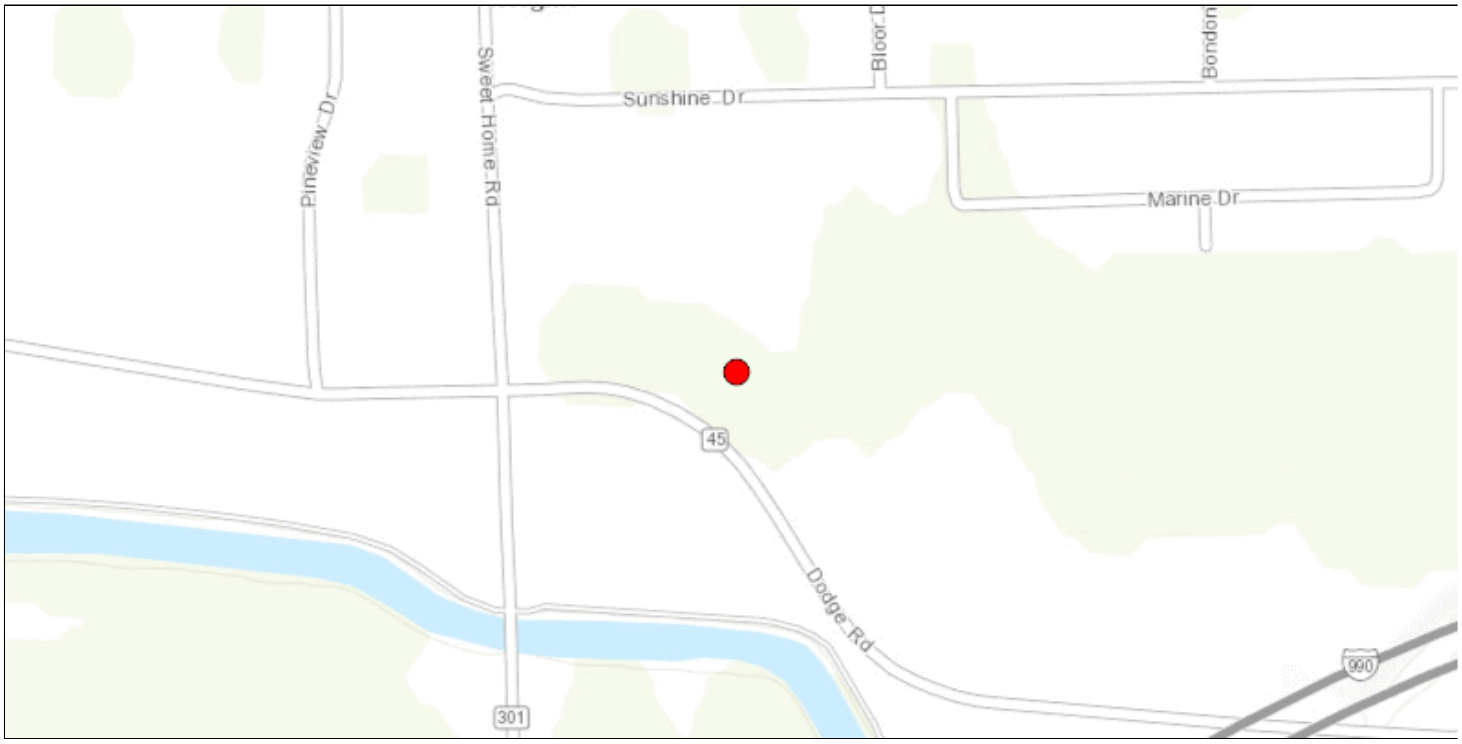
Appendix A

Site Location Map

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stormwater Interactive Map



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	190681.063	**Northing:**	4770798.806
Longitude/Latitude	**Longitude:**	-78.796	**Latitude:**	43.027

The approximate address of the point you clicked on is:
26-42 Dodge Rd, Getzville, New York, 14068

County: Erie
Town: Amherst
USGS Quad: TONAWANDA EAST

DEC Administrative Boundaries

Region 9:
(Western New York) Allegany, Chautauqua, Cattaraugus, Erie, Niagara and Wyoming counties. For more information visit **http://www.dec.ny.gov/about/617.html**.

Regulated MS4s

UA 2000: 11350
Standard: Buffalo
Municipality: AMHERST
SWIS: 142200
Regulated: Automatic

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Appendix B

NYSDEC Notice of Intent (NOI)

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NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Sawyer's Landing LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Severyn

Owner/Operator Contact Person First Name
Will

Owner/Operator Mailing Address
43 Central Ave

City
Lancaster

State: NY Zip: 14086 -

Phone (Owner/Operator): 716 - 912 - 0969 Fax (Owner/Operator): ___ - ___ - ____

Email (Owner/Operator)
william.severyn.ny@gmail.com

FED TAX ID
__ - _____ (not required for individuals)

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Project Site Information

Project/Site Name
Sawyer's Landing

Street Address (NOT P.O. BOX)
Dodge Road

Side of Street
● **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Amherst

State: NY
Zip: 14228-
County: Erie
DEC Region: 9

Name of Nearest Cross Street
Sweet Home Road

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
○ **North** ○ **South** ● **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
40.08-3-13.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
-78796
Ex. -73.749

Y Coordinates (Northing)
42.90022 77
Ex. 42.652

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

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3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- (●) FOREST
- ( ) PASTURE/OPEN LAND
- ( ) CULTIVATED LAND
- ( ) SINGLE FAMILY HOME
- ( ) SINGLE FAMILY SUBDIVISION
- ( ) TOWN HOME RESIDENTIAL
- ( ) MULTIFAMILY RESIDENTIAL
- ( ) INSTITUTIONAL/SCHOOL
- ( ) INDUSTRIAL
- ( ) COMMERCIAL
- ( ) ROAD/HIGHWAY
- ( ) RECREATIONAL/SPORTS FIELD
- ( ) BIKE PATH/TRAIL
- ( ) LINEAR UTILITY
- ( ) PARKING LOT
- ( ) OTHER

Post-Development Future Land Use

- ( ) SINGLE FAMILY HOME — Number of Lots
- ( ) SINGLE FAMILY SUBDIVISION
- ( ) TOWN HOME RESIDENTIAL
- ( ) MULTIFAMILY RESIDENTIAL
- ( ) INSTITUTIONAL/SCHOOL
- ( ) INDUSTRIAL
- ( ) COMMERCIAL
- ( ) MUNICIPAL
- ( ) ROAD/HIGHWAY
- ( ) RECREATIONAL/SPORTS FIELD
- ( ) BIKE PATH/TRAIL
- ( ) LINEAR UTILITY (water, sewer, gas, etc.)
- ( ) PARKING LOT
- ( ) CLEARING/GRADING ONLY
- ( ) DEMOLITION, NO REDEVELOPMENT
- ( ) WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- (●) OTHER: Mixed use

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
17.147.4	16.146.4	0.0 0.0	8.0 8.0

5. Do you plan to disturb more than 5 acres of soil at any one time? (●) **Yes** ( ) **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
%	%	%	100 %

7. Is this a phased project? ( ) **Yes** (●) **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 7/1/2021 - **End Date** 7/1/2022

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9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name: Ellicott Creek

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ○ Yes ● No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ Yes ● No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ Yes ● No
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ Yes ● No
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ Yes ● No

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15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Erie County

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

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24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer
Carmina Wood Morris DPC

Contact Name (Last, Space, First)
Wood Christopher

Mailing Address
487 Main St

City
Buffalo

State Zip
NY 14127-

Phone
716-842-3165

Fax
716-842-0263

Email
cwood@cwm-ae.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name
Christopher

MI

Last Name
Wood

Signature

Date
03/03/2021

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25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ● Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ● Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ○ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

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Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ● **Preservation of Undisturbed Areas**
- ● **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.006161 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

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Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)	
RR Techniques (Area Reduction)				
● Conservation of Natural Areas (RR-1)	1.01	and/or	0.00	and/or
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or		and/or
○ Tree Planting/Tree Pit (RR-3)		and/or		and/or
○ Disconnection of Rooftop Runoff (RR-4)		and/or		and/or
RR Techniques (Volume Reduction)				
○ Vegetated Swale (RR-5)				
○ Rain Garden (RR-6)				
○ Stormwater Planter (RR-7)				
○ Rain Barrel/Cistern (RR-8)				
○ Porous Pavement (RR-9)				
○ Green Roof (RR-10)				
Standard SMPs with RRv Capacity				
○ Infiltration Trench (I-1)				
○ Infiltration Basin (I-2)				
○ Dry Well (I-3)				
○ Underground Infiltration System (I-4)				
● Bioretention (F-5)	4.34		3	
○ Dry Swale (O-1)				
Standard SMPs				
○ Micropool Extended Detention (P-1)				
○ Wet Pond (P-2)				
○ Wet Extended Detention (P-3)				
○ Multiple Pond System (P-4)				
● Pocket Pond (P-5)	3.43		4	
○ Surface Sand Filter (F-1)				
○ Underground Sand Filter (F-2)				
○ Perimeter Sand Filter (F-3)				
○ Organic Filter (F-4)				
○ Shallow Wetland (W-1)				
○ Extended Detention Wetland (W-2)				
○ Pond/Wetland System (W-3)				
○ Pocket Wetland (W-4)				
○ Wet Swale (O-2)				

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Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.10999 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.10217 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

3.63 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

3.83

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.402 **acre-feet**

CPv Provided

0.402 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

4.34 **CFS**

Post-development

3.63 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

7.37 **CFS**

Post-development

4.34 **CFS**

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37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Sawyer's Landing LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ● Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ● **Yes** ○ **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

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Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

Will

MI

Print Last Name

Severyn

Owner/Operator Signature

William T Severyn

Date

03/03/2021

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix C

MS4 SWPPP Acceptance Form

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Sawyer's Landing LLC
2. Contact Person:	Will Severyn
3. Street Address:	43 Central Ave
4. City/State/Zip:	Lancaster, NY 14086
II. Project Site Information	
5. Project/Site Name:	Sawyer's Landing
6. Street Address:	Dodge Road
7. City/State/Zip:	Amherst, NY 14228
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	Sarah Burow
9. Title/Position:	Senior Engineer Assistant
10. Date Final SWPPP Reviewed and Accepted:	09/29/2023
IV. Regulated MS4 Information	
11. Name of MS4:	Town of Amherst
12. MS4 SPDES Permit Identification Number: NYR20A	122
13. Contact Person:	Sarah Burow
14. Street Address:	1100 N. Forest Rd
15. City/State/Zip:	Williamsville, NY 14221
16. Telephone Number:	716-631-7154

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MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:	Vaishali Reberholt PE
Title/Position:	SMO
Signature:	
Date:	10/02/2023

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

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Appendix D

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

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(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

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calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

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E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

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8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

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B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

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must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

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b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

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use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

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b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

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the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project

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b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

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b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

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begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

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d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

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(Part IV.C.4.a)

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

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b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

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b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

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E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

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(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

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include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

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3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

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R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

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Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

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and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

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Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

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New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

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Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

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SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

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Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

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training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

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APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

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Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

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Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

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Figure 1 - New York City Watershed East of the Hudson

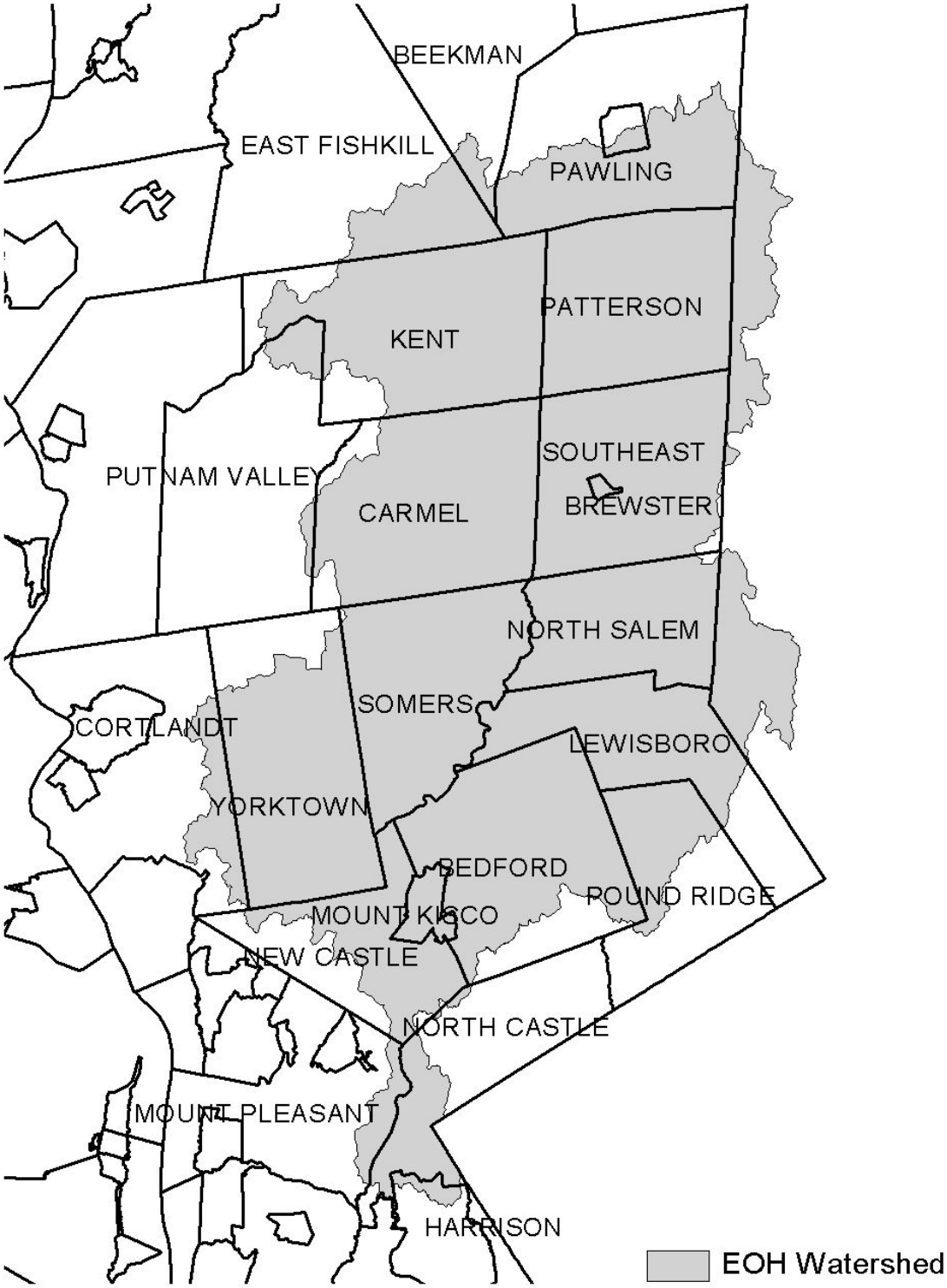

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Figure 2 - Onondaga Lake Watershed



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Figure 3 - Greenwood Lake Watershed

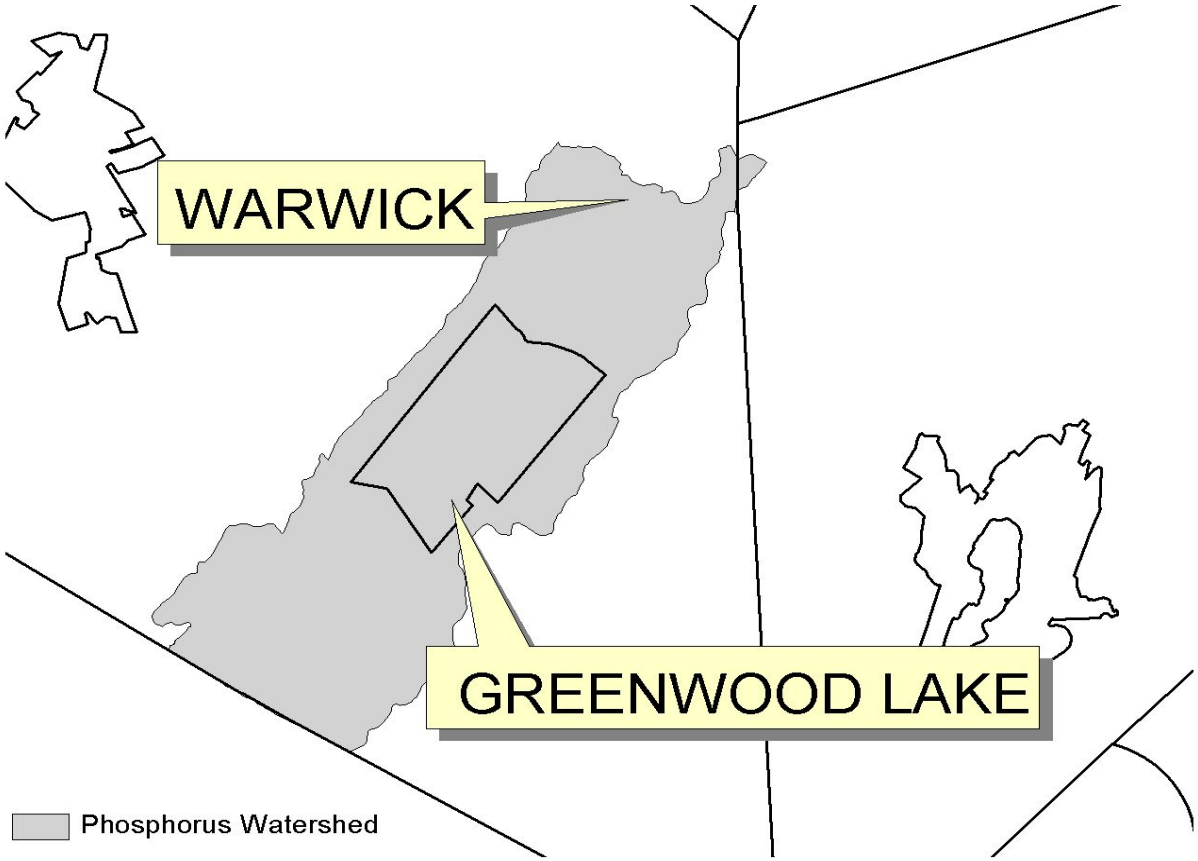

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Figure 4 - Oscawana Lake Watershed

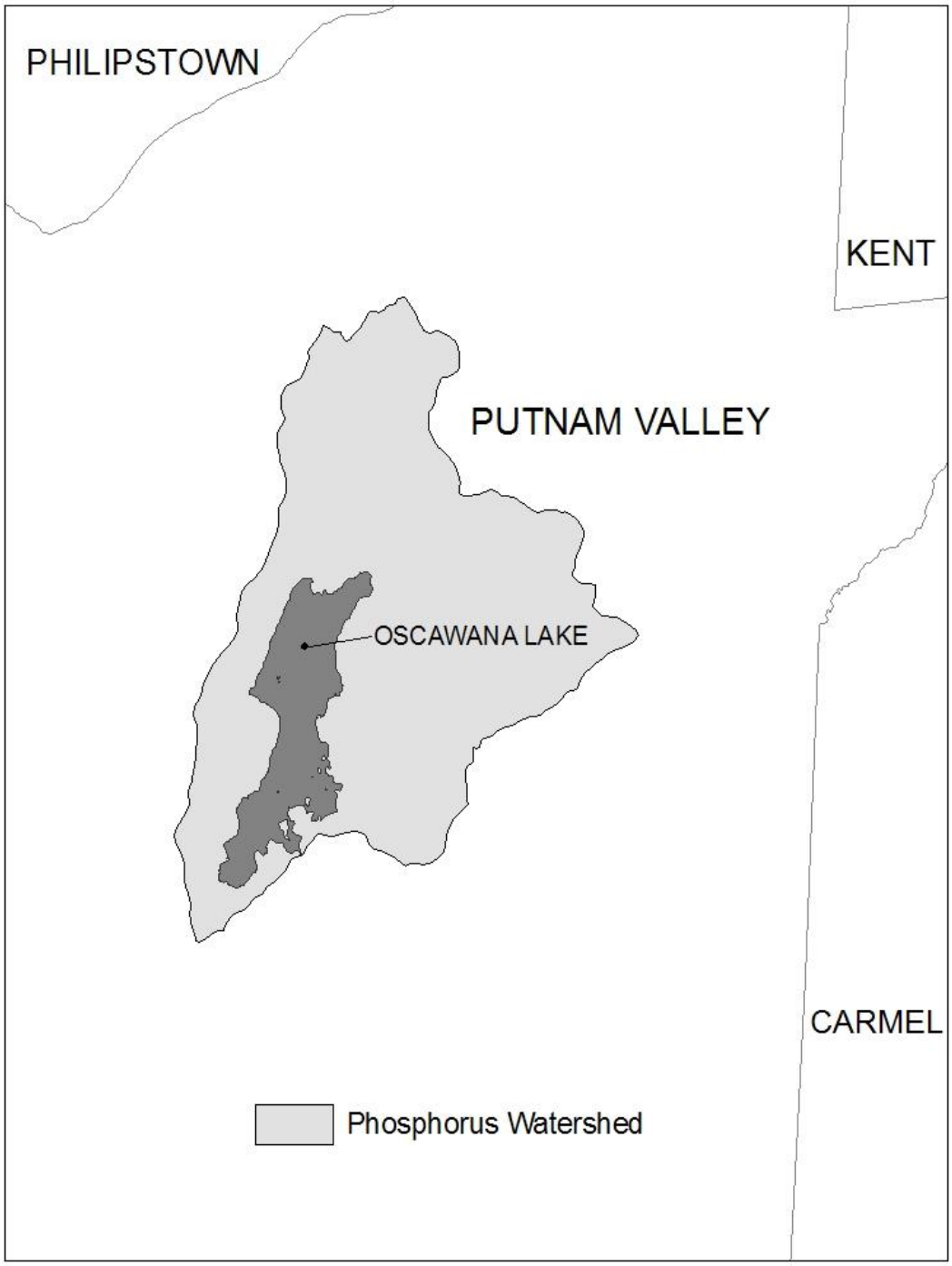

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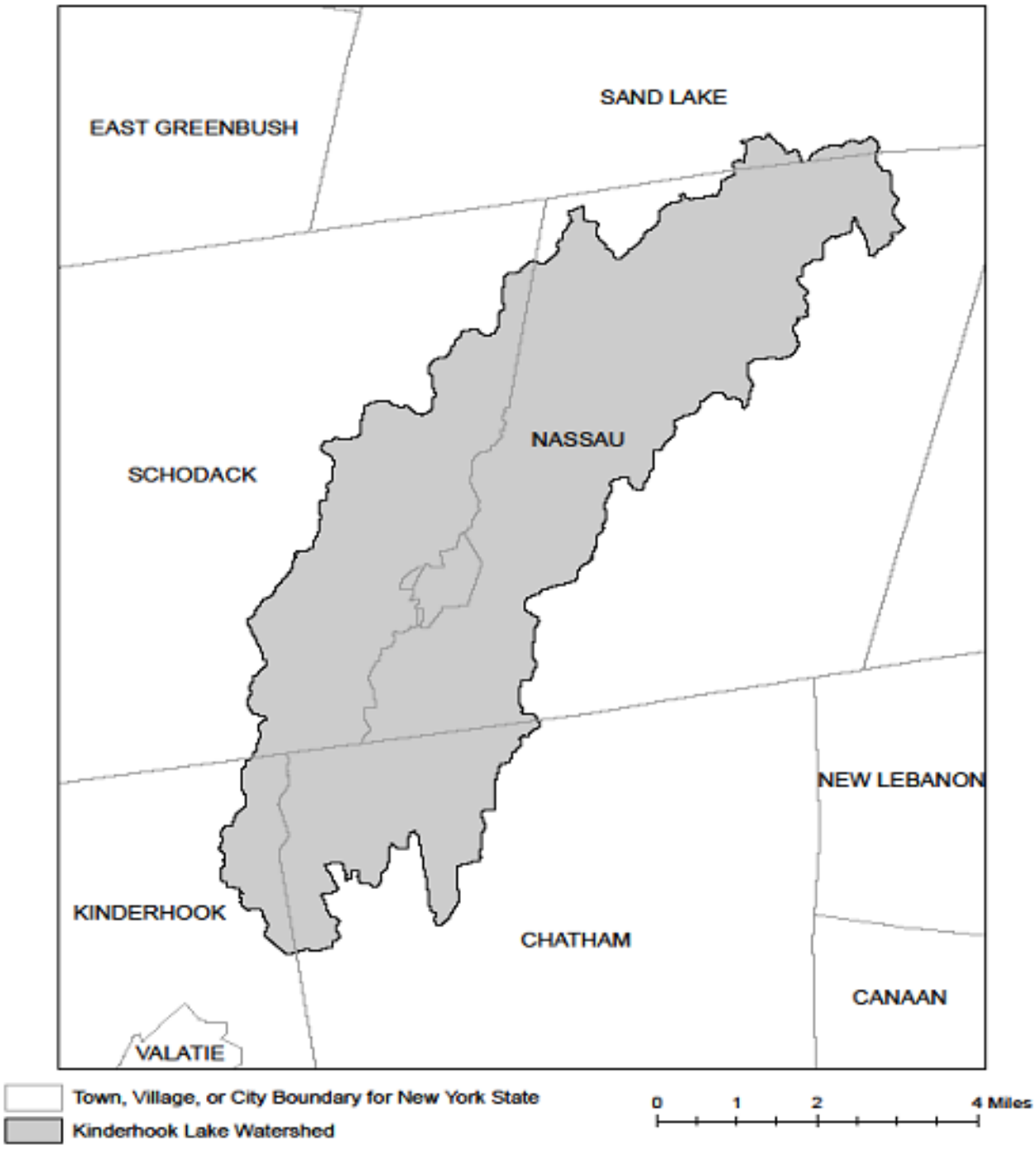
Figure 5 - Kinderhook Lake Watershed



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APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

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APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

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303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix E

Forms

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Sawyer's Landing

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of Amherst.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Sawyer's Landing

eNOI Submission Number: HPY-3BW1-F4YNR

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

William T Severyn

Signature

3/3/21

Date

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Sawyer's Landing

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Sawyer's Landing LLC

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher		Wood
First name	MI	Last Name



Signature

3/3/21

Date

Revised: January 2020

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix F

NYSDEC Notice of Termination (NOT)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix G

Construction Documents

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York
SITE DEVELOPMENT DRAWINGS

AGENCIES

ENGINEERING DEPARTMENT
NAME/TITLE: JEFFERY BURROUGHS, P.E. – TOWN ENGINEER
COMPANY/DEPT: TOWN OF AMHERST ENGINEERING DEPARTMENT
ADDRESS: 1100 NORTH FOREST ROAD
WILLIAMSVILLE, NEW YORK 14221
TELEPHONE 716–631–7154

PLANNING & ZONING DEPARTMENT
NAME/TITLE: DANIEL HOWARD – PLANNING DIRECTOR
COMPANY/DEPT: TOWN OF AMHERST PLANNING DEPARTMENT
ADDRESS: 5583 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221
TELEPHONE 716–631–7051

LAND SURVEYOR
NAME/TITLE: GPI ENGINEERING, LANDSCAPE ARCHITECTURE SURVEYING, LLP
COMPANY/DEPT: 4950 GENESEE STREET, SUITE 100
ADDRESS: BUFFALO, NEW YORK 14225
TELEPHONE 716–633–4844

UTILITIES

NATURAL GAS
COMPANY/DEPT:. NATIONAL FUEL GAS CORP.
ADDRESS: 6363 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221
TELEPHONE 716–857–7000

TELEPHONE COMPANY
COMPANY/DEPT: VERIZON
ADDRESS: 65 FRANKLIN STREET
BUFFALO, NEW YORK 14203
TELEPHONE 716–840–8748

CABLE COMPANY
COMPANY/DEPT: TIME WARNER
ADDRESS: 789 CHURCH ROAD
WEST SENECA, NEW YORK
TELEPHONE 716–558–8615

ELECTRIC COMPANY
COMPANY/DEPT: NATIONAL GRID
ADDRESS: 144 KENSINGTON AVENUE
BUFFALO, NEW YORK 14214
TELEPHONE 716–236–2738

WATER
COMPANY/DEPT:. ERIE COUNTY WATER AUTHORITY
ADDRESS: 3030 UNION ROAD
CHEEKTOWAGA, NEW YORK 14227
TELEPHONE 716–684–1510

DIG SAFELY NEW YORK
TELEPHONE 1–800–962–7962

OWNER/DEVELOPER

NAME: Sawyer's Landing LLC
ADDRESS 43 Central Ave Suite #300
Lancaster, NY 14086
TELEPHONE 716 818-0207

ENGINEER

Carmina•Wood•Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

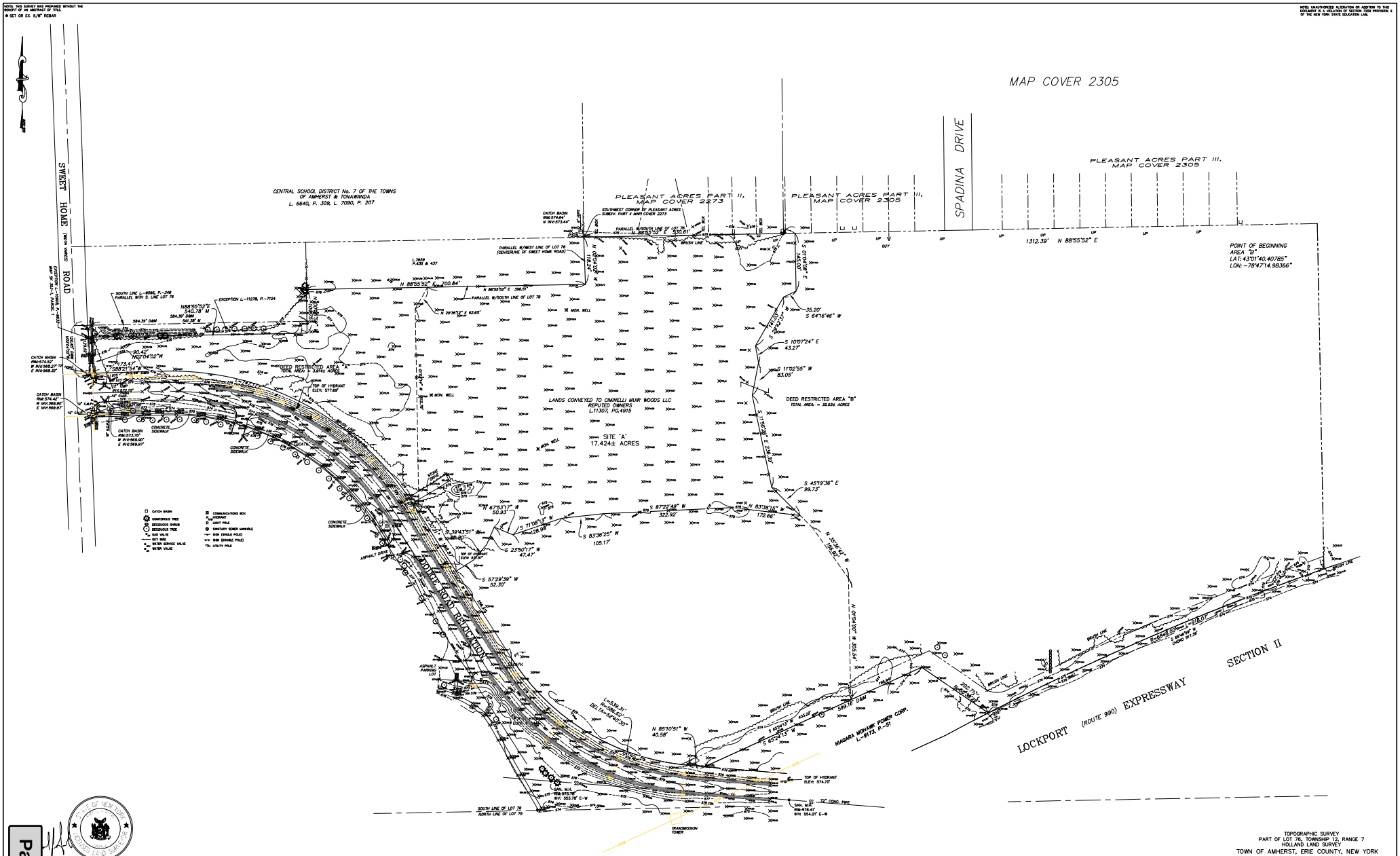
August 2024

REVISIONS:

No.	Description	Date
1	Rev. Plan Set per Client	11/21/24

DWG NO.	DRAWING TITLE
–	COVER SHEET
–	TOPOGRAPHIC SURVEY (BY GPI)
C–001	DEMOLITION & EROSION CONTROL PLAN
C–002	DEMOLITION & EROSION CONTROL DETAILS
C–100	OVERALL SITE PLAN
C–101	SITE PLAN
C–102	PARCEL MAP
C–103	ROAD & BIKE PATH LAYOUT PLAN
C–104	SITE DETAILS
C–105	SITE DETAILS
C–106	SITE DETAILS
C–107	SITE DETAILS
C–200	GRADING PLAN
C–201	GRADING PLAN – RECREATION TRAIL
C–300	STORM DRAINAGE PLAN
C–301	STORM DRAINAGE DETAILS
C–302	STORM DRAINAGE DETAILS
C–303	STORM DRAINAGE DETAILS
C–400	UTILITY PLAN
C–401	SANITARY SEWER DETAILS
C–402	SANITARY SEWER DETAILS
C–403	SANITARY SEWER GENERAL NOTES
C–404	WATER DETAILS
C–405	WATER DETAILS
C–406	WATER DETAILS & NOTES
C–407	INSULATED ENCLOSURE DETAIL
L–100	LANDSCAPE PLAN
LP–100	PHOTOMETRIC PLAN
LP–101	PHOTOMETRIC DETAILS
TT–100	FIRE TRUCK PLAN

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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© Carmina Wood Morris DPC

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

EXCEPTION L.–11278, P.–7124

CATCH BASIN
RIM: 574.64'
N INV: 573.44'
6" HDPE

TEL BOX

BRUSH LINE

EX. FENCE TO BE REMOVED, COORD. W/ OWNER

PROTECT UTILITIES ALONG NORTH PROPERTY LINE (TYP.)

INSTALL TEMPORARY SILT SOCK AROUND PERIMETER OF SITE, MAINTAIN UNTIL THE SITE IS STABILIZED

INSTALL TEMPORARY SILT SOCK AROUND PERIMETER OF SITE, MAINTAIN UNTIL THE SITE IS STABILIZED

BIO. AREA #1

BIO. AREA #2

BIO. AREA #3

TOPSOIL STOCKPILE AREA (COORDINATE LOCATION WITH OWNER)

INSTALL TEMPORARY SILT SOCK AROUND PERIMETER OF STOCKPILE

INSTALL TEMPORARY SILT SOCK AROUND PERIMETER OF BIORETENTION AREAS AS SHOWN, MAINTAIN UNTIL THE SITE IS STABILIZED

MON. WELL

LIMIT OF CLEARING

SITE TO BE CLEARED WITHIN PROPERTY LIMITS UNLESS OTHERWISE NOTED

NOTE: ALL TREES & STUMPS ON SITE TO BE REMOVED

FIRE HYDRANTS ALONG DODGE ROAD TO BE PROTECTED DURING CONSTRUCTION (TYP.)

UTILITY POLES ALONG DODGE ROAD TO BE PROTECTED DURING CONSTRUCTION (TYP.)

INSTALL DETENTION BASIN TO ACT AS SEDIMENT TRAP. SEE GRADING PLAN (NOTE: DO NOT INSTALL BIORETENTION SOIL PRIOR TO STABILIZATION OF THE TRIBUTARY PORTIONS OF THE SITE)

CONCRETE SIDEWALK

CATV

TOP OF HYDRANT ELEV: 577.69'

INSTALL TEMPORARY SILT SOCK AROUND PERIMETER OF SITE, MAINTAIN UNTIL THE SITE IS STABILIZED

STABILIZED CONSTRUCTION ENTRANCE, COORDINATE LOCATION WITH PROPOSED ENTRANCE, SEE SITE PLAN

CONCRETE SIDEWALK

ASPHALT DRIVE

TOP OF HYDRANT ELEV: 575.35'

INSTALL CONCRETE WASHOUT AREA TO ALLOW EASY ACCESS FOR CONCRETE TRUCKS, LOCATION MAY BE ADJUSTED TO ACCOMMODATE CONSTRUCTION

CONTRACTOR TO INSTALL STABILIZED CONSTRUCTION PARKING AREA AS SHOWN, COORDINATE LOCATION W/ STABILIZED CONSTRUCTION ENTRANCE.

NOTE: ALL NEW DRAINAGE INLETS ON SITE AND OFF SHALL HAVE INLET PROTECTION INSTALLED

INSTALL TEMPORARY SILT SOCK AROUND PERIMETER OF SITE, MAINTAIN UNTIL THE SITE IS STABILIZED

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50 100FL

SITE PLAN

SCALE: 1"=50'

RESTORATION NOTES

1. THE ADJACENT AREAS DISTURBED OR DAMAGED DURING CONSTRUCTION MUST BE RESTORED IN KIND TO THE SATISFACTION OF THE OWNER.
2. WHEN RESTORING LAWN AREAS ADJACENT TO NEW CONSTRUCTION, ON-SITE MATERIAL MAY BE USED TO BACKFILL THE AREA WITHIN SIX INCHES OF THE FINISHED SURFACE. ON-SITE MATERIAL SHALL BE THOROUGHLY COMPACTED AND FREE OF GRASS CLUMPS, TREE ROOTS PIECES OF ASPHALT AND OTHER EXTRANEOUS MATERIALS, AND STONES LARGER THAN 1 INCH IN SIZE.
3. ALL DISTURBED UNSURFACED AREAS SHALL RECEIVE FOUR INCHES OF TOPSOIL, SEED AND MULCH AND SHALL BE WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. WHEN ADJACENT ASPHALT, CONCRETE OR PAVING STONE AREAS ARE DISTURBED AS PART OF THE CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO REPLACE THE DAMAGED OR EXCAVATED AREA. THE PERIMETER OF THE DISTURBED AREA SHALL BE SAW CUT FULL DEPTH, SO THAT ALL LINES ARE STRAIGHT AND TRUE. PAVING STONES SHALL BE REPLACED IN WHOLE UNITS ONLY, AND ALL REPLACEMENT PAVING STONES ARE TO MATCH THE EXISTING ONES IN SIZE, SHAPE AND COLOR. ASPHALT SHALL BE COMPACTED TO A SMOOTH FINISH AND SHALL BE FLUSH WITH THE EXISTING ADJACENT AREA THAT IS TO REMAIN.

EROSION CONTROL PLAN

THE FOLLOWING EROSION CONTROL PROCEDURE SHALL BE ADHERED TO BY THE CONTRACTOR:

1. INSTALL TEMPORARY SILT FENCE BARRIERS AS DIRECTED BY THE OWNER AND AS SHOWN ON THE EROSION CONTROL PLAN TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
2. ALL SILT FENCE BARRIERS SHALL BE REPLACED WHEREVER THEY BECOME CLOGGED OR INOPERABLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.
4. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER-SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR, AND WATER SPREAD AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.
5. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED AND ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS.
6. ALL DISTURBED AREAS (EXCEPT STABILIZED STONE AREAS) SHALL BE SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE AND AS SOON AS PHYSICALLY POSSIBLE.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES, AND CULVERTS. SILT BUILDUP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE TOWN.
8. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL FOLLOW THE REGULATIONS SET FORTH IN THE NYSDEC SPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.
ALL LOCAL ORDINANCES REGARDING THE SALE OF TOPSOIL MUST BE FOLLOWED. TOPSOIL MAY NOT BE REMOVED WITHOUT A PERMIT.

TION AND MAINTENANCE PROCEDURES

E CONTRACTOR SHALL BE RESPONSIBLE FOR ASSIGNING AN INDIVIDUAL TO BE RESPONSIBLE FOR THE INSPECTION D MAINTENANCE OF TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES. THE WORK MAY INCLUDE, Y NOT LIMITED TO THE FOLLOWING:

ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. AS DEEMED NECESSARY BY THE TOWN AND ENGINEER, REPAIRS SHALL BE COMPLETED WITHIN 24 HOURS OF BEING REPORTED.
CHECK AND REPAIR SILT FENCING AND EROSION CONTROL DEVICES, AS NECESSARY.
TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH AND REPAIRED AS NECESSARY.
NEIGHBORING ROADWAYS WILL BE MONITORED TO ENSURE THAT ANY TRACKED MUD, DIRT, OR ROCK IS SWEPT AS NECESSARY.

NOTES:

1. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THOSE ITEMS TO REMAIN, SUCH AS TREES, PROPERTY CORNER PINS, UTILITY POLES, VALVES, HYDRANTS, CURBS, MANHOLES, AND CATCH BASINS.
2. TEMPORARY SILT FENCE AND EROSION CONTROL DEVICES TO BE INSTALLED AS DIRECTED BY THE OWNERS FIELD REPRESENTATIVE. MAINTAIN UNTIL VEGETATION IS ESTABLISHED AND PAVEMENT IS INSTALLED.
3. THE CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE ACCESSING THE SITE FROM PAVED ROADWAYS.
4. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH NEW YORK STATE M.U.T.C.D. STANDARDS PRIOR TO STARTING WORK.

STABILIZATION PRACTICES FOR THIS SITE INCLUDE:

A. LAND CLEARING ACTIVITIES SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND SHALL PROGRESS AS EARTHWORK IS NEEDED.
B. USE OF STABILIZATION METHOD FOR ALL SLOPES HAVING A SLOPE GREATER THAN 1V:3H.
C. PERMANENT SEEDING AND PLANTING OF ALL UNPAVED AREAS USING THE HYDROMULCHING GRASS SEEDING TECHNIQUE.
D. MULCHING EXPOSED AREAS.
E. VEGETATION PRESERVATION IN UNDISTURBED AREAS.
F. FREQUENT WATERING TO MINIMIZE WIND EROSION DURING CONSTRUCTION.

A. FOR SITES WHERE 5 ACRES OR MORE ARE DISTURBED AT ANY ONE TIME: IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE THE SOIL DISTURBANCE ACTIVITY CEASED. THE SOIL STABILIZATION MEASURES SELECTED SHALL BE IN CONFORMANCE WITH THE MOST CURRENT VERSION OF THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.

B. THE OWNER OR OPERATOR SHALL PREPARE A PHASING PLAN THAT DEFINES MAXIMUM DISTURBED AREA PER PHASE AND SHOWS REQUIRED CUTS AND FILLS.

C. THE OWNER OR OPERATOR SHALL INSTALL ANY ADDITIONAL MEASURES NEEDED TO PROTECT WATER QUALITY.

112.2 STRUCTURAL PRACTICES

STRUCTURAL PRACTICES FOR THIS SITE INCLUDE:

A. INLET PROTECTION USING A METHOD DETAILED IN THE CONSTRUCTION DOCUMENTS.
B. PERIMETER PROTECTION USING TEMPORARY SILT FENCE/SILT SOCK OR SILT SOCK.
C. OUTLET PROTECTION USING RIPRAP STONE AND END SECTIONS.
D. STABILIZED CONSTRUCTION ENTRANCE.
E. TEMPORARY STONE WASH OFF AREAS.
F. STORM SEWER, CURB/GUTTER.

SEDIMENT TRAPS AND BASINS.

112.3 SEQUENCE OF MAJOR ACTIVITIES

THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING THE FOLLOWING EROSION CONTROL AND STORM WATER MANAGEMENT CONTROL MEASURES. THE CONTRACTOR MAY DESIGNATE THESE TASKS TO CERTAIN SUBCONTRACTORS AS HE SEES FIT, BUT THE ULTIMATE RESPONSIBILITY FOR IMPLEMENTING THESE CONTROLS AND ENSURING THEIR PROPER FUNCTIONING REMAINS WITH THE CONTRACTOR. THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

A. CONSTRUCT TEMPORARY CONSTRUCTION EXIT AT LOCATION SHOWN ON THE DEMOLITION & EROSION CONTROL PLAN SHEET.
B. INSTALL PERIMETER SILT FENCE/SILT SOCKS/SILT SOCK IN THE LOCATIONS SHOWN ON THE DEMOLITION & EROSION CONTROL PLAN SHEET.
C. CLEAR & GRUB SITE.
D. INSTALLATION OF DETENTION BASINS TO ACT AS SEDIMENT BASINS (DO NOT INSTALL BIORETENTION SOIL OR UNDERDRAINS UNTIL STABILIZED)
E. COMMENCE SITE GRADING.
F. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED.
G. FINALIZE PAVEMENT SUBGRADE PREPARATION.
H. CONSTRUCT ALL CURB, DRAINAGE INLETS, STORM SEWER PIPES AND STORM SEWER MANHOLES, AS SHOWN ON THE PLANS. INSTALL TEMPORARY INLET PROTECTION AT THE LOCATIONS OF ALL INLETS.
I. REMOVE INLET PROTECTION AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
J. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT.
K. CARRY OUT FINAL GRADING AND SEEDING AND PLANTING.
L. CLEAN STORM SYSTEM FOLLOWING CONSTRUCTION. CLEAN DETENTION BASINS OF ANY SILT AND RETURN TO DESIGN GRADES.
M. REMOVE SILT FENCING /SILT SOCK ONLY AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.

NOTE: SEDIMENT CONTROL STORAGE DURING CONSTRUCTION ITRAPS & BASINS DURING CONSTRUCTION SHALL BE 134 CY PER ACRE OF DISTURBANCE PER NYSDEC REQUIREMENTS.

TOWN OF AMHERST APPROVAL BOX:

REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Demolition & Erosion Control Plan

DRAWING NO.
C-0

Project no.: 2

Packet Pg. 1507

2.a

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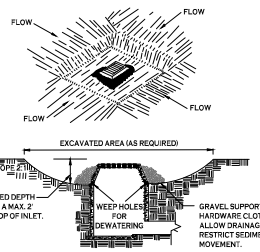
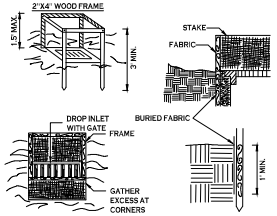


CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL, TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1
NOT TO SCALE

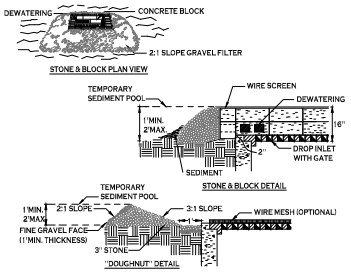


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2
NOT TO SCALE



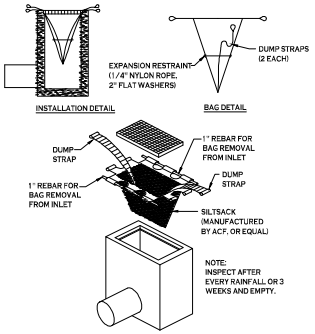
CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

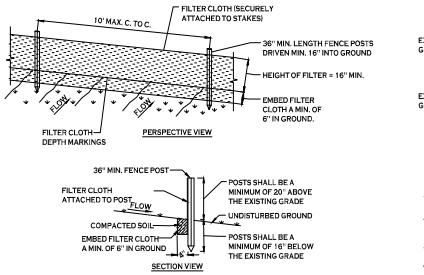
MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3
NOT TO SCALE

NOTE: INSTALL ONE OF THE INLET PROTECTION OPTIONS SHOWN PRIOR TO CONSTRUCTION



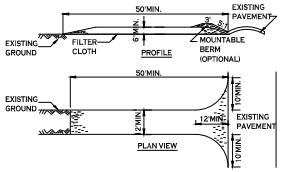
SILT SACK DETAIL
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

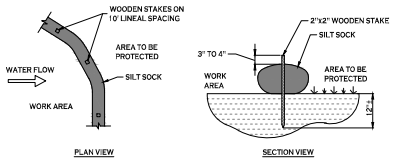
SILT FENCE DETAIL
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

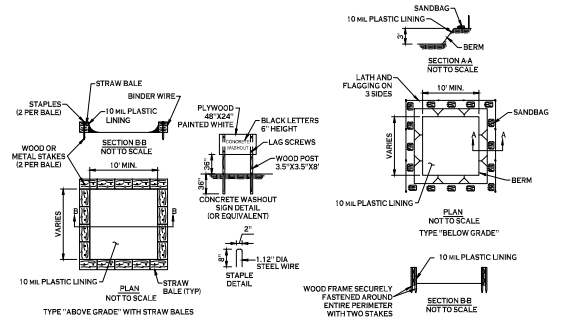


NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED ½ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK DETAIL
NOT TO SCALE



NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL
NOT TO SCALE

TOWN OF AMHERST APPROVAL BOX:

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487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Demolition & Erosion Control Details

DRAWING NO.
C-0
Project no.: 2

2.a

Packet Pg. 1508

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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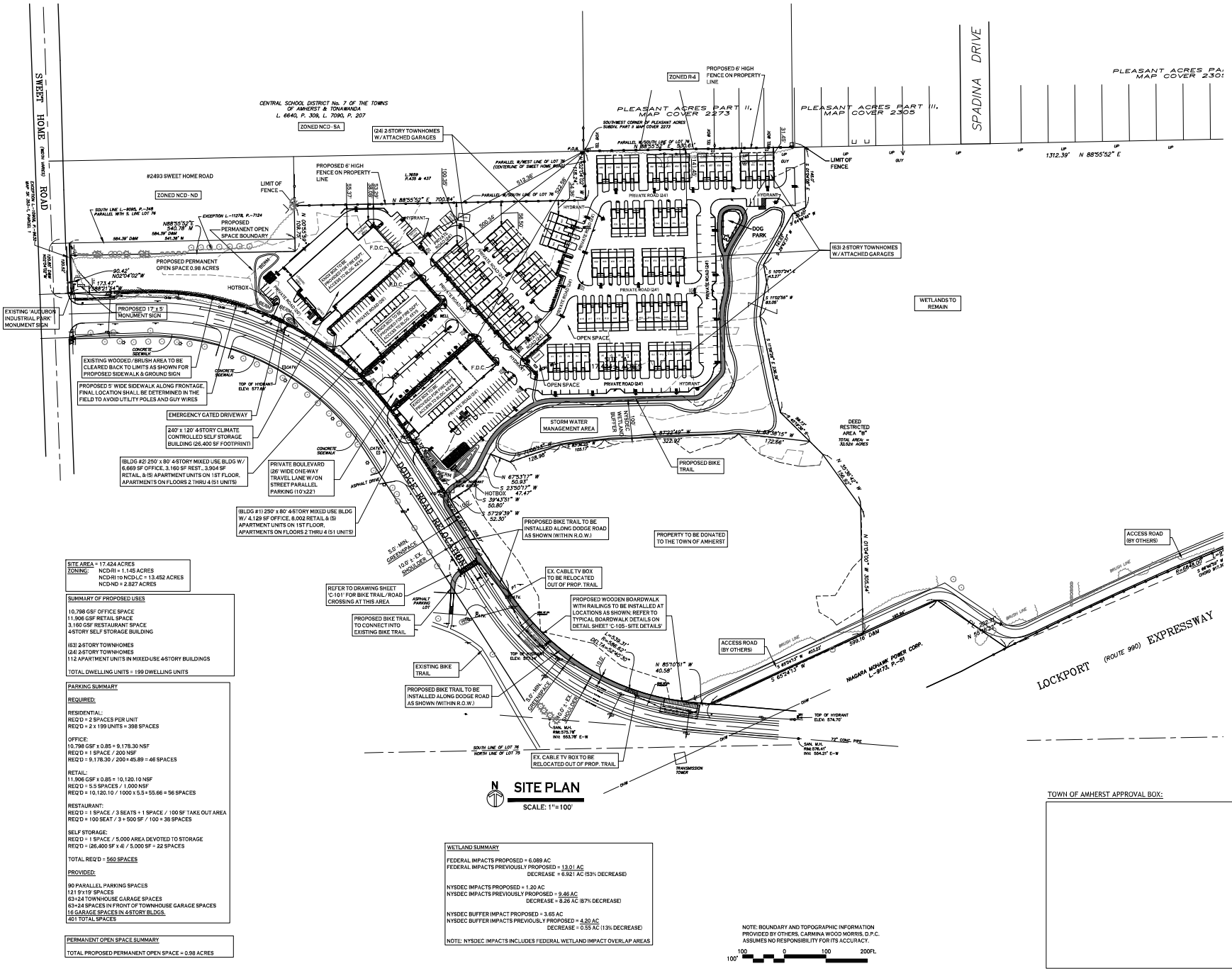
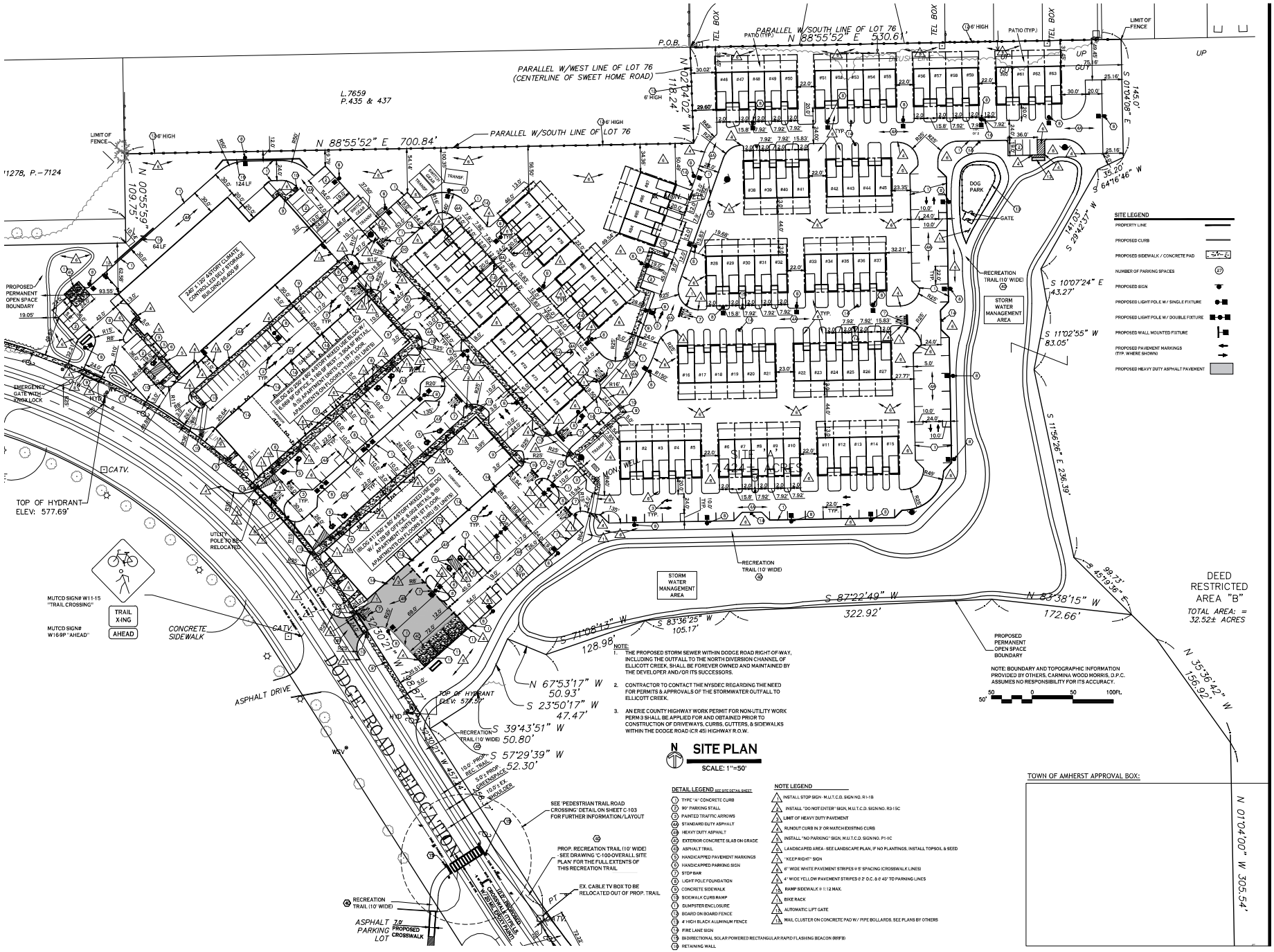

SWEET HOME ROAD (MAIN HIGHWAY)
#2493 SWEET HOME ROAD
CENTRAL SCHOOL DISTRICT No. 7 OF THE TOWN OF AMHERST & TONAWANDA L. 6640, P. 309, L. 7090, P. 207
ZONED NCD - SA
ZONED NCD - ND
ZONED R-4
(24) 2-STORY TOWNHOMES W/ ATTACHED GARAGES
(63) 2-STORY TOWNHOMES W/ ATTACHED GARAGES
PROPOSED 6' HIGH FENCE ON PROPERTY LINE
LIMIT OF FENCE
PLEASANT ACRES PART II, MAP COVER 2273
PLEASANT ACRES PART II, MAP COVER 2305
SPADINA DRIVE
PLEASANT ACRES PA MAP COVER 230
1312.39' N 88°55'52" E
N 88°55'52" E 700.84'
PROPOSED PERMANENT OPEN SPACE 0.98 ACRES
PROPOSED PERMANENT OPEN SPACE BOUNDARY
EXISTING 'AUDUBON INDUSTRIAL PARK' MONUMENT SIGN
PROPOSED 17' x 5' MONUMENT SIGN
EXISTING WOODED / BRUSH AREA TO BE CLEARED BACK TO LIMITS AS SHOWN FOR PROPOSED SIDEWALK & GROUND SIGN
PROPOSED 5' WIDE SIDEWALK ALONG FRONTAGE, FINAL LOCATION SHALL BE DETERMINED IN THE FIELD TO AVOID UTILITY POLES AND GUY WIRES
EMERGENCY GATED DRIVEWAY
240' x 120' 4-STORY CLIMATE CONTROLLED SELF STORAGE BUILDING (26,400 SF FOOTPRINT)
(BLDG #2) 250' x 80' 4-STORY MIXED USE BLDG W/ 6,669 SF OFFICE, 3,160 SF REST., 3,904 SF RETAIL, & (5) APARTMENT UNITS ON 1ST FLOOR, APARTMENTS ON FLOORS 2 THRU 4 (51 UNITS)
PRIVATE BOULEVARD (26' WIDE ONEWAY TRAVEL LANE W/ ON STREET PARALLEL PARKING (10'x22')
(BLDG #1) 250' x 80' 4-STORY MIXED-USE BLDG W/ 4,129 SF OFFICE, 8,002 RETAIL & (5) APARTMENT UNITS ON 1ST FLOOR, APARTMENTS ON FLOORS 2 THRU 4 (51 UNITS)
DODGE ROAD RELOCATION
PROPOSED BIKE TRAIL TO BE INSTALLED ALONG DODGE ROAD AS SHOWN (WITHIN R.O.W.)
REFER TO DRAWING SHEET 'C-101' FOR BIKE TRAIL/ROAD CROSSING AT THIS AREA
PROPOSED BIKE TRAIL TO CONNECT INTO EXISTING BIKE TRAIL
EXISTING BIKE TRAIL
PROPOSED BIKE TRAIL TO BE INSTALLED ALONG DODGE ROAD AS SHOWN (WITHIN R.O.W.)
EX. CABLE TV BOX TO BE RELOCATED OUT OF PROP. TRAIL
EX. CABLE TV BOX TO BE RELOCATED OUT OF PROP. TRAIL
PROPOSED WOODEN BOARDWALK WITH RAILINGS TO BE INSTALLED AT LOCATIONS AS SHOWN. REFER TO TYPICAL BOARDWALK DETAILS ON DETAIL SHEET 'C-105 - SITE DETAILS'
PROPERTY TO BE DONATED TO THE TOWN OF AMHERST
STORM WATER MANAGEMENT AREA
PROPOSED BIKE TRAIL
DEED RESTRICTED AREA "B" TOTAL AREA = 30.026 ACRES
WETLANDS TO REMAIN
OPEN SPACE
DOG PARK
PRIVATE ROAD (24')
HYDRANT
HOTBOX
F.D.C.
ACCESS ROAD (BY OTHERS)
NIAGARA MOHAWK POWER CORP. L.-9725, P.-51
LOCKPORT (ROUTE 990) EXPRESSWAY
TOP OF HYDRANT ELEV. 574.70'
72" CONC. PIPE
SAN. M.H. RIM 576.45' INV. 564.21' E-W
SAN. M.H. RIM 575.79' INV. 553.79' E-W
TRANSMISSION TOWER
SOUTH LINE OF LOT 76 NORTH LINE OF LOT 75
SOUTH LINE L.-9085, P.-348 PARALLEL WITH S. LINE LOT 76
EXCEPTION L.-11378, P.-7124
PARALLEL W/WEST LINE OF LOT 76 (CENTERLINE OF SWEET HOME ROAD)
PARALLEL W/SOUTH LINE OF LOT 76
SOUTHWEST CORNER OF PLEASANT ACRES SUBDIV. PART II MAP COVER 2273
P.O.B.
N 88°55'52" E 530.61'
N 88°55'52" E 540.78'
N 02°04'02" W 90.42'
S 88°27'14" W 173.47'
S 02°04'02" E 90.42'
N 88°55'52" E 584.39' D&M
541.39' M
513.39'
524.68'
100.00'
S 01°04'08" E 100.00'
S 88°55'52" W 700.84'
S 88°55'52" W 584.39' D&M
541.39' M
S 01°04'08" E 100.00'
N 01°04'08" W 100.00'
N 88°55'52" E 584.39'
S 01°04'08" E 100.00'
S 88°55'52" W 584.39'
N 01°04'08" W 100.00'
S 88°55'52" W 513.39'
N 01°04'08" W 100.00'
S 88°55'52" W 524.68'
N 01°04'08" W 100.00'
S 88°55'52" W 530.61'
N 01°04'08" W 100.00'
S 01°04'08" E



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REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/09/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

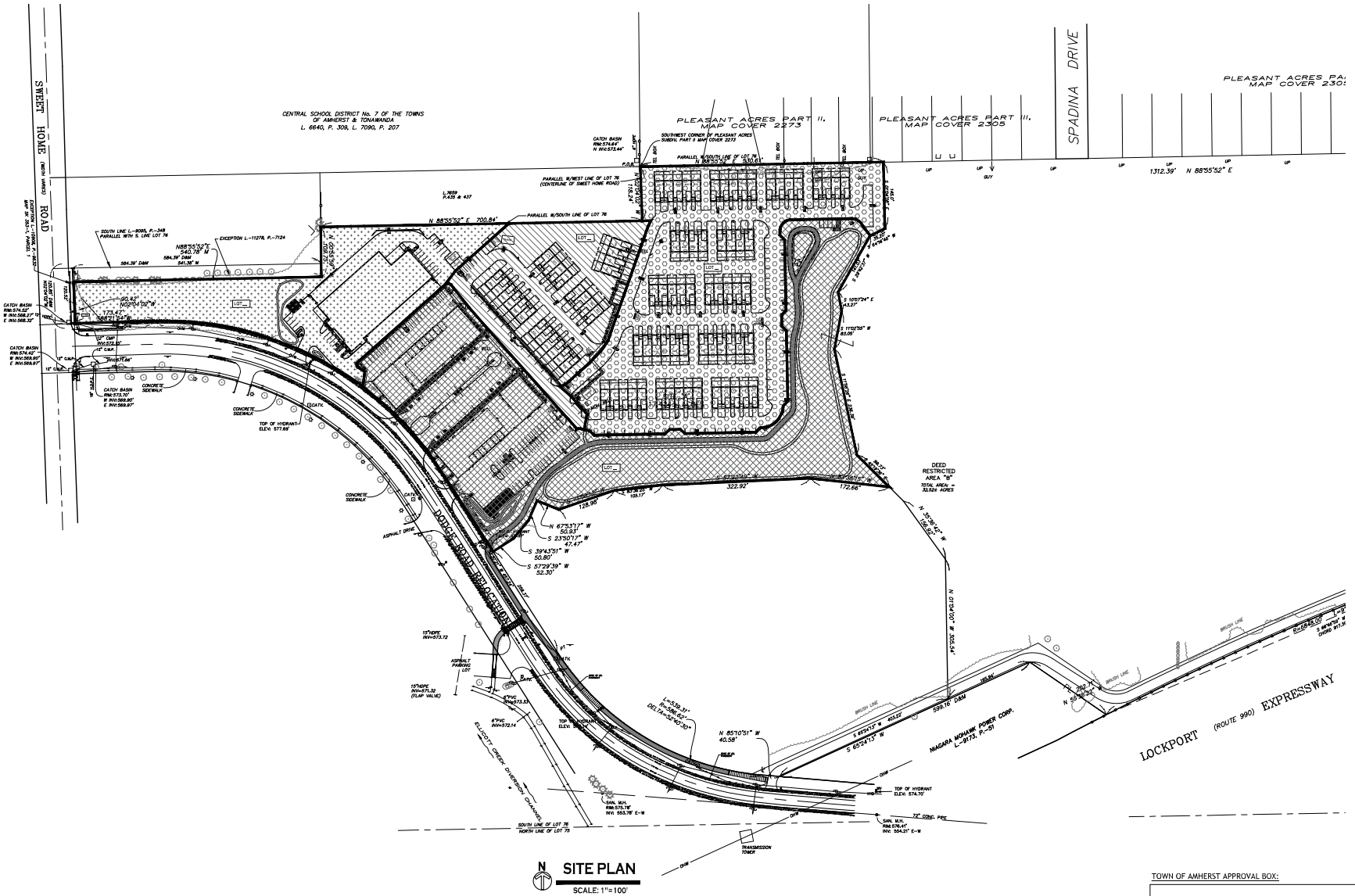
Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan

DRAWING NO.
C-1
Project no.: 2

Packet Pg. 1510

2.a



SITE PLAN
SCALE: 1"=100'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200FT.

TOWN OF AMHERST APPROVAL BOX:

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Buffalo, New York 14203
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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per town 07/29/22 comments	03/27/23
4	Plan rev. per 09/13/23 Fire Safety comments	03/27/23
5	Plan rev. per 10/20/23 Town comments	10/31/23
6	Plan revised per Town/Client comments	05/28/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Parcel Map

DRAWING NO.
C-1
Project no.: 2

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Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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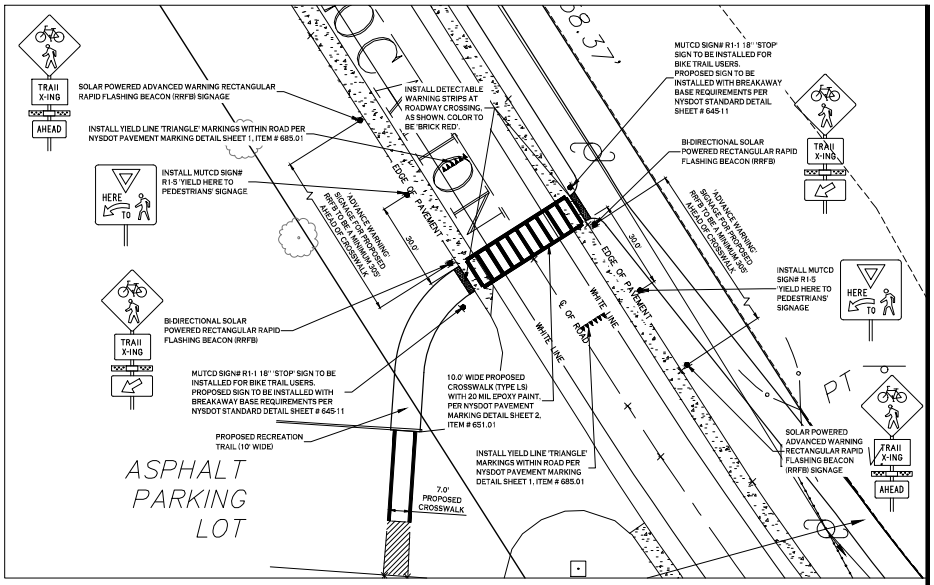
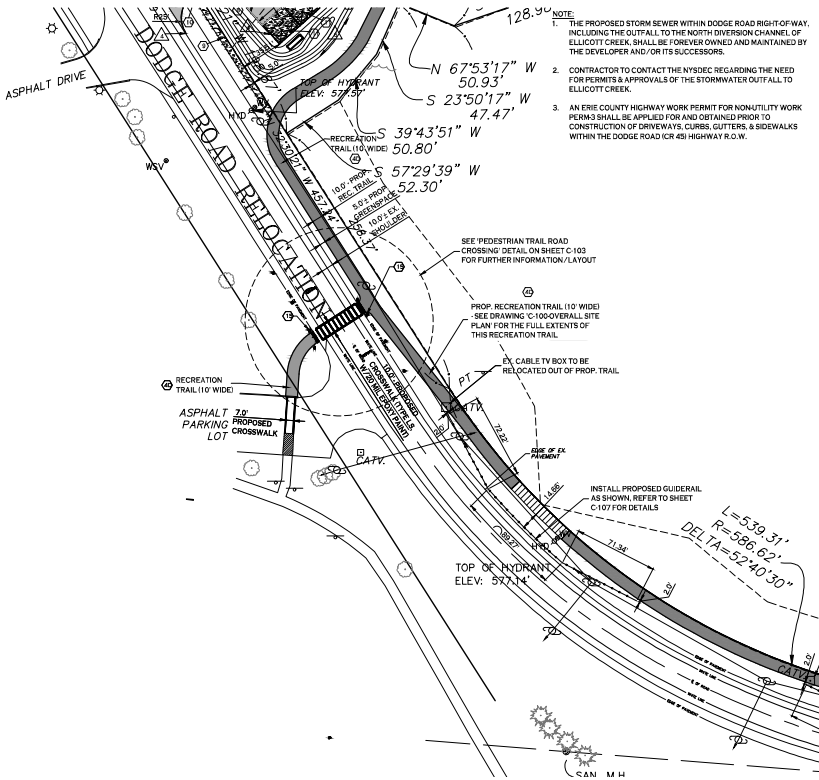


N **PEDESTRIAN TRAIL ROAD CROSSING**
SCALE: 1"=20'



NOTE:
1. THE PROPOSED STORM SEWER WITHIN DODGE ROAD RIGHT-OF-WAY, INCLUDING THE OUTFALL TO THE NORTH DIVERSION CHANNEL OF ELLICOTT CREEK, SHALL BE FOREVER OWNED AND MAINTAINED BY THE DEVELOPER AND/OR ITS SUCCESSORS.
2. CONTRACTOR TO CONTACT THE NYSDEC REGARDING THE NEED FOR PERMITS & APPROVALS OF THE STORMWATER OUTFALL TO ELLICOTT CREEK.
3. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR NON-UTILITY WORK PERM-3 SHALL BE APPLIED FOR AND OBTAINED PRIOR TO CONSTRUCTION OF DRIVEWAYS, CURBS, GUTTERS, & SIDEWALKS WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

DETAIL LEGEND SEE SITE DETAIL SHEET
1. TYPE "A" CONCRETE CURB
2. 90° PARKING STALL
3. PAINTED TRAFFIC ARROWS
4A. STANDARD DUTY ASPHALT
4B. HEAVY DUTY ASPHALT
4C. EXTERIOR CONCRETE SLAB ON GRADE
4D. ASPHALT TRAIL
5. HANDICAPPED PAVEMENT MARKINGS
6. HANDICAPPED PARKING SIGN
7. STOP BAR
8. LIGHT POLE FOUNDATION
9. CONCRETE SIDEWALK
10. SIDEWALK CURB RAMP
11. DUMPSTER ENCLOSURE
12. BOARD ON BOARD FENCE
13. 4' HIGH BLACK ALUMINUM FENCE
14. FIRE LANE SIGN
15. BI-DIRECTIONAL SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB)
16. RETAINING WALL

NOTE LEGEND
1. INSTALL STOP SIGN - M.U.T.C.D. SIGN NO. R1-1 B
2. INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R3-1 SC
3. LIMIT OF HEAVY DUTY PAVEMENT
4. RUNOUT CURB IN 3' OR MATCH EXISTING CURB
5. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1 C
6. LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
7. "KEEP RIGHT" SIGN
8. 6" WIDE WHITE PAVEMENT STRIPES @ 0' SPACING (CROSSWALK LINES)
9. 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & @ 45° TO PARKING LINES
10. RAMP SIDEWALK @ 1:12 MAX.
11. BIKE RACK
12. AUTOMATIC LIFT GATE
13. MAIL CLUSTER ON CONCRETE PAD W/ PIPE BOLLARDS, SEE PLANS BY OTHERS

SITE LEGEND
- PROPERTY LINE
- PROPOSED CURB
- PROPOSED SIDEWALK / CONCRETE PAD
- NUMBER OF PARKING SPACES (27)
- PROPOSED SIGN
- PROPOSED LIGHT POLE W/ SINGLE FIXTURE
- PROPOSED LIGHT POLE W/ DOUBLE FIXTURE
- PROPOSED WALL MOUNTED FIXTURE
- PROPOSED PAVEMENT MARKINGS (TYP. WHERE SHOWN)
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT

N **SITE PLAN**
SCALE: 1"=50'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.
50' 0 50 100FT.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.
20' 0 20 40FT.

TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan rev. per 04/19/24 Passero comments	04/19/24
2	Plan rev. per 04/29/24 ECDPW comments	04/29/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan
Roadway & Bike Path Area

DRAWING NO.
C-1[illegible]

Project no.: 2[illegible]

Packet Pg. 1512

2.a

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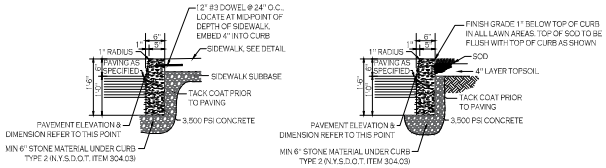
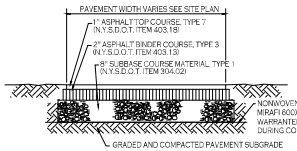


ABUTTING SIDEWALK

ABUTTING LANDSCAPE/GRASS

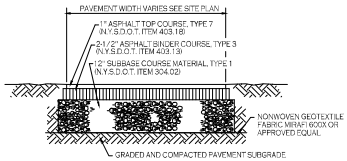
NOTES:
1. CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. WHERE THE CURB DROPS (IS FLUSH WITH ASPHALT) THE DEPTH OF CURB BELOW GRADE SHALL BE INCREASED TO 1'-6" AND OTHER DIMENSIONS ADJUSTED ACCORDINGLY.

TYPE "A" CONCRETE CURB - 1



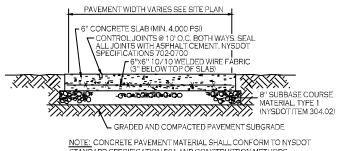
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION - 4A



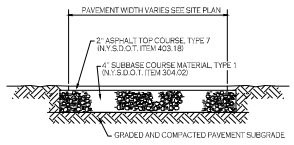
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

HEAVY DUTY ASPHALT SECTION - 4B



NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

EXTERIOR CONCRETE SLAB-ON-GRADE SECTION - 4C

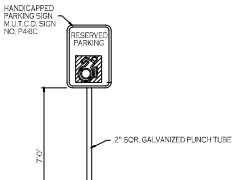


NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

ASPHALT TRAIL SECTION - 4D

HANDICAPPED PARKING SIGN - 6

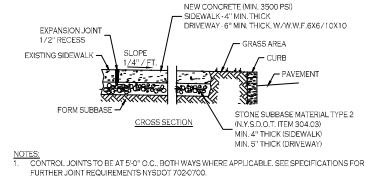
INSTALLED IN PAVEMENT



NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

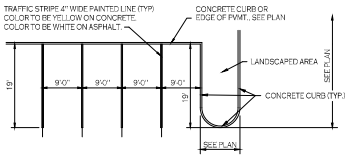
HANDICAP PARKING SIGNS - 6

INSTALLED IN GRASS/LANDSCAPED AREA

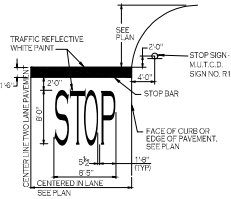


NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTH WAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.
3. SUBBASE GRADE SHALL FOLLOW THE PROPOSED GRADE OF THE SIDEWALK AND SLOPE AWAY FROM BUILDING WHERE APPLICABLE, PROVIDE CONTINUOUS STONE PATH TO CURB UNDERDRAIN WHERE PROVIDED.
4. FULL DEPTH EXPANSION JOINTS SHALL BE INSTALLED EVERY 20' O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
5. SEE CURB DETAIL FOR DOWLING REQUIREMENTS WHERE ABUTTING CURB.
6. INSTALL 6' LONG #3 DOWELS @ 12" O.C. WHERE SIDEWALK ABUTS A BUILDING WALL AT AN ENTRANCE, THICKEN SIDEWALK TO 6" AT BUILDING WALL AND INSTALL DOWEL, CENTERED IN THE 6" DEPTH. DOWELS AND THICKENING OF SIDEWALK SHALL EXTEND 18" EITHER SIDE OF ENTRANCE.
7. INSTALL 1/2" PREMOLDED EXPANSION JOINT WITH BACKER ROD & SEALANT WHERE SIDEWALK ABUTS BUILDING OR OTHER STRUCTURE.

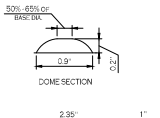
CONCRETE SIDEWALK - 9



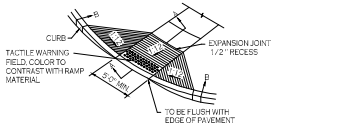
90° PARKING STALL LAYOUT - 2



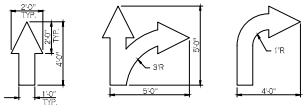
STOP BAR DETAIL - 7



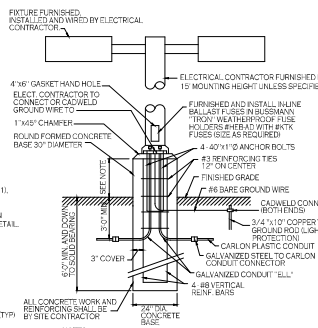
NOTE: TACTILE WARNING DEVICES SHALL BE PER ICC/ANSI A117.1-1998, SECTION 705.3.1.2 OR CURRENT UPDATE.



SIDEWALK CURB RAMP - 10



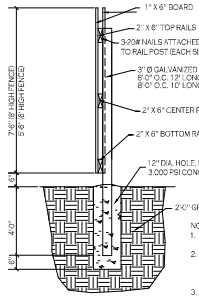
PAINTED TRAFFIC ARROWS - 3



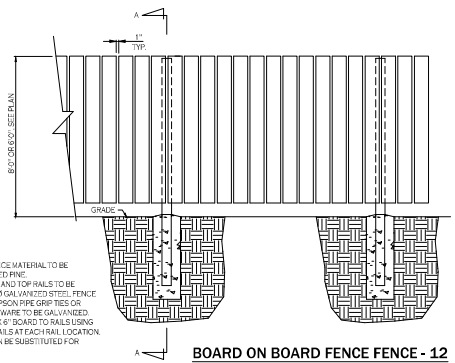
NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
   IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
   IN PAVEMENT: 3" ABOVE GRADE
   IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION - 8

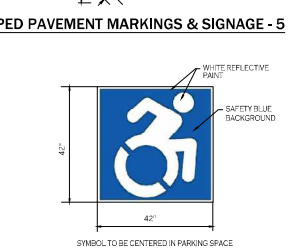
USE FOR 15' MOUNTING HEIGHT L.E.D. FIXTURES



NOTES:
1. ALL WOODEN FENCE MATERIAL TO BE PRESSURE TREATED PINE.
2. CENTER, BOTTOM AND TOP RAILS TO BE FASTENED TO 3" Ø GALVANIZED STEEL FENCE POSTS USING SIMPSON PIPE GRIP TIES OR EQUAL. ALL HARDWARE TO BE GALVANIZED.
3. ATTACH EACH 1" X 6" BOARD TO RAILS USING (3) GALVANIZED NAILS AT EACH RAIL LOCATION.
4. WOOD POSTS CAN BE SUBSTITUTED FOR STEEL.



BOARD ON BOARD FENCE FENCE - 12



HANDICAPPED PAVEMENT MARKINGS & SIGNAGE - 5

SYMBOL TO BE CENTERED IN PARKING SPACE

INTERNATIONAL HANDICAP SYMBOL - 5A



INSTALLATION

1) SIGNS SHALL BE LOCATED ON THE RIGHT SIDE OF THE ROADWAY FACING APPROACHING TRAFFIC.
2) SIGNS SHALL BE INSTALLED APPROXIMATELY TWO FEET OFF OF PAVEMENT EDGE OR FACE OF CURB.
3) THE HEIGHT OF THE SIGN SHALL BE A MINIMUM OF SEVEN (7) FEET, MEASURED FROM THE BOTTOM OF THE SIGN TO THE GROUND.
4) ALL SIGNS SHALL BE INSTALLED FACING TRAFFIC AT AN ANGLE OF BETWEEN 30 AND 45 DEGREES WITH A LINE PARALLEL TO THE FLOW OF TRAFFIC. THE SIGN LEGENDS SHALL INCLUDE SINGLE HEADED ARROWS POINTING IN THE DIRECTION OF THE REGULATION IF THE SIGNS ARE AT THE END OF THE ZONE, OR DOUBLE HEADED ARROWS POINTING IN BOTH DIRECTIONS IF THE SIGNS ARE AT INTERMEDIATE POINTS WITHIN A ZONE.
5) BUILDING MOUNT WHERE REQUIRED @ 50' O.C.

FIRE LANE SIGN - 14

TOWN OF AMHERST APPROVAL BOX:

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487 Main Street Suite 600
Buffalo, New York 14203
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F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-1[illegible]

Project no.: 2[illegible]

Packet Pg. 1513

2.a

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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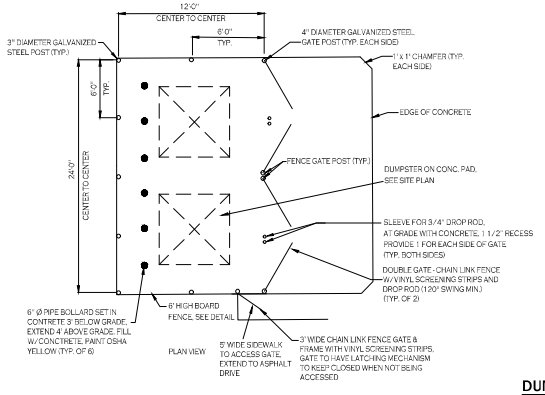
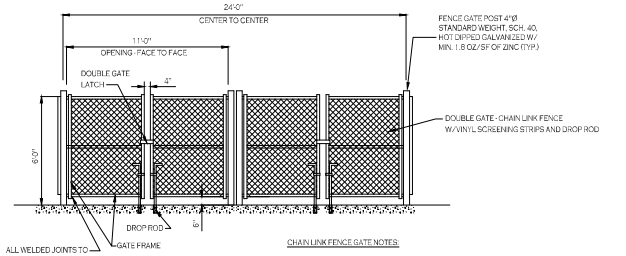
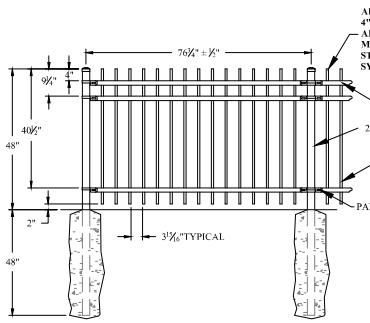




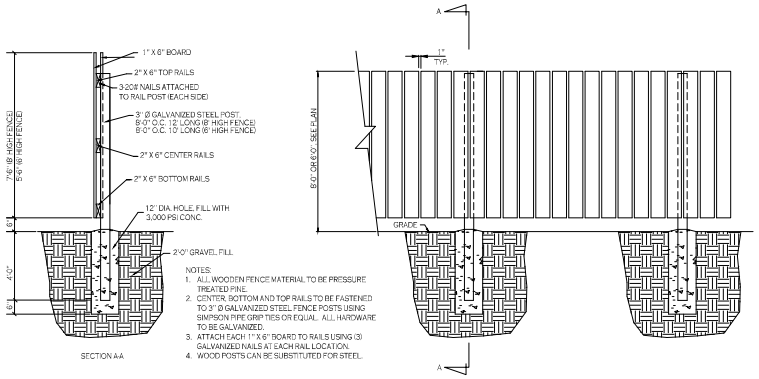
CHAIN LINK FENCE GATE NOTES:

1. GATE POST FOOTINGS TO BE MIN. 36" DEEP x (4x) POST DIAMETER. EXTEND POST TO WITHIN 6" OF BOTTOM.
2. GATE FRAMES TO BE 2" SQ. GALVANIZED STEEL, WEIGHING 2.60 LB./FT IN ACCORDANCE WITH ASTM F 900.
3. CHAIN LINK FENCE FABRIC SHALL BE 2" MESH, 9 GAUGE, ZINC COATED STEEL CORE WIRE. INSTALL MESH WITH HOOK BOLTS AND TENSION BARS ON ALL 4 SIDES. ATTACH AT 15" MAX.
4. DOUBLE GATE LATCH TO BE FORKED TYPE CAPABLE OF RETAINING GATE IN CLOSED POSITION AND HAVE PROVISION FOR PAD LOCK. LATCH SHALL BE OPERABLE FROM EITHER SIDE OF GATE.
5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED STEEL TO SUIT GATE SIZE.

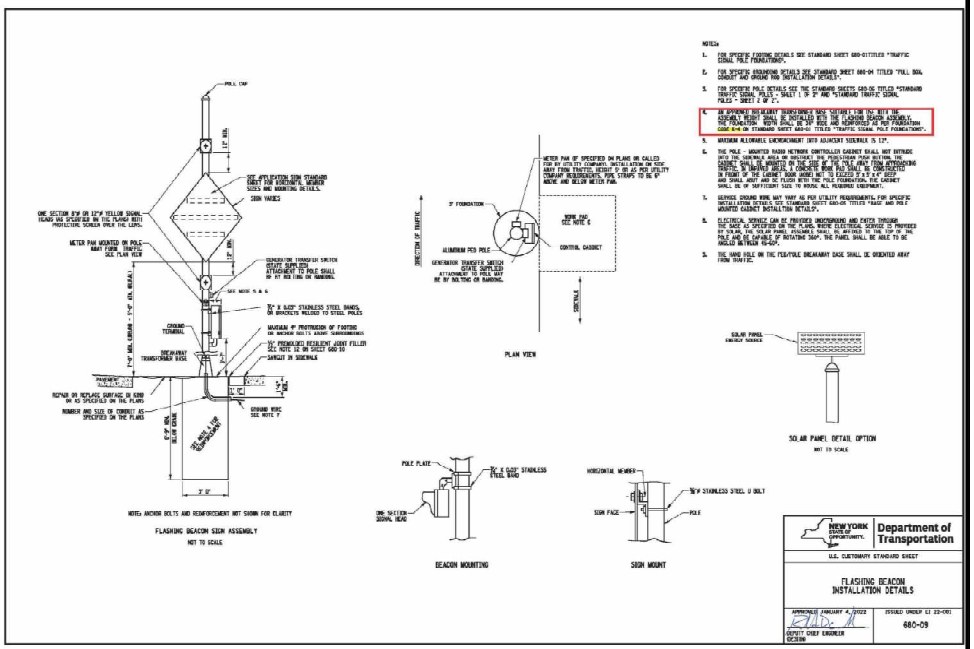
DUMPSTER ENCLOSURE - 11

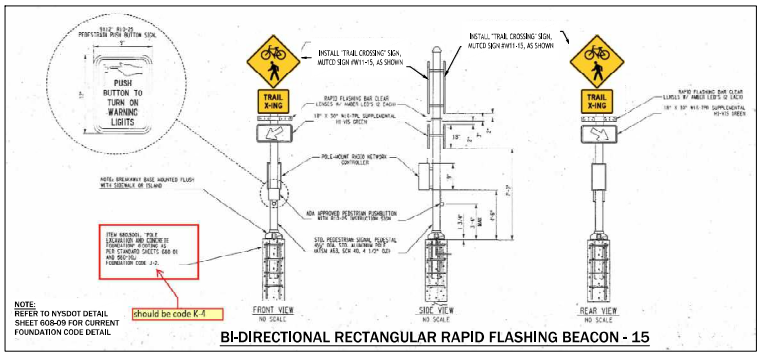


4' HIGH BLACK ALUMINUM FENCE - 13



BOARD ON BOARD FENCE FENCE - FOR DUMPSTER ENCLOSURE





BI-DIRECTIONAL RECTANGULAR RAPID FLASHING BEACON - 15

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22
3	Rev. per ECDPW 03/28/24 Comments	04/02/24
4	Plan rev.: per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-1
Project no.: 2

Packet Pg. 1514

2.a

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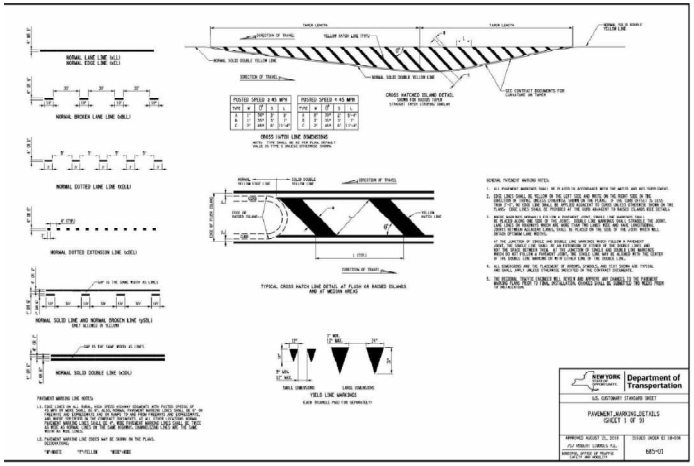
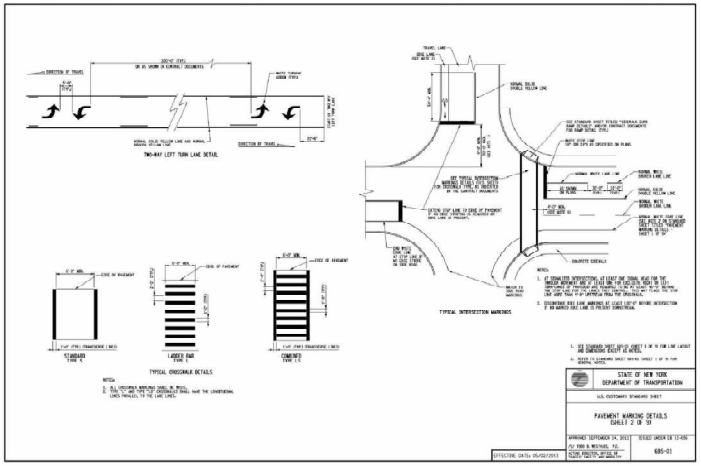
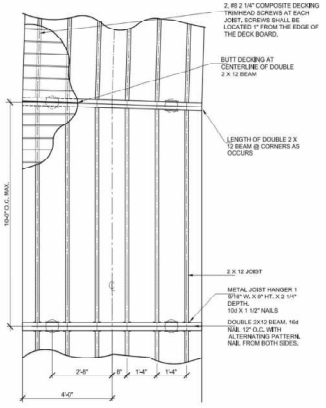
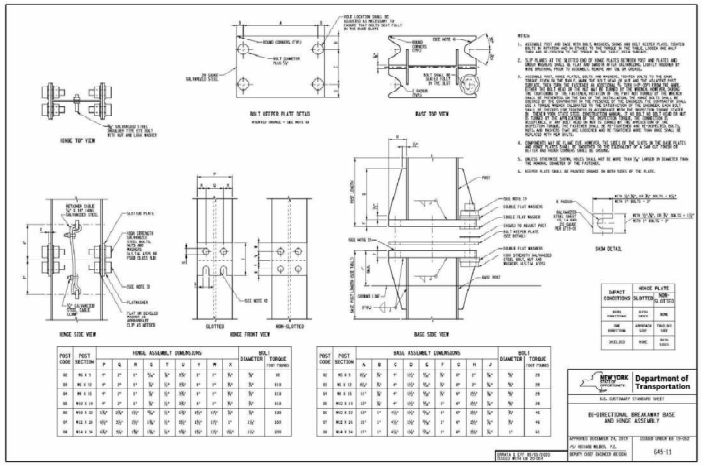
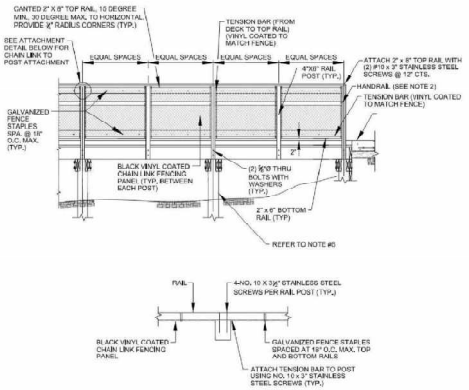






BOARDWALK FRAMING PLAN

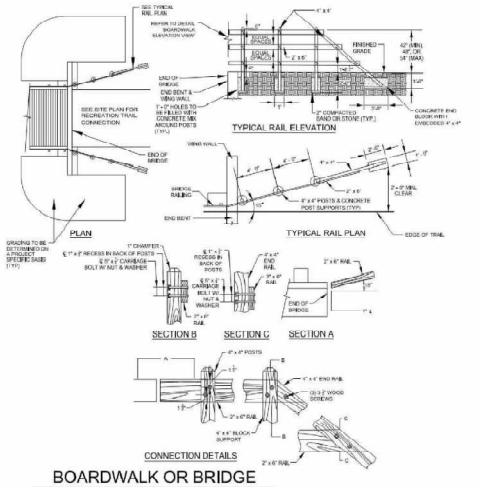




ATTACHMENT DETAIL

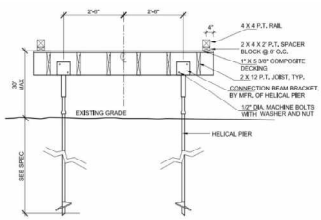
TYPICAL BOARDWALK RAILING ELEVATION VIEW

NOTES:
1. THE MINIMUM HEIGHT OF BRIDGE/BOARDWALK RAILING SHALL BE 42", UNLESS OTHERWISE NOTED, THE HEIGHT CAN RANGE BETWEEN 42", 45", OR 54".
2. A GRIPABLE, ROUND RAIL THAT WILL ACT AS BOTH A RUB RAIL AND HANDRAIL SHALL ONLY BE REQUIRED WHEN GRADES ARE GREATER THAN 5%, REFER TO DETAIL GW-3034 FOR BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT.
3. UTILIZE DETAIL GW-3034 "BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT" AS A TYPICAL RAIL ATTACHMENT DETAIL FOR HORIZONTAL RAILS TO RAIL POST CONNECTIONS.
4. BLACK VINYL COATED CHAIN LINK FENCE AND TENSION TIES SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
5. SPAN LENGTHS, JOIST SPACING, SIZING OF MEMBERS, REINFORCED CONCRETE DECK, AND OTHER DESIGN SPECIFICS SHALL BE DETERMINED BY THE ENGINEER ON A PROJECT SPECIFIC BASIS.
6. FOUNDATION SHALL CONSIST OF DRIVEN PILES, AUGURED PILES, HELICAL PIERS, OR OTHER APPLIED FOUNDATION SYSTEM, SPECIFICS SUCH AS NUMBER OF PILES, SPACING, AND HEIGHT SHALL BE DETERMINED BY ENGINEER ON A PROJECT SPECIFIC BASIS BASED ON REQUIRED LOADING.



BOARDWALK OR BRIDGE TIMBER APPROACH RAILING

NOTES:
1. THE LENGTH OF THE APPROACH RAILING SHALL VARY DEPENDING ON SITE CONDITIONS.
2. THE LATERAL OFFSET OF THE RAILING SHOULD BE AT LEAST 1 FOOT FROM THE EDGE OF PATH, THE ENDS OF THE RAILING SHOULD BE FLARED AWAY FROM THE PATH EDGE.
3. THE APPROACH RAILING HEIGHT SHALL MATCH THE HEIGHT OF THE BRIDGE OR BOARDWALK RAILING UNLESS OTHERWISE NOTED. THE RAILING HEIGHT WILL BE 42" (MIN), 45", OR 54" (MAX),
4. ALL CONCRETE FOOTERS AND END BLOCKS SHALL BE 3000 PSI MIN.



BOARDWALK SECTION

NOTES:
1. PROVIDE FULL EROSION AND SEDIMENTATION CONTROLS AROUND ALL CONSTRUCTION AREAS.
2. BOARDWALK ELEVATION VARIES.
3. CALCULATIONS FOR ALL PERIPILE DESIGN DEPTHS BASED ON GEOTECHNICAL ANALYSIS TEST RESULTS. CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AND PAYING FOR GEOTECHNICAL DESIGN SERVICES.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per Amherst T.S.B. 03/07/24 Comments	03/13/24
2	Rev. per ECDPW 03/28/24 Comments	04/02/24
3	Plan rev. per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-1[illegible]

Project no.: 2[illegible]

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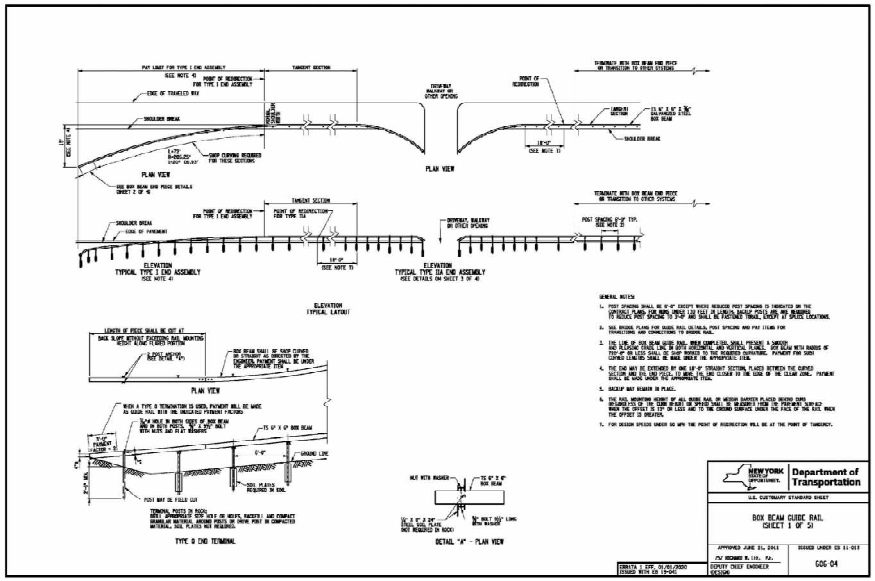
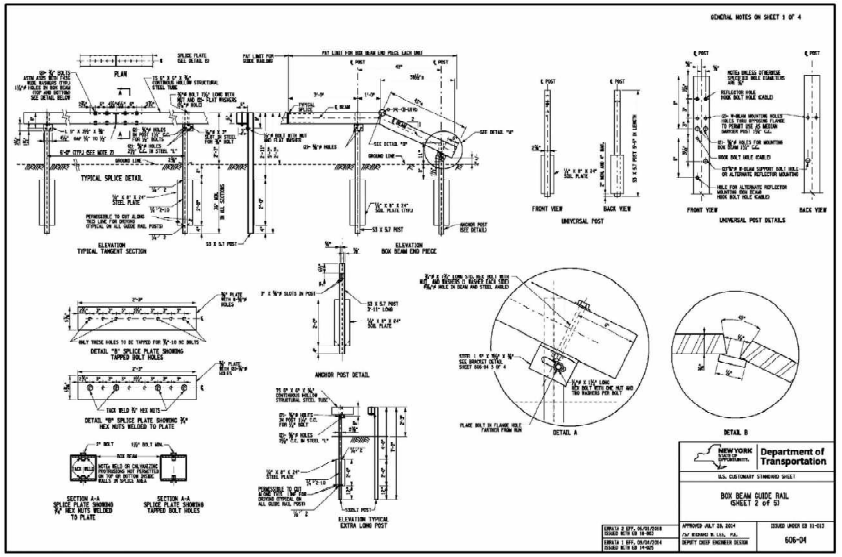
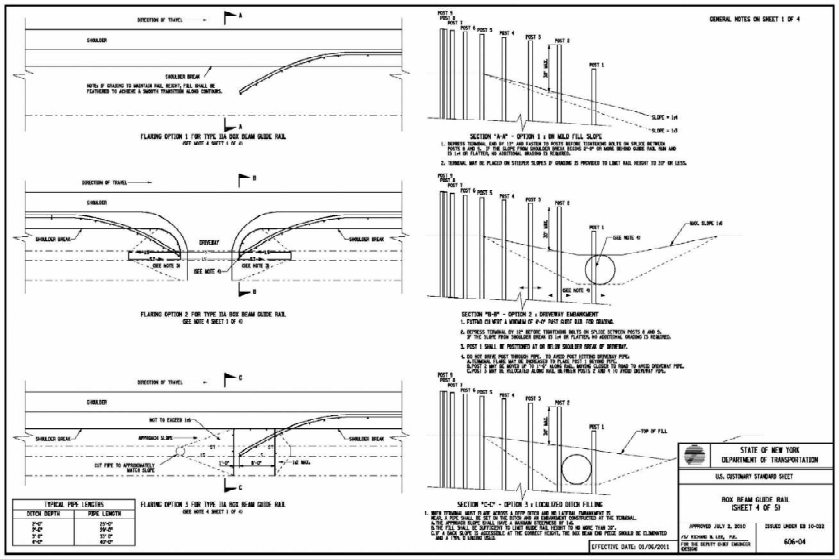
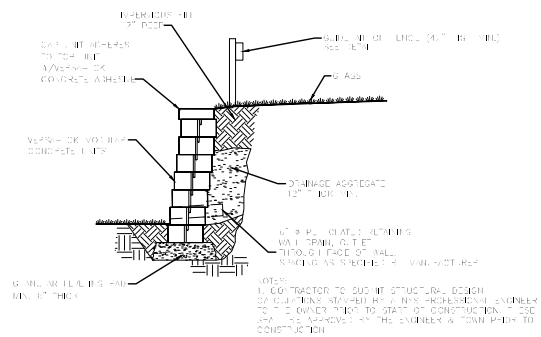
2.a

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)









TYPICAL SECTION-UNREINFORCED RETAINING WALL

SCALE: NONE

UNREINFORCED WALLS SHALL BE USED UP TO A HEIGHT OF 4' ABOVE GRADE

RETAINING WALL - 16

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris PC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan rev. per 03/28/24 ECDPW comments	04/02/24
2	Plan rev. per 04/19/24 Passero comments	04/19/24
3	Plan rev. per 04/29/24 ECDPW comments	04/29/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Details

DRAWING NO.

C-1

Project no.: 2

2.a

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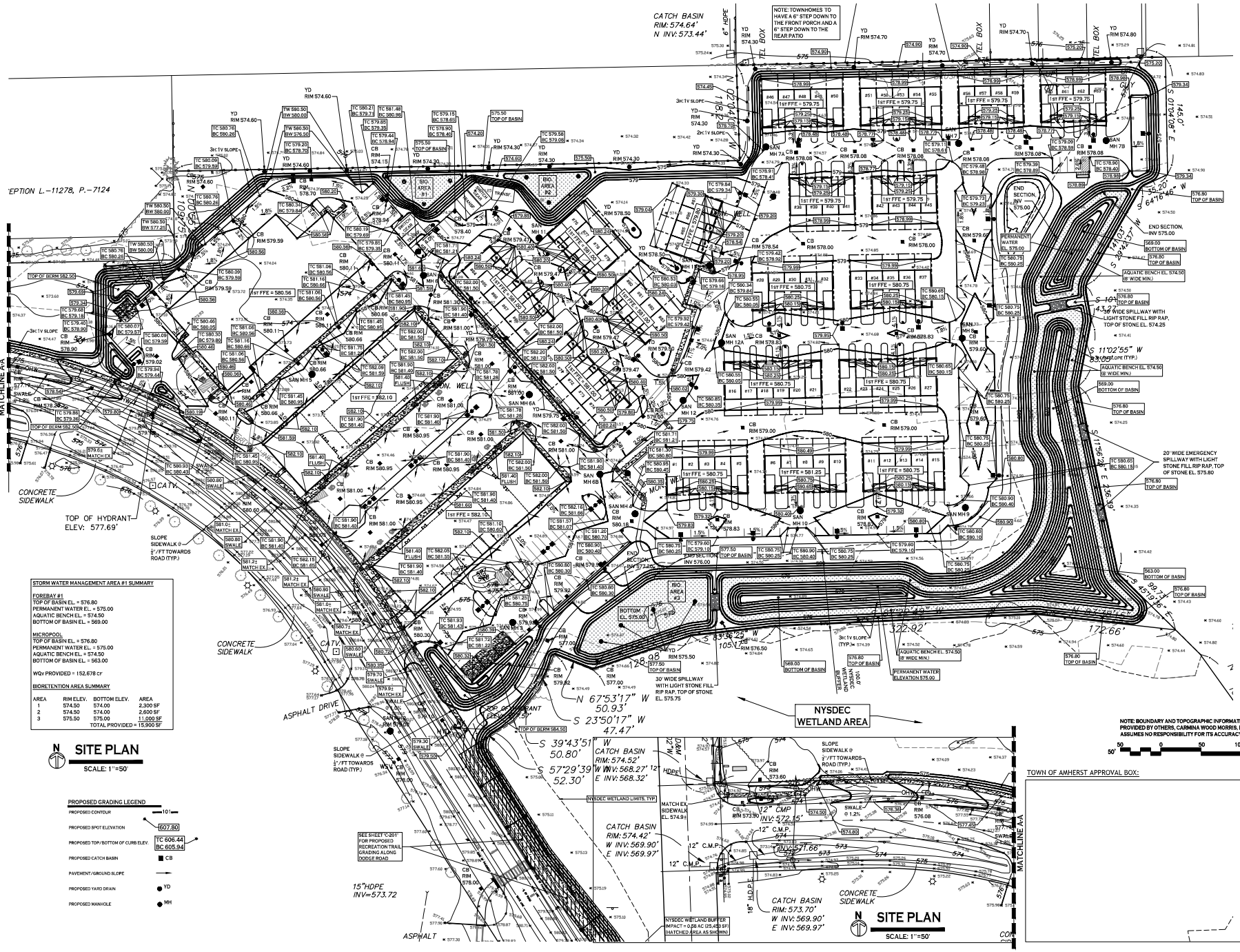
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)


CATCH BASIN
RIM: 574.64'
N INV: 573.44'
NOTE: TOWNHOMES TO HAVE A 6" STEP DOWN TO THE FRONT PORCH AND A 6" STEP DOWN TO THE REAR PATIO
N 22°04'18" W
145.01'
S 10°04'08" E
145.01'
S 64°16'46" W
35.20'
S 20°43'37" W
141.03'
S 11°02'55" W
143.22'
S 11°56'26" E
236.30'
S 83°36'25" W
105.98'
N 67°53'17" W
50.93'
S 23°50'17" W
47.47'
S 39°43'51" W
50.80'
S 57°29'39" W
52.30'
S 32°09'16" E
172.66'
S 32°09'16" E
332.92'
CONCRETE SIDEWALK
ASPHALT DRIVE
TOP OF HYDRANT ELEV: 577.69'
SLOPE SIDEWALK @ ¼"/FT TOWARDS ROAD (TYP.)
30' WIDE SPILLWAY WITH LIGHT STONE FILL RIP RAP, TOP OF STONE EL. 575.75
20' WIDE EMERGENCY SPILLWAY WITH LIGHT STONE FILL RIP RAP, TOP OF STONE EL. 575.80
14' WIDE SPILLWAY WITH LIGHT STONE FILL RIP RAP, TOP OF STONE EL. 574.25
NYSDEC WETLAND AREA
NYSDEC WETLAND LIMITS, TYP.
NYSDEC WETLAND BUFFER IMPACT = 0.08 AC (25,453 SF) HATCHED AREA AS SHOWN
SEE SHEET C-201 FOR PROPOSED RECREATION TRAIL GRADING ALONG DODGE ROAD
15"HDPE INV=573.72
12" CMP INV: 572.15'
12" C.M.P. 574
INV:571.66
18" H.D.P.E.
CATCH BASIN RIM: 574.52' W INV: 568.27' E INV: 568.32'
CATCH BASIN RIM: 574.42' W INV: 569.90' E INV: 569.97'
CATCH BASIN RIM: 573.70' W INV: 569.90' E INV: 569.97'
MATCHLINE A-A
TOP OF BERM 584.50
BOTTOM EL. 575.00
PERMANENT WATER ELEVATION 575.00
AQUATIC BENCH EL. 574.50 (8' WIDE MIN.)
BOTTOM OF BASIN 569.00
TOP OF BASIN 576.80
END SECTION, INV 575.00
END SECTION, INV 576.00
END SECTION, INV 577.26
BOTTOM OF BASIN 563.00
TOP OF BASIN 576.80
1st FFE = 579.75
1st FFE = 580.75
1st FFE = 582.10
1st FFE = 580.25
1st FFE = 581.25
1st FFE = 580.75
1st FFE = 580.75
1st FFE = 580.75

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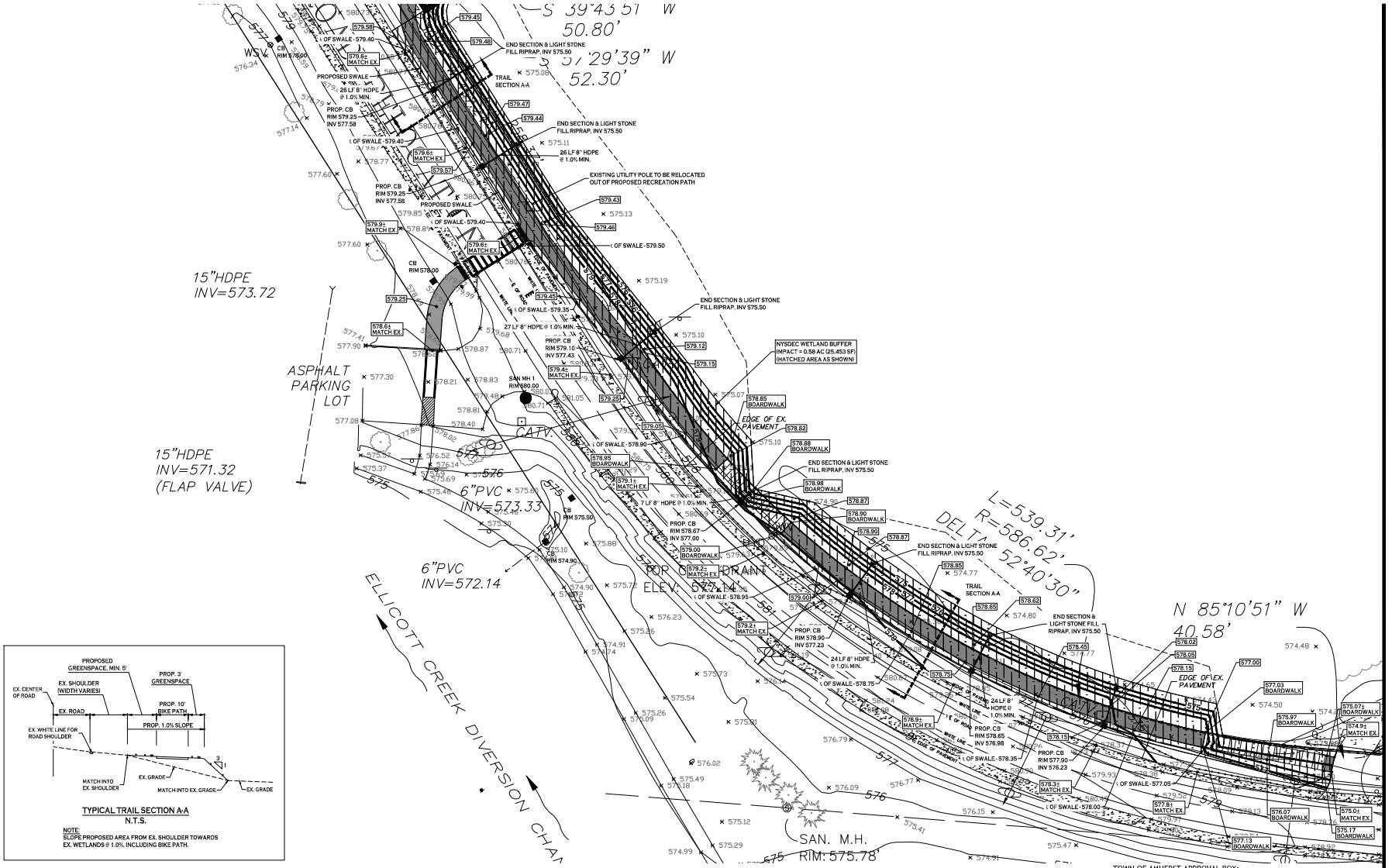

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487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Grading Plan - Recreation Trail

DRAWING NO.
C-2
Project no.: 2

2.a

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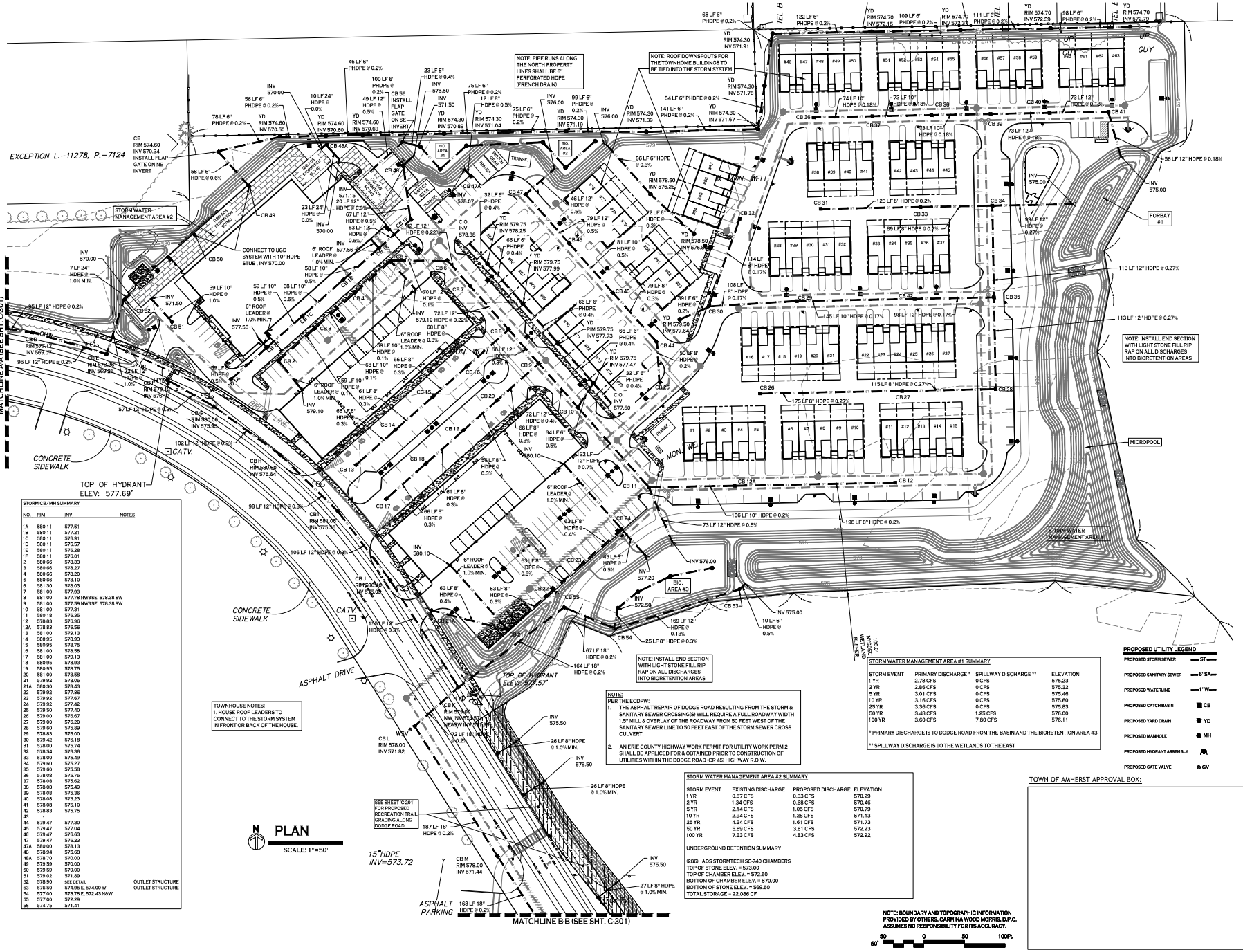

STORM CB/MH SUMMARY

NO.	RIM	INV	NOTES
1A	580.11	577.51	
1B	580.11	577.21	
1C	580.11	576.91	
1D	580.11	576.57	
1E	580.11	576.28	
1F	580.11	576.01	
2	580.66	578.33	
3	580.66	578.27	
4	580.66	578.20	
5	580.66	578.10	
6	581.30	578.03	
7	581.00	577.93	
8	581.00	577.78 NW&SE, 578.38 SW	
9	581.00	577.59 NW&SE, 578.38 SW	
10	581.00	577.31	
11	580.19	576.35	
12	579.83	576.96	
12A	579.83	576.56	
13	581.00	579.13	
14	580.95	578.93	
15	580.95	578.79	
16	581.00	578.58	
17	581.00	578.13	
18	580.95	578.93	
19	580.95	578.75	
20	581.00	578.59	
21	579.92	578.05	
21A	580.30	578.43	
22	579.92	577.86	
23	579.92	577.67	
24	579.92	577.42	
25	579.50	577.40	
26	579.00	576.67	
27	579.00	576.20	
28	579.80	575.89	
29	578.83	576.00	
30	579.42	576.18	
31	578.00	575.74	
32	578.04	576.36	
33	578.00	575.49	
34	579.80	575.27	
35	579.80	575.58	
36	578.08	575.75	
37	578.08	575.62	
38	578.08	575.49	
39	578.08	575.36	
40	578.08	575.23	
41	578.08	575.10	
42	578.83	575.75	
43			
44	579.47	577.30	
45	579.47	577.04	
46	579.47	576.63	
47	579.47	576.23	
47A	580.00	578.13	
48	578.94	575.68	
48A	578.70	570.00	
49	579.59	570.00	
50	579.59	570.00	
51	579.02	571.89	
52	578.90	SEE DETAIL	OUTLET STRUCTURE
53	576.50	574.95 E, 574.00 W	OUTLET STRUCTURE
54	577.00	573.78 E, 572.43 N&W	
55	577.00	572.29	
56	574.75	571.41	

STORM WATER MANAGEMENT AREA #1 SUMMARY

STORM EVENT	PRIMARY DISCHARGE *	SPILLWAY DISCHARGE **	ELEVATION
1 YR	2.78 CFS	0 CFS	575.23
2 YR	2.86 CFS	0 CFS	575.32
5 YR	3.01 CFS	0 CFS	575.46
10 YR	3.16 CFS	0 CFS	575.60
25 YR	3.36 CFS	0 CFS	575.83
50 YR	3.48 CFS	1.25 CFS	576.00
100 YR	3.60 CFS	7.80 CFS	576.11

* PRIMARY DISCHARGE IS TO DODGE ROAD FROM THE BASIN AND THE BIORETENTION AREA #3

** SPILLWAY DISCHARGE IS TO THE WETLANDS TO THE EAST

STORM WATER MANAGEMENT AREA #2 SUMMARY

STORM EVENT	EXISTING DISCHARGE	PROPOSED DISCHARGE	ELEVATION
1 YR	0.87 CFS	0.33 CFS	570.29
2 YR	1.34 CFS	0.68 CFS	570.46
5 YR	2.14 CFS	1.05 CFS	570.79
10 YR	2.94 CFS	1.28 CFS	571.13
25 YR	4.34 CFS	1.61 CFS	571.73
50 YR	5.69 CFS	3.61 CFS	572.23
100 YR	7.33 CFS	4.83 CFS	572.92

UNDERGROUND DETENTION SUMMARY

(286) ADS STORMTECH SC-740 CHAMBERS
TOP OF STONE ELEV. = 573.00
TOP OF CHAMBER ELEV. = 572.50
BOTTOM OF CHAMBER ELEV. = 570.00
BOTTOM OF STONE ELEV. = 569.50
TOTAL STORAGE = 22,086 CF

PROPOSED UTILITY LEGEND

- PROPOSED STORM SEWER — ST
- PROPOSED SANITARY SEWER — 6"SA
- PROPOSED WATERLINE — 1"W
- PROPOSED CATCH BASIN — CB
- PROPOSED YARD DRAIN — YD
- PROPOSED MANHOLE — MH
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE — GV

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	09/04/24
2	Rev. per Shop Drawing Review	10/09/24
3	Verify UGD Field Layout (SWM Area#2)	11/21/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Storm Drainage Plan

DRAWING NO.
C-3

Project no.: 2

Packet Pg. 1519

2.a

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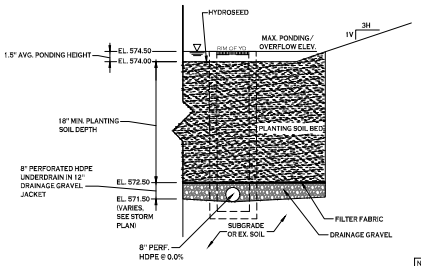
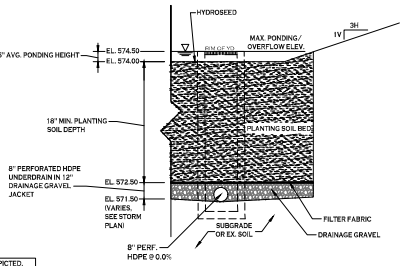
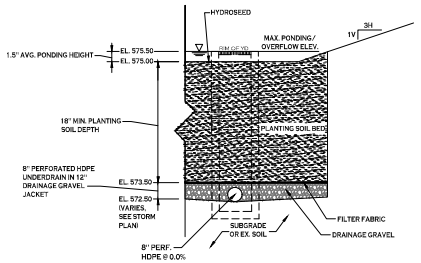


BIORETENTION AREA #1



BIORETENTION AREA #2



BIORETENTION AREA #3

NOTE: AS DEPICTED, YARD DRAIN RIM ELEVATIONS ARE TO BE SET 6" ABOVE PROPOSED GRADE IN BIORETENTION AREAS.

BIORETENTION AREA - TYPICAL SECTIONS

NOT TO SCALE

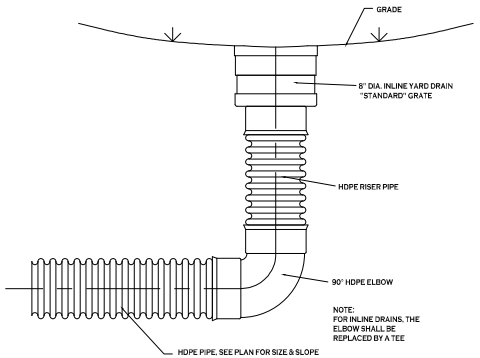
NOTES:
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C'. MIRAFI 180N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43, NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 0.5 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

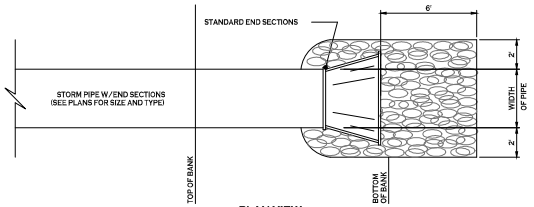
BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
HOUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5

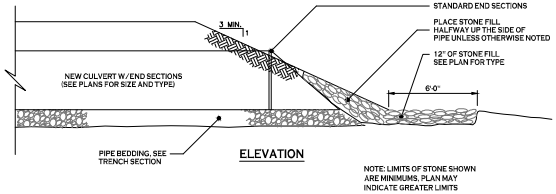


NOTE: SEE TYPICAL TRENCH SECTION FOR BEDDING REQUIREMENTS

TYPICAL YARD DRAIN DETAIL



PLAN VIEW

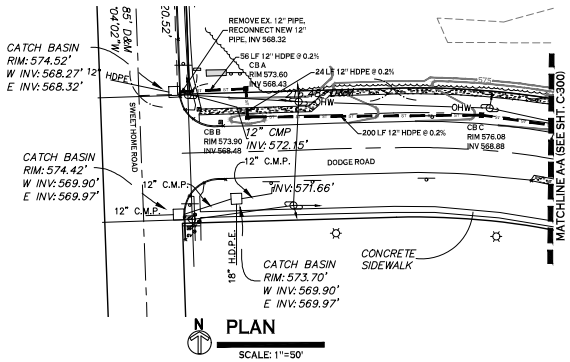


ELEVATION

NOTE: LIMITS OF STONE SHOWN ARE MINIMUMS. PLAN MAY INDICATE GREATER LIMITS

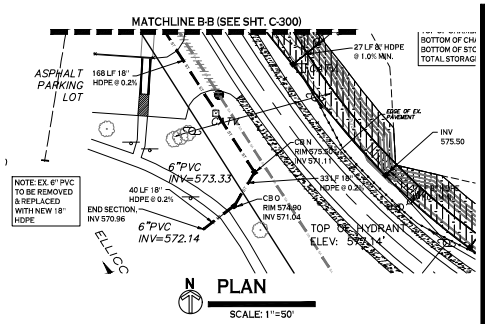
TYPICAL PIPE OUTLET W/ END SECTION & RIP RAP

NOT TO SCALE



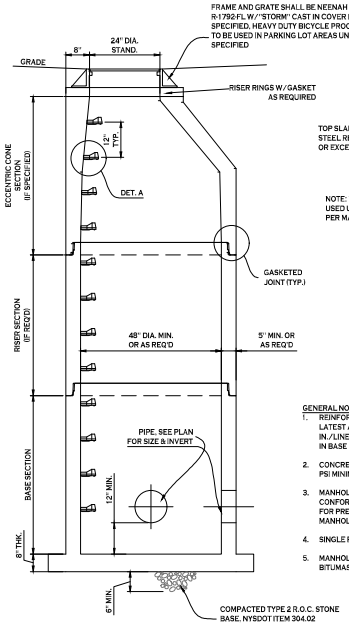
N PLAN

SCALE: 1"=50'



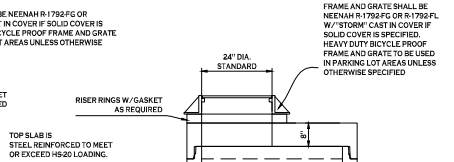
N PLAN

SCALE: 1"=50'



TYPICAL STORM MANHOLE DETAIL

NOT TO SCALE



ALTERNATE TOP SLAB



DETAIL A

GENERAL NOTES:
1. REINFORCED STEEL TO CONFORM TO LATEST A.S.T.M. A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) IN BASE SLAB.
2. CONCRETE COMPRESSIVE STRENGTH - 4000 PSI MINIMUM.
3. MANHOLE DESIGN SPECIFICATIONS TO CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
4. SINGLE POUR MONOLITHIC BASE SECTION.
5. MANHOLE TO BE COATED ON OUTSIDE WITH BITUMASTIC SEALER.

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REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Storm Drainage Details

DRAWING NO.
C-3

Project no.: 2

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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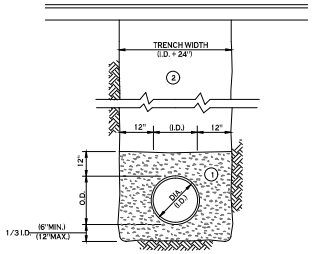


NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

(1) NO. 1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

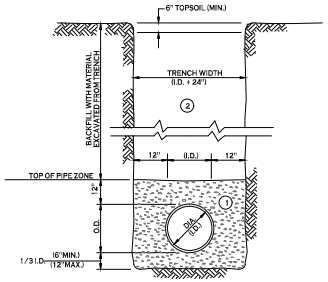
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) TYPE 2 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

STORM SEWER TRENCH SECTION IN PAVED AREAS

NOT TO SCALE



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

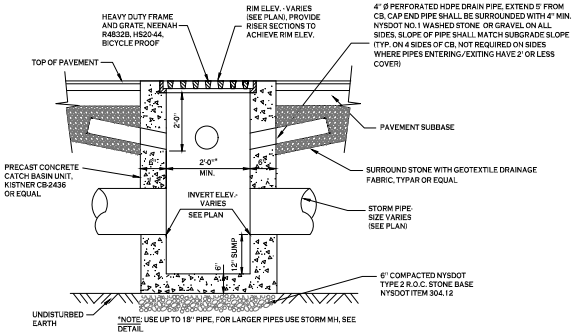
(1) NO. 1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL, COMPACTED IN 6" LIFTS.

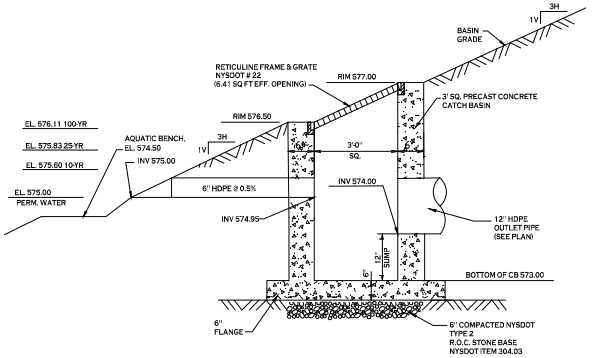
STORM SEWER TRENCH SECTION IN UNPAVED AREAS

NOT TO SCALE



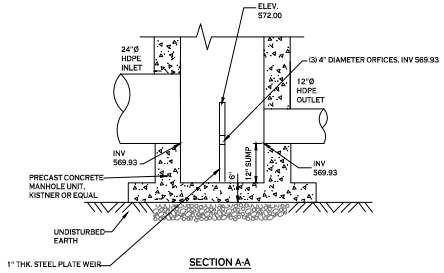
TYPICAL PRECAST CATCH BASIN

NOT TO SCALE



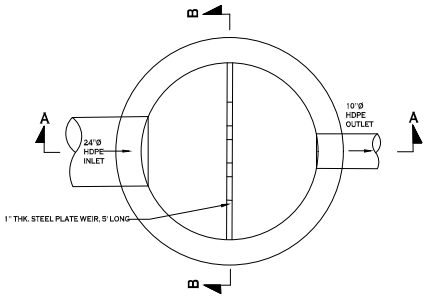
DETENTION BASIN OUTLET STRUCTURE - CB 53

N.T.S.



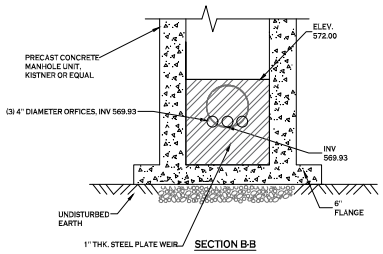
SECTION A-A

NOTES:
1. FASTEN STEEL PLATE TO CB WALL WITH ANGLE CLIPS AND BOLTS
2. STEEL PLATE, ANGLE CLIPS, AND BOLTS TO BE HOT DIPPED GALVANIZED



PLAN

*NOTE: USE 5'-0" I.D. MANHOLE



SECTION B-B

OUTLET CONTROL STRUCTURE - CB 52

NOT TO SCALE

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REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road

Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Storm Drainage Details

DRAWING NO.

C-3

Project no.: 2

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2.a

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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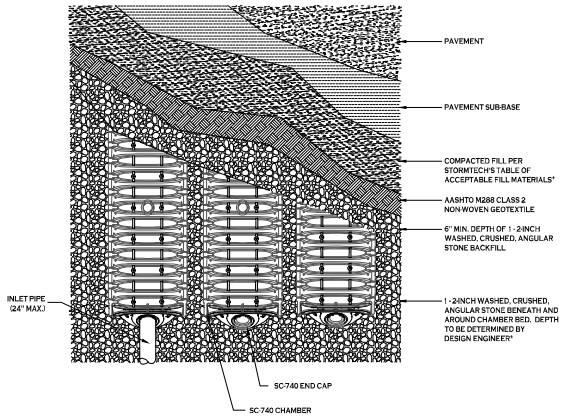
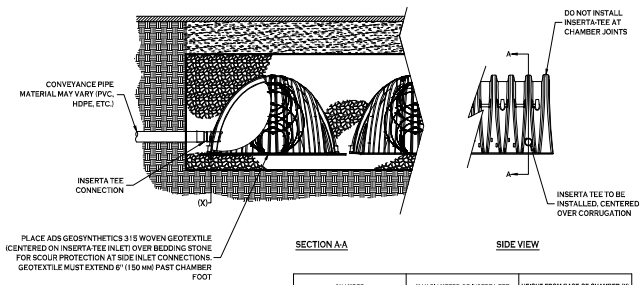


STORMTECH SC-740 CHAMBER SYSTEM
PLAN VIEW DETAIL
NOT TO SCALE

*SEE STORMTECH'S DESIGN MANUAL



SECTION A-A SIDE VIEW

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 MM)	4" (100 MM)
SC-740	10" (250 MM)	4" (100 MM)
DC-780	10" (250 MM)	4" (100 MM)
MC-3500	12" (300 MM)	6" (150 MM)
MC-4500	12" (300 MM)	8" (200 MM)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

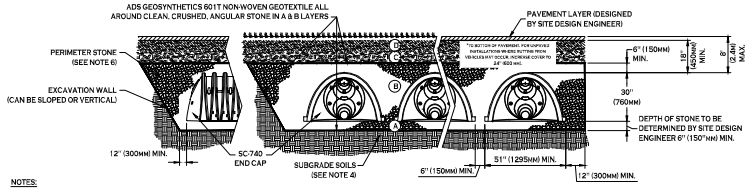
NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

INSERTA TEE DETAIL
NOT TO SCALE

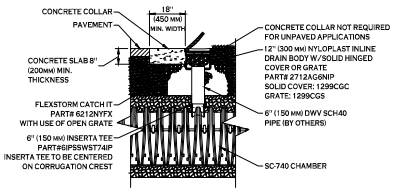
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION/DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 MM) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 MM) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 MM) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 LBS (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 MM) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:
1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



SC-740 6" INSPECTION PORT DETAIL
NOT TO SCALE

INSPECTION AND MAINTENANCE
STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
A. INSPECTION PORTS (IF PRESENT)
A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 MM) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
B. ALL ISOLATOR ROWS
B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 MM) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 M) OR MORE IS PREFERRED
B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES:
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: 2/24/21
Scale: As Noted

DRAWING NAME:
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DRAWING NO.
C-3
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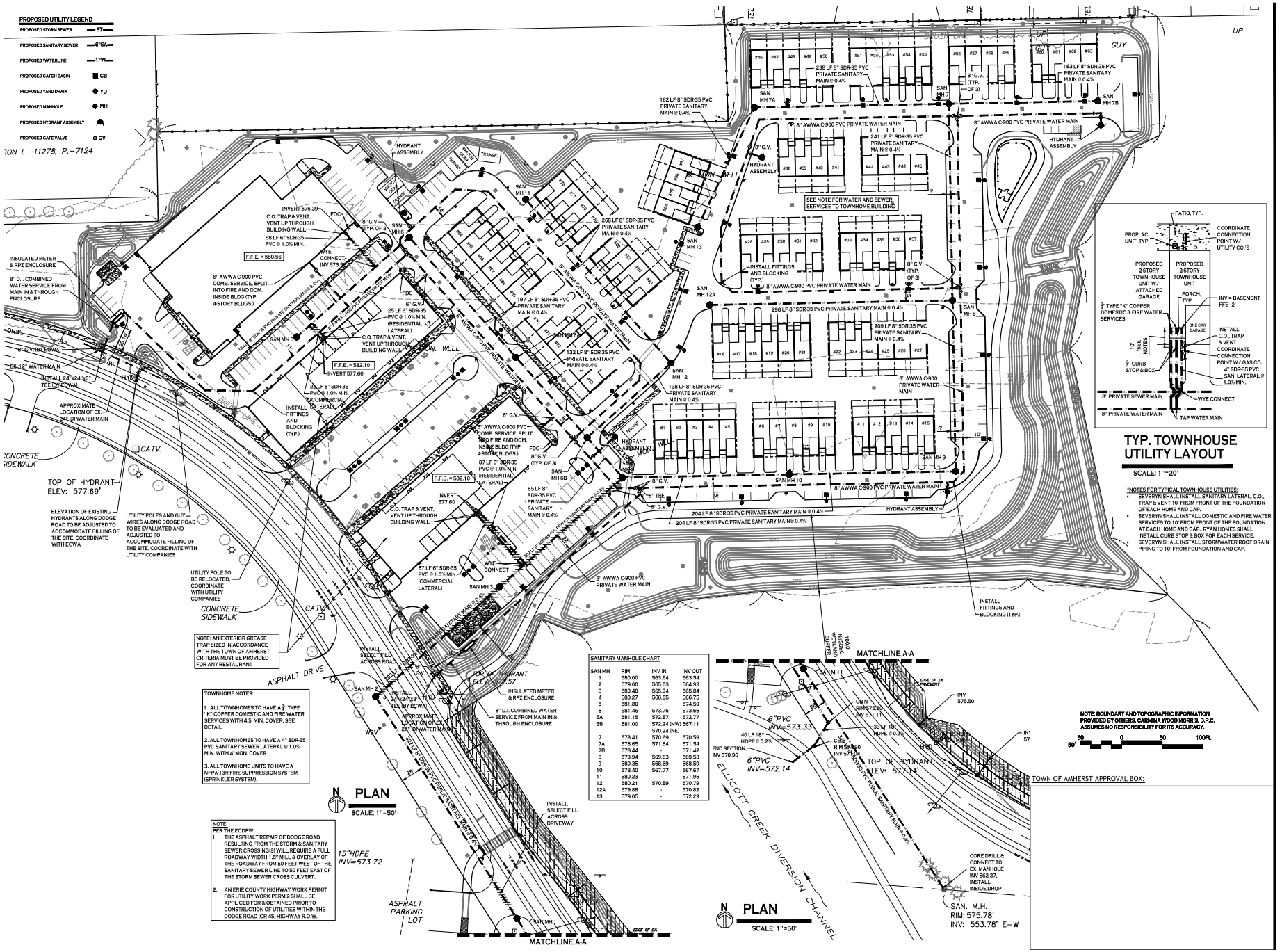
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



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2.a
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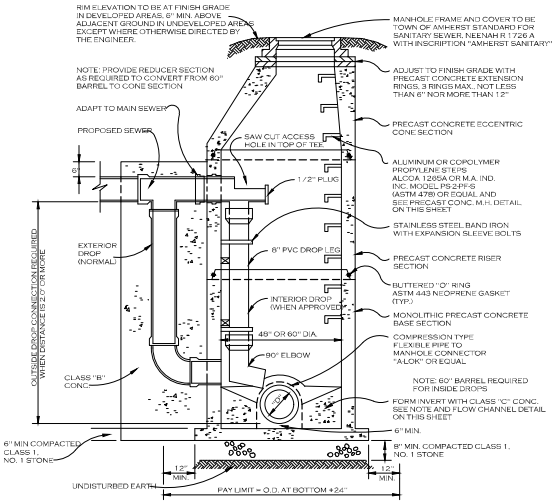
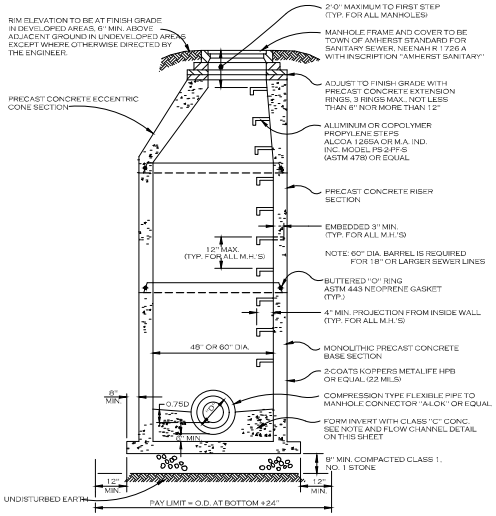
NOTIFY UNITED UNDERGROUND LOCATING SERVICE (U.U.L.S.) 72 HOURS BEFORE STARTING THE JOB

NOTIFY SUN OIL PIPELINE CORPORATION 72 HOURS BEFORE EXCAVATING (SEE DRAWING NO. 18)

PRECAST CONCRETE DROP MANHOLE

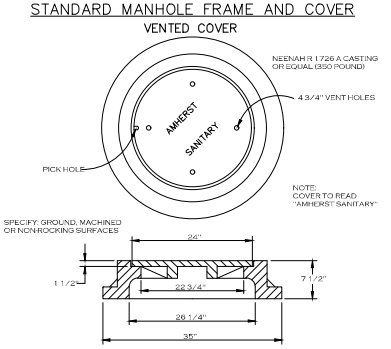


PRECAST CONCRETE MANHOLE



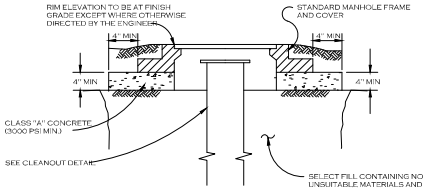
STANDARD MANHOLE FRAME AND COVER

VENTED COVER



CLEANOUT WITH STANDARD MANHOLE FRAME AND COVER

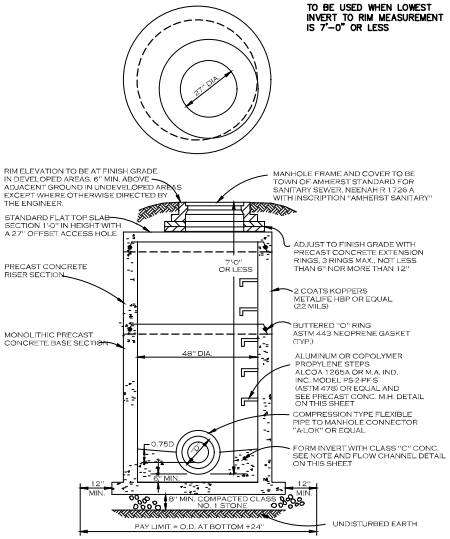
(TO BE USED IN LOCATIONS ONLY AS APPROVED BY TOWN ENGINEER)



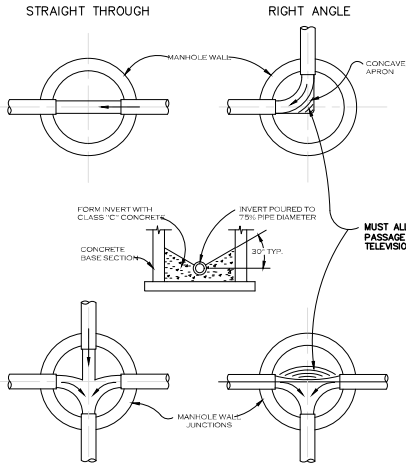
NOTE:
CLEANOUT NOT TO BE INSTALLED WHEN DISTANCE FROM M.H. EXCEEDS 150

FLAT TOP MANHOLE ASSEMBLY

NOTE:
TO BE USED WHEN LOWEST INVERT TO RIM MEASUREMENT IS 7'-0" OR LESS



FLOW CHANNEL DETAIL SANITARY SEWERS

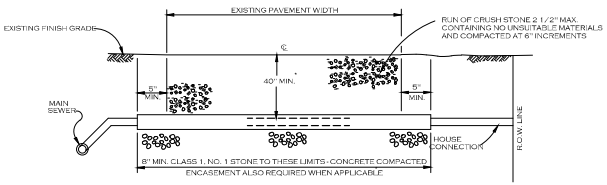


NOTE:
FLOW CHANNELS MUST ALLOW PLACEMENT, REMOVAL AND PASSAGE OF T.V. CAMERAS. THE CAMERA DIMENSIONS ARE APPROXIMATELY 26" LONG X 6 1/2" SQUARE. A BLOCK OF WOOD OF THESE DIMENSIONS MAY BE USED TO SIMULATE THE SIZE OF THE CAMERA. THIS WILL SIMPLIFY THE FORMATION OF FLOW CHANNELS AND INVERTS.

DEPTH OF ALL CHANNELS TO BE 75% OF PIPE DIAMETER.

FINISH ALL CHANNELS AT PROPER GRADE AS TO ALLOW SMOOTH & UNOBSTRUCTED FLOW ALL INVERTS TO BE FLUSH WITH THE INSIDES.

SANITARY TYPICAL PAVEMENT CROSSING FOR HOUSE CONNECTION



WHEN DEPTH FROM TOP OF HOUSE CONNECTION PIPE TO SURFACE IS LESS THAN 6.0 FEET, A CONCRETE ENCASEMENT WILL BE REQUIRED TO THE LIMITS SHOWN (SEE WATER CROSSING DETAIL SAN. SEWERS DWG. #4 - PG. #2 OF 4)

TOWN OF AMHERST APPROVAL BOX:

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

Carmina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/24/21
Drawn by: 12/1/21
Scale: As Noted

DRAWING NAME:
Sanitary Sewer Details

DRAWING NO.
C-4

Project no.: 2

Packet Pg. 1524

2.a

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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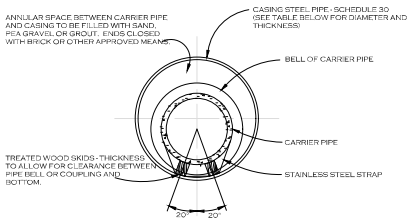
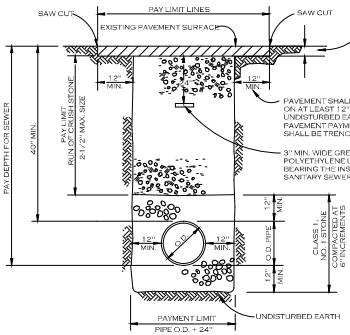
TOWN ROAD CROSSING BY JACKING AND BORING METHOD 8"–24" DIAMETER CARRIER PIPE



SCHEDULE FOR DIAMETER AND THICKNESS OF CASING PIPE		
CARRIER PIPE DIAMETER	CASING PIPE DIAMETER	CASING PIPE WALL THICKNESS
8"	16" OR 20"	0.375
10"	20"	0.375
12"	24"	0.375
15"	27"	0.375 MIN.
18"	30"	0.375
21"	36"	0.469
24"	42"	0.469

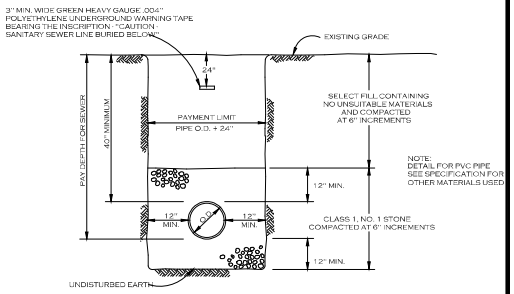
TYPICAL TRENCH DETAIL – TOWN ROAD CROSSING FOR MAIN SEWERS & HOUSE AND BUILDING CONNECTIONS



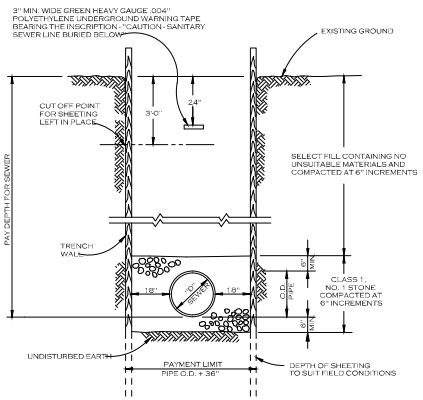
NOTE:
WHERE THE CONTRACTOR EXCAVATES BEYOND THE PAY LIMITS SHOWN, SELECT FILL AND PAVEMENT, SIDEWALK & DRIVEWAY REPLACEMENT OUTSIDE THE PAY LIMITS SHALL BE FURNISHED AND PLACED AT THE CONTRACTOR'S EXPENSE. (TYP.)

NOTE:
IF CONCRETE ENCASEMENT IS REQUIRED, IT SHALL BE INSTALLED IN PLACE OF (AND TO THE DIMENSIONS OF) THE PIPE BEDDING AND COVER TO 12" MIN. ABOVE AND BELOW THE PIPE. (SEE WATER CROSSING DETAIL ON THIS SHEET)

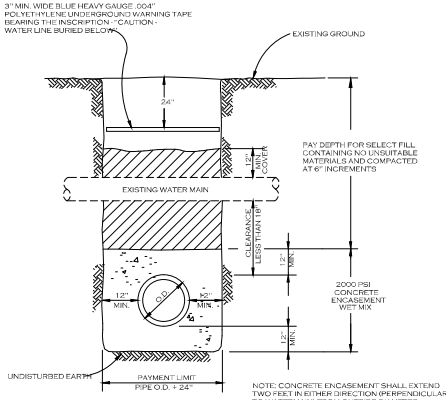
TYPICAL EARTH TRENCH DETAIL UNPAVED AND UNTRAVELED AREAS



SHEETED TRENCH DETAIL

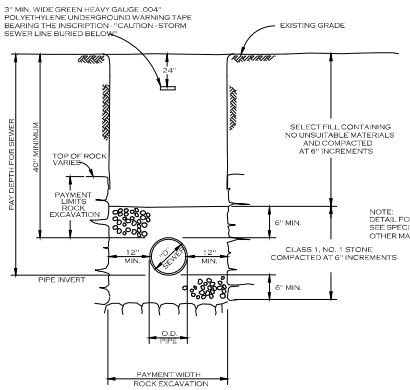


WATER CROSSING DETAIL CLEARANCE LESS THAN 18"



NOTE: CONCRETE ENCASEMENT SHALL EXTEND TWO FEET IN EITHER DIRECTION (PERPENDICULAR TO WATERMAIN) FROM OUTSIDE DIAMETER OF WATERMAIN.

TYPICAL ROCK TRENCH DETAIL



TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Sanitary Sewer Details

DRAWING NO.
C-4

Project no.: 2

Packet Pg. 1525
2.a
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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GENERAL NOTES:

01. THE CONTRACTOR SHALL COMPLY WITH THE TOWN OF AMHERST STANDARD DRAWINGS AND SPECIFICATIONS.

02. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND THE TOWN OF AMHERST ENG. DEPT. OF ANY HAZARDOUS SUBSTANCE ENCOUNTERED DURING THE CONSTRUCTION OF THE WORK. HE SHALL AT HIS EXPENSE, CONFORM TO ALL LAWS, RULES, REGULATIONS AND DIRECTIONS AS PROMULGATED BY THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NEW YORK STATE DEPARTMENT OF HEALTH AND ANY SUCH LOCAL RULES, ORDINANCES AND LAWS WHEN ENCOUNTERING OR WORKING WITH ANY SUCH HAZARDOUS SUBSTANCE.

03. THE CONTRACTOR SHALL COMPLY IN ALL RESPECTS TO THE INDUSTRIAL CODE PART (RULE NO.) 53 RELATING TO CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES, AS ISSUED BY THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARD AND APPEALS.

04. SINCE THE ERIE COUNTY WATER AUTHORITY OPERATES AND MAINTAINS THE EXISTING WATER LINES, THEY ARE TO BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF THE START OF CONSTRUCTION. ALL EXISTING VALVES ARE TO BE OPERATED BY THE ERIE COUNTY WATER AUTHORITY PERSONNEL.

05. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AHEAD OF THE PIPE LAYING OPERATION, SO THAT, IF MINOR ADJUSTMENTS MUST BE MADE IN ELEVATION AND/OR ALIGNMENT DUE TO INTERFERENCE FROM THESE UTILITIES, SAID CHANGES CAN BE MADE IN ADVANCE OF THE WORK.

06. WHERE SUCH FACILITIES ARE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, HE SHALL CERTIFY TO THE ENGINEERING DEPARTMENT OF THE TOWN OF AMHERST THAT SAID FACILITIES AS CONSTRUCTED WERE SUPERVISED BY HIMSELF (HERSELF) AND THAT THE WORKS HAVE BEEN FULLY COMPLETED IN ACCORDANCE WITH THE APPROVED ENGINEERING REPORTS, PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND ANY AND ALL ADDENDA TO SAME.

07. THE CONSTRUCTION OF THE FACILITIES SHALL BE UNDER THE SUPERVISION OF A PERSON OR FIRM QUALIFIED TO PRACTICE PROFESSIONAL ENGINEERING IN NEW YORK STATE UNDER THE EDUCATION LAW OF THE STATE, WHENEVER ENGINEERING SERVICES ARE REQUIRED BY SUCH LAW FOR SUCH PURPOSES.

08. A WRITTEN CERTIFICATE OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF HYDROSTATIC LEAKAGE TESTS, MADE BY THE PROFESSIONAL ENGINEER SUPERVISING THE CONSTRUCTION, SHALL BE SUBMITTED TO THE ERIE COUNTY DEPART. OF ENVIRONMENT PLANNING AND NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION.

09. UNSUITABLE MATERIALS SUCH AS FROZEN ORGANIC AND/OR VEGETABLE MATERIAL, DEBRIS, TREES, LUMBER, LARGE STONES OR CLODS (6.0" OR LARGER), MUCK, PEAT, ORGANIC SILT WILL NOT BE ACCEPTABLE FILL AND CERTAIN MAN–MADE DEPOSITS OF INDUSTRIAL WASTE, SLUDGE OR LANDFILL MAY ALSO BE DETERMINED AS UNSUITABLE HAZARDOUS MATERIAL.

10. THE COMPACTION OF ALL MATERIALS WILL OCCUR AT 6" INCREMENTS.

11. VERIFICATION OF ALL EXISTING EASEMENTS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THEY MUST BE SHOWN ALONG WITH ALL PROPOSED EASEMENTS ON PLAN DRAWINGS.

12. SHOULD A FLUID CONDITION BE ENCOUNTERED AT THE TRENCH BOTTOM, THE CONTRACTOR IS TO INSTALL ADDITIONAL STONE CRADLE AS ORDERED BY THE ENGINEER.

13. ALL PIPE CROSSING UNDER PAVED AREAS ARE TO BE BACKFILLED TO SUBGRADE WITH COMPACTED SELECT MATERIAL TO FIVE (5) FEET OUTSIDE THE PAVEMENT EDGES.

14. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TREE EXPERT TO REMOVE, WHERE NECESSARY, BRANCHES WHICH INTERFERE WITH THE CONSTRUCTION OPERATION, OR REPAIR TREES HAVING SUFFERED DAMAGE BY CONSTRUCTION ACTIVITIES. THE COST INVOLVED IN THE ABOVE IS TO BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.

15. SEWERS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A TEN FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE–BY–CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATERMAIN, PROVIDED THAT THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (46CM) ABOVE THE TOP OF THE SEWER.

16. SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (46CM) BETWEEN THE OUTSIDE OF A WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATERMAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATERMAIN JOINTS. WHERE A WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER, TO PREVENT DAMAGE TO THE WATERMAIN.

17. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPE AND SHALL BE PRESSURE TESTED AS TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.

18. THE PIPE SHALL BE P.V.C. SEWER PIPE CONFORMING TO THE LATEST REVISIONS OF ASTM DESIGNATION D–3034, SDR–35, INSTALLED IN ACCORDANCE WITH ASTM.

19. THE MANHOLE COVERS ARE TO BEAR THE INSCRIPTION "AMHERST SANITARY".

SANITARY SEWER TESTING METHODS

GENERAL NOTES

(A) LEAKAGE TESTS

01. THE TEST PERIOD WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN 24 HOURS, REGARDLESS OF THE TEST METHOD USED.

02. THE TOTAL LEAKAGE OF ANY SECTION TESTED BY ANY TEST METHOD SHALL NOT EXCEED THE RATE OF 200 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER.

03. MANHOLES SHALL BE CONSIDERED AS SECTIONS OF 48" DIAMETER PIPE AND THE EQUIVALENT LEAKAGE ALLOWANCE SHALL BE COMPUTED PER NOTE 02 USING THE SUBMERGED HEIGHT OF MANHOLE AS THE LENGTH.

04. WHEN MANHOLES ARE TESTED SEPARATELY, ALL PIPE OPENINGS SHALL BE PLUGGED AND THE TEST PROCEDURES AND CRITERIA SHALL BE APPLIED IN THE SAME MANNER AS FOR TESTS INVOLVING ONLY THE PIPE OR A COMBINATION OF PIPE AND MANHOLES.

(B) INFILTRATION TEST   CRITERIA FOR USE

01. THIS TEST METHOD MAY ONLY BE USED WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TESTS.

02. GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING BACKFILLING.

03. THE NUMBER OF STANDPIPES REQUIRED AND LOCATION OF THE SAME ARE TO BE AS ORDERED BY THE ENGINEER. STANDPIPES MAY BE OF ANY PIPE MATERIAL BUT MUST BE OF SUCH DIAMETER (2–1/2" MINIMUM) AS TO PERMIT THE INSERTION OF A RULE OR LEVEL ROD. CRUSHED STONE SHALL BE PLACED AROUND THE LOWER OPEN ENDS OF THE STANDPIPES.

04. STANDPIPES ARE TO BE REMOVED AT THE SATISFACTORY COMPLETION OF THE TESTS.

05. IF IN LIEU OF STANDPIPES, THE TRENCH IS TO BE LEFT OPEN FOR GROUND WATER OBSERVATION, THE LENGTH OF UNBACKFILLED TRENCH AT ANY ONE TIME MAY HAVE TO BE LIMITED FOR REASONS OF SAFETY.

(C) EXFILTRATION TEST   CRITERIA FOR USE

01. THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR ABOVE GROUND WATER WHICHEVER IS HIGHER AT THE HIGHEST POINT OF THE PIPE LINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER TO MAINTAIN THE ORIGINAL LEVEL.

02. IN THIS TEST THE PIPE LINE MUST BE FILLED WITH WATER AND ALLOWED TO REMAIN SO FILLED FOR AT LEAST 24 HOURS PRIOR TO TAKING MEASUREMENTS.

03. REGARDING GROUND WATER MEASUREMENTS: SEE NOTES 02 THROUGH 05 ABOVE.

04. REGARDING THE TEST STANDPIPE: THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.

(D) DEFLECTION TEST FOR PVC SEWER PIPE

01. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE GRAVITY SEWER PIPE. TESTS SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.

02. NO PIPE SHALL EXCEED DEFLECTION OF 5%. DEFLECTION GAGE MAY BE BORROWED FROM THE TOWN ENGINEER FOR 8" AND 10" PIPE. THE DEFLECTION TEST MUST BE EXECUTED AFTER 30 DAYS OF PLACEMENT OF FINAL BACKFILL. THE TEST WILL ALSO BE DONE WITHOUT MECHANICAL PULLING DEVICES.

MANHOLE PLACEMENT AND MAINTENANCE
DURING CONSTRUCTION AND DEVELOPMENT

CONTRACTOR AND/OR DEVELOPERS SHALL CONSTRUCT ALL MANHOLE STRUCTURES IN ACCORDANCE WITH THE TOWN OF AMHERST STANDARD SPECIFICATIONS OR THE SPECIFICATIONS OF THE DESIGN ENGINEER WHEN REQUIRED BY THE TOWN.

ALL MANHOLES ARE TO BE DESIGNED AND FURNISHED WITH RIM ELEVATIONS AT FINAL FINISHED GRADES. THE CONTRACTOR, DEVELOPER, OR HOME BUILDER SHALL BE RESPONSIBLE FOR ALL CORRECTIONS, ADJUSTMENTS, AND MODIFICATIONS NEEDED FOR RAISING, LOWERING, OR REPLACING ANY AND ALL MANHOLES AS PROPOSED FOR THE FACILITY.

ALL AS–BUILT STATIONING, LINE AND GRADE IMPROVEMENTS, INVERT AND RIM ELEVATIONS, "Y" LOCATIONS, INSPECTION REPORTS, ROADWAY OR STREET NAMES, RIGHT–OF–WAY WIDTHS, AND EASEMENT LINES SHALL BE FURNISHED TO THE TOWN ON A SET OF MYLAR DRAWINGS PRIOR TO TAP–IN APPROVAL, PIP ACCEPTANCE, AND/OR RELEASE OF FINAL PAYMENT.

ALL MANHOLE STRUCTURES SHALL BE MADE ACCESSIBLE TO THE TOWN OF AMHERST TELEVISION/MAINTENANCE CREWS. THE CONTRACTOR AND/OR DEVELOPER SHALL PROVIDE A DRY, WELL COMPACTED, STABLE SURFACE FREE FROM SHOW AND OBSTRUCTIONS FOR SAFE AND OPEN ACCESS WITH TOWN VEHICLES. SHOULD THE CONTRACTOR AND/OR DEVELOPER WISH TV INSPECTIONS DURING WET WEATHER/WET SOFT SOIL CONDITIONS, HE SHALL PROVIDE ALL NECESSARY GRANULAR BACKFILL, DISTRIBUTED AND COMPACTED TO SUPPLY ACCESS TO EACH MANHOLE. THE CONTRACTOR AND/OR DEVELOPER SHALL BEAR ALL COSTS OF TOWING, DOWN TIME, CREW TIME, AND DAMAGE ALONG WITH RESTORATION, SHOULD SUCH ACCESSWAYS FAIL.

TOWN OF AMHERST APPROVAL BOX:

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Buffalo, New York 14203
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F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Sanitary Sewer
General Notes

DRAWING NO.

C-4

Project no.: 2

2.a

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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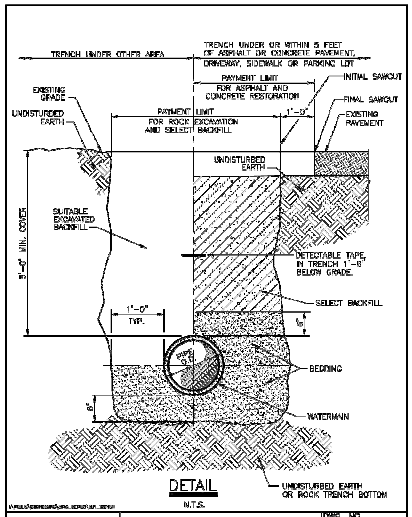
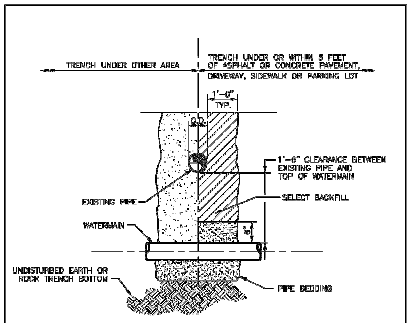


DETAIL
N.T.S.

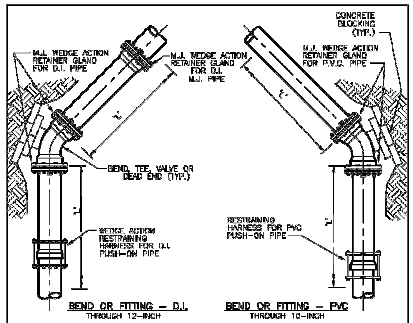
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TRENCH THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD1
		DATE: 4/28/92 REVISED: 10/08



NOTES:
1. ALL EXISTING UTILITIES MUST BE SUPPORTED DURING CONSTRUCTION OF THE NEW WATERMAIN.
2. WHEN CROSSING A SEWERLINE WITH A NEW WATERMAIN, ONE FULL PIPE LENGTH (18 FT. MIN.) SHALL BE USED AT THE POINT OF CROSSING. THE WATERMAIN SHALL BE PLACED SO THAT BOTH JOINT ENDS ARE AS FAR AS POSSIBLE FROM THE EXISTING SEWERLINE.

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PIPE CROSSING	DWG. NO. SD2
		DATE: 4/28/92 REVISED: 10/08



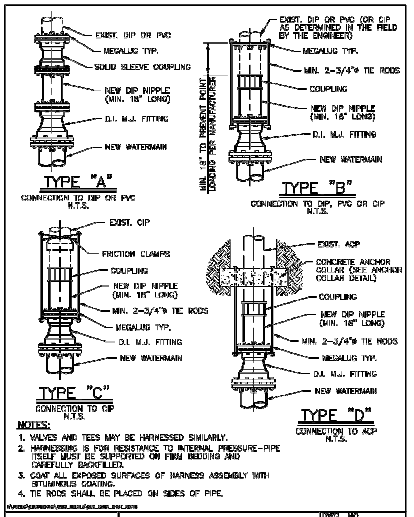
RESTRAINED JOINT SCHEDULE

PIPE SIZE	PIPE TYPE	11.25° ELBOW 'L'	22.5° ELBOW 'L'	45° ELBOW 'L'	90° BRANCH, 90° BEND, VALVE OR DEAD END 'L'
6"	PVC	13'	25'	50'	120 MIN.
8"	PVC	15'	30'	59'	122 MIN.
8"	D.I.P.	15'	30'	59'	122 MIN.

NOTES:
1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

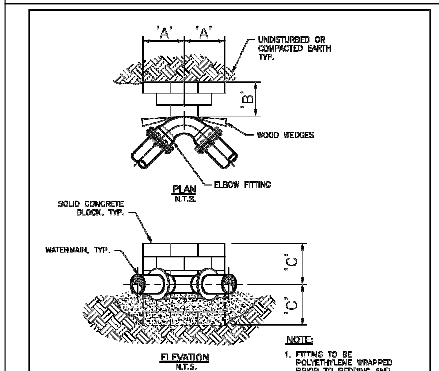
PLAN
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4
		DATE: 4/28/92 REVISED: 10/08



NOTES:
1. VALVES AND TEES MAY BE HARNESSED SIMILARLY.
2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE-PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5
		DATE: 5/08 REVISED: 10/08

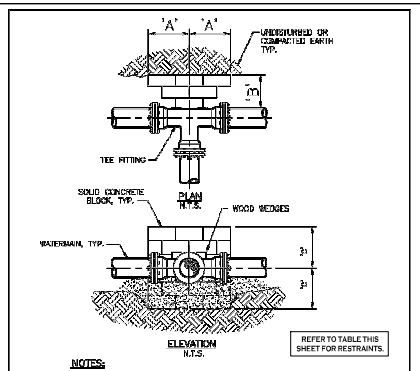


NOTE:
1. FITTING TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.

DIMENSION SCHEDULE

PIPE SIZE	11.25° ELBOW 'A'	11.25° ELBOW 'B'	11.25° ELBOW 'C'	22.5° ELBOW 'A'	22.5° ELBOW 'B'	22.5° ELBOW 'C'	45° ELBOW 'A'	45° ELBOW 'B'	45° ELBOW 'C'	MJ ELBOW 'A'	MJ ELBOW 'B'	MJ ELBOW 'C'
8"	1.5'	1.5'	2.5'	2.5'	1.5'	2.5'	3.0'	1.5'	3.5'	3.5'	1.5'	5.0'

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR ELBOW FITTING	DWG. NO. SD6
		DATE: 4/28/92 REVISED: 10/08

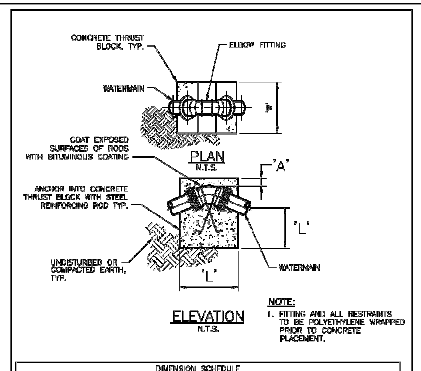


REFER TO TABLE THIS SHEET FOR RESTRAINTS.

NOTES:
1. THRUST BLOCK REQUIRED FOR TEES, HYDRANT LATERAL TEES AND TAPPING SLEEVE INSTALLATIONS.
2. FITTING TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.

BRANCH TEE SIZE	DIMENSION SCHEDULE 'A'	'B'	'C'
6"	1'-0"	1'-0"	0'-6"
8"	1'-6"	1'-0"	0'-6"

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR TEE OR "DEAD END" FITTING	DWG. NO. SD7
		DATE: 4/28/92 REVISED: 10/08



NOTE:
1. FITTING AND ALL RESTRAINTS TO BE POLYETHYLENE WRAPPED PRIOR TO CONCRETE PLACEMENT.

DIMENSION SCHEDULE

PIPE SIZE	PIPE TYPE	11.25° ELBOW 'A'	11.25° ELBOW 'W'	11.25° ELBOW 'L'	11.25° ELBOW ROD ø	22.5° ELBOW 'A'	22.5° ELBOW 'W'	22.5° ELBOW 'L'	22.5° ELBOW ROD ø	45° ELBOW 'A'	45° ELBOW 'W'	45° ELBOW 'L'	45° ELBOW ROD ø
6"	D.I.P.	12"	1'-0"	1'-0"	1/2"	12"	1'-0"	1'-0"	1/2"	1'-6"	2'-0"	2'-0"	1/2"

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8
		DATE: 4/28/92 REVISED: 10/08

TOWN OF AMHERST APPROVAL BOX:

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Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details

DRAWING NO.
C-4

Project no.: 2

Packet Pg. 1527
2.a
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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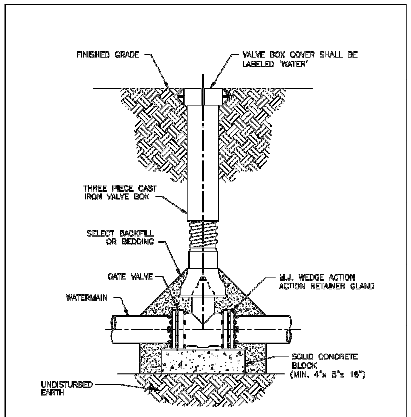
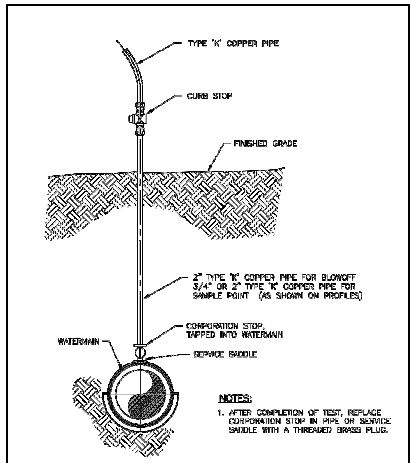


NOTES:
1. VALVE SHALL NOT SUPPORT VALVE BOX.
2. GATE VALVE SHALL BE INSTALLED LEVEL.
3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED IN BOX.

SECTION
N.T.S.

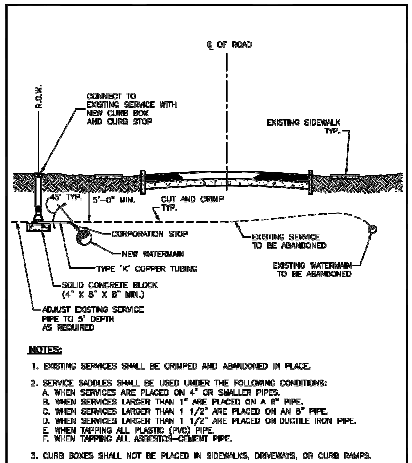
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11
		DATE 4/28/92
		REVISED 02/17



NOTES:
1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

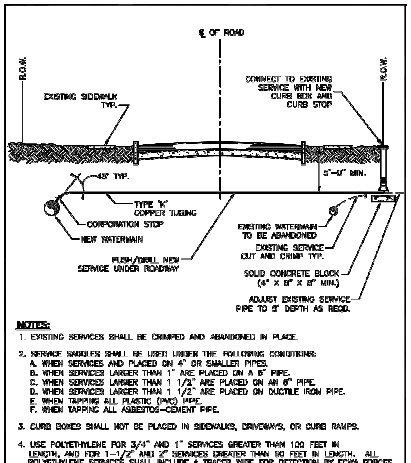
ELEVATION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17
		DATE 4/28/92
		REVISED 10/08



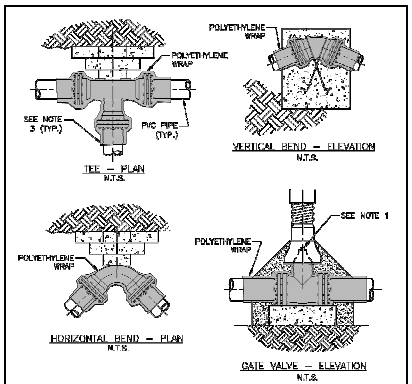
NOTES:
1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
   A. WHEN SERVICES ARE PLACED ON 4" OR SMALLER PIPES.
   B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 8" PIPE.
   C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
   D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
   E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
   F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL NEAR SIDE SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD15
		DATE 4/92
		REVISED 09/16



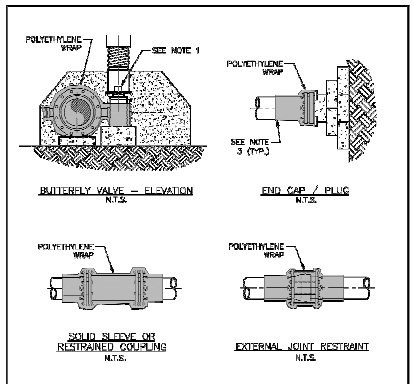
NOTES:
1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
   A. WHEN SERVICES ARE PLACED ON 4" OR SMALLER PIPES.
   B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 8" PIPE.
   C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
   D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
   E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
   F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 50 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FAR SIDE SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD15
		DATE 4/92
		REVISED 09/16



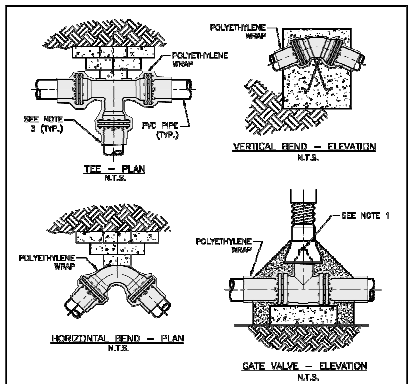
NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (ON POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A
		DATE 3/16
		REVISED 12/18



NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (ON POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A
		DATE 12/18
		REVISED



NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON GATE VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PVC PIPE WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING DUCTILE IRON FITTINGS ON PVC PIPE	DWG. NO. SD39
		DATE 3/16
		REVISED

TOWN OF AMHERST APPROVAL BOX:

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487 Main Street Suite 600
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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/19/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details

DRAWING NO.
C-4

Project no.: 2

2.a

Packet Pg. 1528

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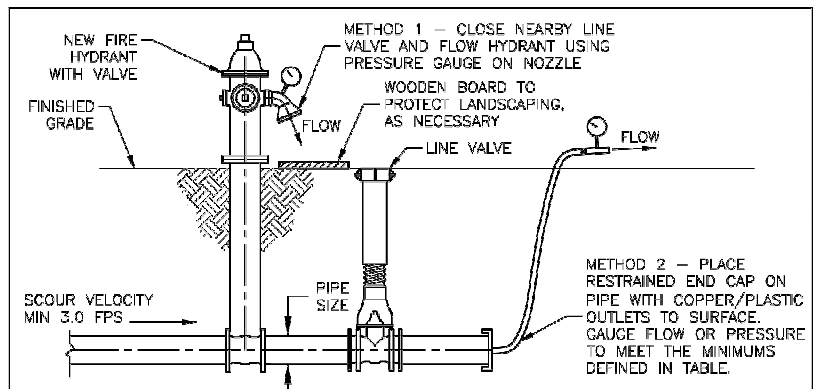


PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW: 2 1/2" NOZZLE PRESSURE (PSI)	METHOD 1 HYDRANT FLOW: 4" NOZZLE PRESSURE (PSI)	METHOD 2 END CAP FLOW: 2" I.D. PRESSURE (PSI)	METHOD 2 END CAP FLOW: 3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	–	22
16	1900	–	20	–	62
20	3000	–	50	–	–

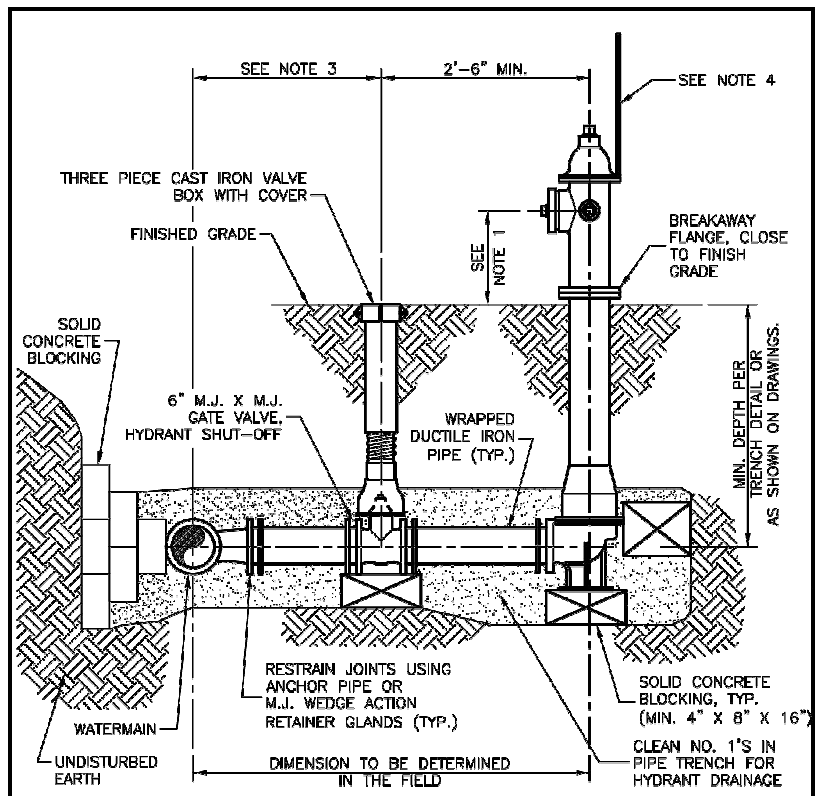
I.D. = INNER DIAMETER

NOTES:

1. TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
2. OUTLET PRESSURE MEASURED BY PITOT GAUGE.
3. ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
4. TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK — STANDARD DETAIL WATERLINE FLUSHING — DWG. NO. SD36 — DATE 6/16 — REVISED 3/18



NOTES:

1. CENTERLINE OF THE LOWEST NOZZLE TO FINISHED GRADE SHALL BE A MIN. OF 15" & MAX. OF 18".
2. HYDRANT RISER SHALL BE INSTALLED PLUMB.
3. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT.
4. RELOCATE HYDRANT MARKER (IF PRESENT), FOR WATERLINE REPLACEMENT PROJECTS ONLY.
5. HYDRANT FACE TO BE A MINIMUM OF 3' FROM THE BACK FACE OF ALL CURBS OR A MINIMUM OF 5' FROM ALL EDGES OF PAVEMENT (IF NO CURB).

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK — STANDARD DETAIL FIRE HYDRANT INSTALLATION — DWG. NO. SD13 — DATE 6/00 — REVISED 11/16

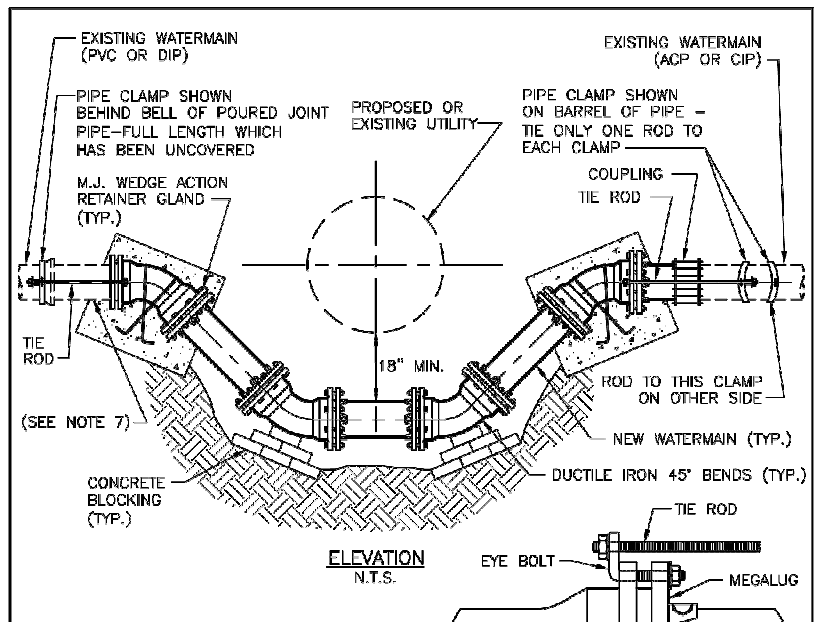
NOTES

1. All elevations refer to USGS NAVD83 datum.
2. The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
3. The CONTRACTOR'S work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed, or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install the watermain to avoid conflicts.
6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as-needed basis, phased to reduce erosion and visual impact.
7. Blasting will not be permitted.
8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
9. The Erie County Water Authority shall only operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers in writing of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 3 business days in advance of the requested shut-down date.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK — STANDARD DETAIL GENERAL NOTES — DWG. NO. SD29 — DATE 3/05 — REVISED 7/17

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment, and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be scheduled and returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga, New York 14227.
19. The CONTRACTOR shall cold patch all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict access for school buses or any emergency vehicles.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for review prior to the start of testing.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants, and curb stops operate as required.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK — STANDARD DETAIL GENERAL NOTES — DWG. NO. SD30 — DATE 3/05 — REVISED 7/17



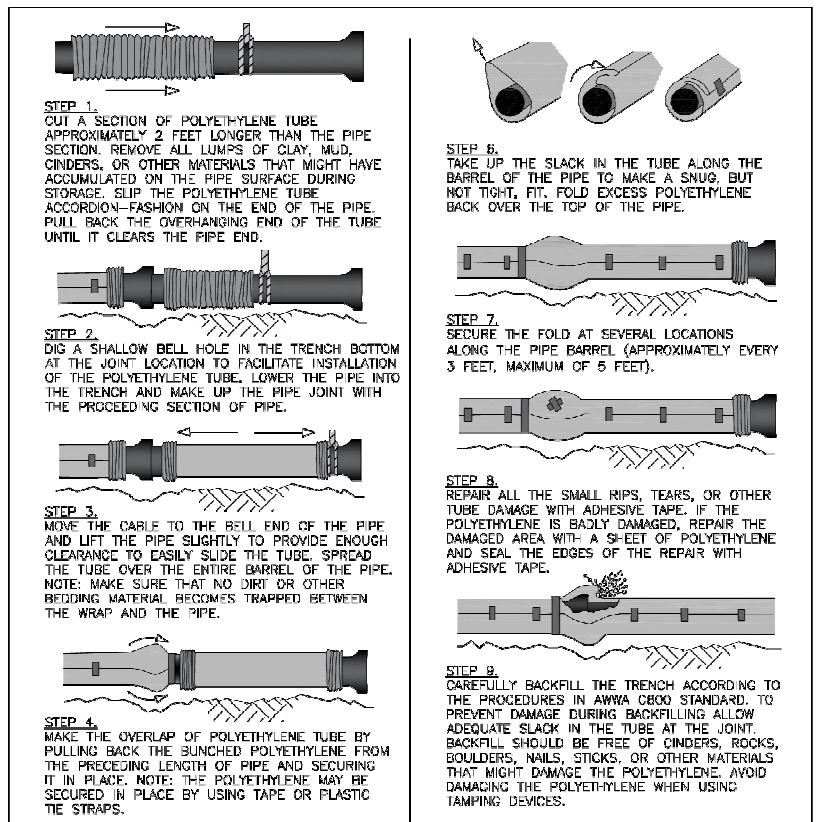
NOTES:

1. RESTRAINED MECHANICAL JOINTS SHOWN EXCEPT AS NOTED.
2. TIE TOP BENDS BACK TO FULL LENGTH OF PIPE IN UNEXCAVATED TRENCH.
3. VALVES, TEES AND HYDRANTS MAY BE HARNESSED SIMILARLY.
4. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURES–PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
5. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
6. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.
7. IF EXISTING PIPE IS CIP OR PVC, CONNECT TO NEW FITTING ONLY WHEN ALLOWED BY ENGINEER.

TIE ROD SCHEDULE

PIPE SIZE	PIPE TYPE	ROD ⌀	NUMBER OF RODS
8"	PVC	3/4"	2

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK — STANDARD DETAIL HARNESSING DETAILS–INSTALL OFFSET IN EXISTING WATERMAIN — DWG. NO. SD10 — DATE 6/00 — REVISED 10/05



NOTES:

1 – POLYETHYLENE WRAP (POLYWRAP) SHALL BE OF PROPER DIAMETER TO FIT OVER BELLS AND EXTERNAL WEDGE–ACTION RETAINER GLANDS.
2 – CAST AND DUCTILE IRON FITTINGS (BENDS, TEES, VALVES, ETC.) ARE TO BE WRAPPED IN POLYWRAP AND SECURED IN PLACE.
3 – DO NOT USE CHAINS, METAL WIRE, OR OTHER SUPPORTING SYSTEMS WHICH MAY DAMAGE THE POLYETHYLENE ENCASEMENT. REPLACE DAMAGED POLYWRAP ACCORDINGLY.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK — STANDARD DETAIL POLYETHYLENE ENCASEMENT OF DUCTILE IRON PIPE — DWG. NO. SD32 — DATE 06/16 — REVISED 02/19

TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

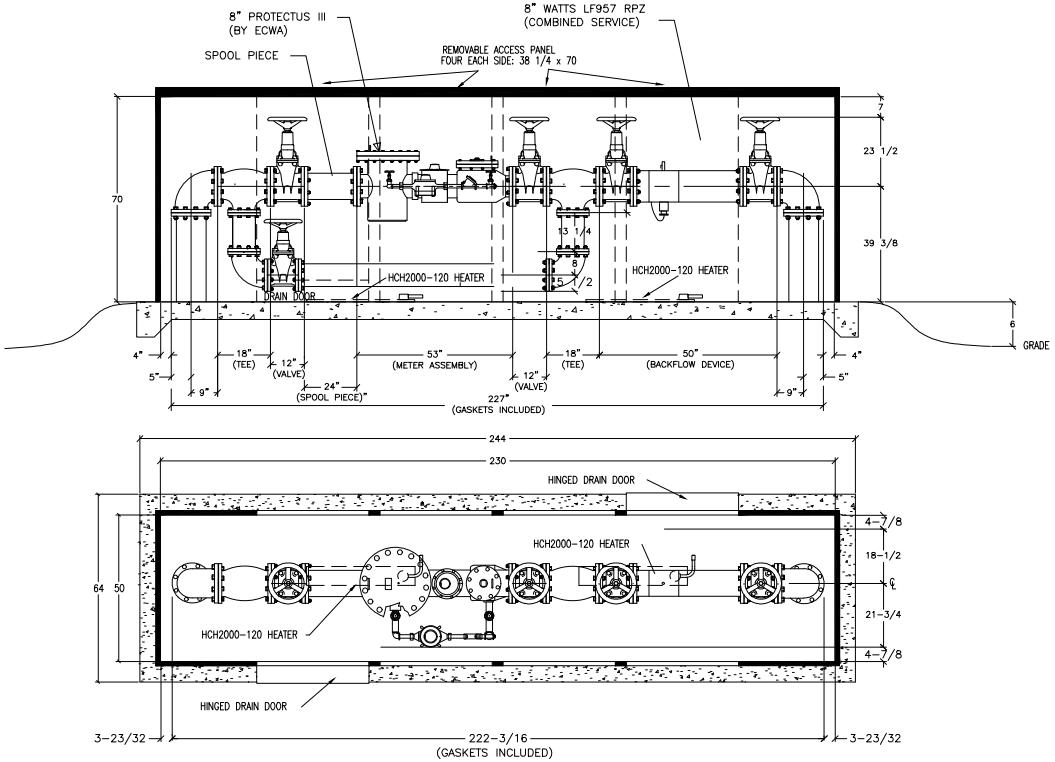
DRAWING NAME:
Water Details & Notes

DRAWING NO.
C-4

Project no.: 2

2.a

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



LEGEND:

REMOVABLE ACCESS PANEL 38 1/4"W x 70"H w/DRAIN DOOR

REMOVABLE ACCESS PANEL 38 1/4"W x 70"H

8"METER & RPZ INSULATED ENCLOSURE

NOTES:

1. BACKFLOW PREVENTER DIMENSIONS FURNISHED BY WATTS
2. ALL DIMENSIONS ARE IN INCHES
3. WALL & INSULATION THICKNESS IS 1-1/2"
4. ROOF & INSULATION THICKNESS IS 3"
5. ENCLOSURE SHOWN IS SAFE-T-COVER MODEL 1000D-ALC00-17
6. EXTERIOR ENCLOSURE DIMENSIONS: 53"W x 233"L x 73" H
7. CONCRETE PAD IS 64"W x 244"L x 6"THK W/W.W.F. 6X6/10X10
8. METER SHOWN: 8" PROTECTUS III, SPOOL PIECE & METER SUPPLIED BY ECWA, VERIFY DIMENSIONS PRIOR TO ORDERING
9. RPZ SHOWN: 8" WATTS LF957 RPZ
10. CONTRACTOR TO INSTALL ELECTRIC SERVICE TO ENCLOSURE, COORDINATE SOURCE WITH OWNER
11. INSTALL A 120V GFI OUTLET IN THE ENCLOSURE
12. HEATERS TO HAVE THERMOSTAT CONTROL
13. ALL 8" PIPING & FITTINGS WITHIN THE ENCLOSURE SHALL BE DUCTILE IRON
14. CONCRETE PAD TO BE 6" ABOVE ADJACENT GRADE

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Insulated Enclosure Detail

DRAWING NO.

C-4

Project no.: 2

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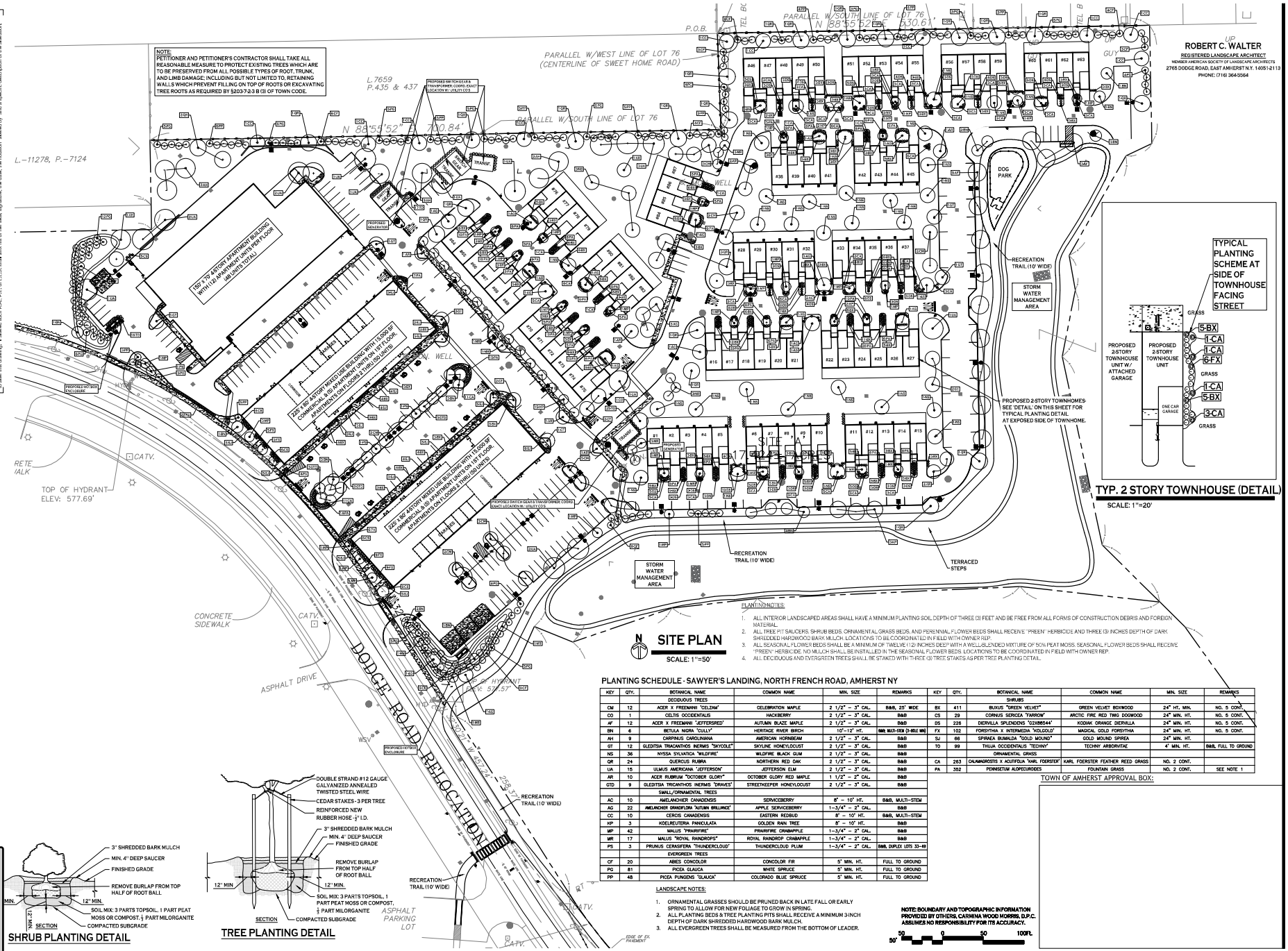
NOTE:
PETITIONER AND PETITIONER'S CONTRACTOR SHALL TAKE ALL REASONABLE MEASURE TO PROTECT EXISTING TREES WHICH ARE TO BE PRESERVED FROM ALL POSSIBLE TYPES OF ROOT, TRUNK, AND LIMB DAMAGE; INCLUDING BUT NOT LIMITED TO, RETAINING WALLS WHICH PREVENT FILLING ON TOP OF ROOTS OR EXCAVATING TREE ROOTS AS REQUIRED BY §203-7-2-3 B (3) OF TOWN CODE.



SITE PLAN
SCALE: 1"=50'

TYP. 2 STORY TOWNHOUSE (DETAIL)
SCALE: 1"=20'

PLANTING NOTES:
1. ALL INTERIOR LANDSCAPED AREAS SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.
2. ALL TREE PIT SAUCERS, SHRUB BEDS, ORNAMENTAL GRASS BEDS, AND PERENNIAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE AND THREE (3) INCHES DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
3. ALL SEASONAL FLOWER BEDS SHALL BE A MINIMUM OF TWELVE (12) INCHES DEEP WITH A WELL-BLENDED MIXTURE OF 50% PEAT MOSS. SEASONAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE. NO MULCH SHALL BE INSTALLED IN THE SEASONAL FLOWER BEDS. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
4. ALL DECIDUOUS AND EVERGREEN TREES SHALL BE STAKED WITH THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

PLANTING SCHEDULE - SAWYER'S LANDING, NORTH FRENCH ROAD, AMHERST NY

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		DECIDUOUS TREES			
CM	12	ACER X FREEMANII "CELZAM"	CELEBRATION MAPLE	2 1/2" – 3" CAL.	B&B, 25' WIDE
CO	1	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" – 3" CAL.	B&B
AF	12	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2 1/2" – 3" CAL.	B&B
BN	6	BETULA NIGRA 'CULLY'	HERITAGE RIVER BIRCH	10'-12' HT.	B&B, MULTI-STEM (3-4BLE MIN)
AH	9	CARPINUS CAROLNIANA	AMERICAN HORNBEAM	2 1/2" – 3" CAL.	B&B
GT	12	GLEDITSIA TRIACANTHOS INERMIS "SKYCOLE"	SKYLINE HONEYLOCUST	2 1/2" – 3" CAL.	B&B
NS	36	NYSSA SYLVATICA "WILDFIRE"	WILDFIRE BLACK GUM	2 1/2" – 3" CAL.	B&B
QR	24	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" – 3" CAL.	B&B
UA	15	ULMUS AMERICANA 'JEFFERSON'	JEFFERSON ELM	2 1/2" – 3" CAL.	B&B
AR	10	ACER RUBRUM "OCTOBER GLORY"	OCTOBER GLORY RED MAPLE	1 1/2" – 2" CAL.	B&B
GTD	9	GLEDITSIA TRICANTHOS INERMIS "DRAVES'	STREETKEEPER HONEYLOCUST	2 1/2" – 3" CAL.	B&B
		SMALL/ORNAMENTAL TREES			
AC	10	AMELANCHER CANADENSIS	SERVICEBERRY	8' – 10' HT.	B&B, MULTI-STEM
AG	22	AMELANCHER GRANDIFLORA 'AUTUMN BRILLIANCE'	APPLE SERVICEBERRY	1-3/4" – 2" CAL.	B&B
CC	10	CERCIS CANADENSIS	EASTERN REDBUD	8' – 10' HT.	B&B, MULTI-STEM
KP	3	KOELREUTERIA PANICULATA	GOLDEN RAIN TREE	8' – 10' HT.	B&B
MP	42	MALUS "PRAIRIFIRE"	PRAIRIFIRE CRABAPPLE	1-3/4" – 2" CAL.	B&B
MR	17	MALUS "ROYAL RAINDROPS"	ROYAL RAINDROP CRABAPPLE	1-3/4" – 2" CAL.	B&B
PS	3	PRUNUS CERASIFERA "THUNDERCLOUD"	THUNDERCLOUD PLUM	1-3/4" – 2" CAL.	B&B, DUPLEX LOTS 33-48
		EVERGREEN TREES			
CF	20	ABIES CONCOLOR	CONCOLOR FIR	5' MIN. HT.	FULL TO GROUND
PG	81	PICEA GLAUCA	WHITE SPRUCE	5' MIN. HT.	FULL TO GROUND
PP	48	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5' MIN. HT.	FULL TO GROUND

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		SHRUBS			
BX	411	BUXUS "GREEN VELVET"	GREEN VELVET BOXWOOD	24" HT. MIN.	NO. 5 CONT.
CS	29	CORNUS SERICEA "FARROW"	ARCTIC FIRE RED TWIG DOGWOOD	24" MIN. HT.	NO. 5 CONT.
DS	226	DIERVILLA SPLENDENS 'G2X86544'	KODIAK ORANGE DIERVILLA	24" MIN. HT.	NO. 5 CONT.
FX	102	FORSYTHIA X INTERMEDIA "KOLGOLD"	MAGICAL GOLD FORSYTHIA	24" MIN. HT.	NO. 5 CONT.
SJ	66	SPIRAEA BUMALDA "GOLD MOUND"	GOLD MOUND SPIREA	24" MIN. HT.	
TO	99	THUJA OCCIDENTALIS "TECHNY"	TECHNY ARBORVITAE	4' MIN. HT.	B&B, FULL TO GROUND
		ORNAMENTAL GRASS			
CA	263	CALAMAGROSTIS X ACUTIFLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	NO. 2 CONT.	
PA	352	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	NO. 2 CONT.	SEE NOTE 1

LANDSCAPE NOTES:
1. ORNAMENTAL GRASSES SHOULD BE PRUNED BACK IN LATE FALL OR EARLY SPRING TO ALLOW FOR NEW FOLIAGE TO GROW IN SPRING.
2. ALL PLANTING BEDS & TREE PLANTING PITS SHALL RECEIVE A MINIMUM 3-INCH DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.
3. ALL EVERGREEN TREES SHALL BE MEASURED FROM THE BOTTOM OF LEADER.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50 100FT

TOWN OF AMHERST APPROVAL BOX:

SHRUB PLANTING DETAIL

TREE PLANTING DETAIL

Carmina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

UP
ROBERT C. WALTER
REGISTERED LANDSCAPE ARCHITECT
MEMBER AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
2765 DODGE ROAD, EAST AMHERST N.Y. 14051-2113
PHONE: (716) 364-9564

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/09/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Landscape Plan

DRAWING NO.
L-1
Project no.: 2

Packet Pg. 1531

2.a

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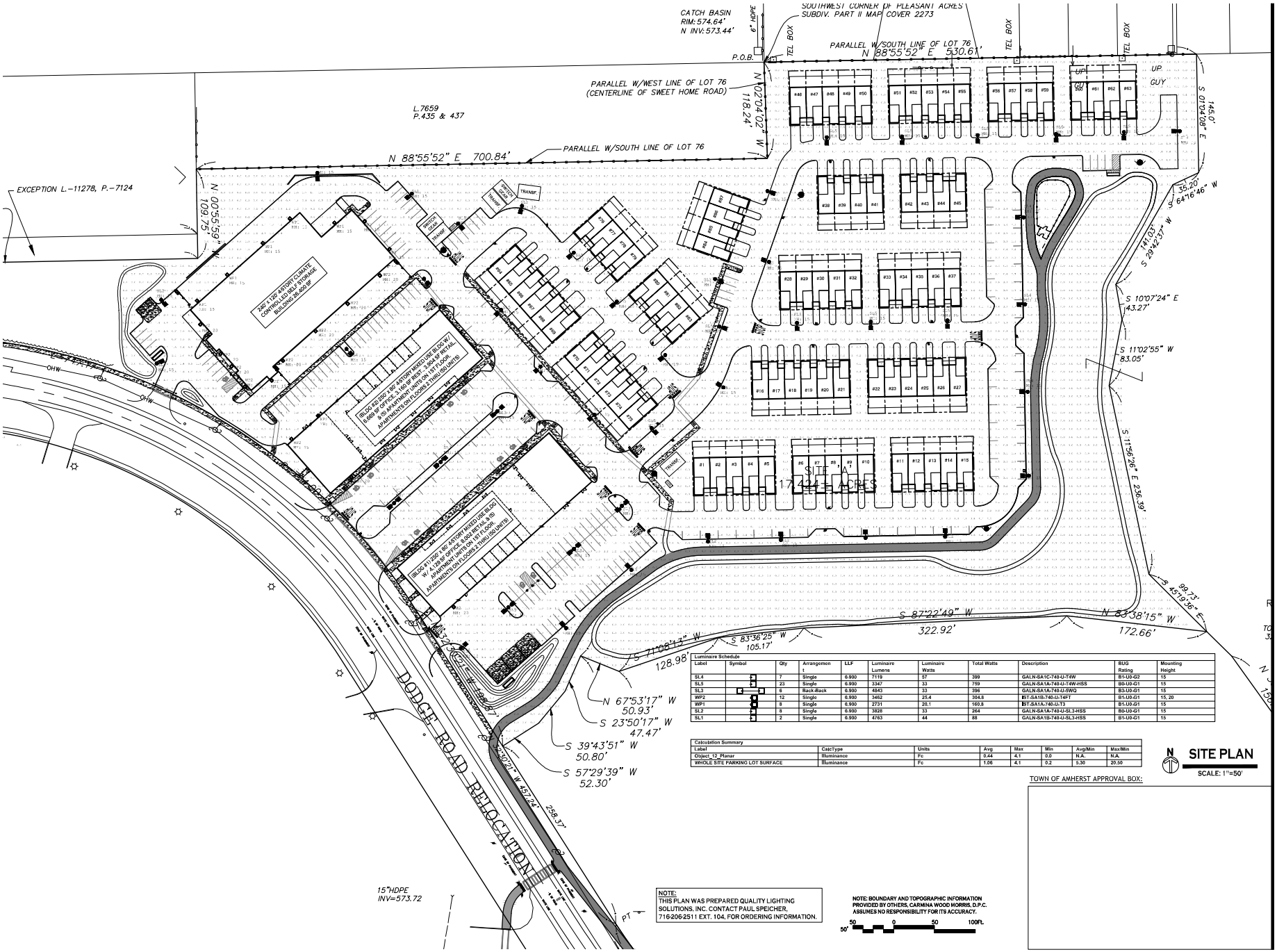


Luminaire Schedule										
Label	Symbol	Qty	Arrangement	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Description	BUG Rating	Mounting Height
SL4		7	Single	0.900	7119	57	399	GALN-SA1C-740-U-T4W	B1-U0-G2	15
SL5		23	Single	0.900	3347	33	759	GALN-SA1A-740-U-T4W-HSS	B0-U0-G1	15
SL3		6	Back-Back	0.900	4843	33	396	GALN-SA1A-740-U-SWQ	B3-U0-G1	15
WP2		12	Single	0.900	3462	25.4	304.8	BST-SA1B-740-U-T4FT	B1-U0-G1	15, 20
WP1		8	Single	0.900	2731	20.1	160.8	BST-SA1A-740-U-T3	B1-U0-G1	15
SL2		8	Single	0.900	3828	33	264	GALN-SA1A-740-U-SL3-HSS	B0-U0-G1	15
SL1		2	Single	0.900	4763	44	88	GALN-SA1B-740-U-SL3-HSS	B1-U0-G1	15

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Object_12_Planar	Illuminance	Fc	0.44	4.1	0.0	N.A.	N.A.
WHOLE SITE PARKING LOT SURFACE	Illuminance	Fc	1.06	4.1	0.2	5.30	20.50

NOTE:
THIS PLAN WAS PREPARED QUALITY LIGHTING SOLUTIONS, INC. CONTACT PAUL SPEICHER, 716-206-2511 EXT. 104, FOR ORDERING INFORMATION.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

N SITE PLAN
SCALE: 1"=50'

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per updated layout	05/16/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

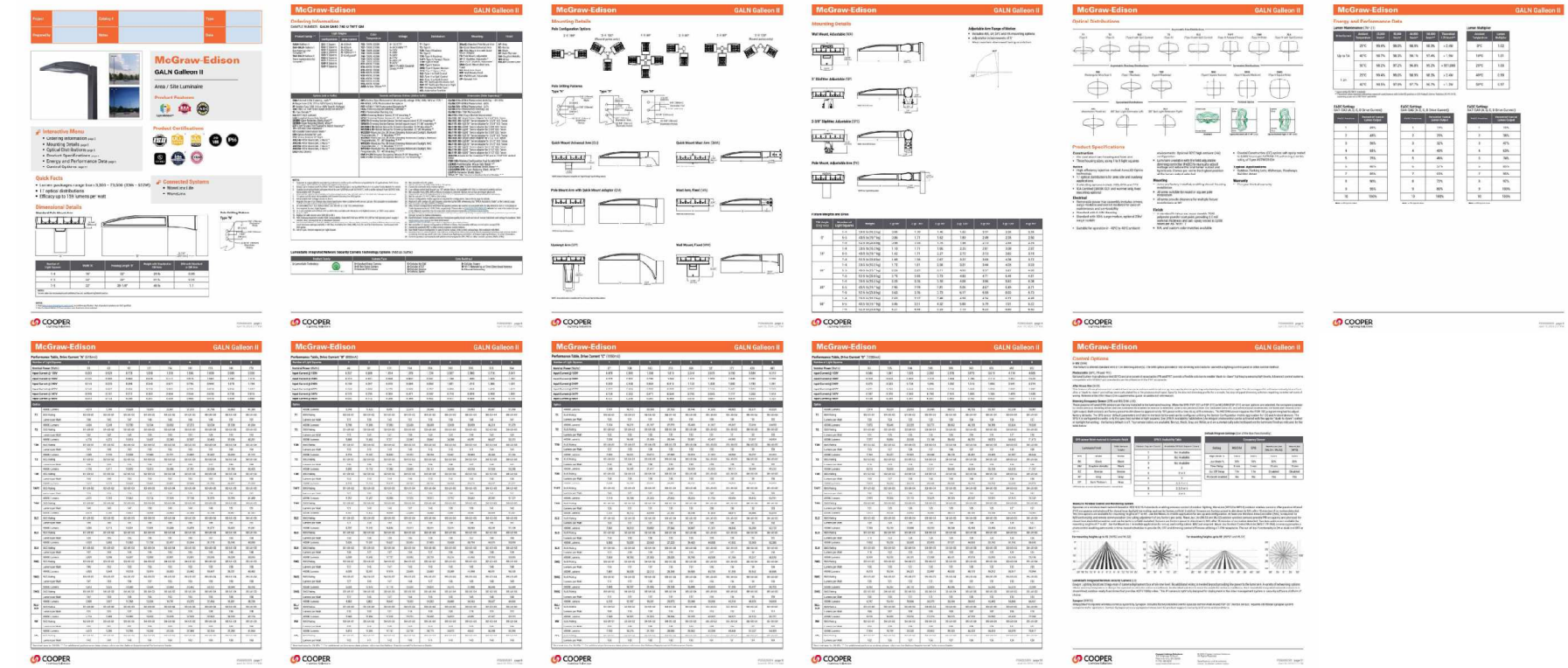
Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Photometric Plan

DRAWING NO.
LP-[illegible]

Project no.: 2[illegible]

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)





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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan revised per updated layout	05/16/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Photometric Details

DRAWING NO.

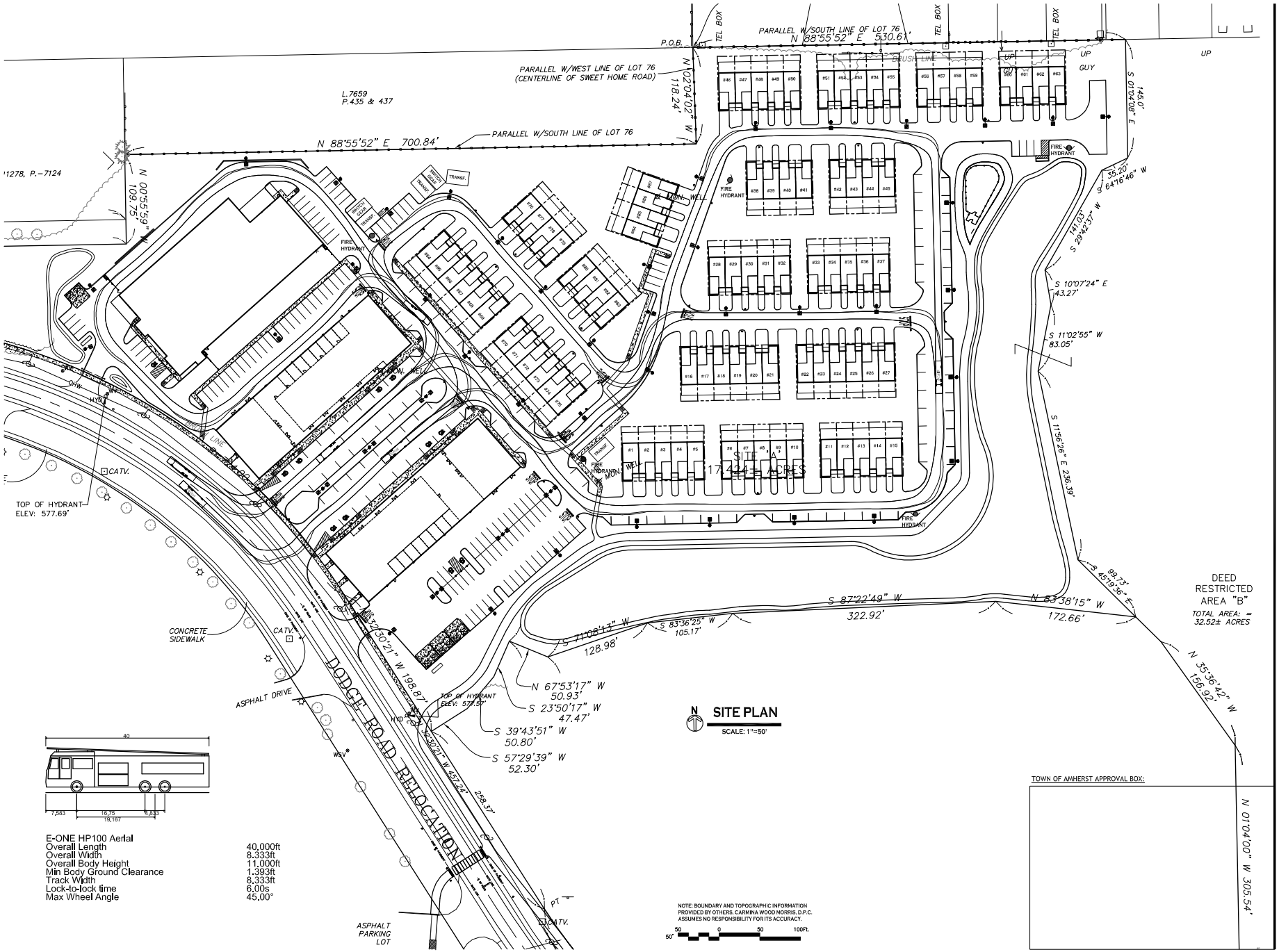
LP-

Project no.: 2

2.a

TOWN OF AMHERST APPROVAL BOX:

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



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E-ONE HP100 Aerial

Overall Length	40.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Fire Truck Plan

DRAWING NO.
TT-1

Project no.: 2

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix H

Soils Information

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Map—Erie County, New York



Map Scale: 1:3,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Erie County, New York
Survey Area Data: Version 20, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2019—Oct 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ge	Getzville silt loam	27.2	87.5%
Ld	Lamson mucky very fine sandy loam	1.8	5.7%
Sw	Swormville clay loam	2.1	6.8%
Totals for Area of Interest		**31.1**	**100.0%**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix I

SHPO Information

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

October 10, 2001

Carolyn A. Pierce
CCRG
105 Robie Avenue
Buffalo, New York 14214

Dear Ms. Pierce:

Re: SEQRA
Muir Woods Mixed-Use Development
Amherst/Erie County
01PR0345

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:cmp

RECEIVED
OCT 16 2001
CIMINELLI DEVELOPMENT COMPANY, INC.

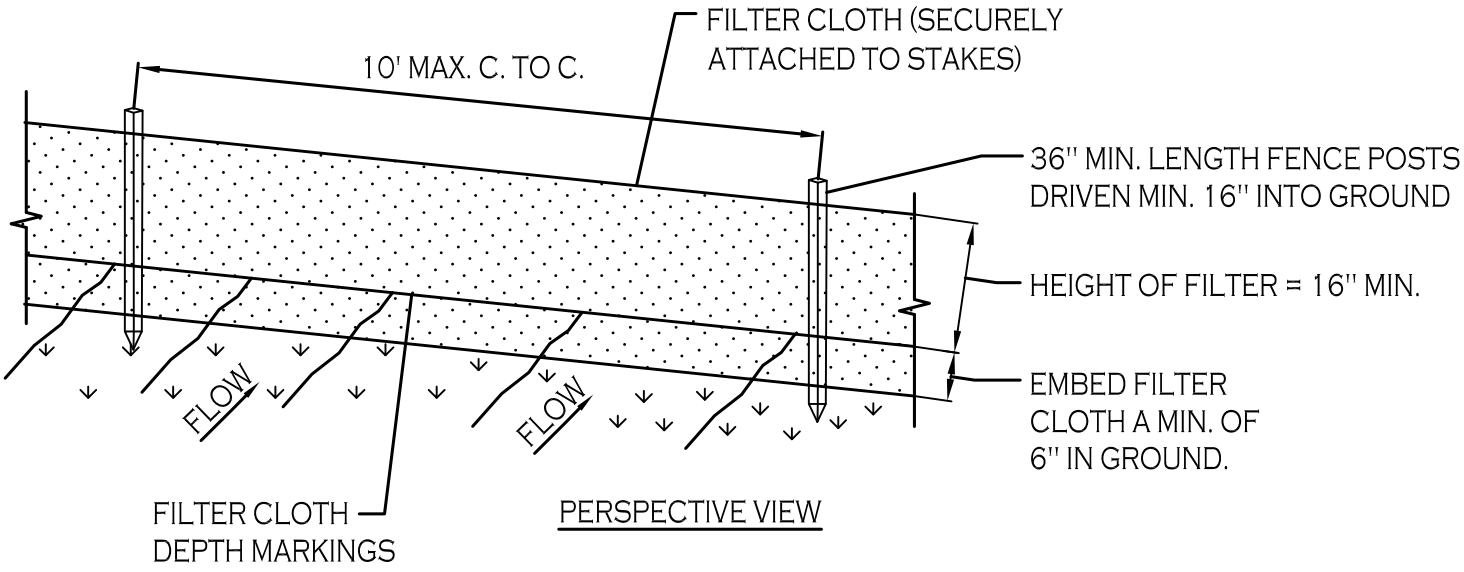
An Equal Opportunity/Affirmative Action Agency
printed on recycled paper

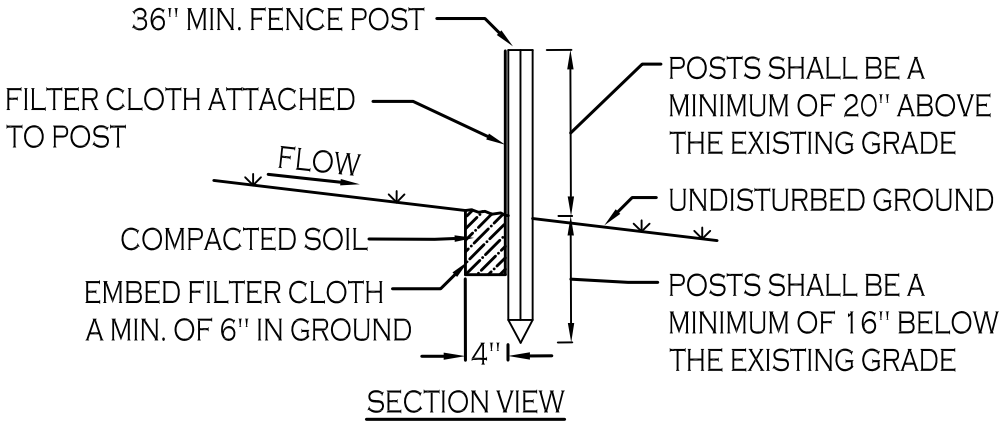
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix J

Standard Erosion Control Details

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)





CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.

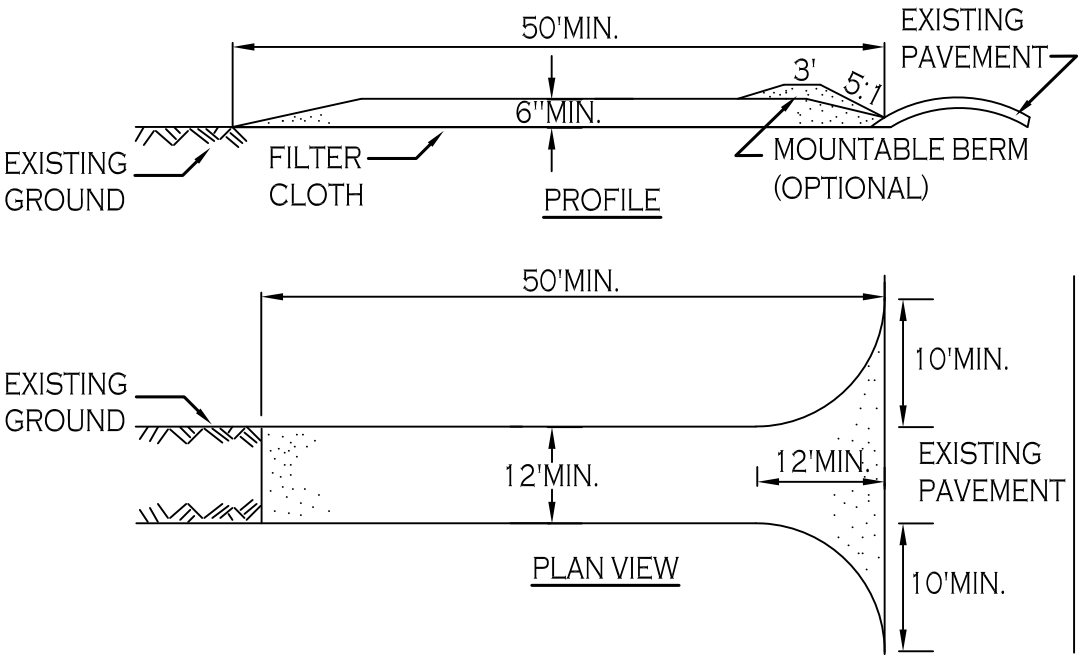
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.

3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).

3. THICKNESS - NOT LESS THAN SIX (6) INCHES.

4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.

5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

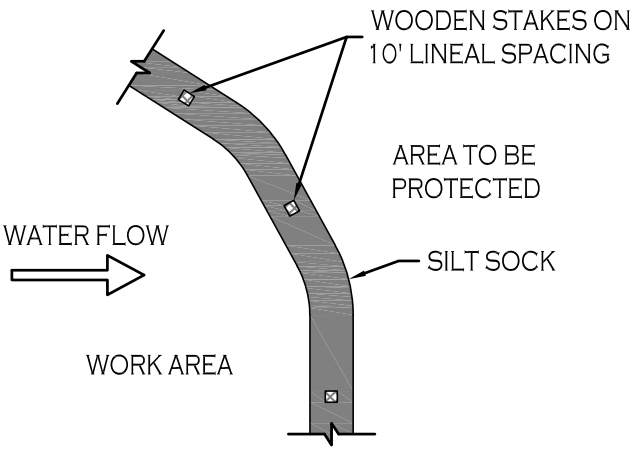
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

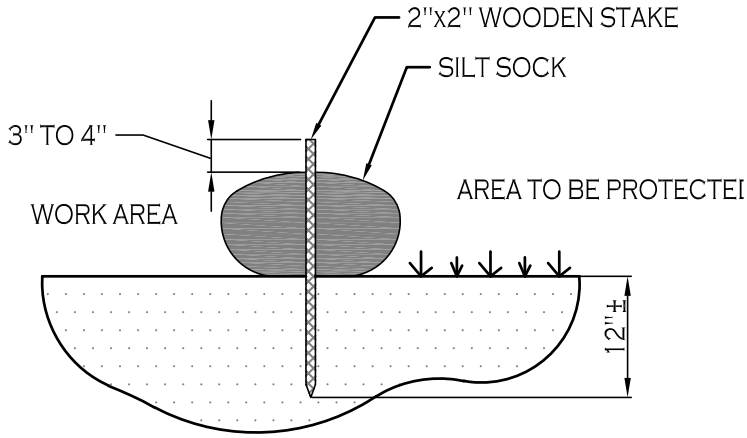
STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



PLAN VIEW



SECTION VIEW

NOTES:

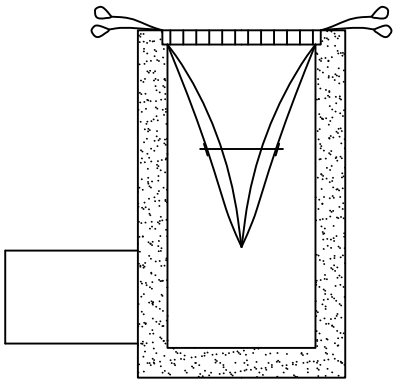
CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

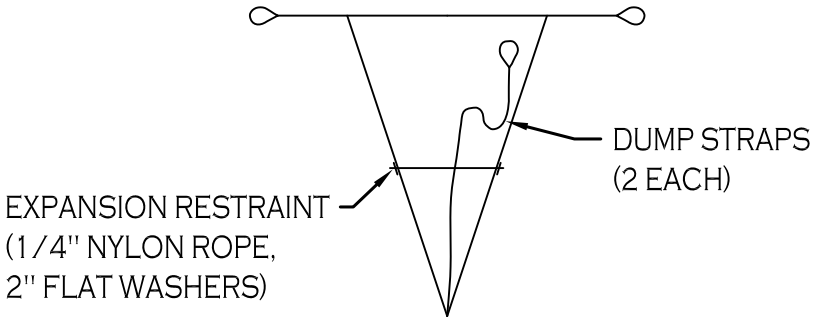
SILT SOCK DETAIL

NOT TO SCALE

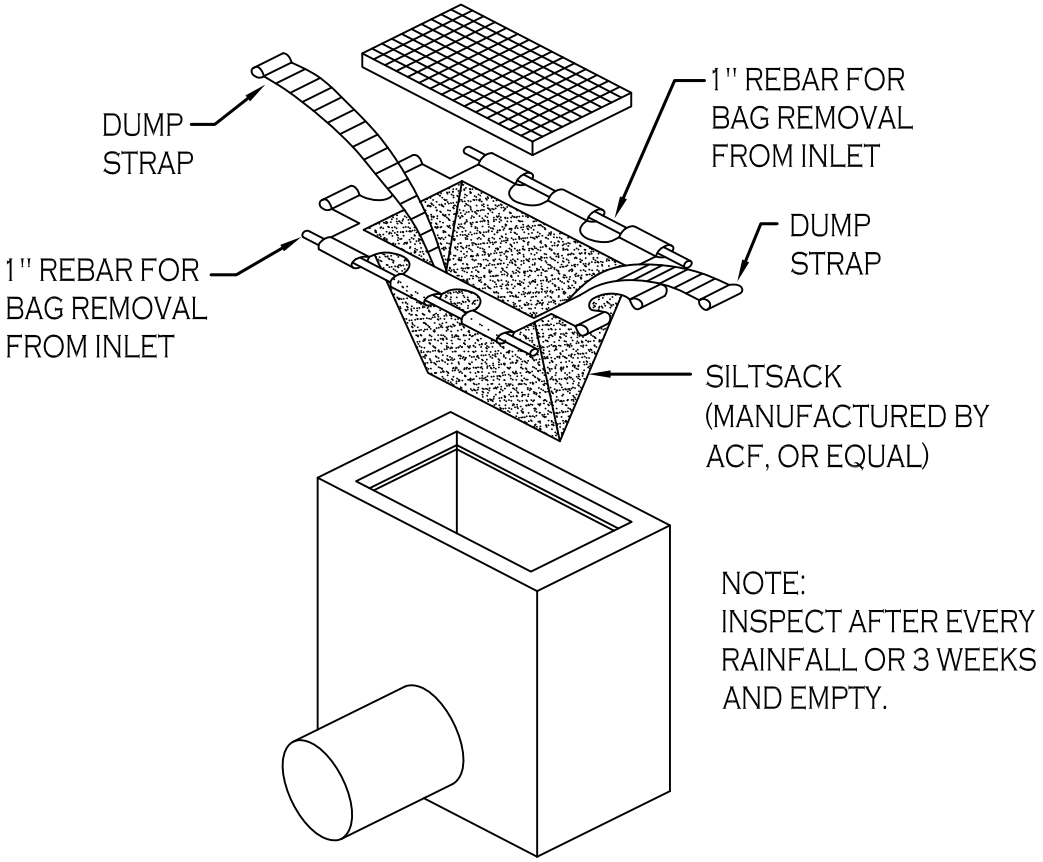
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



INSTALLATION DETAIL



BAG DETAIL

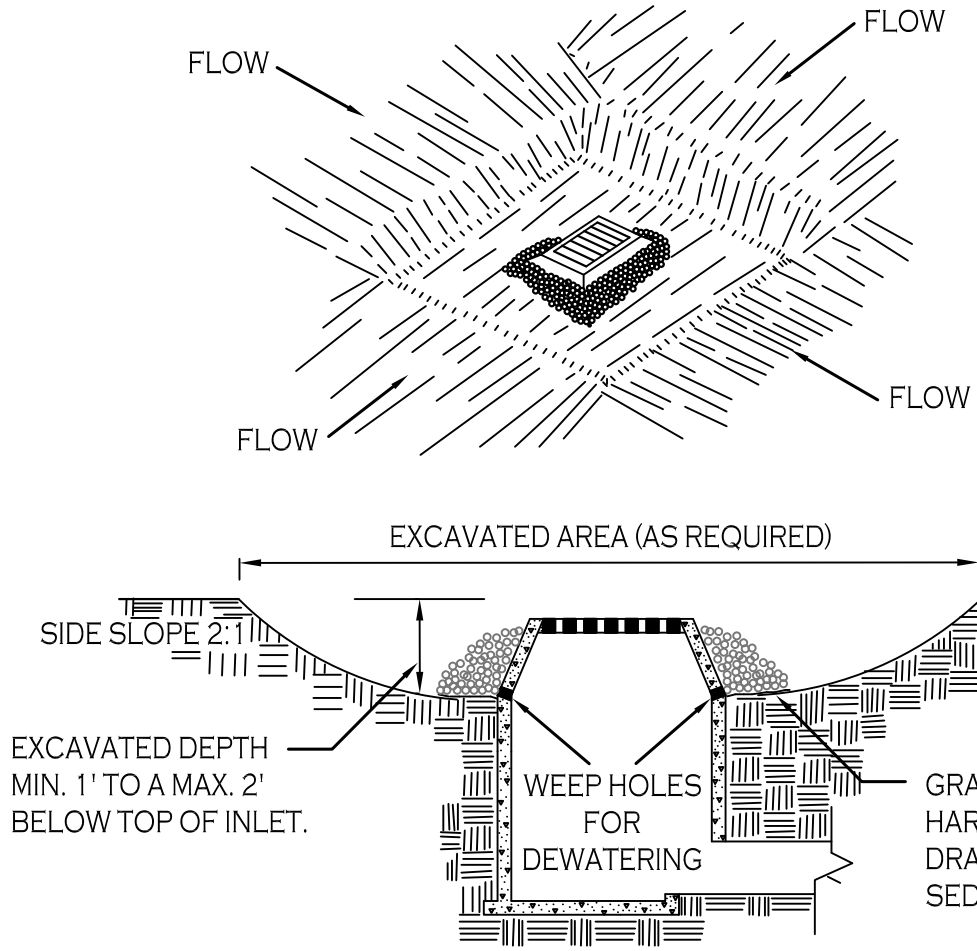


NOTE:
INSPECT AFTER EVERY
RAINFALL OR 3 WEEKS
AND EMPTY.

SILT SACK DETAIL

NOT TO SCALE

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



CONSTRUCTION SPECIFICATIONS

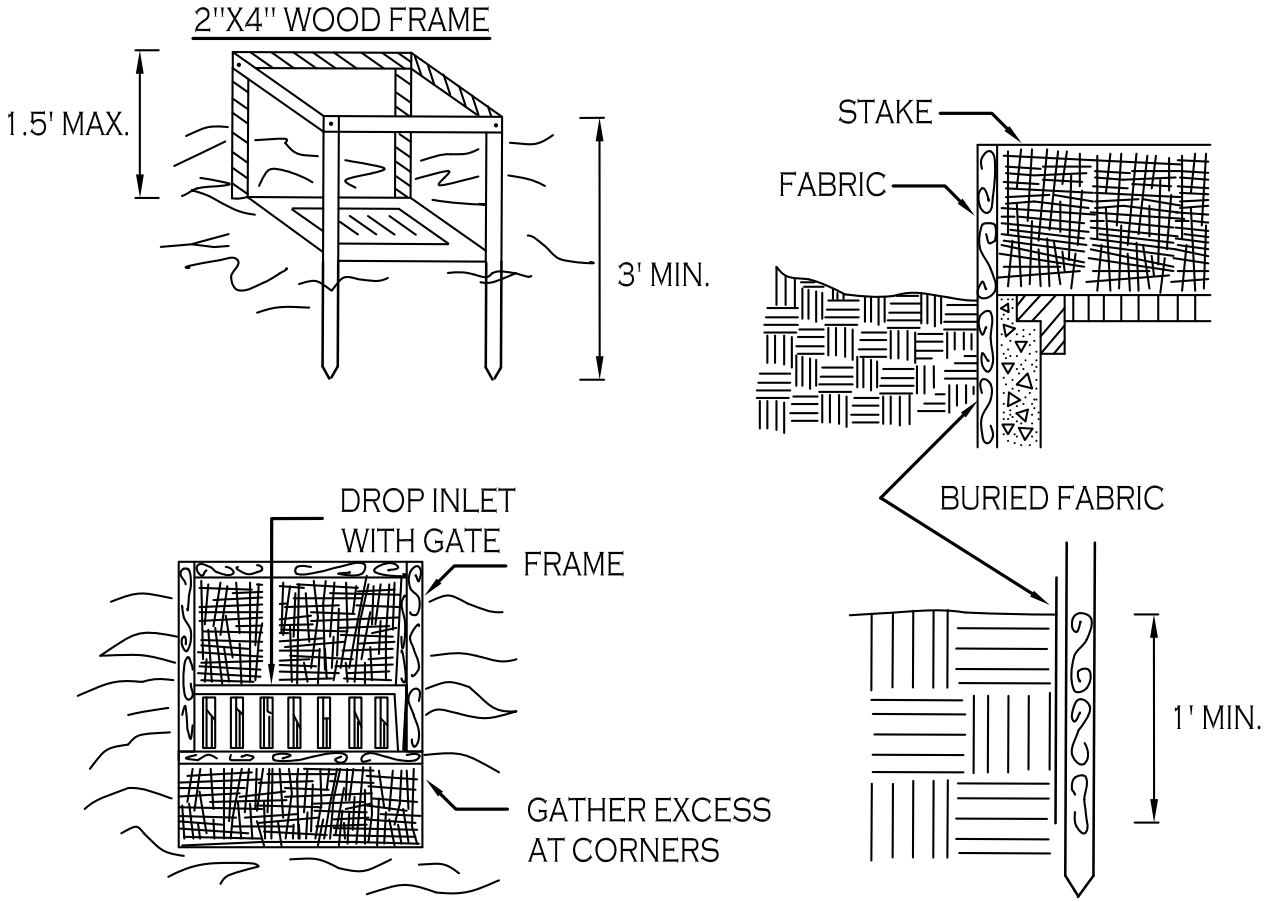
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.

2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.

3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.

4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.

5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.

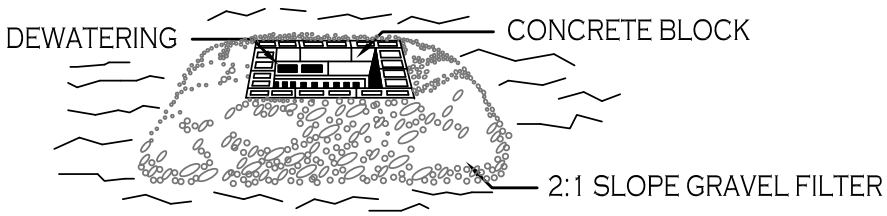
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

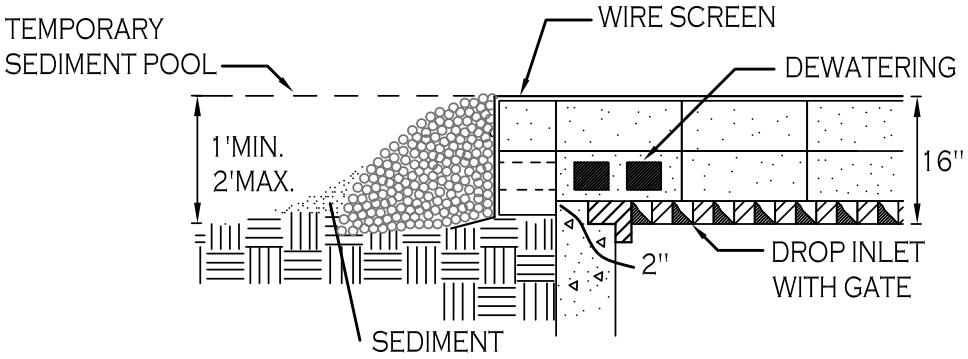
INLET PROTECTION DETAIL 2

NOT TO SCALE

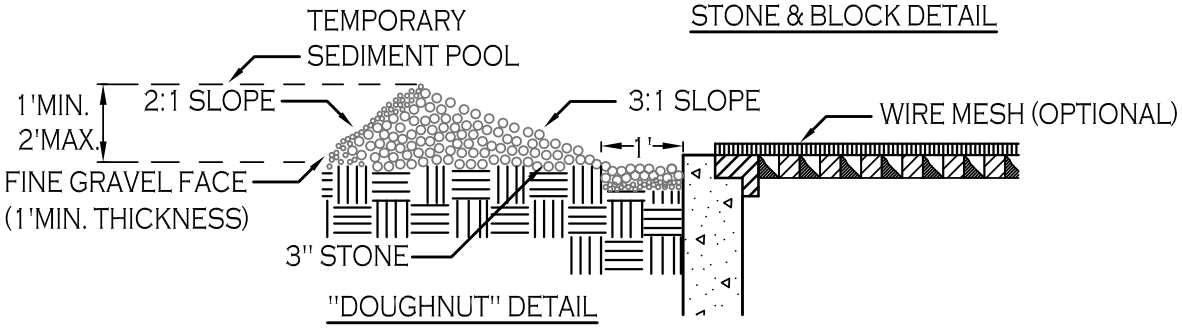
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.

2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.

3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.

4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

NOT TO SCALE

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix K

Wetland Permits

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7165 | F: (716) 851-7168
www.dec.ny.gov

December 24, 2020

Mr. Adam Faeth
Ciminelli Real Estate Corporation
50 Fountain Plaza, Suite 500
Buffalo, New York 14202

Muir Woods Development – "Site A"
Permit Transmittal Letter
Permit No. 9-1422-00398/00001

Dear Mr. Faeth:

Enclosed is your permit which was issued in accordance with applicable provisions of the Environmental Conservation Law. The permit is valid for only that project, activity or operation expressly authorized. If modifications are desired after permit issuance, you must submit the proposed revisions and receive written approval from the Permit Administrator prior to initiating any change. If the Department determines that the modification represents a material change in the scope of the authorized project, activity, operation or permit conditions, you will be required to submit a new application for permit.

Please review all permit conditions carefully. In particular, identify your initial responsibilities under this permit in order to assure timely action if required. Since failure to comply precisely with permit conditions may be treated as a violation of the environmental conservation law, you are requested to provide a copy of the permit to the project contractor, facility operator, and other persons directly responsible for permit implementation (if any).

If you have any questions, please contact this office at the above address.

Respectfully,
David S. Denk
Regional Permit Administrator

Enclosure
ecc: NYSDEC Law Enforcement
Maureen Brady, NYSDEC Office of General Counsel
Mr. Chuck Rosenburg, NYSDEC Division of Fish and Wildlife
Mr. Martin Crossen, USACOE
Sean Hopkins, Esq., Hopkins Sorgi & McCarthy PLLC

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
Ciminelli Muir Woods LLC
50 Fountain Plaza, Suite 500
Buffalo, NY 14202
(716) 631-8000

Facility:
MUIR WOODS DEVELOPMENT
1121 N French Rd
Amherst, NY 14228

Facility Location: in AMHERST in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 191.586 NYTM-N: 4770.823
Latitude: 43°01'38.9" Longitude: 78°47'07.2"

Authorized Activity: Construction of a mixed-use project named "Muir Woods" consisting of approximately two 4-story mixed-use buildings consisting of commercial space and residential units, 90 two-family townhouses and 2 six-unit apartment buildings, approximately 133 detached single-family residential units and 515 cottage-style and apartment-style housing units with various amenities; and gas, electric, sanitary, potable water and storm water (the necessary infrastructure), while maintaining open space on approximately 224 acres in the Audubon New Community District. The Muir Woods project property is a 326 acre site bounded by the Lockport Expressway (Interstate Route 990) and Dodge Road on the south, Sweet Home Road on the west, North French Road on the north and Campbell Boulevard on the east. The project will result in permanent impacts to approximately 2.39 acres of State regulated wetlands (TE-22, TE-23 and TE-34), and 11.38 acres of State regulated 100 foot wide wetland adjacent area. As mitigation for those impacts the project includes creation of 19.58 acres of in-kind and out-of-kind wetlands on-site, in six areas, to replace the functions and benefits of the impacted wetlands. There will be 4.3 acres of stream channel enhancement on-site as mitigation for State wetland regulated adjacent area impacts. The project also includes construction at 520 Campbell Road property as detailed on plan sheets referenced in Natural Resource Condition No. 4.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 9-1422-00398/00001

Renewal	Effective Date: 1/10/2019	Expiration Date: 11/30/2024
Modification # 1	Effective Date: 12/17/2019	Expiration Date: 11/30/2024
Modification # 2	Effective Date: 12/24/2020	Expiration Date: 11/30/2024

Water Quality Certification - Under Section 401 - Clean Water Act
Permit ID 9-1422-00398/00002

Renewal	Effective Date: 1/10/2019	Expiration Date: 11/30/2024
Modification # 1	Effective Date: 12/17/2019	Expiration Date: 11/30/2024
Modification # 2	Effective Date: 12/24/2020	Expiration Date: 11/30/2024

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: DAVID S DENK, Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
270 Michigan Ave
Buffalo, NY 14203 -2915

Authorized Signature: _____ Date ___/____/____

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS; WATER QUALITY CERTIFICATION

1. **No Work Prior to Approval of Legal Instrument for Preservation of Undeveloped Areas of Site** No work authorized by this permit may begin until the Department approves a legal instrument, such as a deed restriction and/or conservation easement, that will preserve in perpetuity the natural resource values of the undeveloped areas of the site. This condition does not apply to the 520 Campbell Boulevard property.

2. **Declaration of Restrictions 520 Campbell Boulevard Property** A Declaration of Restrictions permanently prohibiting any future development of the 6.88 acres of jurisdictional federal wetlands and portion of the upland area on 520 Campbell Boulevard as depicted on the Wetland Restriction Exhibit Map must be incorporated into the deeds for lots 1 – 12 and 21. By 60 days after Water Quality Certification issuance, the permittee shall file with the real property records of the Erie County Clerk`s Office, the deed for each applicable lot containing this notice. The permittee shall within two weeks following the filing of the deed(s) submit proof of filing from the County Clerk's Office

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

showing the Liber and page number at which the deed notice was filed and the date of filing for one of the affected lots to: Regional Permit Administrator, NYSDEC Region 9 Headquarters, 270 Michigan Ave, Buffalo, NY 14203-2915.

3. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by Ciminelli Development Company, Inc. and titled "Supplement #4 to the Wetland Permit Application for Muir Woods Development Project" dated June 2009.

4. **Conformance with Plans Site B** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or the applicant's agent as part of the permit application. Such approved plans include the "Concept Plan - Muir Woods" dated 08 November 2019 amended to show Conifer Planting Area (attached).

5. **Conformance with Plans - 520 Campbell Boulevard** All activities authorized by this permit for the 520 Campbell Boulevard property must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans include those sheets entitled: The Preserve at Muir Woods (DEC Planting Exhibit, DEC Earthwork Exhibit and the Wetland Restriction Exhibit) by Greenman-Pedersen, Inc. dated May 2018.

6. **Conformance with Plans Site A** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or the applicant's agent as part of the permit application. Such approved plans include Drawing C-100 dated July 20, 2020 and received by this Department on August 10, 2020.

7. **Future Phases** Prior to development of Muir Woods Sites A and B, the permittee must obtain specific approval of engineered plans for Sites A and B to ensure compliance with the terms and condition of this permit, the approved wetland mitigation plans and the most current Findings Statement for the overall Muir Woods Project issued pursuant to the State Environmental Quality Review Act. The permittee shall submit the engineered plans for the development of Sites A and B for review by the Department simultaneous with submission of such engineered plans to the Town of Amherst. If required by the Department, the permittee shall make any necessary modifications to the engineered plans to ensure compliance with the terms and conditions of this permit, the approved wetland mitigation plans and the most current Findings Statement.

8. **Permit Conditions Prevail over Plans** If any condition of this permit conflicts with the approved plans noted in Condition Number 1, the permit conditions shall prevail over the plans unless specific written approval for such a change is obtained from this Department prior to implementation.

9. **Pre-construction Meeting to Review Permit** Prior to commencing work at the project site, the permittee shall schedule a pre-construction meeting with Department staff (Contact: Mr. David Denk, Regional Permit Administrator, NYSDEC, Division of Environmental Permits, Telephone : 716/851- 7165 and/or Mr. Charles P. Rosenburg, NYSDEC, Division of Fish and Wildlife, Telephone: 716/851-7010) and selected contractors to review the conditions contained in this permit.

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10. Mark Areas of No Disturbance on the Muir Woods Site Grade stakes and/or other appropriate measures (substantial contractor fencing, perhaps in combination with necessary silt fencing) shall be used to ensure that no equipment enters identified areas of no disturbance within the immediate area under construction (i.e.- Site A, Site B, Site C or Site D) on the Muir Woods project site. Boundaries of the on-site mitigation areas shall likewise be marked to define the limits of that work.

11. Install Controls Along Limits of Disturbance Before any soil is disturbed within a specific Site Development Area, as detailed in Condition #6 above, the permittee shall install securely anchored silt fencing and/or continuous staked hay bales along the limits-of-disturbance as shown on the plans or drawings referenced in this permit. Such erosion and sedimentation controls shall be maintained until unpaved portions of the subject site are stabilized by a self-sustaining cover of vegetation that is adequate to prevent erosion and sedimentation on and off the site. Sediment which has accumulated at the controls shall be removed periodically as necessary during the construction period. Before the controls are removed, the permittee shall remove all sediment that has accumulated at the controls.

12. Work Within Ares Depicted on Plans All construction activity, including operation of machinery, excavation, filling, grading, clearing of vegetation, disposal of waste, street paving and stockpiling of material must take place within the Site Development Areas or mitigation areas as depicted on the project plans referenced by this permit. Construction activity is prohibited within areas to be left in a natural condition or locations on the property not within the Site Development Areas or mitigation areas designated by this permit. Disturbance to the wetlands and their regulated 100 foot wide adjacent areas shall be strictly limited to the work areas identified in the plans, and specifically the MAP SHOWING WETLAND IMPACT AREAS - NEW YORK STATE WETLANDS, and APPENDIX M - PROPOSED ON-SITE MITIGATION PLAN.

13. Invasive Species (Non-Native Vegetation) To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment is cleaned of mud, seeds, vegetation and other debris before entering any approved Site Development Areas within State regulated wetlands or their 100 foot wide adjacent areas, as well as all on-site wetland mitigation areas.

14. Prevention of Invasive Species The permittee shall prevent the establishment of invasive species (purple loosestrife, Phragmites, reed canary-grass, Japanese knotweed, glossy buckthorn and common buckthorn) across all disturbed areas within the wetland mitigation area for five growing seasons. If any of these invasive species become established, monitoring and treatment may be extended for an additional 5 years at the Department's discretion.

15. Wetland Mitigation is Mandatory Completion of all freshwater wetland mitigation is mandatory regardless of whether or not construction proceeds to completion. The required mitigation must be completed by the expiration date of this permit. Mitigation will be subject to remediation, if necessary, pursuant to Condition #16 below. All mitigation areas shall be monitored for a period of ten (10) years or until the mitigation is deemed successful by this Department. Monitoring reports shall be prepared for the first four (4) years after construction of the mitigation areas and every other year (years 6, 8 and 10) thereafter. This Department may, at its discretion, modify the 10-year monitoring period and/or monitoring report requirement at any time. Monitoring reports shall be submitted to Mr. Charles P. Rosenburg, Habitat Manager, NYSDEC, Bureau of Ecosystem Health, 270 Michigan Avenue, Buffalo, NY 14203-2915 Telephone: 716/851-7024.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

16. **On-Site Mitigation to be in Accordance with Mitigation Plan** The on-site mitigation shall be in accordance with Appendix M - Proposed On-Site Wetland Mitigation for Muir Woods prepared by Earth Dimensions, Inc. revised May 25, 2009 and with the modifications shown in Exhibit 22 of the July 20, 2020 application binder.

17. **Planting Row of Native Conifers** The permittee shall plant a row of native conifer trees in the location shown on the attached plan. The tree plantings must be a minimum of 6 feet tall, spaced 15 feet apart, and must be planted no later than October 15th following the completion of construction of the adjacent apartment units.

18. **Survival Rate for Mitigation Plantings** The permittee shall prepare a care, maintenance, inspection, and replacement schedule for the tree and shrub plantings described in the mitigation plan to ensure an 85% survival rate for five growing seasons. This condition includes all on-site landscape "buffer" plantings.

19. **Herbicides, Pesticides in Wetland or Adjacent Area** The use of herbicides and other pesticides in State regulated wetlands or their 100 foot wide adjacent areas is a regulated activity and may only be conducted pursuant to a valid Article 33 Pesticides Permit.

20. **Requirement for SPDES General Permit GP-0-15-002 for Stormwater Discharge from Construction Activities** Since development of the Muir Woods site in the Town of Amherst will involve land disturbance of one (1) or more acres, the permittee is required to obtain coverage under State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002 for Stormwater Discharge from Construction Activities. A Notice of Intent (NOI) is required to be sent to NYSDEC, Division of Water, 625 Broadway, 4th Floor, Albany, New York 12233-3505, Telephone: 518/402-8111 and approved before construction commences. Alternatively, an eNOI may be filed electronically as described on the Department's website. The General Permit GP-0-15-002 and NOI form are available on the Department's website at www.dec.state.ny.us.

21. **Visibly Turbid Discharges Prohibited** Visibly turbid discharges from project dewatering operations, excavation and grading activities are strictly prohibited to any "water body" (pond, wetland, stream or water course). Any such discharges shall be (1) retained in an appropriately maintained upland settling basin, filtered through crushed stone, sand, filter fabric fences, hay bales etc., or (2) directed to a grassy area sufficiently distant from any water body to preclude such entry.

22. **Stockpiling of Soil** Stockpiling of excavated soil is prohibited at locations within any portion of the TE-22, TE-23 and TE-34 Wetlands or their regulated 100 foot wide adjacent areas, or within any mapped 100-year floodplain beyond the Site Development Areas or mitigation areas identified in the plans.

23. **Stabilize Disturbed Areas** All areas of soil disturbance resulting from this project shall be seeded with an appropriate perennial grass seed and mulched with straw, or hydro-seeded. Mulch shall be maintained until suitable vegetative cover is established.

24. **Temporary Mulch, Final Seeding** If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth.

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25. **Disposal of Material** Any non-merchantable tree and brush debris, demolition debris, excess construction materials, and/or excess excavated materials shall be immediately and completely disposed of on an approved upland site more than 100 feet from any regulated freshwater wetland. These materials shall be suitably stabilized so as not to re-enter any water body, wetland, or wetland adjacent area; and must be disposed of in accordance with all local, state, and federal statutes, regulations, or ordinances.

26. **Placement of Interpretive Signs Required** Permanent interpretive signs shall be placed at various wetland boundary locations throughout the Muir Woods project site . The permittee shall submit a proposal for the signs to the Department for approval. The interpretive signs shall be a minimum of 12 inches by 12 inches and shall be placed on permanent posts.

27. **Annual Project Inspection / Meeting** The permittee shall schedule an annual inspection/meeting to update Department staff on project progress and compliance with conditions of this permit for the on-site wetland mitigation area.

28. **Wetland Monuments** Monuments shall be placed every 200 feet along the outer edge of the wetland preservation areas. The monuments shall be 30" long, 5/8" rebar and cap embedded flush and in the center of the top exposed surface of concrete in a minimum 4 inch diameter, 4.5 foot long section of PVC Schedule 40 drain pipe filled with concrete, extending vertically1.5 to 2 feet above existing grade at each location. The caps shall say "Conservation Area Marker, Do Not Disturb". These monuments are to be permanently maintained.

29. **Wetland Boundaries** The boundaries of the TE-22, TE-23 and TE-34 Wetlands shall be fixed for the period of this permit (expires November 30, 2024). At that time, new boundary delineations for those wetlands will be required by this Department (to be performed or confirmed by a Department Biologist). Since project activities will be subject to the updated wetland boundary delineations and pertinent regulations at that time, any future permit modification (if necessary) would be reviewed based on the updated delineations and pertinent regulations. As such, modifications to the current project plan may be necessary depending upon the updated wetland delineations and permit regulations in effect at that time.

30. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

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31. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

32. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

33. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS

1. **Water Quality Certification** The authorized project, as conditioned pursuant to the Certificate, complies with Section 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act, as amended and as implemented by the limitations, standards, and criteria of state statutory and regulatory requirements set forth in 6 NYCRR Section 608.9(a). The authorized project, as conditioned, will also comply with applicable New York State water quality standards, including but not limited to effluent limitations, best usages and thermal discharge criteria, as applicable, as set forth in 6 NYCRR Parts 701, 702, 703, and 704.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

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The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
270 Michigan Ave
Buffalo, NY14203 -2915

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands, Water Quality Certification.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Public Notice

U.S. Army Corps
of Engineers
Buffalo District
CELRB-TDR

Applicant: Ciminelli Real Estate Corporation

Published: December 21, 2020
Expires: January 11, 2021

Application No: 2001-00067 (2020 Site A Modification)
Section: New York

All written comments should reference the above Application No. and be addressed to:
Attn: Martin Crosson
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE WORK DESCRIBED BELOW. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.

Application for Permit Modification under Authority of Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (33 U.S.C. 1344).

APPLICANT: Ciminelli Real Estate Corporation/Ciminelli Muir Woods, LLC ("Ciminelli"). Ciminelli has requested a modification to an existing permit described below.

WATERWAY & LOCATION: approximately 98 acres of Federal wetlands, a 32 acre lake and approximately 4.4 acres of tributaries have been previously identified as jurisdictional on the 326 acre parcel permitted for development known as "Muir Woods". The permitted project is located in the Town of Amherst, County of Erie and State of New York.

LATITUDE & LONGITUDE: Latitude North: 43°01'46"
Longitude West: -78°46'33"

EXISTING CONDITIONS: On May 14, 2012 a permit was issued to Ciminelli for placement of fill into 17.83 acres of Federal wetland and 1.29 acres of federally regulated tributaries for the multi-use development known as "Muir Woods". The current jurisdictional determination remains valid until the existing permit expiration date of November 30, 2024.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROPOSED MODIFICATION: Ciminelli proposes to modify the existing permit to change the proposed use of the area identified as Site A of the "Muir Woods" site. Under the existing permit, Site A was to consist of research and development and flex office space. The applicant is currently proposing to change the previously proposed use of Site A to a mixed-use commercial and residential development. The concept plan for the proposed project includes two 4-story mixed-use buildings, in addition to two-family townhouses and 6-unit apartment buildings. Also in association with the proposed changes, a new recreational bike/walking trail that will enter Site A from the southeast connection with Site B ultimately connecting to the rest of the on-site trail system and the Town's recreational trail that connects to the North Campus of the University of Buffalo and the Ellicott Creek Trailway system. The applicant has indicated these modifications are necessary due to changes in economic conditions in the real estate market, and also due to their consideration of input from the Town of Amherst municipal boards and the local public.

PROJECT PURPOSE
Basic: Construction of a multi-use development.
Overall: Modification of an existing permitted Ciminelli construction project by changing the proposed use of Site A of the Muir Woods site to the planned development from Research and Development and flex office space to mixed-use commercial and residential development with associated amenities on Site A due to market changes and consideration of the Town of Amherst municipal boards and local public input.

Water Dependency Determination: As with the existing permit, this newly proposed modification resulting in changes in project purpose and use within Site A, impacts to waters of the US have been determined to not be water dependent. Therefore, alternatives that do not require impacts to US waters are presumed to exist. The applicant adequately demonstrated that US waters have been avoided and minimized to the greatest extent practicable. As a result, wetland impacts have been reduced from the currently permitted 13.010 acres to 6.089 in Site A.

Mitigation: The currently permitted wetland impact in Site A is 13.010 acres. The new proposed impact to Site A wetlands are 6.089 acres resulting in a reduction in wetland impacts by 6.921 acres. As a result of the decrease in wetland impacts in Site A, the previously approved off-site mitigation consisting of creation of 27.37 acres of wetland habitat in the Town of Newstead has been proposed to be removed as a permit requirement. The previously approved and currently permitted on-site mitigation for Site A consisting of creation of approximately 10.47 acres of wetland remains unchanged. In addition, the increase in avoided wetland area and the reduction in developed area proposed in Site A results in an increase to the amount of wetland area to be preserved on-site as permanent open space from 3.91 acres to 11.83 acres.

Location and details of the above described work are shown on the attached maps and drawings.

Comments or questions pertaining to the work described in this notice should reference the Application Number and be directed to the attention of Martin Crosson, who can be contacted at the above address, by calling (716) 879-4346, or by e-mail at: martin.h.crosson@usace.army.mil. A lack of response will be interpreted as meaning that there is no objection to the work as proposed.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Comments submitted in response to this notice will be fully considered during the public interest review for this permit application. All written comments will be made a part of the administrative record which is available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof, may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

Any individual may request a public hearing by submitting their written request, stating the specific reasons for holding a hearing, in the same manner and time period as other comments.

Pursuant to Section 106 of the National Historic Preservation Act, this proposed modification to Site A does not constitute an action that requires additional consultation with the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP). In a letter dated September 10, 2009 NYSOPRHP indicated the proposed project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places. The proposed modification does not change the previously considered permit area or determination.

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C. 1531), the Corps of Engineers has concluded consultation with the USFWS to evaluate potential impacts to the northern long-eared bat (NLEB). The Corps has previously determined that the project may affect the NLEB, but that the scope of the work falls within the parameters of the 4(d) Rule. Therefore, consultation has concluded. The existing permit for the project included the entire Site A area. This proposed modification does not constitute an action that requires further coordination or consideration under the Endangered Species Act (16 U.S.C. 1531).

Pursuant to Section 401(d) of the Clean Water Act, A Water Quality Certification will be issued or waived for this proposed project modification by the State of New.

Public hearings for the purposes of the Corps permit program will be held when the District Commander determines he can obtain additional information, not available in written comments, that will aid him in the decision-making process for this application. A Corps hearing is not a source of information for the general public, nor a forum for the resolution of issues or conflicting points of view (witnesses are not sworn, and cross examination is prohibited). Hearings will not be held to obtain information on issues unrelated to the work requiring a permit, such as property ownership, neighbor disputes, or the behavior or actions of the public or applicant on upland property not regulated by the Department of the Army. Information obtained from a public hearing is given no greater weight than that obtained from written comments. Therefore, you should not fail to make timely written comments because a hearing might be held.

The decision to approve or deny this permit modification request will be based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

be relevant to the proposal will be considered including the cumulative effects thereof; among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

SIGNED

Diane C. Kozlowski
Chief, Regulatory Branch

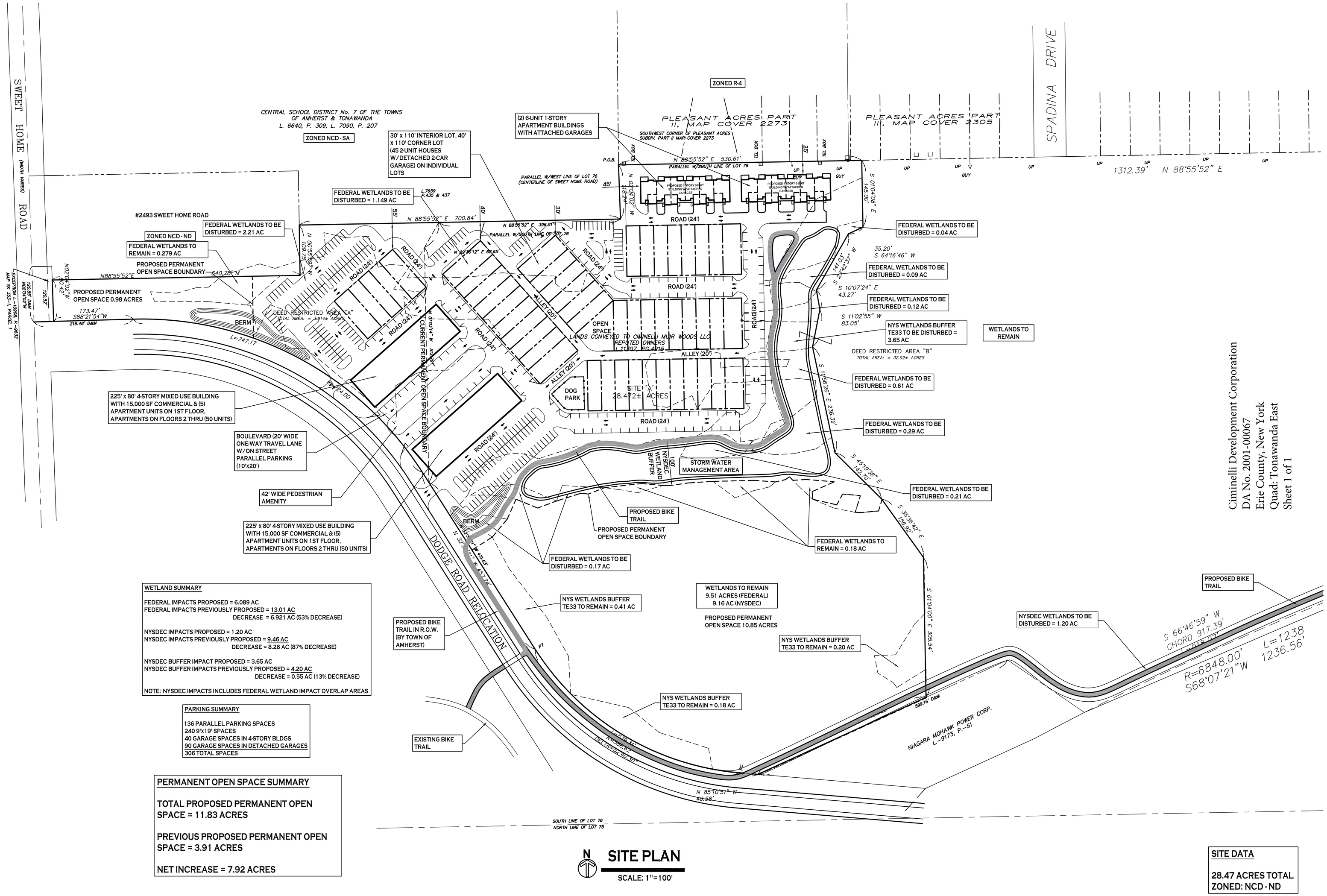
NOTICE TO POSTMASTER: It is requested that this notice be posted continuously and conspicuously for 20 days from the date of issuance.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

All rights reserved. Reuse of these documents without the expressed written permission of Carmina Wood Morris DPC is prohibited. WARNING. It is violation of article 145 sections 7209N and 7301 of the New York State education law for any person, unless acting under the direction of a registered architect, licensed engineer or land surveyor to alter this drawing. If altered such R.A., P.E. or L.L.S. shall affix his or her seal, signature, the date, the notion 'altered by' and a specific description of the alteration.

© Carmina Wood Morris DPC

Attachment: SP-2021-05A application 01162S (2973+ : SP-2021-05A, 50 Dodge Rd.)



SITE PLAN

SCALE: 1"=100'

WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

PARKING SUMMARY

136 PARALLEL PARKING SPACES
240 9'x19' SPACES
40 GARAGE SPACES IN 4-STORY BLDGS
90 GARAGE SPACES IN DETACHED GARAGES
306 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 11.83 ACRES

PREVIOUS PROPOSED PERMANENT OPEN SPACE = 3.91 ACRES

NET INCREASE = 7.92 ACRES

SITE DATA

28.47 ACRES TOTAL
ZONED: NCD - ND

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200Ft.

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date

Ciminelli Development Corporation
DA No. 2001-00067
Erie County, New York
Quad: Tonawanda East
Sheet 1 of 1

PROJECT NAME:

Site Development plans for:

Muir Woods Site "A"

Sweet Home & Dodge Road
Amherst, New York

Date: 7/1/20
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Concept Site Plan

DRAWING NO.

C-100

Project no.: 19.192

Appendix L

NYSDEC Letter of Acknowledgement

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Water, Bureau of Water Permits
625 Broadway, Albany, New York 12233-3505
P: (518) 402-8111 F: (518) 402-9029
www.dec.ny.gov

10/26/2023

Sawyer's Landing LLC
Will Severyn
43 Central Ave
Lancaster, NY 14086

RE: ACKNOWLEDGMENT of NOTICE OF INTENT for Coverage Under SPDES General Permit for Storm Water Discharges from CONSTRUCTION ACTIVITY – General Permit No. GP-0-20-001

Dear Prospective Permittee:

This is to acknowledge that the New York State Department of Environmental Conservation (Department) has received a complete Notice of Intent (NOI) for coverage under General Permit No. GP-0-20-001 for the construction activities located at:

Sawyer's Landing
Dodge Road
Amherst, NY 14228 **County: ERIE**

Pursuant to Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and ECL Article 70, coverage under GP-0-20-001 for the above construction site is effective five (5) business days from **10/12/2023**, which is the date the Department received your complete eNOI.

The permit identification number for this site is: **NYR11L806**. Be sure to include this permit identification number on any forms or correspondence you send the Department. When coverage under GP-0-20-001 is no longer needed, you must submit a Notice of Termination to the Department.

Additionally, authorization to discharge under GP-0-20-001 is conditioned upon compliance with Part II.C. of GP-0-20-001, specifically the following:

1. A final Storm Water Pollution Prevention Plan has been prepared;

2. When applicable, project review pursuant to the State Environmental Quality Review Act (SEQRA) has been satisfied;

3. Where required, all necessary Department permits subject to the Uniform Procedures Act (UPA) (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4).

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

If other UPA permits, or the equivalent, are required, you must submit a preliminary SWPPP to the appropriate Permit Administrator at the Regional Office listed in Appendix F to GP-0-20-001. Th preliminary SWPPP must be submitted at the time that the applications for all other UPA permits, or the equivalent, are submitted to the Department.

Note: Construction cannot commence until all of the above have been satisfied.

Please also be advised that there is an annual regulatory fee of $110, which is billed by the Department in the late fall. The regulatory fee covers a period of one calendar year. In addition, since September 1, 2004, construction stormwater permittees have been assessed an initial authorization fee which is now $110 per acre of land disturbed and $675 per acre of future impervious area. The initial authorization fee covers the duration of the authorized disturbance.

Should you have any questions regarding any aspect of the requirements specified in GP-0-20-001, please contact me at (518) 402-8114.

Sincerely,



David Gasper
Environmental Engineer

cc: RWE - **9**
SWPPP Preparer
Carmina Wood Design
Wood, Christopher
487 Main St
Buffalo, NY 14203

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix M

5 Acre Disturbance Letter

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINAWOOD
DESIGN

April 30, 2024

Sarrah Burrow
Town of Amherst Engineering Department
1100 North Forest Road
Amherst, NY 14221

Re: **Sawyer's Landing**
Amherst, NY

Dear Sarah:

This letter shall serve as our request to have a total of 5 acres disturbed at one time at the above site. Per the NYSDEC General Permit, our site inspections will increase to 2 times per week when 5 acres is reached and will continue until the time the total disturbance is under 5 acres.

If you have any questions regarding the above, please feel free to contact me at 716-550-3342 or via e-mail at cwood@carminawooddesign.

Sincerely,
Carmina Wood Design



Christopher Wood, PE

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix N

Engineer's Report

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD
DESIGN

ENGINEER'S REPORT

for

Sawyer's Landing
Dodge & Sweet Home Road
Town of Amherst, Erie County, New York

Prepared for

Sawyer's Landing LLC

c/o Severyn Development
43 Central Ave Suite #300
Lancaster, NY 14086

Prepared by

Carmina Wood Morris, D.P.C.

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

February 2021

Revised 11/21/2024



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table of Contents

Written Engineer's Report

Section 1 - Location & Description
Section 2 - Water Service
Section 3 - Sanitary Sewer Service
Section 4 - Storm Sewer Service

Appendices

Appendix A Sanitary Sewer and Water Demand Calculations

Appendix B Storm Sewer System Drainage Calculations

- Existing Runoff
- Proposed Runoff – East
- Proposed Runoff - West
- Green Infrastructure & Water Quality Calculations

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Section 1 - Location & Description

This project is a development of a 17.4 acre site located on the north side of Dodge Road, west of Sweet Home Road in the Town of Amherst. Both Dodge Road and Sweet Home Road are Erie County roads. Proposed is the construction of a mixed-use development to include (2) 4-story mixed-use buildings with 112 apartment units total, (1) 4-story self-storage building and (87) 2-story townhomes. A bike trail will be constructed on site, this trail will connect to the existing Town of Amherst bike trail on the south side of Dodge Road. The approximately 1-acre westerly portion will remain undisturbed and be deed restricted as permanent open space. The site is currently undeveloped consisting of woods and overgrown brush/grass. NYSDEC and Federal wetlands were delineated on site by Earth Dimensions, Inc. Approximately 6.1 acres of Federal and 1.2 acres of NYSDEC wetlands have been permitted to be impacted. The proposed site development area to be disturbed for this project is approximately 16.4 acres.

Section 2 - Water Service

A new 8” D.I. combined service will be tapped off the existing 24" D.I.P. ECWA water main along the north side of Dodge Road at the northern portion of the project site. Following the tap, the 8” D.I. service will continue north into the site where it will enter into a Hot-Box enclosure. Within the Hot-Box enclosure an 8" meter (by ECWA) and an 8” Watts 957 RPZ will be installed. Similarly, a second 8” D.I. combined service will be tapped off the existing 24” ECWA main at the southern portion of the site along Dodge Road. As with the first installation, following the tap, the 8” D.I. service will continue northeast into the site where it will enter a hotbox with the same 8” meter (by ECWA) and 8” Watts 957 RPZ. The services will exit the Hot-Box enclosures and then transition into 8” AWWA C-900 PVC. The services will run throughout the site to provide both domestic and fire service to the proposed buildings. Heat & light for testing will be provided in the areas of the meters & RPZs to prevent freezing. Drainage due to testing or failure will be to the exterior through a drain, drainage will be away from the enclosures. The owner will be responsible for keeping the drainage ports clear of snow and debris. A total of 5 (five) proposed fire hydrants shall be installed around the site to provide fire protection coverage. There are no existing water services to this site, and therefore none to be killed/abandoned per ECWA requirements.

Domestic Summary:

Peak Operating Demand:	136.47 gpm
Water Main:	24” on Dodge Road
Static Pressure:	105 psi (per ECWA, 98 psi residual)
Friction Loss:	0.0 psi
Loss through meter/RPZ:	13.0 psi
Elevation Loss:	0.0 psi
Pressure after RPZ & Meter:	92 psi
Pressure at 4th floor:	76.8 psi

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Repairs to all devices will be made during off hours, dual backflow preventers are not required. The site is not located in a 100-year flood plain. Disinfection of the water service following installation will be continuous feed, according to AWWA C-651, latest revision.

Section 3 - Sanitary Sewer Service

The proposed sanitary sewer service will connect to the existing 60" sanitary sewer (peanut line) located on the south side of Dodge Road. In order to connect to this sewer, a public sewer extension along the south side of Dodge Road will be required. This public extension will consist of a total of 643 LF of 8" SDR-35 PVC at a minimum slope of 0.4%.

The proposed private on-site sewer mains will consist of 8" SDR-35 PVC at a minimum slope of 0.4%. Each of the proposed commercial buildings and apartment buildings will have a 6" SDR-35 PVC sanitary sewer lateral at a minimum slope of 1.0% tied into the private main. The townhouse units will have a 4" SDR-35 PVC sanitary sewer lateral at a minimum slope of 1.0% tied into the private main. The 8" private main will tie into the proposed public extension on the south side of Dodge Road across from the SE portion of the project site.

A downstream sanitary sewer capacity analysis (DSCA) is required to be prepared for the site given the flows will exceed 2,500 gpd. This report is included in Appendix A.

Design Parameters

Housing: use 220/gpd/unit
Q = 199 units x 220 gpd/unit = 43,780 gpd

Commercial: use 0.1 gpd/sf
Q = 11,906 sf x 0.1 gpd/sf = 1,191 gpd

Office: use 0.1 gpd/sf
Q = 10,798 sf x 0.1 gpd/sf = 1,080 gpd

Self Storage: use 15 gpd/employee
Q = 5 employees x 15 gpd = 75 gpd

Restaurant: use 35 gpd/seat
Q = 100 seats x 35 gpd/seat = 3,500 gpd

Total = 49,625 gpd (average) using a 3.98 PF (see appendix A for calc)

Total = 49,625 x 3.98 = 197,306 gpd = 137.02 gpm = 0.305 cfs

The hydraulic loading rates per "Design Standard for Wastewater Treatment Works" 2014, NYSDEC. See attached Sanitary Sewer & Water Calculations for additional information.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

I/I Mitigation:

Peak Flow = 137.02 gpm
4:1 offset = 137.02 x 4 = 548.07 gpm
Mitigation Credit = $250/gpm
I/I Mitigation = 548.07 gpm x $250/gpm = $137,017.93
Refer to Appendix A for additional information.

Section 4 - Storm Sewer Service

The existing site is generally flat and slopes west with portions sloping east. The portion that slopes west settles in a low area and once the capacity of that area is exceeded, sheet flow continues towards Sweet Home Road and is collected by an existing 12" pipe on the north side of Dodge Road. This pipe flows to the Erie County system on Sweet Home Road. The portion that flows east flows to the offsite wetlands.

Currently Dodge Road does not have a drainage system. A series of catch basins and pipes will be installed in the green area on the north side of Dodge Road to collect the road drainage. The west portion of this system will connect to the existing closed drainage system on Sweet Home Road. The east portion will discharge to the Ellicott Creek diversion channel using and existing discharge point. This new system will also convey the proposed discharge from the site as described below.

The proposed onsite storm sewer system consists of smooth interior and perforated HDPE pipes connected by a series of catch basins, manholes and yard drains. The site is split into a storm water management area on the east and west sides.

<u>West Side</u>

The west side of the site has (2) bioretention areas which portions of the westerly area will discharge to. These bioretention areas along with the remainder of the west portion of the site will discharge to the underground detention area. Note that the yard drains installed along the north property line discharge to the underground detention area. An outlet structure in the SW portion of this area will control runoff to at or below existing runoff flow rates. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Sweet Home Road system.

<u>Underground Detention Summary</u>

(286) ADS Stormtech SC-740 chambers
Top of stone elev. = 573.00
Top of chamber elev. = 572.50
Bottom of chamber elev. = 570.00
Bottom of stone elev. = 569.50
Total storage = 22,086 CF

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Event	Ex. Discharge	Pro. Discharge	Elev.
1 yr	0.87 cfs	0.33 cfs	570.29
2 yr	1.34 cfs	0.68 cfs	570.46
5 yr	2.14 cfs	1.05 cfs	570.79
10 yr	2.94 cfs	1.28 cfs	571.13
25 yr	4.34 cfs	1.61 cfs	571.73
50 yr	5.69 cfs	3.61 cfs	572.23
100 yr	7.33 cfs	4.83 cfs	572.92

East Side

The east side of the site has a bioretention area and wet detention pond which this portion of the site discharges to. The NE portion of the site discharges to a forebay which spills into the main micropool portion of the wet detention basin. The SE portion of the site discharges to the bioretention area which also spills into the main micropool portion of the site. An outlet control structure is located in the SE portion of the micropool and controls the discharge from this storm water management area. Spillways are also located on the east portion of the micropool which will discharge to the existing wetlands to the east in order to not cut off all flow from this site into this area. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Ellicott Creek diversion channel.

The bioretention areas and wet detention pond for the project area are sized to provide 100% of the required Runoff Reduction Volume (RRv) and Water Quality Volume (WQv) treatment for the overall site in accordance with Chapter 4 of the NYSDEC Stormwater design manual. The soils in the vicinity of the bioretention areas are mainly USDA hydrologic group 'D' and therefore the system will be installed with underdrains per NYSDEC requirements. The bioretention areas will consist of 6" and 8" perforated HDPE underdrains in 12" of drainage gravel, followed by filter fabric and 18" minimum of planting soil. Overflow yard drains will be installed to allow 6" maximum temporary ponding for RRv treatment. The east bioretention area (area #3) spills into the wet detention pond and the underdrain pipe ties together with the pond discharge and flows to Dodge Road. The east bioretention areas (areas #1 & #2) have a catch basin to act as the spillway and this catch basin and the underdrain pipes discharge to the underground detention area.

Storm Water Management Area Summary

Forebay
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50
Bottom of basin elev. = 569.00

Micropool
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bottom of basin elev. = 563.00

Overall Storm Water Summary

WQv Provided = 152,678 cf (pond)
WQv Provided = 6,948 cf (bioretention)
WQv Provided = 159,626 cf (total)

Bioretention Area Summary:

Area	Rim Elev.	Bottom Elev.	Area
1	574.50	574.00	2,300 sf
2	574.50	574.00	2,600 sf
3	575.50	575.00	11,000 sf
		Total Provided =	15,900 sf

Water Quality Summary:
WQv req'd = 28,804 cf (0.661 ac-ft)
RRv min. req'd = 5,518 cf (0.127 ac-ft)
RRv provided = 8,662 cf (0.199 ac-ft)
WQv provided = 159,626 cf (3.665 ac-ft)
Total RRv + WQv provided = 8,662 cf + 159,626 cf = 168,287 cf (3.868 ac-ft)

Detention: Comparison of the existing 1-year vs. the proposed 1-year runoff
Comparison of the existing 10-year vs. the proposed 10-year runoff
Comparison of the existing 100-year vs. the proposed 100-year runoff

Storm pipes: 10-year storm

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix A

Sanitary Sewer and Water Demand Calculations

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 24-4034 Date: 11/19/2024
Project Name: Muir Woods
Project Address: Sweet Home Road and Dodge Road - Amherst, NY
Subject: Sanitary Sewer Demand Calcs
Sheet: 1 of 1

Sanitary Sewage Demand Calculations:

West - Mixed Use Buildings									
0.1	gal/d/sf	x	11,906	sf	=	1,191	gpd		*use 0.1 gallons per day per square foot (Retail)
35.0	gal/d/seat	x	100	seats	=	3,500	gpd		*use 35 gallons per day per seat (fast food)
0.1	gal/d/sf	x	10,798	sf	=	1,080	gpd		*use 0.1 gallons per day per square foot (Office
15	gal/d/employee	x	5	employees		75	gpd		*use 15 gallons per employee (Self-Storage)
West - Apartments									
220	gal/d/unit	x	112	units	=	24,640	gpd		*use 220 gallons per day per 2-bedroom unit
North - Townhomes Buildings									
220	gal/d/unit	x	63	units	=	13,860	gpd		*use 220 gallons per day per 2-bedroom unit
220	gal/d/unit	x	24	units	=	5,280	gpd		*use 220 gallons per day per 2-bedroom unit
Total Site Sanitary Demand:					=	49,625	gpd		
					=	0.050	MGD		
Find Peak Sanitary Demand:					=	0.077	cfs		

Peaking Factor based on Population:

Total demand: 49,625 gpd / 100 gpcd = 496 per capita

Population (P) = 496 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 3.98

Peak Sanitary Demand	=	49,625	x	3.98	=	197,306	gpd		
					=	0.197	MGD		
					=	0.305	cfs		

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow					=	197,306	gpd	=	137.02 gpm
4:1 offset flow per NYSDEC requirements					=	137.0	x	4	= 548.07 gpm req'd
Mitigation Credit					=	$250	/ gpm		
Mitigation Agreement Amount					**=**	**$137,017.93**			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 24-4034 Date: 11/21/2024
Project Name: Sawyer's Landing (Muir Woods)
Project Address: Sweet Home Road and Dodge Road - Amherst, NY
Subject: Sanitary Sewer & Water Demand Calcs
Sheet: 2 of 2

Water Demand Calculations (domestic):

Site

49,625 gpd x 1.1 = 54,588 gpd *use 110% of sewage demand

*use 1.8 peaking factor and assume a 12 hour day

54,588 gpm x 1day/12hr x 1hr/60min = 75.82 gpm

75.82 gpm x 1.8 = 136.47 gpm Q_{peak}

Headlosses:

Q_{peak} = 136.47 gpm
Pipe = 8 inch Ductile Iron C = 140
Length = 33 LF (approx. distance from tap to RPZ)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(33)(136.47)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.01 \text{ ft} = 0.01 \text{ psi}$$

Δ elev = 0 ft = 0.00 psi
Loss through meter = 1 psi
Loss through RPZ = 12 psi
Total Losses = 13.0 psi
Static Pressure = 105 psi (per ECWA - residual pressure 98 psi)
Residual Pressure Following RPZ = 105 - 13.0 = 92.0 psi (available after rpz & meter)

Headlosses to furthest hydrant

Q_{peak} = 136.47 gpm
Pipe = 8 inch C-900 PVC C = 140
Length = 1,293 LF (approx. distance from RPZ to hydrant)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(1,293)(136.47)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.52 \text{ ft} = 0.22 \text{ psi}$$

Δ elev = 1.1 ft = 0.48 psi
Total Losses = 0.7 psi
Static Pressure = 92 psi (per ECWA - residual pressure 98 psi)
Residual Pressure Following hydrant = 92.0 - 0.7 = 91.3 psi (available after furthest hydrant)

Residual Pressure 30" above 4th Floor
Δ elev = 35 ft = 15.16 psi
Residual Pressure 30" above 4th Floor = 92.0 - 15.16 = 76.8 psi

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

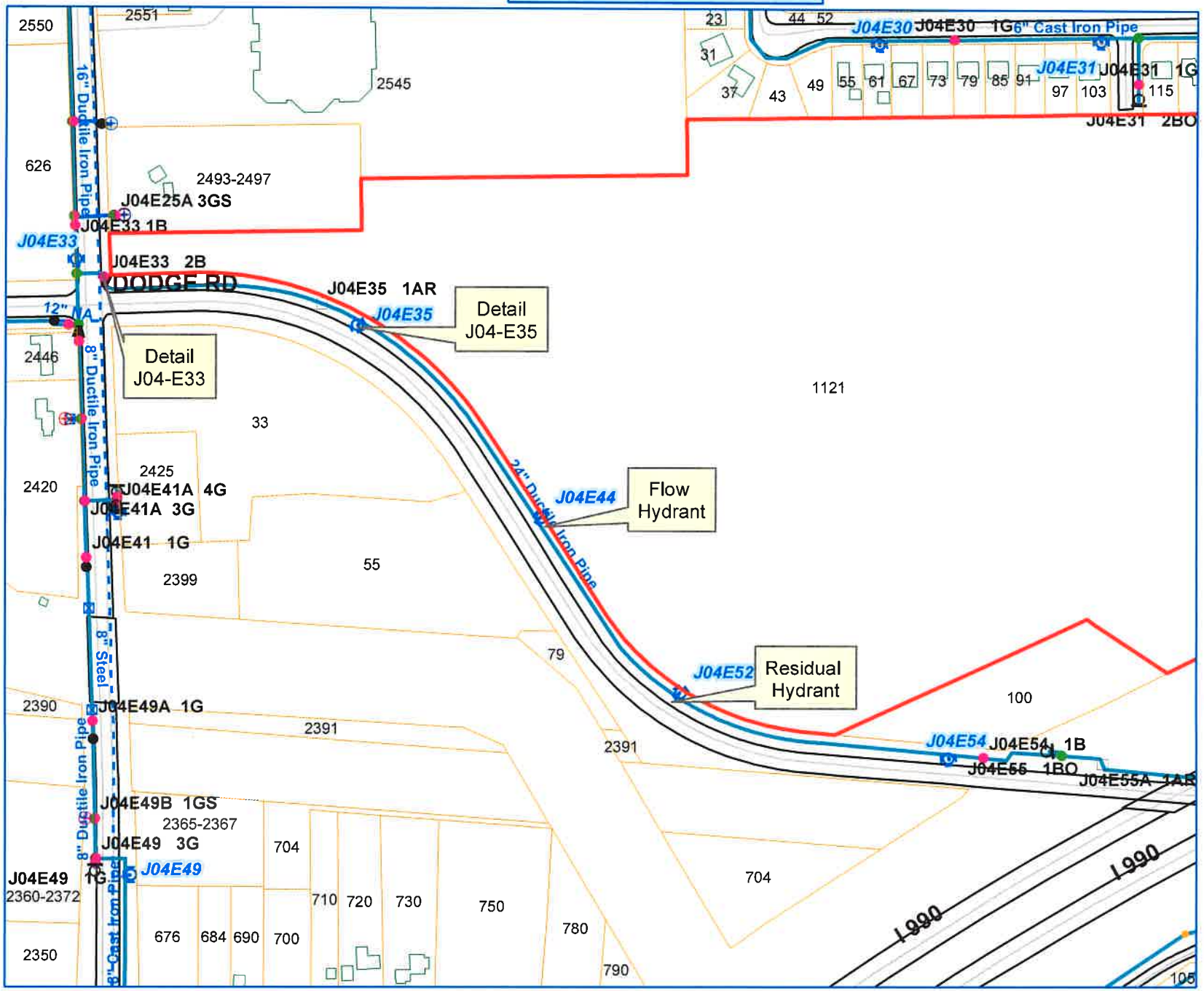
Downstream Sewer Capacity Analysis

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Water Demand Calculations

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

1121 Dodge Rd., AMTN



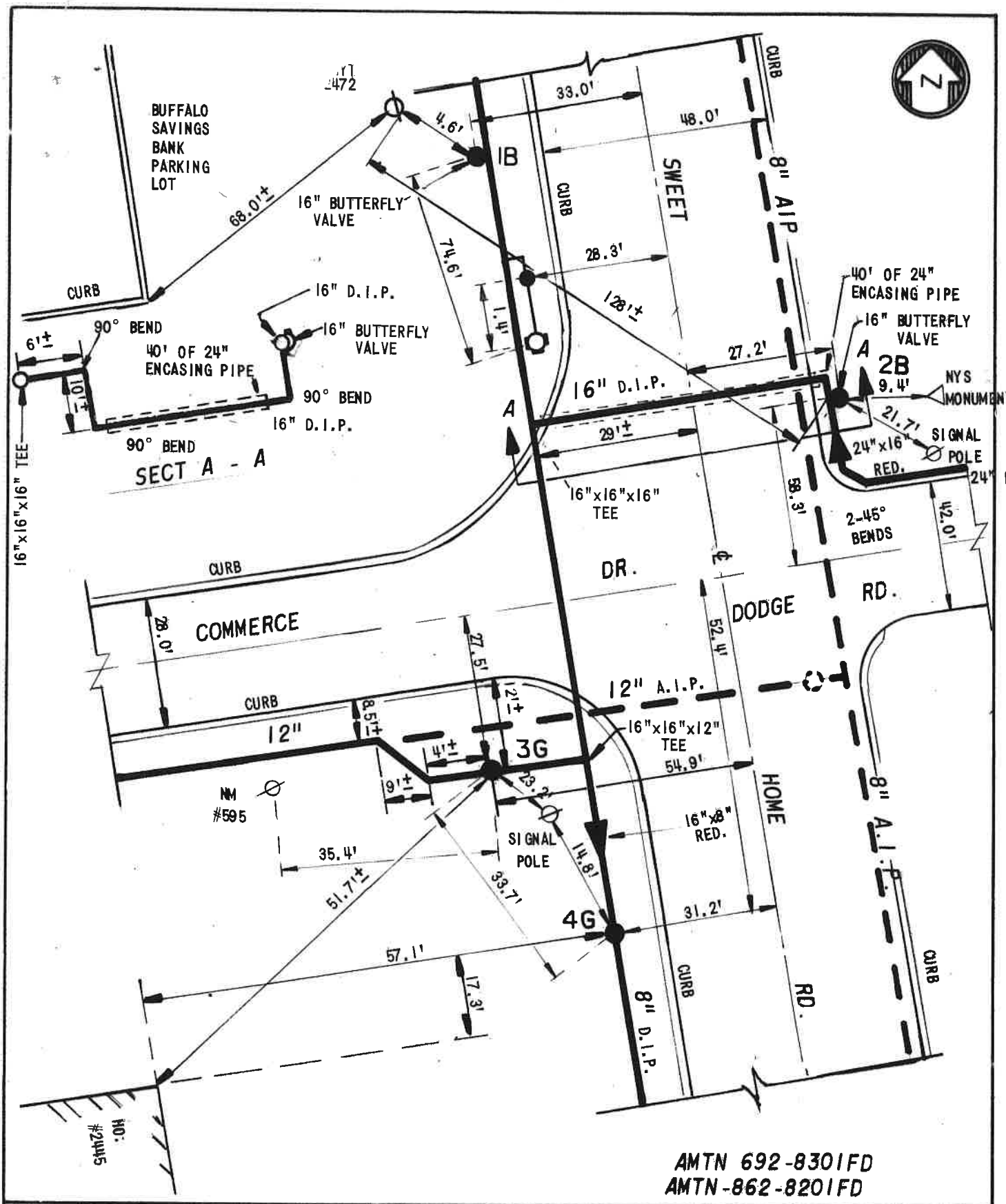
N

1 inch = 300 feet

Legend:

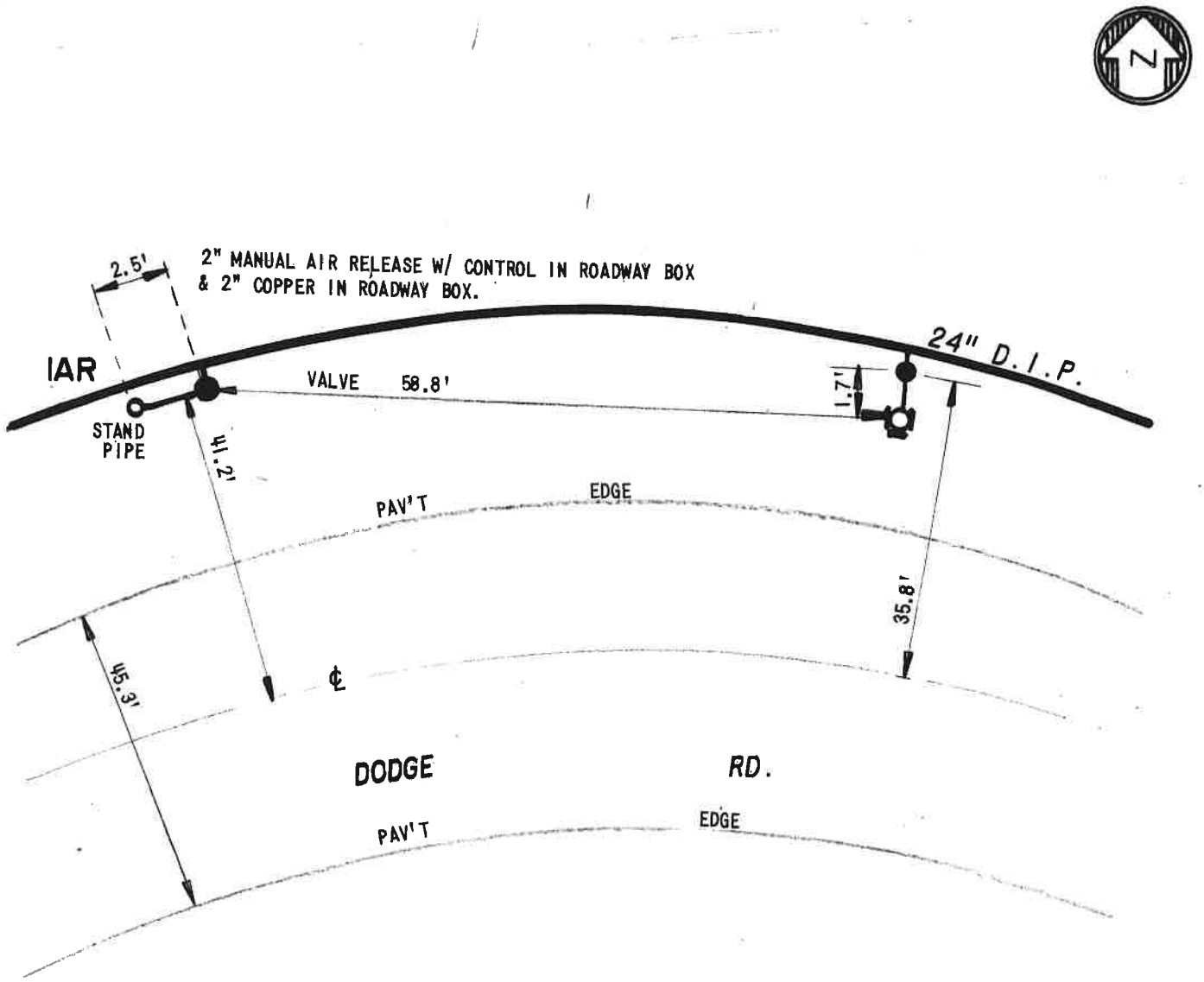
Parcels





ERIE COUNTY WATER AUTHORITY, BUFFALO, NEW YORK	REVISED DR. BY: RLS DATE: 6-30-06 NOT TO SCALE	TOWN OF AMHERST W.D 15C	J04-E33 DETAIL SHEET NO.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



AMTN-692-8301-FD

SHEET 1

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	REVISED DR. BY: RLS DATE: 6-30-06 NOT TO SCALE	TOWN OF AMHERST W.D. 15C	J04-E35 DETAIL SHEET NO.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

AMHERST
Size of Main/Branch: 24"/6" Fire District: 22028 GETZVILLE FD 11 Water District: 315 AMHERST DISTRICT 15C

Performed By: JRS & DPZ

Comments: HYDRANT FLOW TEST REQUESTED BY BILL GROFF
PRATT & HUTH, PHONE: 633-4844, FAX: 633-4940

Dischrge Coef: .90 Elvtn Usgs(ft): Static(psi): 105 Residual(psi): 98 Required Residual Pressure(psi): 20
Gallons Used..: 7,680 Total Flow(gpm): 2,558 Flow at Reqd Resid Pressure: 9,850

Flow Hydrants:

C	Flow Hyd	Flow Hydrant Address	Main/Brnch	Nzle	Size	Pitot	Flow	Comments
_	J04 E44	DODGE RD	24"/6"	1:	2.50	58.0	1,279	
		2ND HYD E/O SWEET HOME RD		2:	2.50	58.0	1,279	
				3:			Tot Flow:	2,558

Bottom

I=Flow Hydrant Inquiry
ENTER=Continue F3=Exit F6=Maintain Test F7=Test Hydrant Inquiry F15=Print Test Information

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix B

Storm Sewer System Drainage Calculations

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Existing Runoff

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Existing

Subcat Reach Pond Link

Routing Diagram for 21.011 Existing
Prepared by Hewlett-Packard Company, Printed 3/1/2021
HydroCAD® 10.00-18 s/n 05019 © 2016 HydroCAD Software Solutions LLC

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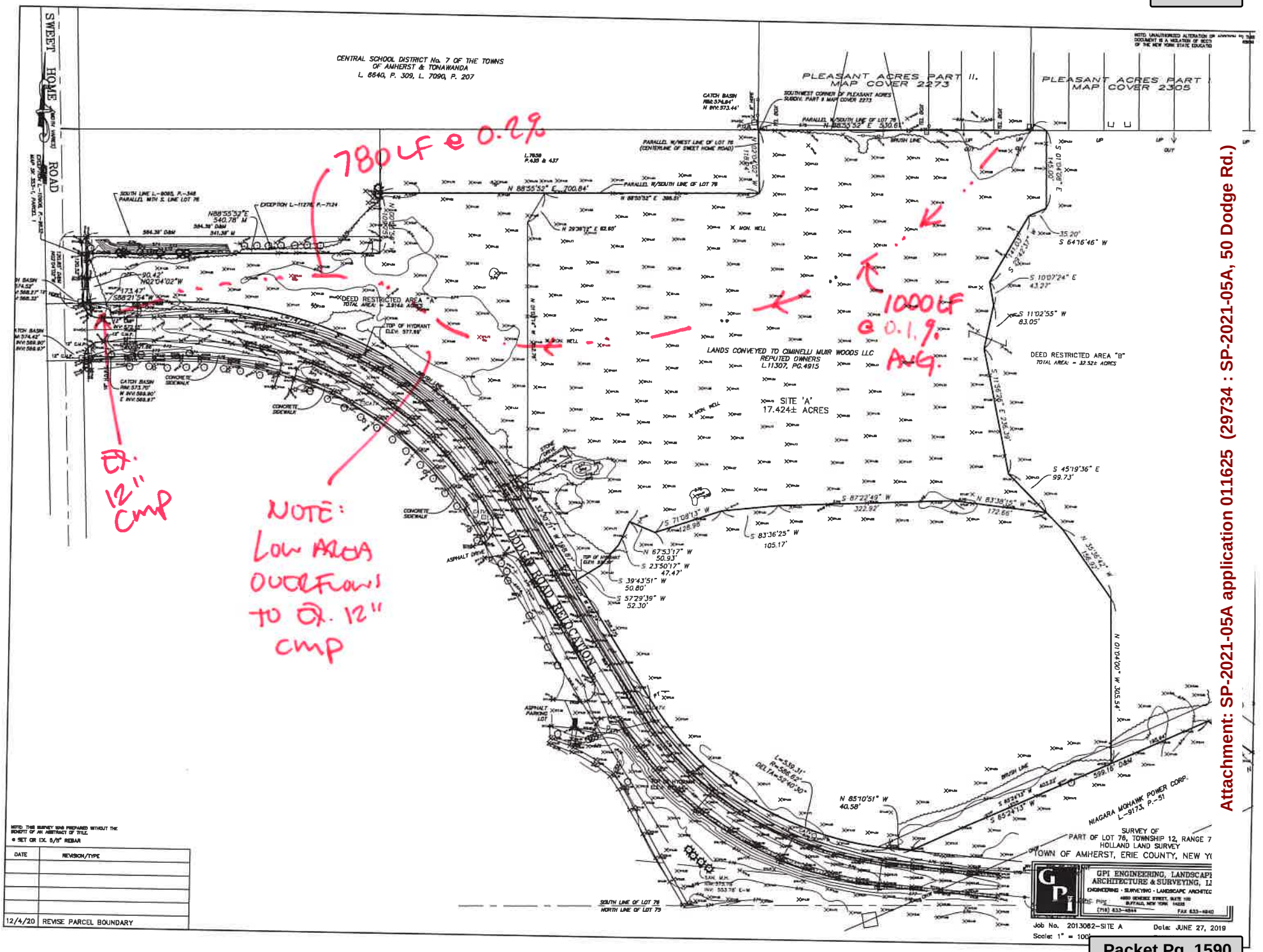


Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Subcatchment 1S: Existing

Event	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	0.87	0.578	0.41
2-Year	1.34	0.851	0.60
5-Year	2.14	1.304	0.92
10-Year	2.94	1.752	1.24
25-Year	4.34	2.527	1.78
50-Year	5.69	3.272	2.31
100-Year	**7.33**	**4.181**	**2.95**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.830	77	Brush, Fair, HSG D (1S)
12.170	79	Woods, Fair, HSG D (1S)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
17.000	HSG D	1S
0.000	Other	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	4.830	0.000	4.830	Brush, Fair	1S
0.000	0.000	0.000	12.170	0.000	12.170	Woods, Fair	1S

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

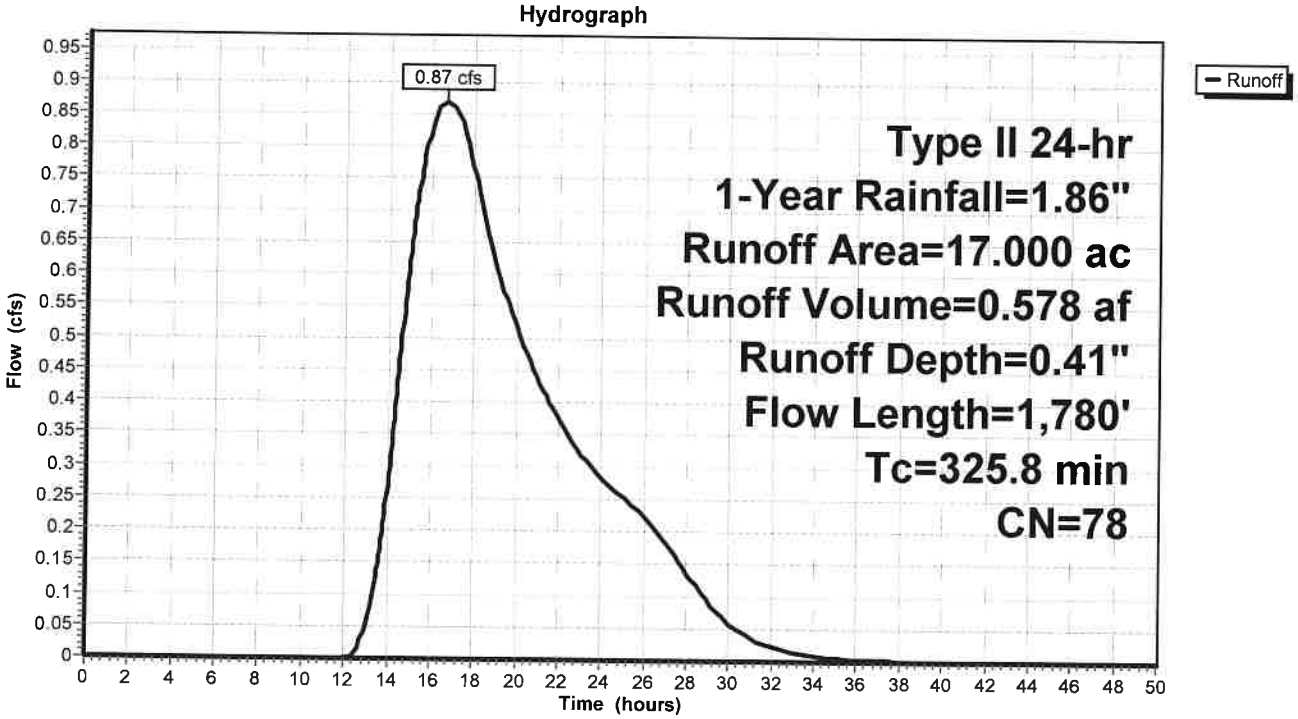
Runoff = 0.87 cfs @ 16.65 hrs, Volume= 0.578 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

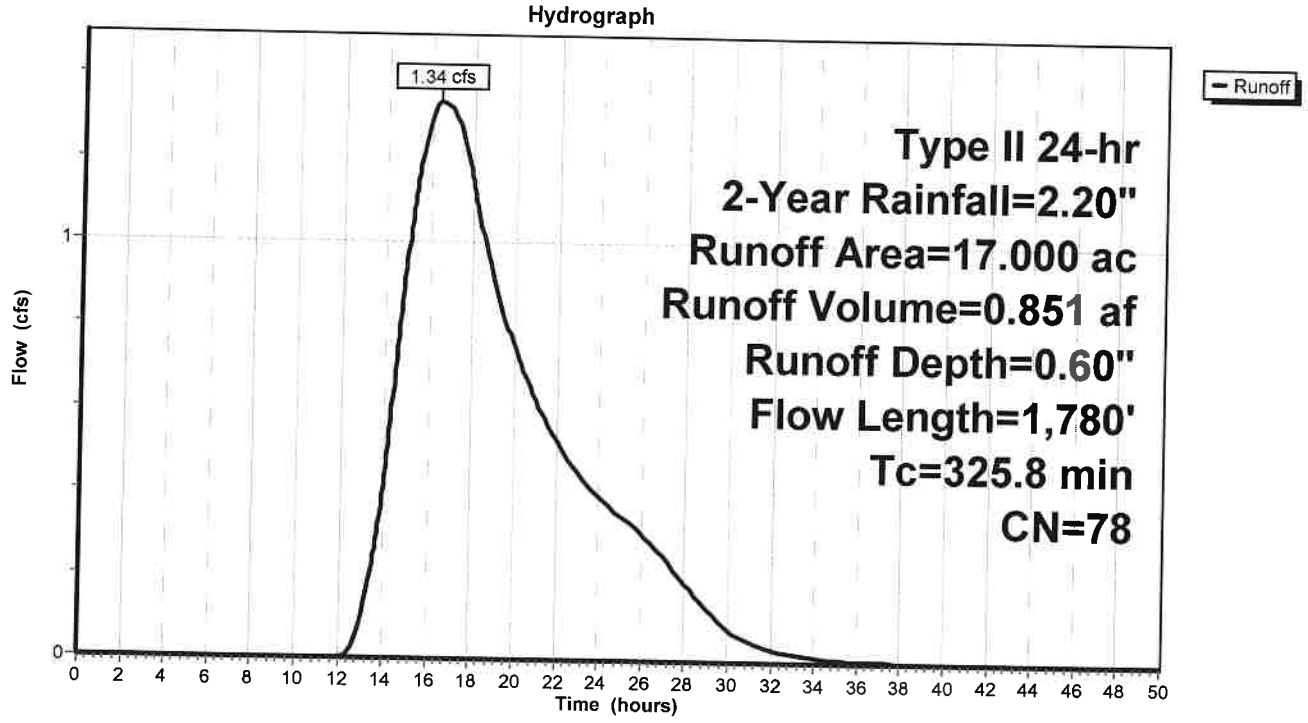
Runoff = 1.34 cfs @ 16.35 hrs, Volume= 0.851 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

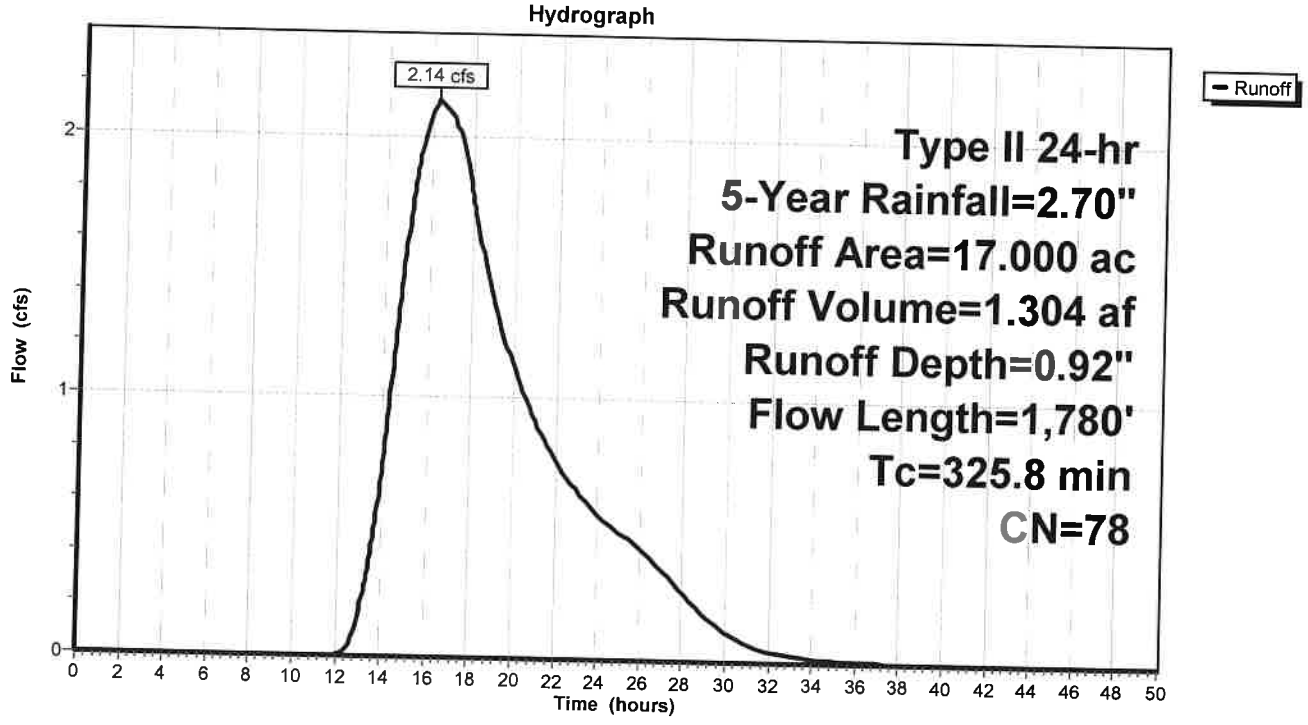
Runoff = 2.14 cfs @ 16.31 hrs, Volume= 1.304 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

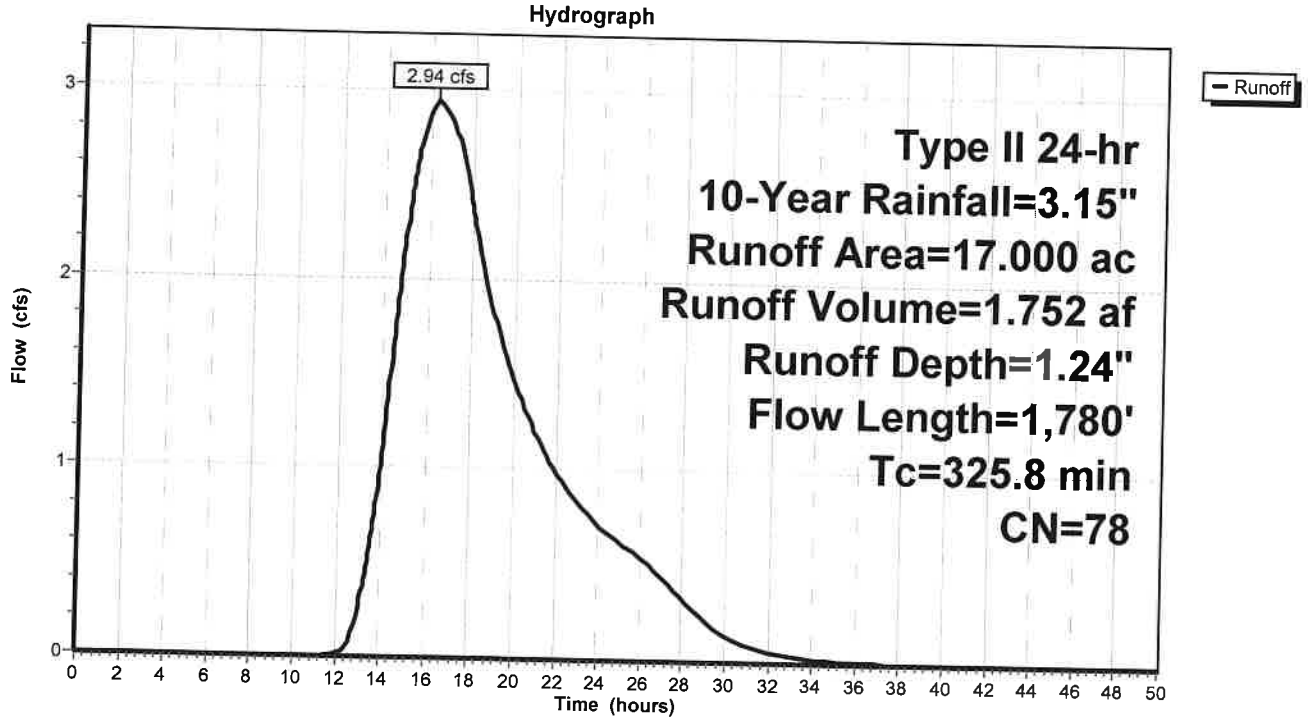
Runoff = 2.94 cfs @ 16.31 hrs, Volume= 1.752 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

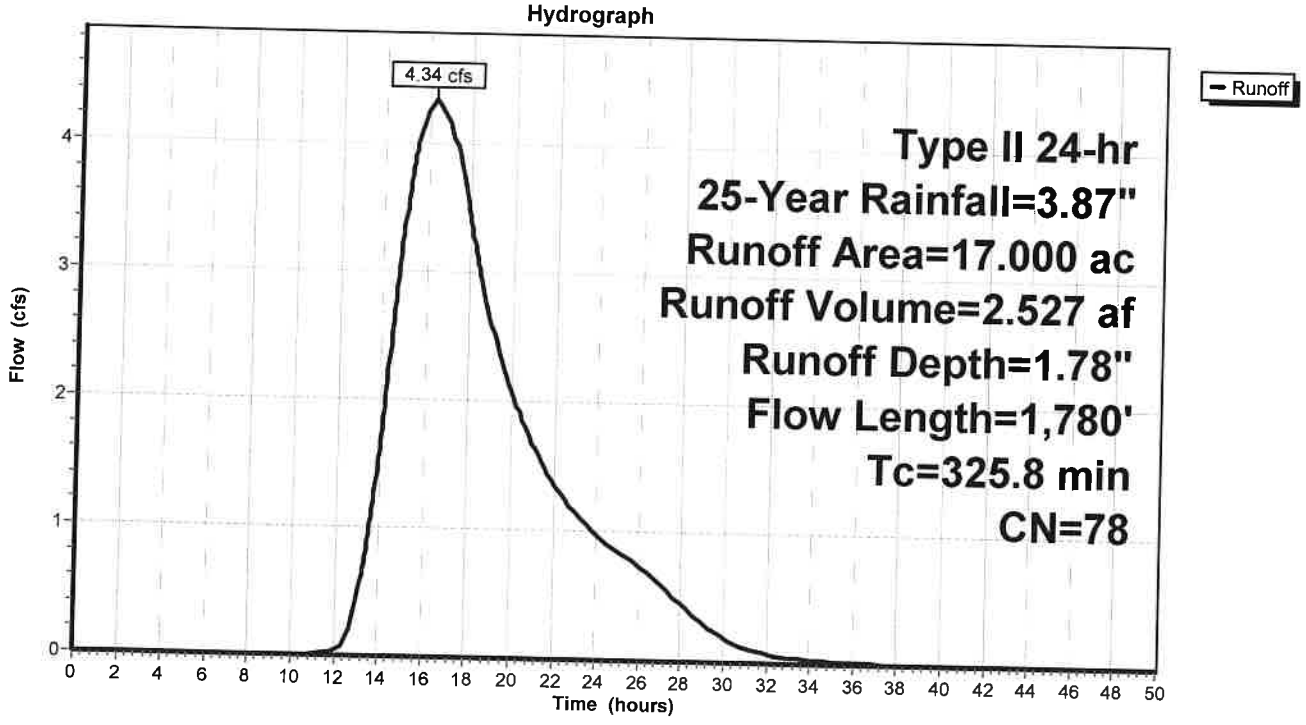
Runoff = 4.34 cfs @ 16.30 hrs, Volume= 2.527 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

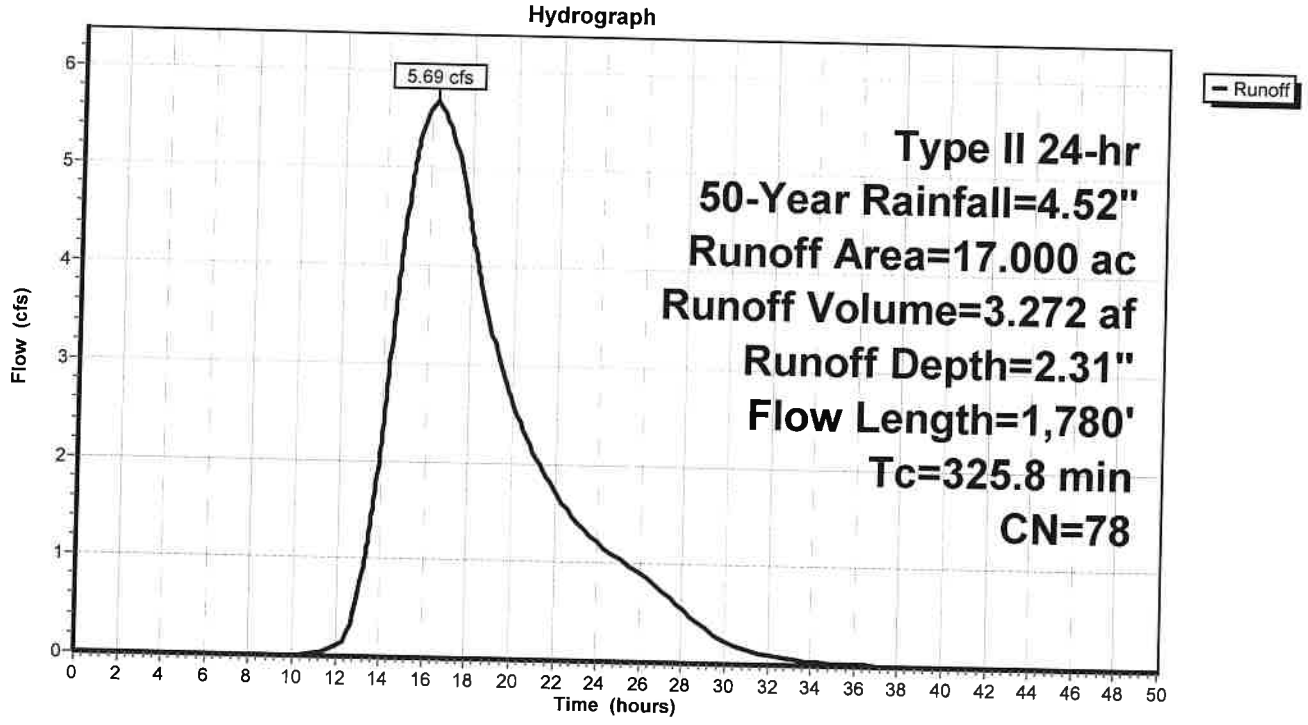
Runoff = 5.69 cfs @ 16.29 hrs, Volume= 3.272 af, Depth= 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

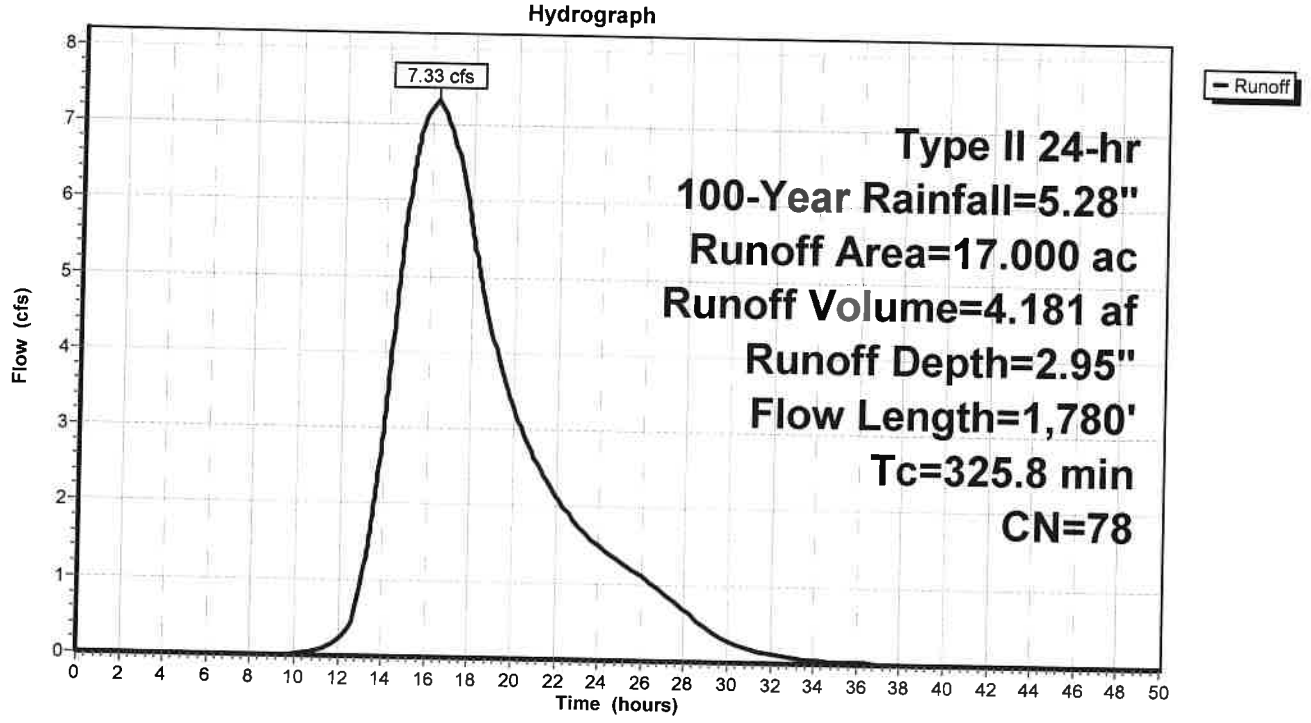
Runoff = 7.33 cfs @ 16.29 hrs, Volume= 4.181 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



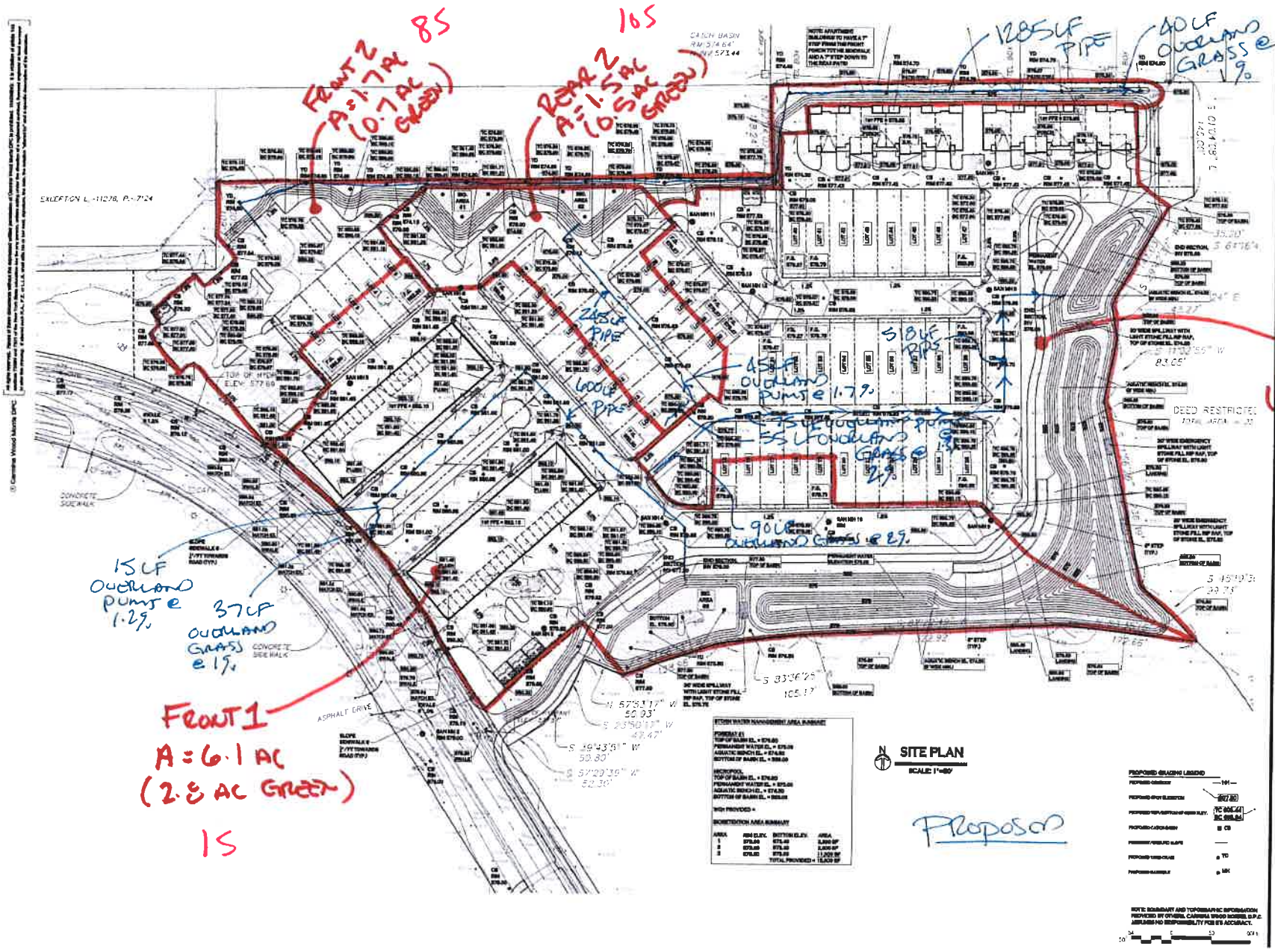
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Proposed Runoff

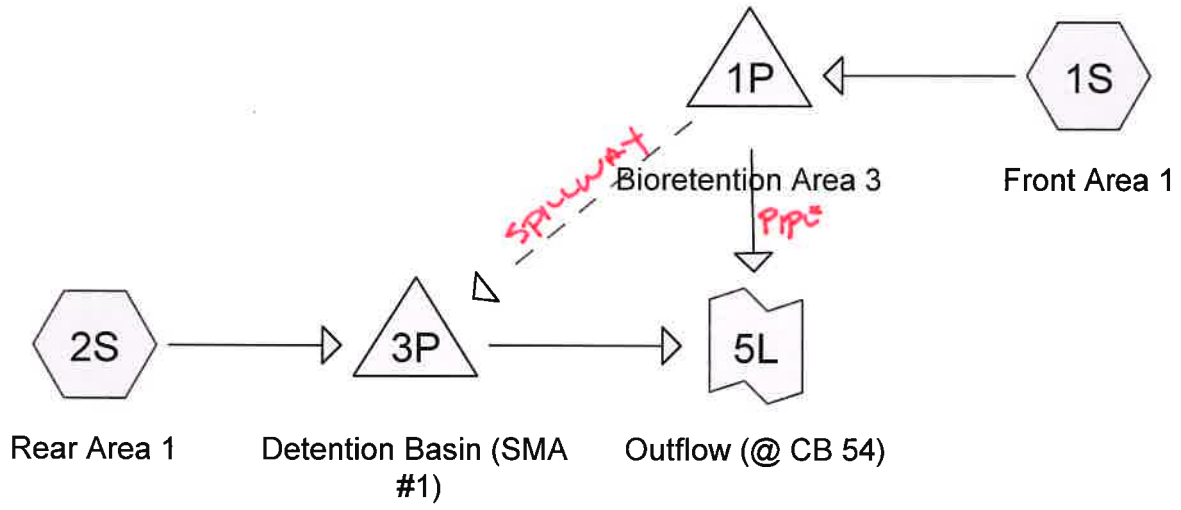
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Proposed Runoff - East

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Subcat Reach Pond Link

Routing Diagram for 21.011 Proposed
Prepared by Hewlett-Packard Company, Printed 3/4/2021
HydroCAD® 10.00-18 s/n 05019 © 2016 HydroCAD Software Solutions LLC

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Link 5L: Outflow (@ CB 54)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-Year	2.78	2.78	**0.00**
2-Year	2.86	2.86	0.00
5-Year	3.01	3.01	0.00
10-Year	3.16	3.16	0.00
25-Year	3.36	3.36	0.00
50-Year	3.48	3.48	0.00
100-Year	**3.60**	**3.60**	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Pond 3P: Detention Basin (SMA #1)

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	6.05	0.10	0.10	0.00	575.23	13,685
2-Year	12.29	0.18	0.18	0.00	575.32	19,129
5-Year	20.08	0.33	0.33	0.00	575.46	28,218
10-Year	26.01	0.47	0.47	0.00	575.60	37,117
25-Year	34.94	0.64	0.64	0.00	575.83	51,964
50-Year	42.93	1.97	0.72	1.25	576.00	62,935
100-Year	**52.24**	**8.57**	**0.78**	**7.80**	**576.11**	**70,722**

TO DODGE RD

TO WETLANDS

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Pond 1P: Bioretention Area 3

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	8.17	4.38	2.74	1.63	575.82	7,520
2-Year	10.57	8.19	2.79	5.41	575.91	8,359
5-Year	14.18	12.91	2.83	10.09	575.99	9,153
10-Year	17.46	16.45	2.85	13.60	576.04	9,672
25-Year	22.74	21.73	2.89	18.84	576.11	10,375
50-Year	27.50	26.43	2.91	23.52	576.17	10,954
100-Year	**33.05**	**31.92**	**2.94**	**28.98**	**576.23**	**11,585**

↑ TO DODGE RD

↑ TO BASIN

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.500	80	>75% Grass cover, Good, HSG D (1S, 2S)
3.200	98	Paved parking, HSG D (1S, 2S)
2.800	98	Roofs, HSG D (1S, 2S)
10.500	**90**	**TOTAL AREA**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
10.500	HSG D	1S, 2S
0.000	Other	
10.500		**TOTAL AREA**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	4.500	0.000	4.500	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.000	3.200	0.000	3.200	Paved parking	1S, 2S
0.000	0.000	0.000	2.800	0.000	2.800	Roofs	1S, 2S
0.000	**0.000**	**0.000**	**10.500**	**0.000**	**10.500**	**TOTAL AREA**	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=0.98"
Flow Length=652' Tc=13.3 min CN=90 Runoff=8.17 cfs 0.496 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=1.04"
Flow Length=683' Tc=14.4 min CN=91 Runoff=6.05 cfs 0.382 af

Pond 1P: Bioretention Area 3 Peak Elev=575.82' Storage=7,520 cf Inflow=8.17 cfs 0.496 af
Primary=2.74 cfs 0.475 af Secondary=1.63 cfs 0.021 af Outflow=4.38 cfs 0.496 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.23' Storage=13,685 cf Inflow=6.05 cfs 0.403 af
Primary=0.10 cfs 0.249 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.249 af

Link 5L: Outflow (@ CB 54) Inflow=2.78 cfs 0.724 af
Primary=2.78 cfs 0.724 af

Total Runoff Area = 10.500 ac Runoff Volume = 0.878 af Average Runoff Depth = 1.00"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

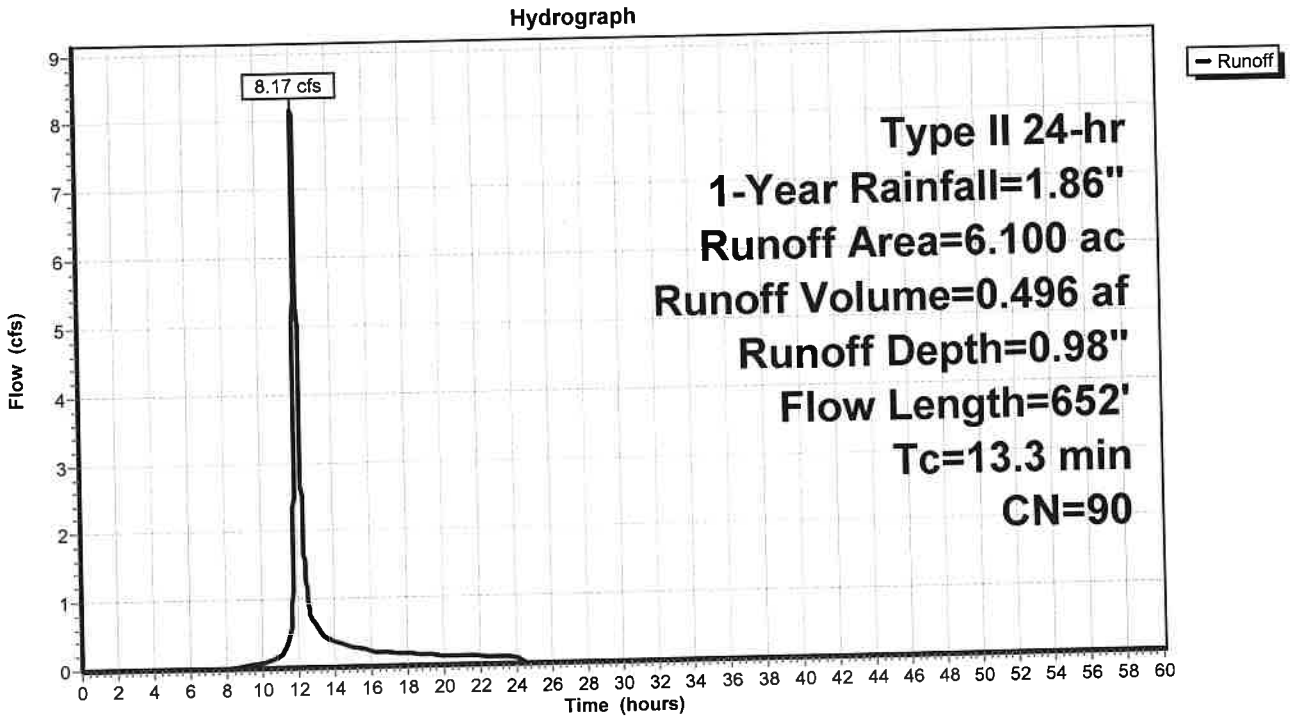
Runoff = 8.17 cfs @ 12.05 hrs, Volume= 0.496 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.00
9.00	0.27	0.00	0.02
10.00	0.34	0.01	0.07
11.00	0.44	0.03	0.20
12.00	1.23	0.48	**7.23**
13.00	1.44	0.63	**0.63**
14.00	1.53	0.70	0.37
15.00	1.59	0.75	0.29
16.00	1.64	0.79	0.23
17.00	1.68	0.83	0.20
18.00	1.71	0.85	0.17
19.00	1.74	0.88	0.15
20.00	1.77	0.90	0.13
21.00	1.79	0.92	0.12
22.00	1.82	0.94	0.12
23.00	1.84	0.96	0.11
24.00	**1.86**	**0.98**	0.11
25.00	1.86	0.98	0.00
26.00	1.86	0.98	0.00
27.00	1.86	0.98	0.00
28.00	1.86	0.98	0.00
29.00	1.86	0.98	0.00
30.00	1.86	0.98	0.00
31.00	1.86	0.98	0.00
32.00	1.86	0.98	0.00
33.00	1.86	0.98	0.00
34.00	1.86	0.98	0.00
35.00	1.86	0.98	0.00
36.00	1.86	0.98	0.00
37.00	1.86	0.98	0.00
38.00	1.86	0.98	0.00
39.00	1.86	0.98	0.00
40.00	1.86	0.98	0.00
41.00	1.86	0.98	0.00
42.00	1.86	0.98	0.00
43.00	1.86	0.98	0.00
44.00	1.86	0.98	0.00
45.00	1.86	0.98	0.00
46.00	1.86	0.98	0.00
47.00	1.86	0.98	0.00
48.00	1.86	0.98	0.00
49.00	1.86	0.98	0.00
50.00	1.86	0.98	0.00
51.00	1.86	0.98	0.00
52.00	1.86	0.98	0.00
53.00	1.86	0.98	0.00
54.00	1.86	0.98	0.00
55.00	1.86	0.98	0.00
56.00	1.86	0.98	0.00
57.00	1.86	0.98	0.00
58.00	1.86	0.98	0.00
59.00	1.86	0.98	0.00
60.00	1.86	0.98	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

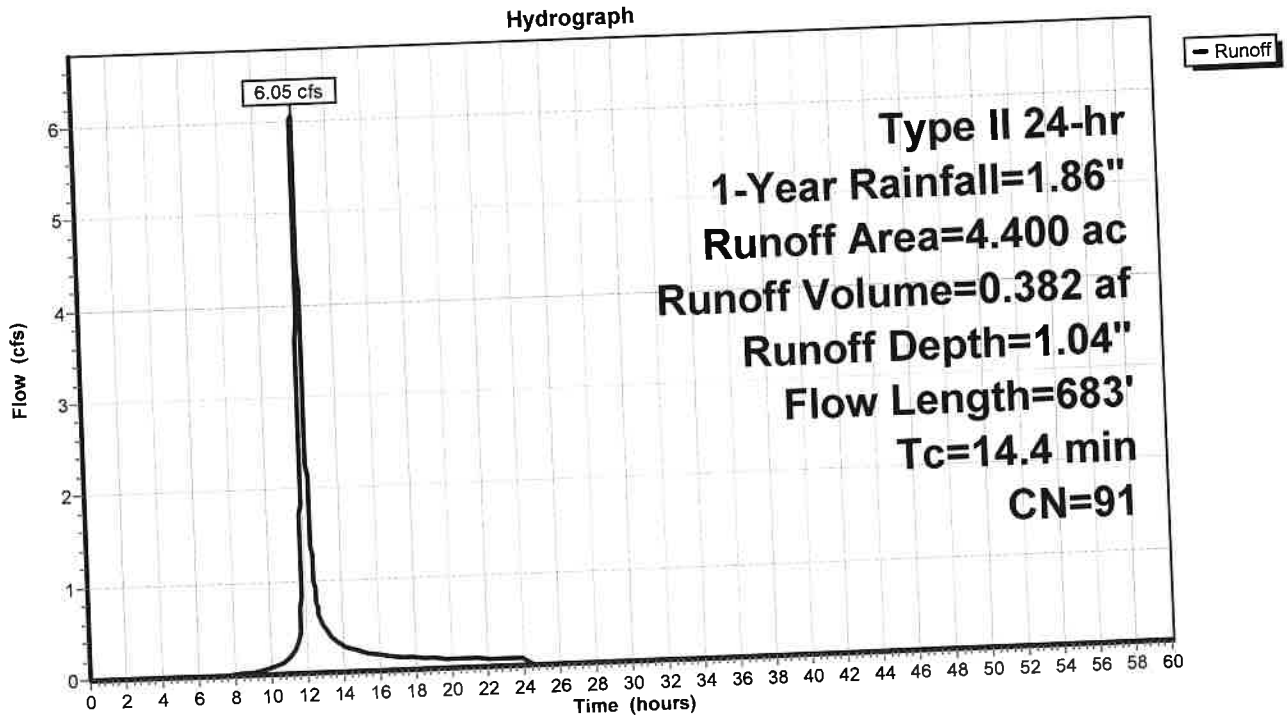
Runoff = 6.05 cfs @ 12.06 hrs, Volume= 0.382 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.01
9.00	0.27	0.01	0.03
10.00	0.34	0.02	0.06
11.00	0.44	0.05	0.17
12.00	1.23	0.53	**5.18**
13.00	1.44	0.69	**0.48**
14.00	1.53	0.76	0.28
15.00	1.59	0.81	0.21
16.00	1.64	0.85	0.17
17.00	1.68	0.89	0.15
18.00	1.71	0.92	0.13
19.00	1.74	0.94	0.11
20.00	1.77	0.97	0.10
21.00	1.79	0.99	0.09
22.00	1.82	1.01	0.09
23.00	1.84	1.02	0.08
24.00	**1.86**	**1.04**	0.08
25.00	1.86	1.04	0.00
26.00	1.86	1.04	0.00
27.00	1.86	1.04	0.00
28.00	1.86	1.04	0.00
29.00	1.86	1.04	0.00
30.00	1.86	1.04	0.00
31.00	1.86	1.04	0.00
32.00	1.86	1.04	0.00
33.00	1.86	1.04	0.00
34.00	1.86	1.04	0.00
35.00	1.86	1.04	0.00
36.00	1.86	1.04	0.00
37.00	1.86	1.04	0.00
38.00	1.86	1.04	0.00
39.00	1.86	1.04	0.00
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45.00	1.86	1.04	0.00
46.00	1.86	1.04	0.00
47.00	1.86	1.04	0.00
48.00	1.86	1.04	0.00
49.00	1.86	1.04	0.00
50.00	1.86	1.04	0.00
51.00	1.86	1.04	0.00
52.00	1.86	1.04	0.00
53.00	1.86	1.04	0.00
54.00	1.86	1.04	0.00
55.00	1.86	1.04	0.00
56.00	1.86	1.04	0.00
57.00	1.86	1.04	0.00
58.00	1.86	1.04	0.00
59.00	1.86	1.04	0.00
60.00	1.86	1.04	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area =	6.100 ac,	54.10% Impervious,	Inflow Depth =	0.98"	for 1-Year event
Inflow =	8.17 cfs @	12.05 hrs,	Volume=	0.496 af	
Outflow =	4.38 cfs @	12.19 hrs,	Volume=	0.496 af,	Atten= 46%, Lag= 8.2 min
Primary =	2.74 cfs @	12.19 hrs,	Volume=	0.475 af	
Secondary =	1.63 cfs @	12.19 hrs,	Volume=	0.021 af	

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.82' @ 12.19 hrs Surf.Area= 9,695 sf Storage= 7,520 cf

Plug-Flow detention time= 319.4 min calculated for 0.496 af (100% of inflow)
Center-of-Mass det. time= 319.4 min (1,152.7 - 833.3)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

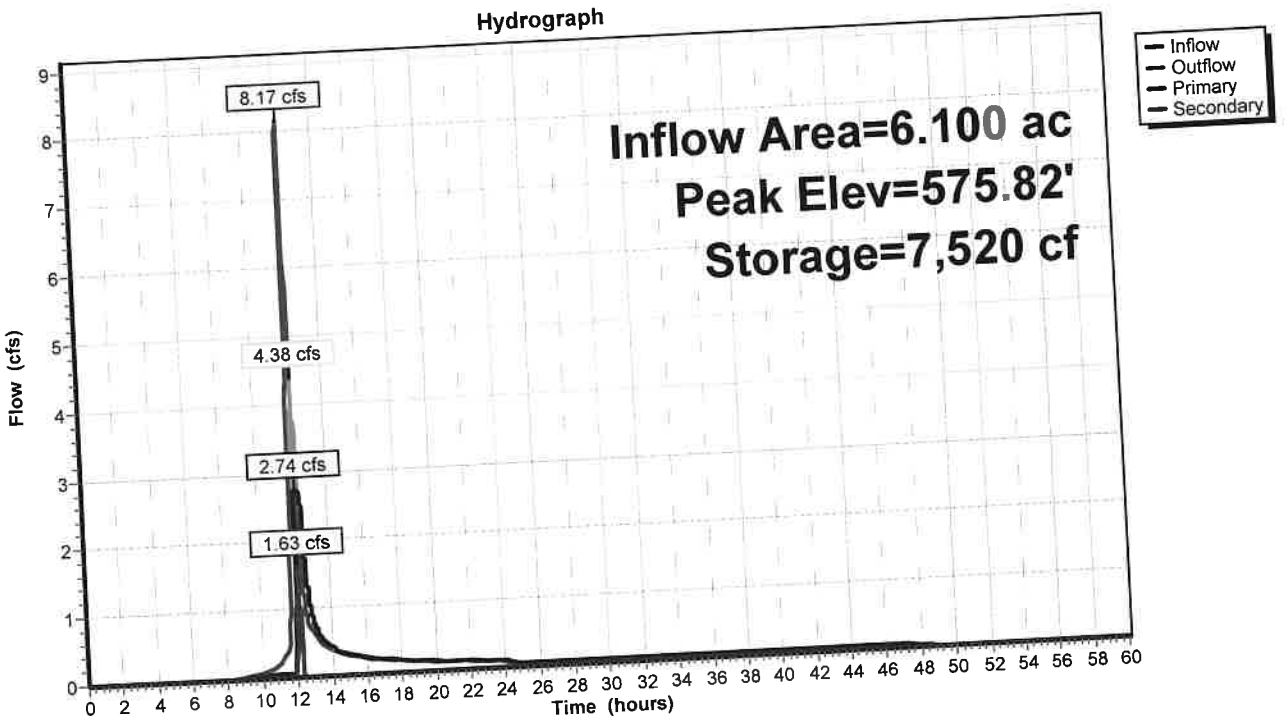
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.74 cfs @ 12.19 hrs HW=575.82' (Free Discharge)
↑—**1=8" pipe** (Barrel Controls 2.74 cfs @ 7.86 fps)
↑—**2=Grate** (Passes < 3.80 cfs potential flow)
↑—**3=Exfiltration** (Passes < 0.06 cfs potential flow)

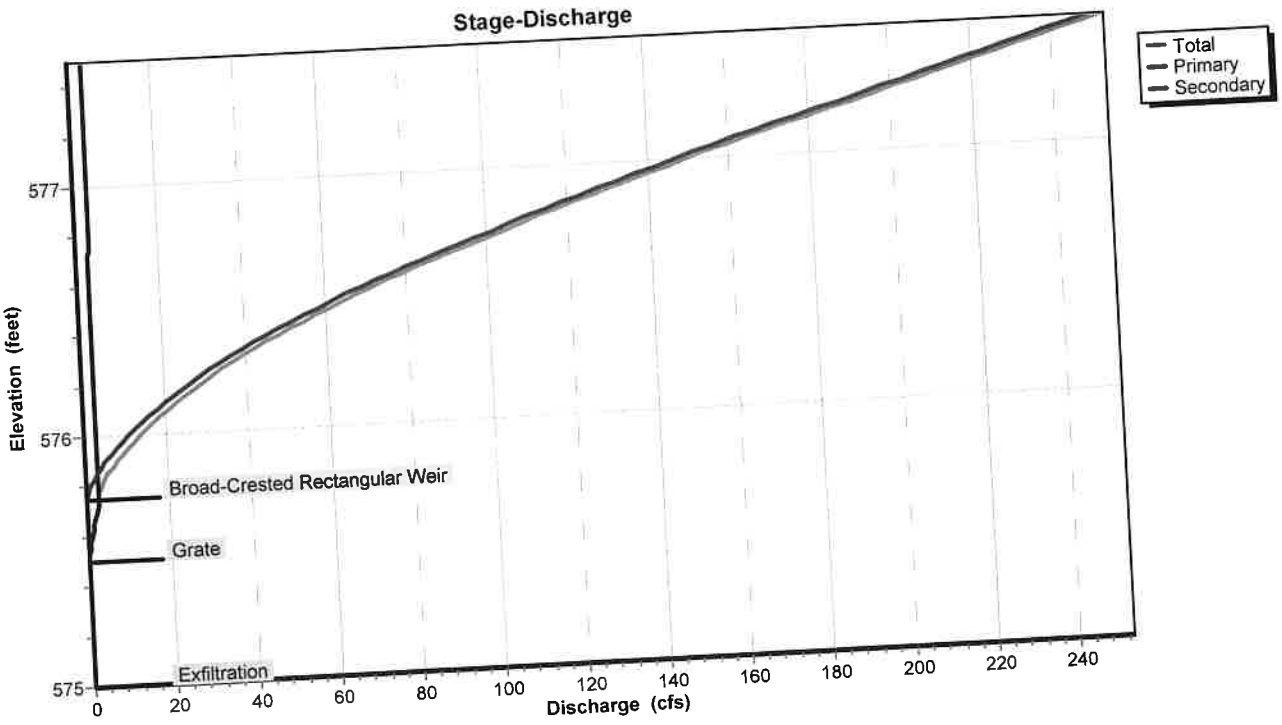
Secondary OutFlow Max=1.62 cfs @ 12.19 hrs HW=575.82' (Free Discharge)
↑—**4=Broad-Crested Rectangular Weir** (Weir Controls 1.62 cfs @ 0.77 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

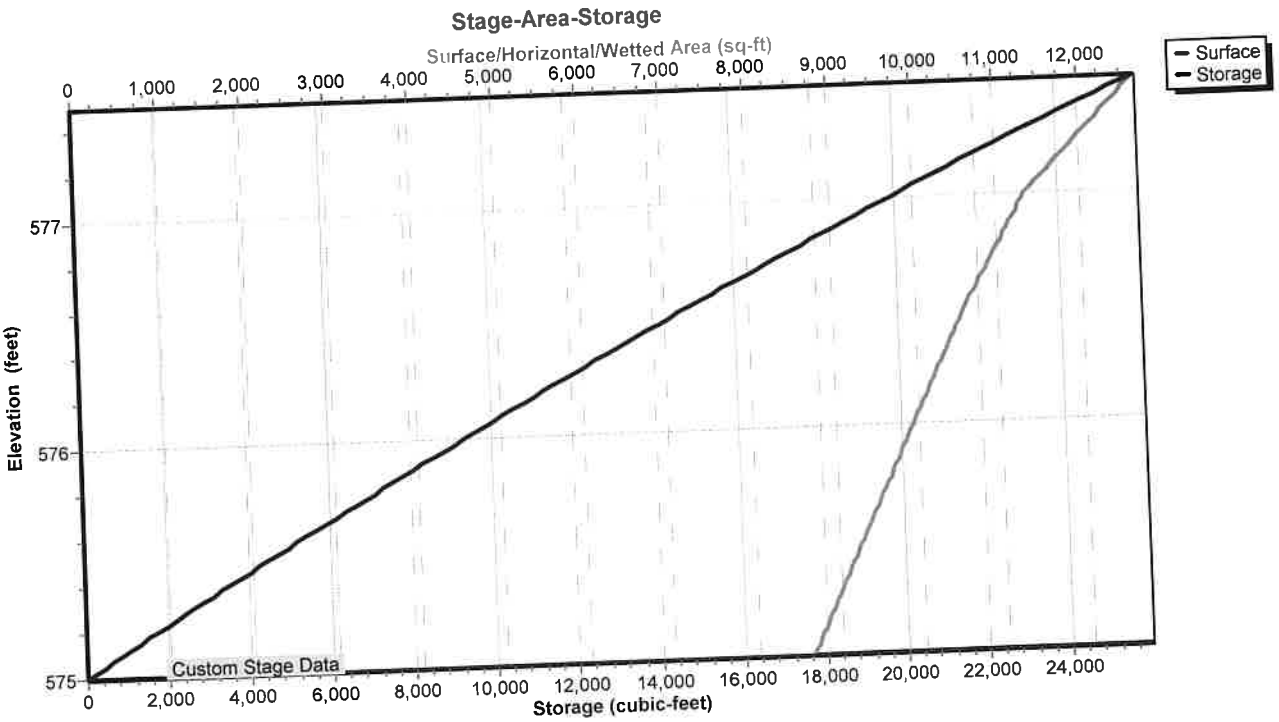


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.00	0	575.00	0.00	0.00	0.00
10.00	0.07	121	575.01	0.03	0.03	0.00
12.00	**7.23**	**4,533**	**575.51**	**0.08**	**0.08**	**0.00**
14.00	**0.37**	**5,004**	**575.56**	**0.42**	**0.42**	**0.00**
16.00	0.23	4,812	575.54	0.25	0.25	0.00
18.00	0.17	4,735	575.53	0.18	0.18	0.00
20.00	0.13	4,666	575.52	0.14	0.14	0.00
22.00	0.12	4,618	575.51	0.12	0.12	0.00
24.00	0.11	4,598	575.51	0.11	0.11	0.00
26.00	0.00	4,207	575.47	0.06	0.06	0.00
28.00	0.00	3,812	575.43	0.05	0.05	0.00
30.00	0.00	3,420	575.38	0.05	0.05	0.00
32.00	0.00	3,031	575.34	0.05	0.05	0.00
34.00	0.00	2,646	575.30	0.05	0.05	0.00
36.00	0.00	2,264	575.26	0.05	0.05	0.00
38.00	0.00	1,885	575.21	0.05	0.05	0.00
40.00	0.00	1,510	575.17	0.05	0.05	0.00
42.00	0.00	1,138	575.13	0.05	0.05	0.00
44.00	0.00	769	575.09	0.05	0.05	0.00
46.00	0.00	404	575.05	0.05	0.05	0.00
48.00	0.00	96	575.01	0.02	0.02	0.00
50.00	0.00	18	575.00	0.00	0.00	0.00
52.00	0.00	3	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 1.10" for 1-Year event
Inflow = 6.05 cfs @ 12.06 hrs, Volume= 0.403 af
Outflow = 0.10 cfs @ 19.66 hrs, Volume= 0.249 af, Atten= 98%, Lag= 455.7 min
Primary = 0.10 cfs @ 19.66 hrs, Volume= 0.249 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.23' @ 19.66 hrs Surf.Area= 60,952 sf Storage= 13,685 cf

Plug-Flow detention time= 1,134.7 min calculated for 0.249 af (62% of inflow)
Center-of-Mass det. time= 1,028.3 min (1,852.6 - 824.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

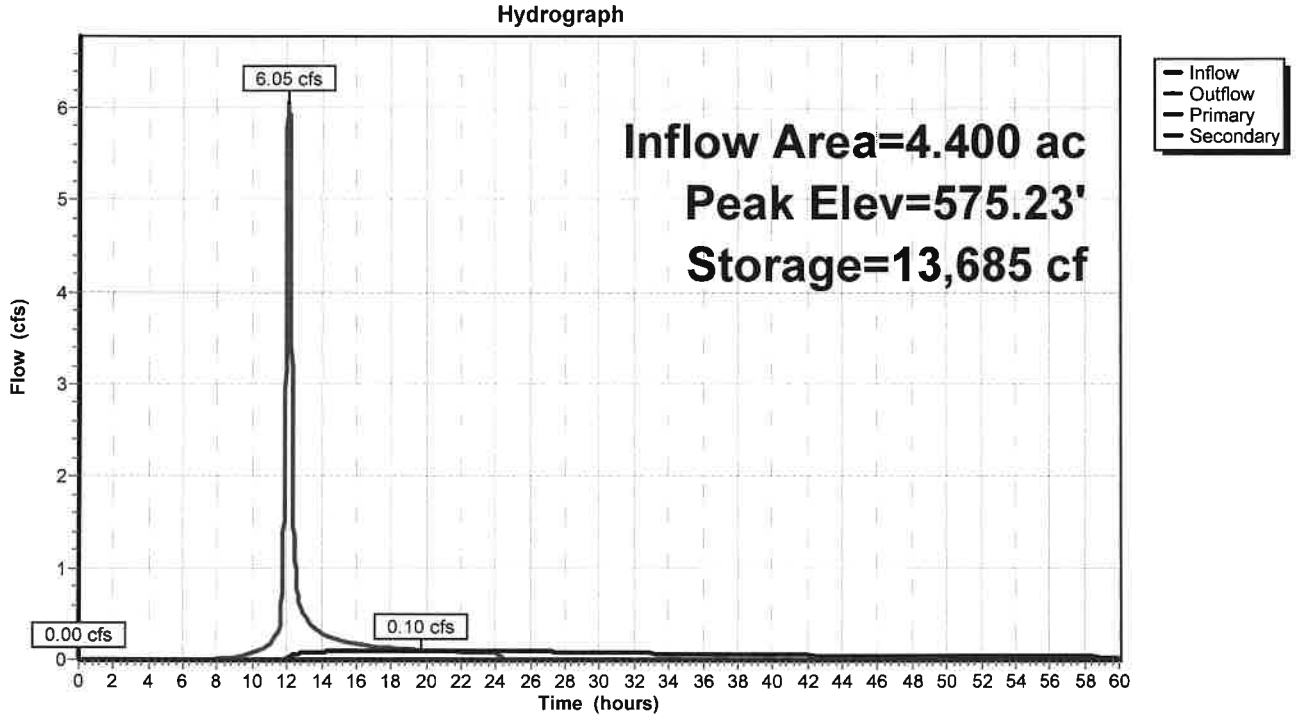
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.10 cfs @ 19.66 hrs HW=575.23' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.10 cfs of 1.85 cfs potential flow)
  ├**2=low flow outlet pipe** (Barrel Controls 0.10 cfs @ 1.70 fps)
  └**3=Grate** (Controls 0.00 cfs)

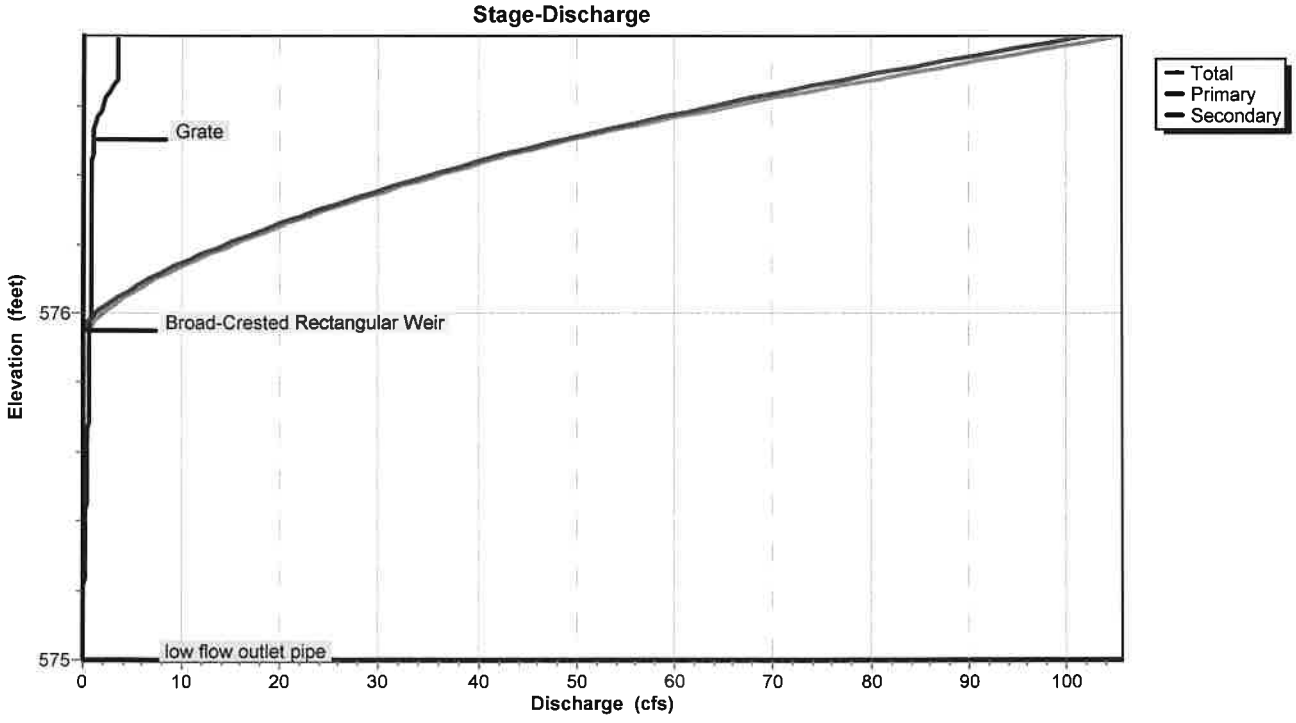
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

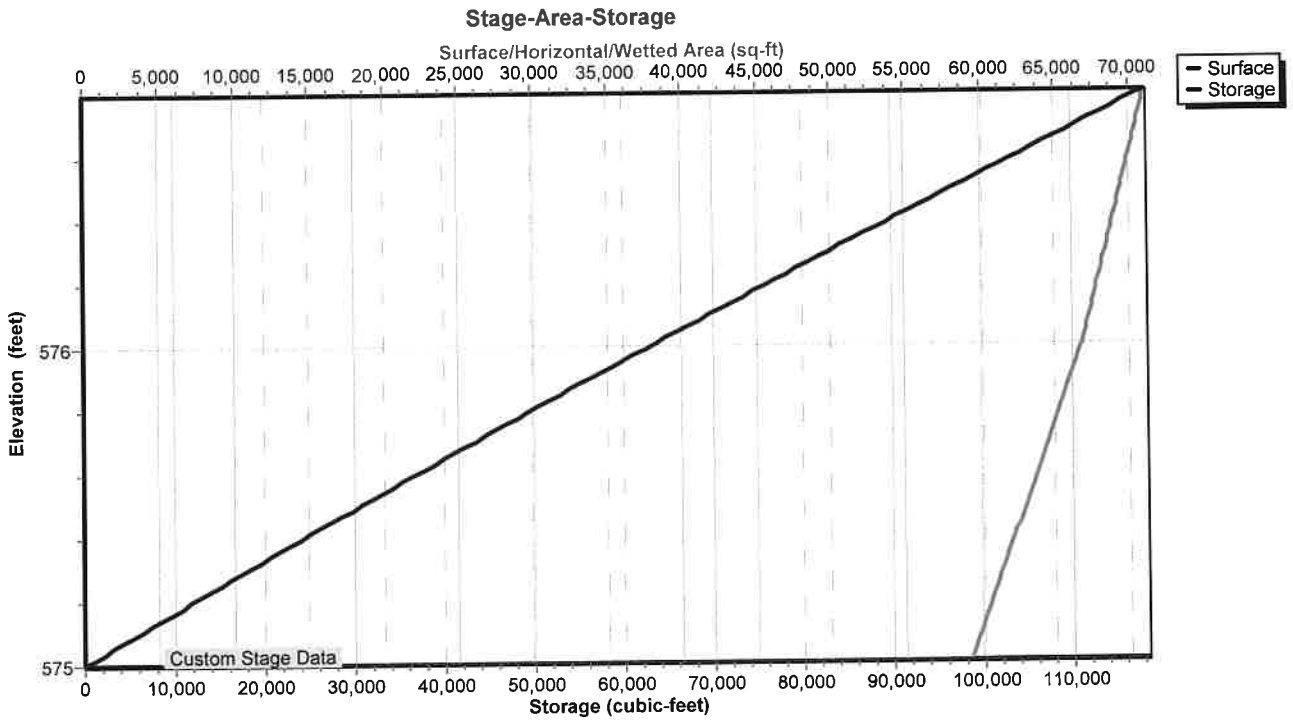


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.01	5	575.00	0.00	0.00	0.00
10.00	0.06	218	575.00	0.00	0.00	0.00
12.00	**5.18**	3,798	575.06	0.01	0.01	0.00
14.00	**0.28**	12,350	575.21	0.08	0.08	0.00
16.00	0.17	13,252	575.22	0.10	0.10	0.00
18.00	0.13	**13,599**	**575.23**	**0.10**	**0.10**	0.00
20.00	0.10	**13,682**	**575.23**	**0.10**	**0.10**	0.00
22.00	0.09	13,599	575.23	0.10	0.10	0.00
24.00	0.08	13,477	575.22	0.10	0.10	0.00
26.00	0.00	12,859	575.21	0.09	0.09	0.00
28.00	0.00	12,236	575.20	0.08	0.08	0.00
30.00	0.00	11,664	575.19	0.08	0.08	0.00
32.00	0.00	11,139	575.19	0.07	0.07	0.00
34.00	0.00	10,655	575.18	0.06	0.06	0.00
36.00	0.00	10,207	575.17	0.06	0.06	0.00
38.00	0.00	9,792	575.16	0.06	0.06	0.00
40.00	0.00	9,408	575.16	0.05	0.05	0.00
42.00	0.00	9,050	575.15	0.05	0.05	0.00
44.00	0.00	8,716	575.15	0.04	0.04	0.00
46.00	0.00	8,404	575.14	0.04	0.04	0.00
48.00	0.00	8,113	575.14	0.04	0.04	0.00
50.00	0.00	7,839	575.13	0.04	0.04	0.00
52.00	0.00	7,582	575.13	0.03	0.03	0.00
54.00	0.00	7,341	575.12	0.03	0.03	0.00
56.00	0.00	7,114	575.12	0.03	0.03	0.00
58.00	0.00	6,899	575.12	0.03	0.03	0.00
60.00	0.00	6,696	575.11	0.03	0.03	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

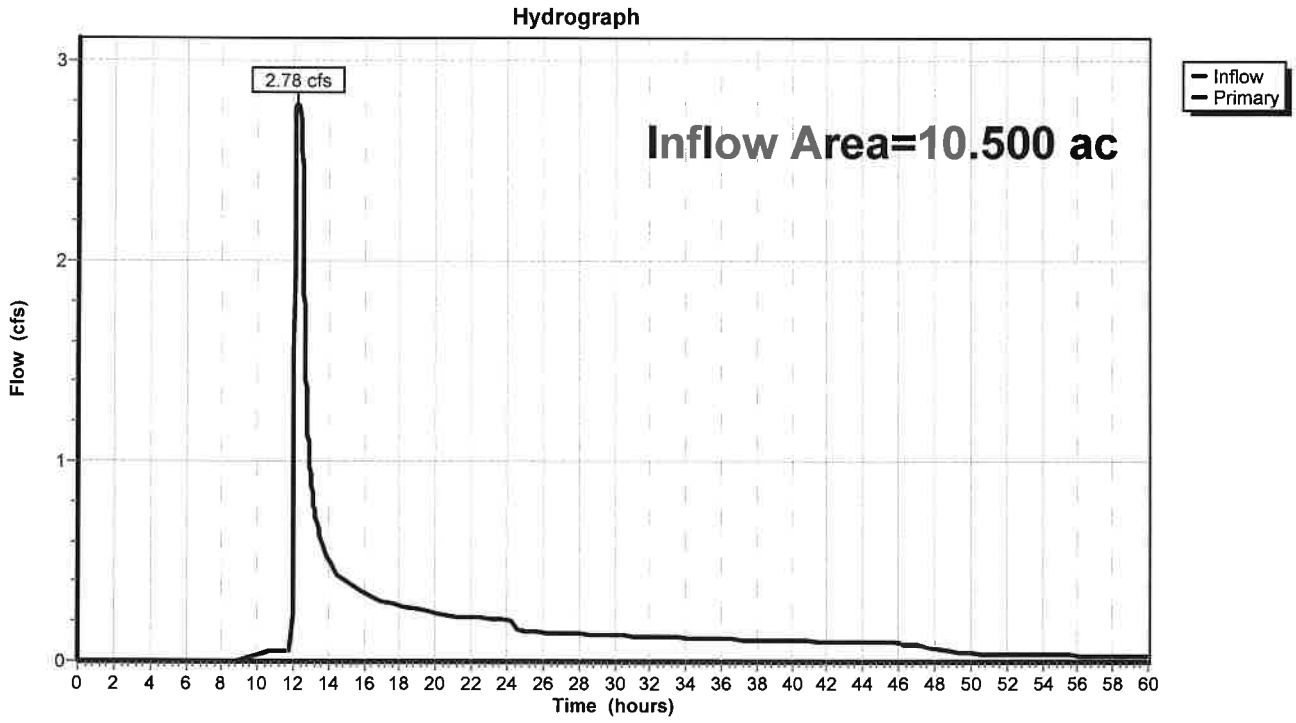
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 0.83" for 1-Year event
Inflow = 2.78 cfs @ 12.22 hrs, Volume= 0.724 af
Primary = 2.78 cfs @ 12.22 hrs, Volume= 0.724 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.04	0.00	0.04
1.00	0.00	0.00	0.00	53.00	0.03	0.00	0.03
2.00	0.00	0.00	0.00	54.00	0.03	0.00	0.03
3.00	0.00	0.00	0.00	55.00	0.03	0.00	0.03
4.00	0.00	0.00	0.00	56.00	0.03	0.00	0.03
5.00	0.00	0.00	0.00	57.00	0.03	0.00	0.03
6.00	0.00	0.00	0.00	58.00	0.03	0.00	0.03
7.00	0.00	0.00	0.00	59.00	0.03	0.00	0.03
8.00	0.00	0.00	0.00	60.00	0.03	0.00	0.03
9.00	0.01	0.00	0.01				
10.00	0.03	0.00	0.03				
11.00	0.05	0.00	0.05				
12.00	**0.09**	0.00	**0.09**				
13.00	**0.91**	0.00	**0.91**				
14.00	0.51	0.00	0.51				
15.00	0.40	0.00	0.40				
16.00	0.34	0.00	0.34				
17.00	0.30	0.00	0.30				
18.00	0.28	0.00	0.28				
19.00	0.26	0.00	0.26				
20.00	0.24	0.00	0.24				
21.00	0.23	0.00	0.23				
22.00	0.22	0.00	0.22				
23.00	0.21	0.00	0.21				
24.00	0.21	0.00	0.21				
25.00	0.15	0.00	0.15				
26.00	0.15	0.00	0.15				
27.00	0.14	0.00	0.14				
28.00	0.14	0.00	0.14				
29.00	0.13	0.00	0.13				
30.00	0.13	0.00	0.13				
31.00	0.13	0.00	0.13				
32.00	0.12	0.00	0.12				
33.00	0.12	0.00	0.12				
34.00	0.12	0.00	0.12				
35.00	0.12	0.00	0.12				
36.00	0.11	0.00	0.11				
37.00	0.11	0.00	0.11				
38.00	0.11	0.00	0.11				
39.00	0.11	0.00	0.11				
40.00	0.10	0.00	0.10				
41.00	0.10	0.00	0.10				
42.00	0.10	0.00	0.10				
43.00	0.10	0.00	0.10				
44.00	0.10	0.00	0.10				
45.00	0.09	0.00	0.09				
46.00	0.09	0.00	0.09				
47.00	0.09	0.00	0.09				
48.00	0.06	0.00	0.06				
49.00	0.05	0.00	0.05				
50.00	0.04	0.00	0.04				
51.00	0.04	0.00	0.04				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=1.27"
Flow Length=652' Tc=13.3 min CN=90 Runoff=10.57 cfs 0.644 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=1.34"
Flow Length=683' Tc=14.4 min CN=91 Runoff=7.75 cfs 0.491 af

Pond 1P: Bioretention Area 3 Peak Elev=575.91' Storage=8,359 cf Inflow=10.57 cfs 0.644 af
Primary=2.79 cfs 0.556 af Secondary=5.41 cfs 0.088 af Outflow=8.19 cfs 0.644 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.32' Storage=19,128 cf Inflow=12.29 cfs 0.579 af
Primary=0.18 cfs 0.400 af Secondary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.400 af

Link 5L: Outflow (@ CB 54) Inflow=2.86 cfs 0.956 af
Primary=2.86 cfs 0.956 af

Total Runoff Area = 10.500 ac Runoff Volume = 1.135 af Average Runoff Depth = 1.30"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

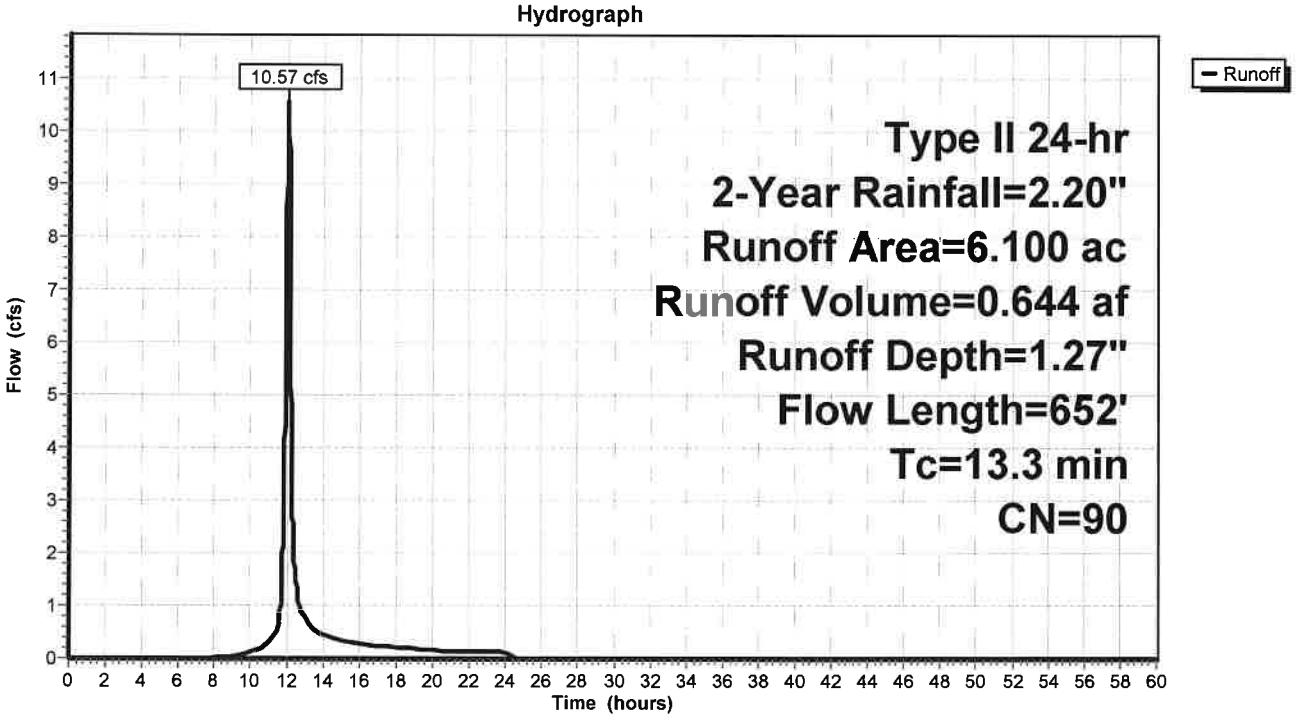
Runoff = 10.57 cfs @ 12.05 hrs, Volume= 0.644 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.00
8.00	0.26	0.00	0.02
9.00	0.32	0.01	0.06
10.00	0.40	0.02	0.12
11.00	0.52	0.06	0.30
12.00	1.46	0.65	**9.45**
13.00	1.70	0.84	**0.79**
14.00	1.80	0.93	0.46
15.00	1.88	0.99	0.36
16.00	1.94	1.04	0.28
17.00	1.98	1.08	0.24
18.00	2.03	1.12	0.21
19.00	2.06	1.15	0.19
20.00	2.09	1.17	0.16
21.00	2.12	1.20	0.15
22.00	2.15	1.22	0.14
23.00	2.18	1.24	0.14
24.00	**2.20**	**1.27**	0.13
25.00	2.20	1.27	0.00
26.00	2.20	1.27	0.00
27.00	2.20	1.27	0.00
28.00	2.20	1.27	0.00
29.00	2.20	1.27	0.00
30.00	2.20	1.27	0.00
31.00	2.20	1.27	0.00
32.00	2.20	1.27	0.00
33.00	2.20	1.27	0.00
34.00	2.20	1.27	0.00
35.00	2.20	1.27	0.00
36.00	2.20	1.27	0.00
37.00	2.20	1.27	0.00
38.00	2.20	1.27	0.00
39.00	2.20	1.27	0.00
40.00	2.20	1.27	0.00
41.00	2.20	1.27	0.00
42.00	2.20	1.27	0.00
43.00	2.20	1.27	0.00
44.00	2.20	1.27	0.00
45.00	2.20	1.27	0.00
46.00	2.20	1.27	0.00
47.00	2.20	1.27	0.00
48.00	2.20	1.27	0.00
49.00	2.20	1.27	0.00
50.00	2.20	1.27	0.00
51.00	2.20	1.27	0.00
52.00	2.20	1.27	0.00
53.00	2.20	1.27	0.00
54.00	2.20	1.27	0.00
55.00	2.20	1.27	0.00
56.00	2.20	1.27	0.00
57.00	2.20	1.27	0.00
58.00	2.20	1.27	0.00
59.00	2.20	1.27	0.00
60.00	2.20	1.27	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

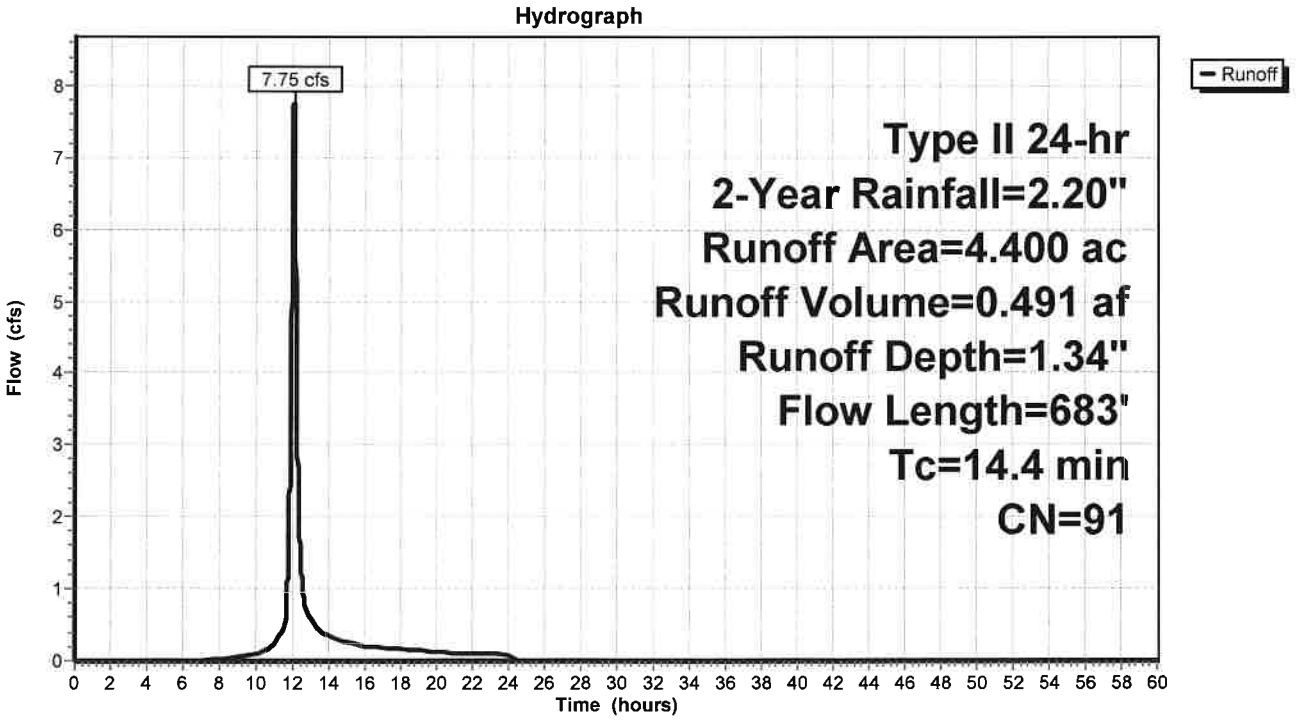
Runoff = 7.75 cfs @ 12.06 hrs, Volume= 0.491 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.00
8.00	0.26	0.00	0.02
9.00	0.32	0.01	0.06
10.00	0.40	0.03	0.10
11.00	0.52	0.08	0.25
12.00	1.46	0.71	**6.69**
13.00	1.70	0.90	**0.60**
14.00	1.80	0.99	0.35
15.00	1.88	1.06	0.27
16.00	1.94	1.11	0.21
17.00	1.98	1.15	0.18
18.00	2.03	1.19	0.16
19.00	2.06	1.22	0.14
20.00	2.09	1.25	0.12
21.00	2.12	1.27	0.11
22.00	2.15	1.30	0.10
23.00	2.18	1.32	0.10
24.00	**2.20**	**1.34**	0.10
25.00	2.20	1.34	0.00
26.00	2.20	1.34	0.00
27.00	2.20	1.34	0.00
28.00	2.20	1.34	0.00
29.00	2.20	1.34	0.00
30.00	2.20	1.34	0.00
31.00	2.20	1.34	0.00
32.00	2.20	1.34	0.00
33.00	2.20	1.34	0.00
34.00	2.20	1.34	0.00
35.00	2.20	1.34	0.00
36.00	2.20	1.34	0.00
37.00	2.20	1.34	0.00
38.00	2.20	1.34	0.00
39.00	2.20	1.34	0.00
40.00	2.20	1.34	0.00
41.00	2.20	1.34	0.00
42.00	2.20	1.34	0.00
43.00	2.20	1.34	0.00
44.00	2.20	1.34	0.00
45.00	2.20	1.34	0.00
46.00	2.20	1.34	0.00
47.00	2.20	1.34	0.00
48.00	2.20	1.34	0.00
49.00	2.20	1.34	0.00
50.00	2.20	1.34	0.00
51.00	2.20	1.34	0.00
52.00	2.20	1.34	0.00
53.00	2.20	1.34	0.00
54.00	2.20	1.34	0.00
55.00	2.20	1.34	0.00
56.00	2.20	1.34	0.00
57.00	2.20	1.34	0.00
58.00	2.20	1.34	0.00
59.00	2.20	1.34	0.00
60.00	2.20	1.34	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 1.27" for 2-Year event
Inflow = 10.57 cfs @ 12.05 hrs, Volume= 0.644 af
Outflow = 8.19 cfs @ 12.13 hrs, Volume= 0.644 af, Atten= 22%, Lag= 4.9 min
Primary = 2.79 cfs @ 12.13 hrs, Volume= 0.556 af
Secondary = 5.41 cfs @ 12.13 hrs, Volume= 0.088 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.91' @ 12.13 hrs Surf.Area= 9,805 sf Storage= 8,359 cf

Plug-Flow detention time= 252.3 min calculated for 0.644 af (100% of inflow)
Center-of-Mass det. time= 252.2 min (1,078.1 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

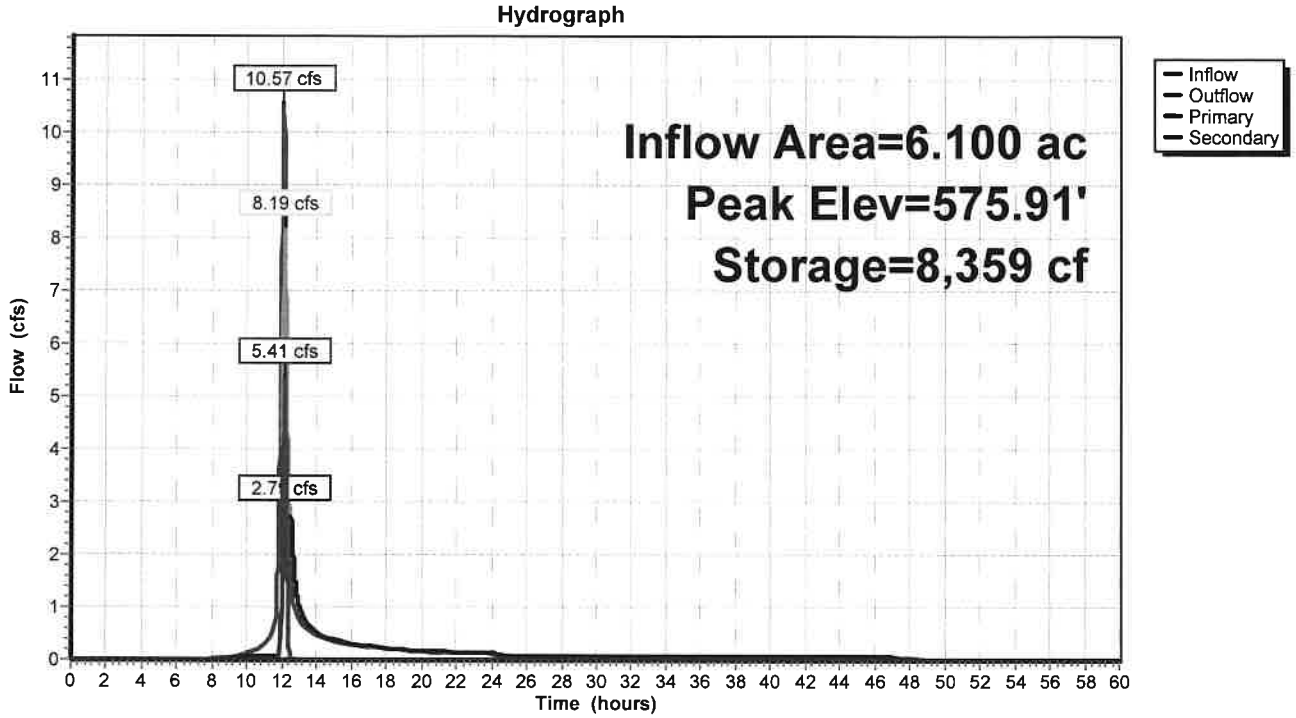
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.79 cfs @ 12.13 hrs HW=575.91' (Free Discharge)
↑**1=8" pipe** (Barrel Controls 2.79 cfs @ 7.98 fps)
↑**2=Grate** (Passes < 4.28 cfs potential flow)
↑**3=Exfiltration** (Passes < 0.06 cfs potential flow)

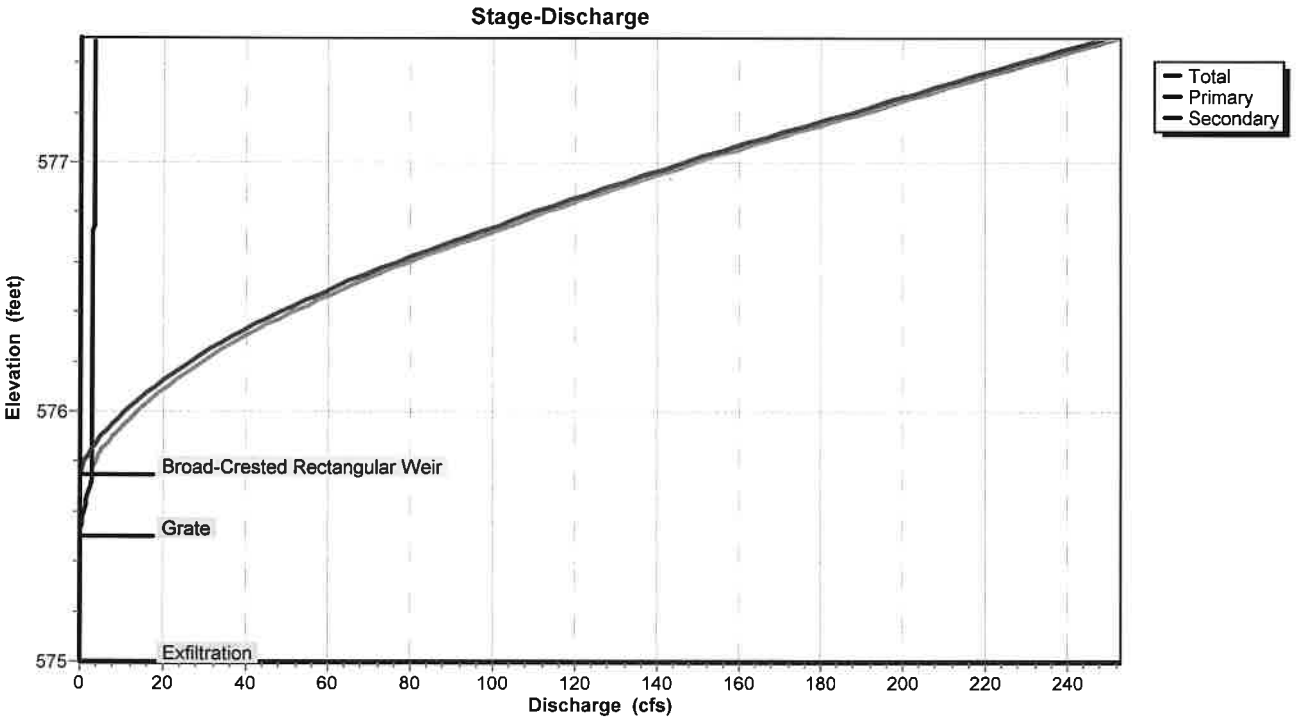
Secondary OutFlow Max=5.39 cfs @ 12.13 hrs HW=575.91' (Free Discharge)
↑**4=Broad-Crested Rectangular Weir** (Weir Controls 5.39 cfs @ 1.15 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

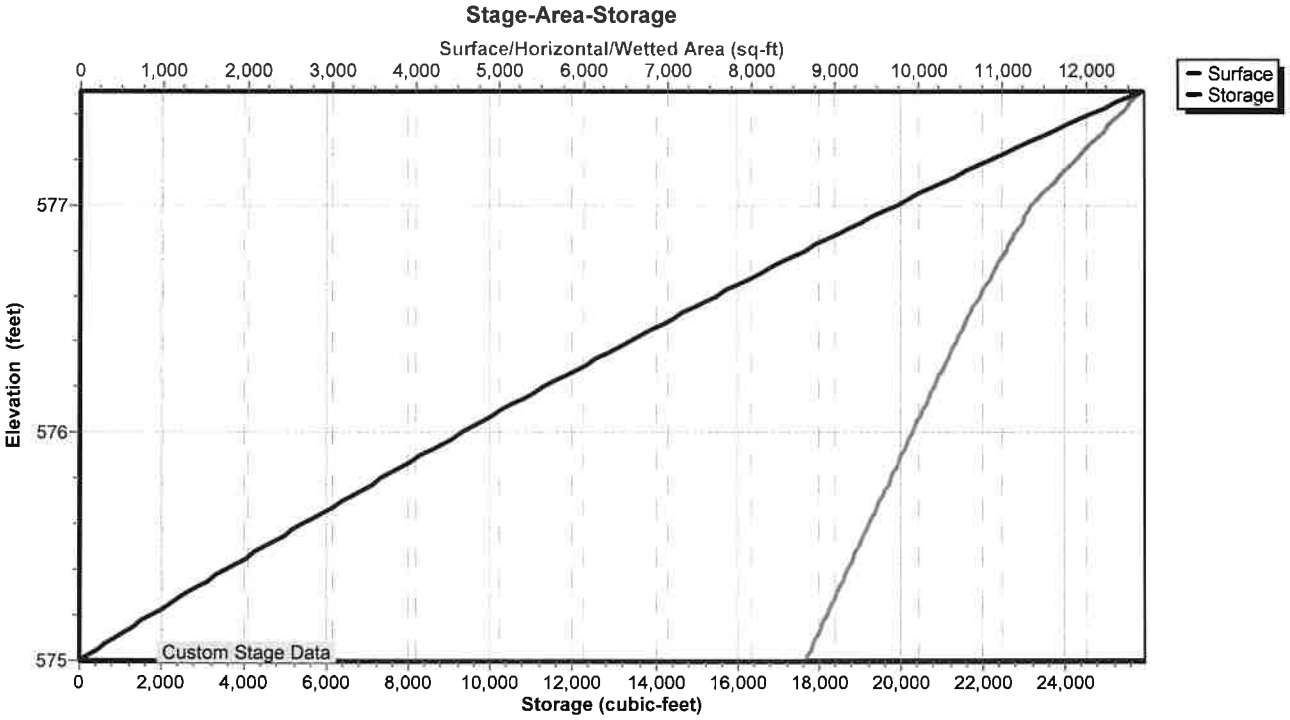


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.02	17	575.00	0.00	0.00	0.00
10.00	0.12	257	575.03	0.05	0.05	0.00
12.00	**9.45**	**6,253**	**575.69**	**2.30**	**2.30**	**0.00**
14.00	**0.46**	**5,096**	**575.57**	**0.52**	**0.52**	**0.00**
16.00	0.28	4,881	575.54	0.30	0.30	0.00
18.00	0.21	4,786	575.53	0.22	0.22	0.00
20.00	0.16	4,719	575.53	0.17	0.17	0.00
22.00	0.14	4,676	575.52	0.15	0.15	0.00
24.00	0.13	4,652	575.52	0.13	0.13	0.00
26.00	0.00	4,232	575.47	0.06	0.06	0.00
28.00	0.00	3,836	575.43	0.05	0.05	0.00
30.00	0.00	3,444	575.39	0.05	0.05	0.00
32.00	0.00	3,055	575.34	0.05	0.05	0.00
34.00	0.00	2,670	575.30	0.05	0.05	0.00
36.00	0.00	2,287	575.26	0.05	0.05	0.00
38.00	0.00	1,909	575.22	0.05	0.05	0.00
40.00	0.00	1,533	575.18	0.05	0.05	0.00
42.00	0.00	1,161	575.13	0.05	0.05	0.00
44.00	0.00	792	575.09	0.05	0.05	0.00
46.00	0.00	426	575.05	0.05	0.05	0.00
48.00	0.00	107	575.01	0.02	0.02	0.00
50.00	0.00	20	575.00	0.00	0.00	0.00
52.00	0.00	4	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 1.58" for 2-Year event
Inflow = 12.29 cfs @ 12.11 hrs, Volume= 0.579 af
Outflow = 0.18 cfs @ 17.01 hrs, Volume= 0.400 af, Atten= 99%, Lag= 293.7 min
Primary = 0.18 cfs @ 17.01 hrs, Volume= 0.400 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.32' @ 17.01 hrs Surf.Area= 61,630 sf Storage= 19,128 cf

Plug-Flow detention time= 1,051.7 min calculated for 0.400 af (69% of inflow)
Center-of-Mass det. time= 962.0 min (1,770.2 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

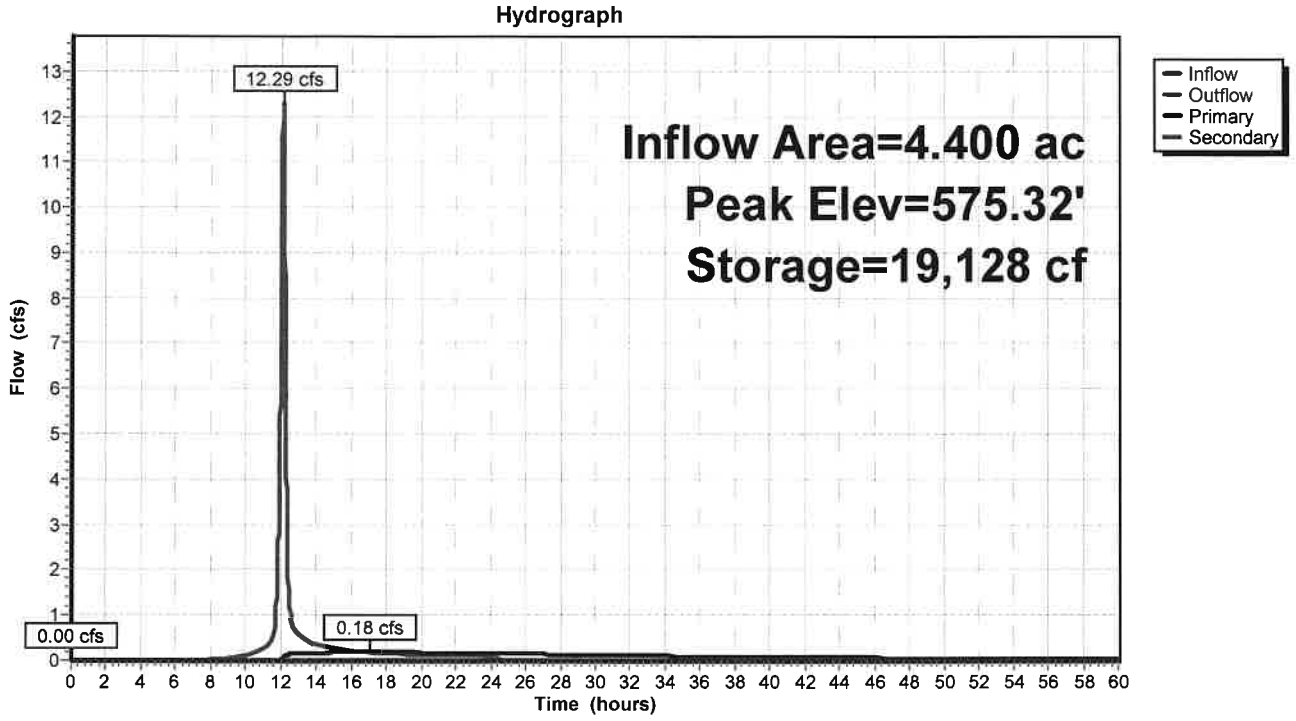
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.18 cfs @ 17.01 hrs HW=575.32' (Free Discharge)
└─**1=12" outlet pipe** (Passes 0.18 cfs of 1.87 cfs potential flow)
  ├─**2=low flow outlet pipe** (Barrel Controls 0.18 cfs @ 1.95 fps)
  └─**3=Grate** (Controls 0.00 cfs)

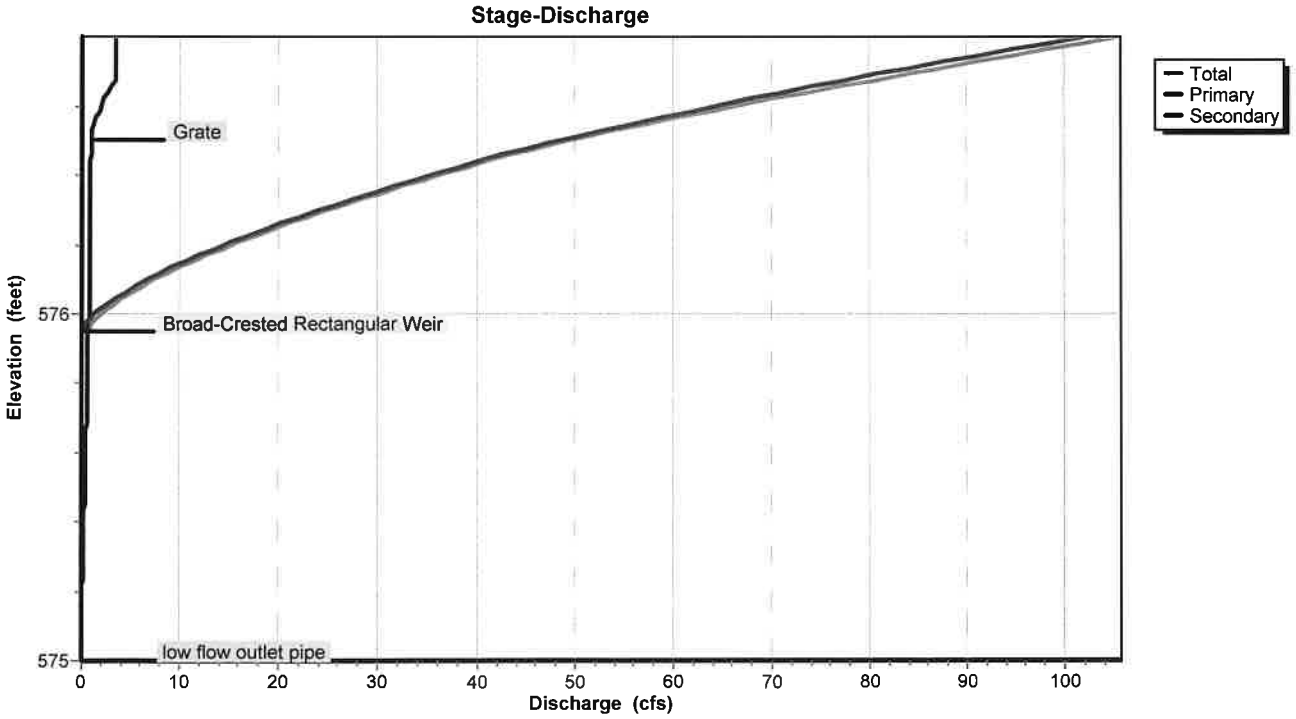
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

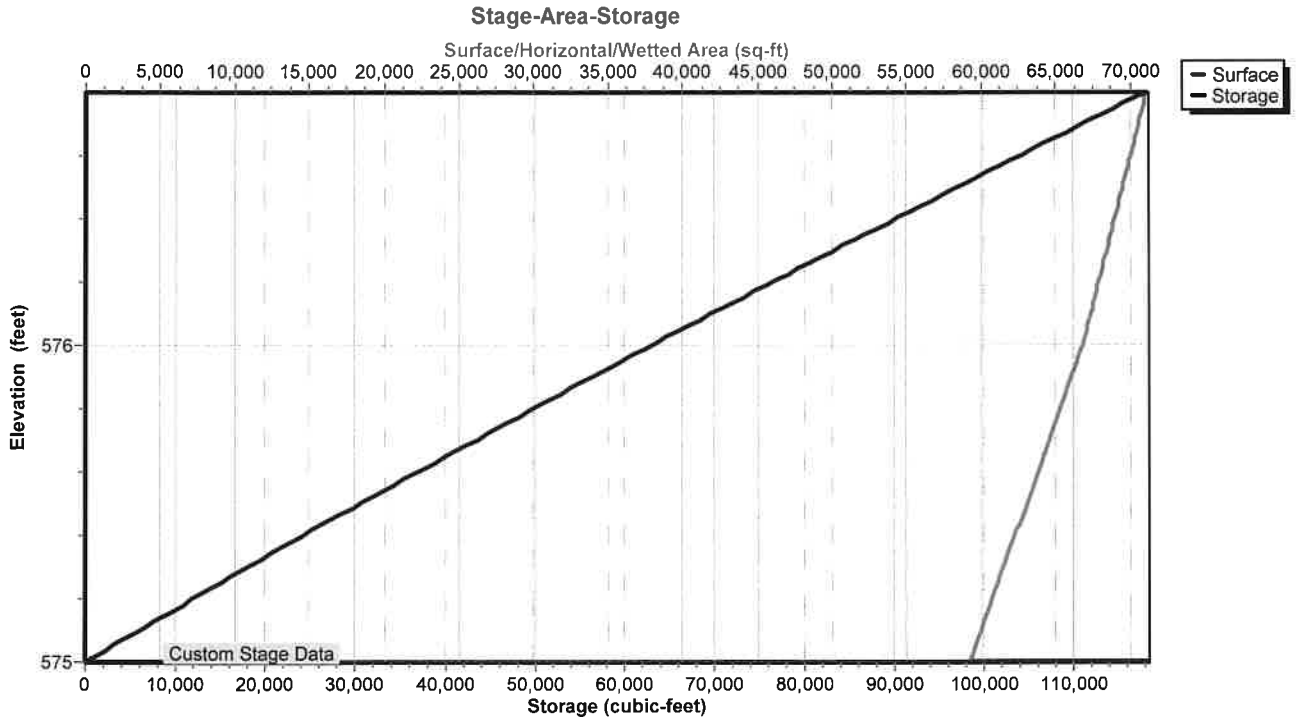


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.02	48	575.00	0.00	0.00	0.00
10.00	0.10	451	575.01	0.00	0.00	0.00
12.00	**6.69**	5,327	575.09	0.02	0.02	0.00
14.00	**0.35**	18,425	575.31	0.17	0.17	0.00
16.00	0.21	**19,087**	**575.32**	**0.18**	**0.18**	0.00
18.00	0.16	**19,093**	**575.32**	**0.18**	**0.18**	0.00
20.00	0.12	18,812	575.31	0.17	0.17	0.00
22.00	0.10	18,367	575.30	0.17	0.17	0.00
24.00	0.10	17,912	575.30	0.16	0.16	0.00
26.00	0.00	16,886	575.28	0.15	0.15	0.00
28.00	0.00	15,893	575.26	0.13	0.13	0.00
30.00	0.00	14,996	575.25	0.12	0.12	0.00
32.00	0.00	14,184	575.24	0.11	0.11	0.00
34.00	0.00	13,445	575.22	0.10	0.10	0.00
36.00	0.00	12,772	575.21	0.09	0.09	0.00
38.00	0.00	12,156	575.20	0.08	0.08	0.00
40.00	0.00	11,591	575.19	0.08	0.08	0.00
42.00	0.00	11,071	575.18	0.07	0.07	0.00
44.00	0.00	10,592	575.18	0.06	0.06	0.00
46.00	0.00	10,149	575.17	0.06	0.06	0.00
48.00	0.00	9,739	575.16	0.05	0.05	0.00
50.00	0.00	9,358	575.16	0.05	0.05	0.00
52.00	0.00	9,003	575.15	0.05	0.05	0.00
54.00	0.00	8,673	575.15	0.04	0.04	0.00
56.00	0.00	8,364	575.14	0.04	0.04	0.00
58.00	0.00	8,075	575.14	0.04	0.04	0.00
60.00	0.00	7,803	575.13	0.04	0.04	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

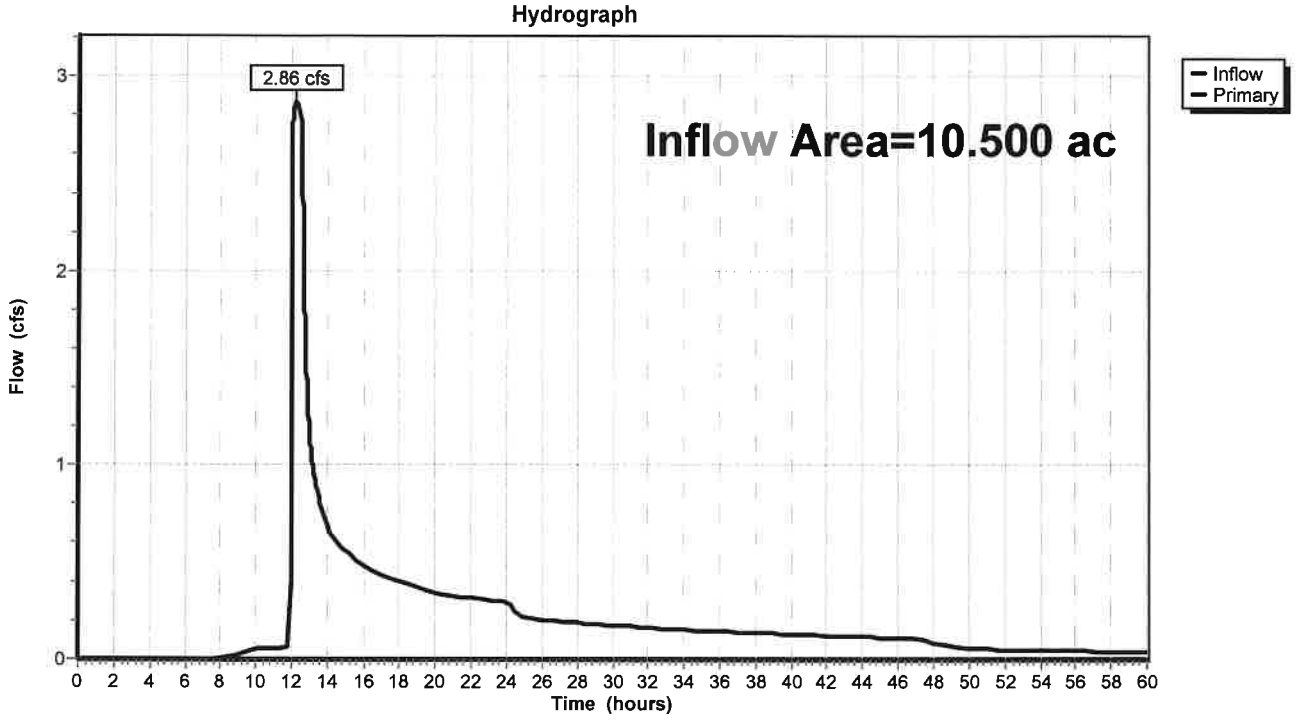
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 1.09" for 2-Year event
Inflow = 2.86 cfs @ 12.23 hrs, Volume= 0.956 af
Primary = 2.86 cfs @ 12.23 hrs, Volume= 0.956 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.05	0.00	0.05
1.00	0.00	0.00	0.00	53.00	0.05	0.00	0.05
2.00	0.00	0.00	0.00	54.00	0.04	0.00	0.04
3.00	0.00	0.00	0.00	55.00	0.04	0.00	0.04
4.00	0.00	0.00	0.00	56.00	0.04	0.00	0.04
5.00	0.00	0.00	0.00	57.00	0.04	0.00	0.04
6.00	0.00	0.00	0.00	58.00	0.04	0.00	0.04
7.00	0.00	0.00	0.00	59.00	0.04	0.00	0.04
8.00	0.00	0.00	0.00	60.00	0.04	0.00	0.04
9.00	0.02	0.00	0.02				
10.00	0.05	0.00	0.05				
11.00	0.05	0.00	0.05				
12.00	**2.31**	0.00	**2.31**				
13.00	**1.18**	0.00	**1.18**				
14.00	0.69	0.00	0.69				
15.00	0.55	0.00	0.55				
16.00	0.48	0.00	0.48				
17.00	0.43	0.00	0.43				
18.00	0.40	0.00	0.40				
19.00	0.37	0.00	0.37				
20.00	0.34	0.00	0.34				
21.00	0.32	0.00	0.32				
22.00	0.31	0.00	0.31				
23.00	0.30	0.00	0.30				
24.00	0.29	0.00	0.29				
25.00	0.21	0.00	0.21				
26.00	0.20	0.00	0.20				
27.00	0.19	0.00	0.19				
28.00	0.19	0.00	0.19				
29.00	0.18	0.00	0.18				
30.00	0.17	0.00	0.17				
31.00	0.17	0.00	0.17				
32.00	0.16	0.00	0.16				
33.00	0.16	0.00	0.16				
34.00	0.15	0.00	0.15				
35.00	0.15	0.00	0.15				
36.00	0.14	0.00	0.14				
37.00	0.14	0.00	0.14				
38.00	0.13	0.00	0.13				
39.00	0.13	0.00	0.13				
40.00	0.13	0.00	0.13				
41.00	0.12	0.00	0.12				
42.00	0.12	0.00	0.12				
43.00	0.12	0.00	0.12				
44.00	0.11	0.00	0.11				
45.00	0.11	0.00	0.11				
46.00	0.11	0.00	0.11				
47.00	0.11	0.00	0.11				
48.00	0.08	0.00	0.08				
49.00	0.06	0.00	0.06				
50.00	0.06	0.00	0.06				
51.00	0.05	0.00	0.05				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=1.71"
Flow Length=652' Tc=13.3 min CN=90 Runoff=14.18 cfs 0.870 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=1.79"
Flow Length=683' Tc=14.4 min CN=91 Runoff=10.29 cfs 0.658 af

Pond 1P: Bioretention Area 3 Peak Elev=575.99' Storage=9,153 cf Inflow=14.18 cfs 0.870 af
Primary=2.83 cfs 0.666 af Secondary=10.09 cfs 0.203 af Outflow=12.91 cfs 0.870 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.46' Storage=28,218 cf Inflow=20.08 cfs 0.861 af
Primary=0.33 cfs 0.652 af Secondary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.652 af

Link 5L: Outflow (@ CB 54) Inflow=3.01 cfs 1.318 af
Primary=3.01 cfs 1.318 af

Total Runoff Area = 10.500 ac Runoff Volume = 1.527 af Average Runoff Depth = 1.75"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

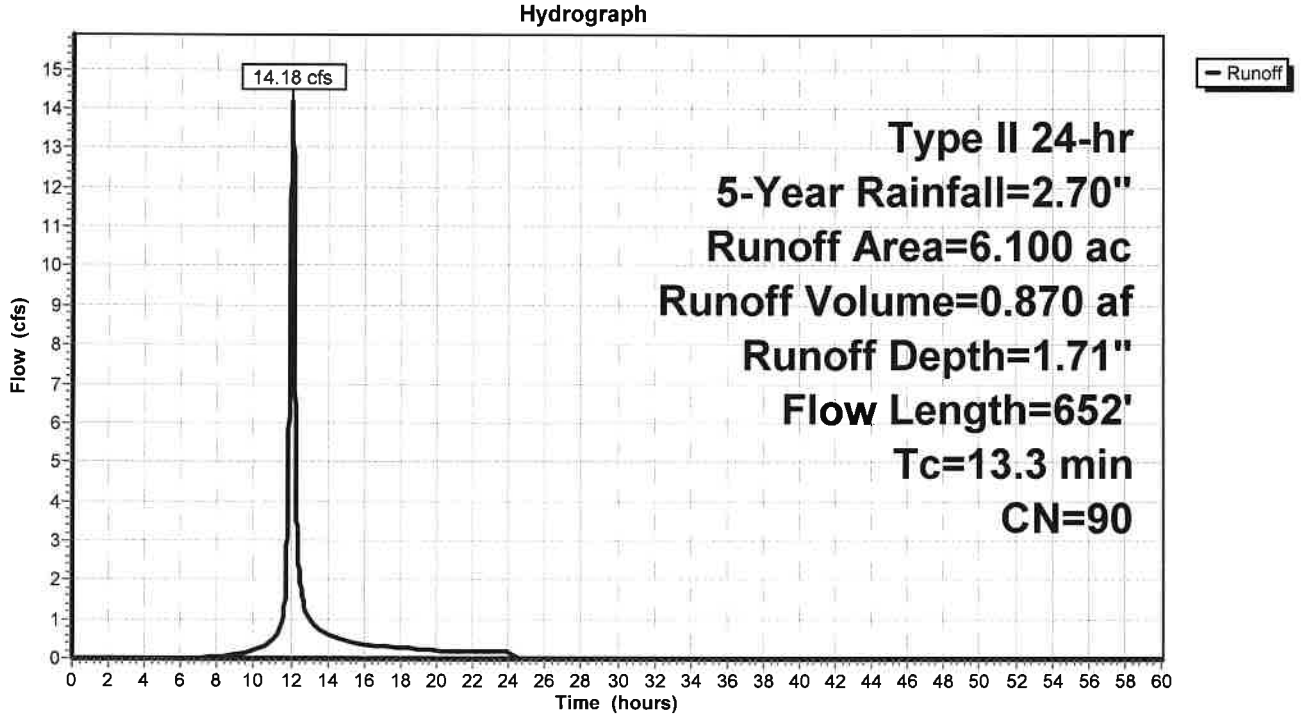
Runoff = 14.18 cfs @ 12.05 hrs, Volume= 0.870 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.00
7.00	0.27	0.00	0.02
8.00	0.32	0.01	0.05
9.00	0.40	0.02	0.12
10.00	0.49	0.05	0.20
11.00	0.63	0.11	0.47
12.00	1.79	0.92	**12.79**
13.00	2.08	1.17	**1.02**
14.00	2.21	1.28	0.59
15.00	2.30	1.36	0.46
16.00	2.38	1.42	0.36
17.00	2.43	1.47	0.31
18.00	2.49	1.52	0.27
19.00	2.53	1.56	0.24
20.00	2.57	1.59	0.20
21.00	2.60	1.62	0.19
22.00	2.64	1.65	0.18
23.00	2.67	1.68	0.17
24.00	**2.70**	**1.71**	0.17
25.00	2.70	1.71	0.00
26.00	2.70	1.71	0.00
27.00	2.70	1.71	0.00
28.00	2.70	1.71	0.00
29.00	2.70	1.71	0.00
30.00	2.70	1.71	0.00
31.00	2.70	1.71	0.00
32.00	2.70	1.71	0.00
33.00	2.70	1.71	0.00
34.00	2.70	1.71	0.00
35.00	2.70	1.71	0.00
36.00	2.70	1.71	0.00
37.00	2.70	1.71	0.00
38.00	2.70	1.71	0.00
39.00	2.70	1.71	0.00
40.00	2.70	1.71	0.00
41.00	2.70	1.71	0.00
42.00	2.70	1.71	0.00
43.00	2.70	1.71	0.00
44.00	2.70	1.71	0.00
45.00	2.70	1.71	0.00
46.00	2.70	1.71	0.00
47.00	2.70	1.71	0.00
48.00	2.70	1.71	0.00
49.00	2.70	1.71	0.00
50.00	2.70	1.71	0.00
51.00	2.70	1.71	0.00
52.00	2.70	1.71	0.00
53.00	2.70	1.71	0.00
54.00	2.70	1.71	0.00
55.00	2.70	1.71	0.00
56.00	2.70	1.71	0.00
57.00	2.70	1.71	0.00
58.00	2.70	1.71	0.00
59.00	2.70	1.71	0.00
60.00	2.70	1.71	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

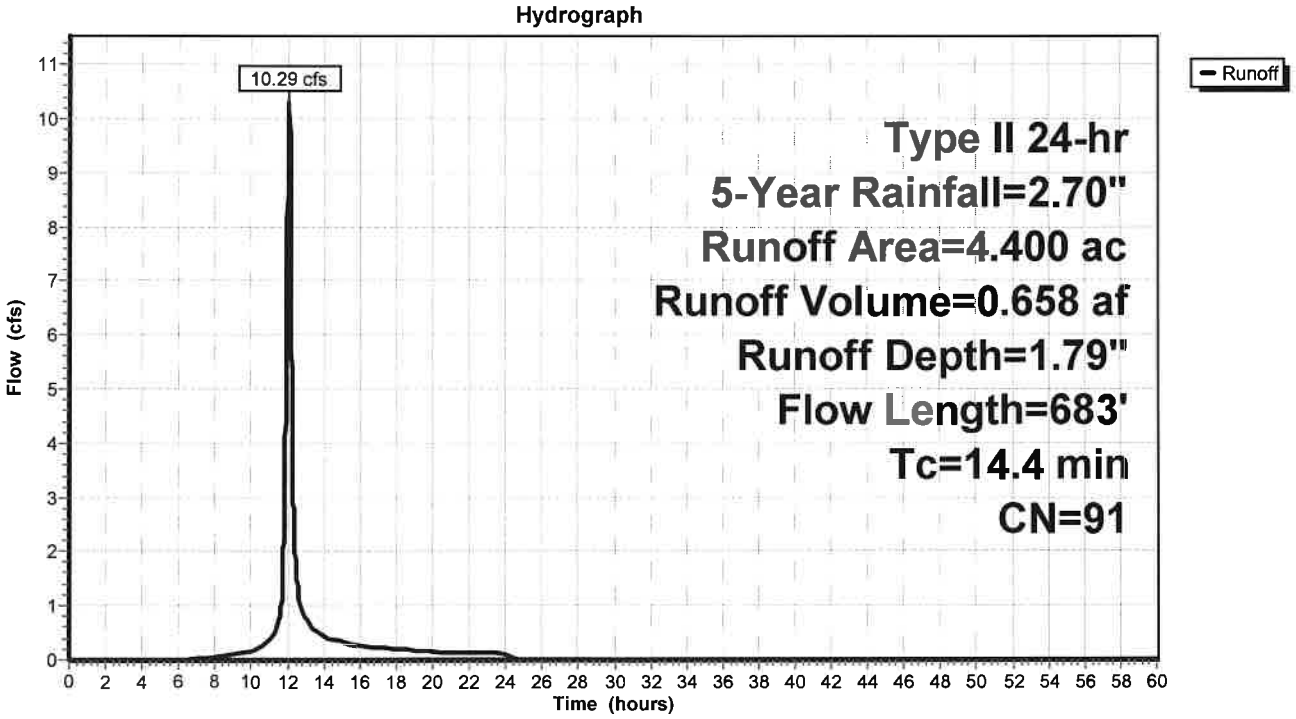
Runoff = 10.29 cfs @ 12.06 hrs, Volume= 0.658 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.00
7.00	0.27	0.00	0.03
8.00	0.32	0.01	0.05
9.00	0.40	0.03	0.10
10.00	0.49	0.07	0.17
11.00	0.63	0.13	0.37
12.00	1.79	0.98	**8.97**
13.00	2.08	1.24	**0.77**
14.00	2.21	1.35	0.44
15.00	2.30	1.43	0.34
16.00	2.38	1.50	0.27
17.00	2.43	1.55	0.23
18.00	2.49	1.60	0.20
19.00	2.53	1.64	0.18
20.00	2.57	1.67	0.15
21.00	2.60	1.71	0.14
22.00	2.64	1.74	0.13
23.00	2.67	1.77	0.13
24.00	**2.70**	**1.79**	0.12
25.00	2.70	1.79	0.00
26.00	2.70	1.79	0.00
27.00	2.70	1.79	0.00
28.00	2.70	1.79	0.00
29.00	2.70	1.79	0.00
30.00	2.70	1.79	0.00
31.00	2.70	1.79	0.00
32.00	2.70	1.79	0.00
33.00	2.70	1.79	0.00
34.00	2.70	1.79	0.00
35.00	2.70	1.79	0.00
36.00	2.70	1.79	0.00
37.00	2.70	1.79	0.00
38.00	2.70	1.79	0.00
39.00	2.70	1.79	0.00
40.00	2.70	1.79	0.00
41.00	2.70	1.79	0.00
42.00	2.70	1.79	0.00
43.00	2.70	1.79	0.00
44.00	2.70	1.79	0.00
45.00	2.70	1.79	0.00
46.00	2.70	1.79	0.00
47.00	2.70	1.79	0.00
48.00	2.70	1.79	0.00
49.00	2.70	1.79	0.00
50.00	2.70	1.79	0.00
51.00	2.70	1.79	0.00
52.00	2.70	1.79	0.00
53.00	2.70	1.79	0.00
54.00	2.70	1.79	0.00
55.00	2.70	1.79	0.00
56.00	2.70	1.79	0.00
57.00	2.70	1.79	0.00
58.00	2.70	1.79	0.00
59.00	2.70	1.79	0.00
60.00	2.70	1.79	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 1.71" for 5-Year event
Inflow = 14.18 cfs @ 12.05 hrs, Volume= 0.870 af
Outflow = 12.91 cfs @ 12.10 hrs, Volume= 0.870 af, Atten= 9%, Lag= 2.9 min
Primary = 2.83 cfs @ 12.10 hrs, Volume= 0.666 af
Secondary = 10.09 cfs @ 12.10 hrs, Volume= 0.203 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.99' @ 12.10 hrs Surf.Area= 9,908 sf Storage= 9,153 cf

Plug-Flow detention time= 193.1 min calculated for 0.869 af (100% of inflow)
Center-of-Mass det. time= 193.4 min (1,010.7 - 817.3)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

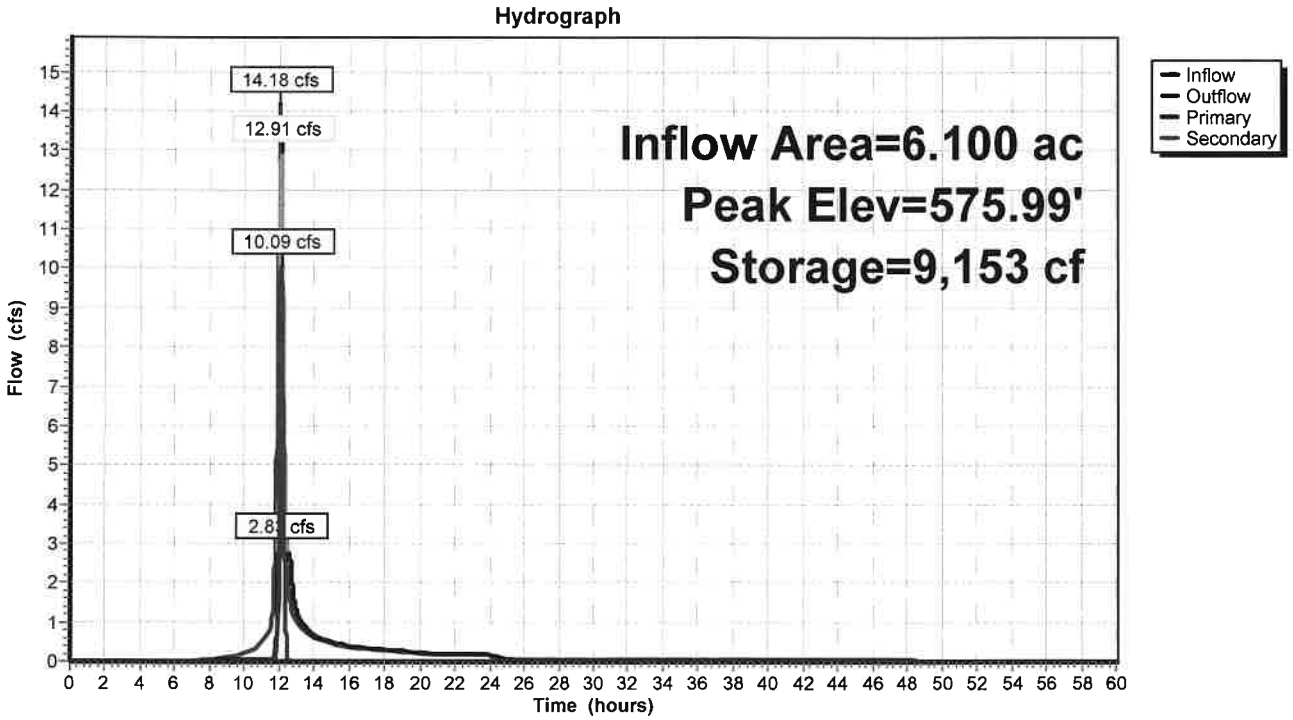
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.83 cfs @ 12.10 hrs HW=575.99' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.83 cfs @ 8.10 fps)
  ├**2=Grate** (Passes < 4.69 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

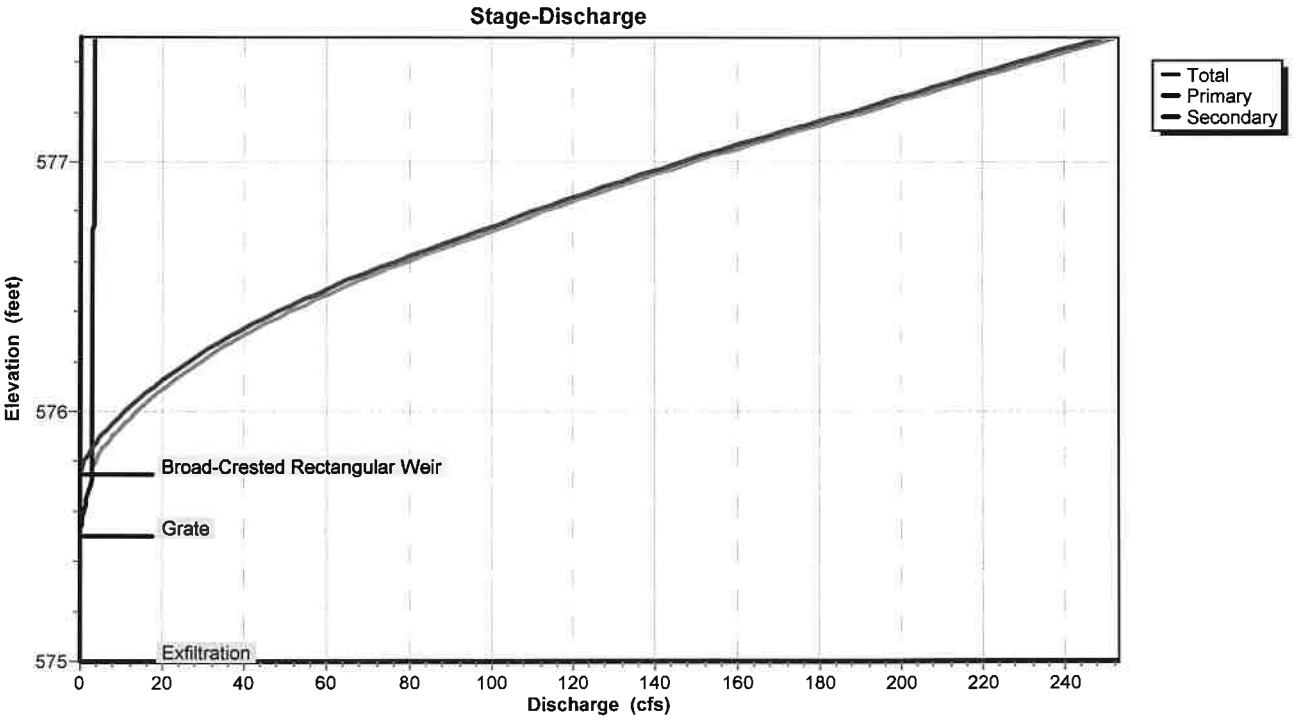
Secondary OutFlow Max=10.07 cfs @ 12.10 hrs HW=575.99' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 10.07 cfs @ 1.42 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

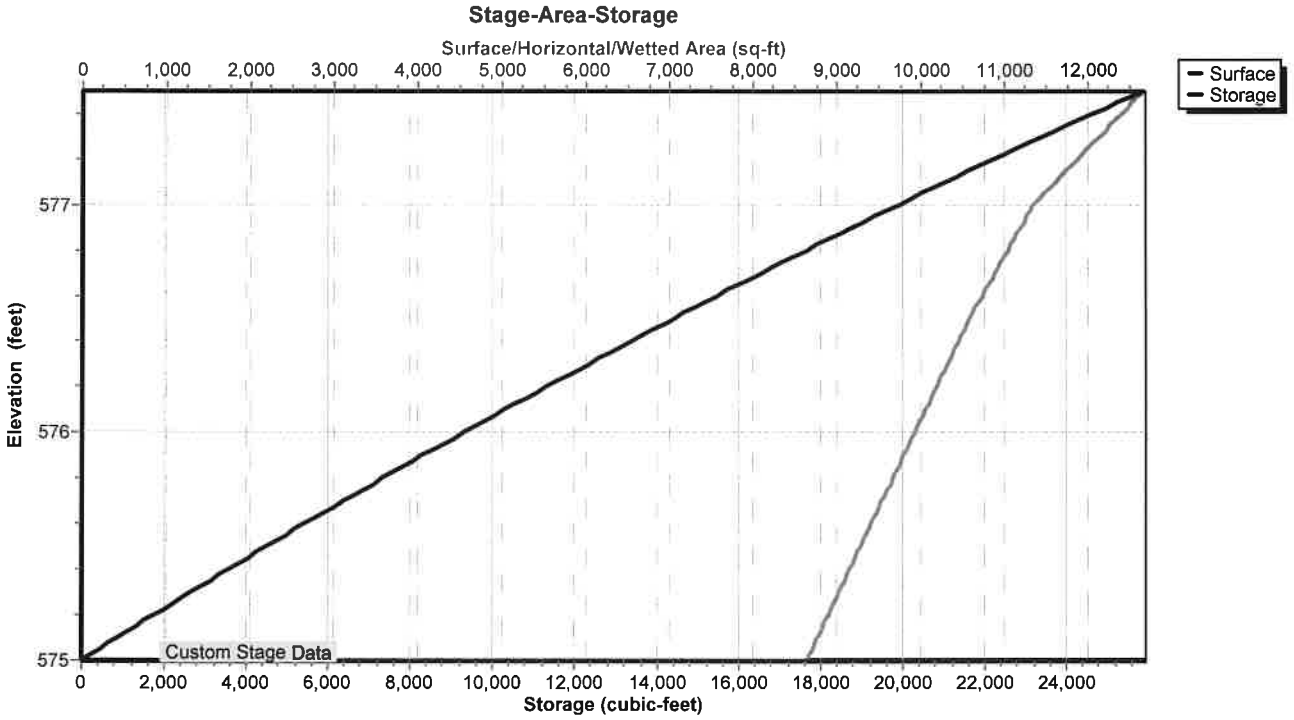


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.05	99	575.01	0.02	0.02	0.00
10.00	0.20	617	575.07	0.05	0.05	0.00
12.00	**12.79**	**8,183**	**575.89**	**7.28**	**2.78**	**4.50**
14.00	**0.59**	**5,218**	**575.58**	**0.66**	**0.66**	**0.00**
16.00	0.36	4,969	575.55	0.38	0.38	0.00
18.00	0.27	4,859	575.54	0.29	0.29	0.00
20.00	0.20	4,774	575.53	0.21	0.21	0.00
22.00	0.18	4,739	575.53	0.18	0.18	0.00
24.00	0.17	4,722	575.53	0.17	0.17	0.00
26.00	0.00	4,258	575.48	0.06	0.06	0.00
28.00	0.00	3,862	575.43	0.05	0.05	0.00
30.00	0.00	3,470	575.39	0.05	0.05	0.00
32.00	0.00	3,081	575.35	0.05	0.05	0.00
34.00	0.00	2,695	575.30	0.05	0.05	0.00
36.00	0.00	2,313	575.26	0.05	0.05	0.00
38.00	0.00	1,934	575.22	0.05	0.05	0.00
40.00	0.00	1,558	575.18	0.05	0.05	0.00
42.00	0.00	1,186	575.14	0.05	0.05	0.00
44.00	0.00	816	575.09	0.05	0.05	0.00
46.00	0.00	450	575.05	0.05	0.05	0.00
48.00	0.00	119	575.01	0.03	0.03	0.00
50.00	0.00	22	575.00	0.01	0.01	0.00
52.00	0.00	4	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 2.35" for 5-Year event
Inflow = 20.08 cfs @ 12.08 hrs, Volume= 0.861 af
Outflow = 0.33 cfs @ 15.13 hrs, Volume= 0.652 af, Atten= 98%, Lag= 182.5 min
Primary = 0.33 cfs @ 15.13 hrs, Volume= 0.652 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.46' @ 15.13 hrs Surf.Area= 62,747 sf Storage= 28,218 cf

Plug-Flow detention time= 974.3 min calculated for 0.652 af (76% of inflow)
Center-of-Mass det. time= 898.6 min (1,692.2 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

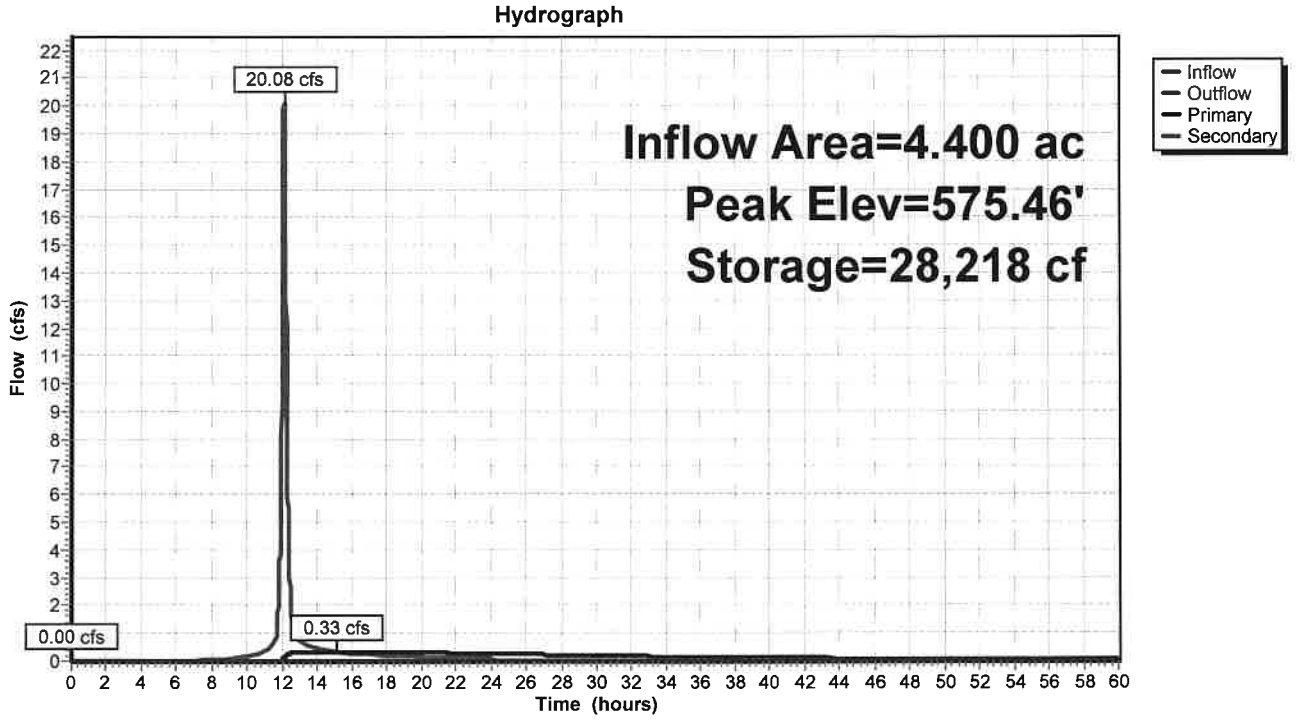
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.33 cfs @ 15.13 hrs HW=575.46' (Free Discharge)
↑—**1=12" outlet pipe** (Passes 0.33 cfs of 2.02 cfs potential flow)
↑—**2=low flow outlet pipe** (Barrel Controls 0.33 cfs @ 2.27 fps)
—**3=Grate** (Controls 0.00 cfs)

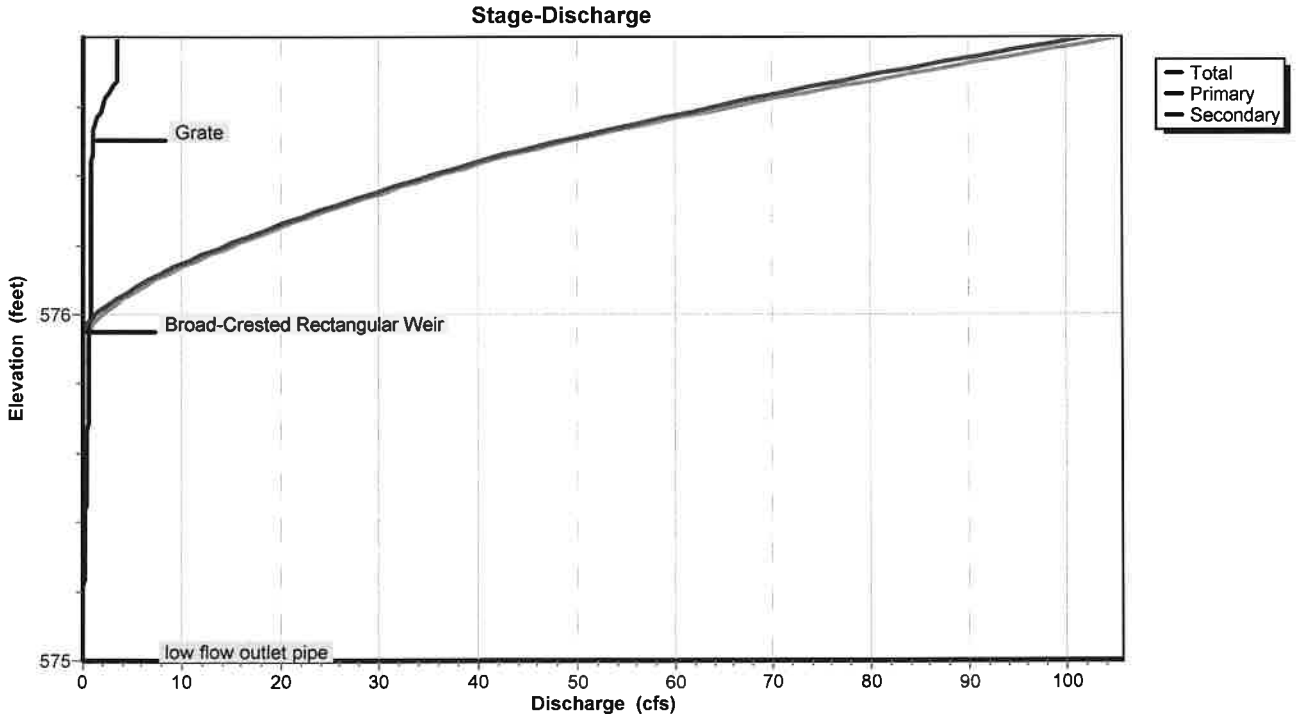
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
↑—**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

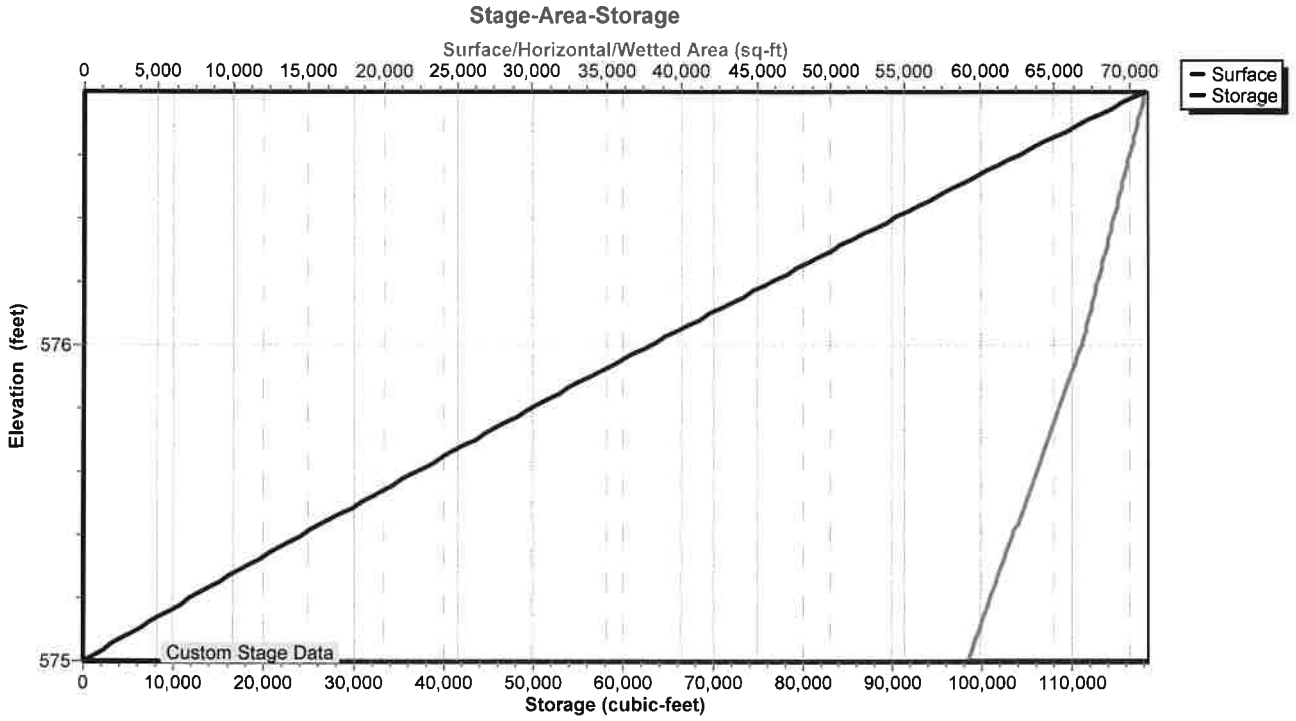


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	1	575.00	0.00	0.00	0.00
8.00	0.05	186	575.00	0.00	0.00	0.00
10.00	0.17	912	575.02	0.00	0.00	0.00
12.00	**13.47**	8,186	575.14	0.04	0.04	0.00
14.00	**0.44**	**28,034**	**575.46**	**0.33**	**0.33**	0.00
16.00	0.27	**28,118**	**575.46**	**0.33**	**0.33**	0.00
18.00	0.20	27,442	575.45	0.32	0.32	0.00
20.00	0.15	26,479	575.43	0.30	0.30	0.00
22.00	0.13	25,382	575.42	0.28	0.28	0.00
24.00	0.12	24,337	575.40	0.26	0.26	0.00
26.00	0.00	22,633	575.37	0.24	0.24	0.00
28.00	0.00	21,033	575.35	0.21	0.21	0.00
30.00	0.00	19,609	575.32	0.19	0.19	0.00
32.00	0.00	18,338	575.30	0.17	0.17	0.00
34.00	0.00	17,199	575.29	0.15	0.15	0.00
36.00	0.00	16,175	575.27	0.13	0.13	0.00
38.00	0.00	15,251	575.25	0.12	0.12	0.00
40.00	0.00	14,415	575.24	0.11	0.11	0.00
42.00	0.00	13,655	575.23	0.10	0.10	0.00
44.00	0.00	12,964	575.22	0.09	0.09	0.00
46.00	0.00	12,331	575.21	0.08	0.08	0.00
48.00	0.00	11,752	575.20	0.08	0.08	0.00
50.00	0.00	11,220	575.19	0.07	0.07	0.00
52.00	0.00	10,729	575.18	0.07	0.07	0.00
54.00	0.00	10,276	575.17	0.06	0.06	0.00
56.00	0.00	9,856	575.16	0.06	0.06	0.00
58.00	0.00	9,467	575.16	0.05	0.05	0.00
60.00	0.00	9,105	575.15	0.05	0.05	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

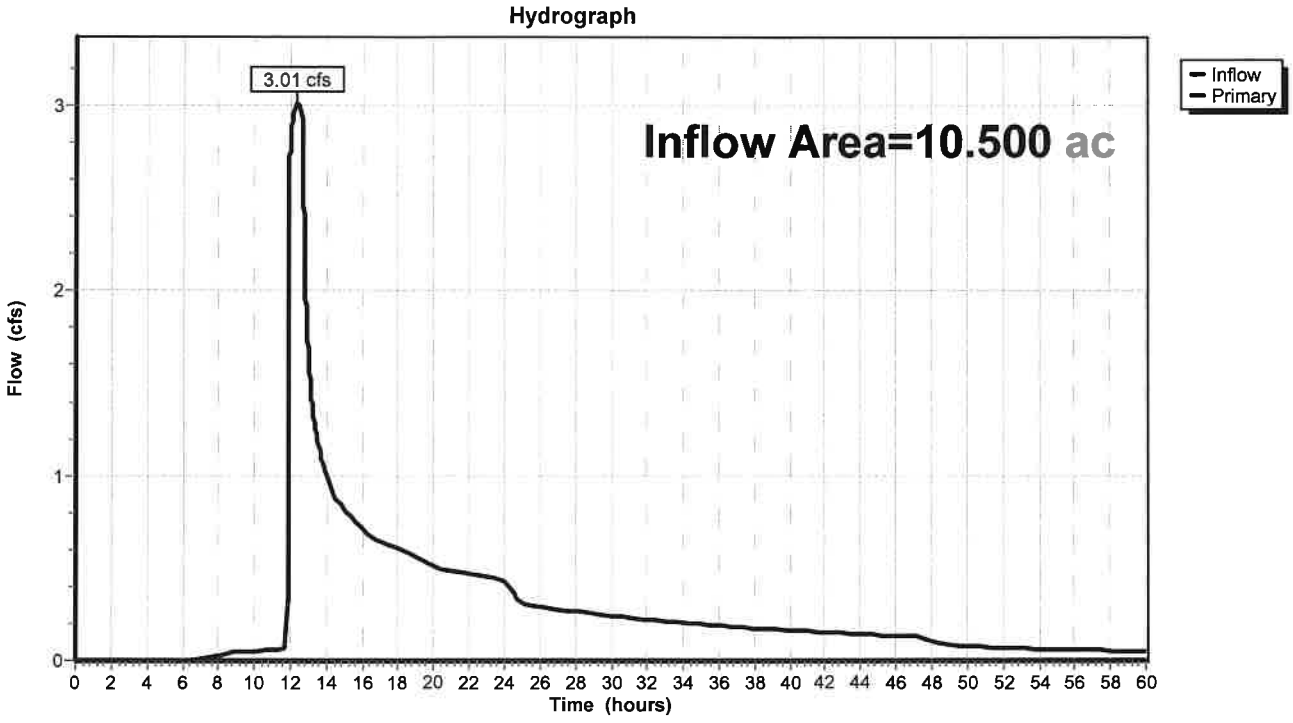
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 1.51" for 5-Year event
Inflow = 3.01 cfs @ 12.34 hrs, Volume= 1.318 af
Primary = 3.01 cfs @ 12.34 hrs, Volume= 1.318 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.07	0.00	0.07
1.00	0.00	0.00	0.00	53.00	0.06	0.00	0.06
2.00	0.00	0.00	0.00	54.00	0.06	0.00	0.06
3.00	0.00	0.00	0.00	55.00	0.06	0.00	0.06
4.00	0.00	0.00	0.00	56.00	0.06	0.00	0.06
5.00	0.00	0.00	0.00	57.00	0.05	0.00	0.05
6.00	0.00	0.00	0.00	58.00	0.05	0.00	0.05
7.00	0.00	0.00	0.00	59.00	0.05	0.00	0.05
8.00	0.02	0.00	0.02	60.00	0.05	0.00	0.05
9.00	0.05	0.00	0.05				
10.00	0.05	0.00	0.05				
11.00	0.05	0.00	0.05				
12.00	**2.82**	0.00	**2.82**				
13.00	**1.62**	0.00	**1.62**				
14.00	0.99	0.00	0.99				
15.00	0.81	0.00	0.81				
16.00	0.71	0.00	0.71				
17.00	0.65	0.00	0.65				
18.00	0.60	0.00	0.60				
19.00	0.56	0.00	0.56				
20.00	0.51	0.00	0.51				
21.00	0.48	0.00	0.48				
22.00	0.47	0.00	0.47				
23.00	0.45	0.00	0.45				
24.00	0.43	0.00	0.43				
25.00	0.31	0.00	0.31				
26.00	0.29	0.00	0.29				
27.00	0.28	0.00	0.28				
28.00	0.26	0.00	0.26				
29.00	0.25	0.00	0.25				
30.00	0.24	0.00	0.24				
31.00	0.23	0.00	0.23				
32.00	0.22	0.00	0.22				
33.00	0.21	0.00	0.21				
34.00	0.20	0.00	0.20				
35.00	0.20	0.00	0.20				
36.00	0.19	0.00	0.19				
37.00	0.18	0.00	0.18				
38.00	0.17	0.00	0.17				
39.00	0.17	0.00	0.17				
40.00	0.16	0.00	0.16				
41.00	0.16	0.00	0.16				
42.00	0.15	0.00	0.15				
43.00	0.15	0.00	0.15				
44.00	0.14	0.00	0.14				
45.00	0.14	0.00	0.14				
46.00	0.13	0.00	0.13				
47.00	0.13	0.00	0.13				
48.00	0.10	0.00	0.10				
49.00	0.09	0.00	0.09				
50.00	0.08	0.00	0.08				
51.00	0.07	0.00	0.07				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=2.12"
Flow Length=652' Tc=13.3 min CN=90 Runoff=17.46 cfs 1.079 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=2.21"
Flow Length=683' Tc=14.4 min CN=91 Runoff=12.59 cfs 0.811 af

Pond 1P: Bioretention Area 3 Peak Elev=576.04' Storage=9,672 cf Inflow=17.46 cfs 1.079 af
Primary=2.85 cfs 0.765 af Secondary=13.60 cfs 0.314 af Outflow=16.45 cfs 1.079 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.60' Storage=37,117 cf Inflow=26.01 cfs 1.125 af
Primary=0.47 cfs 0.892 af Secondary=0.00 cfs 0.000 af Outflow=0.47 cfs 0.892 af

Link 5L: Outflow (@ CB 54) Inflow=3.16 cfs 1.657 af
Primary=3.16 cfs 1.657 af

Total Runoff Area = 10.500 ac Runoff Volume = 1.890 af Average Runoff Depth = 2.16"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

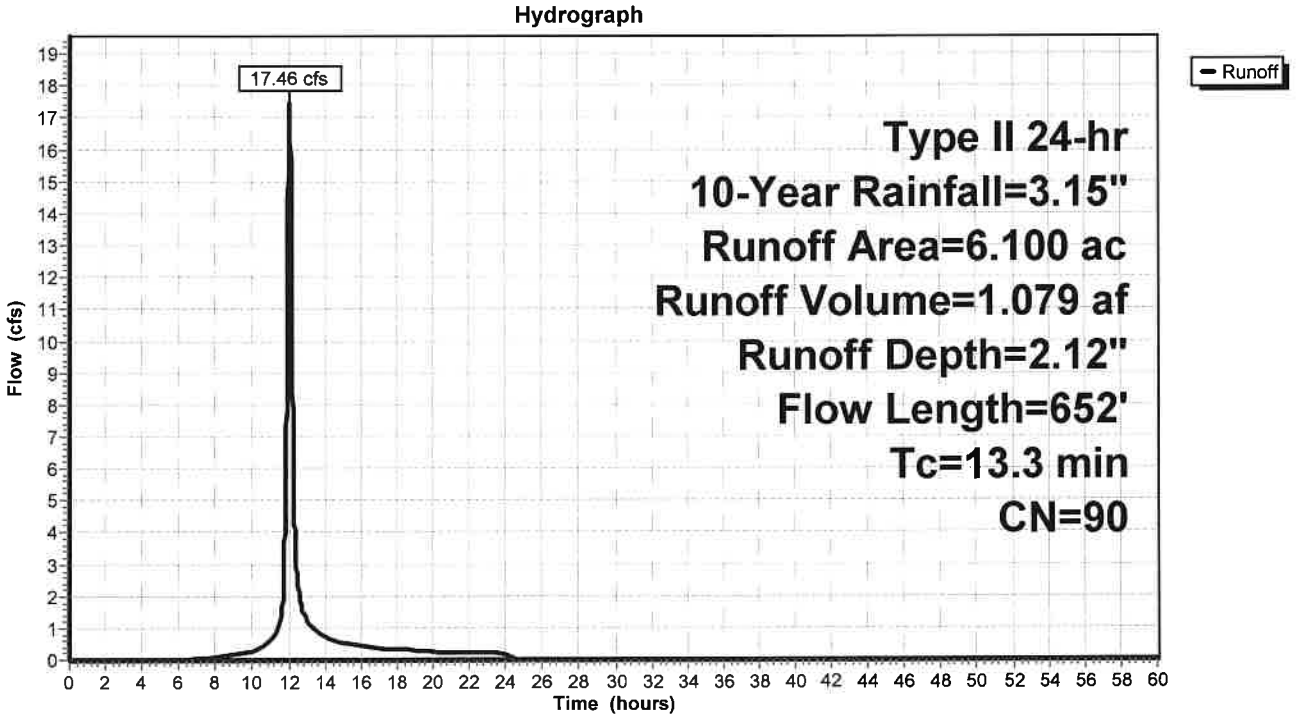
Runoff = 17.46 cfs @ 12.05 hrs, Volume= 1.079 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.07	0.00	0.00
3.00	0.11	0.00	0.00
4.00	0.15	0.00	0.00
5.00	0.20	0.00	0.00
6.00	0.25	0.00	0.01
7.00	0.31	0.01	0.05
8.00	0.38	0.02	0.09
9.00	0.46	0.04	0.18
10.00	0.57	0.08	0.28
11.00	0.74	0.16	0.63
12.00	2.09	1.17	**15.84**
13.00	2.43	1.47	**1.23**
14.00	2.58	1.61	0.71
15.00	2.69	1.70	0.55
16.00	2.77	1.78	0.43
17.00	2.84	1.84	0.37
18.00	2.90	1.89	0.33
19.00	2.95	1.94	0.28
20.00	3.00	1.98	0.24
21.00	3.04	2.02	0.22
22.00	3.08	2.06	0.22
23.00	3.11	2.09	0.21
24.00	**3.15**	**2.12**	0.20
25.00	3.15	2.12	0.00
26.00	3.15	2.12	0.00
27.00	3.15	2.12	0.00
28.00	3.15	2.12	0.00
29.00	3.15	2.12	0.00
30.00	3.15	2.12	0.00
31.00	3.15	2.12	0.00
32.00	3.15	2.12	0.00
33.00	3.15	2.12	0.00
34.00	3.15	2.12	0.00
35.00	3.15	2.12	0.00
36.00	3.15	2.12	0.00
37.00	3.15	2.12	0.00
38.00	3.15	2.12	0.00
39.00	3.15	2.12	0.00
40.00	3.15	2.12	0.00
41.00	3.15	2.12	0.00
42.00	3.15	2.12	0.00
43.00	3.15	2.12	0.00
44.00	3.15	2.12	0.00
45.00	3.15	2.12	0.00
46.00	3.15	2.12	0.00
47.00	3.15	2.12	0.00
48.00	3.15	2.12	0.00
49.00	3.15	2.12	0.00
50.00	3.15	2.12	0.00
51.00	3.15	2.12	0.00
52.00	3.15	2.12	0.00
53.00	3.15	2.12	0.00
54.00	3.15	2.12	0.00
55.00	3.15	2.12	0.00
56.00	3.15	2.12	0.00
57.00	3.15	2.12	0.00
58.00	3.15	2.12	0.00
59.00	3.15	2.12	0.00
60.00	3.15	2.12	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

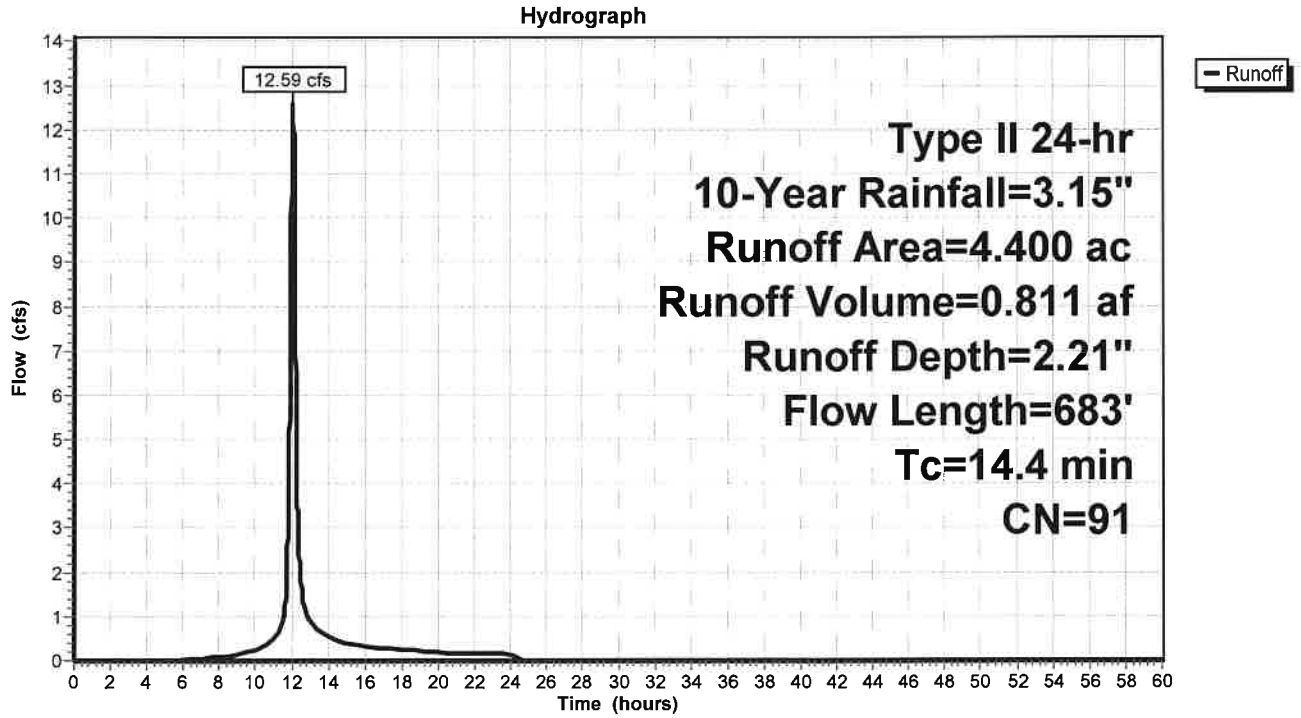
Runoff = 12.59 cfs @ 12.06 hrs, Volume= 0.811 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.07	0.00	0.00
3.00	0.11	0.00	0.00
4.00	0.15	0.00	0.00
5.00	0.20	0.00	0.00
6.00	0.25	0.00	0.02
7.00	0.31	0.01	0.05
8.00	0.38	0.03	0.08
9.00	0.46	0.06	0.15
10.00	0.57	0.10	0.23
11.00	0.74	0.19	0.49
12.00	2.09	1.24	**11.04**
13.00	2.43	1.55	**0.92**
14.00	2.58	1.69	0.53
15.00	2.69	1.78	0.40
16.00	2.77	1.86	0.32
17.00	2.84	1.92	0.27
18.00	2.90	1.98	0.24
19.00	2.95	2.03	0.21
20.00	3.00	2.07	0.18
21.00	3.04	2.11	0.16
22.00	3.08	2.14	0.16
23.00	3.11	2.18	0.15
24.00	**3.15**	**2.21**	0.15
25.00	3.15	2.21	0.00
26.00	3.15	2.21	0.00
27.00	3.15	2.21	0.00
28.00	3.15	2.21	0.00
29.00	3.15	2.21	0.00
30.00	3.15	2.21	0.00
31.00	3.15	2.21	0.00
32.00	3.15	2.21	0.00
33.00	3.15	2.21	0.00
34.00	3.15	2.21	0.00
35.00	3.15	2.21	0.00
36.00	3.15	2.21	0.00
37.00	3.15	2.21	0.00
38.00	3.15	2.21	0.00
39.00	3.15	2.21	0.00
40.00	3.15	2.21	0.00
41.00	3.15	2.21	0.00
42.00	3.15	2.21	0.00
43.00	3.15	2.21	0.00
44.00	3.15	2.21	0.00
45.00	3.15	2.21	0.00
46.00	3.15	2.21	0.00
47.00	3.15	2.21	0.00
48.00	3.15	2.21	0.00
49.00	3.15	2.21	0.00
50.00	3.15	2.21	0.00
51.00	3.15	2.21	0.00
52.00	3.15	2.21	0.00
53.00	3.15	2.21	0.00
54.00	3.15	2.21	0.00
55.00	3.15	2.21	0.00
56.00	3.15	2.21	0.00
57.00	3.15	2.21	0.00
58.00	3.15	2.21	0.00
59.00	3.15	2.21	0.00
60.00	3.15	2.21	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 2.12" for 10-Year event
Inflow = 17.46 cfs @ 12.05 hrs, Volume= 1.079 af
Outflow = 16.45 cfs @ 12.09 hrs, Volume= 1.079 af, Atten= 6%, Lag= 2.3 min
Primary = 2.85 cfs @ 12.09 hrs, Volume= 0.765 af
Secondary = 13.60 cfs @ 12.09 hrs, Volume= 0.314 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.04' @ 12.09 hrs Surf.Area= 9,976 sf Storage= 9,672 cf

Plug-Flow detention time= 160.8 min calculated for 1.079 af (100% of inflow)
Center-of-Mass det. time= 160.7 min (971.9 - 811.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

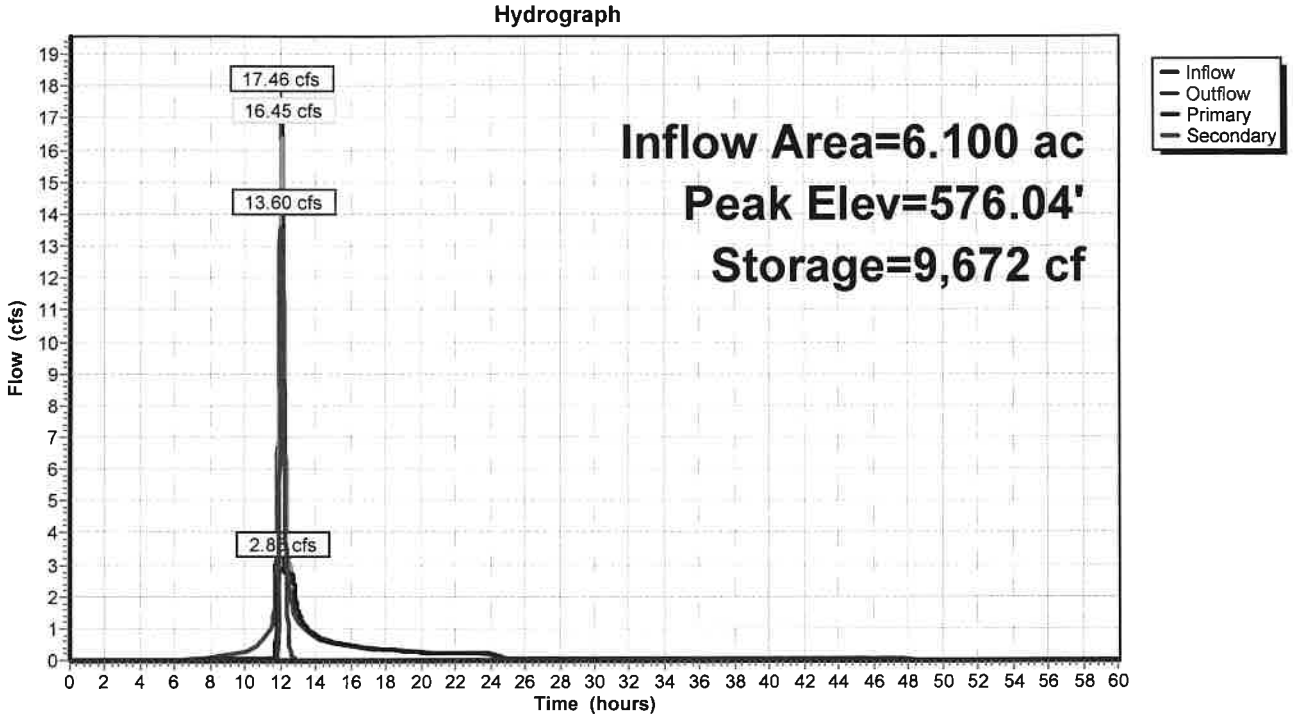
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.85 cfs @ 12.09 hrs HW=576.04' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.85 cfs @ 8.17 fps)
  └**2=Grate** (Passes < 4.93 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

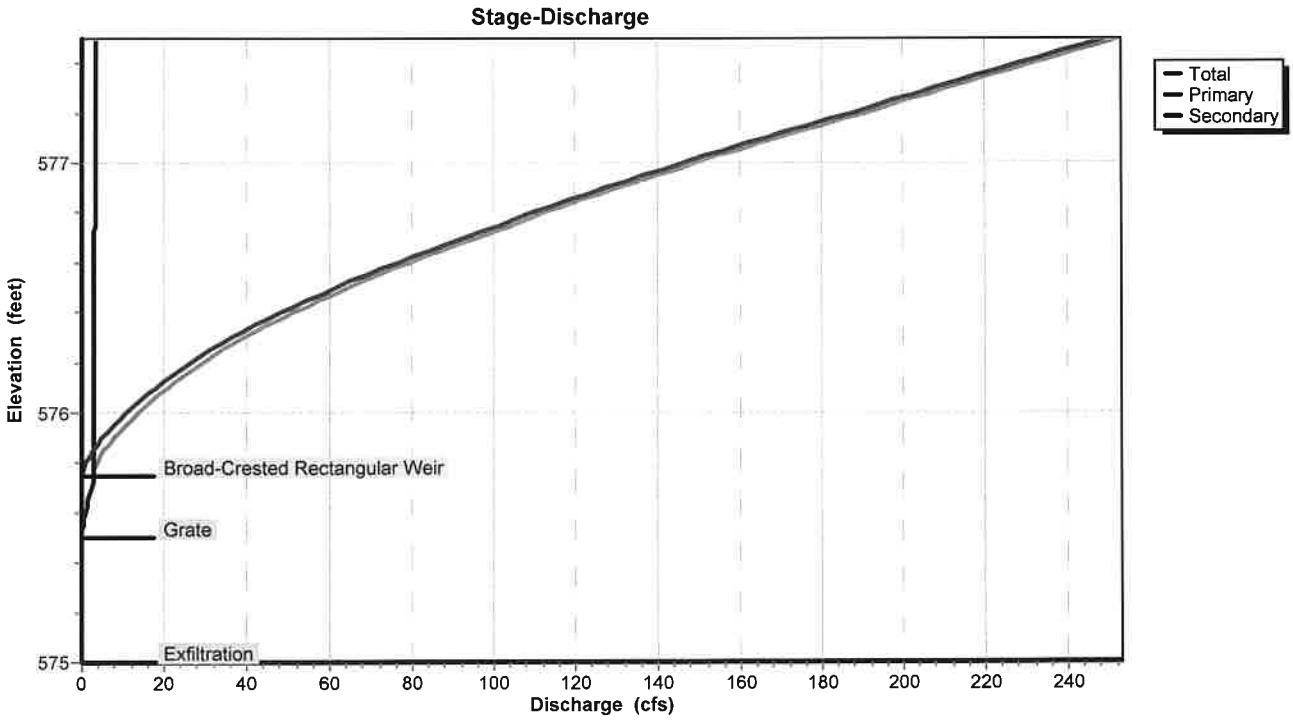
Secondary OutFlow Max=13.58 cfs @ 12.09 hrs HW=576.04' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 13.58 cfs @ 1.57 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

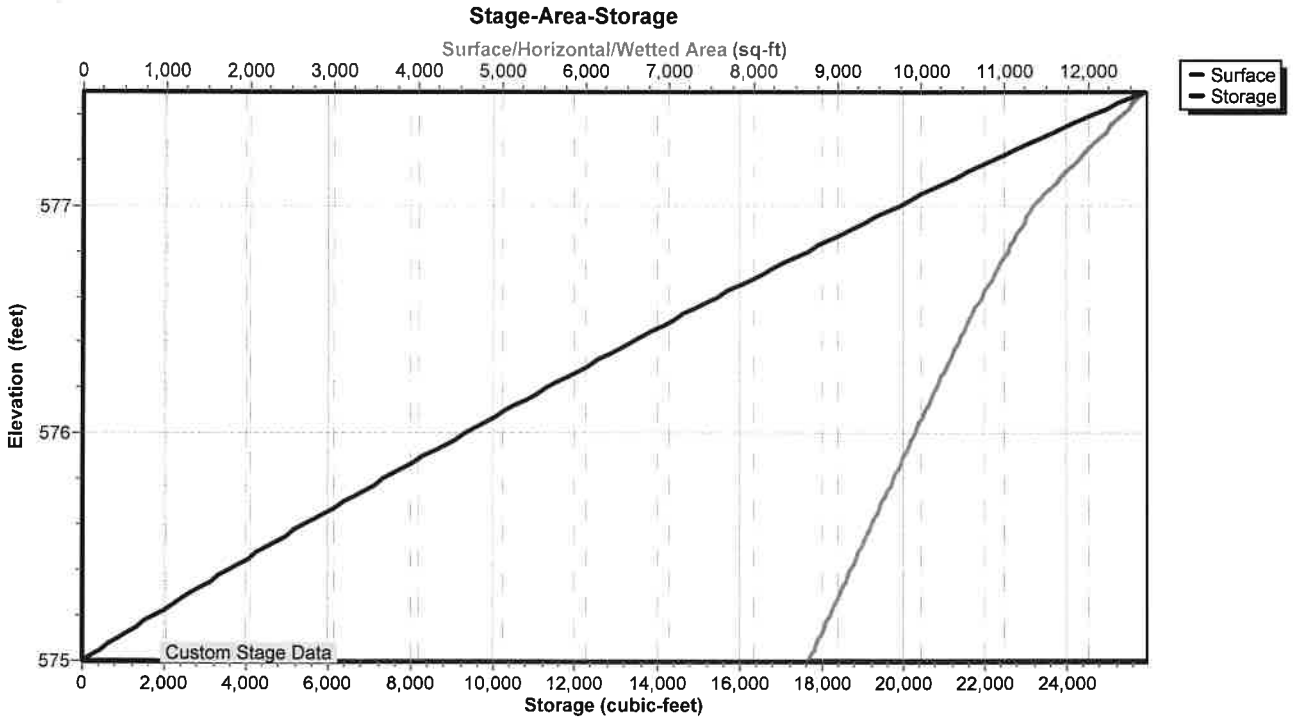


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.01	6	575.00	0.00	0.00	0.00
8.00	0.09	207	575.02	0.05	0.05	0.00
10.00	0.28	1,102	575.13	0.05	0.05	0.00
12.00	**15.84**	**9,006**	**575.97**	**11.97**	**2.82**	**9.15**
14.00	**0.71**	**5,320**	**575.59**	**0.79**	**0.79**	**0.00**
16.00	0.43	5,039	575.56	0.46	0.46	0.00
18.00	0.33	4,925	575.55	0.34	0.34	0.00
20.00	0.24	4,823	575.54	0.25	0.25	0.00
22.00	0.22	4,781	575.53	0.22	0.22	0.00
24.00	0.20	4,760	575.53	0.20	0.20	0.00
26.00	0.00	4,270	575.48	0.06	0.06	0.00
28.00	0.00	3,874	575.43	0.05	0.05	0.00
30.00	0.00	3,482	575.39	0.05	0.05	0.00
32.00	0.00	3,093	575.35	0.05	0.05	0.00
34.00	0.00	2,707	575.31	0.05	0.05	0.00
36.00	0.00	2,324	575.26	0.05	0.05	0.00
38.00	0.00	1,945	575.22	0.05	0.05	0.00
40.00	0.00	1,569	575.18	0.05	0.05	0.00
42.00	0.00	1,197	575.14	0.05	0.05	0.00
44.00	0.00	828	575.10	0.05	0.05	0.00
46.00	0.00	461	575.05	0.05	0.05	0.00
48.00	0.00	126	575.01	0.03	0.03	0.00
50.00	0.00	24	575.00	0.01	0.01	0.00
52.00	0.00	4	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 3.07" for 10-Year event
Inflow = 26.01 cfs @ 12.08 hrs, Volume= 1.125 af
Outflow = 0.47 cfs @ 14.32 hrs, Volume= 0.892 af, Atten= 98%, Lag= 134.6 min
Primary = 0.47 cfs @ 14.32 hrs, Volume= 0.892 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.60' @ 14.32 hrs Surf.Area= 63,820 sf Storage= 37,117 cf

Plug-Flow detention time= 942.6 min calculated for 0.892 af (79% of inflow)
Center-of-Mass det. time= 874.9 min (1,660.4 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

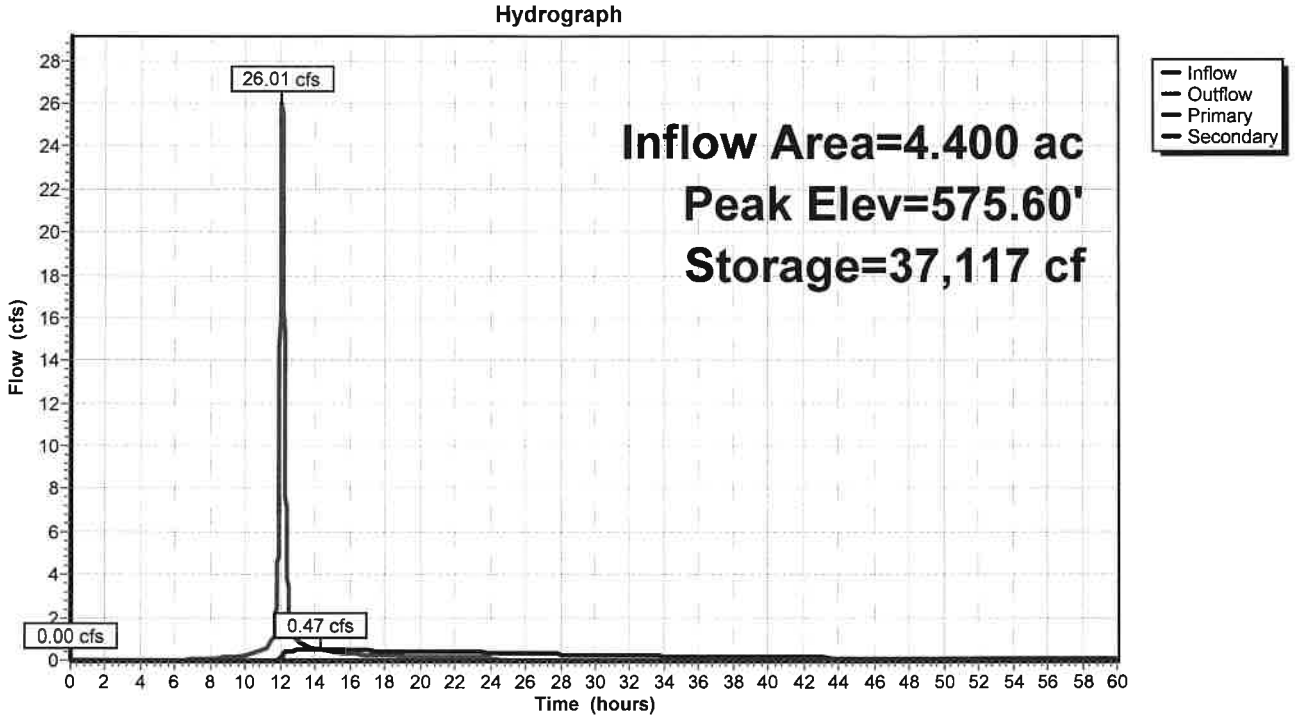
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.47 cfs @ 14.32 hrs HW=575.60' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.47 cfs of 2.23 cfs potential flow)
  ├**2=low flow outlet pipe** (Barrel Controls 0.47 cfs @ 2.50 fps)
  └**3=Grate** (Controls 0.00 cfs)

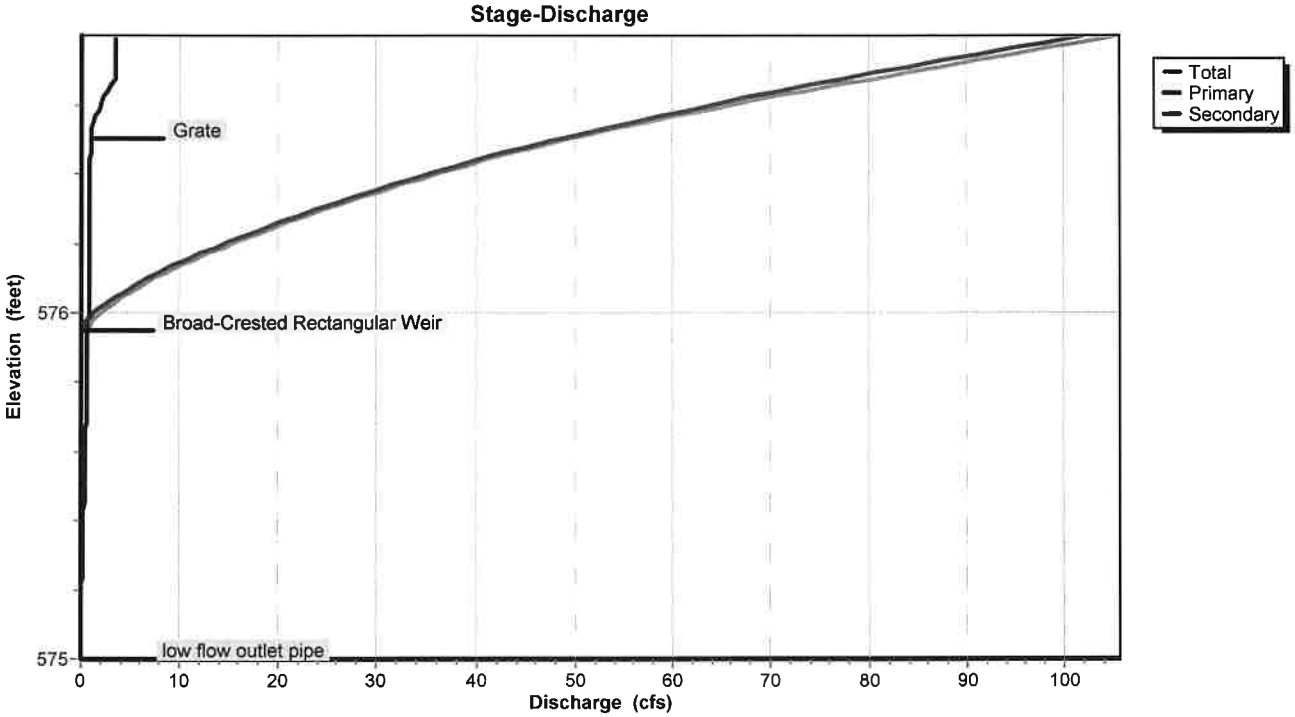
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

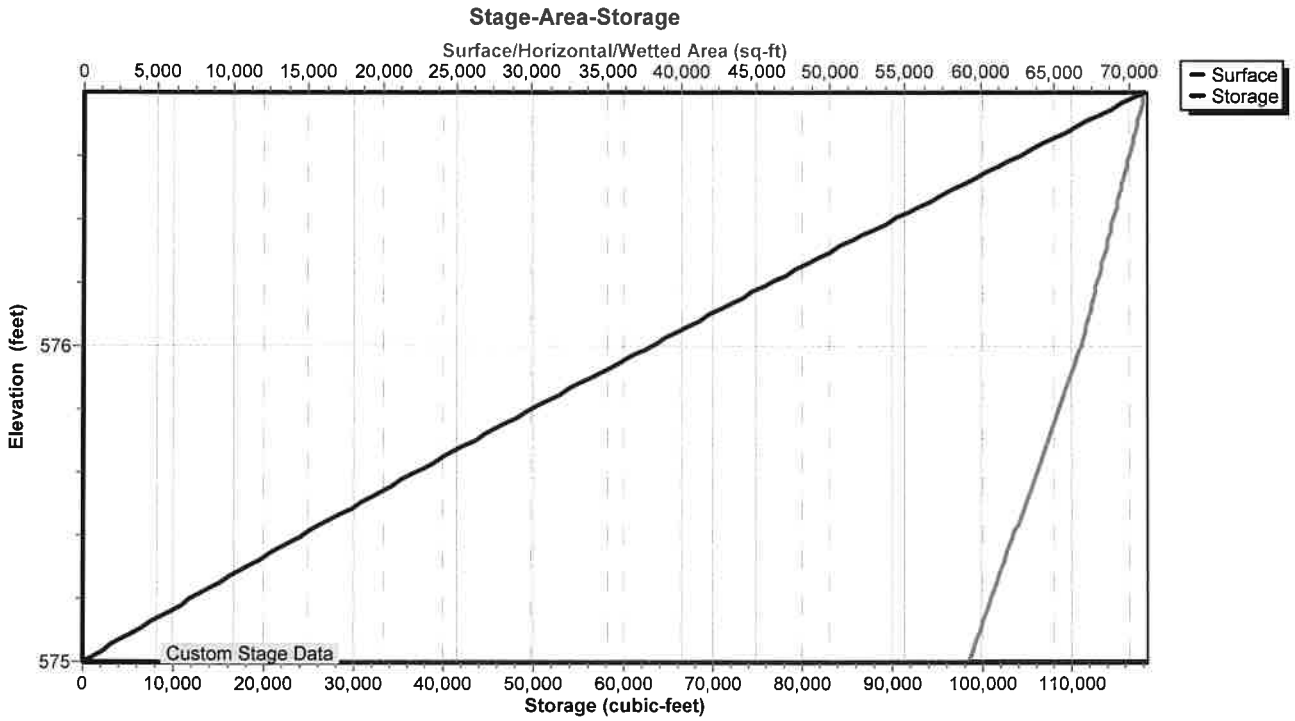


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.02	28	575.00	0.00	0.00	0.00
8.00	0.08	376	575.01	0.00	0.00	0.00
10.00	0.23	1,427	575.02	0.00	0.00	0.00
12.00	**20.19**	11,922	575.20	0.08	0.08	0.00
14.00	**0.53**	**37,087**	**575.60**	**0.47**	**0.47**	0.00
16.00	0.32	**36,669**	**575.60**	**0.46**	**0.46**	0.00
18.00	0.24	35,374	575.58	0.44	0.44	0.00
20.00	0.18	33,764	575.55	0.42	0.42	0.00
22.00	0.16	32,024	575.52	0.39	0.39	0.00
24.00	0.15	30,385	575.50	0.37	0.37	0.00
26.00	0.00	28,005	575.46	0.33	0.33	0.00
28.00	0.00	25,794	575.42	0.29	0.29	0.00
30.00	0.00	23,836	575.39	0.26	0.26	0.00
32.00	0.00	22,102	575.36	0.23	0.23	0.00
34.00	0.00	20,561	575.34	0.20	0.20	0.00
36.00	0.00	19,188	575.32	0.18	0.18	0.00
38.00	0.00	17,961	575.30	0.16	0.16	0.00
40.00	0.00	16,860	575.28	0.14	0.14	0.00
42.00	0.00	15,870	575.26	0.13	0.13	0.00
44.00	0.00	14,975	575.25	0.12	0.12	0.00
46.00	0.00	14,165	575.24	0.11	0.11	0.00
48.00	0.00	13,428	575.22	0.10	0.10	0.00
50.00	0.00	12,756	575.21	0.09	0.09	0.00
52.00	0.00	12,141	575.20	0.08	0.08	0.00
54.00	0.00	11,578	575.19	0.08	0.08	0.00
56.00	0.00	11,059	575.18	0.07	0.07	0.00
58.00	0.00	10,581	575.18	0.06	0.06	0.00
60.00	0.00	10,139	575.17	0.06	0.06	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

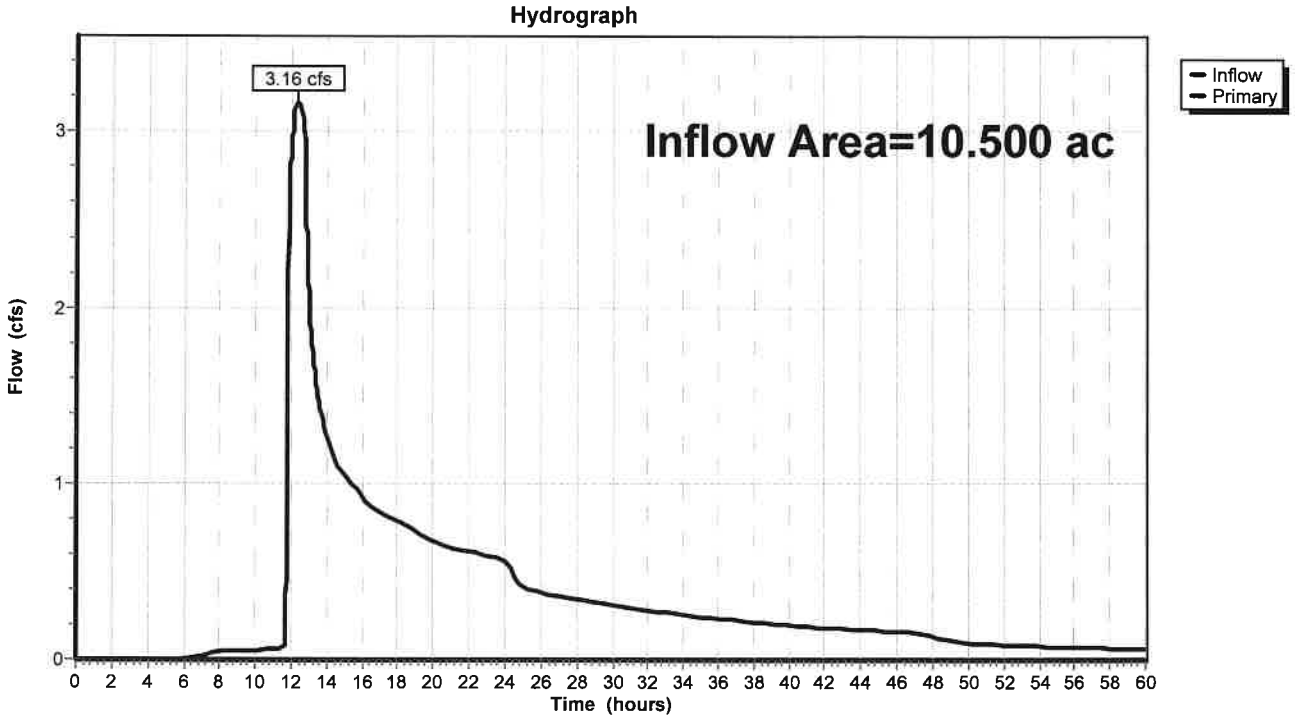
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 1.89" for 10-Year event
Inflow = 3.16 cfs @ 12.39 hrs, Volume= 1.657 af
Primary = 3.16 cfs @ 12.39 hrs, Volume= 1.657 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.08	0.00	0.08
1.00	0.00	0.00	0.00	53.00	0.08	0.00	0.08
2.00	0.00	0.00	0.00	54.00	0.08	0.00	0.08
3.00	0.00	0.00	0.00	55.00	0.07	0.00	0.07
4.00	0.00	0.00	0.00	56.00	0.07	0.00	0.07
5.00	0.00	0.00	0.00	57.00	0.07	0.00	0.07
6.00	0.00	0.00	0.00	58.00	0.06	0.00	0.06
7.00	0.02	0.00	0.02	59.00	0.06	0.00	0.06
8.00	0.05	0.00	0.05	60.00	0.06	0.00	0.06
9.00	0.05	0.00	0.05				
10.00	0.05	0.00	0.05				
11.00	0.06	0.00	0.06				
12.00	**2.90**	0.00	**2.90**				
13.00	**2.02**	0.00	**2.02**				
14.00	1.26	0.00	1.26				
15.00	1.05	0.00	1.05				
16.00	0.92	0.00	0.92				
17.00	0.84	0.00	0.84				
18.00	0.78	0.00	0.78				
19.00	0.73	0.00	0.73				
20.00	0.67	0.00	0.67				
21.00	0.63	0.00	0.63				
22.00	0.61	0.00	0.61				
23.00	0.59	0.00	0.59				
24.00	0.57	0.00	0.57				
25.00	0.40	0.00	0.40				
26.00	0.38	0.00	0.38				
27.00	0.36	0.00	0.36				
28.00	0.34	0.00	0.34				
29.00	0.33	0.00	0.33				
30.00	0.31	0.00	0.31				
31.00	0.29	0.00	0.29				
32.00	0.28	0.00	0.28				
33.00	0.27	0.00	0.27				
34.00	0.26	0.00	0.26				
35.00	0.24	0.00	0.24				
36.00	0.23	0.00	0.23				
37.00	0.22	0.00	0.22				
38.00	0.21	0.00	0.21				
39.00	0.20	0.00	0.20				
40.00	0.20	0.00	0.20				
41.00	0.19	0.00	0.19				
42.00	0.18	0.00	0.18				
43.00	0.18	0.00	0.18				
44.00	0.17	0.00	0.17				
45.00	0.16	0.00	0.16				
46.00	0.16	0.00	0.16				
47.00	0.15	0.00	0.15				
48.00	0.13	0.00	0.13				
49.00	0.11	0.00	0.11				
50.00	0.09	0.00	0.09				
51.00	0.09	0.00	0.09				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=2.80"
Flow Length=652' Tc=13.3 min CN=90 Runoff=22.74 cfs 1.421 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=2.89"
Flow Length=683' Tc=14.4 min CN=91 Runoff=16.27 cfs 1.061 af

Pond 1P: Bioretention Area 3 Peak Elev=576.11' Storage=10,375 cf Inflow=22.74 cfs 1.421 af
Primary=2.89 cfs 0.934 af Secondary=18.84 cfs 0.487 af Outflow=21.73 cfs 1.421 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.83' Storage=51,963 cf Inflow=34.94 cfs 1.548 af
Primary=0.64 cfs 1.276 af Secondary=0.00 cfs 0.000 af Outflow=0.64 cfs 1.276 af

Link 5L: Outflow (@ CB 54) Inflow=3.36 cfs 2.210 af
Primary=3.36 cfs 2.210 af

Total Runoff Area = 10.500 ac Runoff Volume = 2.482 af Average Runoff Depth = 2.84"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

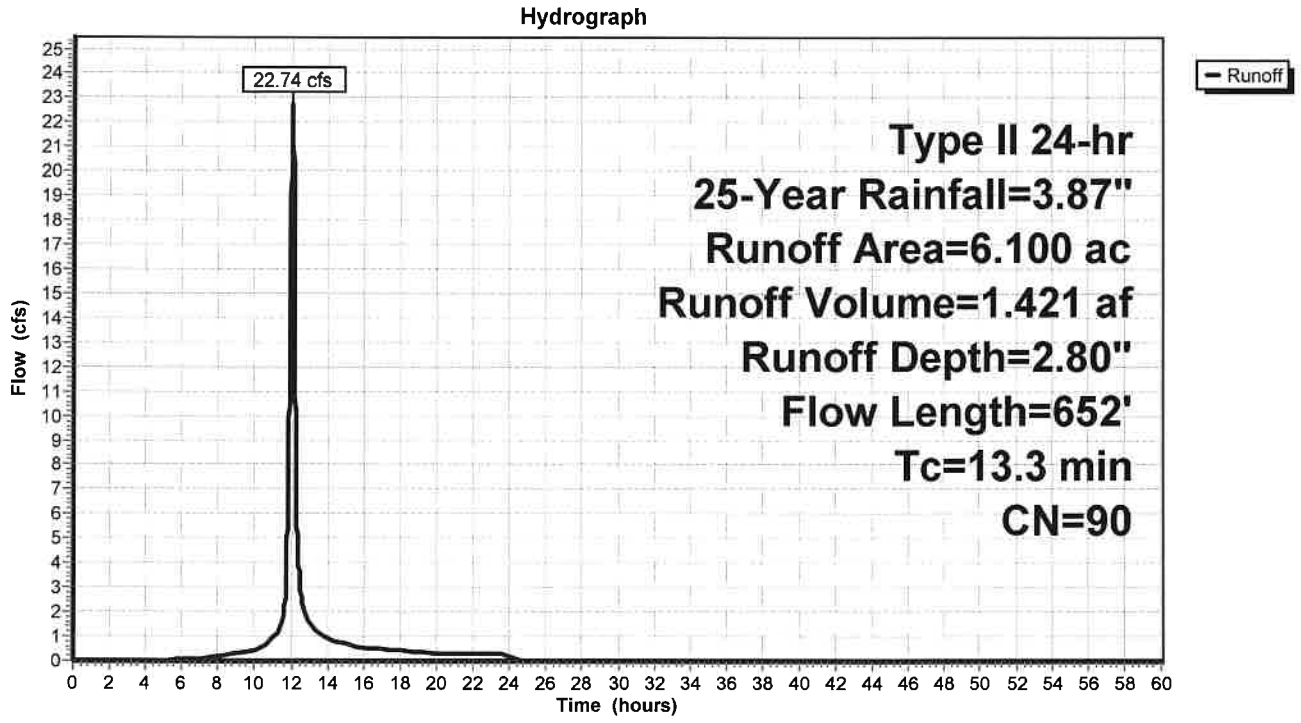
Runoff = 22.74 cfs @ 12.05 hrs, Volume= 1.421 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.00	0.01
6.00	0.31	0.01	0.05
7.00	0.38	0.02	0.10
8.00	0.46	0.04	0.16
9.00	0.57	0.08	0.28
10.00	0.70	0.14	0.43
11.00	0.91	0.26	0.90
12.00	2.57	1.59	**20.75**
13.00	2.99	1.97	**1.57**
14.00	3.17	2.14	0.90
15.00	3.30	2.26	0.70
16.00	3.41	2.36	0.54
17.00	3.49	2.44	0.47
18.00	3.56	2.51	0.41
19.00	3.63	2.57	0.36
20.00	3.68	2.62	0.30
21.00	3.73	2.67	0.28
22.00	3.78	2.71	0.27
23.00	3.83	2.75	0.26
24.00	**3.87**	**2.80**	0.25
25.00	3.87	2.80	0.00
26.00	3.87	2.80	0.00
27.00	3.87	2.80	0.00
28.00	3.87	2.80	0.00
29.00	3.87	2.80	0.00
30.00	3.87	2.80	0.00
31.00	3.87	2.80	0.00
32.00	3.87	2.80	0.00
33.00	3.87	2.80	0.00
34.00	3.87	2.80	0.00
35.00	3.87	2.80	0.00
36.00	3.87	2.80	0.00
37.00	3.87	2.80	0.00
38.00	3.87	2.80	0.00
39.00	3.87	2.80	0.00
40.00	3.87	2.80	0.00
41.00	3.87	2.80	0.00
42.00	3.87	2.80	0.00
43.00	3.87	2.80	0.00
44.00	3.87	2.80	0.00
45.00	3.87	2.80	0.00
46.00	3.87	2.80	0.00
47.00	3.87	2.80	0.00
48.00	3.87	2.80	0.00
49.00	3.87	2.80	0.00
50.00	3.87	2.80	0.00
51.00	3.87	2.80	0.00
52.00	3.87	2.80	0.00
53.00	3.87	2.80	0.00
54.00	3.87	2.80	0.00
55.00	3.87	2.80	0.00
56.00	3.87	2.80	0.00
57.00	3.87	2.80	0.00
58.00	3.87	2.80	0.00
59.00	3.87	2.80	0.00
60.00	3.87	2.80	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

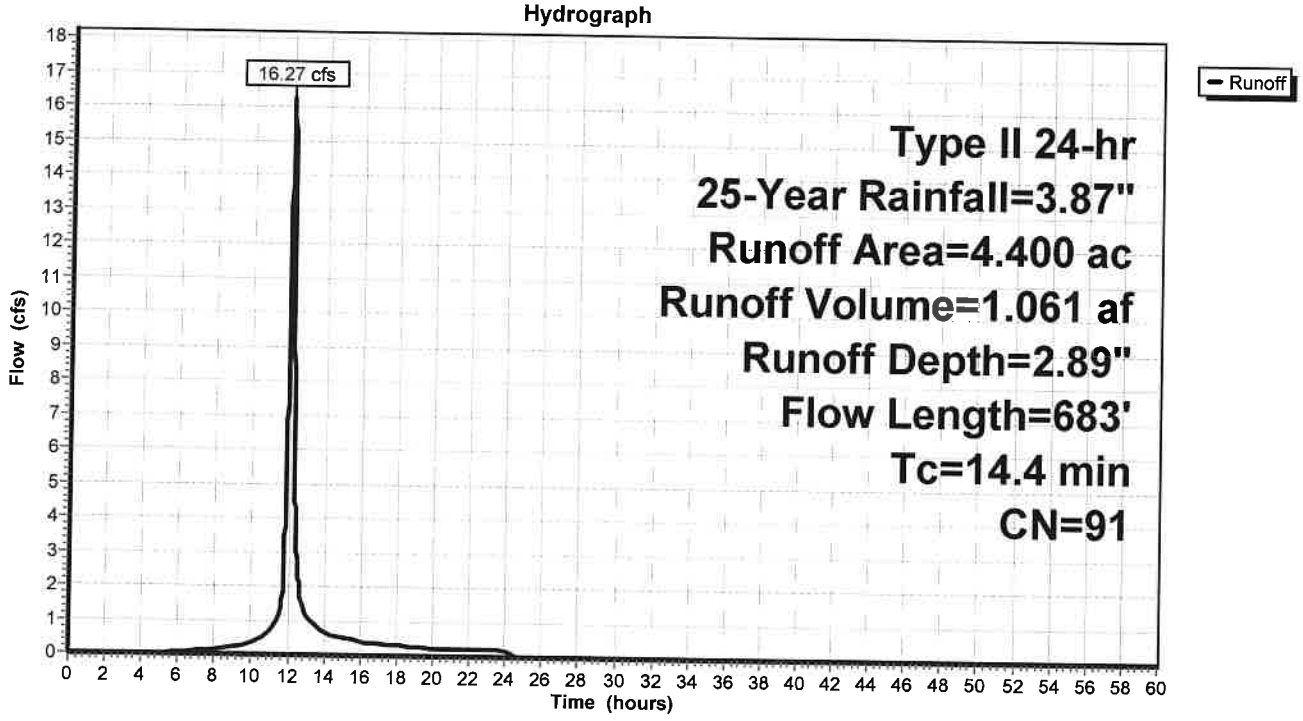
Runoff = 16.27 cfs @ 12.06 hrs, Volume= 1.061 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.00	0.02
6.00	0.31	0.01	0.05
7.00	0.38	0.03	0.09
8.00	0.46	0.06	0.13
9.00	0.57	0.10	0.23
10.00	0.70	0.17	0.34
11.00	0.91	0.30	0.69
12.00	2.57	1.67	**14.36**
13.00	2.99	2.06	**1.16**
14.00	3.17	2.23	0.67
15.00	3.30	2.36	0.51
16.00	3.41	2.45	0.40
17.00	3.49	2.53	0.34
18.00	3.56	2.60	0.30
19.00	3.63	2.66	0.26
20.00	3.68	2.72	0.22
21.00	3.73	2.76	0.21
22.00	3.78	2.81	0.20
23.00	3.83	2.85	0.19
24.00	**3.87**	**2.89**	0.18
25.00	3.87	2.89	0.00
26.00	3.87	2.89	0.00
27.00	3.87	2.89	0.00
28.00	3.87	2.89	0.00
29.00	3.87	2.89	0.00
30.00	3.87	2.89	0.00
31.00	3.87	2.89	0.00
32.00	3.87	2.89	0.00
33.00	3.87	2.89	0.00
34.00	3.87	2.89	0.00
35.00	3.87	2.89	0.00
36.00	3.87	2.89	0.00
37.00	3.87	2.89	0.00
38.00	3.87	2.89	0.00
39.00	3.87	2.89	0.00
40.00	3.87	2.89	0.00
41.00	3.87	2.89	0.00
42.00	3.87	2.89	0.00
43.00	3.87	2.89	0.00
44.00	3.87	2.89	0.00
45.00	3.87	2.89	0.00
46.00	3.87	2.89	0.00
47.00	3.87	2.89	0.00
48.00	3.87	2.89	0.00
49.00	3.87	2.89	0.00
50.00	3.87	2.89	0.00
51.00	3.87	2.89	0.00
52.00	3.87	2.89	0.00
53.00	3.87	2.89	0.00
54.00	3.87	2.89	0.00
55.00	3.87	2.89	0.00
56.00	3.87	2.89	0.00
57.00	3.87	2.89	0.00
58.00	3.87	2.89	0.00
59.00	3.87	2.89	0.00
60.00	3.87	2.89	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 2.80" for 25-Year event
Inflow = 22.74 cfs @ 12.05 hrs, Volume= 1.421 af
Outflow = 21.73 cfs @ 12.08 hrs, Volume= 1.421 af, Atten= 4%, Lag= 2.0 min
Primary = 2.89 cfs @ 12.08 hrs, Volume= 0.934 af
Secondary = 18.84 cfs @ 12.08 hrs, Volume= 0.487 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.11' @ 12.08 hrs Surf.Area= 10,069 sf Storage= 10,375 cf

Plug-Flow detention time= 127.9 min calculated for 1.421 af (100% of inflow)
Center-of-Mass det. time= 128.1 min (931.5 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

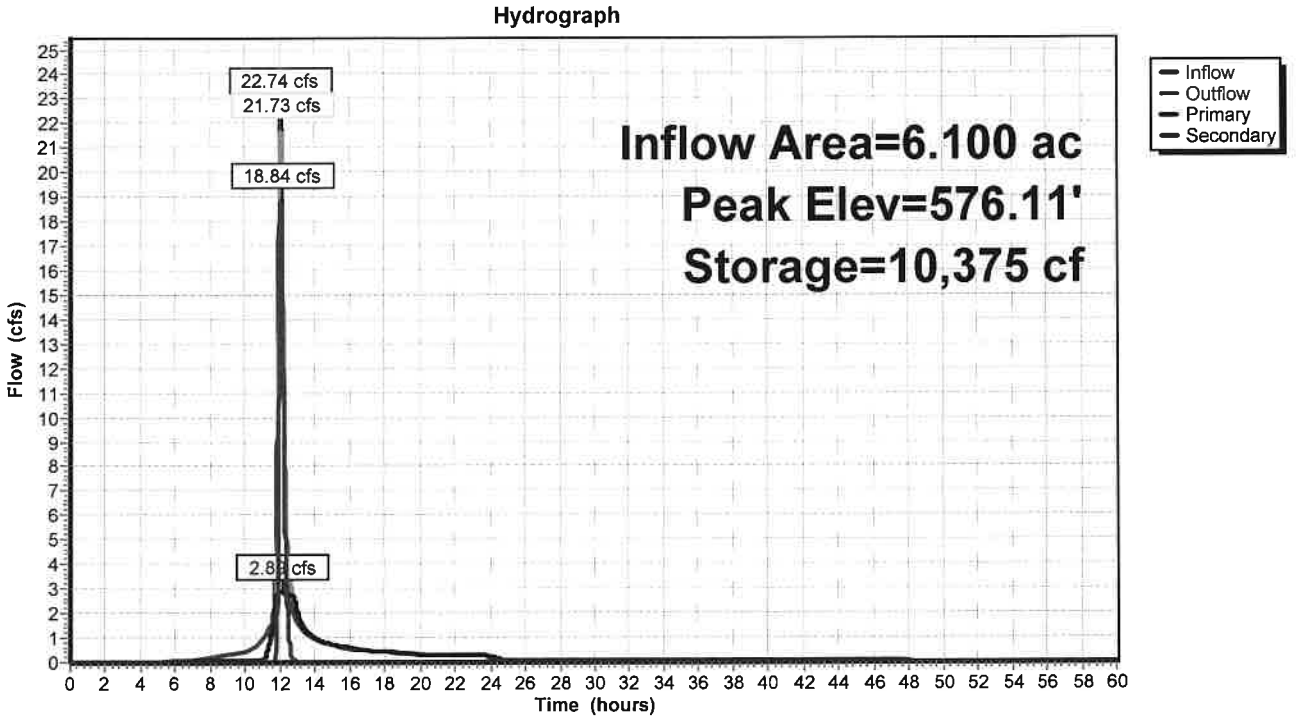
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.89 cfs @ 12.08 hrs HW=576.11' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.89 cfs @ 8.27 fps)
  └**2=Grate** (Passes < 5.25 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

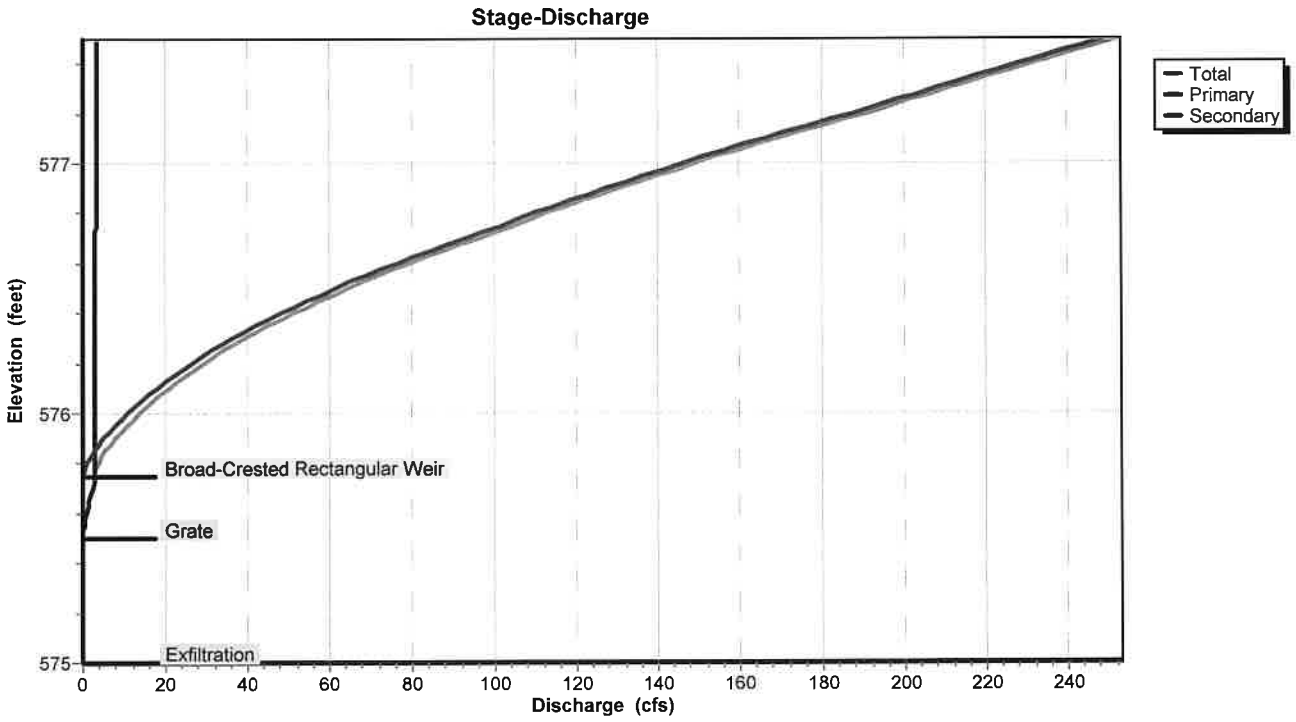
Secondary OutFlow Max=18.83 cfs @ 12.08 hrs HW=576.11' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 18.83 cfs @ 1.75 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

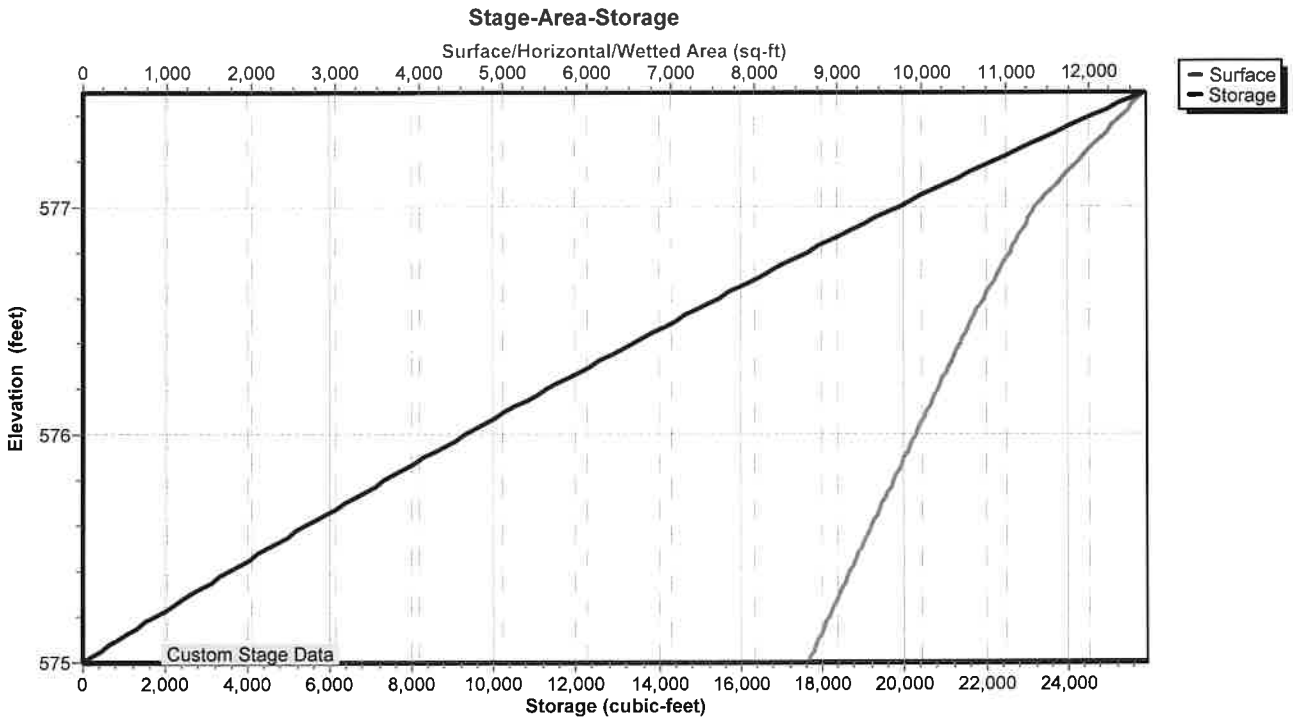


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.05	75	575.01	0.02	0.02	0.00
8.00	0.16	510	575.06	0.05	0.05	0.00
10.00	0.43	2,153	575.24	0.05	0.05	0.00
12.00	**20.75**	**9,748**	**576.05**	**16.99**	**2.86**	**14.14**
14.00	**0.90**	**5,469**	**575.61**	**1.00**	**1.00**	**0.00**
16.00	0.54	5,148	575.57	0.58	0.58	0.00
18.00	0.41	5,009	575.56	0.43	0.43	0.00
20.00	0.30	4,900	575.54	0.32	0.32	0.00
22.00	0.27	4,847	575.54	0.28	0.28	0.00
24.00	0.25	4,821	575.54	0.25	0.25	0.00
26.00	0.00	4,285	575.48	0.06	0.06	0.00
28.00	0.00	3,889	575.44	0.05	0.05	0.00
30.00	0.00	3,497	575.39	0.05	0.05	0.00
32.00	0.00	3,108	575.35	0.05	0.05	0.00
34.00	0.00	2,722	575.31	0.05	0.05	0.00
36.00	0.00	2,339	575.27	0.05	0.05	0.00
38.00	0.00	1,960	575.22	0.05	0.05	0.00
40.00	0.00	1,584	575.18	0.05	0.05	0.00
42.00	0.00	1,211	575.14	0.05	0.05	0.00
44.00	0.00	842	575.10	0.05	0.05	0.00
46.00	0.00	475	575.05	0.05	0.05	0.00
48.00	0.00	134	575.02	0.03	0.03	0.00
50.00	0.00	25	575.00	0.01	0.01	0.00
52.00	0.00	5	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 4.22" for 25-Year event
Inflow = 34.94 cfs @ 12.07 hrs, Volume= 1.548 af
Outflow = 0.64 cfs @ 14.10 hrs, Volume= 1.276 af, Atten= 98%, Lag= 121.4 min
Primary = 0.64 cfs @ 14.10 hrs, Volume= 1.276 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.83' @ 14.10 hrs Surf.Area= 65,573 sf Storage= 51,963 cf

Plug-Flow detention time= 951.6 min calculated for 1.276 af (82% of inflow)
Center-of-Mass det. time= 890.6 min (1,667.8 - 777.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

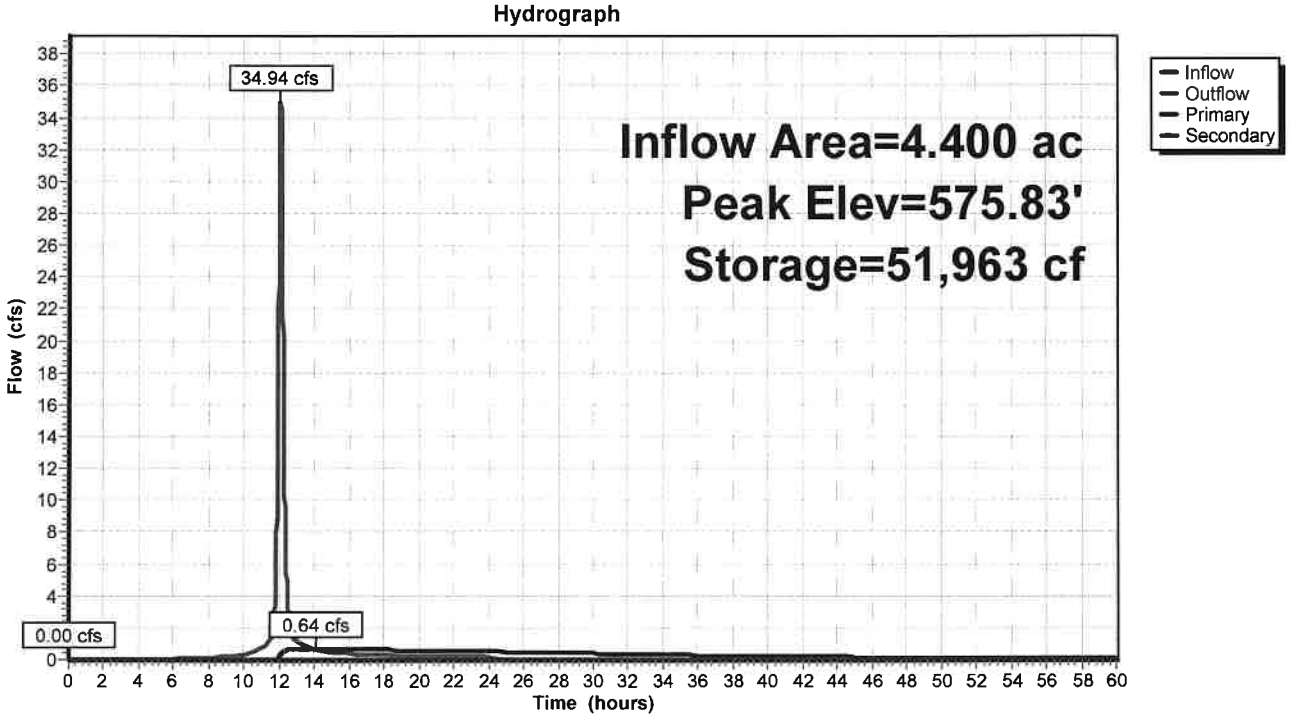
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.64 cfs @ 14.10 hrs HW=575.83' (Free Discharge)
↑—**1=12" outlet pipe** (Passes 0.64 cfs of 2.52 cfs potential flow)
↑—**2=low flow outlet pipe** (Inlet Controls 0.64 cfs @ 3.24 fps)
—**3=Grate** (Controls 0.00 cfs)

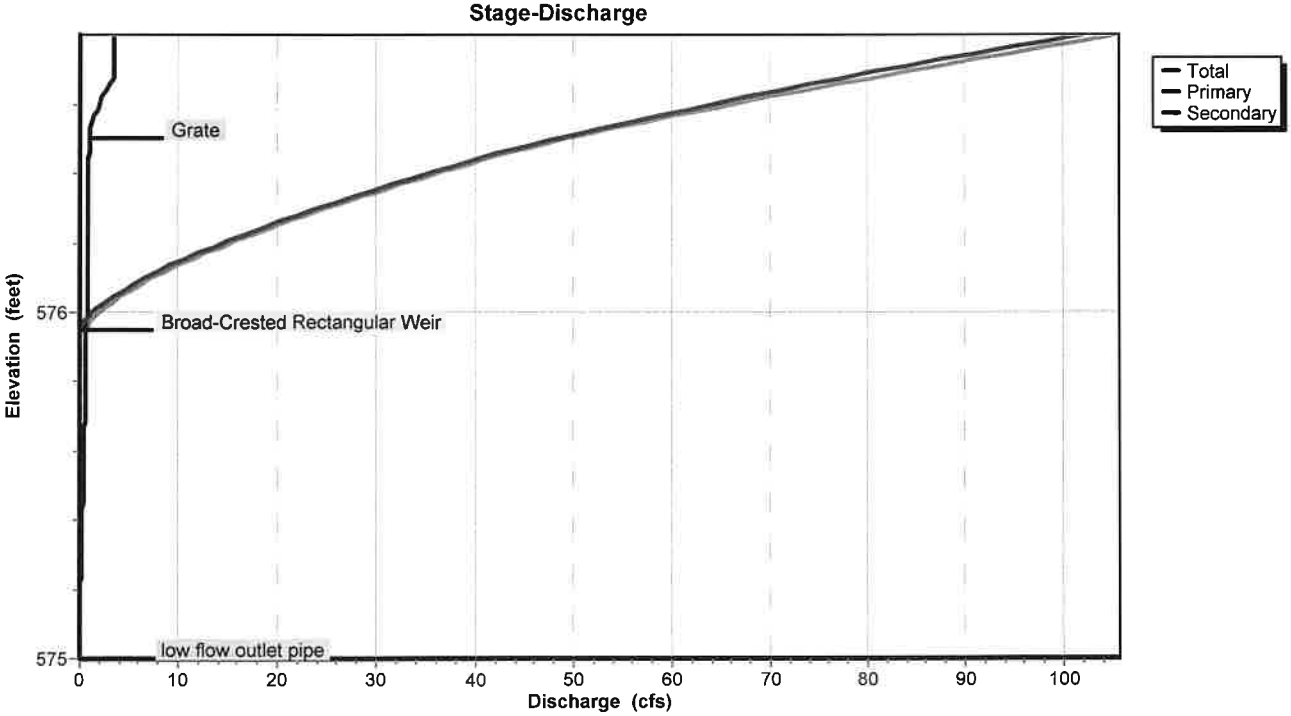
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
↑—**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

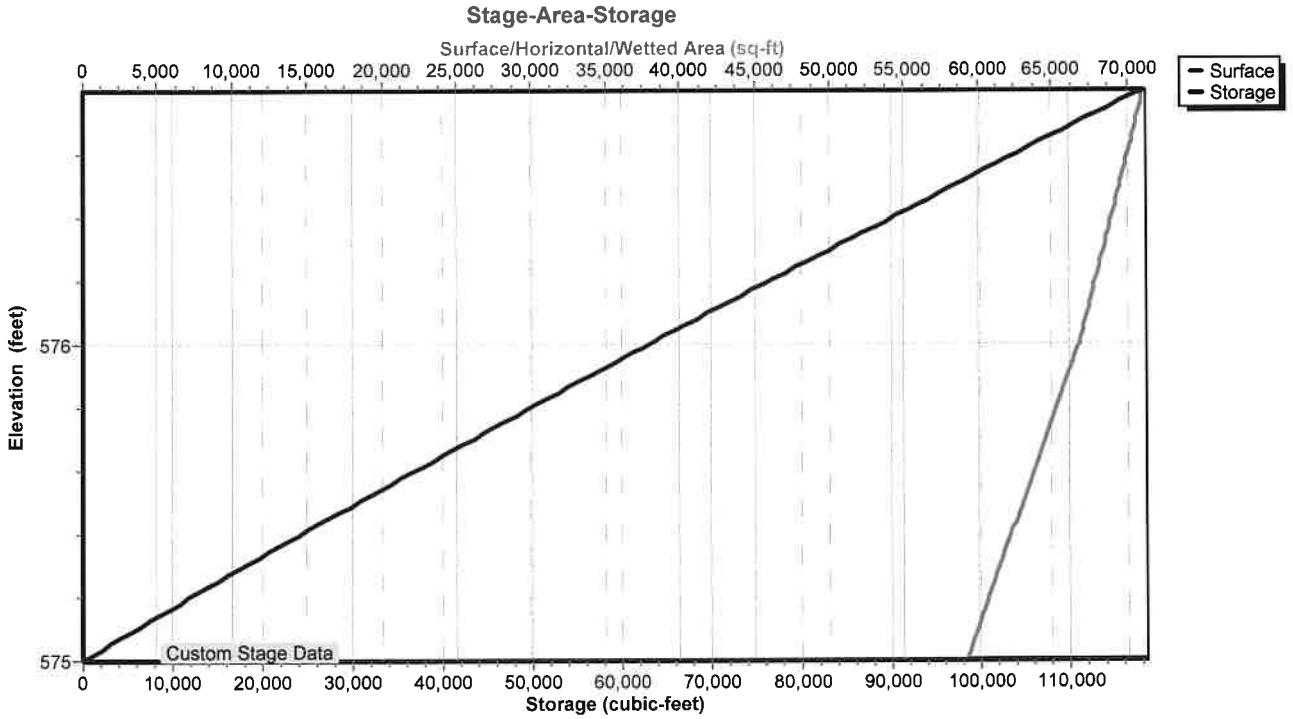


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.05	138	575.00	0.00	0.00	0.00
8.00	0.13	792	575.01	0.00	0.00	0.00
10.00	0.34	2,407	575.04	0.00	0.00	0.00
12.00	**28.50**	18,305	575.30	0.17	0.17	0.00
14.00	**0.67**	**51,959**	**575.83**	**0.64**	**0.64**	0.00
16.00	0.40	**51,083**	**575.82**	**0.63**	**0.63**	0.00
18.00	0.30	49,081	575.79	0.61	0.61	0.00
20.00	0.22	46,637	575.75	0.59	0.59	0.00
22.00	0.20	44,041	575.71	0.55	0.55	0.00
24.00	0.18	41,619	575.67	0.51	0.51	0.00
26.00	0.00	38,209	575.62	0.48	0.48	0.00
28.00	0.00	34,905	575.57	0.44	0.44	0.00
30.00	0.00	31,923	575.52	0.39	0.39	0.00
32.00	0.00	29,266	575.48	0.35	0.35	0.00
34.00	0.00	26,910	575.44	0.31	0.31	0.00
36.00	0.00	24,824	575.41	0.27	0.27	0.00
38.00	0.00	22,978	575.38	0.24	0.24	0.00
40.00	0.00	21,340	575.35	0.21	0.21	0.00
42.00	0.00	19,882	575.33	0.19	0.19	0.00
44.00	0.00	18,582	575.31	0.17	0.17	0.00
46.00	0.00	17,418	575.29	0.15	0.15	0.00
48.00	0.00	16,372	575.27	0.14	0.14	0.00
50.00	0.00	15,429	575.26	0.12	0.12	0.00
52.00	0.00	14,576	575.24	0.11	0.11	0.00
54.00	0.00	13,802	575.23	0.10	0.10	0.00
56.00	0.00	13,098	575.22	0.09	0.09	0.00
58.00	0.00	12,454	575.21	0.09	0.09	0.00
60.00	0.00	11,865	575.20	0.08	0.08	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

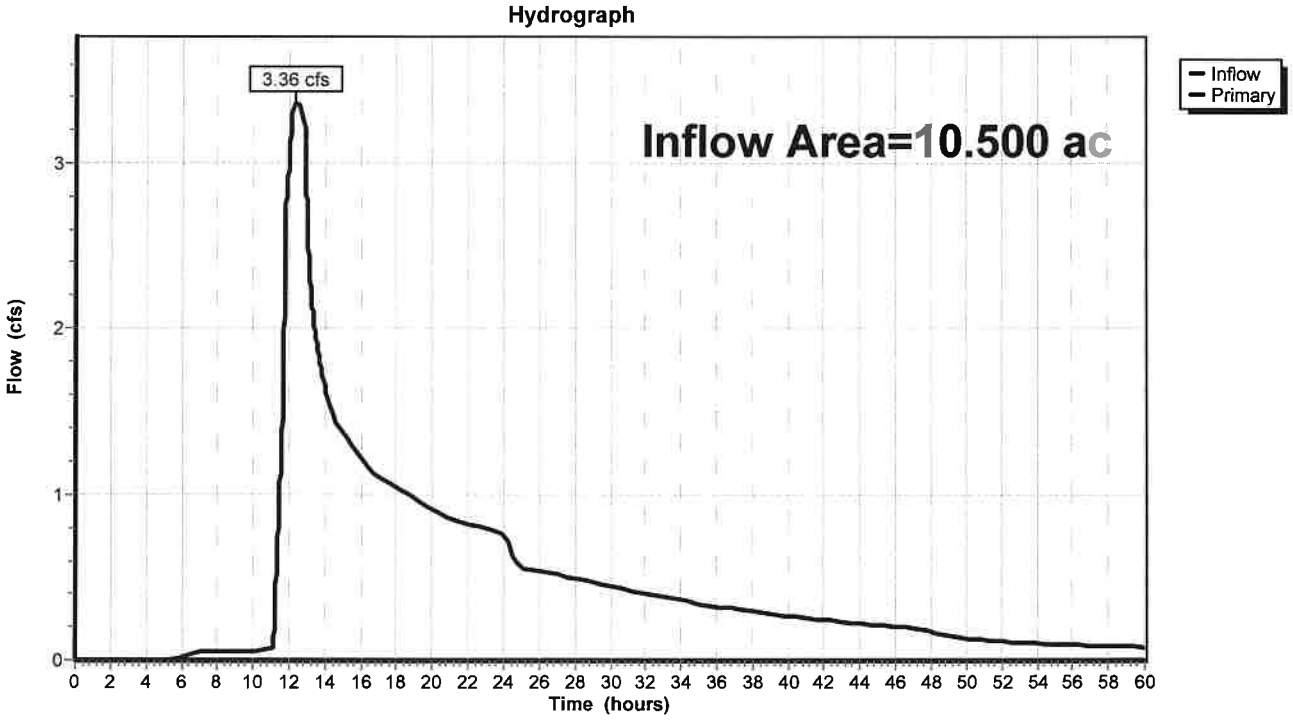
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 2.53" for 25-Year event
Inflow = 3.36 cfs @ 12.37 hrs, Volume= 2.210 af
Primary = 3.36 cfs @ 12.37 hrs, Volume= 2.210 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.11	0.00	0.11
1.00	0.00	0.00	0.00	53.00	0.11	0.00	0.11
2.00	0.00	0.00	0.00	54.00	0.10	0.00	0.10
3.00	0.00	0.00	0.00	55.00	0.10	0.00	0.10
4.00	0.00	0.00	0.00	56.00	0.09	0.00	0.09
5.00	0.00	0.00	0.00	57.00	0.09	0.00	0.09
6.00	0.02	0.00	0.02	58.00	0.09	0.00	0.09
7.00	0.05	0.00	0.05	59.00	0.08	0.00	0.08
8.00	0.05	0.00	0.05	60.00	0.08	0.00	0.08
9.00	0.05	0.00	0.05				
10.00	0.06	0.00	0.06				
11.00	0.07	0.00	0.07				
12.00	**3.02**	0.00	**3.02**				
13.00	**2.64**	0.00	**2.64**				
14.00	1.63	0.00	1.63				
15.00	1.36	0.00	1.36				
16.00	1.21	0.00	1.21				
17.00	1.10	0.00	1.10				
18.00	1.04	0.00	1.04				
19.00	0.97	0.00	0.97				
20.00	0.91	0.00	0.91				
21.00	0.85	0.00	0.85				
22.00	0.82	0.00	0.82				
23.00	0.79	0.00	0.79				
24.00	0.76	0.00	0.76				
25.00	0.55	0.00	0.55				
26.00	0.53	0.00	0.53				
27.00	0.51	0.00	0.51				
28.00	0.49	0.00	0.49				
29.00	0.47	0.00	0.47				
30.00	0.45	0.00	0.45				
31.00	0.42	0.00	0.42				
32.00	0.40	0.00	0.40				
33.00	0.38	0.00	0.38				
34.00	0.36	0.00	0.36				
35.00	0.34	0.00	0.34				
36.00	0.33	0.00	0.33				
37.00	0.31	0.00	0.31				
38.00	0.29	0.00	0.29				
39.00	0.28	0.00	0.28				
40.00	0.27	0.00	0.27				
41.00	0.25	0.00	0.25				
42.00	0.24	0.00	0.24				
43.00	0.23	0.00	0.23				
44.00	0.22	0.00	0.22				
45.00	0.21	0.00	0.21				
46.00	0.20	0.00	0.20				
47.00	0.20	0.00	0.20				
48.00	0.17	0.00	0.17				
49.00	0.14	0.00	0.14				
50.00	0.13	0.00	0.13				
51.00	0.12	0.00	0.12				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=3.41"
Flow Length=652' Tc=13.3 min CN=90 Runoff=27.50 cfs 1.736 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=3.52"
Flow Length=683' Tc=14.4 min CN=91 Runoff=19.58 cfs 1.290 af

Pond 1P: Bioretention Area 3 Peak Elev=576.17' Storage=10,953 cf Inflow=27.50 cfs 1.736 af
Primary=2.91 cfs 1.092 af Secondary=23.52 cfs 0.644 af Outflow=26.43 cfs 1.736 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=576.00' Storage=62,935 cf Inflow=42.93 cfs 1.933 af
Primary=0.72 cfs 1.504 af Secondary=1.25 cfs 0.131 af Outflow=1.97 cfs 1.635 af

Link 5L: Outflow (@ CB 54) Inflow=3.48 cfs 2.596 af
Primary=3.48 cfs 2.596 af

Total Runoff Area = 10.500 ac Runoff Volume = 3.026 af Average Runoff Depth = 3.46"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

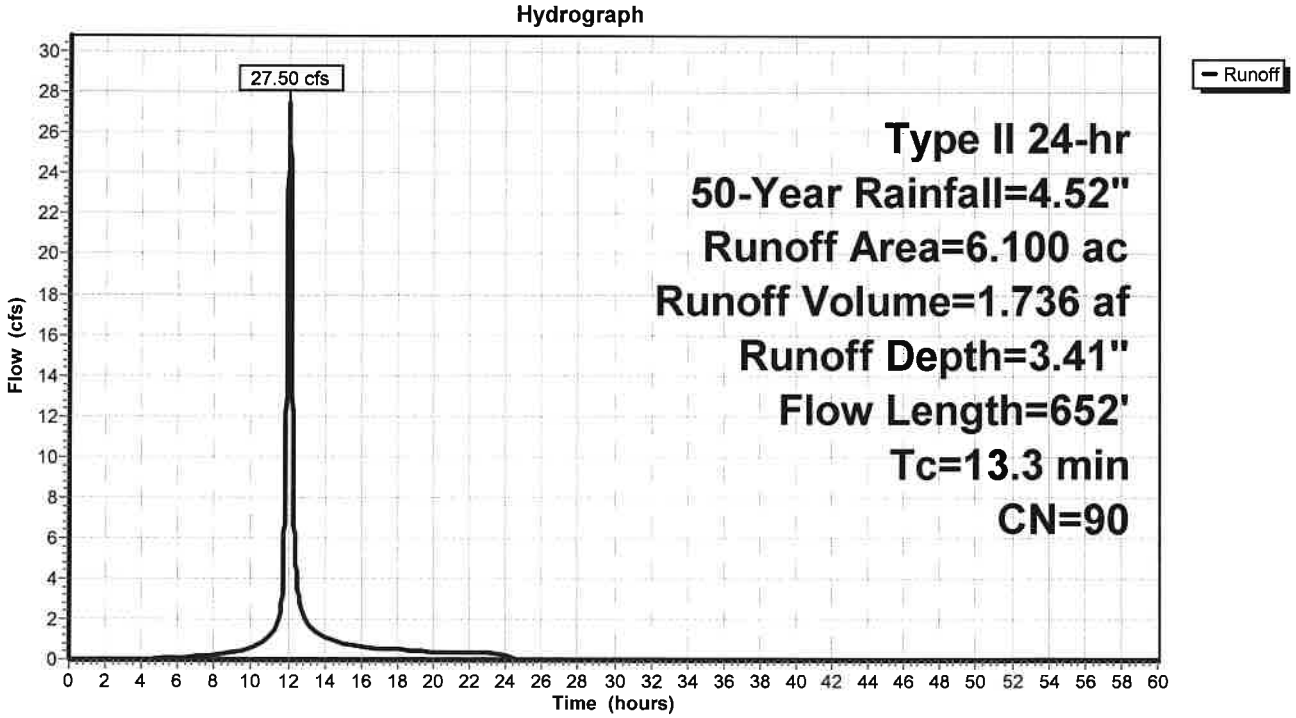
Runoff = 27.50 cfs @ 12.05 hrs, Volume= 1.736 af, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	52.00	4.52	3.41	0.00
1.00	0.05	0.00	0.00	53.00	4.52	3.41	0.00
2.00	0.10	0.00	0.00	54.00	4.52	3.41	0.00
3.00	0.16	0.00	0.00	55.00	4.52	3.41	0.00
4.00	0.22	0.00	0.00	56.00	4.52	3.41	0.00
5.00	0.28	0.00	0.04	57.00	4.52	3.41	0.00
6.00	0.36	0.02	0.09	58.00	4.52	3.41	0.00
7.00	0.45	0.04	0.16	59.00	4.52	3.41	0.00
8.00	0.54	0.07	0.23	60.00	4.52	3.41	0.00
9.00	0.66	0.13	0.39				
10.00	0.82	0.21	0.57				
11.00	1.06	0.36	1.16				
12.00	3.00	1.98	**25.18**				
13.00	3.49	2.44	**1.87**				
14.00	3.71	2.64	1.08				
15.00	3.86	2.78	0.83				
16.00	3.98	2.90	0.64				
17.00	4.08	2.99	0.55				
18.00	4.16	3.07	0.49				
19.00	4.24	3.15	0.42				
20.00	4.30	3.21	0.36				
21.00	4.36	3.26	0.33				
22.00	4.42	3.32	0.32				
23.00	4.47	3.37	0.31				
24.00	**4.52**	**3.41**	0.30				
25.00	4.52	3.41	0.00				
26.00	4.52	3.41	0.00				
27.00	4.52	3.41	0.00				
28.00	4.52	3.41	0.00				
29.00	4.52	3.41	0.00				
30.00	4.52	3.41	0.00				
31.00	4.52	3.41	0.00				
32.00	4.52	3.41	0.00				
33.00	4.52	3.41	0.00				
34.00	4.52	3.41	0.00				
35.00	4.52	3.41	0.00				
36.00	4.52	3.41	0.00				
37.00	4.52	3.41	0.00				
38.00	4.52	3.41	0.00				
39.00	4.52	3.41	0.00				
40.00	4.52	3.41	0.00				
41.00	4.52	3.41	0.00				
42.00	4.52	3.41	0.00				
43.00	4.52	3.41	0.00				
44.00	4.52	3.41	0.00				
45.00	4.52	3.41	0.00				
46.00	4.52	3.41	0.00				
47.00	4.52	3.41	0.00				
48.00	4.52	3.41	0.00				
49.00	4.52	3.41	0.00				
50.00	4.52	3.41	0.00				
51.00	4.52	3.41	0.00				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

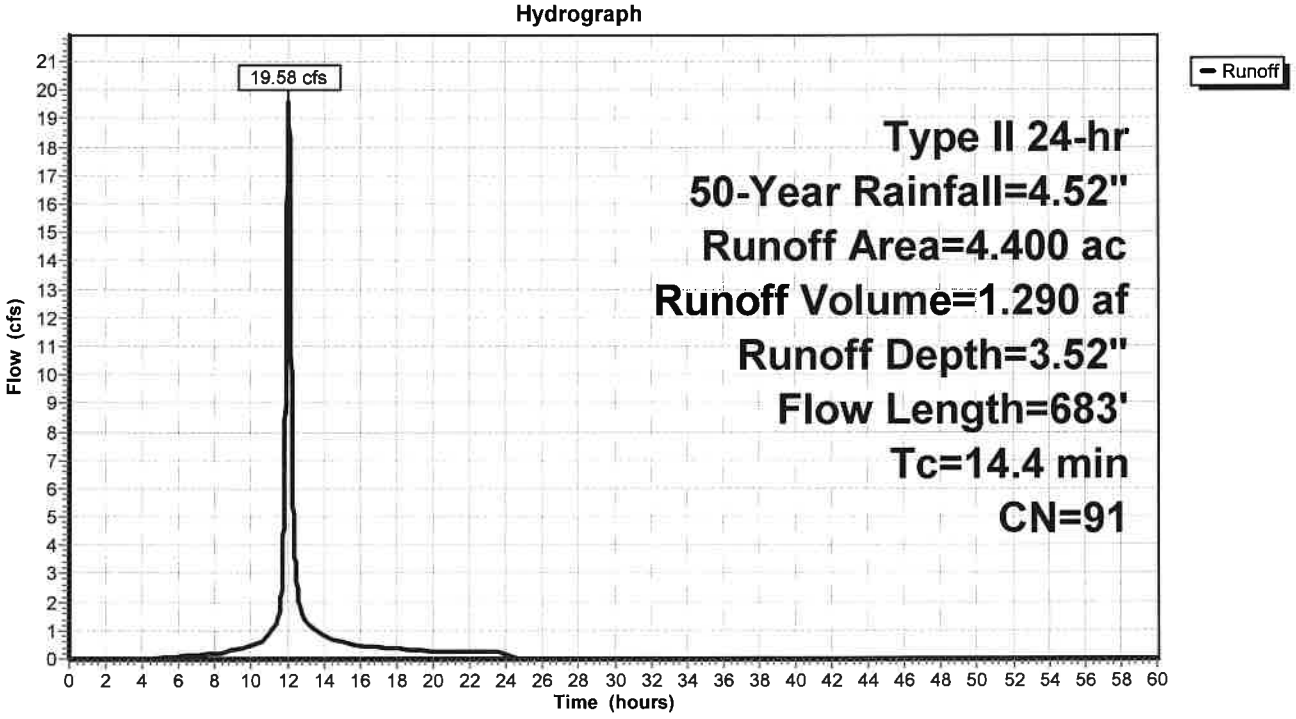
Runoff = 19.58 cfs @ 12.06 hrs, Volume= 1.290 af, Depth= 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.00
5.00	0.28	0.01	0.04
6.00	0.36	0.02	0.08
7.00	0.45	0.05	0.13
8.00	0.54	0.09	0.19
9.00	0.66	0.15	0.31
10.00	0.82	0.24	0.44
11.00	1.06	0.40	0.88
12.00	3.00	2.07	**17.36**
13.00	3.49	2.53	**1.38**
14.00	3.71	2.74	0.79
15.00	3.86	2.88	0.60
16.00	3.98	3.00	0.47
17.00	4.08	3.09	0.40
18.00	4.16	3.17	0.36
19.00	4.24	3.25	0.31
20.00	4.30	3.31	0.26
21.00	4.36	3.36	0.24
22.00	4.42	3.42	0.23
23.00	4.47	3.47	0.22
24.00	**4.52**	**3.52**	0.21
25.00	4.52	3.52	0.00
26.00	4.52	3.52	0.00
27.00	4.52	3.52	0.00
28.00	4.52	3.52	0.00
29.00	4.52	3.52	0.00
30.00	4.52	3.52	0.00
31.00	4.52	3.52	0.00
32.00	4.52	3.52	0.00
33.00	4.52	3.52	0.00
34.00	4.52	3.52	0.00
35.00	4.52	3.52	0.00
36.00	4.52	3.52	0.00
37.00	4.52	3.52	0.00
38.00	4.52	3.52	0.00
39.00	4.52	3.52	0.00
40.00	4.52	3.52	0.00
41.00	4.52	3.52	0.00
42.00	4.52	3.52	0.00
43.00	4.52	3.52	0.00
44.00	4.52	3.52	0.00
45.00	4.52	3.52	0.00
46.00	4.52	3.52	0.00
47.00	4.52	3.52	0.00
48.00	4.52	3.52	0.00
49.00	4.52	3.52	0.00
50.00	4.52	3.52	0.00
51.00	4.52	3.52	0.00
52.00	4.52	3.52	0.00
53.00	4.52	3.52	0.00
54.00	4.52	3.52	0.00
55.00	4.52	3.52	0.00
56.00	4.52	3.52	0.00
57.00	4.52	3.52	0.00
58.00	4.52	3.52	0.00
59.00	4.52	3.52	0.00
60.00	4.52	3.52	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 3.41" for 50-Year event
Inflow = 27.50 cfs @ 12.05 hrs, Volume= 1.736 af
Outflow = 26.43 cfs @ 12.08 hrs, Volume= 1.736 af, Atten= 4%, Lag= 1.9 min
Primary = 2.91 cfs @ 12.08 hrs, Volume= 1.092 af
Secondary = 23.52 cfs @ 12.08 hrs, Volume= 0.644 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.17' @ 12.08 hrs Surf.Area= 10,144 sf Storage= 10,953 cf

Plug-Flow detention time= 109.3 min calculated for 1.736 af (100% of inflow)
Center-of-Mass det. time= 109.3 min (907.1 - 797.8)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

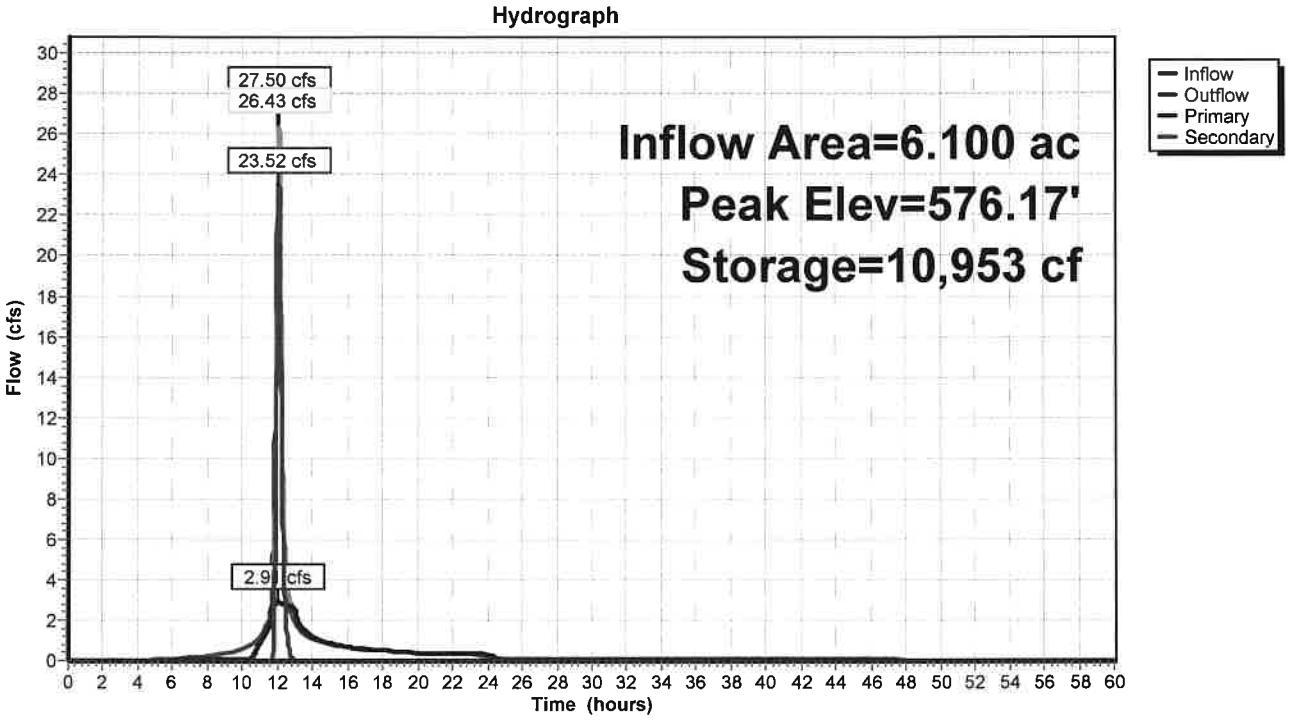
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.91 cfs @ 12.08 hrs HW=576.17' (Free Discharge)
└─**1=8" pipe** (Barrel Controls 2.91 cfs @ 8.34 fps)
  ├─**2=Grate** (Passes < 5.49 cfs potential flow)
  └─**3=Exfiltration** (Passes < 0.06 cfs potential flow)

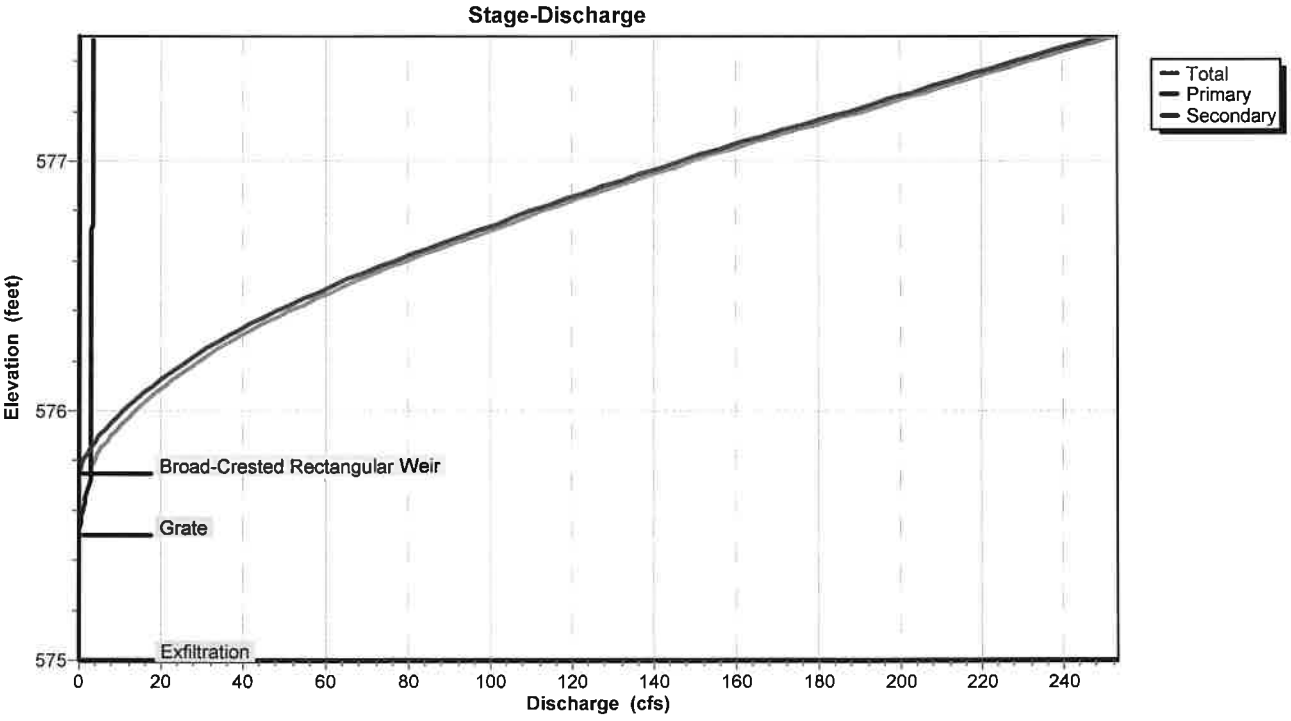
Secondary OutFlow Max=23.50 cfs @ 12.08 hrs HW=576.17' (Free Discharge)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 23.50 cfs @ 1.88 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

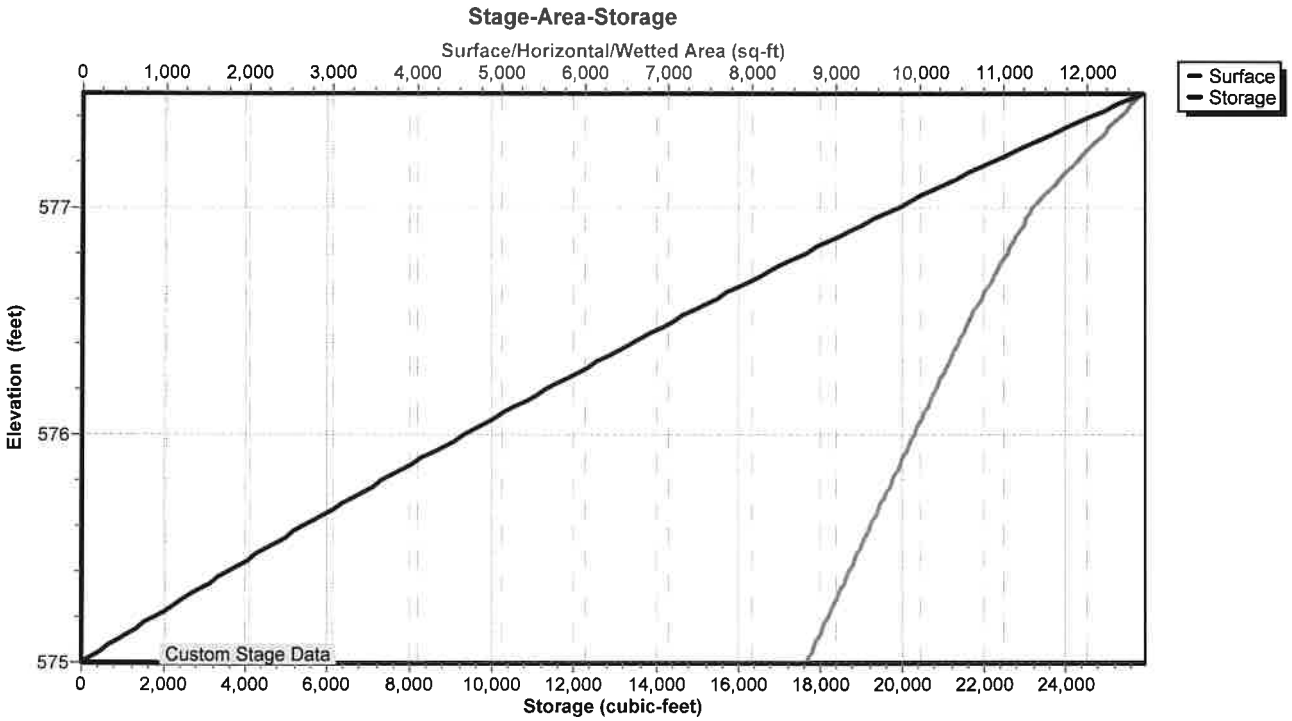


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.09	180	575.02	0.04	0.04	0.00
8.00	0.23	959	575.11	0.05	0.05	0.00
10.00	0.57	3,333	575.38	0.05	0.05	0.00
12.00	**25.18**	**10,302**	**576.10**	**21.15**	**2.88**	**18.27**
14.00	**1.08**	**5,594**	**575.62**	**1.18**	**1.18**	**0.00**
16.00	0.64	5,233	575.58	0.68	0.68	0.00
18.00	0.49	5,081	575.56	0.51	0.51	0.00
20.00	0.36	4,961	575.55	0.38	0.38	0.00
22.00	0.32	4,907	575.55	0.33	0.33	0.00
24.00	0.30	4,876	575.54	0.30	0.30	0.00
26.00	0.00	4,297	575.48	0.06	0.06	0.00
28.00	0.00	3,900	575.44	0.05	0.05	0.00
30.00	0.00	3,508	575.39	0.05	0.05	0.00
32.00	0.00	3,118	575.35	0.05	0.05	0.00
34.00	0.00	2,732	575.31	0.05	0.05	0.00
36.00	0.00	2,350	575.27	0.05	0.05	0.00
38.00	0.00	1,970	575.22	0.05	0.05	0.00
40.00	0.00	1,594	575.18	0.05	0.05	0.00
42.00	0.00	1,221	575.14	0.05	0.05	0.00
44.00	0.00	852	575.10	0.05	0.05	0.00
46.00	0.00	486	575.06	0.05	0.05	0.00
48.00	0.00	140	575.02	0.03	0.03	0.00
50.00	0.00	26	575.00	0.01	0.01	0.00
52.00	0.00	5	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 5.27" for 50-Year event
Inflow = 42.93 cfs @ 12.07 hrs, Volume= 1.933 af
Outflow = 1.97 cfs @ 12.73 hrs, Volume= 1.635 af, Atten= 95%, Lag= 39.8 min
Primary = 0.72 cfs @ 12.73 hrs, Volume= 1.504 af
Secondary = 1.25 cfs @ 12.73 hrs, Volume= 0.131 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.00' @ 12.73 hrs Surf.Area= 66,838 sf Storage= 62,935 cf

Plug-Flow detention time= 900.4 min calculated for 1.635 af (85% of inflow)
Center-of-Mass det. time= 844.0 min (1,616.3 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

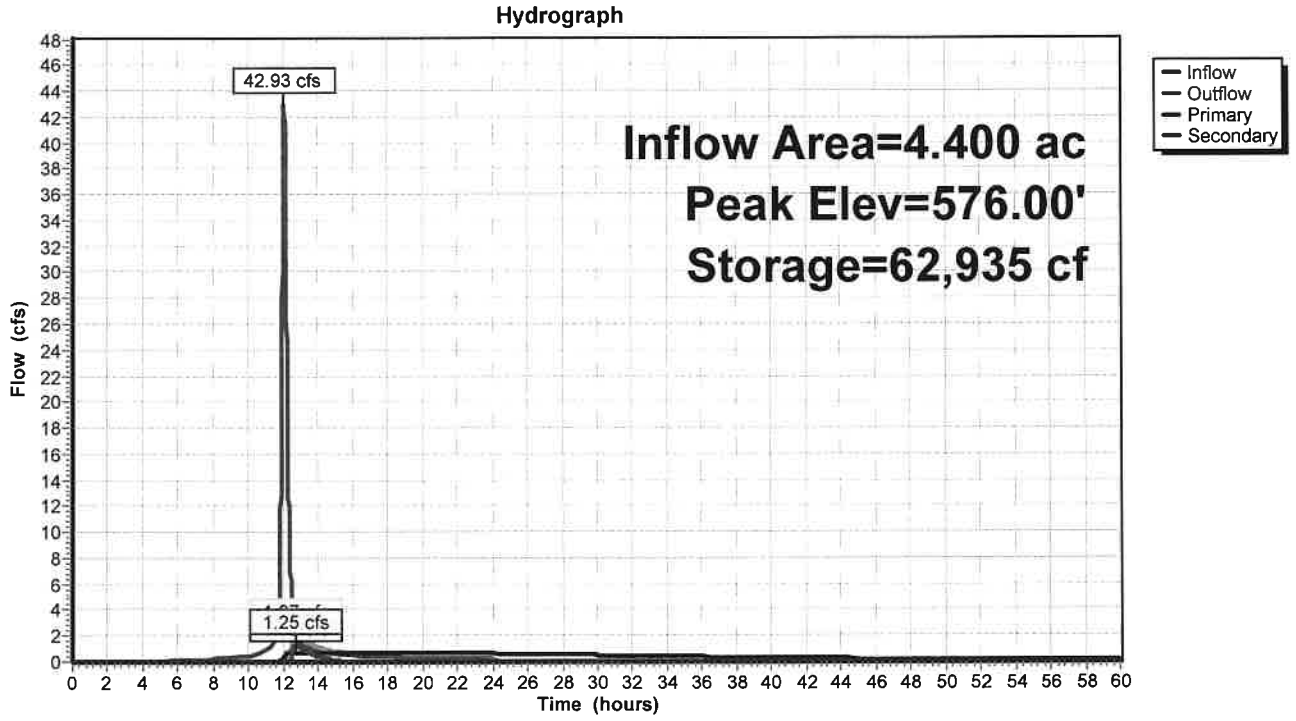
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.72 cfs @ 12.73 hrs HW=576.00' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.72 cfs of 2.71 cfs potential flow)
  ├**2=low flow outlet pipe** (Inlet Controls 0.72 cfs @ 3.68 fps)
  └**3=Grate** (Controls 0.00 cfs)

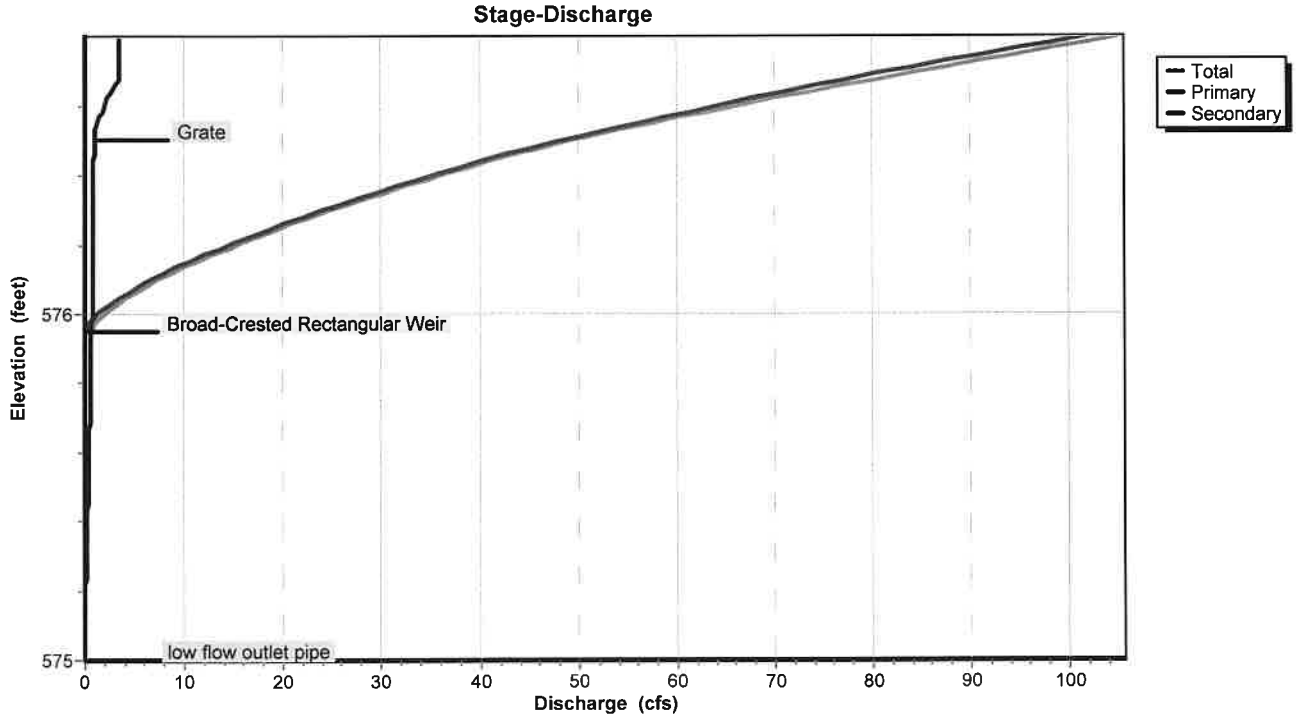
Secondary OutFlow Max=1.25 cfs @ 12.73 hrs HW=576.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 1.25 cfs @ 0.64 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

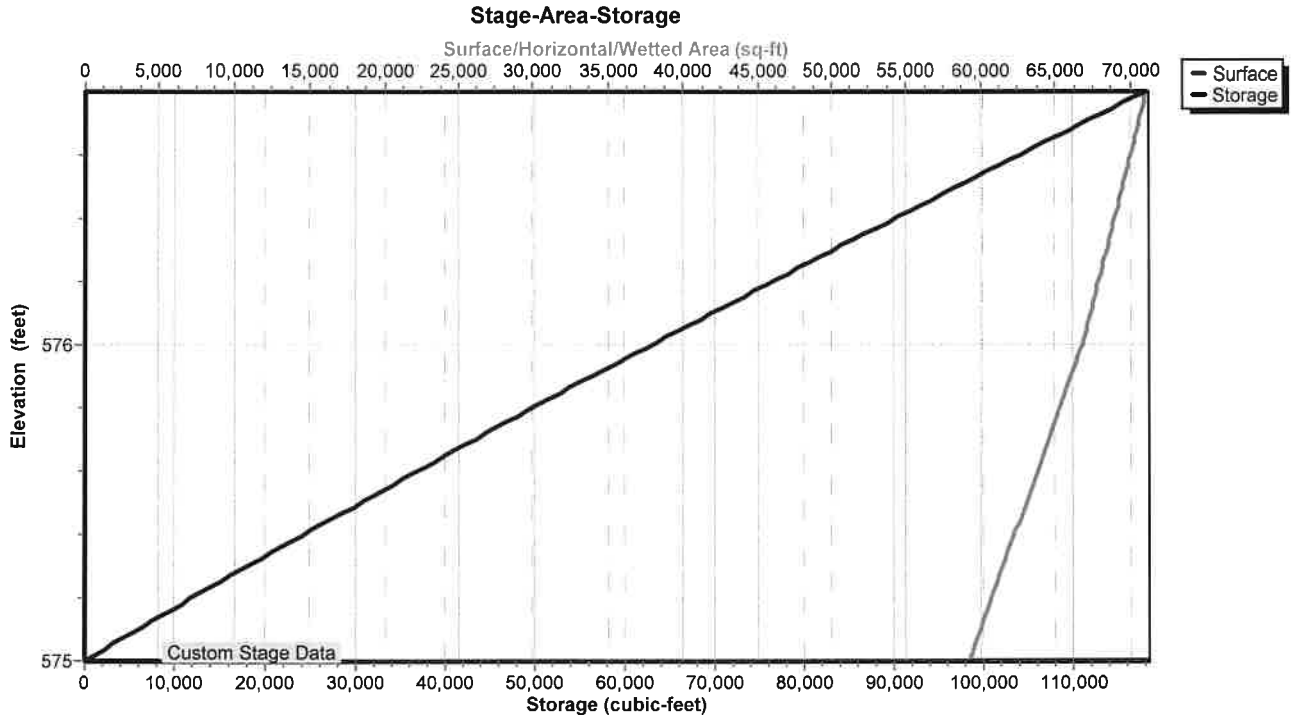


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	1	575.00	0.00	0.00	0.00
6.00	0.08	300	575.01	0.00	0.00	0.00
8.00	0.19	1,265	575.02	0.00	0.00	0.00
10.00	0.44	3,420	575.06	0.01	0.01	0.00
12.00	**35.63**	**24,163**	**575.40**	**0.26**	**0.26**	**0.00**
14.00	**0.79**	**61,204**	**575.97**	**1.11**	**0.71**	**0.40**
16.00	0.47	59,536	575.95	0.70	0.70	0.00
18.00	0.36	57,495	575.92	0.68	0.68	0.00
20.00	0.26	54,889	575.88	0.66	0.66	0.00
22.00	0.23	51,975	575.83	0.64	0.64	0.00
24.00	0.21	49,094	575.79	0.61	0.61	0.00
26.00	0.00	45,010	575.73	0.56	0.56	0.00
28.00	0.00	41,189	575.67	0.50	0.50	0.00
30.00	0.00	37,665	575.61	0.47	0.47	0.00
32.00	0.00	34,410	575.56	0.43	0.43	0.00
34.00	0.00	31,481	575.51	0.38	0.38	0.00
36.00	0.00	28,873	575.47	0.34	0.34	0.00
38.00	0.00	26,562	575.44	0.30	0.30	0.00
40.00	0.00	24,517	575.40	0.27	0.27	0.00
42.00	0.00	22,705	575.37	0.24	0.24	0.00
44.00	0.00	21,097	575.35	0.21	0.21	0.00
46.00	0.00	19,666	575.33	0.19	0.19	0.00
48.00	0.00	18,389	575.30	0.17	0.17	0.00
50.00	0.00	17,245	575.29	0.15	0.15	0.00
52.00	0.00	16,216	575.27	0.14	0.14	0.00
54.00	0.00	15,288	575.25	0.12	0.12	0.00
56.00	0.00	14,449	575.24	0.11	0.11	0.00
58.00	0.00	13,686	575.23	0.10	0.10	0.00
60.00	0.00	12,992	575.22	0.09	0.09	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

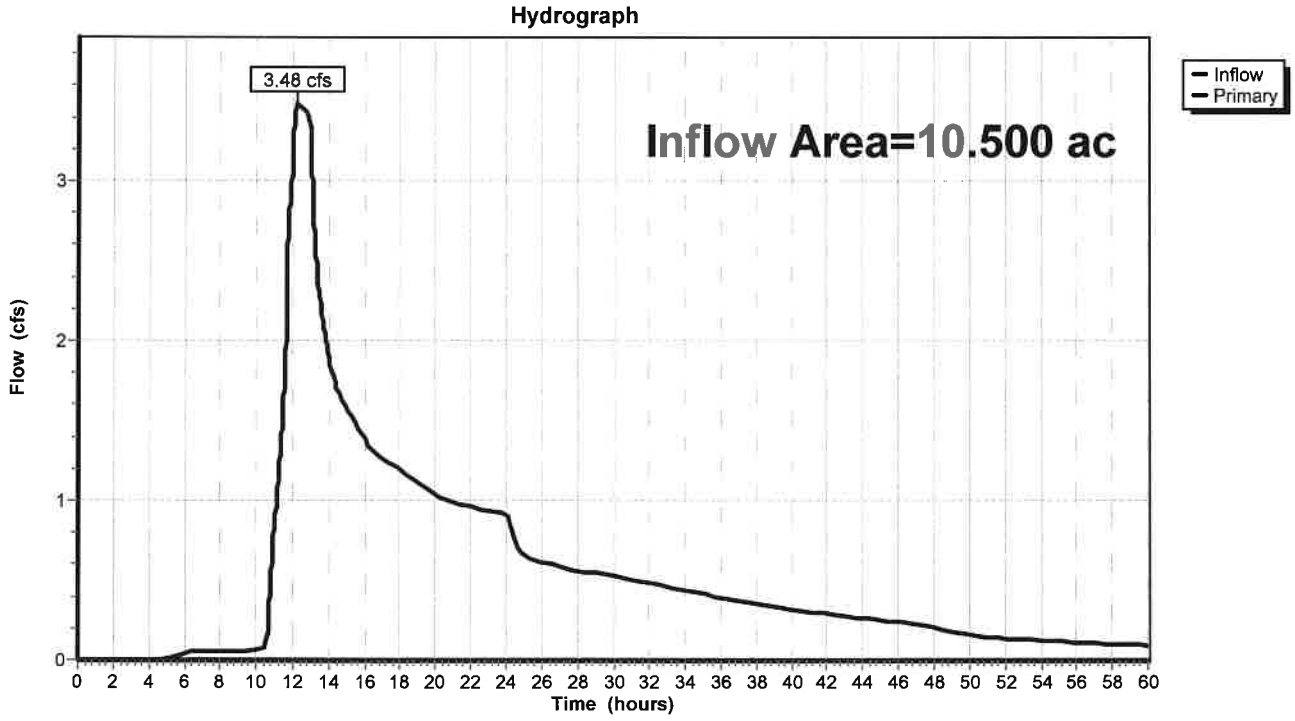
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 2.97" for 50-Year event
Inflow = 3.48 cfs @ 12.21 hrs, Volume= 2.596 af
Primary = 3.48 cfs @ 12.21 hrs, Volume= 2.596 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.14	0.00	0.14
1.00	0.00	0.00	0.00	53.00	0.13	0.00	0.13
2.00	0.00	0.00	0.00	54.00	0.12	0.00	0.12
3.00	0.00	0.00	0.00	55.00	0.12	0.00	0.12
4.00	0.00	0.00	0.00	56.00	0.11	0.00	0.11
5.00	0.01	0.00	0.01	57.00	0.11	0.00	0.11
6.00	0.04	0.00	0.04	58.00	0.10	0.00	0.10
7.00	0.05	0.00	0.05	59.00	0.10	0.00	0.10
8.00	0.05	0.00	0.05	60.00	0.09	0.00	0.09
9.00	0.06	0.00	0.06				
10.00	0.06	0.00	0.06				
11.00	0.88	0.00	0.88				
12.00	**3.14**	0.00	**3.14**				
13.00	**3.25**	0.00	**3.25**				
14.00	1.89	0.00	1.89				
15.00	1.57	0.00	1.57				
16.00	1.38	0.00	1.38				
17.00	1.26	0.00	1.26				
18.00	1.19	0.00	1.19				
19.00	1.11	0.00	1.11				
20.00	1.04	0.00	1.04				
21.00	0.99	0.00	0.99				
22.00	0.96	0.00	0.96				
23.00	0.94	0.00	0.94				
24.00	0.91	0.00	0.91				
25.00	0.65	0.00	0.65				
26.00	0.62	0.00	0.62				
27.00	0.59	0.00	0.59				
28.00	0.56	0.00	0.56				
29.00	0.55	0.00	0.55				
30.00	0.53	0.00	0.53				
31.00	0.51	0.00	0.51				
32.00	0.48	0.00	0.48				
33.00	0.46	0.00	0.46				
34.00	0.44	0.00	0.44				
35.00	0.42	0.00	0.42				
36.00	0.39	0.00	0.39				
37.00	0.37	0.00	0.37				
38.00	0.35	0.00	0.35				
39.00	0.34	0.00	0.34				
40.00	0.32	0.00	0.32				
41.00	0.30	0.00	0.30				
42.00	0.29	0.00	0.29				
43.00	0.27	0.00	0.27				
44.00	0.26	0.00	0.26				
45.00	0.25	0.00	0.25				
46.00	0.24	0.00	0.24				
47.00	0.23	0.00	0.23				
48.00	0.20	0.00	0.20				
49.00	0.17	0.00	0.17				
50.00	0.16	0.00	0.16				
51.00	0.15	0.00	0.15				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=4.15"
Flow Length=652' Tc=13.3 min CN=90 Runoff=33.05 cfs 2.108 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=4.25"
Flow Length=683' Tc=14.4 min CN=91 Runoff=23.44 cfs 1.560 af

Pond 1P: Bioretention Area 3 Peak Elev=576.23' Storage=11,585 cf Inflow=33.05 cfs 2.108 af
Primary=2.94 cfs 1.275 af Secondary=28.98 cfs 0.833 af Outflow=31.92 cfs 2.108 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=576.11' Storage=70,722 cf Inflow=52.24 cfs 2.392 af
Primary=0.78 cfs 1.554 af Secondary=7.80 cfs 0.534 af Outflow=8.57 cfs 2.088 af

Link 5L: Outflow (@ CB 54) Inflow=3.60 cfs 2.829 af
Primary=3.60 cfs 2.829 af

Total Runoff Area = 10.500 ac Runoff Volume = 3.668 af Average Runoff Depth = 4.19"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

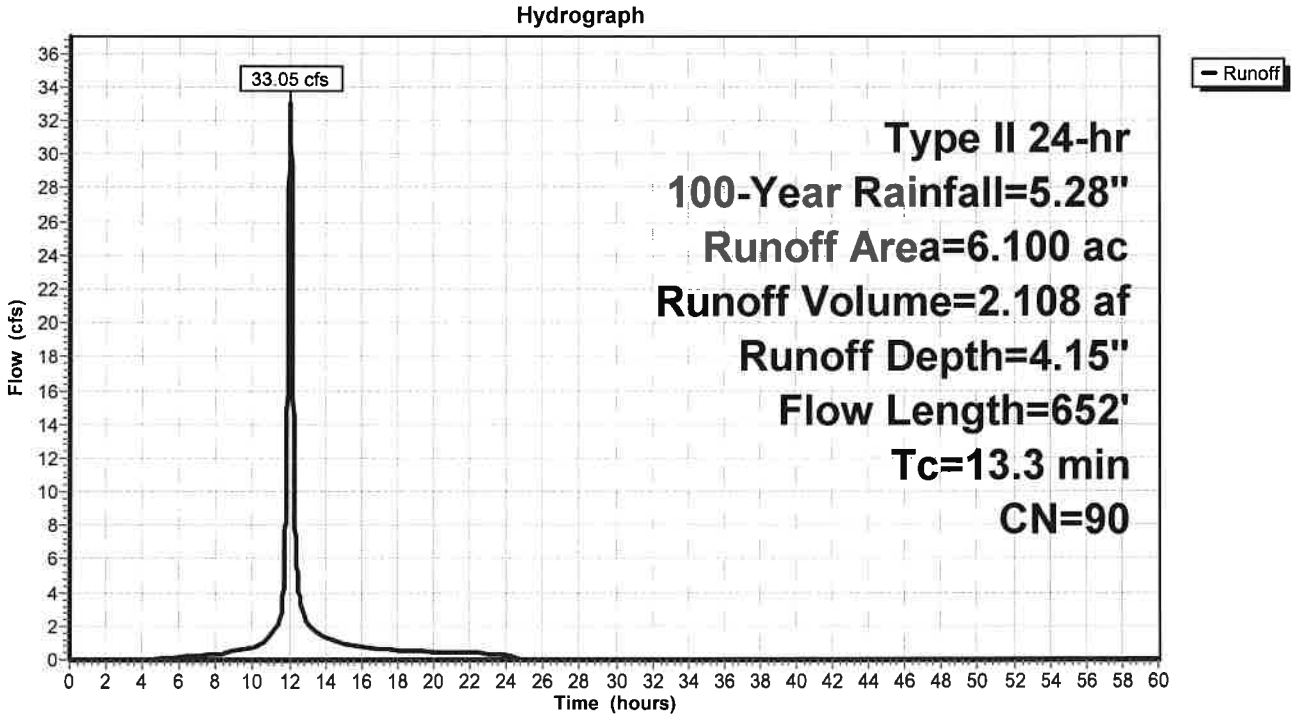
Runoff = 33.05 cfs @ 12.05 hrs, Volume= 2.108 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.00	0.01
5.00	0.33	0.01	0.08
6.00	0.42	0.03	0.15
7.00	0.52	0.06	0.23
8.00	0.63	0.11	0.32
9.00	0.78	0.18	0.52
10.00	0.96	0.29	0.74
11.00	1.24	0.49	1.47
12.00	3.50	2.45	**30.36**
13.00	4.08	2.99	**2.21**
14.00	4.33	3.23	1.27
15.00	4.51	3.40	0.98
16.00	4.65	3.54	0.76
17.00	4.76	3.65	0.66
18.00	4.86	3.74	0.58
19.00	4.95	3.83	0.50
20.00	5.03	3.90	0.42
21.00	5.09	3.97	0.40
22.00	5.16	4.03	0.38
23.00	5.22	4.09	0.36
24.00	**5.28**	**4.15**	0.35
25.00	5.28	4.15	0.00
26.00	5.28	4.15	0.00
27.00	5.28	4.15	0.00
28.00	5.28	4.15	0.00
29.00	5.28	4.15	0.00
30.00	5.28	4.15	0.00
31.00	5.28	4.15	0.00
32.00	5.28	4.15	0.00
33.00	5.28	4.15	0.00
34.00	5.28	4.15	0.00
35.00	5.28	4.15	0.00
36.00	5.28	4.15	0.00
37.00	5.28	4.15	0.00
38.00	5.28	4.15	0.00
39.00	5.28	4.15	0.00
40.00	5.28	4.15	0.00
41.00	5.28	4.15	0.00
42.00	5.28	4.15	0.00
43.00	5.28	4.15	0.00
44.00	5.28	4.15	0.00
45.00	5.28	4.15	0.00
46.00	5.28	4.15	0.00
47.00	5.28	4.15	0.00
48.00	5.28	4.15	0.00
49.00	5.28	4.15	0.00
50.00	5.28	4.15	0.00
51.00	5.28	4.15	0.00
52.00	5.28	4.15	0.00
53.00	5.28	4.15	0.00
54.00	5.28	4.15	0.00
55.00	5.28	4.15	0.00
56.00	5.28	4.15	0.00
57.00	5.28	4.15	0.00
58.00	5.28	4.15	0.00
59.00	5.28	4.15	0.00
60.00	5.28	4.15	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

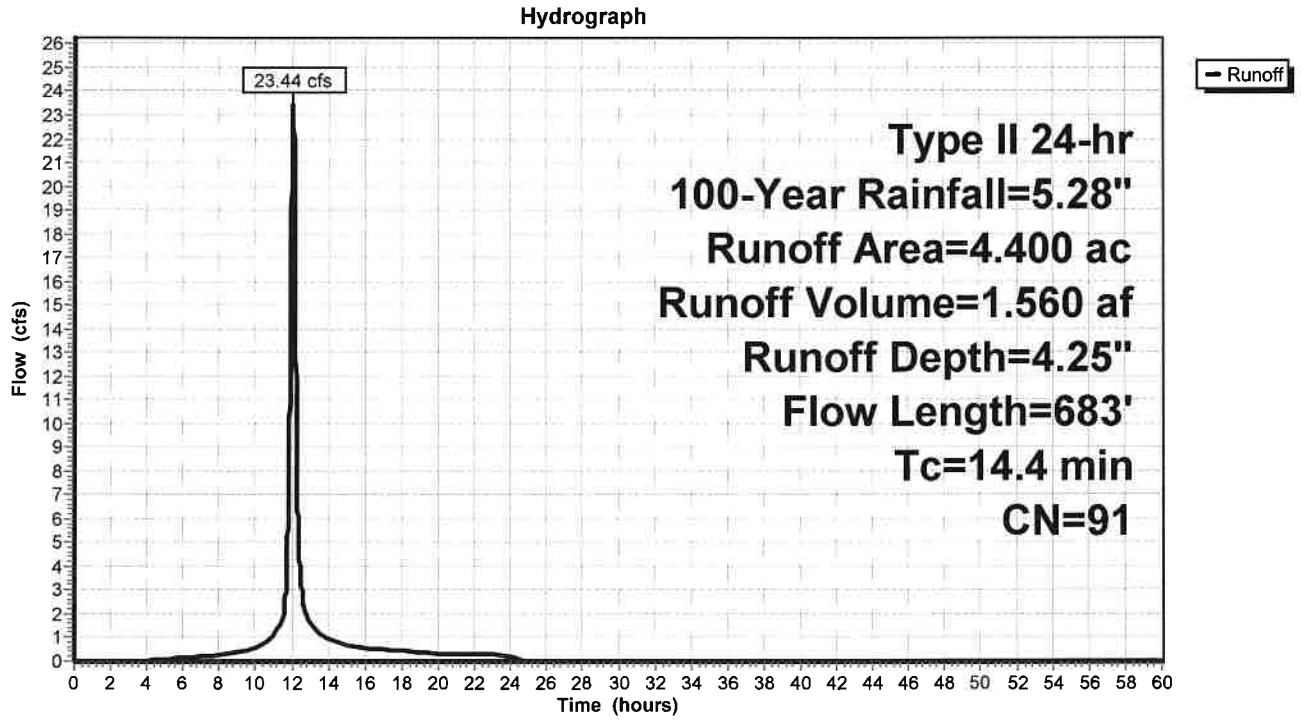
Runoff = 23.44 cfs @ 12.06 hrs, Volume= 1.560 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.00	0.02
5.00	0.33	0.02	0.07
6.00	0.42	0.04	0.13
7.00	0.52	0.08	0.19
8.00	0.63	0.13	0.25
9.00	0.78	0.21	0.41
10.00	0.96	0.33	0.57
11.00	1.24	0.54	1.10
12.00	3.50	2.54	**20.85**
13.00	4.08	3.09	**1.64**
14.00	4.33	3.33	0.94
15.00	4.51	3.50	0.71
16.00	4.65	3.64	0.56
17.00	4.76	3.75	0.48
18.00	4.86	3.85	0.42
19.00	4.95	3.93	0.36
20.00	5.03	4.01	0.31
21.00	5.09	4.07	0.29
22.00	5.16	4.14	0.28
23.00	5.22	4.20	0.26
24.00	**5.28**	**4.25**	0.25
25.00	5.28	4.25	0.00
26.00	5.28	4.25	0.00
27.00	5.28	4.25	0.00
28.00	5.28	4.25	0.00
29.00	5.28	4.25	0.00
30.00	5.28	4.25	0.00
31.00	5.28	4.25	0.00
32.00	5.28	4.25	0.00
33.00	5.28	4.25	0.00
34.00	5.28	4.25	0.00
35.00	5.28	4.25	0.00
36.00	5.28	4.25	0.00
37.00	5.28	4.25	0.00
38.00	5.28	4.25	0.00
39.00	5.28	4.25	0.00
40.00	5.28	4.25	0.00
41.00	5.28	4.25	0.00
42.00	5.28	4.25	0.00
43.00	5.28	4.25	0.00
44.00	5.28	4.25	0.00
45.00	5.28	4.25	0.00
46.00	5.28	4.25	0.00
47.00	5.28	4.25	0.00
48.00	5.28	4.25	0.00
49.00	5.28	4.25	0.00
50.00	5.28	4.25	0.00
51.00	5.28	4.25	0.00
52.00	5.28	4.25	0.00
53.00	5.28	4.25	0.00
54.00	5.28	4.25	0.00
55.00	5.28	4.25	0.00
56.00	5.28	4.25	0.00
57.00	5.28	4.25	0.00
58.00	5.28	4.25	0.00
59.00	5.28	4.25	0.00
60.00	5.28	4.25	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 4.15" for 100-Year event
Inflow = 33.05 cfs @ 12.05 hrs, Volume= 2.108 af
Outflow = 31.92 cfs @ 12.08 hrs, Volume= 2.108 af, Atten= 3%, Lag= 1.8 min
Primary = 2.94 cfs @ 12.08 hrs, Volume= 1.275 af
Secondary = 28.98 cfs @ 12.08 hrs, Volume= 0.833 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.23' @ 12.08 hrs Surf.Area= 10,226 sf Storage= 11,585 cf

Plug-Flow detention time= 93.7 min calculated for 2.108 af (100% of inflow)
Center-of-Mass det. time= 93.9 min (886.3 - 792.4)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

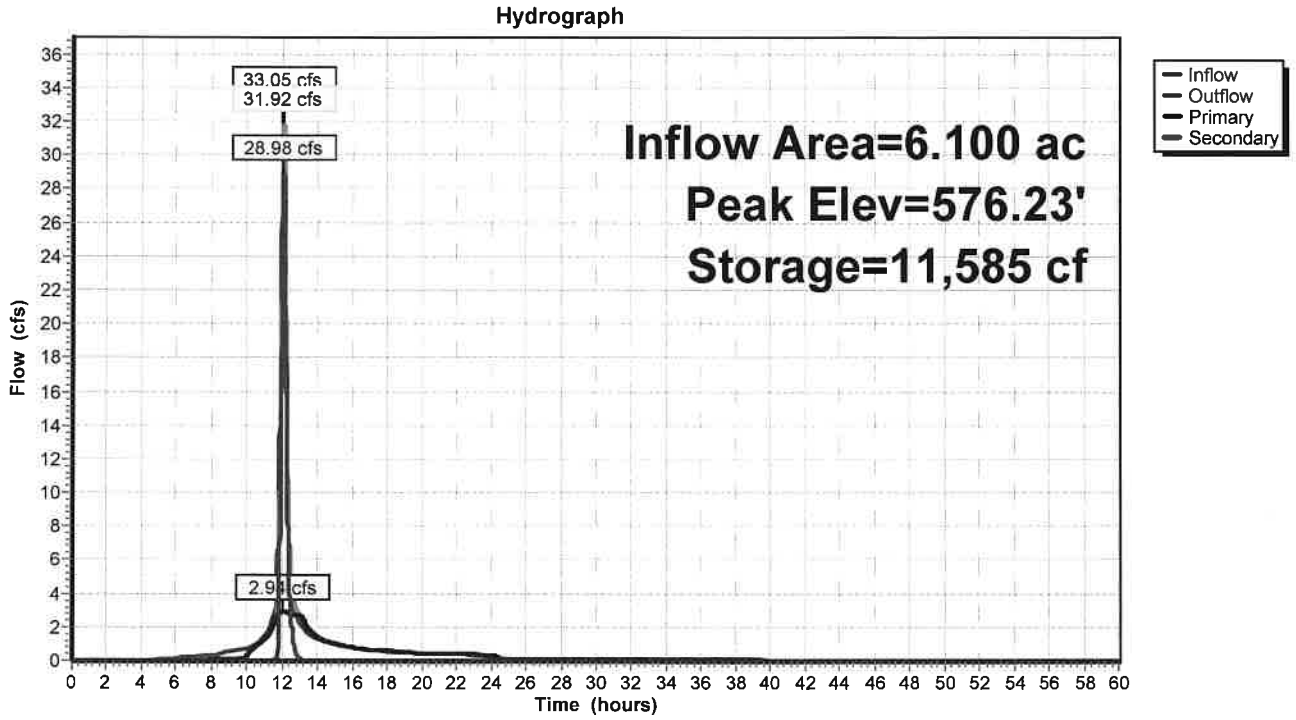
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.94 cfs @ 12.08 hrs HW=576.23' (Free Discharge)
└─**1=8" pipe** (Barrel Controls 2.94 cfs @ 8.43 fps)
  ├─**2=Grate** (Passes < 5.74 cfs potential flow)
  └─**3=Exfiltration** (Passes < 0.06 cfs potential flow)

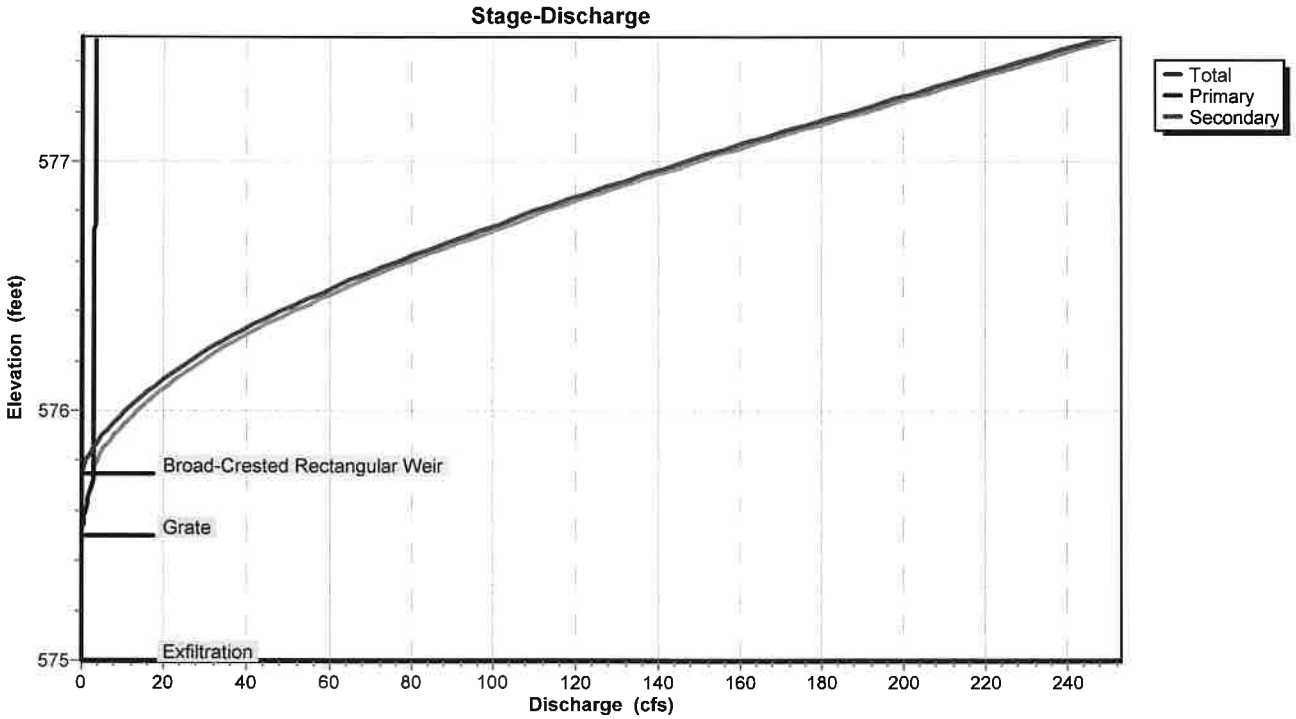
Secondary OutFlow Max=28.93 cfs @ 12.08 hrs HW=576.23' (Free Discharge)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 28.93 cfs @ 2.02 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

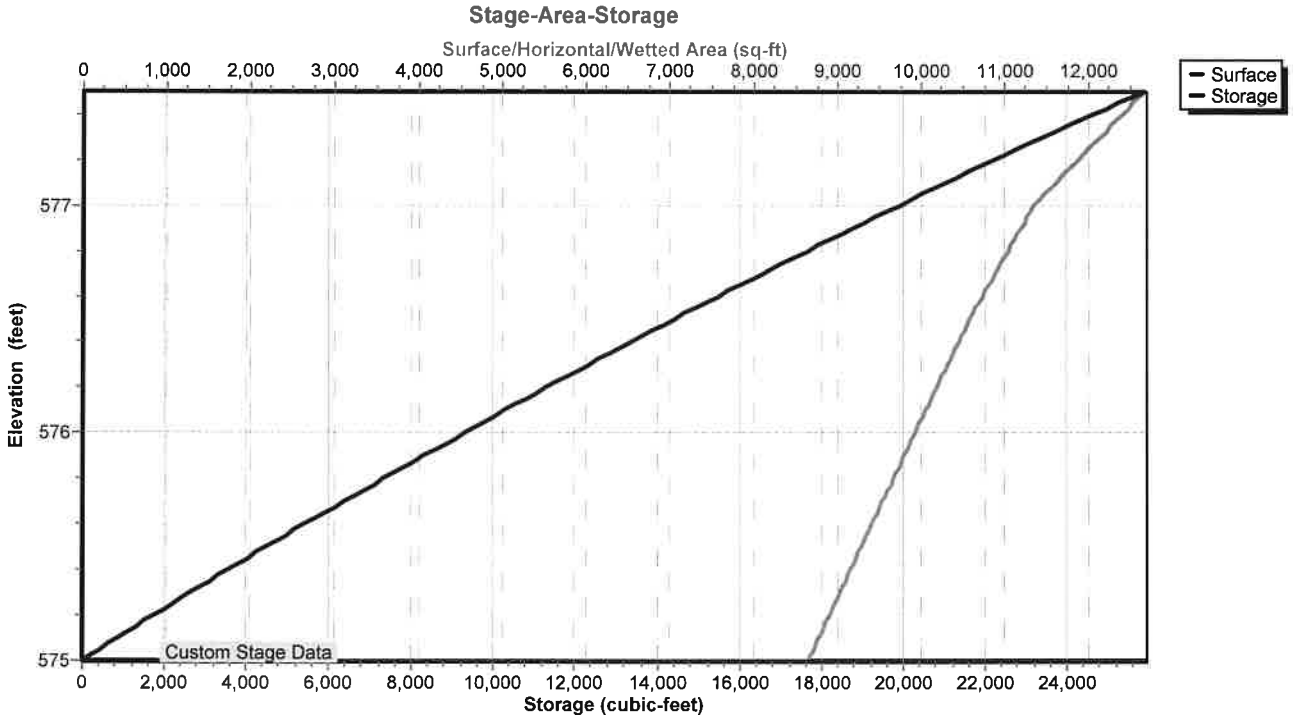


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.01	6	575.00	0.00	0.00	0.00
6.00	0.15	359	575.04	0.05	0.05	0.00
8.00	0.32	1,651	575.19	0.05	0.05	0.00
10.00	0.74	4,857	575.54	0.28	0.28	0.00
12.00	**30.36**	**10,896**	**576.16**	**25.95**	**2.91**	**23.04**
14.00	**1.27**	**5,731**	**575.63**	**1.39**	**1.39**	**0.00**
16.00	0.76	5,329	575.59	0.81	0.81	0.00
18.00	0.58	5,164	575.57	0.60	0.60	0.00
20.00	0.42	5,023	575.56	0.44	0.44	0.00
22.00	0.38	4,969	575.55	0.38	0.38	0.00
24.00	0.35	4,939	575.55	0.35	0.35	0.00
26.00	0.00	4,307	575.48	0.06	0.06	0.00
28.00	0.00	3,911	575.44	0.05	0.05	0.00
30.00	0.00	3,518	575.40	0.05	0.05	0.00
32.00	0.00	3,129	575.35	0.05	0.05	0.00
34.00	0.00	2,743	575.31	0.05	0.05	0.00
36.00	0.00	2,360	575.27	0.05	0.05	0.00
38.00	0.00	1,981	575.23	0.05	0.05	0.00
40.00	0.00	1,604	575.18	0.05	0.05	0.00
42.00	0.00	1,232	575.14	0.05	0.05	0.00
44.00	0.00	862	575.10	0.05	0.05	0.00
46.00	0.00	496	575.06	0.05	0.05	0.00
48.00	0.00	147	575.02	0.03	0.03	0.00
50.00	0.00	28	575.00	0.01	0.01	0.00
52.00	0.00	5	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 6.52" for 100-Year event
Inflow = 52.24 cfs @ 12.07 hrs, Volume= 2.392 af
Outflow = 8.57 cfs @ 12.41 hrs, Volume= 2.088 af, Atten= 84%, Lag= 20.7 min
Primary = 0.78 cfs @ 12.41 hrs, Volume= 1.554 af
Secondary = 7.80 cfs @ 12.41 hrs, Volume= 0.534 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.11' @ 12.41 hrs Surf.Area= 67,462 sf Storage= 70,722 cf

Plug-Flow detention time= 739.0 min calculated for 2.088 af (87% of inflow)
Center-of-Mass det. time= 688.7 min (1,456.5 - 767.8)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

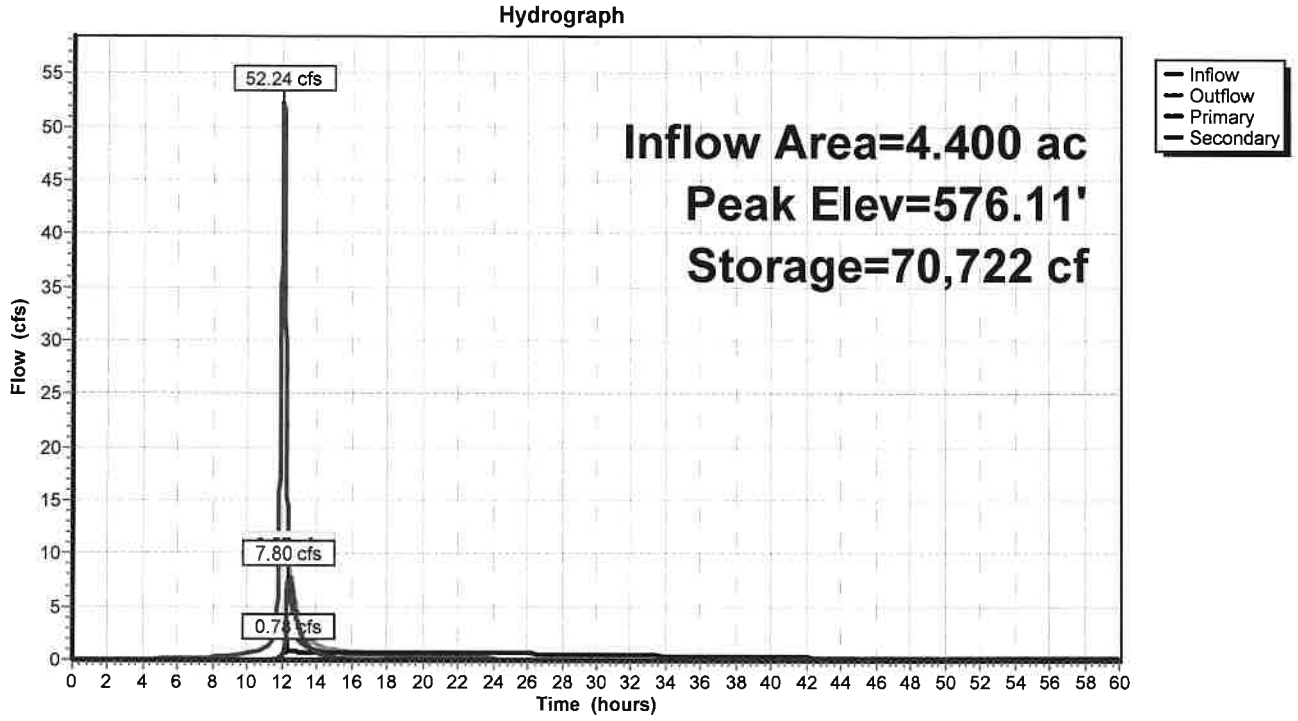
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.78 cfs @ 12.41 hrs HW=576.11' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.78 cfs of 2.84 cfs potential flow)
└**2=low flow outlet pipe** (Inlet Controls 0.78 cfs @ 3.95 fps)
└**3=Grate** (Controls 0.00 cfs)

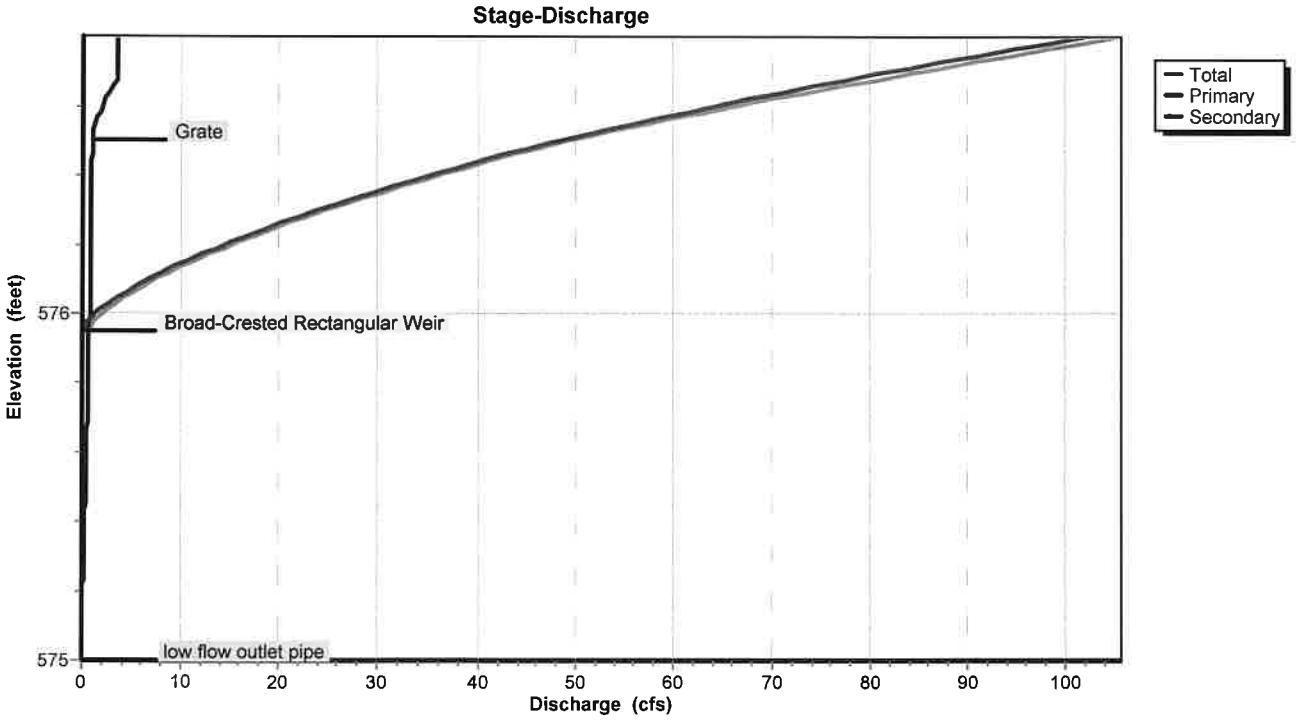
Secondary OutFlow Max=7.79 cfs @ 12.41 hrs HW=576.11' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 7.79 cfs @ 1.18 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

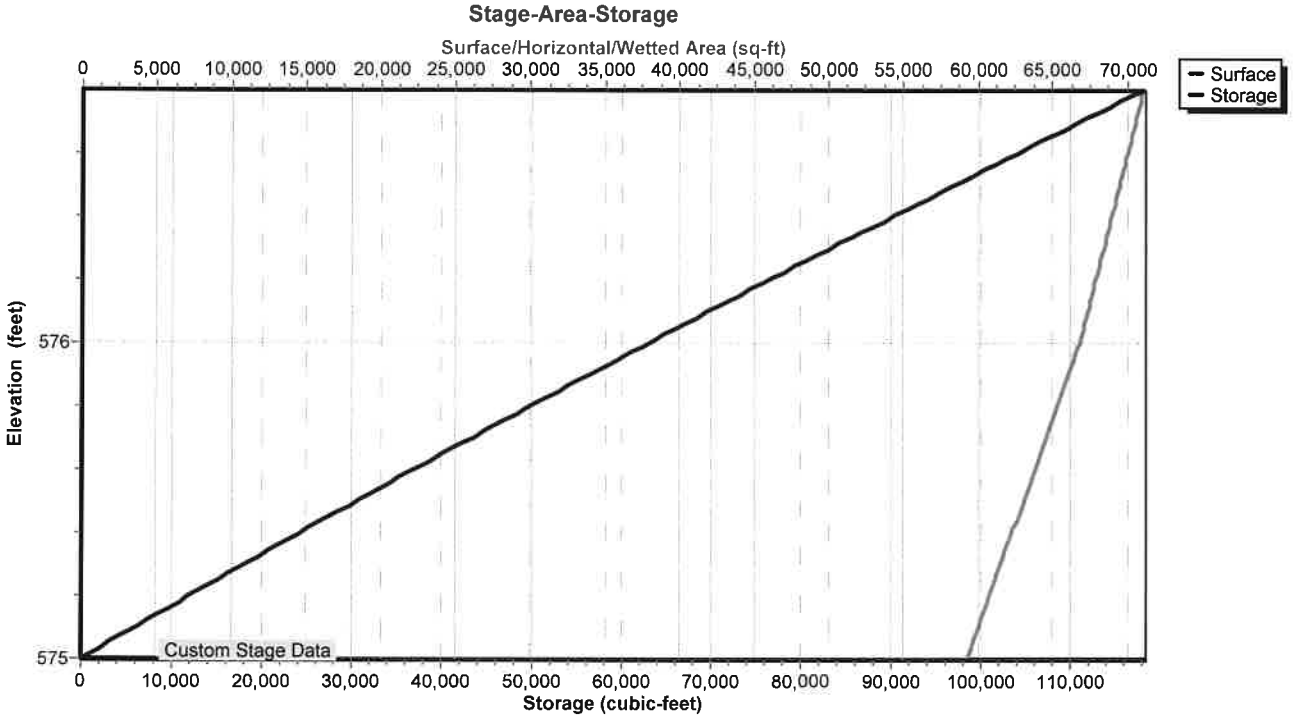


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.02	25	575.00	0.00	0.00	0.00
6.00	0.13	556	575.01	0.00	0.00	0.00
8.00	0.25	1,914	575.03	0.00	0.00	0.00
10.00	0.57	4,720	575.08	0.01	0.01	0.00
12.00	**43.89**	**31,253**	**575.51**	**0.38**	**0.38**	**0.00**
14.00	**0.94**	**61,894**	**575.98**	**1.43**	**0.71**	**0.72**
16.00	0.56	59,972	575.95	0.73	0.70	0.03
18.00	0.42	58,398	575.93	0.69	0.69	0.00
20.00	0.31	56,130	575.90	0.67	0.67	0.00
22.00	0.28	53,450	575.86	0.65	0.65	0.00
24.00	0.25	50,762	575.81	0.63	0.63	0.00
26.00	0.00	46,581	575.75	0.59	0.59	0.00
28.00	0.00	42,588	575.69	0.52	0.52	0.00
30.00	0.00	38,979	575.63	0.49	0.49	0.00
32.00	0.00	35,609	575.58	0.45	0.45	0.00
34.00	0.00	32,555	575.53	0.40	0.40	0.00
36.00	0.00	29,827	575.49	0.36	0.36	0.00
38.00	0.00	27,407	575.45	0.32	0.32	0.00
40.00	0.00	25,264	575.42	0.28	0.28	0.00
42.00	0.00	23,368	575.39	0.25	0.25	0.00
44.00	0.00	21,686	575.36	0.22	0.22	0.00
46.00	0.00	20,191	575.33	0.20	0.20	0.00
48.00	0.00	18,858	575.31	0.17	0.17	0.00
50.00	0.00	17,665	575.29	0.16	0.16	0.00
52.00	0.00	16,594	575.28	0.14	0.14	0.00
54.00	0.00	15,630	575.26	0.13	0.13	0.00
56.00	0.00	14,758	575.25	0.12	0.12	0.00
58.00	0.00	13,967	575.23	0.10	0.10	0.00
60.00	0.00	13,248	575.22	0.10	0.10	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

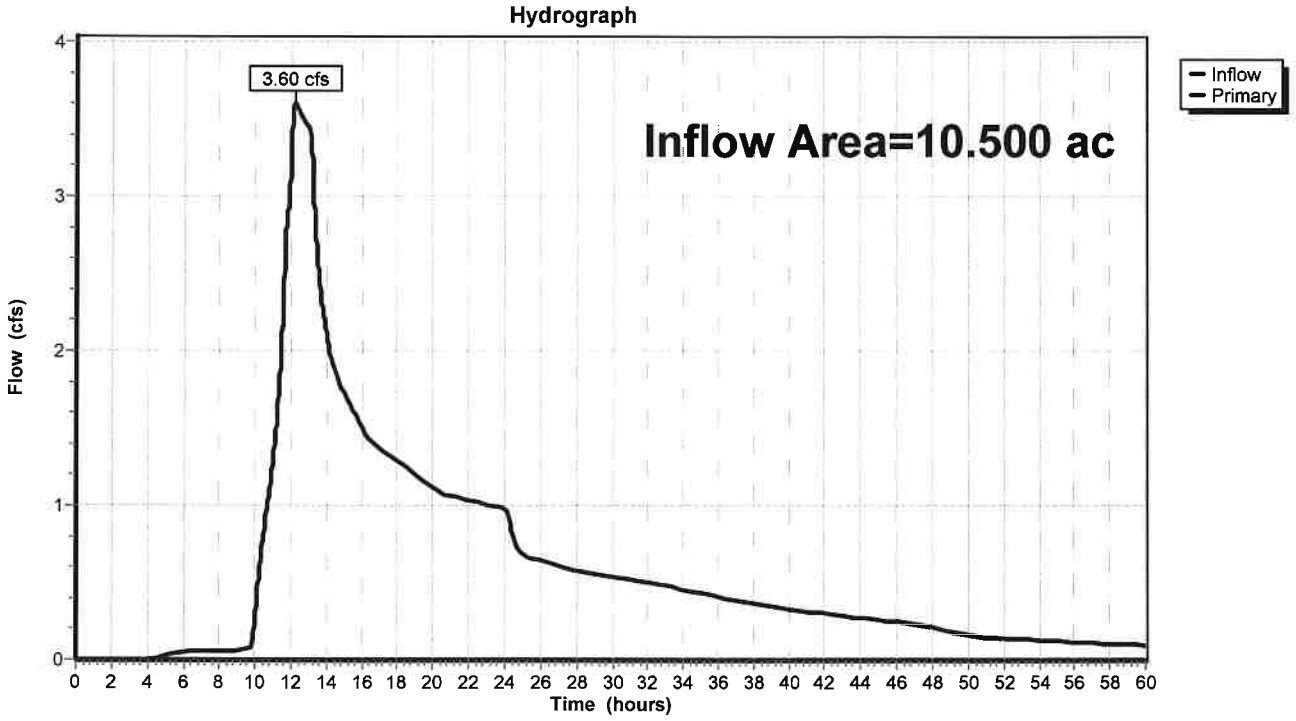
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 3.23" for 100-Year event
Inflow = 3.60 cfs @ 12.19 hrs, Volume= 2.829 af
Primary = 3.60 cfs @ 12.19 hrs, Volume= 2.829 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

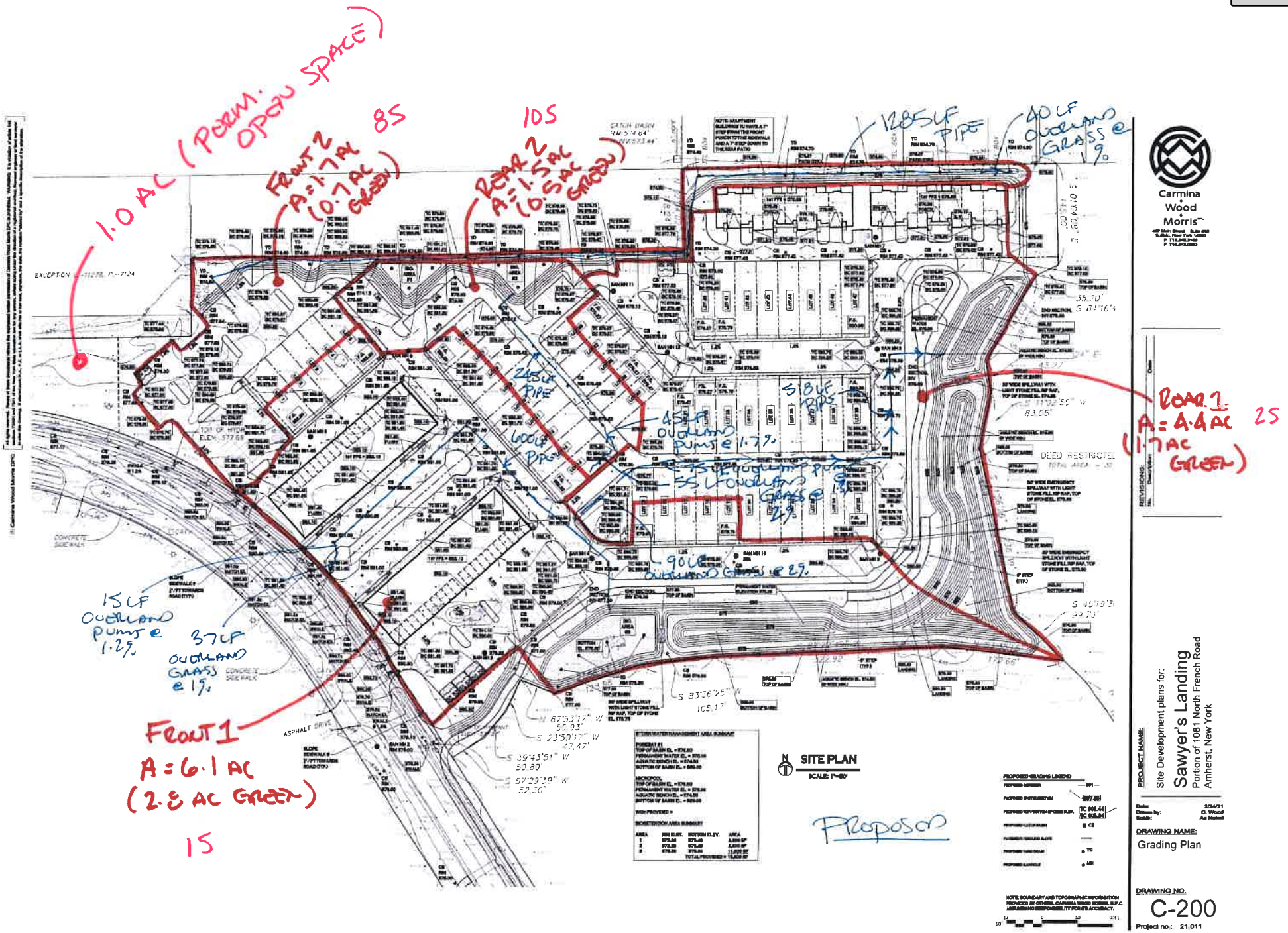
Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.14	0.00	0.14
1.00	0.00	0.00	0.00	53.00	0.13	0.00	0.13
2.00	0.00	0.00	0.00	54.00	0.13	0.00	0.13
3.00	0.00	0.00	0.00	55.00	0.12	0.00	0.12
4.00	0.00	0.00	0.00	56.00	0.12	0.00	0.12
5.00	0.03	0.00	0.03	57.00	0.11	0.00	0.11
6.00	0.05	0.00	0.05	58.00	0.10	0.00	0.10
7.00	0.05	0.00	0.05	59.00	0.10	0.00	0.10
8.00	0.05	0.00	0.05	60.00	0.10	0.00	0.10
9.00	0.06	0.00	0.06				
10.00	0.30	0.00	0.30				
11.00	1.31	0.00	1.31				
12.00	**3.29**	0.00	**3.29**				
13.00	**3.44**	0.00	**3.44**				
14.00	2.10	0.00	2.10				
15.00	1.72	0.00	1.72				
16.00	1.51	0.00	1.51				
17.00	1.37	0.00	1.37				
18.00	1.29	0.00	1.29				
19.00	1.20	0.00	1.20				
20.00	1.11	0.00	1.11				
21.00	1.06	0.00	1.06				
22.00	1.03	0.00	1.03				
23.00	1.01	0.00	1.01				
24.00	0.98	0.00	0.98				
25.00	0.68	0.00	0.68				
26.00	0.64	0.00	0.64				
27.00	0.61	0.00	0.61				
28.00	0.58	0.00	0.58				
29.00	0.55	0.00	0.55				
30.00	0.54	0.00	0.54				
31.00	0.52	0.00	0.52				
32.00	0.50	0.00	0.50				
33.00	0.48	0.00	0.48				
34.00	0.45	0.00	0.45				
35.00	0.43	0.00	0.43				
36.00	0.41	0.00	0.41				
37.00	0.39	0.00	0.39				
38.00	0.37	0.00	0.37				
39.00	0.35	0.00	0.35				
40.00	0.33	0.00	0.33				
41.00	0.32	0.00	0.32				
42.00	0.30	0.00	0.30				
43.00	0.28	0.00	0.28				
44.00	0.27	0.00	0.27				
45.00	0.26	0.00	0.26				
46.00	0.25	0.00	0.25				
47.00	0.24	0.00	0.24				
48.00	0.21	0.00	0.21				
49.00	0.18	0.00	0.18				
50.00	0.16	0.00	0.16				
51.00	0.15	0.00	0.15				

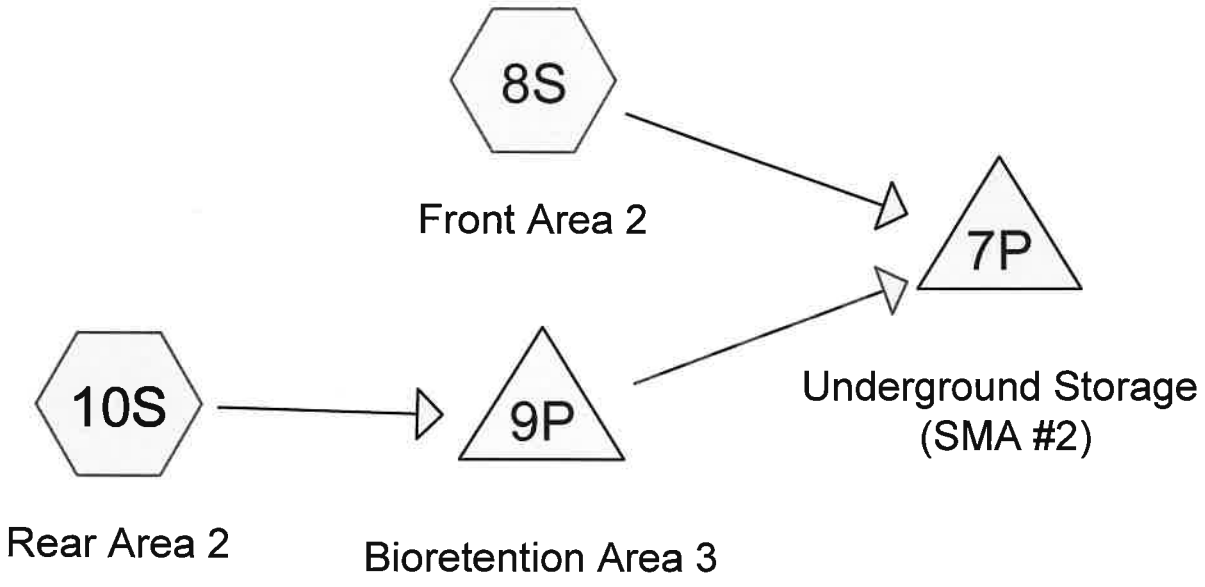
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Proposed Runoff - West

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Subcat Reach Pond Link

Routing Diagram for 21.011 Proposed
Prepared by Hewlett-Packard Company, Printed 3/4/2021
HydroCAD® 10.00-18 s/n 05019 © 2016 HydroCAD Software Solutions LLC

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Pond 7P: Underground Storage

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	2.40	0.33	570.29	4,537
2-Year	4.15	0.68	570.46	5,990
5-Year	7.03	1.05	570.79	8,639
10-Year	9.17	1.28	571.13	11,342
25-Year	11.11	1.61	571.73	15,804
50-Year	12.80	3.61	572.23	18,836
100-Year	**14.92**	**4.83**	**572.92**	**21,772**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.200	80	>75% Grass cover, Good, HSG D (8S, 10S)
1.200	98	Paved parking, HSG D (8S, 10S)
0.800	98	Roofs, HSG D (8S, 10S)
3.200	**91**	**TOTAL AREA**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.200	HSG D	8S, 10S
0.000	Other	
3.200		**TOTAL AREA**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchmer Numbers
0.000	0.000	0.000	1.200	0.000	1.200	>75% Grass cover, Good	8S, 10S
0.000	0.000	0.000	1.200	0.000	1.200	Paved parking	8S, 10S
0.000	0.000	0.000	0.800	0.000	0.800	Roofs	8S, 10S
0.000	**0.000**	**0.000**	**3.200**	**0.000**	**3.200**	**TOTAL AREA**	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=1.04"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=2.36 cfs 0.148 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=1.11"
Flow Length=345' Tc=9.1 min CN=92 Runoff=2.63 cfs 0.139 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=570.29' Storage=4,537 cf Inflow=2.40 cfs 0.287 af
Outflow=0.33 cfs 0.243 af

Pond 9P: Bioretention Area 3 Peak Elev=574.54' Storage=2,922 cf Inflow=2.63 cfs 0.139 af
Outflow=0.43 cfs 0.139 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.287 af Average Runoff Depth = 1.08"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

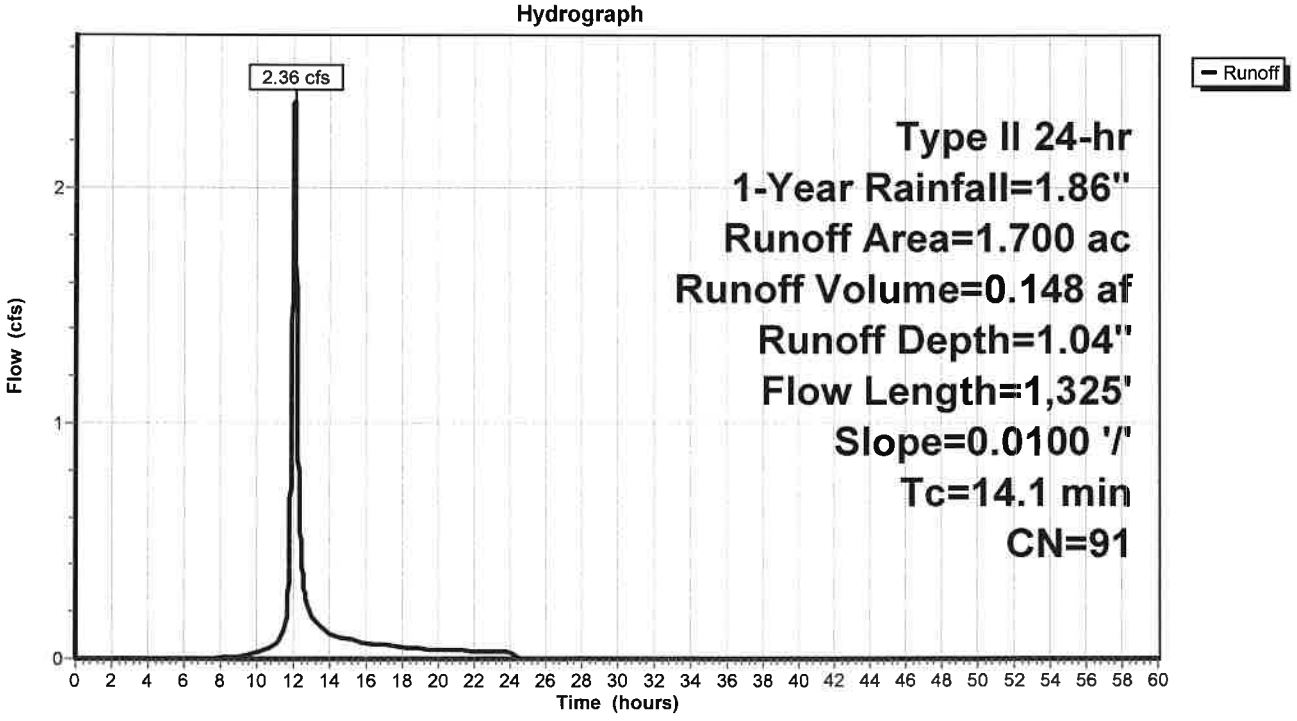
Runoff = 2.36 cfs @ 12.06 hrs, Volume= 0.148 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.00
9.00	0.27	0.01	0.01
10.00	0.34	0.02	0.02
11.00	0.44	0.05	0.07
12.00	1.23	0.53	**2.04**
13.00	1.44	0.69	**0.18**
14.00	1.53	0.76	0.11
15.00	1.59	0.81	0.08
16.00	1.64	0.85	0.07
17.00	1.68	0.89	0.06
18.00	1.71	0.92	0.05
19.00	1.74	0.94	0.04
20.00	1.77	0.97	0.04
21.00	1.79	0.99	0.03
22.00	1.82	1.01	0.03
23.00	1.84	1.02	0.03
24.00	**1.86**	**1.04**	0.03
25.00	1.86	1.04	0.00
26.00	1.86	1.04	0.00
27.00	1.86	1.04	0.00
28.00	1.86	1.04	0.00
29.00	1.86	1.04	0.00
30.00	1.86	1.04	0.00
31.00	1.86	1.04	0.00
32.00	1.86	1.04	0.00
33.00	1.86	1.04	0.00
34.00	1.86	1.04	0.00
35.00	1.86	1.04	0.00
36.00	1.86	1.04	0.00
37.00	1.86	1.04	0.00
38.00	1.86	1.04	0.00
39.00	1.86	1.04	0.00
40.00	1.86	1.04	0.00
41.00	1.86	1.04	0.00
42.00	1.86	1.04	0.00
43.00	1.86	1.04	0.00
44.00	1.86	1.04	0.00
45.00	1.86	1.04	0.00
46.00	1.86	1.04	0.00
47.00	1.86	1.04	0.00
48.00	1.86	1.04	0.00
49.00	1.86	1.04	0.00
50.00	1.86	1.04	0.00
51.00	1.86	1.04	0.00
52.00	1.86	1.04	0.00
53.00	1.86	1.04	0.00
54.00	1.86	1.04	0.00
55.00	1.86	1.04	0.00
56.00	1.86	1.04	0.00
57.00	1.86	1.04	0.00
58.00	1.86	1.04	0.00
59.00	1.86	1.04	0.00
60.00	1.86	1.04	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

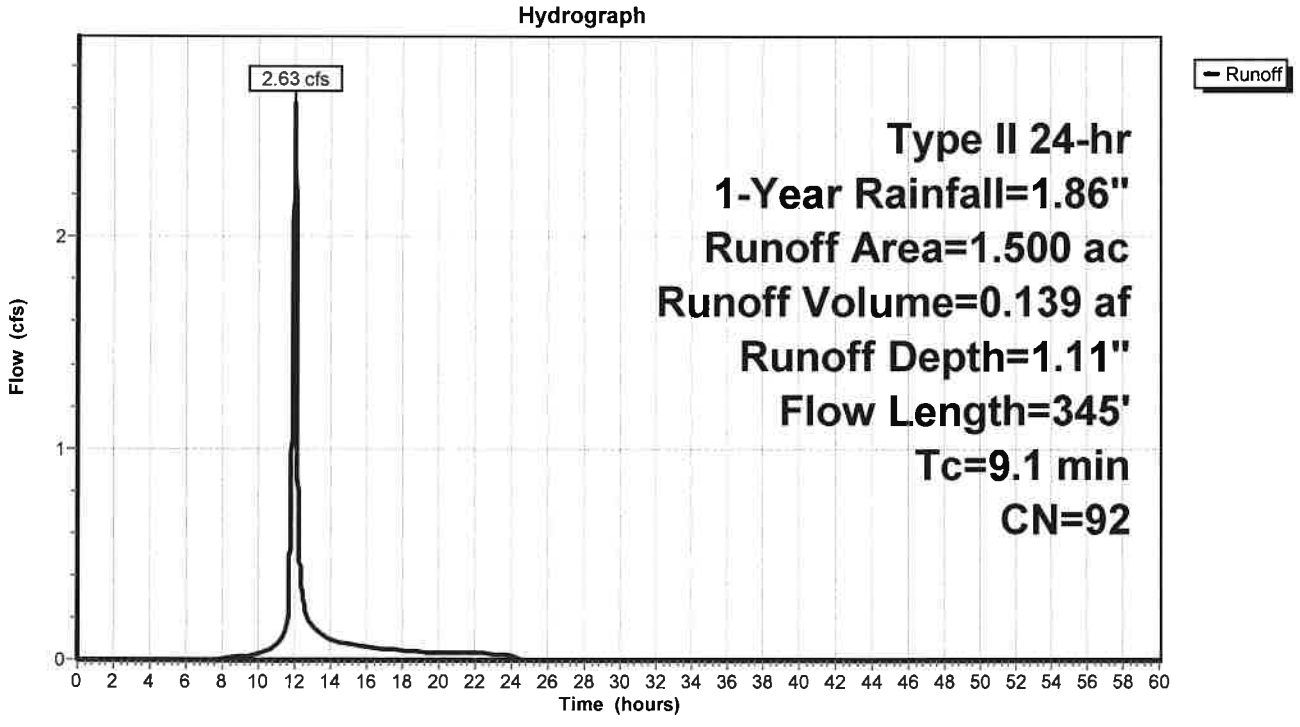
Runoff = 2.63 cfs @ 12.01 hrs, Volume= 0.139 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.01
9.00	0.27	0.01	0.02
10.00	0.34	0.03	0.03
11.00	0.44	0.06	0.07
12.00	1.23	0.58	**2.63**
13.00	1.44	0.75	**0.16**
14.00	1.53	0.82	0.09
15.00	1.59	0.88	0.07
16.00	1.64	0.92	0.06
17.00	1.68	0.95	0.05
18.00	1.71	0.98	0.04
19.00	1.74	1.01	0.04
20.00	1.77	1.03	0.03
21.00	1.79	1.05	0.03
22.00	1.82	1.07	0.03
23.00	1.84	1.09	0.03
24.00	**1.86**	**1.11**	0.03
25.00	1.86	1.11	0.00
26.00	1.86	1.11	0.00
27.00	1.86	1.11	0.00
28.00	1.86	1.11	0.00
29.00	1.86	1.11	0.00
30.00	1.86	1.11	0.00
31.00	1.86	1.11	0.00
32.00	1.86	1.11	0.00
33.00	1.86	1.11	0.00
34.00	1.86	1.11	0.00
35.00	1.86	1.11	0.00
36.00	1.86	1.11	0.00
37.00	1.86	1.11	0.00
38.00	1.86	1.11	0.00
39.00	1.86	1.11	0.00
40.00	1.86	1.11	0.00
41.00	1.86	1.11	0.00
42.00	1.86	1.11	0.00
43.00	1.86	1.11	0.00
44.00	1.86	1.11	0.00
45.00	1.86	1.11	0.00
46.00	1.86	1.11	0.00
47.00	1.86	1.11	0.00
48.00	1.86	1.11	0.00
49.00	1.86	1.11	0.00
50.00	1.86	1.11	0.00
51.00	1.86	1.11	0.00
52.00	1.86	1.11	0.00
53.00	1.86	1.11	0.00
54.00	1.86	1.11	0.00
55.00	1.86	1.11	0.00
56.00	1.86	1.11	0.00
57.00	1.86	1.11	0.00
58.00	1.86	1.11	0.00
59.00	1.86	1.11	0.00
60.00	1.86	1.11	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 1.08" for 1-Year event
Inflow = 2.40 cfs @ 12.06 hrs, Volume= 0.287 af
Outflow = 0.33 cfs @ 13.18 hrs, Volume= 0.243 af, Atten= 86%, Lag= 67.2 min
Primary = 0.33 cfs @ 13.18 hrs, Volume= 0.243 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 570.29' @ 13.18 hrs Surf.Area= 10,145 sf Storage= 4,537 cf

Plug-Flow detention time= 493.3 min calculated for 0.243 af (85% of inflow)
Center-of-Mass det. time= 283.3 min (1,405.6 - 1,122.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

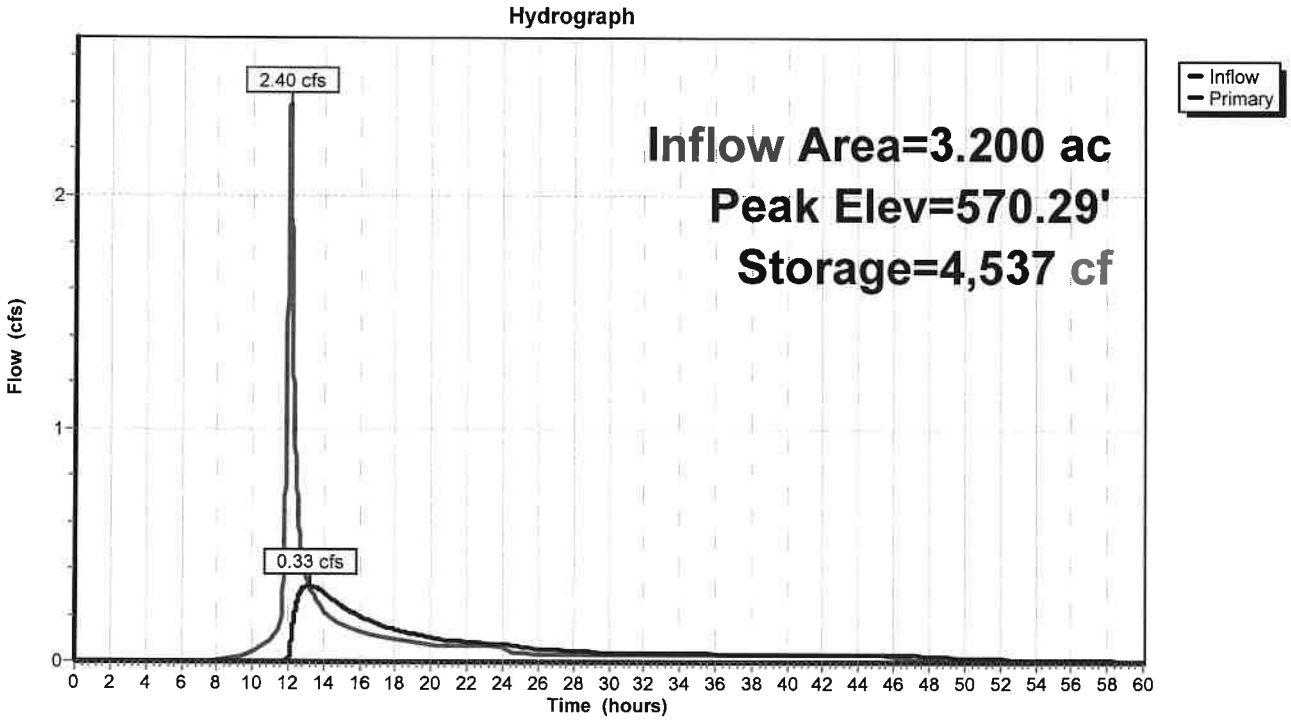
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

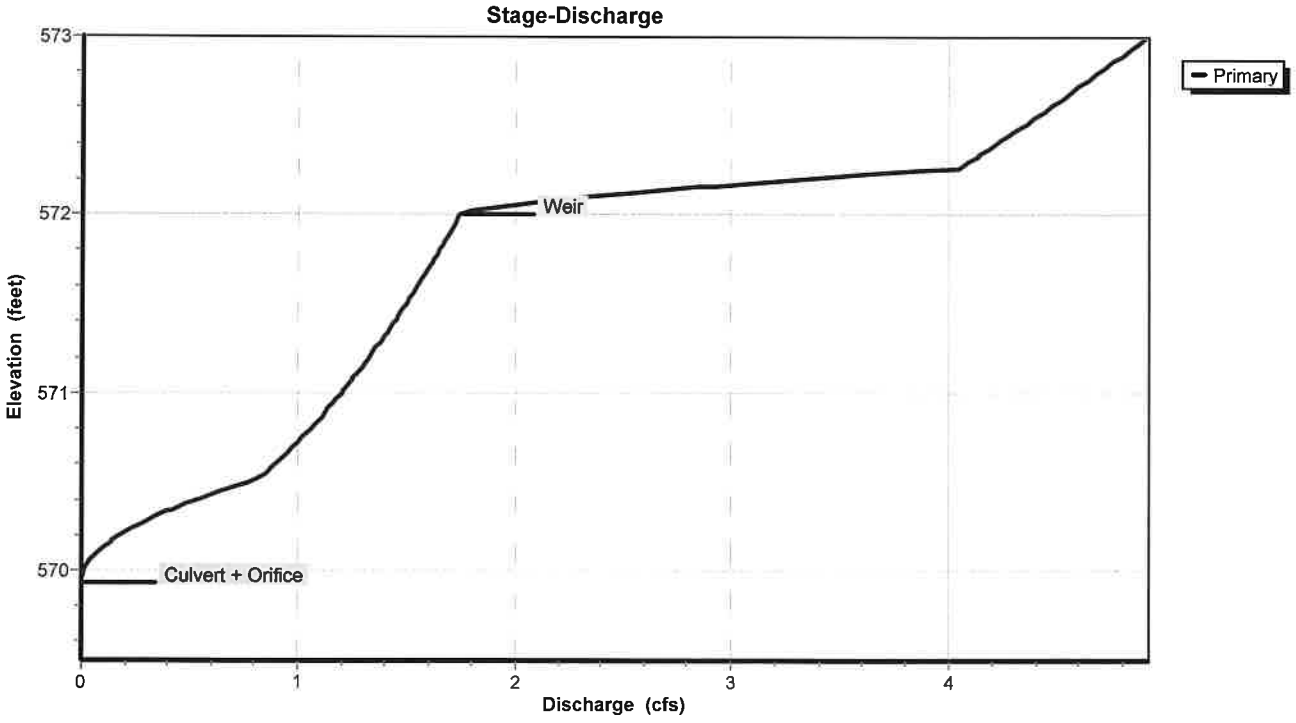
Primary OutFlow Max=0.32 cfs @ 13.18 hrs HW=570.29' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.32 cfs @ 1.88 fps)
  ├**2=Orifice** (Passes 0.32 cfs of 0.56 cfs potential flow)
  └**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

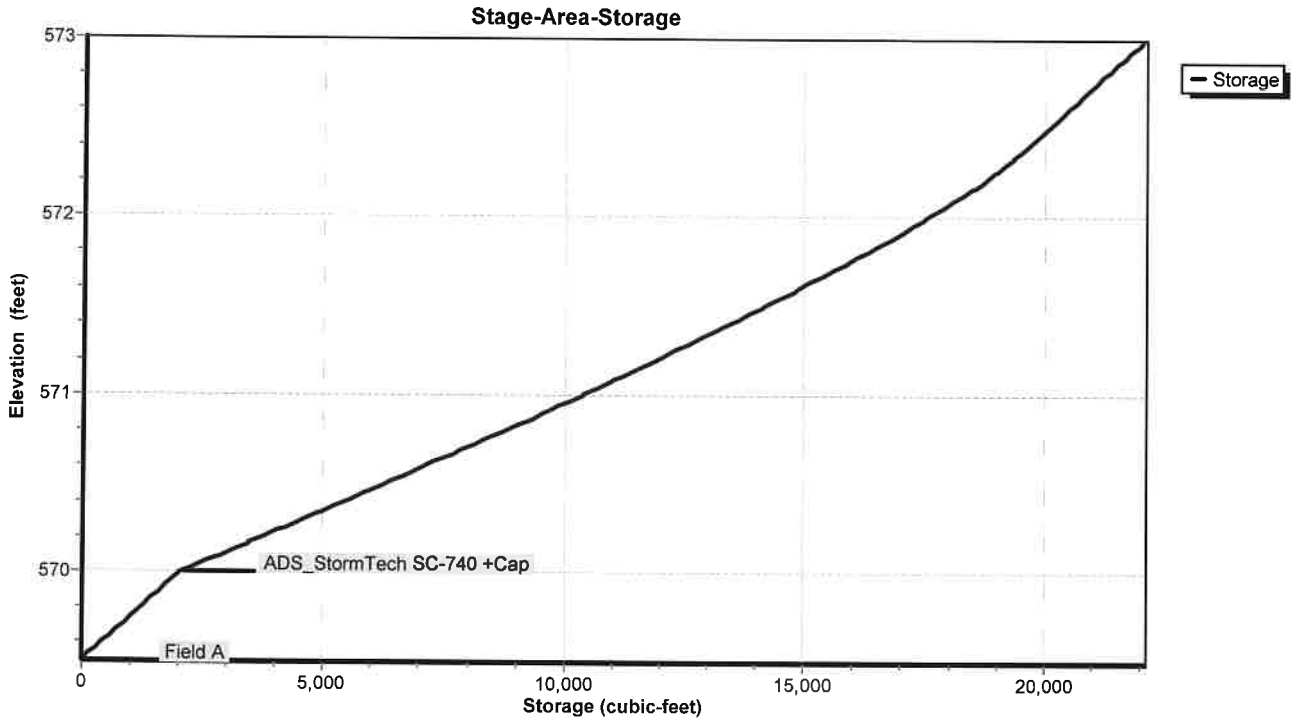


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.00	0	569.50	0.00
8.00	0.00	4	569.50	0.00
10.00	0.04	139	569.53	0.00
12.00	**2.08**	**1,735**	**569.93**	**0.00**
14.00	**0.22**	**4,393**	**570.28**	**0.30**
16.00	0.13	3,835	570.21	0.20
18.00	0.10	3,452	570.17	0.14
20.00	0.07	3,194	570.14	0.10
22.00	0.07	3,023	570.12	0.08
24.00	0.06	2,931	570.10	0.07
26.00	0.03	2,737	570.08	0.06
28.00	0.03	2,618	570.07	0.05
30.00	0.03	2,550	570.06	0.04
32.00	0.03	2,506	570.06	0.04
34.00	0.03	2,476	570.05	0.04
36.00	0.03	2,453	570.05	0.03
38.00	0.03	2,436	570.05	0.03
40.00	0.03	2,422	570.05	0.03
42.00	0.03	2,410	570.04	0.03
44.00	0.03	2,399	570.04	0.03
46.00	0.03	2,388	570.04	0.03
48.00	0.01	2,288	570.03	0.02
50.00	0.00	2,166	570.02	0.02
52.00	0.00	2,066	570.00	0.01
54.00	0.00	1,993	569.99	0.01
56.00	0.00	1,945	569.98	0.01
58.00	0.00	1,910	569.97	0.00
60.00	0.00	1,885	569.96	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)
569.50	0
569.55	203
569.60	406
569.65	609
569.70	812
569.75	1,014
569.80	1,217
569.85	1,420
569.90	1,623
569.95	1,826
570.00	2,029
570.05	2,459
570.10	2,889
570.15	3,318
570.20	3,746
570.25	4,173
570.30	4,598
570.35	5,022
570.40	5,444
570.45	5,865
570.50	6,284
570.55	6,701
570.60	7,116
570.65	7,529
570.70	7,940
570.75	8,349
570.80	8,756
570.85	9,160
570.90	9,562
570.95	9,962
571.00	10,359
571.05	10,754
571.10	11,145
571.15	11,534
571.20	11,919
571.25	12,301
571.30	12,680
571.35	13,056
571.40	13,428
571.45	13,797
571.50	14,161
571.55	14,522
571.60	14,879
571.65	15,230
571.70	15,577
571.75	15,917
571.80	16,252
571.85	16,582
571.90	16,906
571.95	17,224
572.00	17,535
572.05	17,838
572.10	18,133
572.15	18,417
572.20	18,690
572.25	18,946
572.30	19,188
572.35	19,417
572.40	19,637
572.45	19,850
572.50	20,057
572.55	20,260
572.60	20,463
572.65	20,665
572.70	20,868
572.75	21,071
572.80	21,274
572.85	21,477
572.90	21,680
572.95	21,883
573.00	**22,086**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 1.11" for 1-Year event
Inflow = 2.63 cfs @ 12.01 hrs, Volume= 0.139 af
Outflow = 0.43 cfs @ 12.29 hrs, Volume= 0.139 af, Atten= 84%, Lag= 17.0 min
Primary = 0.43 cfs @ 12.29 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.54' @ 12.29 hrs Surf.Area= 5,881 sf Storage= 2,922 cf

Plug-Flow detention time= 615.0 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 615.0 min (1,433.7 - 818.7)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

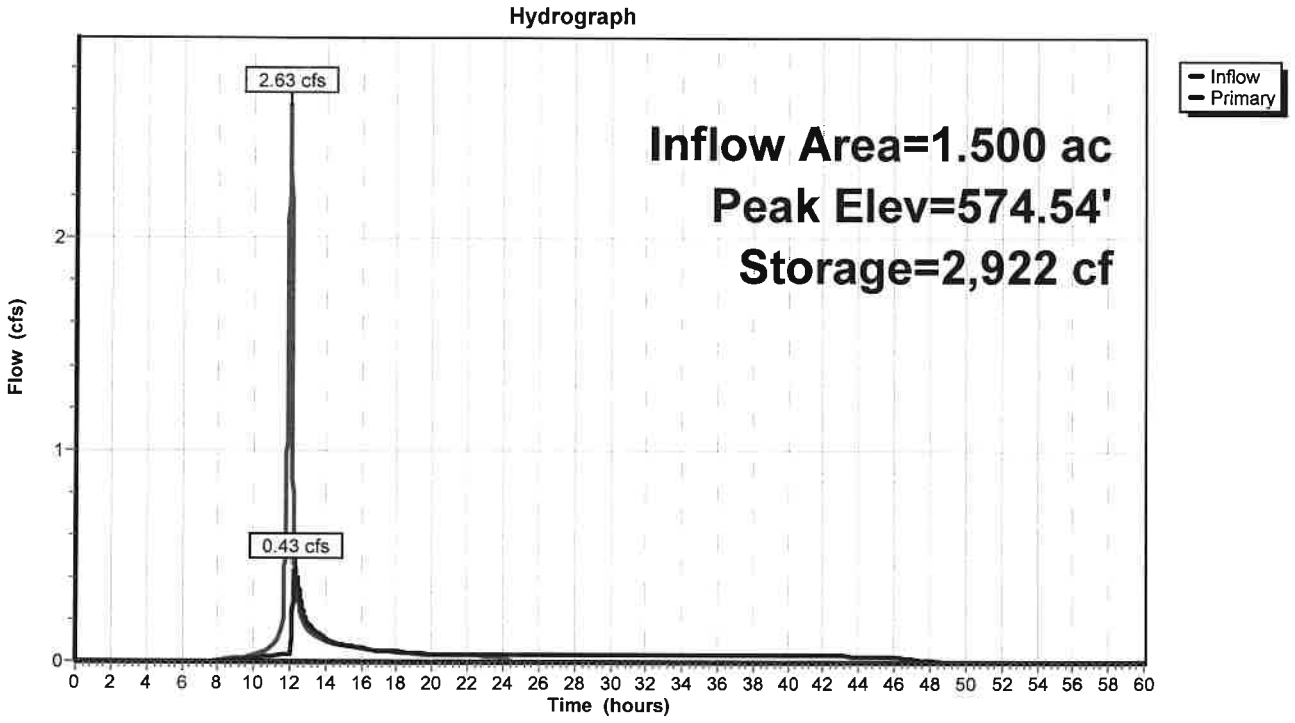
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

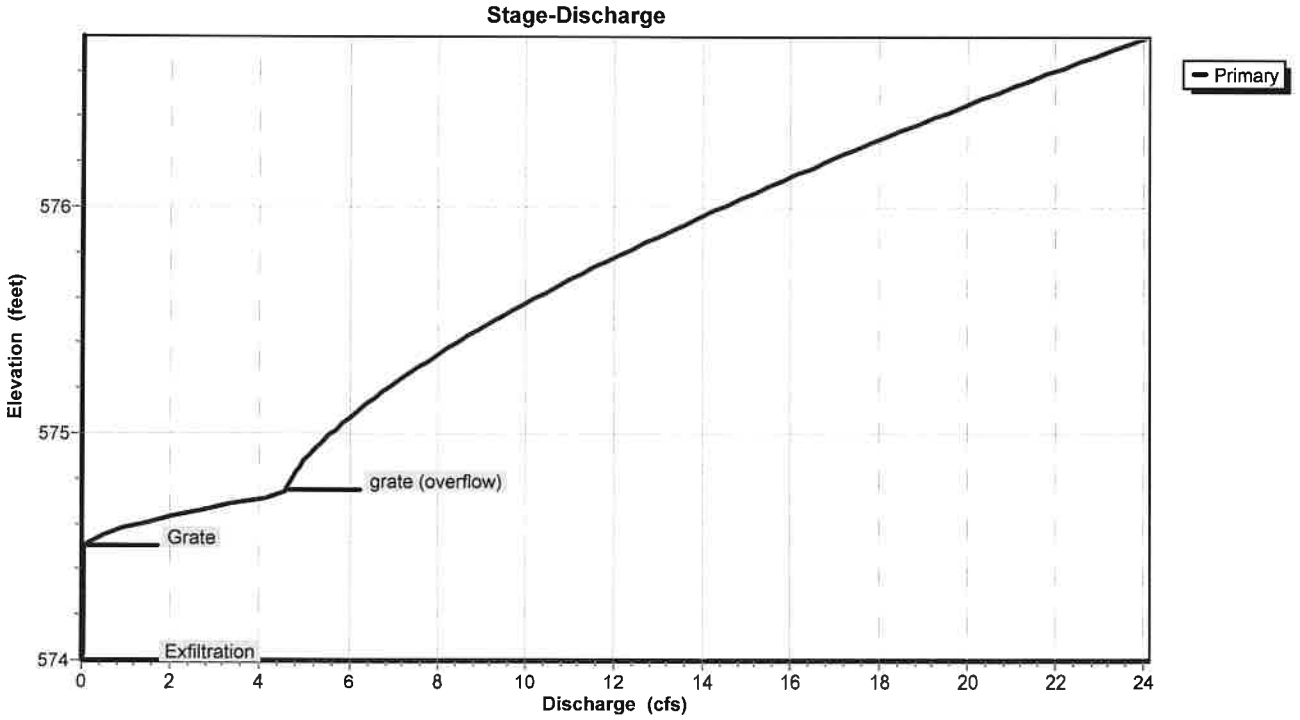
Primary OutFlow Max=0.42 cfs @ 12.29 hrs HW=574.54' (Free Discharge)
- **1=8" pipe** (Passes 0.42 cfs of 4.43 cfs potential flow)
  - **2=Grate** (Weir Controls 0.39 cfs @ 0.69 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

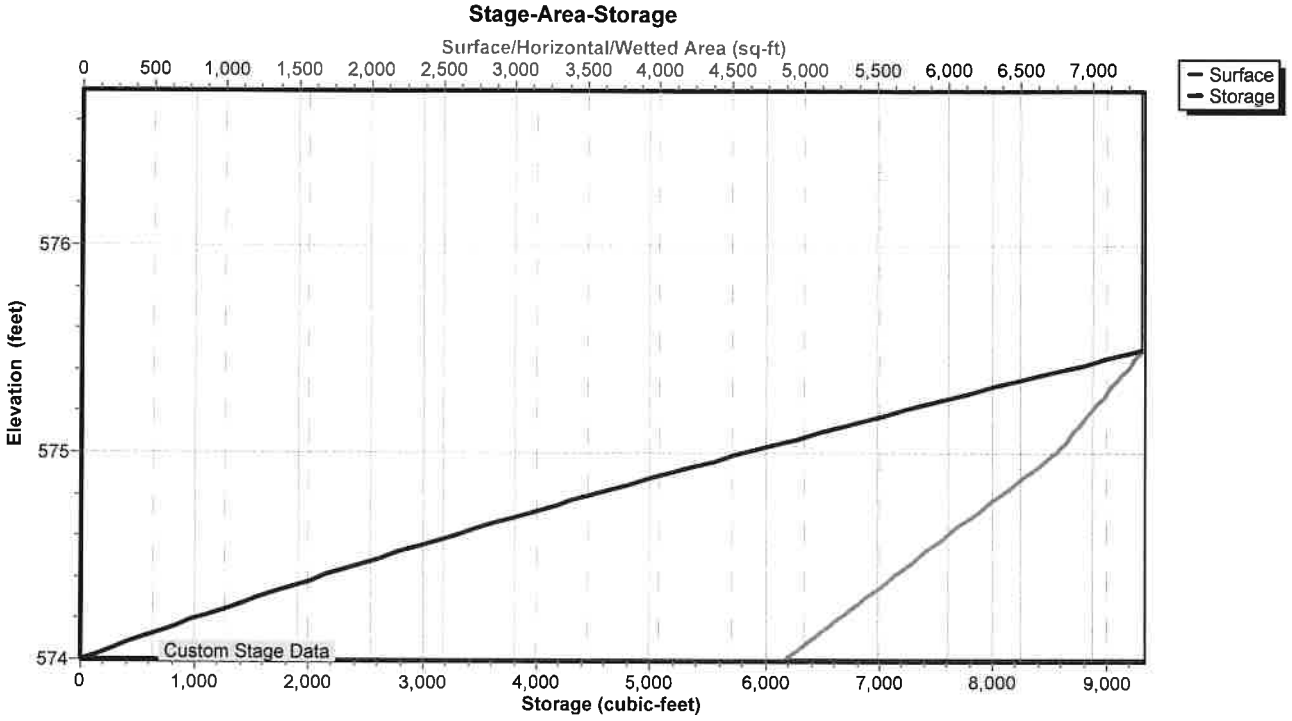


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.00	0	574.00	0.00
8.00	0.01	9	574.00	0.00
10.00	0.03	70	574.01	0.01
12.00	**2.63**	**1,806**	**574.35**	**0.03**
14.00	**0.09**	**2,731**	**574.51**	**0.11**
16.00	0.06	2,688	574.50	0.06
18.00	0.04	2,673	574.50	0.05
20.00	0.03	2,662	574.50	0.03
22.00	0.03	2,636	574.50	0.03
24.00	0.03	2,594	574.49	0.03
26.00	0.00	2,362	574.45	0.03
28.00	0.00	2,119	574.40	0.03
30.00	0.00	1,881	574.36	0.03
32.00	0.00	1,647	574.32	0.03
34.00	0.00	1,417	574.28	0.03
36.00	0.00	1,190	574.23	0.03
38.00	0.00	968	574.19	0.03
40.00	0.00	750	574.15	0.03
42.00	0.00	536	574.11	0.03
44.00	0.00	326	574.07	0.03
46.00	0.00	120	574.02	0.03
48.00	0.00	26	574.01	0.01
50.00	0.00	6	574.00	0.00
52.00	0.00	1	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=1.34"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=3.03 cfs 0.190 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=1.42"
Flow Length=345' Tc=9.1 min CN=92 Runoff=3.32 cfs 0.177 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=570.46' Storage=5,990 cf Inflow=4.15 cfs 0.367 af
Outflow=0.68 cfs 0.324 af

Pond 9P: Bioretention Area 3 Peak Elev=574.60' Storage=3,274 cf Inflow=3.32 cfs 0.177 af
Outflow=1.41 cfs 0.177 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.367 af Average Runoff Depth = 1.38"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

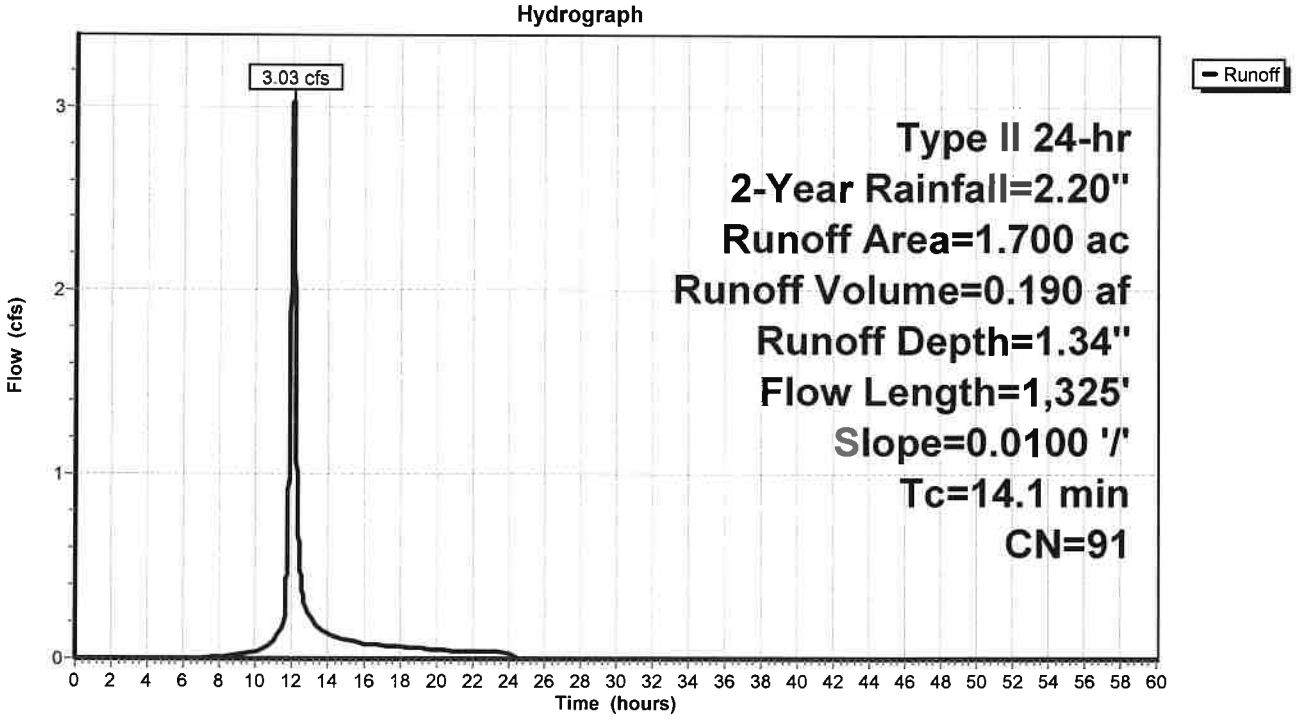
Runoff = 3.03 cfs @ 12.06 hrs, Volume= 0.190 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass**
					Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.00
8.00	0.26	0.00	0.01
9.00	0.32	0.01	0.02
10.00	0.40	0.03	0.04
11.00	0.52	0.08	0.10
12.00	1.46	0.71	**2.64**
13.00	1.70	0.90	**0.23**
14.00	1.80	0.99	0.13
15.00	1.88	1.06	0.10
16.00	1.94	1.11	0.08
17.00	1.98	1.15	0.07
18.00	2.03	1.19	0.06
19.00	2.06	1.22	0.05
20.00	2.09	1.25	0.05
21.00	2.12	1.27	0.04
22.00	2.15	1.30	0.04
23.00	2.18	1.32	0.04
24.00	**2.20**	**1.34**	0.04
25.00	2.20	1.34	0.00
26.00	2.20	1.34	0.00
27.00	2.20	1.34	0.00
28.00	2.20	1.34	0.00
29.00	2.20	1.34	0.00
30.00	2.20	1.34	0.00
31.00	2.20	1.34	0.00
32.00	2.20	1.34	0.00
33.00	2.20	1.34	0.00
34.00	2.20	1.34	0.00
35.00	2.20	1.34	0.00
36.00	2.20	1.34	0.00
37.00	2.20	1.34	0.00
38.00	2.20	1.34	0.00
39.00	2.20	1.34	0.00
40.00	2.20	1.34	0.00
41.00	2.20	1.34	0.00
42.00	2.20	1.34	0.00
43.00	2.20	1.34	0.00
44.00	2.20	1.34	0.00
45.00	2.20	1.34	0.00
46.00	2.20	1.34	0.00
47.00	2.20	1.34	0.00
48.00	2.20	1.34	0.00
49.00	2.20	1.34	0.00
50.00	2.20	1.34	0.00
51.00	2.20	1.34	0.00
52.00	2.20	1.34	0.00
53.00	2.20	1.34	0.00
54.00	2.20	1.34	0.00
55.00	2.20	1.34	0.00
56.00	2.20	1.34	0.00
57.00	2.20	1.34	0.00
58.00	2.20	1.34	0.00
59.00	2.20	1.34	0.00
60.00	2.20	1.34	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

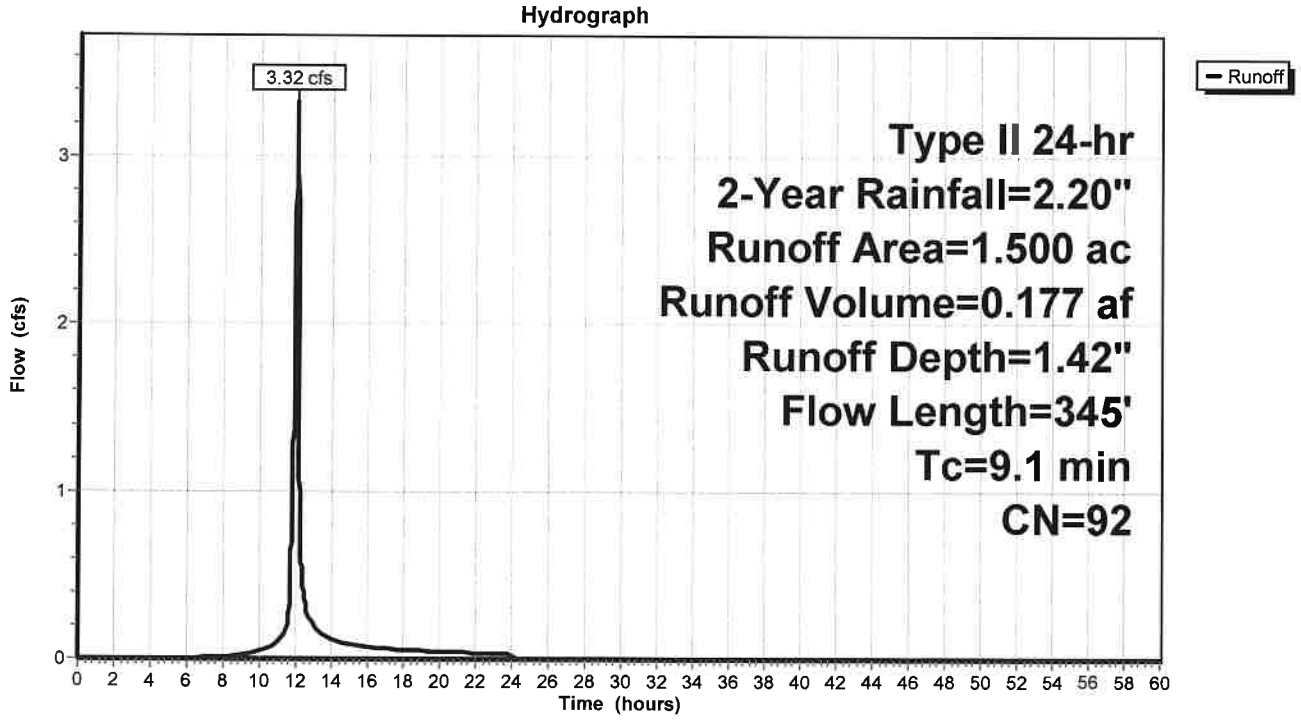
Runoff = 3.32 cfs @ 12.00 hrs, Volume= 0.177 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.01
8.00	0.26	0.01	0.01
9.00	0.32	0.02	0.03
10.00	0.40	0.05	0.04
11.00	0.52	0.10	0.10
12.00	1.46	0.77	**3.32**
13.00	1.70	0.97	0.20
14.00	1.80	1.06	0.12
15.00	1.88	1.13	0.09
16.00	1.94	1.18	0.07
17.00	1.98	1.22	0.06
18.00	2.03	1.26	0.05
19.00	2.06	1.29	0.05
20.00	2.09	1.32	0.04
21.00	2.12	1.35	0.04
22.00	2.15	1.37	0.04
23.00	2.18	1.40	0.03
24.00	**2.20**	**1.42**	0.03
25.00	2.20	1.42	0.00
26.00	2.20	1.42	0.00
27.00	2.20	1.42	0.00
28.00	2.20	1.42	0.00
29.00	2.20	1.42	0.00
30.00	2.20	1.42	0.00
31.00	2.20	1.42	0.00
32.00	2.20	1.42	0.00
33.00	2.20	1.42	0.00
34.00	2.20	1.42	0.00
35.00	2.20	1.42	0.00
36.00	2.20	1.42	0.00
37.00	2.20	1.42	0.00
38.00	2.20	1.42	0.00
39.00	2.20	1.42	0.00
40.00	2.20	1.42	0.00
41.00	2.20	1.42	0.00
42.00	2.20	1.42	0.00
43.00	2.20	1.42	0.00
44.00	2.20	1.42	0.00
45.00	2.20	1.42	0.00
46.00	2.20	1.42	0.00
47.00	2.20	1.42	0.00
48.00	2.20	1.42	0.00
49.00	2.20	1.42	0.00
50.00	2.20	1.42	0.00
51.00	2.20	1.42	0.00
52.00	2.20	1.42	0.00
53.00	2.20	1.42	0.00
54.00	2.20	1.42	0.00
55.00	2.20	1.42	0.00
56.00	2.20	1.42	0.00
57.00	2.20	1.42	0.00
58.00	2.20	1.42	0.00
59.00	2.20	1.42	0.00
60.00	2.20	1.42	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 1.38" for 2-Year event
Inflow = 4.15 cfs @ 12.10 hrs, Volume= 0.367 af
Outflow = 0.68 cfs @ 12.65 hrs, Volume= 0.324 af, Atten= 84%, Lag= 33.2 min
Primary = 0.68 cfs @ 12.65 hrs, Volume= 0.324 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 570.46' @ 12.65 hrs Surf.Area= 10,145 sf Storage= 5,990 cf

Plug-Flow detention time= 401.0 min calculated for 0.324 af (88% of inflow)
Center-of-Mass det. time= 229.7 min (1,287.9 - 1,058.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

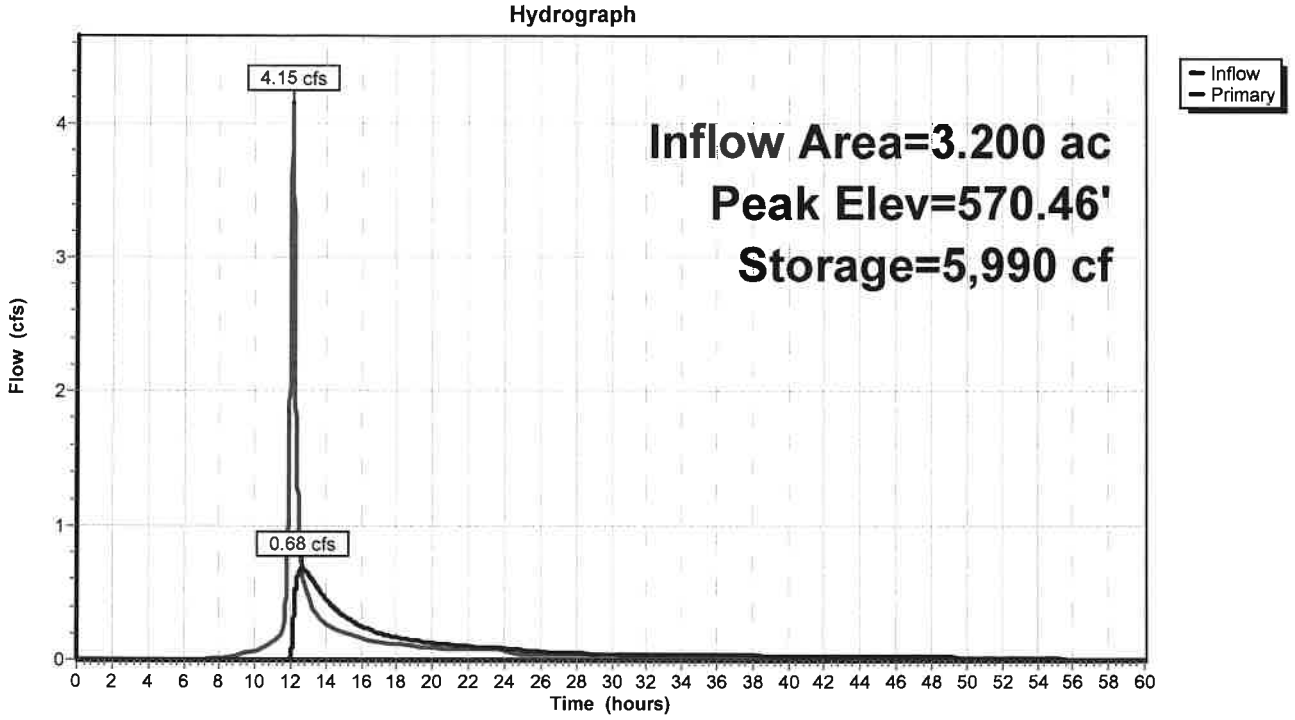
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

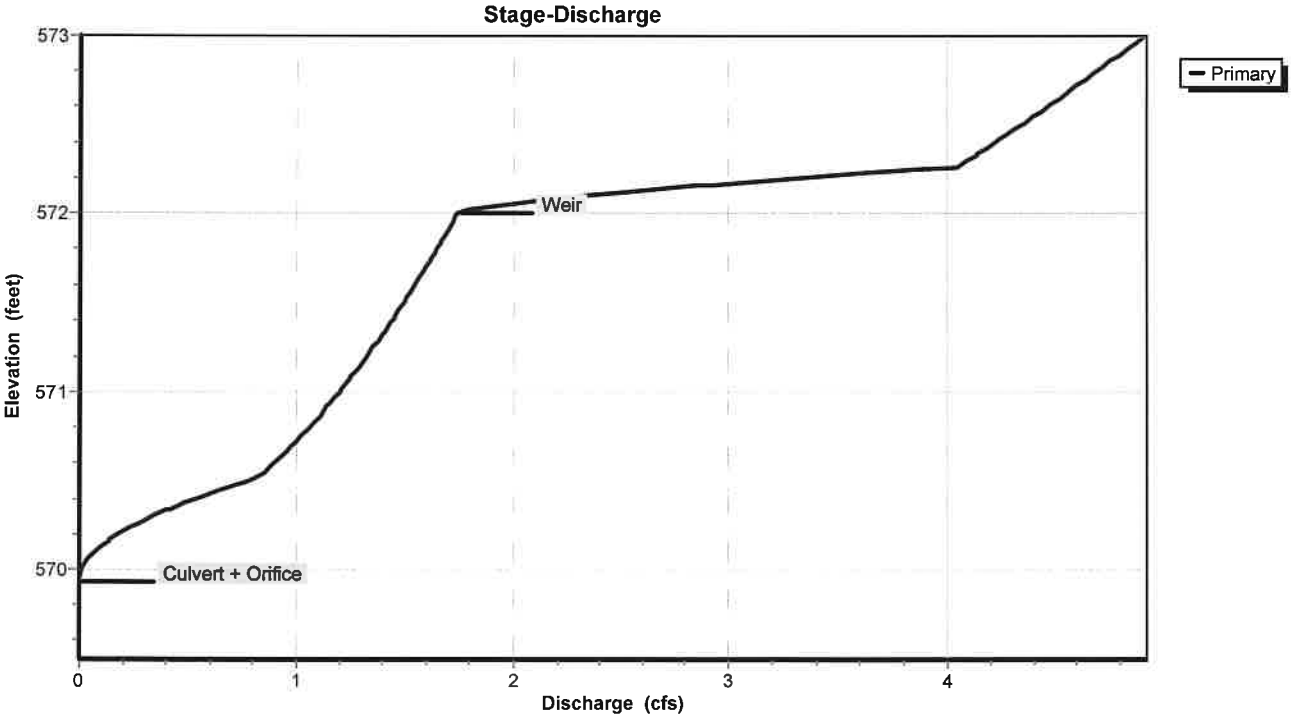
Primary OutFlow Max=0.68 cfs @ 12.65 hrs HW=570.46' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.68 cfs @ 2.31 fps)
└**2=Orifice** (Passes 0.68 cfs of 0.76 cfs potential flow)
└**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

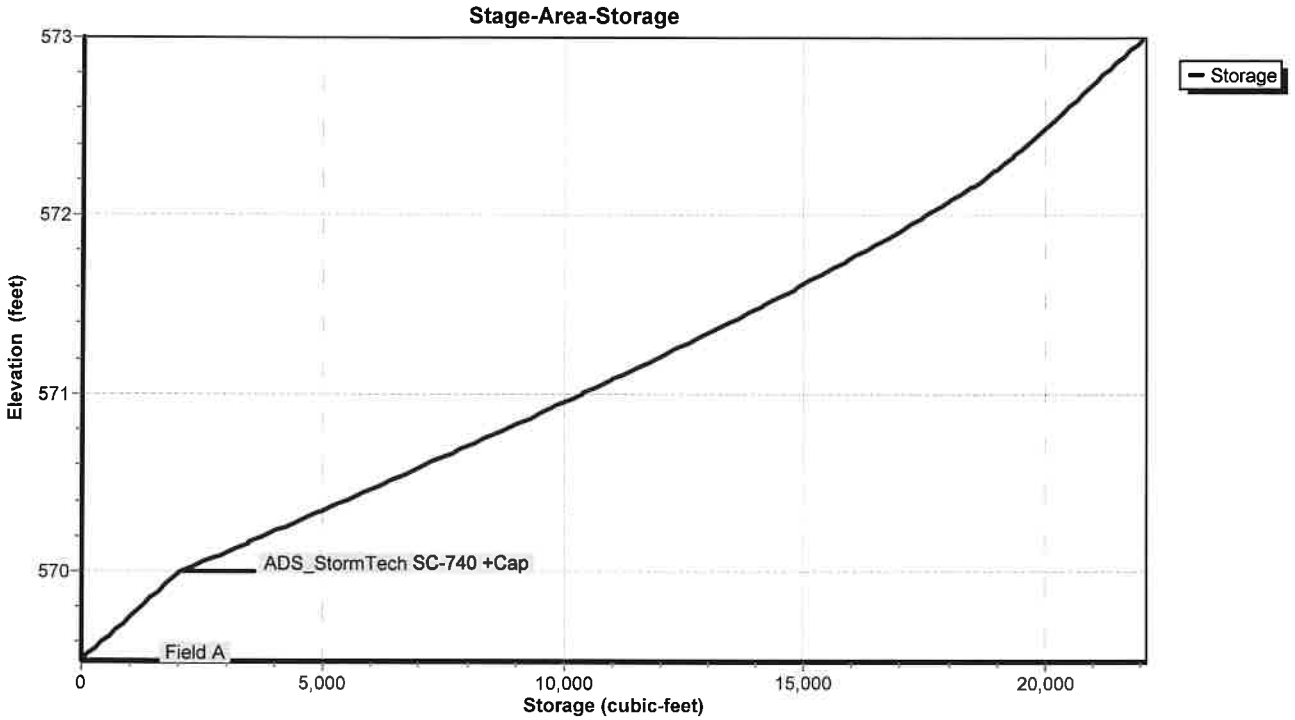


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.00	0	569.50	0.00
8.00	0.01	32	569.51	0.00
10.00	0.06	286	569.57	0.00
12.00	**2.68**	**2,414**	**570.04**	**0.03**
14.00	**0.27**	**5,111**	**570.36**	**0.45**
16.00	0.16	4,155	570.25	0.25
18.00	0.12	3,660	570.19	0.17
20.00	0.09	3,359	570.15	0.12
22.00	0.08	3,149	570.13	0.10
24.00	0.07	3,029	570.12	0.09
26.00	0.03	2,788	570.09	0.06
28.00	0.03	2,647	570.07	0.05
30.00	0.03	2,566	570.06	0.04
32.00	0.03	2,517	570.06	0.04
34.00	0.03	2,484	570.05	0.04
36.00	0.03	2,459	570.05	0.03
38.00	0.03	2,441	570.05	0.03
40.00	0.03	2,426	570.05	0.03
42.00	0.03	2,413	570.04	0.03
44.00	0.03	2,402	570.04	0.03
46.00	0.03	2,392	570.04	0.03
48.00	0.01	2,323	570.03	0.03
50.00	0.00	2,199	570.02	0.02
52.00	0.00	2,091	570.01	0.01
54.00	0.00	2,010	570.00	0.01
56.00	0.00	1,957	569.98	0.01
58.00	0.00	1,919	569.97	0.00
60.00	0.00	1,891	569.97	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)
569.50	0
569.55	203
569.60	406
569.65	609
569.70	812
569.75	1,014
569.80	1,217
569.85	1,420
569.90	1,623
569.95	1,826
570.00	2,029
570.05	2,459
570.10	2,889
570.15	3,318
570.20	3,746
570.25	4,173
570.30	4,598
570.35	5,022
570.40	5,444
570.45	5,865
570.50	6,284
570.55	6,701
570.60	7,116
570.65	7,529
570.70	7,940
570.75	8,349
570.80	8,756
570.85	9,160
570.90	9,562
570.95	9,962
571.00	10,359
571.05	10,754
571.10	11,145
571.15	11,534
571.20	11,919
571.25	12,301
571.30	12,680
571.35	13,056
571.40	13,428
571.45	13,797
571.50	14,161
571.55	14,522
571.60	14,879
571.65	15,230
571.70	15,577
571.75	15,917
571.80	16,252
571.85	16,582
571.90	16,906
571.95	17,224
572.00	17,535
572.05	17,838
572.10	18,133
572.15	18,417
572.20	18,690
572.25	18,946
572.30	19,188
572.35	19,417
572.40	19,637
572.45	19,850
572.50	20,057
572.55	20,260
572.60	20,463
572.65	20,665
572.70	20,868
572.75	21,071
572.80	21,274
572.85	21,477
572.90	21,680
572.95	21,883
573.00	**22,086**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 1.42" for 2-Year event
Inflow = 3.32 cfs @ 12.00 hrs, Volume= 0.177 af
Outflow = 1.41 cfs @ 12.13 hrs, Volume= 0.177 af, Atten= 58%, Lag= 7.6 min
Primary = 1.41 cfs @ 12.13 hrs, Volume= 0.177 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.60' @ 12.13 hrs Surf.Area= 5,993 sf Storage= 3,274 cf

Plug-Flow detention time= 499.6 min calculated for 0.177 af (100% of inflow)
Center-of-Mass det. time= 499.8 min (1,311.6 - 811.8)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

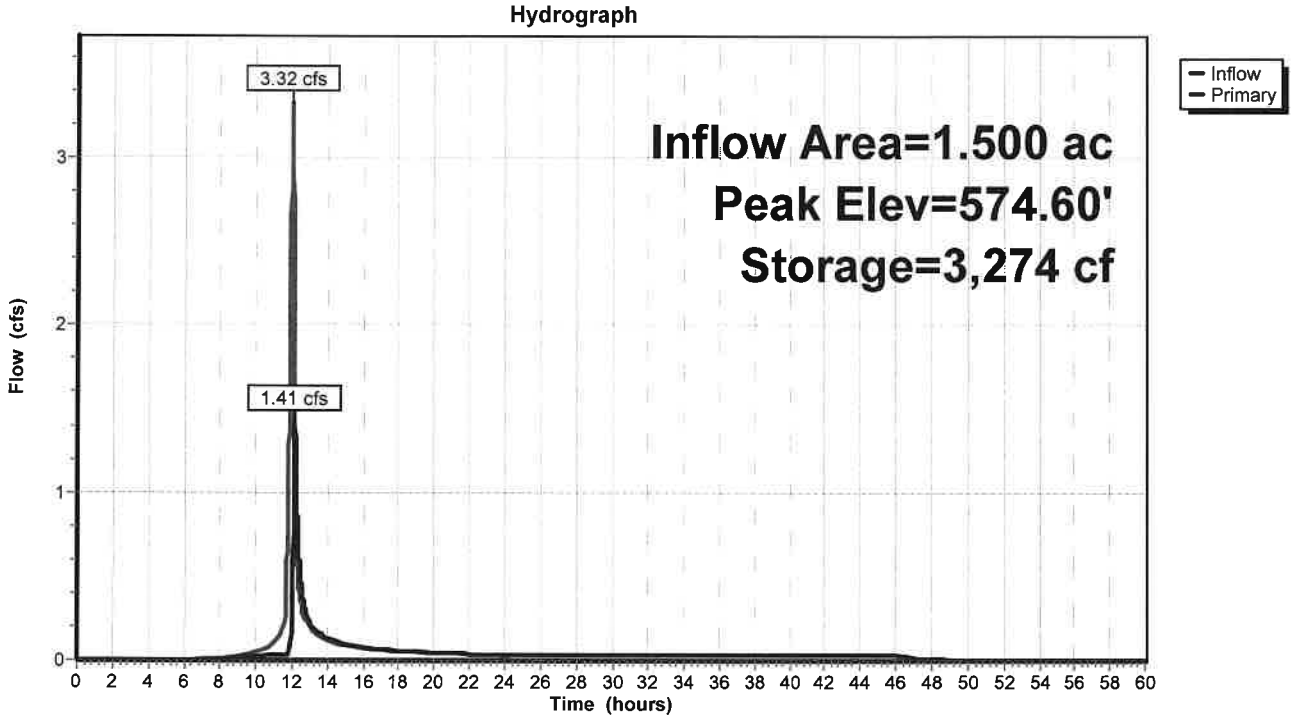
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

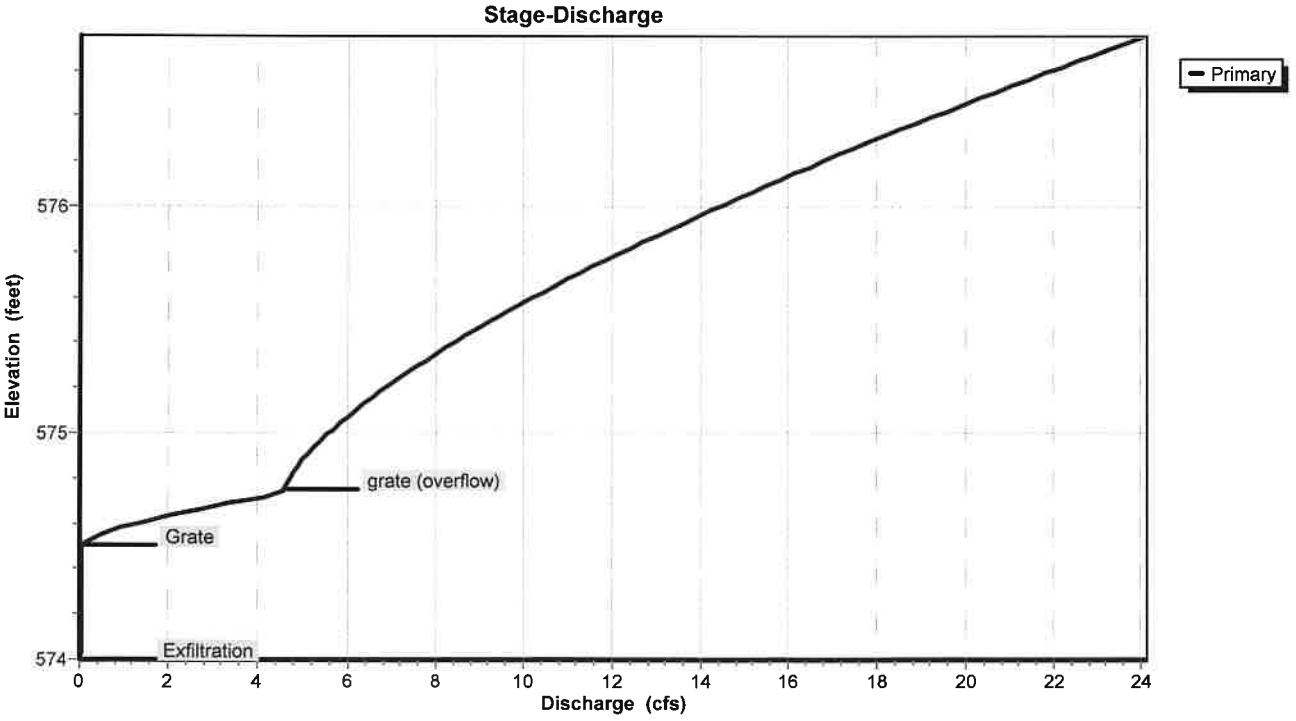
Primary OutFlow Max=1.41 cfs @ 12.13 hrs HW=574.60' (Free Discharge)
- **1=8" pipe** (Passes 1.41 cfs of 4.48 cfs potential flow)
  - **2=Grate** (Weir Controls 1.37 cfs @ 1.05 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

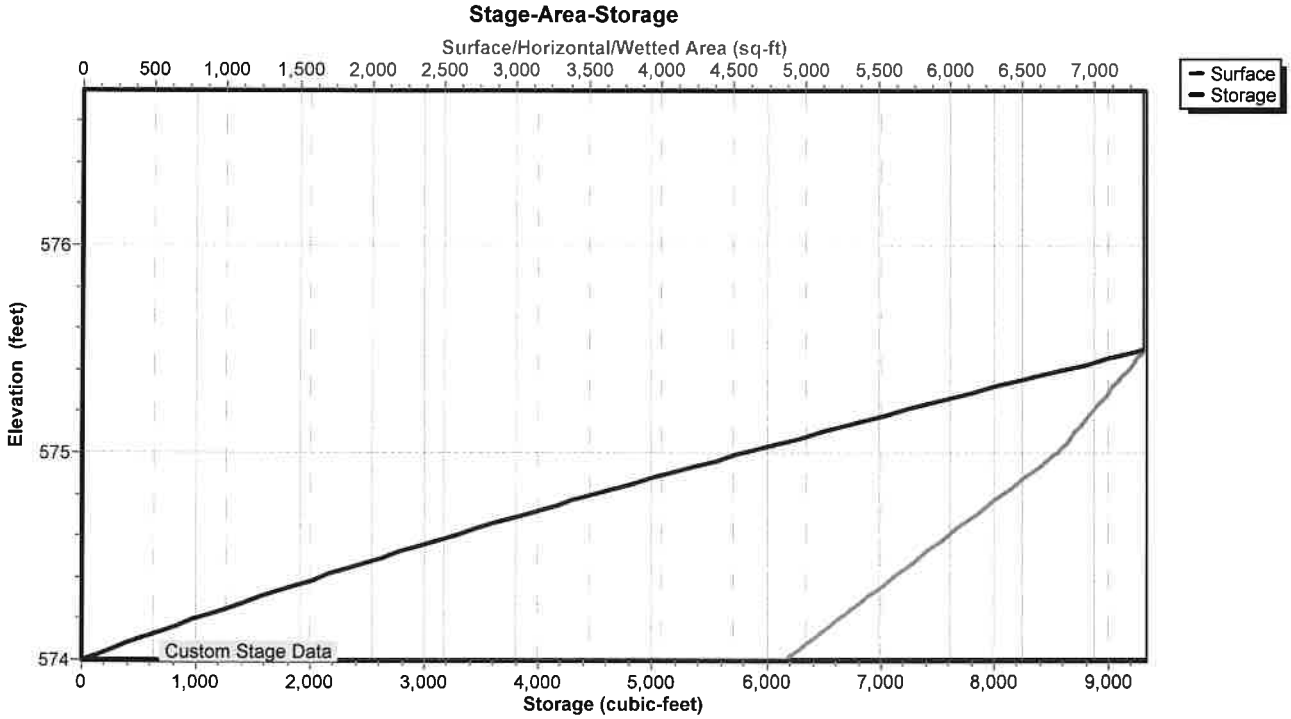


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.00	0	574.00	0.00
8.00	0.01	26	574.01	0.01
10.00	0.04	116	574.02	0.02
12.00	**3.32**	**2,442**	**574.46**	**0.03**
14.00	0.12	**2,754**	**574.52**	**0.13**
16.00	0.07	2,701	574.51	0.08
18.00	0.05	2,683	574.50	0.06
20.00	0.04	2,669	574.50	0.04
22.00	0.04	2,664	574.50	0.04
24.00	0.03	2,661	574.50	0.03
26.00	0.00	2,430	574.46	0.03
28.00	0.00	2,186	574.42	0.03
30.00	0.00	1,947	574.37	0.03
32.00	0.00	1,712	574.33	0.03
34.00	0.00	1,480	574.29	0.03
36.00	0.00	1,253	574.25	0.03
38.00	0.00	1,030	574.20	0.03
40.00	0.00	810	574.16	0.03
42.00	0.00	595	574.12	0.03
44.00	0.00	384	574.08	0.03
46.00	0.00	176	574.04	0.03
48.00	0.00	40	574.01	0.01
50.00	0.00	9	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=1.79"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=4.02 cfs 0.254 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=1.88"
Flow Length=345' Tc=9.1 min CN=92 Runoff=4.35 cfs 0.235 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=570.79' Storage=8,639 cf Inflow=7.03 cfs 0.489 af
Outflow=1.05 cfs 0.446 af

Pond 9P: Bioretention Area 3 Peak Elev=574.68' Storage=3,708 cf Inflow=4.35 cfs 0.235 af
Outflow=3.06 cfs 0.235 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.489 af Average Runoff Depth = 1.83"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

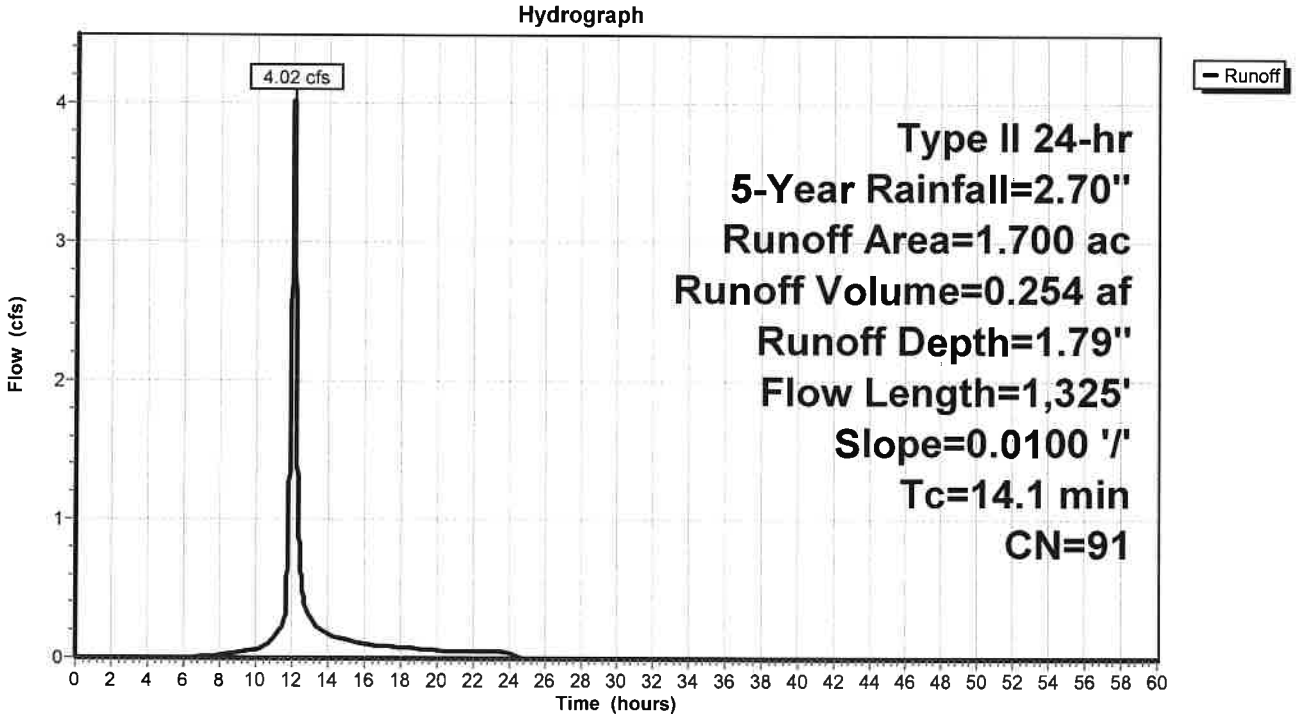
Runoff = 4.02 cfs @ 12.06 hrs, Volume= 0.254 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.00
7.00	0.27	0.00	0.01
8.00	0.32	0.01	0.02
9.00	0.40	0.03	0.04
10.00	0.49	0.07	0.06
11.00	0.63	0.13	0.14
12.00	1.79	0.98	**3.54**
13.00	2.08	1.24	**0.30**
14.00	2.21	1.35	0.17
15.00	2.30	1.43	0.13
16.00	2.38	1.50	0.10
17.00	2.43	1.55	0.09
18.00	2.49	1.60	0.08
19.00	2.53	1.64	0.07
20.00	2.57	1.67	0.06
21.00	2.60	1.71	0.05
22.00	2.64	1.74	0.05
23.00	2.67	1.77	0.05
24.00	**2.70**	**1.79**	0.05
25.00	2.70	1.79	0.00
26.00	2.70	1.79	0.00
27.00	2.70	1.79	0.00
28.00	2.70	1.79	0.00
29.00	2.70	1.79	0.00
30.00	2.70	1.79	0.00
31.00	2.70	1.79	0.00
32.00	2.70	1.79	0.00
33.00	2.70	1.79	0.00
34.00	2.70	1.79	0.00
35.00	2.70	1.79	0.00
36.00	2.70	1.79	0.00
37.00	2.70	1.79	0.00
38.00	2.70	1.79	0.00
39.00	2.70	1.79	0.00
40.00	2.70	1.79	0.00
41.00	2.70	1.79	0.00
42.00	2.70	1.79	0.00
43.00	2.70	1.79	0.00
44.00	2.70	1.79	0.00
45.00	2.70	1.79	0.00
46.00	2.70	1.79	0.00
47.00	2.70	1.79	0.00
48.00	2.70	1.79	0.00
49.00	2.70	1.79	0.00
50.00	2.70	1.79	0.00
51.00	2.70	1.79	0.00
52.00	2.70	1.79	0.00
53.00	2.70	1.79	0.00
54.00	2.70	1.79	0.00
55.00	2.70	1.79	0.00
56.00	2.70	1.79	0.00
57.00	2.70	1.79	0.00
58.00	2.70	1.79	0.00
59.00	2.70	1.79	0.00
60.00	2.70	1.79	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

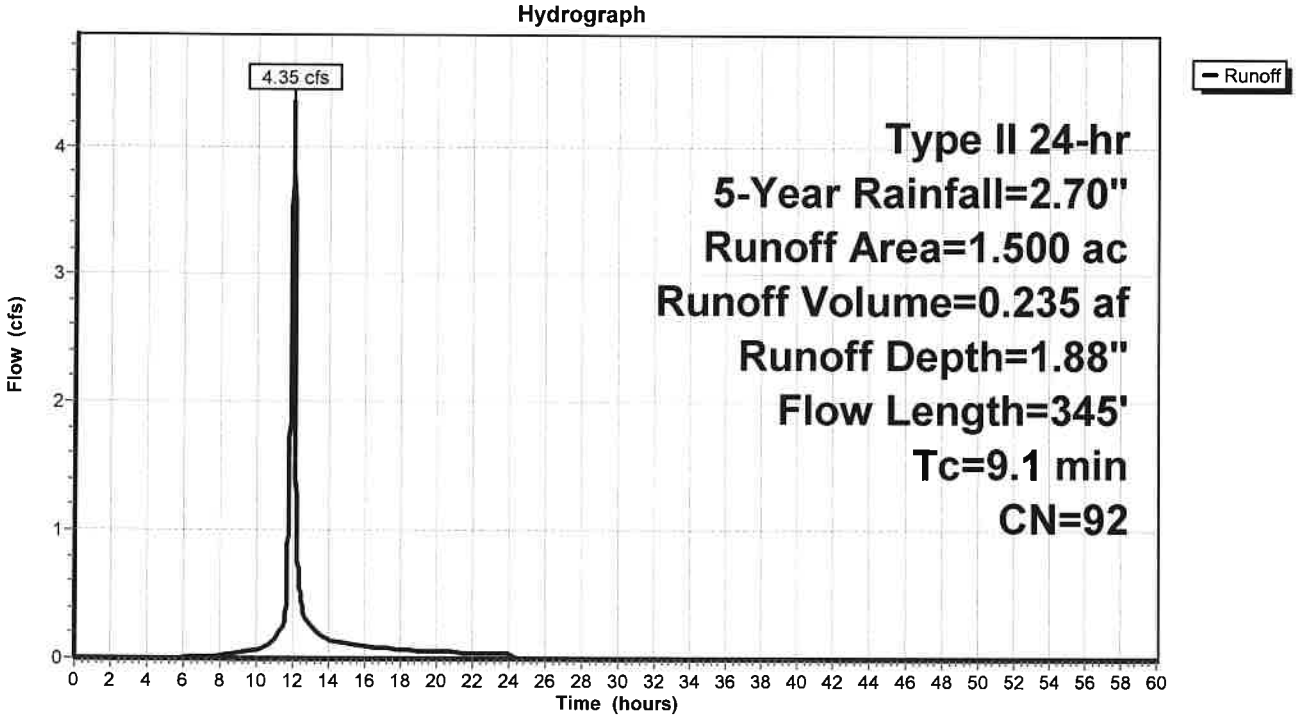
Runoff = 4.35 cfs @ 12.00 hrs, Volume= 0.235 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.01
7.00	0.27	0.01	0.01
8.00	0.32	0.02	0.02
9.00	0.40	0.05	0.04
10.00	0.49	0.08	0.07
11.00	0.63	0.16	0.15
12.00	1.79	1.05	**4.35**
13.00	2.08	1.31	0.25
14.00	2.21	1.43	0.15
15.00	2.30	1.51	0.12
16.00	2.38	1.58	0.09
17.00	2.43	1.63	0.08
18.00	2.49	1.68	0.07
19.00	2.53	1.72	0.06
20.00	2.57	1.76	0.05
21.00	2.60	1.79	0.05
22.00	2.64	1.82	0.05
23.00	2.67	1.85	0.04
24.00	**2.70**	**1.88**	0.04
25.00	2.70	1.88	0.00
26.00	2.70	1.88	0.00
27.00	2.70	1.88	0.00
28.00	2.70	1.88	0.00
29.00	2.70	1.88	0.00
30.00	2.70	1.88	0.00
31.00	2.70	1.88	0.00
32.00	2.70	1.88	0.00
33.00	2.70	1.88	0.00
34.00	2.70	1.88	0.00
35.00	2.70	1.88	0.00
36.00	2.70	1.88	0.00
37.00	2.70	1.88	0.00
38.00	2.70	1.88	0.00
39.00	2.70	1.88	0.00
40.00	2.70	1.88	0.00
41.00	2.70	1.88	0.00
42.00	2.70	1.88	0.00
43.00	2.70	1.88	0.00
44.00	2.70	1.88	0.00
45.00	2.70	1.88	0.00
46.00	2.70	1.88	0.00
47.00	2.70	1.88	0.00
48.00	2.70	1.88	0.00
49.00	2.70	1.88	0.00
50.00	2.70	1.88	0.00
51.00	2.70	1.88	0.00
52.00	2.70	1.88	0.00
53.00	2.70	1.88	0.00
54.00	2.70	1.88	0.00
55.00	2.70	1.88	0.00
56.00	2.70	1.88	0.00
57.00	2.70	1.88	0.00
58.00	2.70	1.88	0.00
59.00	2.70	1.88	0.00
60.00	2.70	1.88	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 1.83" for 5-Year event
Inflow = 7.03 cfs @ 12.07 hrs, Volume= 0.489 af
Outflow = 1.05 cfs @ 12.55 hrs, Volume= 0.446 af, Atten= 85%, Lag= 29.0 min
Primary = 1.05 cfs @ 12.55 hrs, Volume= 0.446 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 570.79' @ 12.55 hrs Surf.Area= 10,145 sf Storage= 8,639 cf

Plug-Flow detention time= 321.6 min calculated for 0.446 af (91% of inflow)
Center-of-Mass det. time= 190.4 min (1,183.7 - 993.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

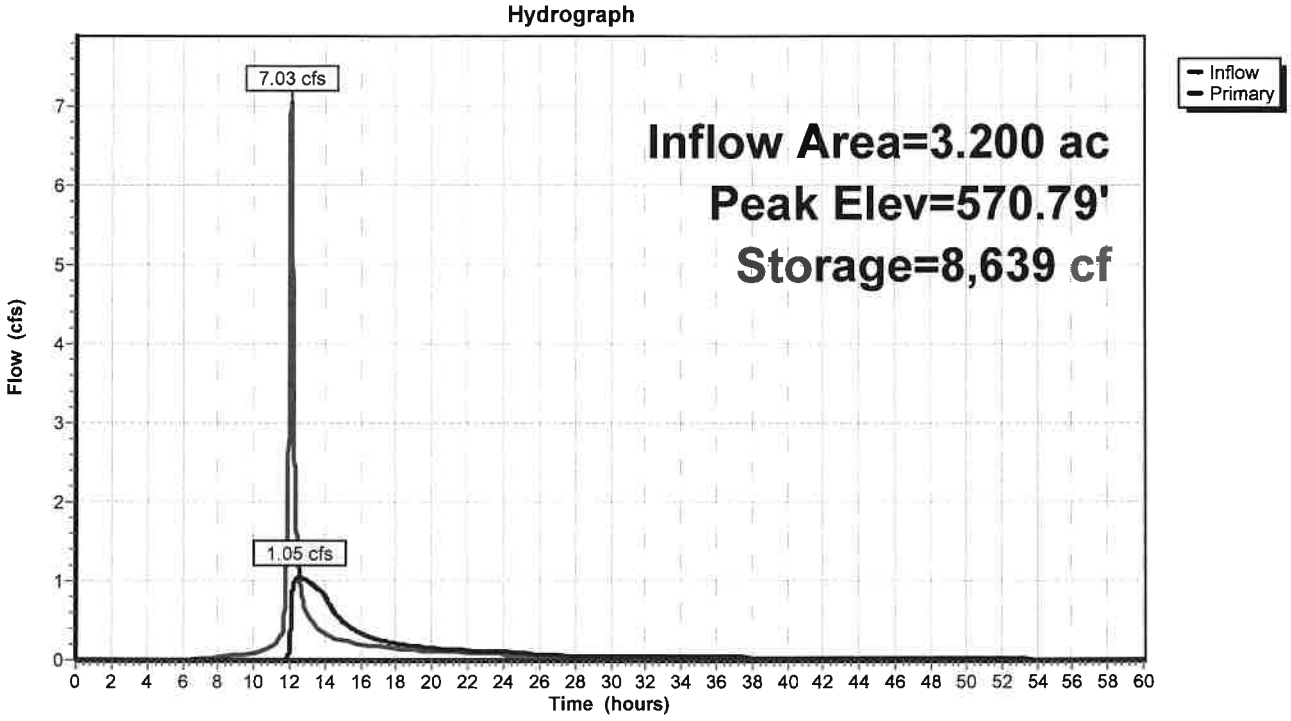
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

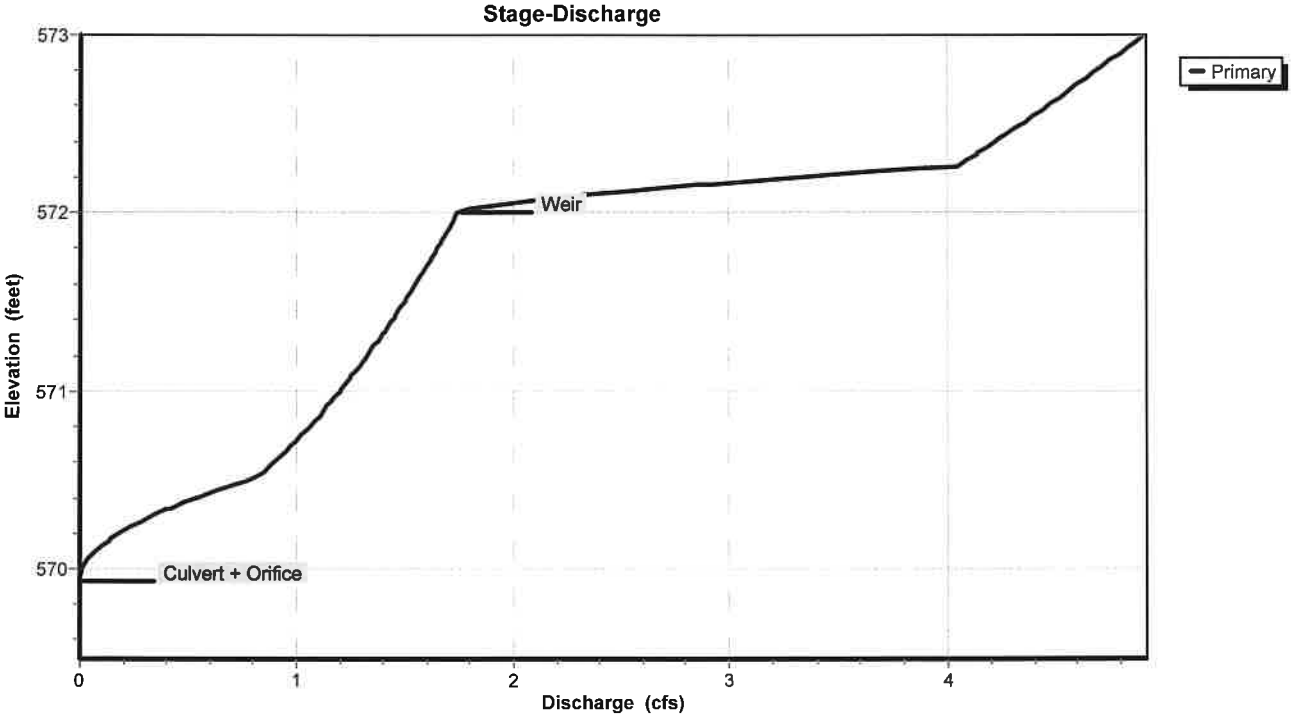
Primary OutFlow Max=1.05 cfs @ 12.55 hrs HW=570.79' (Free Discharge)
└**1=Culvert** (Passes 1.05 cfs of 1.53 cfs potential flow)
└**2=Orifice** (Orifice Controls 1.05 cfs @ 4.00 fps)
└**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

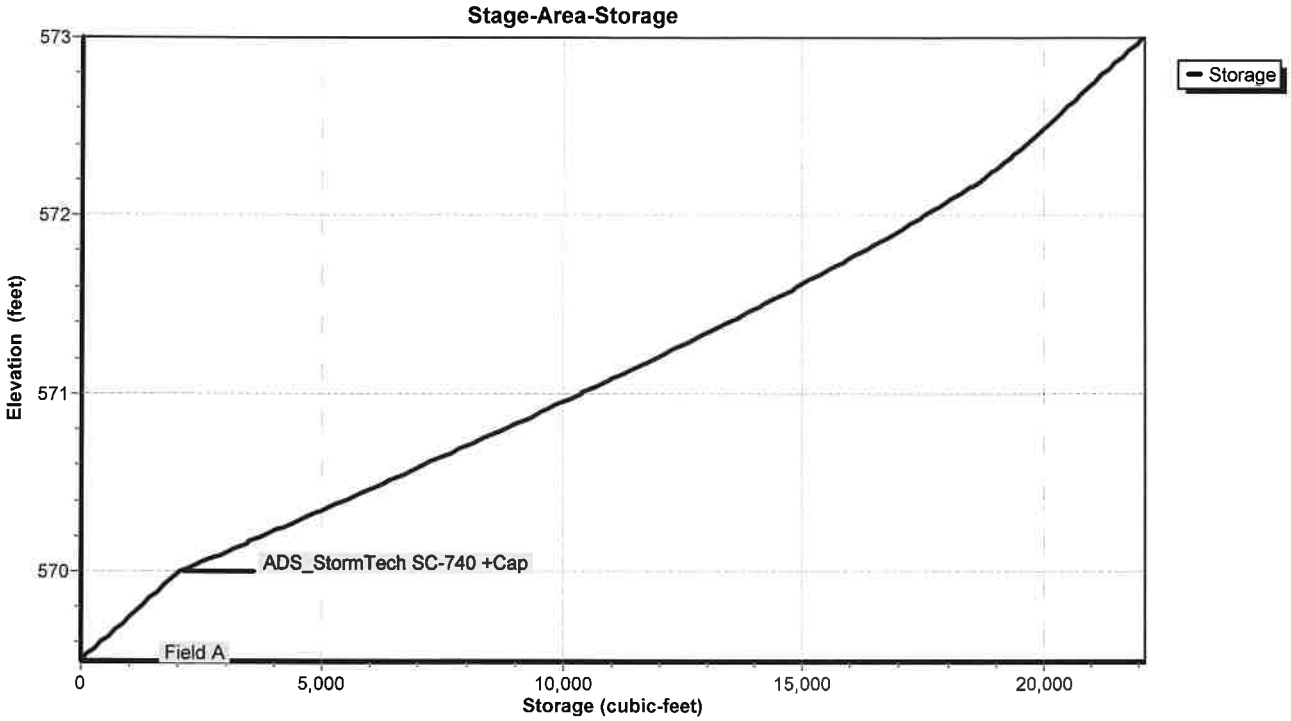


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.00	2	569.50	0.00
8.00	0.03	119	569.53	0.00
10.00	0.09	566	569.64	0.00
12.00	**5.13**	**3,593**	**570.18**	**0.16**
14.00	**0.33**	**6,444**	**570.52**	**0.81**
16.00	0.20	4,602	570.30	0.34
18.00	0.15	3,932	570.22	0.21
20.00	0.11	3,570	570.18	0.15
22.00	0.10	3,332	570.15	0.12
24.00	0.09	3,200	570.14	0.10
26.00	0.03	2,873	570.10	0.07
28.00	0.03	2,693	570.08	0.05
30.00	0.03	2,592	570.07	0.04
32.00	0.03	2,532	570.06	0.04
34.00	0.03	2,493	570.05	0.04
36.00	0.03	2,465	570.05	0.03
38.00	0.03	2,445	570.05	0.03
40.00	0.03	2,428	570.05	0.03
42.00	0.03	2,415	570.04	0.03
44.00	0.03	2,403	570.04	0.03
46.00	0.03	2,393	570.04	0.03
48.00	0.01	2,328	570.03	0.03
50.00	0.00	2,203	570.02	0.02
52.00	0.00	2,095	570.01	0.01
54.00	0.00	2,013	570.00	0.01
56.00	0.00	1,959	569.98	0.01
58.00	0.00	1,920	569.97	0.00
60.00	0.00	1,892	569.97	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 1.88" for 5-Year event
Inflow = 4.35 cfs @ 12.00 hrs, Volume= 0.235 af
Outflow = 3.06 cfs @ 12.08 hrs, Volume= 0.235 af, Atten= 30%, Lag= 4.6 min
Primary = 3.06 cfs @ 12.08 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.68' @ 12.08 hrs Surf.Area= 6,129 sf Storage= 3,708 cf

Plug-Flow detention time= 384.2 min calculated for 0.235 af (100% of inflow)
Center-of-Mass det. time= 384.1 min (1,187.9 - 803.8)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

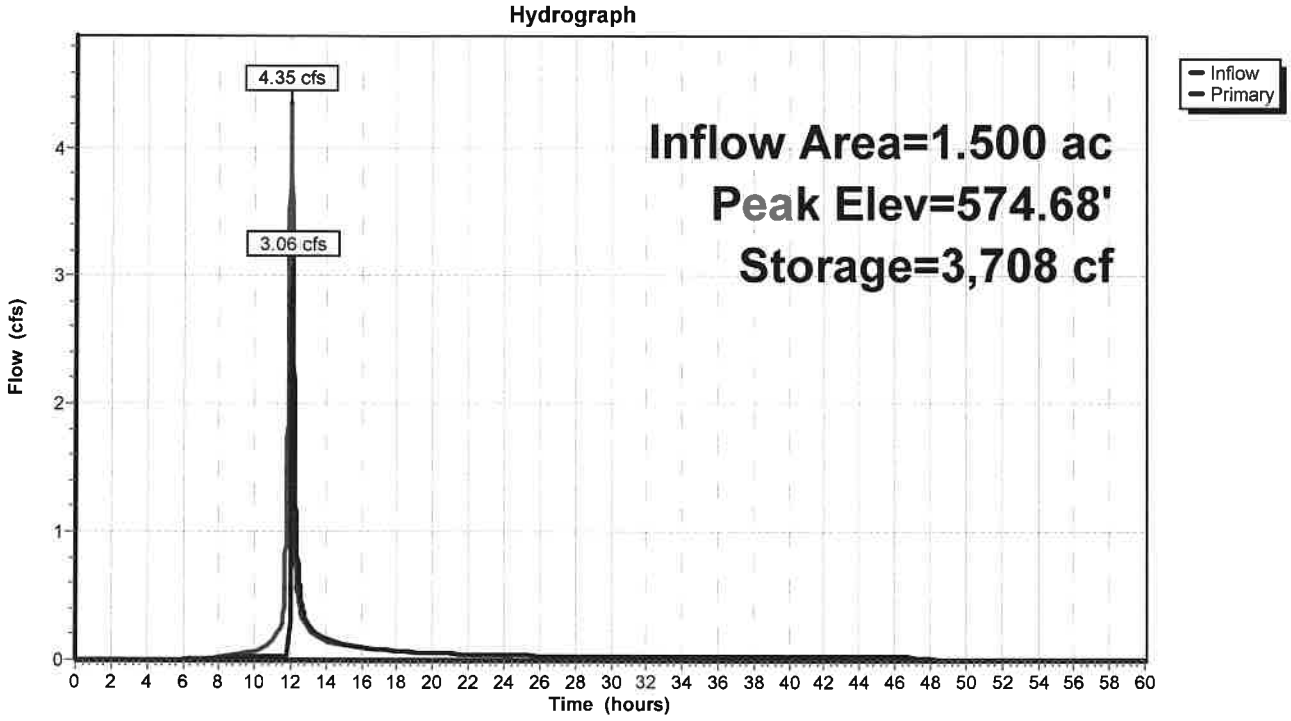
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

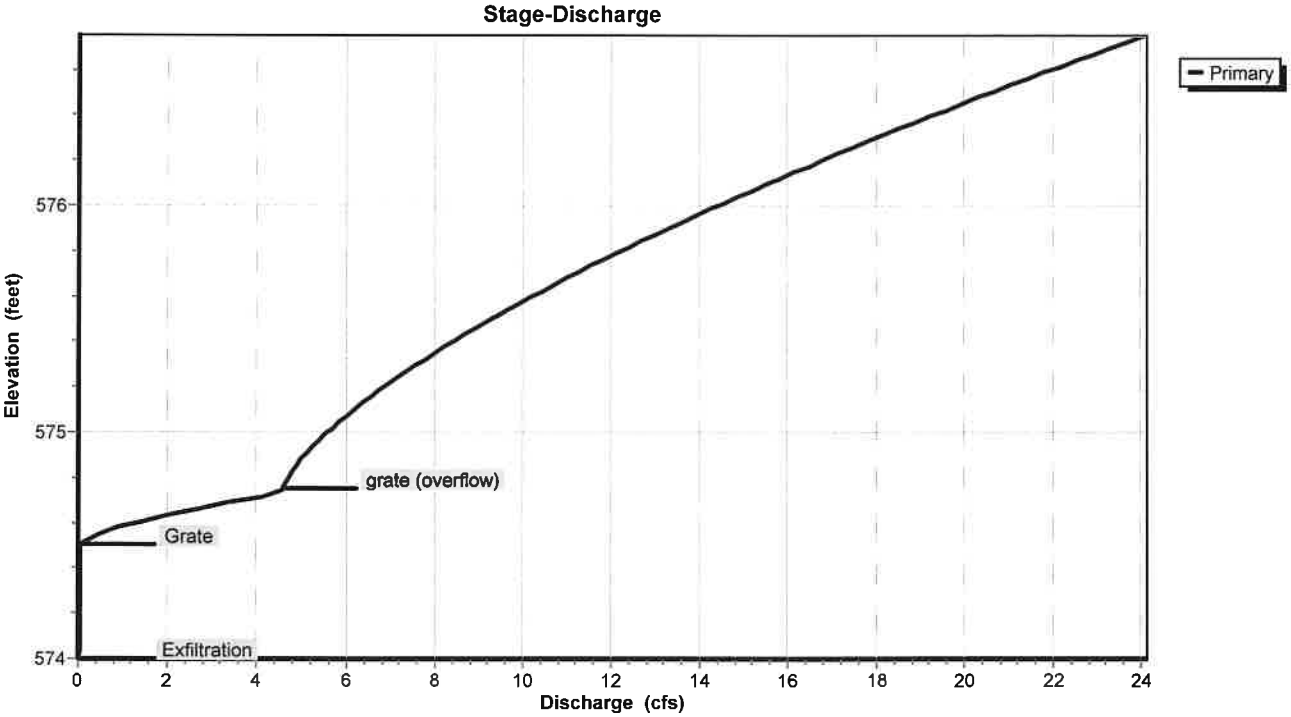
Primary OutFlow Max=3.05 cfs @ 12.08 hrs HW=574.68' (Free Discharge)
- **1=8" pipe** (Passes 3.05 cfs of 4.54 cfs potential flow)
  - **2=Grate** (Weir Controls 3.02 cfs @ 1.37 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

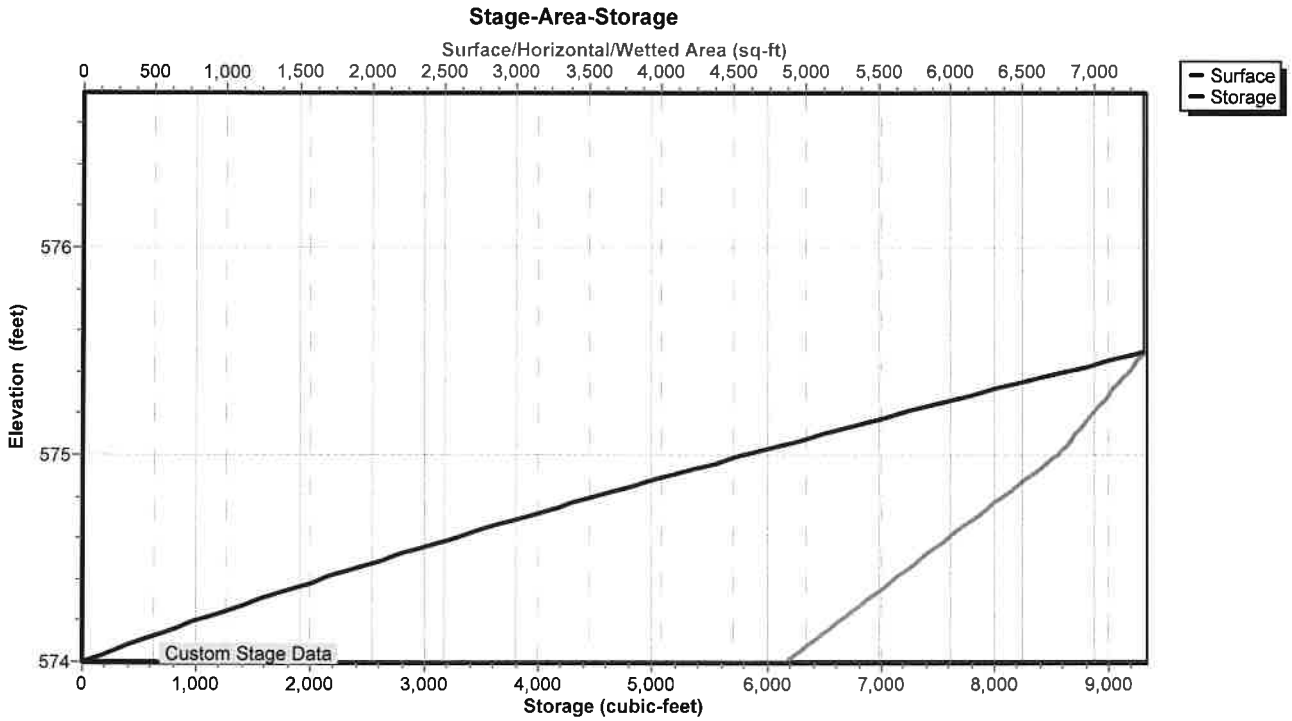


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.01	6	574.00	0.00
8.00	0.02	61	574.01	0.01
10.00	0.07	208	574.04	0.03
12.00	**4.35**	**3,326**	**574.61**	**1.59**
14.00	0.15	**2,783**	**574.52**	**0.16**
16.00	0.09	2,721	574.51	0.10
18.00	0.07	2,697	574.51	0.07
20.00	0.05	2,679	574.50	0.05
22.00	0.05	2,673	574.50	0.05
24.00	0.04	2,670	574.50	0.04
26.00	0.00	2,439	574.46	0.03
28.00	0.00	2,196	574.42	0.03
30.00	0.00	1,956	574.38	0.03
32.00	0.00	1,720	574.33	0.03
34.00	0.00	1,489	574.29	0.03
36.00	0.00	1,262	574.25	0.03
38.00	0.00	1,038	574.21	0.03
40.00	0.00	819	574.16	0.03
42.00	0.00	603	574.12	0.03
44.00	0.00	392	574.08	0.03
46.00	0.00	184	574.04	0.03
48.00	0.00	42	574.01	0.01
50.00	0.00	9	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=2.21"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=4.91 cfs 0.313 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=2.30"
Flow Length=345' Tc=9.1 min CN=92 Runoff=5.28 cfs 0.288 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=571.13' Storage=11,342 cf Inflow=9.17 cfs 0.601 af
Outflow=1.28 cfs 0.558 af

Pond 9P: Bioretention Area 3 Peak Elev=574.72' Storage=4,001 cf Inflow=5.28 cfs 0.288 af
Outflow=4.27 cfs 0.288 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.601 af Average Runoff Depth = 2.25"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

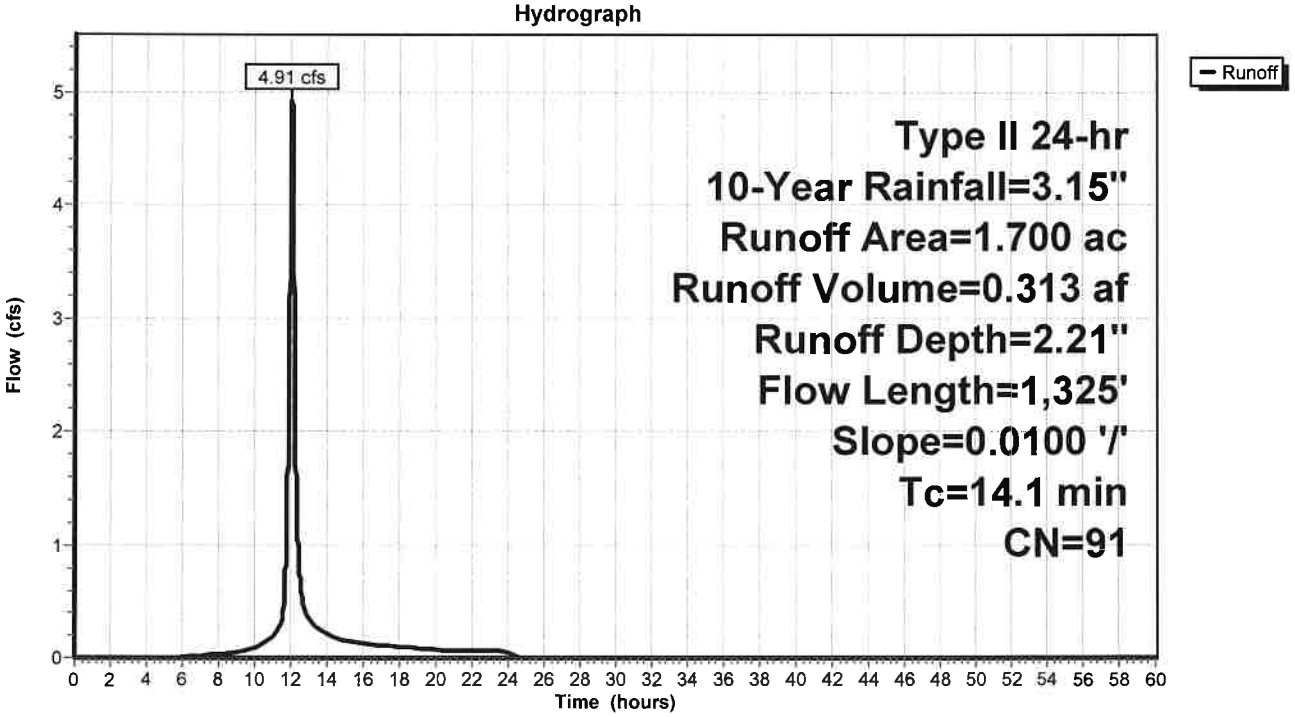
Runoff = 4.91 cfs @ 12.05 hrs, Volume= 0.313 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	52.00	3.15	2.21	0.00
1.00	0.03	0.00	0.00	53.00	3.15	2.21	0.00
2.00	0.07	0.00	0.00	54.00	3.15	2.21	0.00
3.00	0.11	0.00	0.00	55.00	3.15	2.21	0.00
4.00	0.15	0.00	0.00	56.00	3.15	2.21	0.00
5.00	0.20	0.00	0.00	57.00	3.15	2.21	0.00
6.00	0.25	0.00	0.01	58.00	3.15	2.21	0.00
7.00	0.31	0.01	0.02	59.00	3.15	2.21	0.00
8.00	0.38	0.03	0.03	60.00	3.15	2.21	0.00
9.00	0.46	0.06	0.06				
10.00	0.57	0.10	0.09				
11.00	0.74	0.19	0.19				
12.00	2.09	1.24	**4.35**				
13.00	2.43	1.55	**0.35**				
14.00	2.58	1.69	0.20				
15.00	2.69	1.78	0.16				
16.00	2.77	1.86	0.12				
17.00	2.84	1.92	0.11				
18.00	2.90	1.98	0.09				
19.00	2.95	2.03	0.08				
20.00	3.00	2.07	0.07				
21.00	3.04	2.11	0.06				
22.00	3.08	2.14	0.06				
23.00	3.11	2.18	0.06				
24.00	**3.15**	**2.21**	0.06				
25.00	3.15	2.21	0.00				
26.00	3.15	2.21	0.00				
27.00	3.15	2.21	0.00				
28.00	3.15	2.21	0.00				
29.00	3.15	2.21	0.00				
30.00	3.15	2.21	0.00				
31.00	3.15	2.21	0.00				
32.00	3.15	2.21	0.00				
33.00	3.15	2.21	0.00				
34.00	3.15	2.21	0.00				
35.00	3.15	2.21	0.00				
36.00	3.15	2.21	0.00				
37.00	3.15	2.21	0.00				
38.00	3.15	2.21	0.00				
39.00	3.15	2.21	0.00				
40.00	3.15	2.21	0.00				
41.00	3.15	2.21	0.00				
42.00	3.15	2.21	0.00				
43.00	3.15	2.21	0.00				
44.00	3.15	2.21	0.00				
45.00	3.15	2.21	0.00				
46.00	3.15	2.21	0.00				
47.00	3.15	2.21	0.00				
48.00	3.15	2.21	0.00				
49.00	3.15	2.21	0.00				
50.00	3.15	2.21	0.00				
51.00	3.15	2.21	0.00				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

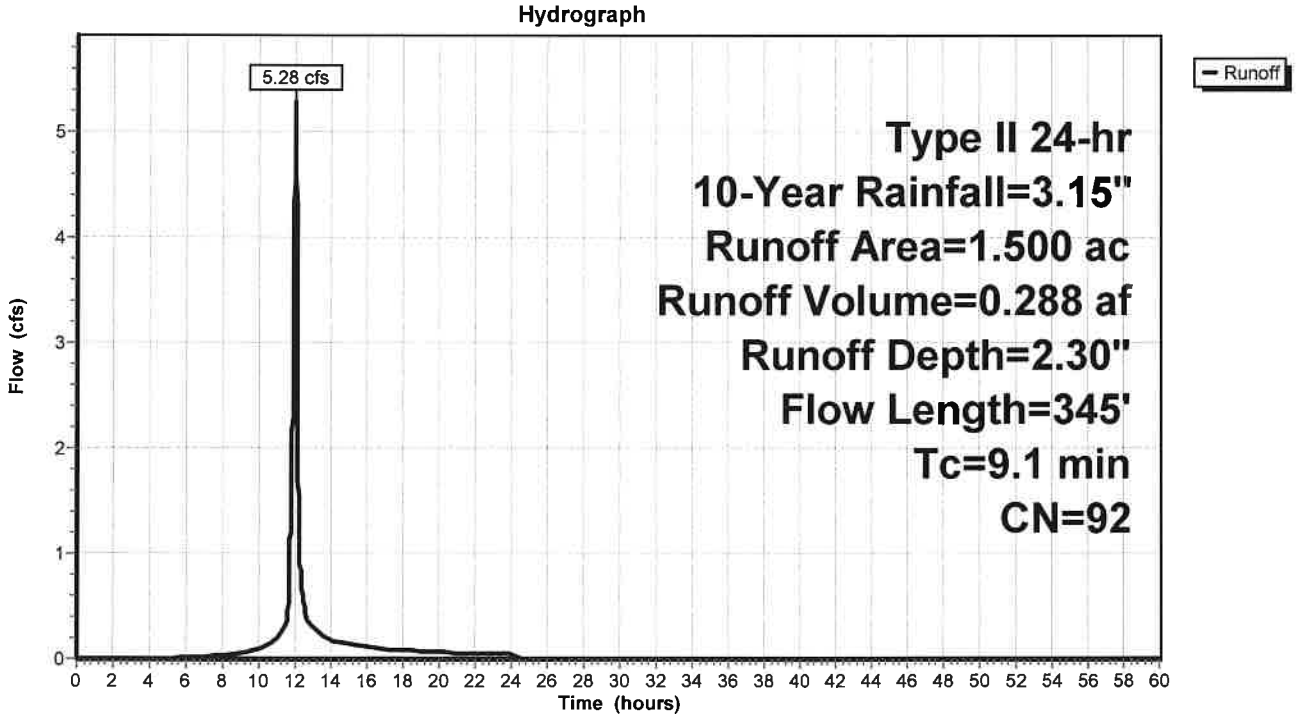
Runoff = 5.28 cfs @ 12.00 hrs, Volume= 0.288 af, Depth= 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	52.00	3.15	2.30	0.00
1.00	0.03	0.00	0.00	53.00	3.15	2.30	0.00
2.00	0.07	0.00	0.00	54.00	3.15	2.30	0.00
3.00	0.11	0.00	0.00	55.00	3.15	2.30	0.00
4.00	0.15	0.00	0.00	56.00	3.15	2.30	0.00
5.00	0.20	0.00	0.00	57.00	3.15	2.30	0.00
6.00	0.25	0.01	0.01	58.00	3.15	2.30	0.00
7.00	0.31	0.02	0.02	59.00	3.15	2.30	0.00
8.00	0.38	0.04	0.03	60.00	3.15	2.30	0.00
9.00	0.46	0.07	0.06				
10.00	0.57	0.12	0.09				
11.00	0.74	0.22	0.20				
12.00	2.09	1.32	**5.27**				
13.00	2.43	1.63	0.30				
14.00	2.58	1.77	0.18				
15.00	2.69	1.87	0.14				
16.00	2.77	1.95	0.11				
17.00	2.84	2.01	0.09				
18.00	2.90	2.07	0.08				
19.00	2.95	2.12	0.07				
20.00	3.00	2.16	0.06				
21.00	3.04	2.20	0.06				
22.00	3.08	2.23	0.05				
23.00	3.11	2.27	0.05				
24.00	**3.15**	**2.30**	0.05				
25.00	3.15	2.30	0.00				
26.00	3.15	2.30	0.00				
27.00	3.15	2.30	0.00				
28.00	3.15	2.30	0.00				
29.00	3.15	2.30	0.00				
30.00	3.15	2.30	0.00				
31.00	3.15	2.30	0.00				
32.00	3.15	2.30	0.00				
33.00	3.15	2.30	0.00				
34.00	3.15	2.30	0.00				
35.00	3.15	2.30	0.00				
36.00	3.15	2.30	0.00				
37.00	3.15	2.30	0.00				
38.00	3.15	2.30	0.00				
39.00	3.15	2.30	0.00				
40.00	3.15	2.30	0.00				
41.00	3.15	2.30	0.00				
42.00	3.15	2.30	0.00				
43.00	3.15	2.30	0.00				
44.00	3.15	2.30	0.00				
45.00	3.15	2.30	0.00				
46.00	3.15	2.30	0.00				
47.00	3.15	2.30	0.00				
48.00	3.15	2.30	0.00				
49.00	3.15	2.30	0.00				
50.00	3.15	2.30	0.00				
51.00	3.15	2.30	0.00				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 2.25" for 10-Year event
Inflow = 9.17 cfs @ 12.06 hrs, Volume= 0.601 af
Outflow = 1.28 cfs @ 12.54 hrs, Volume= 0.558 af, Atten= 86%, Lag= 29.2 min
Primary = 1.28 cfs @ 12.54 hrs, Volume= 0.558 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 571.13' @ 12.54 hrs Surf.Area= 10,145 sf Storage= 11,342 cf

Plug-Flow detention time= 284.1 min calculated for 0.558 af (93% of inflow)
Center-of-Mass det. time= 176.3 min (1,132.0 - 955.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

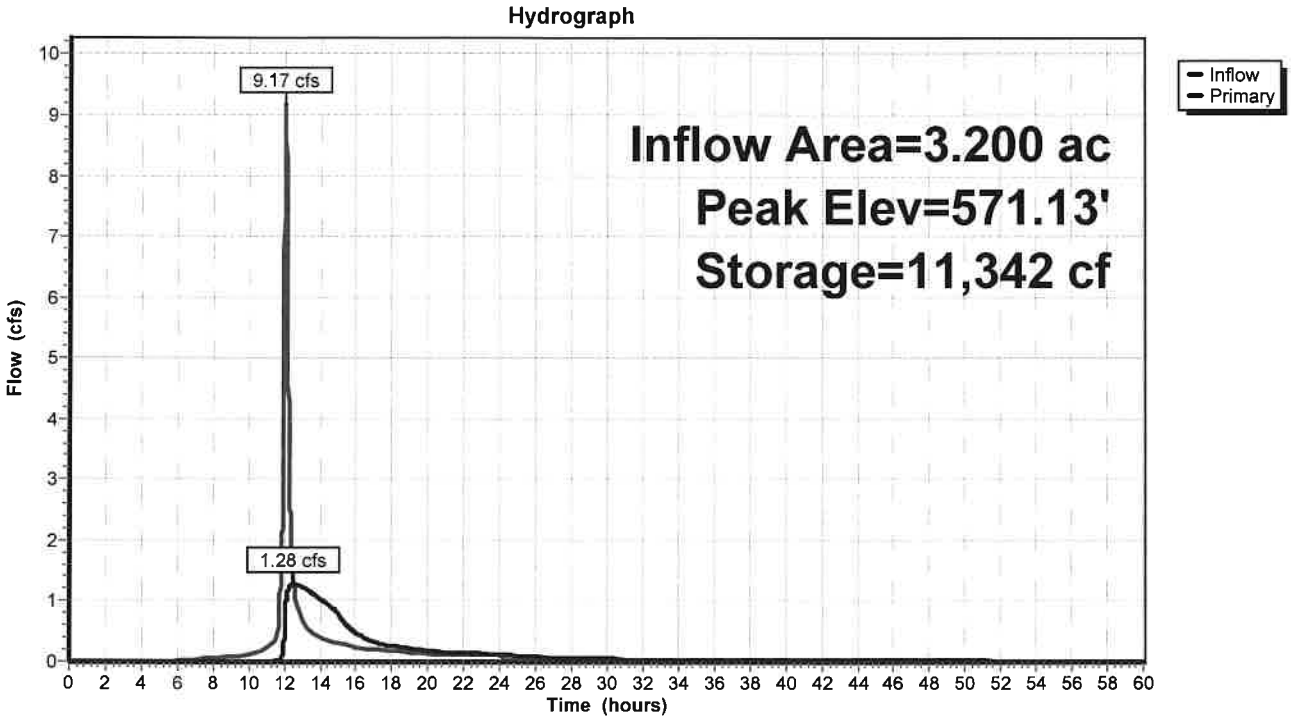
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

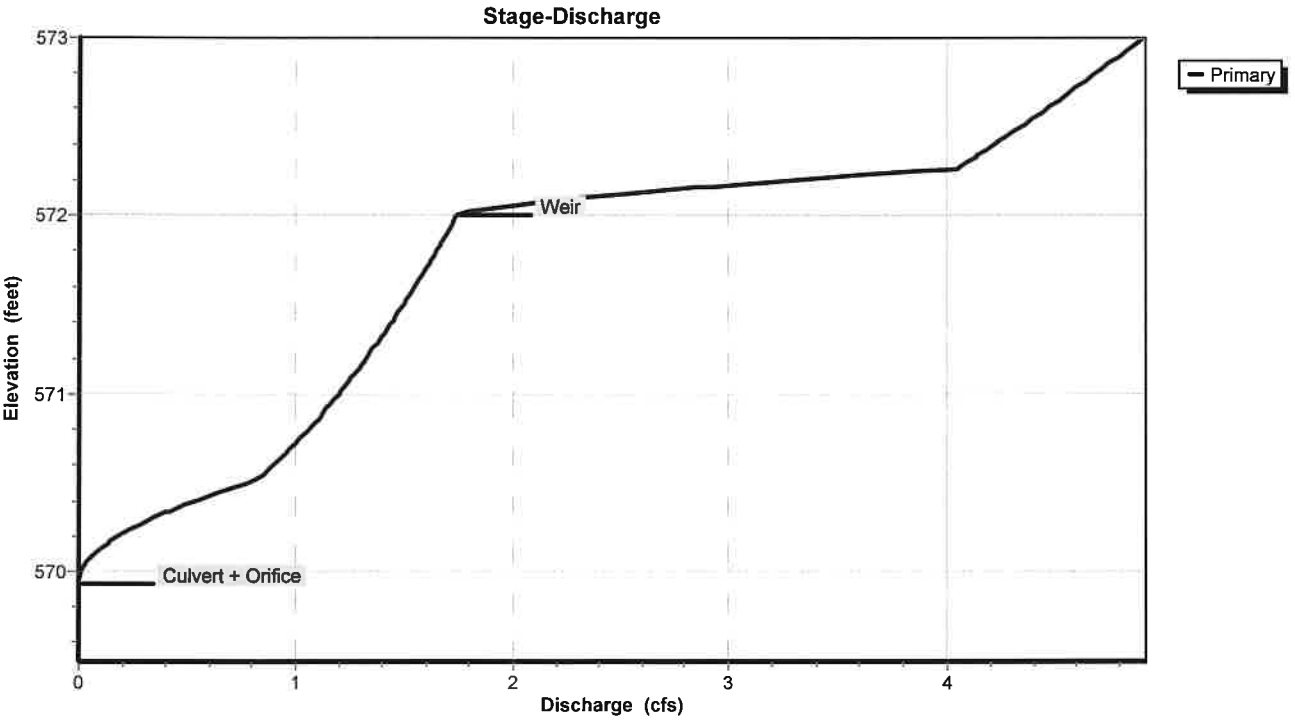
Primary OutFlow Max=1.28 cfs @ 12.54 hrs HW=571.13' (Free Discharge)
└**1=Culvert** (Passes 1.28 cfs of 2.37 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 1.28 cfs @ 4.88 fps)
  └**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

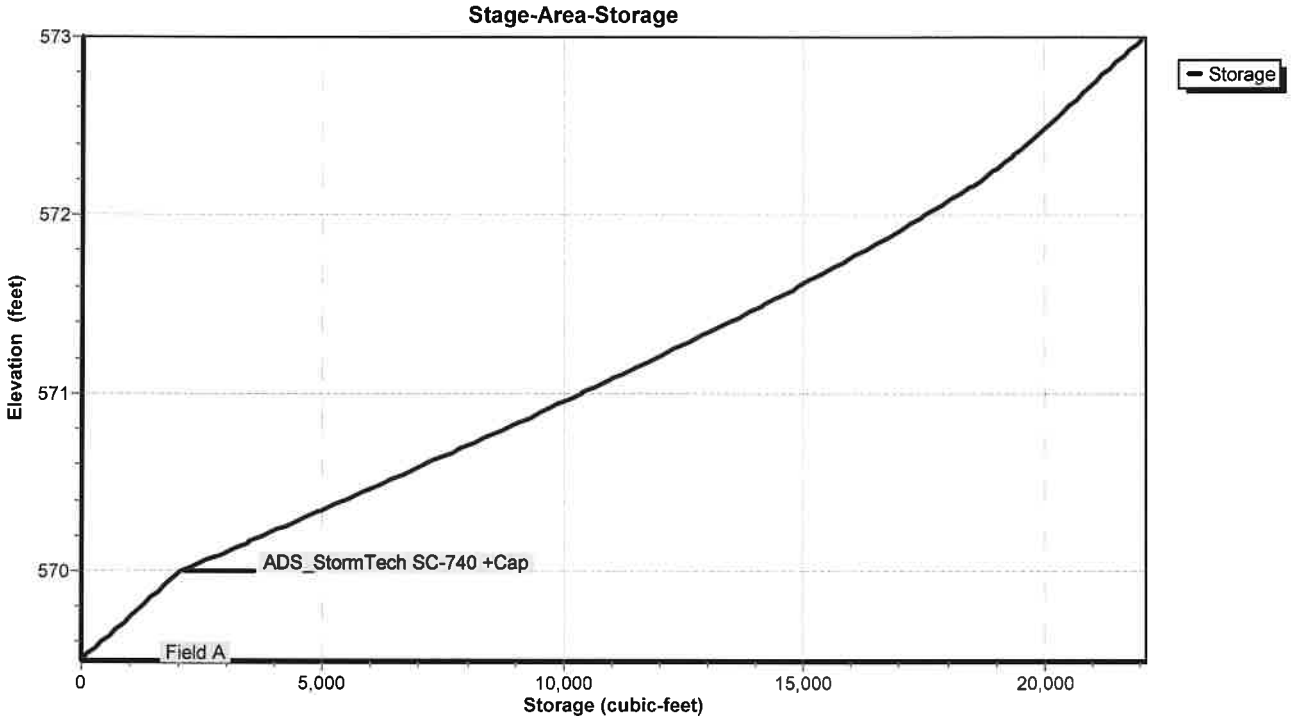


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.01	18	569.50	0.00
8.00	0.05	241	569.56	0.00
10.00	0.12	846	569.71	0.00
12.00	**7.80**	**5,030**	**570.35**	**0.43**
14.00	**0.39**	**8,504**	**570.77**	**1.03**
16.00	0.24	5,183	570.37	0.47
18.00	0.18	4,195	570.25	0.26
20.00	0.13	3,754	570.20	0.18
22.00	0.12	3,484	570.17	0.14
24.00	0.11	3,343	570.15	0.12
26.00	0.03	2,942	570.11	0.08
28.00	0.03	2,728	570.08	0.05
30.00	0.03	2,611	570.07	0.05
32.00	0.03	2,544	570.06	0.04
34.00	0.03	2,500	570.05	0.04
36.00	0.03	2,470	570.05	0.03
38.00	0.03	2,448	570.05	0.03
40.00	0.03	2,430	570.05	0.03
42.00	0.03	2,416	570.05	0.03
44.00	0.03	2,404	570.04	0.03
46.00	0.03	2,393	570.04	0.03
48.00	0.01	2,331	570.04	0.03
50.00	0.00	2,206	570.02	0.02
52.00	0.00	2,098	570.01	0.01
54.00	0.00	2,015	570.00	0.01
56.00	0.00	1,960	569.98	0.01
58.00	0.00	1,921	569.97	0.00
60.00	0.00	1,893	569.97	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 2.30" for 10-Year event
Inflow = 5.28 cfs @ 12.00 hrs, Volume= 0.288 af
Outflow = 4.27 cfs @ 12.06 hrs, Volume= 0.288 af, Atten= 19%, Lag= 3.5 min
Primary = 4.27 cfs @ 12.06 hrs, Volume= 0.288 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.72' @ 12.06 hrs Surf.Area= 6,219 sf Storage= 4,001 cf

Plug-Flow detention time= 318.6 min calculated for 0.288 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,116.8 - 798.1)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

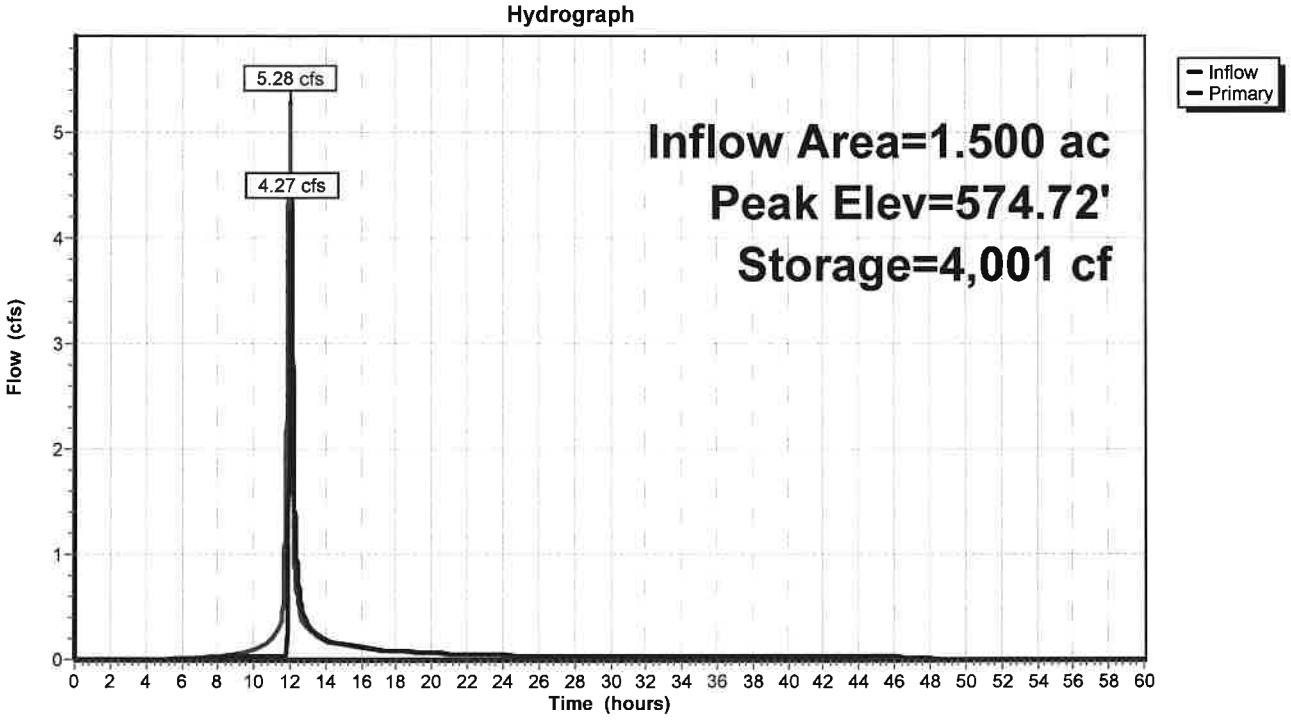
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

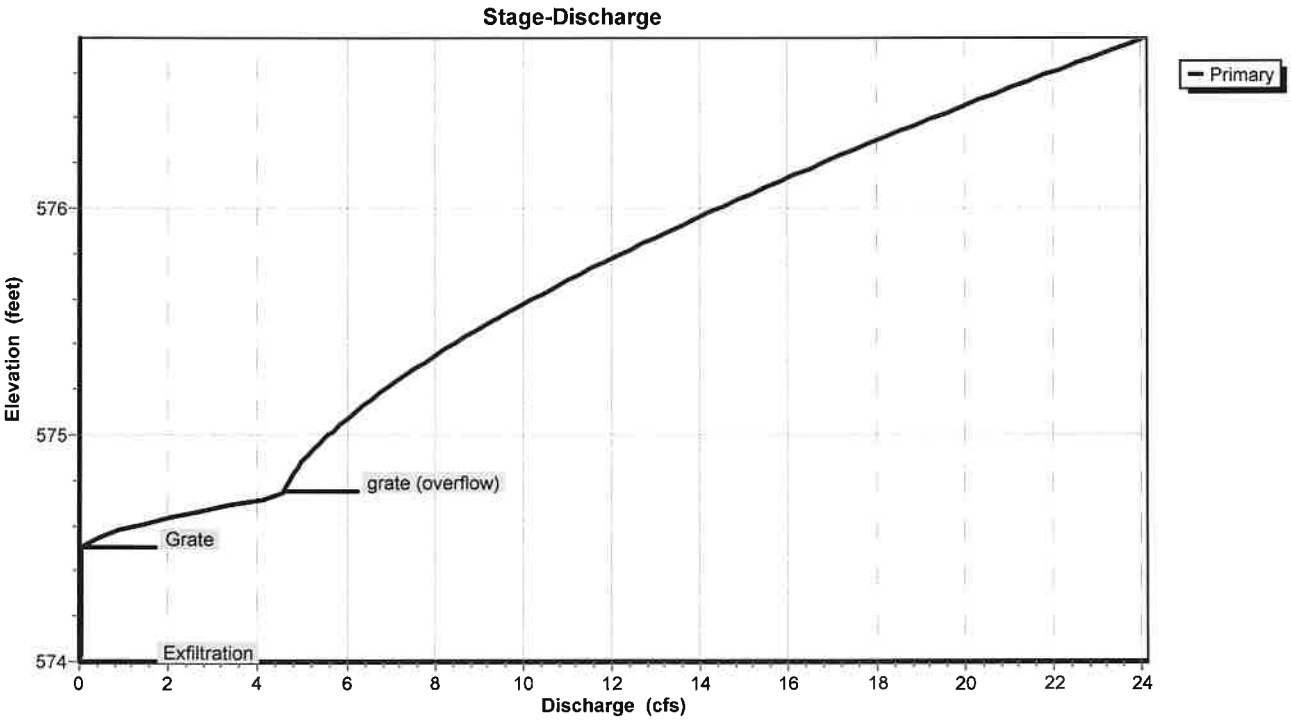
Primary OutFlow Max=4.36 cfs @ 12.06 hrs HW=574.72' (Free Discharge)
- **1=8" pipe** (Passes 4.36 cfs of 4.57 cfs potential flow)
  - **2=Grate** (Weir Controls 4.32 cfs @ 1.54 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

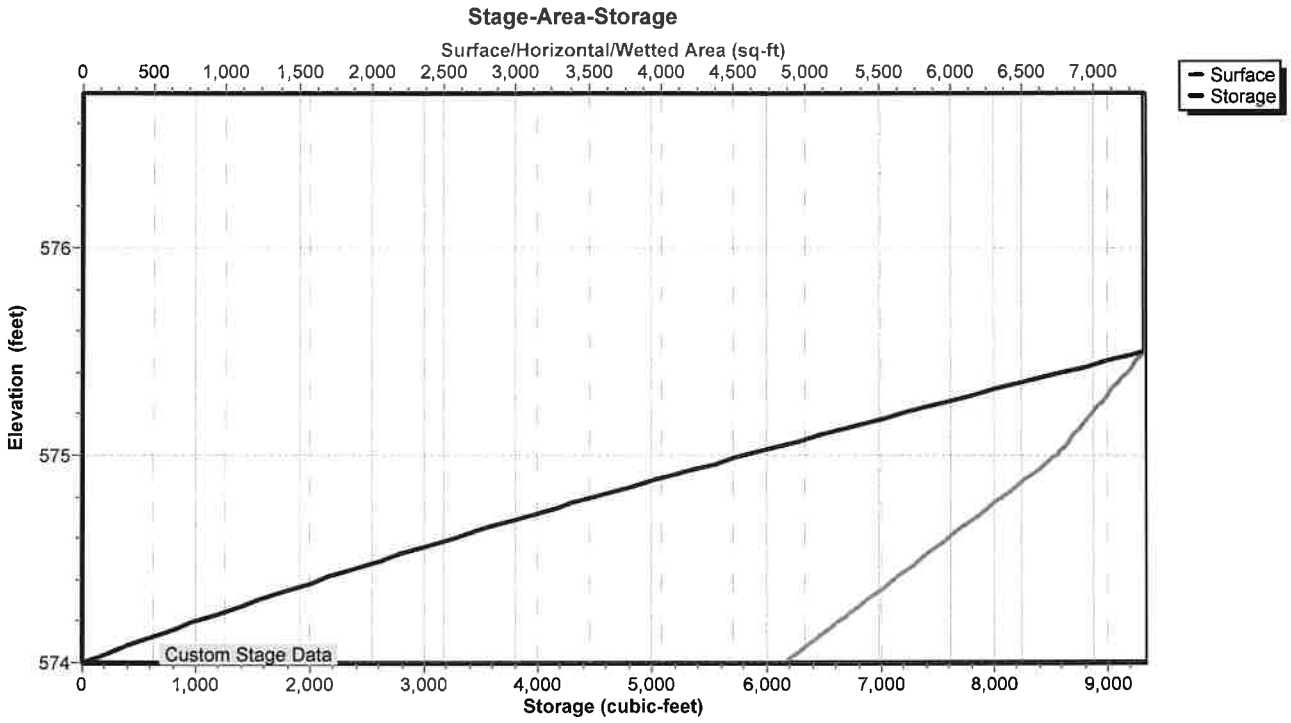


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.01	21	574.00	0.00
8.00	0.03	99	574.02	0.02
10.00	0.09	335	574.07	0.03
12.00	**5.27**	**3,799**	**574.69**	**3.45**
14.00	0.18	**2,801**	**574.52**	**0.19**
16.00	0.11	2,738	574.51	0.12
18.00	0.08	2,710	574.51	0.09
20.00	0.06	2,689	574.50	0.06
22.00	0.05	2,681	574.50	0.06
24.00	0.05	2,677	574.50	0.05
26.00	0.00	2,445	574.46	0.03
28.00	0.00	2,201	574.42	0.03
30.00	0.00	1,961	574.38	0.03
32.00	0.00	1,726	574.33	0.03
34.00	0.00	1,494	574.29	0.03
36.00	0.00	1,267	574.25	0.03
38.00	0.00	1,043	574.21	0.03
40.00	0.00	824	574.16	0.03
42.00	0.00	608	574.12	0.03
44.00	0.00	397	574.08	0.03
46.00	0.00	189	574.04	0.03
48.00	0.00	44	574.01	0.01
50.00	0.00	10	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=2.89"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=6.35 cfs 0.410 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=2.99"
Flow Length=345' Tc=9.1 min CN=92 Runoff=6.75 cfs 0.374 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=571.73' Storage=15,804 cf Inflow=11.11 cfs 0.784 af
Outflow=1.61 cfs 0.740 af

Pond 9P: Bioretention Area 3 Peak Elev=574.82' Storage=4,638 cf Inflow=6.75 cfs 0.374 af
Outflow=4.78 cfs 0.374 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.784 af Average Runoff Depth = 2.94"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

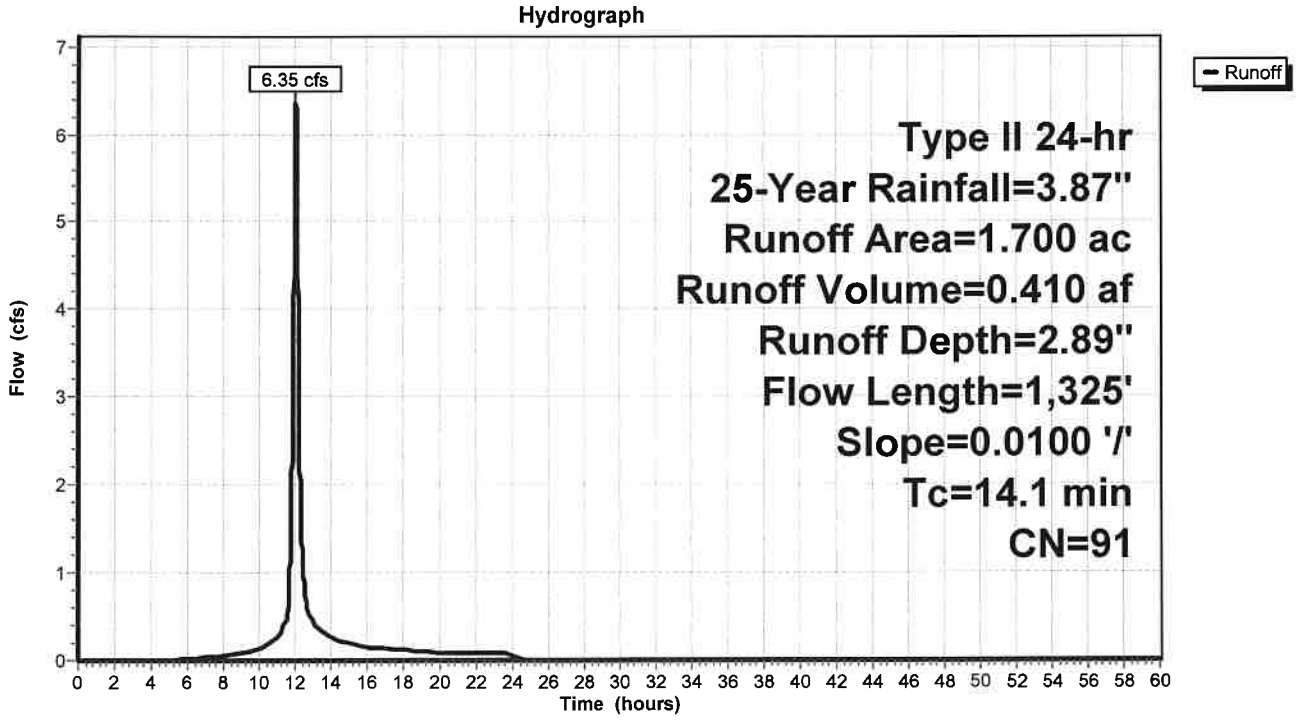
Runoff = 6.35 cfs @ 12.05 hrs, Volume= 0.410 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.00	0.01
6.00	0.31	0.01	0.02
7.00	0.38	0.03	0.04
8.00	0.46	0.06	0.05
9.00	0.57	0.10	0.09
10.00	0.70	0.17	0.13
11.00	0.91	0.30	0.27
12.00	2.57	1.67	**5.66**
13.00	2.99	2.06	**0.45**
14.00	3.17	2.23	0.26
15.00	3.30	2.36	0.20
16.00	3.41	2.45	0.15
17.00	3.49	2.53	0.13
18.00	3.56	2.60	0.12
19.00	3.63	2.66	0.10
20.00	3.68	2.72	0.09
21.00	3.73	2.76	0.08
22.00	3.78	2.81	0.08
23.00	3.83	2.85	0.07
24.00	**3.87**	**2.89**	0.07
25.00	3.87	2.89	0.00
26.00	3.87	2.89	0.00
27.00	3.87	2.89	0.00
28.00	3.87	2.89	0.00
29.00	3.87	2.89	0.00
30.00	3.87	2.89	0.00
31.00	3.87	2.89	0.00
32.00	3.87	2.89	0.00
33.00	3.87	2.89	0.00
34.00	3.87	2.89	0.00
35.00	3.87	2.89	0.00
36.00	3.87	2.89	0.00
37.00	3.87	2.89	0.00
38.00	3.87	2.89	0.00
39.00	3.87	2.89	0.00
40.00	3.87	2.89	0.00
41.00	3.87	2.89	0.00
42.00	3.87	2.89	0.00
43.00	3.87	2.89	0.00
44.00	3.87	2.89	0.00
45.00	3.87	2.89	0.00
46.00	3.87	2.89	0.00
47.00	3.87	2.89	0.00
48.00	3.87	2.89	0.00
49.00	3.87	2.89	0.00
50.00	3.87	2.89	0.00
51.00	3.87	2.89	0.00
52.00	3.87	2.89	0.00
53.00	3.87	2.89	0.00
54.00	3.87	2.89	0.00
55.00	3.87	2.89	0.00
56.00	3.87	2.89	0.00
57.00	3.87	2.89	0.00
58.00	3.87	2.89	0.00
59.00	3.87	2.89	0.00
60.00	3.87	2.89	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

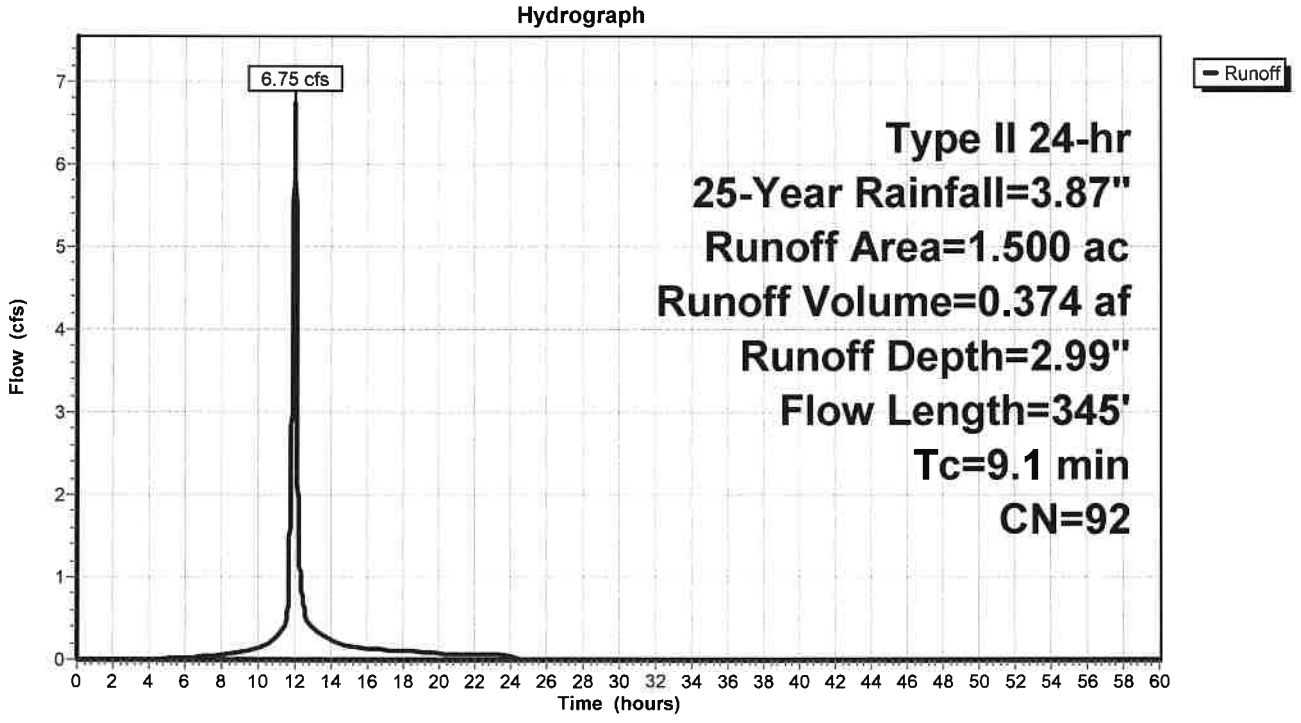
Runoff = 6.75 cfs @ 12.00 hrs, Volume= 0.374 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.01	0.01
6.00	0.31	0.02	0.02
7.00	0.38	0.04	0.04
8.00	0.46	0.07	0.05
9.00	0.57	0.12	0.09
10.00	0.70	0.20	0.13
11.00	0.91	0.34	0.27
12.00	2.57	1.75	**6.75**
13.00	2.99	2.15	0.38
14.00	3.17	2.33	0.22
15.00	3.30	2.45	0.17
16.00	3.41	2.55	0.13
17.00	3.49	2.63	0.12
18.00	3.56	2.70	0.10
19.00	3.63	2.76	0.09
20.00	3.68	2.81	0.08
21.00	3.73	2.86	0.07
22.00	3.78	2.91	0.07
23.00	3.83	2.95	0.07
24.00	**3.87**	**2.99**	0.06
25.00	3.87	2.99	0.00
26.00	3.87	2.99	0.00
27.00	3.87	2.99	0.00
28.00	3.87	2.99	0.00
29.00	3.87	2.99	0.00
30.00	3.87	2.99	0.00
31.00	3.87	2.99	0.00
32.00	3.87	2.99	0.00
33.00	3.87	2.99	0.00
34.00	3.87	2.99	0.00
35.00	3.87	2.99	0.00
36.00	3.87	2.99	0.00
37.00	3.87	2.99	0.00
38.00	3.87	2.99	0.00
39.00	3.87	2.99	0.00
40.00	3.87	2.99	0.00
41.00	3.87	2.99	0.00
42.00	3.87	2.99	0.00
43.00	3.87	2.99	0.00
44.00	3.87	2.99	0.00
45.00	3.87	2.99	0.00
46.00	3.87	2.99	0.00
47.00	3.87	2.99	0.00
48.00	3.87	2.99	0.00
49.00	3.87	2.99	0.00
50.00	3.87	2.99	0.00
51.00	3.87	2.99	0.00
52.00	3.87	2.99	0.00
53.00	3.87	2.99	0.00
54.00	3.87	2.99	0.00
55.00	3.87	2.99	0.00
56.00	3.87	2.99	0.00
57.00	3.87	2.99	0.00
58.00	3.87	2.99	0.00
59.00	3.87	2.99	0.00
60.00	3.87	2.99	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 2.94" for 25-Year event
Inflow = 11.11 cfs @ 12.06 hrs, Volume= 0.784 af
Outflow = 1.61 cfs @ 12.54 hrs, Volume= 0.740 af, Atten= 85%, Lag= 29.2 min
Primary = 1.61 cfs @ 12.54 hrs, Volume= 0.740 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 571.73' @ 12.54 hrs Surf.Area= 10,145 sf Storage= 15,804 cf

Plug-Flow detention time= 252.2 min calculated for 0.740 af (94% of inflow)
Center-of-Mass det. time= 168.6 min (1,084.7 - 916.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

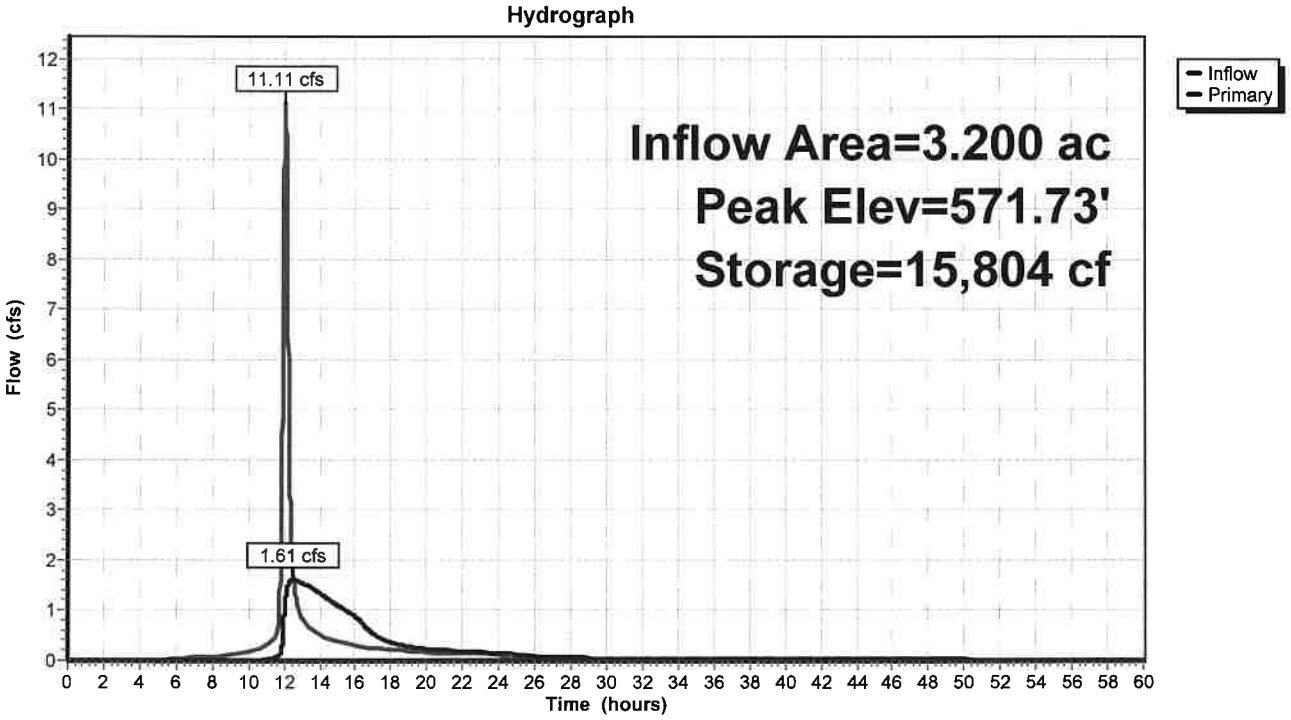
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

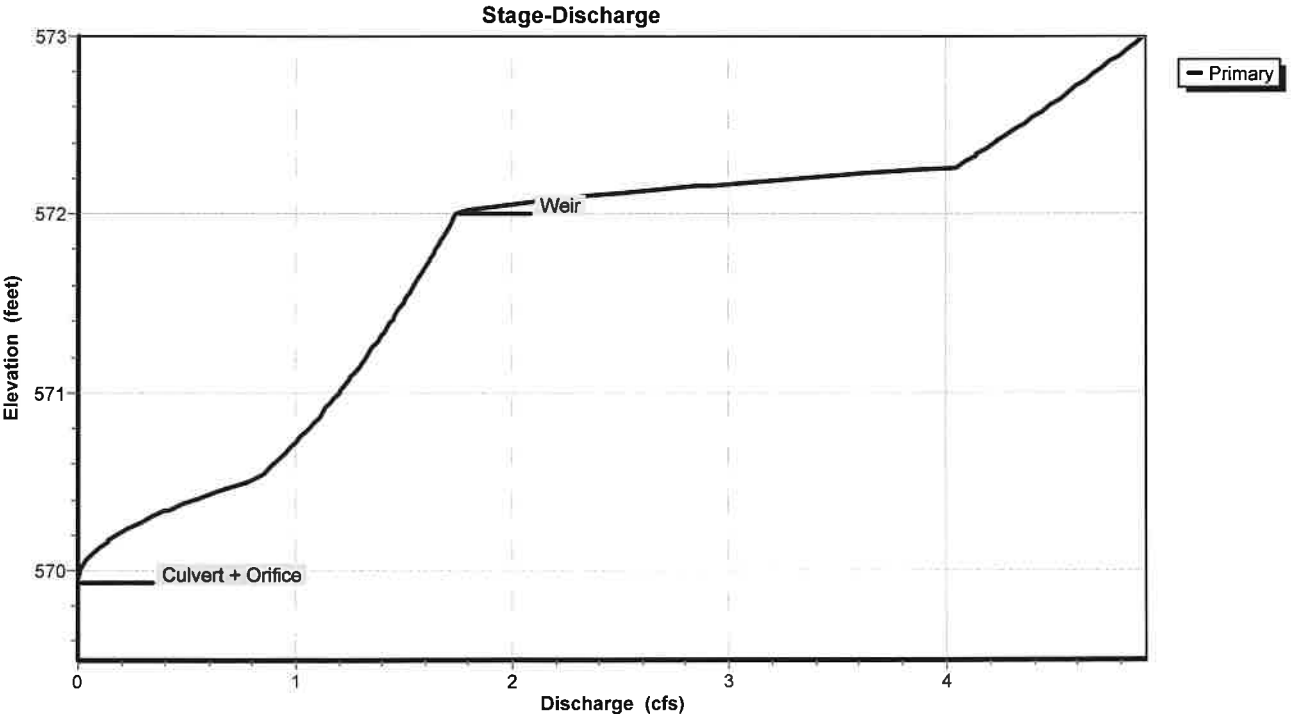
Primary OutFlow Max=1.61 cfs @ 12.54 hrs HW=571.73' (Free Discharge)
└**1=Culvert** (Passes 1.61 cfs of 3.29 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 1.61 cfs @ 6.16 fps)
  └**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

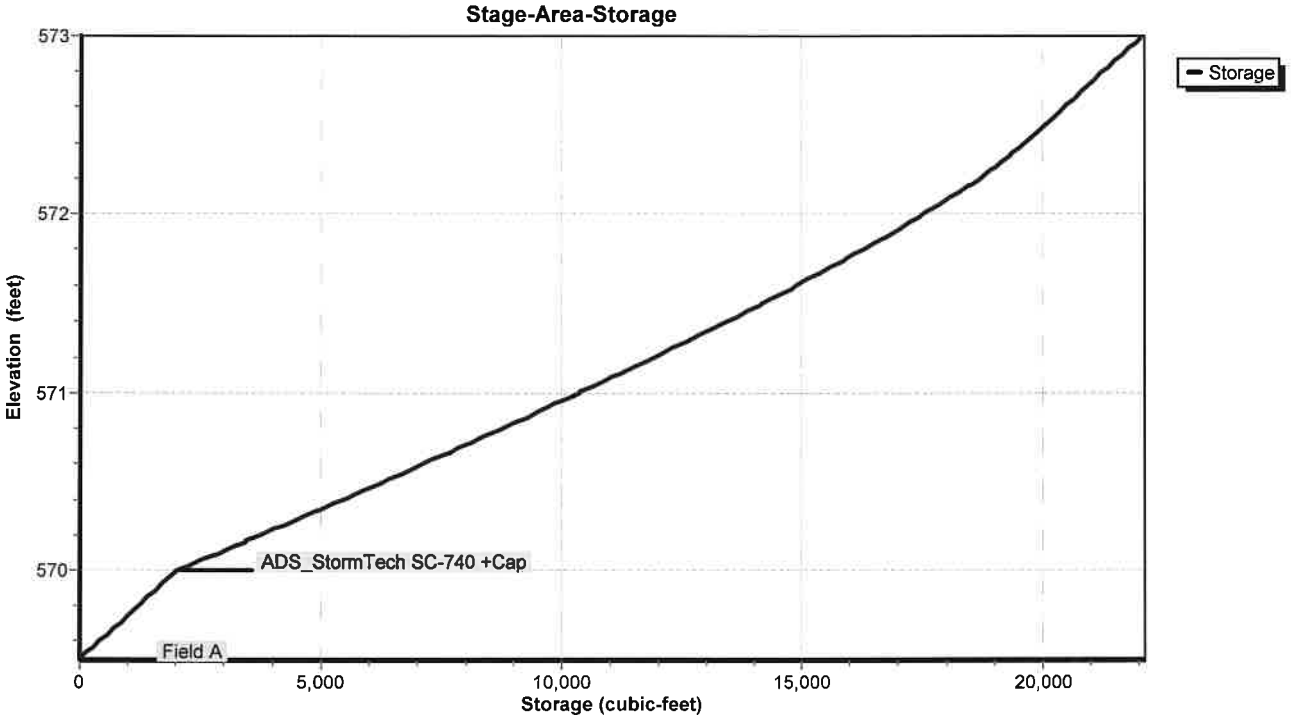


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.03	85	569.52	0.00
8.00	0.08	499	569.62	0.00
10.00	0.16	1,337	569.83	0.00
12.00	**10.28**	**7,562**	**570.65**	**0.94**
14.00	**0.49**	**12,132**	**571.23**	**1.34**
16.00	0.30	6,914	570.58	0.87
18.00	0.22	4,703	570.31	0.36
20.00	0.16	4,045	570.24	0.23
22.00	0.15	3,711	570.20	0.17
24.00	0.13	3,549	570.18	0.15
26.00	0.03	3,038	570.12	0.09
28.00	0.03	2,775	570.09	0.06
30.00	0.03	2,637	570.07	0.05
32.00	0.03	2,558	570.06	0.04
34.00	0.03	2,510	570.06	0.04
36.00	0.03	2,476	570.05	0.04
38.00	0.03	2,451	570.05	0.03
40.00	0.03	2,433	570.05	0.03
42.00	0.03	2,418	570.05	0.03
44.00	0.03	2,405	570.04	0.03
46.00	0.03	2,394	570.04	0.03
48.00	0.01	2,335	570.04	0.03
50.00	0.00	2,210	570.02	0.02
52.00	0.00	2,101	570.01	0.01
54.00	0.00	2,017	570.00	0.01
56.00	0.00	1,961	569.98	0.01
58.00	0.00	1,922	569.97	0.00
60.00	0.00	1,894	569.97	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 2.99" for 25-Year event
Inflow = 6.75 cfs @ 12.00 hrs, Volume= 0.374 af
Outflow = 4.78 cfs @ 12.08 hrs, Volume= 0.374 af, Atten= 29%, Lag= 4.5 min
Primary = 4.78 cfs @ 12.08 hrs, Volume= 0.374 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.82' @ 12.08 hrs Surf.Area= 6,409 sf Storage= 4,638 cf

Plug-Flow detention time= 252.6 min calculated for 0.374 af (100% of inflow)
Center-of-Mass det. time= 252.8 min (1,043.6 - 790.7)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

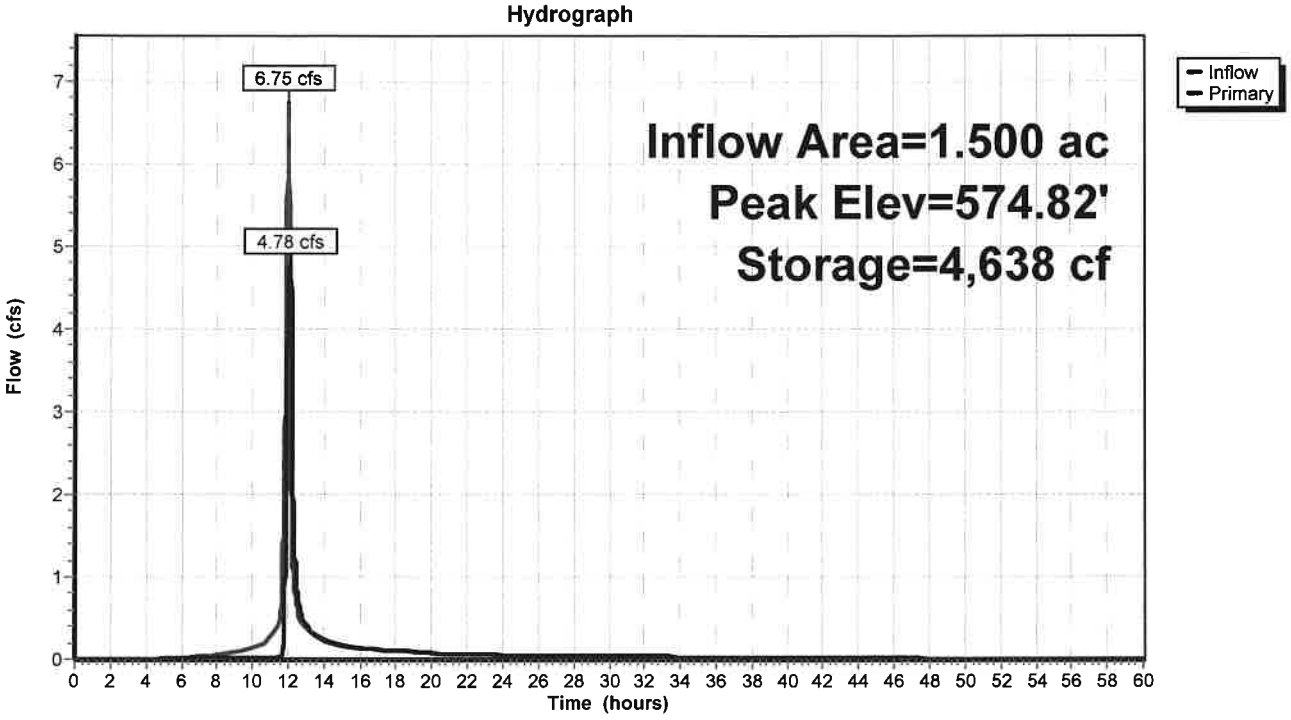
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

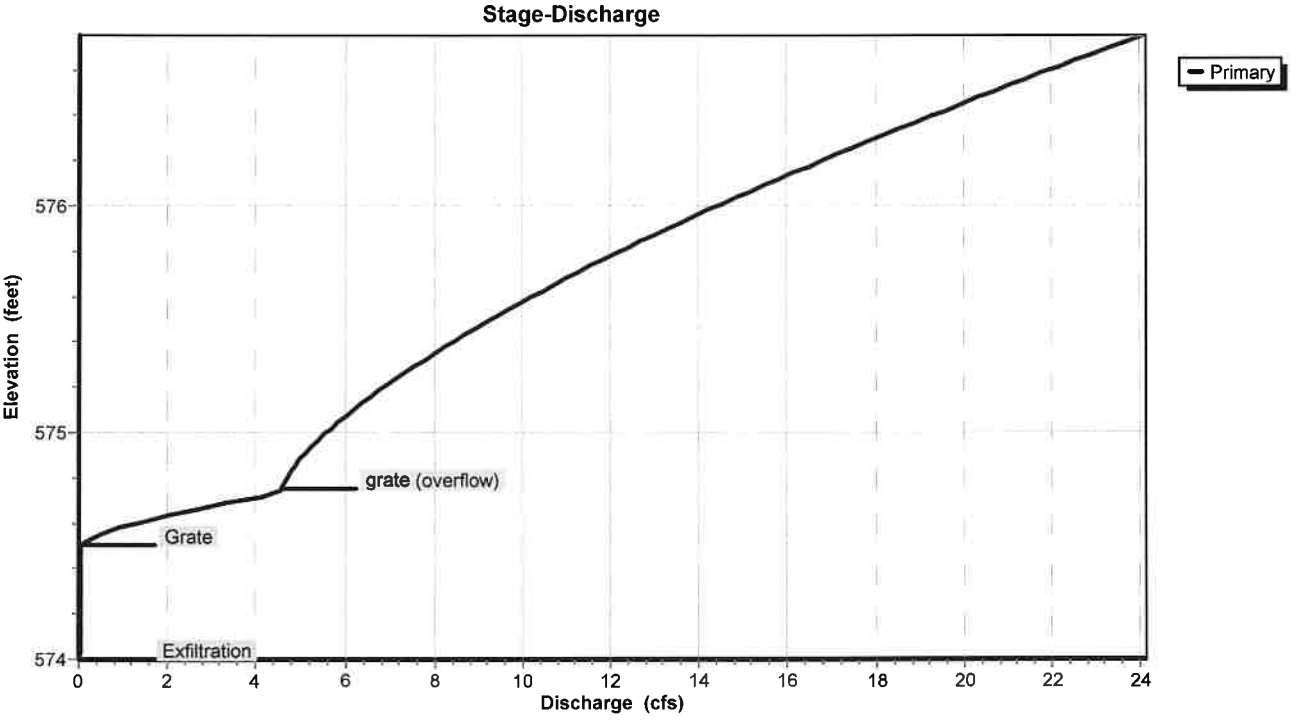
Primary OutFlow Max=4.78 cfs @ 12.08 hrs HW=574.82' (Free Discharge)
- **1=8" pipe** (Barrel Controls 4.65 cfs @ 5.92 fps)
  - **2=Grate** (Passes < 5.74 cfs potential flow)
  - **3=Exfiltration** (Passes < 0.04 cfs potential flow)
- **4=grate (overflow)** (Orifice Controls 0.13 cfs @ 0.87 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

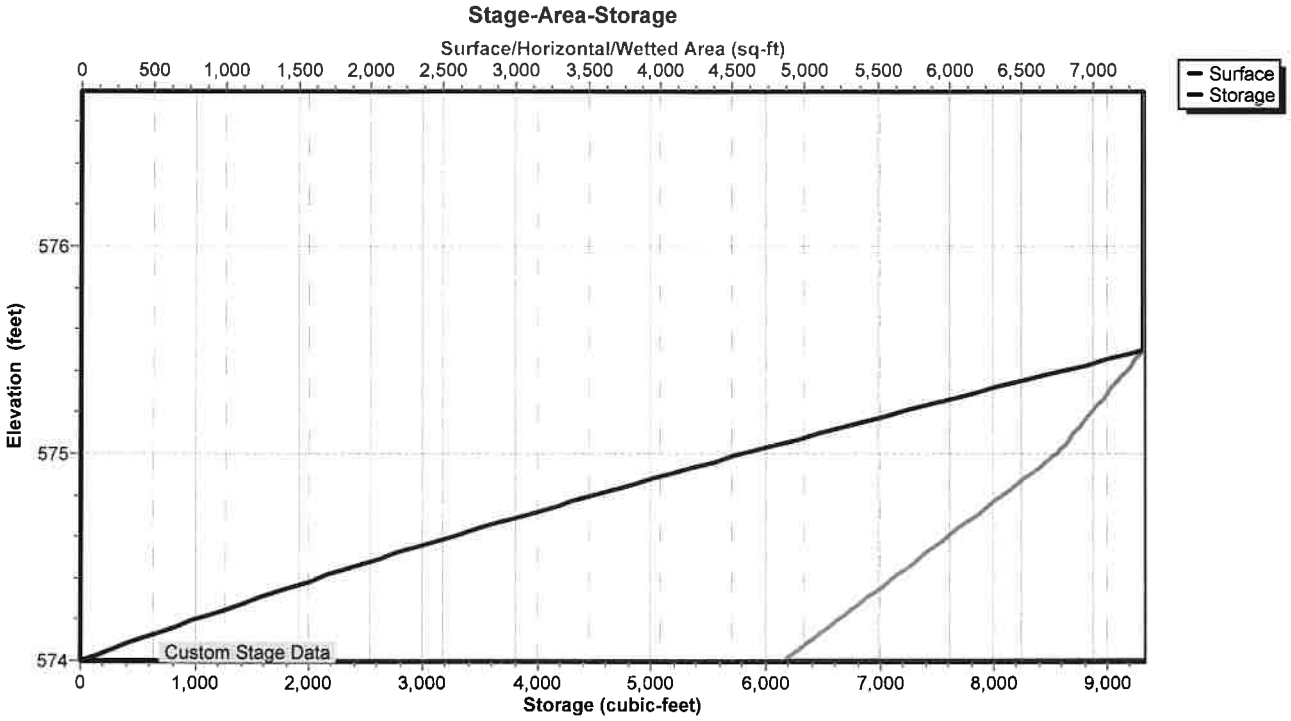


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.02	55	574.01	0.01
8.00	0.05	177	574.04	0.03
10.00	0.13	612	574.12	0.03
12.00	**6.75**	**4,265**	**574.77**	**4.62**
14.00	0.22	**2,825**	**574.53**	**0.24**
16.00	0.13	2,765	574.52	0.14
18.00	0.10	2,730	574.51	0.11
20.00	0.08	2,704	574.51	0.08
22.00	0.07	2,694	574.51	0.07
24.00	0.06	2,689	574.50	0.06
26.00	0.00	2,452	574.46	0.03
28.00	0.00	2,208	574.42	0.03
30.00	0.00	1,968	574.38	0.03
32.00	0.00	1,733	574.34	0.03
34.00	0.00	1,501	574.29	0.03
36.00	0.00	1,273	574.25	0.03
38.00	0.00	1,050	574.21	0.03
40.00	0.00	830	574.17	0.03
42.00	0.00	614	574.12	0.03
44.00	0.00	403	574.08	0.03
46.00	0.00	195	574.04	0.03
48.00	0.00	46	574.01	0.01
50.00	0.00	10	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=3.52"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=7.64 cfs 0.498 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=3.62"
Flow Length=345' Tc=9.1 min CN=92 Runoff=8.07 cfs 0.453 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=572.23' Storage=18,837 cf Inflow=12.80 cfs 0.951 af
Outflow=3.61 cfs 0.907 af

Pond 9P: Bioretention Area 3 Peak Elev=574.93' Storage=5,333 cf Inflow=8.07 cfs 0.453 af
Outflow=5.22 cfs 0.453 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.951 af Average Runoff Depth = 3.57"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

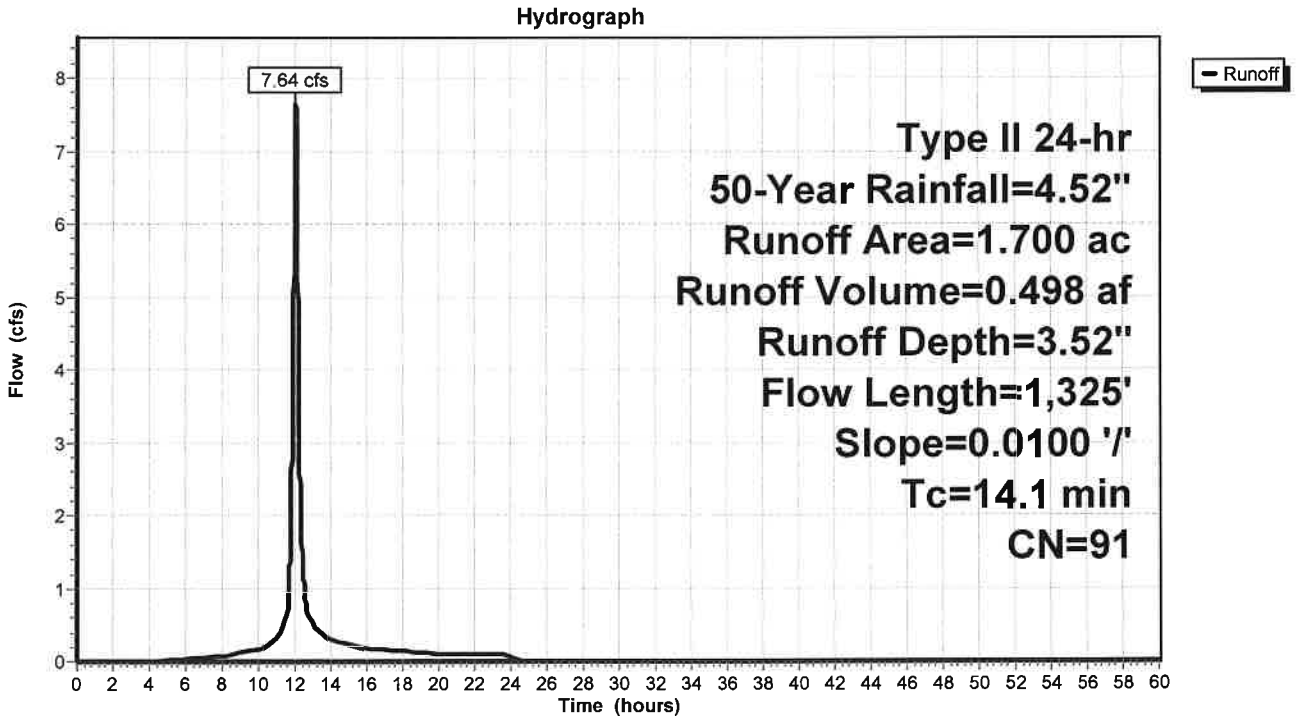
Runoff = 7.64 cfs @ 12.05 hrs, Volume= 0.498 af, Depth= 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.00
5.00	0.28	0.01	0.02
6.00	0.36	0.02	0.03
7.00	0.45	0.05	0.05
8.00	0.54	0.09	0.07
9.00	0.66	0.15	0.12
10.00	0.82	0.24	0.17
11.00	1.06	0.40	0.34
12.00	3.00	2.07	**6.84**
13.00	3.49	2.53	**0.53**
14.00	3.71	2.74	0.30
15.00	3.86	2.88	0.23
16.00	3.98	3.00	0.18
17.00	4.08	3.09	0.16
18.00	4.16	3.17	0.14
19.00	4.24	3.25	0.12
20.00	4.30	3.31	0.10
21.00	4.36	3.36	0.09
22.00	4.42	3.42	0.09
23.00	4.47	3.47	0.09
24.00	**4.52**	**3.52**	0.08
25.00	4.52	3.52	0.00
26.00	4.52	3.52	0.00
27.00	4.52	3.52	0.00
28.00	4.52	3.52	0.00
29.00	4.52	3.52	0.00
30.00	4.52	3.52	0.00
31.00	4.52	3.52	0.00
32.00	4.52	3.52	0.00
33.00	4.52	3.52	0.00
34.00	4.52	3.52	0.00
35.00	4.52	3.52	0.00
36.00	4.52	3.52	0.00
37.00	4.52	3.52	0.00
38.00	4.52	3.52	0.00
39.00	4.52	3.52	0.00
40.00	4.52	3.52	0.00
41.00	4.52	3.52	0.00
42.00	4.52	3.52	0.00
43.00	4.52	3.52	0.00
44.00	4.52	3.52	0.00
45.00	4.52	3.52	0.00
46.00	4.52	3.52	0.00
47.00	4.52	3.52	0.00
48.00	4.52	3.52	0.00
49.00	4.52	3.52	0.00
50.00	4.52	3.52	0.00
51.00	4.52	3.52	0.00
52.00	4.52	3.52	0.00
53.00	4.52	3.52	0.00
54.00	4.52	3.52	0.00
55.00	4.52	3.52	0.00
56.00	4.52	3.52	0.00
57.00	4.52	3.52	0.00
58.00	4.52	3.52	0.00
59.00	4.52	3.52	0.00
60.00	4.52	3.52	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

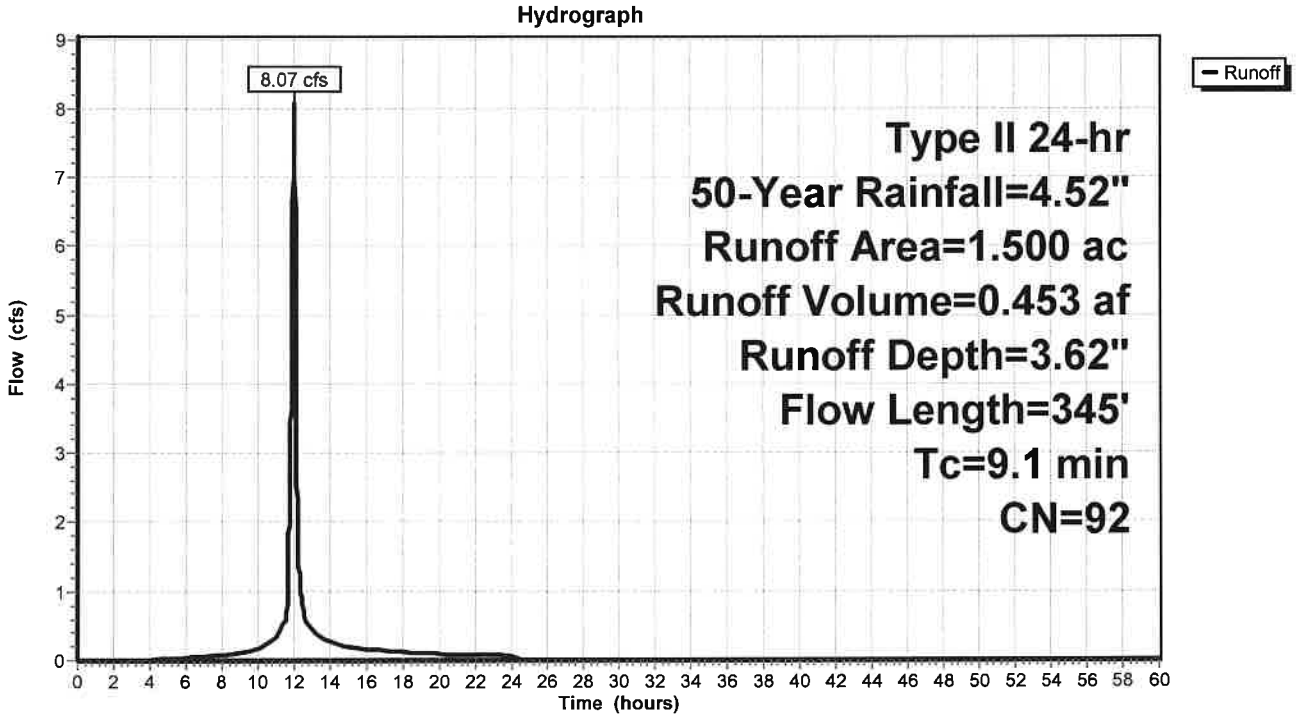
Runoff = 8.07 cfs @ 12.00 hrs, Volume= 0.453 af, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.01
5.00	0.28	0.01	0.02
6.00	0.36	0.03	0.04
7.00	0.45	0.07	0.06
8.00	0.54	0.11	0.07
9.00	0.66	0.18	0.12
10.00	0.82	0.27	0.17
11.00	1.06	0.45	0.34
12.00	3.00	2.16	**8.07**
13.00	3.49	2.63	0.45
14.00	3.71	2.83	0.26
15.00	3.86	2.98	0.20
16.00	3.98	3.10	0.16
17.00	4.08	3.19	0.14
18.00	4.16	3.28	0.12
19.00	4.24	3.35	0.11
20.00	4.30	3.41	0.09
21.00	4.36	3.47	0.08
22.00	4.42	3.52	0.08
23.00	4.47	3.57	0.08
24.00	**4.52**	**3.62**	0.07
25.00	4.52	3.62	0.00
26.00	4.52	3.62	0.00
27.00	4.52	3.62	0.00
28.00	4.52	3.62	0.00
29.00	4.52	3.62	0.00
30.00	4.52	3.62	0.00
31.00	4.52	3.62	0.00
32.00	4.52	3.62	0.00
33.00	4.52	3.62	0.00
34.00	4.52	3.62	0.00
35.00	4.52	3.62	0.00
36.00	4.52	3.62	0.00
37.00	4.52	3.62	0.00
38.00	4.52	3.62	0.00
39.00	4.52	3.62	0.00
40.00	4.52	3.62	0.00
41.00	4.52	3.62	0.00
42.00	4.52	3.62	0.00
43.00	4.52	3.62	0.00
44.00	4.52	3.62	0.00
45.00	4.52	3.62	0.00
46.00	4.52	3.62	0.00
47.00	4.52	3.62	0.00
48.00	4.52	3.62	0.00
49.00	4.52	3.62	0.00
50.00	4.52	3.62	0.00
51.00	4.52	3.62	0.00
52.00	4.52	3.62	0.00
53.00	4.52	3.62	0.00
54.00	4.52	3.62	0.00
55.00	4.52	3.62	0.00
56.00	4.52	3.62	0.00
57.00	4.52	3.62	0.00
58.00	4.52	3.62	0.00
59.00	4.52	3.62	0.00
60.00	4.52	3.62	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 3.57" for 50-Year event
Inflow = 12.80 cfs @ 12.06 hrs, Volume= 0.951 af
Outflow = 3.61 cfs @ 12.36 hrs, Volume= 0.907 af, Atten= 72%, Lag= 17.7 min
Primary = 3.61 cfs @ 12.36 hrs, Volume= 0.907 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 572.23' @ 12.36 hrs Surf.Area= 10,145 sf Storage= 18,837 cf

Plug-Flow detention time= 228.3 min calculated for 0.907 af (95% of inflow)
Center-of-Mass det. time= 158.8 min (1,051.4 - 892.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

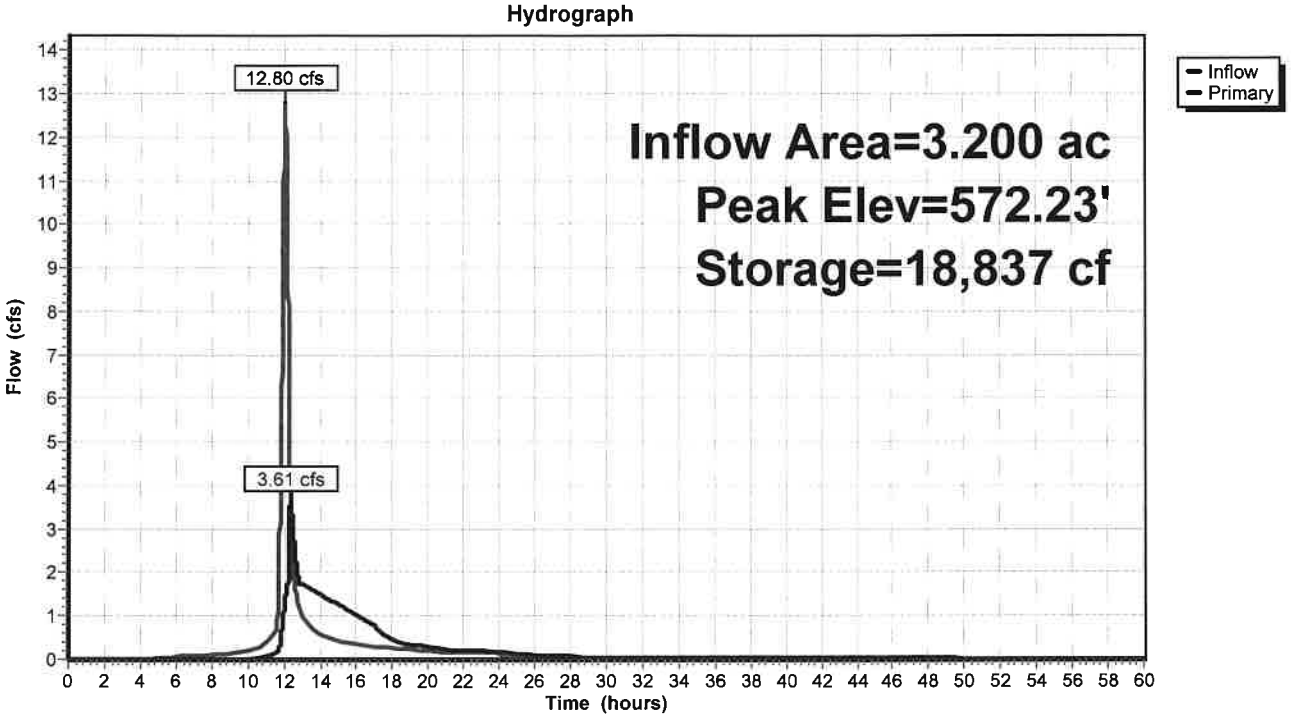
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

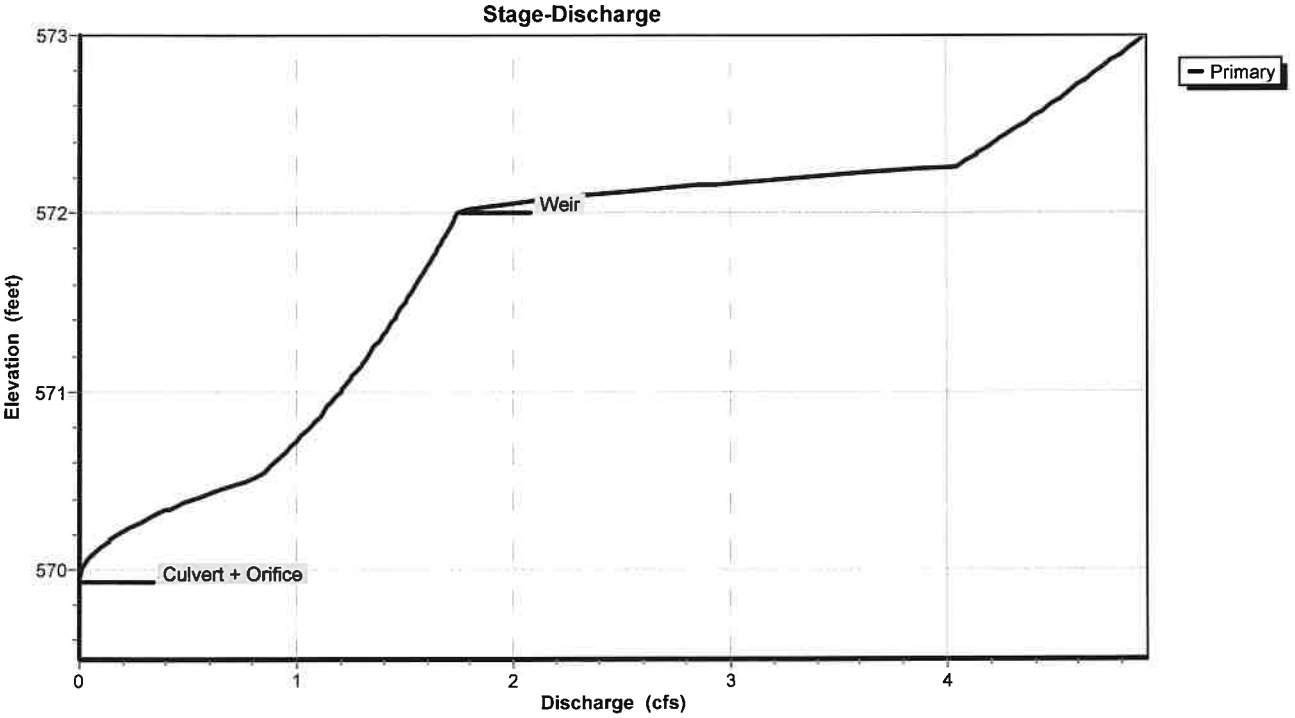
Primary OutFlow Max=3.60 cfs @ 12.36 hrs HW=572.23' (Free Discharge)
└**1=Culvert** (Passes 3.60 cfs of 4.00 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 1.84 cfs @ 7.03 fps)
  └**3=Weir** (Weir Controls 1.76 cfs @ 1.56 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

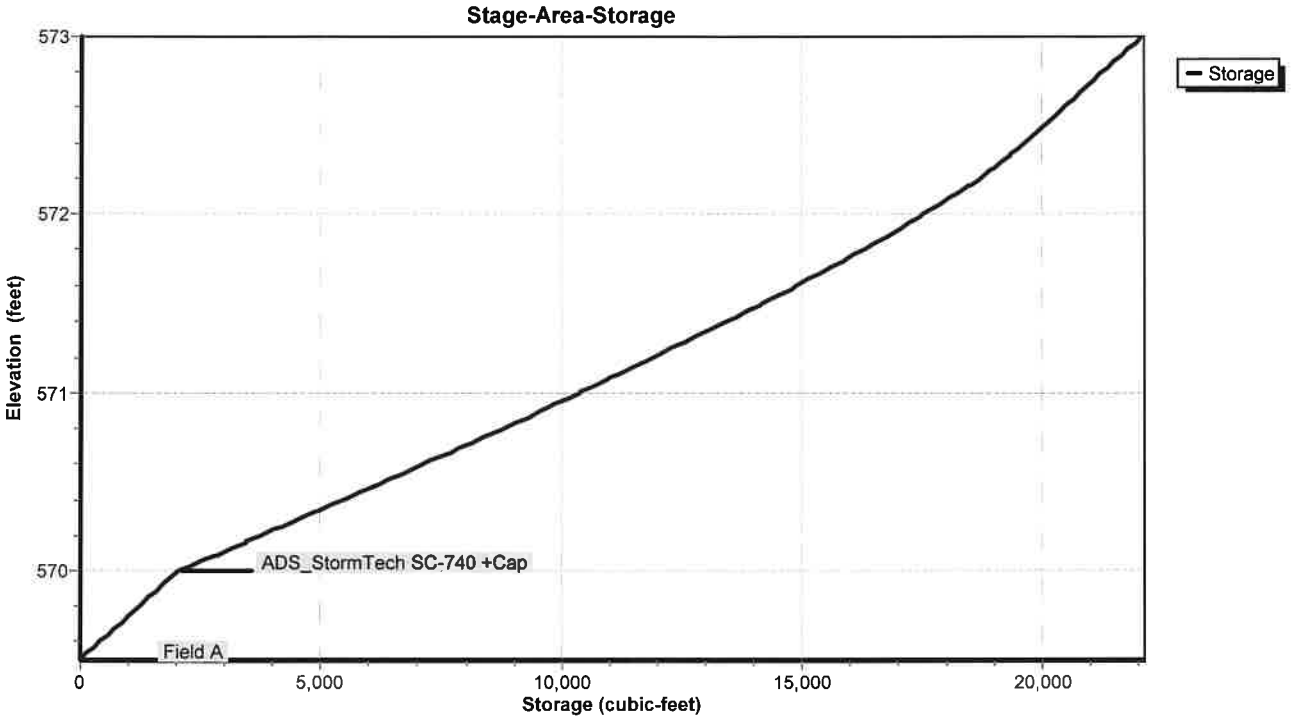


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	1	569.50	0.00
6.00	0.05	184	569.55	0.00
8.00	0.10	755	569.69	0.00
10.00	0.20	1,811	569.95	0.00
12.00	**11.66**	**9,752**	**570.92**	**1.15**
14.00	**0.59**	**14,219**	**571.51**	**1.50**
16.00	0.35	8,385	570.75	1.02
18.00	0.26	5,166	570.37	0.47
20.00	0.19	4,282	570.26	0.27
22.00	0.17	3,893	570.22	0.20
24.00	0.16	3,718	570.20	0.18
26.00	0.03	3,113	570.13	0.09
28.00	0.03	2,810	570.09	0.06
30.00	0.03	2,657	570.07	0.05
32.00	0.03	2,569	570.06	0.04
34.00	0.03	2,516	570.06	0.04
36.00	0.03	2,480	570.05	0.04
38.00	0.03	2,454	570.05	0.03
40.00	0.03	2,435	570.05	0.03
42.00	0.03	2,419	570.05	0.03
44.00	0.03	2,406	570.04	0.03
46.00	0.03	2,395	570.04	0.03
48.00	0.01	2,338	570.04	0.03
50.00	0.00	2,213	570.02	0.02
52.00	0.00	2,103	570.01	0.01
54.00	0.00	2,018	570.00	0.01
56.00	0.00	1,962	569.98	0.01
58.00	0.00	1,923	569.97	0.00
60.00	0.00	1,894	569.97	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 3.62" for 50-Year event
Inflow = 8.07 cfs @ 12.00 hrs, Volume= 0.453 af
Outflow = 5.22 cfs @ 12.09 hrs, Volume= 0.453 af, Atten= 35%, Lag= 5.1 min
Primary = 5.22 cfs @ 12.09 hrs, Volume= 0.453 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.93' @ 12.09 hrs Surf.Area= 6,611 sf Storage= 5,333 cf

Plug-Flow detention time= 214.9 min calculated for 0.453 af (100% of inflow)
Center-of-Mass det. time= 215.2 min (1,000.7 - 785.5)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

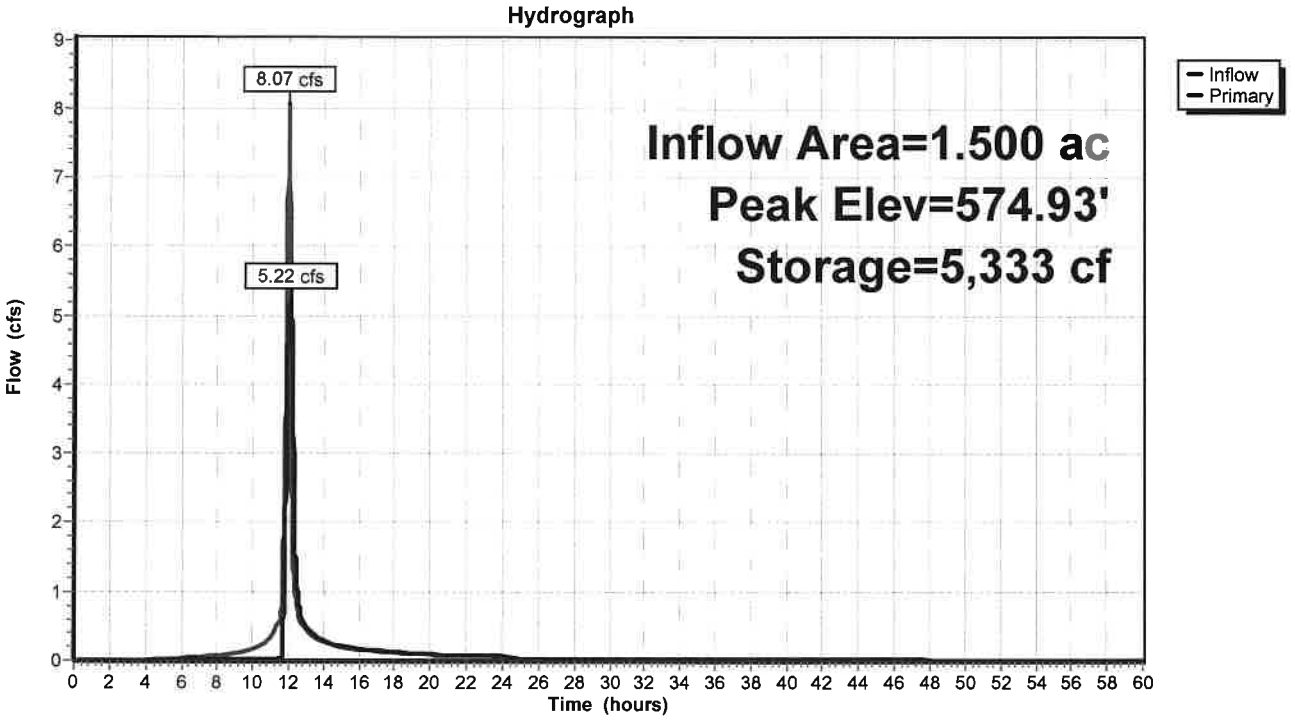
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

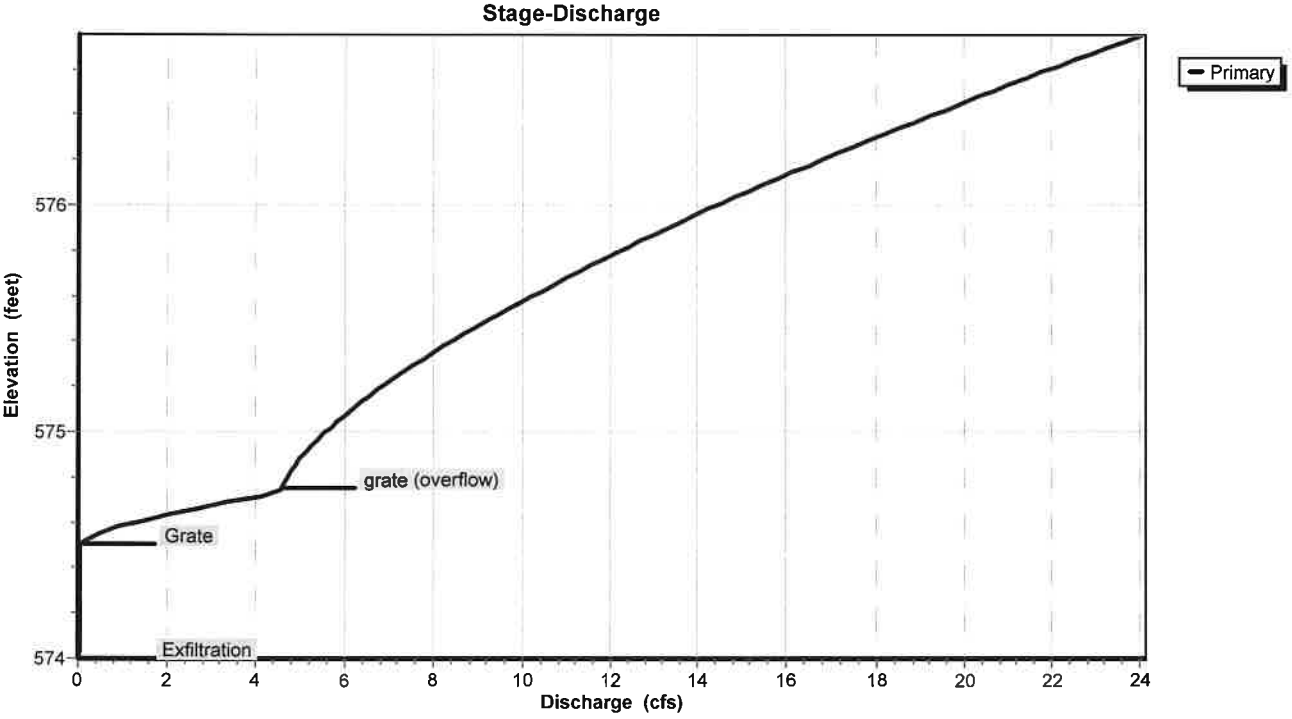
Primary OutFlow Max=5.22 cfs @ 12.09 hrs HW=574.93' (Free Discharge)
- **1=8" pipe** (Barrel Controls 4.73 cfs @ 6.02 fps)
  - **2=Grate** (Passes < 6.61 cfs potential flow)
  - **3=Exfiltration** (Passes < 0.04 cfs potential flow)
- **4=grate (overflow)** (Orifice Controls 0.49 cfs @ 1.36 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

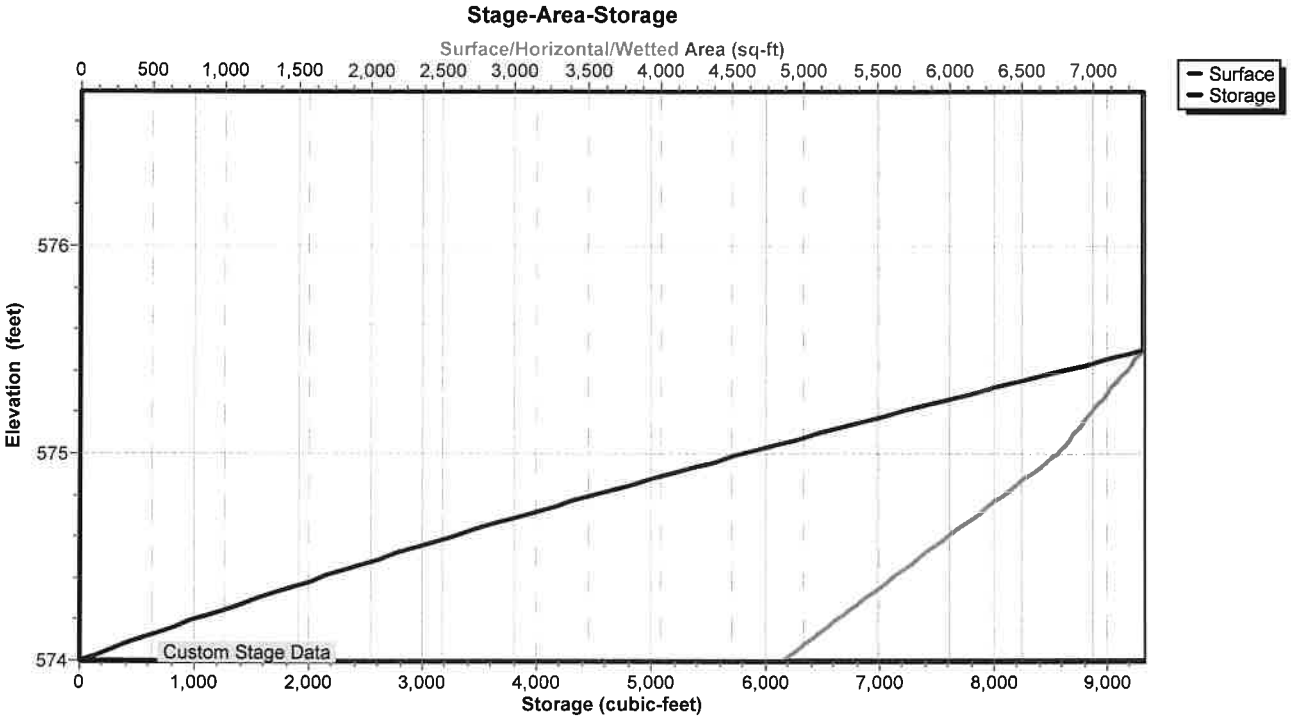


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.01	6	574.00	0.00
6.00	0.04	95	574.02	0.02
8.00	0.07	296	574.06	0.03
10.00	0.17	928	574.18	0.03
12.00	**8.07**	**4,720**	**574.84**	**4.83**
14.00	0.26	**2,846**	**574.53**	**0.28**
16.00	0.16	2,787	574.52	0.17
18.00	0.12	2,748	574.51	0.13
20.00	0.09	2,717	574.51	0.09
22.00	0.08	2,706	574.51	0.08
24.00	0.07	2,699	574.51	0.07
26.00	0.00	2,457	574.46	0.03
28.00	0.00	2,213	574.42	0.03
30.00	0.00	1,974	574.38	0.03
32.00	0.00	1,738	574.34	0.03
34.00	0.00	1,506	574.29	0.03
36.00	0.00	1,278	574.25	0.03
38.00	0.00	1,055	574.21	0.03
40.00	0.00	835	574.17	0.03
42.00	0.00	619	574.12	0.03
44.00	0.00	407	574.08	0.03
46.00	0.00	199	574.04	0.03
48.00	0.00	47	574.01	0.01
50.00	0.00	10	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=4.25"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=9.15 cfs 0.603 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=4.36"
Flow Length=345' Tc=9.1 min CN=92 Runoff=9.61 cfs 0.545 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=572.92' Storage=21,772 cf Inflow=14.92 cfs 1.148 af
Outflow=4.83 cfs 1.105 af

Pond 9P: Bioretention Area 3 Peak Elev=575.05' Storage=6,150 cf Inflow=9.61 cfs 0.545 af
Outflow=5.89 cfs 0.545 af

Total Runoff Area = 3.200 ac Runoff Volume = 1.148 af Average Runoff Depth = 4.31"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

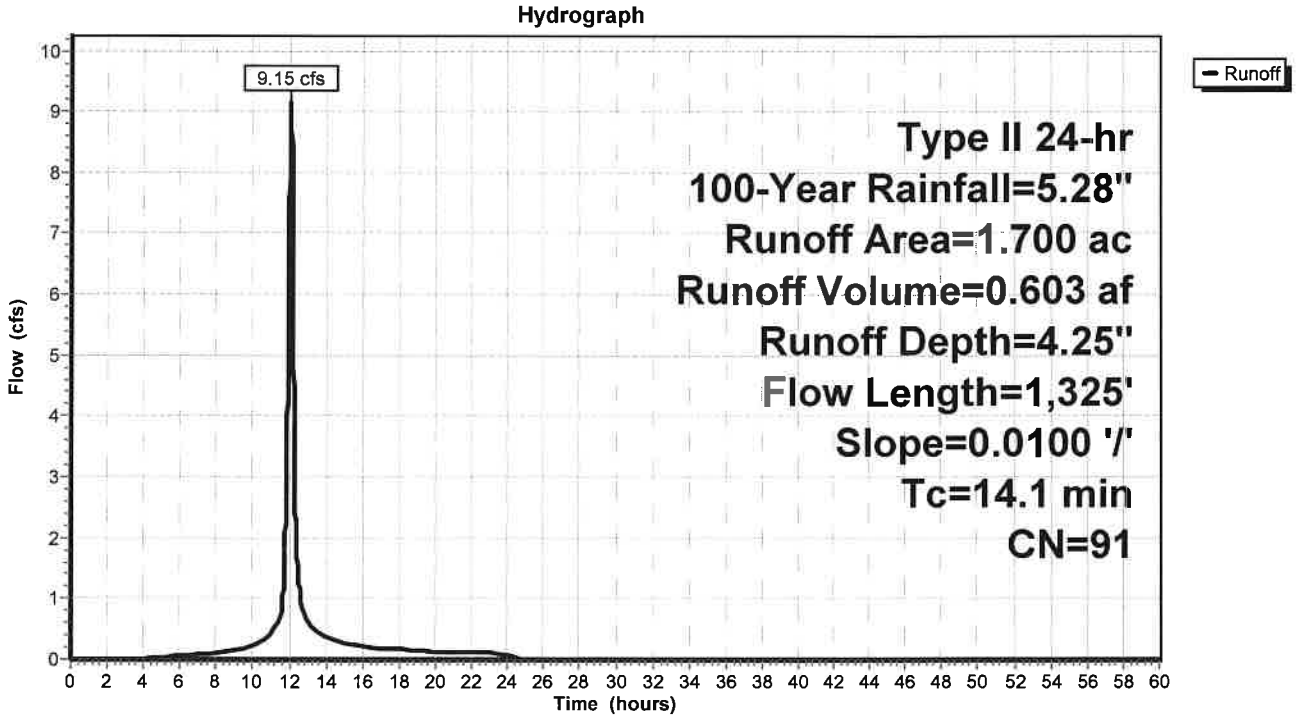
Runoff = 9.15 cfs @ 12.05 hrs, Volume= 0.603 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	52.00	5.28	4.25	0.00
1.00	0.06	0.00	0.00	53.00	5.28	4.25	0.00
2.00	0.12	0.00	0.00	54.00	5.28	4.25	0.00
3.00	0.18	0.00	0.00	55.00	5.28	4.25	0.00
4.00	0.25	0.00	0.01	56.00	5.28	4.25	0.00
5.00	0.33	0.02	0.03	57.00	5.28	4.25	0.00
6.00	0.42	0.04	0.05	58.00	5.28	4.25	0.00
7.00	0.52	0.08	0.07	59.00	5.28	4.25	0.00
8.00	0.63	0.13	0.10	60.00	5.28	4.25	0.00
9.00	0.78	0.21	0.16				
10.00	0.96	0.33	0.22				
11.00	1.24	0.54	0.43				
12.00	3.50	2.54	**8.21**				
13.00	4.08	3.09	**0.63**				
14.00	4.33	3.33	0.36				
15.00	4.51	3.50	0.28				
16.00	4.65	3.64	0.21				
17.00	4.76	3.75	0.18				
18.00	4.86	3.85	0.16				
19.00	4.95	3.93	0.14				
20.00	5.03	4.01	0.12				
21.00	5.09	4.07	0.11				
22.00	5.16	4.14	0.11				
23.00	5.22	4.20	0.10				
24.00	**5.28**	**4.25**	0.10				
25.00	5.28	4.25	0.00				
26.00	5.28	4.25	0.00				
27.00	5.28	4.25	0.00				
28.00	5.28	4.25	0.00				
29.00	5.28	4.25	0.00				
30.00	5.28	4.25	0.00				
31.00	5.28	4.25	0.00				
32.00	5.28	4.25	0.00				
33.00	5.28	4.25	0.00				
34.00	5.28	4.25	0.00				
35.00	5.28	4.25	0.00				
36.00	5.28	4.25	0.00				
37.00	5.28	4.25	0.00				
38.00	5.28	4.25	0.00				
39.00	5.28	4.25	0.00				
40.00	5.28	4.25	0.00				
41.00	5.28	4.25	0.00				
42.00	5.28	4.25	0.00				
43.00	5.28	4.25	0.00				
44.00	5.28	4.25	0.00				
45.00	5.28	4.25	0.00				
46.00	5.28	4.25	0.00				
47.00	5.28	4.25	0.00				
48.00	5.28	4.25	0.00				
49.00	5.28	4.25	0.00				
50.00	5.28	4.25	0.00				
51.00	5.28	4.25	0.00				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

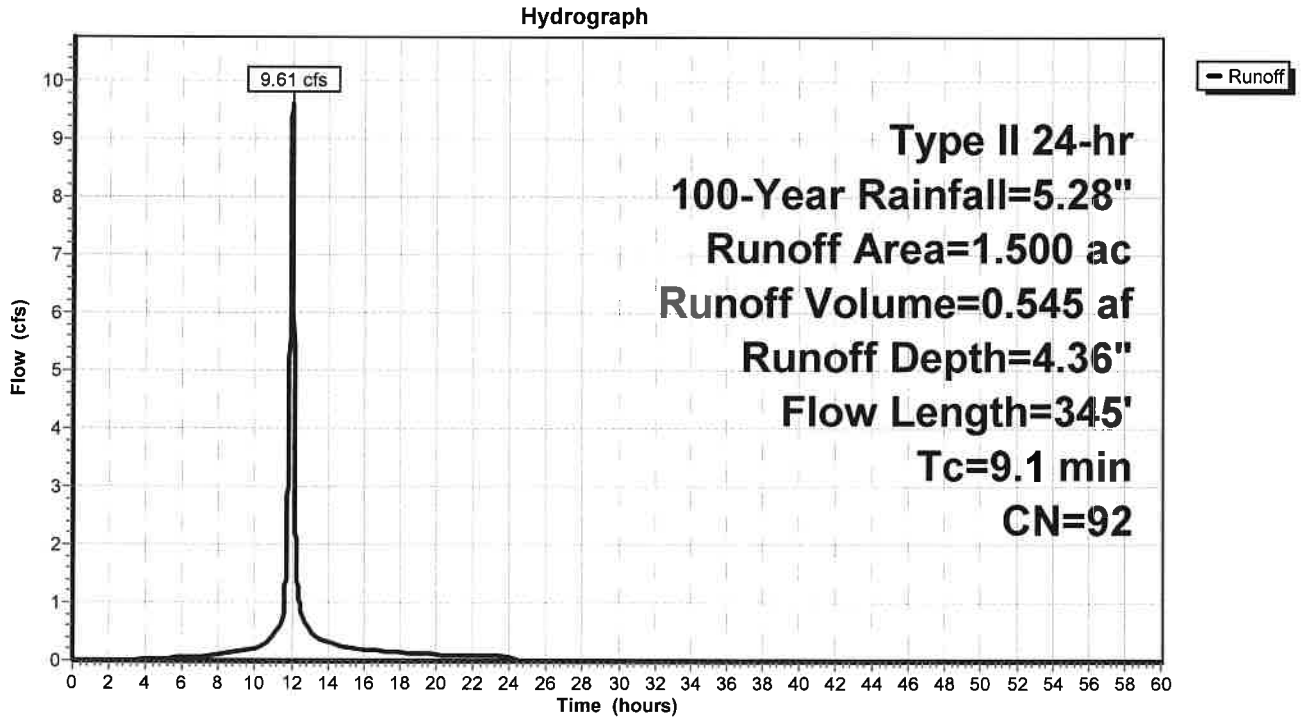
Runoff = 9.61 cfs @ 12.00 hrs, Volume= 0.545 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.01	0.02
5.00	0.33	0.02	0.03
6.00	0.42	0.06	0.05
7.00	0.52	0.10	0.08
8.00	0.63	0.16	0.10
9.00	0.78	0.25	0.16
10.00	0.96	0.37	0.22
11.00	1.24	0.59	0.42
12.00	3.50	2.64	**9.61**
13.00	4.08	3.19	0.53
14.00	4.33	3.44	0.31
15.00	4.51	3.61	0.24
16.00	4.65	3.74	0.19
17.00	4.76	3.86	0.16
18.00	4.86	3.96	0.14
19.00	4.95	4.04	0.12
20.00	5.03	4.12	0.10
21.00	5.09	4.18	0.10
22.00	5.16	4.24	0.09
23.00	5.22	4.30	0.09
24.00	**5.28**	**4.36**	0.09
25.00	5.28	4.36	0.00
26.00	5.28	4.36	0.00
27.00	5.28	4.36	0.00
28.00	5.28	4.36	0.00
29.00	5.28	4.36	0.00
30.00	5.28	4.36	0.00
31.00	5.28	4.36	0.00
32.00	5.28	4.36	0.00
33.00	5.28	4.36	0.00
34.00	5.28	4.36	0.00
35.00	5.28	4.36	0.00
36.00	5.28	4.36	0.00
37.00	5.28	4.36	0.00
38.00	5.28	4.36	0.00
39.00	5.28	4.36	0.00
40.00	5.28	4.36	0.00
41.00	5.28	4.36	0.00
42.00	5.28	4.36	0.00
43.00	5.28	4.36	0.00
44.00	5.28	4.36	0.00
45.00	5.28	4.36	0.00
46.00	5.28	4.36	0.00
47.00	5.28	4.36	0.00
48.00	5.28	4.36	0.00
49.00	5.28	4.36	0.00
50.00	5.28	4.36	0.00
51.00	5.28	4.36	0.00
52.00	5.28	4.36	0.00
53.00	5.28	4.36	0.00
54.00	5.28	4.36	0.00
55.00	5.28	4.36	0.00
56.00	5.28	4.36	0.00
57.00	5.28	4.36	0.00
58.00	5.28	4.36	0.00
59.00	5.28	4.36	0.00
60.00	5.28	4.36	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 4.31" for 100-Year event
Inflow = 14.92 cfs @ 12.06 hrs, Volume= 1.148 af
Outflow = 4.83 cfs @ 12.36 hrs, Volume= 1.105 af, Atten= 68%, Lag= 18.1 min
Primary = 4.83 cfs @ 12.36 hrs, Volume= 1.105 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 572.92' @ 12.36 hrs Surf.Area= 10,145 sf Storage= 21,772 cf

Plug-Flow detention time= 201.7 min calculated for 1.105 af (96% of inflow)
Center-of-Mass det. time= 143.6 min (1,016.5 - 873.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

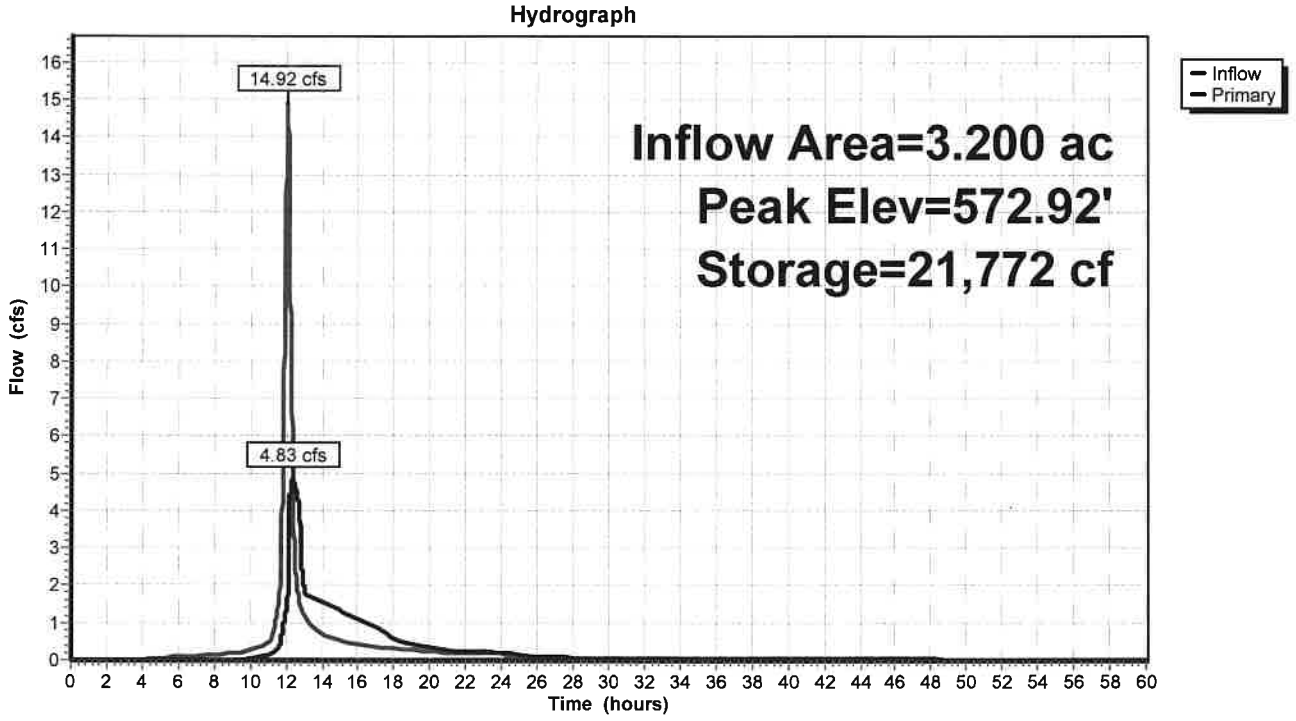
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

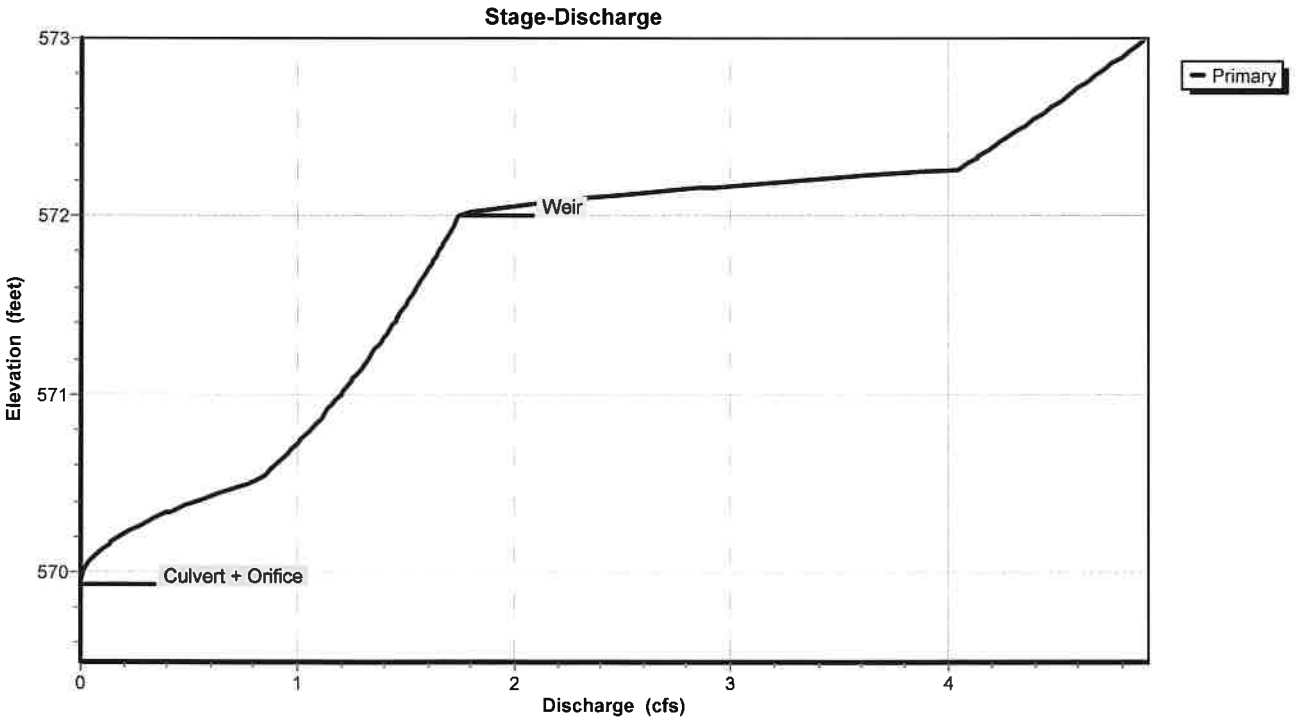
Primary OutFlow Max=4.83 cfs @ 12.36 hrs HW=572.92' (Free Discharge)
└**1=Culvert** (Barrel Controls 4.83 cfs @ 6.16 fps)
└**2=Orifice** (Passes < 2.12 cfs potential flow)
└**3=Weir** (Passes < 13.95 cfs potential flow)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

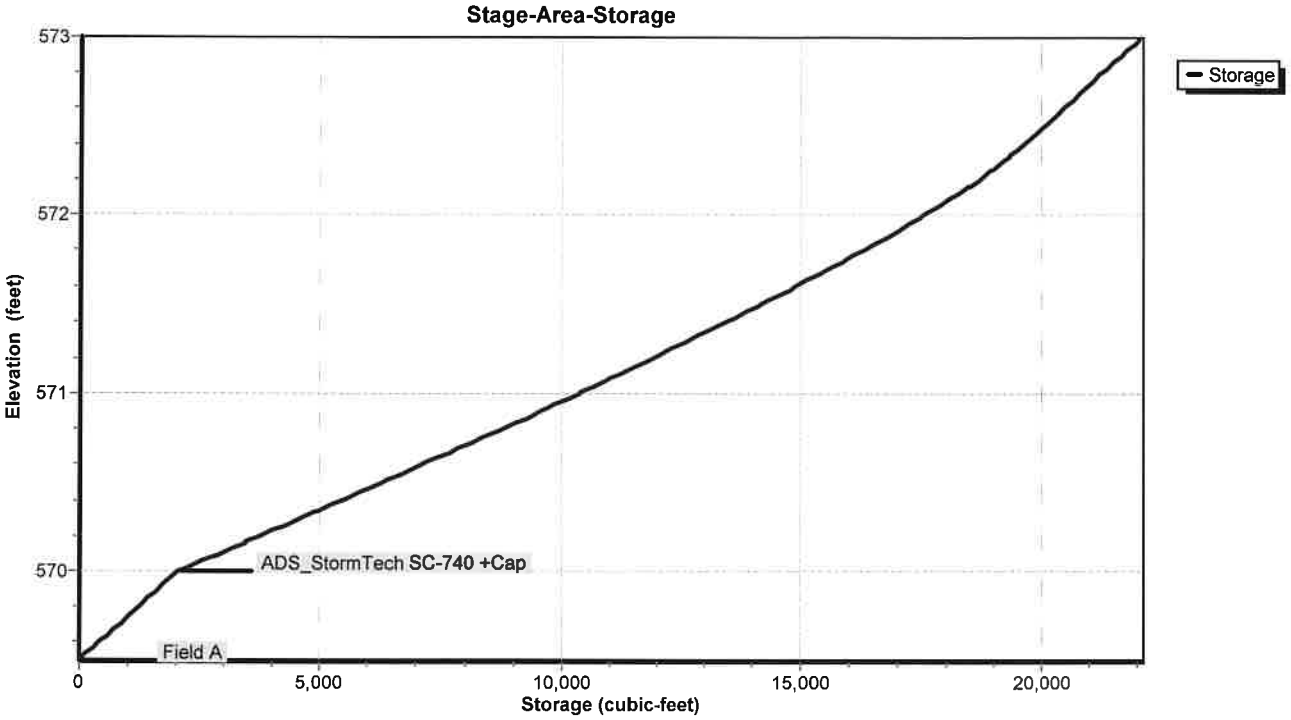


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.01	16	569.50	0.00
6.00	0.08	340	569.58	0.00
8.00	0.13	1,076	569.77	0.00
10.00	0.25	2,364	570.04	0.03
12.00	**13.40**	**12,150**	**571.23**	**1.34**
14.00	**0.69**	**15,059**	**571.63**	**1.56**
16.00	0.41	9,280	570.86	1.10
18.00	0.31	5,592	570.42	0.57
20.00	0.23	4,514	570.29	0.32
22.00	0.20	4,084	570.24	0.24
24.00	0.19	3,896	570.22	0.21
26.00	0.03	3,188	570.13	0.10
28.00	0.03	2,846	570.09	0.07
30.00	0.03	2,675	570.08	0.05
32.00	0.03	2,579	570.06	0.04
34.00	0.03	2,522	570.06	0.04
36.00	0.03	2,484	570.05	0.04
38.00	0.03	2,457	570.05	0.03
40.00	0.03	2,436	570.05	0.03
42.00	0.03	2,420	570.05	0.03
44.00	0.03	2,407	570.04	0.03
46.00	0.03	2,395	570.04	0.03
48.00	0.01	2,341	570.04	0.03
50.00	0.00	2,216	570.02	0.02
52.00	0.00	2,105	570.01	0.01
54.00	0.00	2,020	570.00	0.01
56.00	0.00	1,963	569.98	0.01
58.00	0.00	1,923	569.97	0.00
60.00	0.00	1,895	569.97	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 4.36" for 100-Year event
Inflow = 9.61 cfs @ 12.00 hrs, Volume= 0.545 af
Outflow = 5.89 cfs @ 12.09 hrs, Volume= 0.545 af, Atten= 39%, Lag= 5.5 min
Primary = 5.89 cfs @ 12.09 hrs, Volume= 0.545 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.05' @ 12.09 hrs Surf.Area= 6,805 sf Storage= 6,150 cf

Plug-Flow detention time= 184.7 min calculated for 0.545 af (100% of inflow)
Center-of-Mass det. time= 185.0 min (965.5 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

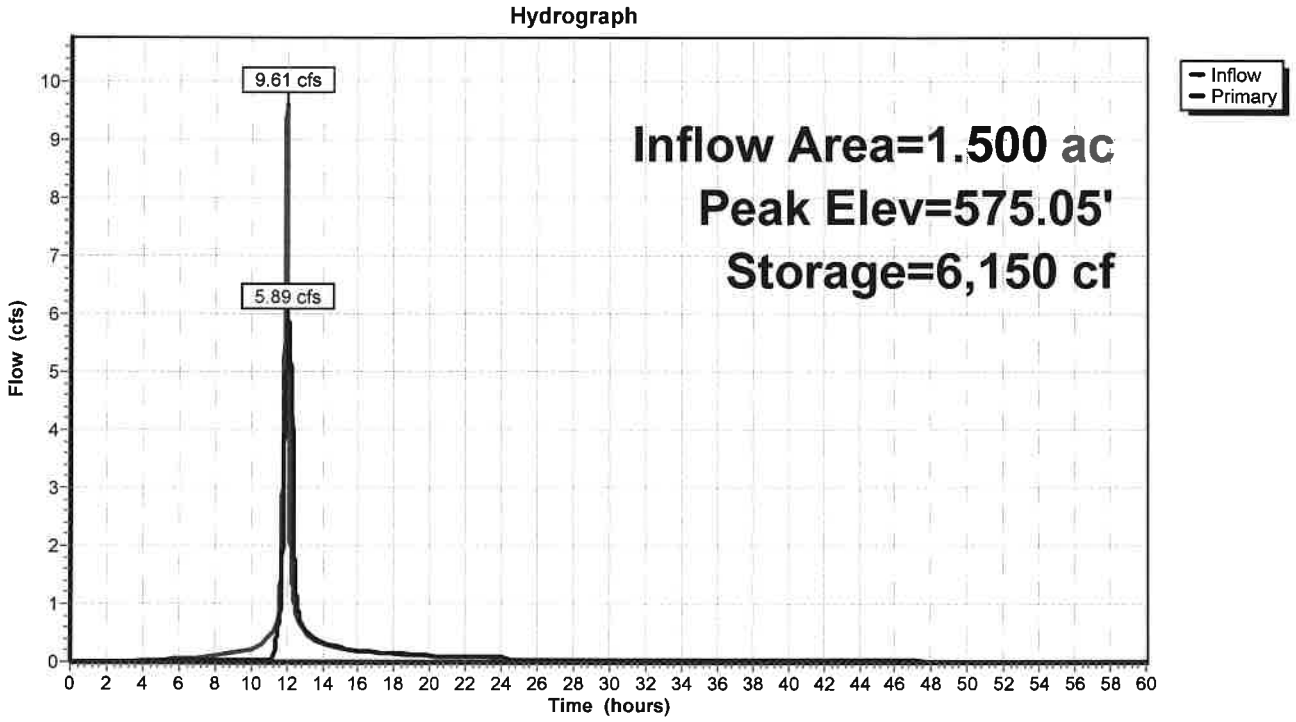
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

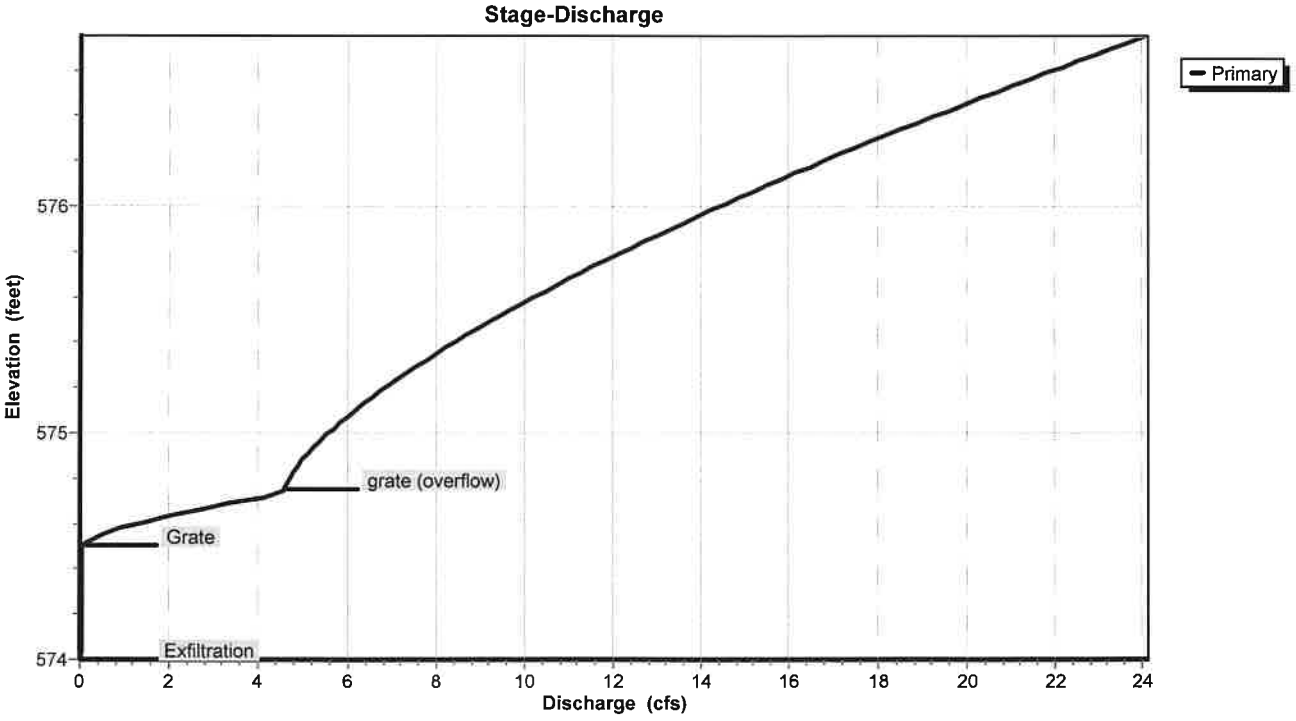
Primary OutFlow Max=5.88 cfs @ 12.09 hrs HW=575.05' (Free Discharge)
- **1=8" pipe** (Barrel Controls 4.82 cfs @ 6.14 fps)
  - **2=Grate** (Passes < 7.49 cfs potential flow)
  - **3=Exfiltration** (Passes < 0.04 cfs potential flow)
- **4=grate (overflow)** (Orifice Controls 1.06 cfs @ 1.76 fps)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

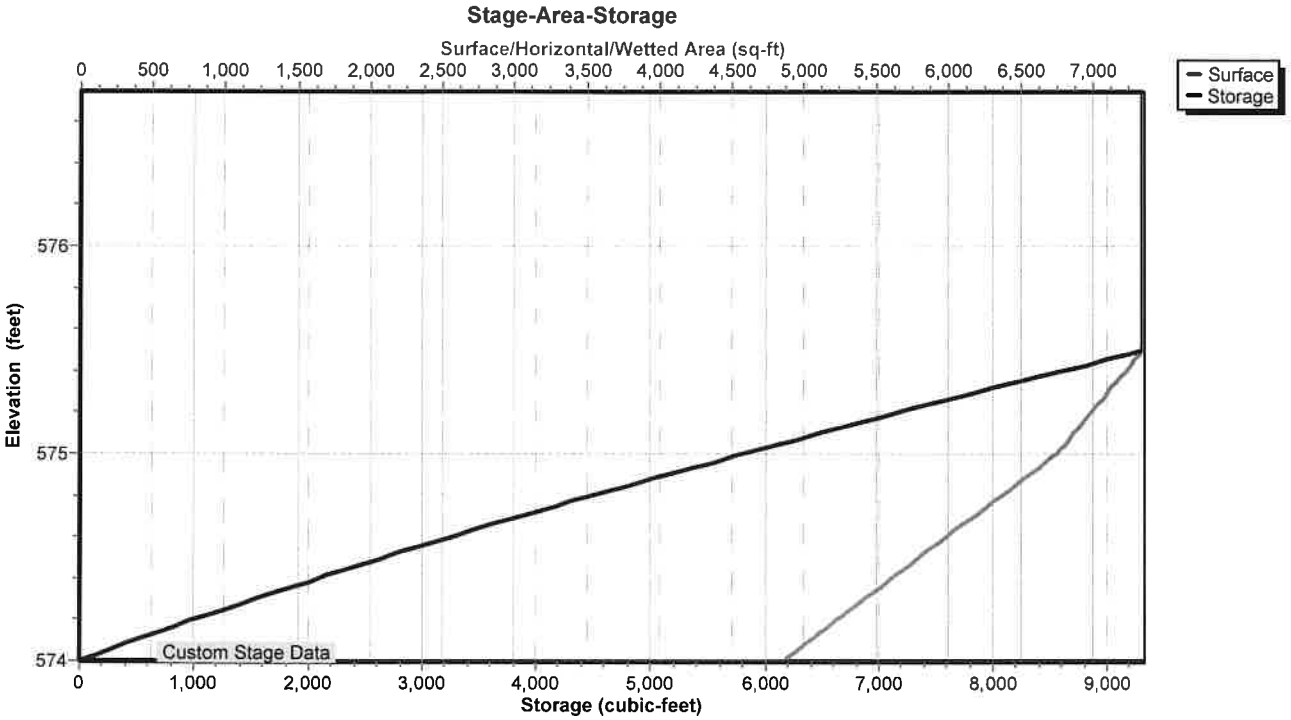


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.02	22	574.00	0.00
6.00	0.05	149	574.03	0.03
8.00	0.10	484	574.10	0.03
10.00	0.22	1,353	574.27	0.03
12.00	**9.61**	**5,288**	**574.92**	**5.19**
14.00	0.31	**2,872**	**574.54**	**0.33**
16.00	0.19	2,803	574.52	0.19
18.00	0.14	2,769	574.52	0.15
20.00	0.10	2,732	574.51	0.11
22.00	0.09	2,719	574.51	0.10
24.00	0.09	2,712	574.51	0.09
26.00	0.00	2,463	574.47	0.03
28.00	0.00	2,219	574.42	0.03
30.00	0.00	1,979	574.38	0.03
32.00	0.00	1,743	574.34	0.03
34.00	0.00	1,511	574.29	0.03
36.00	0.00	1,283	574.25	0.03
38.00	0.00	1,059	574.21	0.03
40.00	0.00	839	574.17	0.03
42.00	0.00	624	574.13	0.03
44.00	0.00	412	574.08	0.03
46.00	0.00	204	574.04	0.03
48.00	0.00	49	574.01	0.01
50.00	0.00	11	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	1	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Green Infrastructure & Water Quality Calculations

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Version 1.7
Last Updated: 2/22/21

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	

Design Point:	1	
P=	1.00	*inch*

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	6.10	3.30	54%	0.54	11,888	
2	1.00	0.00	0%	0.05	182	
3	4.40	2.70	61%	0.60	9,620	
4	1.70	1.00	59%	0.58	3,576	
5	1.50	1.00	67%	0.65	3,539	
6						
7						
8						
9						
10						
Subtotal (1-30)	14.70	8.00	54%	0.54	**28,804**	**Subtotal 1**
Total	14.70	8.00	54%	0.54	**28,804**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

Technique	Total Contributing Area *(Acre)*	Contributing Impervious Area *(Acre)*	Notes
Conservation of Natural Areas	1.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to 150 feet*
Filter Strips	0.00	0.00	
Tree Planting	0.00	0.00	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**1.00**	**0.00**	

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	14.70	8.00	54%	0.54	28,804
Subtract Area	-1.00	0.00			
WQv adjusted after Area Reductions	**13.70**	**8.00**	58%	0.58	28,623
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	13.70	8.00	58%	0.58	**28,623**
WQv reduced by Area Reduction techniques					182

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Total Water Quality Volume Calculation

WQv(acre-feet) = [(P)(Rv)(A)] /12

All Subcatchments						
Catchment	**Total Area** *(Acres)*	**Impervious Cover** *(Acres)*	**Percent Impervious** *%*	**Runoff Coefficient** *Rv*	**WQv** *(ft^3)*	**Description**
1	6.10	3.30	0.54	0.54	11888.25	
2	1.00	0.00	0.00	0.05	182	
3	4.40	2.70	0.61	0.60	9619.50	
4	1.70	1.00	0.59	0.58	3575.55	
5	1.50	1.00	0.67	0.65	3539.25	
6						
7						
8						
9						
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Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	6.10	3.30	0.54	0.54	11888.25	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	54%	0.54	11,888	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.						*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate	0.00	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		11,888	*ft^3*	
Enter Depth of Soil Media	*df*	1.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**8916**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	100	*ft*	
Filter Length	110	*ft*	
Filter Area	11000	*ft^2*	
Actual Volume Provided	14667	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?			Select Practice	
RRv	5,867			
RRv applied	**5,867**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	6,022	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	OK		*Check to be sure Area provided ≥ Af*	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Worksheet

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor & Schueler, 1996)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
5	1.50	1.00	0.67	0.65	3539.25	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	67%	0.65	3,539	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.						*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate	0.00	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		3,539	*ft^3*	
Enter Depth of Soil Media	*df*	1.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**2654**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	49	*ft*	
Filter Length	100	*ft*	
Filter Area	4900	*ft^2*	
Actual Volume Provided	6533	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?		No	Select Practice	
RRv	2,613			
RRv applied	**2,613**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	926	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	OK		*Check to be sure Area provided ≥ Af*	

(For use on HSG C or D Soils with underdrains)

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Conservation of Natural Areas

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft^3)	Precipitation (in)	Description
2	1.00	0.00	0.00	0.05	181.50	1.00	

Design Elements

Is Contiguous Area ≥ 10,000 ft2?	*Yes*
Will limits of disturbance be clearly shown on all construction drawings and marked in field/project development site with structural barriers?	*Yes*
Is the Conservation area located in an acceptable conservation easement instrument that ensures perpetual protection of proposed area?	*Yes*
Does the easement specify how the natural area vegetation will be managed and boundaries will be marked?	*Yes*
Does the conservation area receive runoff from other contributing areas?	*No*
Does Conservation Area drain to a Design Point?	*No*
Is Sheet Flow to Riparian Buffer or another area based practice already being Used for this area?	*No*

Are All Criteria in Section 5.3.1 Met?	*Yes*

Area Reduction Adjustments

Subtract	***1.00***	***Acres from Total Area***
Subtract	***0.00***	***Acres from Total Impervious Area***

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**17.40**	20%
Total Area	17.4	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	8.00	*acre*
Precipitation	1	*in*
Rv	0.95	
Minimum RRv	**5,518**	***ft3***
	0.13	af

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	28804	*0.661*
30	Total RRV Provided	8662	*0.199*
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	5518	*0.127*
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	159626	*3.664*
34	Sum of Volume Reduced & Treated	168287	*3.863*
34	Sum of Volume Reduced and Treated	168287	*3.863*
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Apply Peak Flow Attenuation			
36	Channel Protection	*Cpv*	
37	Overbank	*Qp*	
37	Extreme Flood Control	*Qf*	
	Are Quantity Control requirements met?		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	1.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00			
	Bioretention & Infiltration Bioretention	F-5	7.60	4.30	8480	6948
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5	9.8	3.40		152678.000
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction →			1.00	0.00	182	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			7.60	4.30	8480	6948
Totals by Standard SMP →			9.80	3.40		152678
Totals (Area + Volume + all SMPs) →			18.40	7.70	8,662	159,626
	Impervious Cover √	error				

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 6P: WQv

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
563.00	710	0
563.15	776	111
563.30	843	233
563.45	909	364
563.60	975	506
563.75	1,042	657
563.90	1,108	818
564.05	1,181	989
564.20	1,267	1,173
564.35	1,353	1,369
564.50	1,439	1,579
564.65	1,524	1,801
564.80	1,610	2,036
564.95	1,696	2,284
565.10	1,796	2,546
565.25	1,901	2,823
565.40	2,007	3,116
565.55	2,113	3,425
565.70	2,219	3,750
565.85	2,324	4,090
566.00	2,430	4,447
566.15	2,561	4,821
566.30	2,692	5,215
566.45	2,822	5,629
566.60	2,953	6,062
566.75	3,084	6,515
566.90	3,215	6,987
567.05	3,356	7,479
567.20	3,519	7,995
567.35	3,681	8,535
567.50	3,844	9,100
567.65	4,007	9,688
567.80	4,169	10,301
567.95	4,332	10,939
568.10	4,731	11,613
568.25	5,249	12,361
568.40	5,767	13,188
568.55	6,285	14,091
568.70	6,802	15,073
568.85	7,320	16,132
569.00	7,838	17,269
569.15	8,402	18,487
569.30	8,965	19,790
569.45	9,529	21,177
569.60	10,093	22,648
569.75	10,657	24,204
569.90	11,220	25,845
570.05	11,796	27,571
570.20	12,398	29,385
570.35	13,000	31,290
570.50	13,601	33,285
570.65	14,202	35,371
570.80	14,804	37,546
570.95	15,406	39,812
571.10	16,056	42,170
571.25	16,731	44,629
571.40	17,406	47,189
571.55	18,081	49,851
571.70	18,756	52,614
571.85	19,431	55,478
572.00	20,106	58,443
572.15	20,820	61,512
572.30	21,534	64,689
572.45	22,248	67,973
572.60	22,961	71,363
572.75	23,675	74,861
572.90	24,389	78,466
573.05	25,107	82,178
573.20	25,834	85,998
573.35	26,561	89,928
573.50	27,288	93,967
573.65	28,014	98,114
573.80	28,741	102,371
573.95	29,468	106,737
574.10	32,660	111,335
574.25	37,086	116,565
574.40	41,511	122,460
574.55	45,937	129,019
574.70	50,362	136,241
574.85	54,788	144,127
575.00	**59,213**	**152,678**

WQv

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix O

NYSDEC Stormwater Management Inspection Lists

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretetion Areas (F-5)



Description: Shallow stormwater basin or landscaped area which utilizes engineered soils and vegetation to capture and treat runoff. The practice is often located in parking lot islands, and can also be used to treat residential areas.

KEY CONSIDERATIONS

CONVEYANCE

- Provide overflow for the 10-year storm to the conveyance system.
- Conveyance to the system is typically overland flow delivered to the surface of the system, typically through curb cuts or over a concrete lip.

PRETREATMENT

- Pretreatment consists of a grass channel or grass filter strip, a gravel diaphragm, and a mulch layer, sized based on the methodologies described in Section 6.4.2.

TREATMENT

- Treatment area should have a four foot deep planting soil bed, a surface mulch layer, and a 6" ponding layer.
- Size the treatment area using equations provided in Chapter 6.

LANDSCAPING

- Detailed landscaping plan required.

MAINTENANCE

- Inspect and repair/replace treatment area components
- Stone drop (at least 6") provided at the inlet
- Remulch annually

STORMWATER MANAGEMENT SUITABILITY

- [X] Water Quality
- [ ] Channel Protection
- [ ] Overbank Flood Protection
- [ ] Extreme Flood Protection

Accepts Hotspot Runoff: *Yes*
(requires impermeable liner)

IMPLEMENTATION CONSIDERATIONS

- [M] Capital Cost
- [M] Maintenance Burden

Residential
Subdivision Use: *Yes*

High Density/Ultra-Urban: *Yes*

Drainage Area: *5 acres max.*

Soils: *Planting soils must meet specified criteria; No restrictions on surrounding soils*

Other Considerations:

- *Use of native plants is recommended*

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

	Key: **L**=Low **M**=Medium **H**=High **POLLUTANT REMOVAL** **G** Phosphorus **G** Nitrogen **G** Metals - Cadmium, Copper, Lead, and Zinc removal **F** Pathogens – Coliform, Streptococci, E.Coli removal Key: **G**=Good **F**=Fair **P**=Poor

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Comments:

Actions to be Taken:

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Comments:

Actions to be Taken:

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix P

StormTech O&M Manual

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Isolator® Row
O&M Manual



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

The Isolator® Row

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

The Isolator Row

The Isolator Row is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-7200 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row and passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow stormwater to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the chamber's sidewall. The non-woven fabric is not required over the SC-160, DC-780, MC-3500 or MC-7200 models as these chambers do not have perforated side walls.

The Isolator Row is designed to capture the "first flush" runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row. After Stormwater flows through the Isolator Row and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row to minimize maintenance requirements and maintenance costs.

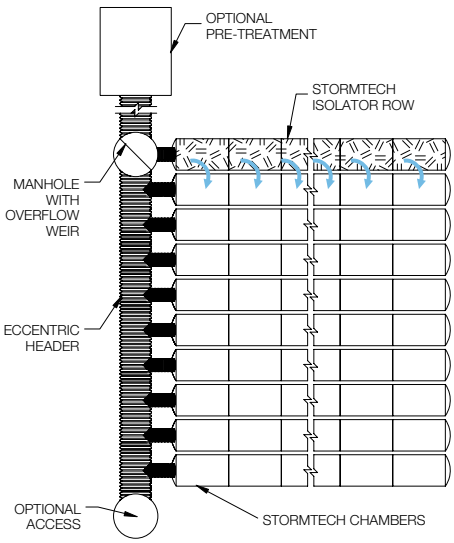
Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.*



Looking down the Isolator Row from the manhole opening, woven geotextile Fabric is shown between the chamber and stone base.



StormTech Isolator Row with Overflow Spillway (*not to scale*)



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Isolator Row Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the **actual frequency of inspection and maintenance practices.**

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

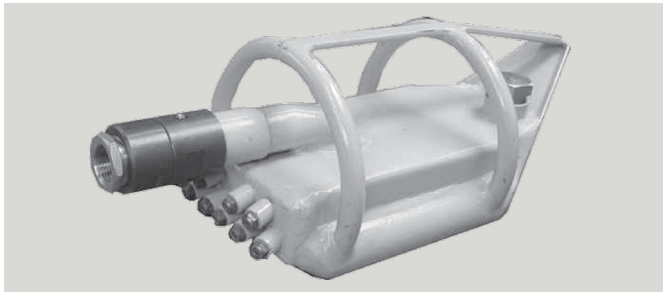
The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

Maintenance

The Isolator Row was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row lengths up to 200" (61 m). **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

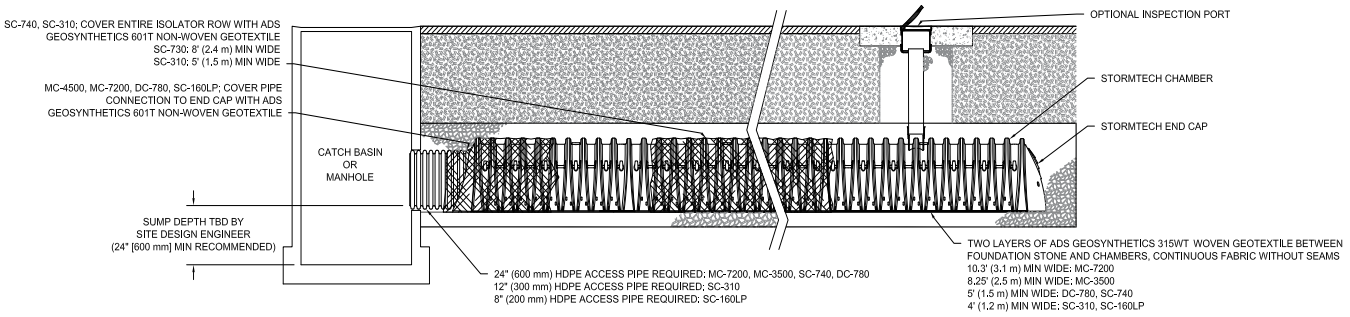






StormTech Isolator Row (not to scale)

Note: *Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-7200 chamber models and is not required over the entire Isolator Row.*



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Isolator Row Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row
   i. Remove cover from manhole at upstream end of Isolator Row
   ii. Using a flashlight, inspect down Isolator Row through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

Step 2

Clean out Isolator Row using the JetVac process.

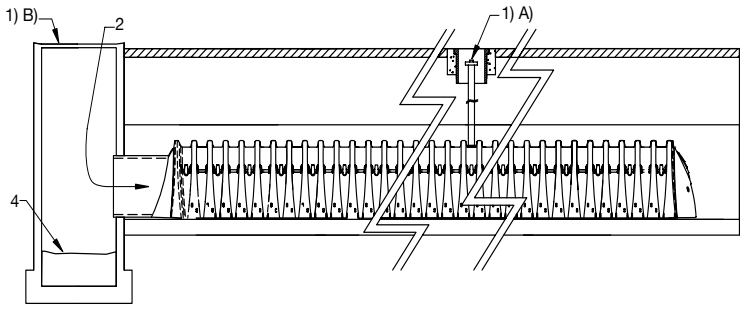
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sedi-ment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
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Stormtech® and the Isolator® Row are registered trademarks of StormTech, Inc.
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adspipe.com
800-821-6710

TRAFFIC IMPACT REPORT UPDATE

June 24, 2024

20243845.0001

SAWYER'S LANDING DEVELOPMENT UPDATE

TOWN OF AMHERST, NY

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PREPARED FOR:
Severyn Development, Inc.
Attn: William Severyn // Chief Executive Officer
43 Central Ave Suite 300
Lancaster, New York 14086

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Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

1.0 EXECUTIVE SUMMARY

The purpose of this updated report is to evaluate the potential traffic impacts related to the proposed Sawyer's Landing development to be located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). Within this report, the operating characteristics of the proposed access points and impacts to the adjacent roadway network are evaluated and mitigating measures are identified (if needed) to minimize operational concerns.

To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

Project Location and Description

The project site is located along the north side of Dodge Road, west of Interstate 990, in the Town of Amherst, Erie County, New York. The project site is bounded by a residential development and Heritage Heights Elementary School to the north, vacant land to the east, offices to the south, and a medical plaza to the west. Land uses in the vicinity of the project site include residential, office, medical, and educational uses. The project site currently consists of a vacant building.

The proposed Sawyer's Landing development will consist of constructing:

- Mixed-Use Building 1 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) restaurant,
  - a ±432 SF leasing office,
  - and an ±8,002 SF membership-based gym
- Mixed-Use Building 2 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) retail store,
  - a ±8,953 square foot (SF) retail store,
  - and a ±2,300 SF office
- a four-story ±26,400 SF self-storage building (±105,600 SF in total),
- 22 two-story duplex townhome buildings containing two units each for a total of 44 duplex townhome units,
- 63 two-story townhomes with attached garages.

Access to the site will be provided via one enter only driveway and one exit only driveway along Dodge Rd and one full access driveway along Dodge Rd to the south of the enter only driveway. There will also be an emergency access driveway along Dodge Road to the north of the exit only driveway with an emergency gate.

Study Area

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following two (2) intersections:

1. Dodge Road/Sweet Home Road
2. Dodge Road/North Forest Road

Existing and Background Conditions

Turning movement traffic counts were collected by Passero Associates on Thursday, March 3, 2022, at the Dodge Rd/North Forest Rd study intersection for both the weekday AM and PM peak hour periods. Turning movement traffic counts were collected by the Town of Amherst on Tuesday May 14, 2024, at the Dodge Rd/Sweet Home Rd study

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

intersection for both the weekday AM and PM peak hour periods. Traffic counts were conducted between 7:00-9:00 AM for the weekday AM peak period and 4:00-6:00 PM for the weekday PM peak period. The peak hour traffic periods generally occurred between 7:30-8:30 AM and 4:30-5:30 PM.

Construction of the proposed project is anticipated to reach full build-out within approximately two years. The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. The following projects were identified and are listed below:

- Aspen Heights Student Housing – Traffic generated by this student housing development was added to the study intersections.
- 480 Dodge Road - Traffic generated by this approved but not yet constructed multifamily project was added to the study intersections.
- 775 John James Audubon Pkwy – Traffic generated by this approved project is included in the background growth rate.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic has decreased between 2010 and 2019 in the study area. To account for normal increases in background traffic growth, including the approved development noted above as well as any unforeseen developments in the study area, a growth rate of 1.0% per year was applied to the existing traffic volumes for the two-year build out period.

Conclusions and Recommendations

This updated Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Sawyer's Landing development to be located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

Conclusions

1. The proposed project is expected to generate approximately 76 entering/102 exiting vehicle trips during the AM peak hour and 163 entering/136 exiting vehicle trips during the PM peak hour.

2. However, not all these driveway volumes are new, but instead a portion of the proposed volumes will visit more than one land use during one trip to the site. Thus, based upon internal capture rates from the NCHRP 684 model and professional judgement, the proposed site is expected to generate approximately 69 entering/92 exiting new vehicle trips during the AM peak hour and 133 entering/110 exiting new vehicle trips during the PM peak hour.

3. Based upon the results of the traffic signal warrant at the Dodge Rd/North Forest Rd intersection, a traffic signal is not warranted at this intersection.

4. All movements generally operate at an acceptable LOS "D" or better under existing, projected background, and full build conditions (with proposed development) during both peak hours at all study intersections except for the northbound left approach at the Sweet Home Rd/Dodge Rd intersection during the AM peak hour, which

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

operates at LOS "F" under background and full build conditions. There are no LOS changes at any of the study intersections that require mitigation.

5. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Recommendations

1. The proposed exit driveway along Dodge Rd should be designed to provide one exiting lane.

2. The proposed enter driveway along Dodge Rd should be designed to provide one entering lane.

3. The proposed southerly driveway along Dodge Rd should be designed to provide one entering and one exiting lane.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

2.0 INTRODUCTION

2.1 Study Purpose and Objectives

The purpose of this updated report is to evaluate the potential traffic impacts related to the proposed Sawyer's Landing development to be l located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). Within this report, the operating characteristics of the proposed access points and impacts to the adjacent roadway network are evaluated and mitigating measures are identified (if needed) to minimize operational concerns.

To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

2.2 Project Location

The project site is located along the north side of Dodge Road, west of Interstate 990, in the Town of Amherst, Erie County, New York. The project site is bounded by a residential development and Heritage Heights Elementary School to the north, vacant land to the east, offices to the south, and a medical plaza to the west. Land uses in the vicinity of the project site include residential, office, medical, and educational uses. The project site currently consists of a vacant building.

Study Area

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following two (2) intersections:

1. Dodge Road/Sweet Home Road
2. Dodge Road/North Forest Road

The project site location and study area are illustrated in **Figure 1** (all figures are included at the end of this report).

3.0 TRANSPORTATION SETTING

3.1 Description of Study Area Roadways

The information outlined in **Table 1** provides a description of the existing roadway network within the study area. **Figure 2** illustrates the lane geometry and traffic control at each of the study intersections and the Annual Average Daily Traffic (AADT) volumes on the study roadways. The AADTs reflect the most recently collected data obtained from the NYSDOT.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table 1: *Existing Highway System*

ROADWAY	CLASS[1]	AGENCY[2]	SPEED LIMIT[3]	TRAVEL LANES[4]	ORIENTATION OF TRAVEL	AADT[5]
Dodge Road	16	ECDPW	40	2	Two-Way/ East-West	6,738 NYSDOT (2017)
Sweet Home Road	16	ECDPW	45	4	Two-way/ North-South	18,050 NYSDOT (2019)
North Forest Road	19	Town of Amherst	35	2	Two-way/ North-South	1,797 NYSDOT (2019)

Notes:
1. State functional classification of roadway
2. Jurisdictional agency of roadway.
3. Posted or statewide limit in miles per hour (mph).
4. Number of travel lanes. Excludes turning/auxiliary lanes developed at intersections.
5. Estimated AADT in vehicles per day (vpd). AADT source (Year).

The Highway Functional Classification System defines the role a roadway plays in the overall road network. Functional classification of highways within the study area is determined by the NYSDOT and the Federal Highway Administration (FHWA).

Urban Minor Arterial (Class 16)

An urban minor arterial interconnects and augments the higher-level arterials as well as serves trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials. They distribute traffic to smaller geographic areas than those served by higher-level Arterials and provide more land access than Principal Arterials without penetrating identifiable neighborhoods. They also provide urban connections for Rural Collectors.

Urban Local (Class 19)

According to the FHWA, this class of roadway includes all facilities not in one of the higher systems (e.g., arterial, collector, etc.). It primarily permits direct access to abutting lands and connections to the higher order systems and is not intended for use in long distance travel. As public roads, they should be accessible for public use throughout the year. Generally, the streets carry little to no through-traffic flows.

3.2 Description of Multimodal Network

Table 2 summarizes the traffic controls, pedestrian, bicycle, and transit accommodations within the study area.

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Table 2: *Multimodal Network*

INTERSECTION	Dodge Rd/Sweet Home Rd	Dodge Rd/North Forest Rd
Intersection Control Type	Signalized	Unsignalized
Sidewalks	◉	○
Crosswalks	●	○
Curb Ramps	●	○
Pedestrian Signal	●	○
Pedestrian Push Button	●	○
Pedestrian Countdown	●	○
Bicycle Facilities	○	○
Street Lighting	●	○
Transit Route	N/A	N/A

● Present at entire intersection
◉ Present at portion of intersection
○ Not present at intersection

3.3 Planned/Programmed Highway Improvements

There are no planned highway improvement projects in the study area.

4.0 EXISTING CONDITIONS ANALYSIS

4.1 Peak Intervals for Analysis

Given the functional characteristics of the corridors, adjacent land uses, and the proposed land use for the project site, the peak hours selected for analysis are the weekday AM and weekday PM peak periods. The combination of site traffic and adjacent street traffic produces the greatest demand during these time periods.

4.2 Existing Traffic Volume Data

Turning movement traffic counts were collected by Passero Associates on Thursday, March 3, 2022, at the Dodge Rd/North Forest Rd study intersection for both the weekday AM and PM peak hour periods. Turning movement traffic counts were collected by the Town of Amherst on Tuesday May 14, 2024, at the Dodge Rd/Sweet Home Rd study intersection for both the weekday AM and PM peak hour periods. Traffic counts were conducted between 7:00-9:00 AM for the weekday AM peak period and 4:00-6:00 PM for the weekday PM peak period. The peak hour traffic periods generally occurred between 7:30-8:30 AM and 4:30-5:30 PM.

All turning movement count data was collected on a typical weekday while local schools were in session. No adverse weather conditions impacted the traffic counts. The traffic volumes were reviewed for seasonality and to confirm the accuracy and relative balance of the collective traffic counts. The actual differences in traffic volumes can be attributed to temporal variations in traffic volumes as well as activity related to driveways located in the segments between the study intersections. Additionally, the volumes at the Dodge Rd/North Forest Rd intersection were increased using a

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0.5% growth rate based on the historical traffic data described in Section 5.0 to account for any growth in traffic between the time of data collection and now. The existing peak hour traffic volumes are shown in **Figure 3**.

4.3 Existing Crash Investigation

The purpose of this crash analysis is to identify inherent safety issues by studying and quantifying historical crashes at the study intersections and identifying potential crash patterns and clusters.

A crash cluster is defined as an abnormal occurrence of similar crash types occurring at approximately the same location or involving the same geometric features. The severity of the crashes should also be considered. A history of crashes is an indication that further analysis is required to determine the cause(s) of the crash(es) and to identify what actions, if any, could be taken to mitigate the crashes.

A crash investigation within the study area was conducted to assess the safety history from January 1, 2019, through December 31, 2023.

Reportable (non-injury, injury, and fatal injury) type crashes are defined as damage to one person's property in the amount of $1,001 or more. The Non-Reportable type crashes result in property damage of $1,000 or less. Crash rates were computed for the study intersections and compared with NYSDOT average crash rates for similar intersections, as summarized in **Table 3**. Intersection rates are listed as crashes per million entering vehicle (CR/MEV).

Table 3: *Intersection Crash Rate Analysis*

INTERSECTION	NUMBER OF CRASHES	NUMBER OF ENTERING VEHICLES	ACTUAL CRASH RATE	STATEWIDE AVERAGE CRASH RATE
Sweet Home Rd at Dodge Rd	30	29,442 vpd	0.56	0.26
Dodge Rd at North Forest Rd	6	6,379 vpd	0.52	0.19

Notable crash clusters are approaches with three or greater identifiable consistent crash types.

1. **Sweet Home Rd at Dodge Rd**

As shown in **Table 3**, the intersection has a crash rate that is approximately 2.15 times higher than the statewide average crash rate for similar intersections. The following crashes occurred: rear end (7), left turn (9), right angle (8), sideswipe (3), and backing (2). The following crash patterns were reported:

- Left Turn
  - Northbound (three crashes)
  - Southbound (four crashes)
- Rear End
  - Southbound (three crashes)
- Right Angle
  - Northbound (five crashes)

The reported rear end crashes (23%) are characteristic of moderate to heavily trafficked signalized intersections. The causes of the rear end crashes were generally due to driver inattention, driver error, unsafe speeds, or following too closely. The causes of the left turn crashes were generally due to failure to yield the right of way. The causes of the right angle crashes were generally driver inattention, driver error, and brake failure. Flashing yellow left turn arrows were installed sometime after June 2022 based on review of historical aerial imagery of the intersection. Based on the

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descriptions in the MV-104 crash reports, there has only been one left turn crash and three right angle crashes at the intersection since the new traffic signal was installed. No other discernible crash patterns exist; thus, no geometric improvements are recommended.

2. **Dodge Rd at North Forest Rd**

As shown in **Table 3**, the intersection has a crash rate that is approximately 2.73 times higher than the statewide average crash rate for similar intersections. The following crashes occurred: rear end (2), right angle (1), and fixed object (3). No discernible crash patterns exist; thus, no geometric improvements are recommended.

5.0 BACKGROUND (NO BUILD) CONDITIONS

Construction of the proposed project is anticipated to reach full build-out within approximately two years. The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. The following projects were identified and are listed below:

- Aspen Heights Student Housing – Traffic generated by this student housing development was added to the study intersections.
- 480 Dodge Road - Traffic generated by this approved but not yet constructed multifamily project was added to the study intersections.
- 775 John James Audubon Pkwy – Traffic generated by this approved project is included in the background growth rate.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic has decreased between 2010 and 2019 in the study area. To account for normal increases in background traffic growth, including the approved development noted above as well as any unforeseen developments in the study area, a growth rate of 1.0% per year was applied to the existing traffic volumes for the two-year build out period. The background traffic volumes are depicted in **Figure 4.**

6.0 PROPOSED DEVELOPMENT CONDITIONS

6.1 Project Description

The proposed Sawyer's Landing development will consist of constructing:

- Mixed-Use Building 1 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) restaurant,
  - a ±432 SF leasing office,
  - and an ±8,002 SF membership-based gym
- Mixed-Use Building 2 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) retail store,
  - a ±8,953 square foot (SF) retail store,

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  - and a ±2,300 SF office
- a four-story ±26,400 SF self-storage building (±105,600 SF in total),
- 22 two-story duplex townhome buildings containing two units each for a total of 44 duplex townhome units,
- 63 two-story townhomes with attached garages.

Access to the site will be provided via one enter only driveway and one exit only driveway along Dodge Rd and one full access driveway along Didge Rd, to the south of the enter only driveway. There will also be an emergency access driveway along Dodge Road to the north of the exit only driveway with an emergency gate.

6.2 Proposed Traffic Generation

The volume of traffic generated by a site is dependent on the intended land use and size of the development. Trip generation is an estimate of the number of trips generated by a specific building or land use. These trips represent the volume of traffic entering and exiting the development. *Trip Generation Manual* (11th Edition) published by the Institute of Transportation Engineers (ITE) is used as a reference for this information. The trip rate for the peak hour of the generator may or may not coincide in time or volume with the trip rate for the peak hour of adjacent street traffic. Volumes generated during the peak hour of the adjacent street traffic and proposed land uses, in this case, the weekday commuter AM and PM peak hours, represent a more critical volume when analyzing the capacity of the system; those intervals will provide the basis of this analysis.

The proposed project consists of multiple different land uses (residential, office, retail, and restaurant) and is considered mixed-use (multi-use). According to the Institute of Transportation Engineers Trip Generation Handbook, (3rd Edition), "…a multi-use development is typically a single real-estate project that consists of two or more ITE land use classifications between which trips can be made without using the off-site road system. Because of the nature of these land uses, the trip-making characteristics are interrelated, and some trips are made among the on-site uses. This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system (compared to the total number of trips generated by comparable, standalone sites)." "In some multi-use developments, these internal trips can be made by walking or by vehicles entirely on internal pathways or internal roadways without using streets external to the site."

The Handbook indicates internal capture rates for trips within a multi-use development to vary between residential, office, retail, restaurant, and entertainment and recreational uses during the AM and PM peak hours. Given the proposed land use components and interconnection between these components, multi-use total volume trips will likely occur.

Methodology contained in National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Development was consulted to perform the mixed-use adjustment. The interactive spreadsheet considers baseline mode shares and vehicle occupancy factors for the proposed land uses, as described in the Handbook, as well as average land use interchange distances (feet walking distance) to determine the internal capture percentage. In order to accurately capture the internal site trips that will occur in the site, the existing office land use that will remain was included in the internal capture calculations. This completed spreadsheet model is included in the Appendices.

The NCHRP 684 model reported an internal baseline capture percentage of 13% during the AM peak hour, and 26% during the PM peak hour. In order to be conservative, an internal baseline capture percentage of 10% was used during the AM peak hour, and 20% was used during the PM peak hour. These multi-use trip projection adjustments were applied to the respective site generated trips and subtracted from the traffic entering and exiting the site during the peak periods.

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Table 4 shows the estimated site generated trips that will be added to the existing roadway system under full project development.

Table 4: *Site Generated Trips*

DESCRIPTION	ITE LUC[1]	SIZE	PM PEAK HOUR		SAT PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
General Office Building	710	±2,300 sf	6	1	1	6
Strip Retail Plaza (<40k)	822	±12,854 sf	18	12	47	47
High-Turnover (Sit-Down) Restaurant	932	±3,901 sf	21	17	22	14
Single Family Attached Housing	215	107 units	12	37	36	25
Multifamily Housing (Mid-Rise)	221	102 units	8	26	24	16
Mini-Warehouse	151	±105,600 sf	6	4	7	8
Health/Fitness Club	492	±8,002 sf	5	5	26	20
Total Site Generated Trips			**76**	**102**	**163**	**136**
Internal Capture Adjustment			*-7*	*-10*	*-30*	*-26*
Total Primary Site Generated Trips			**69**	**92**	**133**	**110**

Note:
1. LUC = Land Use Code.

The proposed project is expected to generate approximately 76 entering/102 exiting vehicle trips during the AM peak hour and 163 entering/136 exiting vehicle trips during the PM peak hour. However, not all these driveway volumes are new, but instead a portion of the proposed volumes will visit more than one land use during one trip to the site. Thus, based upon internal capture rates from the NCHRP 684 model and professional judgement, the proposed site is expected to generate approximately 69 entering/92 exiting new vehicle trips during the AM peak hour and 133 entering/110 exiting new vehicle trips during the PM peak hour.

6.3 Trip Distribution

The cumulative effect of site-generated traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives serving the site. The proposed arrival/departure distribution of traffic generated by the proposed project is considered a function of several parameters, including:

- Employment centers in the local area and region.
- Population centers in the local area and region.
- Proximity and access to Interstate 990.
- Proximity to the North Campus of the University at Buffalo.
- Site access drive locations and internal roadway circulation.
- Existing highway network.
- Existing traffic patterns.
- Existing traffic conditions and controls.

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Figure 5 shows the anticipated trip distribution pattern percentage for the project site. **Figures 6** illustrate the total peak hour site-generated traffic.

6.4 Full Development Volumes

The proposed design hour traffic volumes are developed for the peak hours by combining the background traffic conditions (Figure 4) and the new site-generated traffic volumes (Figure 6) to yield the traffic volumes under full development conditions. **Figure 7** illustrates the total peak hour volumes anticipated for the proposed project under full build-out conditions.

7.0 TRAFFIC OPERATIONS AND ANALYSIS

7.1 Traffic Signal Warrant Investigation

A traffic signal warrant analysis was conducted at the existing Dodge Rd/North Forest Rd intersection under full build conditions. The evaluation is based on traffic exiting North Forest Rd (i.e. northbound traffic). The need for a traffic signal is determined by comprehensive investigation of existing traffic conditions and physical characteristics at the location. The *Standard Specifications Update for the adoption of the National MUTCD (FHWA)* and the *New York State Supplement* were reviewed to investigate the need for a traffic control signal at this location. There are nine (9) warrants, and they are as follows:

- Warrant 1 Eight-Hour Vehicular Volume
- Warrant 2 Four-Hour Vehicular Volume
- Warrant 3 Peak Hour Vehicular Volume
- Warrant 4 Pedestrian Volume
- Warrant 5 School Crossing
- Warrant 6 Coordinated Signal System
- Warrant 7 Crash Experience
- Warrant 8 Roadway Network
- Warrant 9 Intersection Near a Grade Crossing

Prior to applying warrants, the MUTCD suggests consideration of the effects of right-turn volumes on the minor street approach, a 20% reduction was taken in the number of right turning vehicles to be conservative. ITE data and the trip distribution percentages from Figure 5 were used to project the hourly distribution of traffic going to and from the proposed project through this intersection. The posted speed limit on Dodge Rd is 40 MPH, thus 70% thresholds in Table 4C-1, Figure 4C-2, and Figure 4C-4 are used as a basis for analysis.

1. Warrant 1 is subdivided into Condition A and Condition B. The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. These conditions are satisfied when, for each of any eight hours of an average day, anticipated volumes on the artery and side road are more than the minimum values presented in Tables 4C-1 in the MUTCD. **The warrant for Condition A is not met, and the warrant for Condition B is not met.**

2. Warrant 2, the Four-Hour Vehicular Volume signal warrant conditions, are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. This warrant

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stipulates that for any four hours of a day, minimum threshold volumes are met on the artery and side road. **This warrant is not met.**

3. Warrant 3 is intended for application where minor street traffic suffers undue delay in entering or crossing the major street for one hour of the day. It stipulates that the warrant shall be applied in unusual cases (high-occupancy vehicle facilities – i.e., shopping centers, office parks) where a large number of vehicles discharge over a short period of time. **This warrant is not met.**

4. Warrant 4 is met when pedestrians experience excessive delay in crossing the major street because the traffic volumes are so heavy. The intersection currently has low pedestrian activity and is not likely to increase significantly under future development phases. **This warrant is not met.**

5. Warrant 5 is met when a sufficient number of gaps in traffic do not exist for certain size and frequency of school children to cross the major roadway. **This warrant is not met.**

6. Warrant 6 is met when a traffic signal is needed to maintain progressive movement and vehicle platooning in a coordinated signal system. The intersection would likely be coordinated with adjacent signals, if warranted. There is currently no issue with platooning along the Dodge Rd corridor, therefore, **this warrant is not met.**

7. Warrant 7 is intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. The need for a traffic control signal shall be considered if *all* of the following criteria are met:

    a. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce crash frequency.

    b. Five (5) or more reported crashes, of types susceptible to correction by a traffic signal, to have occurred within a 12-month period, each crash involving a personal injury or property damage.

    This warrant is not met.

8. Warrant 8 is met when a traffic signal might encourage concentration and organization of traffic flow on a roadway network. This warrant primarily focuses on two major intersecting roadways, which is not the case at the study intersection. **This warrant is not met.**

9. Warrant 9 is applicable when an intersection is located near an at-grade rail crossing. **This warrant is not met.**

Table 5: *Signal Warrant Analysis Results*

WARRANT	SATISFACTION OF WARRANTS
1A – Eight-Hour Condition A	NO
1B – Eight-Hour Condition B	NO
2 – Four-Hour	NO
3 – Peak-Hour	NO
4 – Pedestrian Volume	NO
5 – School Crossing	NO
6 – Coordinated Signal System	NO

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WARRANT	SATISFACTION OF WARRANTS
7 – Crash Experience	NO
8 – Roadway Network	NO
9 – Intersection Near a Grade Crossing	NO

Table 5 summarizes the signal warrant findings at the existing Dodge Rd/North Forest Rd intersection under full build conditions. Based upon the results, a traffic signal is not warranted at this intersection.

7.2 Description of Capacity Analysis

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service (LOS). Levels of service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis focuses on intersections, as opposed to highway segments.

The standard procedure for capacity analysis of signalized and unsignalized intersections is outlined in the *Highway Capacity Manual* (HCM) 7th Edition published by the Transportation Research Board (TRB). Traffic analysis software, Synchro 12, which is based on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a level of service based on the HCM as an indicator of how well intersections operate.

Six levels of service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the conditions with little to no delay, and LOS "F" conditions with very long delays. Suggested ranges of service capacity and an explanation of levels of service are included in the Appendices. LOS "C" or better is desirable, but LOS "D" for signalized locations and LOS "E" for unsignalized locations are generally thresholds of acceptable operation during peak periods so long as the volume to capacity ratio (v/c) is below 1.0. **Table 6** depicts level of service criteria for both signalized and unsignalized intersections.

Table 6: *Level of Service Criteria*

LEVEL OF SERVICE	SIGNALIZED CONTROL DELAY PER VEHICLE (seconds)	STOP CONTROL DELAY PER VEHICLE (seconds)
A	< 10	< 10
B	10 – 20	10 – 15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	> 80	> 50

LOS for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15-minute analysis period. LOS for unsignalized intersections, however, are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals.

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The v/c ratio, also referred to as degree of saturation, represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur.

7.3 Capacity Analysis Results

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. The future traffic conditions generated by the project were analyzed to assess the operation of the study area intersections. Capacity results for existing, background, and full development conditions are listed in **Table 7**. The discussion following the table summarizes capacity conditions. The detailed Synchro capacity analysis worksheets are contained in the Appendices.

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TABLE 7: CAPACITY ANALYSIS RESULTS

INTERSECTION	2024 EXISTING BASE CONDITIONS				2026 BACKGROUND CONDITIONS				2026 FULL BUILD CONDITIONS			
	AM		PM		PM		SAT		PM		SAT	
1. Sweet Home Rd/Dodge Rd/Commerce Dr (S)												
EB Left - Commmerce Dr	C	20.7	C	21.3	C	20.7	C	21.5	C	20.4	C	22.7
EB Thru/Right - Commerce Dr	C	31.9	C	34.3	C	33.4	C	34.6	C	34.0	D	36.1
WB Left - Dodge Rd	A	8.9	B	16.4	A	9.1	B	19.2	A	9.0	C	21.5
WB Thru - Dodge Rd	C	21.7	C	22.9	C	22.1	C	24.0	C	23.0	C	27.0
WB Right - Dodge Rd	C	25.3	C	21.1	C	25.2	C	25.4	C	25.7	C	30.4
NB Left - Sweet Home Rd	E	72.5	B	15.6	F	106.1	B	16.0	F	112.6	B	16.3
NB Thru/Right - Sweet Home Rd	B	19.2	D	36.2	C	20.5	D	38.2	C	21.4	D	45.4
SB Left- Sweet Home Rd	B	11.4	C	21.9	B	12.8	C	22.9	B	14.4	C	27.7
SB Thru/Right - Sweet Home Rd	C	24.2	C	25.3	C	26.0	C	25.7	C	26.7	C	25.5
Overall LOS	**C**	**29.6**	**C**	**27.1**	**D**	**36.0**	**C**	**28.9**	**D**	**37.1**	**C**	**32.7**
Volume-to-Capacity (v/c) Ratio	**1.03**		**0.83**		**1.12**		**0.86**		**1.14**		**0.92**	
2. Dodge Rd/Proposed Exit Only Driveway (U)												
SB - Proposed Exit Only Driveway	N/A		N/A		N/A		N/A		B	11.6	B	12.8
4. Dodge Rd/Proposed Southerly Driveway (U)												
EB Left - Dodge Rd	N/A		N/A		N/A		N/A		A	7.9	A	8.3
SB - Proposed Southerly Driveway									B	12.1	B	13.6
5. Dodge Rd/N Forest Rd (U)												
WB Left - Dodge Rd	A	7.9	A	7.8	A	7.9	A	7.9	A	8.0	A	8.0
NB - N Forest Rd	B	11.9	B	14.5	B	12.4	C	15.9	B	13.1	C	18.7

Notes:

1. A(2.8) = Level of Service (Delay in seconds per vehicle)
2. NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
3. (S) = Signalized; (U) = Unsignalized
4. N/A = Approach does not exist and/or was not analyzed during this condition
5. Green shaded cells indicate low delays, yellow shaded cells indicate moderate delays, red shaded cells indicate long delays.

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Dodge Road/Sweet Home Road (Signalized)
All approaches operate at LOS "D" or better under all conditions during both peak hours with the exception of the northbound left approach which operates at LOS "F" during the AM peak hour under background and full build conditions. In between background and full build conditions, the eastbound thru/right approach is projected to change from LOS "C" to "D" during the PM peak hour period, however, this is considered a borderline condition as the threshold between LOS "C" and "D" is 35.0 seconds per vehicle and the actual increase in delay projected is 1.5 seconds per vehicle. Also, between background and full build conditions, the westbound left approach is projected to change from LOS "B" to "C" during the PM peak hour period, however, this is also considered a borderline condition as the threshold between LOS "B" and "C" is 20.0 seconds per vehicle and the actual increase in delay projected is 2.3 seconds per vehicle. No other changes in levels of service are anticipated and no improvements are warranted nor recommended at this location.

Dodge Road/Proposed Exit Driveway (Unsignalized)
The southbound approach operates at LOS "B" under full build conditions during both peak hours. The proposed exit driveway should consist of one exiting lane.

Dodge Road/Proposed Southerly Driveway (Unsignalized)
All approaches operate at LOS "B" or better under full build conditions during both peak hours. The proposed southerly driveway should consist of one entering and one exiting lane.

Dodge Road/North Forest Road (Signalized)
All approaches operate at LOS "C" or better under all conditions during both peak hours. No changes in level of service are anticipated and no improvements are warranted nor recommended at this location.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This updated Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Sawyer's Landing development to be located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

Conclusions

1. The proposed project is expected to generate approximately 76 entering/102 exiting vehicle trips during the AM peak hour and 163 entering/136 exiting vehicle trips during the PM peak hour.

2. However, not all these driveway volumes are new, but instead a portion of the proposed volumes will visit more than one land use during one trip to the site. Thus, based upon internal capture rates from the NCHRP 684 model and professional judgement, the proposed site is expected to generate approximately 69 entering/92 exiting new vehicle trips during the AM peak hour and 133 entering/110 exiting new vehicle trips during the PM peak hour.

3. Based upon the results of the traffic signal warrant at the Dodge Rd/North Forest Rd intersection, a traffic signal is not warranted at this intersection.

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4. All movements generally operate at an acceptable LOS "D" or better under existing, projected background, and full build conditions (with proposed development) during both peak hours at all study intersections except for the northbound left approach at the Sweet Home Rd/Dodge Rd intersection during the AM peak hour, which operates at LOS "F" under background and full build conditions. There are no LOS changes at any of the study intersections that require mitigation.

5. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Recommendations

1. The proposed exit driveway along Dodge Rd should be designed to provide one exiting lane.

2. The proposed enter driveway along Dodge Rd should be designed to provide one entering lane.

3. The proposed southerly driveway along Dodge Rd should be designed to provide one entering and one exiting lane.

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9.0 REFERENCES

- Synchro 12 Software. Cubic ITS.
- Highway Capacity Manual (HCM 7th Edition). Transportation Research Board (TRB). Washington, DC. 2016.
- Highway Functional Classification Concepts, Criteria, and Procedures. FHWA. 2013.
- Trip Generation (11th Edition). Institute of Transportation Engineers (ITE). Washington, DC. 2021.
- OnTheMap. US Census Bureau. 2023.
- NCHRP Report 684 Enhancing Internal Trip Capture Estimation for Mixed-Use Develpoments. TRB. 1985.
- Traffic Data Viewer. New York State Department of Transportation (NYSDOT). 2023.

10.0 FIGURES

Figures 1 through 7 are included on the following pages.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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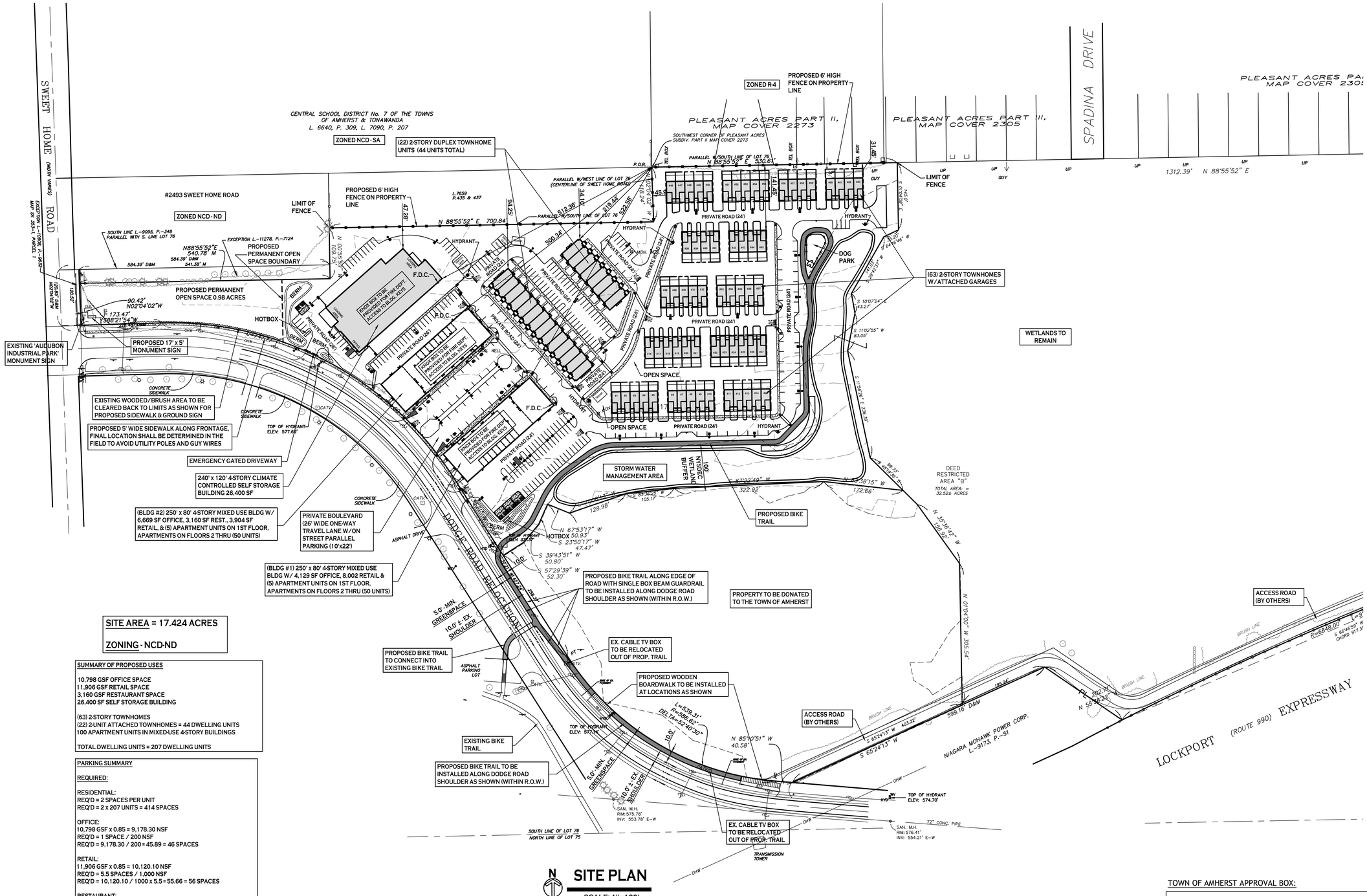


N

SITE PLAN

SCALE: 1"=100'

SITE AREA = 17.424 ACRES

ZONING - NCD-ND

SUMMARY OF PROPOSED USES

10,798 GSF OFFICE SPACE
11,906 GSF RETAIL SPACE
3,160 GSF RESTAURANT SPACE
26,400 SF SELF STORAGE BUILDING

(63) 2-STORY TOWNHOMES
(22) 2-UNIT ATTACHED TOWNHOMES = 44 DWELLING UNITS
100 APARTMENT UNITS IN MIXED-USE 4-STORY BUILDINGS

TOTAL DWELLING UNITS = 207 DWELLING UNITS

PARKING SUMMARY

REQUIRED:

RESIDENTIAL:
REQ'D = 2 SPACES PER UNIT
REQ'D = 2 x 207 UNITS = 414 SPACES

OFFICE:
10,798 GSF x 0.85 = 9,178.30 NSF
REQ'D = 1 SPACE / 200 NSF
REQ'D = 9,178.30 / 200 = 45.89 = 46 SPACES

RETAIL:
11,906 GSF x 0.85 = 10,120.10 NSF
REQ'D = 5.5 SPACES / 1,000 NSF
REQ'D = 10,120.10 / 1000 x 5.5 = 55.66 = 56 SPACES

RESTAURANT:
REQ'D = 1 SPACE / 3 SEATS + 1 SPACE / 100 SF TAKE OUT AREA
REQ'D = 100 SEAT / 3 + 500 SF / 100 = 38 SPACES

SELF STORAGE:
REQ'D = 1 SPACE / 5,000 AREA DEVOTED TO STORAGE
REQ'D = (26,400 SF x 4) / 5,000 SF = 22 SPACES

TOTAL REQ'D = 576 SPACES

PROVIDED:

94 PARALLEL PARKING SPACES
171 9'x19' SPACES
63 TOWNHOUSE GARAGE SPACES
63 SPACES IN FRONT OF TOWNHOUSE GARAGE SPACES
16 GARAGE SPACES IN 4-STORY BLDGS.
407 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 0.98 ACRES

WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200Ft.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Overall Site Plan

DRAWING NO.

C-100

Project no.: 21-011

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 1

PASSERO engineering architecture



Sawyer's Landing Development | Town of Amherst, Erie County, NY

Site Location and Study Area

Key:
- # Study Intersection
- # Proposed Intersection

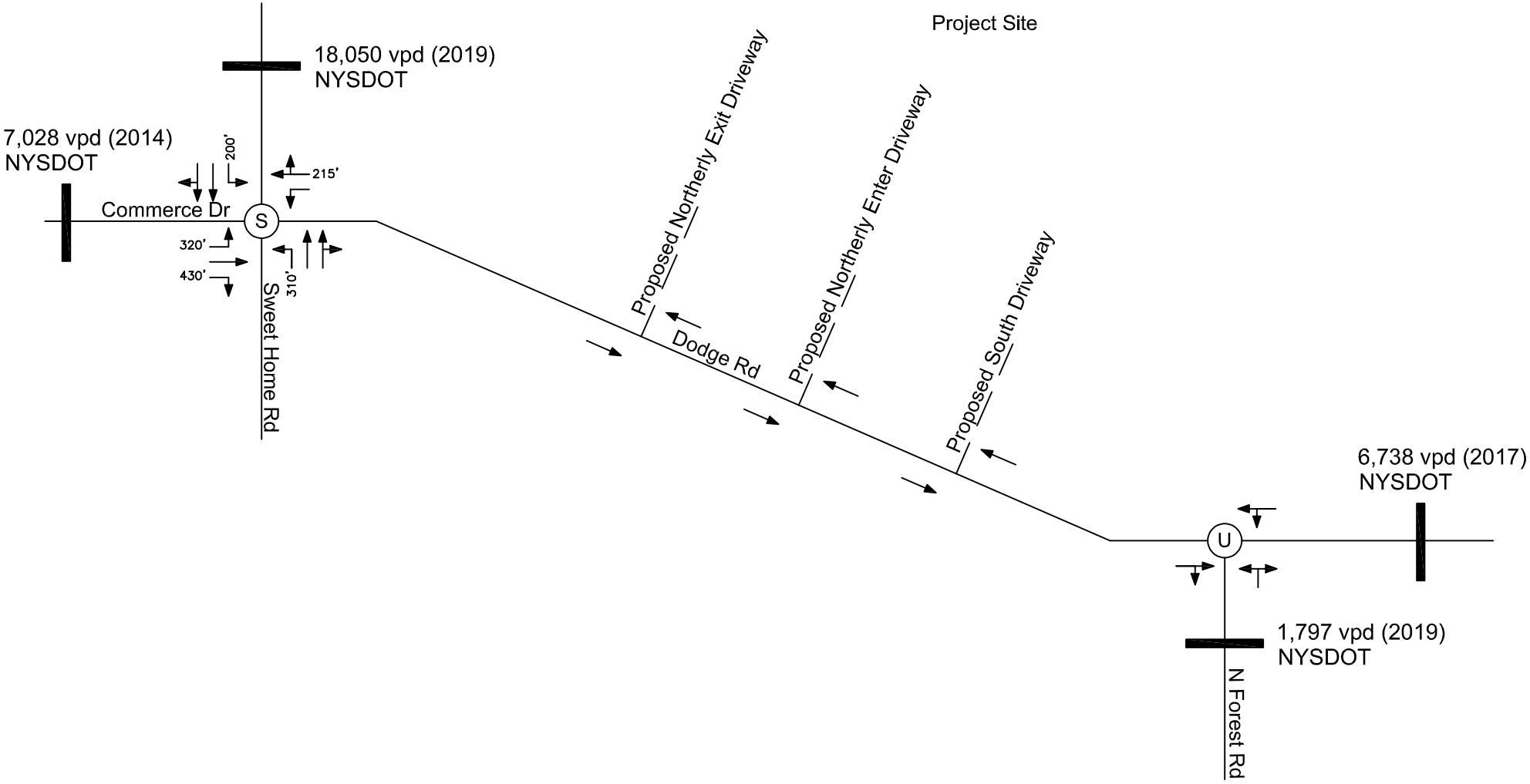
Proje

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 2

PASSERO engineering architecture

Notes:
1. All AADT volumes by those noted:
   1.1. NYSDOT = New York State Department of Transportation.
2. vpd = Vehicles per day.
3. The planned NYSDOT project will include the indicated storage lengths.



Sawyer's Landing Development | Town of Amherst, NY

Lane Geometry and Intersection Control

N
NOT TO SCALE

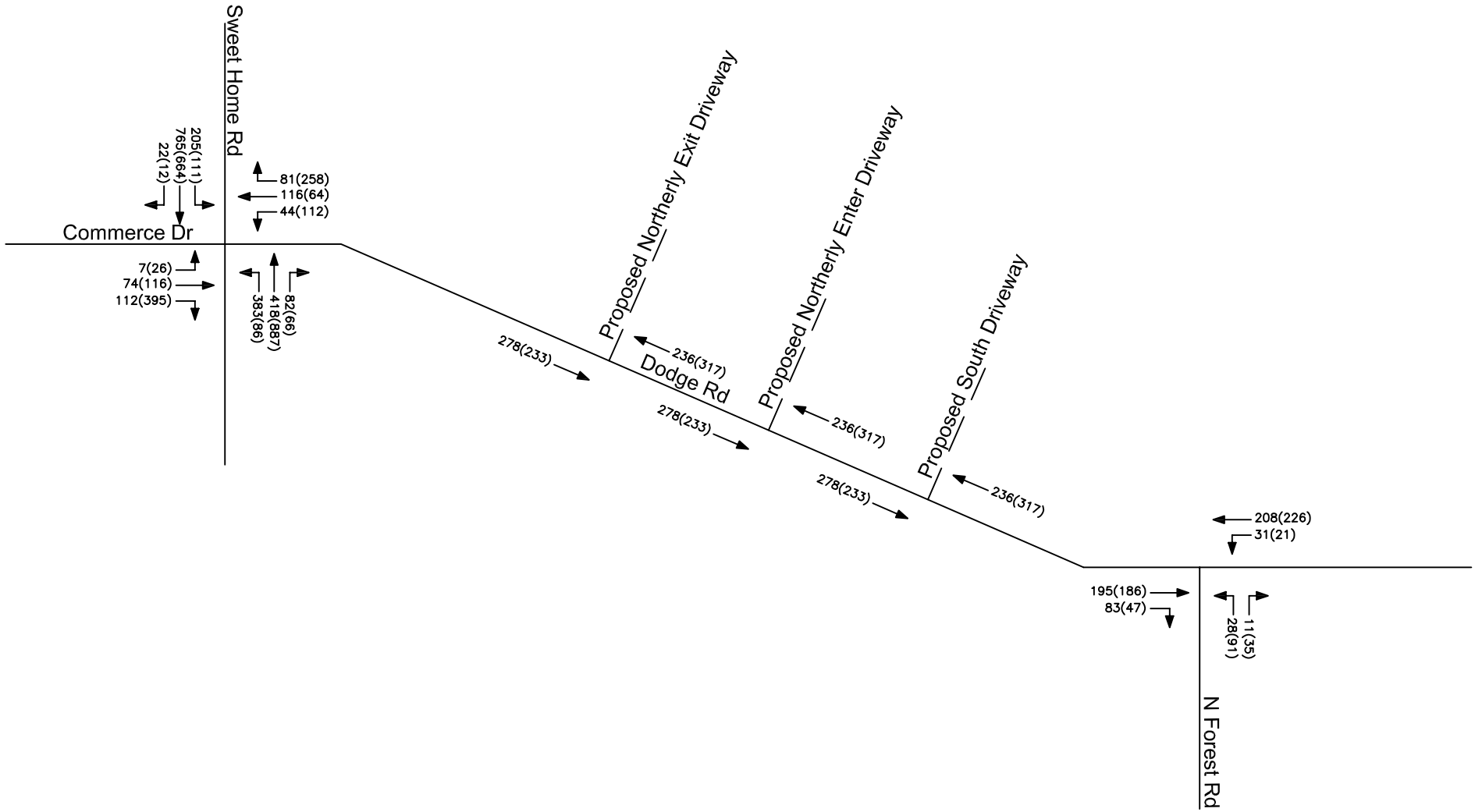
KEY:
– – – Proposed Access
U = Unsignalized

Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 3

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Peak Hour Volumes
2024 Existing Base Conditions

N
NOT TO SCALE

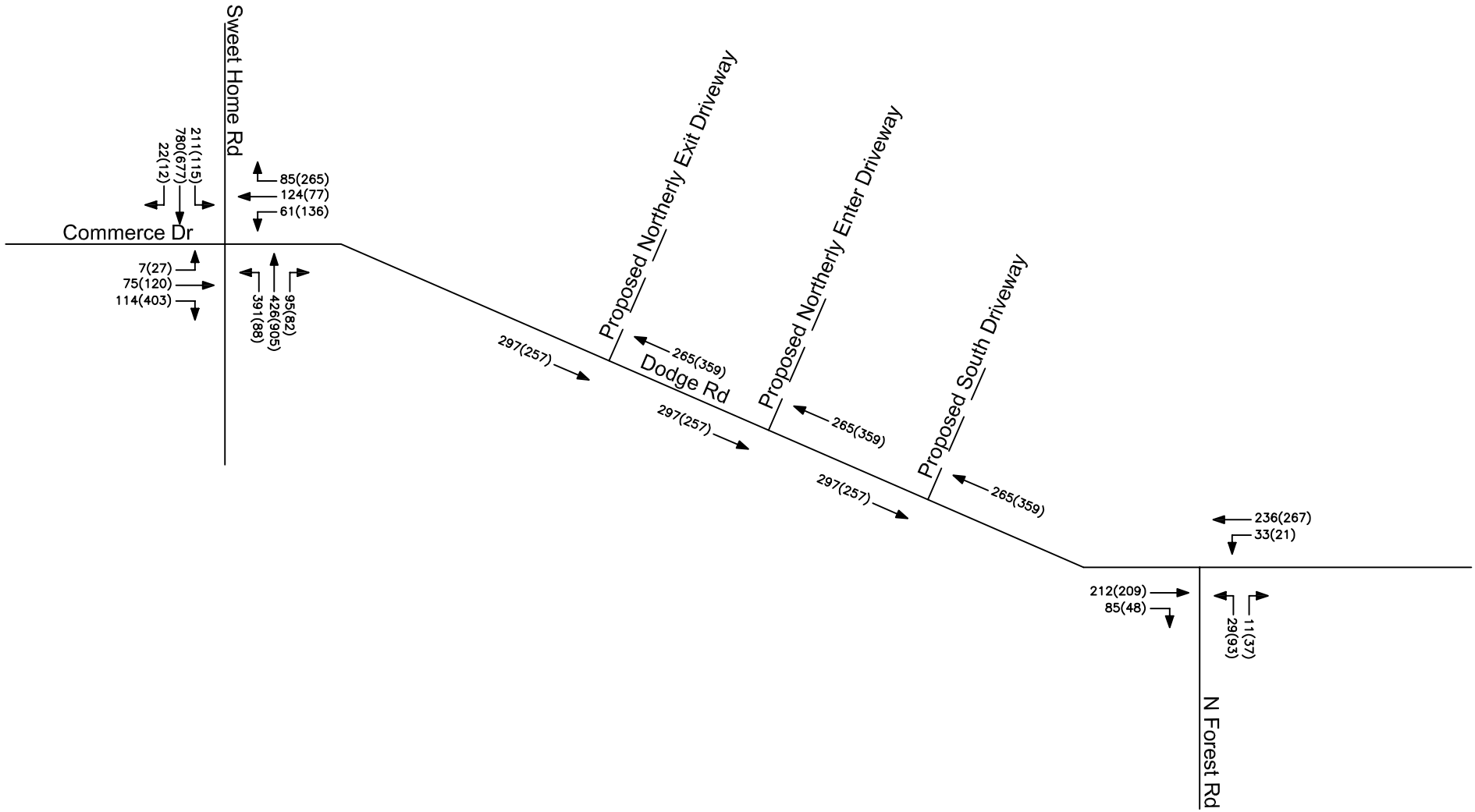
KEY:
00(00) = AM(PM)
– – – Proposed Access

Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 4

PASSERO engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Peak Hour Volumes
2026 Background Conditions

N
NOT TO SCALE

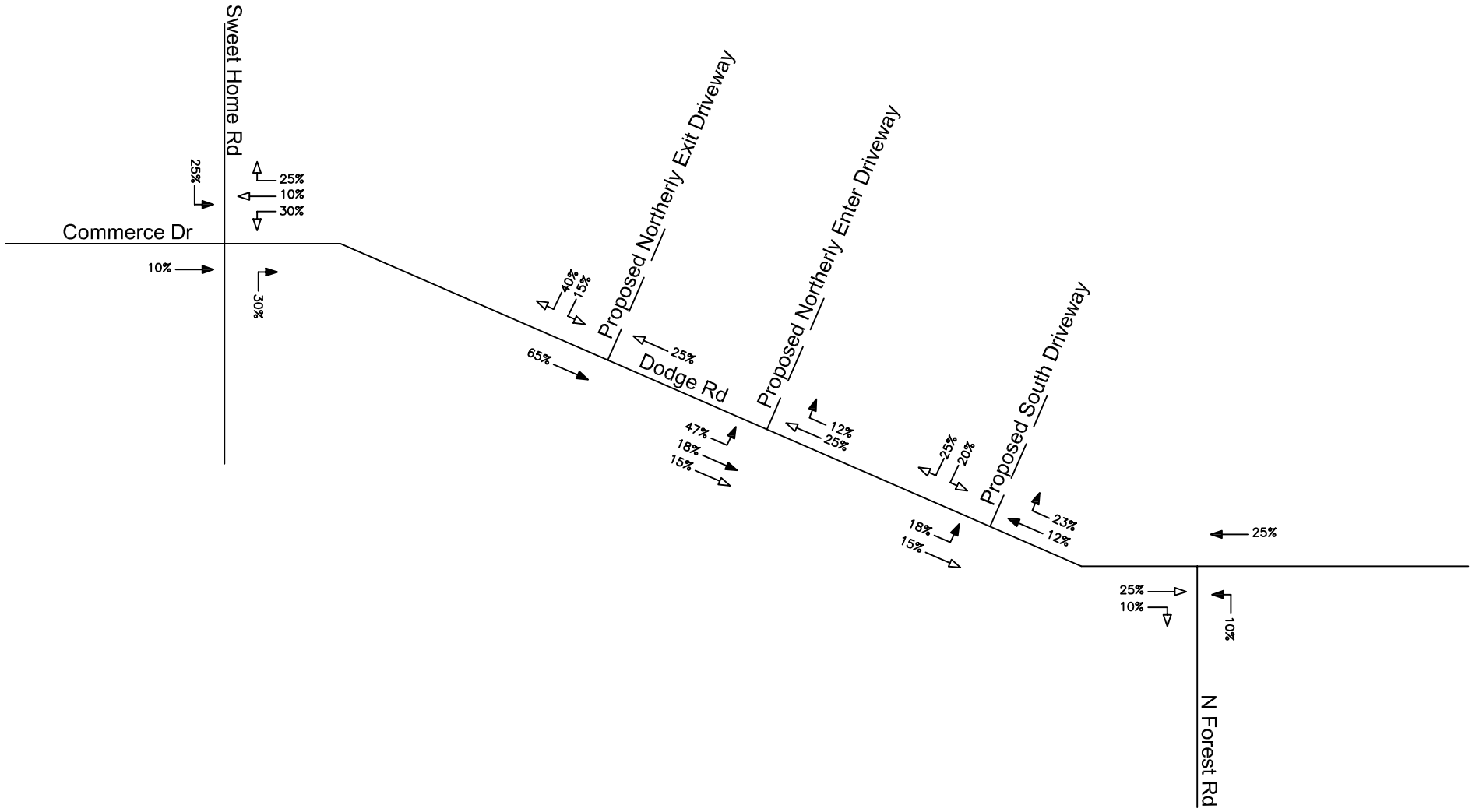
KEY:
00(00) = AM(PM)
– – – Proposed Access

Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 5

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

NOT TO SCALE

Trip Distribution

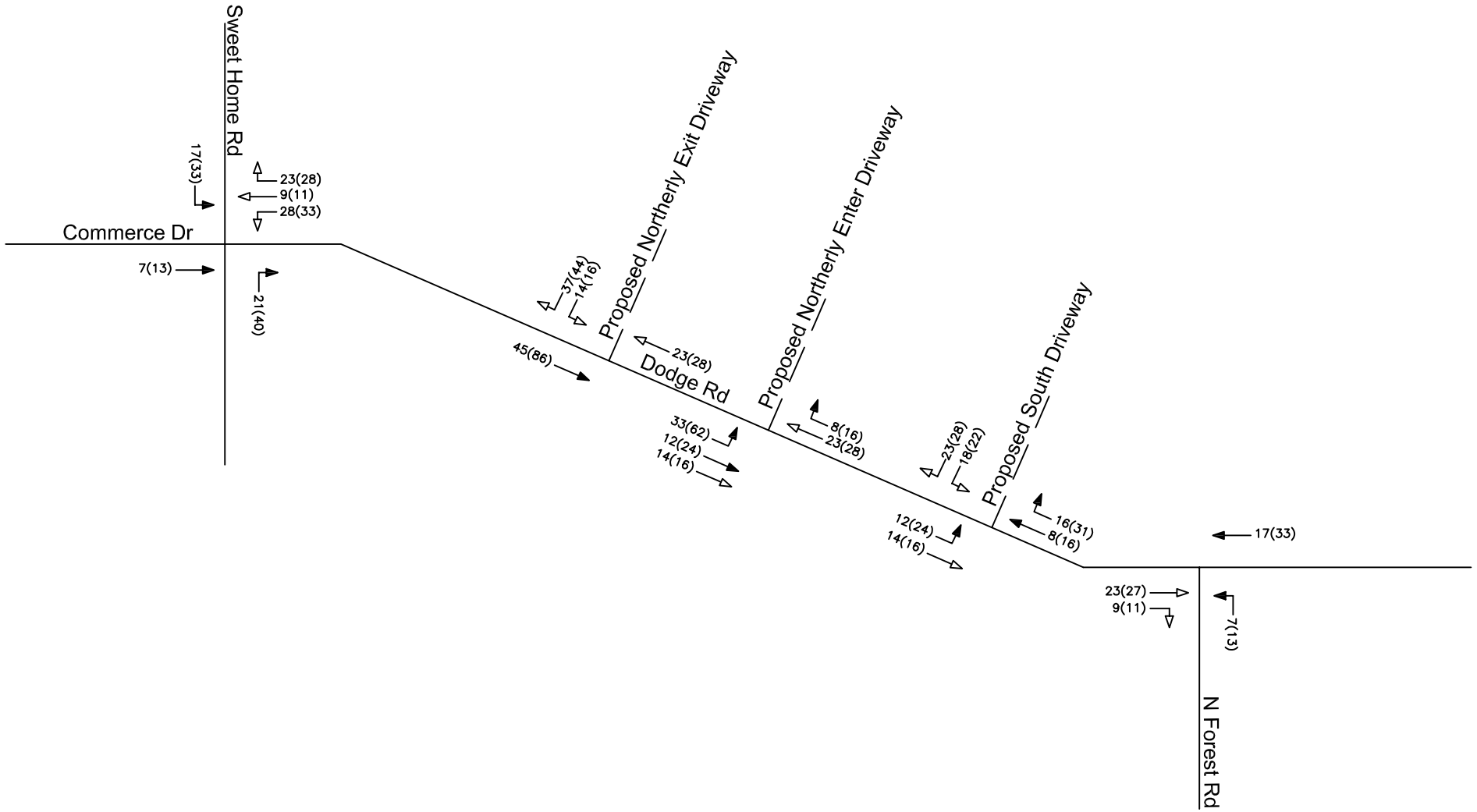
KEY:
00(00) = AM(PM)
→ Entering Trip

Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 6

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Site Generated Trips

N
NOT TO SCALE

KEY:
00(00) = AM(PM)
→ Entering Trip

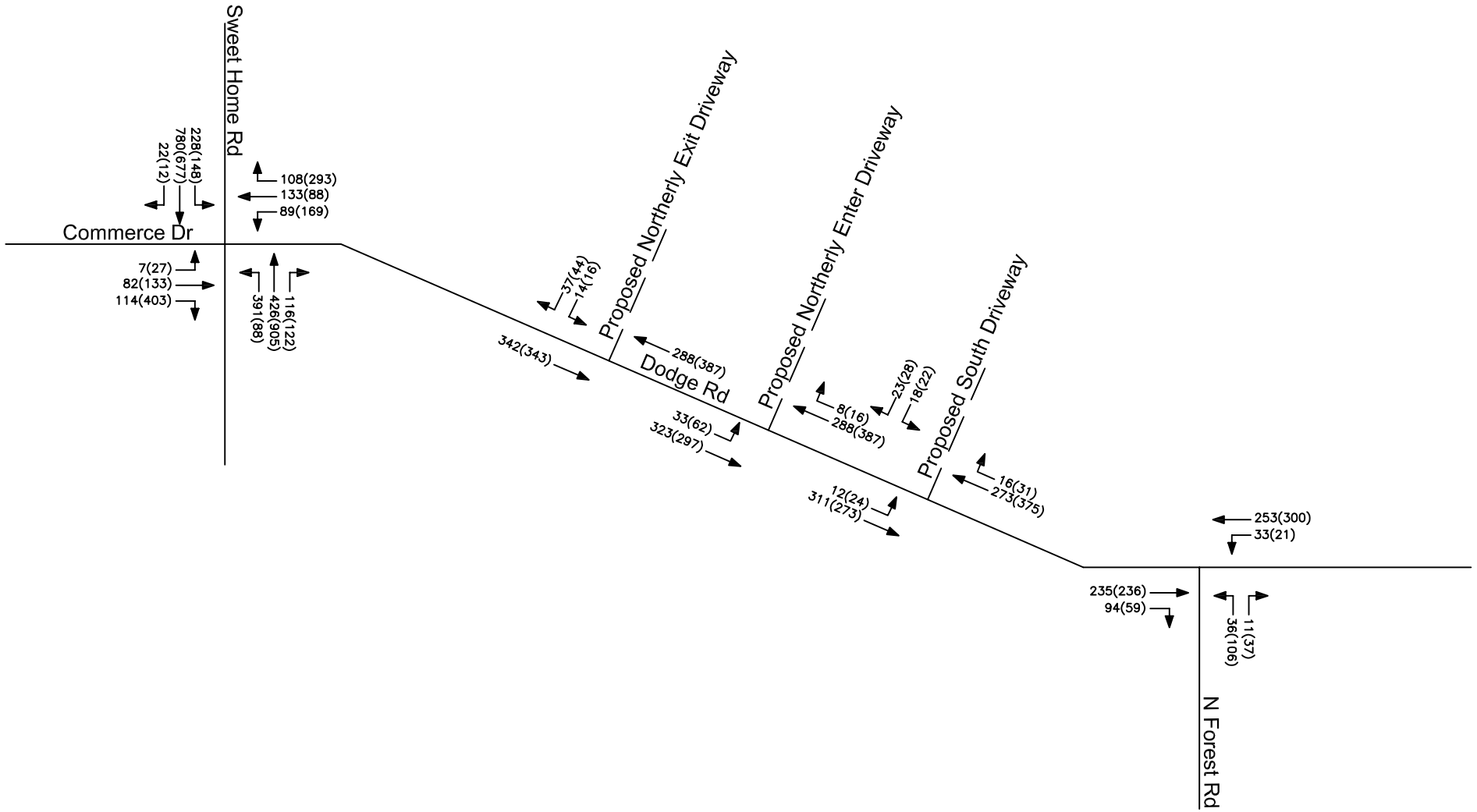
Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

:cess

Figure 7

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Peak Hour Volumes
Full Development Conditions

NOT TO SCALE

KEY:
00(00) = AM(PM)
– – – Proposed Access

Project

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDICES

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX A: EXISTING TRAFFIC COUNT DATA

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
Full Length (7 AM-7 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

Leg / Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2022-03-03 7:00AM	23	2	0	**25**	0	2	4	0	**6**	0	9	25	0	**34**	0	**65**
7:15AM	27	6	0	**33**	0	0	1	0	**1**	0	14	38	0	**52**	0	**86**
7:30AM	54	5	0	**59**	0	3	6	0	**9**	0	23	48	0	**71**	0	**139**
7:45AM	56	9	0	**65**	0	0	5	0	**5**	0	24	44	0	**68**	0	**138**
Hourly Total	160	22	0	**182**	0	5	16	0	**21**	0	70	155	0	**225**	0	**428**
8:00AM	48	12	0	**60**	0	4	8	0	**12**	0	17	50	0	**67**	0	**139**
8:15AM	48	5	0	**53**	0	4	9	0	**13**	0	18	51	0	**69**	0	**135**
8:30AM	35	5	0	**40**	0	2	9	0	**11**	0	13	46	0	**59**	0	**110**
8:45AM	41	3	0	**44**	0	6	10	0	**16**	0	18	56	0	**74**	0	**134**
Hourly Total	172	25	0	**197**	0	16	36	0	**52**	0	66	203	0	**269**	0	**518**
9:00AM	37	3	0	**40**	0	0	7	0	**7**	0	10	38	0	**48**	0	**95**
9:15AM	35	4	0	**39**	0	5	9	0	**14**	0	18	41	0	**59**	0	**112**
9:30AM	30	6	0	**36**	0	2	5	0	**7**	0	15	46	0	**61**	0	**104**
9:45AM	35	7	0	**42**	0	4	9	0	**13**	0	8	32	0	**40**	0	**95**
Hourly Total	137	20	0	**157**	0	11	30	0	**41**	0	51	157	0	**208**	0	**406**
10:00AM	27	6	0	**33**	0	5	14	0	**19**	0	10	34	0	**44**	0	**96**
10:15AM	35	4	0	**39**	0	3	9	0	**12**	0	8	32	0	**40**	0	**91**
10:30AM	32	3	0	**35**	0	2	13	0	**15**	0	11	32	0	**43**	0	**93**
10:45AM	26	2	0	**28**	0	2	8	0	**10**	0	13	35	0	**48**	0	**86**
Hourly Total	120	15	0	**135**	0	12	44	0	**56**	0	42	133	0	**175**	0	**366**
11:00AM	34	1	0	**35**	0	2	13	0	**15**	0	11	31	0	**42**	0	**92**
11:15AM	32	5	0	**37**	0	3	12	0	**15**	0	9	38	0	**47**	0	**99**
11:30AM	33	4	0	**37**	0	3	12	0	**15**	0	12	29	0	**41**	0	**93**
11:45AM	31	7	0	**38**	0	4	17	0	**21**	0	16	38	0	**54**	0	**113**
Hourly Total	130	17	0	**147**	0	12	54	0	**66**	0	48	136	0	**184**	0	**397**
12:00PM	40	6	0	**46**	0	4	12	0	**16**	0	17	41	0	**58**	0	**120**
12:15PM	31	6	0	**37**	0	7	13	0	**20**	0	15	36	0	**51**	0	**108**
12:30PM	36	2	0	**38**	0	5	22	0	**27**	0	19	38	0	**57**	0	**122**
12:45PM	32	6	0	**38**	0	2	13	0	**15**	0	10	40	0	**50**	0	**103**
Hourly Total	139	20	0	**159**	0	18	60	0	**78**	0	61	155	0	**216**	0	**453**
1:00PM	42	7	0	**49**	0	5	12	2	**19**	0	13	25	0	**38**	0	**106**
1:15PM	40	6	0	**46**	0	1	15	0	**16**	0	20	36	0	**56**	0	**118**
1:30PM	32	5	0	**37**	0	6	16	0	**22**	0	7	21	0	**28**	0	**87**
1:45PM	35	2	0	**37**	0	2	15	0	**17**	0	12	34	0	**46**	0	**100**
Hourly Total	149	20	0	**169**	0	14	58	2	**74**	0	52	116	0	**168**	0	**411**
2:00PM	36	2	0	**38**	0	7	14	0	**21**	0	11	38	0	**49**	0	**108**
2:15PM	39	5	0	**44**	0	3	18	0	**21**	0	10	31	0	**41**	0	**106**
2:30PM	38	3	0	**41**	0	6	13	0	**19**	0	18	44	0	**62**	0	**122**
2:45PM	34	6	0	**40**	0	4	13	0	**17**	0	7	39	0	**46**	0	**103**
Hourly Total	147	16	0	**163**	0	20	58	0	**78**	0	46	152	0	**198**	0	**439**
3:00PM	49	8	0	**57**	0	4	20	0	**24**	0	11	49	0	**60**	0	**141**
3:15PM	42	2	0	**44**	0	5	15	0	**20**	0	14	43	0	**57**	0	**121**
3:30PM	43	6	0	**49**	0	6	12	0	**18**	0	15	49	0	**64**	0	**131**
3:45PM	51	5	0	**56**	0	6	15	0	**21**	0	15	50	0	**65**	0	**142**
Hourly Total	185	21	0	**206**	0	21	62	0	**83**	0	55	191	0	**246**	0	**535**
4:00PM	48	2	0	**50**	0	15	36	0	**51**	0	14	47	0	**61**	0	**162**
4:15PM	47	3	0	**50**	0	5	14	0	**19**	0	14	51	0	**65**	0	**134**
4:30PM	56	5	0	**61**	0	10	22	0	**32**	0	14	47	0	**61**	0	**154**
4:45PM	59	3	0	**62**	0	8	23	0	**31**	0	7	36	0	**43**	0	**136**
Hourly Total	210	13	0	**223**	0	38	95	0	**133**	0	49	181	0	**230**	0	**586**
5:00PM	62	8	0	**70**	0	13	28	0	**41**	0	17	53	0	**70**	0	**181**
5:15PM	47	5	0	**52**	0	4	17	0	**21**	0	9	48	0	**57**	0	**130**
5:30PM	38	4	0	**42**	0	5	15	0	**20**	0	2	39	0	**41**	0	**103**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

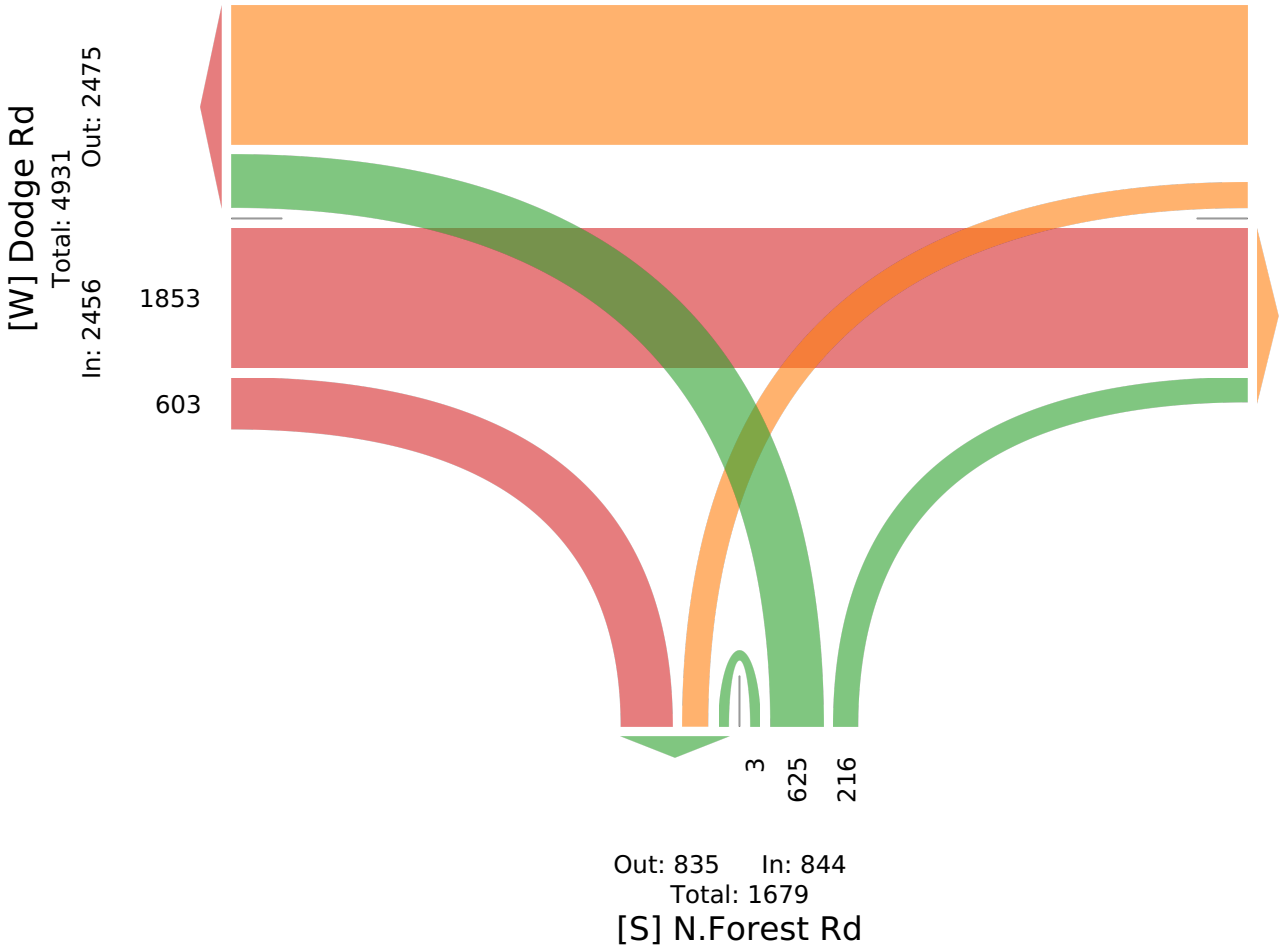
Leg	Dodge Rd					N.Forest Rd					Dodge Rd					
Direction	Westbound					Northbound					Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
5:45PM	37	4	0	**41**	0	3	7	0	**10**	0	10	31	0	**41**	0	**92**
Hourly Total	184	21	0	**205**	0	25	67	0	**92**	0	38	171	0	**209**	0	**506**
6:00PM	33	2	0	**35**	0	8	19	1	**28**	0	6	27	0	**33**	0	**96**
6:15PM	23	3	0	**26**	0	6	7	0	**13**	0	8	29	0	**37**	0	**76**
6:30PM	34	6	0	**40**	0	4	13	0	**17**	0	9	26	0	**35**	0	**92**
6:45PM	27	8	0	**35**	0	6	6	0	**12**	0	2	21	0	**23**	0	**70**
Hourly Total	117	19	0	**136**	0	24	45	1	**70**	0	25	103	0	**128**	0	**334**
Total	1850	229	0	**2079**	0	216	625	3	**844**	0	603	1853	0	**2456**	0	**5379**
% Approach	89.0%	11.0%	0%	**-**	-	25.6%	74.1%	0.4%	**-**	-	24.6%	75.4%	0%	**-**	-	-
% Total	34.4%	4.3%	0%	**38.7%**	-	4.0%	11.6%	0.1%	**15.7%**	-	11.2%	34.4%	0%	**45.7%**	-	-
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	1808	227	0	**2035**	-	211	616	3	**830**	-	591	1796	0	**2387**	-	5252
% Lights	97.7%	99.1%	0%	**97.9%**	-	97.7%	98.6%	100%	**98.3%**	-	98.0%	96.9%	0%	**97.2%**	-	97.6%
Heavy	42	2	0	**44**	-	5	9	0	**14**	-	12	57	0	**69**	-	127
% Heavy	2.3%	0.9%	0%	**2.1%**	-	2.3%	1.4%	0%	**1.7%**	-	2.0%	3.1%	0%	**2.8%**	-	2.4%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
Full Length (7 AM-7 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

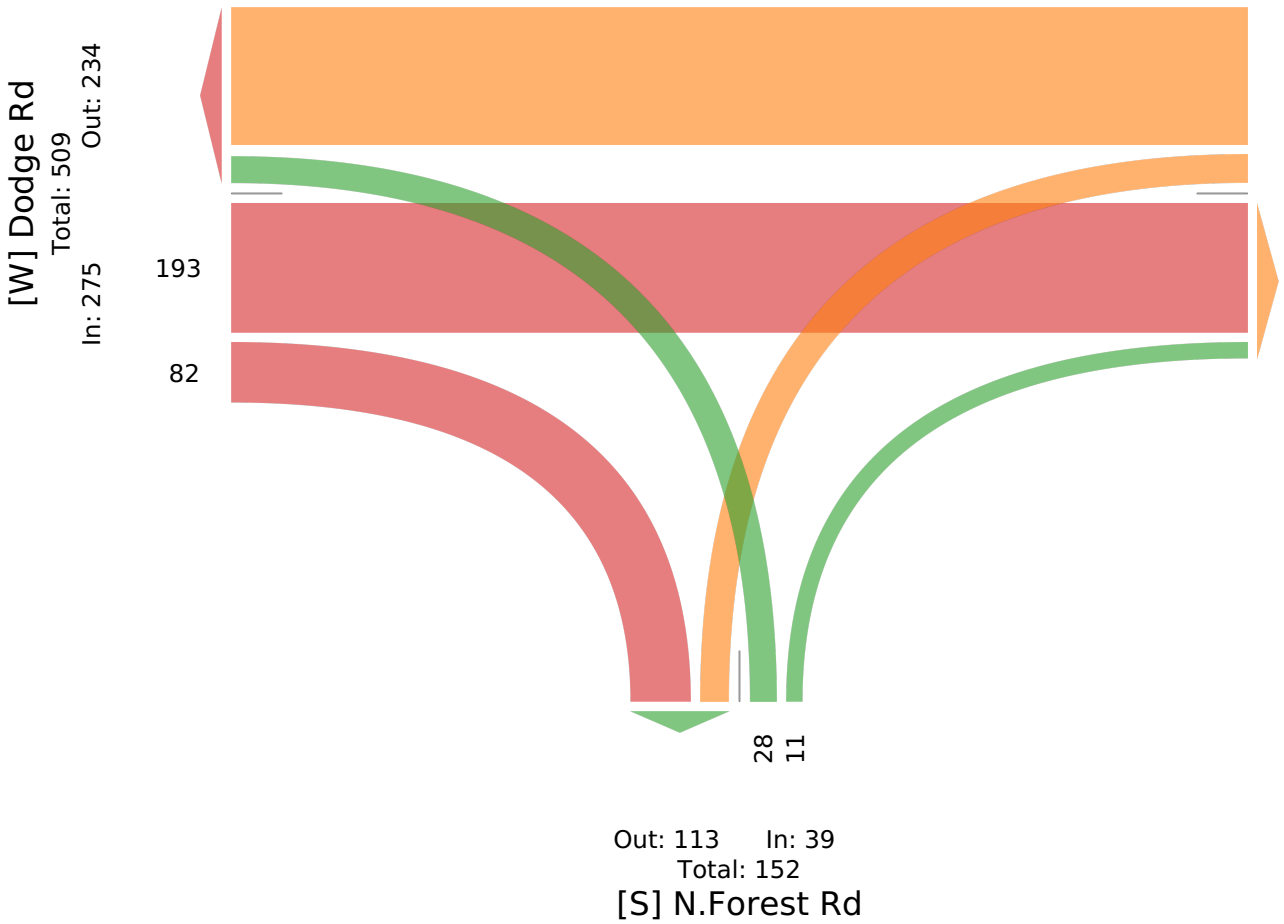
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 7:30AM	54	5	0	**59**	0	3	6	0	**9**	0	23	48	0	**71**	0	**139**
7:45AM	56	9	0	**65**	0	0	5	0	**5**	0	24	44	0	**68**	0	**138**
8:00AM	48	12	0	**60**	0	4	8	0	**12**	0	17	50	0	**67**	0	**139**
8:15AM	48	5	0	**53**	0	4	9	0	**13**	0	18	51	0	**69**	0	**135**
Total	206	31	0	**237**	0	11	28	0	**39**	0	82	193	0	**275**	0	**551**
% Approach	86.9%	13.1%	0%	**-**	-	28.2%	71.8%	0%	**-**	-	29.8%	70.2%	0%	**-**	-	-
% Total	37.4%	5.6%	0%	**43.0%**	-	2.0%	5.1%	0%	**7.1%**	-	14.9%	35.0%	0%	**49.9%**	-	-
PHF	0.920	0.646	-	**0.912**	-	0.688	0.778	-	**0.750**	-	0.854	0.946	-	**0.968**	-	0.991
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	202	31	0	**233**	-	11	27	0	**38**	-	81	188	0	**269**	-	540
% Lights	98.1%	100%	0%	**98.3%**	-	100%	96.4%	0%	**97.4%**	-	98.8%	97.4%	0%	**97.8%**	-	98.0%
Heavy	4	0	0	**4**	-	0	1	0	**1**	-	1	5	0	**6**	-	11
% Heavy	1.9%	0%	0%	**1.7%**	-	0%	3.6%	0%	**2.6%**	-	1.2%	2.6%	0%	**2.2%**	-	2.0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

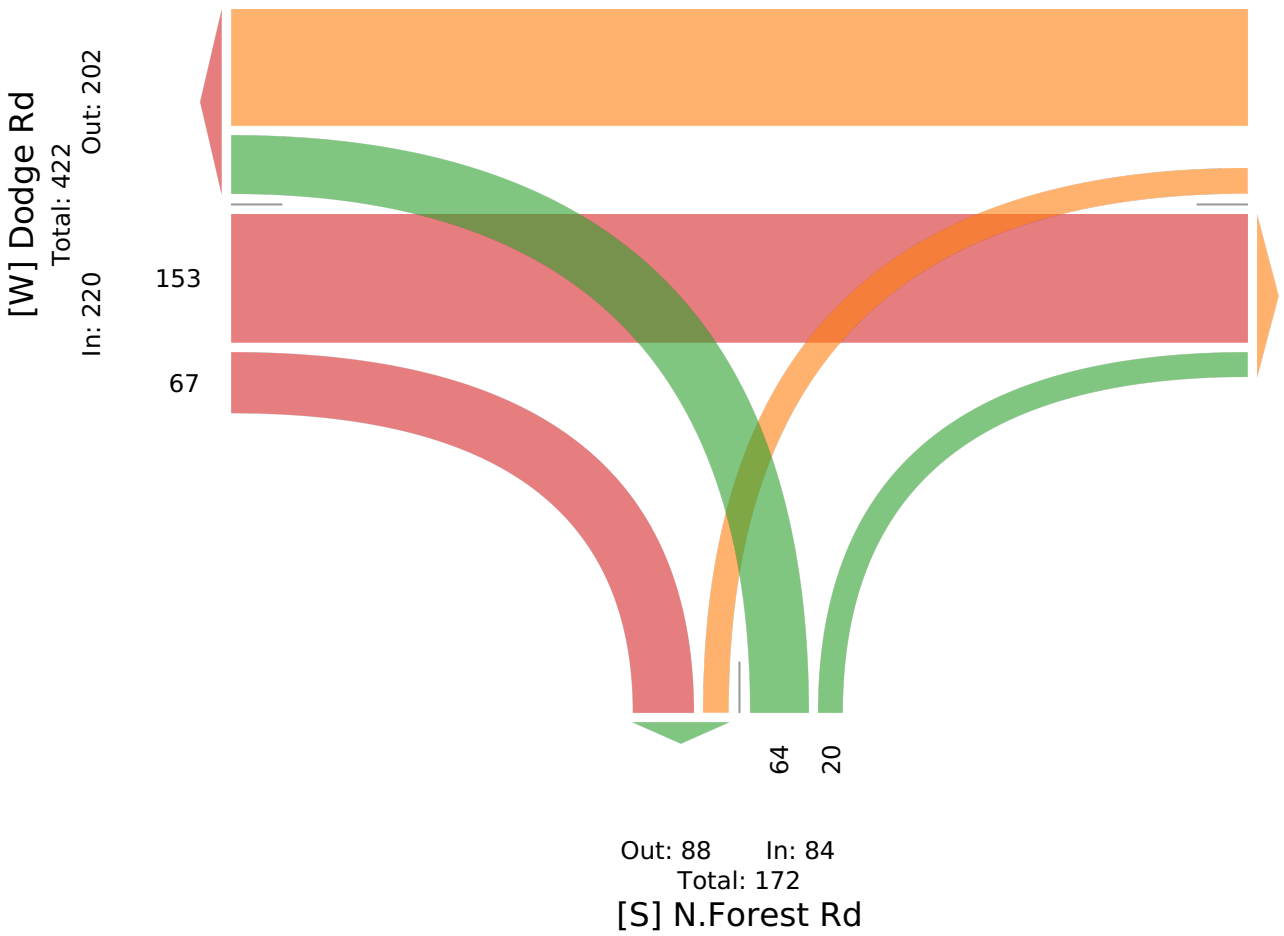
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 11:45AM	31	7	0	**38**	0	4	17	0	**21**	0	16	38	0	**54**	0	**113**
12:00PM	40	6	0	**46**	0	4	12	0	**16**	0	17	41	0	**58**	0	**120**
12:15PM	31	6	0	**37**	0	7	13	0	**20**	0	15	36	0	**51**	0	**108**
12:30PM	36	2	0	**38**	0	5	22	0	**27**	0	19	38	0	**57**	0	**122**
Total	138	21	0	**159**	0	20	64	0	**84**	0	67	153	0	**220**	0	**463**
% Approach	86.8%	13.2%	0%	**-**	-	23.8%	76.2%	0%	**-**	-	30.5%	69.5%	0%	**-**	-	-
% Total	29.8%	4.5%	0%	**34.3%**	-	4.3%	13.8%	0%	**18.1%**	-	14.5%	33.0%	0%	**47.5%**	-	-
PHF	0.863	0.750	-	**0.864**	-	0.714	0.727	-	**0.778**	-	0.882	0.933	-	**0.948**	-	0.949
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	137	21	0	**158**	-	18	62	0	**80**	-	65	150	0	**215**	-	453
% Lights	99.3%	100%	0%	**99.4%**	-	90.0%	96.9%	0%	**95.2%**	-	97.0%	98.0%	0%	**97.7%**	-	97.8%
Heavy	1	0	0	**1**	-	2	2	0	**4**	-	2	3	0	**5**	-	10
% Heavy	0.7%	0%	0%	**0.6%**	-	10.0%	3.1%	0%	**4.8%**	-	3.0%	2.0%	0%	**2.3%**	-	2.2%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

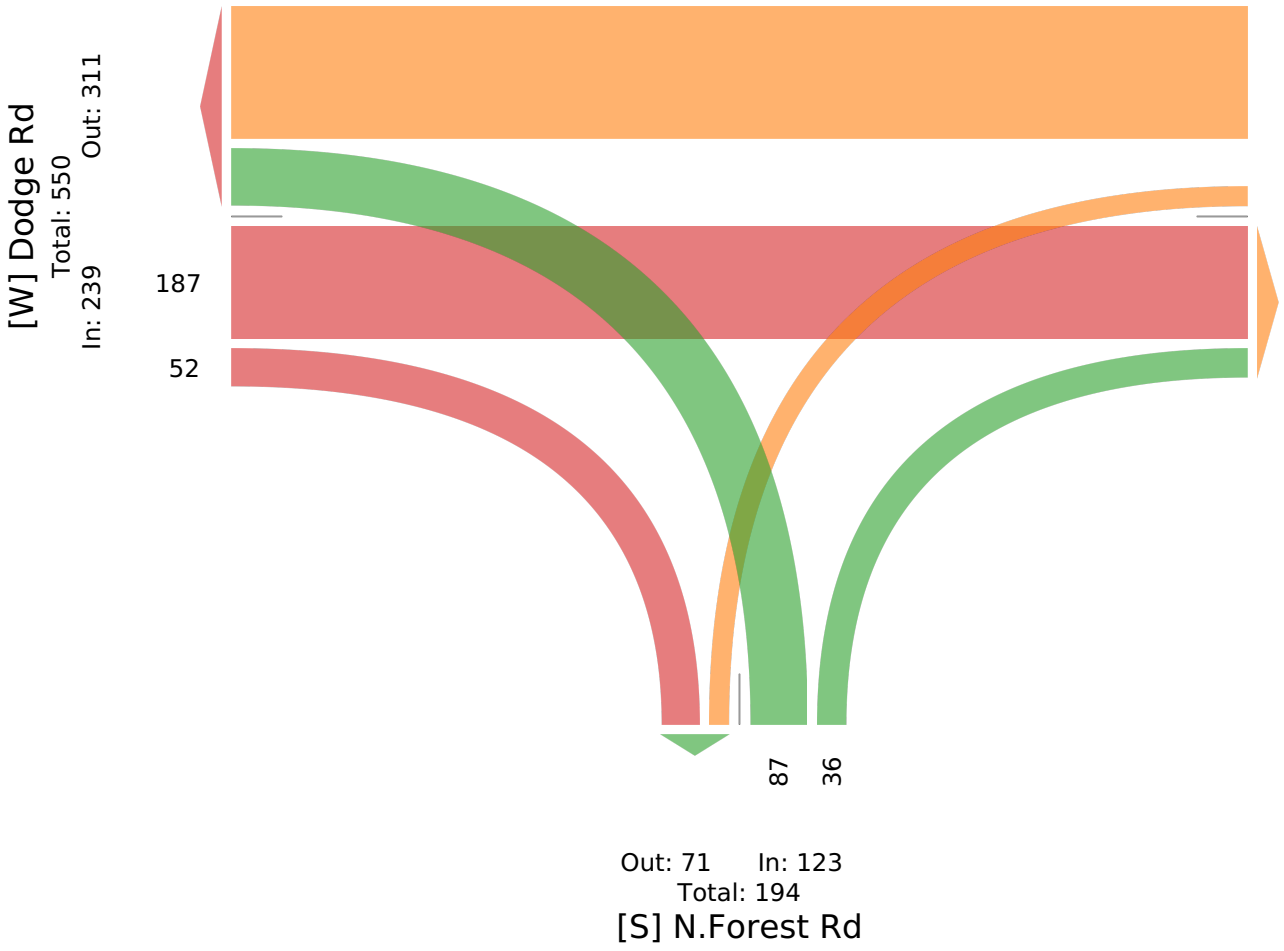
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 4:15PM	47	3	0	**50**	0	5	14	0	**19**	0	14	51	0	**65**	0	**134**
4:30PM	56	5	0	**61**	0	10	22	0	**32**	0	14	47	0	**61**	0	**154**
4:45PM	59	3	0	**62**	0	8	23	0	**31**	0	7	36	0	**43**	0	**136**
5:00PM	62	8	0	**70**	0	13	28	0	**41**	0	17	53	0	**70**	0	**181**
Total	224	19	0	**243**	0	36	87	0	**123**	0	52	187	0	**239**	0	**605**
% Approach	92.2%	7.8%	0%	**-**	-	29.3%	70.7%	0%	**-**	-	21.8%	78.2%	0%	**-**	-	-
% Total	37.0%	3.1%	0%	**40.2%**	-	6.0%	14.4%	0%	**20.3%**	-	8.6%	30.9%	0%	**39.5%**	-	-
PHF	0.903	0.594	-	**0.868**	-	0.692	0.777	-	**0.750**	-	0.765	0.882	-	**0.854**	-	0.836
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	221	19	0	**240**	-	36	86	0	**122**	-	52	185	0	**237**	-	599
% Lights	98.7%	100%	0%	**98.8%**	-	100%	98.9%	0%	**99.2%**	-	100%	98.9%	0%	**99.2%**	-	99.0%
Heavy	3	0	0	**3**	-	0	1	0	**1**	-	0	2	0	**2**	-	6
% Heavy	1.3%	0%	0%	**1.2%**	-	0%	1.1%	0%	**0.8%**	-	0%	1.1%	0%	**0.8%**	-	1.0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
Forced Peak (4:30 PM - 5:30 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

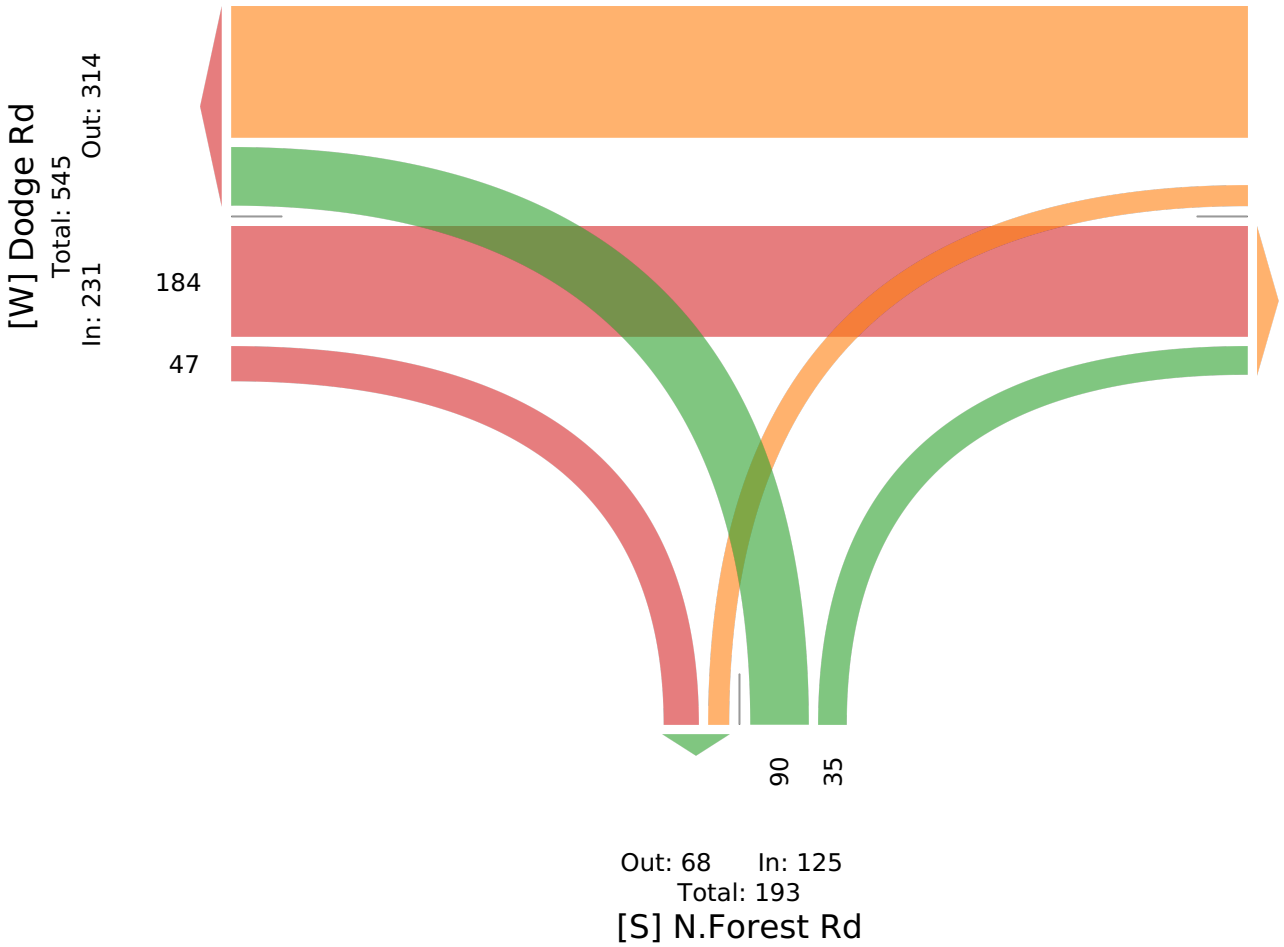
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 4:30PM	56	5	0	**61**	0	10	22	0	**32**	0	14	47	0	**61**	0	**154**
4:45PM	59	3	0	**62**	0	8	23	0	**31**	0	7	36	0	**43**	0	**136**
5:00PM	62	8	0	**70**	0	13	28	0	**41**	0	17	53	0	**70**	0	**181**
5:15PM	47	5	0	**52**	0	4	17	0	**21**	0	9	48	0	**57**	0	**130**
Total	224	21	0	**245**	0	35	90	0	**125**	0	47	184	0	**231**	0	**601**
% Approach	91.4%	8.6%	0%	**-**	-	28.0%	72.0%	0%	**-**	-	20.3%	79.7%	0%	**-**	-	-
% Total	37.3%	3.5%	0%	**40.8%**	-	5.8%	15.0%	0%	**20.8%**	-	7.8%	30.6%	0%	**38.4%**	-	-
PHF	0.903	0.656	-	**0.875**	-	0.673	0.804	-	**0.762**	-	0.691	0.868	-	**0.825**	-	0.830
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	223	21	0	**244**	-	35	89	0	**124**	-	47	183	0	**230**	-	598
% Lights	99.6%	100%	0%	**99.6%**	-	100%	98.9%	0%	**99.2%**	-	100%	99.5%	0%	**99.6%**	-	99.5%
Heavy	1	0	0	**1**	-	0	1	0	**1**	-	0	1	0	**1**	-	3
% Heavy	0.4%	0%	0%	**0.4%**	-	0%	1.1%	0%	**0.8%**	-	0%	0.5%	0%	**0.4%**	-	0.5%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
Forced Peak (4:30 PM - 5:30 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary	
Study Name	Sweet Home Road @ Dodge Rd. & Commerce Rd.
Project	
Project Code	
Legs and Movements	
Bin Size	15 minutes
Time Zone	
Start Time	2024-05-14 00:00:00 +0000
End Time	2024-05-17 00:00:00 +0000
Location	Sweet Home Road @ Dodge Rd. & Commerce Rd.
Latitude and Longitude	43.02669108,-78.79913032

AM Peak	7:30-8:30
Midday Peak	15:00-16:00
PM Peak (Overall Peak Hour)	16:30-17:30

ArticulatedTruck

Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	1		
2024-05-14 07:15:00 +0000	0	0	0	0	0	0	0	1	0	0	0	0	1		
2024-05-14 07:30:00 +0000	0	1	0	0	0	0	0	1	1	0	0	0	0	3	
2024-05-14 07:45:00 +0000	0	0	0	0	0	0	0	1	0	0	0	0	1	2	
2024-05-14 08:00:00 +0000	0	1	0	0	0	0	0	2	1	0	0	0	0	4	
2024-05-14 08:15:00 +0000	0	0	0	0	0	0	0	1	1	0	0	0	2	4	
2024-05-14 08:30:00 +0000	0	0	0	0	0	0	0	0	1	0	0	0	0		
2024-05-14 08:45:00 +0000	0	0	0	0	0	0	0	1	1	0	0	0	1		
2024-05-14 16:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0		
2024-05-14 16:15:00 +0000	0	1	0	0	0	0	0	1	1	0	0	0	1		
2024-05-14 16:30:00 +0000	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
2024-05-14 16:45:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
2024-05-14 17:00:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	1	2	
2024-05-14 17:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
2024-05-14 17:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	1		
2024-05-14 17:45:00 +0000	0	0	0	0	0	1	0	0	1	0	0	0	1	0	
7:30-8:30	0	2	0	0	0	0	0	5	3	0	0	0	0	3	
4:30-5:30	0	2	0	0	0	1	0	0	0	0	0	0	0	2	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bicycle															
Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:45:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30-5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Bus																
Entry	North				East			South				West				
Direction	Southbound				Westbound			Northbound				Eastbound				
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right		
2024-05-14 07:00:00 +0000	0	15	1	0	0	0	0	0	3	0	0	0	0	1		
2024-05-14 07:15:00 +0000	1	1	0	0	0	0	1	0	9	0	0	1	0	0		
2024-05-14 07:30:00 +0000	0	4	1	0	0	0	0	0	5	0	0	0	0	0	10	
2024-05-14 07:45:00 +0000	1	2	0	0	0	0	1	0	3	1	0	1	0	0	9	
2024-05-14 08:00:00 +0000	0	8	0	0	0	0	0	2	6	0	0	0	0	0	16	
2024-05-14 08:15:00 +0000	0	3	0	0	0	0	0	3	3	0	0	1	0	0	10	
2024-05-14 08:30:00 +0000	0	5	1	0	0	0	0	3	4	0	0	1	1	4		
2024-05-14 08:45:00 +0000	0	8	0	0	0	3	0	3	2	0	0	2	7	4		
2024-05-14 16:00:00 +0000	0	6	1	0	0	0	0	0	10	0	0	0	0	0		
2024-05-14 16:15:00 +0000	0	8	0	0	0	0	0	0	2	0	0	1	0	1		
2024-05-14 16:30:00 +0000	1	3	1	0	0	0	0	0	1	0	0	0	0	1	7	
2024-05-14 16:45:00 +0000	0	1	0	0	0	0	0	0	1	0	0	1	0	0	3	
2024-05-14 17:00:00 +0000	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	
2024-05-14 17:15:00 +0000	0	1	1	0	0	0	0	0	1	0	0	1	0	0	4	
2024-05-14 17:30:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	0	0		
2024-05-14 17:45:00 +0000	0	0	1	0	0	0	0	0	1	0	0	1	0	0		
7:30-8:30	1	17	1	0	0	0	1	5	17	1	0	2	0	0		
4:30-5:30	1	5	2	0	0	0	0	0	4	0	0	2	0	2		

Lights

Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	27	164	3	0	3	14	9	60	61	7	0	1	7	38	
2024-05-14 07:15:00 +0000	35	183	3	0	6	13	15	76	97	11	0	3	14	30	
2024-05-14 07:30:00 +0000	49	202	5	0	7	19	21	78	99	15	0	1	27	32	555
2024-05-14 07:45:00 +0000	58	194	6	0	6	39	20	113	96	18	0	0	18	21	589
2024-05-14 08:00:00 +0000	47	150	5	0	10	32	19	93	97	17	0	1	16	27	514
2024-05-14 08:15:00 +0000	47	190	5	0	8	26	18	84	103	17	0	3	13	24	538
2024-05-14 08:30:00 +0000	40	162	1	0	12	22	22	71	84	19	0	3	10	30	
2024-05-14 08:45:00 +0000	41	158	5	0	7	18	19	65	101	21	0	1	14	24	
2024-05-14 16:00:00 +0000	27	141	3	0	22	13	56	21	222	15	0	7	20	88	
2024-05-14 16:15:00 +0000	20	141	2	0	26	14	52	19	208	13	0	4	19	69	
2024-05-14 16:30:00 +0000	26	160	2	0	25	12	68	19	221	17	0	11	28	104	693
2024-05-14 16:45:00 +0000	29	155	4	0	28	13	59	19	226	16	0	2	29	92	672
2024-05-14 17:00:00 +0000	24	176	1	0	34	18	80	21	208	17	0	6	37	131	753
2024-05-14 17:15:00 +0000	29	163	1	0	24	17	50	22	222	16	0	5	22	59	630
2024-05-14 17:30:00 +0000	28	170	4	0	18	10	54	17	207	19	0	5	17	47	
2024-05-14 17:45:00 +0000	27	142	3	0	20	9	42	15	174	12	0	3	15	35	
7:30-8:30	201	736	21	0	31	116	78	368	395	67	0	5	74	104	
4:30-5:30	108	654	8	0	111	60	257	81	877	66	0	24	116	386	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

MotorizedVehicle															
Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 07:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 07:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 08:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 16:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 16:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 16:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 17:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30-5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

SingleUnitTruck

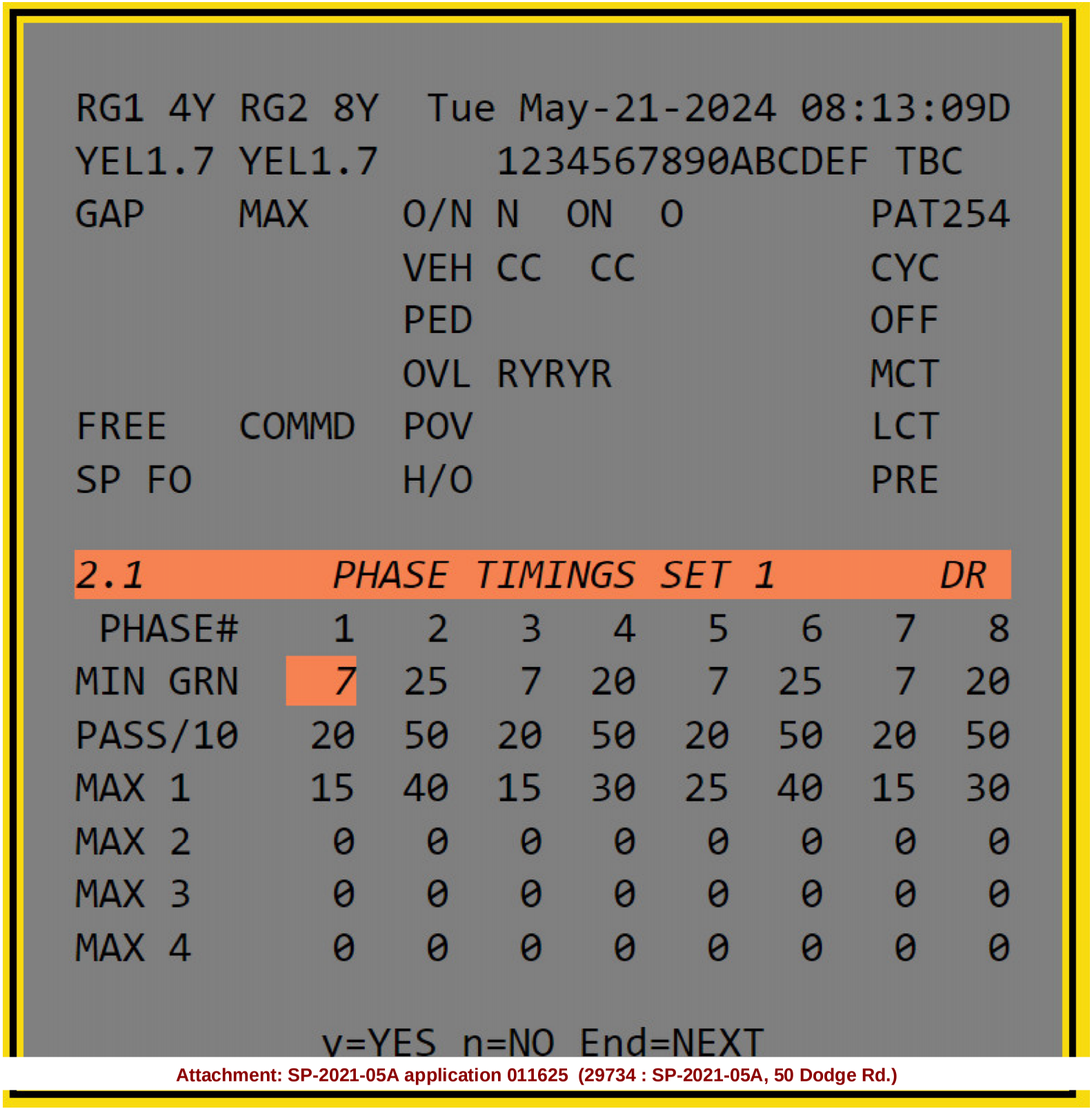
Entry	North				East				South				West			
Direction	Southbound				Westbound				Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right		Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	1	0	0	1	0	0		0	1	1	0	0	1	2	
2024-05-14 07:15:00 +0000	0	1	0	0	2	0	0		1	0	2	0	0	0	2	
2024-05-14 07:30:00 +0000	0	3	0	0	3	0	1		0	0	5	0	0	0	2	14
2024-05-14 07:45:00 +0000	1	1	0	0	3	0	0		1	0	4	0	0	0	1	11
2024-05-14 08:00:00 +0000	1	3	0	0	4	0	1		2	1	2	0	0	0	1	15
2024-05-14 08:15:00 +0000	1	3	0	0	3	0	0		2	2	3	0	0	0	1	15
2024-05-14 08:30:00 +0000	2	1	0	0	3	0	1		3	3	3	0	0	0	2	
2024-05-14 08:45:00 +0000	0	4	0	0	2	0	2		2	2	2	0	0	0	2	
2024-05-14 16:00:00 +0000	0	2	0	0	0	1	0		2	2	0	0	0	0	1	
2024-05-14 16:15:00 +0000	1	1	0	0	0	1	0		1	1	0	0	1	0	1	
2024-05-14 16:30:00 +0000	0	1	0	0	0	1	1		1	2	0	0	0	0	2	8
2024-05-14 16:45:00 +0000	1	2	0	0	0	2	0		1	1	0	0	0	0	1	8
2024-05-14 17:00:00 +0000	1	0	1	0	0	0	0		1	1	0	0	0	0	1	5
2024-05-14 17:15:00 +0000	0	0	1	0	1	0	0		2	2	0	0	0	0	1	7
2024-05-14 17:30:00 +0000	0	1	1	0	0	2	1		0	1	0	0	0	0	0	
2024-05-14 17:45:00 +0000	0	2	0	0	0	0	0		1	1	0	0	0	0	1	
7:30-8:30	3	10	0	0	13	0	2		5	3	14	0	0	0	5	
4:30-5:30	2	3	2	0	1	3	1		5	6	0	0	0	0	5	

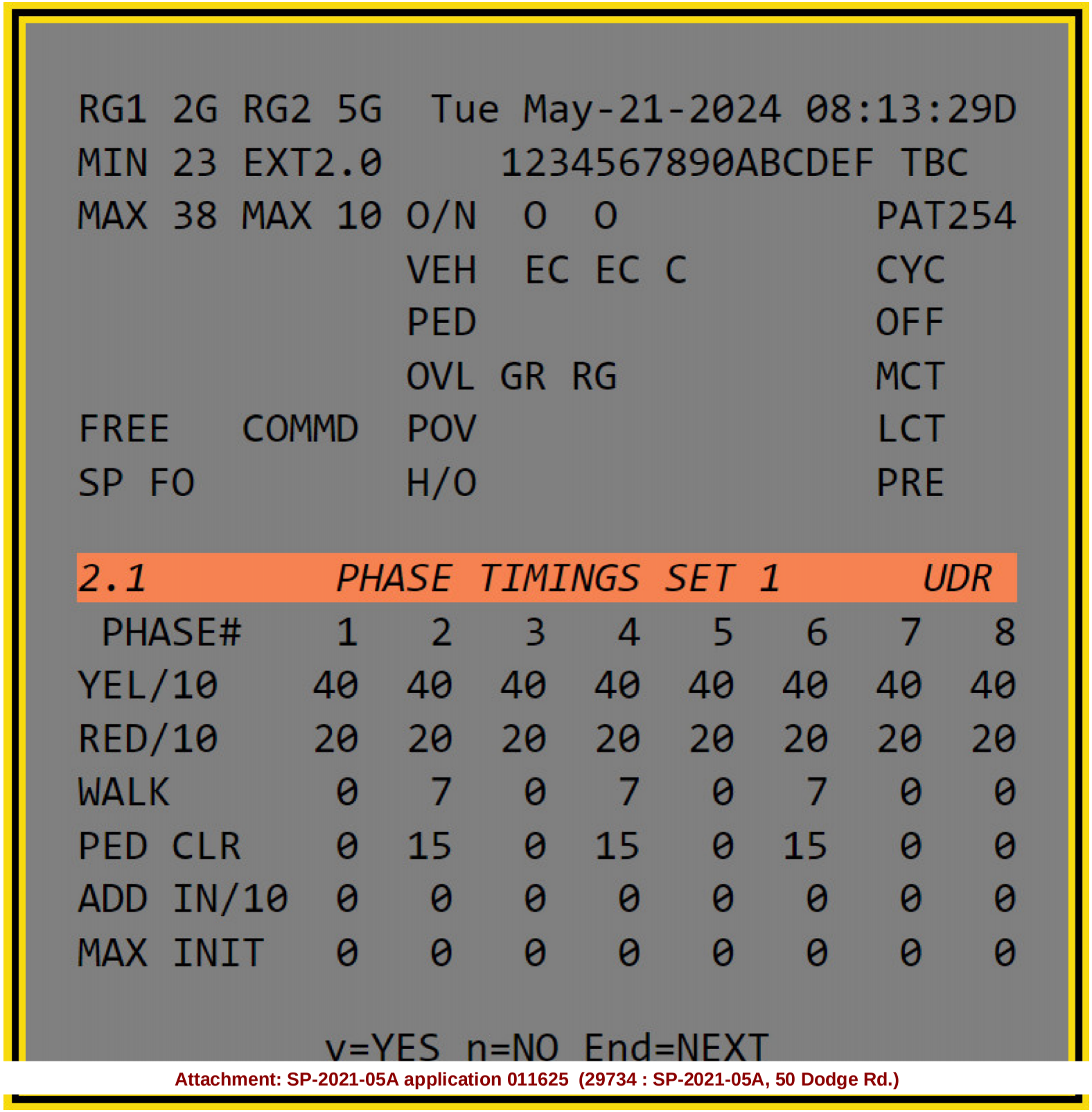
Direction	Southbound				Westbound				Northbound				Eastbound		
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right		Left	Thru	Right	U-Turn	Left	Thru	Right
AM Peak	205	765	22	0	44	116	81		383	418	82	0	7	74	112
PM Peak	111	664	12	0	112	64	258		86	887	66	0	26	116	395
AM HV%	2.00%	3.80%	4.50%	#DIV/0!	29.50%	0.00%	3.70%		3.90%	5.50%	18.30%	#DIV/0!	28.60%	0.00%	7.10%
PM HV%	2.70%	1.50%	33.30%	#DIV/0!	0.90%	6.30%	0.40%		5.80%	1.10%	0.00%	#DIV/0!	7.70%	0.00%	2.30%

AM PHF:	582	PM PHF:	709
	611		684
	549		762
	567		642
	0.944763		0.917651

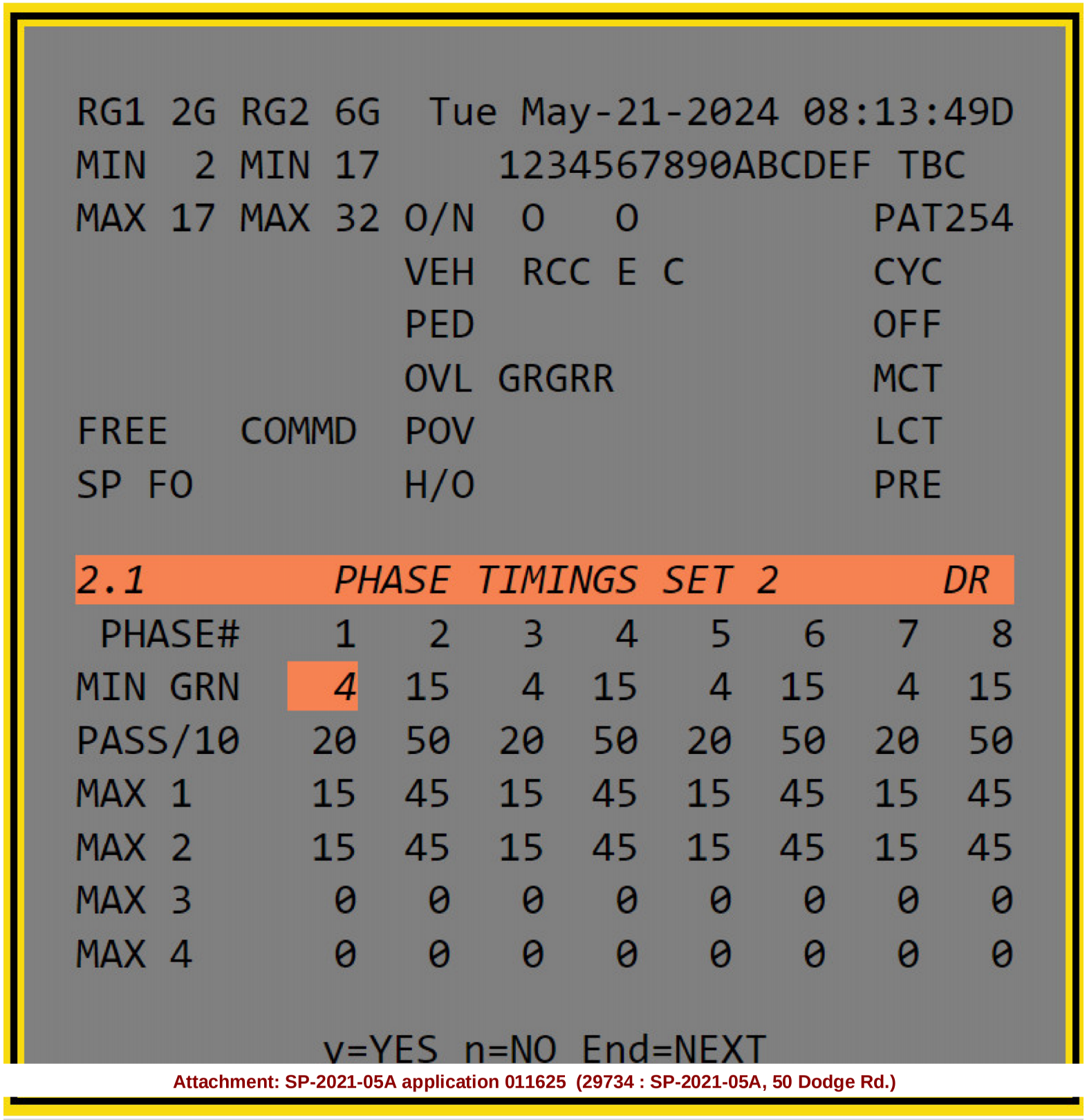
APPENDIX B: MISCELLANEOUS CALCULATIONS

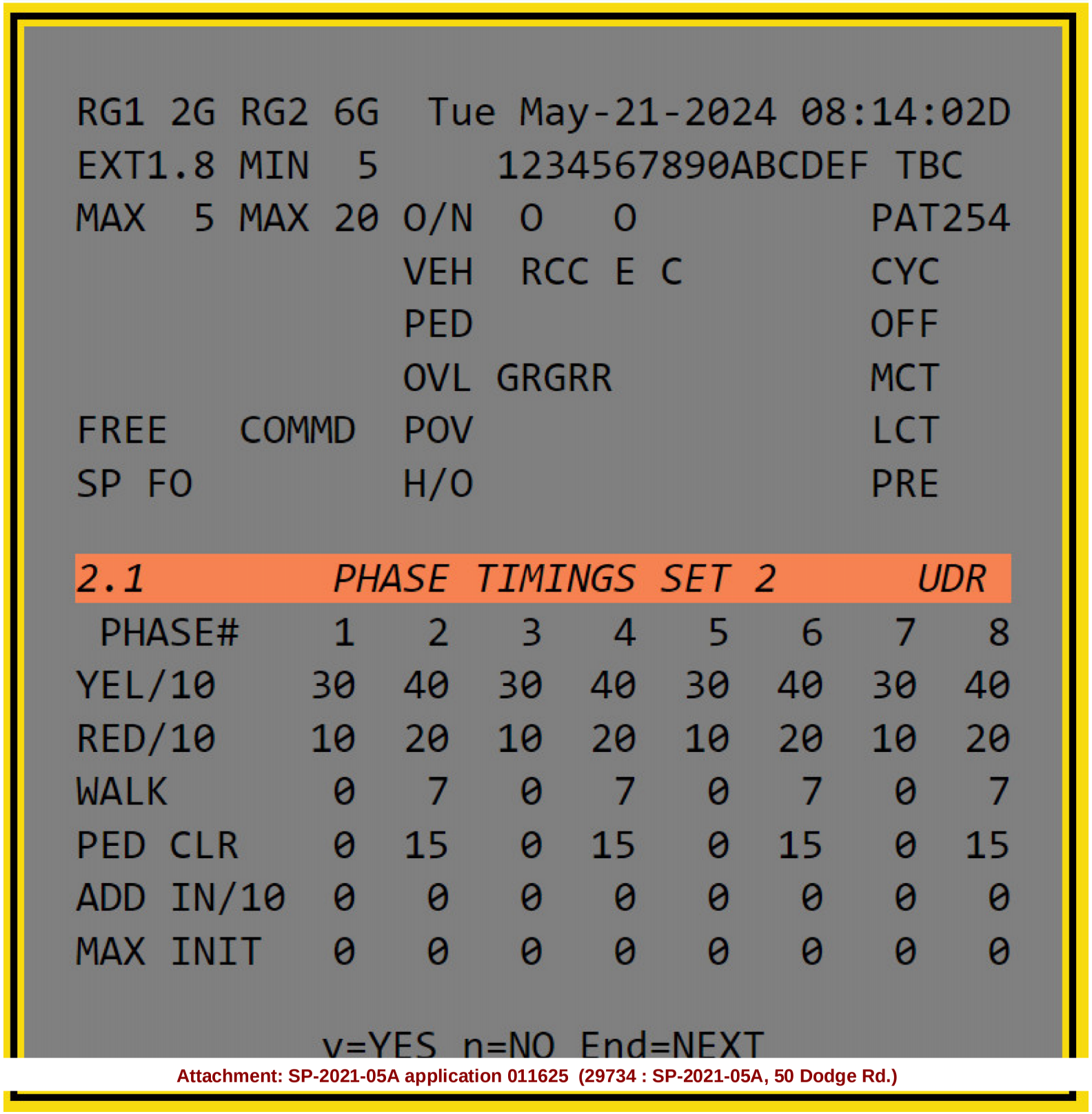
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)


RG1 4Y RG2 8Y Tue May-21-2024 08:13:09D
YEL1.7 YEL1.7 1234567890ABCDEF TBC
GAP MAX O/N N ON O PAT254
VEH CC CC CYC
PED OFF
OVL RYRYR MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 1 DR
PHASE# 1 2 3 4 5 6 7 8
MIN GRN 7 25 7 20 7 25 7 20
PASS/10 20 50 20 50 20 50 20 50
MAX 1 15 40 15 30 25 40 15 30
MAX 2 0 0 0 0 0 0 0 0
MAX 3 0 0 0 0 0 0 0 0
MAX 4 0 0 0 0 0 0 0 0
v=YES n=NO End=NEXT



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)


RG1 2G RG2 6G Tue May-21-2024 08:13:49D
MIN 2 MIN 17 1234567890ABCDEF TBC
MAX 17 MAX 32 O/N O O PAT254
VEH RCC E C CYC
PED OFF
OVL GRGRR MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 2 DR
PHASE# 1 2 3 4 5 6 7 8
MIN GRN 4 15 4 15 4 15 4 15
PASS/10 20 50 20 50 20 50 20 50
MAX 1 15 45 15 45 15 45 15 45
MAX 2 15 45 15 45 15 45 15 45
MAX 3 0 0 0 0 0 0 0 0
MAX 4 0 0 0 0 0 0 0 0
v=YES n=NO End=NEXT


RG1 2G RG2 6G Tue May-21-2024 08:14:02D
EXT1.8 MIN 5 1234567890ABCDEF TBC
MAX 5 MAX 20 O/N O O PAT254
VEH RCC E C CYC
PED OFF
OVL GRGRR MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 2 UDR
PHASE# 1 2 3 4 5 6 7 8
YEL/10 30 40 30 40 30 40 30 40
RED/10 10 20 10 20 10 20 10 20
WALK 0 7 0 7 0 7 0 7
PED CLR 0 15 0 15 0 15 0 15
ADD IN/10 0 0 0 0 0 0 0 0
MAX INIT 0 0 0 0 0 0 0 0
y=YES n=NO End=NEXT

PASSERO
engineering architecture

Sawyer's Landing Development, Town of Amherst, NY

Documentation of Ambient Traffic Volume Growth

Roadway	Segment starts at	Segment end at	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth
North Forest Rd	Turtle Creek Apts	Dodge Rd			2,189			1,809		1,825	1,845		-2.81%
Dodge Rd	Sweet Home Rd	Campbell Rd			5,440				7,058	6,738			-4.53%
Sweet Home Rd	Commerce Dr	North French Rd		16,606		15,052			16,008			18,050	2.07%
Sweet Home Rd	N Ellicott Rd	Commerce Dr	21,021						21,437				0.33%
												AVERAGE	**-1.24%**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection Crash Rate Calculations
Sawyer's Landing Development

Intersection #1:	Sweet Home Rd at Dodge Rd
Date of Count:	Tuesday, May 14, 2024
Number of Crashes:	30
Number of Injuries:	11
Number of Fatalities:	0
Entering Vehicles (PM):	2797
ADT:	29442
Start Date:	January 1, 2019
End Date:	December 31, 2023
Number of Years:	5
Intersection Type:	4 Legged
Area Type:	Urban
Control Type:	Signal w/ Left Turn 5 or More Lanes

crash rate = Number of Crashes x 1 Million / ADT x 365 Days per Year x Number of Years

crash rate = 30 x 1,000,000 / 29442 x 365 x 5

	Crash Rate		Fatality Rate	Injury Rate
Study Intersection	**0.56**	**cr/mve**	**0%**	**37%**
Statewide Average*	**0.26**	**cr/mve**		

ADT = Average Daily Total vehicles entering intersection
cr/mve = crashes per million entering vehicles
* Most recent available 2019 Average Crash Rates for State Highways by Facility Type

	Direction					
Type	Northbound	Southbound	Eastbound	Westbound	Unknown	Totals
Left turn	3	4		2		9
Rear-end	1	3	2	1		7
Overtaking						0
Right Angle	5	1	1	1		8
Right Turn				1		1
Head On						0
Side-swipe	1	1	1			3
Fixed Object						0
Backing		1	1			2
Other						0
Bike/Ped						0
Animal						0
Totals	10	10	5	5	0	30

PDO	19
Injury	11
Injury + PDO	
Fatal	
NR	
Total	30

Intersection Crash Rate Calculations
Sawyer's Landing Development

Intersection #5:	Dodge Rd at North Forest Rd
Date of Count:	Thursday, March 3, 2022
Number of Crashes:	6
Number of Injuries:	0
Number of Fatalities:	0
Entering Vehicles (PM):	606
ADT:	6379
Start Date:	January 1, 2019
End Date:	December 31, 2023
Number of Years:	5
Intersection Type:	3 Legged
Area Type:	Urban
Control Type:	Sign 1-3 Lanes

crash rate = Number of Crashes x 1 Million / ADT x 365 Days per Year x Number of Years

crash rate = 6 x 1,000,000 / 6379 x 365 x 5

	Crash Rate		Fatality Rate	Injury Rate
Study Intersection	**0.52**	**cr/mve**	**0%**	**0%**
Statewide Average*	**0.19**	**cr/mve**		

ADT = Average Daily Total vehicles entering intersection
cr/mve = crashes per million entering vehicles
* Most recent available 2019 Average Crash Rates for State Highways by Facility Type

	Direction					
Type	Northbound	Southbound	Eastbound	Westbound	Unknown	Totals
Left turn						0
Rear-end	1			1		2
Overtaking						0
Right Angle	1					1
Right Turn						0
Head On						0
Side-swipe						0
Fixed Object	2		1			3
Backing						0
Other						0
Bike/Ped						0
Animal						0
Totals	4	0	1	1	0	6

PDO	6
Injury	
Injury + PDO	
Fatal	
NR	
Total	6

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROPOSED SAWYER'S LANDING DEVELOPMENT
TOWN OF AMHERST, NY
AM PEAK

		Fig 3					Fig 4	Fig 6				Fig 7	Fig 8
				Num of yrs									
				2									
LOCATION NUMBER	INTERSECTION DESCRIPTION	Existing Volumes	2024 Existing Volumes	2026 Bkgd Vol	Aspen Heights	480 Dodge Rd	2026 Bkgrd Volumes	Sawyer's Landing				Total Site Trips	FULL Build Volumes
				1.00%				Enter Dist. %	Exit Dist. %	Trips IN 69	Trips OUT 92		
1	Sweet Home Road												
	Dodge Road/Commerce Drive												
	SR	22	22	22			22						22
	ST	765	765	780			780						780
	SL	205	205	209		2	211	25%		17		17	228
	WR	81	81	83		2	85		25%		23	23	108
	WT	116	116	118	3	3	124		10%		9	9	133
	WL	44	44	45	15	1	61		30%		28	28	89
	NR	82	82	84	11		95	30%		21		21	116
	NT	418	418	426			426						426
	NL	383	383	391			391						391
	ER	112	112	114			114						114
	ET	74	74	75			75	10%		7		7	82
	EL	7	7	7			7						7
2	Dodge Road												
	Proposed Northerly Exit Driveway												
	SR								40%		37	37	37
	ST												
	SL								15%		14	14	14
	WR												
	WT	234	236	241	18	6	265		25%		23	23	288
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	275	278	284	11	2	297	65%		45		45	342
	EL												
3	Dodge Road												
	Proposed Northerly Enter Driveway												
	SR												
	ST												
	SL												
	WR							12%		8		8	8
	WT	234	236	241	18	6	265		25%		23	23	288
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	275	278	284	11	2	297	18%	15%	12	14	26	323
	EL							47%		33		33	33
4	Dodge Road												
	Proposed South Driveway												
	SR								25%		23	23	23
	ST												
	SL								20%		18	18	18
	WR							23%		16		16	16
	WT	234	236	241	18	6	265	12%		8		8	273
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	275	278	284	11	2	297		15%		14	14	311
	EL							18%		12		12	12
5	Dodge Road		0.5%										
	North Forest Road		2										
	SR												
	ST												
	SL												
	WR												
	WT	206	208	212	18	6	236	25%		17		17	253
	WL	31	31	32		1	33						33
	NR	11	11	11			11						11
	NT												
	NL	28	28	29			29	10%		7		7	36
	ER	82	83	85			85		10%		9	9	94
	ET	193	195	199	11	2	212		25%		23	23	235
	EL												

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROPOSED SAWYER'S LANDING DEVELOPMENT
TOWN OF AMHERST, NY
PM PEAK

		Fig 3					Fig 4	Fig 6				Fig 7	Fig 8
				Num of yrs									
				2									
LOCATION NUMBER	INTERSECTION DESCRIPTION	Existing Volumes	2024 Existing Volumes	2026 Bkgd Vol	Aspen Heights	480 Dodge Rd	2026 Bkgrd Volume	Sawyer's Landing				Total Site Trips	FULL Build Volumes
				1.00%				Enter Dist. %	Exit Dist. %	Trips IN 133	Trips OUT 110		
1	Sweet Home Road Dodge Road/Commerce Drive												
	SR	12	12	12			12						12
	ST	664	664	677			677						677
	SL	111	111	113		2	115	25%		33		33	148
	WR	258	258	263		2	265		25%		28	28	293
	WT	64	64	65	11	1	77		10%		11	11	88
	WL	112	112	114	21	1	136		30%		33	33	169
	NR	66	66	67	13	2	82	30%		40		40	122
	NT	887	887	905			905						905
	NL	86	86	88			88						88
	ER	395	395	403			403						403
	ET	116	116	118		2	120	10%		13		13	133
	EL	26	26	27			27						27
2	Dodge Road Proposed Northerly Exit Driveway												
	SR								40%		44	44	44
	ST												
	SL								15%		16	16	16
	WR												
	WT	314	317	323	32	4	359		25%		28	28	387
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	231	233	238	13	6	257	65%		86		86	343
	EL												
3	Dodge Road Proposed Northerly Enter Driveway												
	SR												
	ST												
	SL												
	WR							12%		16		16	16
	WT	314	317	323	32	4	359		25%		28	28	387
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	231	233	238	13	6	257	18%	15%	24	16	40	297
	EL							47%		62		62	62
4	Dodge Road Proposed South Driveway												
	SR								25%		28	28	28
	ST												
	SL								20%		22	22	22
	WR							23%		31		31	31
	WT	314	317	323	32	4	359	12%		16		16	375
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	231	233	238	13	6	257		15%		16	16	273
	EL							18%		24		24	24
5	Dodge Road North Forest Road		0.5% 2										
	SR												
	ST												
	SL												
	WR												
	WT	224	226	231	32	4	267	25%		33		33	300
	WL	21	21	21			21						21
	NR	35	35	36		1	37						37
	NT												
	NL	90	91	93			93	10%		13		13	106
	ER	47	47	48			48		10%		11	11	59
	ET	184	186	190	13	6	209		25%		27	27	236
	EL												

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

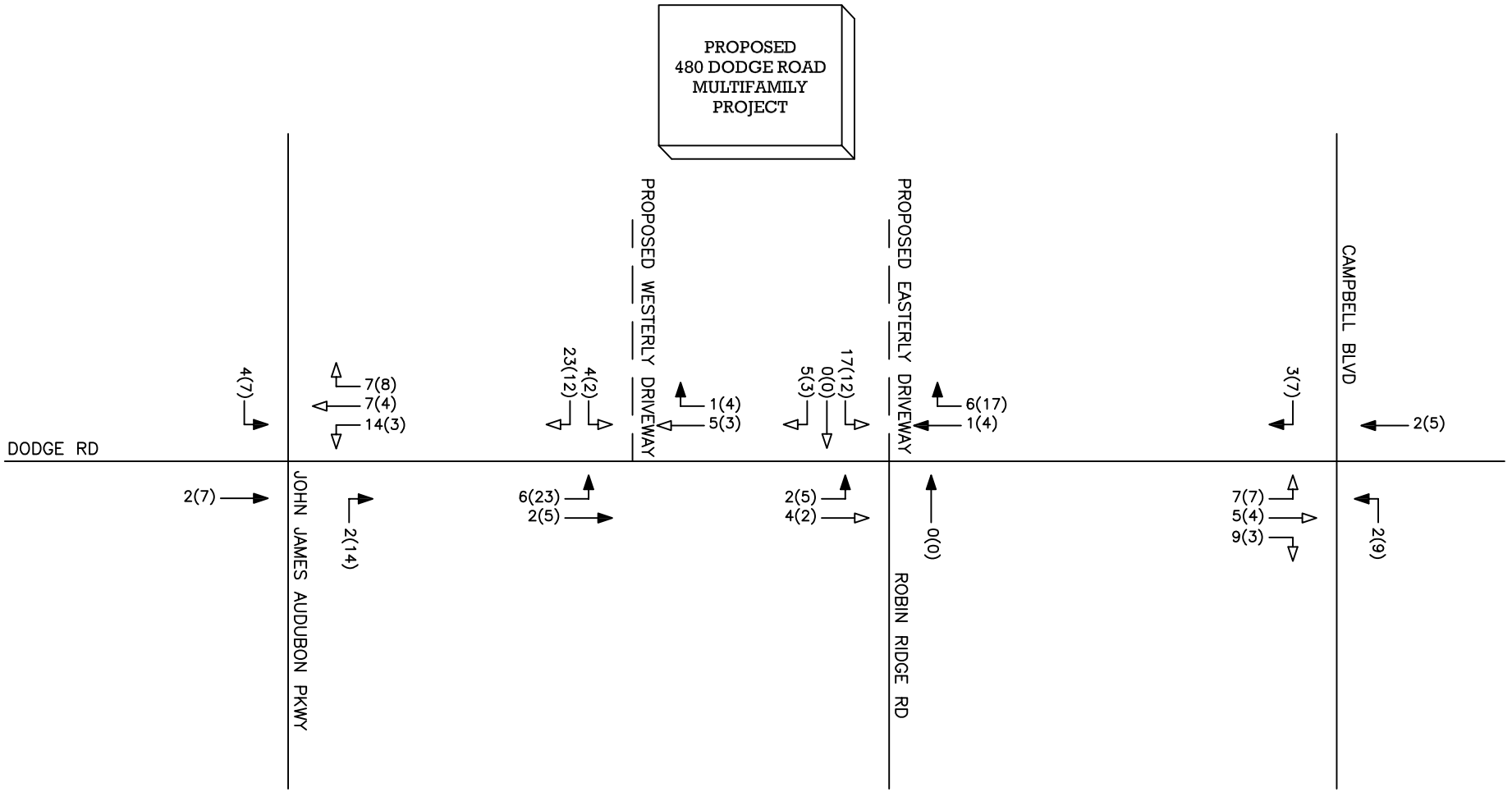


FIGURE 7

TOTAL SITE GENERATED TRIPS

PROPOSED 480 DODGE ROAD MULTIFAMILY PROJECT
TOWN OF AMHERST, NY

N
NOT TO SCALE

KEY

00(00) = AM(PM)
→ = ENTERING TRIPS
→ = EXITING TRIPS

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

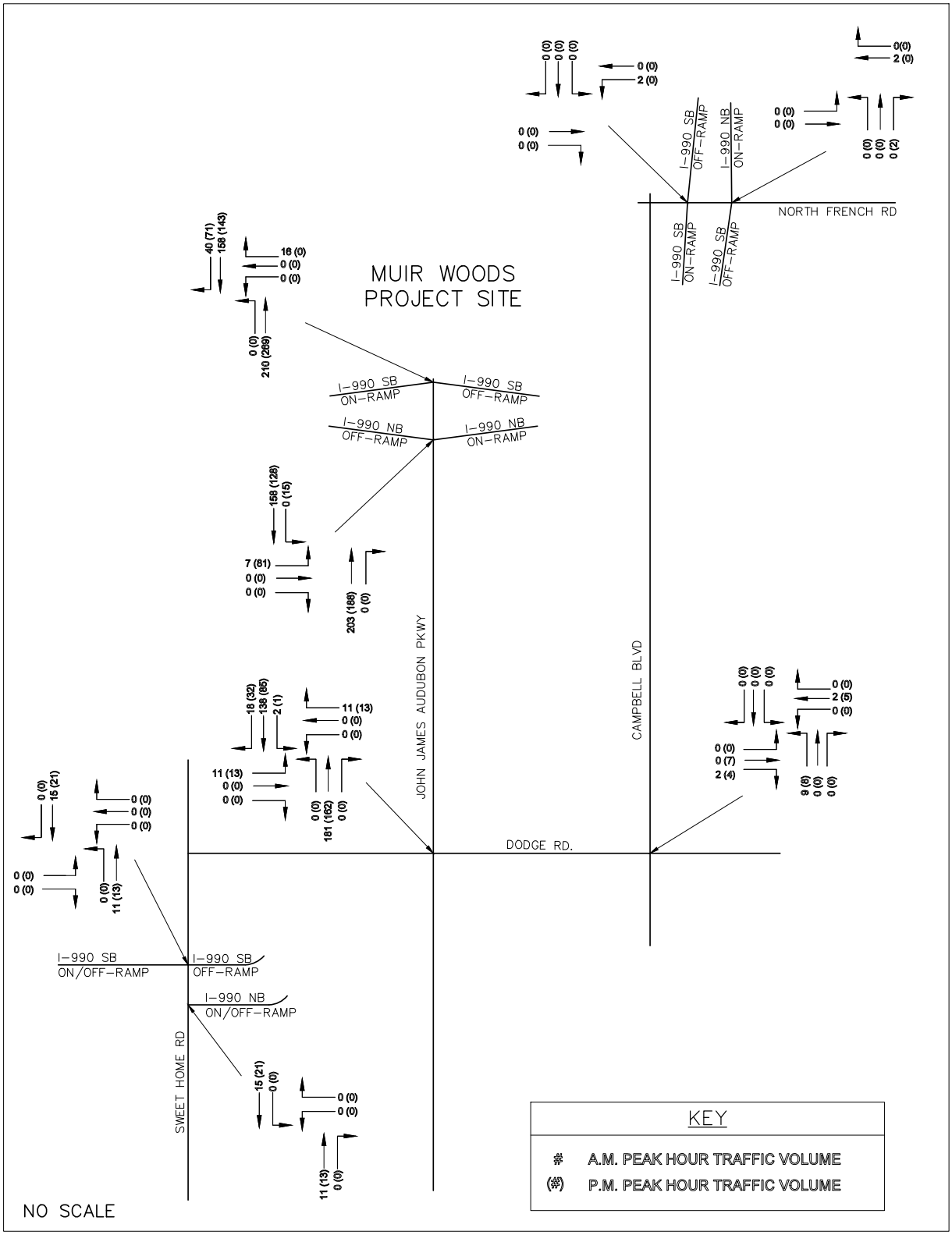


EXHIBIT VII
SITE GENERATED TRAFFIC

Greenman-Pedersen, Inc.
Engineering and Construction Services
Engineering - Surveying - Planning
BUFFALO (716) 852-4644 • ROCHESTER (585) 486-4555 • JAMESTOWN (716) 484-3503

BUF-2013062 MARCH 2020

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROJECT DETAILS

Project Name:	Sawyers Landing	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	5/24/2024	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	2
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak	7	1	0		76	102	178
Scenario - 2	PM Peak	7	1	0		163	136	299

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Scenario - 1

Scenario Name: AM Peak
Dev. phase: 1
User Group:
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
710 - General Office Building	General	1000 Sq. Ft. GFA	2.3	Weekday, Peak Hour of	Best Fit (LOG)	6	1	7
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.86Ln(X) + 1.16	88%	12%	
822 - Strip Retail Plaza (<40k)	General	1000 Sq. Ft. GLA	12.85	Weekday, Peak Hour of	Average	18	12	30
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	2.36	60%	40%	
151 - Mini-Warehouse	General	1000 Sq. Ft. GFA	105.6	Weekday, Peak Hour of	Average	6	4	10
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	0.09	59%	41%	
215 - Single-Family Attached Housing	General	Dwelling Units	107	Weekday, Peak Hour of	Best Fit (LIN)	12	37	49
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.52(X) - 5.70	25%	75%	
221 - Multifamily Housing (Mid-Rise) - Not	General	Dwelling Units	102	Weekday, Peak Hour	Best Fit (LIN)	8	26	34
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			of Adjacent Street	T = 0.44(X) - 11.61	23%	77%	
932 - High-Turnover (Sit-Down) Restaurant	General	1000 Sq. Ft. GFA	3.90	Weekday, Peak Hour of	Average	21	17	38
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	9.57	55%	45%	
492 - Health/Fitness Club	General	1000 Sq. Ft. GFA	8.00	Weekday, Peak Hour of	Average	5	5	10
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	1.31	51%	49%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	99	100	1.1	1.1	88	12
822 - Strip Retail Plaza (<40k)	100	100	1	1	60	40
151 - Mini-Warehouse	100	100	1	1	59	41
215 - Single-Family Attached Housing	100	100	1	1	25	75
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	23	77
932 - High-Turnover (Sit-Down) Restaurant	100	100	1	1	55	45
492 - Health/Fitness Club	100	100	1	1	51	49

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	6	1	0	0	6	1
	7		0		7	
822 - Strip Retail Plaza (<40k)	18	12	0	0	18	12
	30		0		30	
151 - Mini-Warehouse	6	4	0	0	6	4
	10		0		10	
215 - Single-Family Attached Housing	12	37	0	0	12	37
	49		0		49	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	8	26	0	0	8	26
	34		0		34	
932 - High-Turnover (Sit-Down) Restaurant	21	17	0	0	21	17

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

932 - High-Turnover (Sit-Down) Restaurant	38		0		38	
492 - Health/Fitness Club	5	5	0	0	5	5
	10		0		10	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	6	1	7
822 - Strip Retail Plaza (<40k)	18	12	30
151 - Mini-Warehouse	6	4	10
215 - Single-Family Attached Housing	12	37	49
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	8	26	34
932 - High-Turnover (Sit-Down) Restaurant	21	17	38
492 - Health/Fitness Club	5	5	10

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	76	102	178
External Vehicle Trips	76	102	178
New Vehicle Trips	76	102	178

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Scenario - 2

Scenario Name: PM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
710 - General Office Building	General	1000 Sq. Ft. GFA	2.3	Weekday, Peak Hour of	Best Fit (LOG)	1	6	7
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.83Ln(X) + 1.29	17%	83%	
822 - Strip Retail Plaza (<40k)	General	1000 Sq. Ft. GLA	12.85	Weekday, Peak Hour of	Best Fit (LOG)	47	47	94
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.71Ln(X) + 2.72	50%	50%	
151 - Mini-Warehouse	General	1000 Sq. Ft. GFA	105.6	Weekday, Peak Hour of	Average	7	8	15
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	0.15	47%	53%	
215 - Single-Family Attached Housing	General	Dwelling Units	107	Weekday, Peak Hour of	Best Fit (LIN)	36	25	61
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.60(X) - 3.93	59%	41%	
221 - Multifamily Housing (Mid-Rise) - Not	General	Dwelling Units	102	Weekday, Peak Hour	Best Fit (LIN)	24	16	40
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			of Adjacent Street	T = 0.39(X) + 0.34	61%	39%	
932 - High-Turnover (Sit-Down) Restaurant	General	1000 Sq. Ft. GFA	3.90	Weekday, Peak Hour of	Average	22	14	36
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	9.05	61%	39%	
492 - Health/Fitness Club	General	1000 Sq. Ft. GFA	8.00	Weekday, Peak Hour of	Best Fit (LOG)	26	20	46
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.67Ln(X) + 2.44	57%	43%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	99	1.1	1.1	17	83
822 - Strip Retail Plaza (<40k)	100	100	1	1	50	50
151 - Mini-Warehouse	100	100	1	1	47	53
215 - Single-Family Attached Housing	100	100	1	1	59	41
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	61	39
932 - High-Turnover (Sit-Down) Restaurant	100	100	1	1	61	39
492 - Health/Fitness Club	100	100	1	1	57	43

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	1	7	0	0	1	7
	8		0		8	
822 - Strip Retail Plaza (<40k)	47	47	0	0	47	47
	94		0		94	
151 - Mini-Warehouse	7	8	0	0	7	8
	15		0		15	
215 - Single-Family Attached Housing	36	25	0	0	36	25
	61		0		61	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	24	16	0	0	24	16
	40		0		40	
932 - High-Turnover (Sit-Down) Restaurant	22	14	0	0	22	14

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

932 - High-Turnover (Sit-Down) Restaurant	36		0		36	
492 - Health/Fitness Club	26	20	0	0	26	20
	46		0		46	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	1	6	7
822 - Strip Retail Plaza (<40k)	47	47	94
151 - Mini-Warehouse	7	8	15
215 - Single-Family Attached Housing	36	25	61
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	24	16	40
932 - High-Turnover (Sit-Down) Restaurant	22	14	36
492 - Health/Fitness Club	26	20	46

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	163	136	299
External Vehicle Trips	163	136	299
New Vehicle Trips	163	136	299

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Sawyer's Landing Development	**Organization:**	Passero Associates
Project Location:	Town of Amherst, NY	**Performed By:**	Nick Merrifield
Scenario Description:		**Date:**	May 2024
Analysis Year:	2026	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	2,300	SF	7	6	1
Retail	822	12,854	SF	30	18	12
Restaurant	932	3,901	SF	38	21	17
Cinema/Entertainment				0		
Residential	215/221	209	Units	83	20	63
Hotel				0		
All Other Land Uses[2]	492/151	8,002/105,600	SF	20	11	9
Total				178	76	102

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.06	0%	1%	1.06	0%	0%
Retail	1.17	0%	0%	1.16	0%	0%
Restaurant	1.41	0%	1%	1.39	0%	2%
Cinema/Entertainment						
Residential	1.13	0%	3%	1.09	0%	2%
Hotel						
All Other Land Uses[2]	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		2	0	0	0
Restaurant	1	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	6	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	208	91	117
Internal Capture Percentage	13%	14%	11%
External Vehicle-Trips[3]	156	66	90
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	2	1	1

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	17%	0%
Retail	14%	14%
Restaurant	27%	17%
Cinema/Entertainment	N/A	N/A
Residential	4%	10%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project Name:	Sawyer's Landing Development
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.06	6	6	1.06	1	1
Retail	1.17	18	21	1.16	12	14
Restaurant	1.41	21	30	1.39	17	24
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.13	20	23	1.09	63	69
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	1	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	14	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	7	0	0	0
Retail	0		15	0	0	0
Restaurant	1	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	6	0		0
Hotel	0	1	2	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	5	6	5	0	0
Retail	3	18	21	15	0	0
Restaurant	8	22	30	16	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	22	23	19	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	11	11	11	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	1	1	1	0	0
Retail	2	12	14	10	0	0
Restaurant	4	20	24	14	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	62	69	56	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	9	9	9	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Sawyer's Landing Development	**Organization:**	Passero Associates
Project Location:	Town of Amherst, NY	**Performed By:**	Nick Merrifield
Scenario Description:		**Date:**	May 2024
Analysis Year:	2026	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	2,300	SF	7	1	6
Retail	822	12,854	SF	94	47	47
Restaurant	932	3,901	SF	36	22	14
Cinema/Entertainment				0		
Residential	215/221	209	Units	101	60	41
Hotel				0		
All Other Land Uses[2]	492/151	8,002/105,600	SF	61	33	28
Total				299	163	136

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.11	0%	0%	1.07	0%	0%
Retail	1.21	0%	0%	1.18	0%	0%
Restaurant	1.41	0%	1%	1.39	0%	2%
Cinema/Entertainment						
Residential	1.15	0%	3%	1.21	0%	4%
Hotel						
All Other Land Uses[2]	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	194		283	
Retail					283	
Restaurant					283	
Cinema/Entertainment						
Residential		283	283			
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	0		9	0	14	0
Restaurant	0	8		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	6	4	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	349	191	158
Internal Capture Percentage	26%	24%	28%
External Vehicle-Trips[3]	222	125	97
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	4	2	2

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	17%
Retail	26%	42%
Restaurant	42%	58%
Cinema/Entertainment	N/A	N/A
Residential	25%	20%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project Name:	Sawyer's Landing Development
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.11	1	1	1.07	6	6
Retail	1.21	47	57	1.18	47	55
Restaurant	1.41	22	31	1.39	14	19
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.15	60	69	1.21	41	50
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	1		16	2	14	3
Restaurant	1	8		2	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	2	20	10	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	3	0
Retail	0		9	0	32	0
Restaurant	0	29		0	11	0
Cinema/Entertainment	0	2	1		3	0
Residential	1	6	4	0		0
Hotel	0	1	2	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	1	1	1	0	0
Retail	15	42	57	35	0	0
Restaurant	13	18	31	13	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	17	52	69	43	0	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	33	33	33	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	5	6	5	0	0
Retail	23	32	55	27	0	0
Restaurant	11	8	19	6	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	40	50	31	0	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	28	28	28	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	41.0%
	To Restaurant	20.0%	20.5%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	9.8%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	13.7%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project: **Sawyer's Landing Development**
Location: **Town of Amherst, NY**

Description	ITE LUC	SIZE/ UNITS	AM PEAK HOUR		PM PEAK HOUR		% of Total Trips	
			Enter	Exit	Enter	Exit	AM	PM
General Office Building	710	2,300 SF	6	1	1	6	4%	2%
Strip Retail Plaza (<40k)	822	12,854 SF	18	12	47	47	17%	31%
High-Turnover (Sit-Down) Restaurant	932	3,901 SF	21	17	22	14	21%	12%
Single Family Attached Housing	215	107 Units	12	37	36	25	28%	20%
Multifamily Housing (Mid-Rise)	221	102 Units	8	26	24	16	19%	13%
Mini-Warehouse	151	105,600 SF	6	4	7	8	6%	5%
Health/Fitness Club	492	8,002 SF	5	5	26	20	6%	15%
Sub-Total Site Generated Trips			**76**	**102**	**163**	**136**	100%	100%
General Office Building	710	2,300 SF	5	1	1	5	4%	3%
Strip Retail Plaza (<40k)	822	12,854 SF	16	10	37	33	17%	29%
High-Turnover (Sit-Down) Restaurant	932	3,901 SF	17	14	14	8	19%	9%
Single Family Attached Housing	215	107 Units	12	34	29	21	28%	21%
Multifamily Housing (Mid-Rise)	221	102 Units	8	24	19	14	20%	14%
Mini-Warehouse	151	105,600 SF	6	4	7	8	6%	6%
Health/Fitness Club	492	8,002 SF	5	5	26	20	6%	19%
Total Net Site Generated Trips			**69**	**92**	**133**	**110**	100%	100%
Multi-use Trips			7	10	30	26		

Base Internal Capture Percentages

AM PEAK HOUR		PM PEAK HOUR	
Enter	Exit	Enter	Exit
17%	0%	0%	17%
14%	14%	26%	42%
27%	17%	42%	58%
4%	10%	25%	20%
4%	10%	25%	20%
0%	0%	0%	0%
0%	0%	0%	0%
Adjusted Internal Capture Percentages			
12%	0%	0%	12%
10%	13%	22%	30%
19%	15%	35%	41%
3%	9%	21%	14%
3%	9%	21%	14%
0%	0%	0%	0%
0%	0%	0%	0%

enter	exit	enter	exit	
14%	11%	24%	28%	**Base %**
10%	10%	20%	20%	**Adjusted %**
29%	9%	17%	29%	**% change**

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Traffic Signal Warrant Analysis

Dodge Rd/North Forest Rd - Full Build Conditions

Town of Amherst, Erie County, NY

Hour			2026 Background Volumes on Dodge Rd	Hourly Fluctuation	**2026 Full Build Artery Volume on Dodge Rd**	2026 Background Volumes on North Forest Rd	**Total Hourly Volumes Exiting North Forest Rd under Full Build Conditions**	Warrant 1 - Condition A	Warrant 1 - Condition B	Warrant 2 - 4 hour	Warrant 3 - Peak hour
			Two-Way	Two-Way	**Total**	SB		350/105	525/53	60 vph	75 vph
7:00 AM	to	8:00 AM	419	5.14%	**464**	20	**28**	N	N	N	N
8:00 AM	to	9:00 AM	480	4.65%	**521**	50	**57**	N	N	N	N
9:00 AM	to	10:00 AM	376	4.04%	**412**	40	**46**	N	N	N	N
10:00 AM	to	11:00 AM	319	4.40%	**358**	55	**61**	N	N	N	N
11:00 AM	to	12:00 PM	341	5.90%	**393**	65	**74**	N	N	N	N
12:00 PM	to	1:00 PM	387	6.65%	**446**	77	**87**	N	N	N	N
1:00 PM	to	2:00 PM	347	6.20%	**402**	71	**80**	N	N	N	N
2:00 PM	to	3:00 PM	372	6.72%	**431**	77	**87**	N	N	N	N
3:00 PM	to	4:00 PM	466	6.90%	**527**	82	**92**	N	Y	N	N
4:00 PM	to	5:00 PM	467	8.63%	**543**	130	**143**	Y	Y	Y	N
5:00 PM	to	6:00 PM	426	9.81%	**513**	90	**104**	N	N	N	N
6:00 PM	to	7:00 PM	272	7.94%	**342**	66	**78**	N	N	N	N
								1	2	1	0

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Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

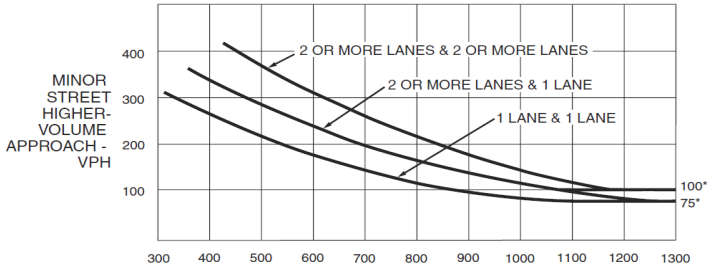
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

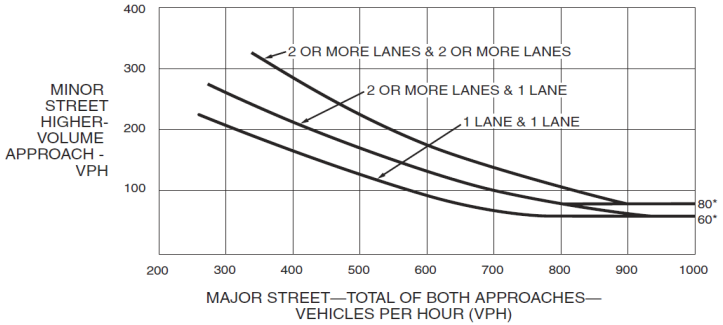
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

ASSERO
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Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROJECT DETAILS

Project Name:	Sawyers Landing - Full Day	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	5/24/2024	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	1
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	Full Day	6	1	0		1260	1260	2520

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Scenario - 1

Scenario Name: Full Day
Dev. phase: 1
Analyst Note:
Warning:

User Group:
No. of Years to Project Traffic : 0

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
710 - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	2.3	Weekday	Best Fit (LOG)	22	22	44
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.87Ln(X) + 3.05	50%	50%	
822 - Strip Retail Plaza (<40k)	General Urban/Suburban	1000 Sq. Ft. GLA	12.85	Weekday	Average	350	350	700
Data Source: Trip Generation Manual, 11th Ed					54.45	50%	50%	
151 - Mini-Warehouse	General Urban/Suburban	1000 Sq. Ft. GFA	105.6	Weekday	Average	77	77	154
Data Source: Trip Generation Manual, 11th Ed					1.45	50%	50%	
215 - Single-Family Attached Housing	General Urban/Suburban	Dwelling Units	107	Weekday	Best Fit (LIN)	382	382	764
Data Source: Trip Generation Manual, 11th Ed					T = 7.62(X) - 50.48	50%	50%	
221 - Multifamily Housing (Mid-Rise) - Not	General Urban/Suburban	Dwelling Units	102	Weekday	Best Fit (LIN)	220	220	440
Data Source: Trip Generation Manual, 11th Ed					T = 4.77(X) - 46.46	50%	50%	
932 - High-Turnover (Sit-Down) Restaurant	General Urban/Suburban	1000 Sq. Ft. GFA	3.90	Weekday	Average	209	209	418
Data Source: Trip Generation Manual, 11th Ed					107.20	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	100	1.1	1.1	50	50
822 - Strip Retail Plaza (<40k)	100	100	1	1	50	50
151 - Mini-Warehouse	100	100	1.6	1.6	50	50
215 - Single-Family Attached Housing	100	100	1	1	50	50
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	50	50
932 - High-Turnover (Sit-Down) Restaurant	100	100	1.5	1.5	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	24	24	0	0	24	24
	48		0		48	
822 - Strip Retail Plaza (<40k)	350	350	0	0	350	350
	700		0		700	
151 - Mini-Warehouse	122	122	0	0	122	122
	244		0		244	
215 - Single-Family Attached Housing	382	382	0	0	382	382
	764		0		764	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	220	220	0	0	220	220
	440		0		440	
932 - High-Turnover (Sit-Down) Restaurant	314	314	0	0	314	314
	628		0		628	

NEW VEHICLE TRIPS

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	22	22	44
822 - Strip Retail Plaza (<40k)	350	350	700
151 - Mini-Warehouse	77	77	154
215 - Single-Family Attached Housing	382	382	764
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	220	220	440
932 - High-Turnover (Sit-Down) Restaurant	209	209	418

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	1260	1260	2520
External Vehicle Trips	1260	1260	2520
New Vehicle Trips	1260	1260	2520

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PASSERO ASSOCIATES
engineering architecture

PROJECT: _____ SHEET: ____ OF ____
PROJECT NO: _____ COMPUTED BY: _____
SUBJECT: _____ CHECKED BY: _____
_____ DATE: _____

Health/fitness PM Exiting Trips = 26

% of total weekday vols = 12.3%

Weekday Trips = $\frac{26}{.123}$ = 211

Sawyers Landing Total Trips = 211 + 1260

= 1471

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX C: LOS CALCULATIONS – EXISTING CONDITIONS

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

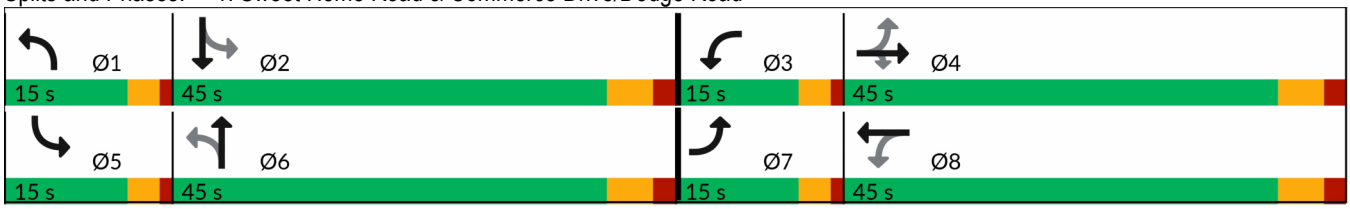
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	74	112	44	116	81	383	418	82	205	765	22
Future Volume (vph)	7	74	112	44	116	81	383	418	82	205	765	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.938			0.975			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1399	1900	1509	1388	1753	0	1736	3260	0	1770	3456	0
Flt Permitted	0.627			0.597			0.197			0.423		
Satd. Flow (perm)	923	1900	1509	873	1753	0	360	3260	0	788	3456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119		31			20			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	29%	0%	7%	30%	0%	4%	4%	6%	18%	2%	4%	5%
Adj. Flow (vph)	7	79	119	47	123	86	407	445	87	218	814	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	79	119	47	209	0	407	532	0	218	837	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	28.0	28.0	8.0	28.0		8.0	28.0		8.0	28.0	
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	45.0		15.0	45.0	
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	11.0	39.0	39.0	11.0	39.0		11.0	39.0		11.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	21.0	16.1	16.1	24.3	20.8		43.8	30.4		40.8	29.0	
Actuated g/C Ratio	0.27	0.20	0.20	0.31	0.26		0.55	0.38		0.52	0.37	
v/c Ratio	0.02	0.20	0.29	0.15	0.43		1.02	0.41		0.41	0.66	
Control Delay (s/veh)	20.7	31.9	8.9	21.7	25.3		72.5	19.2		11.4	24.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.7	31.9	8.9	21.7	25.3		72.5	19.2		11.4	24.2	
LOS	C	C	A	C	C		E	B		B	C	
Approach Delay (s/veh)		18.2			24.7			42.3			21.6	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 79.1			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 29.6		Intersection LOS: C	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	195	83	31	208	28	11
Future Volume (vph)	195	83	31	208	28	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960				0.962	
Flt Protected				0.994	0.965	
Satd. Flow (prot)	1781	0	0	1856	1715	0
Flt Permitted				0.994	0.965	
Satd. Flow (perm)	1781	0	0	1856	1715	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	1%	0%	2%	4%	0%
Adj. Flow (vph)	197	84	31	210	28	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	0	241	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.3%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	83	31	208	28	11
Future Vol, veh/h	195	83	31	208	28	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	1	0	2	4	0
Mvmt Flow	197	84	31	210	28	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	281	0	512	239
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1293	-	519	805
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	769	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	504	805
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.02	11.86
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	564	-	-	233	-
HCM Lane V/C Ratio	0.07	-	-	0.024	-
HCM Control Delay (s/veh)	11.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

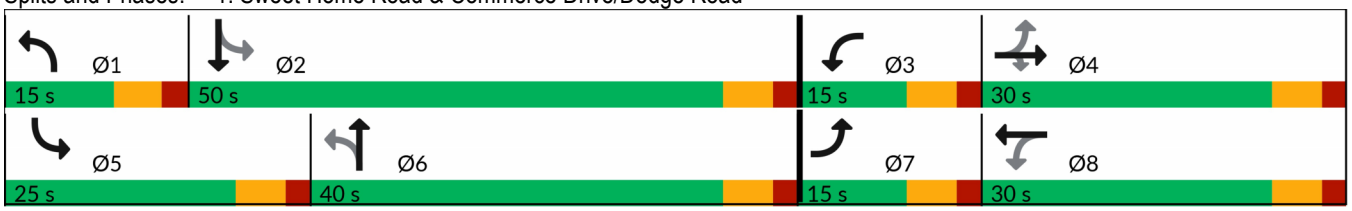
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	116	395	112	64	258	86	887	66	111	664	12
Future Volume (vph)	26	116	395	112	64	258	86	887	66	111	664	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.880			0.990			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1900	1583	1787	1652	0	1703	3541	0	1752	3510	0
Flt Permitted	0.384			0.574			0.285			0.107		
Satd. Flow (perm)	676	1900	1583	1080	1652	0	511	3541	0	197	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			327		167			7			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	0%	2%	1%	6%	0%	6%	1%	0%	3%	2%	33%
Adj. Flow (vph)	28	126	429	122	70	280	93	964	72	121	722	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	126	429	122	350	0	93	1036	0	121	735	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0		7.0	25.0		7.0	25.0	
Minimum Split (s)	13.0	28.0	28.0	13.0	28.0		13.0	31.0		13.0	31.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0		15.0	40.0		25.0	50.0	
Total Split (%)	13.6%	27.3%	27.3%	13.6%	27.3%		13.6%	36.4%		22.7%	45.5%	
Maximum Green (s)	9.0	24.0	24.0	9.0	24.0		9.0	34.0		19.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	28.0	21.0	21.0	32.9	27.7		41.1	33.4		45.0	37.5	
Actuated g/C Ratio	0.29	0.22	0.22	0.34	0.29		0.43	0.35		0.47	0.39	
v/c Ratio	0.10	0.30	0.71	0.28	0.58		0.29	0.83		0.50	0.53	
Control Delay (s/veh)	21.3	34.3	16.4	22.9	21.1		15.6	36.2		21.9	25.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	21.3	34.3	16.4	22.9	21.1		15.6	36.2		21.9	25.3	
LOS	C	C	B	C	C		B	D		C	C	
Approach Delay (s/veh)		20.6			21.6			34.5			24.8	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 95.7			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 27.1		Intersection LOS: C	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	186	47	21	226	91	35
Future Volume (vph)	186	47	21	226	91	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973				0.963	
Flt Protected				0.996	0.965	
Satd. Flow (prot)	1834	0	0	1892	1753	0
Flt Permitted				0.996	0.965	
Satd. Flow (perm)	1834	0	0	1892	1753	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%
Adj. Flow (vph)	224	57	25	272	110	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	0	297	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.9%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	47	21	226	91	35
Future Vol, veh/h	186	47	21	226	91	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	1	0
Mvmt Flow	224	57	25	272	110	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	281	0	575	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1293	-	481	791
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	470	791
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.67	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	153	-
HCM Lane V/C Ratio	0.287	-	-	0.02	-
HCM Control Delay (s/veh)	14.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX D: LOS CALCULATIONS – BACKGROUND CONDITIONS

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

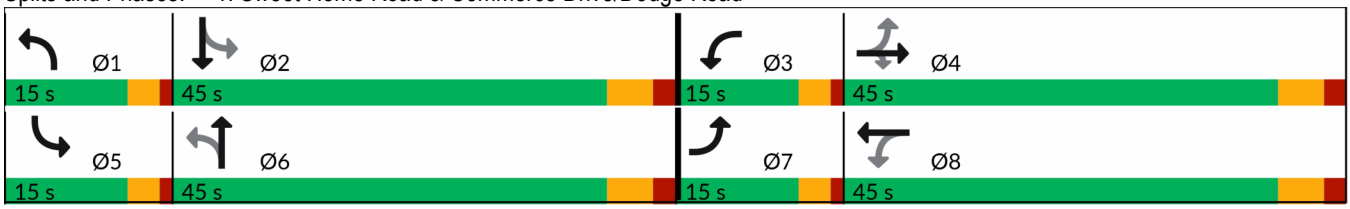
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	75	114	61	124	85	391	426	95	211	780	22
Future Volume (vph)	7	75	114	61	124	85	391	426	95	211	780	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.939			0.973			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1399	1900	1509	1388	1756	0	1736	3247	0	1770	3456	0
Flt Permitted	0.620			0.579			0.181			0.398		
Satd. Flow (perm)	913	1900	1509	846	1756	0	331	3247	0	741	3456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		30			24			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	29%	0%	7%	30%	0%	4%	4%	6%	18%	2%	4%	5%
Adj. Flow (vph)	7	80	121	65	132	90	416	453	101	224	830	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	80	121	65	222	0	416	554	0	224	853	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	28.0	28.0	8.0	28.0		8.0	28.0		8.0	28.0	
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	45.0		15.0	45.0	
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	11.0	39.0	39.0	11.0	39.0		11.0	39.0		11.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	21.9	16.0	16.0	27.2	23.5		44.1	30.8		41.4	29.4	
Actuated g/C Ratio	0.27	0.19	0.19	0.33	0.29		0.54	0.37		0.50	0.36	
v/c Ratio	0.02	0.21	0.30	0.19	0.42		1.12	0.45		0.45	0.68	
Control Delay (s/veh)	20.7	33.4	9.1	22.1	25.2		106.1	20.5		12.8	26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.7	33.4	9.1	22.1	25.2		106.1	20.5		12.8	26.0	
LOS	C	C	A	C	C		F	C		B	C	
Approach Delay (s/veh)		18.9			24.5			57.2			23.3	
Approach LOS		B			C			E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 82.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay (s/veh): 36.0		Intersection LOS: D	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	212	85	33	236	29	11
Future Volume (vph)	212	85	33	236	29	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.963	
Flt Protected				0.994	0.965	
Satd. Flow (prot)	1783	0	0	1856	1716	0
Flt Permitted				0.994	0.965	
Satd. Flow (perm)	1783	0	0	1856	1716	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	1%	0%	2%	4%	0%
Adj. Flow (vph)	214	86	33	238	29	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	300	0	0	271	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	85	33	236	29	11
Future Vol, veh/h	212	85	33	236	29	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	1	0	2	4	0
Mvmt Flow	214	86	33	238	29	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	300	0	562	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1273	-	485	786
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1273	-	470	786
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	721	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.97	12.37
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	529	-	-	221	-
HCM Lane V/C Ratio	0.076	-	-	0.026	-
HCM Control Delay (s/veh)	12.4	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

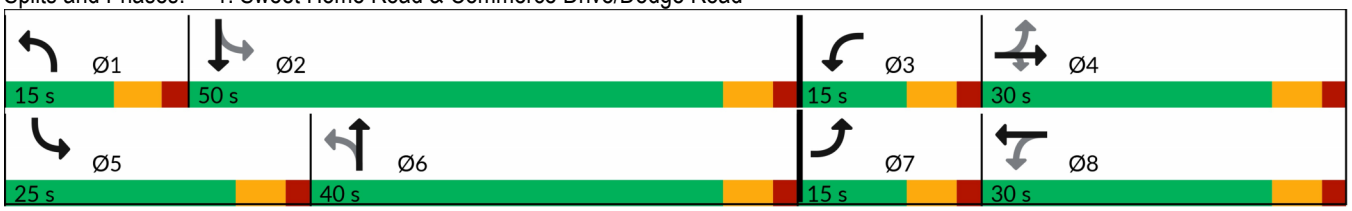
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	120	403	136	77	265	88	905	82	115	677	12
Future Volume (vph)	27	120	403	136	77	265	88	905	82	115	677	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.884			0.988			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1900	1583	1787	1657	0	1703	3534	0	1752	3510	0
Flt Permitted	0.347			0.569			0.277			0.105		
Satd. Flow (perm)	610	1900	1583	1070	1657	0	497	3534	0	194	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			311		144			9			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	0%	2%	1%	6%	0%	6%	1%	0%	3%	2%	33%
Adj. Flow (vph)	29	130	438	148	84	288	96	984	89	125	736	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	130	438	148	372	0	96	1073	0	125	749	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0		7.0	25.0		7.0	25.0	
Minimum Split (s)	13.0	28.0	28.0	13.0	28.0		13.0	31.0		13.0	31.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0		15.0	40.0		25.0	50.0	
Total Split (%)	13.6%	27.3%	27.3%	13.6%	27.3%		13.6%	36.4%		22.7%	45.5%	
Maximum Green (s)	9.0	24.0	24.0	9.0	24.0		9.0	34.0		19.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	28.4	21.3	21.3	33.4	28.2		41.9	34.1		45.9	38.2	
Actuated g/C Ratio	0.29	0.22	0.22	0.34	0.29		0.43	0.35		0.47	0.39	
v/c Ratio	0.11	0.31	0.74	0.34	0.63		0.30	0.86		0.52	0.54	
Control Delay (s/veh)	21.5	34.6	19.2	24.0	25.4		16.0	38.2		22.9	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	21.5	34.6	19.2	24.0	25.4		16.0	38.2		22.9	25.7	
LOS	C	C	B	C	C		B	D		C	C	
Approach Delay (s/veh)		22.7			25.0			36.4			25.3	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 97.1			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 28.9		Intersection LOS: C	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	209	48	21	267	93	37
Future Volume (vph)	209	48	21	267	93	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975				0.961	
Flt Protected				0.996	0.966	
Satd. Flow (prot)	1838	0	0	1892	1751	0
Flt Permitted				0.996	0.966	
Satd. Flow (perm)	1838	0	0	1892	1751	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%
Adj. Flow (vph)	252	58	25	322	112	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	0	0	347	157	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	209	48	21	267	93	37
Future Vol, veh/h	209	48	21	267	93	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	1	0
Mvmt Flow	252	58	25	322	112	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	310	0	653	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1262	-	434	763
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	423	763
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	682	-

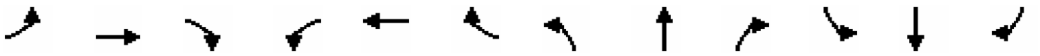
Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.58	15.94
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	484	-	-	131	-
HCM Lane V/C Ratio	0.323	-	-	0.02	-
HCM Control Delay (s/veh)	15.9	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.1	-

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX E: LOS CALCULATIONS – FULL BUILD CONDITIONS

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	82	114	89	133	108	391	426	116	228	780	22
Future Volume (vph)	7	82	114	89	133	108	391	426	116	228	780	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.933			0.968			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1399	1900	1509	1388	1741	0	1736	3219	0	1770	3456	0
Flt Permitted	0.601			0.578			0.184			0.373		
Satd. Flow (perm)	885	1900	1509	845	1741	0	336	3219	0	695	3456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		36			30			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	29%	0%	7%	30%	0%	4%	4%	6%	18%	2%	4%	5%
Adj. Flow (vph)	7	87	121	95	141	115	416	453	123	243	830	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	87	121	95	256	0	416	576	0	243	853	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

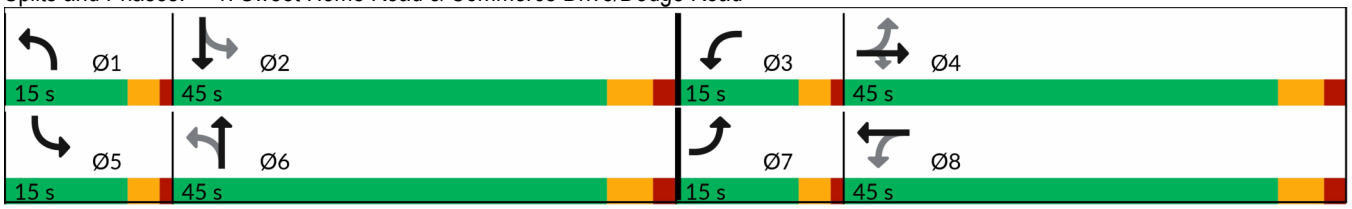
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	28.0	28.0	8.0	28.0		8.0	28.0		8.0	28.0	
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	45.0		15.0	45.0	
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	11.0	39.0	39.0	11.0	39.0		11.0	39.0		11.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	22.3	16.4	16.4	28.5	24.8		44.7	31.3		42.6	30.3	
Actuated g/C Ratio	0.26	0.19	0.19	0.34	0.29		0.53	0.37		0.50	0.36	
v/c Ratio	0.02	0.23	0.31	0.28	0.47		1.14	0.47		0.50	0.68	
Control Delay (s/veh)	20.4	34.0	9.0	23.0	25.7		112.6	21.4		14.4	26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.4	34.0	9.0	23.0	25.7		112.6	21.4		14.4	26.7	
LOS	C	C	A	C	C		F	C		B	C	
Approach Delay (s/veh)		19.5			25.0			59.7			24.0	
Approach LOS		B			C			E			C	

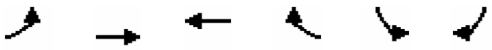
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 84.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay (s/veh): 37.1 Intersection LOS: D
Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	342	288	0	14	37
Future Volume (vph)	0	342	288	0	14	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.902	
Flt Protected					0.987	
Satd. Flow (prot)	0	1845	1863	0	1658	0
Flt Permitted					0.987	
Satd. Flow (perm)	0	1845	1863	0	1658	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		161	84		307	
Travel Time (s)		2.6	1.4		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	0	372	313	0	15	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	372	313	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.0%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	0.9

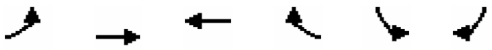
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	342	288	0	14	37
Future Vol, veh/h	0	342	288	0	14	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2
Mvmt Flow	0	372	313	0	15	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	685	313
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	414	727
Stage 1	0	-	-	0	741	-
Stage 2	0	-	-	0	697	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	414	727
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.58
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	602
HCM Lane V/C Ratio	-	-	0.092
HCM Control Delay (s/veh)	-	-	11.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3

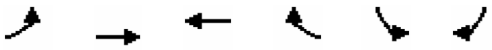
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	323	288	8	0	0
Future Volume (vph)	33	323	288	8	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996			
Flt Protected		0.995				
Satd. Flow (prot)	0	1837	1855	0	0	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1837	1855	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		84	108		365	
Travel Time (s)		1.4	1.8		8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	36	351	313	9	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	387	322	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	311	273	16	18	23
Future Volume (vph)	12	311	273	16	18	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.925	
Flt Protected		0.998			0.978	
Satd. Flow (prot)	0	1842	1850	0	1685	0
Flt Permitted		0.998			0.978	
Satd. Flow (perm)	0	1842	1850	0	1685	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		108	576		362	
Travel Time (s)		1.8	9.8		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	13	338	297	17	20	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	351	314	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	0.9

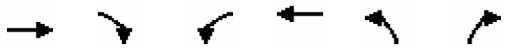
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	311	273	16	18	23
Future Vol, veh/h	12	311	273	16	18	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2
Mvmt Flow	13	338	297	17	20	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	314	0	-	0	670	305
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1246	-	-	-	422	734
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1246	-	-	-	417	734
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.29	0	12.12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	67	-	-	-	550
HCM Lane V/C Ratio	0.01	-	-	-	0.081
HCM Control Delay (s/veh)	7.9	0	-	-	12.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	235	94	33	253	36	11
Future Volume (vph)	235	94	33	253	36	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.968	
Flt Protected				0.994	0.963	
Satd. Flow (prot)	1783	0	0	1856	1718	0
Flt Permitted				0.994	0.963	
Satd. Flow (perm)	1783	0	0	1856	1718	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	1%	0%	2%	4%	0%
Adj. Flow (vph)	237	95	33	256	36	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	0	0	289	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.3

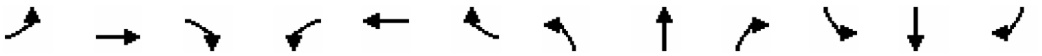
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	235	94	33	253	36	11
Future Vol, veh/h	235	94	33	253	36	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	1	0	2	4	0
Mvmt Flow	237	95	33	256	36	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	332	0	607	285
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1238	-	456	759
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	730	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1238	-	442	759
Mov Cap-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.92	13.14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	490	-	-	208	-
HCM Lane V/C Ratio	0.097	-	-	0.027	-
HCM Control Delay (s/veh)	13.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



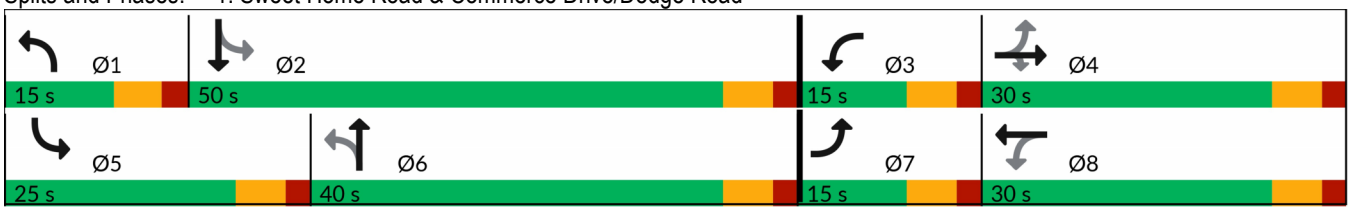
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	133	403	169	88	293	88	905	122	148	677	12
Future Volume (vph)	27	133	403	169	88	293	88	905	122	148	677	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.885			0.982			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1900	1583	1787	1658	0	1703	3514	0	1752	3510	0
Flt Permitted	0.273			0.539			0.293			0.100		
Satd. Flow (perm)	480	1900	1583	1014	1658	0	525	3514	0	184	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295		139			14			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	0%	2%	1%	6%	0%	6%	1%	0%	3%	2%	33%
Adj. Flow (vph)	29	145	438	184	96	318	96	984	133	161	736	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	145	438	184	414	0	96	1117	0	161	749	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

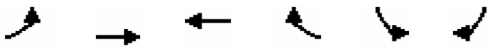
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0		7.0	25.0		7.0	25.0	
Minimum Split (s)	13.0	28.0	28.0	13.0	28.0		13.0	31.0		13.0	31.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0		15.0	40.0		25.0	50.0	
Total Split (%)	13.6%	27.3%	27.3%	13.6%	27.3%		13.6%	36.4%		22.7%	45.5%	
Maximum Green (s)	9.0	24.0	24.0	9.0	24.0		9.0	34.0		19.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	29.0	22.0	22.0	34.3	29.1		41.9	34.1		49.2	40.0	
Actuated g/C Ratio	0.29	0.22	0.22	0.34	0.29		0.42	0.34		0.49	0.40	
v/c Ratio	0.12	0.34	0.75	0.44	0.71		0.30	0.92		0.61	0.53	
Control Delay (s/veh)	22.7	36.1	21.5	27.0	30.4		16.3	45.4		27.7	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.7	36.1	21.5	27.0	30.4		16.3	45.4		27.7	25.5	
LOS	C	D	C	C	C		B	D		C	C	
Approach Delay (s/veh)		25.1			29.4			43.2			26.0	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 99.7			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 32.7		Intersection LOS: C	
Intersection Capacity Utilization 85.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	343	387	0	16	44
Future Volume (vph)	0	343	387	0	16	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.900	
Flt Protected					0.987	
Satd. Flow (prot)	0	1881	1792	0	1655	0
Flt Permitted					0.987	
Satd. Flow (perm)	0	1881	1792	0	1655	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		134	50		272	
Travel Time (s)		3.0	1.1		6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	6%	2%	2%	2%
Adj. Flow (vph)	0	373	421	0	17	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	373	421	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.6%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1

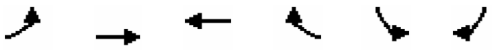
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	343	387	0	16	44
Future Vol, veh/h	0	343	387	0	16	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	6	2	2	2
Mvmt Flow	0	373	421	0	17	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	793	421
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	357	633
Stage 1	0	-	-	0	662	-
Stage 2	0	-	-	0	697	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	357	633
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	12.83
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	525
HCM Lane V/C Ratio	-	-	0.124
HCM Control Delay (s/veh)	-	-	12.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

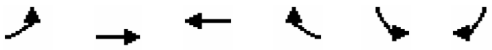
Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	297	387	16	0	0
Future Volume (vph)	62	297	387	16	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995			
Flt Protected		0.991				
Satd. Flow (prot)	0	1846	1853	0	0	0
Flt Permitted		0.991				
Satd. Flow (perm)	0	1846	1853	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		50	136		277	
Travel Time (s)		0.9	2.3		6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	323	421	17	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	390	438	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.1%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	24	273	375	31	22	28
Future Volume (vph)	24	273	375	31	22	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.925	
Flt Protected		0.996			0.978	
Satd. Flow (prot)	0	1855	1844	0	1685	0
Flt Permitted		0.996			0.978	
Satd. Flow (perm)	0	1855	1844	0	1685	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		136	606		319	
Travel Time (s)		2.3	10.3		7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	297	408	34	24	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	323	442	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	273	375	31	22	28
Future Vol, veh/h	24	273	375	31	22	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	297	408	34	24	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	441	0	-	0	773	424
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1119	-	-	-	367	630
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1119	-	-	-	357	630
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.67	0	13.63
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	145	-	-	-	471
HCM Lane V/C Ratio	0.023	-	-	-	0.115
HCM Control Delay (s/veh)	8.3	0	-	-	13.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	236	59	21	300	106	37
Future Volume (vph)	236	59	21	300	106	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973				0.965	
Flt Protected				0.997	0.964	
Satd. Flow (prot)	1834	0	0	1894	1755	0
Flt Permitted				0.997	0.964	
Satd. Flow (perm)	1834	0	0	1894	1755	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%
Adj. Flow (vph)	284	71	25	361	128	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	355	0	0	386	173	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	236	59	21	300	106	37
Future Vol, veh/h	236	59	21	300	106	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	1	0
Mvmt Flow	284	71	25	361	128	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	355	0	732	320
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	412	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1214	-	390	726
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1214	-	380	726
Mov Cap-2 Maneuver	-	-	-	-	380	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.53	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	-	-	118	-
HCM Lane V/C Ratio	0.398	-	-	0.021	-
HCM Control Delay (s/veh)	18.7	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 9-1422-00398

PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
SAWYER'S LANDING LLC
43 Central Ave
LANCASTER, NY 14086
(716) 912-0969

CIMINELLI MUIR WOODS, LLC
50 Fountain Plz Ste 500
Buffalo, NY 14202
(716) 631-8000

Facility:
MUIR WOODS DEVELOPMENT
1121 N French Rd
Amherst, NY 14228

Facility Location: in AMHERST in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 191.586 NYTM-N: 4770.823
Latitude: 43°01'38.9" Longitude: 78°47'07.2"
Authorized Activity: Construction of a new bike path, measuring approximately 830 linear feet in length and permanently impacting approximately 0.58-acres of the regulated 100' wide adjacent area of NYSDEC Freshwater Wetland TE-33. No direct impact to Freshwater Wetland TE-33 itself is authorized as part of this project. The project is located at the facility location listed above.

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 9-1422-00398/00003
New Permit Effective Date: 7/25/2024 Expiration Date: 7/24/2027

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ, Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY 14209

Authorized Signature: Lisa M. Czechowicz Date 7 / 25 / 2024

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Distribution List

NYSDEC Region 9 Division of Law Enforcement
Chuck Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health
Molly Bebak, NYSDEC Region 9 Division of Water
Town of Amherst
Jody M. Celeste, Earth Dimensions, Inc.
Ciminelli Muir Woods, LLC

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by various, including pages 1-3 of Joint Application Form (3 pgs), "Overall Site Plan" (1 pg), "Grading Plan - Recreation Trail" (1 pg), and "Monument and Tree Planting Plan" (1 pg), 6 pages DEC date-stamped 3/1/24 attached to this permit.

2. **Conditions Prevail Over Plans** If any condition of this permit conflicts with the approved plans, the permit condition shall prevail over the plans.

3. **Notice of Intent to Commence Work** The Permittee shall notify the Department 3 to 5 days prior to the commencement of work on the project by emailing DEP.R9@dec.ny.gov, at attention to Matthew Smith, Environmental Analyst I, and Charles Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health. The email needs to include the permit number, permittee name and the project start date.

4. **Siltation Prevention Measures** Siltation prevention measures, such as silt fencing, sediment traps, settling basins and/or filter bags, as deemed necessary and appropriate for the situation, shall be installed and maintained during the project, to prevent movement of silt and turbid waters from the project site into NYS Freshwater Wetland TE-33, its associated 100' wide adjacent area, and/or any other watercourse, stream, water body or wetland.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

5. **Install Monuments** The permittee shall install a minimum of nine (9) monuments along the edge of the bike path as shown in the final NYSDEC approved site plan. The monuments shall be 30-inch long 5/8-inch rebar and cap embedded flush and in the center of the top exposed surface of concrete in a minimum 4-inch diameter, 4.5-foot long section of PVC Schedule 40 drain pipe filled with concrete, extending vertically 1.5 - 2 feet above existing grade at each location. The caps shall say "Wetland Conservation Area, Do Not Disturb, Survey Marker."

6. **Work Within Area Depicted on Plans** No impacts to Freshwater Wetland TE-33 or its 100' wide adjacent area located outside of monuments are authorized by this permit. Other than impacts directly associated with work authorized by this permit, Freshwater Wetland TE-33 and its regulated 100'-wide adjacent area must be left in an undisturbed condition.

7. **Minimize Adverse Impacts to Wetlands, Wildlife, Water** All work must be performed in a manner which minimizes adverse impacts to wetlands, wildlife, water quality and natural resources.

8. **Invasive Species (Non-native Vegetation)** To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment be cleaned of mud, seeds, vegetation and other debris before entering any approved construction areas within the 100' wide regulated wetland adjacent area of NYS Freshwater Wetland TE-33.

9. **Equipment Storage 100' from Wetland, Water Body** All equipment and machinery shall be stored, refueled, and safely contained greater than 100 feet landward of the regulated wetland or water body at the end of each work day. This will serve to avoid the inadvertent leakage of deleterious substances into the regulated area.

10. **Disposal of Material** All excess construction materials shall be immediately removed from the project area upon project completion. Materials may be used at another permitted site, recycled, disposed of at a NYSDEC-approved landfill, or disposed of at an upland site, as appropriate for the material and in accordance with all local, state and federal regulations. Disposal in wetlands and/or regulated 100' wide wetland adjacent areas (including regulated areas of NYS Freshwater Wetland TE-33), other surface waters, or in 100-year floodplains is strictly prohibited.

11. **Seed, Mulch Disturbed Areas** All areas of soil disturbance resulting from this project must be seeded with an appropriate erosion control seed mix and mulched with straw or hydro-mulched immediately upon completion of the project.

12. **Temporary Mulch, Final Seeding** If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth but not more than six months after project completion.

13. **Establish Vegetative Cover** The permittee must ensure the establishment of at least 90 percent vegetative cover across all project disturbed areas by the end of the first complete growing season after completion of construction.

14. **Long-term Plant Survival** The permittee must ensure a minimum of 85% survival of plantings by the end of five growing seasons. If this goal is not met, the permittee must re-evaluate the restoration project in order to determine how to meet the mitigation goal and submit plans to be approved to the NYSDEC Region 9 Bureau of Ecosystem Health via email at R9BEH@dec.ny.gov.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

15. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

16. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

17. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

18. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY14209

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

PASSERO
engineering architecture

242 West Main Street, Suite 100
Rochester, NY 14614
585.325.1000 | passero.com

December 30, 2024

Daniel J. Ulatowski, AICP
Assistant Planning Director / ZEO
Town of Amherst Planning Department
5583 Main Street
Williamsville, New York 14221

Re: Sawyer's Landing Mixed-Use Project
Town of Amherst, NY
50 Dodge Road [Formerly Portion of 1081 North French Road - Site "A" of Muir Woods Property]
Alternative Parking Plan
PA Project No: 20243845.0002

Dear Mr. Ulatowski:

This technical letter provides an updated shared parking demand assessment for the proposed mixed-use project (Sawyer's Landing Development) located in the Town of Amherst in connection with the request for the approval of an Alternate Parking Plan per Section 7-1-7A of the Zoning Code.

This letter updates a previous version of the Alternative Parking Plan dated September 27, 2024, and is consistent with the most recently updated plans prepared by Carmina Wood Design to be submitted in connection with a request to Amend the Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA"). Additionally, per Town feedback, this letter performs a shared parking sensitivity analysis of residential parking demands should more residents decide to work from home rather than leave the project site. All supporting materials are included in the attachments. The following tasks were undertaken:

- Estimated parking demands using Town Zoning Code requirements.
- Estimated mixed-use parking demands considering shared parking principles based on nationally accepted methodology developed, in part, by the Urban Land Institute (ULI), Institute of Transportation Engineers (ITE), International Council of Shopping Centers (ICSC), and National Parking Association (NPA).

PROJECT DESCRIPTION

The proposed mixed-use project consists of the following:

- **Apartments:** 115 units (12 studios, 88 one-bedroom, 2 two-bedroom, 13 three-bedroom layouts).
- **2-Story Townhomes:** 87 units (assume 100% three-bedroom).
- **Retail:** 3,802 SF
- **Office:** 4,000 SF
- **Self-Storage Building:** 105,600 SF

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

The project will provide **401 total parking spaces** split into:

- **90** parallel spaces
- **121** 9'x19' spaces
- **63+24** townhouse garage spaces
- **63+24** spaces in front of townhouse garage spaces
- **16** garage spaces in 4-story buildings

PARKING REQUIREMENTS PER ZONING CODE

Section 7-1-6A of the Zoning Code sets forth the off-street parking requirements for different categories of land uses. **Table 1** summarizes the parking requirements. Based on the proposed supply of 401 spaces, the site has a theoretical deficit of 60 spaces.

Table 1: Town Code Parking Requirements

USE TYPE	PARKING SPACE REQUIREMENTS	SIZE	RESULT
Residential	2 per unit	202 units	404
Office	1 per 200 NFA	4,000 GFA (3,400 NFA)	17
Retail	5.5 per 1,000 NFA	3,802 GFA (3,231.7 NFA)	18
Self-Storage	1 per 5,000 SF devoted to storage		22
Total Required Parking			461

Note: GFA = gross floor area. NFA = net floor area. For single story, multiple tenant building – 85% of GFA.

PARKING DEMAND ASSESSMENT

SHARED PARKING PRINCIPLES

Shared parking studies are conducted to establish the total number of spaces necessary by mixed-use developments to effectively meet the expected parking demands. The shared parking concept builds upon the premise that land uses in a mixed-use development often do not share the same peak demand period, so spaces can be shared between the different land uses during different peak periods.

Each land use typically has a peak demand period where it would occupy the maximum number of spaces that the use requires and an off-peak period where a lesser percentage of the maximum spaces would be occupied; be it by time of day, day of week, or even month of the year. This allows for the project to provide fewer spaces than would be required if the land uses on a project site were to be treated separately with individual parking demands. The concept of shared parking is well recognized within the real estate and regulatory community and is proven to work.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

DISCUSSION OF METHODOLOGY

To estimate the number of parking spaces required for the proposed project, this assessment used the ULI methodology for shared parking. This methodology is utilized by transportation engineers and planners when evaluating the parking demand for a mixed-use project. The ULI *Shared Parking (3rd Edition)* includes state-of-the-art practice methodologies for determining parking demand in these types of projects.

Accompanying the publication is an interactive Shared Parking Calculation Model (Model) that is used to estimate the shared parking demand. The Model requires a user to input the number of units associated with each proposed land use. Within the Model, 32 land uses are identified – some of which are subdivided into more refined categories – with 44 different recommended base parking ratios based on suburban locations with little or no transit. Data contained within the Model is from a combination of ULI surveys and the ITE *Parking Generation Manual*. Output consists of a summary table describing the base parking demand and shared parking reduction; a monthly demand comparison; weekday and weekend demand by month; and weekday and weekend demand by hour.

Several important factors to consider when estimating demand for residential uses include the following:

- The residential demand is based on the number of units per bedroom type (e.g., studio efficiency, one-bedroom, two-bedroom, and three or more bedrooms).
- Time of day factors for demand vary throughout a typical 24-hour period for both weekday and weekend periods. Demands may also vary based on suburban or urban settings. Reserved spaces are assumed to have a 100% utilization rate for all hours. Reserved spaces are those that are dedicated to tenants. In this case, the garage spaces, and the surface spaces in front of them qualify as reserved. 190 spaces are assumed to be reserved for residential use only.
- For a typical weekday, residential suburban factors vary from 100% between 12:00 AM and 5:00 AM and fall to as low as 40% from 12:00 PM through 3:00 PM. In an urban setting, the demand varies from 100% between 12:00 AM and 5:00 AM and falls to as low as 50% between 12:00 PM and 2:00 PM.
- For a typical weekend, residential suburban factors range from 100% between 12:00 AM and 6:00 AM and fall to as low as 65% from 1:00 PM through 2:00 PM. In an urban setting, the demand varies from 100% between 12:00 AM and 5:00 AM and falls to as low as 50% at 6:00 PM.

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

SHARED PARKING ANALYSIS

The peak hour demand, respective to weekday, weekend, and seasonal demands, is projected to occur at **10:00 PM on a December weekend**. The projected peak hour demand (i.e., the busiest hour of the busiest weekday or weekend of the year) is **364 spaces**. The ULI does not have data for Self-Storage; therefore, 22 spaces were conservatively assumed without adjustment during weekdays and weekends. **Table 2** presents the parking demand accumulations for the peak weekday and weekend periods. Weekday shared demand also occurs in December at 10:00 PM.

Table 2: Shared Parking Demand

LAND USE	SIZE	UNIT	WEEKDAY DEMAND		WEEKEND DEMAND	
			MAXIMUM	SHARED	MAXIMUM	SHARED
Residential	202	DU	366	358	376	359
Office	4,000	SF	16	0	3	0
Retail	3,802	SF	15	4	17	5
Self-Storage	105,600	SF	22	0	22	0
Total Parking Demands			419	362	418	364

When considering shared parking, the site's 401 parking spaces will be sufficient to accommodate future demands.

Please feel free to contact me directly with any questions.

Sincerely,

David Kruse, AICP, PTP, RSP1
Senior Transportation Planner
dkruse@passero.com • 585-505-6012

Attachments

cc: William Severyn, Severyn Development, Inc.
Sean Hopkins, Esq., Hopkins Sorgi & McCarthy PLLC
Chris Wood, PE, Carmina Wood Design

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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Project: Sawyer's Landing
Description:

Shared Parking Demand Summary

Peak Month: DECEMBER -- Peak Period: 10 PM, WEEKEND

Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 10 PM	Peak Mo Adj December	Estimated Parking Demand	Peak Hr Adj 10 PM	Peak Mo Adj December	Estimated Parking Demand
Retail																		
Retail (<400 ksf)	3,802	sf GLA	2.90	100%	93%	2.70	ksf GLA	3.20	100%	91%	2.92	ksf GLA	30%	100%	3	35%	100%	4
Employee			0.70	100%	77%	0.54		0.80	100%	72%	0.58		40%	100%	1	45%	100%	1
Food and Beverage																		
Entertainment and Institutions																		
Hotel and Residential																		
Residential, Suburban																0%		
Studio Efficiency	12	units	0.38	100%	100%	0.38	unit	0.38	100%	100%	0.38	unit	95%	100%	5	89%	100%	4
1 Bedroom	88	units	0.41	100%	100%	0.41	unit	0.41	100%	100%	0.41	unit	95%	100%	34	89%	100%	32
2 Bedrooms	2	units	0.74	100%	100%	0.74	unit	0.74	100%	100%	0.74	unit	95%	100%	2	89%	100%	2
3+ Bedrooms	100	units	1.13	100%	100%	1.13	unit	1.13	100%	100%	1.13	unit	95%	100%	107	89%	100%	101
Reserved	55%	res spaces	0.93	100%	100%	0.93	unit	0.93	100%	100%	0.93	unit	100%	100%	189	100%	100%	189
Visitor	202	units	0.10	100%	100%	0.10	unit	0.15	100%	100%	0.15	unit	100%	100%	21	100%	100%	31
Office																		
Office <25 ksf	4,000	sf GFA	0.30	100%	100%	0.30	ksf GFA	0.03	100%	100%	0.03	ksf GFA	0%	100%	-	0%	100%	-
Reserved		empl	0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
Employee			3.50	100%	48%	1.70		0.35	100%	48%	0.17		1%	100%	-	0%	100%	-
Additional Land Uses																		
Self Storage	105,600	sf GFA	0.20	100%	100%	0.20	sf GFA	0.20	100%	100%	0.20	sf GFA	0%	0%	-	0%	0%	-
Employee			0.00	100%	100%	0.00		0.00	100%	100%	0.00		0%	0%	-	0%	0%	-

Customer/Visitor	24	Customer	35
Employee/Resident	149	Employee/Resident	140
Reserved	189	Reserved	189
Total	362	Total	364

Attachment: SP-2021-05A application 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York
SITE DEVELOPMENT DRAWINGS

AGENCIES

ENGINEERING DEPARTMENT
NAME/TITLE: JEFFERY BURROUGHS, P.E. – TOWN ENGINEER
COMPANY/DEPT: TOWN OF AMHERST ENGINEERING DEPARTMENT
ADDRESS: 1100 NORTH FOREST ROAD
WILLIAMSVILLE, NEW YORK 14221

TELEPHONE 716–631–7154

PLANNING & ZONING DEPARTMENT
NAME/TITLE: DANIEL HOWARD – PLANNING DIRECTOR
COMPANY/DEPT: TOWN OF AMHERST PLANNING DEPARTMENT
ADDRESS: 5583 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221

TELEPHONE 716–631–7051

LAND SURVEYOR
NAME/TITLE: GPI ENGINEERING, LANDSCAPE ARCHITECTURE SURVEYING, LLP
COMPANY/DEPT: 4950 GENESEE STREET, SUITE 100
ADDRESS: BUFFALO, NEW YORK 14225

TELEPHONE 716–633–4844

UTILITIES

NATURAL GAS
COMPANY/DEPT:. NATIONAL FUEL GAS CORP.
ADDRESS: 6363 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221

TELEPHONE 716–857–7000

TELEPHONE COMPANY
COMPANY/DEPT: VERIZON
ADDRESS: 65 FRANKLIN STREET
BUFFALO, NEW YORK 14203

TELEPHONE 716–840–8748

CABLE COMPANY
COMPANY/DEPT: TIME WARNER
ADDRESS: 789 CHURCH ROAD
WEST SENECA, NEW YORK

TELEPHONE 716–558–8615

ELECTRIC COMPANY
COMPANY/DEPT: NATIONAL GRID
ADDRESS: 144 KENSINGTON AVENUE
BUFFALO, NEW YORK 14214

TELEPHONE 716–236–2738

WATER
COMPANY/DEPT:. ERIE COUNTY WATER AUTHORITY
ADDRESS: 3030 UNION ROAD
CHEEKTOWAGA, NEW YORK 14227

TELEPHONE 716–684–1510

DIG SAFELY NEW YORK

TELEPHONE 1–800–962–7962

OWNER/DEVELOPER

NAME: Sawyer's Landing LLC
ADDRESS 43 Central Ave Suite #300
Lancaster, NY 14086

TELEPHONE 716 818-0207

ENGINEER

Carmina • Wood • Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

August 2024

REVISIONS:

No.	Description	Date
4	Rev. Plan Set per Client	11/21/24

DWG NO.	DRAWING TITLE
–	COVER SHEET
–	TOPOGRAPHIC SURVEY (BY GPI)
C–001	DEMOLITION & EROSION CONTROL PLAN
C–002	DEMOLITION & EROSION CONTROL DETAILS
C–100	OVERALL SITE PLAN
C–101	SITE PLAN
C–102	PARCEL MAP
C–103	ROAD & BIKE PATH LAYOUT PLAN
C–104	SITE DETAILS
C–105	SITE DETAILS
C–106	SITE DETAILS
C–107	SITE DETAILS
C–200	GRADING PLAN
C–201	GRADING PLAN – RECREATION TRAIL
C–300	STORM DRAINAGE PLAN
C–301	STORM DRAINAGE DETAILS
C–302	STORM DRAINAGE DETAILS
C–303	STORM DRAINAGE DETAILS
C–400	UTILITY PLAN
C–401	SANITARY SEWER DETAILS
C–402	SANITARY SEWER DETAILS
C–403	SANITARY SEWER GENERAL NOTES
C–404	WATER DETAILS
C–405	WATER DETAILS
C–406	WATER DETAILS & NOTES
C–407	INSULATED ENCLOSURE DETAIL
L–100	LANDSCAPE PLAN
LP–100	PHOTOMETRIC PLAN
LP–101	PHOTOMETRIC DETAILS
TT–100	FIRE TRUCK PLAN

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE.

● SET OR EX. 5/8" REBAR

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

MAP COVER 2305

SWEET HOME ROAD (WIDTH VARIES)

EXCEPTION L-10908, P-362
MAP 39.353-1 PARCEL 1

CENTRAL SCHOOL DISTRICT No. 7 OF THE TOWNS OF AMHERST & TONAWANDA
L. 6640, P. 309, L. 7090, P. 207

PLEASANT ACRES PART II, MAP COVER 2273

PLEASANT ACRES PART III, MAP COVER 2305

SPADINA DRIVE

PLEASANT ACRES PART III, MAP COVER 2305

SOUTHWEST CORNER OF PLEASANT ACRES SUBDIV. PART II MAP COVER 2273

CATCH BASIN RIM:574.64' N INV:573.44'

PARALLEL W/SOUTH LINE OF LOT 76
N 88°55'52" E 530.61'

1312.39' N 88°55'52" E

POINT OF BEGINNING
AREA "B"
LAT: 43°01'40.40785"
LON: -78°47'14.98366"

PARALLEL W/WEST LINE OF LOT 76 (CENTERLINE OF SWEET HOME ROAD)

L.7659 P.435 & 437

N 02°04'02" W 1182.74'

N 88°55'52" E 700.84'

N 88°55'52" E 396.51'

PARALLEL W/SOUTH LINE OF LOT 76

N 29°36'17" E 62.65'

SOUTH LINE L.-9095, P.-348
PARALLEL WITH S. LINE LOT 76

EXCEPTION L.-11278, P.-7124

N88°55'52"E 540.78' M
584.39' D&M
541.38' M

120.85' D&M
N02°04'02"W

90.42'
N02°04'02"W

S88°21'54"W 173.47'
205.48' D&M

CATCH BASIN RIM:574.52' W INV:568.27' E INV:568.32'

CATCH BASIN RIM:574.42' W INV:569.90' E INV:569.97'

CATCH BASIN RIM:573.70' W INV:569.90' E INV:569.97'

12" CMP

CONCRETE SIDEWALK

DEED RESTRICTED AREA "A"
TOTAL AREA: = 3.9144 ACRES

TOP OF HYDRANT ELEV: 577.69'

MON. WELL

LANDS CONVEYED TO CIMINELLI MUIR WOODS LLC
REPUTED OWNERS
L.11307, PG.4915

SITE 'A'
17.424± ACRES

DEED RESTRICTED AREA "B"
TOTAL AREA: = 32.52± ACRES

S 10°04'08" E 145.00'

S 64°16'46" W 35.20'

S 10°07'24" E 43.27'

S 11°02'55" W 83.05'

S 01°56'26" E 236.39'

S 45°19'36" E 99.73'

N 83°38'15" W 172.66'

S 87°22'49" W 322.92'

S 83°36'25" W 105.17'

S 71°08'13" W 128.98'

S 23°50'17" W 47.47'

N 67°53'17" W 50.93'

S 39°43'51" W 60.80'

S 57°29'39" W 52.30'

N 35°56'42" W 159.92'

N 01°04'00" W 325.54'

N 85°10'51" W 40.58'

S 65°24'13" W 599.16' D&M

L=539.31'
R=586.62'
DELTA=52°40'30"

R=6848.00' L=918.07'
S 66°46'59" W
CHORD 917.39

202.71'
N 66°38'02" W

195.04'

S 65°24'13" W 603.22'

CONCRETE SIDEWALK

ASPHALT DRIVE

ASPHALT PARKING LOT

STONE DRIVE

BRUSH LINE

GUY

UP

DWY

TOP OF HYDRANT ELEV: 574.70'

SAN. M.H. RIM: 575.76' INV: 553.78' E-W

SAN. M.H. RIM:576.41' INV: 554.21' E-W

72" CONC. PIPE

SOUTH LINE OF LOT 76
NORTH LINE OF LOT 75

TRANSMISSION TOWER

NIAGARA MOHAWK POWER CORP. L.-9173, P.-51

DOUGH ROAD RELOCATION

SECTION II

LOCKPORT (ROUTE 990) EXPRESSWAY

- CATCH BASIN
- CONIFEROUS TREE
- DECIDUOUS SHRUB
- DECIDUOUS TREE
- GAS VALVE
- GUY WIRE
- WATER SERVICE VALVE
- WATER VALVE
- COMMUNICATIONS BOX
- HYDRANT
- LIGHT POLE
- SANITARY SEWER MANHOLE
- SIGN (SINGLE POLE)
- SIGN (DOUBLE POLE)
- UTILITY POLE

STATE OF NEW YORK
LICENSED LAND SURVEYOR

DATE	REVISION/TYPE

TOPOGRAPHIC SURVEY
PART OF LOT 76, TOWNSHIP 12, RANGE 7
HOLLAND LAND SURVEY
TOWN OF AMHERST, ERIE COUNTY, NEW YORK

GPI ENGINEERING, LANDSCAPE ARCHITECTURE & SURVEYING, LLP
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Job No. 2013062-SITE A Date: DECEMBER 22, 2020
Scale: 1" = 100' TAX No. 40.08-3-13.1 (PART OF)

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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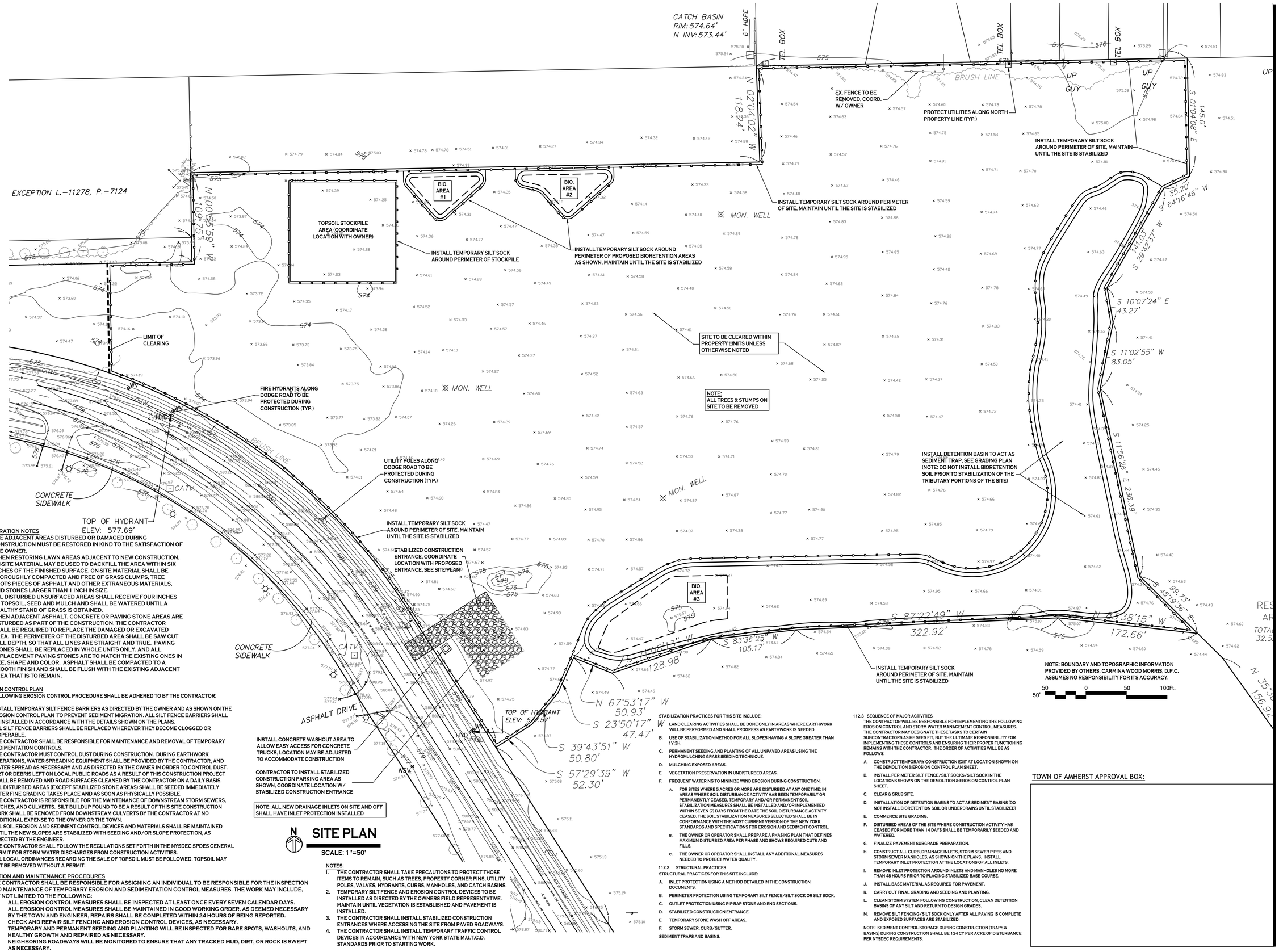

RESTORATION NOTES

1. THE ADJACENT AREAS DISTURBED OR DAMAGED DURING CONSTRUCTION MUST BE RESTORED IN KIND TO THE SATISFACTION OF THE OWNER.
2. WHEN RESTORING LAWN AREAS ADJACENT TO NEW CONSTRUCTION, ON-SITE MATERIAL MAY BE USED TO BACKFILL THE AREA WITHIN SIX INCHES OF THE FINISHED SURFACE. ON-SITE MATERIAL SHALL BE THOROUGHLY COMPACTED AND FREE OF GRASS CLUMPS, TREE ROOTS PIECES OF ASPHALT AND OTHER EXTRANEOUS MATERIALS, AND STONES LARGER THAN 1 INCH IN SIZE.
3. ALL DISTURBED UNSURFACED AREAS SHALL RECEIVE FOUR INCHES OF TOPSOIL, SEED AND MULCH AND SHALL BE WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. WHEN ADJACENT ASPHALT, CONCRETE OR PAVING STONE AREAS ARE DISTURBED AS PART OF THE CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO REPLACE THE DAMAGED OR EXCAVATED AREA. THE PERIMETER OF THE DISTURBED AREA SHALL BE SAW CUT FULL DEPTH, SO THAT ALL LINES ARE STRAIGHT AND TRUE. PAVING STONES SHALL BE REPLACED IN WHOLE UNITS ONLY, AND ALL REPLACEMENT PAVING STONES ARE TO MATCH THE EXISTING ONES IN SIZE, SHAPE AND COLOR. ASPHALT SHALL BE COMPACTED TO A SMOOTH FINISH AND SHALL BE FLUSH WITH THE EXISTING ADJACENT AREA THAT IS TO REMAIN.

EROSION CONTROL PLAN

THE FOLLOWING EROSION CONTROL PROCEDURE SHALL BE ADHERED TO BY THE CONTRACTOR:

1. INSTALL TEMPORARY SILT FENCE BARRIERS AS DIRECTED BY THE OWNER AND AS SHOWN ON THE EROSION CONTROL PLAN TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
2. ALL SILT FENCE BARRIERS SHALL BE REPLACED WHEREVER THEY BECOME CLOGGED OR INOPERABLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.
4. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER-SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR, AND WATER SPREAD AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.
5. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED AND ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS.
6. ALL DISTURBED AREAS (EXCEPT STABILIZED STONE AREAS) SHALL BE SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE AND AS SOON AS PHYSICALLY POSSIBLE.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES, AND CULVERTS. SILT BUILDUP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE TOWN.
8. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION, AS DIRECTED BY THE ENGINEER.
9. THE CONTRACTOR SHALL FOLLOW THE REGULATIONS SET FORTH IN THE NYSDEC SPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.
10. ALL LOCAL ORDINANCES REGARDING THE SALE OF TOPSOIL MUST BE FOLLOWED. TOPSOIL MAY NOT BE REMOVED WITHOUT A PERMIT.

INSPECTION AND MAINTENANCE PROCEDURES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSIGNING AN INDIVIDUAL TO BE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES. THE WORK MAY INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
   - 1.1. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
   - 1.2. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. AS DEEMED NECESSARY BY THE TOWN AND ENGINEER, REPAIRS SHALL BE COMPLETED WITHIN 24 HOURS OF BEING REPORTED.
   - 1.3. CHECK AND REPAIR SILT FENCING AND EROSION CONTROL DEVICES, AS NECESSARY.
   - 1.4. TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH AND REPAIRED AS NECESSARY.
   - 1.5. NEIGHBORING ROADWAYS WILL BE MONITORED TO ENSURE THAT ANY TRACKED MUD, DIRT, OR ROCK IS SWEPT AS NECESSARY.

NOTES:

1. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THOSE ITEMS TO REMAIN, SUCH AS TREES, PROPERTY CORNER PINS, UTILITY POLES, VALVES, HYDRANTS, CURBS, MANHOLES, AND CATCH BASINS.
2. TEMPORARY SILT FENCE AND EROSION CONTROL DEVICES TO BE INSTALLED AS DIRECTED BY THE OWNERS FIELD REPRESENTATIVE. MAINTAIN UNTIL VEGETATION IS ESTABLISHED AND PAVEMENT IS INSTALLED.
3. THE CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE ACCESSING THE SITE FROM PAVED ROADWAYS.
4. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH NEW YORK STATE M.U.T.C.D. STANDARDS PRIOR TO STARTING WORK.

STABILIZATION PRACTICES FOR THIS SITE INCLUDE:

A. LAND CLEARING ACTIVITIES SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND SHALL PROGRESS AS EARTHWORK IS NEEDED.
B. USE OF STABILIZATION METHOD FOR ALL SLOPES HAVING A SLOPE GREATER THAN 1V:3H.
C. PERMANENT SEEDING AND PLANTING OF ALL UNPAVED AREAS USING THE HYDROMULCHING GRASS SEEDING TECHNIQUE.
D. MULCHING EXPOSED AREAS.
E. VEGETATION PRESERVATION IN UNDISTURBED AREAS.
F. FREQUENT WATERING TO MINIMIZE WIND EROSION DURING CONSTRUCTION.
   - A. FOR SITES WHERE 5 ACRES OR MORE ARE DISTURBED AT ANY ONE TIME: IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE THE SOIL DISTURBANCE ACTIVITY CEASED. THE SOIL STABILIZATION MEASURES SELECTED SHALL BE IN CONFORMANCE WITH THE MOST CURRENT VERSION OF THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
   - B. THE OWNER OR OPERATOR SHALL PREPARE A PHASING PLAN THAT DEFINES MAXIMUM DISTURBED AREA PER PHASE AND SHOWS REQUIRED CUTS AND FILLS.
   - C. THE OWNER OR OPERATOR SHALL INSTALL ANY ADDITIONAL MEASURES NEEDED TO PROTECT WATER QUALITY.

112.2 STRUCTURAL PRACTICES

STRUCTURAL PRACTICES FOR THIS SITE INCLUDE:

A. INLET PROTECTION USING A METHOD DETAILED IN THE CONSTRUCTION DOCUMENTS.
B. PERIMETER PROTECTION USING TEMPORARY SILT FENCE/SILT SOCK OR SILT SOCK.
C. OUTLET PROTECTION USING RIP-RAP STONE AND END SECTIONS.
D. STABILIZED CONSTRUCTION ENTRANCE.
E. TEMPORARY STONE WASH OFF AREAS.
F. STORM SEWER, CURB/GUTTER.

SEDIMENT TRAPS AND BASINS.

112.3 SEQUENCE OF MAJOR ACTIVITIES

THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING THE FOLLOWING EROSION CONTROL AND STORM WATER MANAGEMENT CONTROL MEASURES. THE CONTRACTOR MAY DESIGNATE THESE TASKS TO CERTAIN SUBCONTRACTORS AS HE SEES FIT, BUT THE ULTIMATE RESPONSIBILITY FOR IMPLEMENTING THESE CONTROLS AND ENSURING THEIR PROPER FUNCTIONING REMAINS WITH THE CONTRACTOR. THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

A. CONSTRUCT TEMPORARY CONSTRUCTION EXIT AT LOCATION SHOWN ON THE DEMOLITION & EROSION CONTROL PLAN SHEET.
B. INSTALL PERIMETER SILT FENCE/SILT SOCKS/SILT SOCK IN THE LOCATIONS SHOWN ON THE DEMOLITION & EROSION CONTROL PLAN SHEET.
C. CLEAR & GRUB SITE.
D. INSTALLATION OF DETENTION BASINS TO ACT AS SEDIMENT BASINS (DO NOT INSTALL BIORETENTION SOIL OR UNDERDRAINS UNTIL STABILIZED)
E. COMMENCE SITE GRADING.
F. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED.
G. FINALIZE PAVEMENT SUBGRADE PREPARATION.
H. CONSTRUCT ALL CURB, DRAINAGE INLETS, STORM SEWER PIPES AND STORM SEWER MANHOLES, AS SHOWN ON THE PLANS. INSTALL TEMPORARY INLET PROTECTION AT THE LOCATIONS OF ALL INLETS.
I. REMOVE INLET PROTECTION AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
J. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT.
K. CARRY OUT FINAL GRADING AND SEEDING AND PLANTING.
L. CLEAN STORM SYSTEM FOLLOWING CONSTRUCTION, CLEAN DETENTION BASINS OF ANY SILT AND RETURN TO DESIGN GRADES.
M. REMOVE SILT FENCING/SILT SOCK ONLY AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.

NOTE: SEDIMENT CONTROL STORAGE DURING CONSTRUCTION (TRAPS & BASINS) DURING CONSTRUCTION SHALL BE 134 CY PER ACRE OF DISTURBANCE PER NYSDEC REQUIREMENTS.

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STATE OF NEW YORK
CHRISTOPHER WOOD
LICENSED PROFESSIONAL ENGINEER
076304

REVISIONS:

No.	Description	Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Demolition & Erosion Control Plan

DRAWING NO.
C-001

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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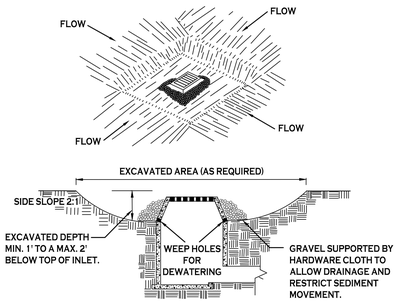


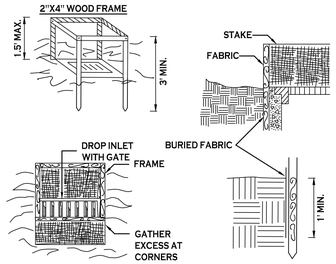
CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

   MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE



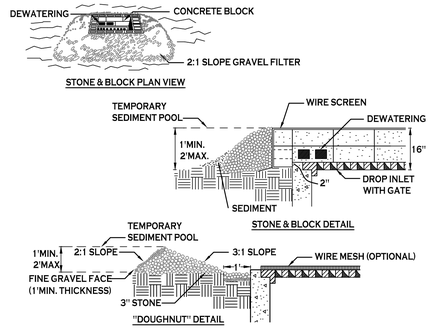
CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP, SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

   MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

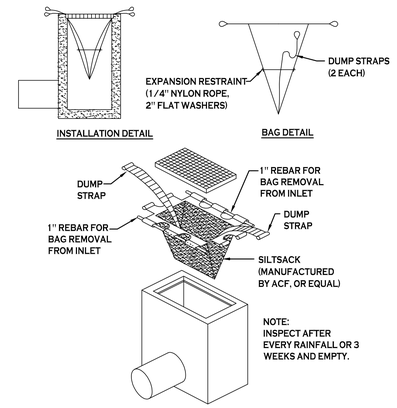
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

   MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

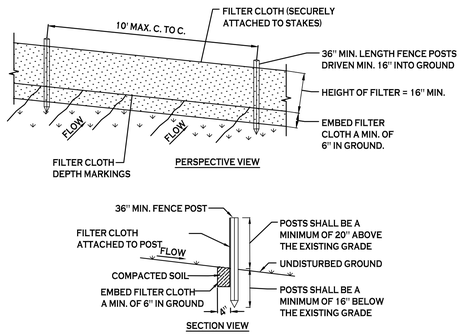
NOT TO SCALE

NOTE: INSTALL ONE OF THE INLET PROTECTION OPTIONS SHOWN PRIOR TO CONSTRUCTION



SILT SACK DETAIL

NOT TO SCALE

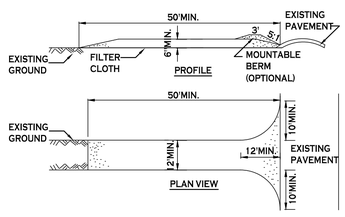


CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE

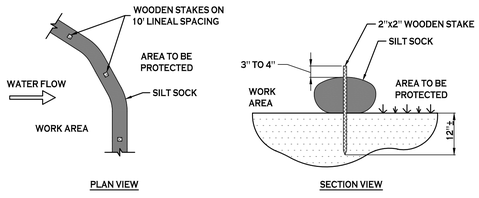


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



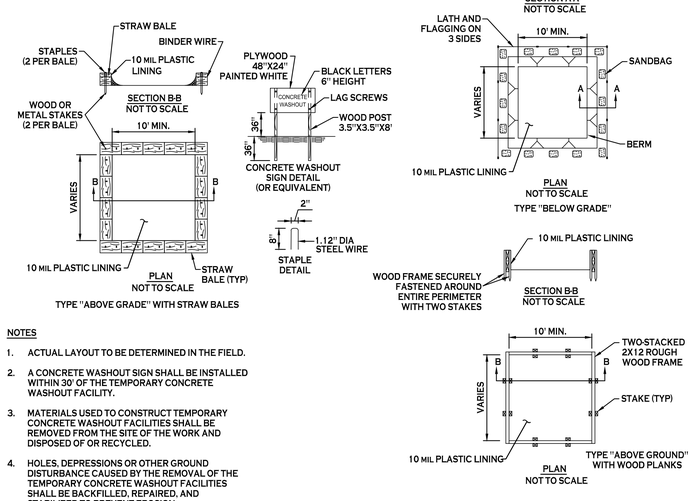
NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED ½ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK DETAIL

NOT TO SCALE



NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL

NOT TO SCALE

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STATE OF NEW YORK · R. CHRISTOPHER WOOD · LICENSED PROFESSIONAL ENGINEER · 076394

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Demolition & Erosion Control Details

DRAWING NO.

C-002

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 [29734 : SP-2021-05A, 50 Dodge Rd.)

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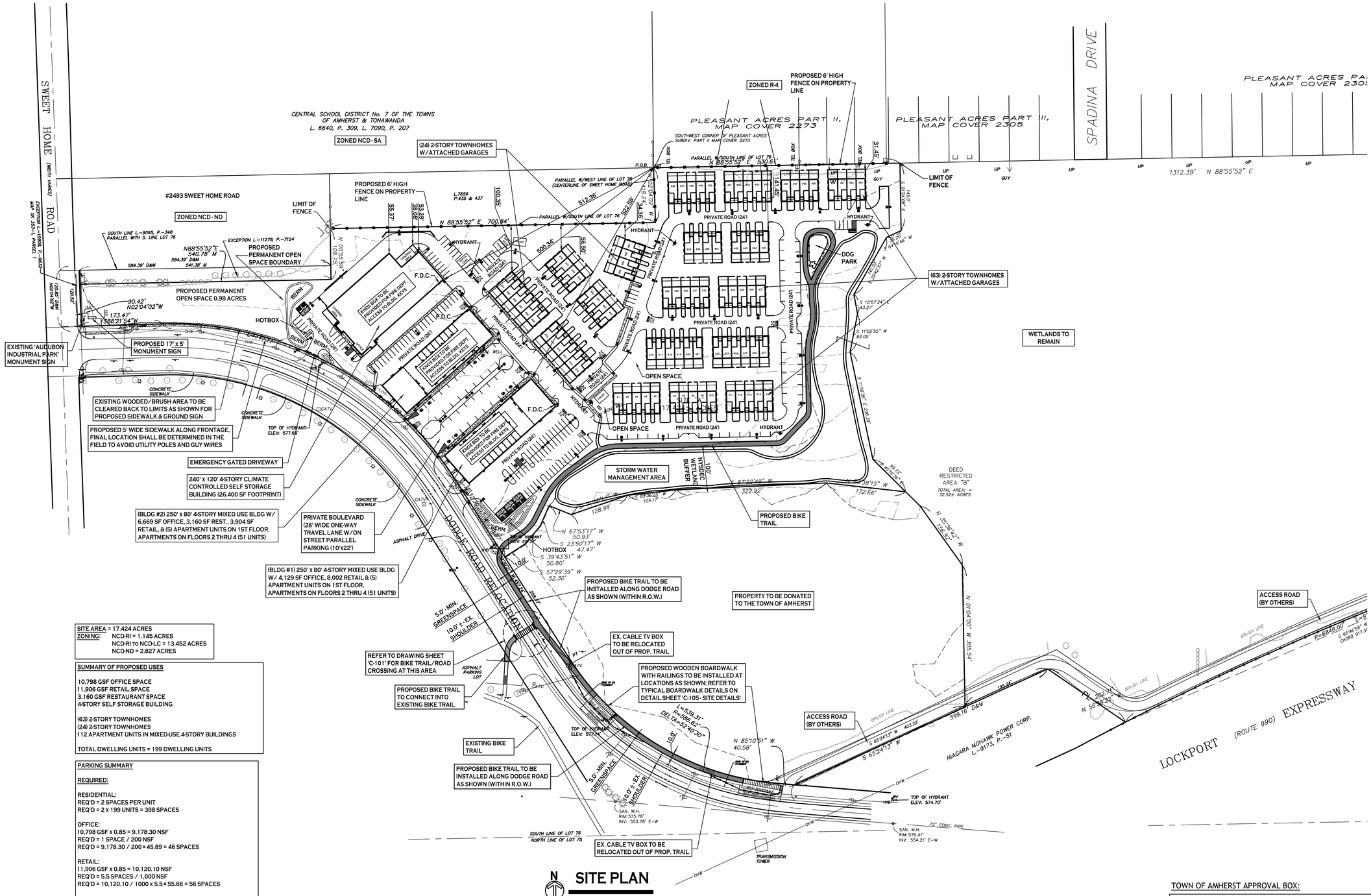

SITE PLAN

SCALE: 1"=100'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200Ft.

SITE AREA = 17.424 ACRES
ZONING: NCD-RI = 1.145 ACRES
NCD-RI TO NCD-LC = 13.452 ACRES
NCD-ND = 2.827 ACRES

SUMMARY OF PROPOSED USES

10,798 GSF OFFICE SPACE
11,906 GSF RETAIL SPACE
3,160 GSF RESTAURANT SPACE
4-STORY SELF STORAGE BUILDING

(63) 2-STORY TOWNHOMES
(24) 2-STORY TOWNHOMES
112 APARTMENT UNITS IN MIXED-USE 4-STORY BUILDINGS

TOTAL DWELLING UNITS = 199 DWELLING UNITS

PARKING SUMMARY

REQUIRED:

RESIDENTIAL:
REQ'D = 2 SPACES PER UNIT
REQ'D = 2 x 199 UNITS = 398 SPACES

OFFICE:
10,798 GSF x 0.85 = 9,178.30 NSF
REQ'D = 1 SPACE / 200 NSF
REQ'D = 9,178.30 / 200 = 45.89 = 46 SPACES

RETAIL:
11,906 GSF x 0.85 = 10,120.10 NSF
REQ'D = 5.5 SPACES / 1,000 NSF
REQ'D = 10,120.10 / 1000 x 5.5 = 55.66 = 56 SPACES

RESTAURANT:
REQ'D = 1 SPACE / 3 SEATS + 1 SPACE / 100 SF TAKE OUT AREA
REQ'D = 100 SEAT / 3 + 500 SF / 100 = 38 SPACES

SELF STORAGE:
REQ'D = 1 SPACE / 5,000 AREA DEVOTED TO STORAGE
REQ'D = (26,400 SF x 4) / 5,000 SF = 22 SPACES

TOTAL REQ'D = 560 SPACES

PROVIDED:

90 PARALLEL PARKING SPACES
121 9'x19' SPACES
63+24 TOWNHOUSE GARAGE SPACES
63+24 SPACES IN FRONT OF TOWNHOUSE GARAGE SPACES
16 GARAGE SPACES IN 4-STORY BLDGS.
401 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 0.98 ACRES

WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

TOWN OF AMHERST APPROVAL BOX:

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STATE OF NEW YORK — RICHRISTOPHER WOOD — 078394 — LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per Amherst T.S.B. 03/07/24 Comments	03/13/24
2	Rev. per ECDPW 03/28/24 Comments	04/02/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Overall Site Plan

DRAWING NO.
C-100

Project no.: 21.011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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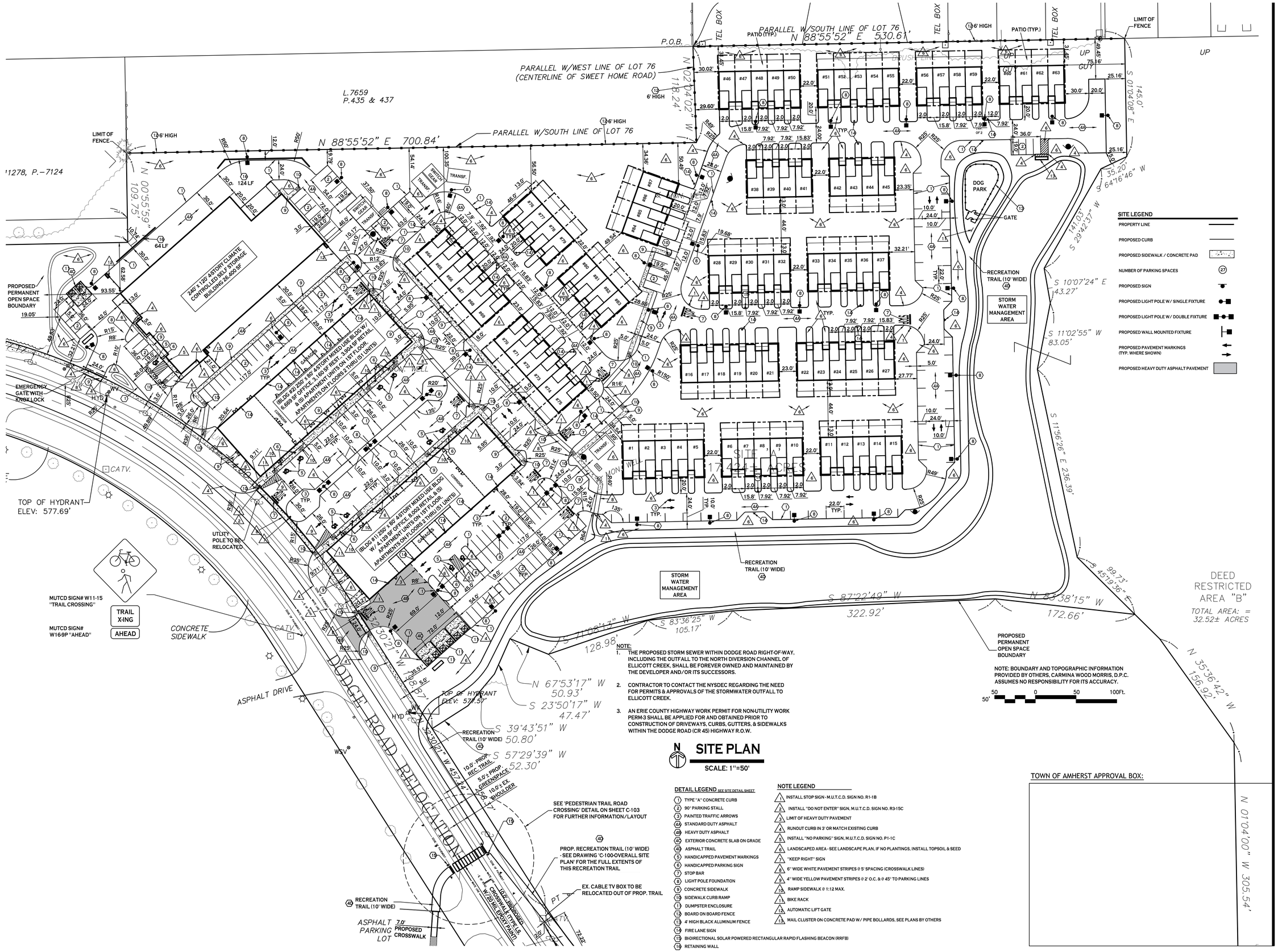

NOTE:
1. THE PROPOSED STORM SEWER WITHIN DODGE ROAD RIGHT-OF-WAY, INCLUDING THE OUTFALL TO THE NORTH DIVERSION CHANNEL OF ELLICOTT CREEK, SHALL BE FOREVER OWNED AND MAINTAINED BY THE DEVELOPER AND/OR ITS SUCCESSORS.
2. CONTRACTOR TO CONTACT THE NYSDEC REGARDING THE NEED FOR PERMITS & APPROVALS OF THE STORMWATER OUTFALL TO ELLICOTT CREEK.
3. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR NONUTILITY WORK PERM3 SHALL BE APPLIED FOR AND OBTAINED PRIOR TO CONSTRUCTION OF DRIVEWAYS, CURBS, GUTTERS, & SIDEWALKS WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

SITE PLAN
SCALE: 1"=50'

SITE LEGEND
- PROPERTY LINE
- PROPOSED CURB
- PROPOSED SIDEWALK / CONCRETE PAD
- NUMBER OF PARKING SPACES (27)
- PROPOSED SIGN
- PROPOSED LIGHT POLE W/ SINGLE FIXTURE
- PROPOSED LIGHT POLE W/ DOUBLE FIXTURE
- PROPOSED WALL MOUNTED FIXTURE
- PROPOSED PAVEMENT MARKINGS (TYP. WHERE SHOWN)
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT

DETAIL LEGEND SEE SITE DETAIL SHEET
1. TYPE "A" CONCRETE CURB
2. 90° PARKING STALL
3. PAINTED TRAFFIC ARROWS
4A. STANDARD DUTY ASPHALT
4B. HEAVY DUTY ASPHALT
4C. EXTERIOR CONCRETE SLAB ON GRADE
4D. ASPHALT TRAIL
5. HANDICAPPED PAVEMENT MARKINGS
6. HANDICAPPED PARKING SIGN
7. STOP BAR
8. LIGHT POLE FOUNDATION
9. CONCRETE SIDEWALK
10. SIDEWALK CURB RAMP
11. DUMPSTER ENCLOSURE
12. BOARD ON BOARD FENCE
13. 4' HIGH BLACK ALUMINUM FENCE
14. FIRE LANE SIGN
15. BI-DIRECTIONAL SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB)
16. RETAINING WALL

NOTE LEGEND
1. INSTALL STOP SIGN - M.U.T.C.D. SIGN NO. R1-1B
2. INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R3-15C
3. LIMIT OF HEAVY DUTY PAVEMENT
4. RUNOUT CURB IN 3' OR MATCH EXISTING CURB
5. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1C
6. LANDSCAPED AREA - SEE LANDSCAPE PLAN. IF NO PLANTINGS, INSTALL TOPSOIL & SEED
7. "KEEP RIGHT" SIGN
8. 6" WIDE WHITE PAVEMENT STRIPES @ 5' SPACING (CROSSWALK LINES)
9. 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & @ 45° TO PARKING LINES
10. RAMP SIDEWALK @ 1:12 MAX.
11. BIKE RACK
12. AUTOMATIC LIFT GATE
13. MAIL CLUSTER ON CONCRETE PAD W/ PIPE BOLLARDS, SEE PLANS BY OTHERS

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

STATE OF NEW YORK R. CHRISTOPHER WOOD 076394 PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/08/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan

DRAWING NO.
C-101

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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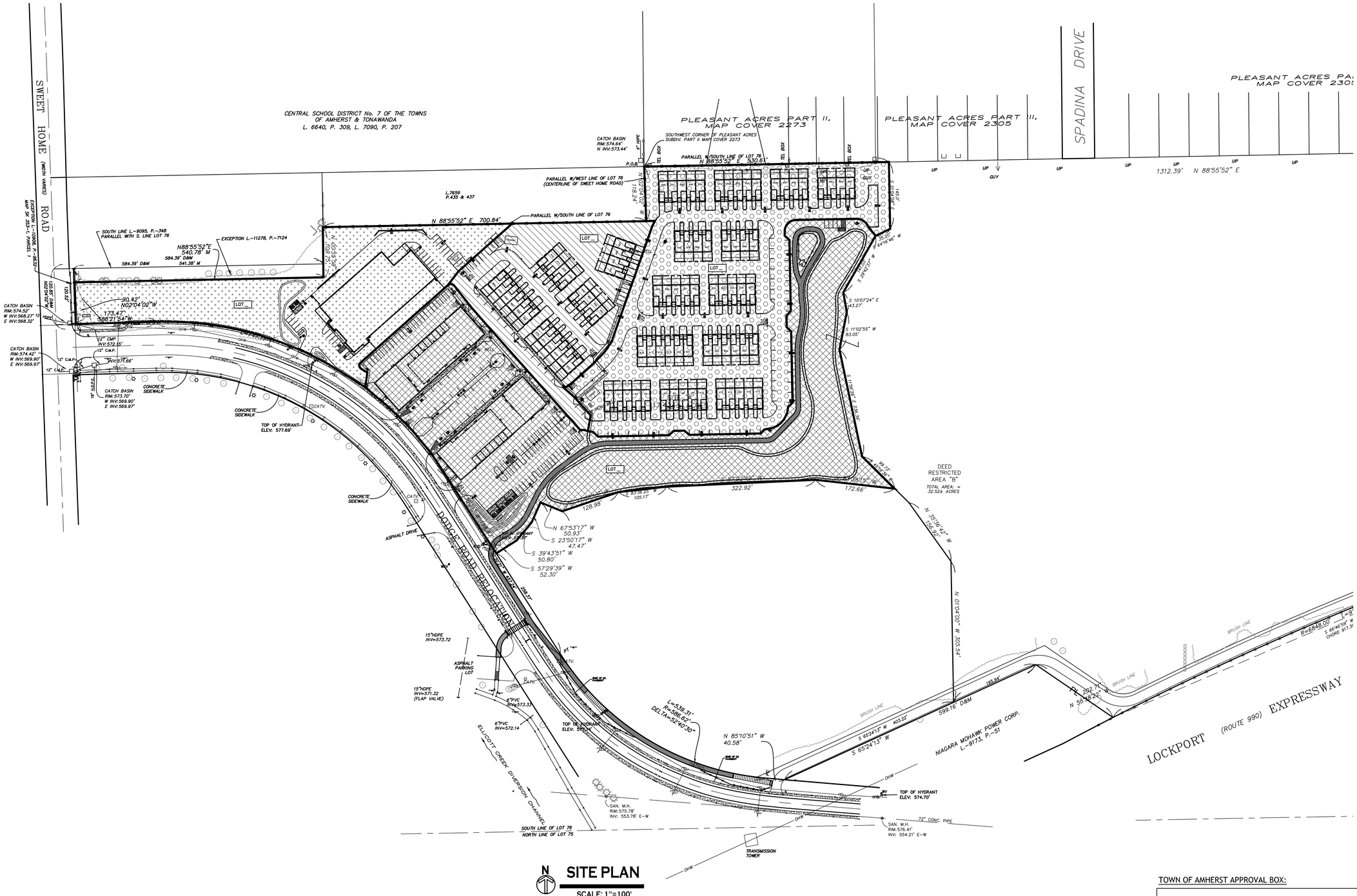

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200Ft.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
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STATE OF NEW YORK — CHRISTOPHER WOOD — 076394 — LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per town 07/29/22 comments	03/27/23
4	Plan rev. per 09/13/23 Fire Safety comments	03/27/23
5	Plan rev. per 10/20/23 Town comments	10/31/23
6	Plan revised per Town/Client comments	05/28/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Parcel Map

DRAWING NO.

C-102

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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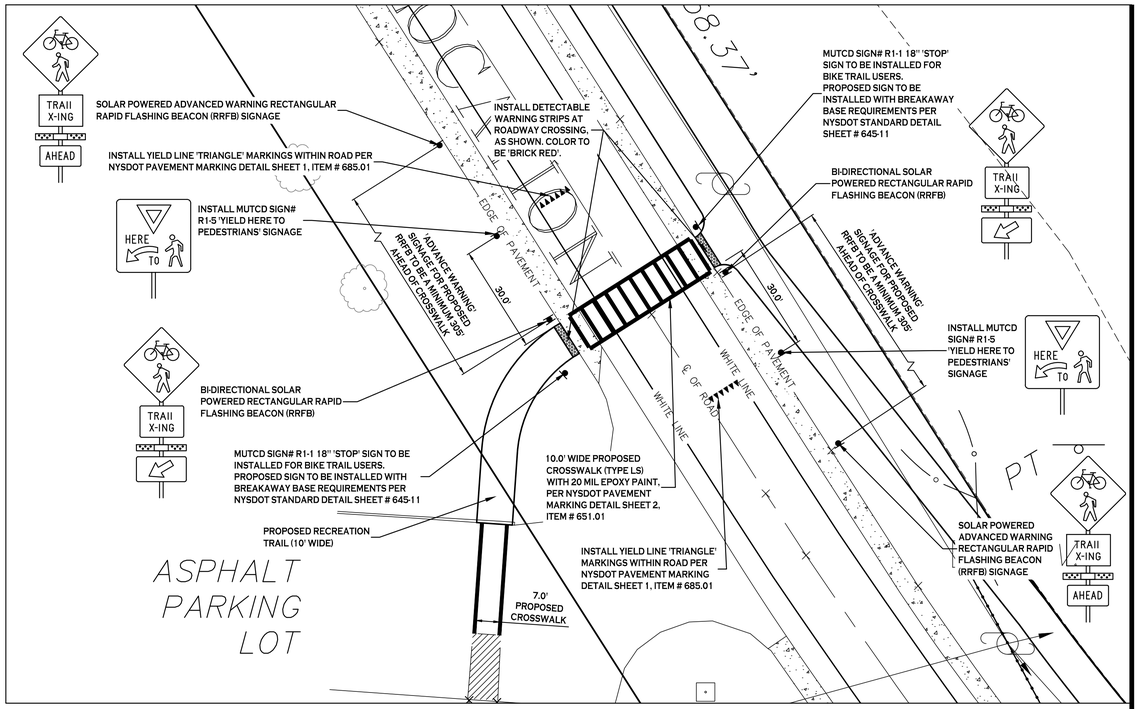
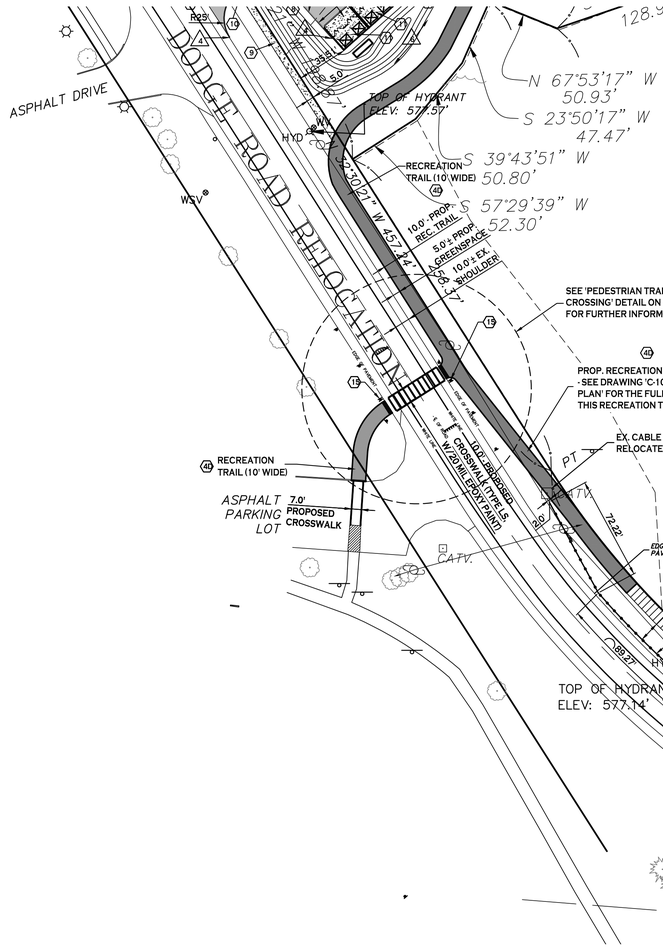


PEDESTRIAN TRAIL ROAD CROSSING

SCALE: 1"=20'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

20' 0 20 40Ft.



SITE PLAN

SCALE: 1"=50'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

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DETAIL LEGEND SEE SITE DETAIL SHEET

1. TYPE "A" CONCRETE CURB
2. 90° PARKING STALL
3. PAINTED TRAFFIC ARROWS
4A. STANDARD DUTY ASPHALT
4B. HEAVY DUTY ASPHALT
4C. EXTERIOR CONCRETE SLAB ON GRADE
4D. ASPHALT TRAIL
5. HANDICAPPED PAVEMENT MARKINGS
6. HANDICAPPED PARKING SIGN
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14. FIRE LANE SIGN
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16. RETAINING WALL

NOTE LEGEND

1. INSTALL STOP SIGN - M.U.T.C.D. SIGN NO. R1-1B
2. INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R3-15C
3. LIMIT OF HEAVY DUTY PAVEMENT
4. RUNOUT CURB IN 3' OR MATCH EXISTING CURB
5. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1C
6. LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
7. "KEEP RIGHT" SIGN
8. 6" WIDE WHITE PAVEMENT STRIPES @ 5' SPACING (CROSSWALK LINES)
9. 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & @ 45° TO PARKING LINES
10. RAMP SIDEWALK @ 1:12 MAX.
11. BIKE RACK
12. AUTOMATIC LIFT GATE
13. MAIL CLUSTER ON CONCRETE PAD W/ PIPE BOLLARDS, SEE PLANS BY OTHERS

SITE LEGEND

- PROPERTY LINE
- PROPOSED CURB
- PROPOSED SIDEWALK / CONCRETE PAD
- NUMBER OF PARKING SPACES (27)
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- PROPOSED LIGHT POLE W/ SINGLE FIXTURE
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- PROPOSED PAVEMENT MARKINGS (TYP. WHERE SHOWN)
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT

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STATE OF NEW YORK — R. CHRISTOPHER WOOD — LICENSED — 076394 — PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan rev. per 04/19/24 Passero comments	04/19/24
2	Plan rev. per 04/29/24 ECDPW comments	04/29/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Plan
Roadway & Bike Path Area

DRAWING NO.

C-103

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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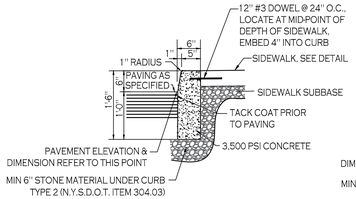
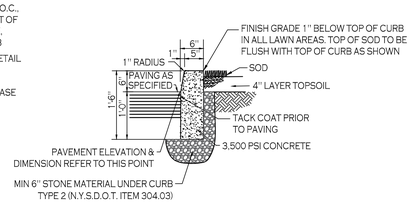


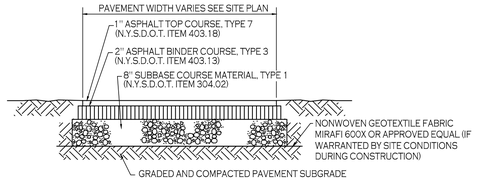
ABUTTING SIDEWALK



ABUTTING LANDSCAPE/GRASS

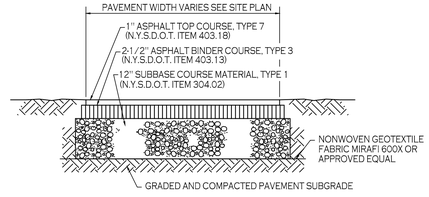
NOTES:
1. CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. WHERE THE CURB DROPS (IS FLUSH WITH ASPHALT) THE DEPTH OF CURB BELOW GRADE SHALL BE INCREASED TO 1'-6" AND OTHER DIMENSIONS ADJUSTED ACCORDINGLY.

TYPE "A" CONCRETE CURB - 1



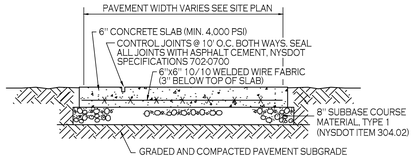
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION - 4A



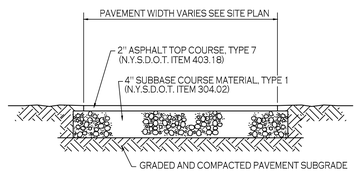
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

HEAVY DUTY ASPHALT SECTION - 4B



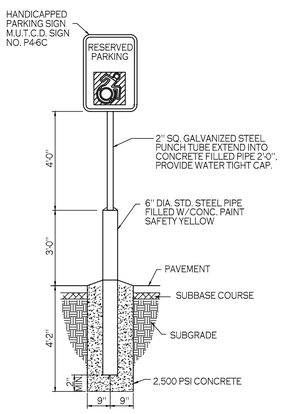
NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

EXTERIOR CONCRETE SLAB-ON-GRADE SECTION - 4C



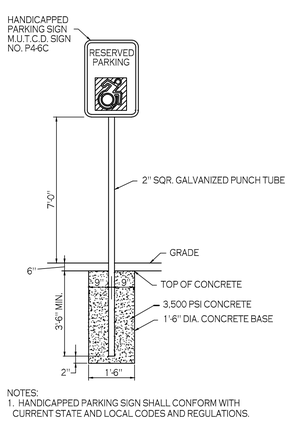
NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

ASPHALT TRAIL SECTION - 4D



HANDICAPPED PARKING SIGN - 6

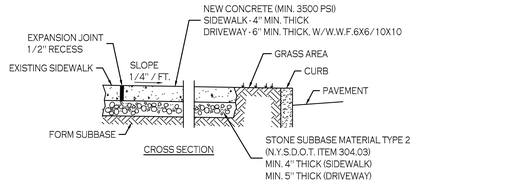
INSTALLED IN PAVEMENT



NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

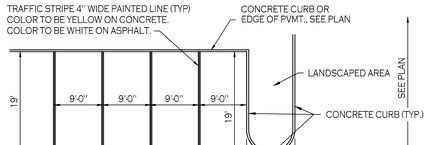
HANDICAP PARKING SIGNS - 6

INSTALLED IN GRASS/LANDSCAPED AREA

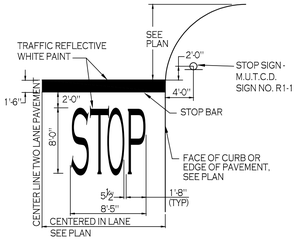


NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTH WAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.
3. SUBBASE GRADE SHALL FOLLOW THE PROPOSED GRADE OF THE SIDEWALK AND SLOPE AWAY FROM BUILDING WHERE APPLICABLE. PROVIDE CONTINUOUS STONE PATH TO CURB UNDERDRAIN WHERE PROVIDED.
4. FULL DEPTH EXPANSION JOINTS SHALL BE INSTALLED EVERY 20' O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
5. SEE CURB DETAIL FOR DOWLING REQUIREMENTS WHERE ABUTTING CURB.
6. INSTALL 6" LONG #3 DOWELS @ 12" O.C. WHERE SIDEWALK ABUTS A BUILDING WALL, AT AN ENTRANCE, THICKEN SIDEWALK TO 6" AT BUILDING WALL AND INSTALL DOWEL CENTERED IN THE 6" DEPTH. DOWELS AND THICKENING OF SIDEWALK SHALL EXTEND 18" EITHER SIDE OF ENTRANCE.
7. INSTALL 1/2" PREMOLDED EXPANSION JOINT WITH BACKER ROD & SEALANT WHERE SIDEWALK ABUTS BUILDING OR OTHER STRUCTURE.

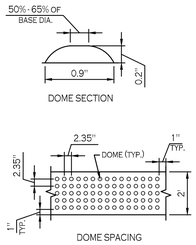
CONCRETE SIDEWALK - 9



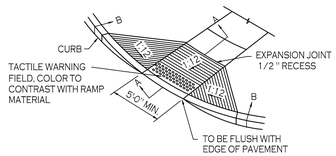
90° PARKING STALL LAYOUT - 2

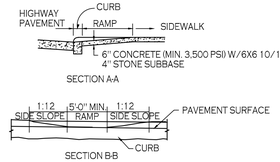


STOP BAR DETAIL - 7

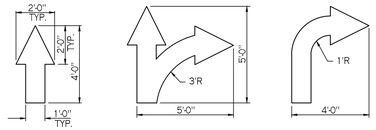


NOTE: TACTILE WARNING DEVICES SHALL BE PER ICC/ANSI A117.1-1998, SECTION 705.3.1.2 OR CURRENT UPDATE

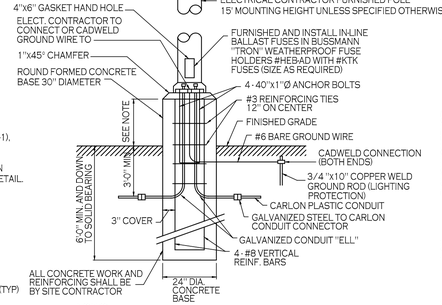




SIDEWALK CURB RAMP - 10



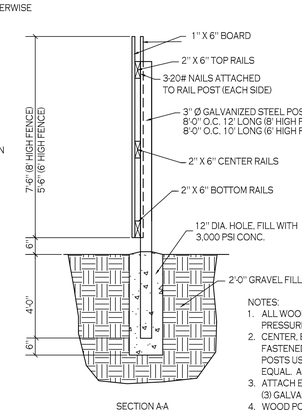
PAINTED TRAFFIC ARROWS - 3



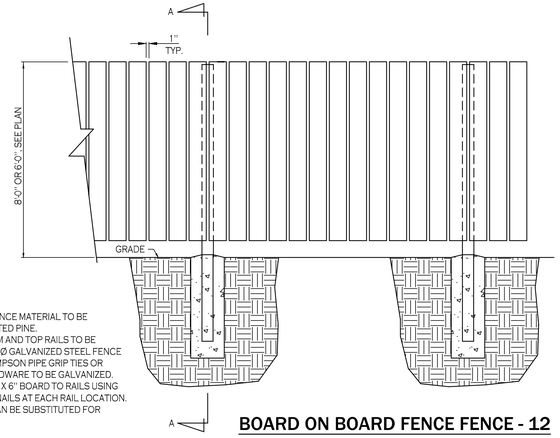
NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
   IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
   IN PAVEMENT: 3" ABOVE GRADE
   IN NONCURBED GRASS AREAS: 6" ABOVE GRADE

LIGHT POLE FOUNDATION - 8

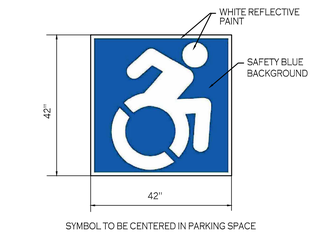
USE FOR 15' MOUNTING HEIGHT L.E.D. FIXTURES



NOTES:
1. ALL WOODEN FENCE MATERIAL TO BE PRESSURE TREATED PINE.
2. CENTER, BOTTOM AND TOP RAILS TO BE FASTENED TO 3" Ø GALVANIZED STEEL FENCE POSTS USING SIMPSON PIPE GRIP TIES OR EQUAL. ALL HARDWARE TO BE GALVANIZED.
3. ATTACH EACH 1" X 6" BOARD TO RAILS USING (3) GALVANIZED NAILS AT EACH RAIL LOCATION.
4. WOOD POSTS CAN BE SUBSTITUTED FOR STEEL.



BOARD ON BOARD FENCE FENCE - 12



SYMBOL TO BE CENTERED IN PARKING SPACE

INTERNATIONAL HANDICAP SYMBOL - 5A



SIZE:	12" X 18"
LINE 1:	3"
LINE 2:	3"
LINE 3:	2"
LINE 4:	ARROW
BACKGROUND:	WHITE
LEGEND:	RED
MARGIN:	3/8"
BORDER:	3/8"

INSTALLATION

1) SIGNS SHALL BE LOCATED ON THE RIGHT SIDE OF THE ROADWAY FACING APPROACHING TRAFFIC.
2) SIGNS SHALL BE INSTALLED APPROXIMATELY TWO FEET OFF OF PAVEMENT EDGE OR FACE OF CURB.
3) THE HEIGHT OF THE SIGN SHALL BE A MINIMUM OF SEVEN (7) FEET, MEASURED FROM THE BOTTOM OF THE SIGN TO THE GROUND.
4) ALL SIGNS SHALL BE INSTALLED FACING TRAFFIC AT AN ANGLE OF BETWEEN 30 AND 45 DEGREES WITH A LINE PARALLEL TO THE FLOW OF TRAFFIC. THE SIGN LEGENDS SHALL INCLUDE SINGLE-HEADED ARROWS POINTING IN THE DIRECTION OF THE REGULATION IF THE SIGNS ARE AT THE END OF THE ZONE, OR DOUBLE-HEADED ARROWS POINTING IN BOTH DIRECTIONS IF THE SIGNS ARE AT INTERMEDIATE POINTS WITHIN A ZONE.
5) BUILDING MOUNT WHERE REQUIRED @ 50' O.C..

FIRE LANE SIGN - 14

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STATE OF NEW YORK · CHRISTOPHER WOOD · 076394 · LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-104

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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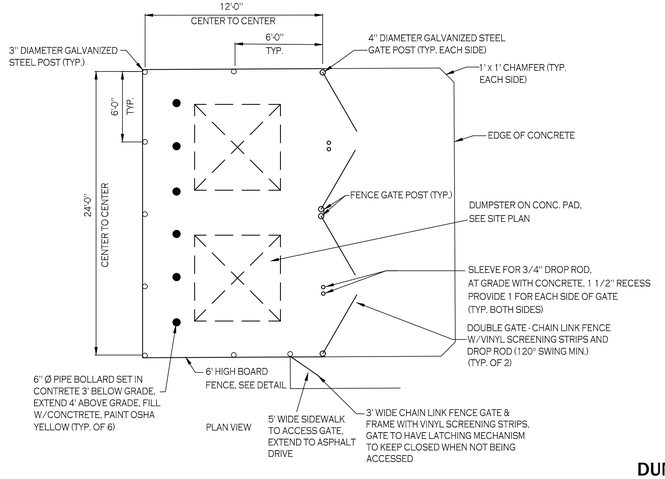
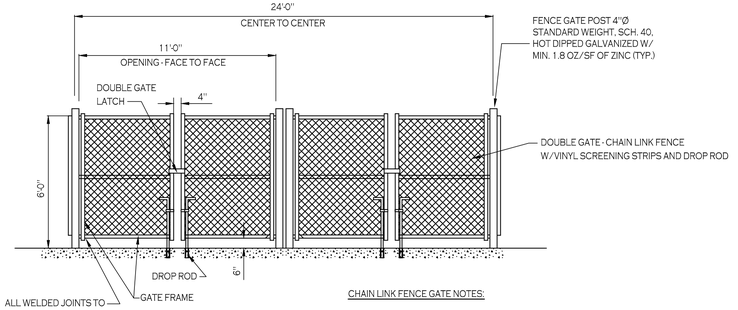
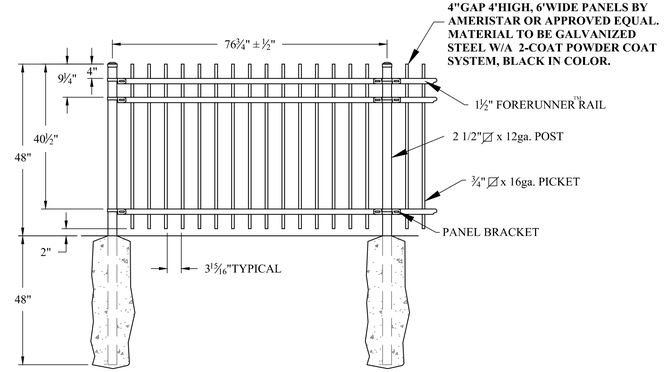




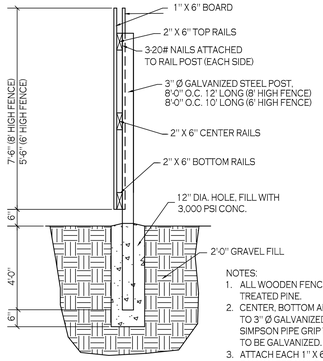
DUMPSTER ENCLOSURE - 11

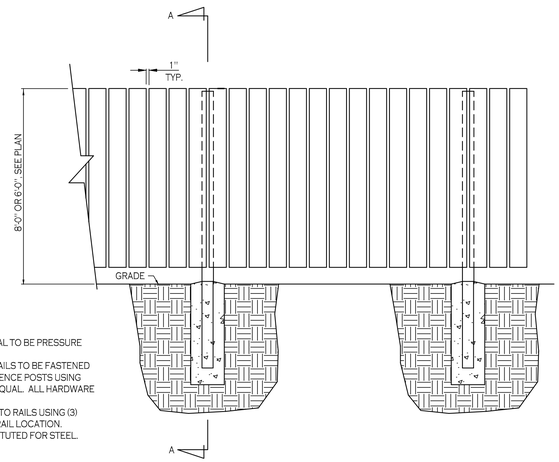
CHAIN LINK FENCE GATE NOTES:

1. GATE POST FOOTINGS TO BE MIN. 36" DEEP x (4x) POST DIAMETER, EXTEND POST TO WITHIN 6" OF BOTTOM.
2. GATE FRAMES TO BE 2" SQ. GALVANIZED STEEL, WEIGHING 2.60 LB/FT IN ACCORDANCE WITH ASTM F 900.
3. CHAIN LINK FENCE FABRIC SHALL BE 2" MESH, 9 GAUGE, ZINC COATED STEEL CORE WIRE. INSTALL MESH WITH HOOK BOLTS AND TENSION BARS ON ALL 4 SIDES, ATTACH AT 15" MAX.
4. DOUBLE GATE LATCH TO BE FORKED TYPE CAPABLE OF RETAINING GATE IN CLOSED POSITION AND HAVE PROVISION FOR PAD LOCK. LATCH SHALL BE OPERABLE FROM EITHER SIDE OF GATE.
5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED STEEL TO SUIT GATE SIZE.



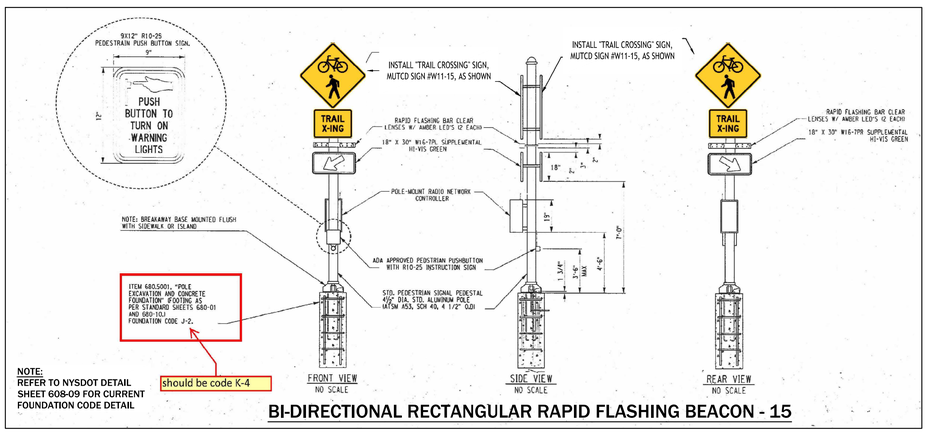
4' HIGH BLACK ALUMINUM FENCE - 13



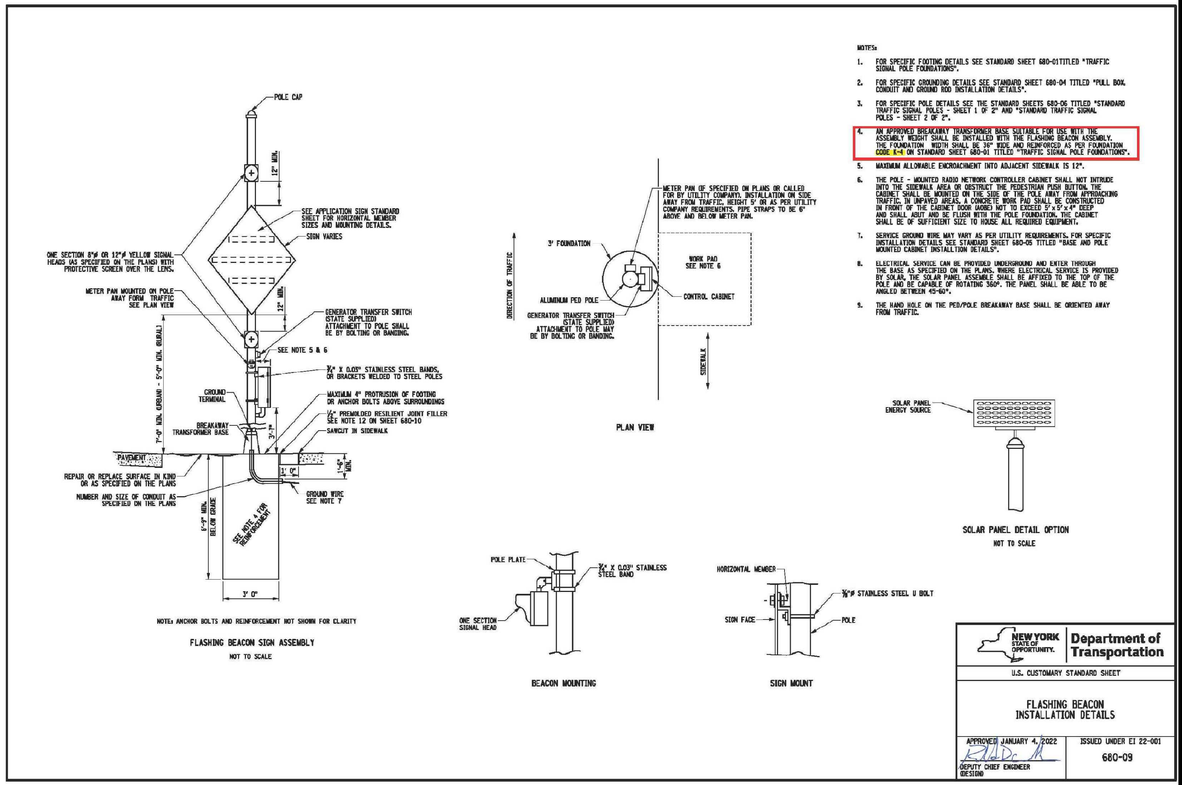


NOTES:
1. ALL WOODEN FENCE MATERIAL TO BE PRESSURE TREATED PINE.
2. CENTER, BOTTOM AND TOP RAILS TO BE FASTENED TO 3" Ø GALVANIZED STEEL FENCE POSTS USING SIMPSON PIPE GRIP TIES OR EQUAL. ALL HARDWARE TO BE GALVANIZED.
3. ATTACH EACH 1" X 6" BOARD TO RAILS USING (3) GALVANIZED NAILS AT EACH RAIL LOCATION.
4. WOOD POSTS CAN BE SUBSTITUTED FOR STEEL.

BOARD ON BOARD FENCE FENCE - FOR DUMPSTER ENCLOSURE



BI-DIRECTIONAL RECTANGULAR RAPID FLASHING BEACON - 15



NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S. CUSTOMARY STANDARD SHEET

FLASHING BEACON INSTALLATION DETAILS

APPROVED JANUARY 4, 2022
DEPUTY CHIEF ENGINEER
DESIGN

ISSUED UNDER EI 22-001
680-09

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STATE OF NEW YORK CHRISTOPHER WOOD LICENSED PROFESSIONAL ENGINEER 076394

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Rev. per ECDPW 03/28/24 Comments	04/02/24
4	Plan rev. per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-105

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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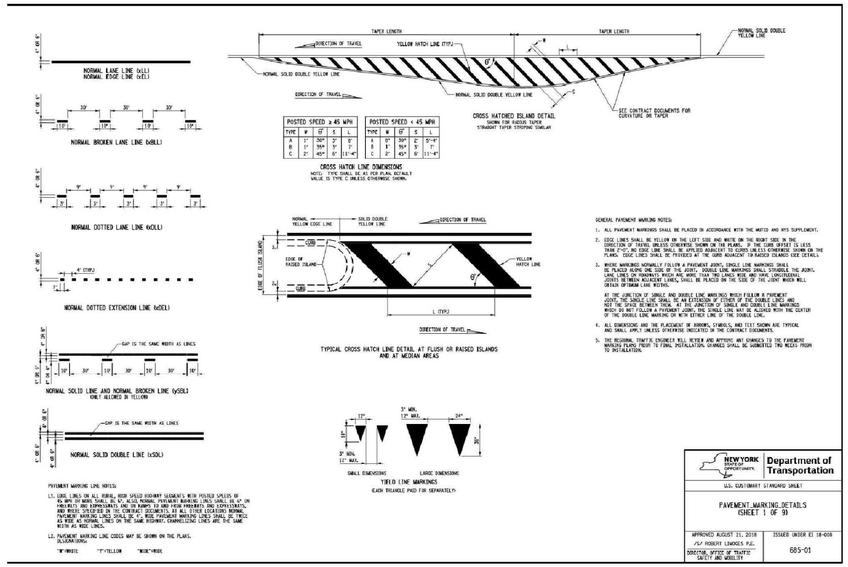
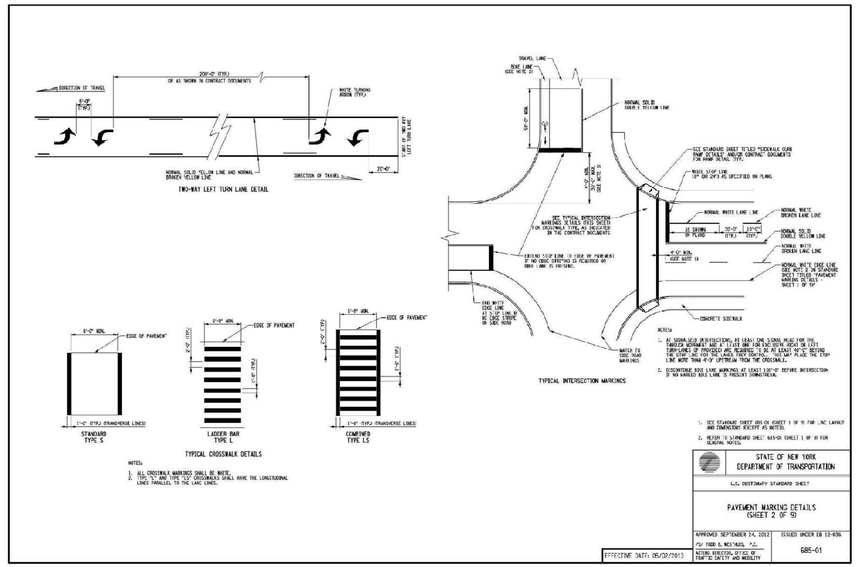
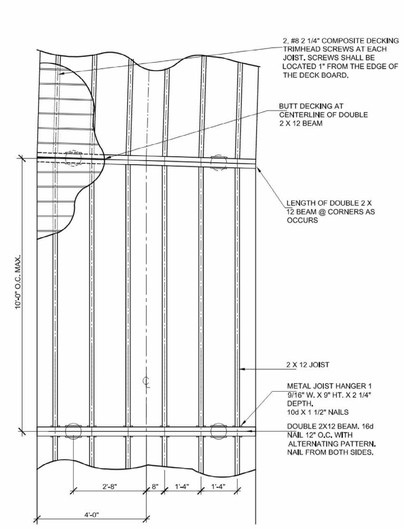
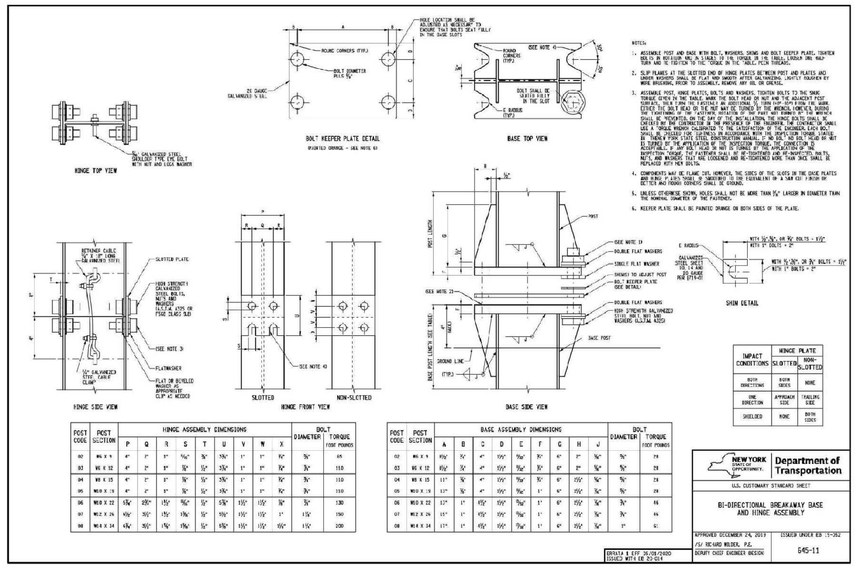
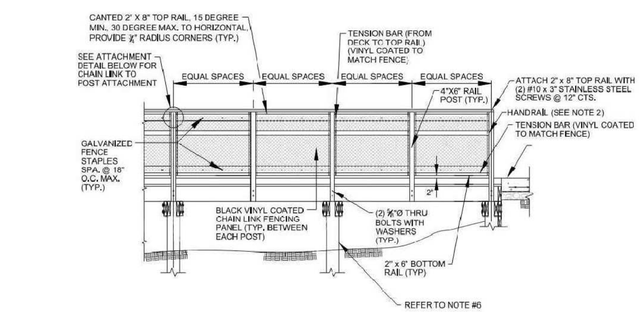


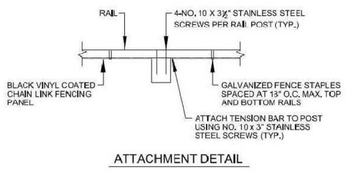




BOARDWALK FRAMING PLAN





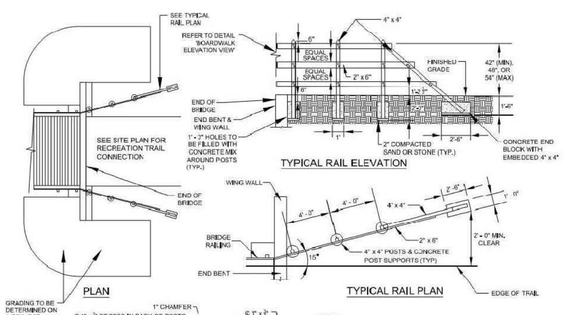


ATTACHMENT DETAIL

TYPICAL BOARDWALK RAILING ELEVATION VIEW

NOTES:

1. THE MINIMUM HEIGHT OF BRIDGE/BOARDWALK RAILING SHALL BE 42", UNLESS OTHERWISE NOTED. THE HEIGHT CAN RANGE BETWEEN 42", 48", OR 54".
2. A GRIP-ABLE, ROUND RAIL THAT WILL ACT AS BOTH A RUB RAIL AND HANDRAIL SHALL ONLY BE REQUIRED WHEN GRADES ARE GREATER THAN 5%, REFER TO DETAIL GW-30.04 FOR BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT.
3. UTILIZE DETAIL GW-30.04 "BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT" AS A TYPICAL RAIL ATTACHMENT DETAIL FOR HORIZONTAL RAILS TO RAIL POST CONNECTIONS.
4. BLACK VINYL COATED CHAIN LINK FENCE AND TENSION TIES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
5. SPAN LENGTHS, JOIST SPACING, SIZING OF MEMBERS, REINFORCED CONCRETE DECK, AND OTHER DESIGN SPECIFICS SHALL BE DETERMINED BY THE ENGINEER ON A PROJECT SPECIFIC BASIS.
6. FOUNDATION SHALL CONSIST OF DRIVEN PILES, AUGURED PILES, HELICAL PIERS, OR OTHER APPLIED FOUNDATION SYSTEM, SPECIFICS SUCH AS NUMBER OF PILES, SPACING, AND HEIGHT SHALL BE DETERMINED BY ENGINEER ON A PROJECT SPECIFIC BASIS BASED ON REQUIRED LOADING.

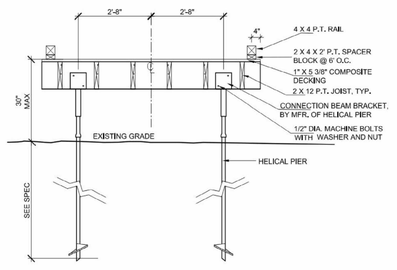


CONNECTION DETAILS

BOARDWALK OR BRIDGE TIMBER APPROACH RAILING

NOTES:

1. THE LENGTH OF THE APPROACH RAILING SHALL VARY DEPENDING ON SITE CONDITIONS.
2. THE LATERAL OFFSET OF THE RAILING SHOULD BE AT LEAST 1 FOOT FROM THE EDGE OF PATH. THE ENDS OF THE RAILING SHOULD BE FLARED AWAY FROM THE PATH EDGE.
3. THE APPROACH RAILING HEIGHT SHALL MATCH THE HEIGHT OF THE BRIDGE OR BOARDWALK RAILING, UNLESS OTHERWISE NOTED. THE RAILING HEIGHT WILL BE 42" (MIN), 48", OR 54" (MAX).
4. ALL CONCRETE FOOTERS AND END BLOCKS SHALL BE 3000 PSI MIN.



BOARDWALK SECTION

NOTES:

1. PROVIDE FULL EROSION AND SEDIMENTATION CONTROLS AROUND ALL CONSTRUCTION AREAS.
2. BOARDWALK ELEVATION VARIES.
3. CALCULATIONS FOR ALL PERIPILE DESIGN DEPTHS BASED ON GEOTECHNICAL ANALYSIS TEST RESULTS. CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AND PAYING FOR GEOTECHNICAL DESIGN SERVICES.

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Buffalo, New York 14203
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STATE OF NEW YORK CHRISTOPHER WOOD LICENSED 076394 PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per Amherst T.S.B. 03/07/24 Comments	03/13/24
2	Rev. per ECDPW 03/28/24 Comments	04/02/24
3	Plan rev. per 04/19/24 Passero comments	04/19/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Details

DRAWING NO.

C-106

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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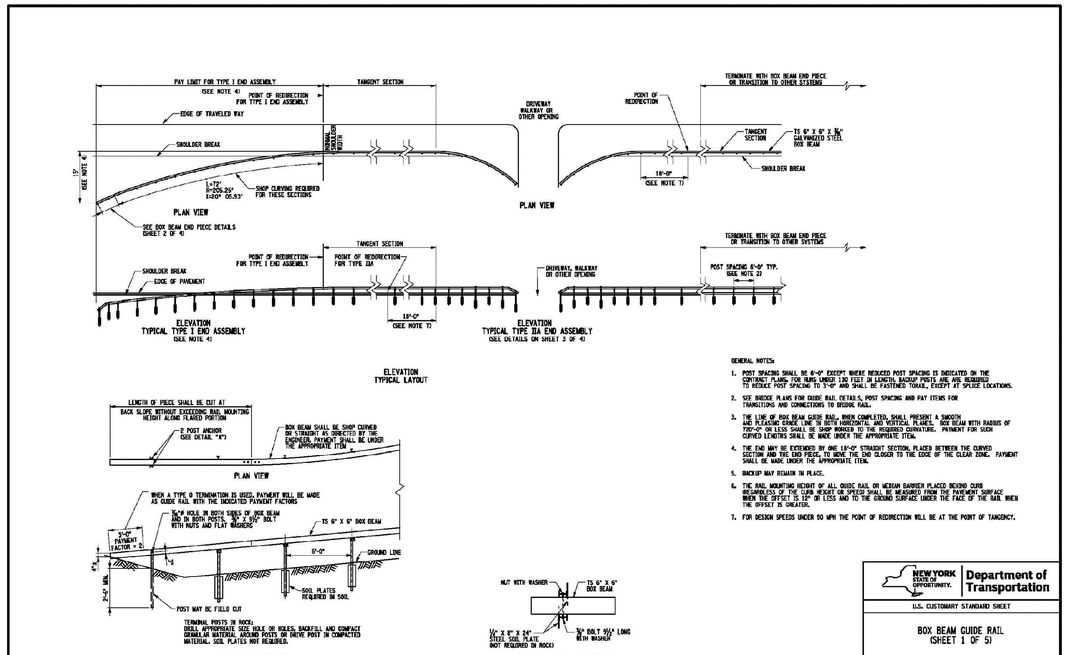
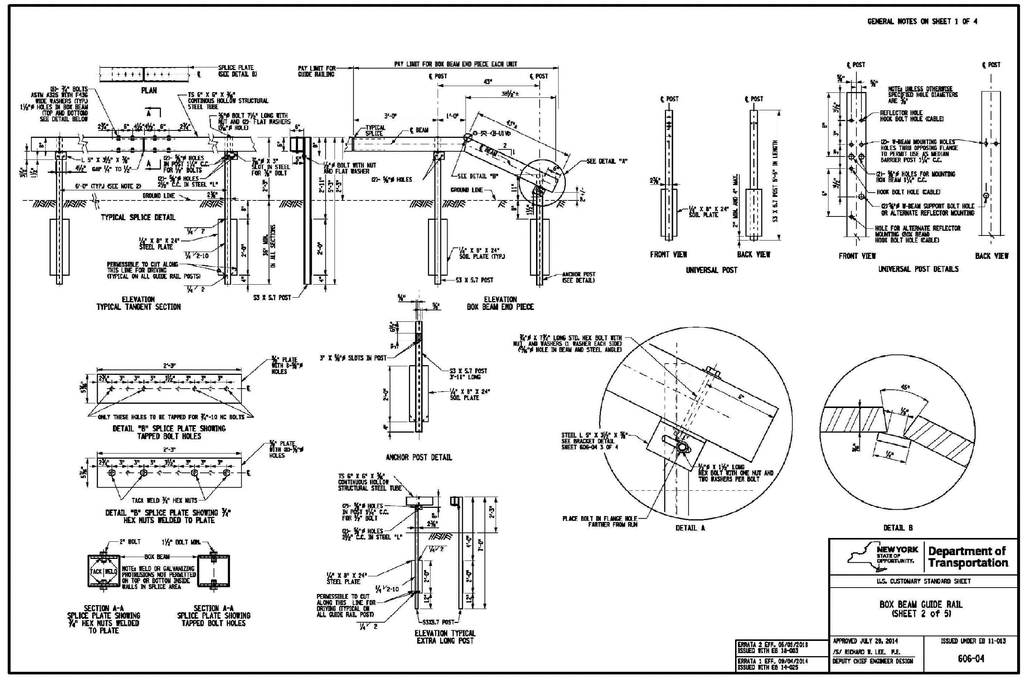


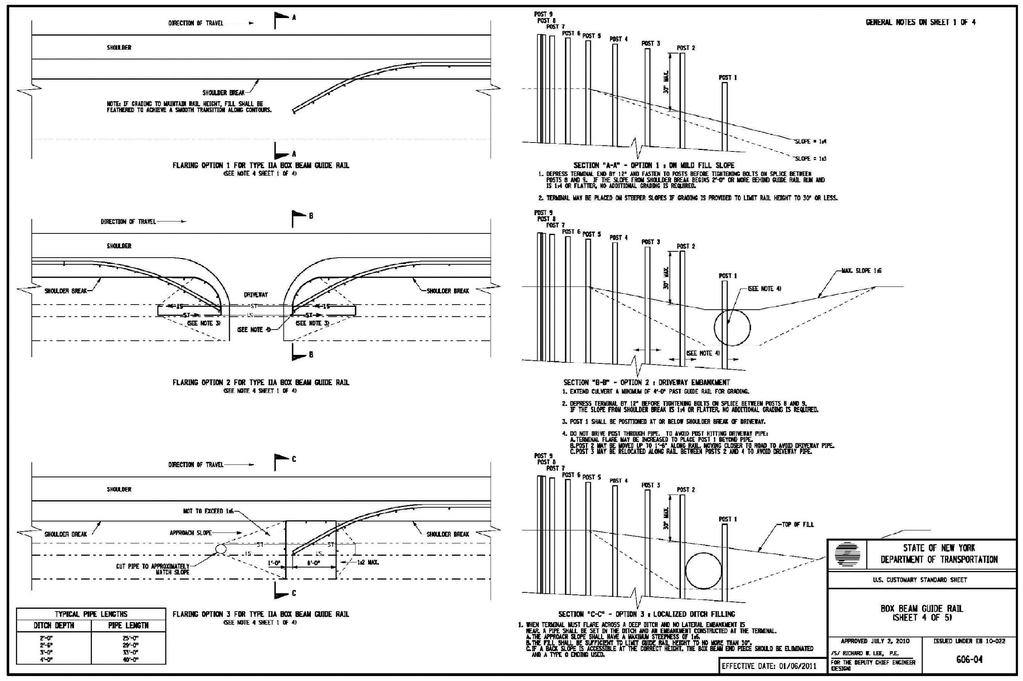
GENERAL NOTES:

1. POST SPACING SHALL BE 6'-0" EXCEPT WHERE REDUCED POST SPACING IS INDICATED ON THE CONTRACT PLANS, FOR RUNS UNDER 150 FEET IN LENGTH, BACKUP POSTS ARE ARE REQUIRED TO REDUCE POST SPACING TO 3'-0" AND SHALL BE FASTENED TOGHER, EXCEPT AT SPLICE LOCATIONS.
2. SEE BRIDGE PLANS FOR GUIDE RAIL DETAILS, POST SPACING AND PAY ITEMS FOR TRANSITIONS AND CONNECTIONS TO BRIDGE RAIL.
3. THE LINE OF BOX BEAM GUIDE RAIL, WHEN COMPLETED, SHALL PRESENT A SMOOTH LOG ALIGNMENT FREE OF IRREGULARITIES AND VERTICAL CURVES. BOX BEAM WITH RADIUS OF 720'-0" OR LESS SHALL BE SHOP BENDED TO THE REQUIRED CURVATURE. PAYMENT FOR SUCH CURVED LENGTHS SHALL BE MADE UNDER THE APPROPRIATE ITEM.
4. THE END MAY BE EXTENDED BY ONE 18'-0" STRAIGHT SECTION, PLACED BETWEEN THE CURVED SECTION AND THE END PIECE, TO MOVE THE END CLOSER TO THE EDGE OF THE CLEAR ZONE. PAYMENT SHALL BE MADE UNDER THE APPROPRIATE ITEM.
5. BACKUP MAY REMAIN IN PLACE.
6. THE RAIL MOUNTING HEIGHT OF ALL GUIDE RAIL ON MEDIAN BARRIER PLACED BEHIND CURB OR GRADING, OF THE LOW HEIGHT OR SPLIT-RAIL, SHALL BE MEASURED FROM THE PAVEMENT SURFACE WHEN THE OFFSET IS 1'0" OR LESS AND TO THE GROUND SURFACE UNDER THE FACE OF THE RAIL WHEN THE OFFSET IS GREATER.
7. FOR DESIGN SPEEDS UNDER 50 MPH THE POINT OF REDIRECTION WILL BE AT THE POINT OF TANGENCY.

NEW YORK STATE OF OPPORTUNITY.	Department of Transportation
U.S. CUSTOMARY STANDARD SHEET	
BOX BEAM GUIDE RAIL (SHEET 1 OF 5)	
APPROVED JUNE 21, 2011	ISSUED UNDER ES 11-013
/S/ RICHARD M. LEE, P.E. DEPUTY CHIEF ENGINEER DESIGN	606-04
ERRATA 1 EFF. 01/01/2020 ISSUED WITH ES 19-041	

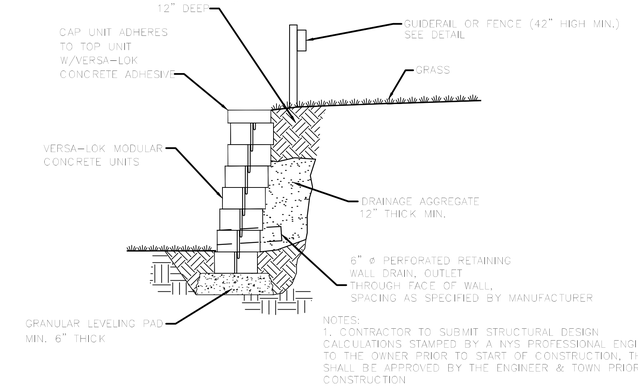


NEW YORK STATE OF OPPORTUNITY.	Department of Transportation
U.S. CUSTOMARY STANDARD SHEET	
BOX BEAM GUIDE RAIL (SHEET 2 of 5)	
APPROVED JULY 26, 2014	ISSUED UNDER ES 11-013
/S/ RICHARD M. LEE, P.E. DEPUTY CHIEF ENGINEER DESIGN	606-04
ERRATA 2 EFF. 05/01/2018 ISSUED WITH ES 14-060 ERRATA 1 EFF. 09/01/2014 ISSUED WITH ES 14-025	



TYPICAL PIPE LENGTHS	
DITCH DEPTH	PIPE LENGTH
2'-0"	25'-0"
2'-6"	29'-0"
3'-0"	33'-0"
4'-0"	40'-0"

STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION	
U.S. CUSTOMARY STANDARD SHEET	
BOX BEAM GUIDE RAIL (SHEET 4 OF 5)	
APPROVED JULY 3, 2010	ISSUED UNDER ES 10-022
/S/ RICHARD M. LEE, P.E. FOR THE DEPUTY CHIEF ENGINEER DESIGN	606-04
EFFECTIVE DATE: 01/06/2011	



TYPICAL SECTION-UNREINFORCED RETAINING WALL

SCALE: NONE

UN-REINFORCED WALLS SHALL BE USED UP TO A HEIGHT OF 4' ABOVE GRADE

RETAINING WALL - 16

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REVISIONS:

No.	Description	Date
1	Plan rev, per 03/28/24 ECDPW comments	04/02/24
2	Plan rev, per 04/19/24 Passero comments	04/19/24
3	Plan rev, per 04/29/24 ECDPW comments	04/29/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Details

DRAWING NO.

C-107

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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CATCH BASIN
RIM: 574.64'
N INV: 573.44'

NOTE: TOWNHOMES TO HAVE A 6" STEP DOWN TO THE FRONT PORCH AND A 6" STEP DOWN TO THE REAR PATIO

EXCEPTION L.–11278, P.–7124

MATCHLINE A-A

CONCRETE SIDEWALK

TOP OF HYDRANT ELEV: 577.69'

SLOPE SIDEWALK @ ¼"/FT TOWARDS ROAD (TYP.)

CONCRETE SIDEWALK

ASPHALT DRIVE

TOP OF HYDRANT ELEV: 575.57'

SLOPE SIDEWALK @ ¼"/FT TOWARDS ROAD (TYP.)

SEE SHEET 'C-201' FOR PROPOSED RECREATION TRAIL GRADING ALONG DODGE ROAD

15"HDPE INV=573.72

ASPHALT

BIO. AREA #1

BIO. AREA #2

BIO. AREA #3

BOTTOM EL. 575.00

30' WIDE SPILLWAY WITH LIGHT STONE FILL RIP RAP, TOP OF STONE EL. 575.75

NYSDEC WETLAND AREA

100' NYSDEC WETLAND BUFFER

NYSDEC WETLAND LIMITS, TYP.

NYSDEC WETLAND BUFFER IMPACT = 0.58 AC (25,455 SF) (HATCHED AREA AS SHOWN)

CATCH BASIN
RIM: 574.42'
W INV: 569.90'
E INV: 569.97'

CATCH BASIN
RIM: 573.70'
W INV: 569.90'
E INV: 569.97'

12" CMP
INV: 572.15'

12" C.M.P.
INV: 571.66'

18" H.D.P.E.

END SECTION, INV 575.00

END SECTION, INV 575.00

END SECTION, INV 577.20

END SECTION, INV 576.00

PERMANENT WATER EL. 575.00

PERMANENT WATER ELEVATION 575.00

30' WIDE SPILLWAY WITH LIGHT STONE FILL RIP RAP, TOP OF STONE EL. 574.25

20' WIDE EMERGENCY SPILLWAY WITH LIGHT STONE FILL RIP RAP, TOP OF STONE EL. 575.80

AQUATIC BENCH EL. 574.50 (8' WIDE MIN.)

TOP OF BERM 582.50

TOP OF BERM 584.50

3H:1V SLOPE

2H:1V SLOPE

3H:1V SLOPE (TYP.)

1ST FFE = 579.75

1ST FFE = 580.75

1ST FFE = 581.00

1ST FFE = 582.10

1ST FFE = 580.56

1ST FFE = 581.25

S 10°40'14" E 145.01'

S 01°40'28" E 145.01'

S 11°02'55" W 83.00'

S 11°59'29" E 336.92'

S 64°16'46" W 105.28'

S 39°43'51" W 50.80'

S 57°29'39" W 52.30'

N 67°53'17" W 50.93'

S 23°50'17" W 47.47'

S 10°43'27" W 172.66'

S 20°47'37" W 322.92'

S 45°19'16" E 99.71'

N 10°43'27" E 172.66'

S 64°16'46" W 35.20'

SLOPE @ 1.2%

SWALE @ 1.2%

SWALE @ 1.0%

MATCH EX. SIDEWALK EL. 574.9±

MATCH EX.

SEE SHEET C-201 FOR GRADING

STORM WATER MANAGEMENT AREA #1 SUMMARY

FOREBAY #1
TOP OF BASIN EL. = 576.80
PERMANENT WATER EL. = 575.00
AQUATIC BENCH EL. = 574.50
BOTTOM OF BASIN EL. = 569.00

MICROPOOL
TOP OF BASIN EL. = 576.80
PERMANENT WATER EL. = 575.00
AQUATIC BENCH EL. = 574.50
BOTTOM OF BASIN EL. = 563.00

WQv PROVIDED = 152,678 CF

BIORETENTION AREA SUMMARY

AREA	RIM ELEV.	BOTTOM ELEV.	AREA
1	574.50	574.00	2,300 SF
2	574.50	574.00	2,600 SF
3	575.50	575.00	11,000 SF
		TOTAL PROVIDED =	15,900 SF

N
SITE PLAN
SCALE: 1"=50'

N
SITE PLAN
SCALE: 1"=50'

PROPOSED GRADING LEGEND

PROPOSED CONTOUR	101
PROPOSED SPOT ELEVATION	607.80
PROPOSED TOP/BOTTOM OF CURB ELEV.	TC 606.44 BC 605.94
PROPOSED CATCH BASIN	CB
PAVEMENT/GROUND SLOPE	
PROPOSED YARD DRAIN	YD
PROPOSED MANHOLE	MH

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

TOWN OF AMHERST APPROVAL BOX:

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STATE OF NEW YORK
R. CHRISTOPHER WOOD
LICENSED
07630A
PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per Ryan Homes Comments	04/08/24
2	Rev. per ARC & WS Comments	09/04/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Grading Plan

DRAWING NO.
C-200

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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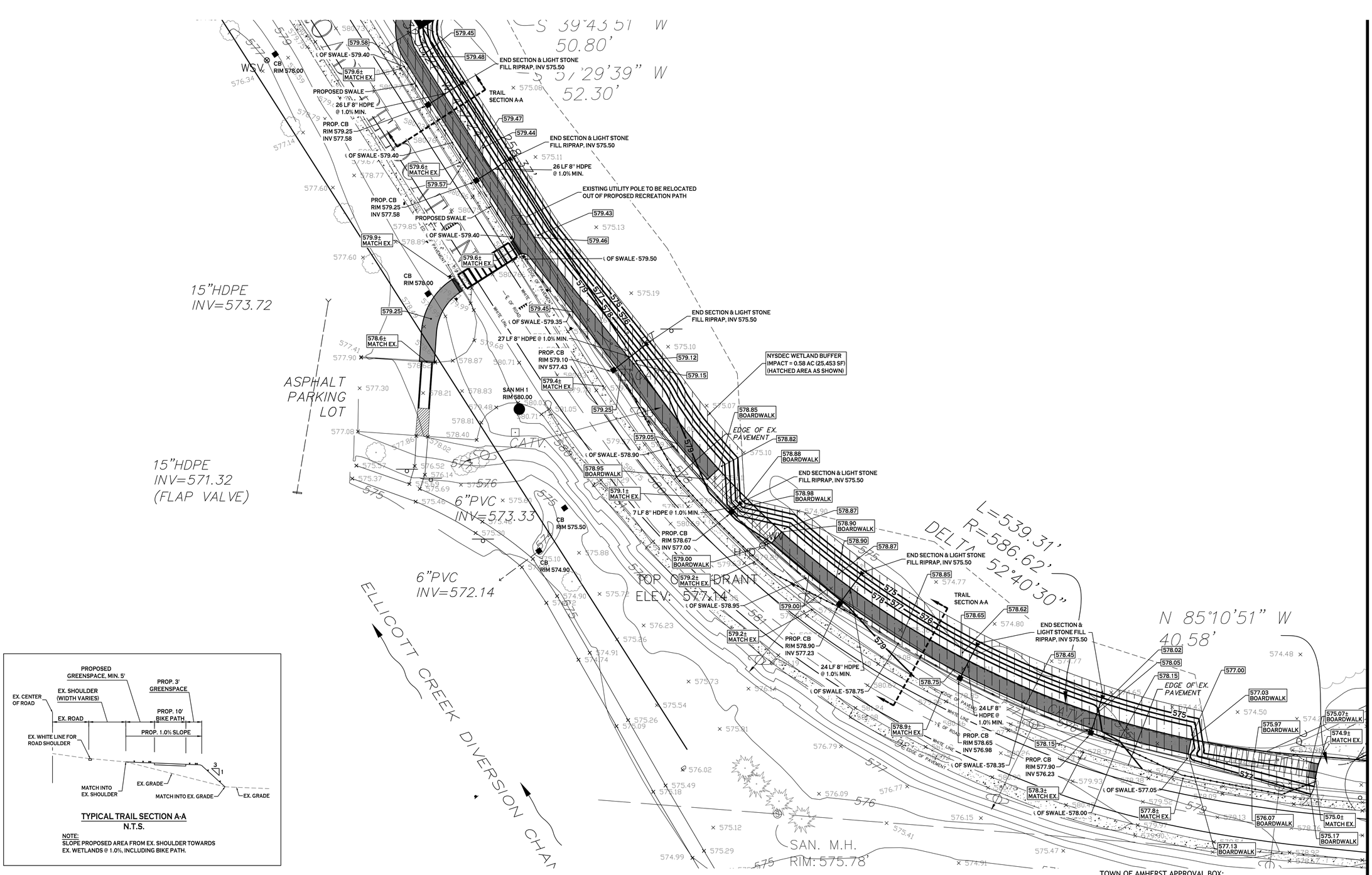

TYPICAL TRAIL SECTION A-A
N.T.S.

NOTE:
SLOPE PROPOSED AREA FROM EX. SHOULDER TOWARDS EX. WETLANDS @ 1.0%, INCLUDING BIKE PATH.

PROPOSED GRADING LEGEND

PROPOSED CONTOUR	101
PROPOSED SPOT ELEVATION	607.80
PROPOSED TOP/BOTTOM OF CURB ELEV.	TC 606.44 BC 605.94
PROPOSED CATCH BASIN	CB
PAVEMENT/GROUND SLOPE	
PROPOSED YARD DRAIN	YD
PROPOSED MANHOLE	MH

SITE PLAN
SCALE: 1"=30'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

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STATE OF NEW YORK
C. CHRISTOPHER WOOD
076394
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Grading Plan - Recreation Trail

DRAWING NO.
C-201

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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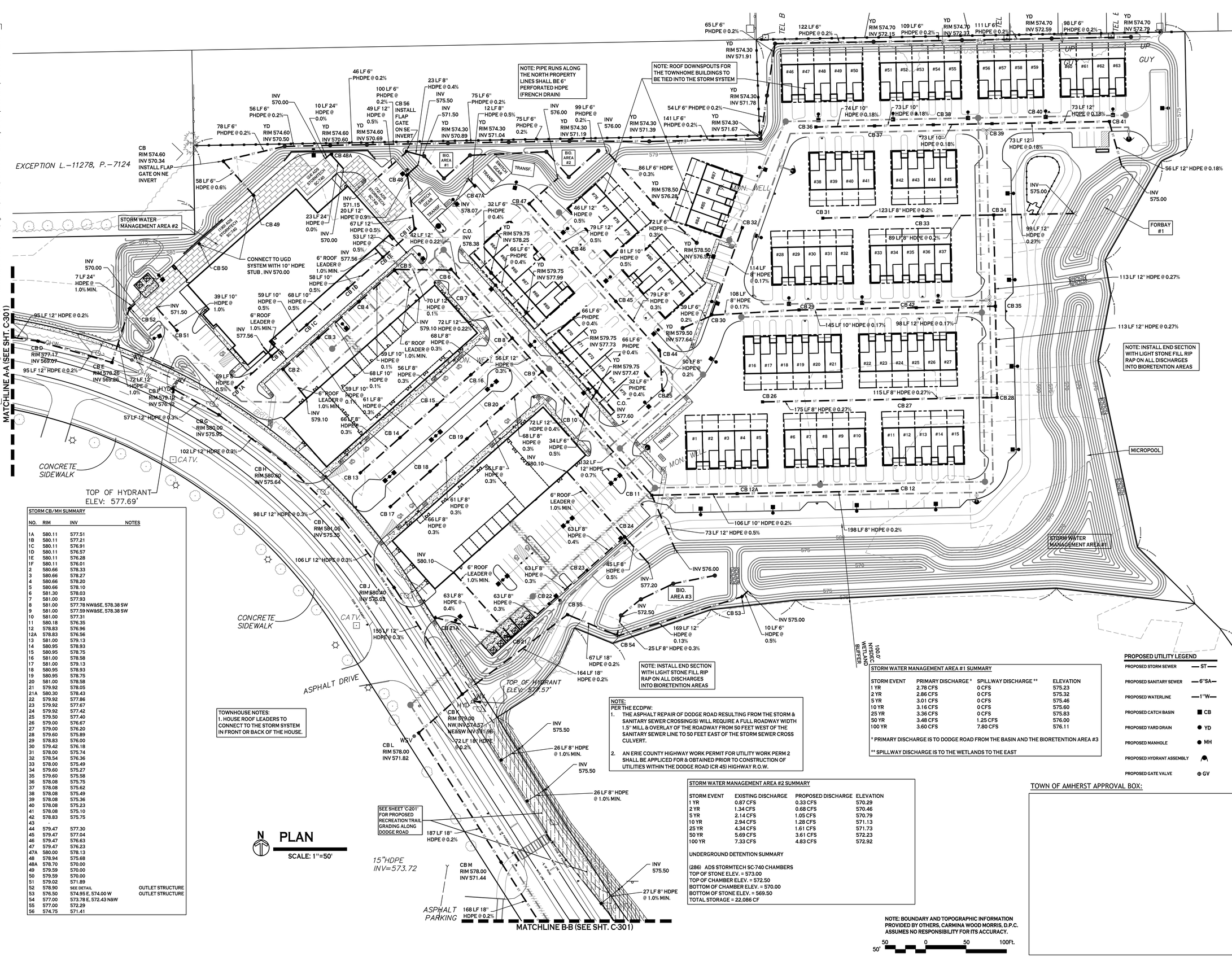

STORM CB/MH SUMMARY			
NO.	RIM	INV	NOTES
1A	580.11	577.51	
1B	580.11	577.21	
1C	580.11	576.91	
1D	580.11	576.57	
1E	580.11	576.28	
1F	580.11	576.01	
2	580.66	578.33	
3	580.66	578.27	
4	580.66	578.20	
5	580.66	578.10	
6	581.30	578.03	
7	581.00	577.93	
8	581.00	577.78 NW&SE, 578.38 SW	
9	581.00	577.59 NW&SE, 578.38 SW	
10	581.00	577.31	
11	580.18	576.35	
12	578.83	576.96	
12A	578.83	576.56	
13	581.00	579.13	
14	580.95	578.93	
15	580.95	578.75	
16	581.00	578.58	
17	581.00	579.13	
18	580.95	578.93	
19	580.95	578.75	
20	581.00	578.58	
21	579.92	578.05	
21A	580.30	578.43	
22	579.92	577.86	
23	579.92	577.67	
24	579.92	577.42	
25	579.50	577.40	
26	579.00	576.67	
27	579.00	576.20	
28	579.60	575.89	
29	578.83	576.00	
30	579.42	576.18	
31	578.00	575.74	
32	578.54	576.36	
33	578.00	575.49	
34	579.60	575.27	
35	579.60	575.58	
36	578.08	575.75	
37	578.08	575.62	
38	578.08	575.49	
39	578.08	575.36	
40	578.08	575.23	
41	578.08	575.10	
42	578.83	575.75	
43	-	-	
44	579.47	577.30	
45	579.47	577.04	
46	579.47	576.63	
47	579.47	576.23	
47A	580.00	578.13	
48	578.94	575.68	
48A	578.70	570.00	
49	579.59	570.00	
50	579.59	570.00	
51	579.02	571.89	
52	578.90	SEE DETAIL	OUTLET STRUCTURE
53	576.50	574.95 E, 574.00 W	OUTLET STRUCTURE
54	577.00	573.78 E, 572.43 N&W	
55	577.00	572.29	
56	574.75	571.41	

TOWNHOUSE NOTES:
1. HOUSE ROOF LEADERS TO CONNECT TO THE STORM SYSTEM IN FRONT OR BACK OF THE HOUSE.

NOTE:
PER THE ECDPW:
1. THE ASPHALT REPAIR OF DODGE ROAD RESULTING FROM THE STORM & SANITARY SEWER CROSSING(S) WILL REQUIRE A FULL ROADWAY WIDTH 1.5" MILL & OVERLAY OF THE ROADWAY FROM 50 FEET WEST OF THE SANITARY SEWER LINE TO 50 FEET EAST OF THE STORM SEWER CROSS CULVERT.
2. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR UTILITY WORK PERM 2 SHALL BE APPLICED FOR & OBTAINED PRIOR TO CONSTRUCTION OF UTILITIES WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

NOTE: INSTALL END SECTION WITH LIGHT STONE FILL RIP RAP ON ALL DISCHARGES INTO BIORETENTION AREAS

SEE SHEET 'C-201' FOR PROPOSED RECREATION TRAIL GRADING ALONG DODGE ROAD

STORM WATER MANAGEMENT AREA #1 SUMMARY			
STORM EVENT	PRIMARY DISCHARGE *	SPILLWAY DISCHARGE **	ELEVATION
1 YR	2.78 CFS	0 CFS	575.23
2 YR	2.86 CFS	0 CFS	575.32
5 YR	3.01 CFS	0 CFS	575.46
10 YR	3.16 CFS	0 CFS	575.60
25 YR	3.36 CFS	0 CFS	575.83
50 YR	3.48 CFS	1.25 CFS	576.00
100 YR	3.60 CFS	7.80 CFS	576.11

* PRIMARY DISCHARGE IS TO DODGE ROAD FROM THE BASIN AND THE BIORETENTION AREA #3
** SPILLWAY DISCHARGE IS TO THE WETLANDS TO THE EAST

STORM WATER MANAGEMENT AREA #2 SUMMARY			
STORM EVENT	EXISTING DISCHARGE	PROPOSED DISCHARGE	ELEVATION
1 YR	0.87 CFS	0.33 CFS	570.29
2 YR	1.34 CFS	0.68 CFS	570.46
5 YR	2.14 CFS	1.05 CFS	570.79
10 YR	2.94 CFS	1.28 CFS	571.13
25 YR	4.34 CFS	1.61 CFS	571.73
50 YR	5.69 CFS	3.61 CFS	572.23
100 YR	7.33 CFS	4.83 CFS	572.92

UNDERGROUND DETENTION SUMMARY

(286) ADS STORMTECH SC-740 CHAMBERS
TOP OF STONE ELEV. = 573.00
TOP OF CHAMBER ELEV. = 572.50
BOTTOM OF CHAMBER ELEV. = 570.00
BOTTOM OF STONE ELEV. = 569.50
TOTAL STORAGE = 22,086 CF

PROPOSED UTILITY LEGEND

PROPOSED STORM SEWER	ST
PROPOSED SANITARY SEWER	6"SA
PROPOSED WATERLINE	1"W
PROPOSED CATCH BASIN	CB
PROPOSED YARD DRAIN	YD
PROPOSED MANHOLE	MH
PROPOSED HYDRANT ASSEMBLY	
PROPOSED GATE VALVE	GV

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

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STATE OF NEW YORK R. CHRISTOPHER WOOD 076394 LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	09/04/24
2	Rev. per Shop Drawing Review	10/09/24
3	Verify UGD Field Layout (SWM Area#2)	11/21/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Storm Drainage Plan

DRAWING NO.
C-300

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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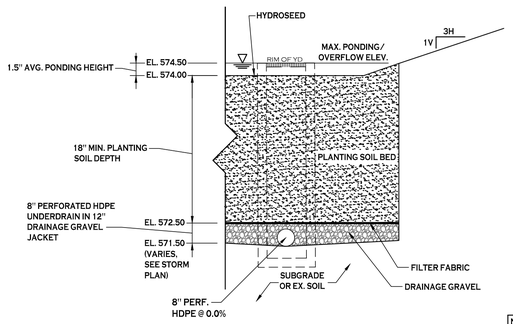
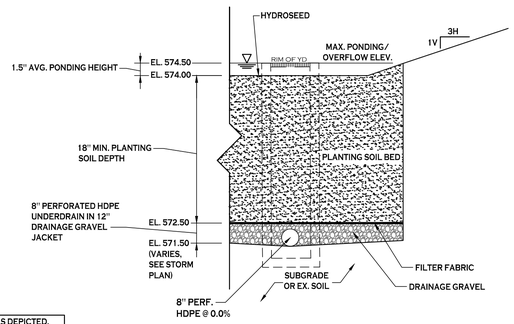
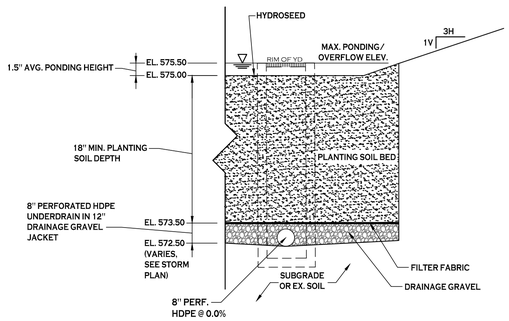


BIORETENTION AREA #1



BIORETENTION AREA #2

NOTE: AS DEPICTED, YARD DRAIN RIM ELEVATIONS ARE TO BE SET 6" ABOVE PROPOSED GRADE IN BIORETENTION AREAS.



BIORETENTION AREA #3

BIORETENTION AREA - TYPICAL SECTIONS

NOT TO SCALE

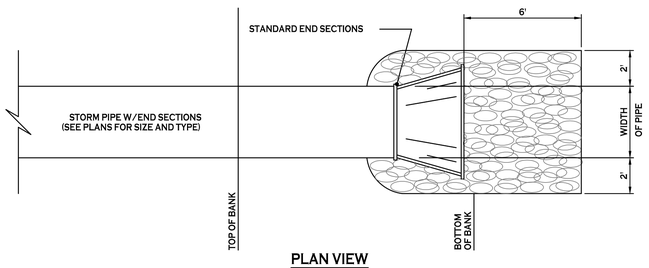
NOTES:
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180-N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43. NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 0.5 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

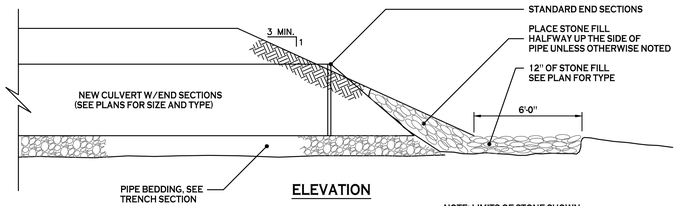
CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5



PLAN VIEW

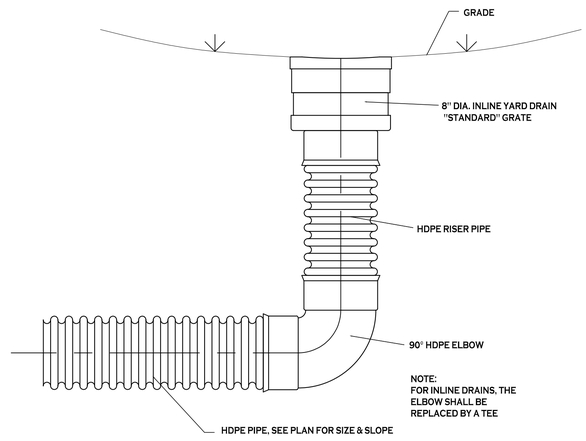


ELEVATION

NOTE: LIMITS OF STONE SHOWN ARE MINIMUMS, PLAN MAY INDICATE GREATER LIMITS

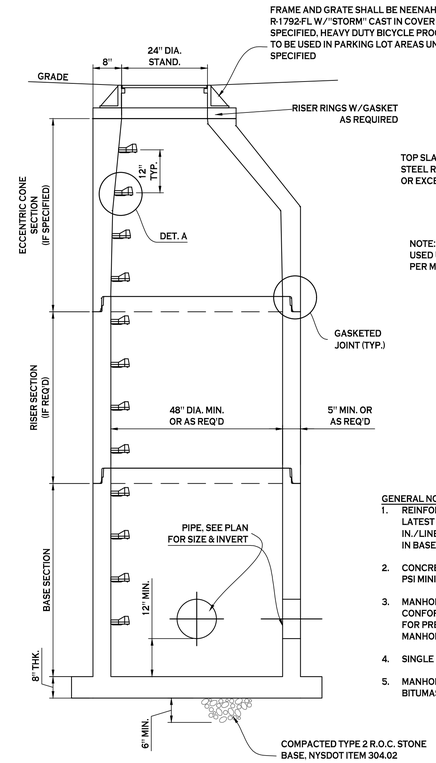
TYPICAL PIPE OUTLET W/ END SECTION & RIP RAP

NOT TO SCALE



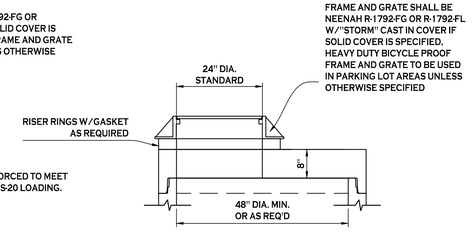
NOTE:
SEE TYPICAL TRENCH SECTION FOR BEDDING REQUIREMENTS

TYPICAL YARD DRAIN DETAIL



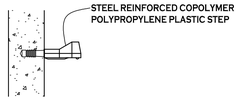
TYPICAL STORM MANHOLE DETAIL

NOT TO SCALE



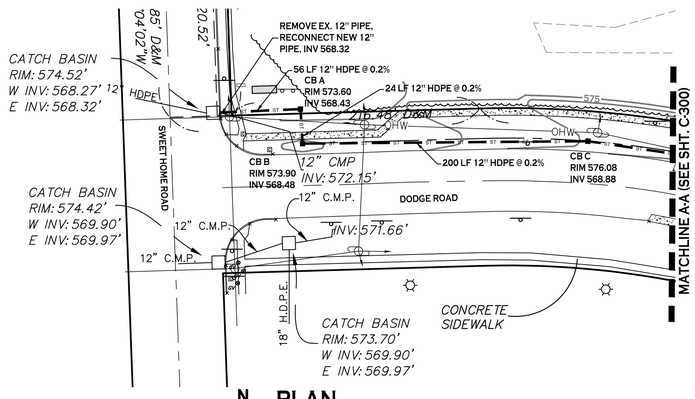
ALTERNATE TOP SLAB

NOTE: ECCENTRIC CONE SECTION SHALL BE USED UNLESS DEPTH WARRANTS TOP SLAB PER MANUFACTURER



DETAIL A

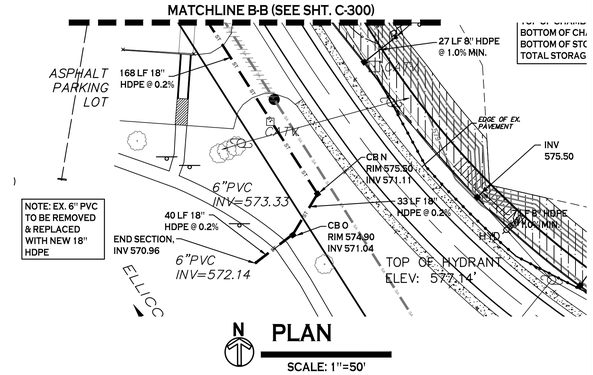
GENERAL NOTES:
1. REINFORCED STEEL TO CONFORM TO LATEST A.S.T.M. A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) IN BASE SLAB.
2. CONCRETE COMPRESSIVE STRENGTH - 4000 PSI MINIMUM.
3. MANHOLE DESIGN SPECIFICATIONS TO CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRE-CAST REINFORCED CON-CRETE MANHOLE SECTIONS.
4. SINGLE POUR MONOLITHIC BASE SECTION.
5. MANHOLE TO BE COATED ON OUTSIDE WITH BITUMASTIC SEALER.



N

PLAN

SCALE: 1"=50'



N

PLAN

SCALE: 1"=50'

TOWN OF AMHERST APPROVAL BOX:

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STATE OF NEW YORK
R. CHRISTOPHER WOOD
076394
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Storm Drainage Details

DRAWING NO.

C-301

Project no.: 21-011

Attachment: SP-2021-06A drawings 011625 (29734 : SP-2021-06A, 50 Dodge Rd.)

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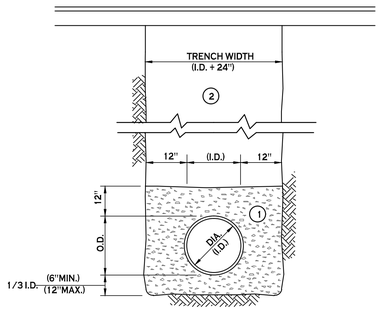


NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

(1) NO. 1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

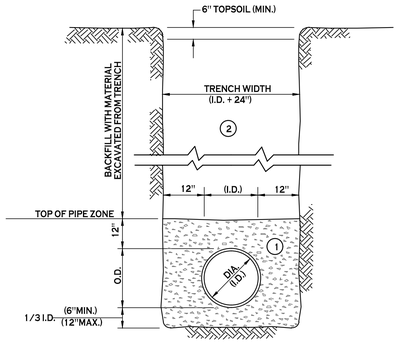
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) TYPE 2 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

STORM SEWER TRENCH SECTION IN PAVED AREAS

NOT TO SCALE



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

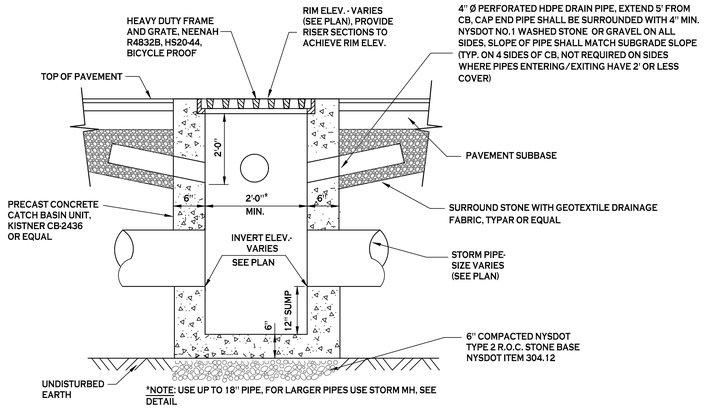
(1) NO. 1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

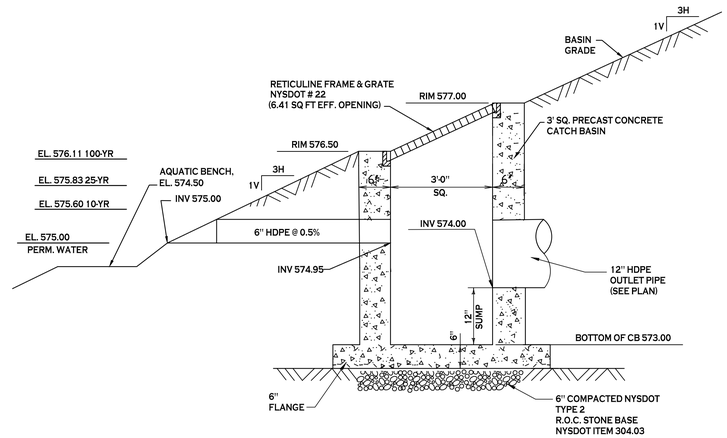
STORM SEWER TRENCH SECTION IN UNPAVED AREAS

NOT TO SCALE



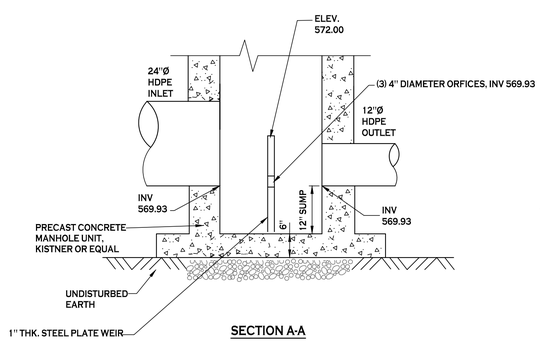
TYPICAL PRECAST CATCH BASIN

NOT TO SCALE

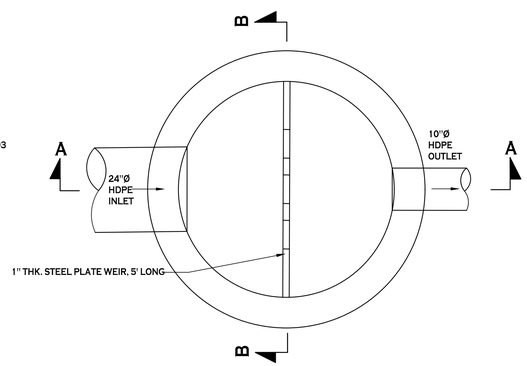


DETENTION BASIN OUTLET STRUCTURE - CB 53

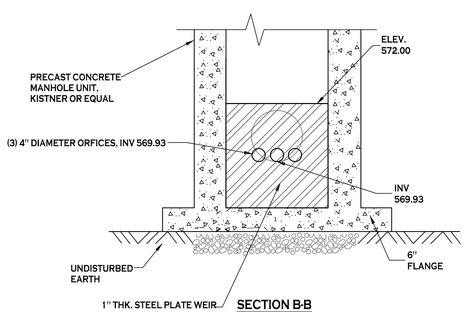
N.T.S.



SECTION A-A



PLAN



SECTION B-B

NOTES:
1. FASTEN STEEL PLATE TO CB WALL WITH ANGLE CLIPS AND BOLTS
2. STEEL PLATE, ANGLE CLIPS, AND BOLTS TO BE HOT DIPPED GALVANIZED

* NOTE: USE 5'-0" I.D. MANHOLE

OUTLET CONTROL STRUCTURE - CB 52

NOT TO SCALE

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STATE OF NEW YORK
CHRISTOPHER WOOD
LICENSED PROFESSIONAL ENGINEER
076394

REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Storm Drainage Details

DRAWING NO.

C-302

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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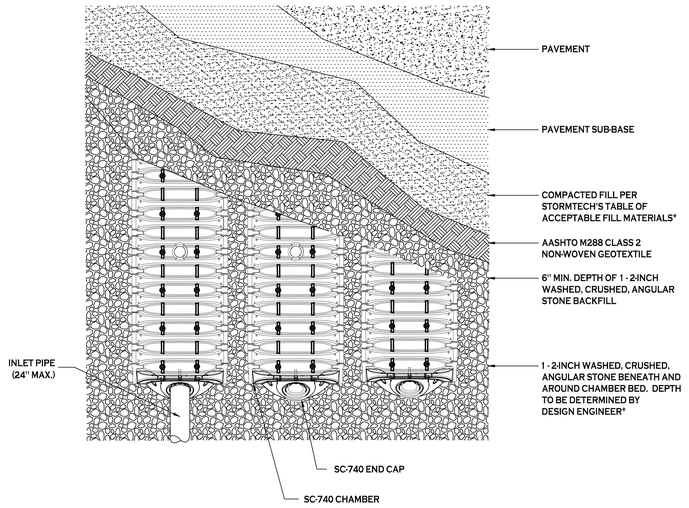
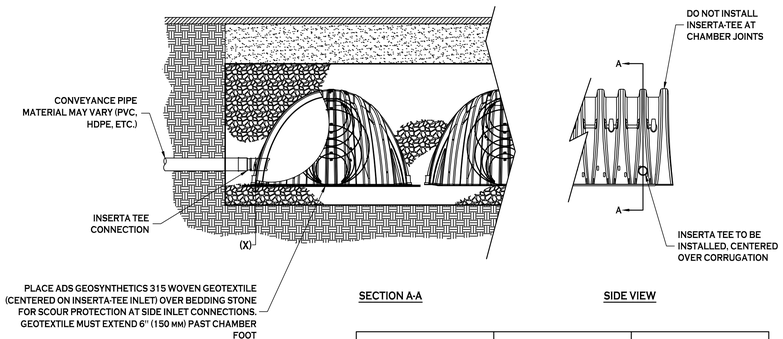


STORMTECH SC-740 CHAMBER SYSTEM
PLAN VIEW DETAIL
NOT TO SCALE

*SEE STORMTECH'S DESIGN MANUAL



SECTION A-A SIDE VIEW

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 MM)	4" (100 MM)
SC-740	10" (250 MM)	4" (100 MM)
DC-780	10" (250 MM)	4" (100 MM)
MC-3500	12" (300 MM)	6" (150 MM)
MC-4500	12" (300 MM)	8" (200 MM)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

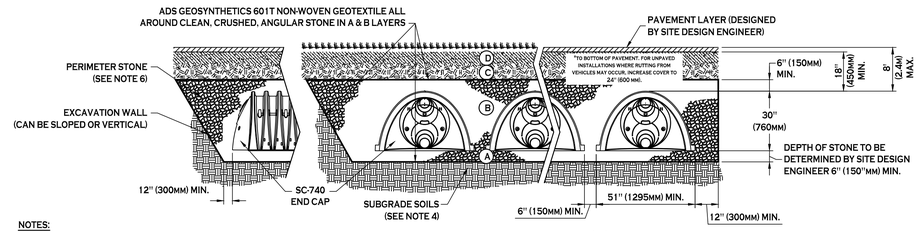
NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

INSERTA TEE DETAIL
NOT TO SCALE

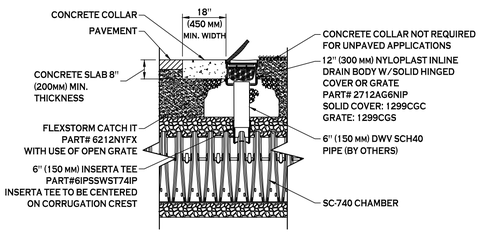
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION/DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 MM) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LATER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 MM) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 MM) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 LBS (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 MM) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:
1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



SC-740 6" INSPECTION PORT DETAIL
NOT TO SCALE

INSPECTION AND MAINTENANCE
STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
A. INSPECTION PORTS (IF PRESENT)
A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 MM) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
B. ALL ISOLATOR ROWS
B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 MM) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 M) OR MORE IS PREFERRED
B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES:
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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STATE OF NEW YORK — R. CHRISTOPHER WOOD — 076304 — LICENSED PROFESSIONAL ENGINEER

REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: 2/24/21
Scale: As Noted

DRAWING NAME:
Storm Drainage Details

DRAWING NO.
C-303

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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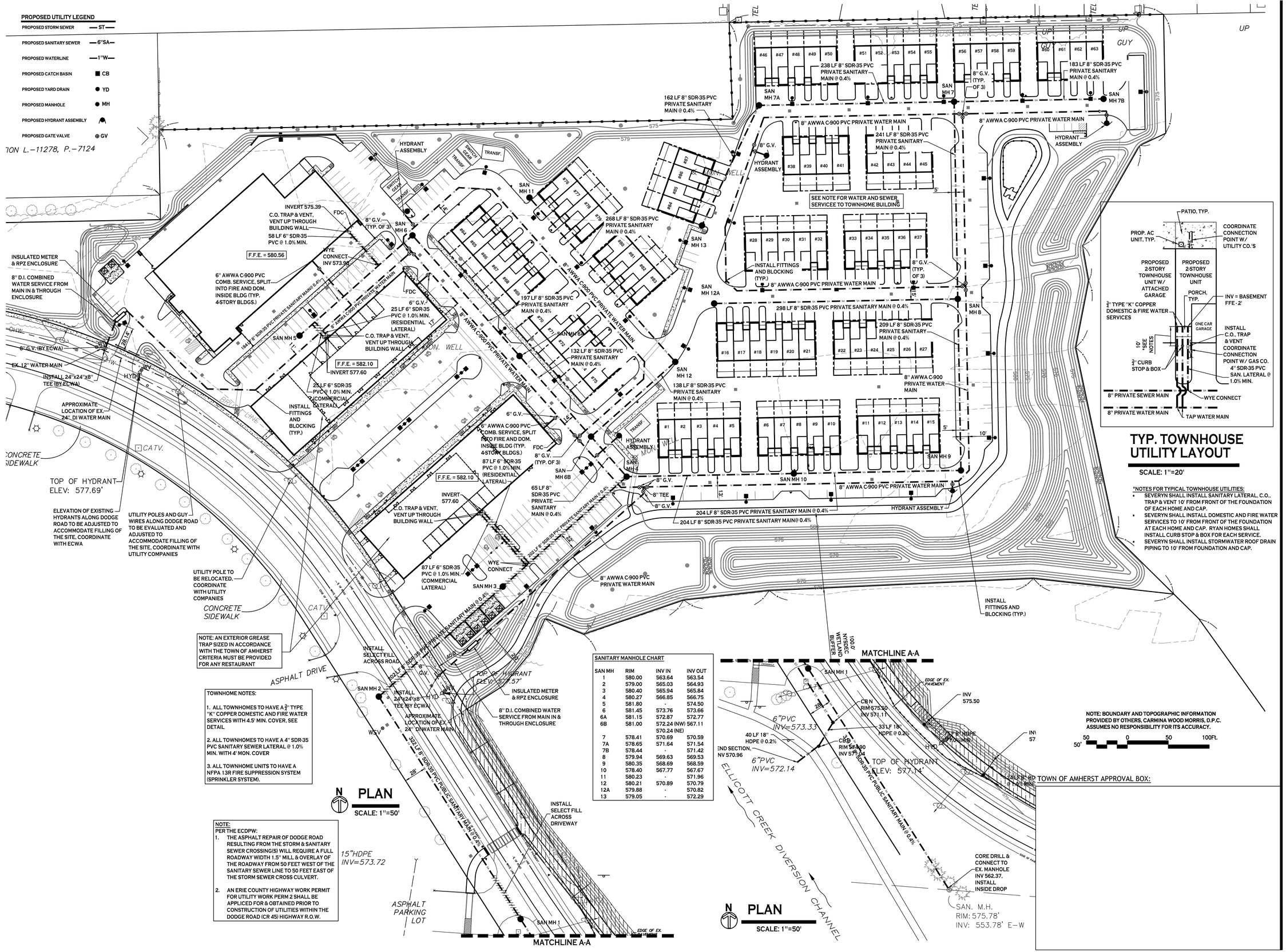
PROPOSED UTILITY LEGEND

- PROPOSED STORM SEWER — ST
- PROPOSED SANITARY SEWER — 6"SA
- PROPOSED WATERLINE — 1"W
- PROPOSED CATCH BASIN — CB
- PROPOSED YARD DRAIN — YD
- PROPOSED MANHOLE — MH
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE — GV



SANITARY MANHOLE CHART

SAN MH	RIM	INV IN	INV OUT
1	580.00	563.64	563.54
2	579.00	565.03	564.93
3	580.40	565.94	565.84
4	580.27	566.85	566.75
5	581.80	-	574.50
6	581.45	573.76	573.66
6A	581.15	572.87	572.77
6B	581.00	572.24 (NW) 570.24 (NE)	567.11
7	578.41	570.69	570.59
7A	578.65	571.64	571.54
7B	578.44	-	571.42
8	579.94	569.63	569.53
9	580.35	568.69	568.59
10	578.40	567.77	567.67
11	580.23	-	571.96
12	580.21	570.89	570.79
12A	579.88	-	570.82
13	579.05	-	572.29

TOWNHOME NOTES:

1. ALL TOWNHOMES TO HAVE A ¾" TYPE "K" COPPER DOMESTIC AND FIRE WATER SERVICES WITH 4.5' MIN. COVER, SEE DETAIL
2. ALL TOWNHOMES TO HAVE A 4" SDR-35 PVC SANITARY SEWER LATERAL @ 1.0% MIN. WITH 4' MON. COVER
3. ALL TOWNHOME UNITS TO HAVE A NFPA 13R FIRE SUPPRESSION SYSTEM (SPRINKLER SYSTEM).

NOTE:
PER THE ECDPW:
1. THE ASPHALT REPAIR OF DODGE ROAD RESULTING FROM THE STORM & SANITARY SEWER CROSSING(S) WILL REQUIRE A FULL ROADWAY WIDTH 1.5" MILL & OVERLAY OF THE ROADWAY FROM 50 FEET WEST OF THE SANITARY SEWER LINE TO 50 FEET EAST OF THE STORM SEWER CROSS CULVERT.
2. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR UTILITY WORK PERM 2 SHALL BE APPLICED FOR & OBTAINED PRIOR TO CONSTRUCTION OF UTILITIES WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

N **PLAN**
SCALE: 1"=50'

N **PLAN**
SCALE: 1"=50'

TYP. TOWNHOUSE UTILITY LAYOUT

SCALE: 1"=20'

*NOTES FOR TYPICAL TOWNHOUSE UTILITIES:

- SEVERYN SHALL INSTALL SANITARY LATERAL, C.O., TRAP & VENT 10' FROM FRONT OF THE FOUNDATION OF EACH HOME AND CAP.
- SEVERYN SHALL INSTALL DOMESTIC AND FIRE WATER SERVICES TO 10' FROM FRONT OF THE FOUNDATION AT EACH HOME AND CAP. RYAN HOMES SHALL INSTALL CURB STOP & BOX FOR EACH SERVICE.
- SEVERYN SHALL INSTALL STORMWATER ROOF DRAIN PIPING TO 10' FROM FOUNDATION AND CAP.

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STATE OF NEW YORK — CHRISTOPHER WOOD — 076304 — LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	09/04/24
2	Rev. per Shop Drawing Review	10/09/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/22
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Utility Plan

DRAWING NO.
C-400

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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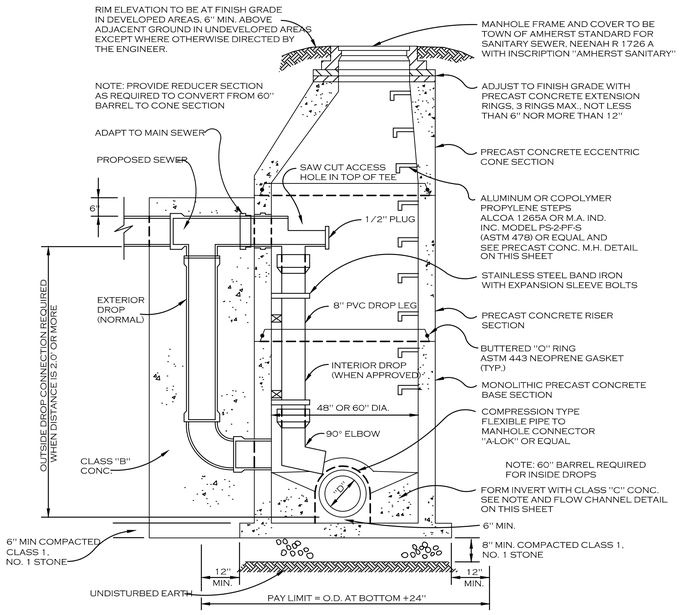
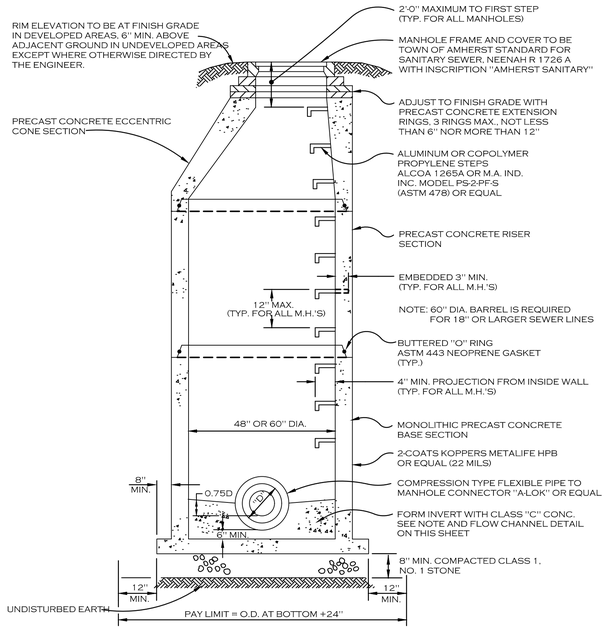
NOTIFY UNITED UNDERGROUND LOCATING SERVICE (U.U.L.S.) 72 HOURS BEFORE STARTING THE JOB

NOTIFY SUN OIL PIPELINE CORPORATION 72 HOURS BEFORE EXCAVATING (SEE DRAWING NO. 18)

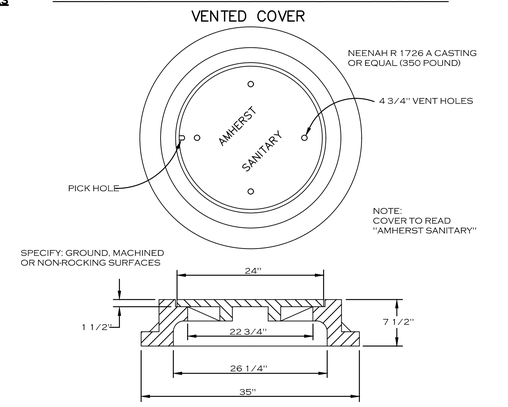
PRECAST CONCRETE DROP MANHOLE



PRECAST CONCRETE MANHOLE

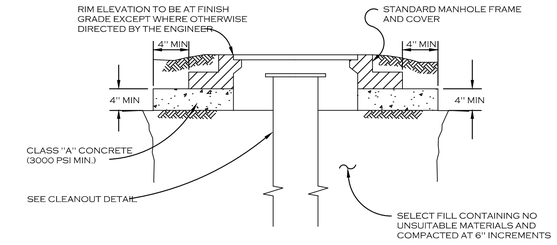


STANDARD MANHOLE FRAME AND COVER



CLEANOUT WITH STANDARD MANHOLE FRAME AND COVER

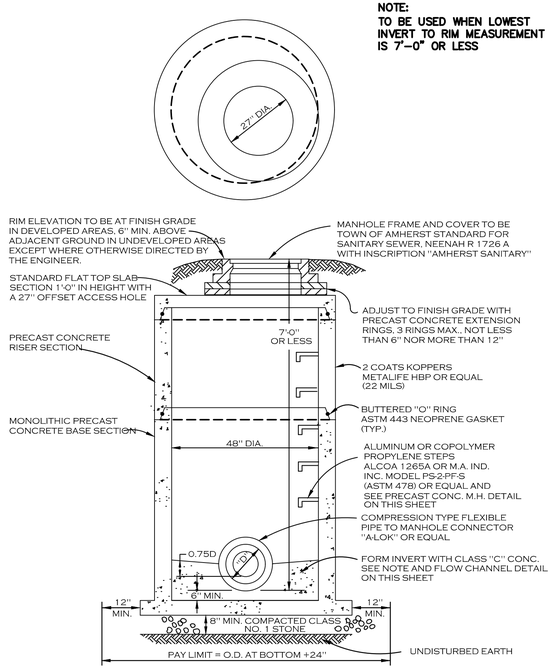
(TO BE USED IN LOCATIONS ONLY AS APPROVED BY TOWN ENGINEER)



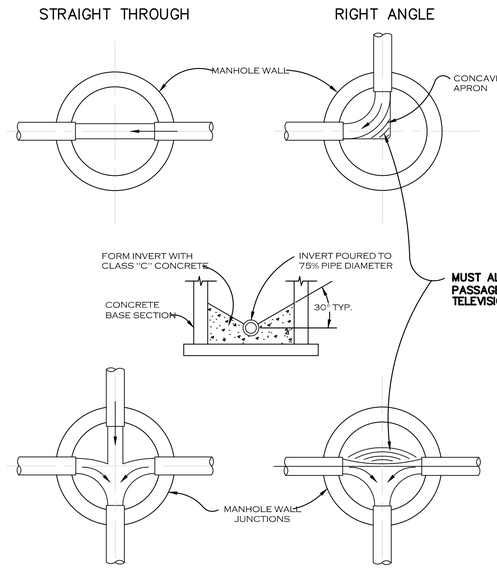
NOTE:
CLEANOUT NOT TO BE INSTALLED WHEN DISTANCE FROM M.H. EXCEEDS 150

FLAT TOP MANHOLE ASSEMBLY

NOTE:
TO BE USED WHEN LOWEST INVERT TO RIM MEASUREMENT IS 7'-0" OR LESS



FLOW CHANNEL DETAIL SANITARY SEWERS

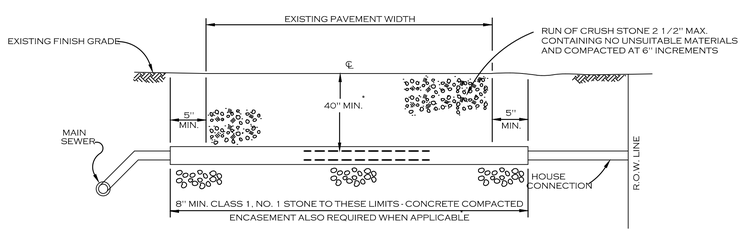


NOTE:
FLOW CHANNELS MUST ALLOW PLACEMENT, REMOVAL AND PASSAGE OF T.V. CAMERAS. THE CAMERA DIMENSIONS ARE APPROXIMATELY 26" LONG x 6 1/2" SQUARE. A BLOCK OF WOOD OF THESE DIMENSIONS MAY BE USED TO SIMULATE THE SIZE OF THE CAMERA. THIS WILL SIMPLIFY THE FORMATION OF FLOW CHANNELS AND INVERTS.

DEPTH OF ALL CHANNELS TO BE 75% OF PIPE DIAMETER.

FINISH ALL CHANNELS AT PROPER GRADE AS TO ALLOW SMOOTH & UN-OBSTRUCTED FLOW ALL INVERTS TO BE FLUSH WITH THE INSIDES.

SANITARY TYPICAL PAVEMENT CROSSING FOR HOUSE CONNECTION



*WHEN DEPTH FROM TOP OF HOUSE CONNECTION PIPE TO SURFACE IS LESS THAN 6.0 FEET, A CONCRETE ENCASEMENT WILL BE REQUIRED TO THE LIMITS SHOWN (SEE WATER CROSSING DETAIL SAN. SEWERS DWG. #4 - PG. #2 OF 4)

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/24/21
Drawn by: 12/1/21
Scale: As Noted

DRAWING NAME:
Sanitary Sewer Details

DRAWING NO.
C-401

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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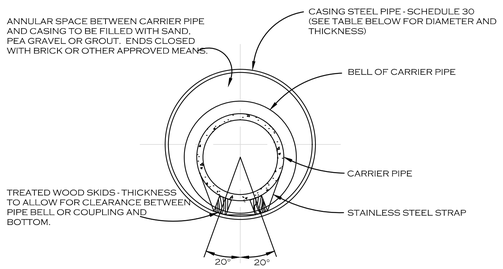
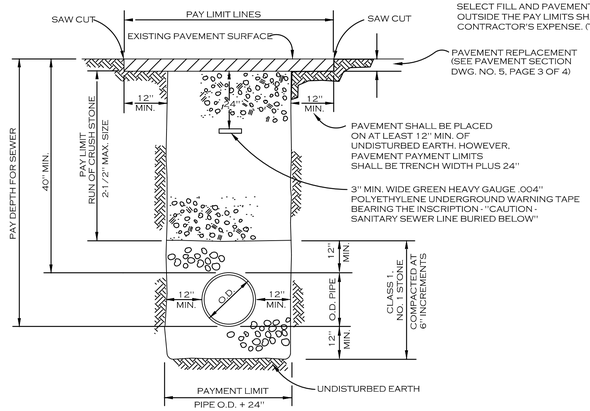
TOWN ROAD CROSSING BY JACKING AND BORING METHOD 8"–24" DIAMETER CARRIER PIPE



SCHEDULE FOR DIAMETER AND THICKNESS OF CASING PIPE

CARRIER PIPE DIAMETER	CASING PIPE DIAMETER	CASING PIPE WALL THICKNESS
8"	16" OR 20"	0.375
10"	20"	0.375
12"	24"	0.375
15"	27"	0.375 MIN.
18"	30"	0.375
21"	36"	0.469
24"	42"	0.469

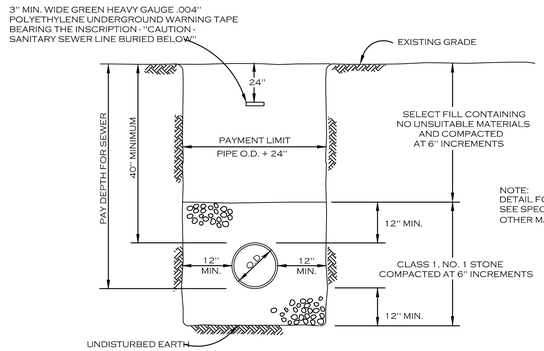
TYPICAL TRENCH DETAIL – TOWN ROAD CROSSING FOR MAIN SEWERS & HOUSE AND BUILDING CONNECTIONS



NOTE:
WHERE THE CONTRACTOR EXCAVATES BEYOND THE PAY LIMITS SHOWN; SELECT FILL AND PAVEMENT, SIDEWALK & DRIVEWAY REPLACEMENT OUTSIDE THE PAY LIMITS SHALL BE FURNISHED AND PLACED AT THE CONTRACTOR'S EXPENSE. (TYP.)

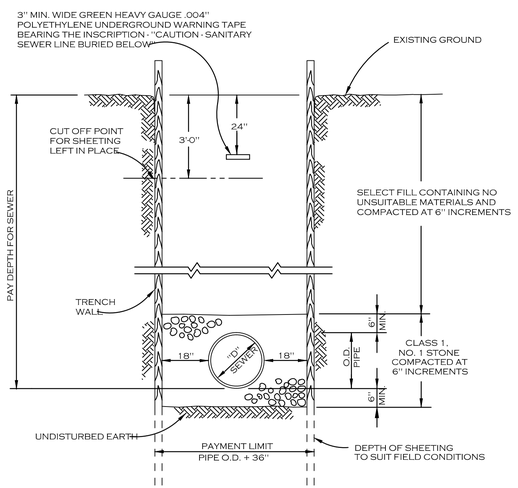
NOTE:
IF CONCRETE ENCASEMENT IS REQUIRED, IT SHALL BE INSTALLED IN PLACE OF (AND TO THE DIMENSIONS OF) THE PIPE BEDDING AND COVER TO 12" MIN. ABOVE AND BELOW THE PIPE (SEE WATER CROSSING DETAIL ON THIS SHEET)

TYPICAL EARTH TRENCH DETAIL UNPAVED AND UNTRAVELED AREAS

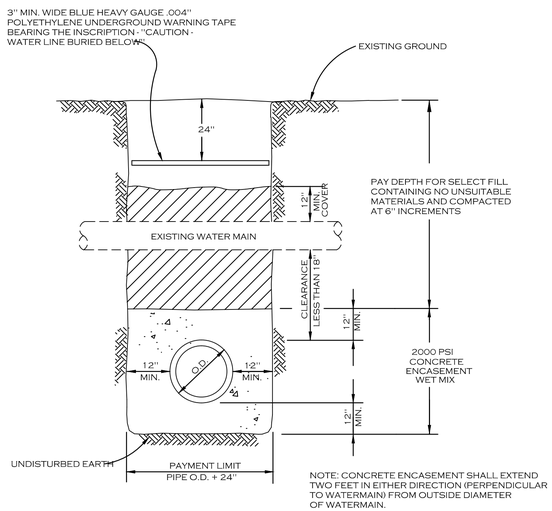


NOTE:
DETAIL FOR PVC PIPE SEE SPECIFICATION FOR OTHER MATERIALS USED

SHEETED TRENCH DETAIL

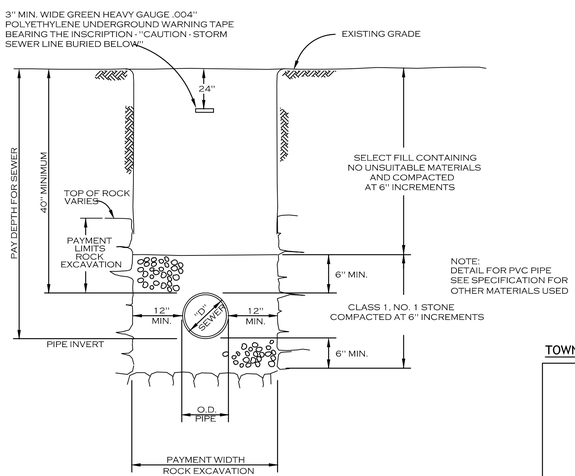


WATER CROSSING DETAIL CLEARANCE LESS THAN 18"



NOTE: CONCRETE ENCASEMENT SHALL EXTEND TWO FEET IN EITHER DIRECTION (PERPENDICULAR TO WATERMAIN) FROM OUTSIDE DIAMETER OF WATERMAIN.

TYPICAL ROCK TRENCH DETAIL



NOTE:
DETAIL FOR PVC PIPE SEE SPECIFICATION FOR OTHER MATERIALS USED

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Sanitary Sewer Details

DRAWING NO.
C-402

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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GENERAL NOTES:

01. THE CONTRACTOR SHALL COMPLY WITH THE TOWN OF AMHERST STANDARD DRAWINGS AND SPECIFICATIONS.

02. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND THE TOWN OF AMHERST ENG. DEPT. OF ANY HAZARDOUS SUBSTANCE ENCOUNTERED DURING THE CONSTRUCTION OF THE WORK. HE SHALL AT HIS EXPENSE, CONFORM TO ALL LAWS, RULES, REGULATIONS AND DIRECTIONS AS PROMULGATED BY THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NEW YORK STATE DEPARTMENT OF HEALTH AND ANY SUCH LOCAL RULES, ORDINANCES AND LAWS WHEN ENCOUNTERING OR WORKING WITH ANY SUCH HAZARDOUS SUBSTANCE.

03. THE CONTRACTOR SHALL COMPLY IN ALL RESPECTS TO THE INDUSTRIAL CODE PART (RULE NO.) 53 RELATING TO CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES, AS ISSUED BY THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARD AND APPEALS.

04. SINCE THE ERIE COUNTY WATER AUTHORITY OPERATES AND MAINTAINS THE EXISTING WATER LINES, THEY ARE TO BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF THE START OF CONSTRUCTION. ALL EXISTING VALVES ARE TO BE OPERATED BY THE ERIE COUNTY WATER AUTHORITY PERSONNEL.

05. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AHEAD OF THE PIPE LAYING OPERATION, SO THAT, IF MINOR ADJUSTMENTS MUST BE MADE IN ELEVATION AND/OR ALIGNMENT DUE TO INTERFERENCE FROM THESE UTILITIES, SAID CHANGES CAN BE MADE IN ADVANCE OF THE WORK.

06. WHERE SUCH FACILITIES ARE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, HE SHALL CERTIFY TO THE ENGINEERING DEPARTMENT OF THE TOWN OF AMHERST THAT SAID FACILITIES AS CONSTRUCTED WERE SUPERVISED BY HIMSELF (HERSELF) AND THAT THE WORKS HAVE BEEN FULLY COMPLETED IN ACCORDANCE WITH THE APPROVED ENGINEERING REPORTS, PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND ANY AND ALL ADDENDA TO SAME.

07. THE CONSTRUCTION OF THE FACILITIES SHALL BE UNDER THE SUPERVISION OF A PERSON OR FIRM QUALIFIED TO PRACTICE PROFESSIONAL ENGINEERING IN NEW YORK STATE UNDER THE EDUCATION LAW OF THE STATE, WHENEVER ENGINEERING SERVICES ARE REQUIRED BY SUCH LAW FOR SUCH PURPOSES.

08. A WRITTEN CERTIFICATE OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF HYDROSTATIC LEAKAGE TESTS, MADE BY THE PROFESSIONAL ENGINEER SUPERVISING THE CONSTRUCTION, SHALL BE SUBMITTED TO THE ERIE COUNTY DEPART. OF ENVIRONMENT PLANNING AND NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION.

09. UNSUITABLE MATERIALS SUCH AS FROZEN ORGANIC AND/OR VEGETABLE MATERIAL, DEBRIS, TREES, LUMBER, LARGE STONES OR CLODS (6.0" OR LARGER), MUCK, PEAT, ORGANIC SILT WILL NOT BE ACCEPTABLE FILL AND CERTAIN MAN-MADE DEPOSITS OF INDUSTRIAL WASTE, SLUDGE OR LANDFILL MAY ALSO BE DETERMINED AS UNSUITABLE HAZARDOUS MATERIAL.

10. THE COMPACTION OF ALL MATERIALS WILL OCCUR AT 6" INCREMENTS.

11. VERIFICATION OF ALL EXISTING EASEMENTS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THEY MUST BE SHOWN ALONG WITH ALL PROPOSED EASEMENTS ON PLAN DRAWINGS.

12. SHOULD A FLUID CONDITION BE ENCOUNTERED AT THE TRENCH BOTTOM, THE CONTRACTOR IS TO INSTALL ADDITIONAL STONE CRADLE AS ORDERED BY THE ENGINEER.

13. ALL PIPE CROSSING UNDER PAVED AREAS ARE TO BE BACKFILLED TO SUBGRADE WITH COMPACTED SELECT MATERIAL TO FIVE (5) FEET OUTSIDE THE PAVEMENT EDGES.

14. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TREE EXPERT TO REMOVE, WHERE NECESSARY, BRANCHES WHICH INTERFERE WITH THE CONSTRUCTION OPERATION, OR REPAIR TREES HAVING SUFFERED DAMAGE BY CONSTRUCTION ACTIVITIES. THE COST INVOLVED IN THE ABOVE IS TO BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.

15. SEWERS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A TEN FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATERMAIN, PROVIDED THAT THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (46CM) ABOVE THE TOP OF THE SEWER.

16. SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (46CM) BETWEEN THE OUTSIDE OF A WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATERMAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATERMAIN JOINTS. WHERE A WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER, TO PREVENT DAMAGE TO THE WATERMAIN.

17. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPE AND SHALL BE PRESSURE TESTED AS TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.

18. THE PIPE SHALL BE P.V.C. SEWER PIPE CONFORMING TO THE LATEST REVISIONS OF ASTM DESIGNATION D-3034, SDR-35, INSTALLED IN ACCORDANCE WITH ASTM.

19. THE MANHOLE COVERS ARE TO BEAR THE INSCRIPTION "AMHERST SANITARY".

SANITARY SEWER TESTING METHODS

GENERAL NOTES

(A) LEAKAGE TESTS

01. THE TEST PERIOD WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN 24 HOURS, REGARDLESS OF THE TEST METHOD USED.

02. THE TOTAL LEAKAGE OF ANY SECTION TESTED BY ANY TEST METHOD SHALL NOT EXCEED THE RATE OF 200 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER.

03. MANHOLES SHALL BE CONSIDERED AS SECTIONS OF 48" DIAMETER PIPE AND THE EQUIVALENT LEAKAGE ALLOWANCE SHALL BE COMPUTED PER NOTE 02 USING THE SUBMERGED HEIGHT OF MANHOLE AS THE LENGTH.

04. WHEN MANHOLES ARE TESTED SEPARATELY, ALL PIPE OPENINGS SHALL BE PLUGGED AND THE TEST PROCEDURES AND CRITERIA SHALL BE APPLIED IN THE SAME MANNER AS FOR TESTS INVOLVING ONLY THE PIPE OR A COMBINATION OF PIPE AND MANHOLES.

(B) INFILTRATION TEST CRITERIA FOR USE

01. THIS TEST METHOD MAY ONLY BE USED WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TESTS.

02. GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING BACKFILLING.

03. THE NUMBER OF STANDPIPES REQUIRED AND LOCATION OF THE SAME ARE TO BE AS ORDERED BY THE ENGINEER. STANDPIPES MAY BE OF ANY PIPE MATERIAL BUT MUST BE OF SUCH DIAMETER (2-1/2" MINIMUM) AS TO PERMIT THE INSERTION OF A RULE OR LEVEL ROD. CRUSHED STONE SHALL BE PLACED AROUND THE LOWER OPEN ENDS OF THE STANDPIPES.

04. STANDPIPES ARE TO BE REMOVED AT THE SATISFACTORY COMPLETION OF THE TESTS.

05. IF IN LIEU OF STANDPIPES, THE TRENCH IS TO BE LEFT OPEN FOR GROUND WATER OBSERVATION, THE LENGTH OF UNBACKFILLED TRENCH AT ANY ONE TIME MAY HAVE TO BE LIMITED FOR REASONS OF SAFETY.

(C) EXFILTRATION TEST CRITERIA FOR USE

01. THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR ABOVE GROUND WATER WHICHEVER IS HIGHER AT THE HIGHEST POINT OF THE PIPE LINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER TO MAINTAIN THE ORIGINAL LEVEL.

02. IN THIS TEST THE PIPE LINE MUST BE FILLED WITH WATER AND ALLOWED TO REMAIN SO FILLED FOR AT LEAST 24 HOURS PRIOR TO TAKING MEASUREMENTS.

03. REGARDING GROUND WATER MEASUREMENTS: SEE NOTES 02 THROUGH 05 ABOVE.

04. REGARDING THE TEST STANDPIPE: THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.

(D) DEFLECTION TEST FOR PVC SEWER PIPE

01. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE GRAVITY SEWER PIPE. TESTS SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.

02. NO PIPE SHALL EXCEED DEFLECTION OF 5%. DEFLECTION GAGE MAY BE BORROWED FROM THE TOWN ENGINEER FOR 8" AND 10" PIPE. THE DEFLECTION TEST MUST BE EXECUTED AFTER 30 DAYS OF PLACEMENT OF FINAL BACKFILL. THE TEST WILL ALSO BE DONE WITHOUT MECHANICAL PULLING DEVICES.

MANHOLE PLACEMENT AND MAINTENANCE
DURING CONSTRUCTION AND DEVELOPMENT

CONTRACTOR AND/OR DEVELOPERS SHALL CONSTRUCT ALL MANHOLE STRUCTURES IN ACCORDANCE WITH THE TOWN OF AMHERST STANDARD SPECIFICATIONS OR THE SPECIFICATIONS OF THE DESIGN ENGINEER WHEN REQUIRED BY THE TOWN.

ALL MANHOLES ARE TO BE DESIGNED AND FURNISHED WITH RIM ELEVATIONS AT FINAL FINISHED GRADES. THE CONTRACTOR, DEVELOPER, OR HOME BUILDER SHALL BE RESPONSIBLE FOR ALL CORRECTIONS, ADJUSTMENTS, AND MODIFICATIONS NEEDED FOR RAISING, LOWERING, OR REPLACING ANY AND ALL MANHOLES AS PROPOSED FOR THE FACILITY.

ALL AS-BUILT STATIONING, LINE AND GRADE IMPROVEMENTS, INVERT AND RIM ELEVATIONS, "Y" LOCATIONS, INSPECTION REPORTS, ROADWAY OR STREET NAMES, RIGHT-OF-WAY WIDTHS, AND EASEMENT LINES SHALL BE FURNISHED TO THE TOWN ON A SET OF MYLAR DRAWINGS PRIOR TO TAP-IN APPROVAL, PIP ACCEPTANCE, AND/OR RELEASE OF FINAL PAYMENT.

ALL MANHOLE STRUCTURES SHALL BE MADE ACCESSIBLE TO THE TOWN OF AMHERST TELEVISION/MAINTENANCE CREWS. THE CONTRACTOR AND/OR DEVELOPER SHALL PROVIDE A DRY, WELL COMPACTED, STABLE SURFACE FREE FROM SHOW AND OBSTRUCTIONS FOR SAFE AND OPEN ACCESS WITH TOWN VEHICLES. SHOULD THE CONTRACTOR AND/OR DEVELOPER WISH TV INSPECTIONS DURING WET WEATHER/WET SOFT SOIL CONDITIONS, HE SHALL PROVIDE ALL NECESSARY GRANULAR BACKFILL, DISTRIBUTED AND COMPACTED TO SUPPLY ACCESS TO EACH MANHOLE. THE CONTRACTOR AND/OR DEVELOPER SHALL BEAR ALL COSTS OF TOWING, DOWN TIME, CREW TIME, AND DAMAGE ALONG WITH RESTORATION, SHOULD SUCH ACCESSWAYS FAIL.

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STATE OF NEW YORK
R. CHRISTOPHER WOOD
076394
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Sanitary Sewer General Notes

DRAWING NO.
C-403

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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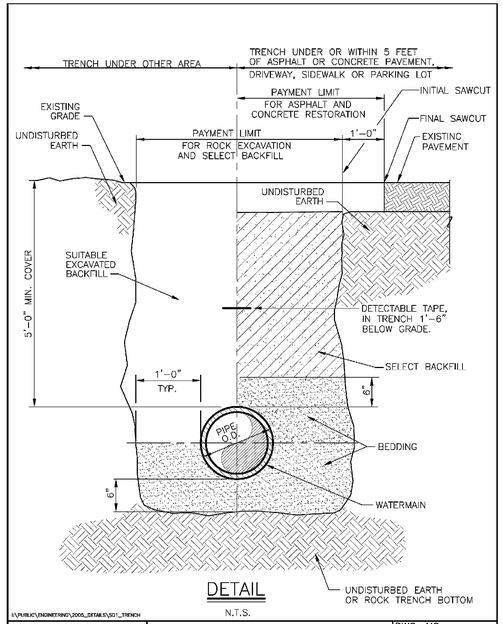
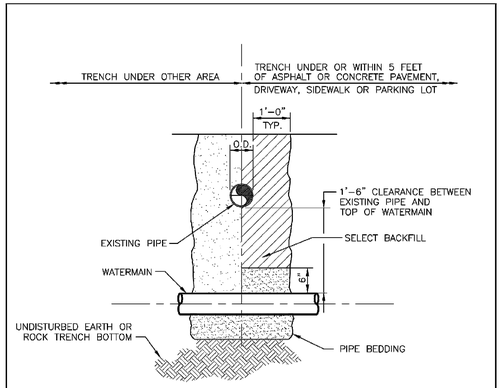


DETAIL
N.T.S.

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD1_TRENCH

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TRENCH THROUGH 12–INCH DIAMETER WATERMAIN	DWG. NO. SD1	
		DATE 4/28/92	REVISED 10/05



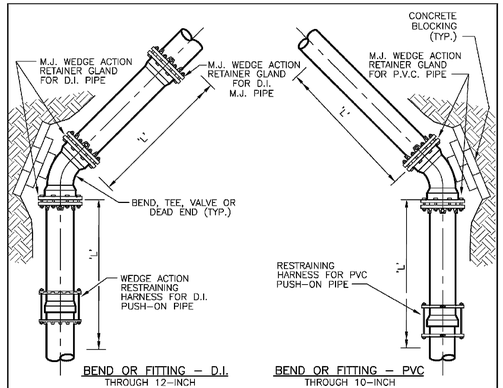
NOTES:

1. ALL EXISTING UTILITIES MUST BE SUPPORTED DURING CONSTRUCTION OF THE NEW WATERMAIN.
2. WHEN CROSSING A SEWERLINE WITH A NEW WATERMAIN, ONE FULL PIPE LENGTH (18 FT. MIN.) SHALL BE USED AT THE POINT OF CROSSING. THE WATERMAIN SHALL BE PLACED SO THAT BOTH JOINT ENDS ARE AS FAR AS POSSIBLE FROM THE EXISTING SEWERLINE.

SECTION
N.T.S.

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD2_PIPE_CROSSING

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PIPE CROSSING	DWG. NO. SD2	
		DATE 4/28/92	REVISED 10/05



BEND OR FITTING – D.I. THROUGH 12–INCH

BEND OR FITTING – PVC THROUGH 10–INCH

RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW 'L'	22.5° ELBOW 'L'	45° ELBOW 'L'	TEE BRANCH, 90° BEND, VALVE OR DEAD END 'L'
6"	PVC	13'	25'	50'	120' MIN.
8"	PVC	15'	30'	59'	122' MIN.
8"	D.I.P.	15'	30'	59'	122' MIN.

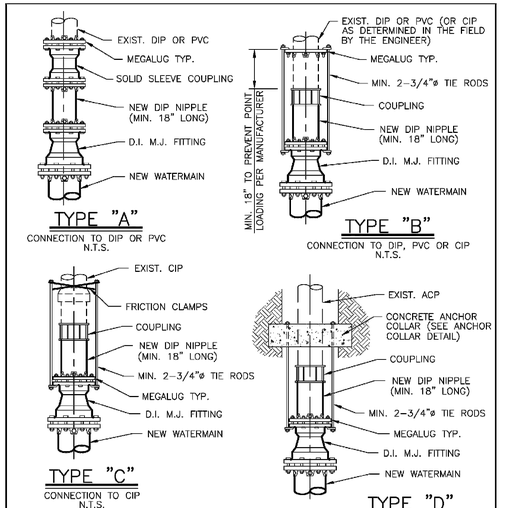
NOTES:

1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN
N.T.S.

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD4_REST_JOINT_SCHED

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 10/05



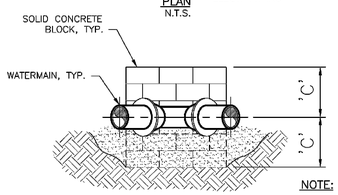
NOTES:

1. VALVES AND TEES MAY BE HARNESSED SIMILARLY.
2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE–PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD5_CONN_EXIST_MAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12–INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 3/05	REVISED 10/05

PLAN
N.T.S.



ELEVATION
N.T.S.

NOTE:

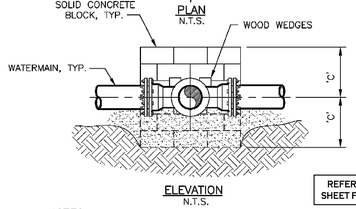
1. FITTING TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.

DIMENSION SCHEDULE												
PIPE SIZE	11.25° ELBOW			22.5° ELBOW			45° ELBOW			90° ELBOW		
	'A'	'B'	'C'	'A'	'B'	'C'	'A'	'B'	'C'	'A'	'B'	'C'
8"	1.5'	1.5'	2.5'	2.5'	1.5'	2.5'	3.0'	1.5'	3.5'	3.5'	1.5'	5.0'

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD6_THRUST_BLOCKS_ELBOW

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR ELBOW FITTING	DWG. NO. SD6	
		DATE 4/28/92	REVISED 10/05

PLAN
N.T.S.



ELEVATION
N.T.S.

REFER TO TABLE THIS SHEET FOR RESTRAINTS.

NOTES:

1. THRUST BLOCK REQUIRED FOR TEES, HYDRANT LATERAL TEES AND TAPPING SLEEVE INSTALLATIONS.
2. FITTING TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.

BRANCH TEE SIZE	DIMENSION SCHEDULE 'A'	'B'	'C'
6"	1'-0"	1'-0"	0'-6"
8"	1'-6"	1'-0"	0'-6"

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD7_THRUST_BLOCKS_TEE

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR TEE OR "DEAD END" FITTING	DWG. NO. SD7	
		DATE 4/28/92	REVISED 10/05

PLAN
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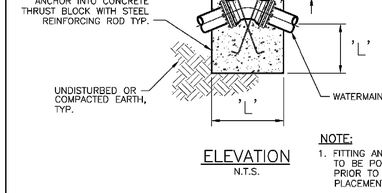

ELEVATION
N.T.S.

NOTE:

1. FITTING AND ALL RESTRAINTS TO BE POLYETHYLENE WRAPPED PRIOR TO CONCRETE PLACEMENT.

DIMENSION SCHEDULE													
PIPE SIZE	PIPE TYPE	11.25° ELBOW				22.5° ELBOW				45° ELBOW			
		'A'	'W'	'L'	ROD ø	'A'	'W'	'L'	ROD ø	'A'	'W'	'L'	ROD ø
8"	D.I.P.	12"	1'-0"	1'-0"	1/2"	12"	1'-9"	1'-9"	1/2"	1'-6"	2'-0"	2'-0"	1/2"

S:\PUBLIC\ENGINEERING\2005_DETAILS\SD8_THRUST_BLOCKS_VBEND

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 10/05

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Water Details

DRAWING NO.

C-404

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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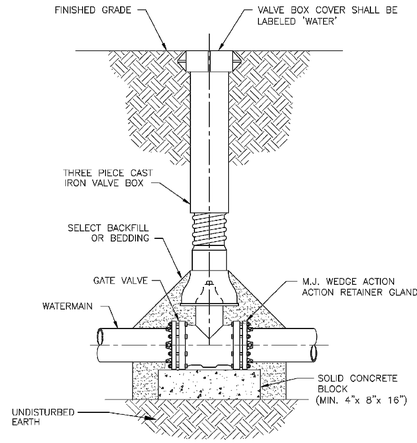
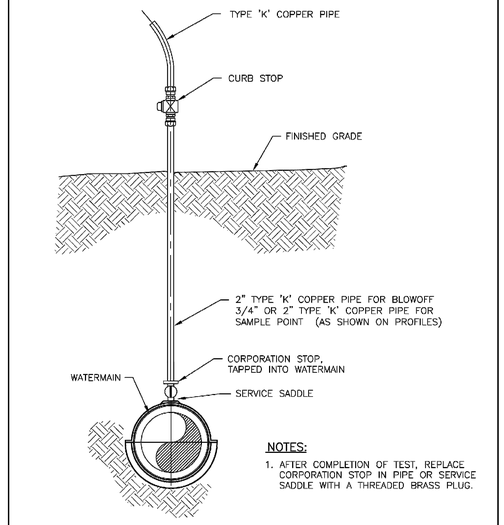


NOTES:
1. VALVE SHALL NOT SUPPORT VALVE BOX.
2. GATE VALVE SHALL BE INSTALLED LEVEL.
3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED IN BOX.

SECTION
N.T.S.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD11_GATE_VALVE_SET

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11
		DATE 4/28/92 · REVISED 02/17

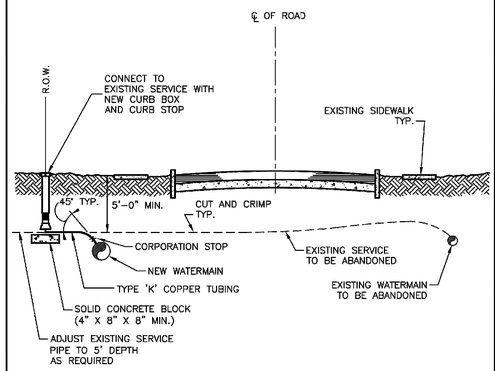


NOTES:
1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

ELEVATION
N.T.S.

I:\PUBLIC\ENGINEERING\2005_DETAILS\SD17_TEMP_BO_SAMP_PT

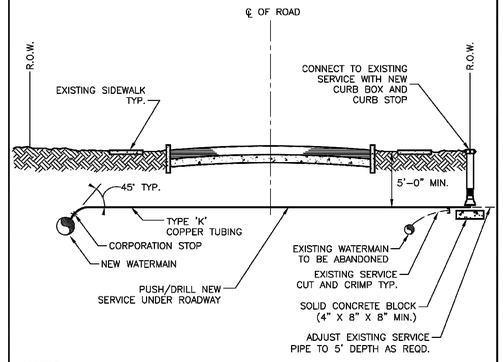
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17
		DATE 4/28/92 · REVISED 10/05



NOTES:
1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
   A. WHEN SERVICES ARE PLACED ON 4" OR SMALLER PIPES.
   B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
   C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
   D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
   E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
   F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD15_NS_SERV_REPLACE

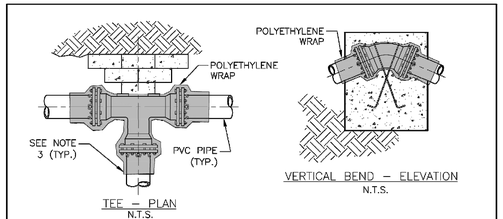
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL NEAR SIDE SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD15
		DATE 4/92 · REVISED 09/16



NOTES:
1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
   A. WHEN SERVICES AND PLACED ON 4" OR SMALLER PIPES.
   B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 6" PIPE.
   C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
   D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
   E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
   F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 60 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

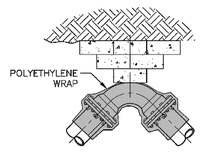
I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD16_FS_SERV_REPLACE

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FAR SIDE SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD16
		DATE 4/92 · REVISED 09/16

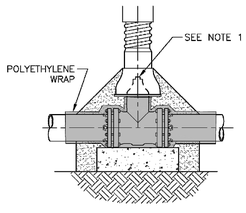


TEE – PLAN
N.T.S.

VERTICAL BEND – ELEVATION
N.T.S.



HORIZONTAL BEND – PLAN
N.T.S.

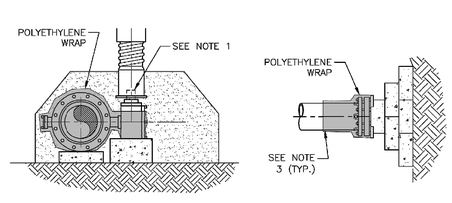


GATE VALVE – ELEVATION
N.T.S.

NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

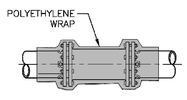
I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A
		DATE 3/18 · REVISED 12/18

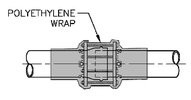


BUTTERFLY VALVE – ELEVATION
N.T.S.

END CAP / PLUG
N.T.S.



SOLID SLEEVE OR RESTRAINED COUPLING
N.T.S.

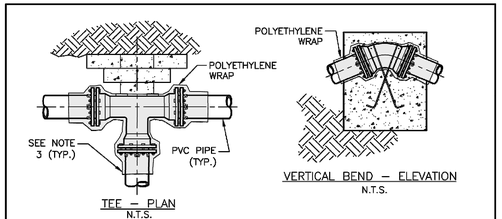


EXTERNAL JOINT RESTRAINT
N.T.S.

NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (OR POLYWRAP IF DIP) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

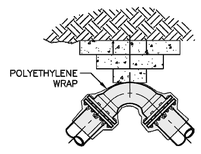
I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39B_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39B
		DATE 12/18 · REVISED

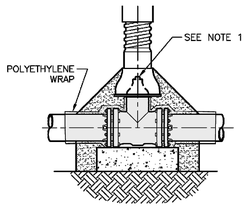


TEE – PLAN
N.T.S.

VERTICAL BEND – ELEVATION
N.T.S.



HORIZONTAL BEND – PLAN
N.T.S.



GATE VALVE – ELEVATION
N.T.S.

NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON GATE VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PVC PIPE WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

I:\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD39_POLYWRAPPING_FITTINGS

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING DUCTILE IRON FITTINGS ON PVC PIPE	DWG. NO. SD39
		DATE 3/18 · REVISED

TOWN OF AMHERST APPROVAL BOX:

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Buffalo, New York 14203
P 716.842.3165
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STATE OF NEW YORK · CHRISTOPHER WOOD · 076394 · LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details

DRAWING NO.
C-405

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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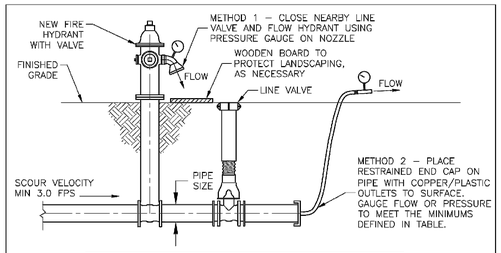


PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW: 2 1/2" NOZZLE PRESSURE (PSI)	METHOD 1 HYDRANT FLOW: 4" NOZZLE PRESSURE (PSI)	METHOD 2 END CAP FLOW: 2" I.D. PRESSURE (PSI)	METHOD 2 END CAP FLOW: 3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	–	22
16	1900	–	20	–	62
20	3000	–	50	–	–

I.D. = INNER DIAMETER

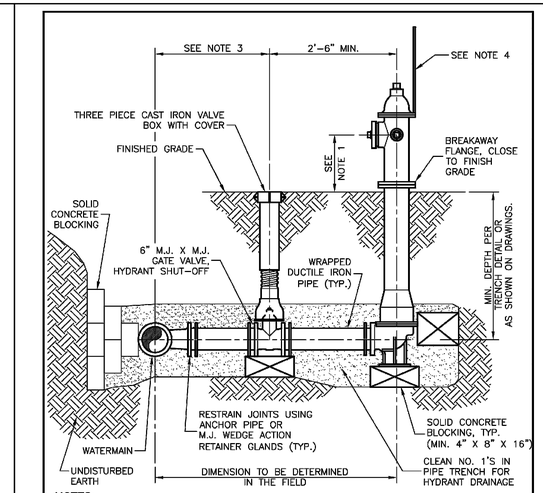
NOTES:

1. TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
2. OUTLET PRESSURE MEASURED BY PITOT GAUGE.
3. ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
4. TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION
N.T.S.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD36_WATERLINE_FLUSHING

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL WATERLINE FLUSHING	DWG. NO. SD36
		DATE 6/16 · REVISED 3/18



NOTES:

1. CENTERLINE OF THE LOWEST NOZZLE TO FINISHED GRADE SHALL BE A MIN. OF 15" & MAX. OF 18".
2. HYDRANT RISER SHALL BE INSTALLED PLUMB.
3. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT.
4. RELOCATE HYDRANT MARKER (IF PRESENT), FOR WATERLINE REPLACEMENT PROJECTS ONLY.
5. HYDRANT FACE TO BE A MINIMUM OF 3' FROM THE BACK FACE OF ALL CURBS OR A MINIMUM OF 5' FROM ALL EDGES OF PAVEMENT (IF NO CURB).

SECTION
N.T.S.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD13_HYD_INST

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FIRE HYDRANT INSTALLATION	DWG. NO. SD13
		DATE 6/00 · REVISED 11/16

NOTES

1. All elevations refer to USGS NAVD83 datum.
2. The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
3. The CONTRACTOR'S work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed, or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install the watermain to avoid conflicts.
6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as-needed basis, phased to reduce erosion and visual impact.
7. Blasting will not be permitted.
8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
9. The Erie County Water Authority shall only operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers in writing of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 5 business days in advance of the requested shut-down date.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD29_GENERAL_NOTES

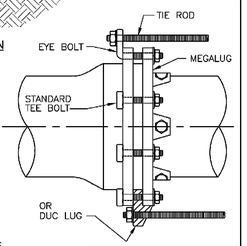
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD29
		DATE 3/05 · REVISED 7/17

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item.Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment, and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be scheduled and returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga, New York 14227.
19. The CONTRACTOR shall cold patch all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict access for school buses or any emergency vehicles.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for review prior to the start of testing.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants, and curb stops operate as required.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD30_GENERAL_NOTES

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30
		DATE 3/05 · REVISED 7/17

ELEVATION
N.T.S.



NOTES:

1. RESTRAINED MECHANICAL JOINTS SHOWN EXCEPT AS NOTED.
2. TIE TOP BENDS BACK TO FULL LENGTH OF PIPE IN UNEXCAVATED TRENCH.
3. VALVES, TEES AND HYDRANTS MAY BE HARNESSED SIMILARLY.
4. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURES–PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
5. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
6. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.
7. IF EXISTING PIPE IS CIP OR PVC, CONNECT TO NEW FITTING ONLY WHEN ALLOWED BY ENGINEER.

TIE ROD SCHEDULE			
PIPE SIZE	PIPE TYPE	ROD ø	NUMBER OF RODS
8"	PVC	3/4"	2

\\PUBLIC\ENGINEERING\2006_DETAILS\SD10_HARN_OFFSET_EXIST_WMAIN

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL HARNESSING DETAILS–INSTALL OFFSET IN EXISTING WATERMAIN	DWG. NO. SD10
		DATE 6/00 · REVISED 10/05

STEP 1.
CUT A SECTION OF POLYETHYLENE TUBE APPROXIMATELY 2 FEET LONGER THAN THE PIPE SECTION. REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, OR OTHER MATERIALS THAT MIGHT HAVE ACCUMULATED ON THE PIPE SURFACE DURING STORAGE. SLIP THE POLYETHYLENE TUBE ACCORDION–FASHION ON THE END OF THE PIPE. PULL BACK THE OVERHANGING END OF THE TUBE UNTIL IT CLEARS THE PIPE END.

STEP 2.
DIG A SHALLOW BELL HOLE IN THE TRENCH BOTTOM AT THE JOINT LOCATION TO FACILITATE INSTALLATION OF THE POLYETHYLENE TUBE. LOWER THE PIPE INTO THE TRENCH AND MAKE UP THE PIPE JOINT WITH THE PROCEEDING SECTION OF PIPE.

STEP 3.
MOVE THE CABLE TO THE BELL END OF THE PIPE AND LIFT THE PIPE SLIGHTLY TO PROVIDE ENOUGH CLEARANCE TO EASILY SLIDE THE TUBE. SPREAD THE TUBE OVER THE ENTIRE BARREL OF THE PIPE. NOTE: MAKE SURE THAT NO DIRT OR OTHER BEDDING MATERIAL BECOMES TRAPPED BETWEEN THE WRAP AND THE PIPE.

STEP 4.
MAKE THE OVERLAP OF POLYETHYLENE TUBE BY PULLING BACK THE BUNCHED POLYETHYLENE FROM THE PRECEDING LENGTH OF PIPE AND SECURING IT IN PLACE. NOTE: THE POLYETHYLENE MAY BE SECURED IN PLACE BY USING TAPE OR PLASTIC TIE STRAPS.

STEP 5.
OVERLAP THE SECURED TUBE END WITH THE END OF THE NEW PIPE SECTION, FOR A MINIMUM OF 12 INCHES. SECURE THE NEW TUBE END IN PLACE. PIPE JOINT SHOULD HAVE TWO LAYERS OF POLYWRAP, EACH SECURED IN PLACE.

STEP 6.
TAKE UP THE SLACK IN THE TUBE ALONG THE BARREL OF THE PIPE TO MAKE A SNUG, BUT NOT TIGHT, FIT. FOLD EXCESS POLYETHYLENE BACK OVER THE TOP OF THE PIPE.

STEP 7.
SECURE THE FOLD AT SEVERAL LOCATIONS ALONG THE PIPE BARREL (APPROXIMATELY EVERY 3 FEET, MAXIMUM OF 5 FEET).

STEP 8.
REPAIR ALL THE SMALL RIPS, TEARS, OR OTHER TUBE DAMAGE WITH ADHESIVE TAPE. IF THE POLYETHYLENE IS BADLY DAMAGED, REPAIR THE DAMAGED AREA WITH A SHEET OF POLYETHYLENE AND SEAL THE EDGES OF THE REPAIR WITH ADHESIVE TAPE.

STEP 9.
CAREFULLY BACKFILL THE TRENCH ACCORDING TO THE PROCEDURES IN AWWA C600 STANDARD. TO PREVENT DAMAGE DURING BACKFILLING ALLOW ADEQUATE SLACK IN THE TUBE AT THE JOINT. BACKFILL SHOULD BE FREE OF CINDERS, ROCKS, BOULDERS, NAILS, STICKS, OR OTHER MATERIALS THAT MIGHT DAMAGE THE POLYETHYLENE. AVOID DAMAGING THE POLYETHYLENE WHEN USING TAMPING DEVICES.

NOTES:
1 – POLYETHYLENE WRAP (POLYWRAP) SHALL BE OF PROPER DIAMETER TO FIT OVER BELLS AND EXTERNAL WEDGE–ACTION RETAINER GLANDS.
2 – CAST AND DUCTILE IRON FITTINGS (BENDS, TEES, VALVES, ETC.) ARE TO BE WRAPPED IN POLYWRAP AND SECURED IN PLACE.
3 – DO NOT USE CHAINS, METAL WIRE, OR OTHER SUPPORTING SYSTEMS WHICH MAY DAMAGE THE POLYETHYLENE ENCASEMENT. REPLACE DAMAGED POLYWRAP ACCORDINGLY.

\\PUBLIC\ENGINEERING\CURRENT ECWA DETAILS\SD32_POLY_WRAP

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYETHYLENE ENCASEMENT OF DUCTILE IRON PIPE	DWG. NO. SD32
		DATE 06/16 · REVISED 02/19

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

STATE OF NEW YORK · CHRISTOPHER WOOD · 076304 · LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details & Notes

DRAWING NO.
C-406

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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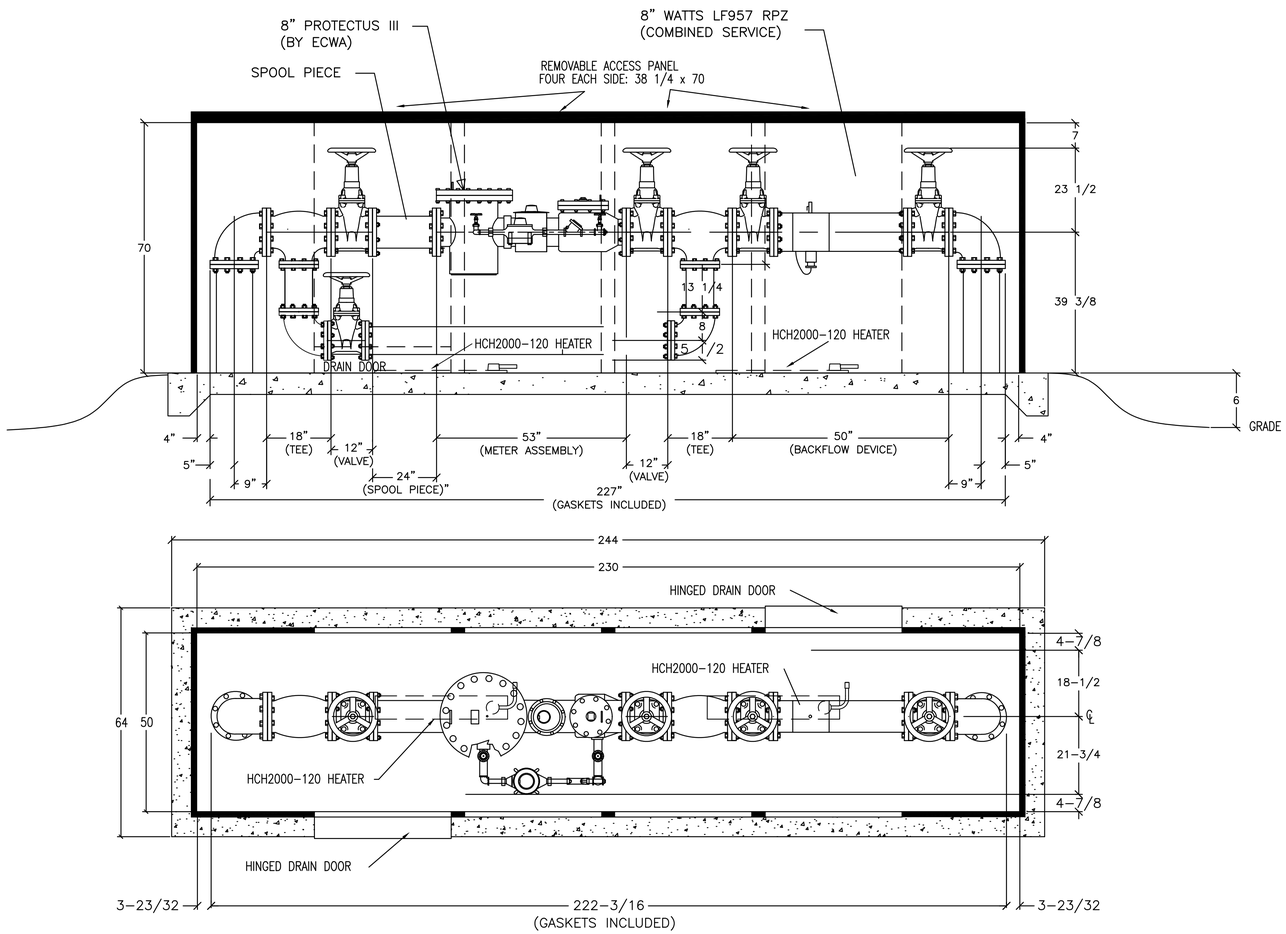

LEGEND:

REMOVABLE ACCESS PANEL 38 1/4"W x 70"H w/DRAIN DOOR

REMOVABLE ACCESS PANEL 38 1/4"W x 70"H

8"METER & RPZ INSULATED ENCLOSURE

NOTES:

1. BACKFLOW PREVENTER DIMENSIONS FURNISHED BY WATTS
2. ALL DIMENSIONS ARE IN INCHES
3. WALL & INSULATION THICKNESS IS 1-1/2"
4. ROOF & INSULATION THICKNESS IS 3"
5. ENCLOSURE SHOWN IS SAFE-T-COVER MODEL 1000D-ALC00-17
6. EXTERIOR ENCLOSURE DIMENSIONS: 53"W x 233"L x 73" H
7. CONCRETE PAD IS 64"W x 244"L x 6"THK W/W.W.F. 6X6/10X10
8. METER SHOWN: 8" PROTECTUS III, SPOOL PIECE & METER SUPPLIED BY ECWA, VERIFY DIMENSIONS PRIOR TO ORDERING
9. RPZ SHOWN: 8" WATTS LF957 RPZ
10. CONTRACTOR TO INSTALL ELECTRIC SERVICE TO ENCLOSURE, COORDINATE SOURCE WITH OWNER
11. INSTALL A 120V GFI OUTLET IN THE ENCLOSURE
12. HEATERS TO HAVE THERMOSTAT CONTROL
13. ALL 8" PIPING & FITTINGS WITHIN THE ENCLOSURE SHALL BE DUCTILE IRON
14. CONCRETE PAD TO BE 6" ABOVE ADJACENT GRADE

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

STATE OF NEW YORK
CHRISTOPHER WOOD
076304
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Insulated Enclosure Detail

DRAWING NO.

C-407

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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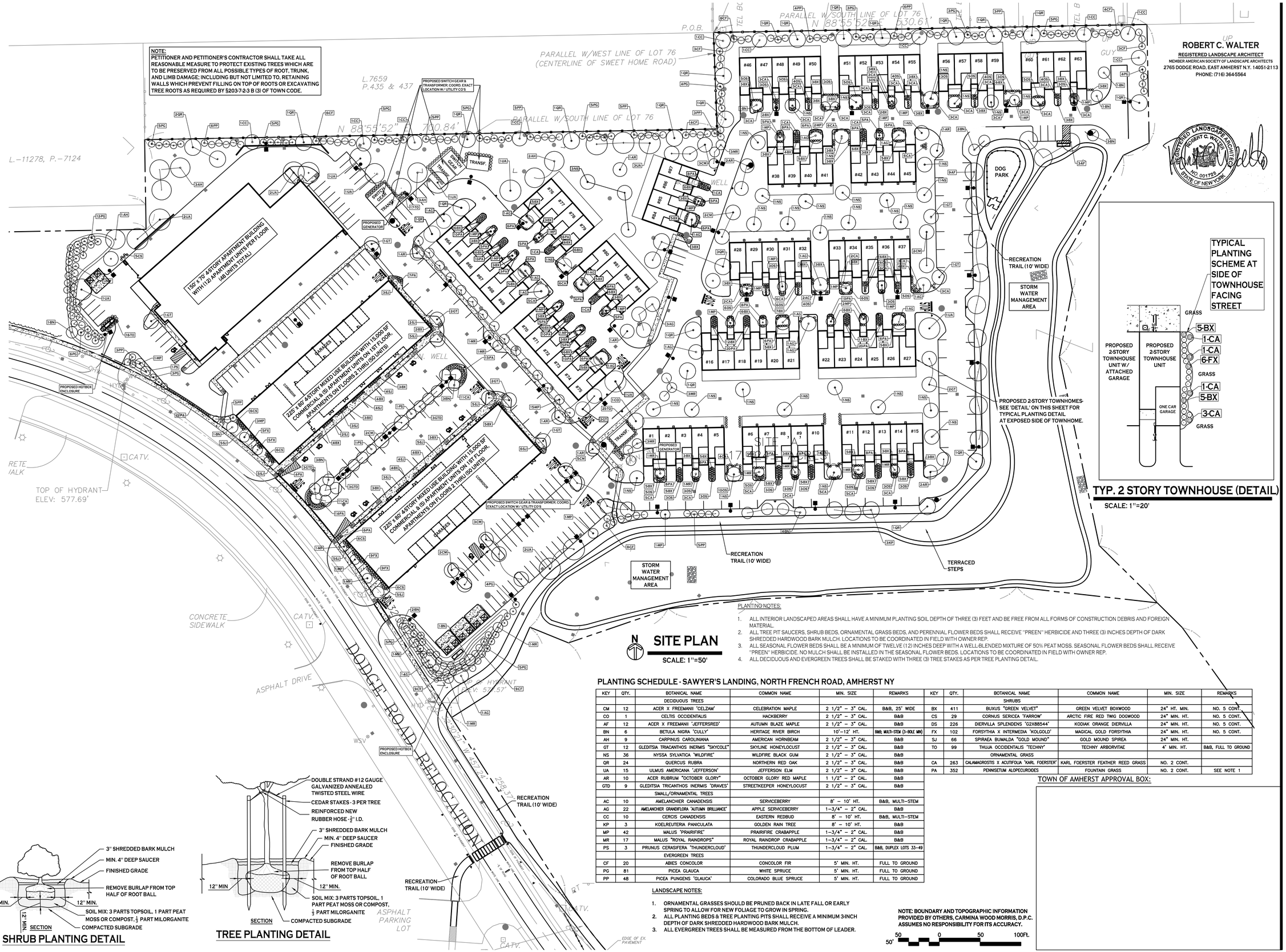
NOTE:
PETITIONER AND PETITIONER'S CONTRACTOR SHALL TAKE ALL REASONABLE MEASURE TO PROTECT EXISTING TREES WHICH ARE TO BE PRESERVED FROM ALL POSSIBLE TYPES OF ROOT, TRUNK, AND LIMB DAMAGE; INCLUDING BUT NOT LIMITED TO, RETAINING WALLS WHICH PREVENT FILLING ON TOP OF ROOTS OR EXCAVATING TREE ROOTS AS REQUIRED BY §203-7-2-3 B (3) OF TOWN CODE.



SITE PLAN
SCALE: 1"=50'

TYP. 2 STORY TOWNHOUSE (DETAIL)
SCALE: 1"=20'

PLANTING NOTES:

1. ALL INTERIOR LANDSCAPED AREAS SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.
2. ALL TREE PIT SAUCERS, SHRUB BEDS, ORNAMENTAL GRASS BEDS, AND PERENNIAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE AND THREE (3) INCHES DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
3. ALL SEASONAL FLOWER BEDS SHALL BE A MINIMUM OF TWELVE (12) INCHES DEEP WITH A WELL-BLENDED MIXTURE OF 50% PEAT MOSS, SEASONAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE. NO MULCH SHALL BE INSTALLED IN THE SEASONAL FLOWER BEDS. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
4. ALL DECIDUOUS AND EVERGREEN TREES SHALL BE STAKED WITH THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

PLANTING SCHEDULE - SAWYER'S LANDING, NORTH FRENCH ROAD, AMHERST NY

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		DECIDUOUS TREES			
CM	12	ACER X FREEMANII 'CELZAM'	CELEBRATION MAPLE	2 1/2" – 3" CAL.	B&B, 25' WIDE
CO	1	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" – 3" CAL.	B&B
AF	12	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2 1/2" – 3" CAL.	B&B
BN	6	BETULA NIGRA 'CULLY'	HERITAGE RIVER BIRCH	10'–12' HT.	B&B; MULTI-STEM (3-BOLE MIN)
AH	9	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2 1/2" – 3" CAL.	B&B
GT	12	GLEDITSIA TRIACANTHOS INERMIS "SKYCOLE"	SKYLINE HONEYLOCUST	2 1/2" – 3" CAL.	B&B
NS	36	NYSSA SYLVATICA 'WILDFIRE'	WILDFIRE BLACK GUM	2 1/2" – 3" CAL.	B&B
QR	24	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" – 3" CAL.	B&B
UA	15	ULMUS AMERICANA 'JEFFERSON'	JEFFERSON ELM	2 1/2" – 3" CAL.	B&B
AR	10	ACER RUBRUM "OCTOBER GLORY"	OCTOBER GLORY RED MAPLE	1 1/2" – 2" CAL.	B&B
GTD	9	GLEDITSIA TRICANTHOS INERMIS 'DRAVES'	STREETKEEPER HONEYLOCUST	2 1/2" – 3" CAL.	B&B
		SMALL/ORNAMENTAL TREES			
AC	10	AMELANCHIER CANADENSIS	SERVICEBERRY	8' – 10' HT.	B&B, MULTI-STEM
AG	22	AMELANCHER GRANDIFLORA 'AUTUMN BRILLIANCE'	APPLE SERVICEBERRY	1–3/4" – 2" CAL.	B&B
CC	10	CERCIS CANADENSIS	EASTERN REDBUD	8' – 10' HT.	B&B, MULTI-STEM
KP	3	KOELREUTERIA PANICULATA	GOLDEN RAIN TREE	8' – 10' HT.	B&B
MP	42	MALUS "PRAIRIFIRE"	PRAIRIFIRE CRABAPPLE	1–3/4" – 2" CAL.	B&B
MR	17	MALUS "ROYAL RAINDROPS"	ROYAL RAINDROP CRABAPPLE	1–3/4" – 2" CAL.	B&B
PS	3	PRUNUS CERASIFERA 'THUNDERCLOUD'	THUNDERCLOUD PLUM	1–3/4" – 2" CAL.	B&B, DUPLEX LOTS 33-49
		EVERGREEN TREES			
CF	20	ABIES CONCOLOR	CONCOLOR FIR	5' MIN. HT.	FULL TO GROUND
PG	81	PICEA GLAUCA	WHITE SPRUCE	5' MIN. HT.	FULL TO GROUND
PP	48	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5' MIN. HT.	FULL TO GROUND
		SHRUBS			
BX	411	BUXUS "GREEN VELVET"	GREEN VELVET BOXWOOD	24" HT. MIN.	NO. 5 CONT.
CS	29	CORNUS SERICEA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	24" MIN. HT.	NO. 5 CONT.
DS	226	DIERVILLA SPLENDENS 'G2X88544'	KODIAK ORANGE DIERVILLA	24" MIN. HT.	NO. 5 CONT.
FX	102	FORSYTHIA X INTERMEDIA 'KOLGOLD'	MAGICAL GOLD FORSYTHIA	24" MIN. HT.	NO. 5 CONT.
SJ	66	SPIRAEA BUMALDA "GOLD MOUND"	GOLD MOUND SPIREA	24" MIN. HT.	
TO	99	THUJA OCCIDENTALIS 'TECHNY'	TECHNY ARBORVITAE	4' MIN. HT.	B&B, FULL TO GROUND
		ORNAMENTAL GRASS			
CA	263	CALAMAGROSTIS X ACUTIFOLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	NO. 2 CONT.	
PA	352	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	NO. 2 CONT.	SEE NOTE 1

LANDSCAPE NOTES:

1. ORNAMENTAL GRASSES SHOULD BE PRUNED BACK IN LATE FALL OR EARLY SPRING TO ALLOW FOR NEW FOLIAGE TO GROW IN SPRING.
2. ALL PLANTING BEDS & TREE PLANTING PITS SHALL RECEIVE A MINIMUM 3-INCH DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.
3. ALL EVERGREEN TREES SHALL BE MEASURED FROM THE BOTTOM OF LEADER.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

SHRUB PLANTING DETAIL

TREE PLANTING DETAIL

TOWN OF AMHERST APPROVAL BOX:

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/08/24

ROBERT C. WALTER
REGISTERED LANDSCAPE ARCHITECT
MEMBER AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
2765 DODGE ROAD, EAST AMHERST N.Y. 14051-2113
PHONE: (716) 364-5564

REGISTERED LANDSCAPE ARCHITECT ROBERT C. WALTER NO. 001729 STATE OF NEW YORK

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/2
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Landscape Plan

DRAWING NO.
L-100

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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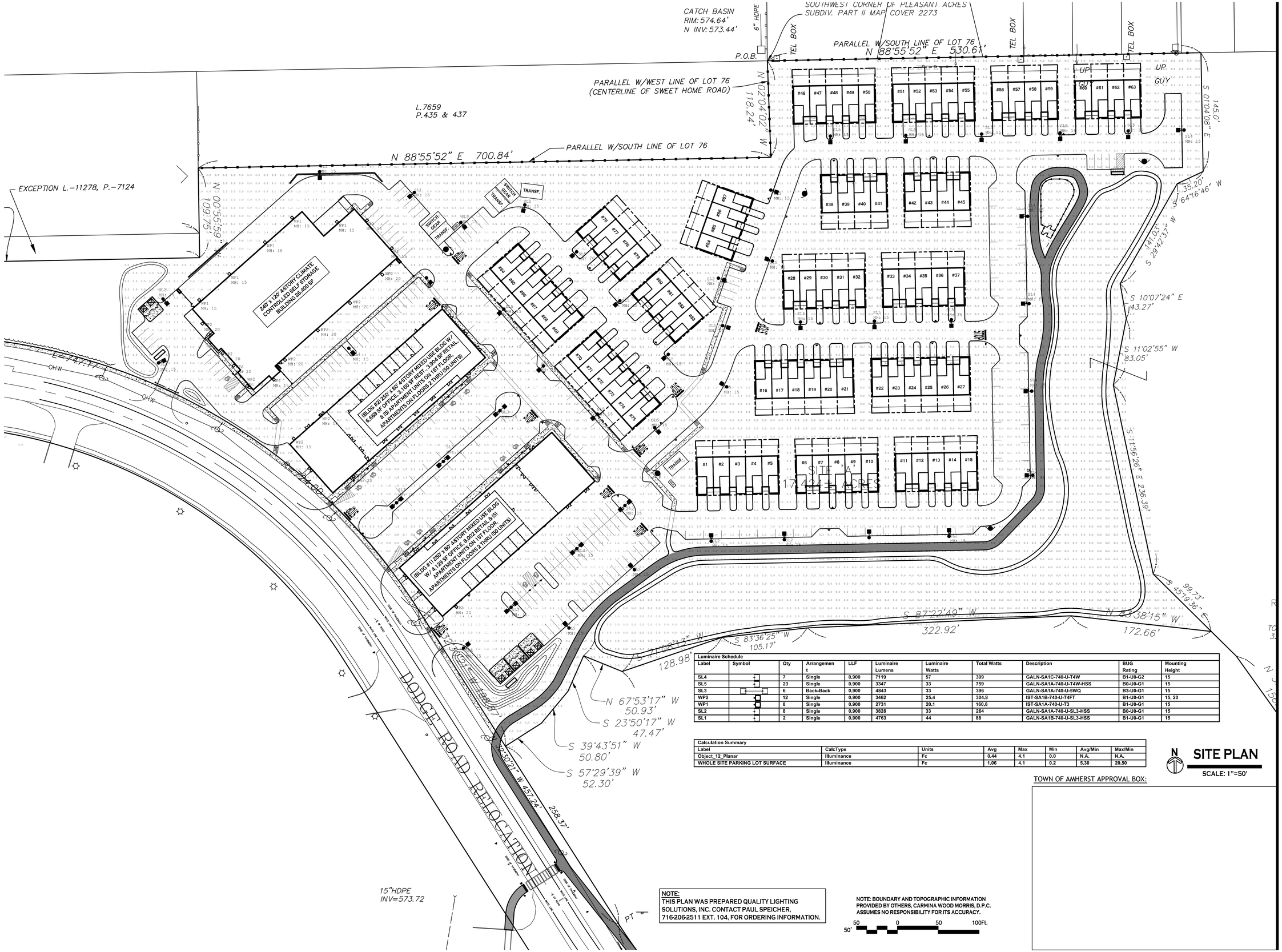

Luminaire Schedule									
Label	Symbol	Qty	Arrangement	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Description	BUG Rating	Mounting Height
SL4		7	Single	0.900	7119	57	399	GALN-SA1C-740-U-T4W	B1-U0-G2	15
SL5		23	Single	0.900	3347	33	759	GALN-SA1A-740-U-T4W-HSS	B0-U0-G1	15
SL3		6	Back-Back	0.900	4843	33	396	GALN-SA1A-740-U-5WQ	B3-U0-G1	15
WP2		12	Single	0.900	3462	25,4	304,8	IST-SA1B-740-U-T4FT	B1-U0-G1	15, 20
WP1		8	Single	0.900	2731	20,1	160,8	IST-SA1A-740-U-T3	B1-U0-G1	15
SL2		8	Single	0.900	3828	33	264	GALN-SA1A-740-U-SL3-HSS	B0-U0-G1	15
SL1		2	Single	0.900	4763	44	88	GALN-SA1B-740-U-SL3-HSS	B1-U0-G1	15

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Object_12_Planar	Illuminance	Fc	0.44	4.1	0.0	N.A.	N.A.
WHOLE SITE PARKING LOT SURFACE	Illuminance	Fc	1.06	4.1	0.2	5.30	20.50

N

SITE PLAN

SCALE: 1"=50'

NOTE:
THIS PLAN WAS PREPARED QUALITY LIGHTING SOLUTIONS, INC. CONTACT PAUL SPEICHER, 716-206-2511 EXT. 104, FOR ORDERING INFORMATION.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

STATE OF NEW YORK
R. CHRISTOPHER WOOD
076304
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date
1	Plan revised per updated layout	05/16/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Photometric Plan

DRAWING NO.

LP-100

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

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Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
A	Plan revised per town comments	05/18/22
B	Plan revised per town comments	07/26/22
C	Plan revised per updated layout	05/16/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Photometric Details

DRAWING NO.
LP-101

Project no.: 21-011

TOWN OF AMHERST APPROVAL BOX:

Attachment: SP-2021-06A drawings 01162

Packet Pg. 2047

Project		Catalog #		Type	
Prepared by		Notes		Date	



McGraw-Edison

GALN Galleon II

Area / Site Luminaire

Product Features



Interactive Menu

- Ordering Information page 2
- Mounting Details page 2
- Optical Distributions page 3
- Product Specifications page 4
- Energy and Performance Data page 5
- Control Options page 11

Product Certifications

Quick Facts

- Lumen packages range from 3,300 - 73,500 (33W - 552W)
- 17 optical distributions
- Efficacy up to 159 lumens per watt

Dimensional Details

Standard Pole Mount Arm



Pole Drilling Pattern
Type "A"



Number of Light Sources	Width 'A'	Housing Length 'B'	Weight with Standard or QA Arm	EPA (ft²) Standard or QA Arm
1-4	14"	22"	29 lb	0.93
5-6	22"	22"	39 lb	0.93
7-9	22"	28-1/8"	48 lb	1.5

NOTES:
1. For use with pole mast arm assembly and optional tilt unit, see Mounting Details section.

NOTES:
1. Luminaire is compatible for wayside(s) outdoor installation and Power connectivity for all applications. Refer to Luminaire Ordering Information for more details.
2. Designed for Environmental Specified. Refer to www.designlights.org/QuickTerms/ Consult your local City Lighting Standards for design criteria.
3. Luminaire is compatible with Wireless Monitoring and Control Systems. Refer to Ordering Information for more details.
4. Shipping weight is for a single luminaire with mounting arm. Actual weight may vary.
5. Complies per CE rated. Not available with Corrosion Protection (CP) option.
6. Not available with Fusing (F) option.
7. Not available with Surge Protection (SPD) option. Not available in combination with any other options. Not available in combination with Shorting Cap (SC).
8. Not available with Shorting Cap (SC).
9. IP rate & tested to 1.5 m immersion for 30 minutes.
10. IP rate & tested to 1.5 m immersion for 30 minutes.
11. Not available with Fusing (F) option.
12. Not available with Surge Protection (SPD) option.
13. Not available with Shorting Cap (SC).
14. Not available with Shorting Cap (SC).
15. Not available with Shorting Cap (SC).
16. Not available with Shorting Cap (SC).
17. Not available with Shorting Cap (SC).



SITE PLAN

SCALE: 1"=50'

E-ONE HP100 Aerial	
Overall Length	40.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

TOWN OF AMHERST APPROVAL BOX:

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Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

STATE OF NEW YORK
R. CHRISTOPHER WOOD
076394
LICENSED PROFESSIONAL ENGINEER

REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Fire Truck Plan

DRAWING NO.

TT-100

Project no.: 21-011

Attachment: SP-2021-05A drawings 011625 (29734 : SP-2021-05A, 50 Dodge Rd.)

Application for Site Plan Amendment
50 Dodge Road
Proposed Mixed-Use Project - Site "A" of Muir Woods Property
Applicant: Sawyers Landing LLC
Date: November 25, 2024

Prepared By: Sean Hopkins, Esq.
Hopkins Sorgi & McCarthy PLLC
35 California Drive, Suite 100
Williamsvile, NY 14221
Tel: 510-4338
E-mail: shopkins@hsmlegal.com

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Major Site Plan Review

For Official Use

File #: _____ **Acreage** 17.42 **Fee $** $1,215.00

Address Verified by Assessor's Office _____ VERIFIED BY _____ DATE

Site Plan Review		**Fill In Applicable Fees**
1 acre or less	$1,250.00	
Each Additional acre or fraction thereof	$ 650.00/acre	
Amendments to Site Plans	$1,200.00	1,200.00
Request for Relief of / or Change to Conditions of Site Plan Approval	$1,200.00	
Request for Extension of Site Plan Approval	$ 450.00	
Stormwater Pollution Prevention Plan		
1-4.99 Acres	$ 500.00	
5-10 Acres	$ 750.00	
>10 Acres	$1,000.00	
Affidavit Fee for Public Hearing	$ 15.00	$15.00
	TOTAL FEE:	$ 1,215.00

Materials Received by Planning Department _____ RECEIVED BY _____ DATE

Materials Accepted by Town Clerk & Fee Paid _____ ACCEPTED BY _____ DATE

To Be Completed By Applicant

Petitioner: Name: Sawyers Landing LLC c/o Sean W. Hopkins, Esq.

Address: 35 California Drive, Suite 100

Williamsville, New York 14221

_____

_____ city _____ state _____ zip code

Phone: 510-4338 Fax: _____ E Mail: shopkins@hsmlegal.com

Town of Amherst Planning Department 5583 Main Street Williamsville-NY-14221
(716) 631-7051- Fax: (716) 631-7153

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Representative (Architect, Engineer, Landscape Architect, Surveyor, or Attorney):

Name: Jon Barniak

Address: Carmina Wood Design

80 Silo City Row, Suite 100

Buffalo (city) New York (state) 14203 (zip code)

Phone: . 716.501.5766 Fax:

E Mail: jbarniak@carminawooddesign.com

Project Location (must be verified by Town Assessor's Office):

Address: 50 Dodge Road

SBL No(s): 40.08-3-13.1/A

Project Name: Sawyers Landing Project

Project Description:

See attached Exhibit "2" for Project Description. The layout of the proposed mixed-use project to be located at 50 Dodge Road as depicted on the Overall Site Plan [Drawing C-100] prepared by Carmina Wood Design. A reduced size copy of the Overall Site Plan is provided at Exhibit "3". and a reduced size copy of the Site Plan [Drawing C-101] is provided at Exhibit "4". The proposed mixed-use project includes the subdivision of the 17.42 acre Project Site into four parcels as depicted on the Parcel Map [Drawing C-102] prepared by Carmina Wood Design. A reduced size copy of the Parcel Map [Drawing C-102] is provided at Exhibit "5".

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

If this petition is an amendment to a previously approved site plan, please describe the proposed changes (include type and size of existing structures and number of existing parking spaces):

The changes to the Site Plan approved by the Planning Board on September 22, 2022 include a reduction of the number of residential units from 258 units to 199 units including elimination of a four-story multifamily building with 48 units, an increase in the commercial square footage resulting from the ~~addition of a four-story climate controlled building and a reduction of the number of parking spaces~~.

	existing	proposed	total
Gross Floor Area (non-residential):	0	131,464 sq. ft.	131,464 sq. ft.
Number of Residential Units:	0	199	199
Number of Parking Spaces:	0	401	401

Acreage of Parcel: 17.42 Acres

Frontage on Public Roads: The parcel has approximately 1,120 ft. on Dodge Road and approximately 120 ft. of frontage on Sweet Home Road.

Existing Zoning District(s) NCD

[Note: A completed Part 1 of the Full Environmental Assessment Form prepared pursuant to the State Environmental Quality Review Act ("SEQRA") with Page 5[a] and Attachments "A" and "B" is attached as Exhibit "1" of this Site Plan Amendment Application.]

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 1 – Part 1 of the Full Environmental Assessment Form prepared pursuant to the State Environmental Quality Review Act ("SEQRA") with attached Page 5[a] and Attachments "A" and "B"

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Full Environmental Assessment Form
Part 1 - Project and Setting

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Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Proposed Mixed-Use Project - Site A of Muir Woods		
Project Location (describe, and attach a general location map): 50 Dodge Road - Town of Amherst - Erie County		
Brief Description of Proposed Action (include purpose or need): The proposed action consists of an amendment of the Site Plan approved by the Planning Board ("Planning Board on September 22, 2021 pto accommodate the updated layout for the proposed mixed-use project to be located at 50 Dodge Road. The layout of the mixed-use project is depicted on the Overall Site Plan [Drawing C-100] prepared by Carmina Wood Design. The action has been defined broadly to include all required discretionary approvals and permits as well as all site improvements including the two proposed mixed-use buildings, the climate controlled storage building, residential buildings, driveway connections, access aisles, parking spaces, driveways, 100 ft. Adjacent Area impacts for the recreational trail, lighting, landscaping, an on-site storm water management improvements, sanitary sewer and water lines and connections and all other required utility improvements. The project purpose is to develop 50 Dodge Road as a mixed-use project as depicted on Overall Site Plan for the project prepared by Carmina Wood Design. The project is a Type I action pursuant to SEQRA and the Town Board issued an Amended Findings Statement pursuant to SEQRA on October 5, 2024. The proposed use is consistent with the Town's adopted Comprehensive Plan.		
Name of Applicant/Sponsor: Sawyers Landing LLC c/o Sean Hopkins, Esq.	Telephone: 716.510-4338 E-Mail: shopkins@hsmlegal.com	
Address: 5500 Main Street, Suite 343		
City/PO: Williamsville, NY	State: NY	Zip Code: 14221
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

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B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board	PIPs
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Planning Board - Amended Site Plan Approval	November 25, 2024
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Building Department - Building Permits;	To be determined
e. County agencies ☑Yes ☐No	Highway Work Permit - ECDPW; Water - ECWA	To be determined
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC - Wetland Permit; DSCA Approval and SPDES Permit	Amended wetland permit issued on 07/02/24- DSCA & SPDES - To be determined
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

[**Note**: The Town has an adopted Waterfront Revitalization Program.]

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

NYS Heritage Areas:West Erie Canal Corridor [Note: The project will not have any impacts on the West Erie Canal Corridor.]

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

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C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Site "A" of the Muir Woods property is zoned New Community District pursuant to the Town of Amherst Zoning Map.

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? Sweet Home Central School District

b. What police or other public protection forces serve the project site?
Town of Amherst Police Department

c. Which fire protection and emergency medical services serve the project site?
Volunteer Fire Department

d. What parks serve the project site?
Various Town Parks including Nature View Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Mixed-use project consisting of commercial space and various residential unit types.

b. a. Total acreage of the site of the proposed action? 17.424 acres
b. Total acreage to be physically disturbed? 13.33 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 17.424 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
63 residential lots [2 family townhomes for sale]
ii. Is a cluster/conservation layout proposed? ☑ Yes ☐ No
iii. Number of lots proposed? 4 lots
iv. Minimum and maximum proposed lot sizes? Minimum 3 acres Maximum 7.

e. Will the proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated 3-4
- Anticipated commencement date of phase 1 (including demolition) Mar month 2025 year
- Anticipated completion date of final phase Mar month 2027 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

The infrastructure necessary for each phase will be installed to ensure compliance with applicable technical standards including those for stormwater management.

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f. Does the project include new residential uses? [**Note**: The 87 one-family units consist of attached townhome units for sale.] ☑ Yes ☐ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	87			56
At completion of all phases	87			112

The build-out of the residential components will be based on market conditions.

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes, There will be 15,000 sq. ft. of commercial space in each of the two mixed-use buildings.

i. Total number of structures 3

ii. Dimensions (in feet) of largest proposed structure: 55' height; 240' width; and 120' length

iii. Approximate extent of building space to be heated or cooled: 131,464 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑ Yes ☐ No

If Yes,

i. Purpose of the impoundment: Storm water management

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑ Other specify: Storm water runoff from impervious surfaces.

iii. If other than water, identify the type of impounded/contained liquids and their source.

N/A

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: 1.5 acres

v. Dimensions of the proposed dam or impounding structure: N/A height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): Impoundment area is an excavation consisting of earth fill.

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

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ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres: _____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No
If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:

i. Total anticipated water usage/demand per day: 49,265 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:

- Name of district or service area: ECWA Consolidated Water District
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:

i. Total anticipated liquid waste generation per day: 49,625 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): Sanitary wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: Tonawanda Creek Wastewater Treatment Plant
- Name of district: Town of Amherst Consolidated Sanitary Sewer District
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

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- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑ Yes ☐ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 8 acres (impervious surface)

_____ Square feet or 17.42 acres (parcel size)

ii. Describe types of new point sources. Parking lots and roof tops

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Stormwater runoff will be conveyed into the on-site stormwater management system to be installed per the applicable stringent stormwater quality and quantity standards of the NYS Department of Environmental Conservation ("NYSDEC")

- If to surface waters, identify receiving water bodies or wetlands: NYSDEC & Federal wetlands on the east portion of the Project Site after on-site stormwater management system.
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☑ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☑ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐ Yes ☑ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

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h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? [**Note:** An updated Traffic Impact Study prepared by Passero Associates dated June 24, 2024 has been submitted based on the current project layout.] ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

To be determined

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

National Grid

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7:00 to 7:00
- Saturday: 8:00 to 6:00
- Sunday: As needed
- Holidays: Not Applicable

ii. During Operations:

- Monday - Friday: 8:00 to 11:00
- Saturday: 8:00 to 11:00
- Sunday: 8:00 to 10:00
- Holidays: 8:00 to 10:00

The hours of operation during "During Operations" as listed above apply to the first floor commercial space in the two mixed-use buildings. The hours are estimates since the tenants that will lease the first floor commercial space including both office and retail tenants have not yet been identified.

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m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Construction activities will include the use of construction equipment during daytime hours that will exceed ambient background noise levels. The construction related noise impacts are a temporary unavoidable impact.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Lighting will be installed in compliance with the lighting standards contained in the Town of Amherst Zoning Code. A

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

Potential use of lawn fertilizer and pesticides on maintained portions of property in accordance with applicable standards for application and use of lawn fertilizer and pesticides.

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☑ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 3 tons per week (unit of time)
- Operation : 3 tons per week (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: wood and metal waste may be recycled by the contract at their discretion
- Operation: Town of Amherst recycling program will be followed

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Approved NYSDEC landfill via contractor or private disposal company
- Operation: Approved NYSDEC landfill via private disposal company

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s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): Wetlands

ii. If mix of uses, generally describe:

There are mixture of uses in the vicinity of the Project Site including residential uses to the north in the Bucyrus Heights Subdivision, an elementary school, apartments and office buildings on Sweet Home Road and permanent open space to the east of the Project Site..

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	8.0	+ 8.0
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	17.4	0	-17.4
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: Greenspace, Landscaping, Pond	0	9.4	+9.4

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2.c

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No
If Yes,
i. Identify Facilities:
1. Heritage Heights Elementary School (Sweet Home School District- 2545 Sweet Home Road); 2. Creative Play Learning Center (Private Day Care Facility- 647 Dodge Road); and 3. Four Seasons Child Care & Preschool (Private Day Care Facility- 1639 North French Road).

e. Does the project site contain an existing dam? ☐ Yes ☑ No
If Yes:
i. Dimensions of the dam and impoundment:
- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection:
_____
_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No
- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:
_____
_____
iii. Describe any development constraints due to the prior solid waste activities: _____
_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:
_____
_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No
☐ Yes – Spills Incidents database Provide DEC ID number(s): _____
☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____
_____
_____
iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No
If yes, provide DEC ID number(s): _____
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):
_____
_____

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

2.c

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Getzville silt loam	94 %
Swormville clay loam	6 %
	%

d. What is the average depth to the water table on the project site? Average: >5 feet

e. Drainage status of project site soils:

☐	Well Drained:	% of site
☐	Moderately Well Drained:	% of site
☑	Poorly Drained	100 % of site

f. Approximate proportion of proposed action site with slopes:

☑	0-10%:	100 % of site
☐	10-15%:	% of site
☐	15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, NYS Wetland Approximate Size NYS Wetland (in a...
- Wetland No. (if regulated by DEC) TE-33

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

m. Identify the predominant wildlife species that occupy or use the project site:
Typical suburban species

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation):
ii. Source(s) of description or evaluation:
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:
i. Species and listing (endangered or threatened):

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☑ Yes ☐ No

If Yes:
i. Species and listing:
Spiny Softshell - The Project Sponsor does not believe that Spiny Softshell is present on Site A of the Muir Woods property.

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name:
ii. Basis for designation:
iii. Designating agency and date:

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: Eligible property:Heritage Heights Elementary School

iii. Brief description of attributes on which listing is based:

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No [No impact letter issued by SHPO on October 10, 2001.]

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Sawyers Landing LLC Date November 24, 2024

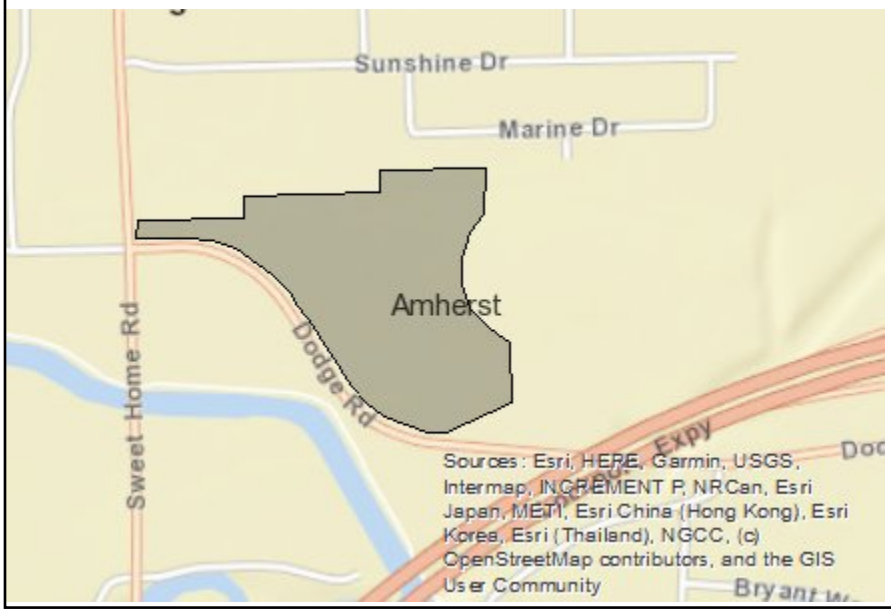
Signature Sean Hopkins Title Attorney for Project Sponsor

Sean W. Hopkins, Esq.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PRINT FORM

EAF Mapper Summary Report



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas:West Erie Canal Corridor
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters, NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):34.6
E.2.h.iv [Surface Water Features - DEC Wetlands Number]	TE-33
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	Yes
E.2.p. [Rare Plants or Animals - Name]	Spiny Softshell
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:Heritage Heights Elementary School
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST ATTACHMENT
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM
Mixed-Use Project - 50 Dodge Road

1. For each applicable category of proposed new structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Getzville Silt Loam	Severe	Severe	Severe	Severe	Moderate
Swormville Clay Loam	Severe	Severe	Severe	Severe	Severe

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

_____ Geotechnical report attached __x___ Not applicable

3. Is your property located: On Youngs Road between Dodge and Klein Roads? □ Yes x No
On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? □ Yes x No

If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? □ Yes x No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
Not Applicable

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: Yes ☒ No

Describe_____
_____

(Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per peak hour upon completion of project__243 [Sat. Peak Hour]
Source: __Updated Traffic Impact Study prepared by Passero Associates dated June 23, 2024._____

8. Will blasting occur during construction? □ Yes ☒ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? ☒ Yes □ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:
49,265 average flow 197,060 peak flow.
(Average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

11. Based on the Town's *2011 Reconnaissance Level Survey of Historic Resources*, is your property 'blue-rated' for historic significance? x Yes □ No
[There are not any buildings located on the Project Site.]
[Note: A copy of the No Impact Determination letter issued by SHPO is provided at Attachment "B" of the Part 1 of the Full Environmental Assessment Form provided at Exhibit "1".]

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Attachment "A" of Part 1 of Full Environmental Assessment Form - Wetland Permit DEC ID 9-1422-00398] issued by the New York State Fepartment of Environmental Conservation dated July 25, 2024

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 9-1422-00398

PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
SAWYER'S LANDING LLC
43 Central Ave
LANCASTER, NY 14086
(716) 912-0969

CIMINELLI MUIR WOODS, LLC
50 Fountain Plz Ste 500
Buffalo, NY 14202
(716) 631-8000

Facility:
MUIR WOODS DEVELOPMENT
1121 N French Rd
Amherst, NY 14228

Facility Location: in AMHERST in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 191.586 NYTM-N: 4770.823
Latitude: 43°01'38.9" Longitude: 78°47'07.2"
Authorized Activity: Construction of a new bike path, measuring approximately 830 linear feet in length and permanently impacting approximately 0.58-acres of the regulated 100' wide adjacent area of NYSDEC Freshwater Wetland TE-33. No direct impact to Freshwater Wetland TE-33 itself is authorized as part of this project. The project is located at the facility location listed above.

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 9-1422-00398/00003
New Permit Effective Date: 7/25/2024 Expiration Date: 7/24/2027

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ, Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY 14209

Authorized Signature: Lisa M. Czechowicz Date 7 / 25 / 2024

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Distribution List

NYSDEC Region 9 Division of Law Enforcement
Chuck Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health
Molly Bebak, NYSDEC Region 9 Division of Water
Town of Amherst
Jody M. Celeste, Earth Dimensions, Inc.
Ciminelli Muir Woods, LLC

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by various, including pages 1-3 of Joint Application Form (3 pgs), "Overall Site Plan" (1 pg), "Grading Plan - Recreation Trail" (1 pg), and "Monument and Tree Planting Plan" (1 pg), 6 pages DEC date-stamped 3/1/24 attached to this permit.

2. **Conditions Prevail Over Plans** If any condition of this permit conflicts with the approved plans, the permit condition shall prevail over the plans.

3. **Notice of Intent to Commence Work** The Permittee shall notify the Department 3 to 5 days prior to the commencement of work on the project by emailing DEP.R9@dec.ny.gov, at attention to Matthew Smith, Environmental Analyst I, and Charles Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health. The email needs to include the permit number, permittee name and the project start date.

4. **Siltation Prevention Measures** Siltation prevention measures, such as silt fencing, sediment traps, settling basins and/or filter bags, as deemed necessary and appropriate for the situation, shall be installed and maintained during the project, to prevent movement of silt and turbid waters from the project site into NYS Freshwater Wetland TE-33, its associated 100' wide adjacent area, and/or any other watercourse, stream, water body or wetland.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

5. **Install Monuments** The permittee shall install a minimum of nine (9) monuments along the edge of the bike path as shown in the final NYSDEC approved site plan. The monuments shall be 30-inch long 5/8-inch rebar and cap embedded flush and in the center of the top exposed surface of concrete in a minimum 4-inch diameter, 4.5-foot long section of PVC Schedule 40 drain pipe filled with concrete, extending vertically 1.5 - 2 feet above existing grade at each location. The caps shall say "Wetland Conservation Area, Do Not Disturb, Survey Marker."

6. **Work Within Area Depicted on Plans** No impacts to Freshwater Wetland TE-33 or its 100' wide adjacent area located outside of monuments are authorized by this permit. Other than impacts directly associated with work authorized by this permit, Freshwater Wetland TE-33 and its regulated 100'-wide adjacent area must be left in an undisturbed condition.

7. **Minimize Adverse Impacts to Wetlands, Wildlife, Water** All work must be performed in a manner which minimizes adverse impacts to wetlands, wildlife, water quality and natural resources.

8. **Invasive Species (Non-native Vegetation)** To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment be cleaned of mud, seeds, vegetation and other debris before entering any approved construction areas within the 100' wide regulated wetland adjacent area of NYS Freshwater Wetland TE-33.

9. **Equipment Storage 100' from Wetland, Water Body** All equipment and machinery shall be stored, refueled, and safely contained greater than 100 feet landward of the regulated wetland or water body at the end of each work day. This will serve to avoid the inadvertent leakage of deleterious substances into the regulated area.

10. **Disposal of Material** All excess construction materials shall be immediately removed from the project area upon project completion. Materials may be used at another permitted site, recycled, disposed of at a NYSDEC-approved landfill, or disposed of at an upland site, as appropriate for the material and in accordance with all local, state and federal regulations. Disposal in wetlands and/or regulated 100' wide wetland adjacent areas (including regulated areas of NYS Freshwater Wetland TE-33), other surface waters, or in 100-year floodplains is strictly prohibited.

11. **Seed, Mulch Disturbed Areas** All areas of soil disturbance resulting from this project must be seeded with an appropriate erosion control seed mix and mulched with straw or hydro-mulched immediately upon completion of the project.

12. **Temporary Mulch, Final Seeding** If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth but not more than six months after project completion.

13. **Establish Vegetative Cover** The permittee must ensure the establishment of at least 90 percent vegetative cover across all project disturbed areas by the end of the first complete growing season after completion of construction.

14. **Long-term Plant Survival** The permittee must ensure a minimum of 85% survival of plantings by the end of five growing seasons. If this goal is not met, the permittee must re-evaluate the restoration project in order to determine how to meet the mitigation goal and submit plans to be approved to the NYSDEC Region 9 Bureau of Ecosystem Health via email at R9BEH@dec.ny.gov.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

15. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

16. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

17. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

18. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY14209

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Attachment "B" of Part 1 of Full Environmental Assessment Form - SHPO No Impact Determination Letter dated October 10, 2021

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

NEW YORK STATE
Bernadette Castro
Commissioner

October 10, 2001

Carolyn A. Pierce
CCRG
105 Robie Avenue
Buffalo, New York 14214

Dear Ms. Pierce:

Re: SEQRA
Muir Woods Mixed-Use Development
Amherst/Erie County
01PR0345

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:cmp

RECEIVED
OCT 16 2001
CIMINELLI DEVELOPMENT COMPANY, INC.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 2 – Description of the Proposed Mixed-Use Project - 50 Dodge Road [Site "A" of the Muir Woods Property]

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

EXHIBIT 2 OF SITE PLAN AMENDMENT APPLICATION

DESCRIPTION OF PROPOSED SITE PLAN AMENDMENT
50 DODGE ROAD [SITE "A" OF MUIR WOODS PROPERTY]

The proposed project consists of a modifications of the mixed-use project that received Site Plan Approval from the Planning Board on September 22, 2022 to be located at 50 Dodge Road [Site "A" of Muir Woods Property] (the "Project Site"). The Project Site is properly zoned for the proposed mixed-use project. The mixed-use project consists of the following: two 4-story mixed use buildings [15,000 sq. ft. of 1st floor commercial space along with 5 1st floor apartments and 51 upper floor apartments], a 4-story climate-controlled storage building, 87 two-story townhomes for sale along with all related site improvements depicted on the engineered plans prepared by Carmina Wood Design submitted with this Site Plan Application. A reduced size copy of the Overall Site Plan [Drawing C-100] is provided at Exhibit "3". The fully engineered plans for the modified mixed-use project consist of the following:

- Cover Sheet;
- Topographic Survey;
- Demolition & Erosion Control Plan [Drawing C-001];
- Demolition & Erosion Control Details Plan [Drawing C-002];
- Overall Site Plan [Drawing C-100];
- Site Plan [Drawing C-101];
- Parcel Map [Drawing C-102];
- Site Details Plan [Drawing C-103];
- Site Details Plan [Drawing C-104];
- Site Details Plan [Drawing C-105];
- Site Details Plan [Drawing C-106];
- Grading Plan [Drawing C-200];
- Grading Plan [Drawing C-201];

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

- Storm Drainage Plan [Drawing C-300];
- Storm Drainage Details Plan [Drawing C-301];
- Storm Drainage Plan [Drawing C-302];
- Storm Drainage Details Plan [Drawing C-303];
- Utility Plan [Drawing C-400];
- Sanitary Sewer Details Plan [Drawing C-401];
- Sanitary Sewer Details Plan [Drawing C-402];
- Sanitary Sewer General Notes Plan [Drawing C-403];
- Sanitary Sewer Testing Notes Plan [Drawing C-404];
- Water Details Plan [Drawing C-404];
- Water Details Plan [Drawing C-405];
- Insulated Enclosure Detail Plan [Drawing C-408];
- Landscape Plan [Drawing L-100]
- Photometric Study [Drawing LP-100];
- Photometric Details Plan [Drawing LP-101];
- Fire Truck Plan [TT-100]

For purposes of the review process, the proposed mixed-use project has been defined broadly to include all required discretionary approvals and permits as well as all site improvements including the proposed driveway connections to Dodge Road, access aisles, parking spaces, driveways, wetland impacts, lighting, landscaping, on-site storm water management improvements, sanitary sewer and water lines and connections and all other required utility improvements.[1] The project purpose is to develop 50 Dodge Road as an innovative mixed-use project on property that has been designated for development for several decades. The proposed mixed-use project is a Type I action pursuant to SEQRA. The Town Board issued an Amended Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA") on

[1] A completed Part 1 of the Full Environmental Assessment Form with attached Page 5[a] and Attachments “A” and “B” is provided at Exhibit “1”.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

October 19, 2020 to allow mixed-use development of the Project Site.[2] Additionally, on October 19, 2020, the Town Board also adopted a resolution to amend the Town's Comprehensive to designate the Project Site as appropriate for mixed-use.[3]

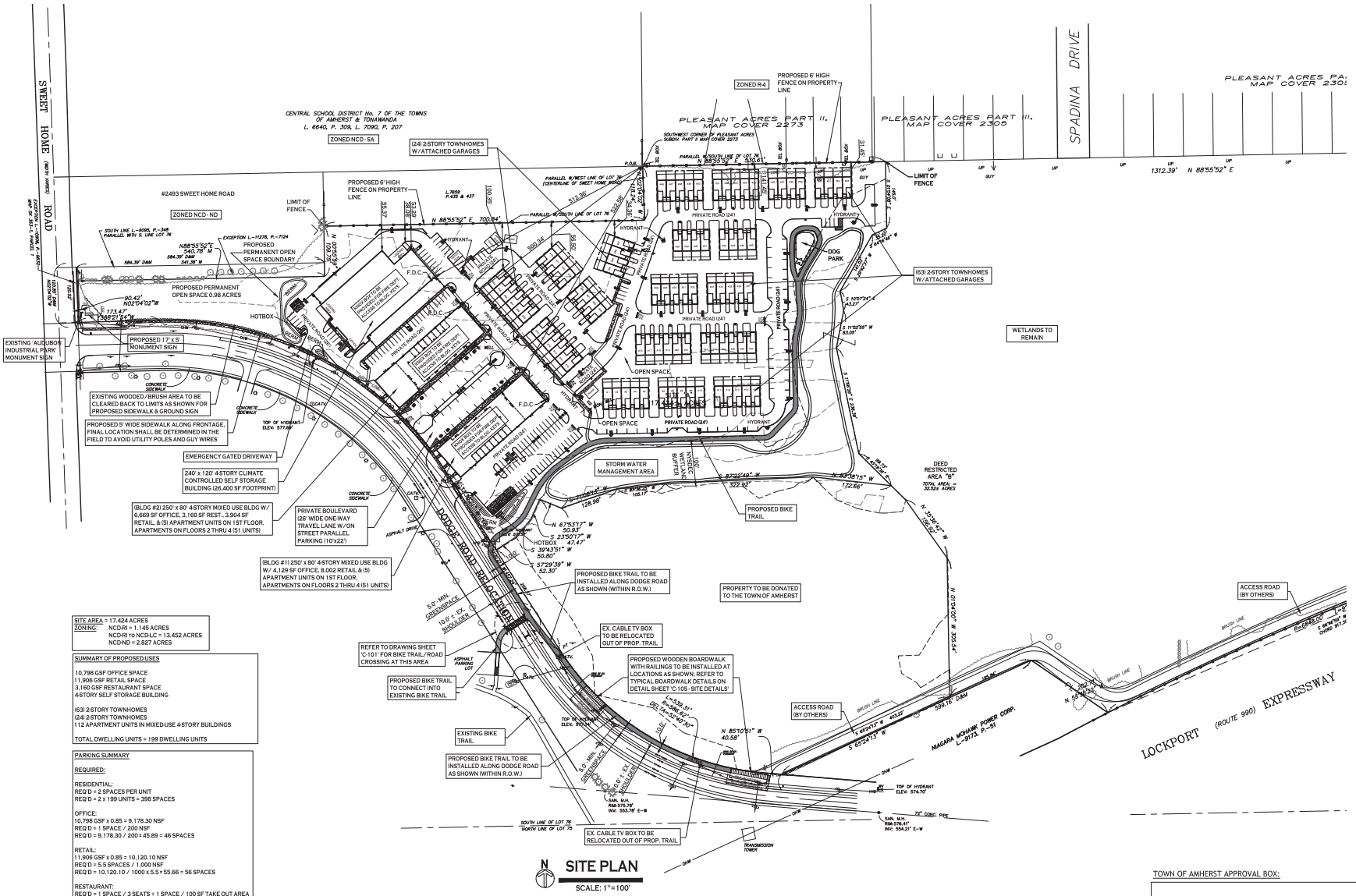
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

[2] A copy Resolution 2024-773 as adopted by the Town of Amherst Town Board on October 15, 2024 for the purpose of Issuing an Amended Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA") for allowing updated mixed-use development on the Project Site is provided at Exhibit "10".

[3] A copy of Resolution 2020-792 as Adopted by the Town of Amherst Town Board on October 19, 2020 for the purpose of approving an Amendment to the Town of Amherst Comprehensive Plan to accommodate mixed-use development on the Project Site is provided at Exhibit "11".

Exhibit 3 – Reduced Size Copy of Overall Site Plan [Drawing C-100] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



SITE AREA = 17.424 ACRES
ZONING: NCD-RI = 1.145 ACRES
NCD-RI to NCD-LC = 13.452 ACRES
NCD-ND = 2.827 ACRES

SUMMARY OF PROPOSED USES

10,798 GSF OFFICE SPACE
11,906 GSF RETAIL SPACE
3,160 GSF RESTAURANT SPACE
4-STORY SELF STORAGE BUILDING

(63) 2-STORY TOWNHOMES
(24) 2-STORY TOWNHOMES
112 APARTMENT UNITS IN MIXED-USE 4-STORY BUILDINGS

TOTAL DWELLING UNITS = 199 DWELLING UNITS

PARKING SUMMARY

REQUIRED:

RESIDENTIAL:
REQ'D = 2 SPACES PER UNIT
REQ'D = 2 x 199 UNITS = 398 SPACES

OFFICE:
10,798 GSF x 0.85 = 9,178.30 NSF
REQ'D = 1 SPACE / 200 NSF
REQ'D = 9,178.30 / 200 = 45.89 = 46 SPACES

RETAIL:
11,906 GSF x 0.85 = 10,120.10 NSF
REQ'D = 5.5 SPACES / 1,000 NSF
REQ'D = 10,120.10 / 1000 x 5.5 = 55.66 = 56 SPACES

RESTAURANT:
REQ'D = 1 SPACE / 3 SEATS + 1 SPACE / 100 SF TAKE OUT AREA
REQ'D = 100 SEAT / 3 + 500 SF / 100 = 38 SPACES

SELF STORAGE:
REQ'D = 1 SPACE / 5,000 AREA DEVOTED TO STORAGE
REQ'D = (26,400 SF x 4) / 5,000 SF = 22 SPACES

TOTAL REQ'D = 560 SPACES

PROVIDED:

90 PARALLEL PARKING SPACES
121 9'x19' SPACES
63+24 TOWNHOUSE GARAGE SPACES
63+24 SPACES IN FRONT OF TOWNHOUSE GARAGE SPACES
16 GARAGE SPACES IN 4-STORY BLDGS.
401 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 0.98 ACRES

WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200FL

TOWN OF AMHERST APPROVAL BOX:

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Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per Amherst T.S.B. 03/07/24 Comments	03/13/24
2	Rev. per ECDPW 03/28/24 Comments	04/02/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

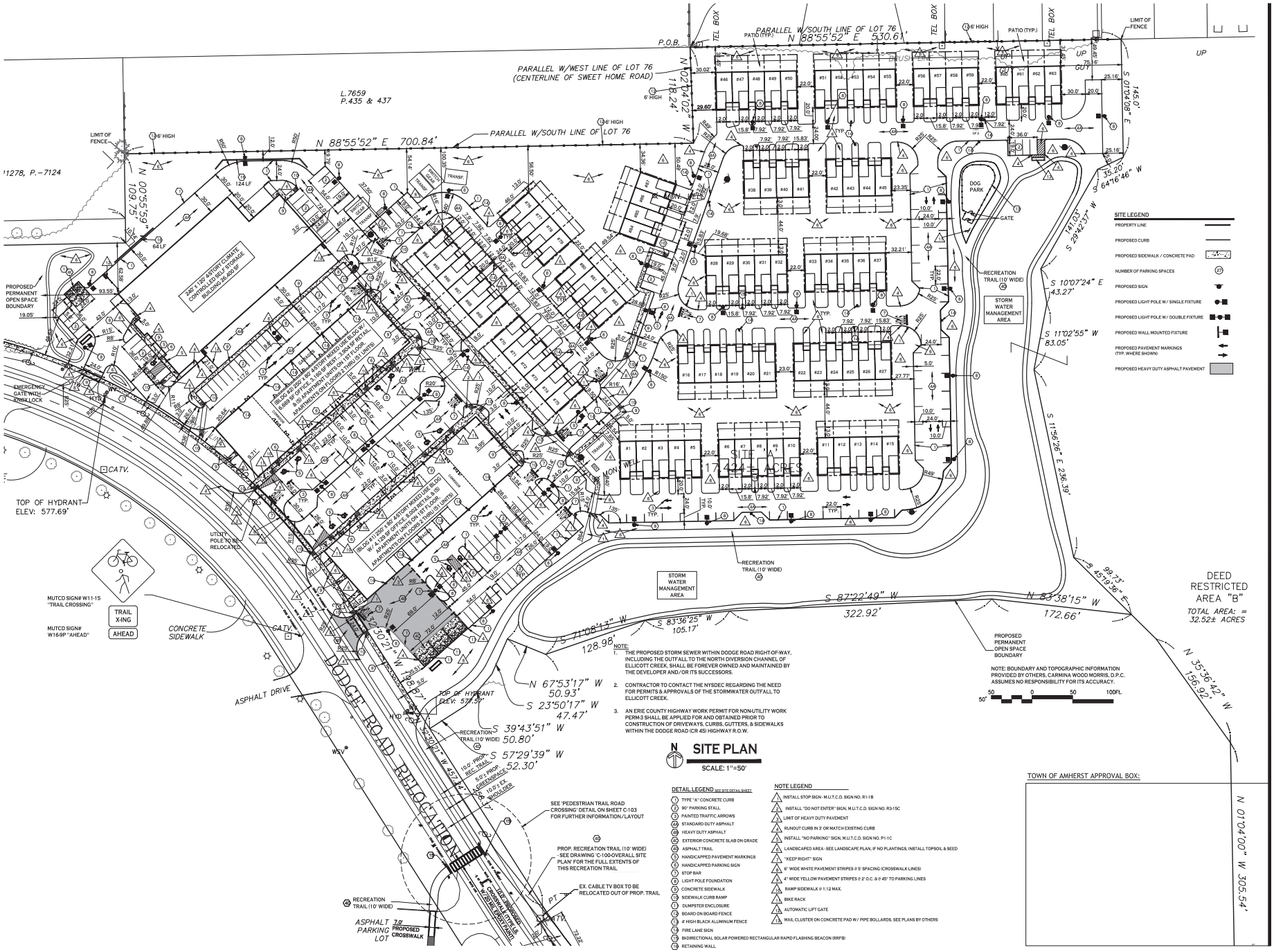
DRAWING NAME:
Overall Site Plan

DRAWING NO.
C-100

Project no.: 21.011

Exhibit 4 – Reduced Size Copy of Site Plan [Drawing C- 101] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



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REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/08/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

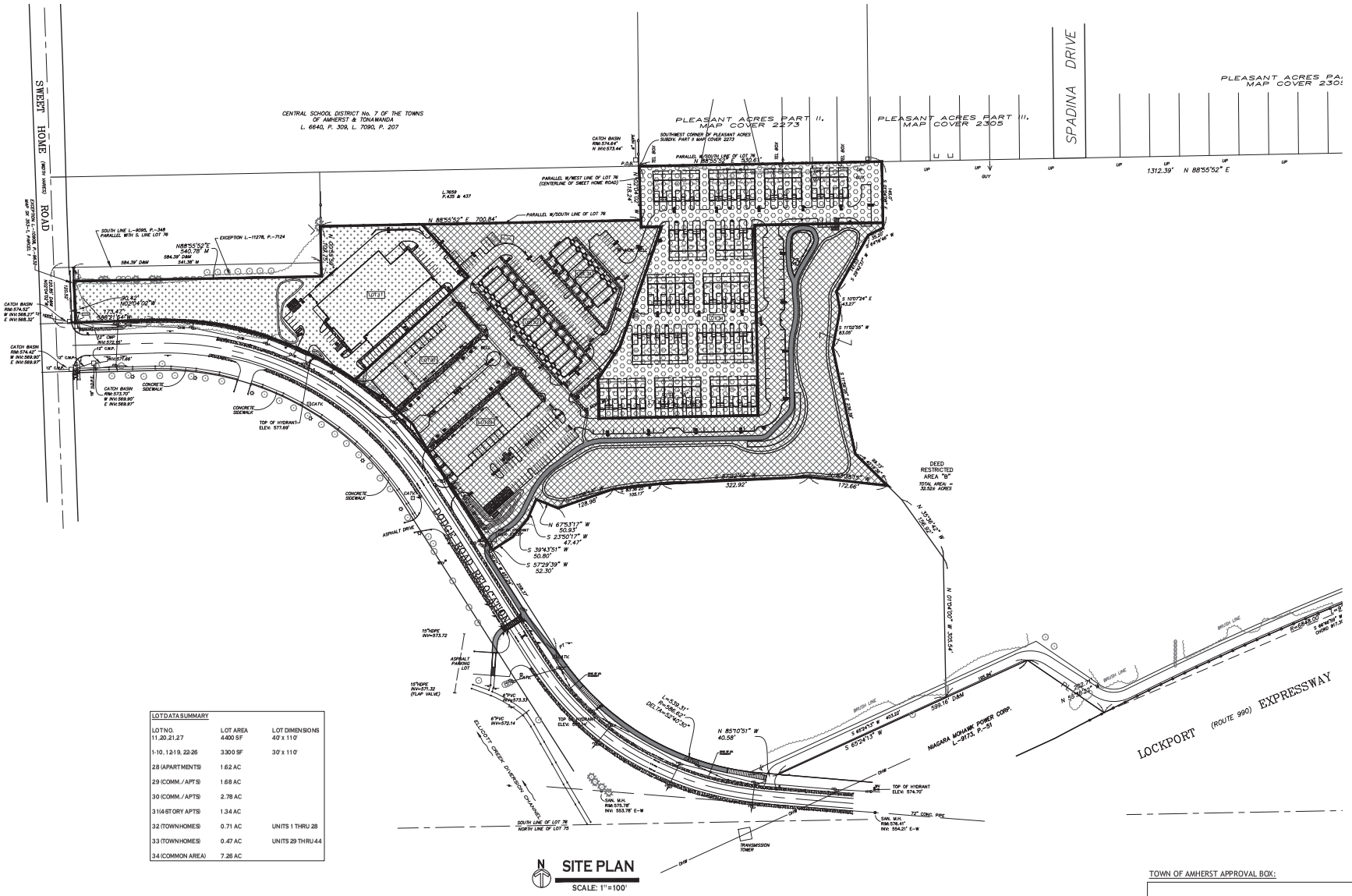
Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan

DRAWING NO.
C-101
Project no.: 21.011

Exhibit 5 – Reduced Size Copy of Parcel Map [Drawing C-102] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



SITE PLAN

SCALE: 1"=100'

LOT DATA SUMMARY		
LOT NO. 11,20,21,27	LOT AREA 4,400 SF	LOT DIMENSIONS 40'x 110'
1-10, 12-19, 22-26	3,300 SF	30'x 110'
28 (APARTMENTS)	1.62 AC	
29 (COMM./APTS)	1.68 AC	
30 (COMM./APTS)	2.78 AC	
31 (4 STORY APTS)	1.34 AC	
32 (TOWNHOMES)	0.71 AC	UNITS 1 THRU 28
33 (TOWNHOMES)	0.47 AC	UNITS 29 THRU 44
34 (COMMON AREA)	7.26 AC	

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200FT.

TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per town 07/29/22 comments	03/27/23
4	Plan rev. per 09/13/23 Fire Safety comments	03/27/23
5	Plan rev. per 10/20/23 Town comments	10/31/23
6	Plan revised per Town/Client comments	05/28/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

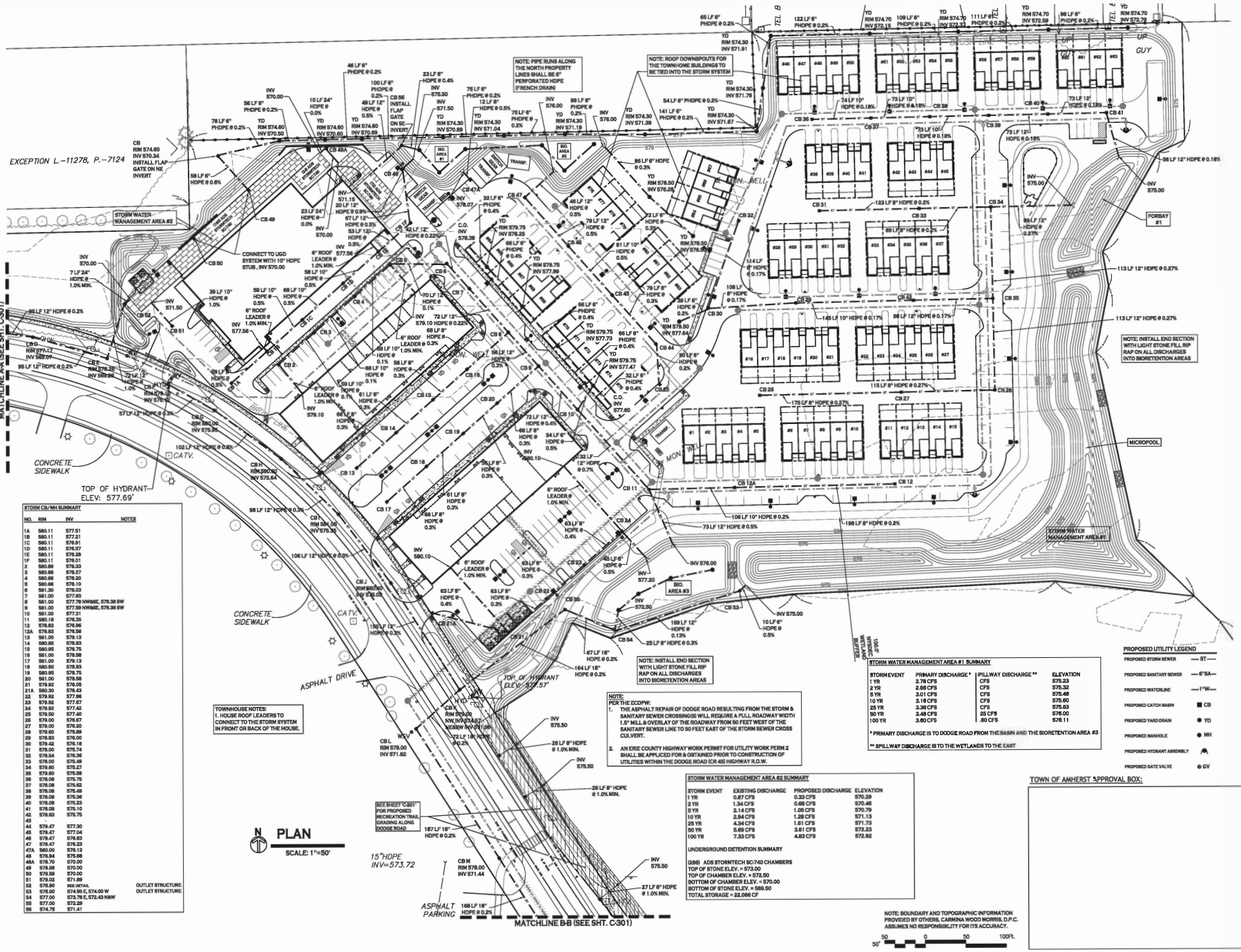
Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Parcel Map

DRAWING NO.
C-102
Project no.: 21.011

Exhibit 6 – Reduced Size Copy of Storm Drainage Plan [Drawing C-300] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



STORM CB/MH SUMMARY

NO.	RIM	INV	NOTES
1A	580.11	577.51	
1B	580.11	577.21	
1C	580.11	576.91	
1D	580.11	576.57	
1E	580.11	576.28	
1F	580.11	576.01	
2	580.66	578.33	
3	580.66	578.27	
4	580.66	578.20	
5	580.66	578.10	
6	581.30	578.03	
7	581.00	577.93	
8	581.00	577.78 NW&SE, 578.38 SW	
9	581.00	577.59 NW&SE, 578.38 SW	
10	581.00	577.31	
11	580.18	576.35	
12	578.83	576.96	
12A	578.83	576.56	
13	581.00	578.13	
14	580.95	578.93	
15	580.66	578.75	
16	581.00	578.58	
17	581.00	579.13	
18	580.95	578.93	
19	580.95	578.75	
20	581.00	578.58	
21	579.92	578.05	
21A	580.30	578.43	
22	579.92	577.86	
23	579.92	577.67	
24	579.92	577.42	
25	579.50	577.40	
26	579.00	576.67	
27	579.00	576.20	
28	579.60	575.89	
29	578.83	576.00	
30	579.42	576.18	
31	578.00	575.74	
32	578.54	575.36	
33	578.00	575.49	
34	579.60	575.27	
35	579.60	575.58	
36	578.08	575.75	
37	578.08	575.62	
38	578.08	575.49	
39	578.08	575.36	
40	578.08	575.23	
41	578.08	575.10	
42	578.83	575.75	
43			
44	579.47	577.30	
45	579.47	577.04	
46	579.47	576.63	
47	579.47	576.23	
47A	580.00	578.13	
48	578.94	575.68	
48A	578.70	570.00	
49	579.39	570.00	
50	579.59	570.00	
51	579.02	571.89	
52	578.90	SEE DETAIL	OUTLET STRUCTURE
53	576.50	574.95 E, 574.00 W	OUTLET STRUCTURE
54	577.00	573.78 E, 572.43 NW	
55	577.00	572.29	
56	574.75	571.41	

STORM WATER MANAGEMENT AREA #1 SUMMARY

STORM EVENT	PRIMARY DISCHARGE *	PILLWAY DISCHARGE **	ELEVATION
1 YR	2.78 CFS	CFS	575.23
2 YR	2.88 CFS	CFS	575.32
5 YR	3.01 CFS	CFS	575.46
10 YR	3.16 CFS	CFS	575.60
25 YR	3.36 CFS	CFS	575.83
50 YR	3.48 CFS	25 CFS	576.00
100 YR	3.60 CFS	.60 CFS	576.11

* PRIMARY DISCHARGE IS TO DODGE ROAD FROM THE BASIN AND THE BIORETENTION AREA #3
** SPILLWAY DISCHARGE IS TO THE WETLANDS TO THE EAST

STORM WATER MANAGEMENT AREA #2 SUMMARY

STORM EVENT	EXISTING DISCHARGE	PROPOSED DISCHARGE	ELEVATION
1 YR	0.87 CFS	0.33 CFS	570.29
2 YR	1.34 CFS	0.68 CFS	570.46
5 YR	2.14 CFS	1.05 CFS	570.79
10 YR	2.94 CFS	1.28 CFS	571.13
25 YR	4.34 CFS	1.61 CFS	571.73
50 YR	5.69 CFS	3.61 CFS	572.23
100 YR	7.33 CFS	4.83 CFS	572.92

UNDERGROUND DETENTION SUMMARY

(286) ADS STORMTECH SC-740 CHAMBERS
TOP OF STONE ELEV. = 573.00
TOP OF CHAMBER ELEV. = 572.50
BOTTOM OF CHAMBER ELEV. = 570.00
BOTTOM OF STONE ELEV. = 569.50
TOTAL STORAGE = 22,086 CF

PROPOSED UTILITY LEGEND

- PROPOSED STORM SEWER — ST
- PROPOSED SANITARY SEWER — 6"SA
- PROPOSED WATERLINE — 1"W
- PROPOSED CATCH BASIN ■ CB
- PROPOSED YARD DRAIN ● YD
- PROPOSED MANHOLE ● MH
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE ● GV

TOWN OF AMHERST APPROVAL BOX:

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

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REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	08/04/24
2	Rev. per Shop Drawing Review	10/09/24
3	Verify UGD Field Layout (SWM Area#2)	11/21/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

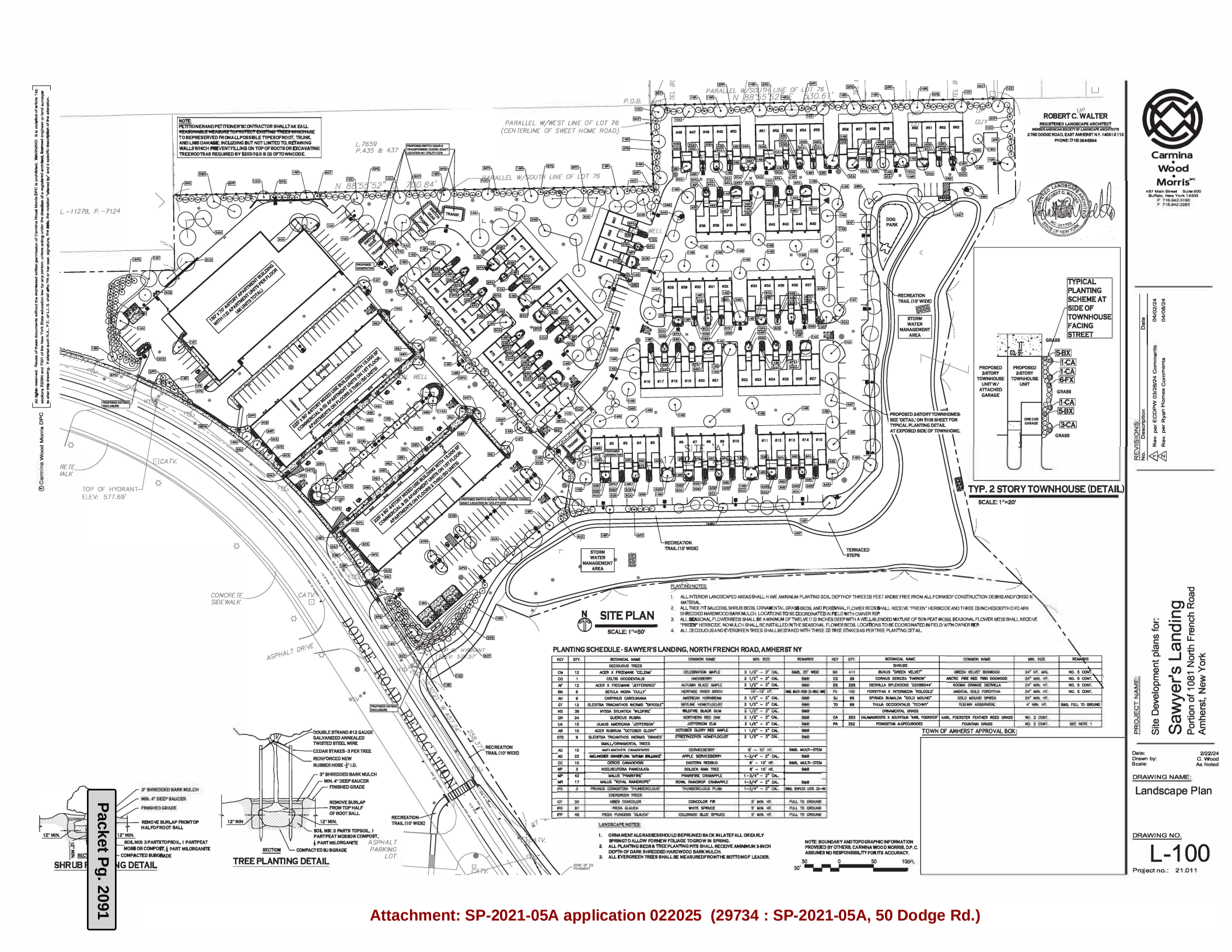
DRAWING NAME:
Storm Drainage Plan

DRAWING NO.
C-300

Project no.: 21.011

Exhibit 7 – Reduced Size Copy of Landscape Plan [Drawing L-100] as Prepared by Carmina Wood Design

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



SITE PLAN

SCALE: 1"=50'

TYP. 2 STORY TOWNHOUSE (DETAIL)

SCALE: 1"=20'

PLANTING NOTES:

1. ALL INTERIOR LANDSCAPED AREAS SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.
2. ALL TREE PIT SAUCERS, SHRUB BEDS, ORNAMENTAL GRASS BEDS, AND PERENNIAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE AND THREE (3) INCHES DEPTH OF FD ARK SHREDDED HARDWOOD BARK MULCH. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
3. ALL SEASONAL FLOWER BEDS SHALL BE A MINIMUM OF TWELVE (12) INCHES DEEP WITH A WELL BLENDED MIXTURE OF 50% PEAT MOSS. SEASONAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE. NO MULCH SHALL BE INSTALLED IN THE SEASONAL FLOWER BEDS. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
4. ALL DECIDUOUS AND EVERGREEN TREES SHALL BE STAKED WITH THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

PLANTING SCHEDULE - SAWYER'S LANDING, NORTH FRENCH ROAD, AMHERST NY

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		DECIDUOUS TREES			
CM	12	ACER X FREEMANII 'CELZAM'	CELEBRATION MAPLE	2 1/2" – 3" CAL.	B&B, 23' WIDE
CO	1	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" – 3" CAL.	B&B
AF	12	ACER X FREEMANII 'JEFFSRED'	AUTUMN BLAZE MAPLE	2 1/2" – 3" CAL.	B&B
BN	6	BETULA NIGRA 'CULLY'	HERITAGE RIVER BIRCH	10'–12' HT.	B&B, MULTI-STEM (3-5 STEMS/ UNIT)
AH	9	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2 1/2" – 3" CAL.	B&B
GT	12	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	SKYLINE HONEYLOCUST	2 1/2" – 3" CAL.	B&B
NS	36	NYSSA SYLVATICA 'WILDFIRE'	WILDFIRE BLACK GUM	2 1/2" – 3" CAL.	B&B
QR	24	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" – 3" CAL.	B&B
UA	15	ULMUS AMERICANA 'JEFFERSON'	JEFFERSON ELM	2 1/2" – 3" CAL.	B&B
AR	10	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	1 1/2" – 2" CAL.	B&B
GTD	9	GLEDITSIA TRIACANTHOS INERMIS 'DRAWES'	STREETKEEPER HONEYLOCUST	2 1/2" – 3" CAL.	B&B
		SMALL/ORNAMENTAL TREES			
AC	10	AMELANCHIER CANADENSIS	SERVICEBERRY	8' – 10' HT.	B&B, MULTI-STEM
AG	22	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	APPLE SERVICEBERRY	1–3/4" – 2" CAL.	B&B
CC	10	CERCIS CANADENSIS	EASTERN REDBUD	8' – 10' HT.	B&B, MULTI-STEM
KP	3	KOELREUTERIA PANICULATA	GOLDEN RAIN TREE	8' – 10' HT.	B&B
MP	42	MALUS 'PRAIRIFIRE'	PRAIRIFIRE CRABAPPLE	1–3/4" – 2" CAL.	
MR	17	MALUS 'ROYAL RAINDROPS'	ROYAL RAINDROP CRABAPPLE	1–3/4" – 2" CAL.	B&B
PS	3	PRUNUS SERRULATA 'THUNDERCLOUD'	THUNDERCLOUD PLUM	1–3/4" – 2" CAL.	B&B, SPLIX LOW 32-48
		EVERGREEN TREES			
CF	20	ABIES CONCOLOR	CONCOLOR FIR	5' MIN. HT.	FULL TO GROUND
PG	91	PICEA GLAUCA	WHITE SPRUCE	5' MIN. HT.	FULL TO GROUND
PP	48	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5' MIN. HT.	FULL TO GROUND

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		SHRUBS			
BX	411	BUXUS 'GREEN VELVET'	GREEN VELVET BOXWOOD	24" HT. MIN.	NO. 5 CONT.
CS	29	CORNUS SERICEA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	24" MIN. HT.	NO. 5 CONT.
DS	226	DIERVILLA SPLENDENS 'G2088544'	KODIAK ORANGE DIERVILLA	24" MIN. HT.	NO. 5 CONT.
FX	103	FORSYTHIA X INTERMEDIA 'KOLGOLD'	MAGICAL GOLD FORSYTHIA	24" MIN. HT.	NO. 5 CONT.
SJ	66	SPIRAEA BUMALDA 'GOLD MOUND'	GOLD MOUND SPIREA	24" MIN. HT.	
TO	99	THUJA OCCIDENTALIS 'TECHNY'	TECHNY ARBORVITAE	4' MIN. HT.	B&B, FULL TO GROUND
		ORNAMENTAL GRASS			
CA	353	CALAMAGROSTIS X ACUTIFLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	NO. 2 CONT.	
PA	352	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	NO. 2 CONT.	SEE NOTE 1

TOWN OF AMHERST APPROVAL BOX:

LANDSCAPE NOTES:

1. ORNAMENTAL GRASSES SHOULD BE PRUNED BACK IN LATE FALL OR EARLY SPRING TO ALLOW FOR NEW FOLIAGE TO GROW IN SPRING.
2. ALL PLANTING BEDS & TREE PLANTING PITS SHALL RECEIVE A MINIMUM 3-INCH DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.
3. ALL EVERGREEN TREES SHALL BE MEASURED FROM THE BOTTOM OF LEADER.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50 100FT.

SHRUB PLANTING DETAIL

TREE PLANTING DETAIL

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ROBERT C. WALTER
REGISTERED LANDSCAPE ARCHITECT
MEMBER AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
2765 DODGE ROAD, EAST AMHERST N.Y. 14051-2113
PHONE: (716) 3646564

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3156
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/08/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Landscape Plan

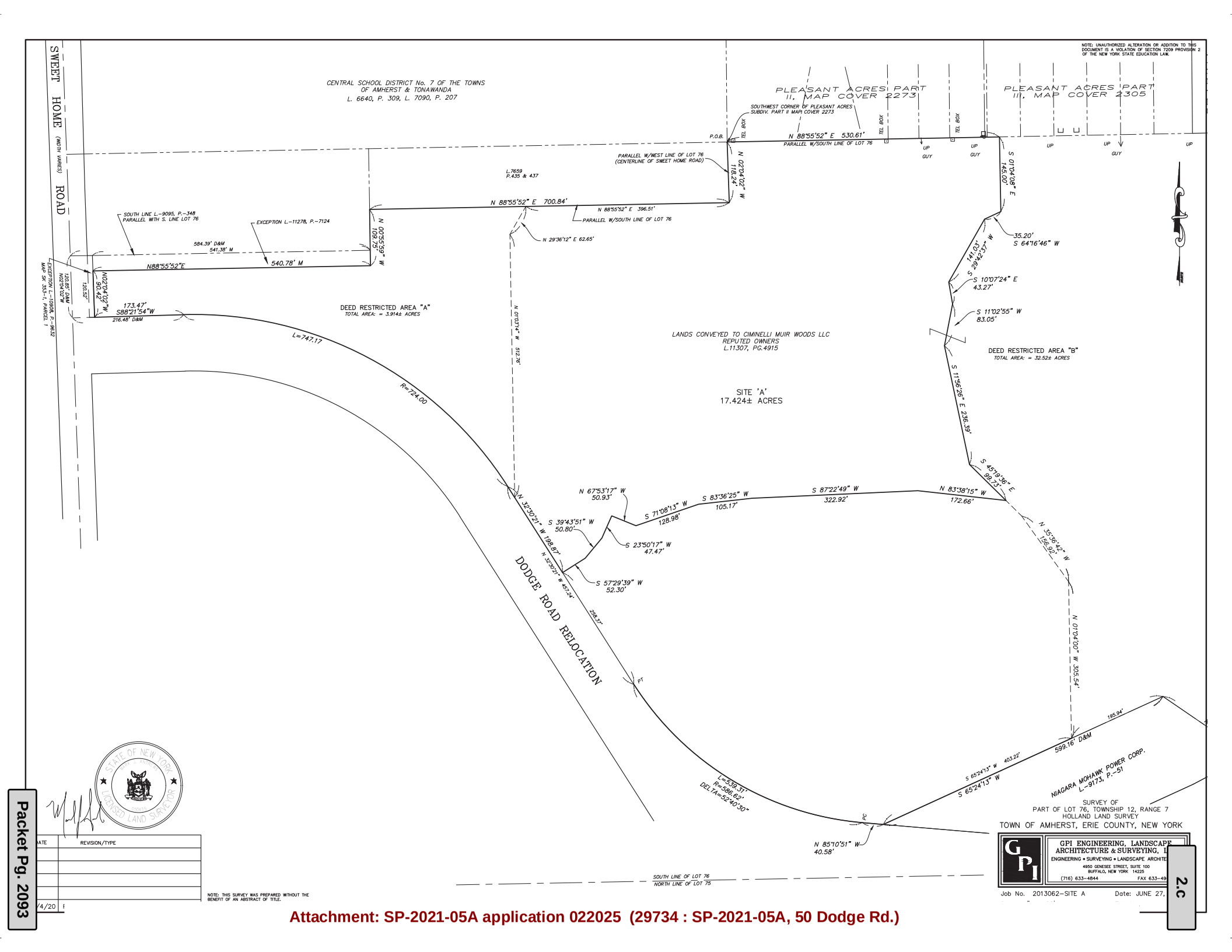
DRAWING NO.
L-100
Project no.: 21.011

Packet Pg. 2091

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 8 – Reduced Size Copy of Survey of the Project Site

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 9 – Resolution Adopted by the Planning Board on September 22, 2024 granting Site Plan Approval for the Previously Approved Mixed-Use Project

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER

Sawyer's Landing LLC
c/o Sean Hopkins, Esq.
5500 Main Street, Suite 343
Williamsville, NY 14221

PROPERTY LOCATION

1081 North French Road (portion) (NCD)

'22 SEP 29 PM4:15

WHEREAS, the Town of Amherst Planning Board on Thursday, September 22, 2022 held a public hearing on a Site Plan for a mixed-use development, and

WHEREAS, the Planning Board reviewed the plans and specifications for the proposed project, and

WHEREAS, the Site Plan was referred to the Town's various review agencies, and

WHEREAS, in accordance with Section 8-7-8 of the Zoning Ordinance, the Planning Board finds that:

A. The site plan includes usable space for active and passive recreation, including pedestrian connections.

B. The site plan includes open space lands for public ownership and use offered for dedication or other disposition to the Town or other public entity.

C. School sites and facilities are adequate to accommodate the proposed site plan.

D. The site plan does not include the extension of roadways to adjacent property.

WHEREAS, in accordance with Section 8-7-9 of the Zoning Ordinance, the Planning Board finds that:

A. The proposed site plan is consistent with the development plan if one is required.

B. The proposed site plan is consistent with the purpose and specific requirements of the Zoning Ordinance and generally consistent with the policies of the Comprehensive Plan.

C. Adequate services and utilities will be available prior to occupancy.

D. The site plan is consistent with all other applicable laws.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER	PROPERTY LOCATION
Sawyer's Landing LLC	1081 North French Road (portion) (NCD)

'22 SEP 29 PM4:1

E. Pursuant to Local Law #3-82, as amended, the Planning Board has determined that the requirements of SEQR are complete and that the subject proposal is not expected to have a significant adverse effect on the environment. The previously undertaken SEQR process included a DEIS, FEIS and culminated in the Town Board's issuance of a SEQR Findings Statement on December 17, 2007. Lead Agency was re-established for review of the proposed amendment to the Findings Statement to allow the proposed mixed-use development, and the Findings Statement was revised on September 27, 2021.

F. Wetland permits were issued for this project by NYSDEC on December 17, 2019 and the US Army Corps of Engineers under Section 404 of the Clean Water Act on December 12, 2019. Both permits authorize work on the project until November 30, 2024.

NOW THEREFORE BE IT FURTHER RESOLVED that the Planning Board, in accordance with Section 8-7 of the Zoning Ordinance approves said Site Plan subject to the following conditions:

1. That the consideration of signs is specifically excluded from this approval as they will require a separate site plan review and approval by the Town.

2. That all dumpsters/trash containers and all mechanical equipment, utility structures, multiple meter boards, generators, and similar appurtenances, including those which are mounted on any part of a primary structure shall be appropriately screened with a fence, wall, and/or landscaping. Provide gate on dumpster enclosure that shall be closed whenever dumpster is not being serviced, enclosure shall be high enough to screen the dumpster(s) within.

3. That as-built record drawings, including location of utilities, be provided to the Engineering Department prior to issuance of a Certificate of Occupancy by the Building Department.

4. That the proposed 27 lots for 2 unit homes is excluded from this approval as it will require separate open development area and subdivision approvals.

5. That the petitioner obtain the required variances for remoteness of the secondary emergency access from the NYS Department of State prior to issuance of final approved site plan drawings by the Planning Department.

6. That the comments in the Amherst Fire Chief's Association Inc. communication dated June 8, 2022 be addressed to the satisfaction of the association.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER	PROPERTY LOCATION
Sawyer's Landing LLC	1081 North French Road (portion) (NCD)

'22 SEP 29 PM4:16

7. That the requirements outlined in the Engineering Department letter dated June 1, 2022 are adhered to or are addressed to the satisfaction of that department.

8. That the requirements outlined in the Stormwater Management Officers letter dated June 27, 2022 are adhered to or are addressed to the satisfaction of that officer.

9. That an address plan for the development be submitted and approved as indicated Assessor's review dated March 10, 2021.

10. That the Zoning Enforcement Officers comments in the Planning Department letter dated September 14, 2022 be addressed to the satisfaction of that officer.

11. That the departmental comments in the Planning Department letter dated September 14, 2022 be addressed to the satisfaction of that department.

12. That the Town's Landscape Architects comments in the Planning Department letter dated September 14, 2022 be addressed to the satisfaction of the architect.

13. That the properties as required by the Findings Statement be deeded over to the Town of Amherst prior to issuance of final approved site plan drawings for the development.

14. That the petitioner and or his contractor obtain any required permits for work with the Dodge Road right-of-way from the Erie County Department of Public Works Division of Highways.

15. That the petitioner and or his contractor obtain any required permits for work with the Sweet Home Road right-of-way from the New York State Department of Transportation.

16. That the petitioner is required to obtain a Floodplain Development Permit from the Building Department.

The foregoing resolution was adopted by the Town of Amherst Planning Board, September 22, 2022; moved by Chmiel; seconded by Giuliani; ayes 5, noes 0; absent 2 (Kahn, Raffaele).

Robert J. Gilmour, Planning Board Chair

9-29-22
Date

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION
SP-2021-05

PETITIONER

Sawyer's Landing LLC

PROPERTY LOCATION

'22 SEP 29 PM4:1[illegible]

1081 North French Road (portion) (NCD)

SM/ac
X:\Current_Planning\Files\Site Plans\2021\SP-2021-05_(1081 N_FrenchRd_NCD)_2021\SP-2021-05_resolution_092222.doc

cc: Town Clerk
Commissioner of Building
Town Engineer
Fire Chiefs
Traffic/Safety
Highway Superintendent
ECDEP
NYSDOT
NYSDEC
Sean Hopkins, Hopkins Sorgi & McCarthy, 5500 Main St., Suite 343, Williamsville, NY 14221
William Severyn, Severyn Development, 43 Central Ave. Suite 300, Lancaster, NY 14086
Adam Faeth, Ciminelli Real Estate Corp., 50 Fountain Plaza, Suite 500, Buffalo, NY 14202
Chris Wood, Carmina Wood Morris, 487 Main St, Suite 500, Buffalo, NY 14203
David Sutton, Sutton Architects, 5409 Main St, 2nd Floor, Williamsville, NY 14221

Approved Plan: July 26, 2022
Received: August 1, 2022
September 6, 2022

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 10 – Resolution 2024 –773 as Adopted by the Town of Amherst Town Board on October 15, 2024 for the Purpose of Issuing an Amended Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA") for Mixed-Use Project at 50 Dodge Road [Site "A" of Muir Woods Property]

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Amherst Town Board
5583 Main Street
Williamsville, NY 14221
www.amherst.ny.us

Francina J. Spoth
Town Clerk

Meeting: 10/15/24 07:00 PM
Department: Town Clerk
Initiated by: **Timothy Koller**
Co-Sponsored by:

DOC ID: 29466 **RESOLUTION 2024-773** **ADOPTED AS AMENDED**

Amendment to the SEQR Certification of Findings and the Filed Declaration of Restrictions for "Muir Woods - Site A" and Adoption of a Local Law for Amendment #77 to the Audubon Development Plan and Zoning Map for 17.42± Acres of Land from NCD-RI to NCD-LC. [50 Dodge Road (Portion) (NCD); Z-2002-09_E]

RESOLVED, that pursuant to 6NYCRR Part 617 (SEQR) and Town Code Section 104, as amended, that the requirements of SEQR have been completed, and be it further

RESOLVED, that pursuant to NYS Town Law Sec.272-a, the Town Board concurs with the findings of the Planning Board as stated in their resolution of August 27, 2024 to amend the "Development Program" within the SEQR Findings Statement approved by the Town Board on September 27, 2021 to permit "Site A" located at the western end of the overall Muir Woods site located at 50 Dodge Road (NCD) to be developed as a mixed-use residential/commercial project consisting of a different mix of residential units than that outlined in the findings statement adopted on September 27, 2021, and be it further

RESOLVED, that the filed Declaration of Restrictions for "Muir Woods Site A" be amended, and be it further

RESOLVED, that pursuant to NYS Town Law Sec.272-a, the Town Board concurs with the findings of the Planning Board as stated in their resolution of August 27, 2024 that the proposed New Community District Local Center (NCD-LC) use classification at 50 Dodge Road (portion) is consistent with the adopted Bicentennial Comprehensive Plan, as amended, and be it further

RESOLVED, that in accordance with Section 203-8-3 and Section 203-8-15 of the Town Code (Zoning), the Town Board adopts Local Law (#___) to amend the Audubon Development Plan and Town Zoning Map.

10/1/2024
A motion to open the public hearing was made by Supervisor Kulpa, seconded by Councilmember Berger and unanimously approved 4-0. The public hearing was opened at 7:03 PM.

Attorney Sean Hopkins, presented.

The following speakers addressed the Town Board:
Tom Wesibeck, 48 Drawbridge Ct
Don Smith, 201 N Long St
John Trabert, 234 Mt Vernon Rd

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Kathy Aquilina, 215 Maple Rd

There were no further speakers from the public, therefore Supervisor Kulpa moved to close the hearing and set a decision date for the October 15th Town Board meeting, seconded by Councilmember Berger and unanimously approved 4-0. The public hearing was closed at 7:36 PM.

10/15/2024

A motion to approve was made by Supervisor Kulpa and seconded by Councilmember Berger. A motion was then made by Councilmember Berger to amend, seconded by Councilmember Marinucci and unanimously approved 4-0. Amendment adds the underlined language. A motion to approve as amended was made by Supervisor Kulpa, seconded by Councilmember Berger and unanimously approved 4-0.

RESULT:	**ADOPTED AS AMENDED [UNANIMOUS]**
MOVER:	Brian J. Kulpa, Supervisor
SECONDER:	Jacqualine Berger, Councilmember
AYES:	Kulpa, Berger, Szukala, Marinucci
ABSENT:	Lavin

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Exhibit 11 – Resolution 2020-792 as Adopted by the Town of Amherst Town Board on October 19, 2020 for the Purpose of Approving an Amendment to the Town of Amherst Comprehensive Plan

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Amherst Town Board
5583 Main Street
Williamsville, NY 14221
www.amherst.ny.us

Francina J. Spoth
Town Clerk

Meeting: 10/19/20 07:00 PM
Department: Town Clerk
Initiated by: **Kathleen Cooper**
Co-Sponsored by:

DOC ID: 22366 **RESOLUTION 2020-792** **ROLL CALL VOTE (ADOPTED)**

Amendment to the Comprehensive Plan for "Muir Woods - Site A" (1081 N. French Road)

Amendment to the Comprehensive Plan for
"Muir Woods - Site A"
[1081 North French Road (NCD); BCPA-2020-02]

RESOLVED, that pursuant to 6NYCRR Part 617 (SEQR) and Town Code Section 104, as amended, that the requirements of SEQR have been completed, and be it further

RESOLVED, that pursuant to NYS Town Law Section 272-a and Section 11.6 of the Town Comprehensive Plan, the Town Board concurs with the findings of the Planning Board as stated in their resolution of August 20, 2020 to amend the Conceptual Land Use Plan (Figure 6) and the University Focal Planning Area (Figure 21) of the Comprehensive Plan for "Muir Woods - Site A" located at 1081 North French Road (NCD) to permit mixed-use residential/commercial use on Site A.

For additional information (copy & paste link):
https://share.amherst.ny.us:443/docman/doc_files_list.php?hash=uaaidrb0hpn0mkelzsuqvr62

10/06/2020
A motion to open the public hearing was made by Supervisor Kulpa, seconded by Councilmember Lavin and unanimously approved 4-0. The public hearing was opened at 7:51 PM.

Sean W. Hopkins, Esq., presented for both resolution #791 and #792 and answered questions from the Board.

There were no speakers from the public, therefore Supervisor Kulpa moved to adjourn the public hearing and set a Decision Date for October 19th. The motion was seconded by Councilmember Lavin and unanimously approved 4-0. The public hearing was adjourned at 8:13 PM.

10/19/2020
A motion to open the public hearing was made by Supervisor Kulpa, seconded by Deputy Supervisor Berger and unanimously approved 5-0. The public hearing was opened at 7:07 PM.

Sean W. Hopkins, Esq., presented.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

There were no speakers from the public, therefore Supervisor Kulpa moved to close the public hearing, seconded by Deputy Supervisor Berger and unanimously approved 5-0. The public hearing was closed at 7:18 PM.

A motion to approve the Negative Declaration was made by Supervisor Kulpa, seconded by Deputy Supervisor Berger and approved 4-1 (nay, Bucki). A motion to adopt the resolution was made by Supervisor Kulpa, seconded by Deputy Supervisor Berger and approved via Roll Call vote 4-1 (nay, Bucki).

RESULT:	**ROLL CALL VOTE (ADOPTED) [4 TO 1]**
MOVER:	Brian J. Kulpa, Supervisor
SECONDER:	Jacqualine Berger, Deputy Supervisor
AYES:	Kulpa, Berger, Lavin, Szukala
NAYS:	Bucki

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINAWOOD
DESIGN

STORMWATER POLLUTION PREVENTION PLAN for CONSTRUCTION ACTIVITIES

Sawyer's Landing

Dodge & Sweet Home Road
Town of Amherst, Erie County, New York

Prepared for

Sawyer's Landing LLC

c/o Severyn Development
43 Central Ave Suite #300
Lancaster, NY 14086

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165



August 2023
Revised 11/21/2024

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

101 SCOPE

A. **PURPOSE:** Sawyer's Landing LLC (SL) has placed an emphasis on following the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity governing storm water discharges during construction, and in accordance with erosion control practices. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by SL; and/or liquidated damages. This section provides a descriptive explanation of SL's Storm Water Pollution Prevention Program and required Contractor participation.

The Engineer of record for this project certifies that this SWPPP meets the requirements and is in compliance with the New York State Stormwater Management Design Manual and latest NYSDEC Phase II stormwater regulation requirements.

B. **SPDES General Permit for Stormwater Discharges from Construction Activity:** Regulations promulgated by the NYSDEC to regulate the discharge of storm water from construction activities on sites where more than one (1) acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities for New York State. In order to use the General Permit, a Notice of Intent (NOI) form must be completed and electronically submitted to the NYSDEC at least 5 business days prior to any earth-disturbing activities (this time frame may increase to 60 business days if a full review of the SWPPP is determined necessary by the NYSDEC) and a Storm Water Pollution Prevention Plan (SWPPP) for the site must be prepared and followed during the construction activities. Once a copy of the SPDES permit is received from NYSDEC after filing, it will be included in Appendix L of this report.

Approval from a regulated, traditional land use control MS4:

1. An **owner or operator** of a construction activity that is <u>not</u> subject to the requirements of a regulated, traditional land use control MS4 must first develop a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the NYSDEC.

2. An **owner or operator** of a construction activity that is subject to the requirements of a regulated, traditional land use control MS4 must first

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

develop a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the NYSDEC. The **owner or operator** shall have the "MS4 SWPPP Acceptance" form signed by the principal executive officer or ranking elected official from the regulated, traditional land use control MS4, or by a duly authorized representative of that person, and then submit that form along with the NOI to the address referenced under "Notice of Intent (NOI) Submittal".

C. **RESPONSIBILITIES OF THE CONTRACTOR:** The Contractor shall manage the discharge of storm water from the site in accordance with the NYSDEC General Permit for Construction Activities conditions and the following provisions of this section. The Operator shall be responsible for conducting the storm water management practices in accordance with the permit. The Contractor shall be responsible for providing **qualified inspector**s to conduct the inspections required by the SWPPP. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The Operator has petitioned the NYSDEC for coverage under the storm water discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) for coverage under this permit has been filed by the Operator. The SWPPP must be prepared prior to submittal of the NOI form. The Operator will require the Contractor to be a co-permittee with the Operator. The Contractor will be required to post the NOI at the construction site along with any building permits.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

E. **CONTRACTOR CERTIFICATION & TRAINING:** Proof of Training/Certification of the Contractor's Designated individual shall be kept on site at all times.

F. **REQUIREMENTS FOR THE GENERAL CONTRACTOR AND SUBCONTRACTOR(S):** The General Contractor and Subcontractor(s) shall sign the "Contractor's Certification Statement" (located in the Appendix of this report) verifying they have been instructed on how to comply with and fully understand the requirements of the SPDES General Permit for Construction Activity for the State of New York and the SWPPP. These certifications must be signed, by a responsible corporate officer or other party meeting the "Signatory Requirements" of the SPDES General Permit, on behalf of each entity, prior to the beginning of any construction activities.

G. **STORM WATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The SWPPP is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A sign or other notice must be posted near the main entrance of the construction site which contains a completed NOI, the location of the SWPPP and the name and phone number of a contact person responsible for scheduling SWPPP viewing times, and any other state specific requirements.

H. **INSPECTIONS AND RECORD-KEEPING:**

A. **<u>General Construction Site Inspection and Maintenance Requirements</u>**

1. The **owner or operator** must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. **<u>Owner or operator Maintenance Inspection Requirements</u>**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

1. The **owner or operator** shall inspect, in accordance with the requirements in the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the **owner or operator** can stop conducting the maintenance inspections. The **owner or operator** shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of the General Permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the **owner or operator** can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. **Qualified inspector Inspection Requirements**

The **owner or operator** shall have a **qualified inspector** conduct site inspections in conformance with the following requirements:

Note: The **trained contractor** identified in Part III.A.6 of the General Permit **cannot** conduct the **qualified inspector** site inspections unless they meet the **qualified inspector** qualifications included in Appendix A of the General Permit. In order to perform these inspections, the trained contractor would have to be a:

- Licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- Someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

1. A **qualified inspector** shall conduct site inspections for all construction activities identified in Tables 1 and 2 of Appendix B of the General Permit, with the exception of:

    a. The construction of a single family residential subdivision with 25% or less impervious cover at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C of the General Permit and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

    b. The construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E of the General Permit;

    c. Construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

    d. Construction activities located in the watersheds identified in Appendix D of the General Permit that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the **qualified inspector** shall conduct site inspections in accordance with the following timetable:

    a. For construction sites where soil disturbance activities are on-going, the **qualified inspector** shall conduct a site inspection at least once every seven (7) calendar days.

    b. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to **disturb greater than five (5) acres** of soil at any one time, the **qualified inspector**

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shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been **temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas**, the **qualified inspector** shall conduct a site inspection at least once every thirty (30) calendar days. The **owner or operator** shall notify the Regional Office stormwater contact person (see contact information in Appendix F of the General Permit) or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity) in writing prior to reducing the frequency of inspections.

d. For construction sites where **soil disturbance activities have been shut down with partial project completion**, the **qualified inspector** can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The **owner or operator** shall notify the Regional Office stormwater contact person or, in areas under the jurisdiction of a regulated, traditional land use control MS4, the MS4 (provided the MS4 is not the **owner or operator** of the construction activity). in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the **owner or operator** shall have the **qualified inspector** perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The **owner or operator** shall then submit the completed NOT form to the address in Part II.A.1 of the General Permit.

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3. At a minimum, the **qualified inspector** shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

4. The **qualified inspector** shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

   a. Date and time of inspection;

   b. Name and title of person(s) performing inspection;

   c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

   d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

   e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;

   f. Identification of all erosion and sediment control practices that need repair or maintenance;

   g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

   h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

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i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The **qualified inspector** shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The **qualified inspector** shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the **qualified inspector** shall notify the **owner or operator** and appropriate contractor or subcontractor identified in Part III.A.6. of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the **qualified inspector**. Pursuant to Part II.C.2 of the General Permit, the inspection reports shall be maintained on site with the SWPPP.

Record Retention - The **owner or operator** shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the site achieves final stabilization. This period may be extended by the Department, in its sole discretion, at any time upon written notification.

l. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant

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to be a dynamic working guide that is to be kept current and amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. The Contractor's failure to modify or report deficiencies to the Operator will result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

J. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** A site can be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover with a density of **85%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the facility no longer discharges storm water associated with construction activities and a Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The Operator's Project Manager must complete the NOT. The NOT must be signed by the signatory (or equivalent position) on the NOI and subsequently submitted to the appropriate agency. The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP, which will then be optically scanned into the final SWPPP document as required. This filing terminates coverage under the General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. The **owner or operator** shall also have the **qualified inspector** perform a final site inspection prior to signing and submitting the NOT to the Department. The local MS4/Stormwater Management Officer must also sign the NOT and may require a final site inspection to be completed prior to. Final payment and/or the release of retainage will be withheld until all provisions of the SWPPP have been submitted, completed and accepted by the Operator.

102 PROJECT NAME AND LOCATION

Sawyer's Landing

Dodge Road

Town of Amherst, County of Erie, New York

Easting: 190681.1

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Northing: 4770798.8

Estimated Area of Site ≈ 17.4 acres

Estimated Area to be disturbed by Construction Activities ≈ 16.4 acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

Sawyer's Landing LLC

c/o Severyn Development

43 Central Avenue

Lancaster, NY 14086

Contact Person: William Severyn

Telephone: 716–818-0207

104 PROJECT DESCRIPTION

This project is a development of a 17.4 acre site located on the north side of Dodge Road, west of Sweet Home Road in the Town of Amherst. Both Dodge Road and Sweet Home Road are Erie County roads. Proposed is the construction of a mixed-use development to include (2) 4-story mixed-use buildings with 112 apartment units total, (1) 4-story self-storage building and (87) 2-story townhomes. A bike trail will be constructed on site, this trail will connect to the existing Town of Amherst bike trail on the south side of Dodge Road. The approximately 1-acre westerly portion will remain undisturbed and be deed restricted as permanent open space. The site is currently undeveloped consisting of woods and overgrown brush/grass. NYSDEC and Federal wetlands were delineated on site by Earth Dimensions, Inc. Approximately 6.1 acres of Federal and 1.2 acres of NYSDEC wetlands have been permitted to be impacted. The proposed site development area to be disturbed for this project is approximately 16.4 acres.

<u>Soil disturbing activities will include:</u>

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of detention basins, bioretention areas including topsoil & seed

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D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of curb and parking lot

G. Final grading & landscaping

H. Construction of building

This project is owned by Sawyer's Landing LLC and will be developed by the same. The work area consists of approximately 16.4 acres for which erosion and sediment controls have been developed and fully addressed in this written plan and the Erosion and Sediment Control Plans. See the construction documents for additional details.

105 RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The initial runoff curve number for the pre-construction site is "CN" = 78. The post-construction runoff curve number for the site will be "CN" = 91. The site is 17.4 acres of which approximately 16.4 acres will be disturbed by construction activities.

See soils information located in Appendix H.

The site is in Erie County, which receives an average of approximately 45 inches rainfall annually with the highest amounts of rainfall received in the months of May thru September. Annual snow for this area is approximately 120 inches.

106 WATERS

The runoff generated from this site will discharge to the storm system on Dodge Road which is tributary to Ellicott Creek.

107 INDIAN COUNTRY LANDS

This project is not located on Indian Lands.

108 ENDANGERED AND THREATENED SPECIES

No endangered or threatened species have been determined to be on the site.

109 CRITICAL HABITAT

See section 108 above.

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110 HISTORIC PLACES

The assessed property is shown on the NYSHPO map as an archeologically sensitive area. A NYSHPO "no effect" letter is included in Appendix I.

111 WETLANDS AND/OR OTHER SURFACE WATERS

Federal and NYSDEC wetlands were delineated on site by Earth Dimensions, Inc. Approximately 6.1 acres of Federal and 1.2 acres of NYSDEC wetlands have been permitted to be impacted. The USACOE and NYSDEC wetland permits are included in Appendix K of this report.

112 EROSION AND SEDIMENT CONTROLS

112.1 STABILIZATION PRACTICES

Stabilization practices for this site include:

A. Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.

B. Use of stabilization method for all slopes with a slope greater than 1V:3H.

C. Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

D. Mulching exposed areas.

E. Vegetation preservation in undisturbed areas.

F. Frequent watering to minimize wind erosion during construction.

a. **For sites where 5 acres or more are disturbed at any one time**: In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control.

b. The **owner or operator** shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

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c. The **owner or operator** shall install any additional measures needed to protect water quality.

112.2 STRUCTURAL PRACTICES

Structural practices for this site include:

A. Inlet protection using a method detailed in the Construction Documents.

B. Perimeter protection using temporary silt fence/silt sock or silt sock.

C. Outlet protection using rip-rap stone and end sections.

D. Stabilized Construction Entrance.

E. Temporary stone wash off areas.

F. Storm sewer, curb/gutter.

G. Sediment traps and basins.

112.3 SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows:

A. Construct temporary construction exits at locations shown on the Demolition & Erosion Control Plan Sheet.

B. Install perimeter silt fence/silt socks/silt sock in the locations shown on the Demolition & Erosion Control Plan Sheet.

C. Clear & Grub site.

D. Installation of detention basin to act as sediment basin.

E. Commence site grading.

F. If less than 5 acres of the site have been disturbed and construction activity has ceased for more than 14 days, temporarily seed and water to stabilize this area. If more than 5 acres of the site have been disturbed and construction activity has ceased for more than 7 days, temporarily seed and water to stabilize this area.

G. Installation of proposed utilities.

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H. Install base material as required for pavement/buildings.

I. Finalize pavement subgrade preparation.

J. Construction of buildings.

K. Construct all curb, drainage inlets, storm sewer pipes and storm sewer manholes, as shown on the plans. Install temporary inlet protection at the locations of all inlets.

L. Dust control.

L. Remove inlet protection around inlets and manholes no more than 48 hours prior to placing stabilized base course.

N. Carry out final grading and seeding and planting.

O. Install bioretention areas (do not install bioretention soil or underdrains until surrounding area is stabilized).

P. Clean storm system following construction, clean detention basin of any silt and return to design grades.

Q. Remove silt fencing/silt sock only after all paving is complete and exposed surfaces are stabilized.

R. Remove temporary construction exits only prior to pavement construction in these areas.

Note: Sediment control storage during construction (traps & basins) during construction shall be 134 cy per acre of disturbance per NYSDEC requirements.

112.4 STORM WATER MANAGEMENT

The existing site is generally flat and slopes west with portions sloping east. The portion that slopes west settles in a low area and once the capacity of that area is exceeded, sheet flow continues towards Sweet Home Road and is collected by an existing 12" pipe on the north side of Dodge Road. This pipe flows to the Erie County system on Sweet Home Road. The portion that flows east flows to the offsite wetlands.

Currently Dodge Road does not have a drainage system. A series of catch basins and pipes will be installed in the green area on the north side of Dodge Road to collect the road drainage. The west portion of this system will connect to the existing closed drainage system on Sweet Home Road. The east portion will discharge to the Ellicott Creek diversion channel using and existing discharge point. This new system will also convey the proposed discharge from the site as described below.

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The proposed onsite storm sewer system consists of smooth interior and perforated HDPE pipes connected by a series of catch basins, manholes and yard drains. The site is split into a storm water management area on the east and west sides.

West Side

The west side of the site has (2) bioretention areas which portions of the westerly area will discharge to. These bioretention areas along with the remainder of the west portion of the site will discharge to the underground detention area. Note that the yard drains installed along the north property line discharge to the underground detention area. An outlet structure in the SW portion of this area will control runoff to at or below existing runoff flow rates. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Sweet Home Road system.

Underground Detention Summary

(286) ADS Stormtech SC-740 chambers
Top of stone elev. = 573.00
Top of chamber elev. = 572.50
Bottom of chamber elev. = 570.00
Bottom of stone elev. = 569.50
Total storage = 22,086 CF

Event	Ex. Discharge	Pro. Discharge	Elev.
1 yr	0.87 cfs	0.33 cfs	570.29
2 yr	1.34 cfs	0.68 cfs	570.46
5 yr	2.14 cfs	1.05 cfs	570.79
10 yr	2.94 cfs	1.28 cfs	571.13
25 yr	4.34 cfs	1.61 cfs	571.73
50 yr	5.69 cfs	3.61 cfs	572.23
100 yr	7.33 cfs	4.83 cfs	572.92

East Side

The east side of the site has a bioretention area and wet detention pond which this portion of the site discharges to. The NE portion of the site discharges to a forebay which spills into the main micropool portion of the wet detention basin. The SE portion of the site discharges to the bioretention area which also spills into the main micropool portion of the site. An outlet control structure is located in the SE portion of the micropool and controls the discharge from this storm water management area. Spillways are also located on the east portion of the micropool which will discharge to the existing wetlands to the east in order to not

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cut off all flow from this site into this area. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Ellicott Creek diversion channel.

The bioretention areas and wet detention pond for the project area are sized to provide 100% of the required Runoff Reduction Volume (RRv) and Water Quality Volume (WQv) treatment for the overall site in accordance with Chapter 4 of the NYSDEC Stormwater design manual. The soils in the vicinity of the bioretention areas are mainly USDA hydrologic group 'D' and therefore the system will be installed with underdrains per NYSDEC requirements. The bioretention areas will consist of 6" and 8" perforated HDPE underdrains in 12" of drainage gravel, followed by filter fabric and 18" minimum of planting soil. Overflow yard drains will be installed to allow 6" maximum temporary ponding for RRv treatment. The east bioretention area (area #3) spills into the wet detention pond and the underdrain pipe ties together with the pond discharge and flows to Dodge Road. The east bioretention areas (areas #1 & #2) have a catch basin to act as the spillway and this catch basin and the underdrain pipes discharge to the underground detention area.

Storm Water Management Area Summary

Forebay
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50
Bottom of basin elev. = 569.00

Micropool
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50
Bottom of basin elev. = 563.00

Overall Storm Water Summary

WQv Provided = 152,678 cf (pond)
WQv Provided = 6,948 cf (bioretention)
WQv Provided = 159,626 cf (total)

Bioretention Area Summary:

Area	Rim Elev.	Bottom Elev.	Area
1	574.50	574.00	2,300 sf
2	574.50	574.00	2,600 sf
3	575.50	575.00	11,000 sf
		Total Provided =	15,900 sf

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Water Quality Summary:
WQv req'd = 28,804 cf (0.661 ac-ft)
RRv min. req'd = 5,518 cf (0.127 ac-ft)
RRv provided = 8,662 cf (0.199 ac-ft)
WQv provided = 159,626 cf (3.665 ac-ft)
Total RRv + WQv provided = 8,662 cf + 159,626 cf = 168,287 cf (3.868 ac-ft)

Detention: Comparison of the existing 1-year vs. the proposed 1-year runoff
Comparison of the existing 10-year vs. the proposed 10-year runoff
Comparison of the existing 100-year vs. the proposed 100-year runoff

Storm pipes: 10-year storm

Refer to the engineer's report in Appendix N for additional details.

113 OTHER CONTROLS

113.1 OFF-SITE VEHICLE TRACKING

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. Existing paved areas will remain as long as possible and will be used for vehicle wash areas and to further aid in the reduction of vehicle tracking of sediments. The paved streets adjacent to the site entrance shall be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material to/from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

113.2 EXCAVATION SPOIL MATERIALS

Excavation spoil materials are generated during the excavation of the development's building and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project will be hauled off-site or stockpiled for re-use in designated areas which will have temporary erosion & sediment control measures installed. Any removal from site will be done under the necessary permits required by the local governing agencies.

113.3 DUST CONTROL

Minimizing wind erosion and controlling dust will be accomplished by one or more of the following methods:

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A. Frequent watering of excavation and fill areas.

B. Providing gravel or paving at entrance/exit drives, parking areas and transit paths.

113.4 WASTE DISPOSAL

If needed, all waste materials will be collected and stored in securely lidded metal dumpsters rented from an approved waste management company. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied when full and then hauled to a NYSDEC approved landfill for proper disposal. No construction waste will be buried on-site. All personnel will be instructed regarding the correct procedures for waste disposal.

113.5 SANITARY WASTE

If needed, portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

113.6 CONCRETE WASTE FROM CONCRETE TRUCKS

A. Emptying of excess unhardened concrete and/or washout from concrete delivery trucks will be allowed on the job site, but in either (1) specifically designated diked areas which have been prepared to prevent contact between concrete and/or washout and storm water which will be discharged from the site or (2) in locations where waste concrete will be poured into forms to make rip-rap or other useful concrete products.

B. Hardened waste concrete from the designated diked areas described above will be disposed of in accordance with applicable local and state regulations with regards to disposal of construction debris.

113.7 HAZARDOUS SUBSTANCES & HAZARDOUS WASTE

A. All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these

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practices by the job superintendent, who will also be responsible for seeing these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such products are stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

B. The contractor will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials of hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job superintendent to properly train all personnel in the use of the SPCC plan.

C. Any spills of hazardous materials which are in excess of the Reportable Quantities as defined by the EPA regulations shall be immediately reported to the EPA National Response Center at 1-100-424-1102. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

D. In order to minimize the potential for a spill of hazardous materials to come in contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder,

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brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

5. All products will be stored in and used from the original container with the original product label.

6. All products will be used in strict compliance with instructions on the product label.

7. The disposal of excess or used products will be in strict compliance with instructions on the product label.

113.8 CONTAMINATED SOILS

A. Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

B. The job site superintendent will be responsible for seeing that these procedures are followed.

114 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the SPDES General Permit for Construction Activity for the State of New York, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

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The SWPPP for this site development project requires regulated MS4 approval from the Town of Amherst. All changes to the SWPPP must be approved by the Town of Amherst prior to applying changes to the SWPPP in the field.

115 INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected by the owner/operator at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

2. All control measures will be inspected by a Qualified Professional at least weekly and shall continue until the site complies with the Final Stabilization section of this document (See Section 116).

3. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.

4. Built up sediment will be removed from silt fence/silt sock when it has reached one-third the height of the fence.

5. Silt fence/silt socks will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

6. Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

7. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.

8. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

9. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order.

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They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.

10. Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

11. Report to the NYSDEC within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24 hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the NYSDEC in the permit to be reported within 24 hours. The written submission must contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

12. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117 or 40 CFR 302) must be reported.

Upon completion of construction, the property owner is responsible for ensuring that the stormwater facilities are regularly inspected and maintained. Maintenance and inspection procedures are as follows.

1. On a quarterly basis and following significant rainfall events or snow-melts, perform the following:

    - Inspect catch basins, storm manholes, yard drains, storm piping and stormwater pond for debris and accumulation of sediment.
    - Remove and properly dispose of any collected debris and sediment in accordance with applicable state, federal and local regulations.
    - Flush piping with water if necessary to remove accumulated sediment.

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- Bioretention areas shall be maintained per the NYSDEC Maintenance and Management Checklist included in this SWPPP.
- Check all stone outfall structures for erosion and re-stone if necessary to prevent further erosion.
- Inspect grassed/landscaped areas for un-vegetated areas or areas with less than 85% healthy stand of grass and reseed and mulch as necessary. Water daily if reseeded in July and August.
- A record of all inspections should be kept.

2. Maintain all lawn areas by regular mowing, including the grassed slopes of the stormwater pond and any grass swales. Any eroded areas shall be regarded, seeded and mulched immediately.

116 INSPECTION AND MAINTENANCE REPORT FORMS

Once installation of any required or optional erosion control device or measure has been implemented, inspections shall be performed by a Qualified Professional at least once every seven (7) calendar days. For construction sites where soil disturbance activities are on-going and the **owner or operator** has received authorization in accordance with Part II.C.3 of the General Permit to disturb greater than five (5) acres of soil at any one time, the **qualified inspector** shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. The owner and contractor shall obtain from the MS4 an approval for disturbing more than five-acres at any given time. For construction sites where active construction has been suspended, inspection frequency under the general permit can be reduced to once every 30 days, provided temporary stabilization measures have been applied to all disturbed areas. The forms found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the final stabilization of the site.

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117 OTHER RECORD-KEEPING REQUIREMENTS

The Contractor shall keep the following records related to construction activities at the site:

- Dates when major grading activities occur and the areas which were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when an areas is stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

118 SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

118.1 MATERIALS COVERED

The following materials or substances are expected to be present onsite during construction:

- Concrete/Additives/Wastes
- Cleaning solvents
- Sanitary wastes
- Detergents
- Petroleum based products
- Paints/Solvents
- Pesticides
- Solid and construction wastes
- Acids
- Fertilizers
- Soil stabilization additives

118.2 MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

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A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job.

2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

3. Products will be kept in their original containers with the original manufacturer's label in legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.

5. Whenever possible, all of a product will be used up before disposing of the container.

6. Manufacturer's recommendations for proper use and disposal will be followed.

7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

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1. Products will be kept in original containers with the original labels in legible condition.

2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

4. A spill control and containment kit (containing for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

5. All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a

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containment volume that is equal to 110% of the volume of the largest tank. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on a plan by the contractor once the locations have been determined.

2. Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

3. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

4. Concrete Wastes

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or wash out and storm water which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete wash out diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. The job site superintendent will be responsible for seeing that these procedures are followed.

All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to

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prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on a plan by the contractor once the locations have been determined. In addition, a standard detail on the construction of the concrete wash out shall be included on this plan.

E. Solid and Construction Wastes

All waste materials will be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York and the Town of Amherst. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week or more often if necessary, and the trash will be hauled to a landfill approved by the NYSDEC. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on a plan by the contractor once the locations have been determined.

F. Sanitary Wastes

Portable toilet units or field offices with toilet facilities connected to the municipal sanitary sewer will be used for sanitary purposes. All portable toilet units will be emptied a minimum of once per week by a licensed portable facility provided in compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The

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location of sanitary waste units must be identified on a plan by the contractor once the locations have been determined.

G. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Materials Management Plan and in accordance with applicable state and federal regulations.

118.3 SPILL PREVENTION AND RESPONSE PROCEDURES

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these

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procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.

2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

   Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-100-424-1102. From SWPPP-9 "Reportable Quantity Release Form" must be filled out.

4. If the spill exceeds a Reportable Quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases.

C. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

119 CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the NYSDEC SPDES General Permit for Construction Activity for the State of New York, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with

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the water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP will be strictly followed to ensure that no contamination of these non-storm water discharges takes place. The following allowable non-storm water discharges which may occur at the job site include:

A. Discharges from firefighting activities.

B. Fire hydrant flushings (see note below)

C. Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking.

D. Routine external building washdown which does not use detergents.

E. Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used.

F. Air conditioning condensate.

G. Springs or other uncontaminated groundwater, including dewatering ground water infiltration.

H. Foundation or footing drains where no contamination with process materials such as solvents is present.

Note: The Contractor shall discharge any super-chlorinated water from water distribution pipe disinfection activities into sanitary sewer system.

120 STORM WATER CONTROL FACILITY MAINTENANCE

Upon completion of construction, SL shall be responsible for maintenance of the storm sewer system and all ponds, bioretention areas, etc. per a Stormwater Maintenance Agreement to the Town of Amherst that shall be filed with the County of Erie.

The frequency of inspections for the bioretention areas shall match the frequencies listed on the "Bioretention Operation, Maintenance and Management Inspection Checklist" in Appendix O of the SWPPP.

The proposed catch basins, as per section 115, shall be inspected 4 times per year for removal of floatable debris. Any silt buildup over 6" in depth shall be removed and disposed of properly off-site.

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Appendix A

Site Location Map

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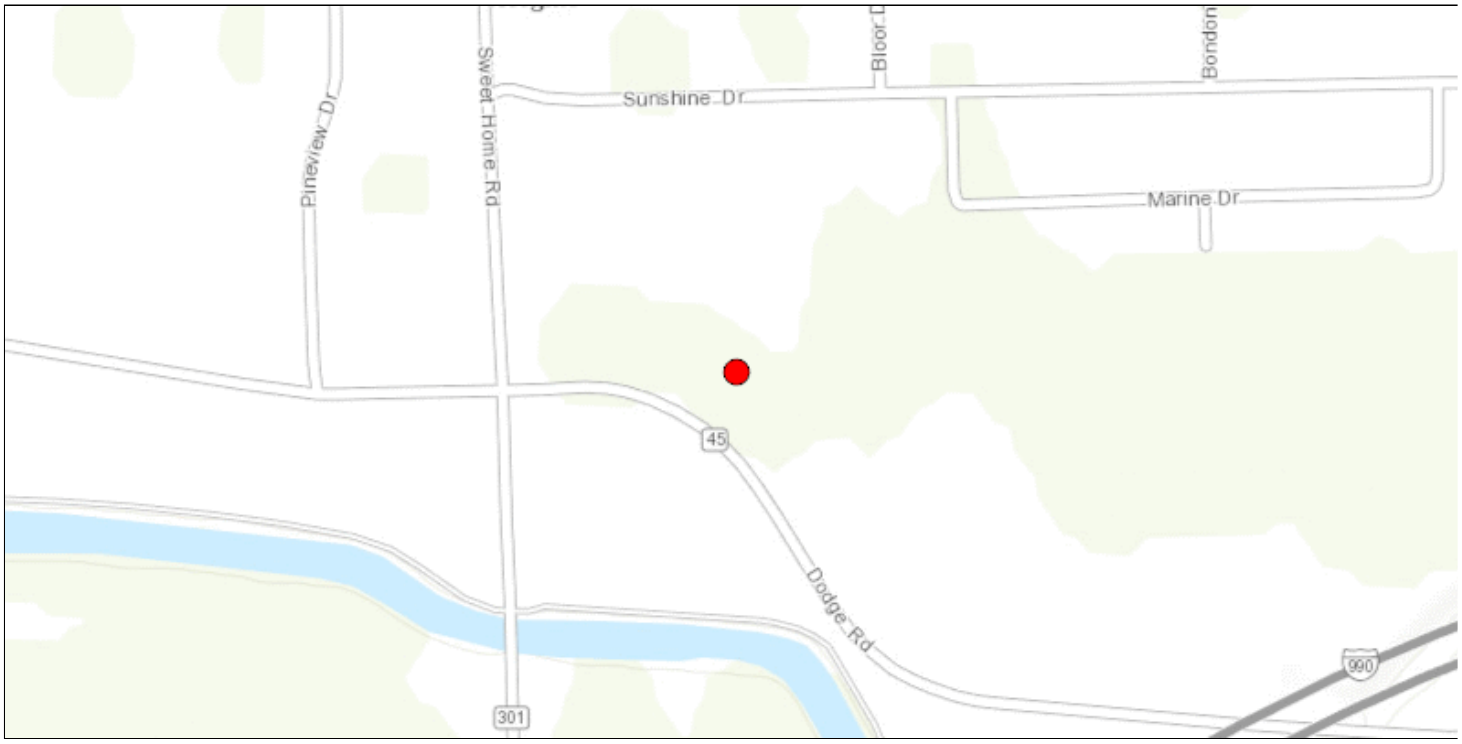
Stormwater Interactive Map



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	190681.063	**Northing:**	4770798.806
Longitude/Latitude	**Longitude:**	-78.796	**Latitude:**	43.027

The approximate address of the point you clicked on is:
26-42 Dodge Rd, Getzville, New York, 14068

County: Erie
Town: Amherst
USGS Quad: TONAWANDA EAST

DEC Administrative Boundaries

Region 9:
(Western New York) Allegany, Chautauqua, Cattaraugus, Erie, Niagara and Wyoming counties. For more information visit **http://www.dec.ny.gov/about/617.html**.

Regulated MS4s

UA 2000: 11350
Standard: Buffalo
Municipality: AMHERST
SWIS: 142200
Regulated: Automatic

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Appendix B

NYSDEC Notice of Intent (NOI)

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NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Sawyer's Landing LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Severyn

Owner/Operator Contact Person First Name
Will

Owner/Operator Mailing Address
43 Central Ave

City
Lancaster

State: NY
Zip: 14086-____

Phone (Owner/Operator): 716-912-0969
Fax (Owner/Operator): ___-___-____

Email (Owner/Operator)
william.severyn.ny@gmail.com

FED TAX ID
__-_____ (not required for individuals)

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Project Site Information

Project/Site Name
Sawyer's Landing

Street Address (NOT P.O. BOX)
Dodge Road

Side of Street
● **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Amherst

State: NY
Zip: 14228-
County: Erie
DEC Region: 9

Name of Nearest Cross Street
Sweet Home Road

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
○ **North** ○ **South** ● **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
40.08-3-13.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
-78796
Ex. -73.749

Y Coordinates (Northing)
42.90022 77
Ex. 42.652

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

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3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- (●) FOREST
- ( ) PASTURE/OPEN LAND
- ( ) CULTIVATED LAND
- ( ) SINGLE FAMILY HOME
- ( ) SINGLE FAMILY SUBDIVISION
- ( ) TOWN HOME RESIDENTIAL
- ( ) MULTIFAMILY RESIDENTIAL
- ( ) INSTITUTIONAL/SCHOOL
- ( ) INDUSTRIAL
- ( ) COMMERCIAL
- ( ) ROAD/HIGHWAY
- ( ) RECREATIONAL/SPORTS FIELD
- ( ) BIKE PATH/TRAIL
- ( ) LINEAR UTILITY
- ( ) PARKING LOT
- ( ) OTHER

Post-Development Future Land Use

- ( ) SINGLE FAMILY HOME — Number of Lots
- ( ) SINGLE FAMILY SUBDIVISION
- ( ) TOWN HOME RESIDENTIAL
- ( ) MULTIFAMILY RESIDENTIAL
- ( ) INSTITUTIONAL/SCHOOL
- ( ) INDUSTRIAL
- ( ) COMMERCIAL
- ( ) MUNICIPAL
- ( ) ROAD/HIGHWAY
- ( ) RECREATIONAL/SPORTS FIELD
- ( ) BIKE PATH/TRAIL
- ( ) LINEAR UTILITY (water, sewer, gas, etc.)
- ( ) PARKING LOT
- ( ) CLEARING/GRADING ONLY
- ( ) DEMOLITION, NO REDEVELOPMENT
- ( ) WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- (●) OTHER: Mixed use

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
17.147.4	16.146.4	0.0 0.0	8.0 8.0

5. Do you plan to disturb more than 5 acres of soil at any one time? (●) **Yes** ( ) **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
%	%	%	100 %

7. Is this a phased project? ( ) **Yes** (●) **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 7/1/2021 - **End Date** 7/1/2022

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9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

Ellicott Creek

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ○ Yes ● No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ Yes ● No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ Yes ● No
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ Yes ● No
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ Yes ● No

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15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

Erie County

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

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24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer: Carmina Wood Morris DPC

Contact Name (Last, Space, First): Wood Christopher

Mailing Address: 487 Main St

City: Buffalo

State: NY Zip: 14127-

Phone: 716-842-3165 Fax: 716-842-0263

Email: cwood@cwm-ae.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name: Christopher **MI**:

Last Name: Wood

Signature:

Date: 03/03/2021

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25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ● Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ● Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ○ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

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Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ● **Preservation of Undisturbed Areas**
- ● **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.006161 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

7738089822

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)	
RR Techniques (Area Reduction)				
● Conservation of Natural Areas (RR-1)	1.01	and/or	0.00	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or		
○ Tree Planting/Tree Pit (RR-3)		and/or		
○ Disconnection of Rooftop Runoff (RR-4)		and/or		
RR Techniques (Volume Reduction)				
○ Vegetated Swale (RR-5)				
○ Rain Garden (RR-6)				
○ Stormwater Planter (RR-7)				
○ Rain Barrel/Cistern (RR-8)				
○ Porous Pavement (RR-9)				
○ Green Roof (RR-10)				
Standard SMPs with RRv Capacity				
○ Infiltration Trench (I-1)				
○ Infiltration Basin (I-2)				
○ Dry Well (I-3)				
○ Underground Infiltration System (I-4)				
● Bioretention (F-5)	4.34		3	
○ Dry Swale (O-1)				
Standard SMPs				
○ Micropool Extended Detention (P-1)				
○ Wet Pond (P-2)				
○ Wet Extended Detention (P-3)				
○ Multiple Pond System (P-4)				
● Pocket Pond (P-5)	3.43		4	
○ Surface Sand Filter (F-1)				
○ Underground Sand Filter (F-2)				
○ Perimeter Sand Filter (F-3)				
○ Organic Filter (F-4)				
○ Shallow Wetland (W-1)				
○ Extended Detention Wetland (W-2)				
○ Pond/Wetland System (W-3)				
○ Pocket Wetland (W-4)				
○ Wet Swale (O-2)				

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Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.10999 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ● **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.10217 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

● **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

3.63 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

3.83

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ● **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.402 **acre-feet**

CPv Provided

0.402 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

4.34 **CFS**

Post-development

3.63 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

7.37 **CFS**

Post-development

4.34 **CFS**

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37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

Sawyer's Landing LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ● Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ● **Yes** ○ **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

Will

MI

Print Last Name

Severyn

Owner/Operator Signature

William T Severyn

Date

03/30/2021

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix C

MS4 SWPPP Acceptance Form

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Sawyer's Landing LLC
2. Contact Person:	Will Severyn
3. Street Address:	43 Central Ave
4. City/State/Zip:	Lancaster, NY 14086
II. Project Site Information	
5. Project/Site Name:	Sawyer's Landing
6. Street Address:	Dodge Road
7. City/State/Zip:	Amherst, NY 14228
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	Sarah Burow
9. Title/Position:	Senior Engineer Assistant
10. Date Final SWPPP Reviewed and Accepted:	09/29/2023
IV. Regulated MS4 Information	
11. Name of MS4:	Town of Amherst
12. MS4 SPDES Permit Identification Number: NYR20A	122
13. Contact Person:	Sarah Burow
14. Street Address:	1100 N. Forest Rd
15. City/State/Zip:	Williamsville, NY 14221
16. Telephone Number:	716-631-7154

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:	Vaishali Reberholt PE
Title/Position:	SMO
Signature:	
Date:	10/02/2023

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

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Appendix D

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

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(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

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calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

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E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

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8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

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B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

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must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

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b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

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use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

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b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

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the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project

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b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

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b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

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begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

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d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

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(Part IV.C.4.a)

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

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l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

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b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

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b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

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E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

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(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

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include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

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3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

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(Part VII.R)

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

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Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

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and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

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Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

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New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

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Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

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SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

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Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

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training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

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APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

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Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

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Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

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Figure 1 - New York City Watershed East of the Hudson

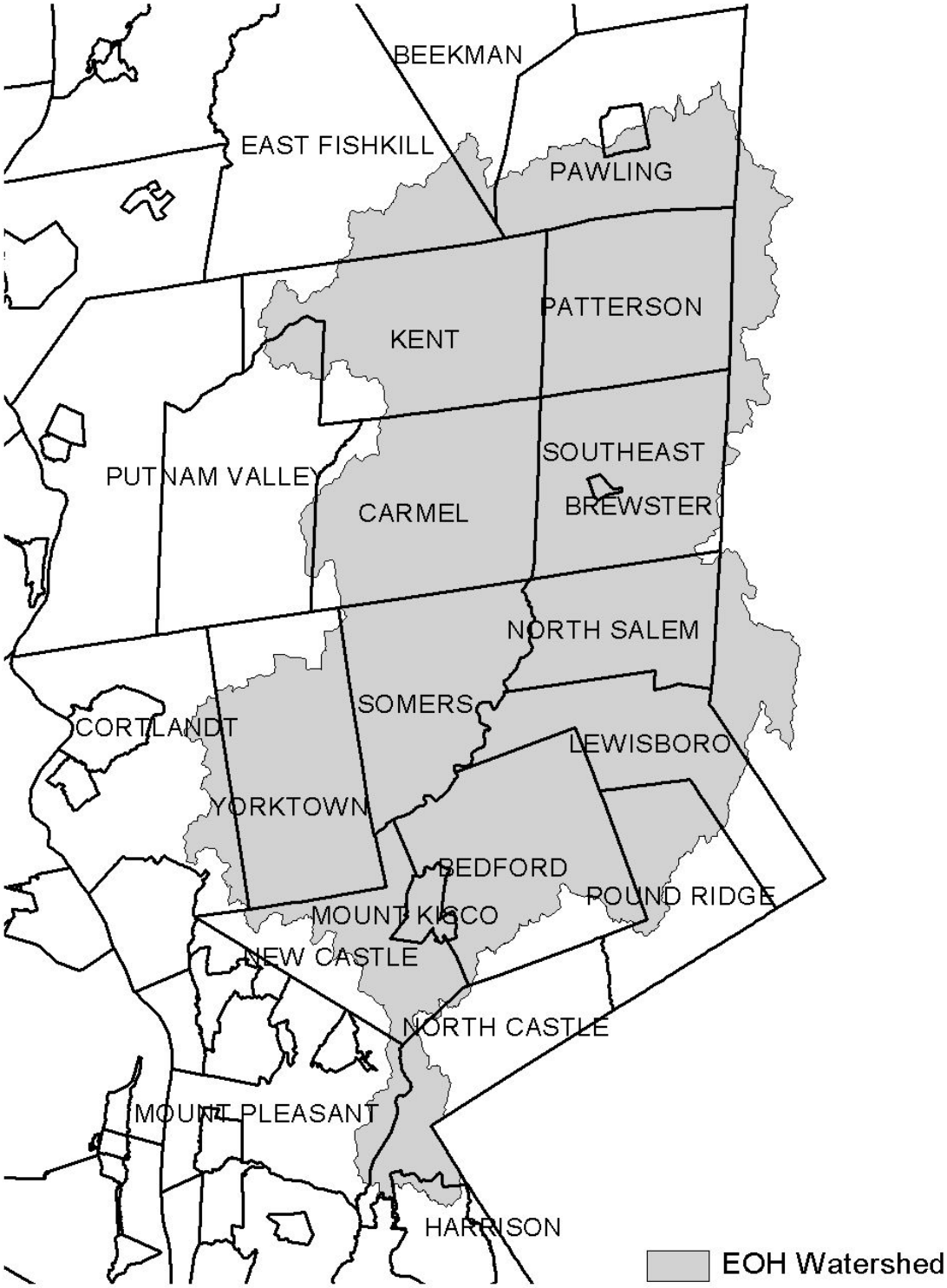

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Figure 2 - Onondaga Lake Watershed



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Appendix C

Figure 3 - Greenwood Lake Watershed

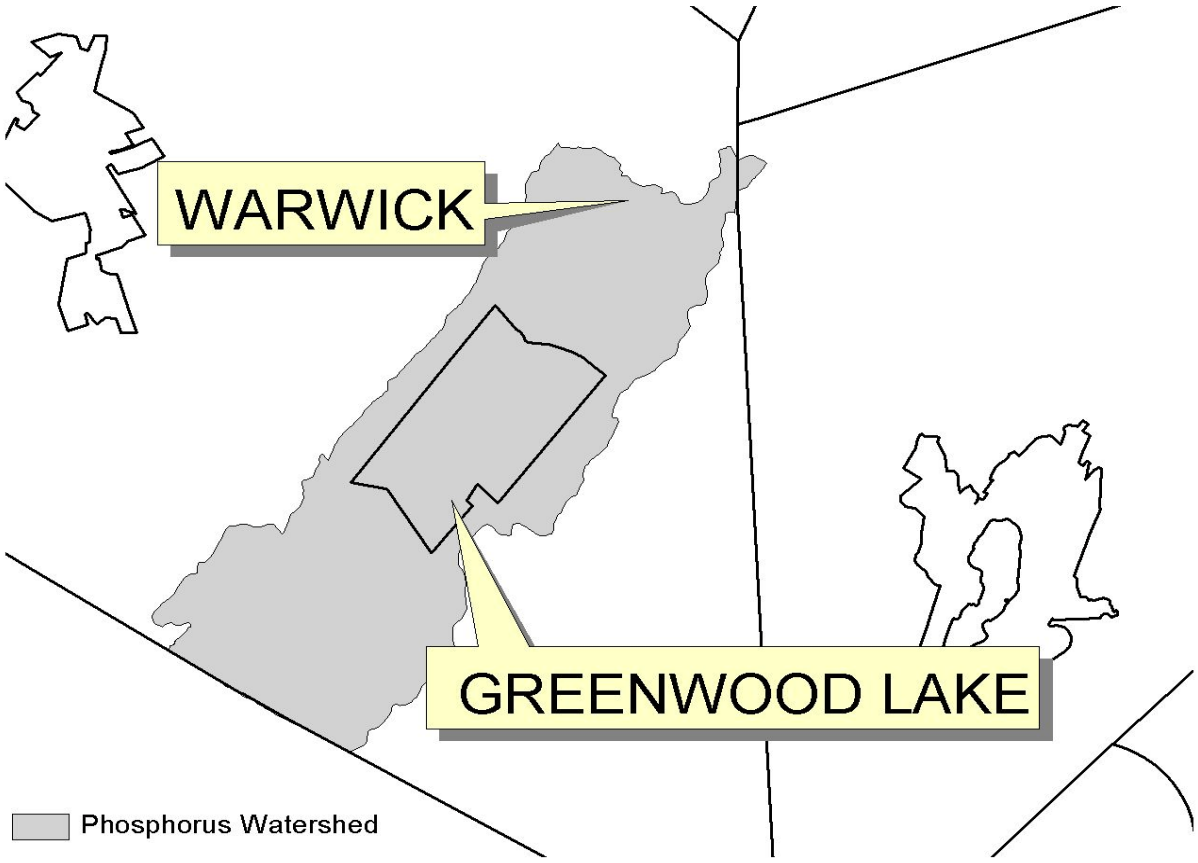

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Figure 4 - Oscawana Lake Watershed

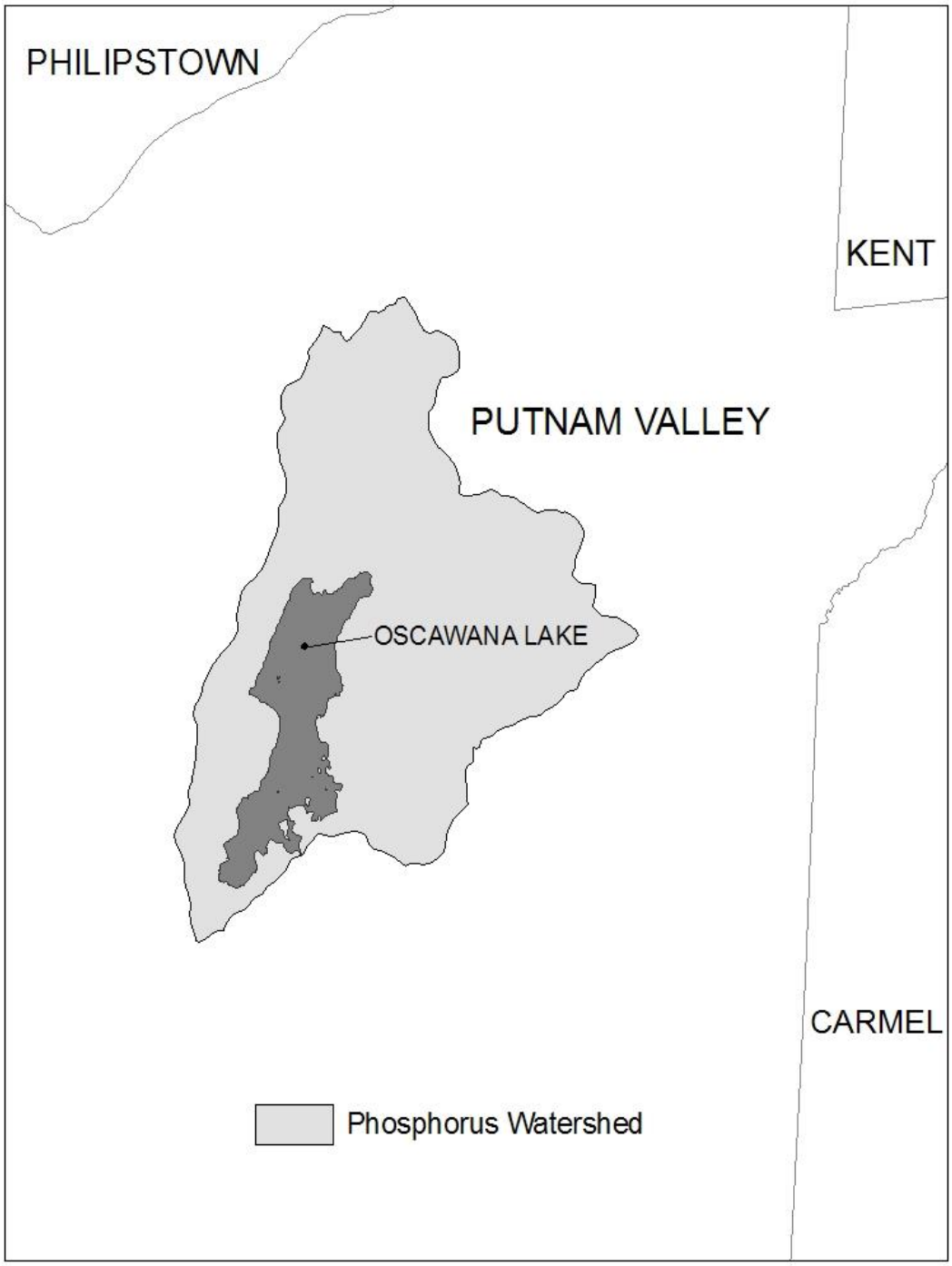

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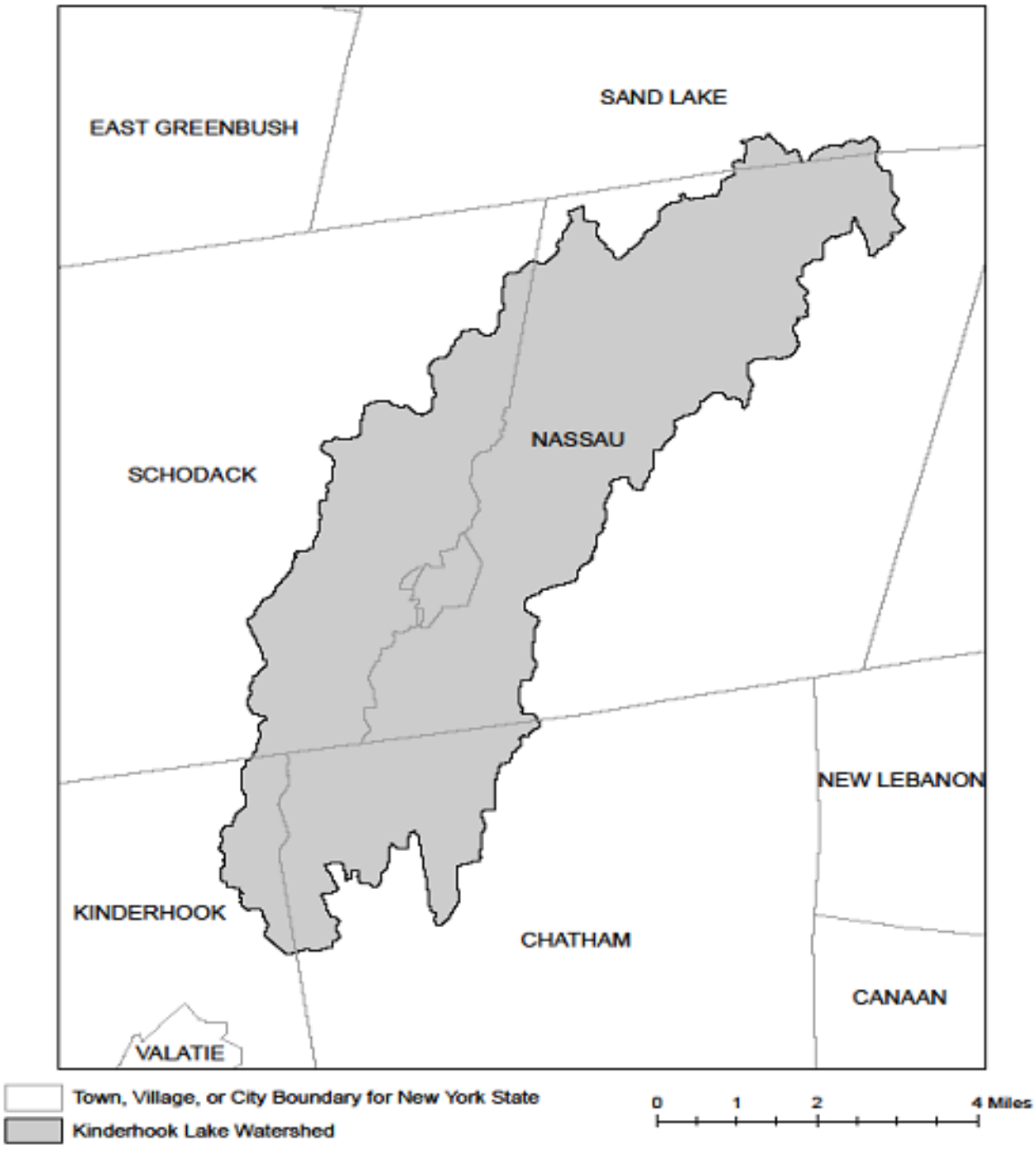
Figure 5 - Kinderhook Lake Watershed



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APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix E

Forms

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Sawyer's Landing

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge storm water. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Note: The contractor shall have at least one NYSDEC trained individual onsite at all times when earthwork and other SWPPP associated work is being performed from each contractor(s) and subcontractor(s). Each contractor(s) and subcontractor(s) shall provide copies of these individuals' certifications to the Town of Amherst.

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Trained Individual(s) Responsible for Implementation: _____

This form must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" of the NYSDEC SPDES General Permit

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Sawyer's Landing

eNOI Submission Number: HPY-3BW1-F4YNR

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

William T Severyn

Signature

3/3/21

Date

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Sawyer's Landing

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Sawyer's Landing LLC

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Christopher		Wood
First name	MI	Last Name



Signature

3/3/21

Date

Revised: January 2020

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix F

NYSDEC Notice of Termination (NOT)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix G

Construction Documents

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York
SITE DEVELOPMENT DRAWINGS

AGENCIES

ENGINEERING DEPARTMENT
NAME/TITLE: JEFFERY BURROUGHS, P.E. – TOWN ENGINEER
COMPANY/DEPT: TOWN OF AMHERST ENGINEERING DEPARTMENT
ADDRESS: 1100 NORTH FOREST ROAD
WILLIAMSVILLE, NEW YORK 14221
TELEPHONE 716–631–7154

PLANNING & ZONING DEPARTMENT
NAME/TITLE: DANIEL HOWARD – PLANNING DIRECTOR
COMPANY/DEPT: TOWN OF AMHERST PLANNING DEPARTMENT
ADDRESS: 5583 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221
TELEPHONE 716–631–7051

LAND SURVEYOR
NAME/TITLE: GPI ENGINEERING, LANDSCAPE ARCHITECTURE SURVEYING, LLP
COMPANY/DEPT: 4950 GENESEE STREET, SUITE 100
ADDRESS: BUFFALO, NEW YORK 14225
TELEPHONE 716–633–4844

UTILITIES

NATURAL GAS
COMPANY/DEPT:. NATIONAL FUEL GAS CORP.
ADDRESS: 6363 MAIN STREET
WILLIAMSVILLE, NEW YORK 14221
TELEPHONE 716–857–7000

TELEPHONE COMPANY
COMPANY/DEPT: VERIZON
ADDRESS: 65 FRANKLIN STREET
BUFFALO, NEW YORK 14203
TELEPHONE 716–840–8748

CABLE COMPANY
COMPANY/DEPT: TIME WARNER
ADDRESS: 789 CHURCH ROAD
WEST SENECA, NEW YORK
TELEPHONE 716–558–8615

ELECTRIC COMPANY
COMPANY/DEPT: NATIONAL GRID
ADDRESS: 144 KENSINGTON AVENUE
BUFFALO, NEW YORK 14214
TELEPHONE 716–236–2738

WATER
COMPANY/DEPT:. ERIE COUNTY WATER AUTHORITY
ADDRESS: 3030 UNION ROAD
CHEEKTOWAGA, NEW YORK 14227
TELEPHONE 716–684–1510

DIG SAFELY NEW YORK
TELEPHONE 1–800–962–7962

OWNER/DEVELOPER

NAME: Sawyer's Landing LLC
ADDRESS 43 Central Ave Suite #300
Lancaster, NY 14086
TELEPHONE 716 818-0207

ENGINEER

Carmina•Wood•Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

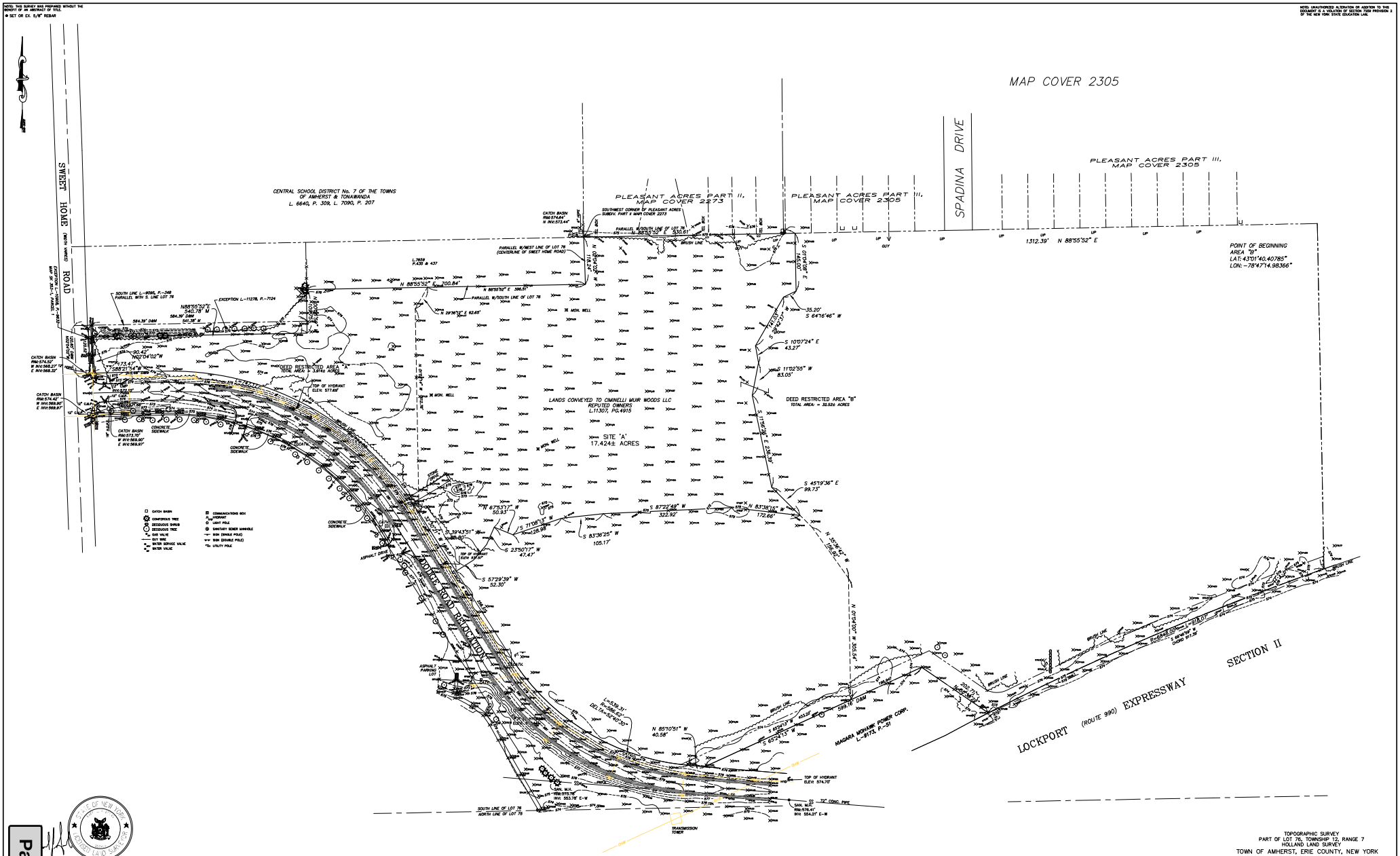
August 2024

REVISIONS:

No.	Description	Date
4	Rev. Plan Set per Client	11/21/24

DWG NO.	DRAWING TITLE
–	COVER SHEET
–	TOPOGRAPHIC SURVEY (BY GPI)
C–001	DEMOLITION & EROSION CONTROL PLAN
C–002	DEMOLITION & EROSION CONTROL DETAILS
C–100	OVERALL SITE PLAN
C–101	SITE PLAN
C–102	PARCEL MAP
C–103	ROAD & BIKE PATH LAYOUT PLAN
C–104	SITE DETAILS
C–105	SITE DETAILS
C–106	SITE DETAILS
C–107	SITE DETAILS
C–200	GRADING PLAN
C–201	GRADING PLAN – RECREATION TRAIL
C–300	STORM DRAINAGE PLAN
C–301	STORM DRAINAGE DETAILS
C–302	STORM DRAINAGE DETAILS
C–303	STORM DRAINAGE DETAILS
C–400	UTILITY PLAN
C–401	SANITARY SEWER DETAILS
C–402	SANITARY SEWER DETAILS
C–403	SANITARY SEWER GENERAL NOTES
C–404	WATER DETAILS
C–405	WATER DETAILS
C–406	WATER DETAILS & NOTES
C–407	INSULATED ENCLOSURE DETAIL
L–100	LANDSCAPE PLAN
LP–100	PHOTOMETRIC PLAN
LP–101	PHOTOMETRIC DETAILS
TT–100	FIRE TRUCK PLAN

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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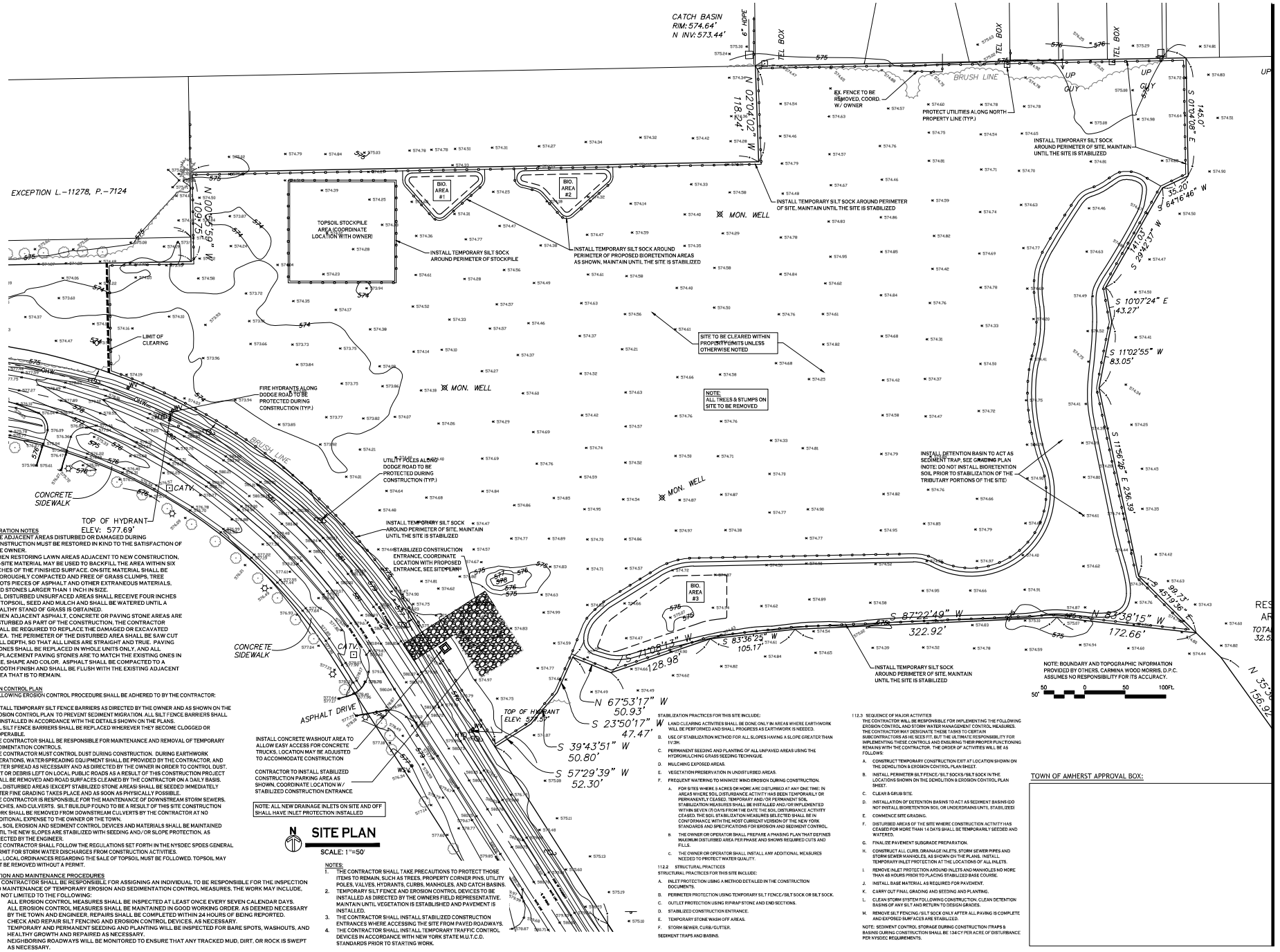

SITE PLAN

SCALE: 1"=50'

RESTORATION NOTES

1. THE ADJACENT AREAS DISTURBED OR DAMAGED DURING CONSTRUCTION MUST BE RESTORED IN KIND TO THE SATISFACTION OF THE OWNER.
2. WHEN RESTORING LAWN AREAS ADJACENT TO NEW CONSTRUCTION, ON-SITE MATERIAL MAY BE USED TO BACKFILL THE AREA WITHIN SIX INCHES OF THE FINISHED SURFACE. ON-SITE MATERIAL SHALL BE THOROUGHLY COMPACTED AND FREE OF GRASS CLUMPS, TREE ROOTS PIECES OF ASPHALT AND OTHER EXTRANEOUS MATERIALS, AND STONES LARGER THAN 1 INCH IN SIZE.
3. ALL DISTURBED UNSURFACED AREAS SHALL RECEIVE FOUR INCHES OF TOPSOIL, SEED AND MULCH AND SHALL BE WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. WHEN ADJACENT ASPHALT, CONCRETE OR PAVING STONE AREAS ARE DISTURBED AS PART OF THE CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO REPLACE THE DAMAGED OR EXCAVATED AREA. THE PERIMETER OF THE DISTURBED AREA SHALL BE SAW CUT FULL DEPTH, SO THAT ALL LINES ARE STRAIGHT AND TRUE. PAVING STONES SHALL BE REPLACED IN WHOLE UNITS ONLY, AND ALL REPLACEMENT PAVING STONES ARE TO MATCH THE EXISTING ONES IN SIZE, SHAPE AND COLOR. ASPHALT SHALL BE COMPACTED TO A SMOOTH FINISH AND SHALL BE FLUSH WITH THE EXISTING ADJACENT AREA THAT IS TO REMAIN.

EROSION CONTROL PLAN

THE FOLLOWING EROSION CONTROL PROCEDURE SHALL BE ADHERED TO BY THE CONTRACTOR:

1. INSTALL TEMPORARY SILT FENCE BARRIERS AS DIRECTED BY THE OWNER AND AS SHOWN ON THE EROSION CONTROL PLAN TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
2. ALL SILT FENCE BARRIERS SHALL BE REPLACED WHEREVER THEY BECOME CLOGGED OR INOPERABLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.
4. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER-SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR, AND WATER SPREAD AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.
5. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED AND ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS.
6. ALL DISTURBED AREAS (EXCEPT STABILIZED STONE AREAS) SHALL BE SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE AND AS SOON AS PHYSICALLY POSSIBLE.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES, AND CULVERTS. SILT BUILDUP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE TOWN.
8. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL FOLLOW THE REGULATIONS SET FORTH IN THE NYSDEC SPDES GENERAL ERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.
L LOCAL ORDINANCES REGARDING THE SALE OF TOPSOIL MUST BE FOLLOWED. TOPSOIL MAY T BE REMOVED WITHOUT A PERMIT.

TION AND MAINTENANCE PROCEDURES

E CONTRACTOR SHALL BE RESPONSIBLE FOR ASSIGNING AN INDIVIDUAL TO BE RESPONSIBLE FOR THE INSPECTION D MAINTENANCE OF TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES. THE WORK MAY INCLUDE, T NOT LIMITED TO THE FOLLOWING:

ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER. AS DEEMED NECESSARY BY THE TOWN AND ENGINEER, REPAIRS SHALL BE COMPLETED WITHIN 24 HOURS OF BEING REPORTED.
CHECK AND REPAIR SILT FENCING AND EROSION CONTROL DEVICES, AS NECESSARY.
TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH AND REPAIRED AS NECESSARY.
NEIGHBORING ROADWAYS WILL BE MONITORED TO ENSURE THAT ANY TRACKED MUD, DIRT, OR ROCK IS SWEPT AS NECESSARY.

NOTES:

1. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THOSE ITEMS TO REMAIN, SUCH AS TREES, PROPERTY CORNER PINS, UTILITY POLES, VALVES, HYDRANTS, CURBS, MANHOLES, AND CATCH BASINS.
2. TEMPORARY SILT FENCE AND EROSION CONTROL DEVICES TO BE INSTALLED AS DIRECTED BY THE OWNERS FIELD REPRESENTATIVE. MAINTAIN UNTIL VEGETATION IS ESTABLISHED AND PAVEMENT IS INSTALLED.
3. THE CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE ACCESSING THE SITE FROM PAVED ROADWAYS.
4. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH NEW YORK STATE M.U.T.C.D. STANDARDS PRIOR TO STARTING WORK.

STABILIZATION PRACTICES FOR THIS SITE INCLUDE:

A. LAND CLEARING ACTIVITIES SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND SHALL PROGRESS AS EARTHWORK IS NEEDED.
B. USE OF STABILIZATION METHOD FOR ALL SLOPES HAVING A SLOPE GREATER THAN 1V:3H.
C. PERMANENT SEEDING AND PLANTING OF ALL UNPAVED AREAS USING THE HYDROMULCHING GRASS SEEDING TECHNIQUE.
D. MULCHING EXPOSED AREAS.
E. VEGETATION PRESERVATION IN UNDISTURBED AREAS.
F. FREQUENT WATERING TO MINIMIZE WIND EROSION DURING CONSTRUCTION.

A. FOR SITES WHERE 5 ACRES OR MORE ARE DISTURBED AT ANY ONE TIME: IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE THE SOIL DISTURBANCE ACTIVITY CEASED. THE SOIL STABILIZATION MEASURES SELECTED SHALL BE IN CONFORMANCE WITH THE MOST CURRENT VERSION OF THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
B. THE OWNER OR OPERATOR SHALL PREPARE A PHASING PLAN THAT DEFINES MAXIMUM DISTURBED AREA PER PHASE AND SHOWS REQUIRED CUTS AND FILLS.
C. THE OWNER OR OPERATOR SHALL INSTALL ANY ADDITIONAL MEASURES NEEDED TO PROTECT WATER QUALITY.

112.2 STRUCTURAL PRACTICES

STRUCTURAL PRACTICES FOR THIS SITE INCLUDE:

A. INLET PROTECTION USING A METHOD DETAILED IN THE CONSTRUCTION DOCUMENTS.
B. PERIMETER PROTECTION USING TEMPORARY SILT FENCE/SILT SOCK OR SILT SOCK.
C. OUTLET PROTECTION USING RIPRAP STONE AND END SECTIONS.
D. STABILIZED CONSTRUCTION ENTRANCE.
E. TEMPORARY STONE WASH OFF AREAS.
F. STORM SEWER, CURB/GUTTER.

SEDIMENT TRAPS AND BASINS.

112.3 SEQUENCE OF MAJOR ACTIVITIES

THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING THE FOLLOWING EROSION CONTROL AND STORM WATER MANAGEMENT CONTROL MEASURES. THE CONTRACTOR MAY DESIGNATE THESE TASKS TO CERTAIN SUBCONTRACTORS AS HE SEES FIT, BUT THE ULTIMATE RESPONSIBILITY FOR IMPLEMENTING THESE CONTROLS AND ENSURING THEIR PROPER FUNCTIONING REMAINS WITH THE CONTRACTOR. THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

A. CONSTRUCT TEMPORARY CONSTRUCTION EXIT AT LOCATION SHOWN ON THE DEMOLITION & EROSION CONTROL PLAN SHEET.
B. INSTALL PERIMETER SILT FENCE/SILT SOCKS/SILT SOCK IN THE LOCATIONS SHOWN ON THE DEMOLITION & EROSION CONTROL PLAN SHEET.
C. CLEAR & GRUB SITE.
D. INSTALLATION OF DETENTION BASINS TO ACT AS SEDIMENT BASINS (DO NOT INSTALL BIORETENTION SOIL OR UNDERDRAINS UNTIL STABILIZED)
E. COMMENCE SITE GRADING.
F. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED.
G. FINALIZE PAVEMENT SUBGRADE PREPARATION.
H. CONSTRUCT ALL CURB, DRAINAGE INLETS, STORM SEWER PIPES AND STORM SEWER MANHOLES, AS SHOWN ON THE PLANS. INSTALL TEMPORARY INLET PROTECTION AT THE LOCATIONS OF ALL INLETS.
I. REMOVE INLET PROTECTION AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
J. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT.
K. CARRY OUT FINAL GRADING AND SEEDING AND PLANTING.
L. CLEAN STORM SYSTEM FOLLOWING CONSTRUCTION. CLEAN DETENTION BASINS OF ANY SILT AND RETURN TO DESIGN GRADES.
M. REMOVE SILT FENCING /SILT SOCK ONLY AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.

NOTE: SEDIMENT CONTROL STORAGE DURING CONSTRUCTION ITRAPS & BASINS DURING CONSTRUCTION SHALL BE 134 CY PER ACRE OF DISTURBANCE PER NYSDEC REQUIREMENTS.

TOWN OF AMHERST APPROVAL BOX:

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487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Demolition & Erosion Control Plan

DRAWING NO.
C-0

Project no.: 2

Packet Pg. 2240

2.c

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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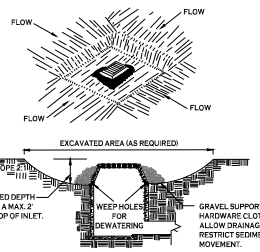
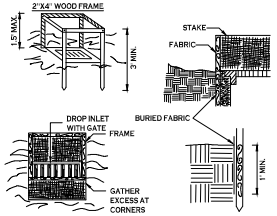


CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL, TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1
NOT TO SCALE

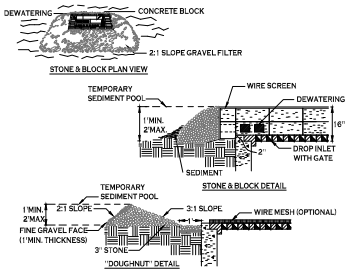


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2
NOT TO SCALE



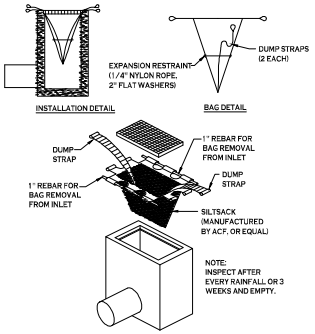
CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

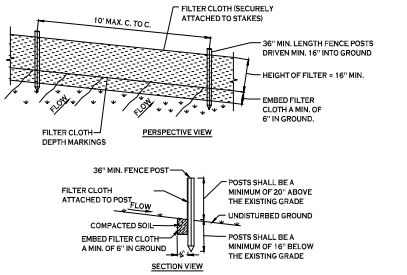
MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3
NOT TO SCALE

NOTE: INSTALL ONE OF THE INLET PROTECTION OPTIONS SHOWN PRIOR TO CONSTRUCTION



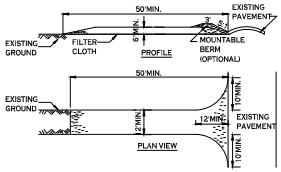
SILT SACK DETAIL
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

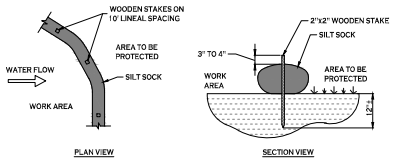
SILT FENCE DETAIL
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

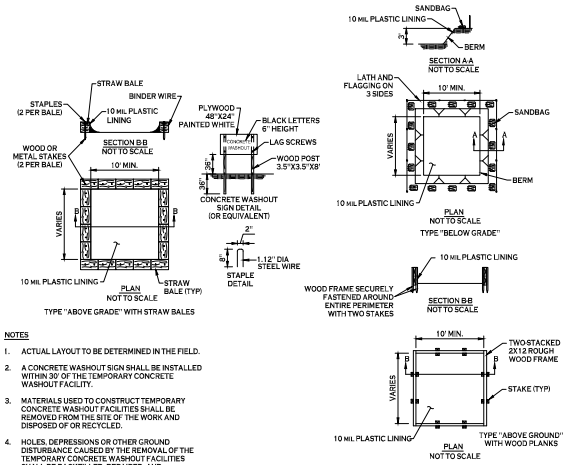


NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED ½ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK DETAIL
NOT TO SCALE



NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CONCRETE WASHOUT DETAIL
NOT TO SCALE

TOWN OF AMHERST APPROVAL BOX:

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487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Demolition & Erosion Control Details

DRAWING NO.
C-0

Project no.: 2

2.c

Packet Pg. 2241

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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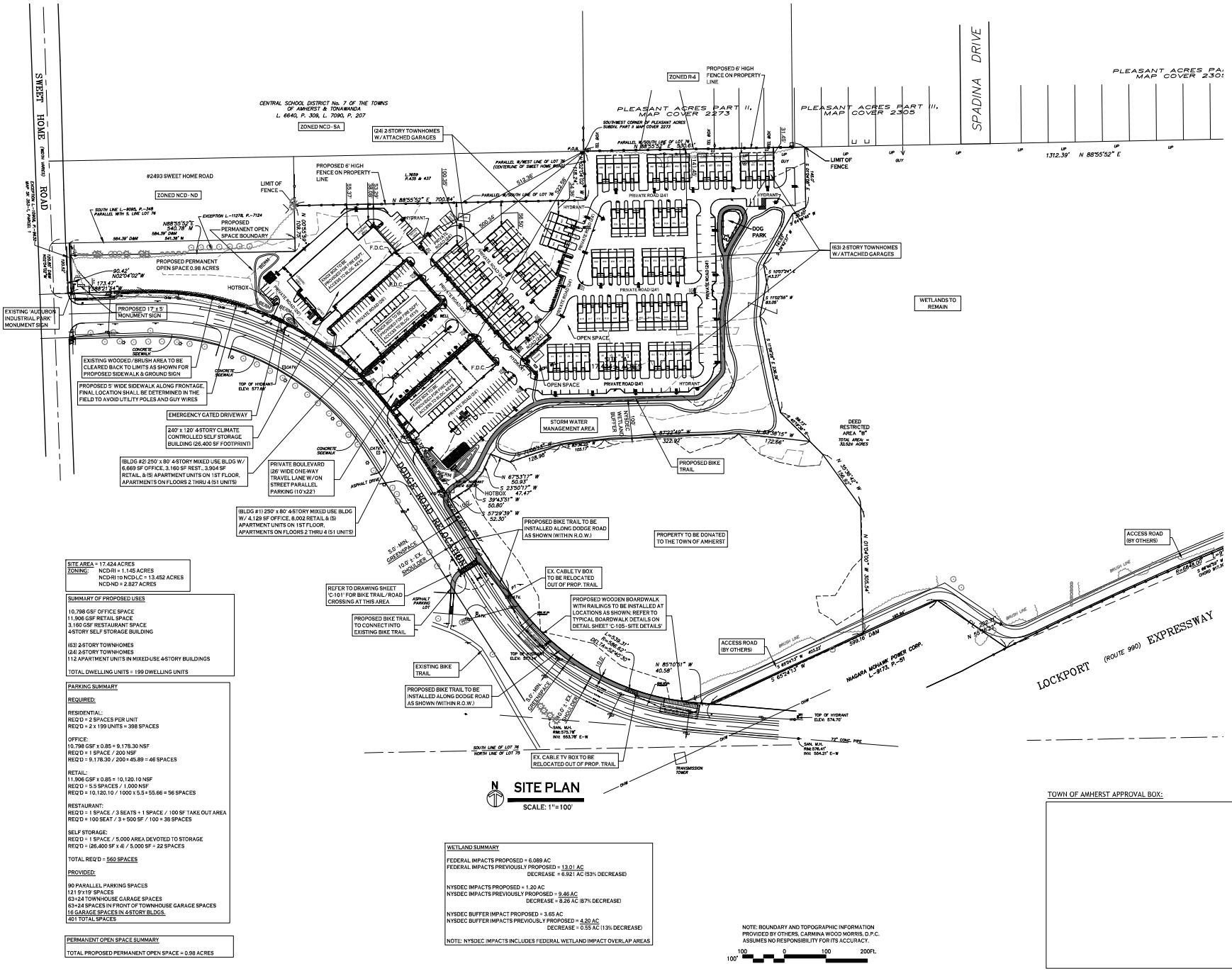


N SITE PLAN
SCALE: 1"= 100'

SITE AREA = 17.424 ACRES
ZONING: NCD-RI = 1.145 ACRES
NCD-RI to NCD-LC = 13.452 ACRES
NCD-ND = 2.827 ACRES

SUMMARY OF PROPOSED USES

10,798 GSF OFFICE SPACE
11,906 GSF RETAIL SPACE
3,160 GSF RESTAURANT SPACE
4-STORY SELF STORAGE BUILDING

(63) 2-STORY TOWNHOMES
(24) 2-STORY TOWNHOMES
112 APARTMENT UNITS IN MIXED-USE 4-STORY BUILDINGS

TOTAL DWELLING UNITS = 199 DWELLING UNITS

PARKING SUMMARY

REQUIRED:

RESIDENTIAL:
REQ'D = 2 SPACES PER UNIT
REQ'D = 2 x 199 UNITS = 398 SPACES

OFFICE:
10,798 GSF x 0.85 = 9,178.30 NSF
REQ'D = 1 SPACE / 200 NSF
REQ'D = 9,178.30 / 200 = 45.89 = 46 SPACES

RETAIL:
11,906 GSF x 0.85 = 10,120.10 NSF
REQ'D = 5.5 SPACES / 1,000 NSF
REQ'D = 10,120.10 / 1000 x 5.5 = 55.66 = 56 SPACES

RESTAURANT:
REQ'D = 1 SPACE / 3 SEATS + 1 SPACE / 100 SF TAKE OUT AREA
REQ'D = 100 SEAT / 3 + 500 SF / 100 = 38 SPACES

SELF STORAGE:
REQ'D = 1 SPACE / 5,000 AREA DEVOTED TO STORAGE
REQ'D = (26,400 SF x 4) / 5,000 SF = 22 SPACES

TOTAL REQ'D = 560 SPACES

PROVIDED:

90 PARALLEL PARKING SPACES
121 9'x19' SPACES
63+24 TOWNHOUSE GARAGE SPACES
63+24 SPACES IN FRONT OF TOWNHOUSE GARAGE SPACES
16 GARAGE SPACES IN 4-STORY BLDGS.
401 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 0.98 ACRES

WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200FL

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per Amherst T.-S.B. 03/07/24 Comments	03/13/24
2	Rev. per ECDPW 03/28/24 Comments	04/02/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

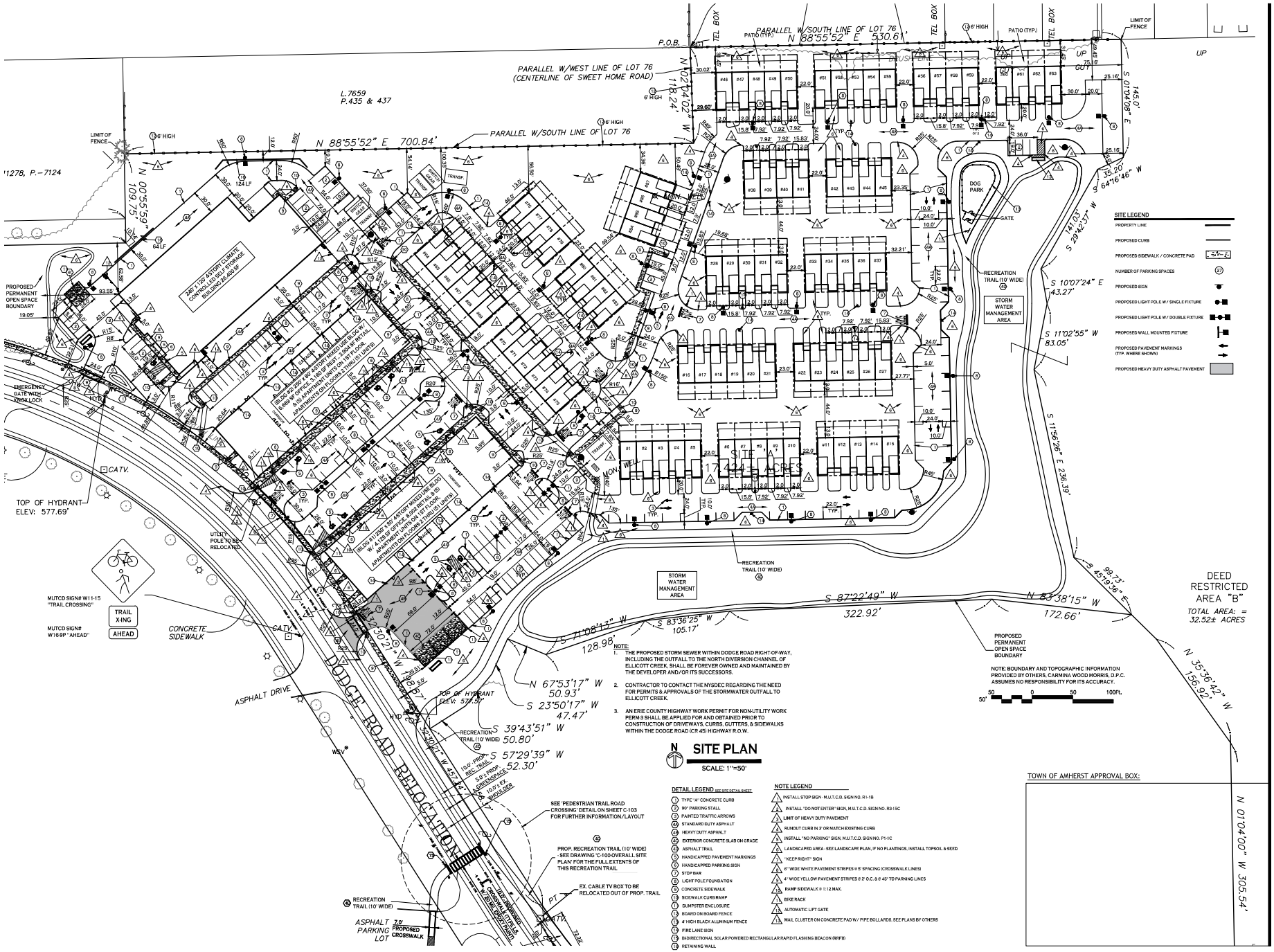
Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Overall Site Plan

DRAWING NO.
C-1
Project no.: 2

Packet Pg. 2242

2.c



1. THE PROPOSED STORM SEWER WITHIN DODGE ROAD RIGHT-OF-WAY, INCLUDING THE OUTFALL TO THE NORTH DIVERSION CHANNEL OF ELLICOTT CREEK, SHALL BE FOREVER OWNED AND MAINTAINED BY THE DEVELOPER AND/OR ITS SUCCESSORS.
2. CONTRACTOR TO CONTACT THE NYSDEC REGARDING THE NEED FOR PERMITS & APPROVALS OF THE STORMWATER OUTFALL TO ELLICOTT CREEK.
3. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR NON-UTILITY WORK PERM 3 SHALL BE APPLIED FOR AND OBTAINED PRIOR TO CONSTRUCTION OF DRIVEWAYS, CURBS, GUTTERS, & SIDEWALKS WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

NOTE: THE PROPOSED STORM SEWER WITHIN DODGE ROAD RIGHT-OF-WAY, INCLUDING THE OUTFALL TO THE NORTH DIVERSION CHANNEL OF ELLICOTT CREEK, SHALL BE FOREVER OWNED AND MAINTAINED BY THE DEVELOPER AND/OR ITS SUCCESSORS.

SITE PLAN
SCALE: 1"=50'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50' 100' FT.

DETAIL LEGEND (SEE SITE DETAIL SHEET)

1 TYPE "A" CONCRETE CURB
2 90° PARKING STALL
3 PAINTED TRAFFIC ARROWS
4A STANDARD DUTY ASPHALT
4B HEAVY DUTY ASPHALT
5A EXTERIOR CONCRETE SLAB ON GRADE
5B ASPHALT TRAIL
6 HANDICAPPED PAVEMENT MARKINGS
7 HANDICAPPED PARKING SIGN
8 STOP BAR
9 LIGHT POLE FOUNDATION
10 CONCRETE SIDEWALK
11B SIDEWALK CURB RAMP
11 DUMPSTER ENCLOSURE
12A BOARD ON BOARD FENCE
12B 4' HIGH BLACK ALUMINUM FENCE
13A FIRE LANE SIGN
13B BI-DIRECTIONAL SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB)
13B RETAINING WALL

NOTE LEGEND

A INSTALL STOP SIGN - M.U.T.C.D. SIGN NO. R1-1B
A INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R3-1SC
A LIMIT OF HEAVY DUTY PAVEMENT
A RUNOUT CURB IN 3' OR MATCH EXISTING CURB
A INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1C
A LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
A "KEEP RIGHT" SIGN
A 6" WIDE WHITE PAVEMENT STRIPES @ 8' SPACING (CROSSWALK LINES)
A 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & @ 45° TO PARKING LINES
A RAMP SIDEWALK @ 1:12 MAX.
A BIKE RACK
A AUTOMATIC LIFT GATE
A MAIL CLUSTER ON CONCRETE PAD W/ PIPE BOLLARDS. SEE PLANS BY OTHERS

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Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
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REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/09/24
3	Rev. per ARC & WS Comments	09/04/24
4	Rev. per Client	10/02/24

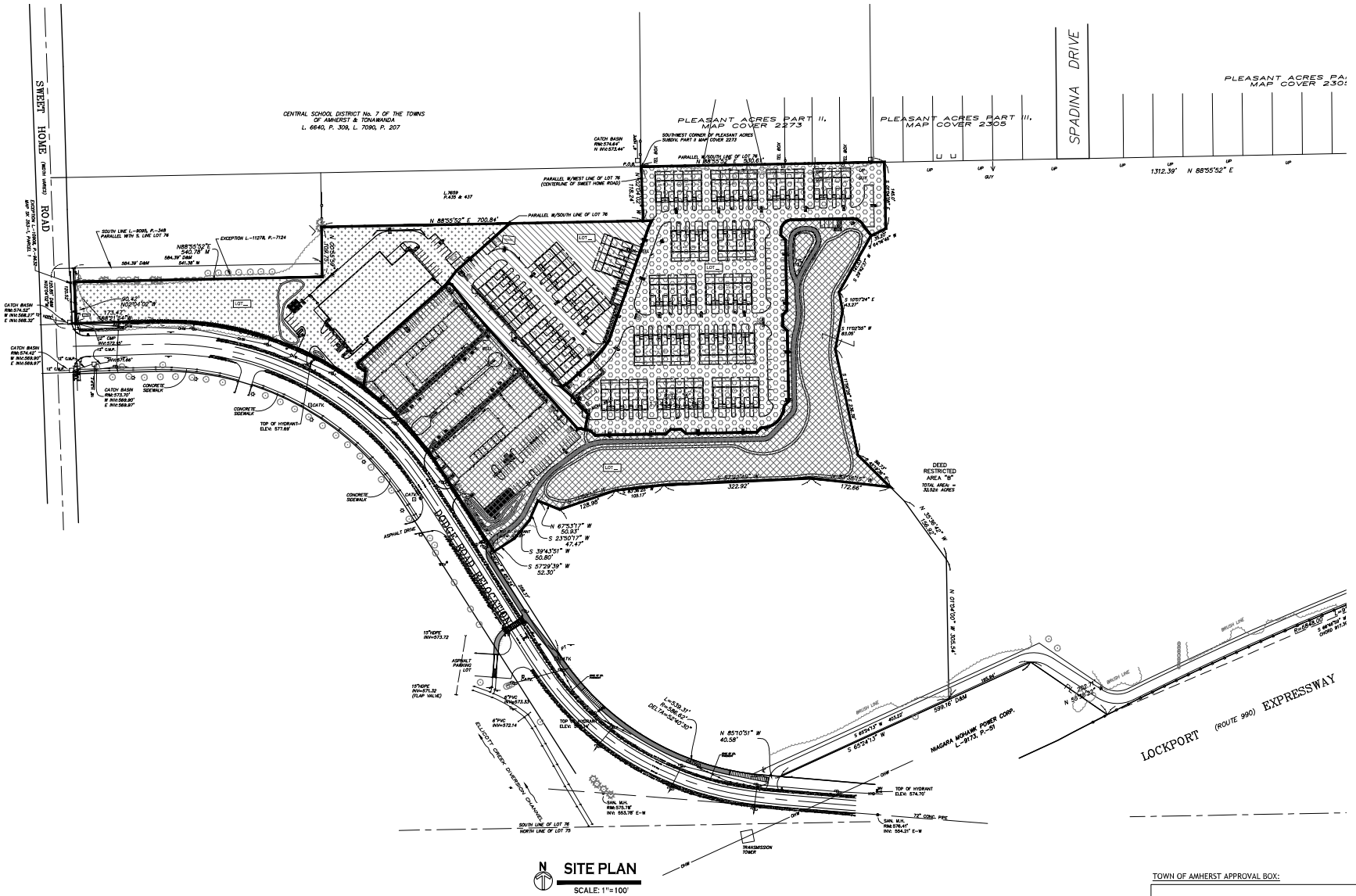
PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan

DRAWING NO.
C-1
Project no.: 2

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



SITE PLAN
SCALE: 1"=100'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200FT.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per town 07/29/22 comments	03/27/23
4	Plan rev. per 09/13/23 Fire Safety comments	03/27/23
5	Plan rev. per 10/20/23 Town comments	10/31/23
6	Plan revised per Town/Client comments	05/28/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Parcel Map

DRAWING NO.
C-1
Project no.: 2

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Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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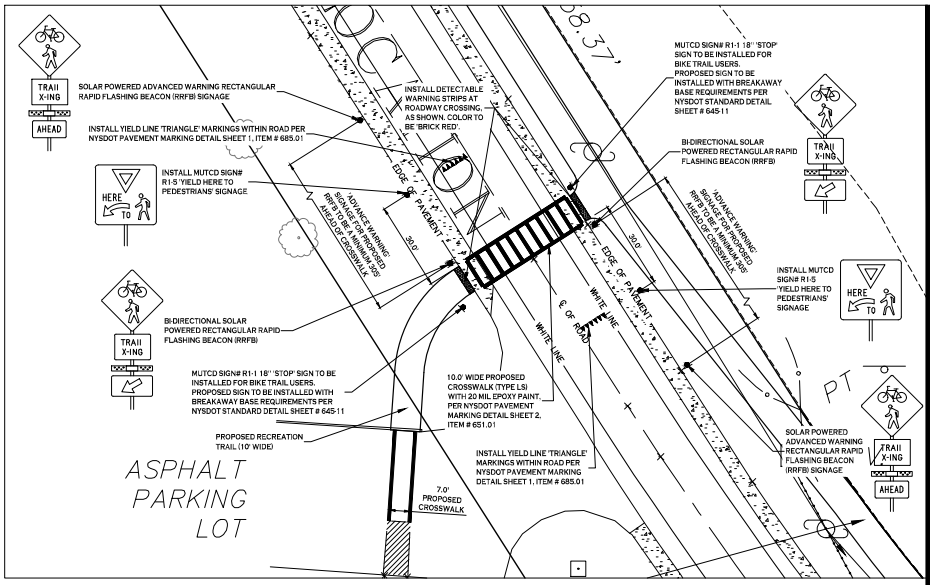
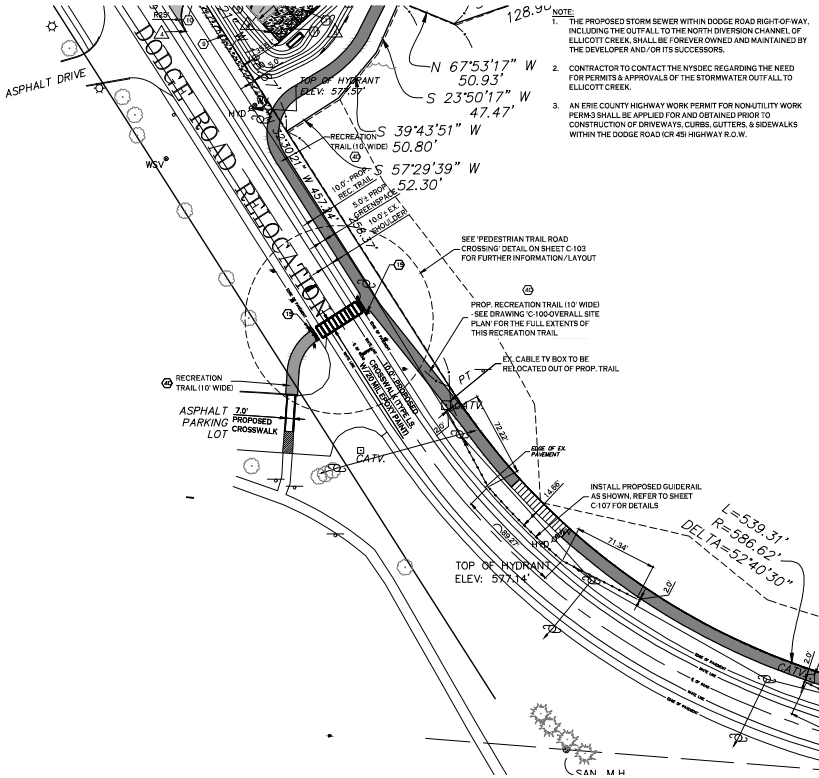


N **PEDESTRIAN TRAIL ROAD CROSSING**
SCALE: 1"=20'



NOTE:
1. THE PROPOSED STORM SEWER WITHIN DODGE ROAD RIGHT-OF-WAY, INCLUDING THE OUTFALL TO THE NORTH DIVERSION CHANNEL OF ELLICOTT CREEK, SHALL BE FOREVER OWNED AND MAINTAINED BY THE DEVELOPER AND/OR ITS SUCCESSORS.
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N **SITE PLAN**
SCALE: 1"=50'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.
50' 0 50 100FT.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.
20' 0 20 40FT.

DETAIL LEGEND SEE SITE DETAIL SHEET
1 TYPE "A" CONCRETE CURB
2 90° PARKING STALL
3 PAINTED TRAFFIC ARROWS
4A STANDARD DUTY ASPHALT
4B HEAVY DUTY ASPHALT
4C EXTERIOR CONCRETE SLAB ON GRADE
4D ASPHALT TRAIL
5 HANDICAPPED PAVEMENT MARKINGS
6 HANDICAPPED PARKING SIGN
7 STOP BAR
8 LIGHT POLE FOUNDATION
9 CONCRETE SIDEWALK
10 SIDEWALK CURB RAMP
11 DUMPSTER ENCLOSURE
12 BOARD ON BOARD FENCE
13 4' HIGH BLACK ALUMINUM FENCE
14 FIRE LANE SIGN
15 BI-DIRECTIONAL SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB)
16 RETAINING WALL

NOTE LEGEND
1 INSTALL STOP SIGN - M.U.T.C.D. SIGN NO. R1-1B
2 INSTALL "DO NOT ENTER" SIGN, M.U.T.C.D. SIGN NO. R3-1SC
3 LIMIT OF HEAVY DUTY PAVEMENT
4 RUNOUT CURB IN 3' OR MATCH EXISTING CURB
5 INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1C
6 LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
7 "KEEP RIGHT" SIGN
8 6" WIDE WHITE PAVEMENT STRIPES @ 0' SPACING (CROSSWALK LINES)
9 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & @ 45° TO PARKING LINES
10 RAMP SIDEWALK @ 1:12 MAX.
11 BIKE RACK
12 AUTOMATIC LIFT GATE
13 MAIL CLUSTER ON CONCRETE PAD W/ PIPE BOLLARDS, SEE PLANS BY OTHERS

SITE LEGEND
PROPERTY LINE
PROPOSED CURB
PROPOSED SIDEWALK / CONCRETE PAD
NUMBER OF PARKING SPACES (27)
PROPOSED SIGN
PROPOSED LIGHT POLE W/ SINGLE FIXTURE
PROPOSED LIGHT POLE W/ DOUBLE FIXTURE
PROPOSED WALL MOUNTED FIXTURE
PROPOSED PAVEMENT MARKINGS (TYP. WHERE SHOWN)
PROPOSED HEAVY DUTY ASPHALT PAVEMENT

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan rev. per 04/19/24 Passero comments	04/19/24
2	Plan rev. per 04/29/24 ECDPW comments	04/29/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Plan
Roadway & Bike Path Area

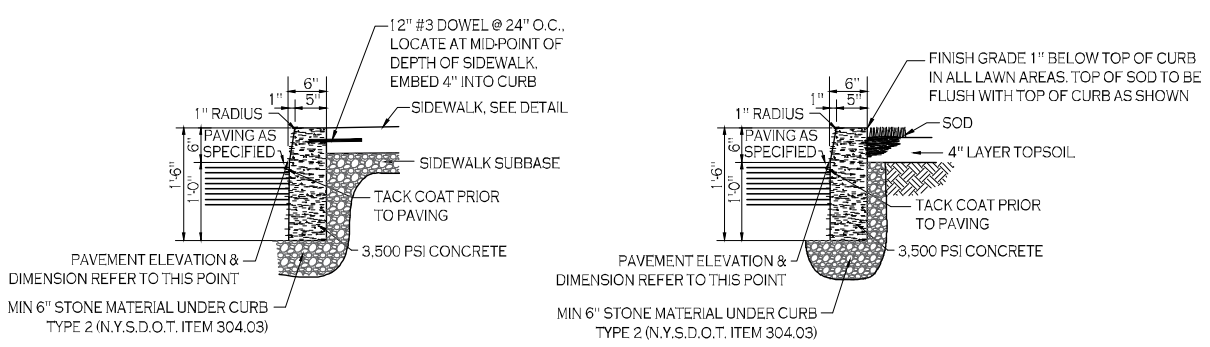
DRAWING NO.
C-1[illegible]

Project no.: 2[illegible]

Packet Pg. 2245

2.c

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

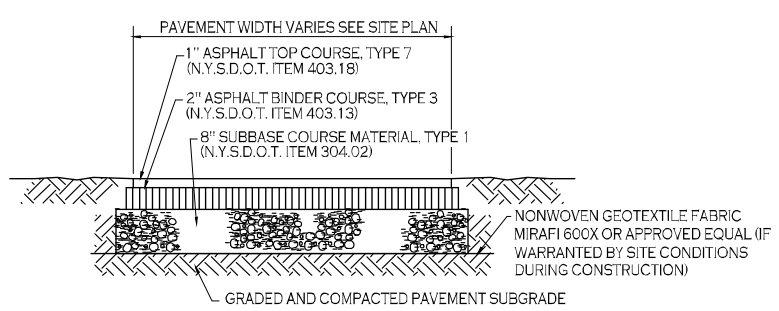


ABUTTING SIDEWALK

ABUTTING LANDSCAPE/GRASS

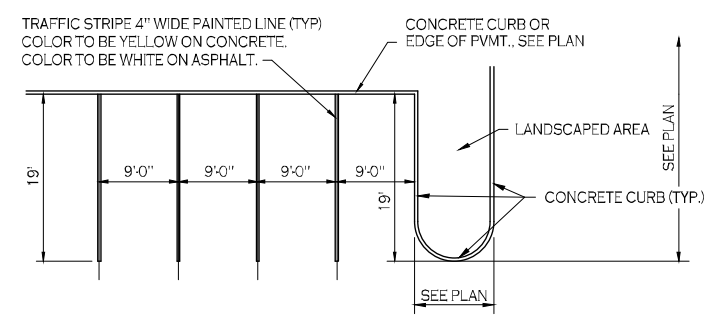
NOTES:
1. CONTROL JOINTS TO BE 2" DEEP AT 15'-0" O.C. - SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. WHERE THE CURB DROPS (IS FLUSH WITH ASPHALT) THE DEPTH OF CURB BELOW GRADE SHALL BE INCREASED TO 1'-6" AND OTHER DIMENSIONS ADJUSTED ACCORDINGLY.

TYPE "A" CONCRETE CURB - 1

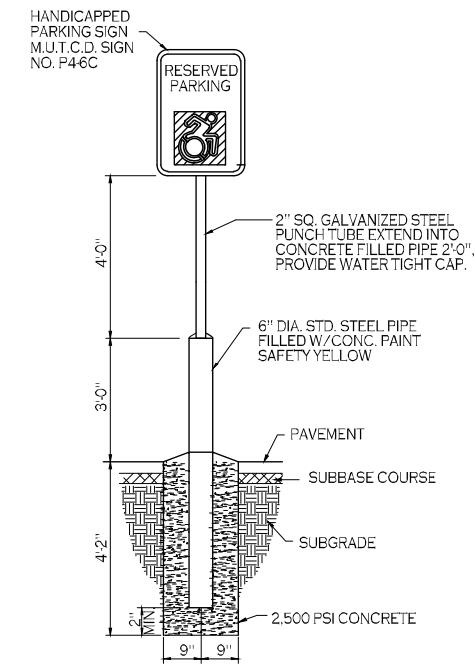


NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

STANDARD DUTY ASPHALT SECTION - 4A

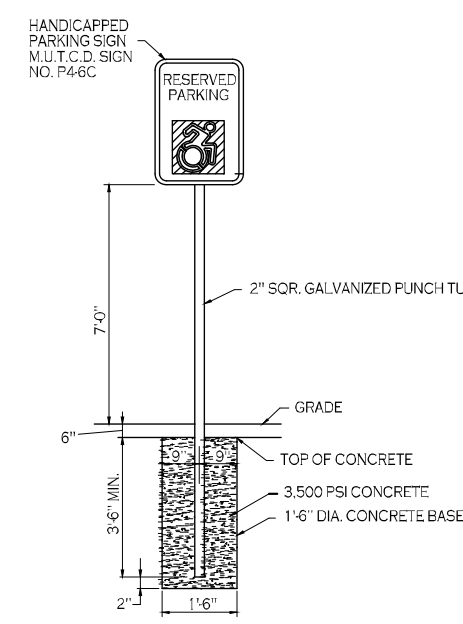


90° PARKING STALL LAYOUT - 2



HANDICAPPED PARKING SIGN - 6

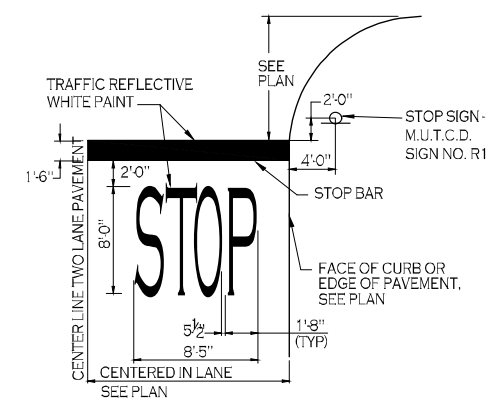
INSTALLED IN PAVEMENT



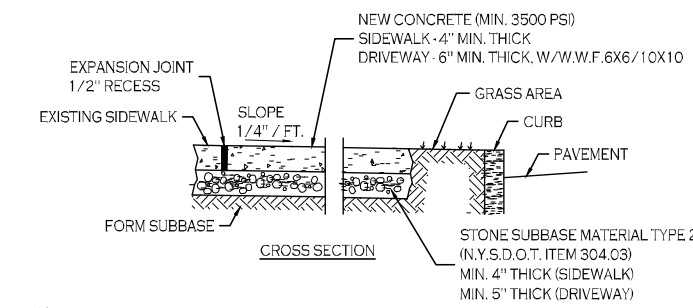
NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

HANDICAP PARKING SIGNS - 6

INSTALLED IN GRASS/LANDSCAPED AREA

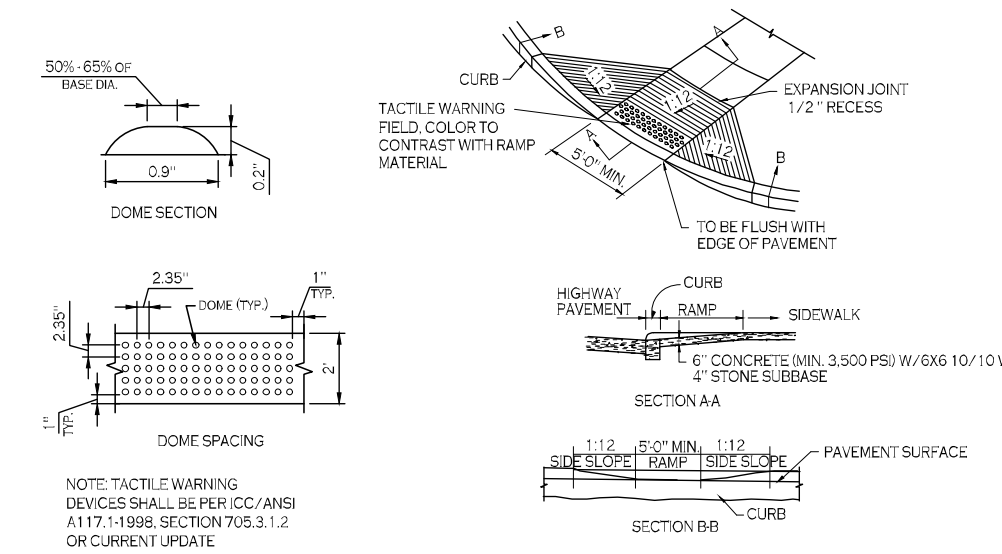


STOP BAR DETAIL - 7



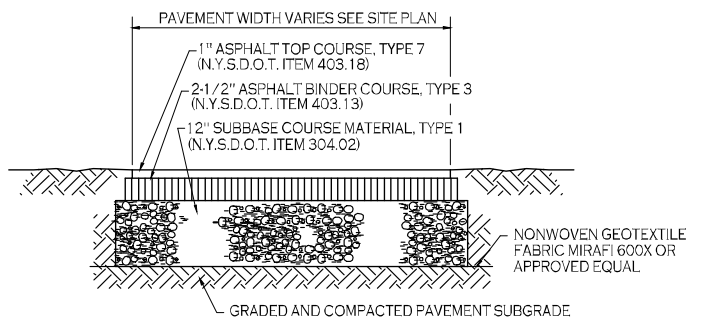
NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTH WAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.
3. SUBBASE GRADE SHALL FOLLOW THE PROPOSED GRADE OF THE SIDEWALK AND SLOPE AWAY FROM BUILDING WHERE APPLICABLE, PROVIDE CONTINUOUS STONE PATH TO CURB UNDERDRAIN WHERE PROVIDED.
4. FULL DEPTH EXPANSION JOINTS SHALL BE INSTALLED EVERY 20' O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
5. SEE CURB DETAIL FOR DOWLING REQUIREMENTS WHERE ABUTTING CURB.
6. INSTALL 6" LONG #3 DOWELS @ 12" O.C. WHERE SIDEWALK ABUTS A BUILDING WALL AT AN ENTRANCE, THICKEN SIDEWALK TO 6" AT BUILDING WALL AND INSTALL DOWEL CENTERED IN THE 6" DEPTH. DOWELS AND THICKENING OF SIDEWALK SHALL EXTEND 18" EITHER SIDE OF ENTRANCE.
7. INSTALL 1/2" PREMOLDED EXPANSION JOINT WITH BACKER ROD & SEALANT WHERE SIDEWALK ABUTS BUILDING OR OTHER STRUCTURE.

CONCRETE SIDEWALK - 9



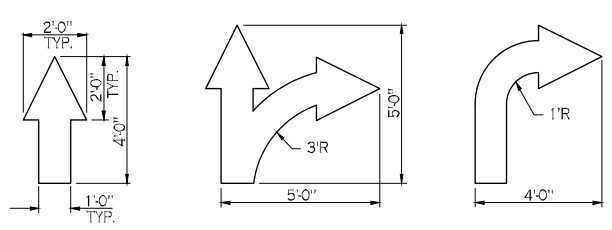
NOTE: TACTILE WARNING DEVICES SHALL BE PER ICC/ANSI A117.1-1998, SECTION 705.3.1.2 OR CURRENT UPDATE

SIDEWALK CURB RAMP - 10

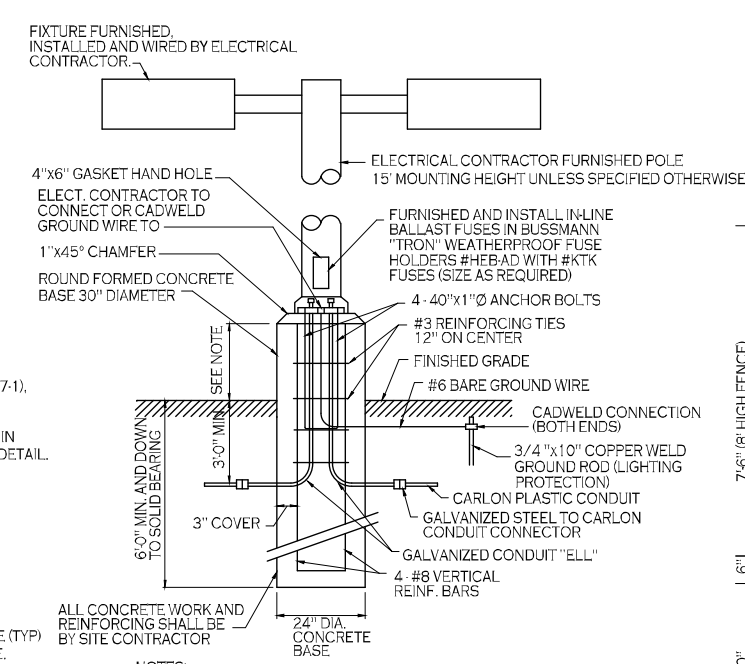


NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

HEAVY DUTY ASPHALT SECTION - 4B



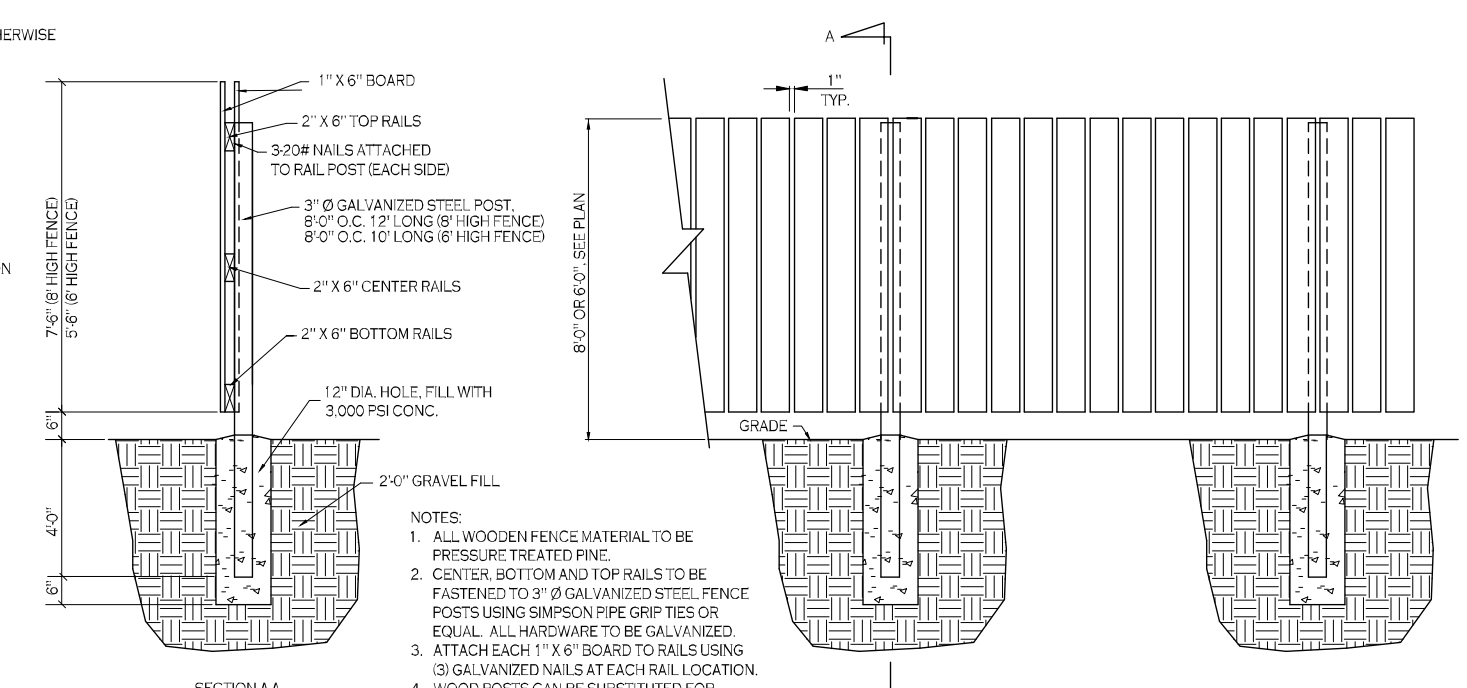
PAINTED TRAFFIC ARROWS - 3



NOTES:
1. FOR LOCATIONS OF FOUNDATIONS SEE SITE PLAN
2. FOR LIGHT FIXTURE ORDERING INFORMATION SEE SITE LIGHTING PLAN
3. LIGHT POLE BASE EXPOSURE ABOVE GRADE SHALL BE:
IN CURBED ISLANDS: 6" ABOVE TOP OF CURB ELEVATION
IN PAVEMENT: 3' ABOVE GRADE
IN NON-CURBED GRASS AREAS: 6" ABOVE GRADE

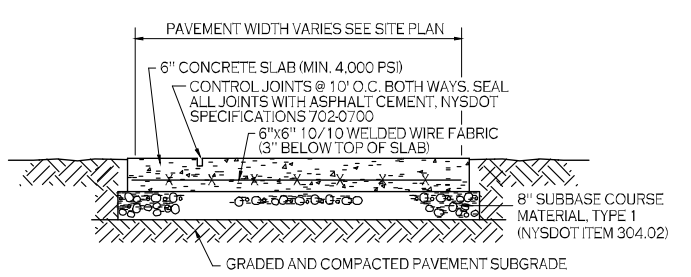
LIGHT POLE FOUNDATION - 8

USE FOR 15' MOUNTING HEIGHT L.E.D. FIXTURES



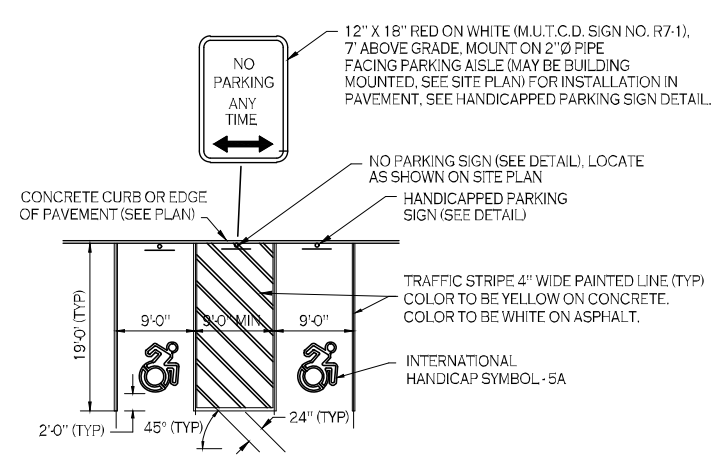
NOTES:
1. ALL WOODEN FENCE MATERIAL TO BE PRESSURE TREATED PINE.
2. CENTER, BOTTOM AND TOP RAILS TO BE FASTENED TO 3" Ø GALVANIZED STEEL FENCE POSTS USING SIMPSON PIPE GRIP TIES OR EQUAL. ALL HARDWARE TO BE GALVANIZED.
3. ATTACH EACH 1" X 6" BOARD TO RAILS USING (3) GALVANIZED NAILS AT EACH RAIL LOCATION.
4. WOOD POSTS CAN BE SUBSTITUTED FOR STEEL.

BOARD ON BOARD FENCE FENCE - 12

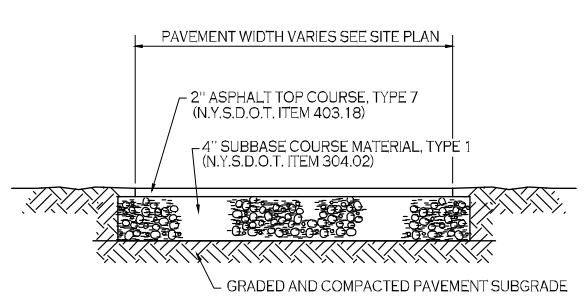


NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

EXTERIOR CONCRETE SLAB-ON-GRADE SECTION - 4C

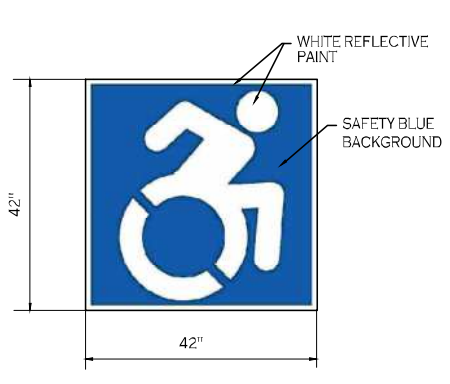


HANDICAPPED PAVEMENT MARKINGS & SIGNAGE - 5



NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

ASPHALT TRAIL SECTION - 4D



SYMBOL TO BE CENTERED IN PARKING SPACE

INTERNATIONAL HANDICAP SYMBOL - 5A



SIZE:	12" X 18"
LINE 1:	3"
LINE 2:	3"
LINE 3:	2"
LINE 4:	ARROW
BACKGROUND:	WHITE
LEGEND:	RED
MARGIN:	3/8"
BORDER:	3/8"

INSTALLATION
1) SIGNS SHALL BE LOCATED ON THE RIGHT SIDE OF THE ROADWAY FACING APPROACHING TRAFFIC.
2) SIGNS SHALL BE INSTALLED APPROXIMATELY TWO FEET OFF OF PAVEMENT EDGE OR FACE OF CURB.
3) THE HEIGHT OF THE SIGN SHALL BE A MINIMUM OF SEVEN (7) FEET, MEASURED FROM THE BOTTOM OF THE SIGN TO THE GROUND.
4) ALL SIGNS SHALL BE INSTALLED FACING TRAFFIC AT AN ANGLE OF BETWEEN 30 AND 45 DEGREES WITH A LINE PARALLEL TO THE FLOW OF TRAFFIC. THE SIGN LEGENDS SHALL INCLUDE SINGLE-HEADED ARROWS POINTING IN THE DIRECTION OF THE REGULATION IF THE SIGNS ARE AT THE END OF THE ZONE, OR DOUBLE-HEADED ARROWS POINTING IN BOTH DIRECTIONS IF THE SIGNS ARE AT INTERMEDIATE POINTS WITHIN A ZONE.
5) BUILDING MOUNT WHERE REQUIRED @ 50' O.C.

FIRE LANE SIGN - 14

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22
3	Plan rev. per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

TOWN OF AMHERST APPROVAL BOX:

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-1
Project no.: 2

2.c

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Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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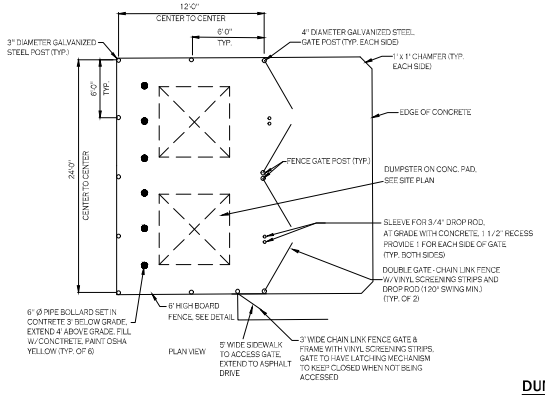
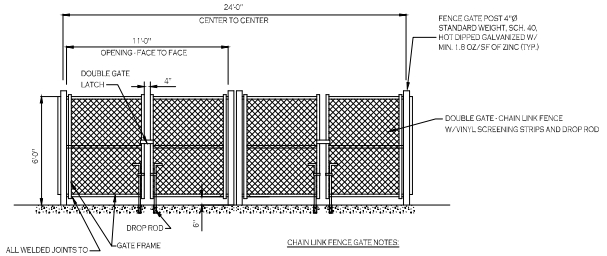
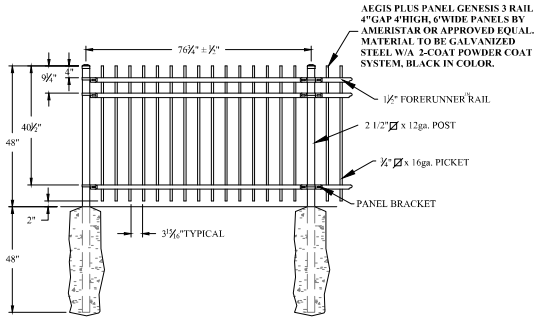




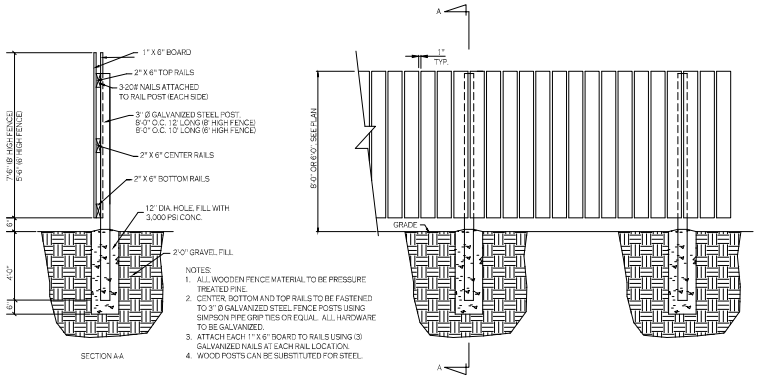
CHAIN LINK FENCE GATE NOTES:

1. GATE POST FOOTINGS TO BE MIN. 36" DEEP x (4x) POST DIAMETER. EXTEND POST TO WITHIN 6" OF BOTTOM.
2. GATE FRAMES TO BE 2" SQ. GALVANIZED STEEL, WEIGHING 2.60 LB./FT IN ACCORDANCE WITH ASTM F 900.
3. CHAIN LINK FENCE FABRIC SHALL BE 2" MESH, 9 GAUGE, ZINC COATED STEEL CORE WIRE. INSTALL MESH WITH HOOK BOLTS AND TENSION BARS ON ALL 4 SIDES. ATTACH AT 15" MAX.
4. DOUBLE GATE LATCH TO BE FORKED TYPE CAPABLE OF RETAINING GATE IN CLOSED POSITION AND HAVE PROVISION FOR PAD LOCK. LATCH SHALL BE OPERABLE FROM EITHER SIDE OF GATE.
5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED STEEL TO SUIT GATE SIZE.

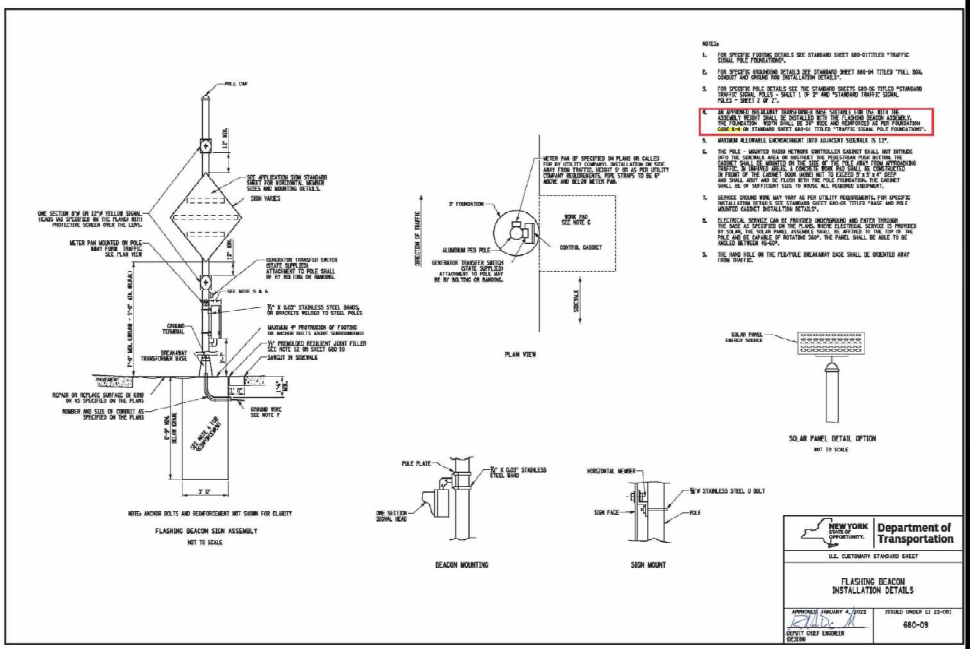
DUMPSTER ENCLOSURE - 11

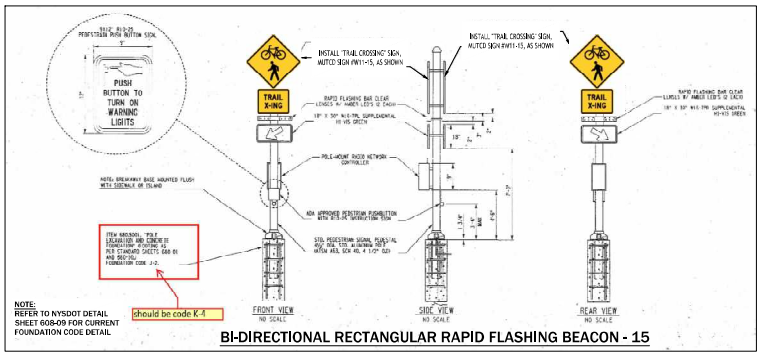


4' HIGH BLACK ALUMINUM FENCE - 13



BOARD ON BOARD FENCE FENCE - FOR DUMPSTER ENCLOSURE





BI-DIRECTIONAL RECTANGULAR RAPID FLASHING BEACON - 15

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
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Buffalo, New York 14203
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F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22
3	Rev. per ECDPW 03/28/24 Comments	04/02/24
4	Plan rev.: per 04/19/24 Passero comments	04/19/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Details

DRAWING NO.
C-1
Project no.: 2

Packet Pg. 2247

2.c

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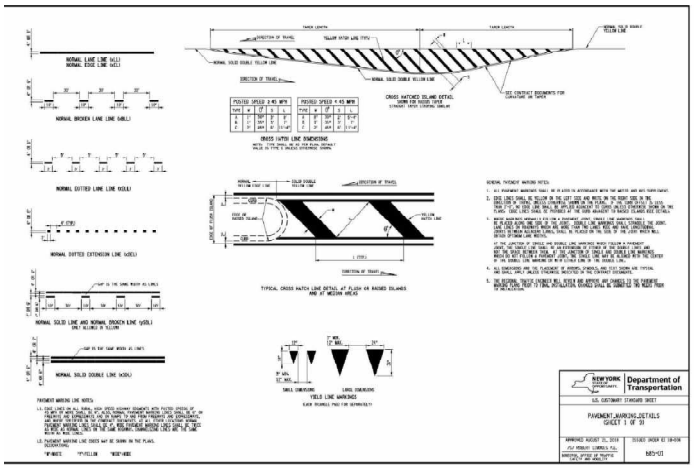
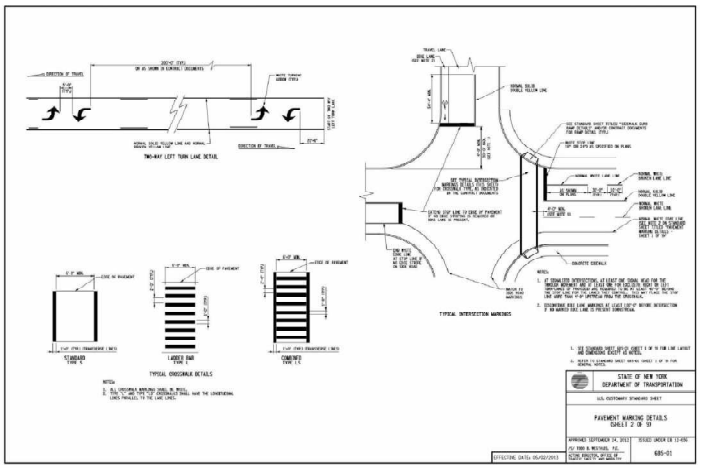
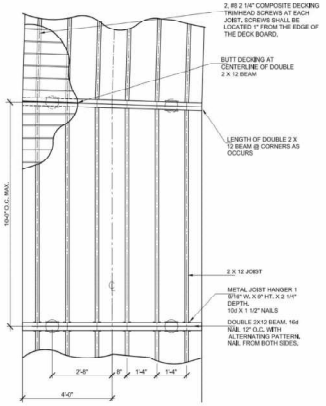
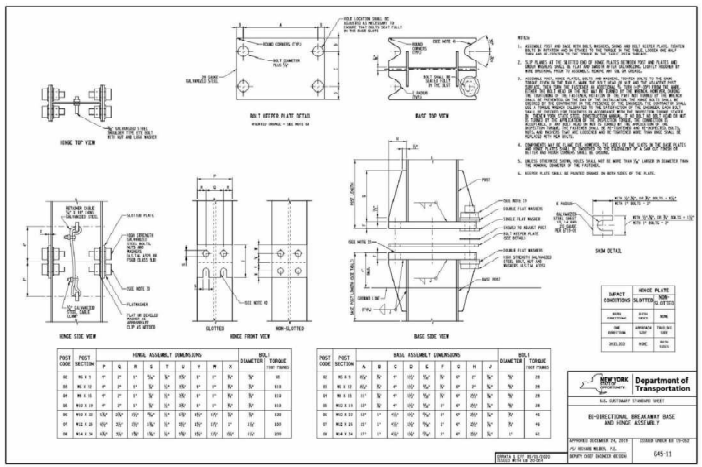
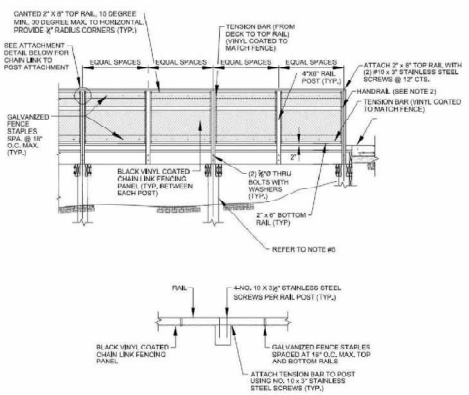






BOARDWALK FRAMING PLAN

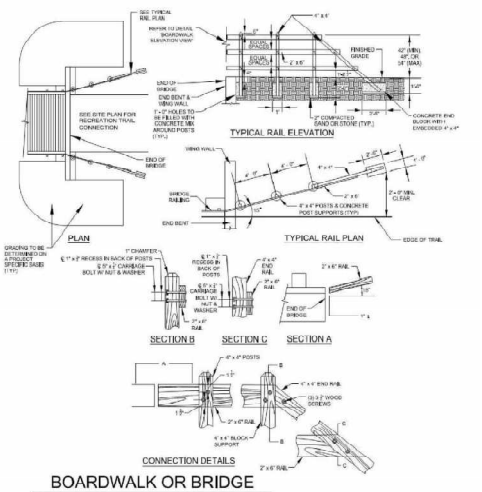




ATTACHMENT DETAIL

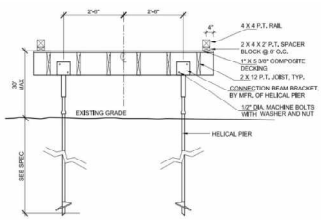
TYPICAL BOARDWALK RAILING ELEVATION VIEW

NOTES:
1. THE MINIMUM HEIGHT OF BRIDGE/BOARDWALK RAILING SHALL BE 42", UNLESS OTHERWISE NOTED, THE HEIGHT CAN RANGE BETWEEN 42", 45", OR 54".
2. A GRIPABLE, ROUND RAIL THAT WILL ACT AS BOTH A RUB RAIL AND HANDRAIL SHALL ONLY BE REQUIRED WHEN GRADES ARE GREATER THAN 5%, REFER TO DETAIL GW-3034 FOR BRIDGE OR BOARDWALK RUB RAIL-HANDRAIL ATTACHMENT.
3. UTILIZE DETAIL GW-3034 "BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT" AS A TYPICAL RAIL ATTACHMENT DETAIL FOR HORIZONTAL RAILS TO RAIL POST CONNECTIONS.
4. BLACK VINYL COATED CHAIN LINK FENCE AND TENSION TIES SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
5. SPAN LENGTHS, JOIST SPACING, SIZING OF MEMBERS, REINFORCED CONCRETE DECK, AND OTHER DESIGN SPECIFICS SHALL BE DETERMINED BY THE ENGINEER ON A PROJECT SPECIFIC BASIS.
6. FOUNDATION SHALL CONSIST OF DRIVEN PILES, AUGURED PILES, HELICAL PIERS, OR OTHER APPLIED FOUNDATION SYSTEM, SPECIFICS SUCH AS NUMBER OF PILES, SPACING, AND HEIGHT SHALL BE DETERMINED BY ENGINEER ON A PROJECT SPECIFIC BASIS BASED ON REQUIRED LOADING.



BOARDWALK OR BRIDGE TIMBER APPROACH RAILING

NOTES:
1. THE LENGTH OF THE APPROACH RAILING SHALL VARY DEPENDING ON SITE CONDITIONS.
2. THE LATERAL OFFSET OF THE RAILING SHOULD BE AT LEAST 1 FOOT FROM THE EDGE OF PATH, THE ENDS OF THE RAILING SHOULD BE FLARED AWAY FROM THE PATH EDGE.
3. THE APPROACH RAILING HEIGHT SHALL MATCH THE HEIGHT OF THE BRIDGE OR BOARDWALK RAILING UNLESS OTHERWISE NOTED. THE RAILING HEIGHT WILL BE 42" (MIN), 45", OR 54" (MAX),
4. ALL CONCRETE FOOTERS AND END BLOCKS SHALL BE 3000 PSI MIN.



BOARDWALK SECTION

NOTES:
1. PROVIDE FULL EROSION AND SEDIMENTATION CONTROLS AROUND ALL CONSTRUCTION AREAS.
2. BOARDWALK ELEVATION VARIES.
3. CALCULATIONS FOR ALL PERIPILE DESIGN DEPTHS BASED ON GEOTECHNICAL ANALYSIS TEST RESULTS. CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AND PAYING FOR GEOTECHNICAL DESIGN SERVICES.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per Amherst T.S.B. 03/07/24 Comments	03/13/24
2	Rev. per ECDPW 03/28/24 Comments	04/02/24
3	Plan rev. per 04/19/24 Passero comments	04/19/24

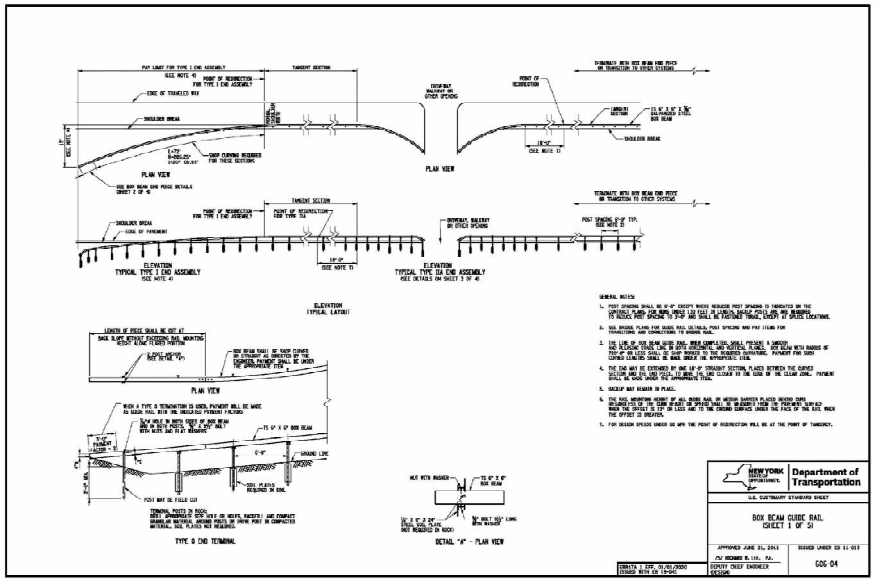
PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

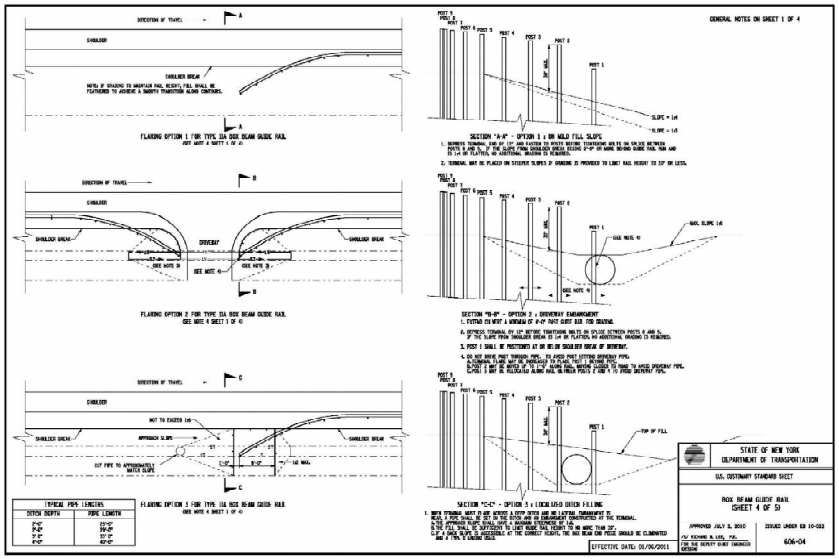
Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

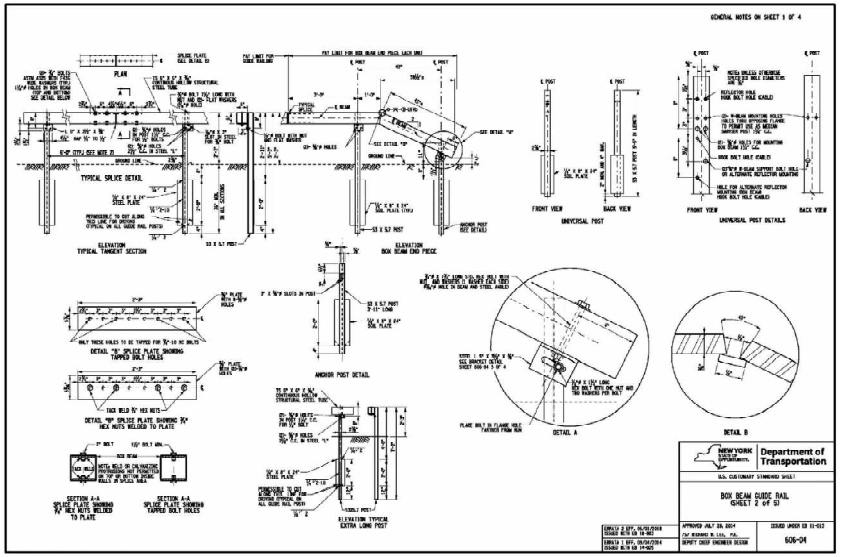
DRAWING NAME:
Site Details

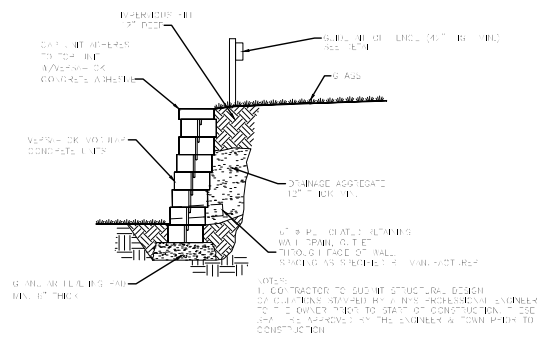
DRAWING NO.
C-1
Project no.: 2

Packet Pg. 2248
2.c
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)









TYPICAL SECTION-UNREINFORCED RETAINING WALL

SCALE: NONE

UNREINFORCED WALLS SHALL BE USED UP TO A HEIGHT OF 4' ABOVE GRADE

RETAINING WALL - 16

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Carmina Wood Morris PC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan rev. per 03/28/24 ECDPW comments	04/02/24
2	Plan rev. per 04/19/24 Passero comments	04/19/24
3	Plan rev. per 04/29/24 ECDPW comments	04/29/24

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Site Details

DRAWING NO.

C-1

Project no.: 2

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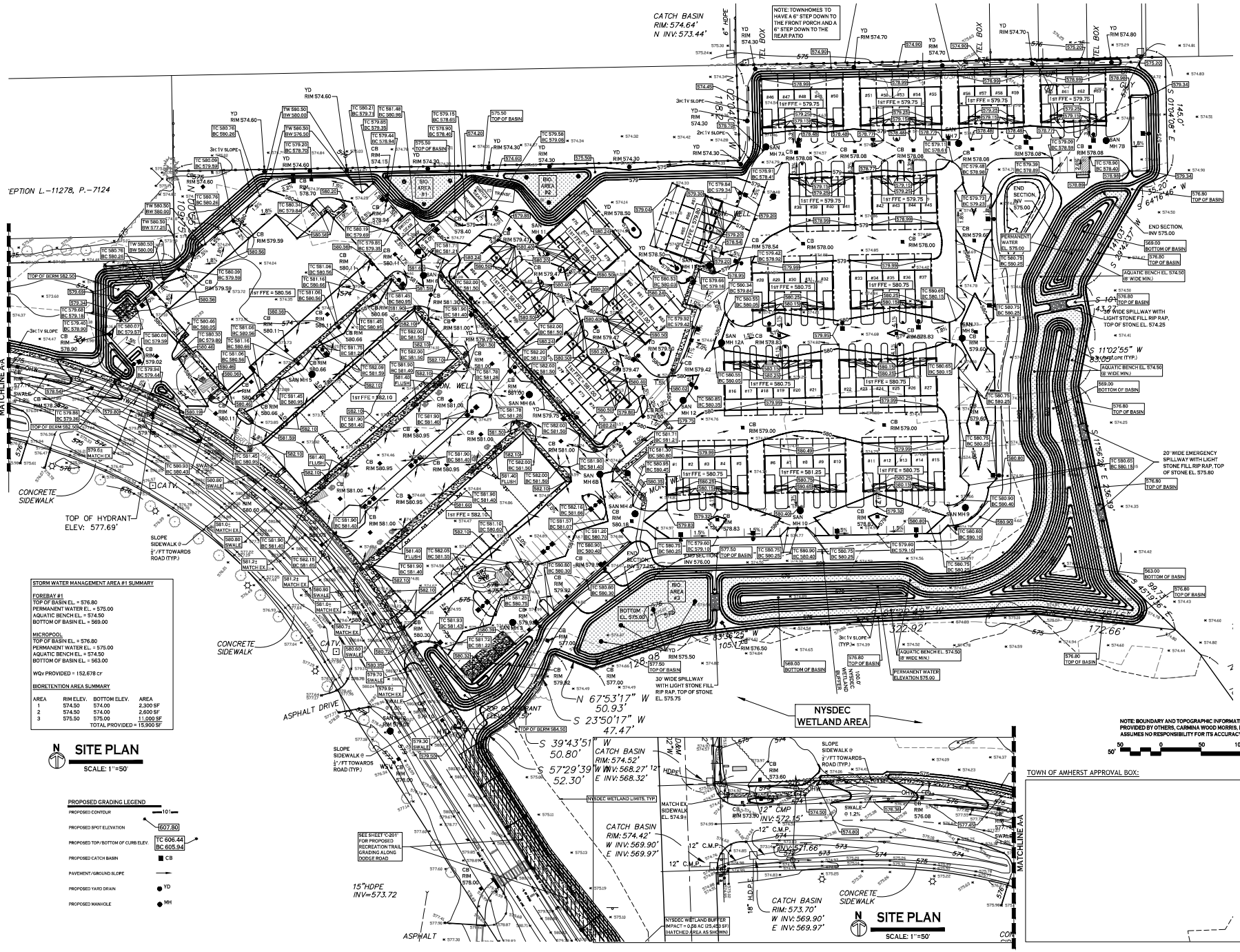

STORM WATER MANAGEMENT AREA #1 SUMMARY

FOREBAY #1
TOP OF BASIN EL. = 576.80
PERMANENT WATER EL. = 575.00
AQUATIC BENCH EL. = 574.50
BOTTOM OF BASIN EL. = 569.00

MICROPOOL
TOP OF BASIN EL. = 576.80
PERMANENT WATER EL. = 575.00
AQUATIC BENCH EL. = 574.50
BOTTOM OF BASIN EL. = 563.00

WQv PROVIDED = 152,678 cf

BIORETENTION AREA SUMMARY

AREA	RIM ELEV.	BOTTOM ELEV.	AREA
1	574.50	574.00	2,300 SF
2	574.50	574.00	2,600 SF
3	575.50	575.00	11,000 SF
		TOTAL PROVIDED =	15,900 SF

PROPOSED GRADING LEGEND

PROPOSED CONTOUR	101
PROPOSED SPOT ELEVATION	607.80
PROPOSED TOP/BOTTOM OF CURB ELEV.	TC 606.44 BC 605.94
PROPOSED CATCH BASIN	CB
PAVEMENT/GROUND SLOPE	
PROPOSED YARD DRAIN	YD
PROPOSED MANHOLE	MH

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per Ryan Homes Comments	04/08/24
2	Rev. per ARC & WS Comments	09/04/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Grading Plan

DRAWING NO.
C-2
Project no.: 2

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Packet Pg. 2250

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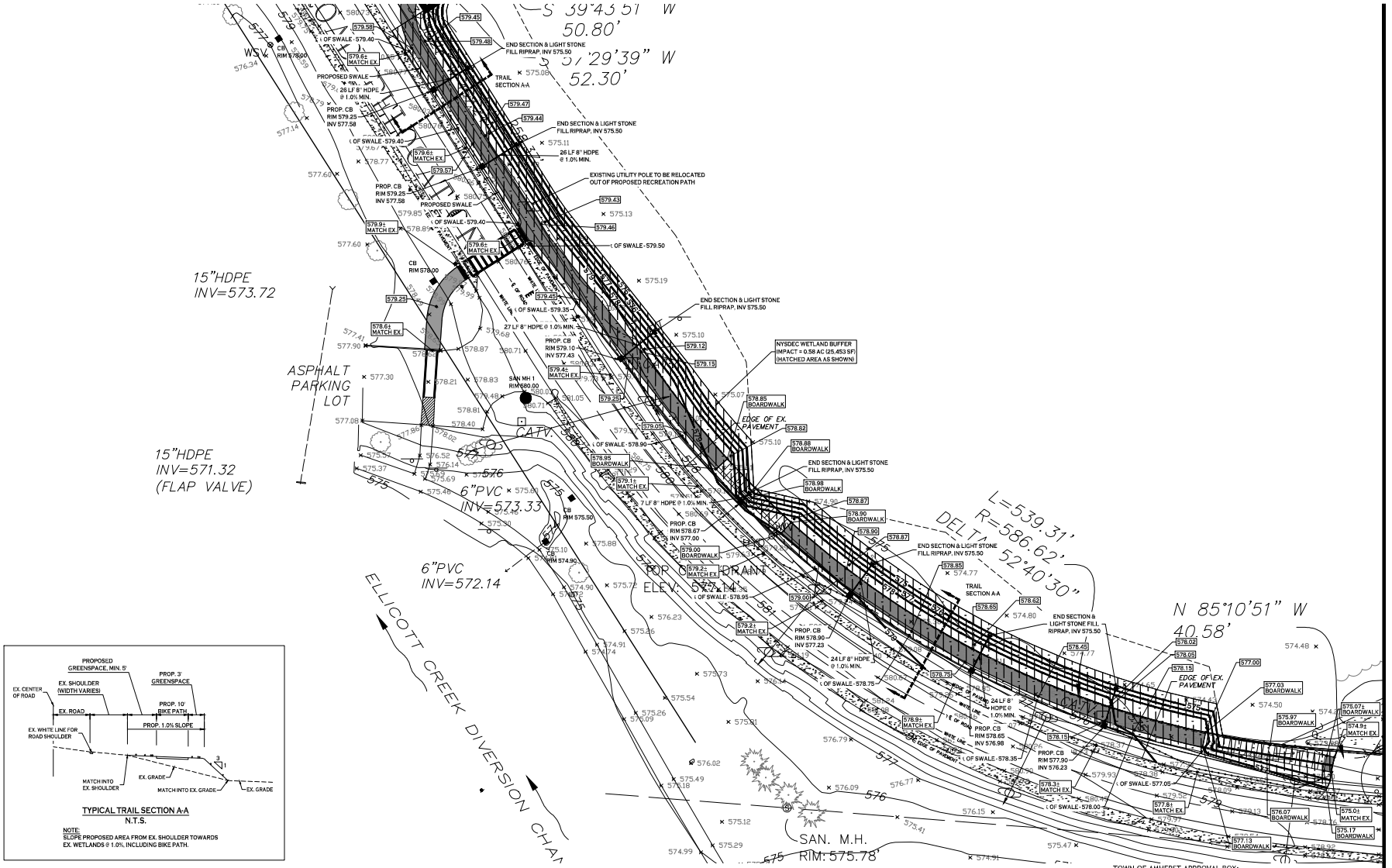

TYPICAL TRAIL SECTION A-A
N.T.S.

NOTE:
SLOPE PROPOSED AREA FROM EX. SHOULDER TOWARDS EX. WETLANDS @ 1.0%, INCLUDING BIKE PATH.

PROPOSED GRADING LEGEND

PROPOSED CONTOUR	101
PROPOSED SPOT ELEVATION	607.80
PROPOSED TOP/BOTTOM OF CURB ELEV.	TC 606.44 BC 605.94
PROPOSED CATCH BASIN	CB
PAVEMENT/GROUND SLOPE	
PROPOSED YARD DRAIN	YD
PROPOSED MANHOLE	MH

SITE PLAN
SCALE: 1"=30'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

TOWN OF AMHERST APPROVAL BOX:

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Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Grading Plan - Recreation Trail

DRAWING NO.
C-2

Project no.: 2

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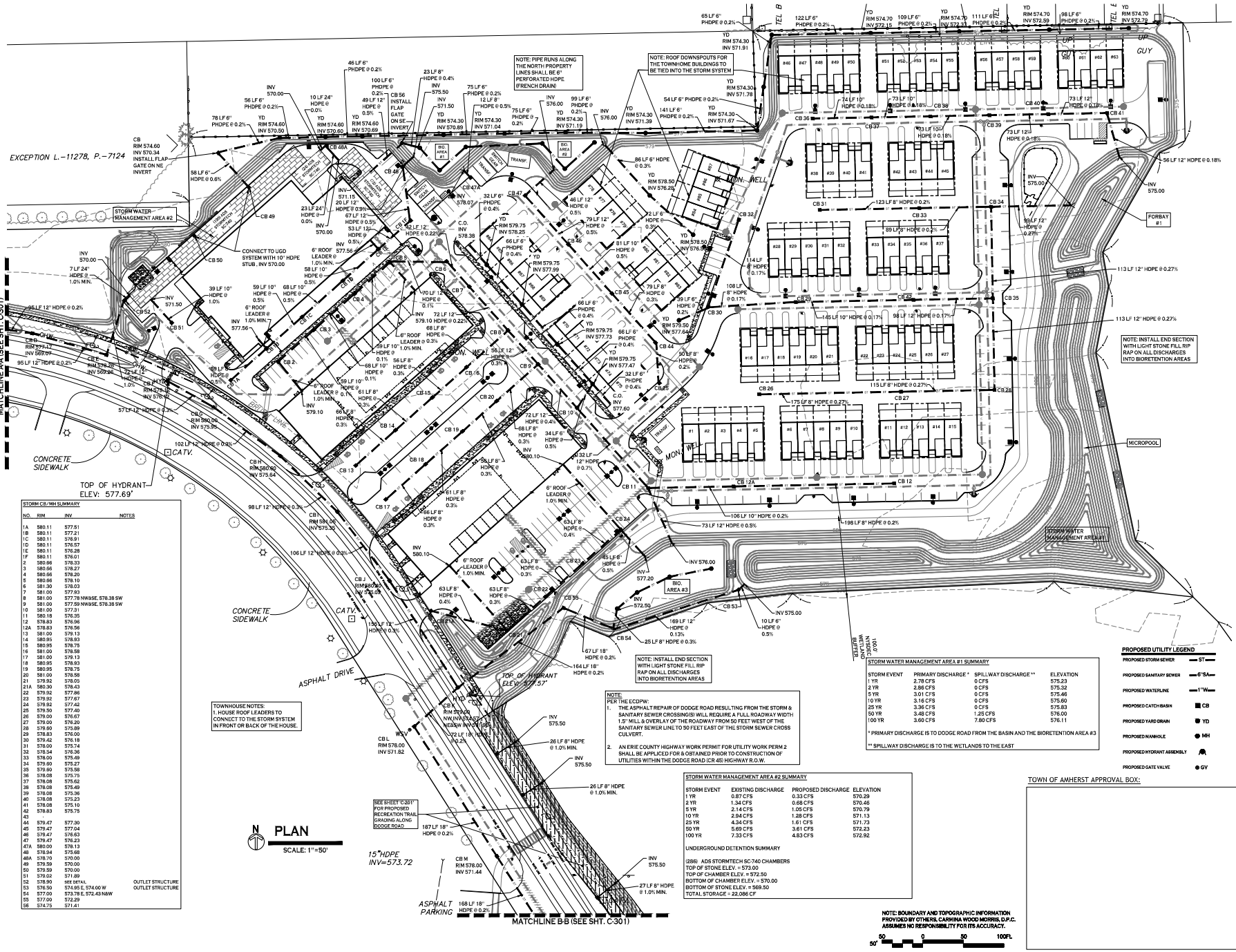

STORM CB/MH SUMMARY			
NO.	RIM	INV	NOTES
1A	580.11	577.51	
1B	580.11	577.21	
1C	580.11	576.91	
1D	580.11	576.57	
1E	580.11	576.28	
1F	580.11	576.01	
2	580.66	578.33	
3	580.66	578.27	
4	580.66	578.20	
5	580.86	578.10	
6	581.30	578.03	
7	581.00	577.93	
8	581.00	577.78 NW&SE, 578.38 SW	
9	581.00	577.59 NW&SE, 578.38 SW	
10	581.00	577.31	
11	580.19	576.35	
12	579.83	576.96	
12A	579.83	576.56	
13	581.00	579.13	
14	580.95	578.93	
15	580.95	578.79	
16	581.00	578.58	
17	581.00	578.13	
18	580.95	578.93	
19	580.95	578.75	
20	581.00	578.59	
21	579.92	578.05	
21A	580.30	578.43	
22	579.92	577.86	
23	579.92	577.67	
24	579.92	577.42	
25	579.50	577.40	
26	579.00	576.67	
27	579.00	576.20	
28	579.80	575.89	
29	578.83	576.00	
30	579.42	576.18	
31	578.00	575.74	
32	578.04	576.36	
33	578.00	575.49	
34	579.80	575.27	
35	579.80	575.58	
36	578.08	575.75	
37	578.08	575.62	
38	578.08	575.49	
39	578.08	575.36	
40	578.08	575.23	
41	578.08	575.10	
42	578.83	575.75	
43			
44	579.47	577.30	
45	579.47	577.04	
46	579.47	576.63	
47	579.47	576.23	
47A	580.00	578.13	
48	578.94	575.68	
48A	578.70	570.00	
49	579.59	570.00	
50	579.59	570.00	
51	579.02	571.89	
52	578.90	SEE DETAIL	OUTLET STRUCTURE
53	576.50	574.95 E, 574.00 W	OUTLET STRUCTURE
54	577.00	573.78 E, 572.43 N&W	
55	577.00	572.29	
56	574.75	571.41	

TOWNHOUSE NOTES:
1. HOUSE ROOF LEADERS TO CONNECT TO THE STORM SYSTEM IN FRONT OR BACK OF THE HOUSE.

NOTE:
PER THE ECDPW:
1. THE ASPHALT REPAIR OF DODGE ROAD RESULTING FROM THE STORM & SANITARY SEWER CROSSING(S) WILL REQUIRE A FULL ROADWAY WIDTH 1.5" MILL & OVERLAY OF THE ROADWAY FROM 50 FEET WEST OF THE SANITARY SEWER LINE TO 50 FEET EAST OF THE STORM SEWER CROSS CULVERT.
2. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR UTILITY WORK PERM 2 SHALL BE APPLIED FOR & OBTAINED PRIOR TO CONSTRUCTION OF UTILITIES WITHIN THE DODGE ROAD (CR 48) HIGHWAY R.O.W.

STORM WATER MANAGEMENT AREA #2 SUMMARY			
STORM EVENT	EXISTING DISCHARGE	PROPOSED DISCHARGE	ELEVATION
1 YR	0.87 CFS	0.33 CFS	570.29
2 YR	1.34 CFS	0.68 CFS	570.46
5 YR	2.14 CFS	1.05 CFS	570.79
10 YR	2.94 CFS	1.28 CFS	571.13
25 YR	4.34 CFS	1.61 CFS	571.73
50 YR	5.69 CFS	3.61 CFS	572.23
100 YR	7.33 CFS	4.83 CFS	572.92

UNDERGROUND DETENTION SUMMARY

(286) ADS STORMTECH SC-740 CHAMBERS
TOP OF STONE ELEV. = 573.00
TOP OF CHAMBER ELEV. = 572.50
BOTTOM OF CHAMBER ELEV. = 570.00
BOTTOM OF STONE ELEV. = 569.50
TOTAL STORAGE = 22.086 CF

STORM WATER MANAGEMENT AREA #1 SUMMARY			
STORM EVENT	PRIMARY DISCHARGE *	SPILLWAY DISCHARGE **	ELEVATION
1 YR	2.78 CFS	0 CFS	575.23
2 YR	2.86 CFS	0 CFS	575.32
5 YR	3.01 CFS	0 CFS	575.46
10 YR	3.16 CFS	0 CFS	575.60
25 YR	3.36 CFS	0 CFS	575.83
50 YR	3.48 CFS	1.25 CFS	576.00
100 YR	3.60 CFS	7.80 CFS	576.11

* PRIMARY DISCHARGE IS TO DODGE ROAD FROM THE BASIN AND THE BIORETENTION AREA #3

** SPILLWAY DISCHARGE IS TO THE WETLANDS TO THE EAST

PROPOSED UTILITY LEGEND
- PROPOSED STORM SEWER — ST
- PROPOSED SANITARY SEWER — 6"SA
- PROPOSED WATERLINE — 1"W
- PROPOSED CATCH BASIN — CB
- PROPOSED YARD DRAIN — YD
- PROPOSED MANHOLE — MH
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE — GV

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 0 50 100FT

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REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	09/04/24
2	Rev. per Shop Drawing Review	10/09/24
3	Verify UGD Field Layout (SWM Area#2)	11/21/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Storm Drainage Plan

DRAWING NO.
C-3
Project no.: 2

Packet Pg. 2252

2.c

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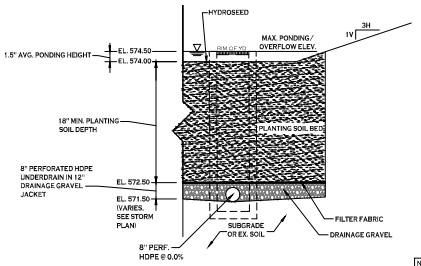
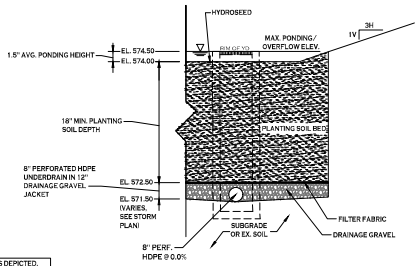
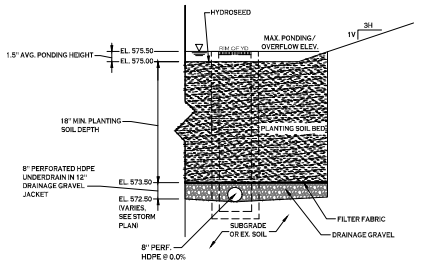


BIORETENTION AREA #1



BIORETENTION AREA #2



BIORETENTION AREA #3

NOTE: AS DEPICTED, YARD DRAIN RIM ELEVATIONS ARE TO BE SET 6" ABOVE PROPOSED GRADE IN BIORETENTION AREAS.

NOTES:
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C'. MIRAFI 180N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43, NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

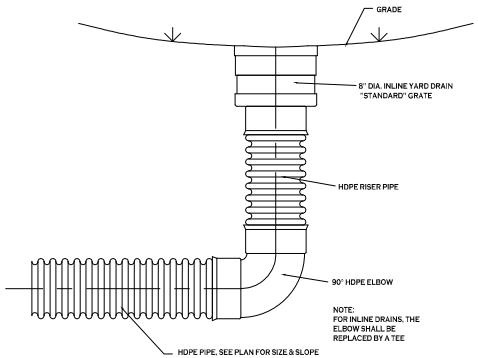
NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 0.5 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

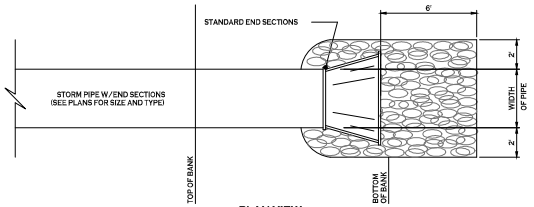
SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5

BIORETENTION AREA - TYPICAL SECTIONS
NOT TO SCALE

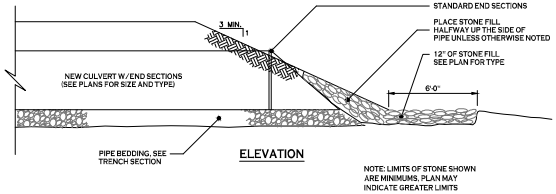


NOTE: SEE TYPICAL TRENCH SECTION FOR BEDDING REQUIREMENTS

TYPICAL YARD DRAIN DETAIL



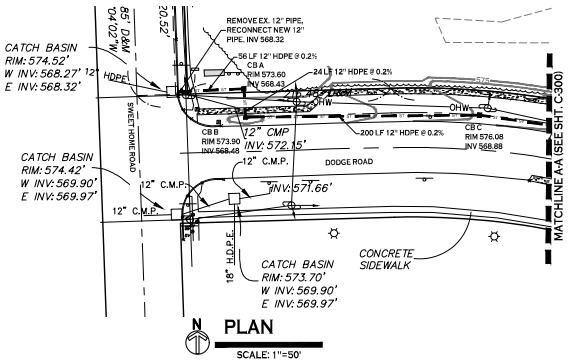
PLAN VIEW



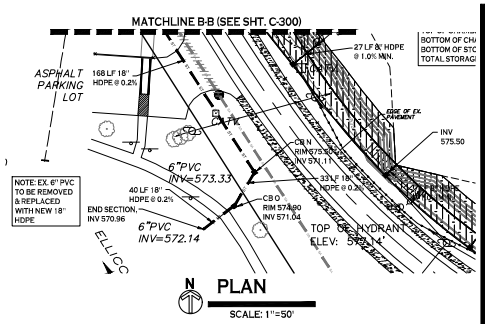
ELEVATION

NOTE: LIMITS OF STONE SHOWN ARE MINIMUMS. PLAN MAY INDICATE GREATER LIMITS

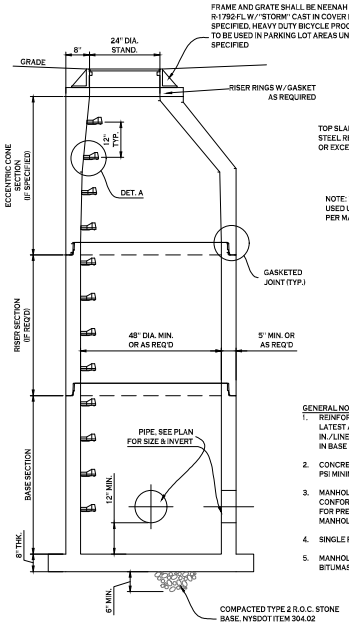
TYPICAL PIPE OUTLET W/ END SECTION & RIP RAP
NOT TO SCALE



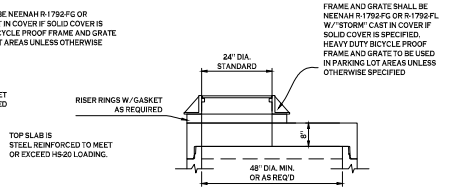
N PLAN
SCALE: 1"=50'



N PLAN
SCALE: 1"=50'



TYPICAL STORM MANHOLE DETAIL
NOT TO SCALE



NOTE: ECCENTRIC CONE SECTION SHALL BE USED UNLESS DEPTH WARRANTS TOP SLAB PER MANUFACTURER

ALTERNATE TOP SLAB



DETAIL A

GENERAL NOTES:
1. REINFORCED STEEL TO CONFORM TO LATEST A.S.T.M. A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) IN BASE SLAB.
2. CONCRETE COMPRESSIVE STRENGTH - 4000 PSI MINIMUM.
3. MANHOLE DESIGN SPECIFICATIONS TO CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
4. SINGLE POUR MONOLITHIC BASE SECTION.
5. MANHOLE TO BE COATED ON OUTSIDE WITH BITUMASTIC SEALER.

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REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Storm Drainage Details

DRAWING NO.
C-3

Project no.: 2

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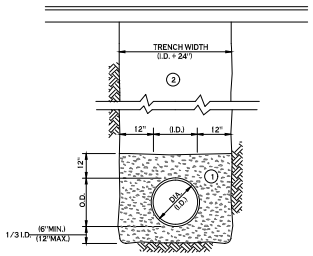


NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

(1) NO. 1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

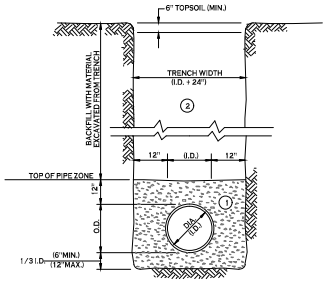
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) TYPE 2 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

STORM SEWER TRENCH SECTION IN PAVED AREAS

NOT TO SCALE



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

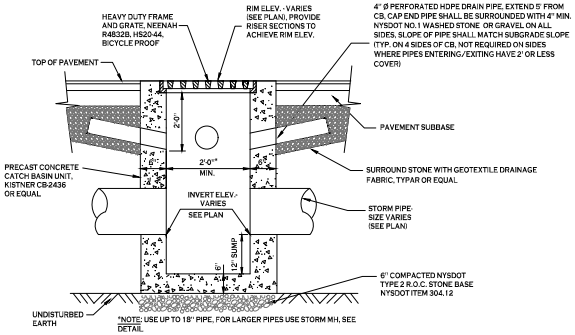
(1) NO. 1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL, COMPACTED IN 6" LIFTS.

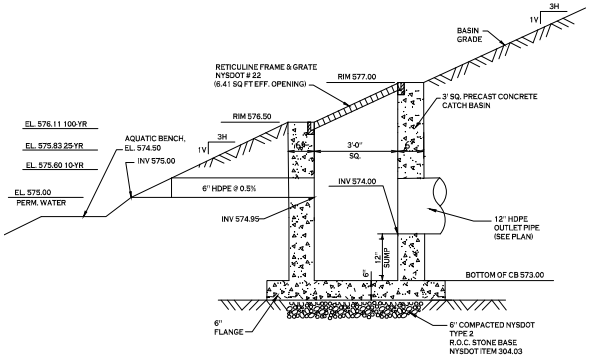
STORM SEWER TRENCH SECTION IN UNPAVED AREAS

NOT TO SCALE



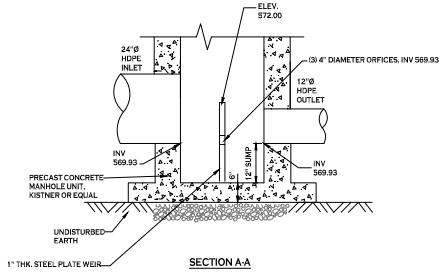
TYPICAL PRECAST CATCH BASIN

NOT TO SCALE



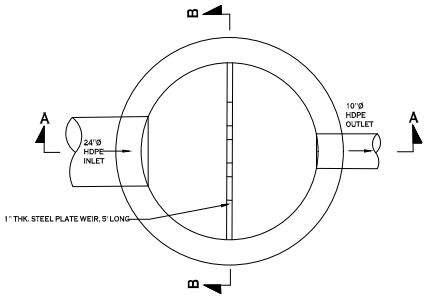
DETENTION BASIN OUTLET STRUCTURE - CB 53

N.T.S.



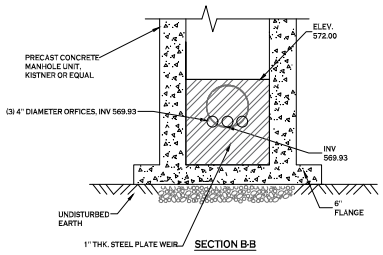
SECTION A-A

NOTES:
1. FASTEN STEEL PLATE TO CB WALL WITH ANGLE CLIPS AND BOLTS
2. STEEL PLATE, ANGLE CLIPS, AND BOLTS TO BE HOT DIPPED GALVANIZED



PLAN

*NOTE: USE 5'-0" I.D. MANHOLE



SECTION B-B

OUTLET CONTROL STRUCTURE - CB 52

NOT TO SCALE

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REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road

Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Storm Drainage Details

DRAWING NO.

C-3

Project no.: 2

Packet Pg. 2254

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

2.c

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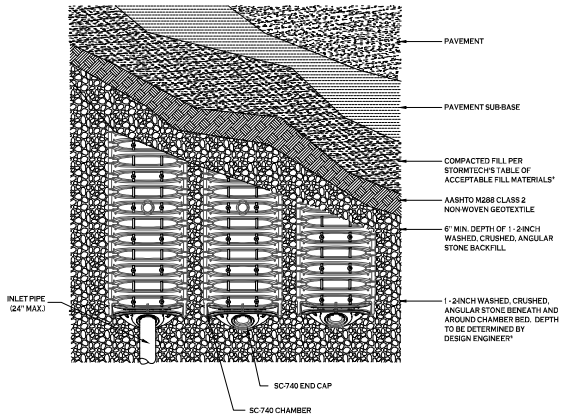


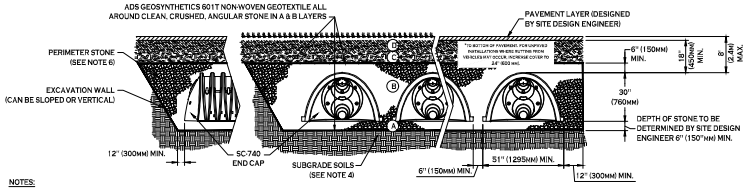
STORMTECH SC-740 CHAMBER SYSTEM
PLAN VIEW DETAIL
NOT TO SCALE

*SEE STORMTECH'S DESIGN MANUAL

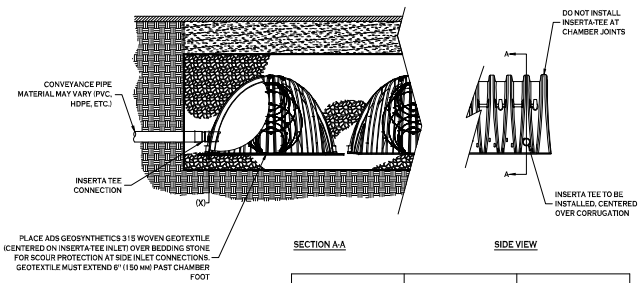
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION/DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LATER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 Lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 Lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:
1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

INSERTA TEE DETAIL
NOT TO SCALE

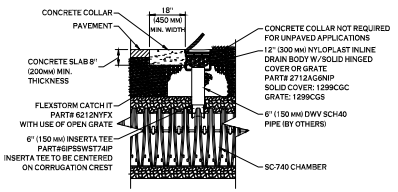
INSPECTION AND MAINTENANCE
STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
A. INSPECTION PORTS (IF PRESENT)
A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
B. ALL ISOLATOR ROWS
B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 M) OR MORE IS PREFERRED
B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES:
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



SC-740 6" INSPECTION PORT DETAIL
NOT TO SCALE

TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:
No. Description Date

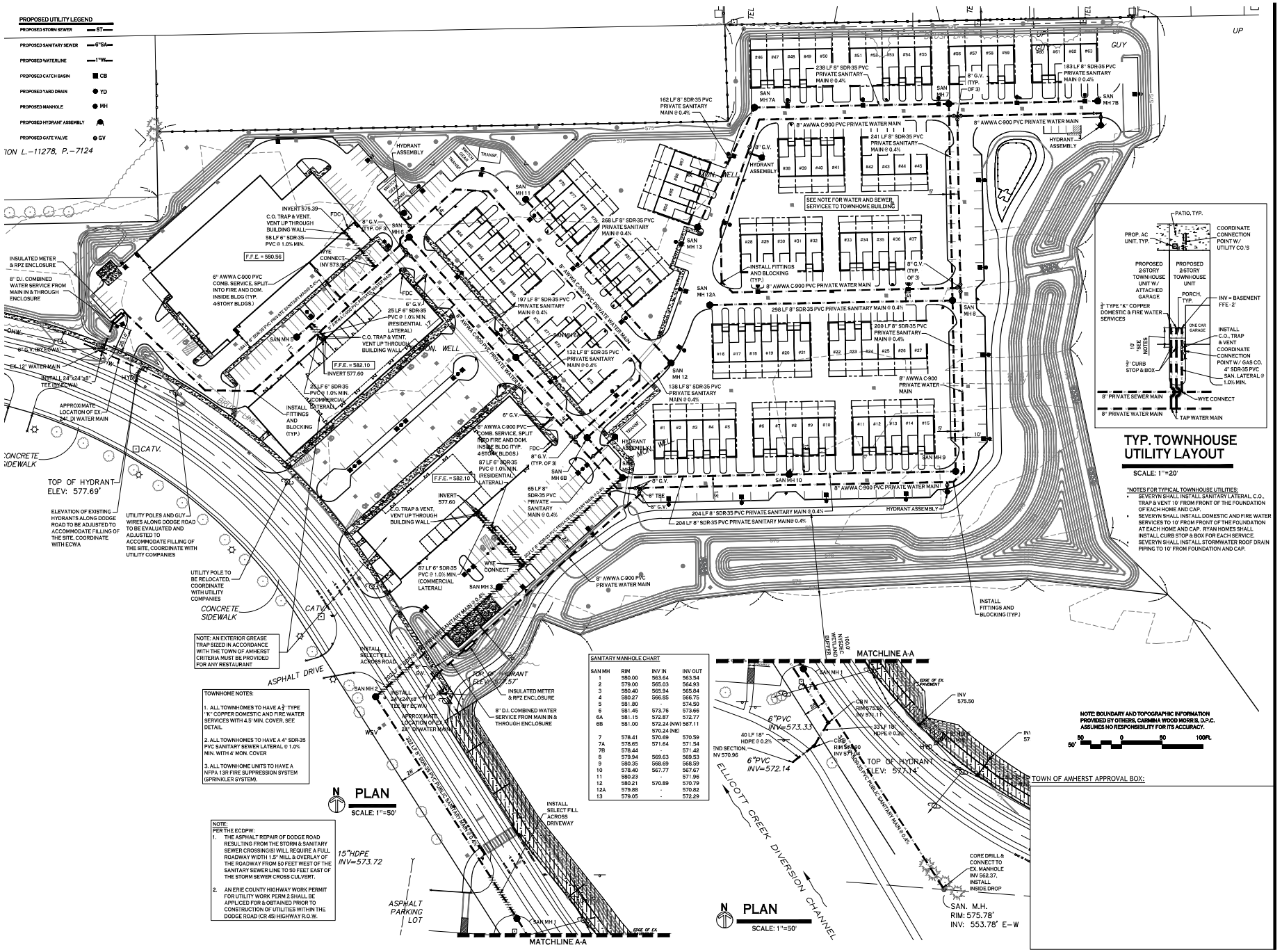
PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: 2/24/21
Scale: As Noted

DRAWING NAME:
Storm Drainage Details

DRAWING NO.
C-3
Project no.: 2

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



TOWNHOME NOTES:

1. ALL TOWNHOMES TO HAVE A ¾" TYPE "K" COPPER DOMESTIC AND FIRE WATER SERVICES WITH 4.5' MIN. COVER, SEE DETAIL.

2. ALL TOWNHOMES TO HAVE A 4" SDR-35 PVC SANITARY SEWER LATERAL @ 1.0% MIN. WITH 4' MON. COVER

3. ALL TOWNHOME UNITS TO HAVE A NFPA 13R FIRE SUPPRESSION SYSTEM (SPRINKLER SYSTEM).

NOTE:
PER THE ECDPW:
1. THE ASPHALT REPAIR OF DODGE ROAD RESULTING FROM THE STORM & SANITARY SEWER CROSSING(S) WILL REQUIRE A FULL ROADWAY WIDTH 1.5" MILL & OVERLAY OF THE ROADWAY FROM 50 FEET WEST OF THE SANITARY SEWER LINE TO 50 FEET EAST OF THE STORM SEWER CROSS CULVERT.
2. AN ERIE COUNTY HIGHWAY WORK PERMIT FOR UTILITY WORK PERM 2 SHALL BE APPLICED FOR & OBTAINED PRIOR TO CONSTRUCTION OF UTILITIES WITHIN THE DODGE ROAD (CR 45) HIGHWAY R.O.W.

SANITARY MANHOLE CHART

SAN MH	RIM	INV IN	INV OUT
1	580.00	563.64	563.54
2	579.00	565.03	564.93
3	580.40	565.94	565.84
4	580.27	566.85	566.75
5	581.80	-	574.50
6	581.45	573.76	573.66
6A	581.15	572.87	572.77
6B	581.00	572.24 (NW)	567.11
		570.24 (NE)	
7	578.41	570.69	570.59
7A	578.65	571.64	571.54
7B	578.44	-	571.42
8	579.94	569.63	569.53
9	580.35	568.69	568.59
10	578.40	567.77	567.67
11	580.23	-	571.96
12	580.21	570.89	570.79
12A	579.88	-	570.82
13	579.05	-	572.29

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REVISIONS:

No.	Description	Date
1	Rev. per ARC & WS Comments	09/04/24
2	Rev. per Shop Drawing Review	10/09/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/22
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Utility Plan

DRAWING NO.
C-4

Project no.: 2

2.c

Packet Pg. 2256

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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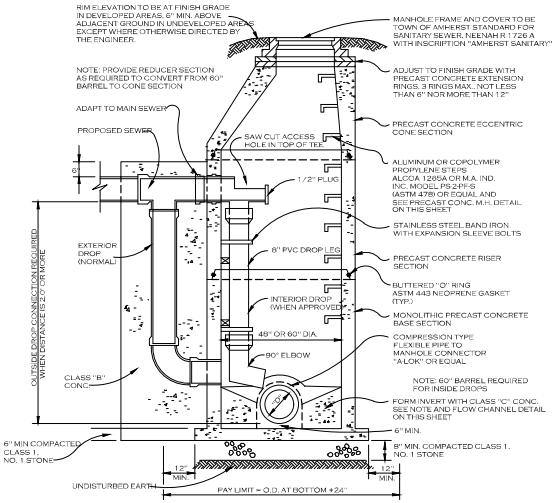
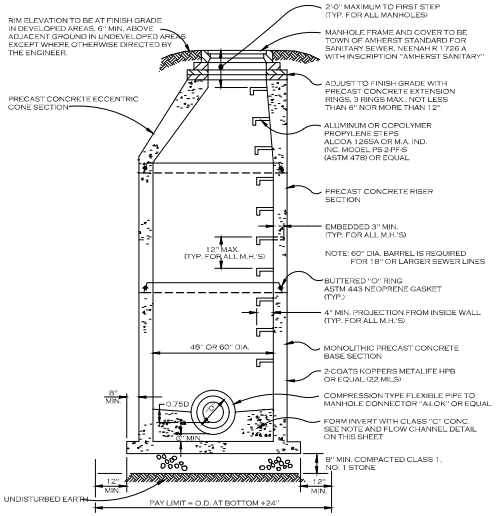
NOTIFY UNITED UNDERGROUND LOCATING SERVICE (U.U.L.S.) 72 HOURS BEFORE STARTING THE JOB

NOTIFY SUN OIL PIPELINE CORPORATION 72 HOURS BEFORE EXCAVATING (SEE DRAWING NO. 18)

PRECAST CONCRETE DROP MANHOLE

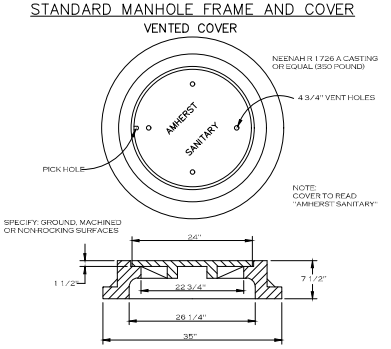


PRECAST CONCRETE MANHOLE



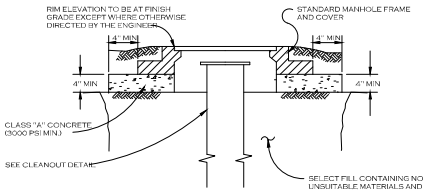
STANDARD MANHOLE FRAME AND COVER

VENTED COVER



CLEANOUT WITH STANDARD MANHOLE FRAME AND COVER

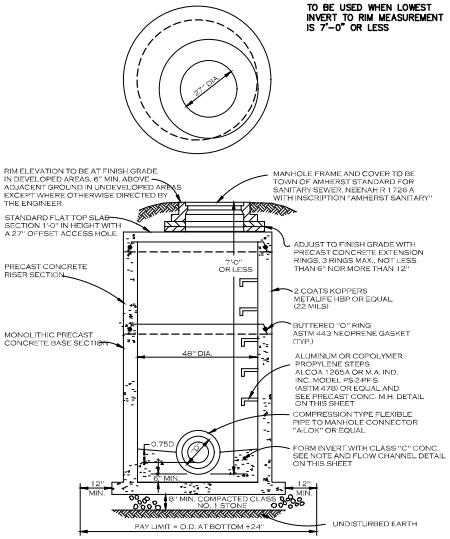
(TO BE USED IN LOCATIONS ONLY AS APPROVED BY TOWN ENGINEER)



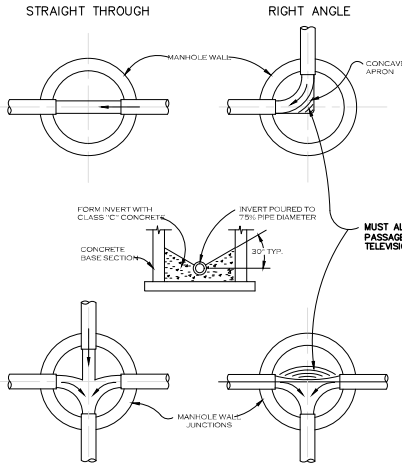
NOTE:
CLEANOUT NOT TO BE INSTALLED WHEN DISTANCE FROM M.H. EXCEEDS 150

FLAT TOP MANHOLE ASSEMBLY

NOTE:
TO BE USED WHEN LOWEST INVERT TO RIM MEASUREMENT IS 7'-0" OR LESS



FLOW CHANNEL DETAIL SANITARY SEWERS

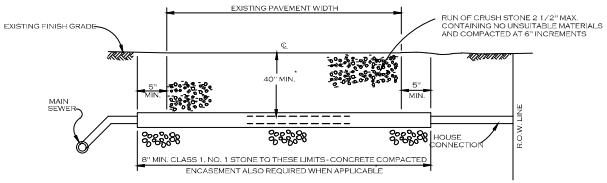


NOTE:
FLOW CHANNELS MUST ALLOW PLACEMENT, REMOVAL AND PASSAGE OF T.V. CAMERAS. THE CAMERA DIMENSIONS ARE APPROXIMATELY 26" LONG X 6 1/2" SQUARE. A BLOCK OF WOOD OF THESE DIMENSIONS MAY BE USED TO SIMULATE THE SIZE OF THE CAMERA. THIS WILL SIMPLIFY THE FORMATION OF FLOW CHANNELS AND INVERTS.

DEPTH OF ALL CHANNELS TO BE 75% OF PIPE DIAMETER.

FINISH ALL CHANNELS AT PROPER GRADE AS TO ALLOW SMOOTH & UNOBSTRUCTED FLOW ALL INVERTS TO BE FLUSH WITH THE INSIDES.

SANITARY TYPICAL PAVEMENT CROSSING FOR HOUSE CONNECTION



WHEN DEPTH FROM TOP OF HOUSE CONNECTION PIPE TO SURFACE IS LESS THAN 6.0 FEET, A CONCRETE ENCASEMENT WILL BE REQUIRED TO THE LIMITS SHOWN (SEE WATER CROSSING DETAIL SAN. SEWERS DWG. #4 - PG. #2 OF 4)

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/24/21
Drawn by: 12/1/21
Scale: As Noted

DRAWING NAME:
Sanitary Sewer Details

DRAWING NO.
C-4

Project no.: 2

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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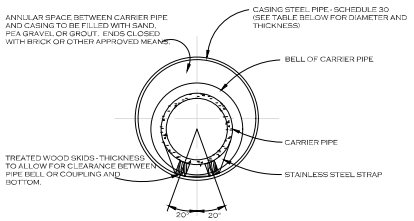
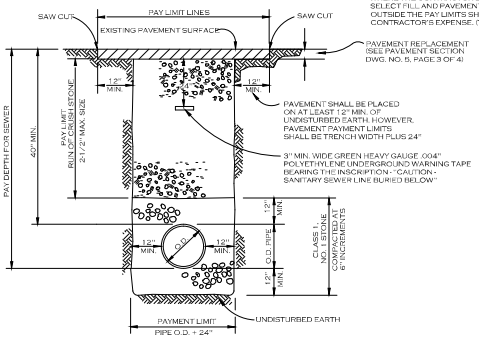
TOWN ROAD CROSSING BY JACKING AND BORING METHOD 8"–24" DIAMETER CARRIER PIPE



SCHEDULE FOR DIAMETER AND THICKNESS OF CASING PIPE		
CARRIER PIPE DIAMETER	CASING PIPE DIAMETER	CASING PIPE WALL THICKNESS
8"	16" OR 20"	0.375
10"	20"	0.375
12"	24"	0.375
15"	27"	0.375 MIN.
18"	30"	0.375
21"	36"	0.469
24"	42"	0.469

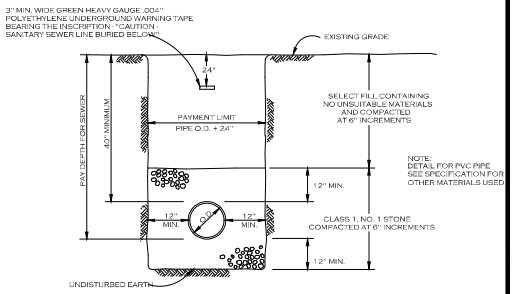
TYPICAL TRENCH DETAIL – TOWN ROAD CROSSING FOR MAIN SEWERS & HOUSE AND BUILDING CONNECTIONS



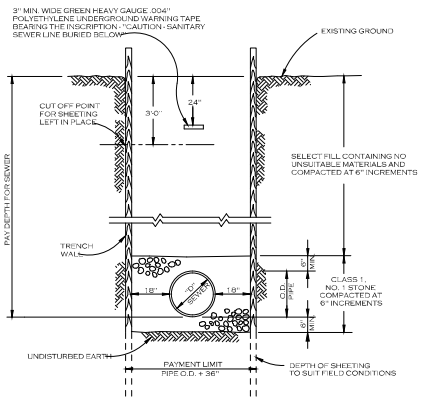
NOTE:
WHERE THE CONTRACTOR EXCAVATES BEYOND THE PAY LIMITS SHOWN, SELECT FILL AND PAVEMENT, SIDEWALK & DRIVEWAY REPLACEMENT OUTSIDE THE PAY LIMITS SHALL BE FURNISHED AND PLACED AT THE CONTRACTOR'S EXPENSE. (TYP.)

NOTE:
IF CONCRETE ENCASEMENT IS REQUIRED, IT SHALL BE INSTALLED IN PLACE OF (AND TO THE DIMENSIONS OF) THE PIPE BEDDING AND COVER TO 12" MIN. ABOVE AND BELOW THE PIPE (SEE WATER CROSSING DETAIL ON THIS SHEET)

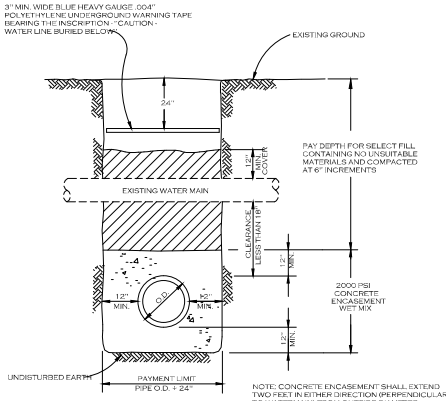
TYPICAL EARTH TRENCH DETAIL UNPAVED AND UNTRAVELED AREAS



SHEETED TRENCH DETAIL

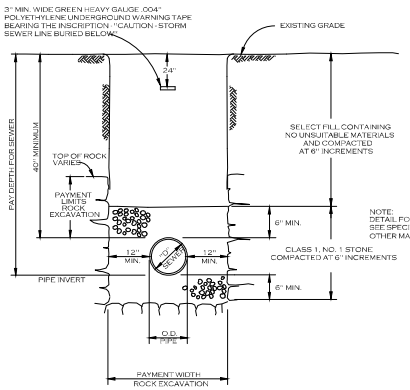


WATER CROSSING DETAIL CLEARANCE LESS THAN 18"



NOTE: CONCRETE ENCASEMENT SHALL EXTEND TWO FEET IN EITHER DIRECTION (PERPENDICULAR TO WATERMAIN) FROM OUTSIDE DIAMETER OF WATERMAIN.

TYPICAL ROCK TRENCH DETAIL



TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Sanitary Sewer Details

DRAWING NO.
C-4

Project no.: 2

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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GENERAL NOTES:

01. THE CONTRACTOR SHALL COMPLY WITH THE TOWN OF AMHERST STANDARD DRAWINGS AND SPECIFICATIONS.

02. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND THE TOWN OF AMHERST ENG. DEPT. OF ANY HAZARDOUS SUBSTANCE ENCOUNTERED DURING THE CONSTRUCTION OF THE WORK. HE SHALL AT HIS EXPENSE, CONFORM TO ALL LAWS, RULES, REGULATIONS AND DIRECTIONS AS PROMULGATED BY THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NEW YORK STATE DEPARTMENT OF HEALTH AND ANY SUCH LOCAL RULES, ORDINANCES AND LAWS WHEN ENCOUNTERING OR WORKING WITH ANY SUCH HAZARDOUS SUBSTANCE.

03. THE CONTRACTOR SHALL COMPLY IN ALL RESPECTS TO THE INDUSTRIAL CODE PART (RULE NO.) 53 RELATING TO CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES, AS ISSUED BY THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARD AND APPEALS.

04. SINCE THE ERIE COUNTY WATER AUTHORITY OPERATES AND MAINTAINS THE EXISTING WATER LINES, THEY ARE TO BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF THE START OF CONSTRUCTION. ALL EXISTING VALVES ARE TO BE OPERATED BY THE ERIE COUNTY WATER AUTHORITY PERSONNEL.

05. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AHEAD OF THE PIPE LAYING OPERATION, SO THAT, IF MINOR ADJUSTMENTS MUST BE MADE IN ELEVATION AND/OR ALIGNMENT DUE TO INTERFERENCE FROM THESE UTILITIES, SAID CHANGES CAN BE MADE IN ADVANCE OF THE WORK.

06. WHERE SUCH FACILITIES ARE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, HE SHALL CERTIFY TO THE ENGINEERING DEPARTMENT OF THE TOWN OF AMHERST THAT SAID FACILITIES AS CONSTRUCTED WERE SUPERVISED BY HIMSELF (HERSELF) AND THAT THE WORKS HAVE BEEN FULLY COMPLETED IN ACCORDANCE WITH THE APPROVED ENGINEERING REPORTS, PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND ANY AND ALL ADDENDA TO SAME.

07. THE CONSTRUCTION OF THE FACILITIES SHALL BE UNDER THE SUPERVISION OF A PERSON OR FIRM QUALIFIED TO PRACTICE PROFESSIONAL ENGINEERING IN NEW YORK STATE UNDER THE EDUCATION LAW OF THE STATE, WHENEVER ENGINEERING SERVICES ARE REQUIRED BY SUCH LAW FOR SUCH PURPOSES.

08. A WRITTEN CERTIFICATE OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF HYDROSTATIC LEAKAGE TESTS, MADE BY THE PROFESSIONAL ENGINEER SUPERVISING THE CONSTRUCTION, SHALL BE SUBMITTED TO THE ERIE COUNTY DEPART. OF ENVIRONMENT PLANNING AND NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION.

09. UNSUITABLE MATERIALS SUCH AS FROZEN ORGANIC AND/OR VEGETABLE MATERIAL, DEBRIS, TREES, LUMBER, LARGE STONES OR CLODS (6.0" OR LARGER), MUCK, PEAT, ORGANIC SILT WILL NOT BE ACCEPTABLE FILL AND CERTAIN MAN-MADE DEPOSITS OF INDUSTRIAL WASTE, SLUDGE OR LANDFILL MAY ALSO BE DETERMINED AS UNSUITABLE HAZARDOUS MATERIAL.

10. THE COMPACTION OF ALL MATERIALS WILL OCCUR AT 6" INCREMENTS.

11. VERIFICATION OF ALL EXISTING EASEMENTS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THEY MUST BE SHOWN ALONG WITH ALL PROPOSED EASEMENTS ON PLAN DRAWINGS.

12. SHOULD A FLUID CONDITION BE ENCOUNTERED AT THE TRENCH BOTTOM, THE CONTRACTOR IS TO INSTALL ADDITIONAL STONE CRADLE AS ORDERED BY THE ENGINEER.

13. ALL PIPE CROSSING UNDER PAVED AREAS ARE TO BE BACKFILLED TO SUBGRADE WITH COMPACTED SELECT MATERIAL TO FIVE (5) FEET OUTSIDE THE PAVEMENT EDGES.

14. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TREE EXPERT TO REMOVE, WHERE NECESSARY, BRANCHES WHICH INTERFERE WITH THE CONSTRUCTION OPERATION, OR REPAIR TREES HAVING SUFFERED DAMAGE BY CONSTRUCTION ACTIVITIES. THE COST INVOLVED IN THE ABOVE IS TO BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.

15. SEWERS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A TEN FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATERMAIN, PROVIDED THAT THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (46CM) ABOVE THE TOP OF THE SEWER.

16. SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (46CM) BETWEEN THE OUTSIDE OF A WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATERMAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATERMAIN JOINTS. WHERE A WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER, TO PREVENT DAMAGE TO THE WATERMAIN.

17. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPE AND SHALL BE PRESSURE TESTED AS TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.

18. THE PIPE SHALL BE P.V.C. SEWER PIPE CONFORMING TO THE LATEST REVISIONS OF ASTM DESIGNATION D-3034, SDR-35, INSTALLED IN ACCORDANCE WITH ASTM.

19. THE MANHOLE COVERS ARE TO BEAR THE INSCRIPTION "AMHERST SANITARY".

SANITARY SEWER TESTING METHODS

GENERAL NOTES

(A) LEAKAGE TESTS

01. THE TEST PERIOD WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN 24 HOURS, REGARDLESS OF THE TEST METHOD USED.

02. THE TOTAL LEAKAGE OF ANY SECTION TESTED BY ANY TEST METHOD SHALL NOT EXCEED THE RATE OF 200 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER.

03. MANHOLES SHALL BE CONSIDERED AS SECTIONS OF 48" DIAMETER PIPE AND THE EQUIVALENT LEAKAGE ALLOWANCE SHALL BE COMPUTED PER NOTE 02 USING THE SUBMERGED HEIGHT OF MANHOLE AS THE LENGTH.

04. WHEN MANHOLES ARE TESTED SEPARATELY, ALL PIPE OPENINGS SHALL BE PLUGGED AND THE TEST PROCEDURES AND CRITERIA SHALL BE APPLIED IN THE SAME MANNER AS FOR TESTS INVOLVING ONLY THE PIPE OR A COMBINATION OF PIPE AND MANHOLES.

(B) INFILTRATION TEST CRITERIA FOR USE

01. THIS TEST METHOD MAY ONLY BE USED WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TESTS.

02. GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING BACKFILLING.

03. THE NUMBER OF STANDPIPES REQUIRED AND LOCATION OF THE SAME ARE TO BE AS ORDERED BY THE ENGINEER. STANDPIPES MAY BE OF ANY PIPE MATERIAL BUT MUST BE OF SUCH DIAMETER (2-1/2" MINIMUM) AS TO PERMIT THE INSERTION OF A RULE OR LEVEL ROD. CRUSHED STONE SHALL BE PLACED AROUND THE LOWER OPEN ENDS OF THE STANDPIPES.

04. STANDPIPES ARE TO BE REMOVED AT THE SATISFACTORY COMPLETION OF THE TESTS.

05. IF IN LIEU OF STANDPIPES, THE TRENCH IS TO BE LEFT OPEN FOR GROUND WATER OBSERVATION, THE LENGTH OF UNBACKFILLED TRENCH AT ANY ONE TIME MAY HAVE TO BE LIMITED FOR REASONS OF SAFETY.

(C) EXFILTRATION TEST CRITERIA FOR USE

01. THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR ABOVE GROUND WATER WHICHEVER IS HIGHER AT THE HIGHEST POINT OF THE PIPE LINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER TO MAINTAIN THE ORIGINAL LEVEL.

02. IN THIS TEST THE PIPE LINE MUST BE FILLED WITH WATER AND ALLOWED TO REMAIN SO FILLED FOR AT LEAST 24 HOURS PRIOR TO TAKING MEASUREMENTS.

03. REGARDING GROUND WATER MEASUREMENTS: SEE NOTES 02 THROUGH 05 ABOVE.

04. REGARDING THE TEST STANDPIPE: THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.

(D) DEFLECTION TEST FOR PVC SEWER PIPE

01. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE GRAVITY SEWER PIPE. TESTS SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.

02. NO PIPE SHALL EXCEED DEFLECTION OF 5%. DEFLECTION GAGE MAY BE BORROWED FROM THE TOWN ENGINEER FOR 8" AND 10" PIPE. THE DEFLECTION TEST MUST BE EXECUTED AFTER 30 DAYS OF PLACEMENT OF FINAL BACKFILL. THE TEST WILL ALSO BE DONE WITHOUT MECHANICAL PULLING DEVICES.

MANHOLE PLACEMENT AND MAINTENANCE
DURING CONSTRUCTION AND DEVELOPMENT

CONTRACTOR AND/OR DEVELOPERS SHALL CONSTRUCT ALL MANHOLE STRUCTURES IN ACCORDANCE WITH THE TOWN OF AMHERST STANDARD SPECIFICATIONS OR THE SPECIFICATIONS OF THE DESIGN ENGINEER WHEN REQUIRED BY THE TOWN.

ALL MANHOLES ARE TO BE DESIGNED AND FURNISHED WITH RIM ELEVATIONS AT FINAL FINISHED GRADES. THE CONTRACTOR, DEVELOPER, OR HOME BUILDER SHALL BE RESPONSIBLE FOR ALL CORRECTIONS, ADJUSTMENTS, AND MODIFICATIONS NEEDED FOR RAISING, LOWERING, OR REPLACING ANY AND ALL MANHOLES AS PROPOSED FOR THE FACILITY.

ALL AS-BUILT STATIONING, LINE AND GRADE IMPROVEMENTS, INVERT AND RIM ELEVATIONS, "Y" LOCATIONS, INSPECTION REPORTS, ROADWAY OR STREET NAMES, RIGHT-OF-WAY WIDTHS, AND EASEMENT LINES SHALL BE FURNISHED TO THE TOWN ON A SET OF MYLAR DRAWINGS PRIOR TO TAP-IN APPROVAL, PIP ACCEPTANCE, AND/OR RELEASE OF FINAL PAYMENT.

ALL MANHOLE STRUCTURES SHALL BE MADE ACCESSIBLE TO THE TOWN OF AMHERST TELEVISION/MAINTENANCE CREWS. THE CONTRACTOR AND/OR DEVELOPER SHALL PROVIDE A DRY, WELL COMPACTED, STABLE SURFACE FREE FROM SHOW AND OBSTRUCTIONS FOR SAFE AND OPEN ACCESS WITH TOWN VEHICLES. SHOULD THE CONTRACTOR AND/OR DEVELOPER WISH TV INSPECTIONS DURING WET WEATHER/WET SOFT SOIL CONDITIONS, HE SHALL PROVIDE ALL NECESSARY GRANULAR BACKFILL, DISTRIBUTED AND COMPACTED TO SUPPLY ACCESS TO EACH MANHOLE. THE CONTRACTOR AND/OR DEVELOPER SHALL BEAR ALL COSTS OF TOWING, DOWN TIME, CREW TIME, AND DAMAGE ALONG WITH RESTORATION, SHOULD SUCH ACCESSWAYS FAIL.

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
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Buffalo, New York 14203
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F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Sanitary Sewer General Notes

DRAWING NO.
C-4

Project no.: 2

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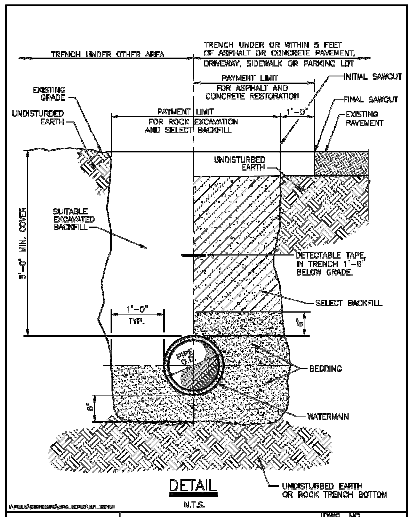
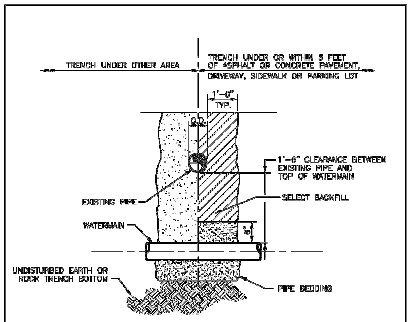


DETAIL
N.T.S.

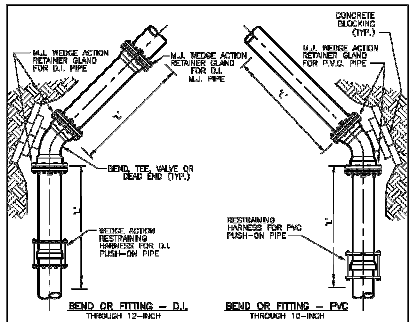
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TRENCH THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD1	
		DATE 4/28/92	REVISED 10/08



NOTES:
1. ALL EXISTING UTILITIES MUST BE SUPPORTED DURING CONSTRUCTION OF THE NEW WATERMAIN.
2. WHEN CROSSING A SEWERLINE WITH A NEW WATERMAIN, ONE FULL PIPE LENGTH (18 FT. MIN.) SHALL BE USED AT THE POINT OF CROSSING. THE WATERMAIN SHALL BE PLACED SO THAT BOTH JOINT ENDS ARE AS FAR AS POSSIBLE FROM THE EXISTING SEWERLINE.

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL PIPE CROSSING	DWG. NO. SD2	
		DATE 4/28/92	REVISED 10/08



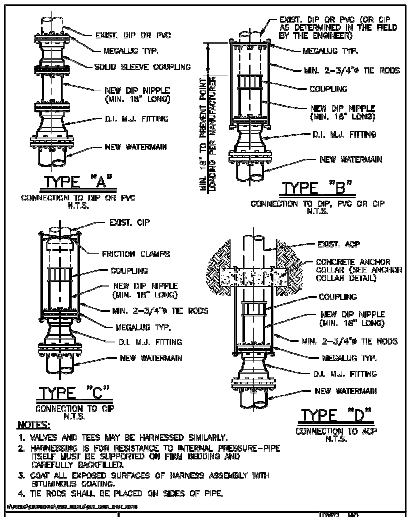
RESTRAINED JOINT SCHEDULE

PIPE SIZE	PIPE TYPE	11.25° ELBOW 'L'	22.5° ELBOW 'L'	45° ELBOW 'L'	90° BRANCH, 90° BEND, VALVE OR DEAD END 'L'
6"	PVC	13'	25'	50'	120 MIN.
8"	PVC	15'	30'	59'	122 MIN.
8"	D.I.P.	15'	30'	59'	122 MIN.

NOTES:
1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

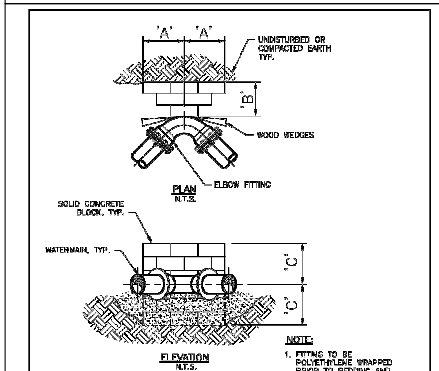
PLAN
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL RESTRAINED JOINT SCHEDULE	DWG. NO. SD4	
		DATE 4/28/92	REVISED 10/08



NOTES:
1. VALVES AND TEES MAY BE HARNESSED SIMILARLY.
2. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURE-PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
3. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
4. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TYPICAL CONNECTION TO EXISTING WATERMAIN THROUGH 12-INCH DIAMETER WATERMAIN	DWG. NO. SD5	
		DATE 5/08	REVISED 10/08

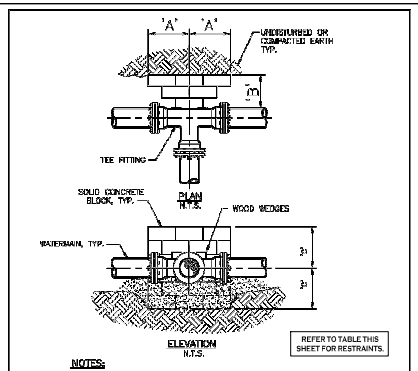


NOTE:
1. FITTING TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.

DIMENSION SCHEDULE

PIPE SIZE	11.25° ELBOW 'A'	11.25° ELBOW 'B'	11.25° ELBOW 'C'	22.5° ELBOW 'A'	22.5° ELBOW 'B'	22.5° ELBOW 'C'	45° ELBOW 'A'	45° ELBOW 'B'	45° ELBOW 'C'	M.J. ELBOW 'A'	M.J. ELBOW 'B'	M.J. ELBOW 'C'
8"	1.5'	1.5'	2.5'	2.5'	1.5'	2.5'	3.0'	1.5'	3.5'	3.5'	1.5'	5.0'

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR ELBOW FITTING	DWG. NO. SD6	
		DATE 4/28/92	REVISED 10/08

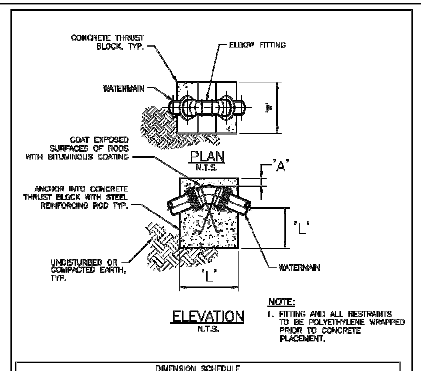


REFER TO TABLE THIS SHEET FOR RESTRAINTS.

NOTES:
1. THRUST BLOCK REQUIRED FOR TEES, HYDRANT LATERAL TEES AND TAPPING SLEEVE INSTALLATIONS.
2. FITTING TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.

BRANCH TEE SIZE	DIMENSION SCHEDULE 'A'	'B'	'C'
6"	1'-0"	1'-0"	0'-6"
8"	1'-6"	1'-0"	0'-6"

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR TEE OR "DEAD END" FITTING	DWG. NO. SD7	
		DATE 4/28/92	REVISED 10/08



NOTE:
1. FITTING AND ALL RESTRAINTS TO BE POLYETHYLENE WRAPPED PRIOR TO CONCRETE PLACEMENT.

DIMENSION SCHEDULE

PIPE SIZE	PIPE TYPE	11.25° ELBOW 'A'	11.25° ELBOW 'W'	11.25° ELBOW 'L'	11.25° ELBOW ROD ø	22.5° ELBOW 'A'	22.5° ELBOW 'W'	22.5° ELBOW 'L'	22.5° ELBOW ROD ø	45° ELBOW 'A'	45° ELBOW 'W'	45° ELBOW 'L'	45° ELBOW ROD ø
6"	D.I.P.	12"	1'-0"	1'-0"	1/2"	12"	1'-9"	1'-9"	1/2"	1'-6"	2'-0"	2'-0"	1/2"

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL THRUST BLOCKS FOR VERTICAL BEND	DWG. NO. SD8	
		DATE 4/28/92	REVISED 10/08

TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details

DRAWING NO.
C-4
Project no.: 2

Packet Pg. 2260
2.c
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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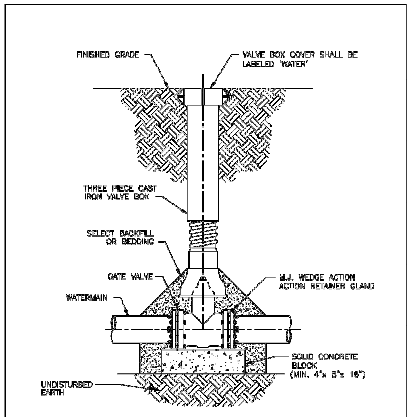
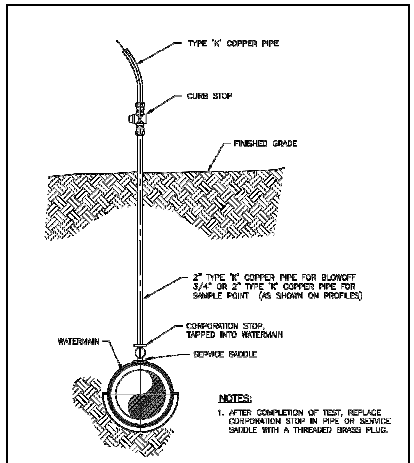


NOTES:
1. VALVE SHALL NOT SUPPORT VALVE BOX.
2. GATE VALVE SHALL BE INSTALLED LEVEL.
3. VALVE BOX SHALL BE PLUMB TO GRADE, WITH OPERATING NUT CENTERED IN BOX.

SECTION
N.T.S.

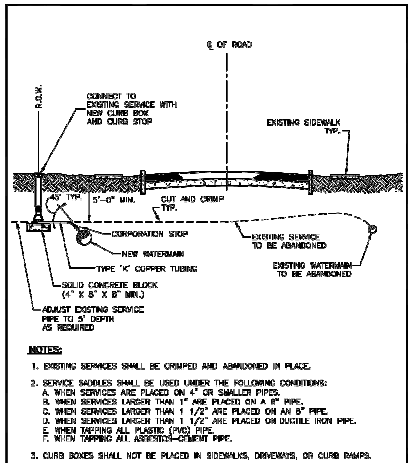
ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GATE VALVE SETTING	DWG. NO. SD11
		DATE 4/28/92 REVISED 02/17



NOTES:
1. AFTER COMPLETION OF TEST, REPLACE CORPORATION STOP IN PIPE OR SERVICE SADDLE WITH A THREADED BRASS PLUG.

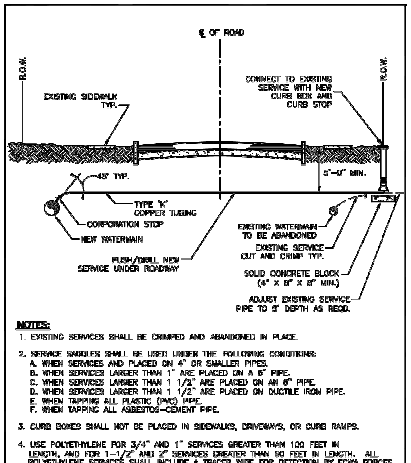
ELEVATION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL TEMPORARY BLOW-OFF/SAMPLING POINT	DWG. NO. SD17
		DATE 4/28/92 REVISED 10/03



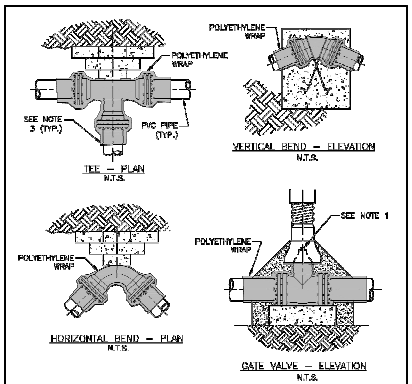
NOTES:
1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
   A. WHEN SERVICES ARE PLACED ON 4" OR SMALLER PIPES.
   B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 8" PIPE.
   C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
   D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
   E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
   F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL NEAR SIDE SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD15
		DATE 4/92 REVISED 09/16



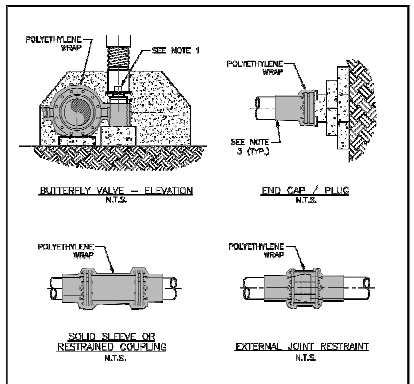
NOTES:
1. EXISTING SERVICES SHALL BE CRIMPED AND ABANDONED IN PLACE.
2. SERVICE SADDLES SHALL BE USED UNDER THE FOLLOWING CONDITIONS:
   A. WHEN SERVICES ARE PLACED ON 4" OR SMALLER PIPES.
   B. WHEN SERVICES LARGER THAN 1" ARE PLACED ON A 8" PIPE.
   C. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON AN 8" PIPE.
   D. WHEN SERVICES LARGER THAN 1 1/2" ARE PLACED ON DUCTILE IRON PIPE.
   E. WHEN TAPPING ALL PLASTIC (PVC) PIPE.
   F. WHEN TAPPING ALL ASBESTOS-CEMENT PIPE.
3. CURB BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, OR CURB RAMPS.
4. USE POLYETHYLENE FOR 3/4" AND 1" SERVICES GREATER THAN 100 FEET IN LENGTH, AND FOR 1-1/2" AND 2" SERVICES GREATER THAN 50 FEET IN LENGTH. ALL POLYETHYLENE SERVICES SHALL INCLUDE A TRACER WIRE FOR DETECTION BY ECWA FORCES.
5. UNIONS ON COPPER TUBING ARE NOT ALLOWED UNLESS APPROVED BY ECWA PRIOR TO INSTALLATION.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FAR SIDE SERVICE REPLACEMENT/INSTALLATION	DWG. NO. SD15
		DATE 4/92 REVISED 09/16



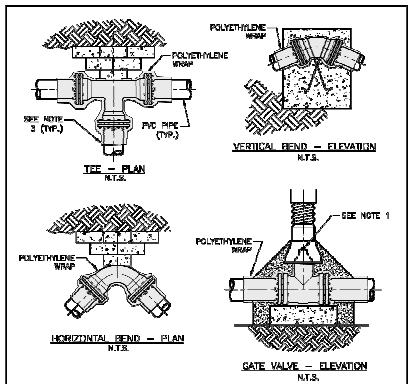
NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (EN POLYWRAP IS DRY) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A
		DATE 3/16 REVISED 12/16



NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PIPE (EN POLYWRAP IS DRY) WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING CAST/DUCTILE IRON FITTINGS	DWG. NO. SD39A
		DATE 12/16 REVISED



NOTES:
1. POLYETHYLENE WRAP IS TO BE PLACED AROUND THE ENTIRE FITTING, AND SECURED IN PLACE WITH POLYETHYLENE TAPE. PROVIDE SUFFICIENT SLACK SO THAT POLYETHYLENE WRAP IS NOT PUNCTURED DURING BACKFILL AND DOES NOT ENTRAP AIR. POLYETHYLENE WRAP IS NOT TO BE INSTALLED WITHIN 6 INCHES OF VALVE OPERATING NUT ON GATE VALVES.
2. ALL FITTINGS TO BE POLYETHYLENE WRAPPED PRIOR TO BEDDING AND CONCRETE BLOCK PLACEMENT.
3. POLYETHYLENE WRAP IS TO BE EXTENDED A MINIMUM OF 12" PAST THE FITTING ON EACH LEG AND SECURED TO THE PVC PIPE WITH AT LEAST TWO CIRCUMFERENTIAL WRAPS OF POLYETHYLENE TAPE.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYWRAPPING DUCTILE IRON FITTINGS ON PVC PIPE	DWG. NO. SD39
		DATE 3/16 REVISED

TOWN OF AMHERST APPROVAL BOX:

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REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/19/22
2	Plan revised per town comments	07/26/22

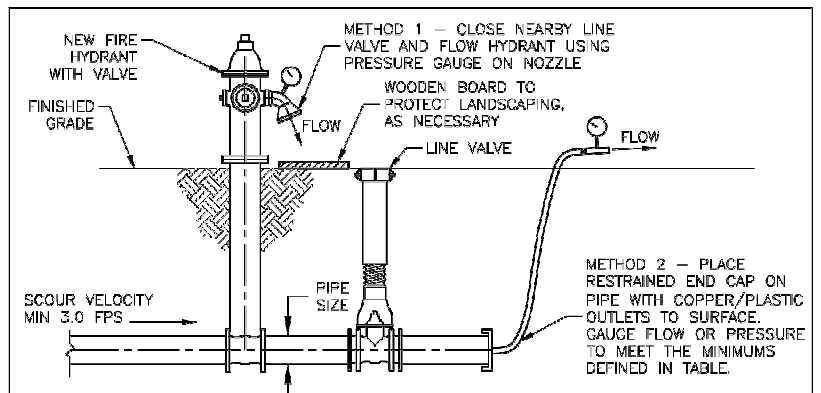
PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details

DRAWING NO.
C-4
Project no.: 2

Packet Pg. 2261
2.c
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



PIPE SIZE (IN)	REQUIRED FLOW (GPM)	METHOD 1 HYDRANT FLOW: 2 1/2" NOZZLE PRESSURE (PSI)	METHOD 1 HYDRANT FLOW: 4" NOZZLE PRESSURE (PSI)	METHOD 2 END CAP FLOW: 2" I.D. PRESSURE (PSI)	METHOD 2 END CAP FLOW: 3" I.D. PRESSURE (PSI)
6	275	7	1	7	2
8	500	9	2	22	5
10	750	20	4	50	10
12	1100	44	7	–	22
16	1900	–	20	–	62
20	3000	–	50	–	–

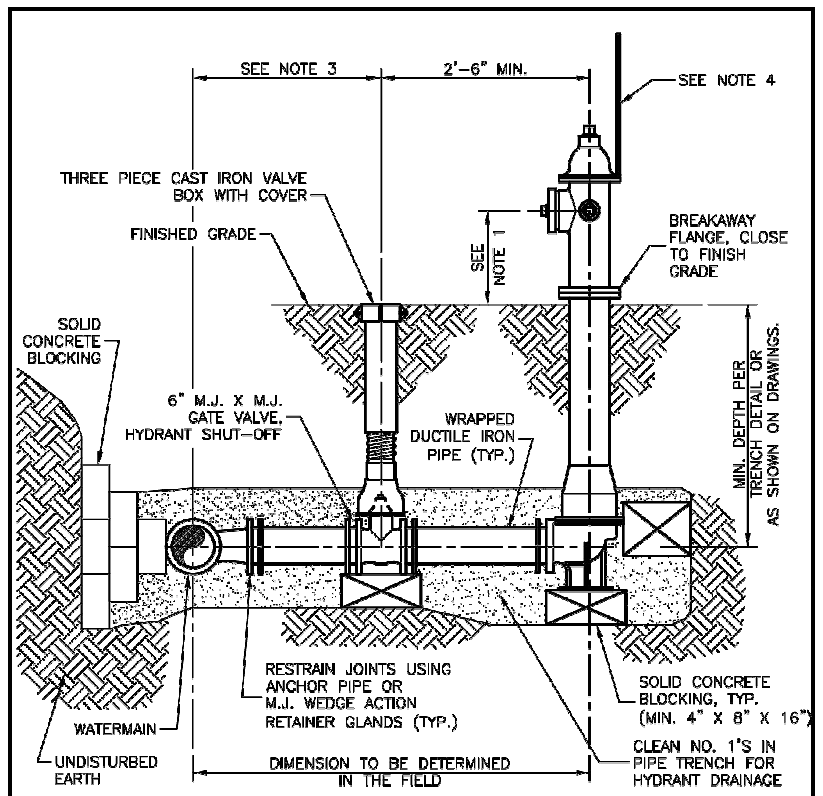
I.D. = INNER DIAMETER

NOTES:

1. TO OBTAIN SCOUR VELOCITY (3.0 FPS) IN THE WATERLINE, CONTRACTOR SHALL ACHIEVE FLOWRATE AT NOZZLE DEFINED IN TABLE. PRESSURE GAUGE USED SHALL SHOW A HIGHER PRESSURE THAN THE MINIMUMS DEFINED IN THE TABLE.
2. OUTLET PRESSURE MEASURED BY PITOT GAUGE.
3. ENGINEER SHALL PROVIDE CALCULATIONS IF CONNECTIONS ARE OTHER THAN THOSE SHOWN, IF MULTIPLE CONNECTIONS ARE USED, OR AS REQUESTED BY ECWA.
4. TO FLUSH THREE PIPE VOLUMES, MINIMUM FLUSHING TIME (IN SECONDS) EQUALS THE LENGTH OF PIPE BEING FLUSHED, IN FEET.

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL WATERLINE FLUSHING	DWG. NO. SD36	DATE 6/16	REVISED 3/18



NOTES:

1. CENTERLINE OF THE LOWEST NOZZLE TO FINISHED GRADE SHALL BE A MIN. OF 15" & MAX. OF 18".
2. HYDRANT RISER SHALL BE INSTALLED PLUMB.
3. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT.
4. RELOCATE HYDRANT MARKER (IF PRESENT), FOR WATERLINE REPLACEMENT PROJECTS ONLY.
5. HYDRANT FACE TO BE A MINIMUM OF 3' FROM THE BACK FACE OF ALL CURBS OR A MINIMUM OF 5' FROM ALL EDGES OF PAVEMENT (IF NO CURB).

SECTION
N.T.S.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL FIRE HYDRANT INSTALLATION	DWG. NO. SD13	DATE 6/00	REVISED 11/16

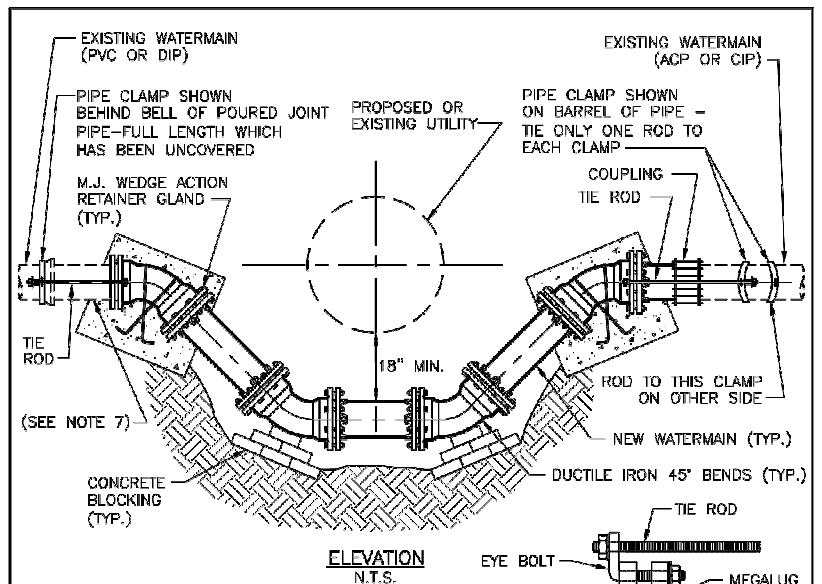
NOTES

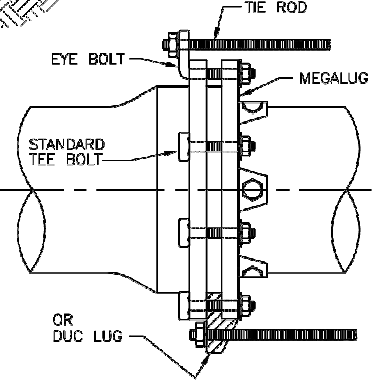
1. All elevations refer to USGS NAVD83 datum.
2. The CONTRACTOR shall obtain necessary permits and furnish copies to the ENGINEER prior to commencing work.
3. The CONTRACTOR'S work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed, or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install the watermain to avoid conflicts.
6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as-needed basis, phased to reduce erosion and visual impact.
7. Blasting will not be permitted.
8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
9. The Erie County Water Authority shall only operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers in writing of any shut-down at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 3 business days in advance of the requested shut-down date.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD29	DATE 3/05	REVISED 7/17

11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with the select granular material.
14. The installation of 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment, and disposal procedures.
18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be scheduled and returned to the Erie County Water Authority Service Center, 3030 Union Road, Cheektowaga, New York 14227.
19. The CONTRACTOR shall cold patch all trench excavations in traveled areas including roads, driveways, sidewalks, and parking areas.
20. The CONTRACTOR shall not restrict access for school buses or any emergency vehicles.
21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for review prior to the start of testing.
23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants, and curb stops operate as required.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL GENERAL NOTES	DWG. NO. SD30	DATE 3/05	REVISED 7/17





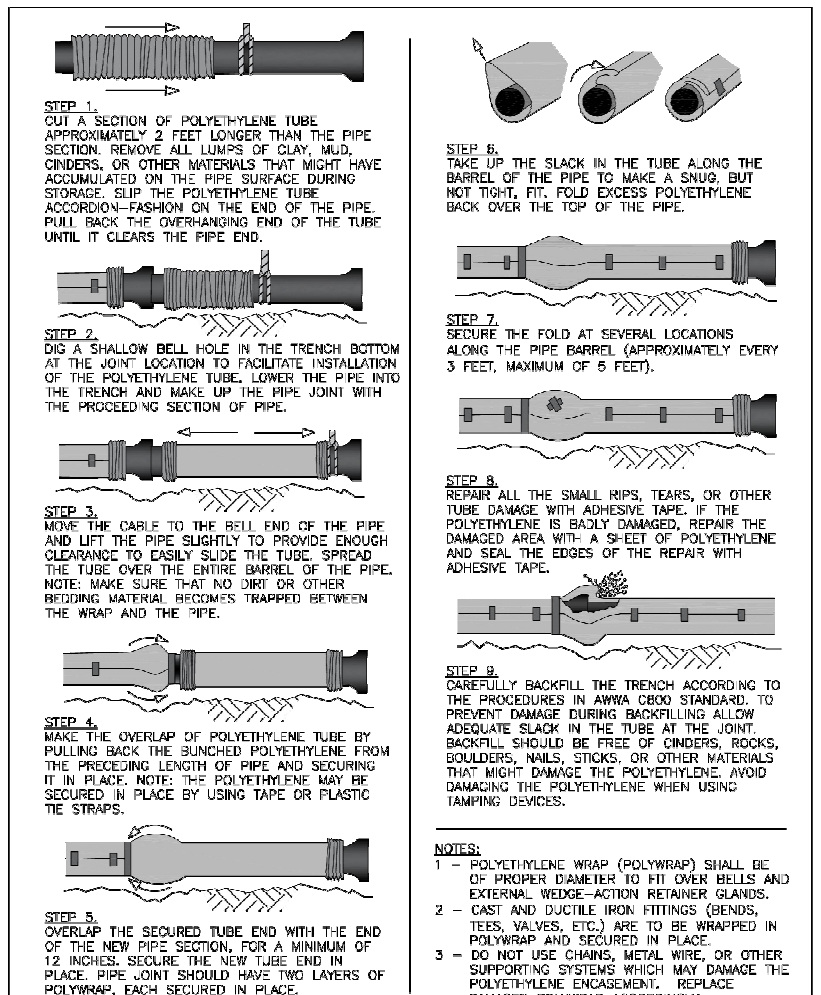
NOTES:

1. RESTRAINED MECHANICAL JOINTS SHOWN EXCEPT AS NOTED.
2. TIE TOP BENDS BACK TO FULL LENGTH OF PIPE IN UNEXCAVATED TRENCH.
3. VALVES, TEES AND HYDRANTS MAY BE HARNESSED SIMILARLY.
4. HARNESSING IS FOR RESISTANCE TO INTERNAL PRESSURES–PIPE ITSELF MUST BE SUPPORTED ON FIRM BEDDING AND CAREFULLY BACKFILLED.
5. COAT ALL EXPOSED SURFACES OF HARNESS ASSEMBLY WITH BITUMINOUS COATING.
6. TIE RODS SHALL BE PLACED ON SIDES OF PIPE.
7. IF EXISTING PIPE IS CIP OR PVC, CONNECT TO NEW FITTING ONLY WHEN ALLOWED BY ENGINEER.

TIE ROD SCHEDULE

PIPE SIZE	PIPE TYPE	ROD ⌀	NUMBER OF RODS
8"	PVC	3/4"	2

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL HARNESSING DETAILS–INSTALL OFFSET IN EXISTING WATERMAIN	DWG. NO. SD10	DATE 6/00	REVISED 10/05



NOTES:

1 – POLYETHYLENE WRAP (POLYWRAP) SHALL BE OF PROPER DIAMETER TO FIT OVER BELLS AND EXTERNAL WEDGE–ACTION RETAINER GLANDS.
2 – CAST AND DUCTILE IRON FITTINGS (BENDS, TEES, VALVES, ETC.) ARE TO BE WRAPPED IN POLYWRAP AND SECURED IN PLACE.
3 – DO NOT USE CHAINS, METAL WIRE, OR OTHER SUPPORTING SYSTEMS WHICH MAY DAMAGE THE POLYETHYLENE ENCASEMENT. REPLACE DAMAGED POLYWRAP ACCORDINGLY.

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	STANDARD DETAIL POLYETHYLENE ENCASEMENT OF DUCTILE IRON PIPE	DWG. NO. SD32	DATE 06/16	REVISED 02/19

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/18/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Water Details & Notes

DRAWING NO.
C-4

Project no.: 2

2.c

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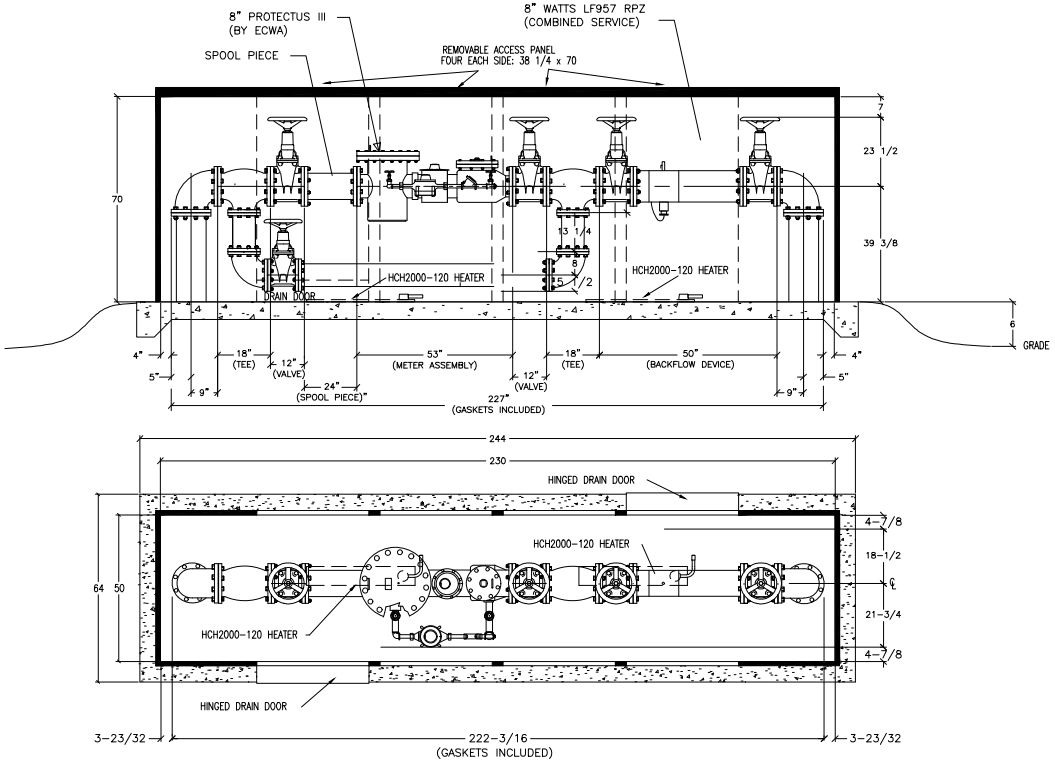

LEGEND:

REMOVABLE ACCESS PANEL 38 1/4"W x 70"H w/DRAIN DOOR

REMOVABLE ACCESS PANEL 38 1/4"W x 70"H

8"METER & RPZ INSULATED ENCLOSURE

NOTES:

1. BACKFLOW PREVENTER DIMENSIONS FURNISHED BY WATTS
2. ALL DIMENSIONS ARE IN INCHES
3. WALL & INSULATION THICKNESS IS 1-1/2"
4. ROOF & INSULATION THICKNESS IS 3"
5. ENCLOSURE SHOWN IS SAFE-T-COVER MODEL 1000D-ALC00-17
6. EXTERIOR ENCLOSURE DIMENSIONS: 53"W x 233"L x 73" H
7. CONCRETE PAD IS 64"W x 244"L x 6"THK W/W.W.F. 6X6/10X10
8. METER SHOWN: 8" PROTECTUS III, SPOOL PIECE & METER SUPPLIED BY ECWA, VERIFY DIMENSIONS PRIOR TO ORDERING
9. RPZ SHOWN: 8" WATTS LF957 RPZ
10. CONTRACTOR TO INSTALL ELECTRIC SERVICE TO ENCLOSURE, COORDINATE SOURCE WITH OWNER
11. INSTALL A 120V GFI OUTLET IN THE ENCLOSURE
12. HEATERS TO HAVE THERMOSTAT CONTROL
13. ALL 8" PIPING & FITTINGS WITHIN THE ENCLOSURE SHALL BE DUCTILE IRON
14. CONCRETE PAD TO BE 6" ABOVE ADJACENT GRADE

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Insulated
Enclosure Detail

DRAWING NO.
C-4
Project no.: 2

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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ROBERT C. WALTER
REGISTERED LANDSCAPE ARCHITECT
MEMBER AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS
2765 DODGE ROAD, EAST AMHERST N.Y. 14051-2113
PHONE: (716) 364-9564

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NOTE:
PETITIONER AND PETITIONER'S CONTRACTOR SHALL TAKE ALL REASONABLE MEASURE TO PROTECT EXISTING TREES WHICH ARE TO BE PRESERVED FROM ALL POSSIBLE TYPES OF ROOT, TRUNK, AND LIMB DAMAGE; INCLUDING BUT NOT LIMITED TO, RETAINING WALLS WHICH PREVENT FILLING ON TOP OF ROOTS OR EXCAVATING TREE ROOTS AS REQUIRED BY §203-7-2-3 B (3) OF TOWN CODE.

P.O.B.

PARALLEL W/SOUTH LINE OF LOT 76 N 88°55'52" E 630.61'

PARALLEL W/WEST LINE OF LOT 76 (CENTERLINE OF SWEET HOME ROAD)

PARALLEL W/SOUTH LINE OF LOT 76 N 88°55'52" E 700.84'

L.7659 P.435 & 437

L.-11278, P.-7124

PROPOSED SWITCH GEAR & TRANSFORMER, COORD. EXACT LOCATION W/ UTILITY COS.

PROPOSED DEMOLITION

TRANSF.

WELL

DOG PARK

RECREATION TRAIL (10' WIDE)

STORM WATER MANAGEMENT AREA

TERRACED STEPS

PROPOSED 2-STORY TOWNHOMES SEE 'DETAIL' ON THIS SHEET FOR TYPICAL PLANTING DETAIL AT EXPOSED SIDE OF TOWNHOME.

150' X 60' 4-STORY APARTMENT BUILDING WITH 132 APARTMENT UNITS (8 UNITS PER FLOOR)

225' X 60' 4-STORY MIXED USE BUILDING WITH 15,000 SF COMMERCIAL & 96 APARTMENT UNITS ON 1ST FLOOR, APARTMENTS ON 2ND FLOOR & THIRD (96 UNITS)

225' X 60' 4-STORY MIXED USE BUILDING WITH 15,000 SF COMMERCIAL & 96 APARTMENT UNITS ON 1ST FLOOR, APARTMENTS ON FLOORS 2 THRU (96 UNITS)

#1 #2 #3 #4 #5 #6 #7 #8 #9 #10 #11 #12 #13 #14 #15 #16 #17 #18 #19 #20 #21 #22 #23 #24 #25 #26 #27 #28 #29 #30 #31 #32 #33 #34 #35 #36 #37 #38 #39 #40 #41 #42 #43 #44 #45 #46 #47 #48 #49 #50 #51 #52 #53 #54 #55 #56 #57 #58 #59 #60 #61 #62 #63

TYPICAL PLANTING SCHEME AT SIDE OF TOWNHOUSE FACING STREET

PROPOSED 2-STORY TOWNHOUSE UNIT W/ ATTACHED GARAGE

PROPOSED 2-STORY TOWNHOUSE UNIT

ONE CAR GARAGE

GRASS
5-BX
1-CA
1-CA
6-FX
GRASS
1-CA
5-BX
3-CA
GRASS

TYP. 2 STORY TOWNHOUSE (DETAIL)
SCALE: 1"=20'

N
SITE PLAN
SCALE: 1"=50'

PLANTING NOTES:
1. ALL INTERIOR LANDSCAPED AREAS SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.
2. ALL TREE PIT SAUCERS, SHRUB BEDS, ORNAMENTAL GRASS BEDS, AND PERENNIAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE AND THREE (3) INCHES DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
3. ALL SEASONAL FLOWER BEDS SHALL BE A MINIMUM OF TWELVE (12) INCHES DEEP WITH A WELL-BLENDED MIXTURE OF 50% PEAT MOSS. SEASONAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE. NO MULCH SHALL BE INSTALLED IN THE SEASONAL FLOWER BEDS. LOCATIONS TO BE COORDINATED IN FIELD WITH OWNER REP.
4. ALL DECIDUOUS AND EVERGREEN TREES SHALL BE STAKED WITH THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

PLANTING SCHEDULE - SAWYER'S LANDING, NORTH FRENCH ROAD, AMHERST NY

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		DECIDUOUS TREES			
CM	12	ACER X FREEMANII "CELZAM"	CELEBRATION MAPLE	2 1/2" – 3" CAL.	B&B, 25' WIDE
CO	1	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" – 3" CAL.	B&B
AF	12	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2 1/2" – 3" CAL.	B&B
BN	6	BETULA NIGRA 'CULLY'	HERITAGE RIVER BIRCH	10'-12' HT.	B&B, MULTI-STEM (3-4BLE MIN)
AH	9	CARPINUS CAROLNIANA	AMERICAN HORNBEAM	2 1/2" – 3" CAL.	B&B
GT	12	GLEDITSIA TRIACANTHOS INERMIS "SKYCOLE"	SKYLINE HONEYLOCUST	2 1/2" – 3" CAL.	B&B
NS	36	NYSSA SYLVATICA "WILDFIRE"	WILDFIRE BLACK GUM	2 1/2" – 3" CAL.	B&B
QR	24	QUERCUS RUBRA	NORTHERN RED OAK	2 1/2" – 3" CAL.	B&B
UA	15	ULMUS AMERICANA 'JEFFERSON'	JEFFERSON ELM	2 1/2" – 3" CAL.	B&B
AR	10	ACER RUBRUM "OCTOBER GLORY"	OCTOBER GLORY RED MAPLE	1 1/2" – 2" CAL.	B&B
GTD	9	GLEDITSIA TRICANTHOS INERMIS "DRAWES'	STREETKEEPER HONEYLOCUST	2 1/2" – 3" CAL.	B&B
		SMALL/ORNAMENTAL TREES			
AC	10	AMELANCHIER CANADENSIS	SERVICEBERRY	8" – 10" HT.	B&B, MULTI-STEM
AG	22	AMELANCHIER GRANDIFLORA 'AUTUMN BRILLIANCE'	APPLE SERVICEBERRY	1-3/4" – 2" CAL.	B&B
CC	10	CERCIS CANADENSIS	EASTERN REDBUD	8' – 10' HT.	B&B, MULTI-STEM
KP	3	KOELREUTERIA PANICULATA	GOLDEN RAIN TREE	8' – 10' HT.	B&B
MP	42	MALUS "PRAIRIFIRE"	PRAIRIFIRE CRABAPPLE	1-3/4" – 2" CAL.	B&B
MR	17	MALUS "ROYAL RAINDROPS"	ROYAL RAINDROP CRABAPPLE	1-3/4" – 2" CAL.	B&B
PS	3	PRUNUS CERASIFERA "THUNDERCLOUD"	THUNDERCLOUD PLUM	1-3/4" – 2" CAL.	B&B, DUPLEX LOTS 33-48
		EVERGREEN TREES			
CF	20	ABIES CONCOLOR	CONCOLOR FIR	5' MIN. HT.	FULL TO GROUND
PG	81	PICEA GLAUCA	WHITE SPRUCE	5' MIN. HT.	FULL TO GROUND
PP	48	PICEA PUNGENS 'GLAUCA'	COLORADO BLUE SPRUCE	5' MIN. HT.	FULL TO GROUND

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	REMARKS
		SHRUBS			
BX	411	BUXUS "GREEN VELVET"	GREEN VELVET BOXWOOD	24" HT. MIN.	NO. 5 CONT.
CS	29	CORNUS SERICEA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	24" MIN. HT.	NO. 5 CONT.
DS	226	DIERVILLA SPLENDENS 'G2X805644'	KODIAK ORANGE DIERVILLA	24" MIN. HT.	NO. 5 CONT.
FX	102	FORSYTHIA X INTERMEDIA 'KOLGOLD'	MAGICAL GOLD FORSYTHIA	24" MIN. HT.	NO. 5 CONT.
SJ	66	SPIRAEA BUMALDA 'GOLD MOUND'	GOLD MOUND SPIREA	24" MIN. HT.	
TO	99	THUJA OCCIDENTALIS 'TECHNY'	TECHNY ARBORVITAE	4' MIN. HT.	B&B, FULL TO GROUND
		ORNAMENTAL GRASS			
CA	263	CALAMAGROSTIS X ACUTIFLIA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	NO. 2 CONT.	
PA	352	PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	NO. 2 CONT.	SEE NOTE 1

LANDSCAPE NOTES:
1. ORNAMENTAL GRASSES SHOULD BE PRUNED BACK IN LATE FALL OR EARLY SPRING TO ALLOW FOR NEW FOLIAGE TO GROW IN SPRING.
2. ALL PLANTING BEDS & TREE PLANTING PITS SHALL RECEIVE A MINIMUM 3-INCH DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.
3. ALL EVERGREEN TREES SHALL BE MEASURED FROM THE BOTTOM OF LEADER.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50 0 50 100FT

TOWN OF AMHERST APPROVAL BOX:

SHRUB PLANTING DETAIL

3" SHREDDED BARK MULCH
MIN. 4" DEEP SAUCER
FINISHED GRADE
REMOVE BURLAP FROM TOP HALF OF ROOT BALL
12" MIN.
SOIL MIX: 3 PARTS TOPSOIL, 1 PART PEAT MOSS OR COMPOST, ½ PART MILORGANITE
COMPACTED SUBGRADE
MIN.
SECTION

TREE PLANTING DETAIL

DOUBLE STRAND #12 GAUGE GALVANIZED ANNEALED TWISTED STEEL WIRE
CEDAR STAKES - 3 PER TREE
REINFORCED NEW RUBBER HOSE - ½" I.D.
3" SHREDDED BARK MULCH
MIN. 4" DEEP SAUCER
FINISHED GRADE
REMOVE BURLAP FROM TOP HALF OF ROOT BALL
12" MIN.
12" MIN.
SOIL MIX: 3 PARTS TOPSOIL, 1 PART PEAT MOSS OR COMPOST, ½ PART MILORGANITE
COMPACTED SUBGRADE
SECTION

REVISIONS:

No.	Description	Date
1	Rev. per ECDPW 03/28/24 Comments	04/02/24
2	Rev. per Ryan Homes Comments	04/09/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

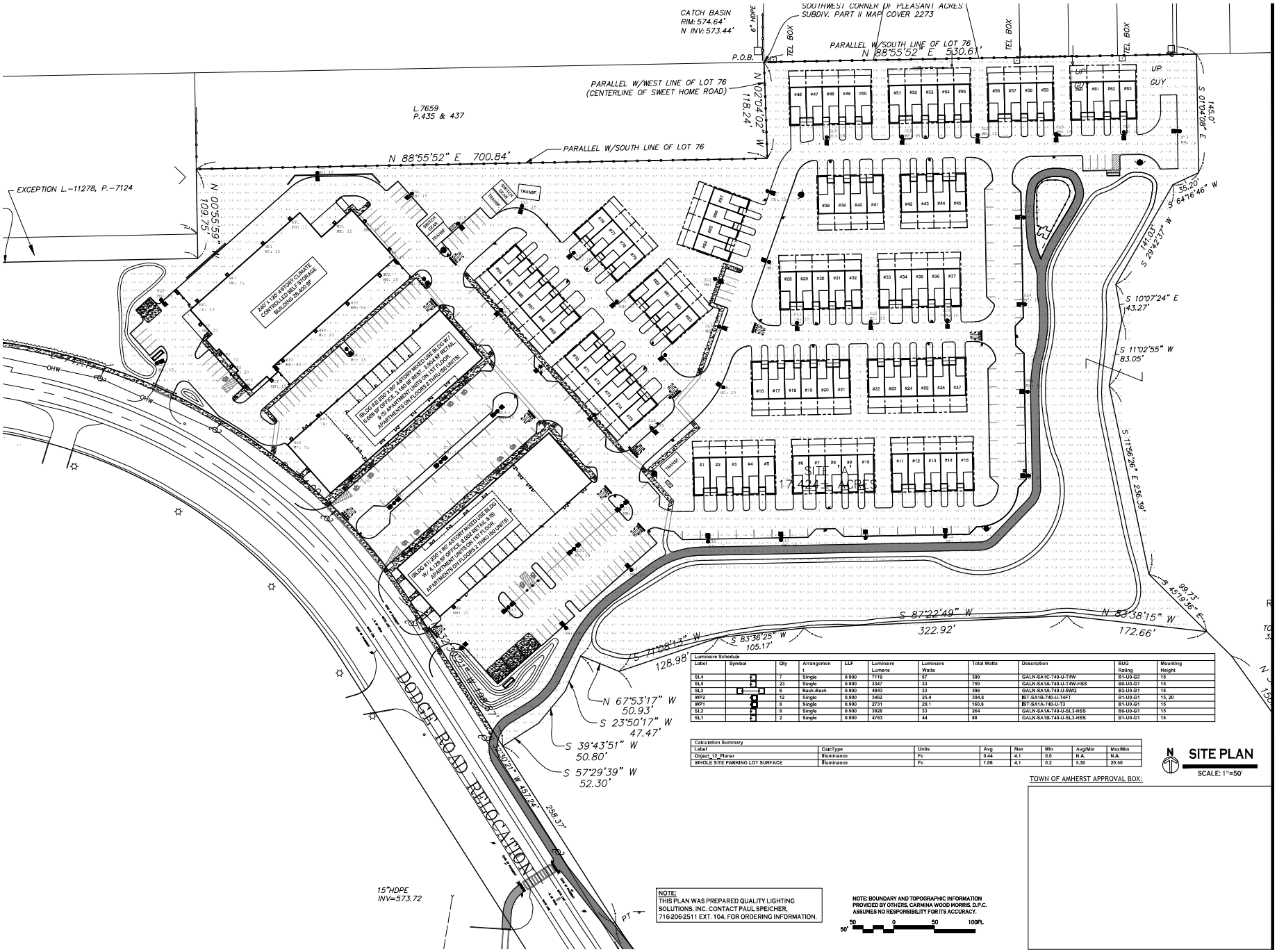
DRAWING NAME:
Landscape Plan

DRAWING NO.
L-1
Project no.: 2

Packet Pg. 2264

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

2.c



Luminaire Schedule										
Label	Symbol	Qty	Arrangement	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Description	BUG Rating	Mounting Height
SL4		7	Single	0.900	7119	57	399	GALN-SA1C-740-U-T4W	B1-U0-G2	15
SL5		23	Single	0.900	3347	33	759	GALN-SA1A-740-U-T4W-HSS	B0-U0-G1	15
SL3		6	Back-Back	0.900	4843	33	396	GALN-SA1A-740-U-SWQ	B3-U0-G1	15
WP2		12	Single	0.900	3462	25.4	304.8	BST-SA1B-740-U-T4FT	B1-U0-G1	15, 20
WP1		8	Single	0.900	2731	20.1	160.8	BST-SA1A-740-U-T3	B1-U0-G1	15
SL2		8	Single	0.900	3828	33	264	GALN-SA1A-740-U-SL3-HSS	B0-U0-G1	15
SL1		2	Single	0.900	4763	44	88	GALN-SA1B-740-U-SL3-HSS	B1-U0-G1	15

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	
Object_12_Planar	Illuminance	Fc	0.44	4.1	0.0	N.A.	N.A.	
WHOLE SITE PARKING LOT SURFACE	Illuminance	Fc	1.06	4.1	0.2	5.30	20.50	

N

SITE PLAN

SCALE: 1"=50'

NOTE:
THIS PLAN WAS PREPARED QUALITY LIGHTING SOLUTIONS, INC. CONTACT PAUL SPEICHER, 716-206-2511 EXT. 104, FOR ORDERING INFORMATION.

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

50' 50 0 50 100Ft.

TOWN OF AMHERST APPROVAL BOX:

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Carmina Wood Morris DPC
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per updated layout	05/16/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Photometric Plan

DRAWING NO.
LP-[illegible]

Project no.: 2[illegible]

Packet Pg. 2265

2.c

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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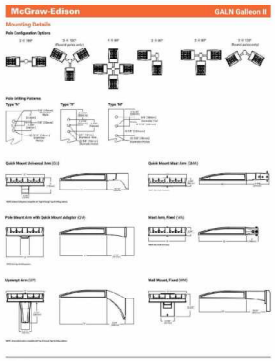
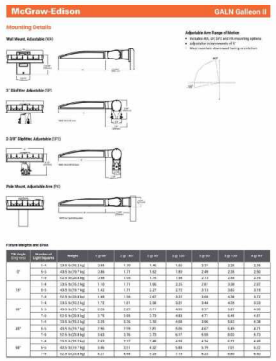
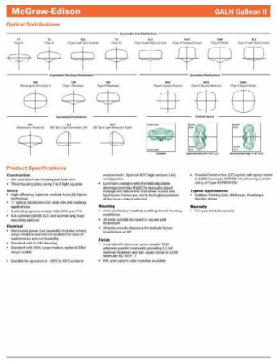
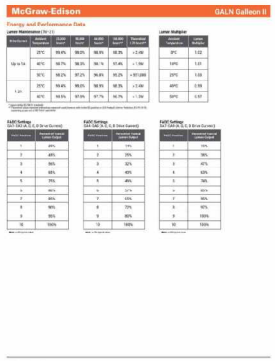
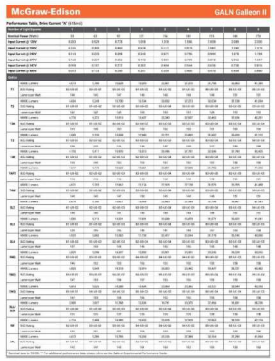
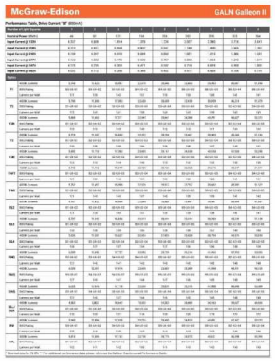


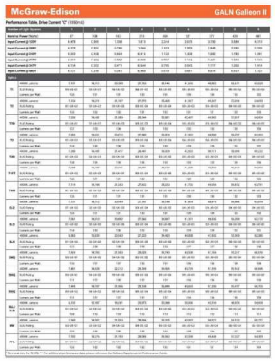


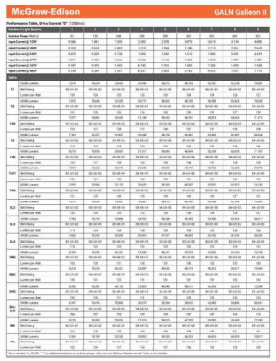


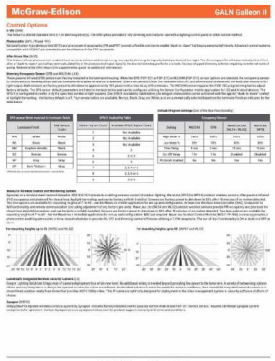




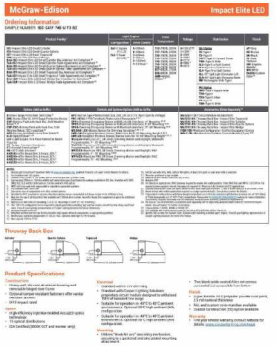


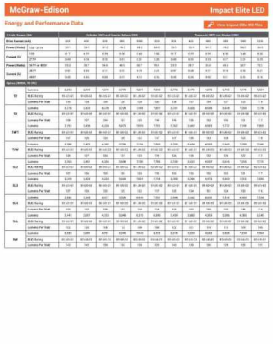


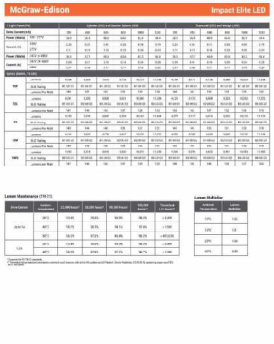


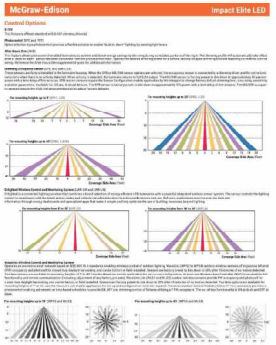












Camrina Wood Morris
487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date
1	Plan revised per town comments	05/16/22
2	Plan revised per town comments	07/26/22
3	Plan revised per updated layout	05/16/24

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Site Photometric Details

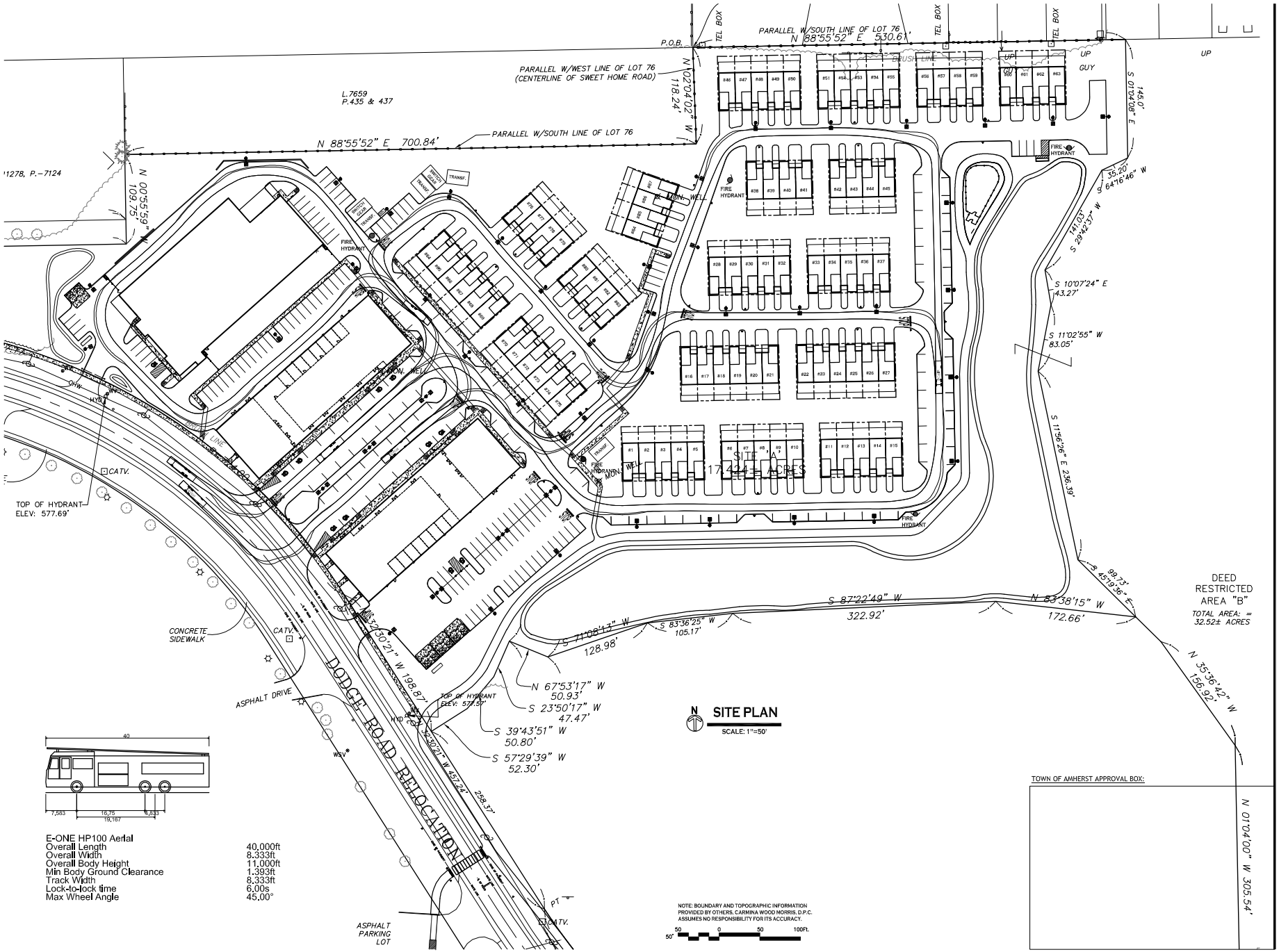
DRAWING NO.
LP-[illegible]
Project no.: 2[illegible]

TOWN OF AMHERST APPROVAL BOX:

Packet Pg. 2266

2.c

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



E-ONE HP100 Aerial

Overall Length	40.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

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Carmina Wood Morris
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:
No. Description Date

PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 12/1/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Fire Truck Plan

DRAWING NO.
TT-1

Project no.: 2

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix H

Soils Information

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Map—Erie County, New York



Map Scale: 1:3,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Erie County, New York
Survey Area Data: Version 20, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2019—Oct 10, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ge	Getzville silt loam	27.2	87.5%
Ld	Lamson mucky very fine sandy loam	1.8	5.7%
Sw	Swormville clay loam	2.1	6.8%
Totals for Area of Interest		**31.1**	**100.0%**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix I

SHPO Information

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

October 10, 2001

Carolyn A. Pierce
CCRG
105 Robie Avenue
Buffalo, New York 14214

Dear Ms. Pierce:

Re: SEQRA
Muir Woods Mixed-Use Development
Amherst/Erie County
01PR0345

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:cmp

RECEIVED
OCT 16 2001
CIMINELLI DEVELOPMENT COMPANY, INC.

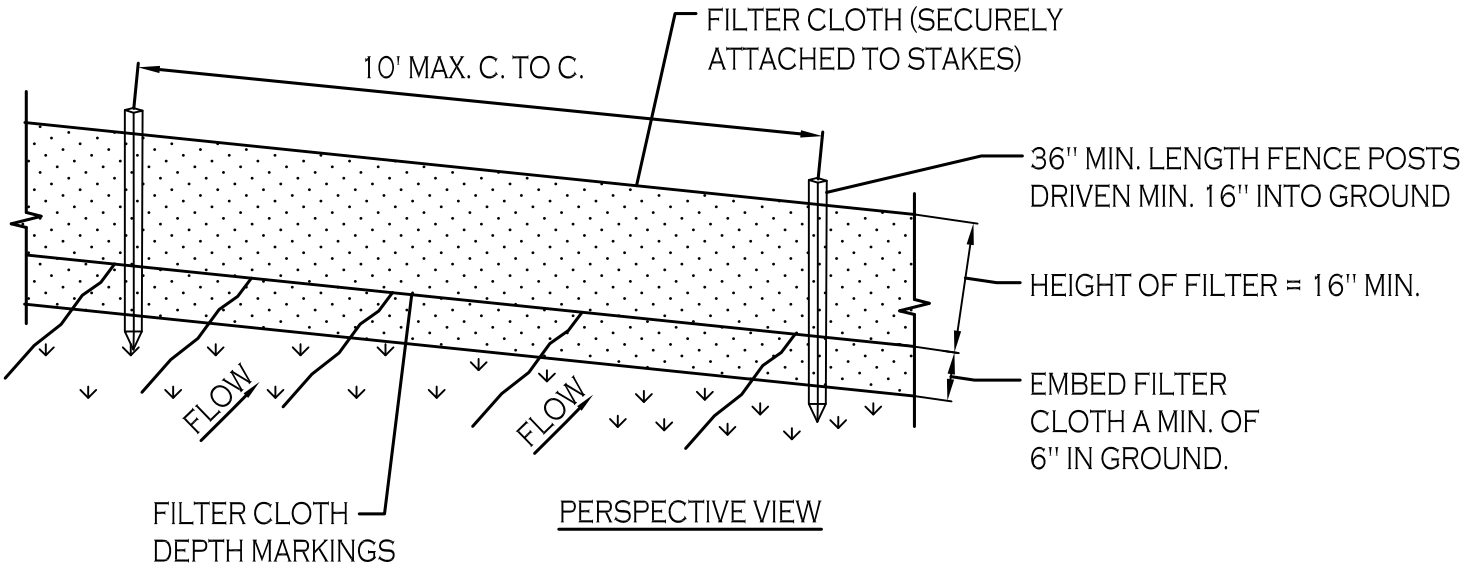
An Equal Opportunity/Affirmative Action Agency
printed on recycled paper

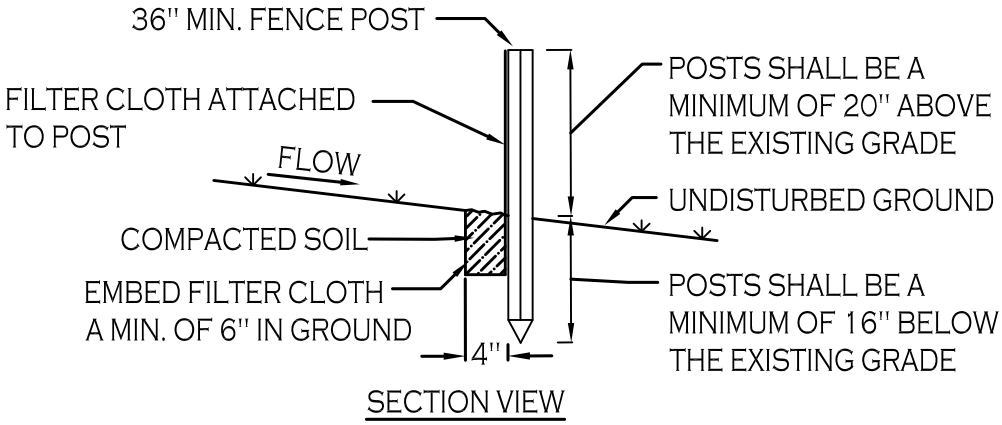
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix J

Standard Erosion Control Details

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)





CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.

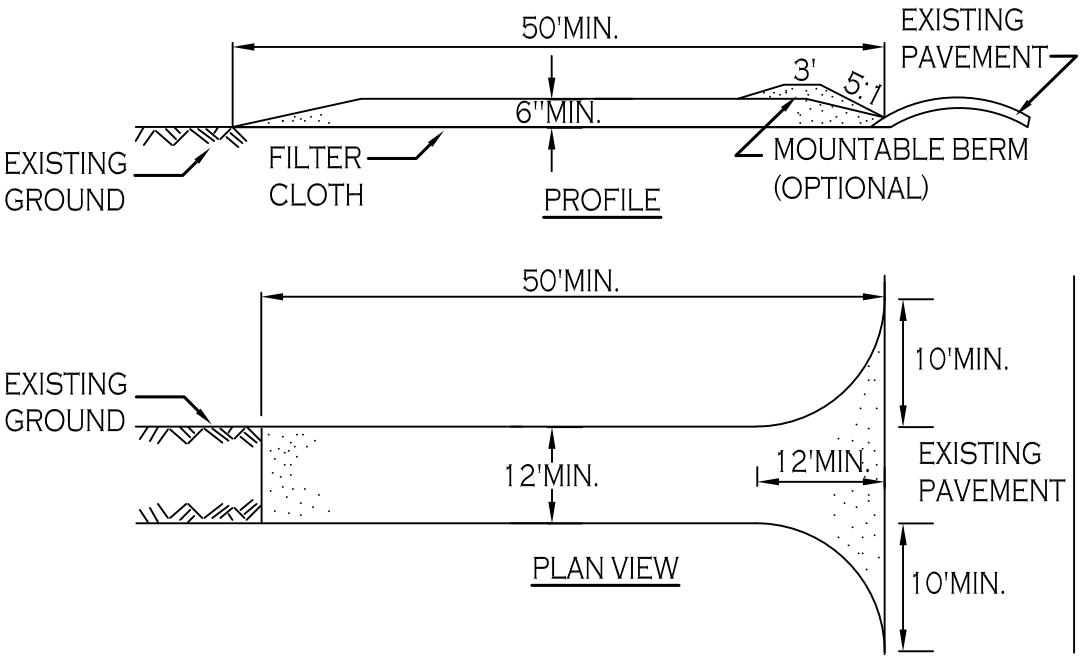
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.

3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).

3. THICKNESS - NOT LESS THAN SIX (6) INCHES.

4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.

5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

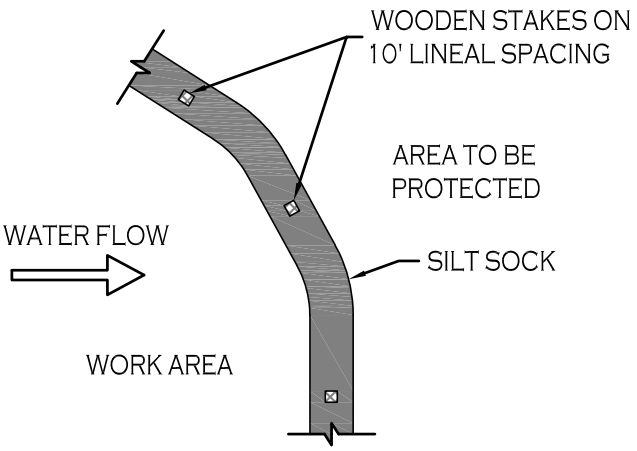
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

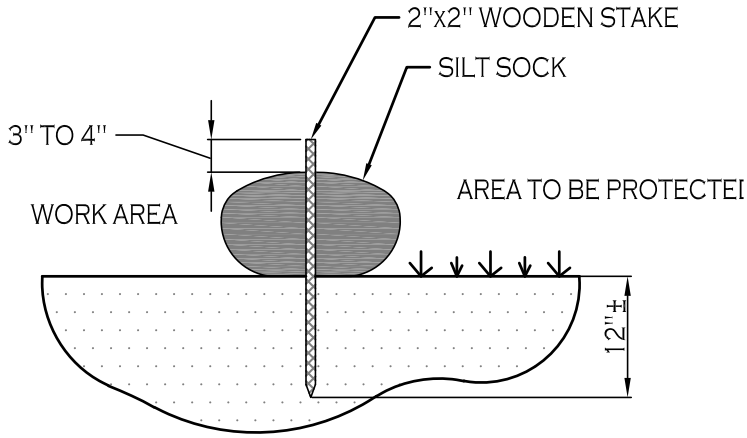
STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



PLAN VIEW



SECTION VIEW

NOTES:

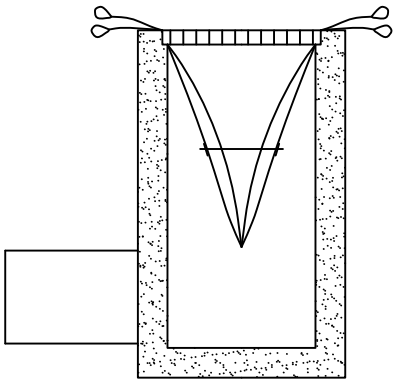
CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

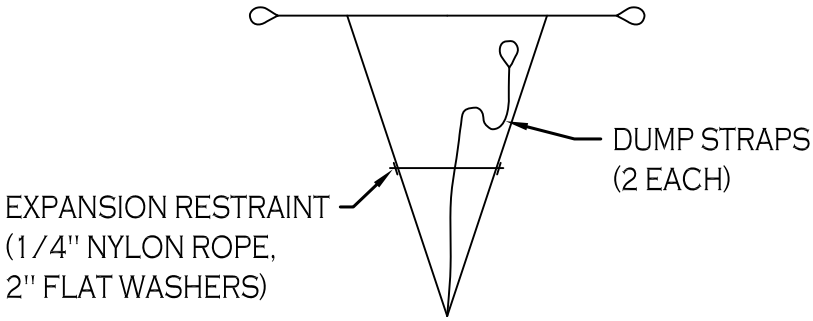
SILT SOCK DETAIL

NOT TO SCALE

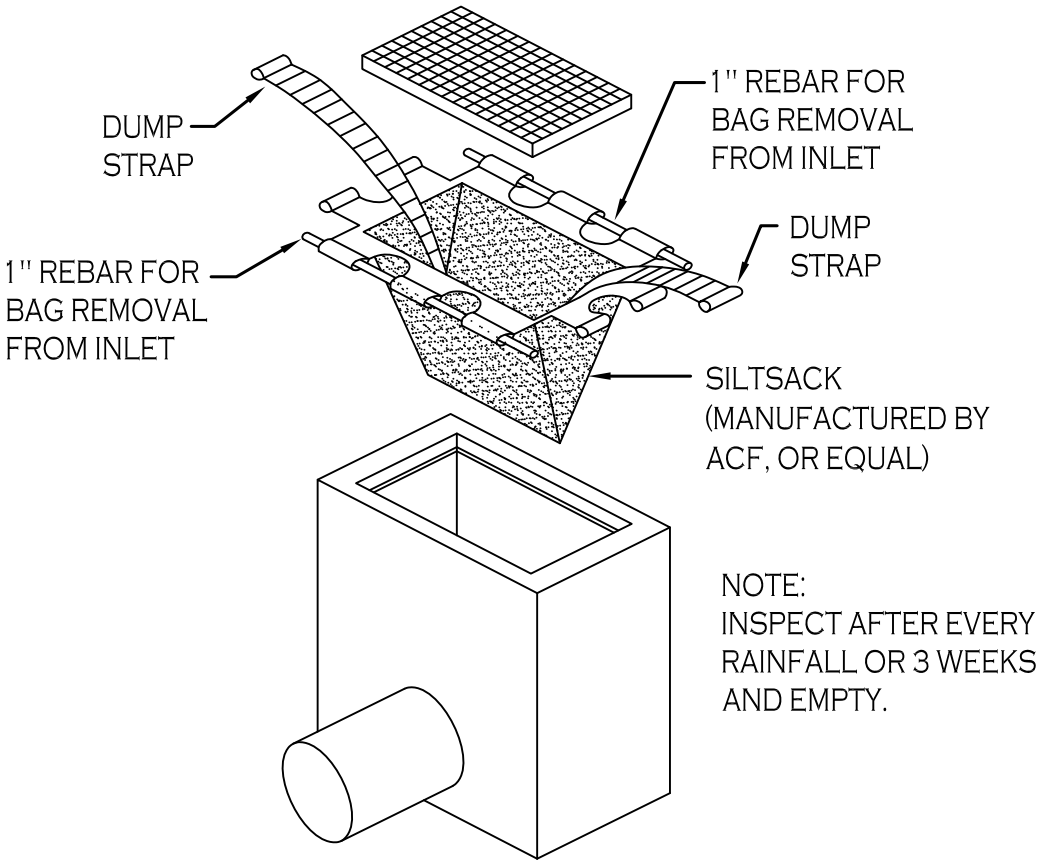
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



INSTALLATION DETAIL



BAG DETAIL

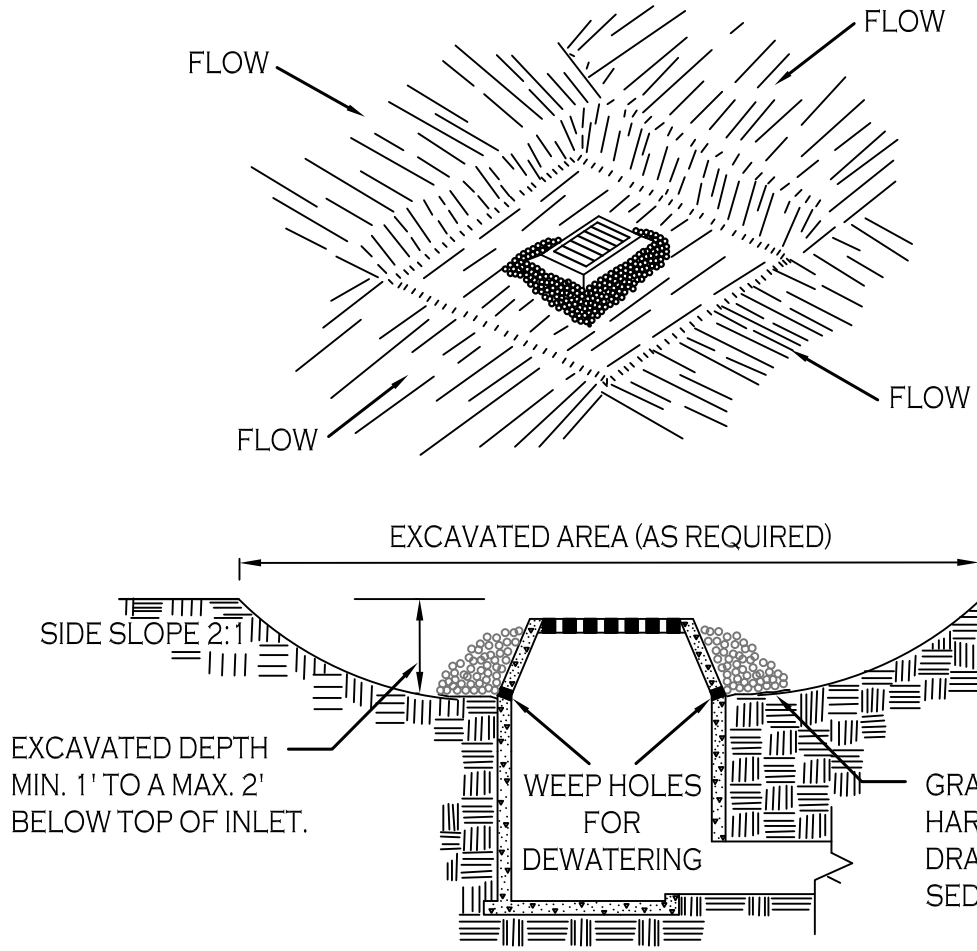


NOTE:
INSPECT AFTER EVERY
RAINFALL OR 3 WEEKS
AND EMPTY.

SILT SACK DETAIL

NOT TO SCALE

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



CONSTRUCTION SPECIFICATIONS

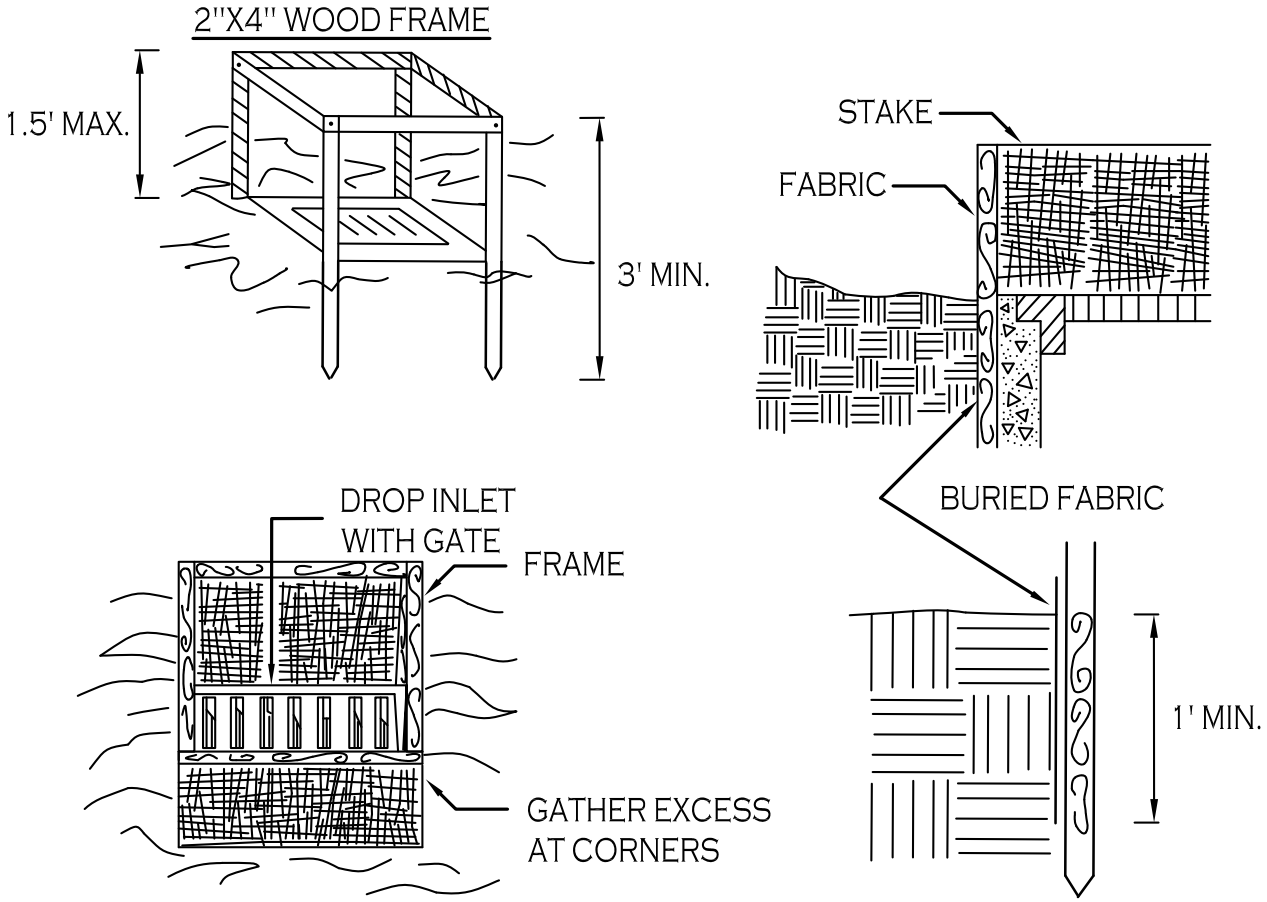
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.

2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.

3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.

4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.

5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.

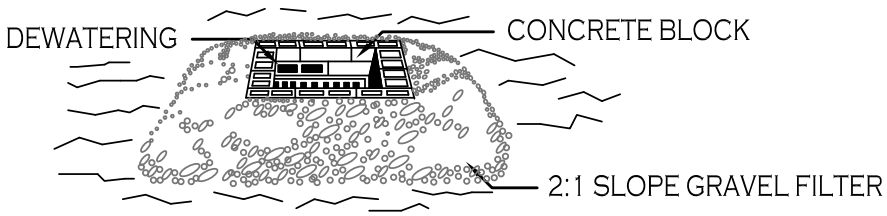
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

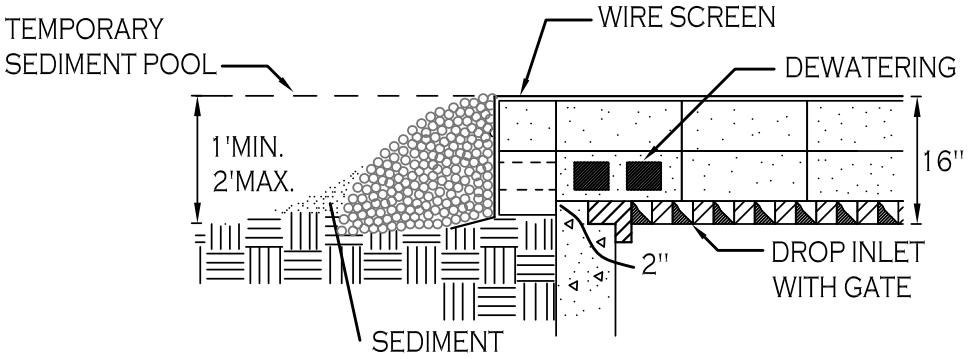
INLET PROTECTION DETAIL 2

NOT TO SCALE

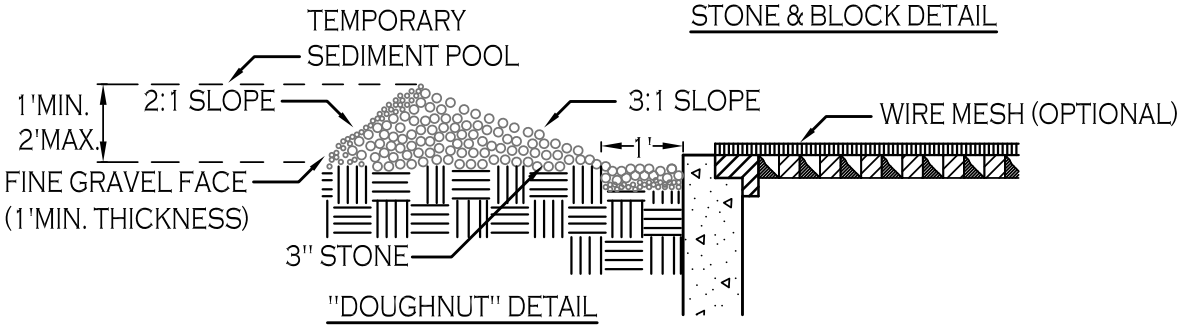
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



"DOUGHNUT" DETAIL

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.

2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.

3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.

4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

NOT TO SCALE

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix K

Wetland Permits

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7165 | F: (716) 851-7168
www.dec.ny.gov

December 24, 2020

Mr. Adam Faeth
Ciminelli Real Estate Corporation
50 Fountain Plaza, Suite 500
Buffalo, New York 14202

Muir Woods Development – "Site A"
Permit Transmittal Letter
Permit No. 9-1422-00398/00001

Dear Mr. Faeth:

Enclosed is your permit which was issued in accordance with applicable provisions of the Environmental Conservation Law. The permit is valid for only that project, activity or operation expressly authorized. If modifications are desired after permit issuance, you must submit the proposed revisions and receive written approval from the Permit Administrator prior to initiating any change. If the Department determines that the modification represents a material change in the scope of the authorized project, activity, operation or permit conditions, you will be required to submit a new application for permit.

Please review all permit conditions carefully. In particular, identify your initial responsibilities under this permit in order to assure timely action if required. Since failure to comply precisely with permit conditions may be treated as a violation of the environmental conservation law, you are requested to provide a copy of the permit to the project contractor, facility operator, and other persons directly responsible for permit implementation (if any).

If you have any questions, please contact this office at the above address.

Respectfully,
David S. Denk
Regional Permit Administrator

Enclosure
ecc: NYSDEC Law Enforcement
Maureen Brady, NYSDEC Office of General Counsel
Mr. Chuck Rosenburg, NYSDEC Division of Fish and Wildlife
Mr. Martin Crossen, USACOE
Sean Hopkins, Esq., Hopkins Sorgi & McCarthy PLLC

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
Ciminelli Muir Woods LLC
50 Fountain Plaza, Suite 500
Buffalo, NY 14202
(716) 631-8000

Facility:
MUIR WOODS DEVELOPMENT
1121 N French Rd
Amherst, NY 14228

Facility Location: in AMHERST in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 191.586 NYTM-N: 4770.823
Latitude: 43°01'38.9" Longitude: 78°47'07.2"

Authorized Activity: Construction of a mixed-use project named "Muir Woods" consisting of approximately two 4-story mixed-use buildings consisting of commercial space and residential units, 90 two-family townhouses and 2 six-unit apartment buildings, approximately 133 detached single-family residential units and 515 cottage-style and apartment-style housing units with various amenities; and gas, electric, sanitary, potable water and storm water (the necessary infrastructure), while maintaining open space on approximately 224 acres in the Audubon New Community District. The Muir Woods project property is a 326 acre site bounded by the Lockport Expressway (Interstate Route 990) and Dodge Road on the south, Sweet Home Road on the west, North French Road on the north and Campbell Boulevard on the east. The project will result in permanent impacts to approximately 2.39 acres of State regulated wetlands (TE-22, TE-23 and TE-34), and 11.38 acres of State regulated 100 foot wide wetland adjacent area. As mitigation for those impacts the project includes creation of 19.58 acres of in-kind and out-of-kind wetlands on-site, in six areas, to replace the functions and benefits of the impacted wetlands. There will be 4.3 acres of stream channel enhancement on-site as mitigation for State wetland regulated adjacent area impacts. The project also includes construction at 520 Campbell Road property as detailed on plan sheets referenced in Natural Resource Condition No. 4.

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 9-1422-00398/00001

Renewal	Effective Date: 1/10/2019	Expiration Date: 11/30/2024
Modification # 1	Effective Date: 12/17/2019	Expiration Date: 11/30/2024
Modification # 2	Effective Date: 12/24/2020	Expiration Date: 11/30/2024

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Water Quality Certification - Under Section 401 - Clean Water Act
Permit ID 9-1422-00398/00002

Renewal	Effective Date: 1/10/2019	Expiration Date: 11/30/2024
Modification # 1	Effective Date: 12/17/2019	Expiration Date: 11/30/2024
Modification # 2	Effective Date: 12/24/2020	Expiration Date: 11/30/2024

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: DAVID S DENK, Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
270 Michigan Ave
Buffalo, NY 14203 -2915

Authorized Signature: _____ Date ___/____/____

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS; WATER QUALITY CERTIFICATION

1. **No Work Prior to Approval of Legal Instrument for Preservation of Undeveloped Areas of Site** No work authorized by this permit may begin until the Department approves a legal instrument, such as a deed restriction and/or conservation easement, that will preserve in perpetuity the natural resource values of the undeveloped areas of the site. This condition does not apply to the 520 Campbell Boulevard property.

2. **Declaration of Restrictions 520 Campbell Boulevard Property** A Declaration of Restrictions permanently prohibiting any future development of the 6.88 acres of jurisdictional federal wetlands and portion of the upland area on 520 Campbell Boulevard as depicted on the Wetland Restriction Exhibit Map must be incorporated into the deeds for lots 1 – 12 and 21. By 60 days after Water Quality Certification issuance, the permittee shall file with the real property records of the Erie County Clerk`s Office, the deed for each applicable lot containing this notice. The permittee shall within two weeks following the filing of the deed(s) submit proof of filing from the County Clerk's Office

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showing the Liber and page number at which the deed notice was filed and the date of filing for one of the affected lots to: Regional Permit Administrator, NYSDEC Region 9 Headquarters, 270 Michigan Ave, Buffalo, NY 14203-2915.

3. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by Ciminelli Development Company, Inc. and titled "Supplement #4 to the Wetland Permit Application for Muir Woods Development Project" dated June 2009.

4. **Conformance with Plans Site B** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or the applicant's agent as part of the permit application. Such approved plans include the "Concept Plan - Muir Woods" dated 08 November 2019 amended to show Conifer Planting Area (attached).

5. **Conformance with Plans - 520 Campbell Boulevard** All activities authorized by this permit for the 520 Campbell Boulevard property must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans include those sheets entitled: The Preserve at Muir Woods (DEC Planting Exhibit, DEC Earthwork Exhibit and the Wetland Restriction Exhibit) by Greenman-Pedersen, Inc. dated May 2018.

6. **Conformance with Plans Site A** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or the applicant's agent as part of the permit application. Such approved plans include Drawing C-100 dated July 20, 2020 and received by this Department on August 10, 2020.

7. **Future Phases** Prior to development of Muir Woods Sites A and B, the permittee must obtain specific approval of engineered plans for Sites A and B to ensure compliance with the terms and condition of this permit, the approved wetland mitigation plans and the most current Findings Statement for the overall Muir Woods Project issued pursuant to the State Environmental Quality Review Act. The permittee shall submit the engineered plans for the development of Sites A and B for review by the Department simultaneous with submission of such engineered plans to the Town of Amherst. If required by the Department, the permittee shall make any necessary modifications to the engineered plans to ensure compliance with the terms and conditions of this permit, the approved wetland mitigation plans and the most current Findings Statement.

8. **Permit Conditions Prevail over Plans** If any condition of this permit conflicts with the approved plans noted in Condition Number 1, the permit conditions shall prevail over the plans unless specific written approval for such a change is obtained from this Department prior to implementation.

9. **Pre-construction Meeting to Review Permit** Prior to commencing work at the project site, the permittee shall schedule a pre-construction meeting with Department staff (Contact: Mr. David Denk, Regional Permit Administrator, NYSDEC, Division of Environmental Permits, Telephone : 716/851- 7165 and/or Mr. Charles P. Rosenburg, NYSDEC, Division of Fish and Wildlife, Telephone: 716/851-7010) and selected contractors to review the conditions contained in this permit.

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10. Mark Areas of No Disturbance on the Muir Woods Site Grade stakes and/or other appropriate measures (substantial contractor fencing, perhaps in combination with necessary silt fencing) shall be used to ensure that no equipment enters identified areas of no disturbance within the immediate area under construction (i.e.- Site A, Site B, Site C or Site D) on the Muir Woods project site. Boundaries of the on-site mitigation areas shall likewise be marked to define the limits of that work.

11. Install Controls Along Limits of Disturbance Before any soil is disturbed within a specific Site Development Area, as detailed in Condition #6 above, the permittee shall install securely anchored silt fencing and/or continuous staked hay bales along the limits-of-disturbance as shown on the plans or drawings referenced in this permit. Such erosion and sedimentation controls shall be maintained until unpaved portions of the subject site are stabilized by a self-sustaining cover of vegetation that is adequate to prevent erosion and sedimentation on and off the site. Sediment which has accumulated at the controls shall be removed periodically as necessary during the construction period. Before the controls are removed, the permittee shall remove all sediment that has accumulated at the controls.

12. Work Within Ares Depicted on Plans All construction activity, including operation of machinery, excavation, filling, grading, clearing of vegetation, disposal of waste, street paving and stockpiling of material must take place within the Site Development Areas or mitigation areas as depicted on the project plans referenced by this permit. Construction activity is prohibited within areas to be left in a natural condition or locations on the property not within the Site Development Areas or mitigation areas designated by this permit. Disturbance to the wetlands and their regulated 100 foot wide adjacent areas shall be strictly limited to the work areas identified in the plans, and specifically the MAP SHOWING WETLAND IMPACT AREAS - NEW YORK STATE WETLANDS, and APPENDIX M - PROPOSED ON-SITE MITIGATION PLAN.

13. Invasive Species (Non-Native Vegetation) To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment is cleaned of mud, seeds, vegetation and other debris before entering any approved Site Development Areas within State regulated wetlands or their 100 foot wide adjacent areas, as well as all on-site wetland mitigation areas.

14. Prevention of Invasive Species The permittee shall prevent the establishment of invasive species (purple loosestrife, Phragmites, reed canary-grass, Japanese knotweed, glossy buckthorn and common buckthorn) across all disturbed areas within the wetland mitigation area for five growing seasons. If any of these invasive species become established, monitoring and treatment may be extended for an additional 5 years at the Department's discretion.

15. Wetland Mitigation is Mandatory Completion of all freshwater wetland mitigation is mandatory regardless of whether or not construction proceeds to completion. The required mitigation must be completed by the expiration date of this permit. Mitigation will be subject to remediation, if necessary, pursuant to Condition #16 below. All mitigation areas shall be monitored for a period of ten (10) years or until the mitigation is deemed successful by this Department. Monitoring reports shall be prepared for the first four (4) years after construction of the mitigation areas and every other year (years 6, 8 and 10) thereafter. This Department may, at its discretion, modify the 10-year monitoring period and/or monitoring report requirement at any time. Monitoring reports shall be submitted to Mr. Charles P. Rosenburg, Habitat Manager, NYSDEC, Bureau of Ecosystem Health, 270 Michigan Avenue, Buffalo, NY 14203-2915 Telephone: 716/851-7024.

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16. **On-Site Mitigation to be in Accordance with Mitigation Plan** The on-site mitigation shall be in accordance with Appendix M - Proposed On-Site Wetland Mitigation for Muir Woods prepared by Earth Dimensions, Inc. revised May 25, 2009 and with the modifications shown in Exhibit 22 of the July 20, 2020 application binder.

17. **Planting Row of Native Conifers** The permittee shall plant a row of native conifer trees in the location shown on the attached plan. The tree plantings must be a minimum of 6 feet tall, spaced 15 feet apart, and must be planted no later than October 15th following the completion of construction of the adjacent apartment units.

18. **Survival Rate for Mitigation Plantings** The permittee shall prepare a care, maintenance, inspection, and replacement schedule for the tree and shrub plantings described in the mitigation plan to ensure an 85% survival rate for five growing seasons. This condition includes all on-site landscape "buffer" plantings.

19. **Herbicides, Pesticides in Wetland or Adjacent Area** The use of herbicides and other pesticides in State regulated wetlands or their 100 foot wide adjacent areas is a regulated activity and may only be conducted pursuant to a valid Article 33 Pesticides Permit.

20. **Requirement for SPDES General Permit GP-0-15-002 for Stormwater Discharge from Construction Activities** Since development of the Muir Woods site in the Town of Amherst will involve land disturbance of one (1) or more acres, the permittee is required to obtain coverage under State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002 for Stormwater Discharge from Construction Activities. A Notice of Intent (NOI) is required to be sent to NYSDEC, Division of Water, 625 Broadway, 4th Floor, Albany, New York 12233-3505, Telephone: 518/402-8111 and approved before construction commences. Alternatively, an eNOI may be filed electronically as described on the Department's website. The General Permit GP-0-15-002 and NOI form are available on the Department's website at www.dec.state.ny.us.

21. **Visibly Turbid Discharges Prohibited** Visibly turbid discharges from project dewatering operations, excavation and grading activities are strictly prohibited to any "water body" (pond, wetland, stream or water course). Any such discharges shall be (1) retained in an appropriately maintained upland settling basin, filtered through crushed stone, sand, filter fabric fences, hay bales etc., or (2) directed to a grassy area sufficiently distant from any water body to preclude such entry.

22. **Stockpiling of Soil** Stockpiling of excavated soil is prohibited at locations within any portion of the TE-22, TE-23 and TE-34 Wetlands or their regulated 100 foot wide adjacent areas, or within any mapped 100-year floodplain beyond the Site Development Areas or mitigation areas identified in the plans.

23. **Stabilize Disturbed Areas** All areas of soil disturbance resulting from this project shall be seeded with an appropriate perennial grass seed and mulched with straw, or hydro-seeded. Mulch shall be maintained until suitable vegetative cover is established.

24. **Temporary Mulch, Final Seeding** If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth.

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25. **Disposal of Material** Any non-merchantable tree and brush debris, demolition debris, excess construction materials, and/or excess excavated materials shall be immediately and completely disposed of on an approved upland site more than 100 feet from any regulated freshwater wetland. These materials shall be suitably stabilized so as not to re-enter any water body, wetland, or wetland adjacent area; and must be disposed of in accordance with all local, state, and federal statutes, regulations, or ordinances.

26. **Placement of Interpretive Signs Required** Permanent interpretive signs shall be placed at various wetland boundary locations throughout the Muir Woods project site . The permittee shall submit a proposal for the signs to the Department for approval. The interpretive signs shall be a minimum of 12 inches by 12 inches and shall be placed on permanent posts.

27. **Annual Project Inspection / Meeting** The permittee shall schedule an annual inspection/meeting to update Department staff on project progress and compliance with conditions of this permit for the on-site wetland mitigation area.

28. **Wetland Monuments** Monuments shall be placed every 200 feet along the outer edge of the wetland preservation areas. The monuments shall be 30" long, 5/8" rebar and cap embedded flush and in the center of the top exposed surface of concrete in a minimum 4 inch diameter, 4.5 foot long section of PVC Schedule 40 drain pipe filled with concrete, extending vertically1.5 to 2 feet above existing grade at each location. The caps shall say "Conservation Area Marker, Do Not Disturb". These monuments are to be permanently maintained.

29. **Wetland Boundaries** The boundaries of the TE-22, TE-23 and TE-34 Wetlands shall be fixed for the period of this permit (expires November 30, 2024). At that time, new boundary delineations for those wetlands will be required by this Department (to be performed or confirmed by a Department Biologist). Since project activities will be subject to the updated wetland boundary delineations and pertinent regulations at that time, any future permit modification (if necessary) would be reviewed based on the updated delineations and pertinent regulations. As such, modifications to the current project plan may be necessary depending upon the updated wetland delineations and permit regulations in effect at that time.

30. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

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31. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

32. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

33. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS

1. **Water Quality Certification** The authorized project, as conditioned pursuant to the Certificate, complies with Section 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act, as amended and as implemented by the limitations, standards, and criteria of state statutory and regulatory requirements set forth in 6 NYCRR Section 608.9(a). The authorized project, as conditioned, will also comply with applicable New York State water quality standards, including but not limited to effluent limitations, best usages and thermal discharge criteria, as applicable, as set forth in 6 NYCRR Parts 701, 702, 703, and 704.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

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The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
270 Michigan Ave
Buffalo, NY14203 -2915

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands, Water Quality Certification.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

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NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

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Public Notice

U.S. Army Corps
of Engineers
Buffalo District
CELRB-TDR

Applicant: Ciminelli Real Estate Corporation

Published: December 21, 2020
Expires: January 11, 2021

Application No: 2001-00067 (2020 Site A Modification)
Section: New York

All written comments should reference the above Application No. and be addressed to:
Attn: Martin Crosson
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, NY 14207

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE WORK DESCRIBED BELOW. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.

Application for Permit Modification under Authority of Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (33 U.S.C. 1344).

APPLICANT: Ciminelli Real Estate Corporation/Ciminelli Muir Woods, LLC ("Ciminelli"). Ciminelli has requested a modification to an existing permit described below.

WATERWAY & LOCATION: approximately 98 acres of Federal wetlands, a 32 acre lake and approximately 4.4 acres of tributaries have been previously identified as jurisdictional on the 326 acre parcel permitted for development known as "Muir Woods". The permitted project is located in the Town of Amherst, County of Erie and State of New York.

LATITUDE & LONGITUDE: Latitude North: 43°01'46"
Longitude West: -78°46'33"

EXISTING CONDITIONS: On May 14, 2012 a permit was issued to Ciminelli for placement of fill into 17.83 acres of Federal wetland and 1.29 acres of federally regulated tributaries for the multi-use development known as "Muir Woods". The current jurisdictional determination remains valid until the existing permit expiration date of November 30, 2024.

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PROPOSED MODIFICATION: Ciminelli proposes to modify the existing permit to change the proposed use of the area identified as Site A of the "Muir Woods" site. Under the existing permit, Site A was to consist of research and development and flex office space. The applicant is currently proposing to change the previously proposed use of Site A to a mixed-use commercial and residential development. The concept plan for the proposed project includes two 4-story mixed-use buildings, in addition to two-family townhouses and 6-unit apartment buildings. Also in association with the proposed changes, a new recreational bike/walking trail that will enter Site A from the southeast connection with Site B ultimately connecting to the rest of the on-site trail system and the Town's recreational trail that connects to the North Campus of the University of Buffalo and the Ellicott Creek Trailway system. The applicant has indicated these modifications are necessary due to changes in economic conditions in the real estate market, and also due to their consideration of input from the Town of Amherst municipal boards and the local public.

PROJECT PURPOSE
Basic: Construction of a multi-use development.
Overall: Modification of an existing permitted Ciminelli construction project by changing the proposed use of Site A of the Muir Woods site to the planned development from Research and Development and flex office space to mixed-use commercial and residential development with associated amenities on Site A due to market changes and consideration of the Town of Amherst municipal boards and local public input.

Water Dependency Determination: As with the existing permit, this newly proposed modification resulting in changes in project purpose and use within Site A, impacts to waters of the US have been determined to not be water dependent. Therefore, alternatives that do not require impacts to US waters are presumed to exist. The applicant adequately demonstrated that US waters have been avoided and minimized to the greatest extent practicable. As a result, wetland impacts have been reduced from the currently permitted 13.010 acres to 6.089 in Site A.

Mitigation: The currently permitted wetland impact in Site A is 13.010 acres. The new proposed impact to Site A wetlands are 6.089 acres resulting in a reduction in wetland impacts by 6.921 acres. As a result of the decrease in wetland impacts in Site A, the previously approved off-site mitigation consisting of creation of 27.37 acres of wetland habitat in the Town of Newstead has been proposed to be removed as a permit requirement. The previously approved and currently permitted on-site mitigation for Site A consisting of creation of approximately 10.47 acres of wetland remains unchanged. In addition, the increase in avoided wetland area and the reduction in developed area proposed in Site A results in an increase to the amount of wetland area to be preserved on-site as permanent open space from 3.91 acres to 11.83 acres.

Location and details of the above described work are shown on the attached maps and drawings.

Comments or questions pertaining to the work described in this notice should reference the Application Number and be directed to the attention of Martin Crosson, who can be contacted at the above address, by calling (716) 879-4346, or by e-mail at: martin.h.crosson@usace.army.mil. A lack of response will be interpreted as meaning that there is no objection to the work as proposed.

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Comments submitted in response to this notice will be fully considered during the public interest review for this permit application. All written comments will be made a part of the administrative record which is available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof, may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

Any individual may request a public hearing by submitting their written request, stating the specific reasons for holding a hearing, in the same manner and time period as other comments.

Pursuant to Section 106 of the National Historic Preservation Act, this proposed modification to Site A does not constitute an action that requires additional consultation with the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP). In a letter dated September 10, 2009 NYSOPRHP indicated the proposed project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places. The proposed modification does not change the previously considered permit area or determination.

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C. 1531), the Corps of Engineers has concluded consultation with the USFWS to evaluate potential impacts to the northern long-eared bat (NLEB). The Corps has previously determined that the project may affect the NLEB, but that the scope of the work falls within the parameters of the 4(d) Rule. Therefore, consultation has concluded. The existing permit for the project included the entire Site A area. This proposed modification does not constitute an action that requires further coordination or consideration under the Endangered Species Act (16 U.S.C. 1531).

Pursuant to Section 401(d) of the Clean Water Act, A Water Quality Certification will be issued or waived for this proposed project modification by the State of New.

Public hearings for the purposes of the Corps permit program will be held when the District Commander determines he can obtain additional information, not available in written comments, that will aid him in the decision-making process for this application. A Corps hearing is not a source of information for the general public, nor a forum for the resolution of issues or conflicting points of view (witnesses are not sworn, and cross examination is prohibited). Hearings will not be held to obtain information on issues unrelated to the work requiring a permit, such as property ownership, neighbor disputes, or the behavior or actions of the public or applicant on upland property not regulated by the Department of the Army. Information obtained from a public hearing is given no greater weight than that obtained from written comments. Therefore, you should not fail to make timely written comments because a hearing might be held.

The decision to approve or deny this permit modification request will be based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may

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be relevant to the proposal will be considered including the cumulative effects thereof; among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

SIGNED

Diane C. Kozlowski
Chief, Regulatory Branch

NOTICE TO POSTMASTER: It is requested that this notice be posted continuously and conspicuously for 20 days from the date of issuance.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Attachment: SP-2021-05A application 022025 (2973+ : SP-2021-05A, 50 Dodge Rd.)

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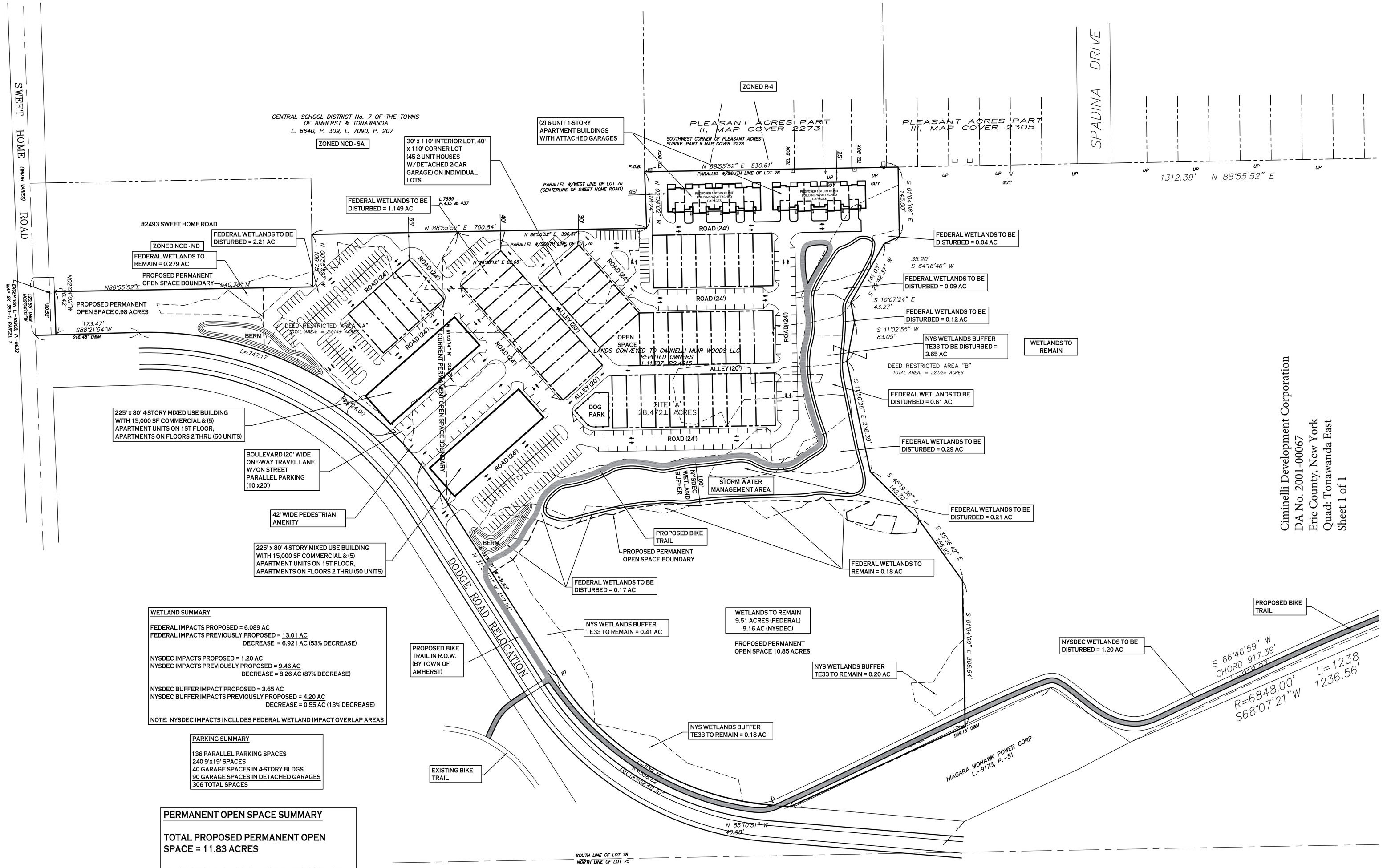


WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

PARKING SUMMARY

136 PARALLEL PARKING SPACES
240 9'x19' SPACES
40 GARAGE SPACES IN 4-STORY BLDGS
90 GARAGE SPACES IN DETACHED GARAGES
306 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 11.83 ACRES

PREVIOUS PROPOSED PERMANENT OPEN SPACE = 3.91 ACRES

NET INCREASE = 7.92 ACRES

SITE PLAN

SCALE: 1"=100'

SITE DATA

28.47 ACRES TOTAL
ZONED: NCD - ND

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200Ft.

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:
No. Description Date

Ciminelli Development Corporation
DA No. 2001-00067
Erie County, New York
Quad: Tonawanda East
Sheet 1 of 1

PROJECT NAME:
Site Development plans for:
Muir Woods Site "A"
Sweet Home & Dodge Road
Amherst, New York

Date: 7/1/20
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Concept Site Plan

DRAWING NO.
C-100
Project no.: 19.192

Appendix L

NYSDEC Letter of Acknowledgement

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Water, Bureau of Water Permits
625 Broadway, Albany, New York 12233-3505
P: (518) 402-8111 F: (518) 402-9029
www.dec.ny.gov

10/26/2023

Sawyer's Landing LLC
Will Severyn
43 Central Ave
Lancaster, NY 14086

RE: ACKNOWLEDGMENT of NOTICE OF INTENT for Coverage Under SPDES General Permit for Storm Water Discharges from CONSTRUCTION ACTIVITY – General Permit No. GP-0-20-001

Dear Prospective Permittee:

This is to acknowledge that the New York State Department of Environmental Conservation (Department) has received a complete Notice of Intent (NOI) for coverage under General Permit No. GP-0-20-001 for the construction activities located at:

Sawyer's Landing
Dodge Road
Amherst, NY 14228 **County: ERIE**

Pursuant to Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and ECL Article 70, coverage under GP-0-20-001 for the above construction site is effective five (5) business days from **10/12/2023**, which is the date the Department received your complete eNOI.

The permit identification number for this site is: **NYR11L806**. Be sure to include this permit identification number on any forms or correspondence you send the Department. When coverage under GP-0-20-001 is no longer needed, you must submit a Notice of Termination to the Department.

Additionally, authorization to discharge under GP-0-20-001 is conditioned upon compliance with Part II.C. of GP-0-20-001, specifically the following:

1. A final Storm Water Pollution Prevention Plan has been prepared;

2. When applicable, project review pursuant to the State Environmental Quality Review Act (SEQRA) has been satisfied;

3. Where required, all necessary Department permits subject to the Uniform Procedures Act (UPA) (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4).

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

If other UPA permits, or the equivalent, are required, you must submit a preliminary SWPPP to the appropriate Permit Administrator at the Regional Office listed in Appendix F to GP-0-20-001. The preliminary SWPPP must be submitted at the time that the applications for all other UPA permits, or the equivalent, are submitted to the Department.

Note: Construction cannot commence until all of the above have been satisfied.

Please also be advised that there is an annual regulatory fee of $110, which is billed by the Department in the late fall. The regulatory fee covers a period of one calendar year. In addition, since September 1, 2004, construction stormwater permittees have been assessed an initial authorization fee which is now $110 per acre of land disturbed and $675 per acre of future impervious area. The initial authorization fee covers the duration of the authorized disturbance.

Should you have any questions regarding any aspect of the requirements specified in GP-0-20-001, please contact me at (518) 402-8114.

Sincerely,

David Gasper

David Gasper
Environmental Engineer

cc: RWE - **9**
SWPPP Preparer
Carmina Wood Design
Wood, Christopher
487 Main St
Buffalo, NY 14203

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix M

5 Acre Disturbance Letter

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINAWOOD
DESIGN

April 30, 2024

Sarrah Burrow
Town of Amherst Engineering Department
1100 North Forest Road
Amherst, NY 14221

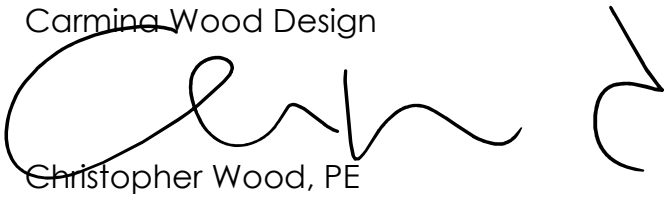
Re: **Sawyer's Landing**
Amherst, NY

Dear Sarah:

This letter shall serve as our request to have a total of 5 acres disturbed at one time at the above site. Per the NYSDEC General Permit, our site inspections will increase to 2 times per week when 5 acres is reached and will continue until the time the total disturbance is under 5 acres.

If you have any questions regarding the above, please feel free to contact me at 716-550-3342 or via e-mail at cwood@carminawooddesign.

Sincerely,
Carmina Wood Design



Christopher Wood, PE

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix N

Engineer's Report

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD
DESIGN

ENGINEER'S REPORT

for

Sawyer's Landing
Dodge & Sweet Home Road
Town of Amherst, Erie County, New York

Prepared for

Sawyer's Landing LLC

c/o Severyn Development
43 Central Ave Suite #300
Lancaster, NY 14086

Prepared by

Carmina Wood Morris, D.P.C.

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

February 2021

Revised 11/21/2024



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table of Contents

Written Engineer's Report

Section 1 - Location & Description
Section 2 - Water Service
Section 3 - Sanitary Sewer Service
Section 4 - Storm Sewer Service

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Appendix A Sanitary Sewer and Water Demand Calculations

Appendix B Storm Sewer System Drainage Calculations

- Existing Runoff
- Proposed Runoff – East
- Proposed Runoff - West
- Green Infrastructure & Water Quality Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Section 1 - Location & Description

This project is a development of a 17.4 acre site located on the north side of Dodge Road, west of Sweet Home Road in the Town of Amherst. Both Dodge Road and Sweet Home Road are Erie County roads. Proposed is the construction of a mixed-use development to include (2) 4-story mixed-use buildings with 112 apartment units total, (1) 4-story self-storage building and (87) 2-story townhomes. A bike trail will be constructed on site, this trail will connect to the existing Town of Amherst bike trail on the south side of Dodge Road. The approximately 1-acre westerly portion will remain undisturbed and be deed restricted as permanent open space. The site is currently undeveloped consisting of woods and overgrown brush/grass. NYSDEC and Federal wetlands were delineated on site by Earth Dimensions, Inc. Approximately 6.1 acres of Federal and 1.2 acres of NYSDEC wetlands have been permitted to be impacted. The proposed site development area to be disturbed for this project is approximately 16.4 acres.

Section 2 - Water Service

A new 8” D.I. combined service will be tapped off the existing 24" D.I.P. ECWA water main along the north side of Dodge Road at the northern portion of the project site. Following the tap, the 8” D.I. service will continue north into the site where it will enter into a Hot-Box enclosure. Within the Hot-Box enclosure an 8" meter (by ECWA) and an 8” Watts 957 RPZ will be installed. Similarly, a second 8” D.I. combined service will be tapped off the existing 24” ECWA main at the southern portion of the site along Dodge Road. As with the first installation, following the tap, the 8” D.I. service will continue northeast into the site where it will enter a hotbox with the same 8” meter (by ECWA) and 8” Watts 957 RPZ. The services will exit the Hot-Box enclosures and then transition into 8” AWWA C-900 PVC. The services will run throughout the site to provide both domestic and fire service to the proposed buildings. Heat & light for testing will be provided in the areas of the meters & RPZs to prevent freezing. Drainage due to testing or failure will be to the exterior through a drain, drainage will be away from the enclosures. The owner will be responsible for keeping the drainage ports clear of snow and debris. A total of 5 (five) proposed fire hydrants shall be installed around the site to provide fire protection coverage. There are no existing water services to this site, and therefore none to be killed/abandoned per ECWA requirements.

Domestic Summary:

Peak Operating Demand:	136.47 gpm
Water Main:	24” on Dodge Road
Static Pressure:	105 psi (per ECWA, 98 psi residual)
Friction Loss:	0.0 psi
Loss through meter/RPZ:	13.0 psi
Elevation Loss:	0.0 psi
Pressure after RPZ & Meter:	92 psi
Pressure at 4th floor:	76.8 psi

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Repairs to all devices will be made during off hours, dual backflow preventers are not required. The site is not located in a 100-year flood plain. Disinfection of the water service following installation will be continuous feed, according to AWWA C-651, latest revision.

Section 3 - Sanitary Sewer Service

The proposed sanitary sewer service will connect to the existing 60" sanitary sewer (peanut line) located on the south side of Dodge Road. In order to connect to this sewer, a public sewer extension along the south side of Dodge Road will be required. This public extension will consist of a total of 643 LF of 8" SDR-35 PVC at a minimum slope of 0.4%.

The proposed private on-site sewer mains will consist of 8" SDR-35 PVC at a minimum slope of 0.4%. Each of the proposed commercial buildings and apartment buildings will have a 6" SDR-35 PVC sanitary sewer lateral at a minimum slope of 1.0% tied into the private main. The townhouse units will have a 4" SDR-35 PVC sanitary sewer lateral at a minimum slope of 1.0% tied into the private main. The 8" private main will tie into the proposed public extension on the south side of Dodge Road across from the SE portion of the project site.

A downstream sanitary sewer capacity analysis (DSCA) is required to be prepared for the site given the flows will exceed 2,500 gpd. This report is included in Appendix A.

Design Parameters

Housing: use 220/gpd/unit
Q = 199 units x 220 gpd/unit = 43,780 gpd

Commercial: use 0.1 gpd/sf
Q = 11,906 sf x 0.1 gpd/sf = 1,191 gpd

Office: use 0.1 gpd/sf
Q = 10,798 sf x 0.1 gpd/sf = 1,080 gpd

Self Storage: use 15 gpd/employee
Q = 5 employees x 15 gpd = 75 gpd

Restaurant: use 35 gpd/seat
Q = 100 seats x 35 gpd/seat = 3,500 gpd

Total = 49,625 gpd (average) using a 3.98 PF (see appendix A for calc)

Total = 49,625 x 3.98 = 197,306 gpd = 137.02 gpm = 0.305 cfs

The hydraulic loading rates per "Design Standard for Wastewater Treatment Works" 2014, NYSDEC. See attached Sanitary Sewer & Water Calculations for additional information.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

I/I Mitigation:

Peak Flow = 137.02 gpm
4:1 offset = 137.02 x 4 = 548.07 gpm
Mitigation Credit = $250/gpm
I/I Mitigation = 548.07 gpm x $250/gpm = $137,017.93
Refer to Appendix A for additional information.

Section 4 - Storm Sewer Service

The existing site is generally flat and slopes west with portions sloping east. The portion that slopes west settles in a low area and once the capacity of that area is exceeded, sheet flow continues towards Sweet Home Road and is collected by an existing 12" pipe on the north side of Dodge Road. This pipe flows to the Erie County system on Sweet Home Road. The portion that flows east flows to the offsite wetlands.

Currently Dodge Road does not have a drainage system. A series of catch basins and pipes will be installed in the green area on the north side of Dodge Road to collect the road drainage. The west portion of this system will connect to the existing closed drainage system on Sweet Home Road. The east portion will discharge to the Ellicott Creek diversion channel using and existing discharge point. This new system will also convey the proposed discharge from the site as described below.

The proposed onsite storm sewer system consists of smooth interior and perforated HDPE pipes connected by a series of catch basins, manholes and yard drains. The site is split into a storm water management area on the east and west sides.

<u>West Side</u>

The west side of the site has (2) bioretention areas which portions of the westerly area will discharge to. These bioretention areas along with the remainder of the west portion of the site will discharge to the underground detention area. Note that the yard drains installed along the north property line discharge to the underground detention area. An outlet structure in the SW portion of this area will control runoff to at or below existing runoff flow rates. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Sweet Home Road system.

<u>Underground Detention Summary</u>

(286) ADS Stormtech SC-740 chambers
Top of stone elev. = 573.00
Top of chamber elev. = 572.50
Bottom of chamber elev. = 570.00
Bottom of stone elev. = 569.50
Total storage = 22,086 CF

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Event	Ex. Discharge	Pro. Discharge	Elev.
1 yr	0.87 cfs	0.33 cfs	570.29
2 yr	1.34 cfs	0.68 cfs	570.46
5 yr	2.14 cfs	1.05 cfs	570.79
10 yr	2.94 cfs	1.28 cfs	571.13
25 yr	4.34 cfs	1.61 cfs	571.73
50 yr	5.69 cfs	3.61 cfs	572.23
100 yr	7.33 cfs	4.83 cfs	572.92

East Side

The east side of the site has a bioretention area and wet detention pond which this portion of the site discharges to. The NE portion of the site discharges to a forebay which spills into the main micropool portion of the wet detention basin. The SE portion of the site discharges to the bioretention area which also spills into the main micropool portion of the site. An outlet control structure is located in the SE portion of the micropool and controls the discharge from this storm water management area. Spillways are also located on the east portion of the micropool which will discharge to the existing wetlands to the east in order to not cut off all flow from this site into this area. The discharge from the outlet control structure will discharge to the new system on Dodge Road which flows to the Ellicott Creek diversion channel.

The bioretention areas and wet detention pond for the project area are sized to provide 100% of the required Runoff Reduction Volume (RRv) and Water Quality Volume (WQv) treatment for the overall site in accordance with Chapter 4 of the NYSDEC Stormwater design manual. The soils in the vicinity of the bioretention areas are mainly USDA hydrologic group 'D' and therefore the system will be installed with underdrains per NYSDEC requirements. The bioretention areas will consist of 6" and 8" perforated HDPE underdrains in 12" of drainage gravel, followed by filter fabric and 18" minimum of planting soil. Overflow yard drains will be installed to allow 6" maximum temporary ponding for RRv treatment. The east bioretention area (area #3) spills into the wet detention pond and the underdrain pipe ties together with the pond discharge and flows to Dodge Road. The east bioretention areas (areas #1 & #2) have a catch basin to act as the spillway and this catch basin and the underdrain pipes discharge to the underground detention area.

Storm Water Management Area Summary

Forebay
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50
Bottom of basin elev. = 569.00

Micropool
Top of basin elev. = 576.80
Permanent water elev. = 575.00
Aquatic bench elev. = 574.50

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bottom of basin elev. = 563.00

Overall Storm Water Summary

WQv Provided = 152,678 cf (pond)
WQv Provided = 6,948 cf (bioretention)
WQv Provided = 159,626 cf (total)

Bioretention Area Summary:

Area	Rim Elev.	Bottom Elev.	Area
1	574.50	574.00	2,300 sf
2	574.50	574.00	2,600 sf
3	575.50	575.00	11,000 sf
		Total Provided =	15,900 sf

Water Quality Summary:
WQv req'd = 28,804 cf (0.661 ac-ft)
RRv min. req'd = 5,518 cf (0.127 ac-ft)
RRv provided = 8,662 cf (0.199 ac-ft)
WQv provided = 159,626 cf (3.665 ac-ft)
Total RRv + WQv provided = 8,662 cf + 159,626 cf = 168,287 cf (3.868 ac-ft)

Detention: Comparison of the existing 1-year vs. the proposed 1-year runoff
Comparison of the existing 10-year vs. the proposed 10-year runoff
Comparison of the existing 100-year vs. the proposed 100-year runoff

Storm pipes: 10-year storm

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix A

Sanitary Sewer and Water Demand Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 24-4034 Date: 11/19/2024
Project Name: Muir Woods
Project Address: Sweet Home Road and Dodge Road - Amherst, NY
Subject: Sanitary Sewer Demand Calcs
Sheet: 1 of 1

2.c

Sanitary Sewage Demand Calculations:

West - Mixed Use Buildings									
0.1	gal/d/sf	x	11,906	sf	=	1,191	gpd		*use 0.1 gallons per day per square foot (Retail)
35.0	gal/d/seat	x	100	seats	=	3,500	gpd		*use 35 gallons per day per seat (fast food)
0.1	gal/d/sf	x	10,798	sf	=	1,080	gpd		*use 0.1 gallons per day per square foot (Office
15	gal/d/employee	x	5	employees		75	gpd		*use 15 gallons per employee (Self-Storage)
West - Apartments									
220	gal/d/unit	x	112	units	=	24,640	gpd		*use 220 gallons per day per 2-bedroom unit
North - Townhomes Buildings									
220	gal/d/unit	x	63	units	=	13,860	gpd		*use 220 gallons per day per 2-bedroom unit
220	gal/d/unit	x	24	units	=	5,280	gpd		*use 220 gallons per day per 2-bedroom unit

Total Site Sanitary Demand:	=	49,625	gpd
	=	0.050	MGD
Find Peak Sanitary Demand:	=	0.077	cfs

Peaking Factor based on Population:

Total demand: 49,625 gpd / 100 gpcd = 496 per capita

Population (P) = 496 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 3.98

Peak Sanitary Demand	=	49,625	x	3.98	=	197,306	gpd	
					=	0.197	MGD	
					=	0.305	cfs	

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow	=	197,306	gpd	=	137.02	gpm			
4:1 offset flow per NYSDEC requirements	=	137.0	x	4	=	548.07	gpm req'd		
Mitigation Credit	=	$250	/ gpm						
Mitigation Agreement Amount	**=**	**$137,017.93**							

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 24-4034 Date: 11/21/2024
Project Name: Sawyer's Landing (Muir Woods)
Project Address: Sweet Home Road and Dodge Road - Amherst, NY
Subject: Sanitary Sewer & Water Demand Calcs
Sheet: 2 of 2

Water Demand Calculations (domestic):

Site

49,625 gpd x 1.1 = 54,588 gpd *use 110% of sewage demand

*use 1.8 peaking factor and assume a 12 hour day

54,588 gpm x 1day/12hr x 1hr/60min = 75.82 gpm

75.82 gpm x 1.8 = 136.47 gpm Q_{peak}

Headlosses:

Q_{peak} = 136.47 gpm
Pipe = 8 inch Ductile Iron C = 140
Length = 33 LF (approx. distance from tap to RPZ)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(33)(136.47)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.01 \text{ ft} = 0.01 \text{ psi}$$

Δ elev = 0 ft = 0.00 psi
Loss through meter = 1 psi
Loss through RPZ = 12 psi
Total Losses = 13.0 psi
Static Pressure = 105 psi (per ECWA - residual pressure 98 psi)
Residual Pressure Following RPZ = 105 - 13.0 = 92.0 psi (available after rpz & meter)

Headlosses to furthest hydrant

Q_{peak} = 136.47 gpm
Pipe = 8 inch C-900 PVC C = 140
Length = 1,293 LF (approx. distance from RPZ to hydrant)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(1,293)(136.47)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.52 \text{ ft} = 0.22 \text{ psi}$$

Δ elev = 1.1 ft = 0.48 psi
Total Losses = 0.7 psi
Static Pressure = 92 psi (per ECWA - residual pressure 98 psi)
Residual Pressure Following hydrant = 92.0 - 0.7 = 91.3 psi (available after furthest hydrant)

Residual Pressure 30" above 4th Floor
Δ elev = 35 ft = 15.16 psi
Residual Pressure 30" above 4th Floor = 92.0 - 15.16 = 76.8 psi

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

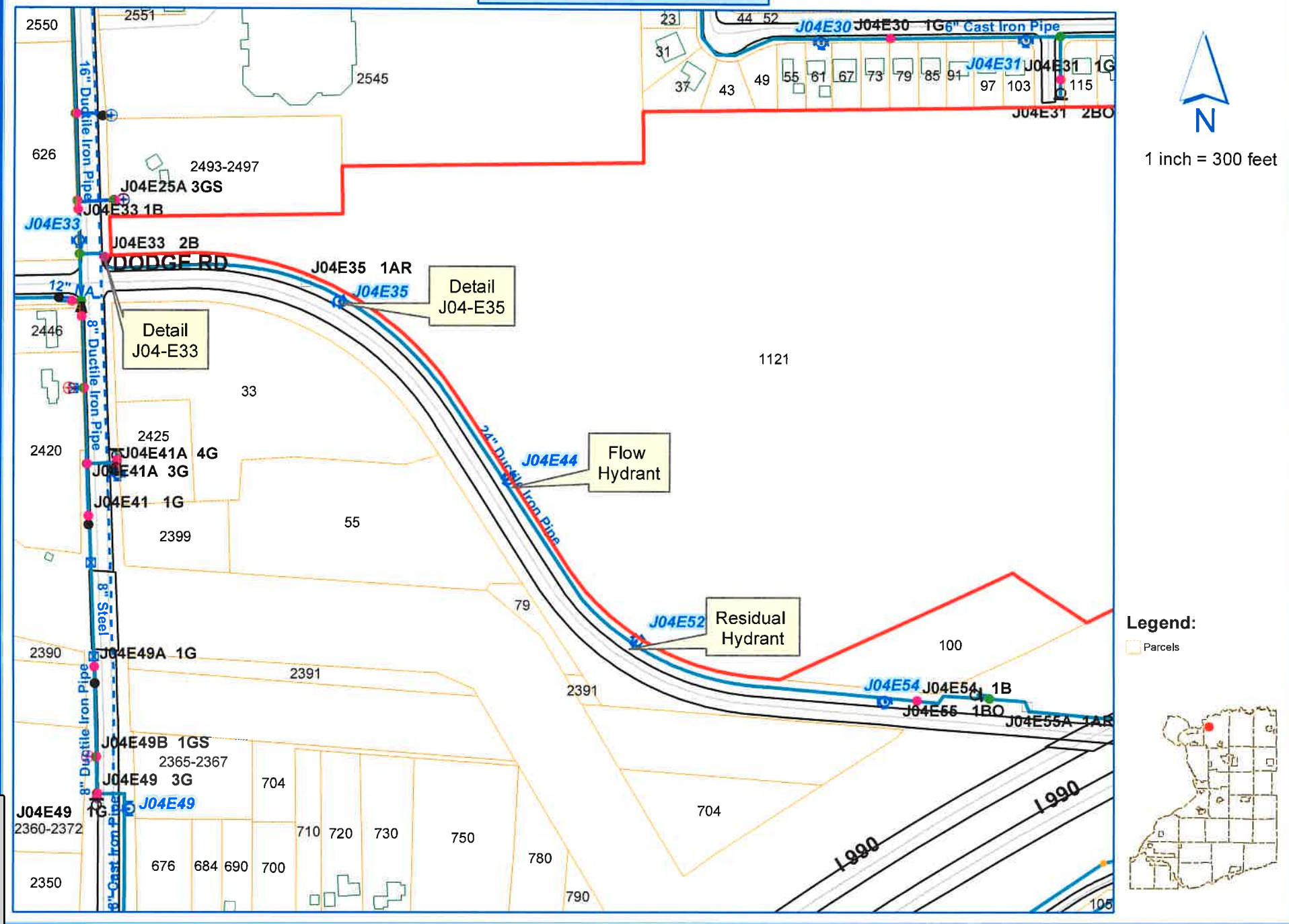
Downstream Sewer Capacity Analysis

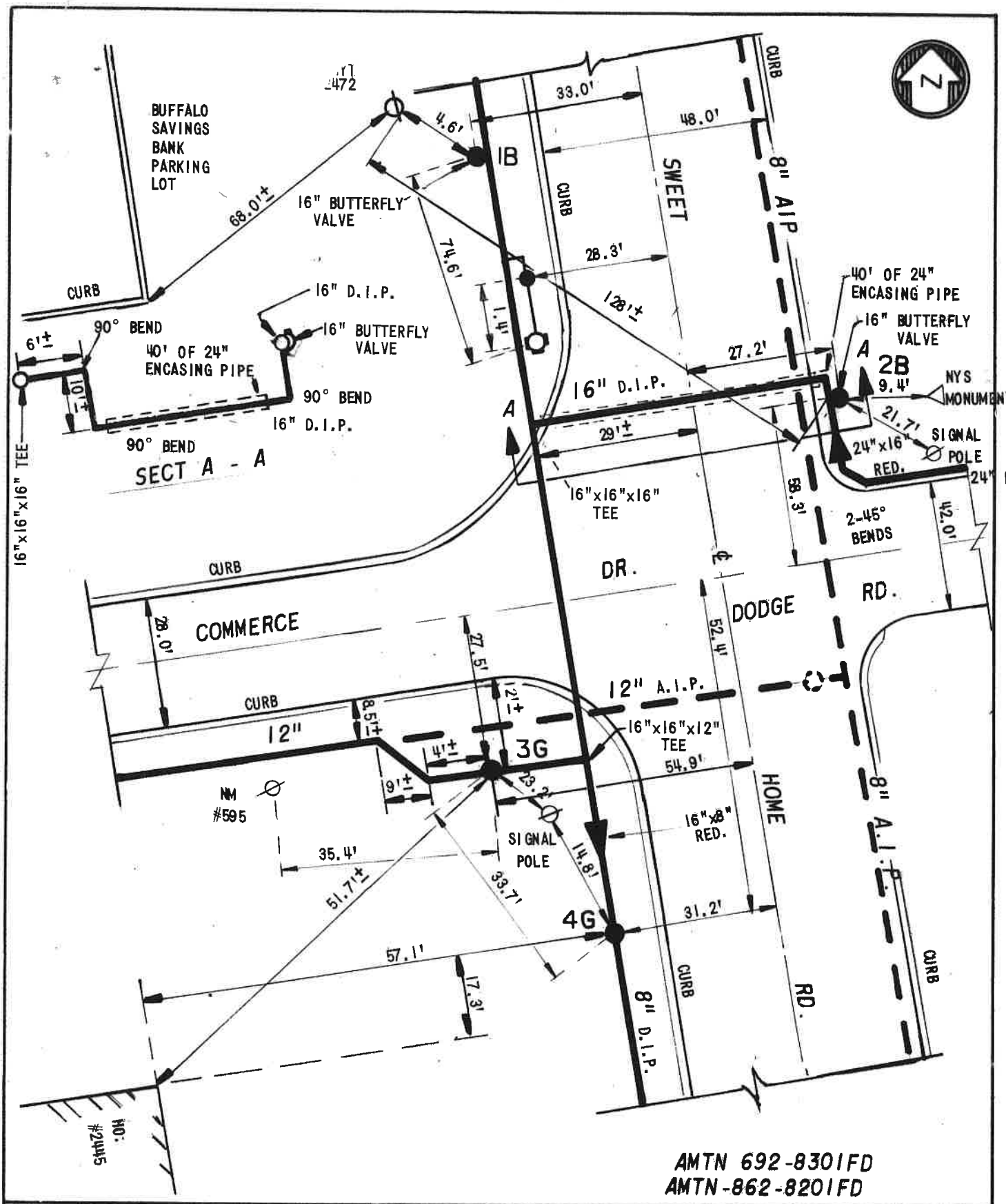
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Water Demand Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

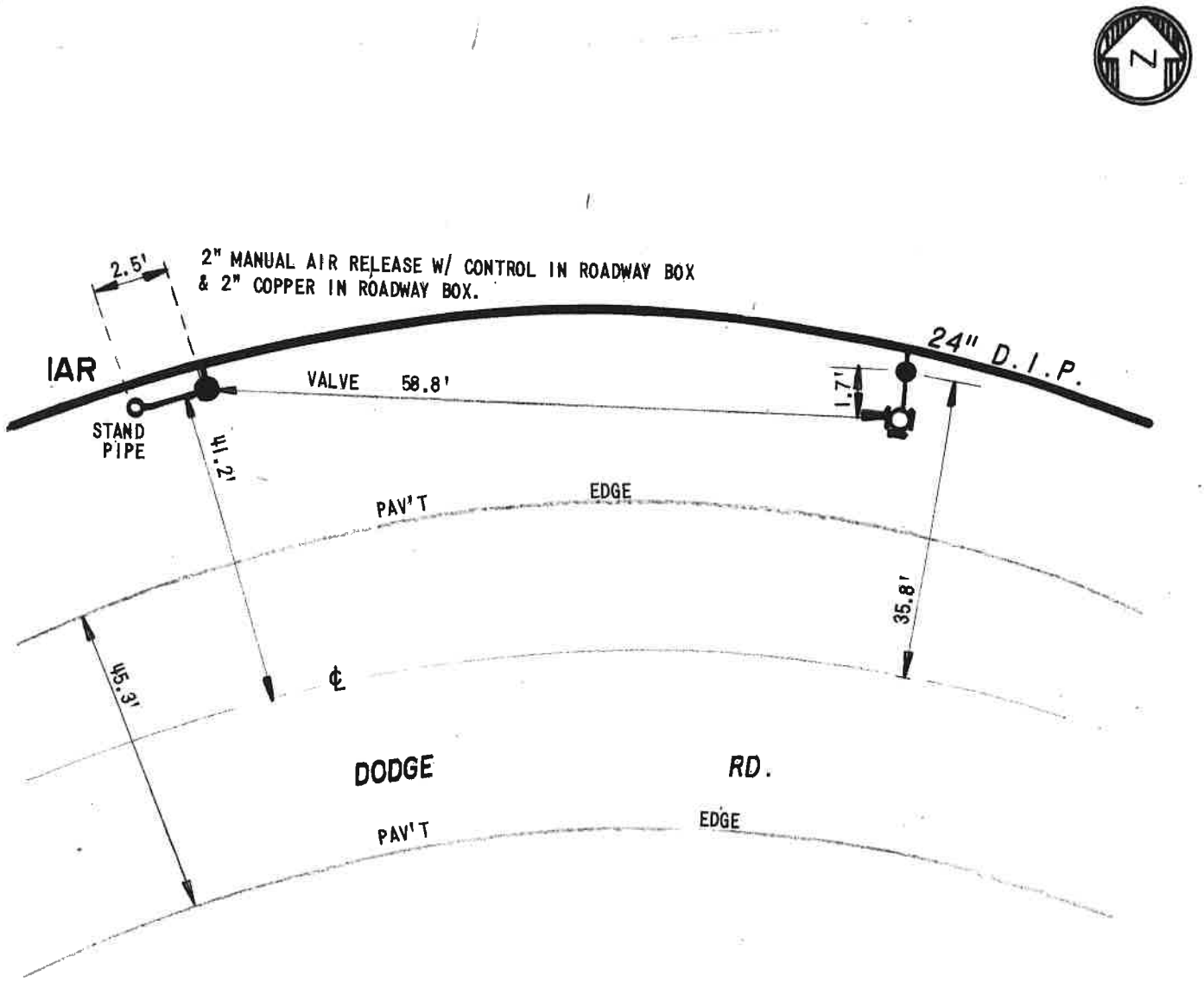
1121 Dodge Rd., AMTN





ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	REVISED DR. BY: RLS DATE: 6-30-06 NOT TO SCALE	TOWN OF AMHERST W.D 15C	J04-E33 DETAIL SHEET NO.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



AMTN-692-8301-FD

SHEET 1

ERIE COUNTY WATER AUTHORITY BUFFALO, NEW YORK	REVISED DR. BY: RLS DATE: 6-30-06 NOT TO SCALE	TOWN OF AMHERST W.D. 15C	J04-E35 DETAIL SHEET NO.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

AMHERST
Size of Main/Branch: 24"/6" Fire District: 22028 GETZVILLE FD 11 Water District: 315 AMHERST DISTRICT 15C

Performed By: JRS & DPZ

Comments: HYDRANT FLOW TEST REQUESTED BY BILL GROFF
PRATT & HUTH, PHONE: 633-4844, FAX: 633-4940

Dischrge Coef: .90 Elvtn Usgs(ft): Static(psi): 105 Residual(psi): 98 Required Residual Pressure(psi): 20
Gallons Used..: 7,680 Total Flow(gpm): 2,558 Flow at Reqd Resid Pressure: 9,850

Flow Hydrants:

C	Flow Hyd	Flow Hydrant Address	Main/Brnch	Nzle	Size	Pitot	Flow	Comments
_	J04 E44	DODGE RD	24"/6"	1:	2.50	58.0	1,279	
		2ND HYD E/O SWEET HOME RD		2:	2.50	58.0	1,279	
				3:			Tot Flow:	2,558

Bottom

I=Flow Hydrant Inquiry
ENTER=Continue F3=Exit F6=Maintain Test F7=Test Hydrant Inquiry F15=Print Test Information

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix B

Storm Sewer System Drainage Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Existing Runoff

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Existing

Subcat Reach Pond Link

Routing Diagram for 21.011 Existing
Prepared by Hewlett-Packard Company, Printed 3/1/2021
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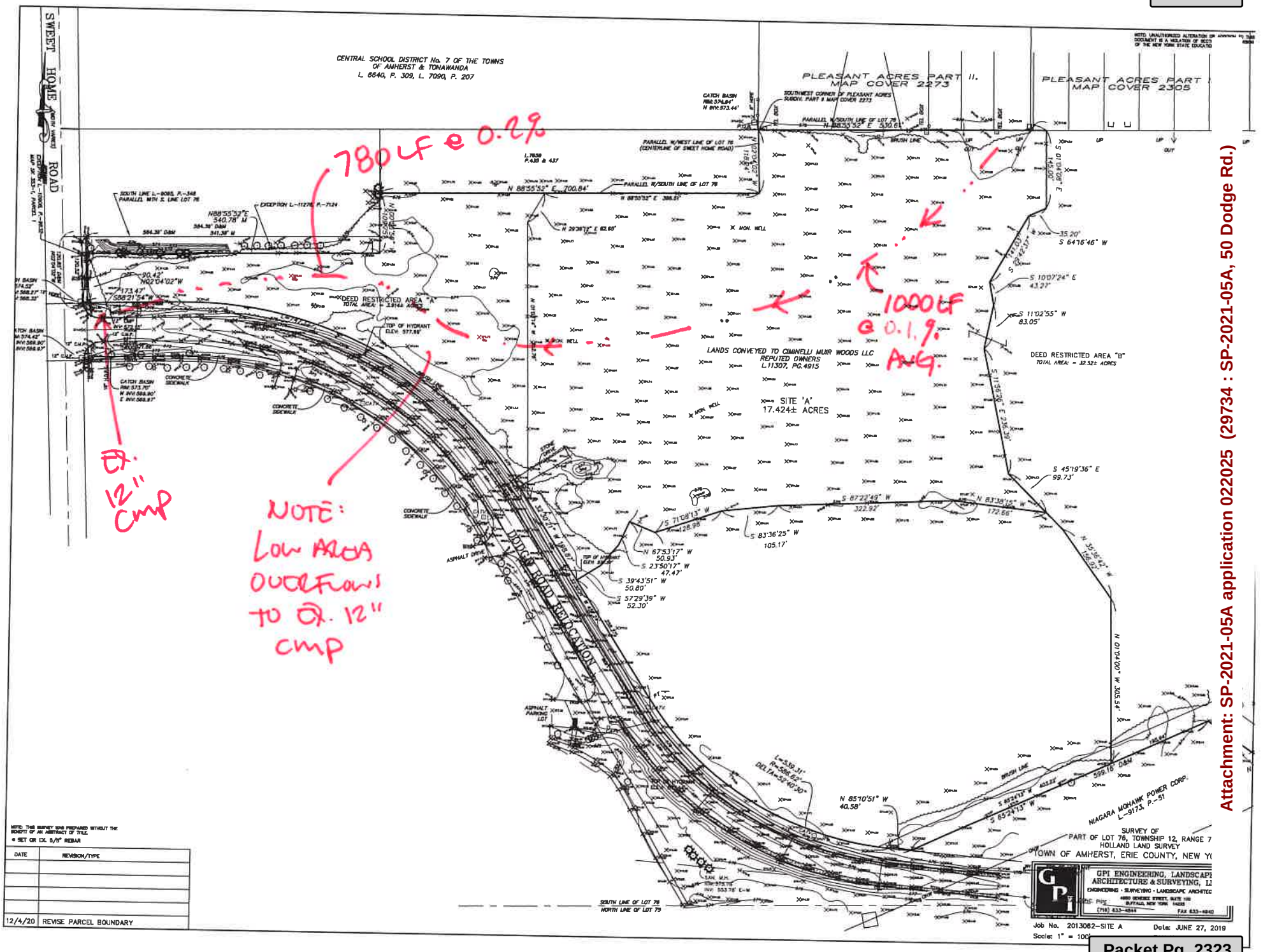
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Subcatchment 1S: Existing

Event	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	0.87	0.578	0.41
2-Year	1.34	0.851	0.60
5-Year	2.14	1.304	0.92
10-Year	2.94	1.752	1.24
25-Year	4.34	2.527	1.78
50-Year	5.69	3.272	2.31
100-Year	**7.33**	**4.181**	**2.95**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.830	77	Brush, Fair, HSG D (1S)
12.170	79	Woods, Fair, HSG D (1S)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
17.000	HSG D	1S
0.000	Other	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	4.830	0.000	4.830	Brush, Fair	1S
0.000	0.000	0.000	12.170	0.000	12.170	Woods, Fair	1S

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

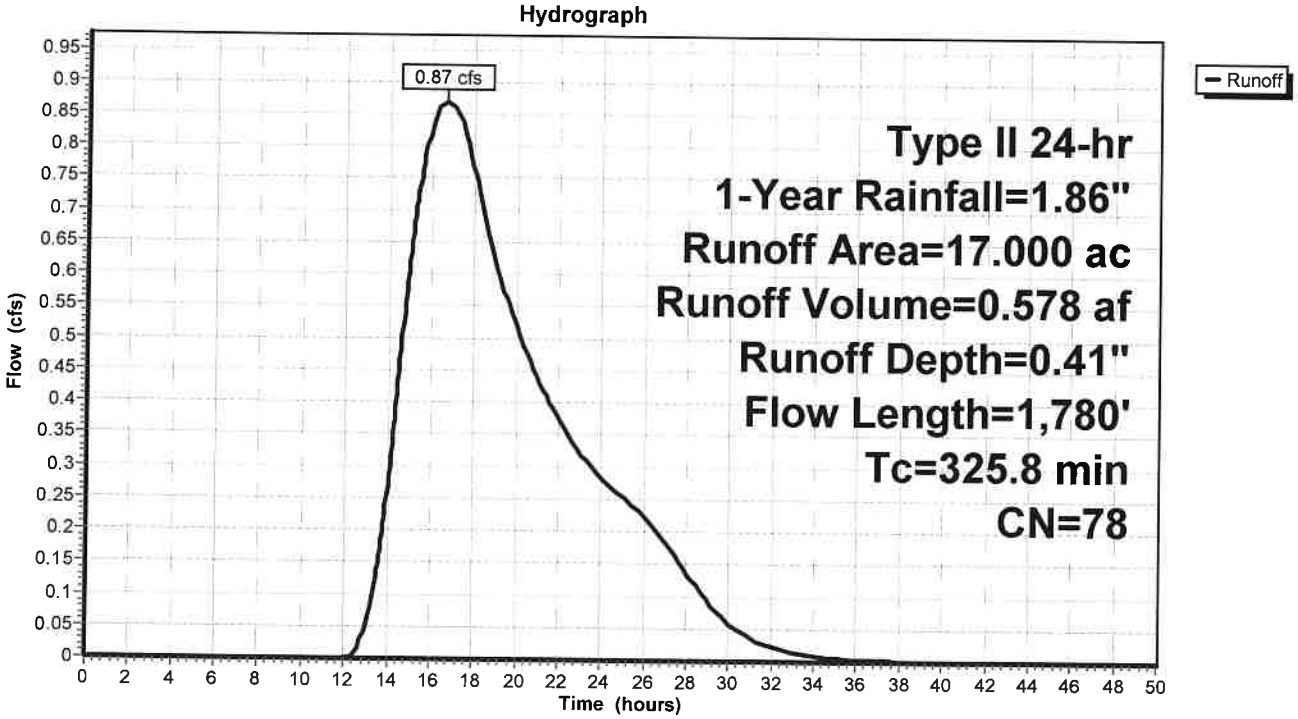
Runoff = 0.87 cfs @ 16.65 hrs, Volume= 0.578 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

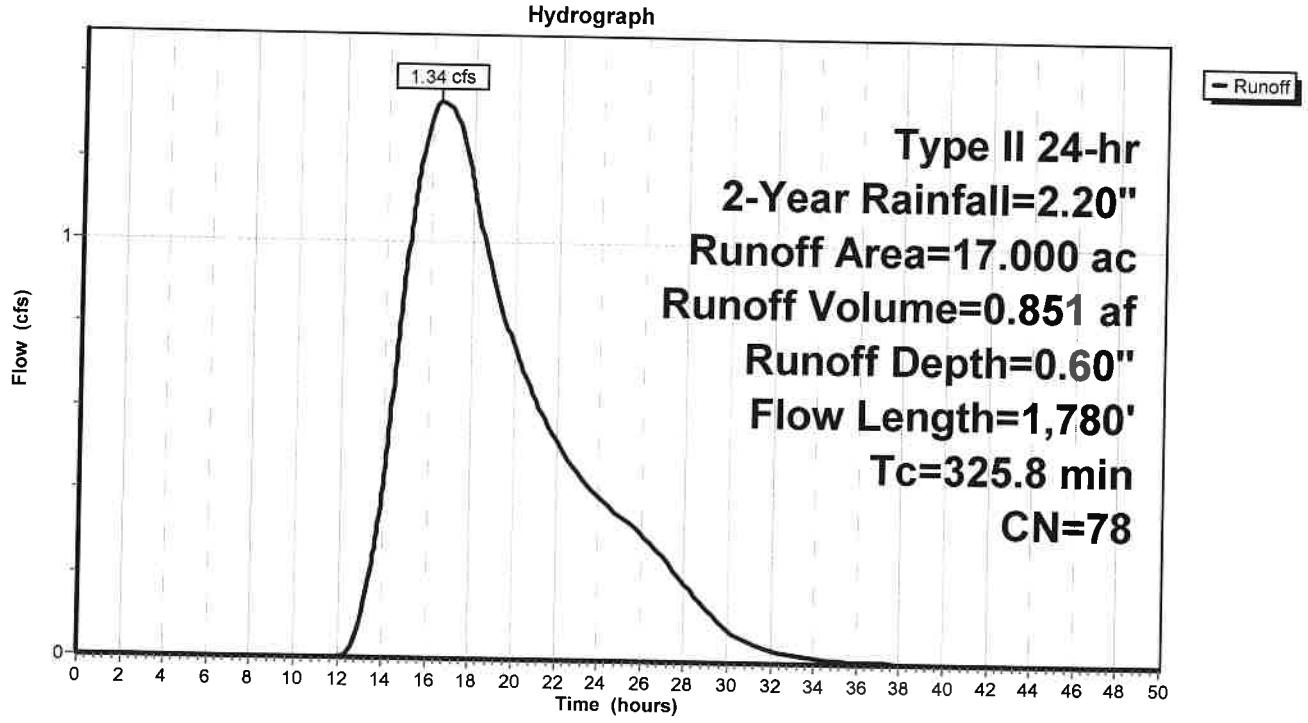
Runoff = 1.34 cfs @ 16.35 hrs, Volume= 0.851 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

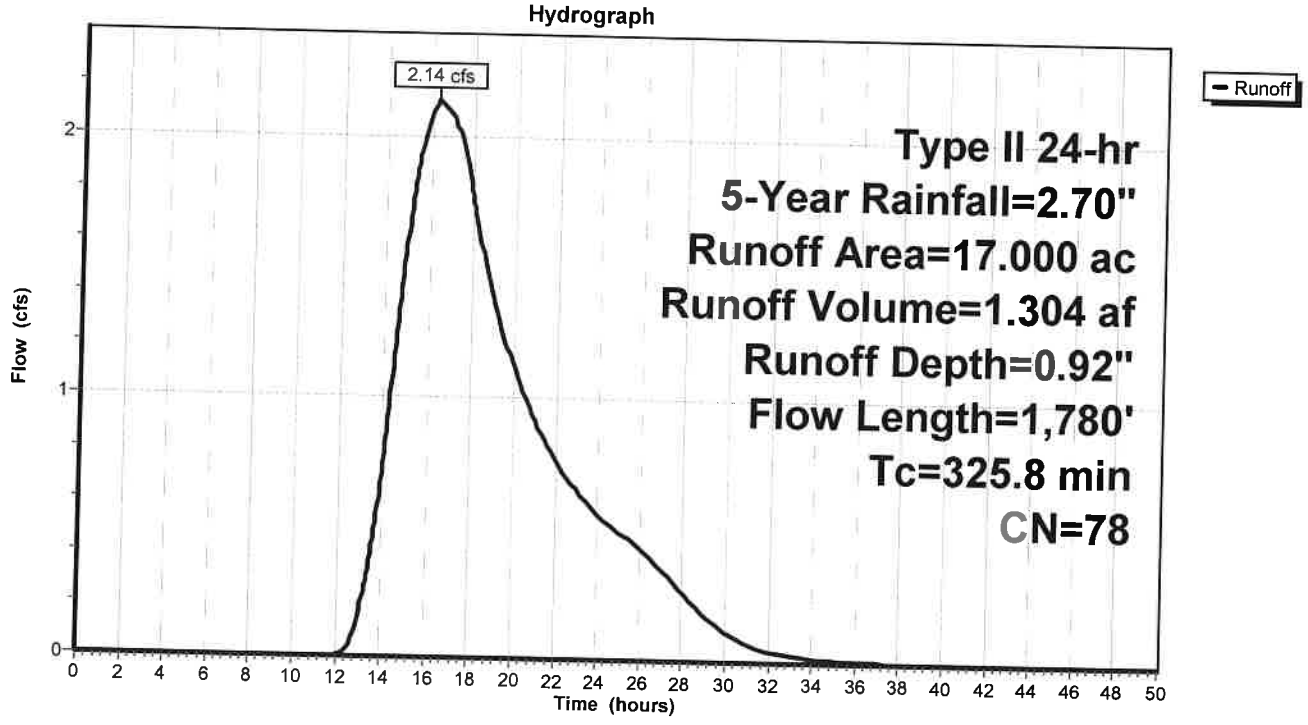
Runoff = 2.14 cfs @ 16.31 hrs, Volume= 1.304 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

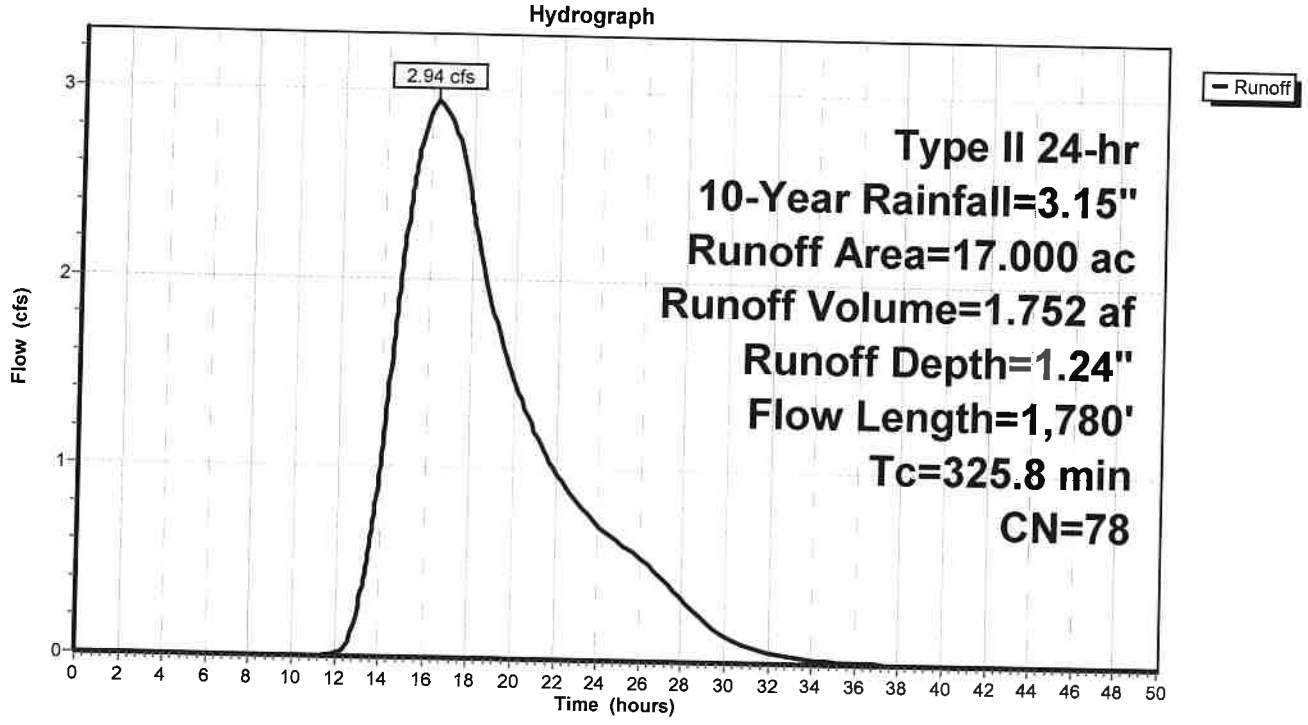
Runoff = 2.94 cfs @ 16.31 hrs, Volume= 1.752 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

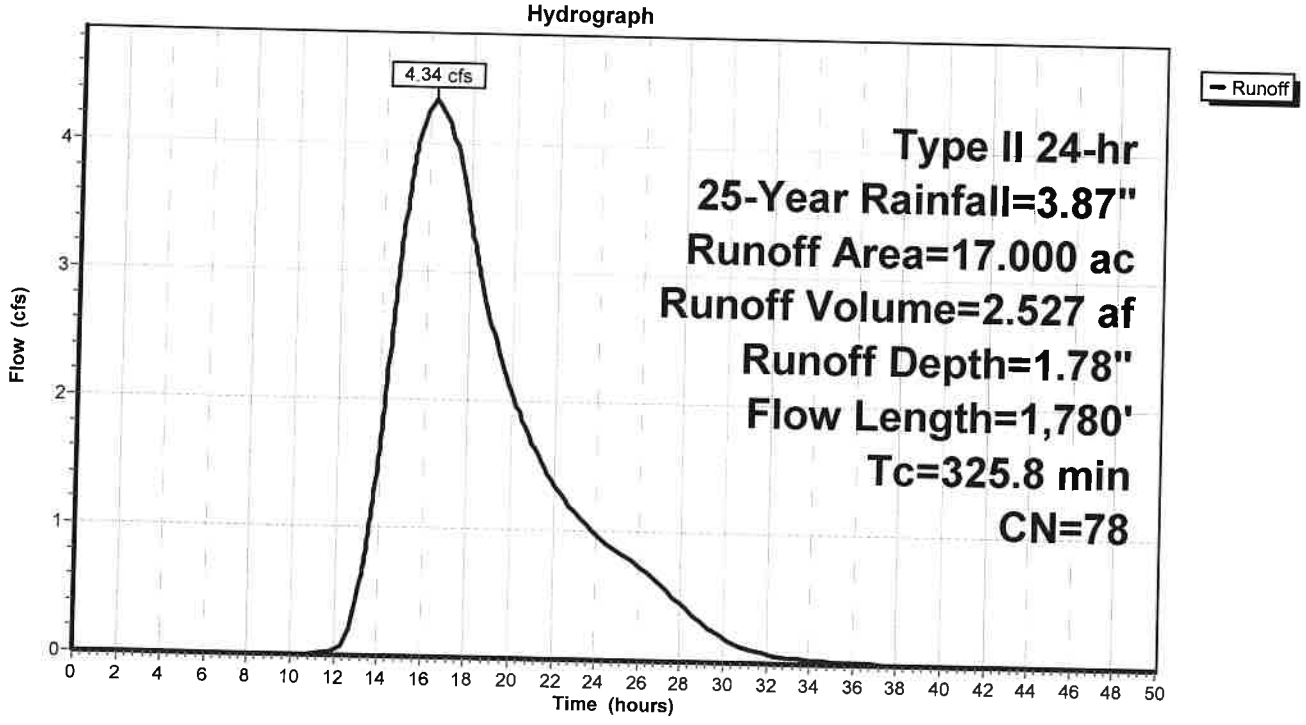
Runoff = 4.34 cfs @ 16.30 hrs, Volume= 2.527 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

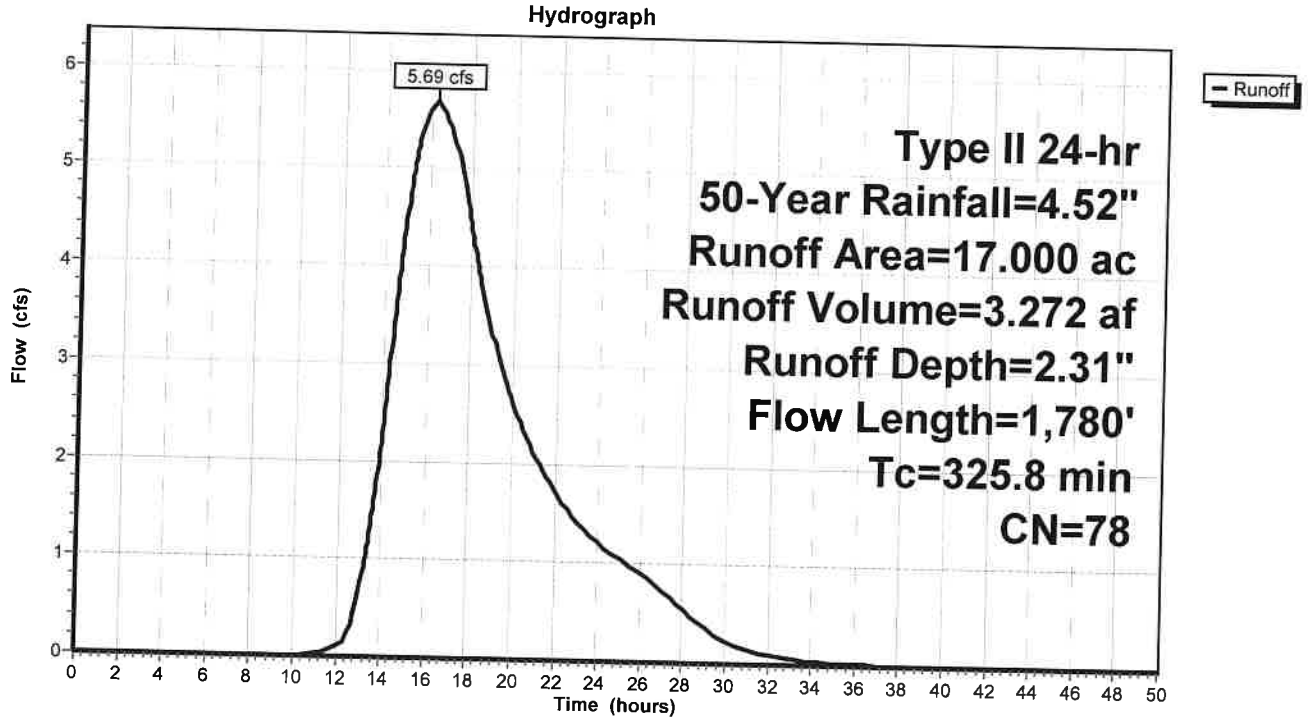
Runoff = 5.69 cfs @ 16.29 hrs, Volume= 3.272 af, Depth= 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Existing

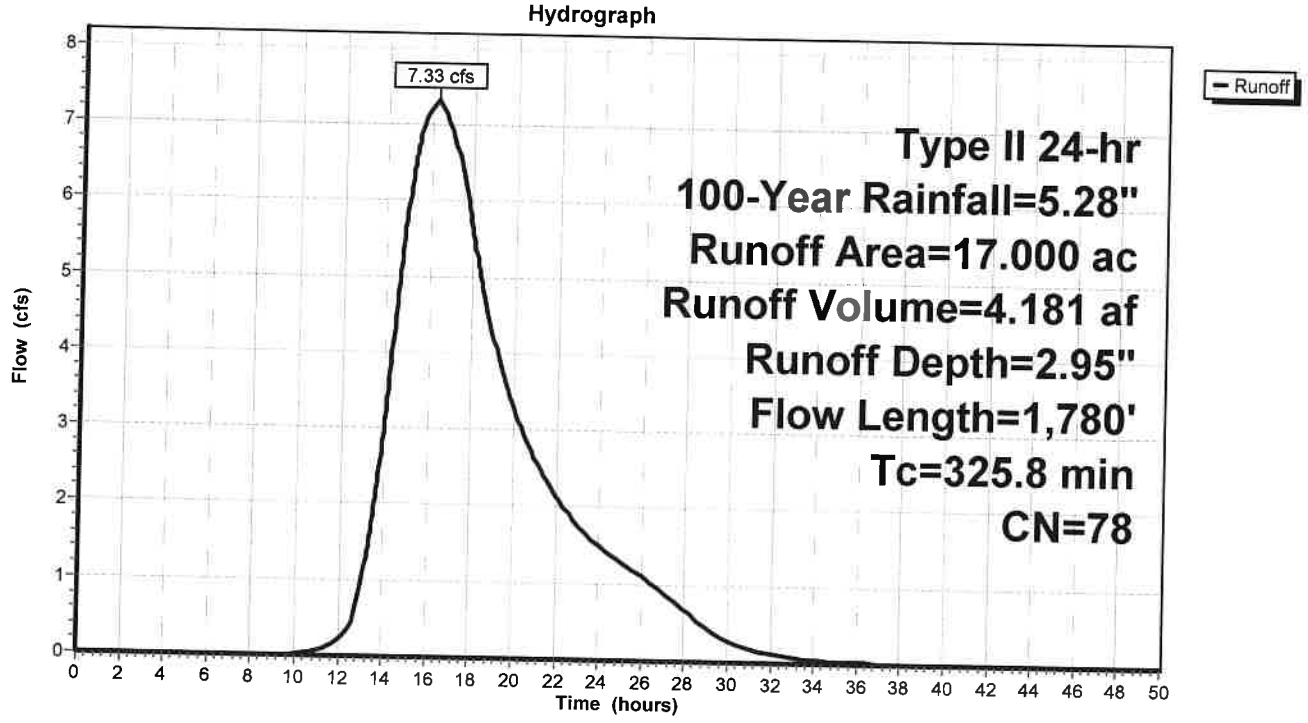
Runoff = 7.33 cfs @ 16.29 hrs, Volume= 4.181 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
12.170	79	Woods, Fair, HSG D
4.830	77	Brush, Fair, HSG D
17.000	78	Weighted Average
17.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
193.9	300	0.0010	0.03		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 2.50"
73.8	700	0.0010	0.16		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
58.1	780	0.0020	0.22		**Shallow Concentrated Flow, woods** Woodland Kv= 5.0 fps
325.8	1,780	Total			

Subcatchment 1S: Existing



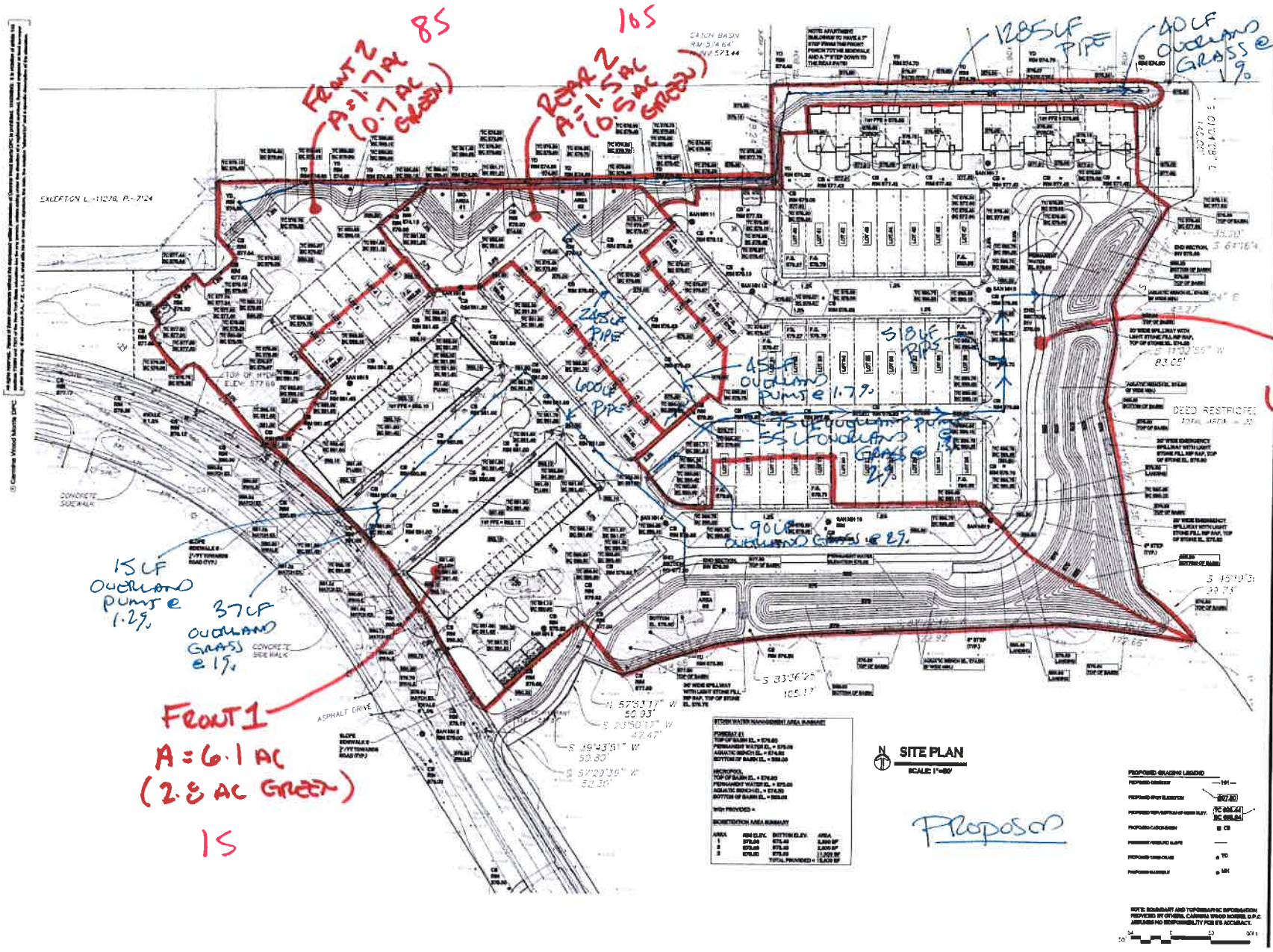
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Proposed Runoff

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Proposed Runoff - East

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Carmina Wood Morris

REVISIONS:
No. Description Date

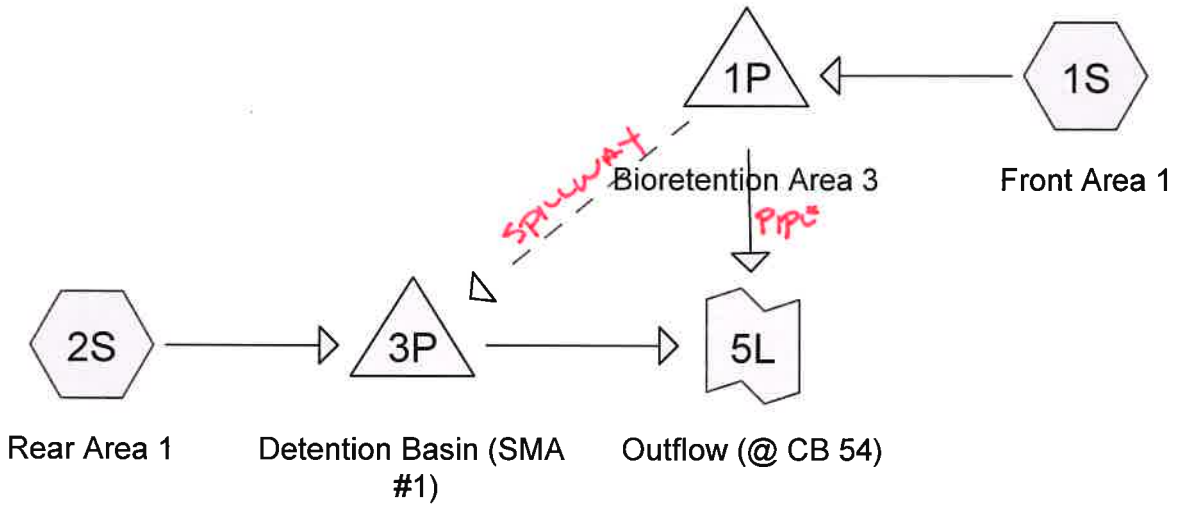
PROJECT NAME:
Site Development plans for:
Sawyer's Landing
Portion of 1081 North French Road
Amherst, New York

Date: 3/24/21
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:
Grading Plan

DRAWING NO.
C-200
Project no.: 21.011

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Subcat Reach Pond Link

Routing Diagram for 21.011 Proposed
Prepared by Hewlett-Packard Company, Printed 3/4/2021
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Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Link 5L: Outflow (@ CB 54)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-Year	2.78	2.78	**0.00**
2-Year	2.86	2.86	0.00
5-Year	3.01	3.01	0.00
10-Year	3.16	3.16	0.00
25-Year	3.36	3.36	0.00
50-Year	3.48	3.48	0.00
100-Year	**3.60**	**3.60**	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Pond 3P: Detention Basin (SMA #1)

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	6.05	0.10	0.10	0.00	575.23	13,685
2-Year	12.29	0.18	0.18	0.00	575.32	19,129
5-Year	20.08	0.33	0.33	0.00	575.46	28,218
10-Year	26.01	0.47	0.47	0.00	575.60	37,117
25-Year	34.94	0.64	0.64	0.00	575.83	51,964
50-Year	42.93	1.97	0.72	1.25	576.00	62,935
100-Year	**52.24**	**8.57**	**0.78**	**7.80**	**576.11**	**70,722**

TO DODGE RD

TO WETLANDS

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Pond 1P: Bioretention Area 3

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	8.17	4.38	2.74	1.63	575.82	7,520
2-Year	10.57	8.19	2.79	5.41	575.91	8,359
5-Year	14.18	12.91	2.83	10.09	575.99	9,153
10-Year	17.46	16.45	2.85	13.60	576.04	9,672
25-Year	22.74	21.73	2.89	18.84	576.11	10,375
50-Year	27.50	26.43	2.91	23.52	576.17	10,954
100-Year	**33.05**	**31.92**	**2.94**	**28.98**	**576.23**	**11,585**

↑ TO DODGE RD

↑ TO BASIN

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.500	80	>75% Grass cover, Good, HSG D (1S, 2S)
3.200	98	Paved parking, HSG D (1S, 2S)
2.800	98	Roofs, HSG D (1S, 2S)
10.500	**90**	**TOTAL AREA**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
10.500	HSG D	1S, 2S
0.000	Other	
10.500		**TOTAL AREA**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	4.500	0.000	4.500	>75% Grass cover, Good	1S, 2S
0.000	0.000	0.000	3.200	0.000	3.200	Paved parking	1S, 2S
0.000	0.000	0.000	2.800	0.000	2.800	Roofs	1S, 2S
0.000	**0.000**	**0.000**	**10.500**	**0.000**	**10.500**	**TOTAL AREA**	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=0.98"
Flow Length=652' Tc=13.3 min CN=90 Runoff=8.17 cfs 0.496 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=1.04"
Flow Length=683' Tc=14.4 min CN=91 Runoff=6.05 cfs 0.382 af

Pond 1P: Bioretention Area 3 Peak Elev=575.82' Storage=7,520 cf Inflow=8.17 cfs 0.496 af
Primary=2.74 cfs 0.475 af Secondary=1.63 cfs 0.021 af Outflow=4.38 cfs 0.496 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.23' Storage=13,685 cf Inflow=6.05 cfs 0.403 af
Primary=0.10 cfs 0.249 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.249 af

Link 5L: Outflow (@ CB 54) Inflow=2.78 cfs 0.724 af
Primary=2.78 cfs 0.724 af

Total Runoff Area = 10.500 ac Runoff Volume = 0.878 af Average Runoff Depth = 1.00"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

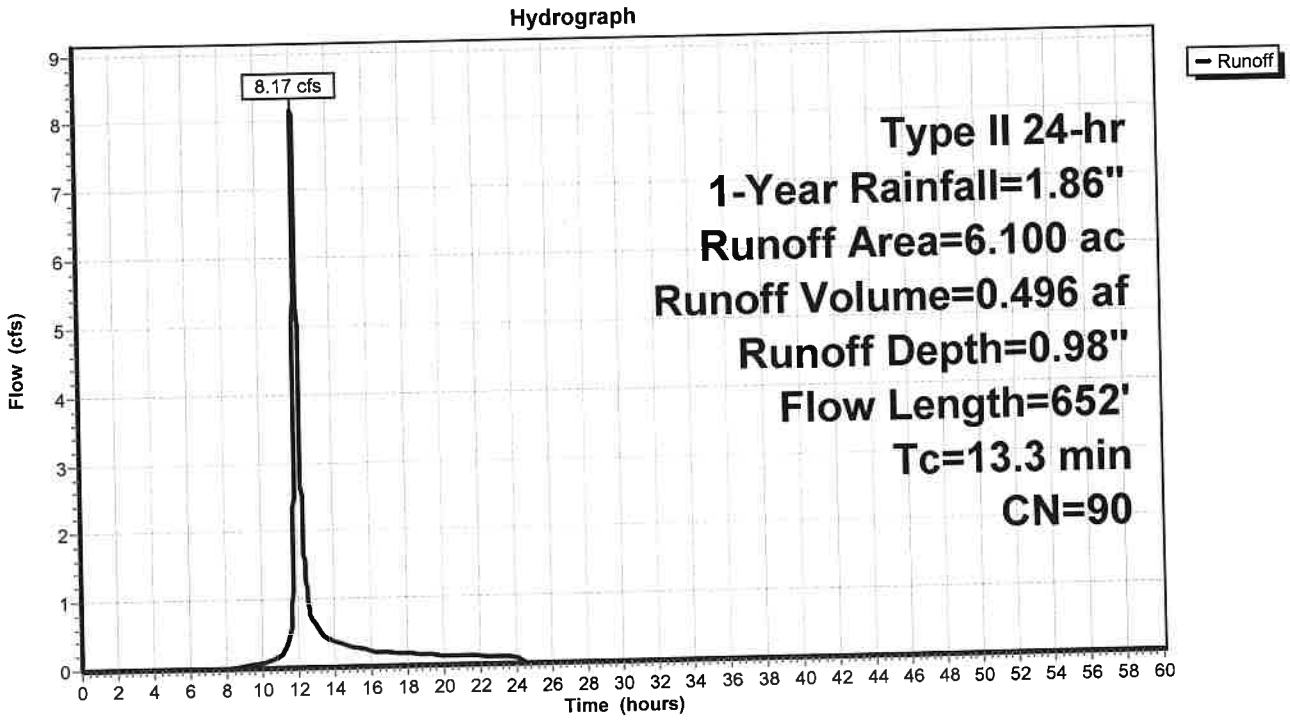
Runoff = 8.17 cfs @ 12.05 hrs, Volume= 0.496 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.00
9.00	0.27	0.00	0.02
10.00	0.34	0.01	0.07
11.00	0.44	0.03	0.20
12.00	1.23	0.48	**7.23**
13.00	1.44	0.63	**0.63**
14.00	1.53	0.70	0.37
15.00	1.59	0.75	0.29
16.00	1.64	0.79	0.23
17.00	1.68	0.83	0.20
18.00	1.71	0.85	0.17
19.00	1.74	0.88	0.15
20.00	1.77	0.90	0.13
21.00	1.79	0.92	0.12
22.00	1.82	0.94	0.12
23.00	1.84	0.96	0.11
24.00	**1.86**	**0.98**	0.11
25.00	1.86	0.98	0.00
26.00	1.86	0.98	0.00
27.00	1.86	0.98	0.00
28.00	1.86	0.98	0.00
29.00	1.86	0.98	0.00
30.00	1.86	0.98	0.00
31.00	1.86	0.98	0.00
32.00	1.86	0.98	0.00
33.00	1.86	0.98	0.00
34.00	1.86	0.98	0.00
35.00	1.86	0.98	0.00
36.00	1.86	0.98	0.00
37.00	1.86	0.98	0.00
38.00	1.86	0.98	0.00
39.00	1.86	0.98	0.00
40.00	1.86	0.98	0.00
41.00	1.86	0.98	0.00
42.00	1.86	0.98	0.00
43.00	1.86	0.98	0.00
44.00	1.86	0.98	0.00
45.00	1.86	0.98	0.00
46.00	1.86	0.98	0.00
47.00	1.86	0.98	0.00
48.00	1.86	0.98	0.00
49.00	1.86	0.98	0.00
50.00	1.86	0.98	0.00
51.00	1.86	0.98	0.00
52.00	1.86	0.98	0.00
53.00	1.86	0.98	0.00
54.00	1.86	0.98	0.00
55.00	1.86	0.98	0.00
56.00	1.86	0.98	0.00
57.00	1.86	0.98	0.00
58.00	1.86	0.98	0.00
59.00	1.86	0.98	0.00
60.00	1.86	0.98	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

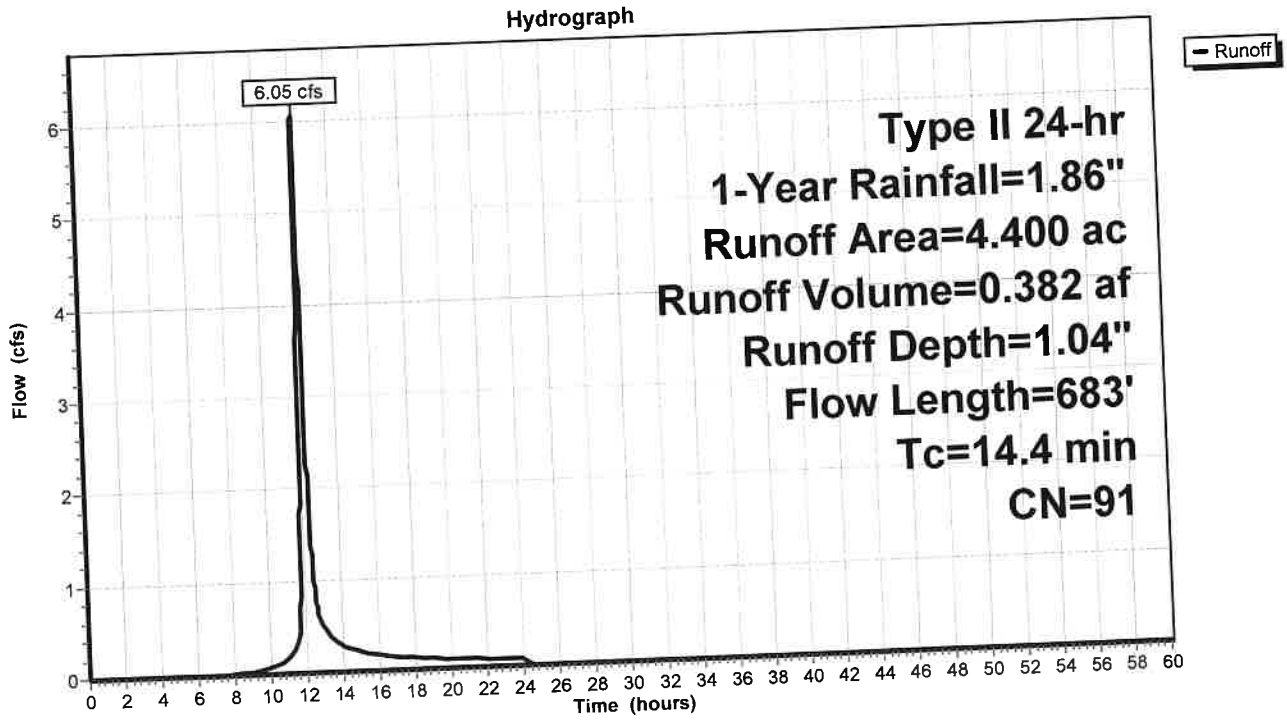
Runoff = 6.05 cfs @ 12.06 hrs, Volume= 0.382 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.01
9.00	0.27	0.01	0.03
10.00	0.34	0.02	0.06
11.00	0.44	0.05	0.17
12.00	1.23	0.53	**5.18**
13.00	1.44	0.69	**0.48**
14.00	1.53	0.76	0.28
15.00	1.59	0.81	0.21
16.00	1.64	0.85	0.17
17.00	1.68	0.89	0.15
18.00	1.71	0.92	0.13
19.00	1.74	0.94	0.11
20.00	1.77	0.97	0.10
21.00	1.79	0.99	0.09
22.00	1.82	1.01	0.09
23.00	1.84	1.02	0.08
24.00	**1.86**	**1.04**	0.08
25.00	1.86	1.04	0.00
26.00	1.86	1.04	0.00
27.00	1.86	1.04	0.00
28.00	1.86	1.04	0.00
29.00	1.86	1.04	0.00
30.00	1.86	1.04	0.00
31.00	1.86	1.04	0.00
32.00	1.86	1.04	0.00
33.00	1.86	1.04	0.00
34.00	1.86	1.04	0.00
35.00	1.86	1.04	0.00
36.00	1.86	1.04	0.00
37.00	1.86	1.04	0.00
38.00	1.86	1.04	0.00
39.00	1.86	1.04	0.00
40.00	1.86	1.04	0.00
41.00	1.86	1.04	0.00
42.00	1.86	1.04	0.00
43.00	1.86	1.04	0.00
44.00	1.86	1.04	0.00
45.00	1.86	1.04	0.00
46.00	1.86	1.04	0.00
47.00	1.86	1.04	0.00
48.00	1.86	1.04	0.00
49.00	1.86	1.04	0.00
50.00	1.86	1.04	0.00
51.00	1.86	1.04	0.00
52.00	1.86	1.04	0.00
53.00	1.86	1.04	0.00
54.00	1.86	1.04	0.00
55.00	1.86	1.04	0.00
56.00	1.86	1.04	0.00
57.00	1.86	1.04	0.00
58.00	1.86	1.04	0.00
59.00	1.86	1.04	0.00
60.00	1.86	1.04	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area =	6.100 ac,	54.10% Impervious,	Inflow Depth =	0.98"	for 1-Year event
Inflow =	8.17 cfs @	12.05 hrs,	Volume=	0.496 af	
Outflow =	4.38 cfs @	12.19 hrs,	Volume=	0.496 af,	Atten= 46%, Lag= 8.2 min
Primary =	2.74 cfs @	12.19 hrs,	Volume=	0.475 af	
Secondary =	1.63 cfs @	12.19 hrs,	Volume=	0.021 af	

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.82' @ 12.19 hrs Surf.Area= 9,695 sf Storage= 7,520 cf

Plug-Flow detention time= 319.4 min calculated for 0.496 af (100% of inflow)
Center-of-Mass det. time= 319.4 min (1,152.7 - 833.3)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

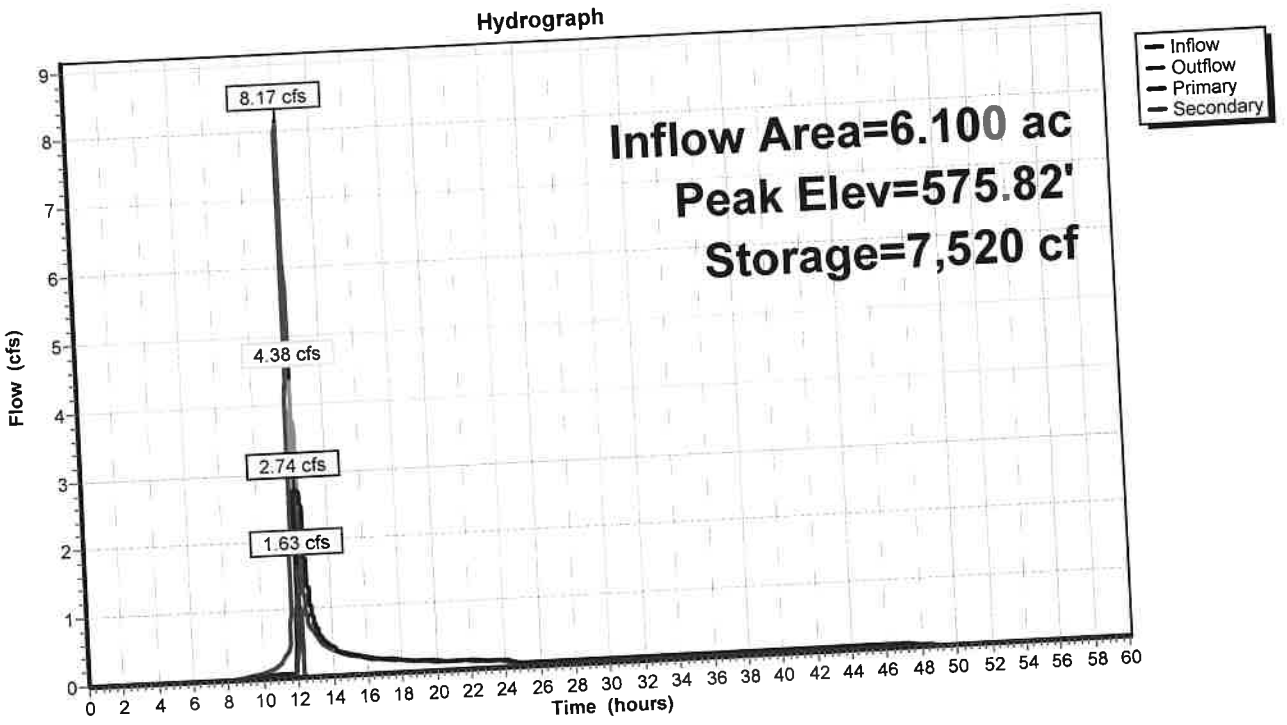
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.74 cfs @ 12.19 hrs HW=575.82' (Free Discharge)
↑—**1=8" pipe** (Barrel Controls 2.74 cfs @ 7.86 fps)
↑—**2=Grate** (Passes < 3.80 cfs potential flow)
↑—**3=Exfiltration** (Passes < 0.06 cfs potential flow)

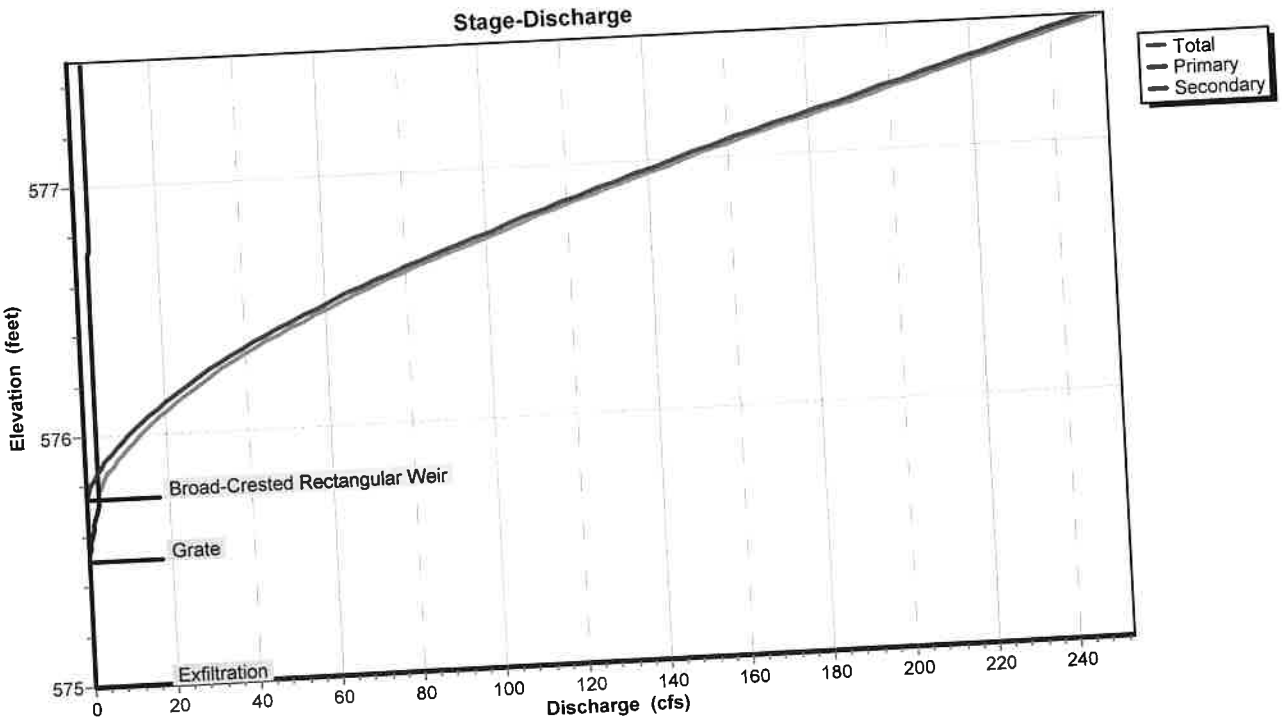
Secondary OutFlow Max=1.62 cfs @ 12.19 hrs HW=575.82' (Free Discharge)
↑—**4=Broad-Crested Rectangular Weir** (Weir Controls 1.62 cfs @ 0.77 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

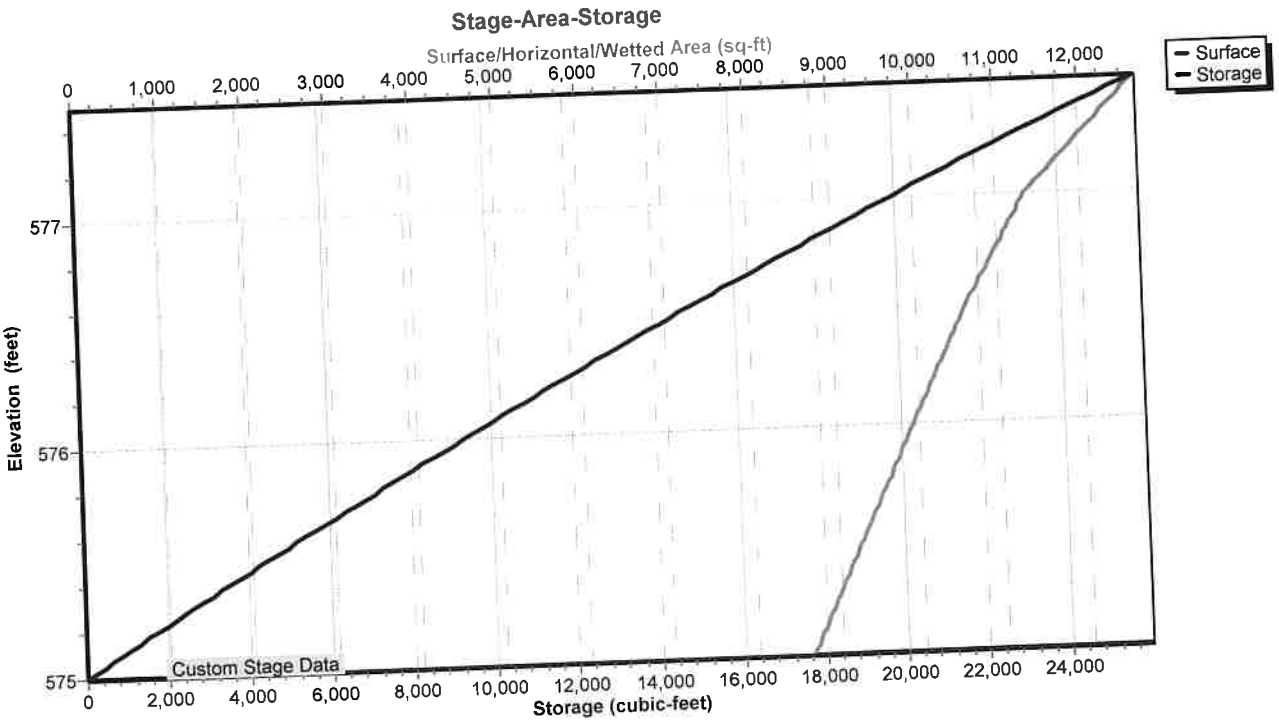


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.00	0	575.00	0.00	0.00	0.00
10.00	0.07	121	575.01	0.03	0.03	0.00
12.00	**7.23**	**4,533**	**575.51**	**0.08**	**0.08**	**0.00**
14.00	**0.37**	**5,004**	**575.56**	**0.42**	**0.42**	**0.00**
16.00	0.23	4,812	575.54	0.25	0.25	0.00
18.00	0.17	4,735	575.53	0.18	0.18	0.00
20.00	0.13	4,666	575.52	0.14	0.14	0.00
22.00	0.12	4,618	575.51	0.12	0.12	0.00
24.00	0.11	4,598	575.51	0.11	0.11	0.00
26.00	0.00	4,207	575.47	0.06	0.06	0.00
28.00	0.00	3,812	575.43	0.05	0.05	0.00
30.00	0.00	3,420	575.38	0.05	0.05	0.00
32.00	0.00	3,031	575.34	0.05	0.05	0.00
34.00	0.00	2,646	575.30	0.05	0.05	0.00
36.00	0.00	2,264	575.26	0.05	0.05	0.00
38.00	0.00	1,885	575.21	0.05	0.05	0.00
40.00	0.00	1,510	575.17	0.05	0.05	0.00
42.00	0.00	1,138	575.13	0.05	0.05	0.00
44.00	0.00	769	575.09	0.05	0.05	0.00
46.00	0.00	404	575.05	0.05	0.05	0.00
48.00	0.00	96	575.01	0.02	0.02	0.00
50.00	0.00	18	575.00	0.00	0.00	0.00
52.00	0.00	3	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 1.10" for 1-Year event
Inflow = 6.05 cfs @ 12.06 hrs, Volume= 0.403 af
Outflow = 0.10 cfs @ 19.66 hrs, Volume= 0.249 af, Atten= 98%, Lag= 455.7 min
Primary = 0.10 cfs @ 19.66 hrs, Volume= 0.249 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.23' @ 19.66 hrs Surf.Area= 60,952 sf Storage= 13,685 cf

Plug-Flow detention time= 1,134.7 min calculated for 0.249 af (62% of inflow)
Center-of-Mass det. time= 1,028.3 min (1,852.6 - 824.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

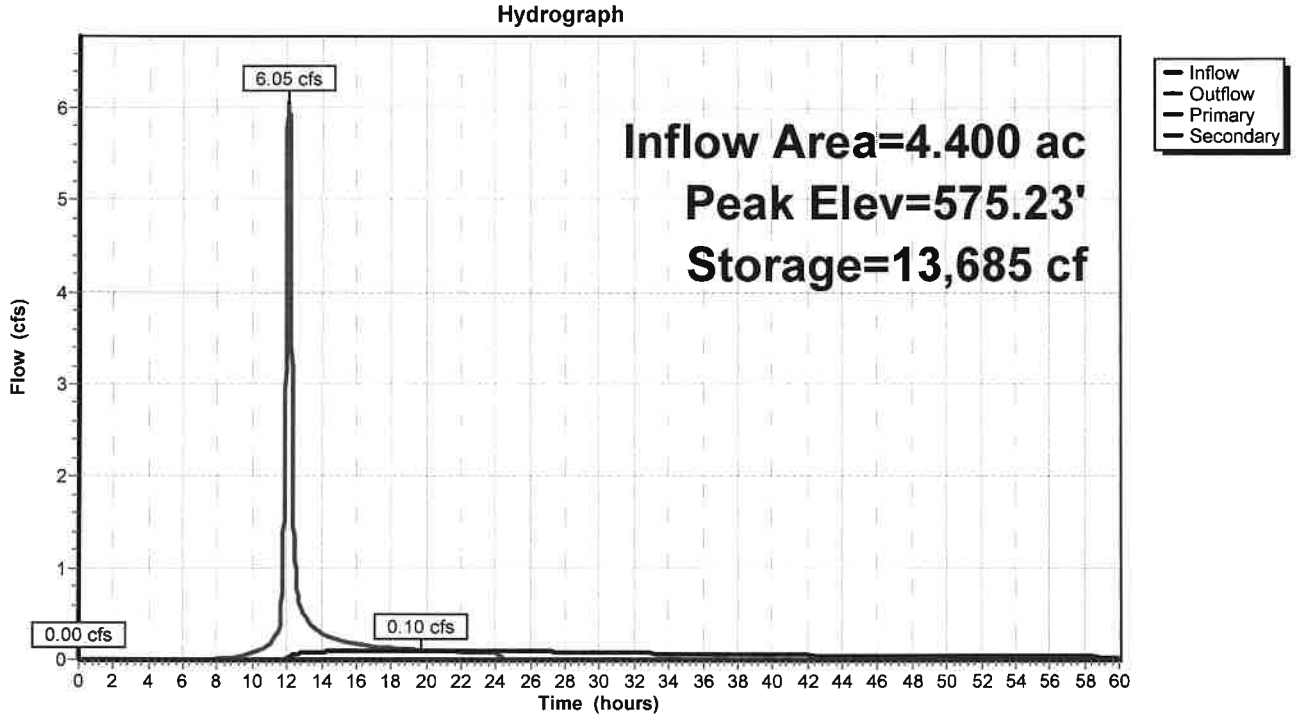
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.10 cfs @ 19.66 hrs HW=575.23' (Free Discharge)
↑**1=12" outlet pipe** (Passes 0.10 cfs of 1.85 cfs potential flow)
↑**2=low flow outlet pipe** (Barrel Controls 0.10 cfs @ 1.70 fps)
3=Grate (Controls 0.00 cfs)

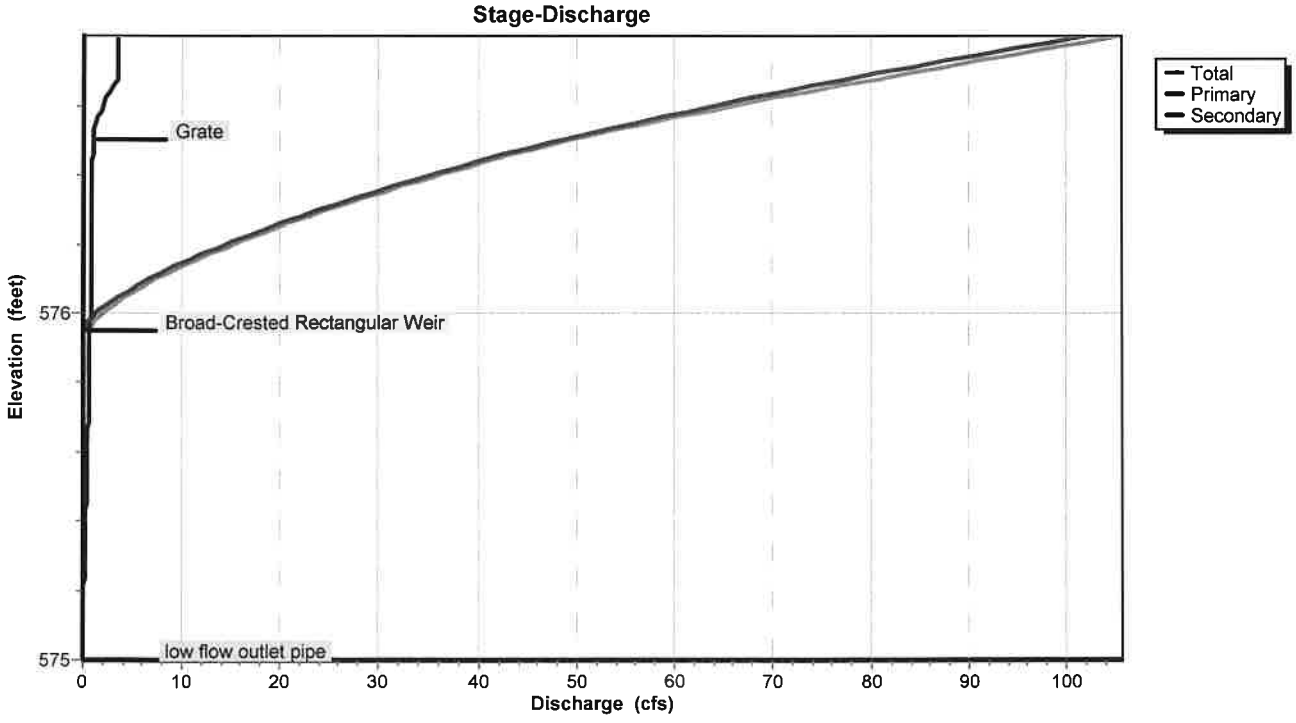
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

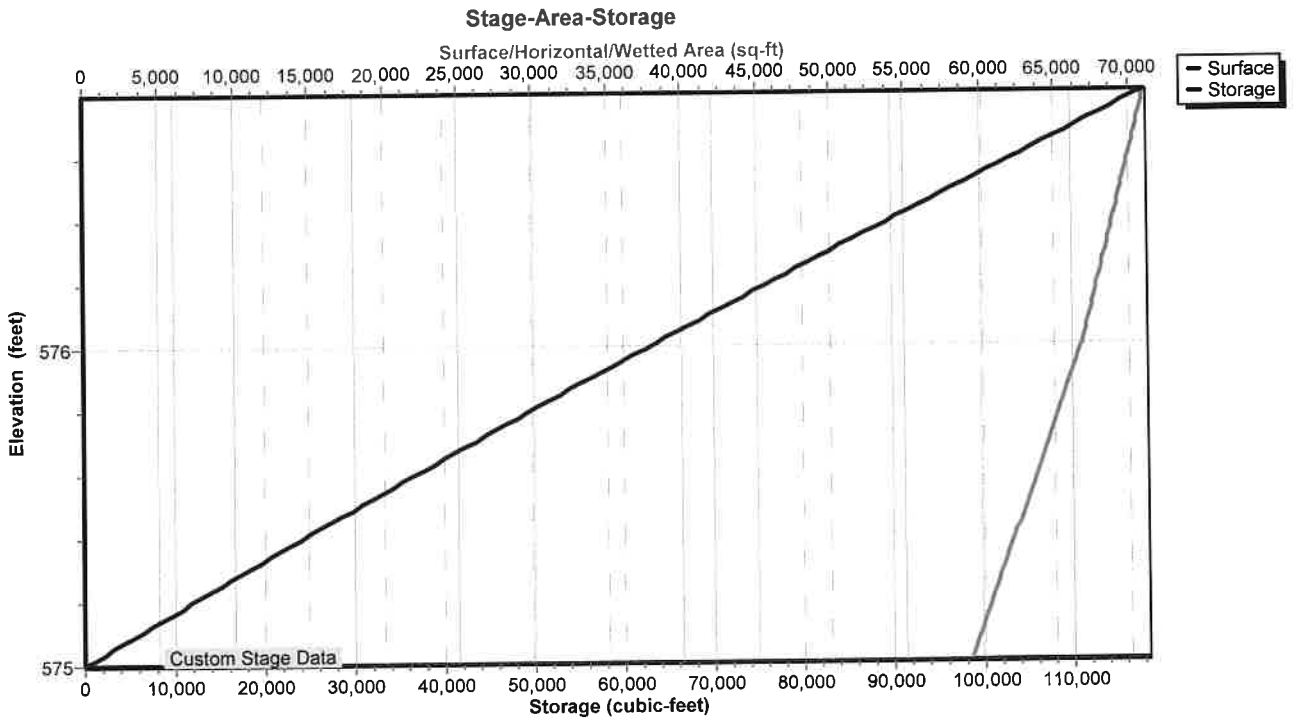


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.01	5	575.00	0.00	0.00	0.00
10.00	0.06	218	575.00	0.00	0.00	0.00
12.00	**5.18**	3,798	575.06	0.01	0.01	0.00
14.00	**0.28**	12,350	575.21	0.08	0.08	0.00
16.00	0.17	13,252	575.22	0.10	0.10	0.00
18.00	0.13	**13,599**	**575.23**	**0.10**	**0.10**	0.00
20.00	0.10	**13,682**	**575.23**	**0.10**	**0.10**	0.00
22.00	0.09	13,599	575.23	0.10	0.10	0.00
24.00	0.08	13,477	575.22	0.10	0.10	0.00
26.00	0.00	12,859	575.21	0.09	0.09	0.00
28.00	0.00	12,236	575.20	0.08	0.08	0.00
30.00	0.00	11,664	575.19	0.08	0.08	0.00
32.00	0.00	11,139	575.19	0.07	0.07	0.00
34.00	0.00	10,655	575.18	0.06	0.06	0.00
36.00	0.00	10,207	575.17	0.06	0.06	0.00
38.00	0.00	9,792	575.16	0.06	0.06	0.00
40.00	0.00	9,408	575.16	0.05	0.05	0.00
42.00	0.00	9,050	575.15	0.05	0.05	0.00
44.00	0.00	8,716	575.15	0.04	0.04	0.00
46.00	0.00	8,404	575.14	0.04	0.04	0.00
48.00	0.00	8,113	575.14	0.04	0.04	0.00
50.00	0.00	7,839	575.13	0.04	0.04	0.00
52.00	0.00	7,582	575.13	0.03	0.03	0.00
54.00	0.00	7,341	575.12	0.03	0.03	0.00
56.00	0.00	7,114	575.12	0.03	0.03	0.00
58.00	0.00	6,899	575.12	0.03	0.03	0.00
60.00	0.00	6,696	575.11	0.03	0.03	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

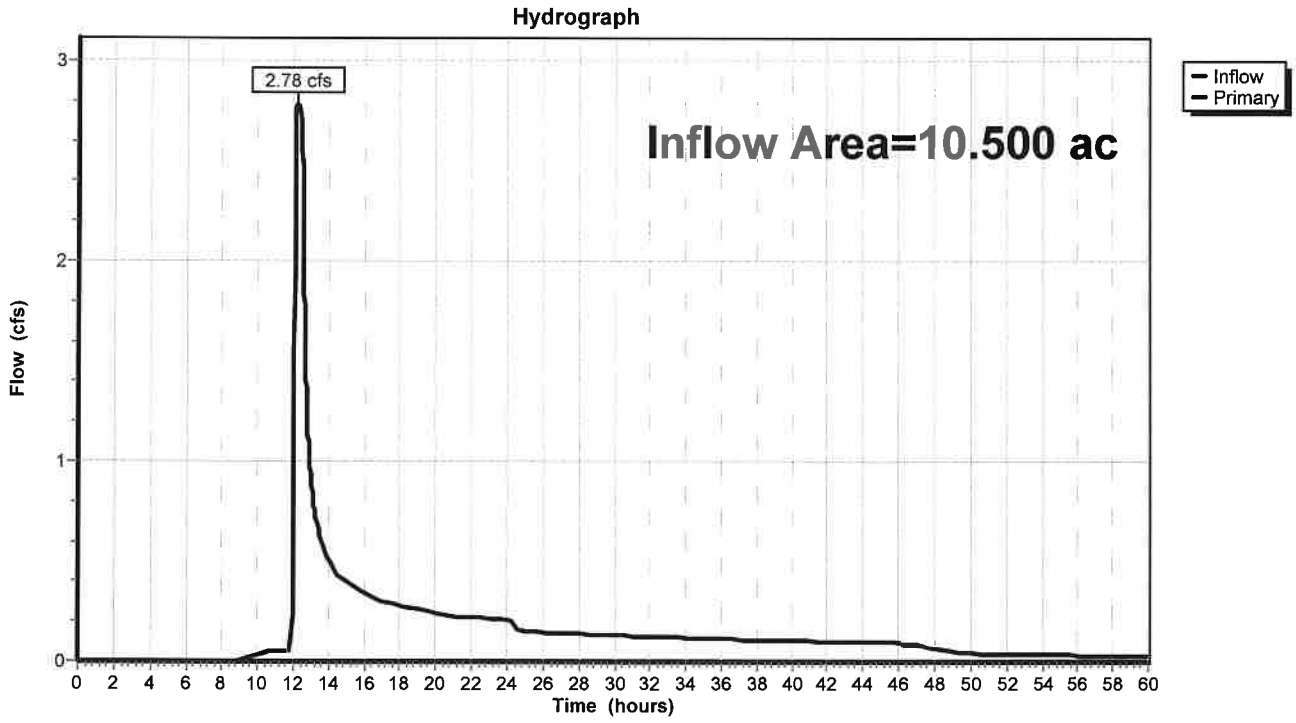
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 0.83" for 1-Year event
Inflow = 2.78 cfs @ 12.22 hrs, Volume= 0.724 af
Primary = 2.78 cfs @ 12.22 hrs, Volume= 0.724 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.04	0.00	0.04
1.00	0.00	0.00	0.00	53.00	0.03	0.00	0.03
2.00	0.00	0.00	0.00	54.00	0.03	0.00	0.03
3.00	0.00	0.00	0.00	55.00	0.03	0.00	0.03
4.00	0.00	0.00	0.00	56.00	0.03	0.00	0.03
5.00	0.00	0.00	0.00	57.00	0.03	0.00	0.03
6.00	0.00	0.00	0.00	58.00	0.03	0.00	0.03
7.00	0.00	0.00	0.00	59.00	0.03	0.00	0.03
8.00	0.00	0.00	0.00	60.00	0.03	0.00	0.03
9.00	0.01	0.00	0.01				
10.00	0.03	0.00	0.03				
11.00	0.05	0.00	0.05				
12.00	**0.09**	0.00	**0.09**				
13.00	**0.91**	0.00	**0.91**				
14.00	0.51	0.00	0.51				
15.00	0.40	0.00	0.40				
16.00	0.34	0.00	0.34				
17.00	0.30	0.00	0.30				
18.00	0.28	0.00	0.28				
19.00	0.26	0.00	0.26				
20.00	0.24	0.00	0.24				
21.00	0.23	0.00	0.23				
22.00	0.22	0.00	0.22				
23.00	0.21	0.00	0.21				
24.00	0.21	0.00	0.21				
25.00	0.15	0.00	0.15				
26.00	0.15	0.00	0.15				
27.00	0.14	0.00	0.14				
28.00	0.14	0.00	0.14				
29.00	0.13	0.00	0.13				
30.00	0.13	0.00	0.13				
31.00	0.13	0.00	0.13				
32.00	0.12	0.00	0.12				
33.00	0.12	0.00	0.12				
34.00	0.12	0.00	0.12				
35.00	0.12	0.00	0.12				
36.00	0.11	0.00	0.11				
37.00	0.11	0.00	0.11				
38.00	0.11	0.00	0.11				
39.00	0.11	0.00	0.11				
40.00	0.10	0.00	0.10				
41.00	0.10	0.00	0.10				
42.00	0.10	0.00	0.10				
43.00	0.10	0.00	0.10				
44.00	0.10	0.00	0.10				
45.00	0.09	0.00	0.09				
46.00	0.09	0.00	0.09				
47.00	0.09	0.00	0.09				
48.00	0.06	0.00	0.06				
49.00	0.05	0.00	0.05				
50.00	0.04	0.00	0.04				
51.00	0.04	0.00	0.04				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=1.27"
Flow Length=652' Tc=13.3 min CN=90 Runoff=10.57 cfs 0.644 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=1.34"
Flow Length=683' Tc=14.4 min CN=91 Runoff=7.75 cfs 0.491 af

Pond 1P: Bioretention Area 3 Peak Elev=575.91' Storage=8,359 cf Inflow=10.57 cfs 0.644 af
Primary=2.79 cfs 0.556 af Secondary=5.41 cfs 0.088 af Outflow=8.19 cfs 0.644 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.32' Storage=19,128 cf Inflow=12.29 cfs 0.579 af
Primary=0.18 cfs 0.400 af Secondary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.400 af

Link 5L: Outflow (@ CB 54) Inflow=2.86 cfs 0.956 af
Primary=2.86 cfs 0.956 af

Total Runoff Area = 10.500 ac Runoff Volume = 1.135 af Average Runoff Depth = 1.30"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

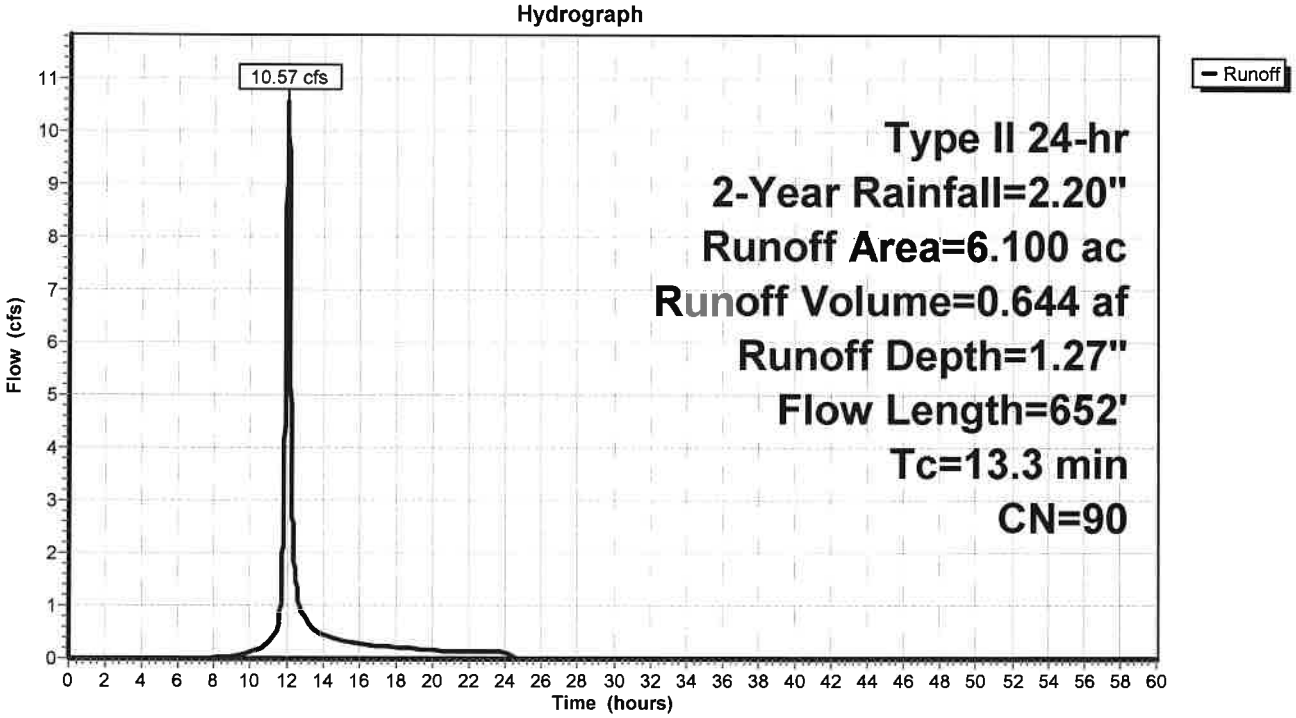
Runoff = 10.57 cfs @ 12.05 hrs, Volume= 0.644 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.00
8.00	0.26	0.00	0.02
9.00	0.32	0.01	0.06
10.00	0.40	0.02	0.12
11.00	0.52	0.06	0.30
12.00	1.46	0.65	**9.45**
13.00	1.70	0.84	**0.79**
14.00	1.80	0.93	0.46
15.00	1.88	0.99	0.36
16.00	1.94	1.04	0.28
17.00	1.98	1.08	0.24
18.00	2.03	1.12	0.21
19.00	2.06	1.15	0.19
20.00	2.09	1.17	0.16
21.00	2.12	1.20	0.15
22.00	2.15	1.22	0.14
23.00	2.18	1.24	0.14
24.00	**2.20**	**1.27**	0.13
25.00	2.20	1.27	0.00
26.00	2.20	1.27	0.00
27.00	2.20	1.27	0.00
28.00	2.20	1.27	0.00
29.00	2.20	1.27	0.00
30.00	2.20	1.27	0.00
31.00	2.20	1.27	0.00
32.00	2.20	1.27	0.00
33.00	2.20	1.27	0.00
34.00	2.20	1.27	0.00
35.00	2.20	1.27	0.00
36.00	2.20	1.27	0.00
37.00	2.20	1.27	0.00
38.00	2.20	1.27	0.00
39.00	2.20	1.27	0.00
40.00	2.20	1.27	0.00
41.00	2.20	1.27	0.00
42.00	2.20	1.27	0.00
43.00	2.20	1.27	0.00
44.00	2.20	1.27	0.00
45.00	2.20	1.27	0.00
46.00	2.20	1.27	0.00
47.00	2.20	1.27	0.00
48.00	2.20	1.27	0.00
49.00	2.20	1.27	0.00
50.00	2.20	1.27	0.00
51.00	2.20	1.27	0.00
52.00	2.20	1.27	0.00
53.00	2.20	1.27	0.00
54.00	2.20	1.27	0.00
55.00	2.20	1.27	0.00
56.00	2.20	1.27	0.00
57.00	2.20	1.27	0.00
58.00	2.20	1.27	0.00
59.00	2.20	1.27	0.00
60.00	2.20	1.27	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

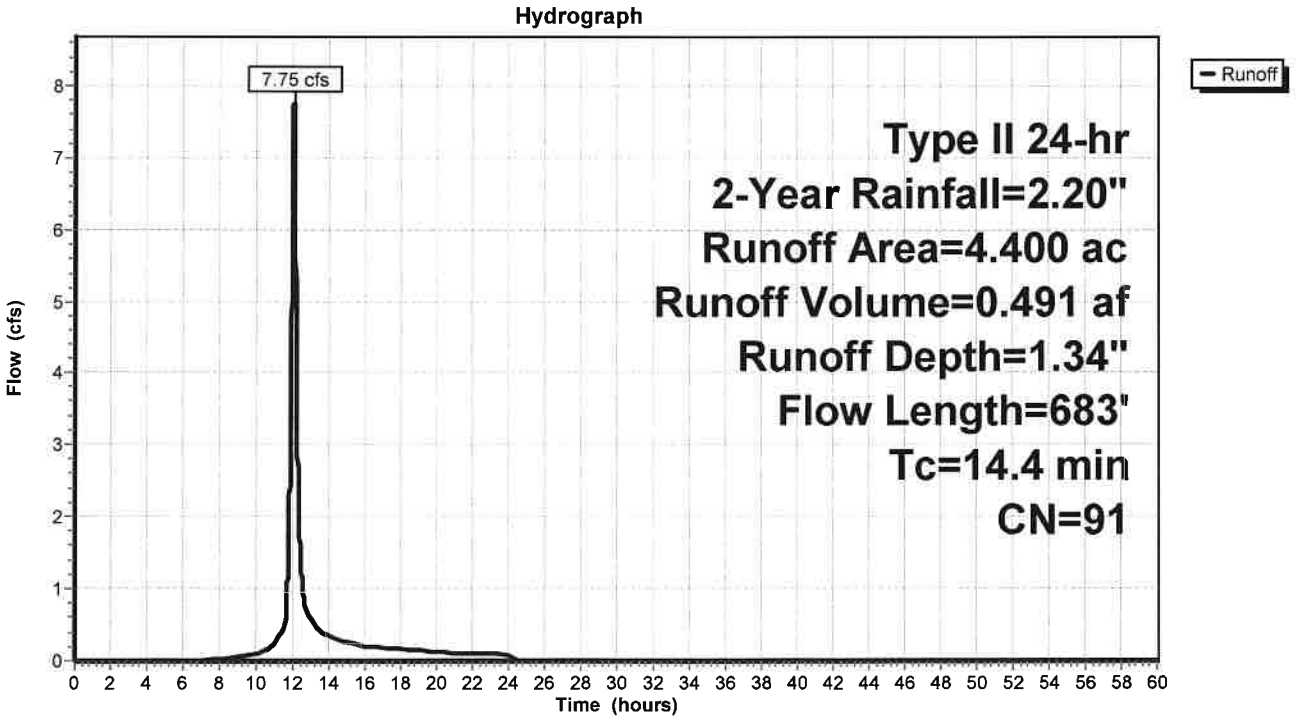
Runoff = 7.75 cfs @ 12.06 hrs, Volume= 0.491 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.00
8.00	0.26	0.00	0.02
9.00	0.32	0.01	0.06
10.00	0.40	0.03	0.10
11.00	0.52	0.08	0.25
12.00	1.46	0.71	**6.69**
13.00	1.70	0.90	**0.60**
14.00	1.80	0.99	0.35
15.00	1.88	1.06	0.27
16.00	1.94	1.11	0.21
17.00	1.98	1.15	0.18
18.00	2.03	1.19	0.16
19.00	2.06	1.22	0.14
20.00	2.09	1.25	0.12
21.00	2.12	1.27	0.11
22.00	2.15	1.30	0.10
23.00	2.18	1.32	0.10
24.00	**2.20**	**1.34**	0.10
25.00	2.20	1.34	0.00
26.00	2.20	1.34	0.00
27.00	2.20	1.34	0.00
28.00	2.20	1.34	0.00
29.00	2.20	1.34	0.00
30.00	2.20	1.34	0.00
31.00	2.20	1.34	0.00
32.00	2.20	1.34	0.00
33.00	2.20	1.34	0.00
34.00	2.20	1.34	0.00
35.00	2.20	1.34	0.00
36.00	2.20	1.34	0.00
37.00	2.20	1.34	0.00
38.00	2.20	1.34	0.00
39.00	2.20	1.34	0.00
40.00	2.20	1.34	0.00
41.00	2.20	1.34	0.00
42.00	2.20	1.34	0.00
43.00	2.20	1.34	0.00
44.00	2.20	1.34	0.00
45.00	2.20	1.34	0.00
46.00	2.20	1.34	0.00
47.00	2.20	1.34	0.00
48.00	2.20	1.34	0.00
49.00	2.20	1.34	0.00
50.00	2.20	1.34	0.00
51.00	2.20	1.34	0.00
52.00	2.20	1.34	0.00
53.00	2.20	1.34	0.00
54.00	2.20	1.34	0.00
55.00	2.20	1.34	0.00
56.00	2.20	1.34	0.00
57.00	2.20	1.34	0.00
58.00	2.20	1.34	0.00
59.00	2.20	1.34	0.00
60.00	2.20	1.34	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 1.27" for 2-Year event
Inflow = 10.57 cfs @ 12.05 hrs, Volume= 0.644 af
Outflow = 8.19 cfs @ 12.13 hrs, Volume= 0.644 af, Atten= 22%, Lag= 4.9 min
Primary = 2.79 cfs @ 12.13 hrs, Volume= 0.556 af
Secondary = 5.41 cfs @ 12.13 hrs, Volume= 0.088 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.91' @ 12.13 hrs Surf.Area= 9,805 sf Storage= 8,359 cf

Plug-Flow detention time= 252.3 min calculated for 0.644 af (100% of inflow)
Center-of-Mass det. time= 252.2 min (1,078.1 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

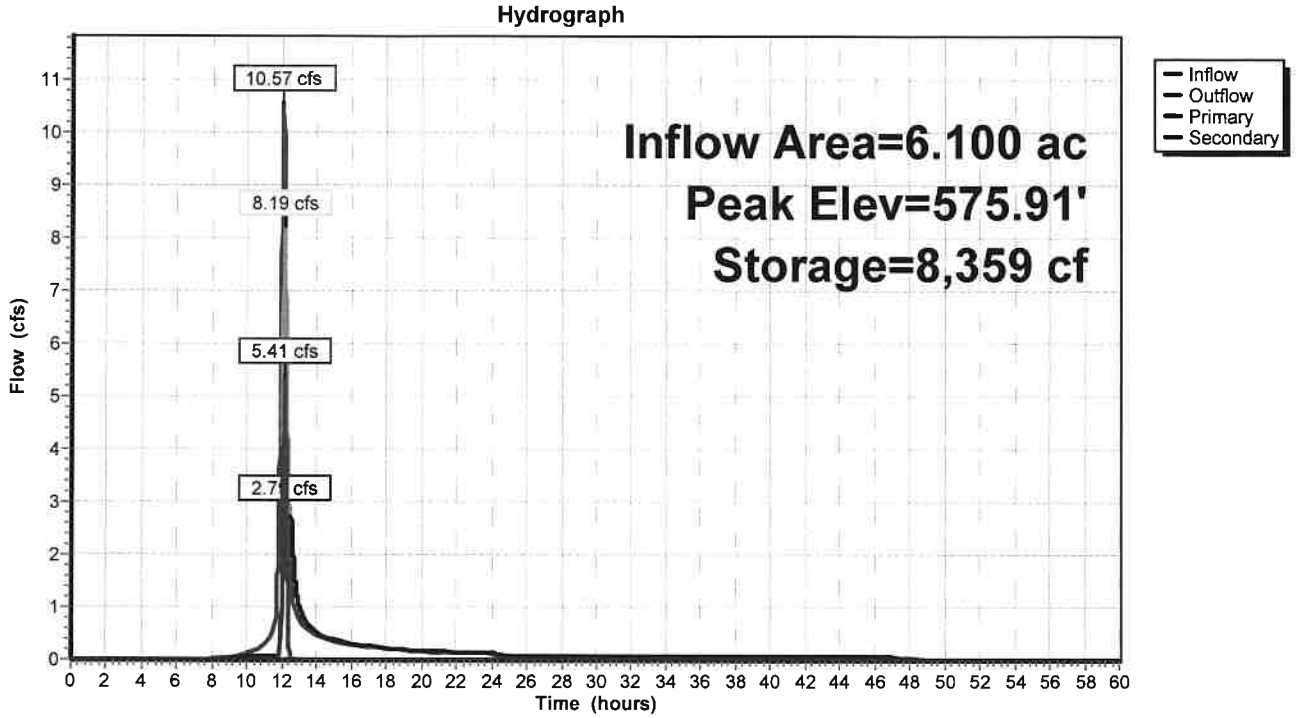
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.79 cfs @ 12.13 hrs HW=575.91' (Free Discharge)
↑**1=8" pipe** (Barrel Controls 2.79 cfs @ 7.98 fps)
↑**2=Grate** (Passes < 4.28 cfs potential flow)
3=Exfiltration (Passes < 0.06 cfs potential flow)

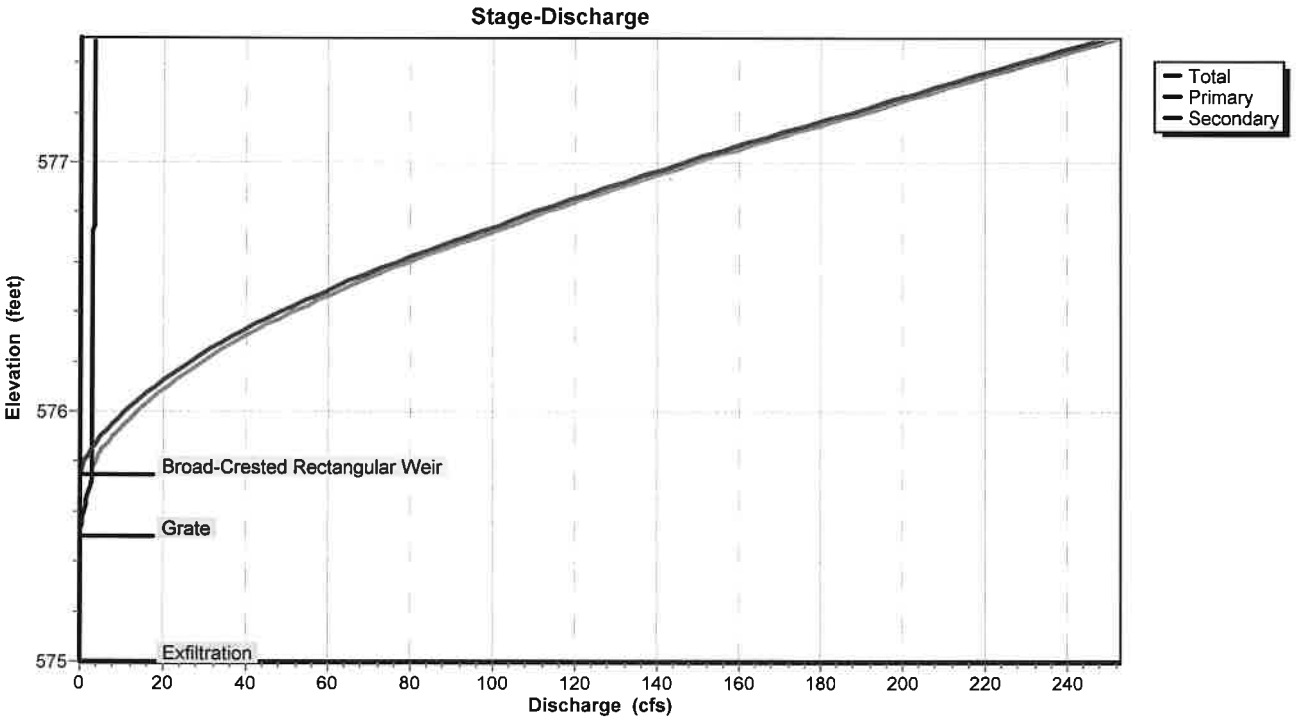
Secondary OutFlow Max=5.39 cfs @ 12.13 hrs HW=575.91' (Free Discharge)
↑**4=Broad-Crested Rectangular Weir** (Weir Controls 5.39 cfs @ 1.15 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

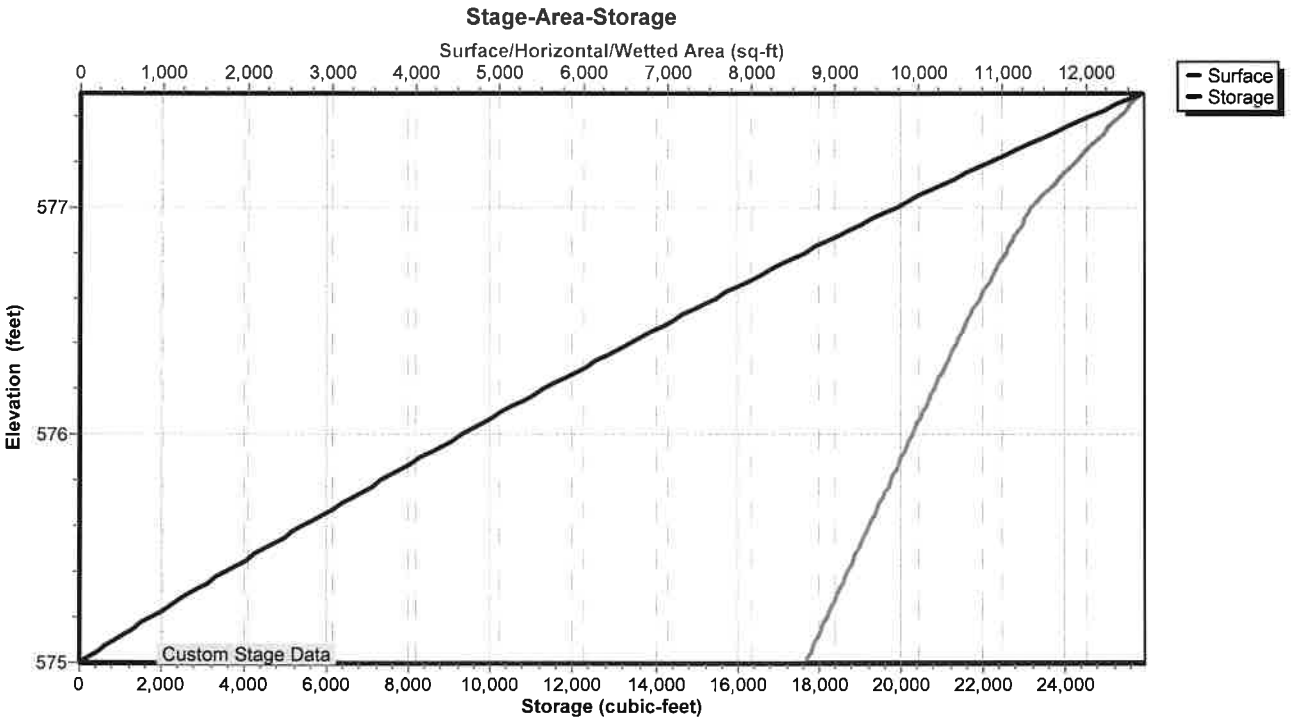


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.02	17	575.00	0.00	0.00	0.00
10.00	0.12	257	575.03	0.05	0.05	0.00
12.00	**9.45**	**6,253**	**575.69**	**2.30**	**2.30**	**0.00**
14.00	**0.46**	**5,096**	**575.57**	**0.52**	**0.52**	**0.00**
16.00	0.28	4,881	575.54	0.30	0.30	0.00
18.00	0.21	4,786	575.53	0.22	0.22	0.00
20.00	0.16	4,719	575.53	0.17	0.17	0.00
22.00	0.14	4,676	575.52	0.15	0.15	0.00
24.00	0.13	4,652	575.52	0.13	0.13	0.00
26.00	0.00	4,232	575.47	0.06	0.06	0.00
28.00	0.00	3,836	575.43	0.05	0.05	0.00
30.00	0.00	3,444	575.39	0.05	0.05	0.00
32.00	0.00	3,055	575.34	0.05	0.05	0.00
34.00	0.00	2,670	575.30	0.05	0.05	0.00
36.00	0.00	2,287	575.26	0.05	0.05	0.00
38.00	0.00	1,909	575.22	0.05	0.05	0.00
40.00	0.00	1,533	575.18	0.05	0.05	0.00
42.00	0.00	1,161	575.13	0.05	0.05	0.00
44.00	0.00	792	575.09	0.05	0.05	0.00
46.00	0.00	426	575.05	0.05	0.05	0.00
48.00	0.00	107	575.01	0.02	0.02	0.00
50.00	0.00	20	575.00	0.00	0.00	0.00
52.00	0.00	4	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 1.58" for 2-Year event
Inflow = 12.29 cfs @ 12.11 hrs, Volume= 0.579 af
Outflow = 0.18 cfs @ 17.01 hrs, Volume= 0.400 af, Atten= 99%, Lag= 293.7 min
Primary = 0.18 cfs @ 17.01 hrs, Volume= 0.400 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.32' @ 17.01 hrs Surf.Area= 61,630 sf Storage= 19,128 cf

Plug-Flow detention time= 1,051.7 min calculated for 0.400 af (69% of inflow)
Center-of-Mass det. time= 962.0 min (1,770.2 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

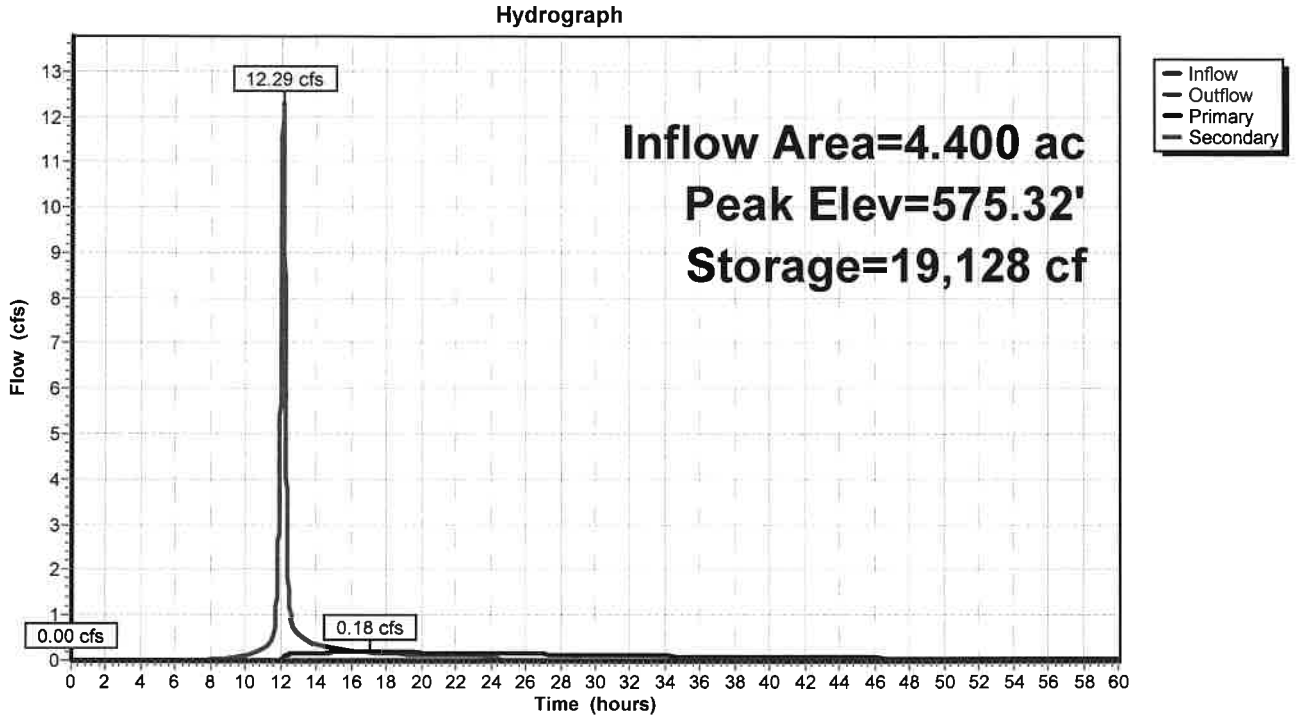
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.18 cfs @ 17.01 hrs HW=575.32' (Free Discharge)
└─**1=12" outlet pipe** (Passes 0.18 cfs of 1.87 cfs potential flow)
  ├─**2=low flow outlet pipe** (Barrel Controls 0.18 cfs @ 1.95 fps)
  └─**3=Grate** (Controls 0.00 cfs)

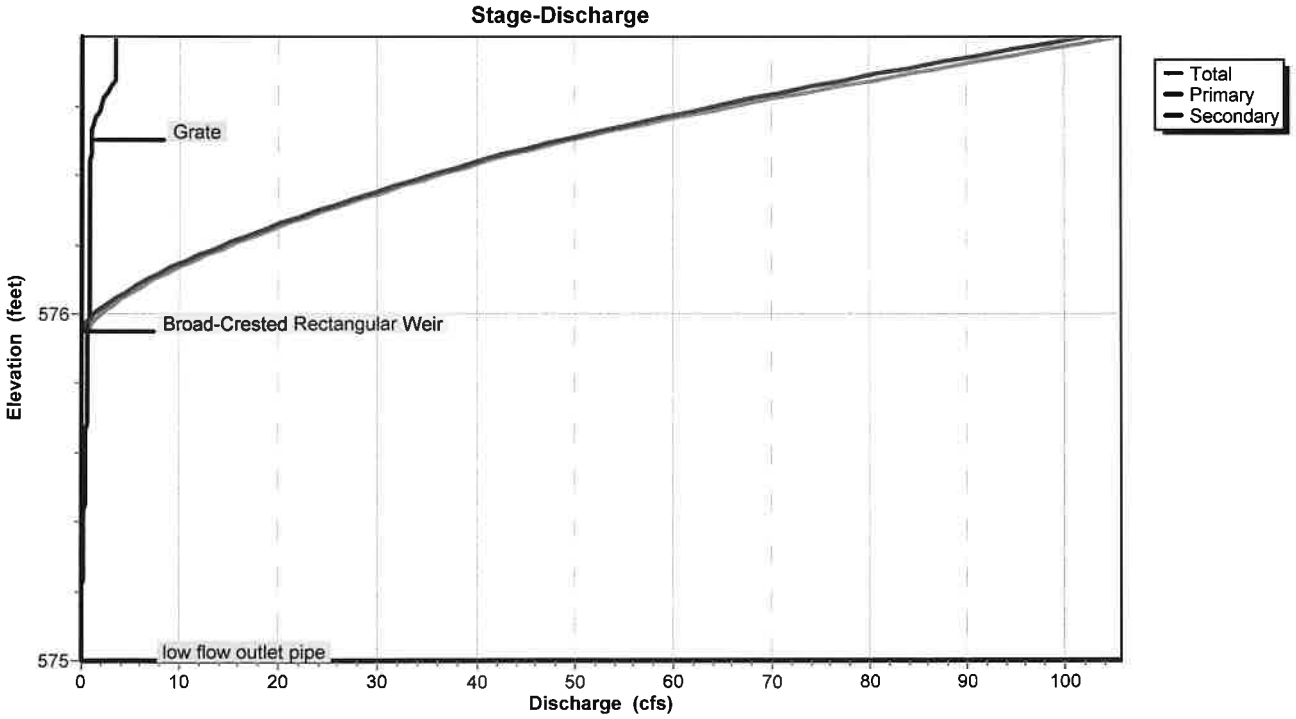
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

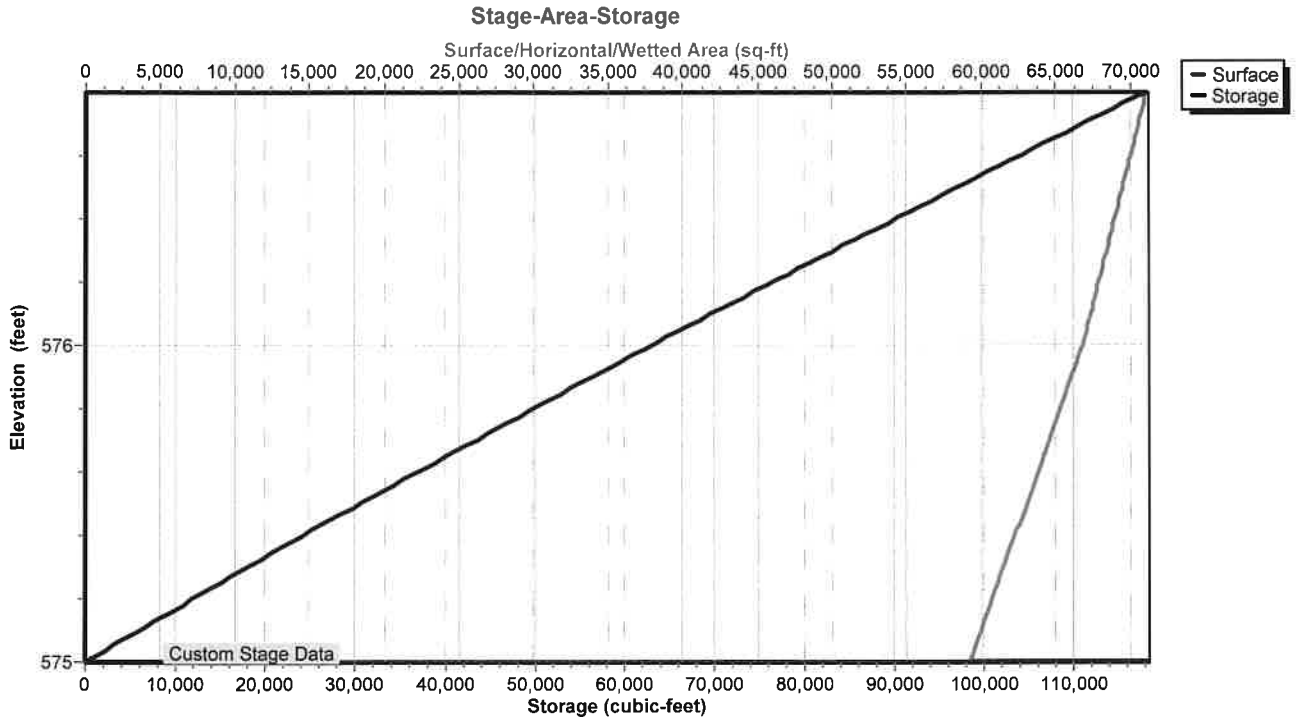


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.02	48	575.00	0.00	0.00	0.00
10.00	0.10	451	575.01	0.00	0.00	0.00
12.00	**6.69**	5,327	575.09	0.02	0.02	0.00
14.00	**0.35**	18,425	575.31	0.17	0.17	0.00
16.00	0.21	**19,087**	**575.32**	**0.18**	**0.18**	0.00
18.00	0.16	**19,093**	**575.32**	**0.18**	**0.18**	0.00
20.00	0.12	18,812	575.31	0.17	0.17	0.00
22.00	0.10	18,367	575.30	0.17	0.17	0.00
24.00	0.10	17,912	575.30	0.16	0.16	0.00
26.00	0.00	16,886	575.28	0.15	0.15	0.00
28.00	0.00	15,893	575.26	0.13	0.13	0.00
30.00	0.00	14,996	575.25	0.12	0.12	0.00
32.00	0.00	14,184	575.24	0.11	0.11	0.00
34.00	0.00	13,445	575.22	0.10	0.10	0.00
36.00	0.00	12,772	575.21	0.09	0.09	0.00
38.00	0.00	12,156	575.20	0.08	0.08	0.00
40.00	0.00	11,591	575.19	0.08	0.08	0.00
42.00	0.00	11,071	575.18	0.07	0.07	0.00
44.00	0.00	10,592	575.18	0.06	0.06	0.00
46.00	0.00	10,149	575.17	0.06	0.06	0.00
48.00	0.00	9,739	575.16	0.05	0.05	0.00
50.00	0.00	9,358	575.16	0.05	0.05	0.00
52.00	0.00	9,003	575.15	0.05	0.05	0.00
54.00	0.00	8,673	575.15	0.04	0.04	0.00
56.00	0.00	8,364	575.14	0.04	0.04	0.00
58.00	0.00	8,075	575.14	0.04	0.04	0.00
60.00	0.00	7,803	575.13	0.04	0.04	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

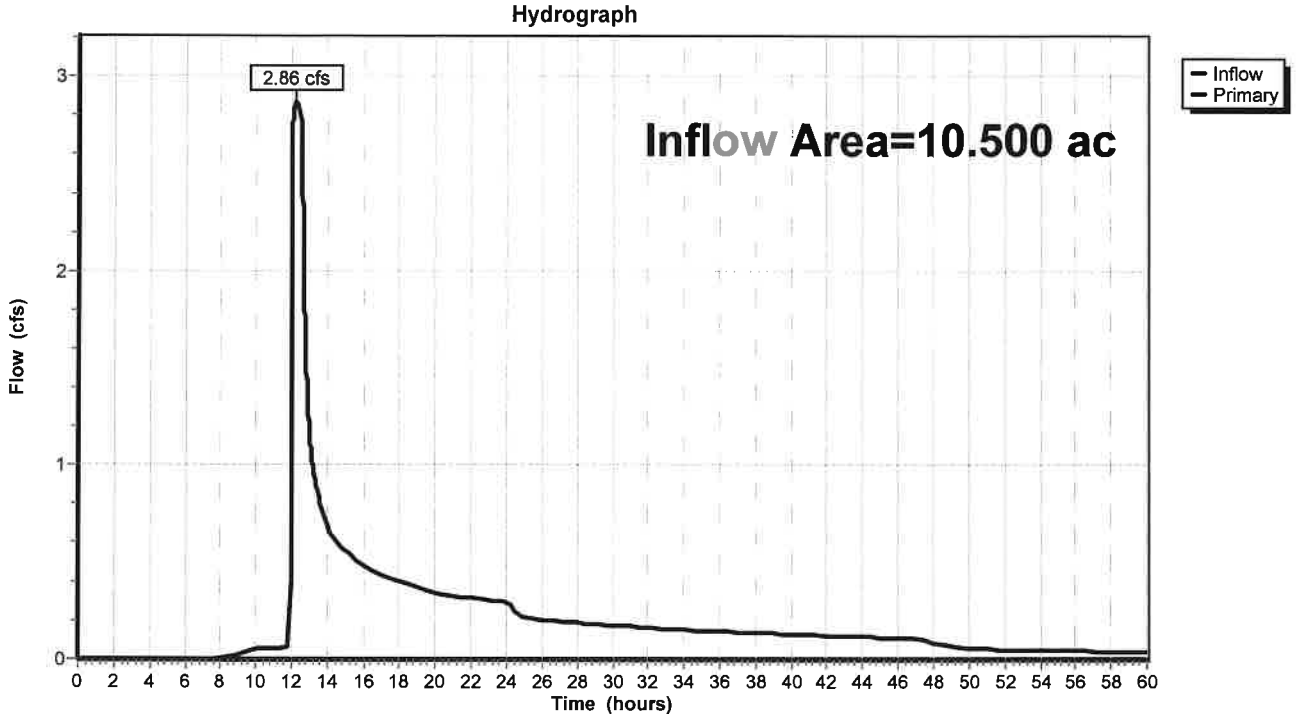
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 1.09" for 2-Year event
Inflow = 2.86 cfs @ 12.23 hrs, Volume= 0.956 af
Primary = 2.86 cfs @ 12.23 hrs, Volume= 0.956 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.05	0.00	0.05
1.00	0.00	0.00	0.00	53.00	0.05	0.00	0.05
2.00	0.00	0.00	0.00	54.00	0.04	0.00	0.04
3.00	0.00	0.00	0.00	55.00	0.04	0.00	0.04
4.00	0.00	0.00	0.00	56.00	0.04	0.00	0.04
5.00	0.00	0.00	0.00	57.00	0.04	0.00	0.04
6.00	0.00	0.00	0.00	58.00	0.04	0.00	0.04
7.00	0.00	0.00	0.00	59.00	0.04	0.00	0.04
8.00	0.00	0.00	0.00	60.00	0.04	0.00	0.04
9.00	0.02	0.00	0.02				
10.00	0.05	0.00	0.05				
11.00	0.05	0.00	0.05				
12.00	**2.31**	0.00	**2.31**				
13.00	**1.18**	0.00	**1.18**				
14.00	0.69	0.00	0.69				
15.00	0.55	0.00	0.55				
16.00	0.48	0.00	0.48				
17.00	0.43	0.00	0.43				
18.00	0.40	0.00	0.40				
19.00	0.37	0.00	0.37				
20.00	0.34	0.00	0.34				
21.00	0.32	0.00	0.32				
22.00	0.31	0.00	0.31				
23.00	0.30	0.00	0.30				
24.00	0.29	0.00	0.29				
25.00	0.21	0.00	0.21				
26.00	0.20	0.00	0.20				
27.00	0.19	0.00	0.19				
28.00	0.19	0.00	0.19				
29.00	0.18	0.00	0.18				
30.00	0.17	0.00	0.17				
31.00	0.17	0.00	0.17				
32.00	0.16	0.00	0.16				
33.00	0.16	0.00	0.16				
34.00	0.15	0.00	0.15				
35.00	0.15	0.00	0.15				
36.00	0.14	0.00	0.14				
37.00	0.14	0.00	0.14				
38.00	0.13	0.00	0.13				
39.00	0.13	0.00	0.13				
40.00	0.13	0.00	0.13				
41.00	0.12	0.00	0.12				
42.00	0.12	0.00	0.12				
43.00	0.12	0.00	0.12				
44.00	0.11	0.00	0.11				
45.00	0.11	0.00	0.11				
46.00	0.11	0.00	0.11				
47.00	0.11	0.00	0.11				
48.00	0.08	0.00	0.08				
49.00	0.06	0.00	0.06				
50.00	0.06	0.00	0.06				
51.00	0.05	0.00	0.05				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=1.71"
Flow Length=652' Tc=13.3 min CN=90 Runoff=14.18 cfs 0.870 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=1.79"
Flow Length=683' Tc=14.4 min CN=91 Runoff=10.29 cfs 0.658 af

Pond 1P: Bioretention Area 3 Peak Elev=575.99' Storage=9,153 cf Inflow=14.18 cfs 0.870 af
Primary=2.83 cfs 0.666 af Secondary=10.09 cfs 0.203 af Outflow=12.91 cfs 0.870 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.46' Storage=28,218 cf Inflow=20.08 cfs 0.861 af
Primary=0.33 cfs 0.652 af Secondary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.652 af

Link 5L: Outflow (@ CB 54) Inflow=3.01 cfs 1.318 af
Primary=3.01 cfs 1.318 af

Total Runoff Area = 10.500 ac Runoff Volume = 1.527 af Average Runoff Depth = 1.75"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

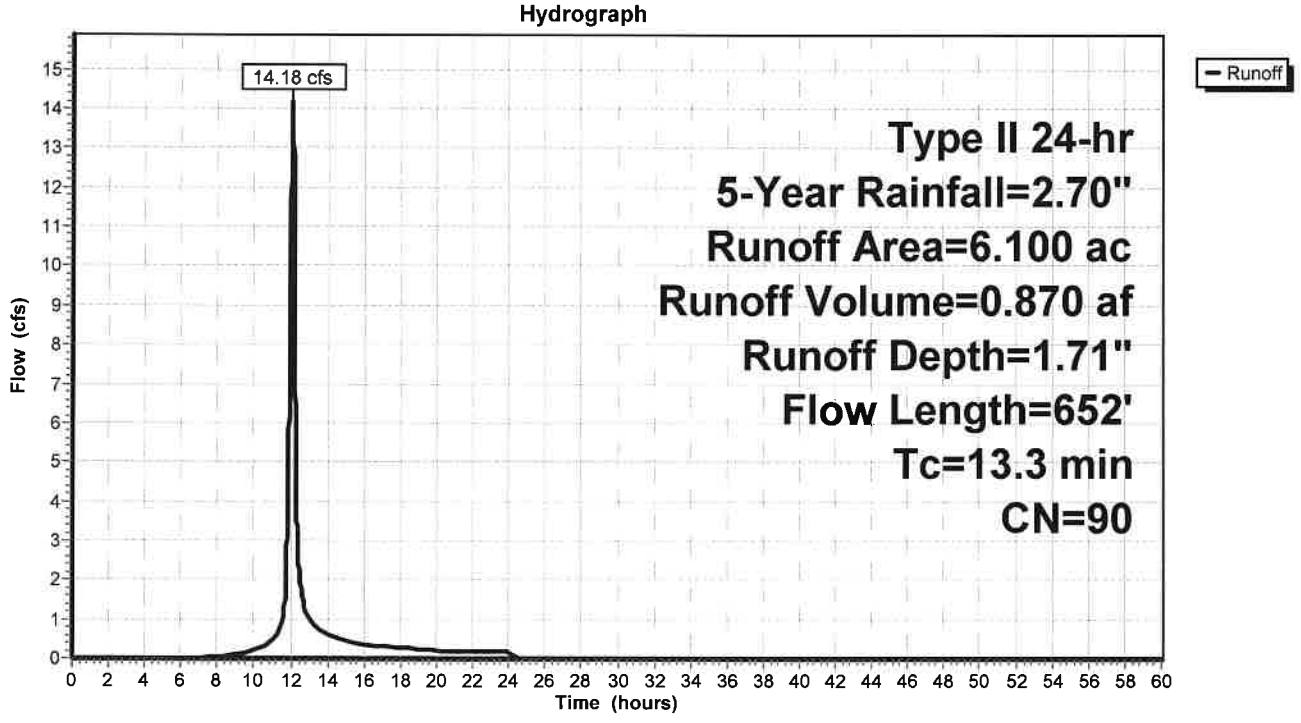
Runoff = 14.18 cfs @ 12.05 hrs, Volume= 0.870 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.00
7.00	0.27	0.00	0.02
8.00	0.32	0.01	0.05
9.00	0.40	0.02	0.12
10.00	0.49	0.05	0.20
11.00	0.63	0.11	0.47
12.00	1.79	0.92	**12.79**
13.00	2.08	1.17	**1.02**
14.00	2.21	1.28	0.59
15.00	2.30	1.36	0.46
16.00	2.38	1.42	0.36
17.00	2.43	1.47	0.31
18.00	2.49	1.52	0.27
19.00	2.53	1.56	0.24
20.00	2.57	1.59	0.20
21.00	2.60	1.62	0.19
22.00	2.64	1.65	0.18
23.00	2.67	1.68	0.17
24.00	**2.70**	**1.71**	0.17
25.00	2.70	1.71	0.00
26.00	2.70	1.71	0.00
27.00	2.70	1.71	0.00
28.00	2.70	1.71	0.00
29.00	2.70	1.71	0.00
30.00	2.70	1.71	0.00
31.00	2.70	1.71	0.00
32.00	2.70	1.71	0.00
33.00	2.70	1.71	0.00
34.00	2.70	1.71	0.00
35.00	2.70	1.71	0.00
36.00	2.70	1.71	0.00
37.00	2.70	1.71	0.00
38.00	2.70	1.71	0.00
39.00	2.70	1.71	0.00
40.00	2.70	1.71	0.00
41.00	2.70	1.71	0.00
42.00	2.70	1.71	0.00
43.00	2.70	1.71	0.00
44.00	2.70	1.71	0.00
45.00	2.70	1.71	0.00
46.00	2.70	1.71	0.00
47.00	2.70	1.71	0.00
48.00	2.70	1.71	0.00
49.00	2.70	1.71	0.00
50.00	2.70	1.71	0.00
51.00	2.70	1.71	0.00
52.00	2.70	1.71	0.00
53.00	2.70	1.71	0.00
54.00	2.70	1.71	0.00
55.00	2.70	1.71	0.00
56.00	2.70	1.71	0.00
57.00	2.70	1.71	0.00
58.00	2.70	1.71	0.00
59.00	2.70	1.71	0.00
60.00	2.70	1.71	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

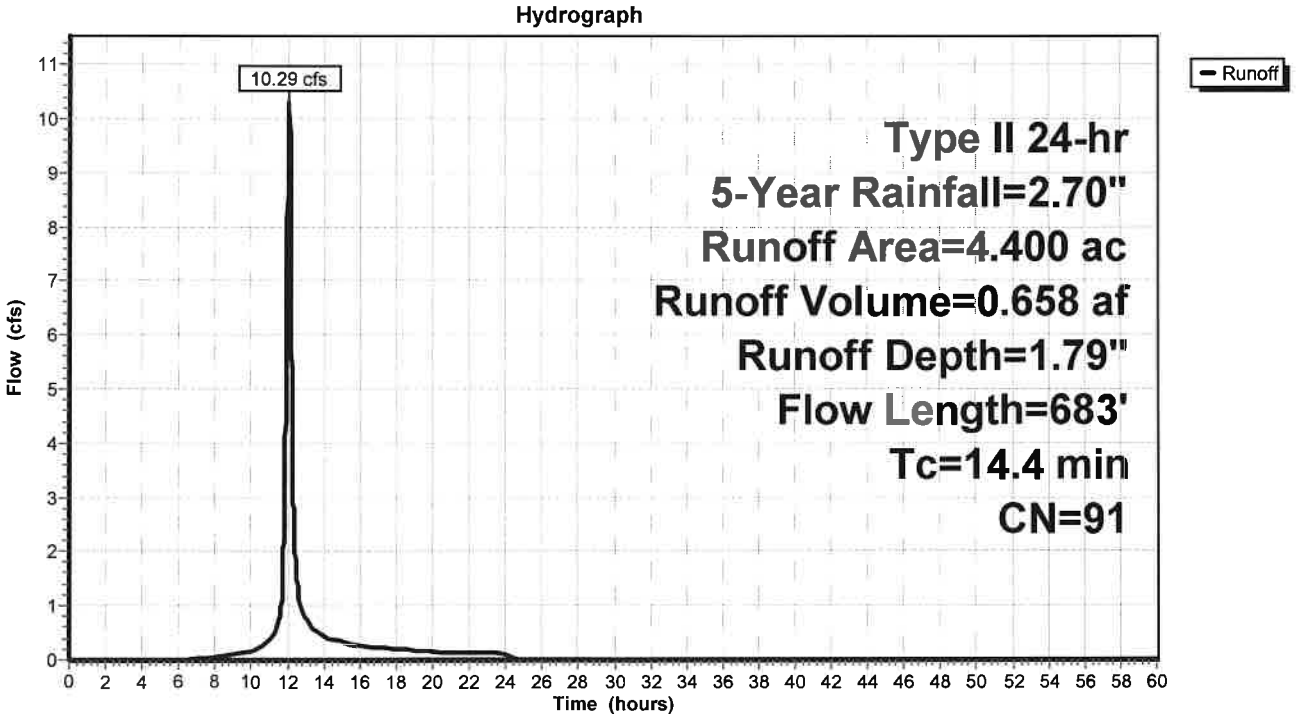
Runoff = 10.29 cfs @ 12.06 hrs, Volume= 0.658 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.00
7.00	0.27	0.00	0.03
8.00	0.32	0.01	0.05
9.00	0.40	0.03	0.10
10.00	0.49	0.07	0.17
11.00	0.63	0.13	0.37
12.00	1.79	0.98	**8.97**
13.00	2.08	1.24	**0.77**
14.00	2.21	1.35	0.44
15.00	2.30	1.43	0.34
16.00	2.38	1.50	0.27
17.00	2.43	1.55	0.23
18.00	2.49	1.60	0.20
19.00	2.53	1.64	0.18
20.00	2.57	1.67	0.15
21.00	2.60	1.71	0.14
22.00	2.64	1.74	0.13
23.00	2.67	1.77	0.13
24.00	**2.70**	**1.79**	0.12
25.00	2.70	1.79	0.00
26.00	2.70	1.79	0.00
27.00	2.70	1.79	0.00
28.00	2.70	1.79	0.00
29.00	2.70	1.79	0.00
30.00	2.70	1.79	0.00
31.00	2.70	1.79	0.00
32.00	2.70	1.79	0.00
33.00	2.70	1.79	0.00
34.00	2.70	1.79	0.00
35.00	2.70	1.79	0.00
36.00	2.70	1.79	0.00
37.00	2.70	1.79	0.00
38.00	2.70	1.79	0.00
39.00	2.70	1.79	0.00
40.00	2.70	1.79	0.00
41.00	2.70	1.79	0.00
42.00	2.70	1.79	0.00
43.00	2.70	1.79	0.00
44.00	2.70	1.79	0.00
45.00	2.70	1.79	0.00
46.00	2.70	1.79	0.00
47.00	2.70	1.79	0.00
48.00	2.70	1.79	0.00
49.00	2.70	1.79	0.00
50.00	2.70	1.79	0.00
51.00	2.70	1.79	0.00
52.00	2.70	1.79	0.00
53.00	2.70	1.79	0.00
54.00	2.70	1.79	0.00
55.00	2.70	1.79	0.00
56.00	2.70	1.79	0.00
57.00	2.70	1.79	0.00
58.00	2.70	1.79	0.00
59.00	2.70	1.79	0.00
60.00	2.70	1.79	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 1.71" for 5-Year event
Inflow = 14.18 cfs @ 12.05 hrs, Volume= 0.870 af
Outflow = 12.91 cfs @ 12.10 hrs, Volume= 0.870 af, Atten= 9%, Lag= 2.9 min
Primary = 2.83 cfs @ 12.10 hrs, Volume= 0.666 af
Secondary = 10.09 cfs @ 12.10 hrs, Volume= 0.203 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.99' @ 12.10 hrs Surf.Area= 9,908 sf Storage= 9,153 cf

Plug-Flow detention time= 193.1 min calculated for 0.869 af (100% of inflow)
Center-of-Mass det. time= 193.4 min (1,010.7 - 817.3)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

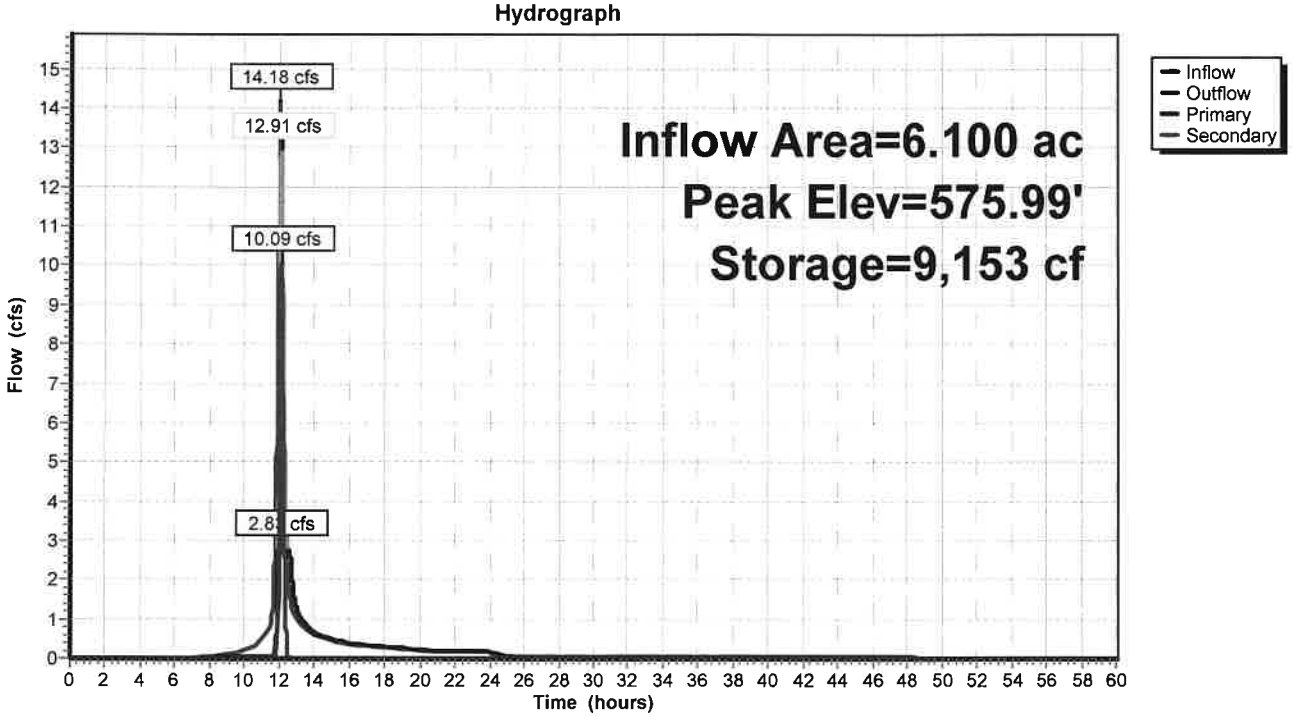
Primary OutFlow Max=2.83 cfs @ 12.10 hrs HW=575.99' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.83 cfs @ 8.10 fps)
  ├**2=Grate** (Passes < 4.69 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

Secondary OutFlow Max=10.07 cfs @ 12.10 hrs HW=575.99' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 10.07 cfs @ 1.42 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

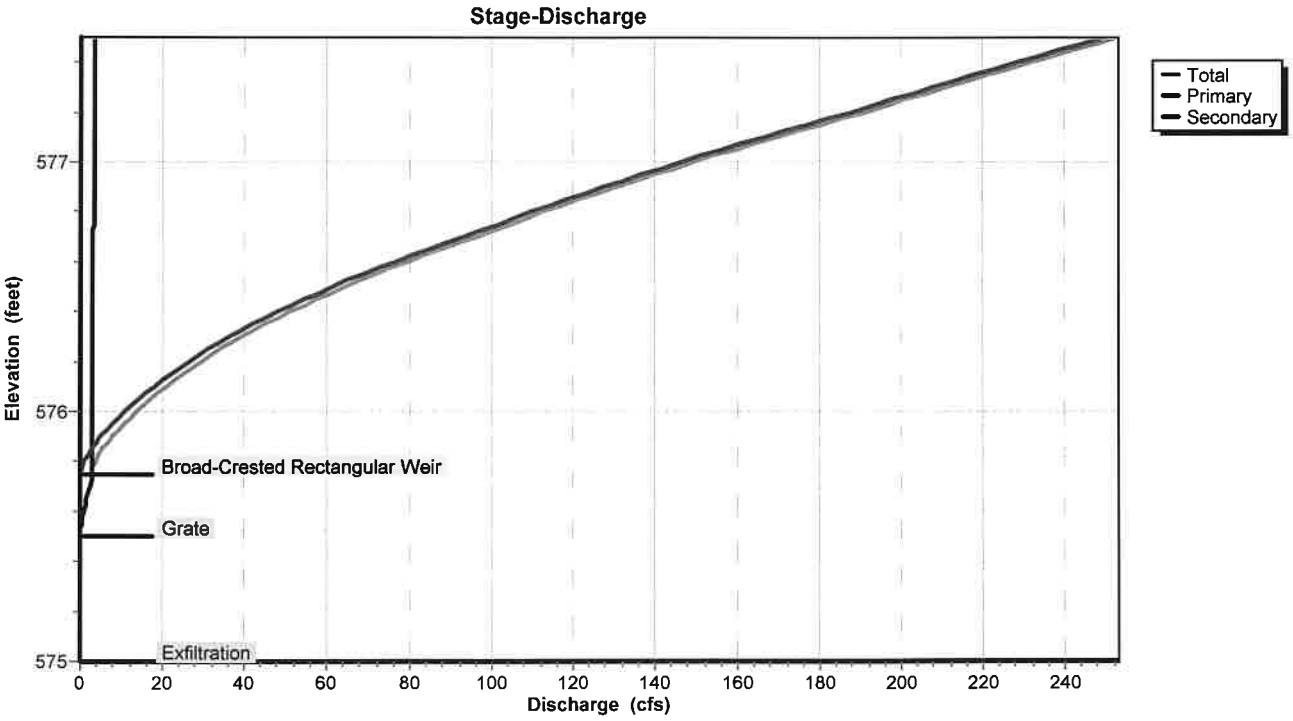
Pond 1P: Bioretention Area 3

Hydrograph



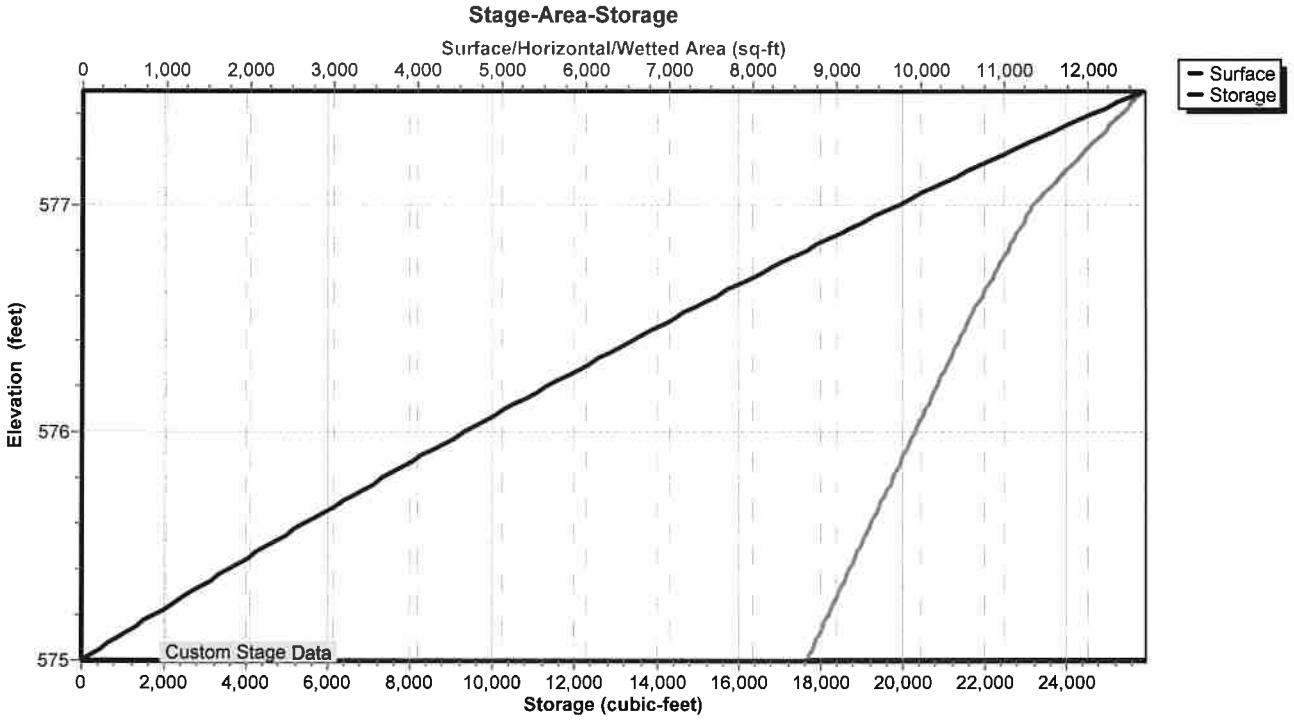
Pond 1P: Bioretention Area 3

Stage-Discharge



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	0	575.00	0.00	0.00	0.00
8.00	0.05	99	575.01	0.02	0.02	0.00
10.00	0.20	617	575.07	0.05	0.05	0.00
12.00	**12.79**	**8,183**	**575.89**	**7.28**	**2.78**	**4.50**
14.00	**0.59**	**5,218**	**575.58**	**0.66**	**0.66**	**0.00**
16.00	0.36	4,969	575.55	0.38	0.38	0.00
18.00	0.27	4,859	575.54	0.29	0.29	0.00
20.00	0.20	4,774	575.53	0.21	0.21	0.00
22.00	0.18	4,739	575.53	0.18	0.18	0.00
24.00	0.17	4,722	575.53	0.17	0.17	0.00
26.00	0.00	4,258	575.48	0.06	0.06	0.00
28.00	0.00	3,862	575.43	0.05	0.05	0.00
30.00	0.00	3,470	575.39	0.05	0.05	0.00
32.00	0.00	3,081	575.35	0.05	0.05	0.00
34.00	0.00	2,695	575.30	0.05	0.05	0.00
36.00	0.00	2,313	575.26	0.05	0.05	0.00
38.00	0.00	1,934	575.22	0.05	0.05	0.00
40.00	0.00	1,558	575.18	0.05	0.05	0.00
42.00	0.00	1,186	575.14	0.05	0.05	0.00
44.00	0.00	816	575.09	0.05	0.05	0.00
46.00	0.00	450	575.05	0.05	0.05	0.00
48.00	0.00	119	575.01	0.03	0.03	0.00
50.00	0.00	22	575.00	0.01	0.01	0.00
52.00	0.00	4	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 2.35" for 5-Year event
Inflow = 20.08 cfs @ 12.08 hrs, Volume= 0.861 af
Outflow = 0.33 cfs @ 15.13 hrs, Volume= 0.652 af, Atten= 98%, Lag= 182.5 min
Primary = 0.33 cfs @ 15.13 hrs, Volume= 0.652 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.46' @ 15.13 hrs Surf.Area= 62,747 sf Storage= 28,218 cf

Plug-Flow detention time= 974.3 min calculated for 0.652 af (76% of inflow)
Center-of-Mass det. time= 898.6 min (1,692.2 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

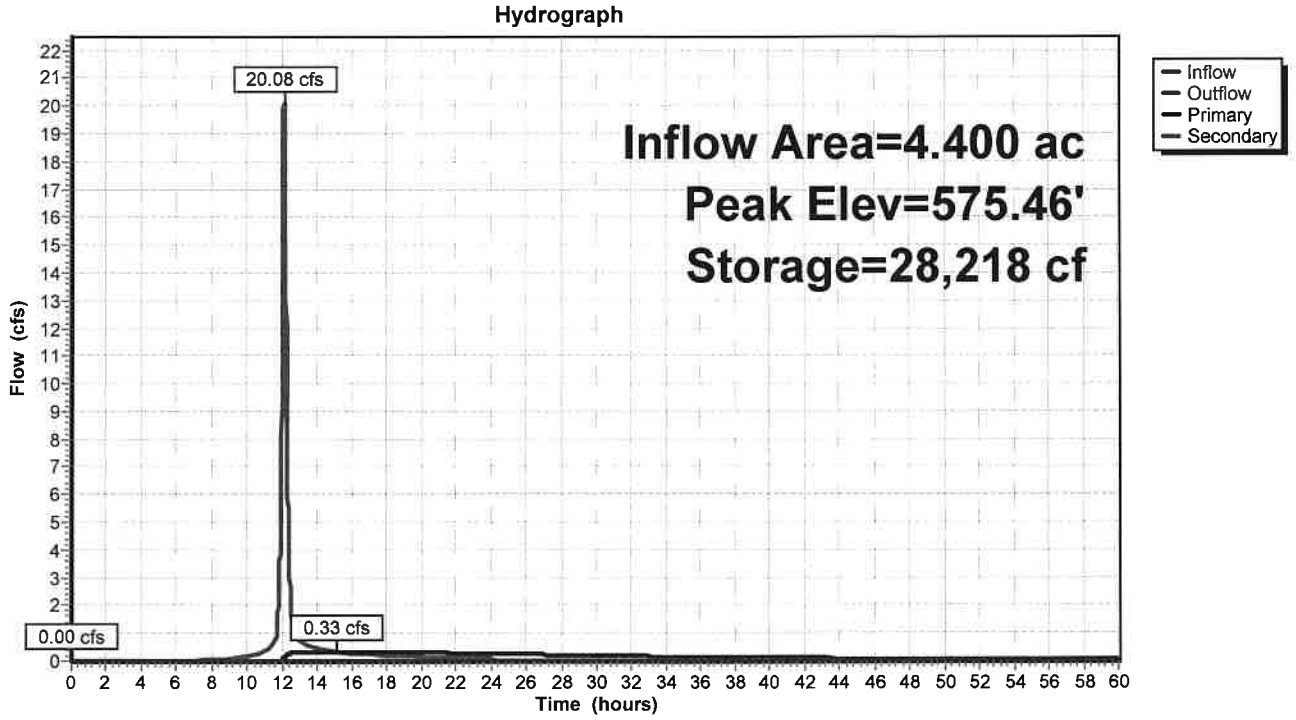
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.33 cfs @ 15.13 hrs HW=575.46' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.33 cfs of 2.02 cfs potential flow)
  └**2=low flow outlet pipe** (Barrel Controls 0.33 cfs @ 2.27 fps)
  └**3=Grate** (Controls 0.00 cfs)

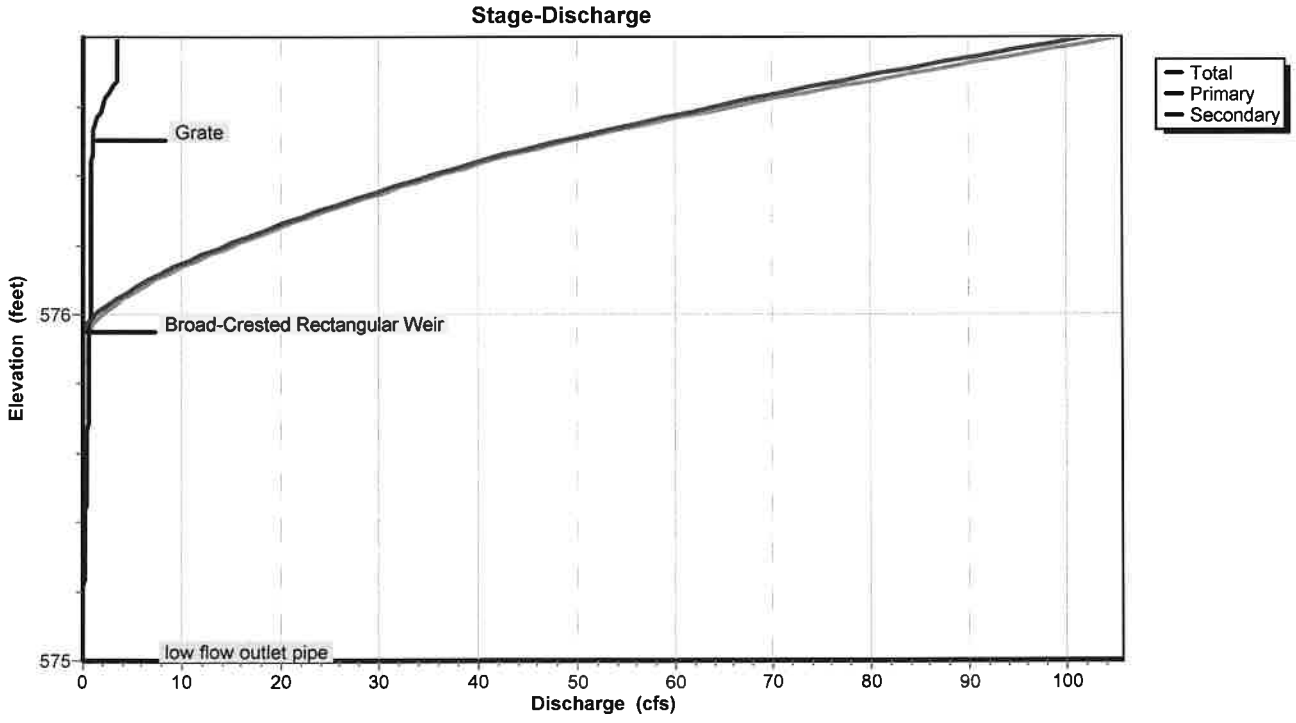
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

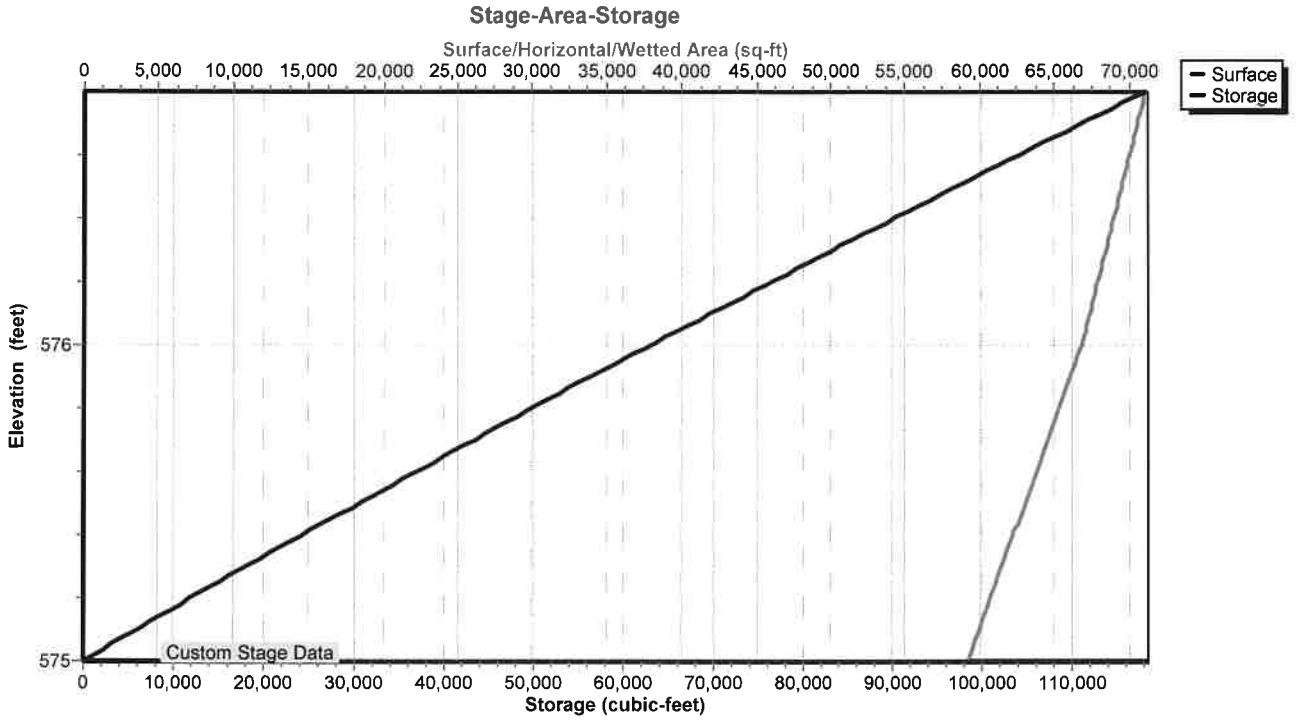


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.00	1	575.00	0.00	0.00	0.00
8.00	0.05	186	575.00	0.00	0.00	0.00
10.00	0.17	912	575.02	0.00	0.00	0.00
12.00	**13.47**	8,186	575.14	0.04	0.04	0.00
14.00	**0.44**	**28,034**	**575.46**	**0.33**	**0.33**	0.00
16.00	0.27	**28,118**	**575.46**	**0.33**	**0.33**	0.00
18.00	0.20	27,442	575.45	0.32	0.32	0.00
20.00	0.15	26,479	575.43	0.30	0.30	0.00
22.00	0.13	25,382	575.42	0.28	0.28	0.00
24.00	0.12	24,337	575.40	0.26	0.26	0.00
26.00	0.00	22,633	575.37	0.24	0.24	0.00
28.00	0.00	21,033	575.35	0.21	0.21	0.00
30.00	0.00	19,609	575.32	0.19	0.19	0.00
32.00	0.00	18,338	575.30	0.17	0.17	0.00
34.00	0.00	17,199	575.29	0.15	0.15	0.00
36.00	0.00	16,175	575.27	0.13	0.13	0.00
38.00	0.00	15,251	575.25	0.12	0.12	0.00
40.00	0.00	14,415	575.24	0.11	0.11	0.00
42.00	0.00	13,655	575.23	0.10	0.10	0.00
44.00	0.00	12,964	575.22	0.09	0.09	0.00
46.00	0.00	12,331	575.21	0.08	0.08	0.00
48.00	0.00	11,752	575.20	0.08	0.08	0.00
50.00	0.00	11,220	575.19	0.07	0.07	0.00
52.00	0.00	10,729	575.18	0.07	0.07	0.00
54.00	0.00	10,276	575.17	0.06	0.06	0.00
56.00	0.00	9,856	575.16	0.06	0.06	0.00
58.00	0.00	9,467	575.16	0.05	0.05	0.00
60.00	0.00	9,105	575.15	0.05	0.05	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

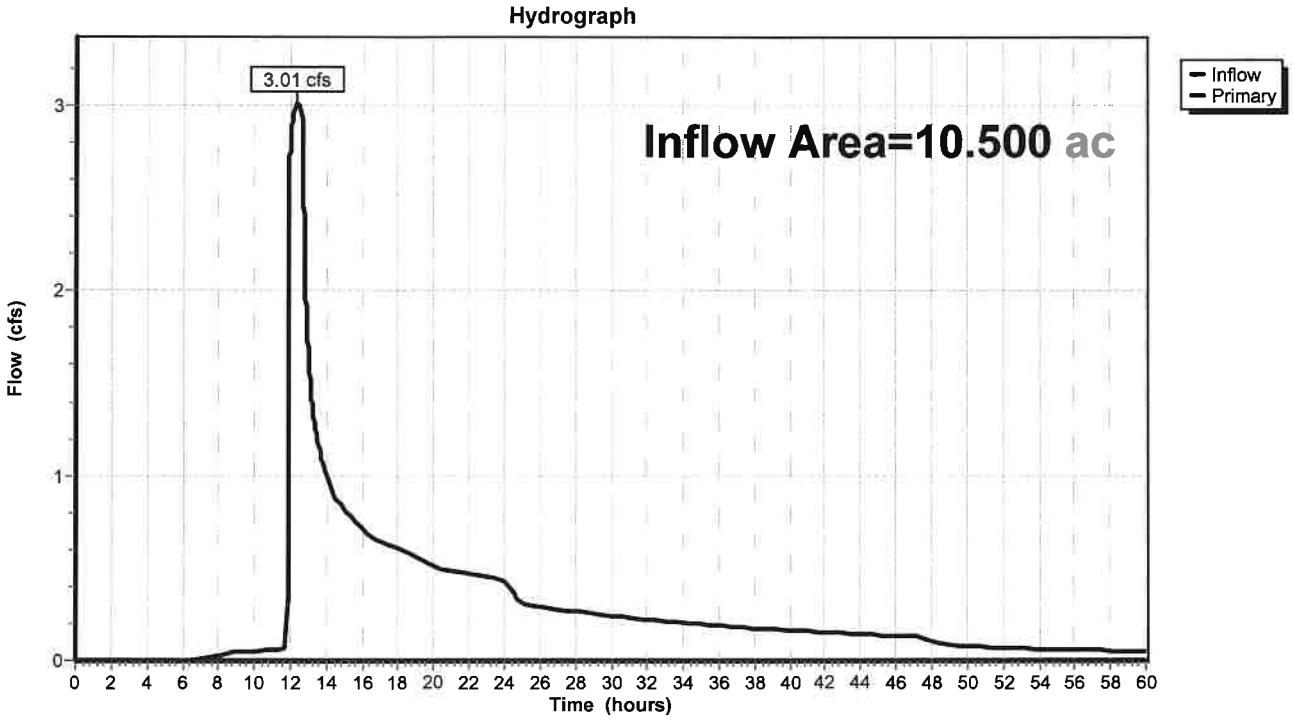
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 1.51" for 5-Year event
Inflow = 3.01 cfs @ 12.34 hrs, Volume= 1.318 af
Primary = 3.01 cfs @ 12.34 hrs, Volume= 1.318 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.07	0.00	0.07
1.00	0.00	0.00	0.00	53.00	0.06	0.00	0.06
2.00	0.00	0.00	0.00	54.00	0.06	0.00	0.06
3.00	0.00	0.00	0.00	55.00	0.06	0.00	0.06
4.00	0.00	0.00	0.00	56.00	0.06	0.00	0.06
5.00	0.00	0.00	0.00	57.00	0.05	0.00	0.05
6.00	0.00	0.00	0.00	58.00	0.05	0.00	0.05
7.00	0.00	0.00	0.00	59.00	0.05	0.00	0.05
8.00	0.02	0.00	0.02	60.00	0.05	0.00	0.05
9.00	0.05	0.00	0.05				
10.00	0.05	0.00	0.05				
11.00	0.05	0.00	0.05				
12.00	**2.82**	0.00	**2.82**				
13.00	**1.62**	0.00	**1.62**				
14.00	0.99	0.00	0.99				
15.00	0.81	0.00	0.81				
16.00	0.71	0.00	0.71				
17.00	0.65	0.00	0.65				
18.00	0.60	0.00	0.60				
19.00	0.56	0.00	0.56				
20.00	0.51	0.00	0.51				
21.00	0.48	0.00	0.48				
22.00	0.47	0.00	0.47				
23.00	0.45	0.00	0.45				
24.00	0.43	0.00	0.43				
25.00	0.31	0.00	0.31				
26.00	0.29	0.00	0.29				
27.00	0.28	0.00	0.28				
28.00	0.26	0.00	0.26				
29.00	0.25	0.00	0.25				
30.00	0.24	0.00	0.24				
31.00	0.23	0.00	0.23				
32.00	0.22	0.00	0.22				
33.00	0.21	0.00	0.21				
34.00	0.20	0.00	0.20				
35.00	0.20	0.00	0.20				
36.00	0.19	0.00	0.19				
37.00	0.18	0.00	0.18				
38.00	0.17	0.00	0.17				
39.00	0.17	0.00	0.17				
40.00	0.16	0.00	0.16				
41.00	0.16	0.00	0.16				
42.00	0.15	0.00	0.15				
43.00	0.15	0.00	0.15				
44.00	0.14	0.00	0.14				
45.00	0.14	0.00	0.14				
46.00	0.13	0.00	0.13				
47.00	0.13	0.00	0.13				
48.00	0.10	0.00	0.10				
49.00	0.09	0.00	0.09				
50.00	0.08	0.00	0.08				
51.00	0.07	0.00	0.07				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=2.12"
Flow Length=652' Tc=13.3 min CN=90 Runoff=17.46 cfs 1.079 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=2.21"
Flow Length=683' Tc=14.4 min CN=91 Runoff=12.59 cfs 0.811 af

Pond 1P: Bioretention Area 3 Peak Elev=576.04' Storage=9,672 cf Inflow=17.46 cfs 1.079 af
Primary=2.85 cfs 0.765 af Secondary=13.60 cfs 0.314 af Outflow=16.45 cfs 1.079 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.60' Storage=37,117 cf Inflow=26.01 cfs 1.125 af
Primary=0.47 cfs 0.892 af Secondary=0.00 cfs 0.000 af Outflow=0.47 cfs 0.892 af

Link 5L: Outflow (@ CB 54) Inflow=3.16 cfs 1.657 af
Primary=3.16 cfs 1.657 af

Total Runoff Area = 10.500 ac Runoff Volume = 1.890 af Average Runoff Depth = 2.16"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

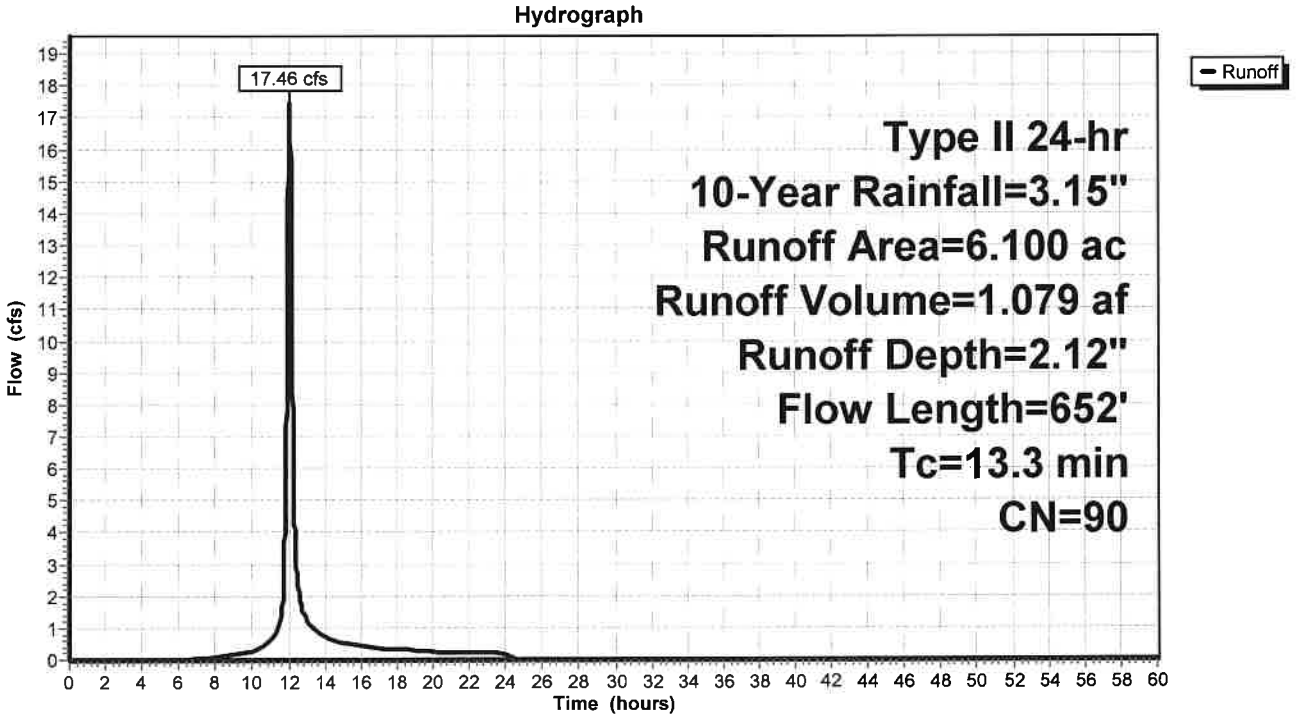
Runoff = 17.46 cfs @ 12.05 hrs, Volume= 1.079 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.07	0.00	0.00
3.00	0.11	0.00	0.00
4.00	0.15	0.00	0.00
5.00	0.20	0.00	0.00
6.00	0.25	0.00	0.01
7.00	0.31	0.01	0.05
8.00	0.38	0.02	0.09
9.00	0.46	0.04	0.18
10.00	0.57	0.08	0.28
11.00	0.74	0.16	0.63
12.00	2.09	1.17	**15.84**
13.00	2.43	1.47	**1.23**
14.00	2.58	1.61	0.71
15.00	2.69	1.70	0.55
16.00	2.77	1.78	0.43
17.00	2.84	1.84	0.37
18.00	2.90	1.89	0.33
19.00	2.95	1.94	0.28
20.00	3.00	1.98	0.24
21.00	3.04	2.02	0.22
22.00	3.08	2.06	0.22
23.00	3.11	2.09	0.21
24.00	**3.15**	**2.12**	0.20
25.00	3.15	2.12	0.00
26.00	3.15	2.12	0.00
27.00	3.15	2.12	0.00
28.00	3.15	2.12	0.00
29.00	3.15	2.12	0.00
30.00	3.15	2.12	0.00
31.00	3.15	2.12	0.00
32.00	3.15	2.12	0.00
33.00	3.15	2.12	0.00
34.00	3.15	2.12	0.00
35.00	3.15	2.12	0.00
36.00	3.15	2.12	0.00
37.00	3.15	2.12	0.00
38.00	3.15	2.12	0.00
39.00	3.15	2.12	0.00
40.00	3.15	2.12	0.00
41.00	3.15	2.12	0.00
42.00	3.15	2.12	0.00
43.00	3.15	2.12	0.00
44.00	3.15	2.12	0.00
45.00	3.15	2.12	0.00
46.00	3.15	2.12	0.00
47.00	3.15	2.12	0.00
48.00	3.15	2.12	0.00
49.00	3.15	2.12	0.00
50.00	3.15	2.12	0.00
51.00	3.15	2.12	0.00
52.00	3.15	2.12	0.00
53.00	3.15	2.12	0.00
54.00	3.15	2.12	0.00
55.00	3.15	2.12	0.00
56.00	3.15	2.12	0.00
57.00	3.15	2.12	0.00
58.00	3.15	2.12	0.00
59.00	3.15	2.12	0.00
60.00	3.15	2.12	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

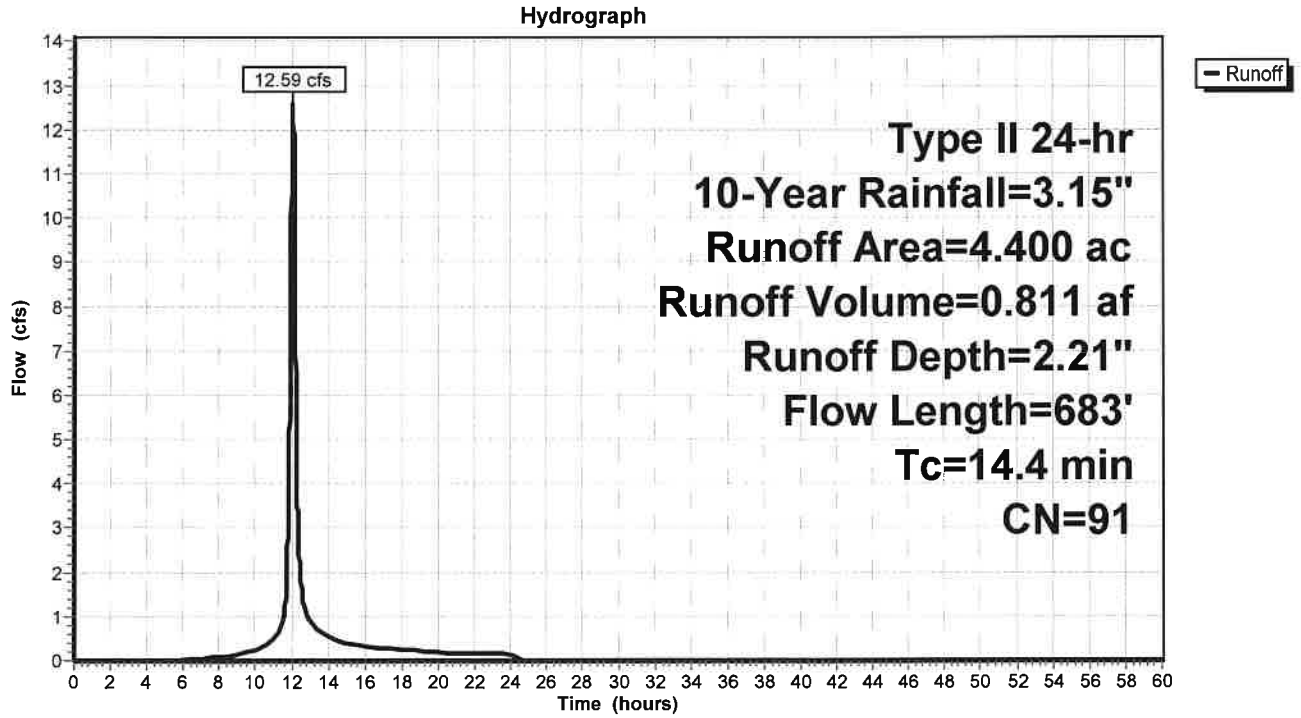
Runoff = 12.59 cfs @ 12.06 hrs, Volume= 0.811 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.07	0.00	0.00
3.00	0.11	0.00	0.00
4.00	0.15	0.00	0.00
5.00	0.20	0.00	0.00
6.00	0.25	0.00	0.02
7.00	0.31	0.01	0.05
8.00	0.38	0.03	0.08
9.00	0.46	0.06	0.15
10.00	0.57	0.10	0.23
11.00	0.74	0.19	0.49
12.00	2.09	1.24	**11.04**
13.00	2.43	1.55	**0.92**
14.00	2.58	1.69	0.53
15.00	2.69	1.78	0.40
16.00	2.77	1.86	0.32
17.00	2.84	1.92	0.27
18.00	2.90	1.98	0.24
19.00	2.95	2.03	0.21
20.00	3.00	2.07	0.18
21.00	3.04	2.11	0.16
22.00	3.08	2.14	0.16
23.00	3.11	2.18	0.15
24.00	**3.15**	**2.21**	0.15
25.00	3.15	2.21	0.00
26.00	3.15	2.21	0.00
27.00	3.15	2.21	0.00
28.00	3.15	2.21	0.00
29.00	3.15	2.21	0.00
30.00	3.15	2.21	0.00
31.00	3.15	2.21	0.00
32.00	3.15	2.21	0.00
33.00	3.15	2.21	0.00
34.00	3.15	2.21	0.00
35.00	3.15	2.21	0.00
36.00	3.15	2.21	0.00
37.00	3.15	2.21	0.00
38.00	3.15	2.21	0.00
39.00	3.15	2.21	0.00
40.00	3.15	2.21	0.00
41.00	3.15	2.21	0.00
42.00	3.15	2.21	0.00
43.00	3.15	2.21	0.00
44.00	3.15	2.21	0.00
45.00	3.15	2.21	0.00
46.00	3.15	2.21	0.00
47.00	3.15	2.21	0.00
48.00	3.15	2.21	0.00
49.00	3.15	2.21	0.00
50.00	3.15	2.21	0.00
51.00	3.15	2.21	0.00
52.00	3.15	2.21	0.00
53.00	3.15	2.21	0.00
54.00	3.15	2.21	0.00
55.00	3.15	2.21	0.00
56.00	3.15	2.21	0.00
57.00	3.15	2.21	0.00
58.00	3.15	2.21	0.00
59.00	3.15	2.21	0.00
60.00	3.15	2.21	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 2.12" for 10-Year event
Inflow = 17.46 cfs @ 12.05 hrs, Volume= 1.079 af
Outflow = 16.45 cfs @ 12.09 hrs, Volume= 1.079 af, Atten= 6%, Lag= 2.3 min
Primary = 2.85 cfs @ 12.09 hrs, Volume= 0.765 af
Secondary = 13.60 cfs @ 12.09 hrs, Volume= 0.314 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.04' @ 12.09 hrs Surf.Area= 9,976 sf Storage= 9,672 cf

Plug-Flow detention time= 160.8 min calculated for 1.079 af (100% of inflow)
Center-of-Mass det. time= 160.7 min (971.9 - 811.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

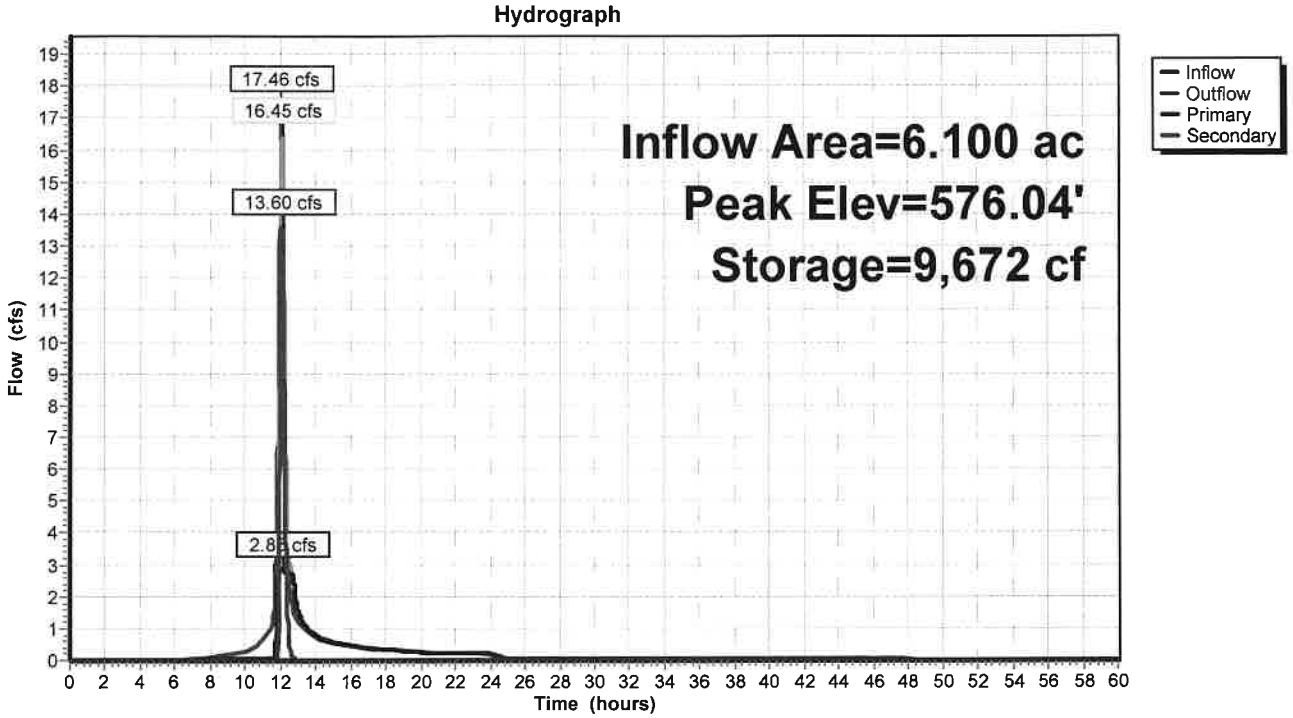
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.85 cfs @ 12.09 hrs HW=576.04' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.85 cfs @ 8.17 fps)
  ├**2=Grate** (Passes < 4.93 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

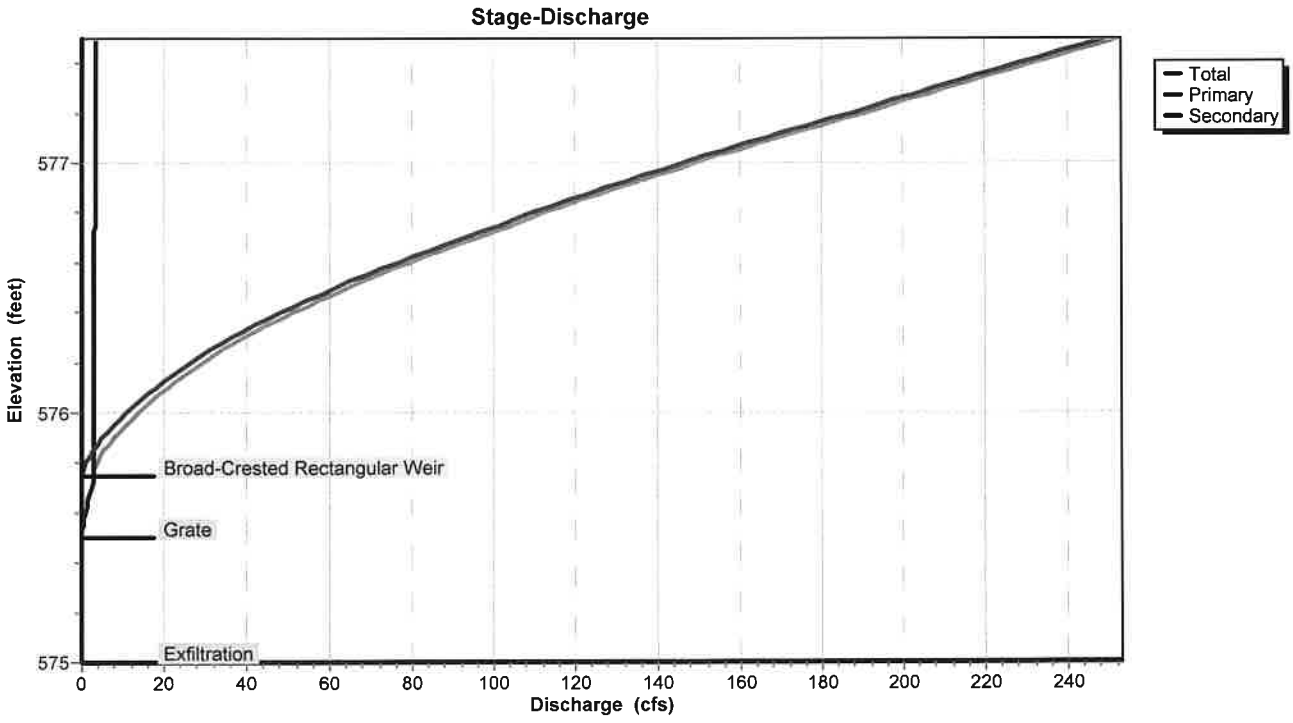
Secondary OutFlow Max=13.58 cfs @ 12.09 hrs HW=576.04' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 13.58 cfs @ 1.57 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

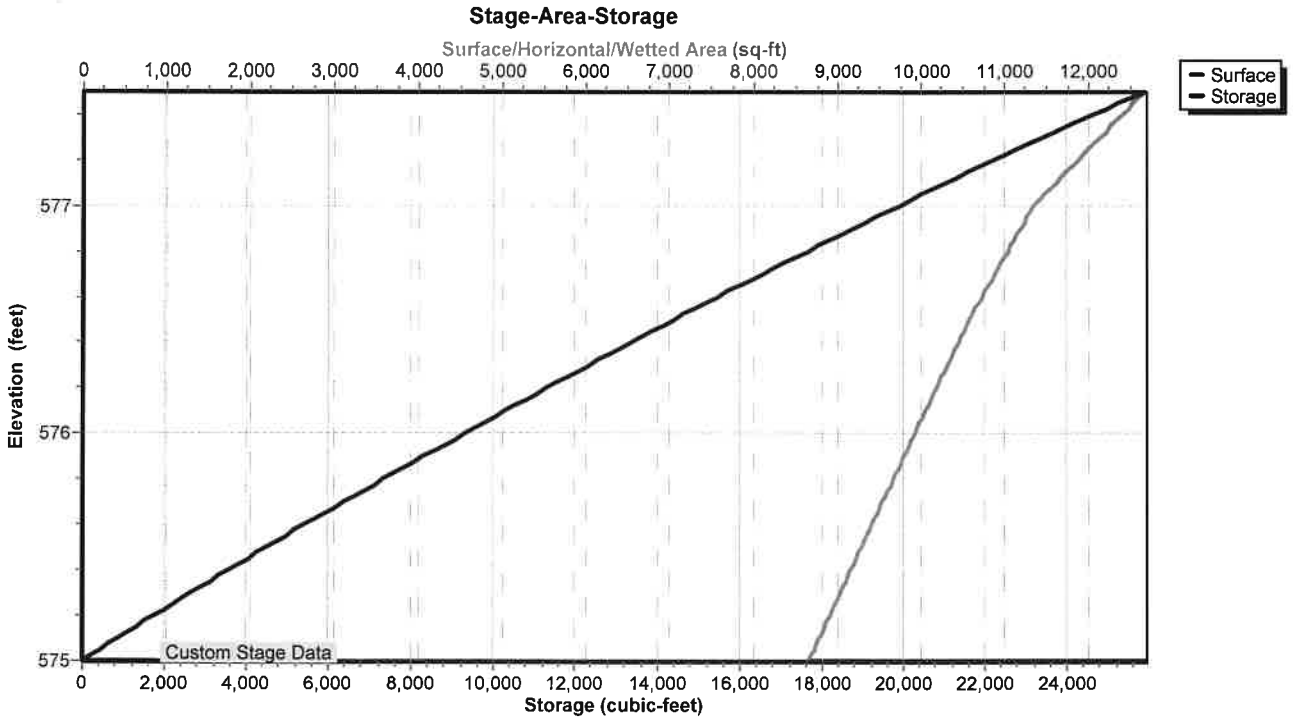


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.01	6	575.00	0.00	0.00	0.00
8.00	0.09	207	575.02	0.05	0.05	0.00
10.00	0.28	1,102	575.13	0.05	0.05	0.00
12.00	**15.84**	**9,006**	**575.97**	**11.97**	**2.82**	**9.15**
14.00	**0.71**	**5,320**	**575.59**	**0.79**	**0.79**	**0.00**
16.00	0.43	5,039	575.56	0.46	0.46	0.00
18.00	0.33	4,925	575.55	0.34	0.34	0.00
20.00	0.24	4,823	575.54	0.25	0.25	0.00
22.00	0.22	4,781	575.53	0.22	0.22	0.00
24.00	0.20	4,760	575.53	0.20	0.20	0.00
26.00	0.00	4,270	575.48	0.06	0.06	0.00
28.00	0.00	3,874	575.43	0.05	0.05	0.00
30.00	0.00	3,482	575.39	0.05	0.05	0.00
32.00	0.00	3,093	575.35	0.05	0.05	0.00
34.00	0.00	2,707	575.31	0.05	0.05	0.00
36.00	0.00	2,324	575.26	0.05	0.05	0.00
38.00	0.00	1,945	575.22	0.05	0.05	0.00
40.00	0.00	1,569	575.18	0.05	0.05	0.00
42.00	0.00	1,197	575.14	0.05	0.05	0.00
44.00	0.00	828	575.10	0.05	0.05	0.00
46.00	0.00	461	575.05	0.05	0.05	0.00
48.00	0.00	126	575.01	0.03	0.03	0.00
50.00	0.00	24	575.00	0.01	0.01	0.00
52.00	0.00	4	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 3.07" for 10-Year event
Inflow = 26.01 cfs @ 12.08 hrs, Volume= 1.125 af
Outflow = 0.47 cfs @ 14.32 hrs, Volume= 0.892 af, Atten= 98%, Lag= 134.6 min
Primary = 0.47 cfs @ 14.32 hrs, Volume= 0.892 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.60' @ 14.32 hrs Surf.Area= 63,820 sf Storage= 37,117 cf

Plug-Flow detention time= 942.6 min calculated for 0.892 af (79% of inflow)
Center-of-Mass det. time= 874.9 min (1,660.4 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

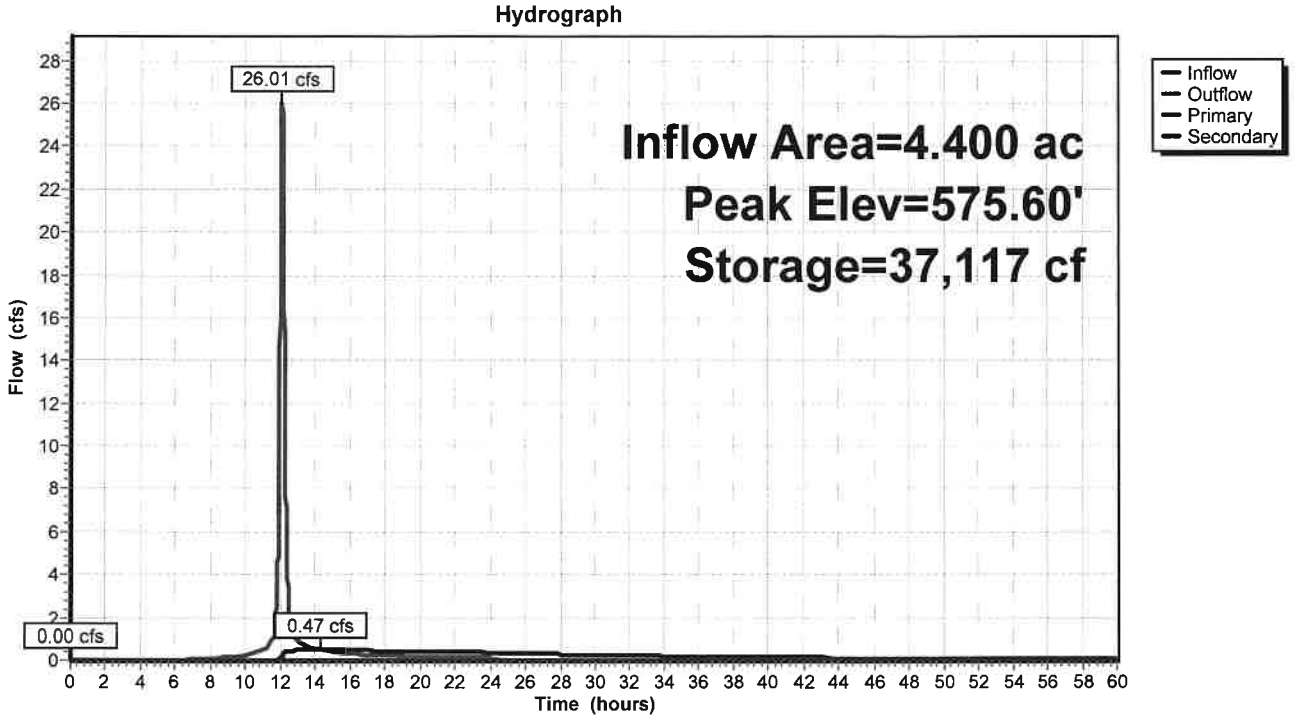
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.47 cfs @ 14.32 hrs HW=575.60' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.47 cfs of 2.23 cfs potential flow)
  ├**2=low flow outlet pipe** (Barrel Controls 0.47 cfs @ 2.50 fps)
  └**3=Grate** (Controls 0.00 cfs)

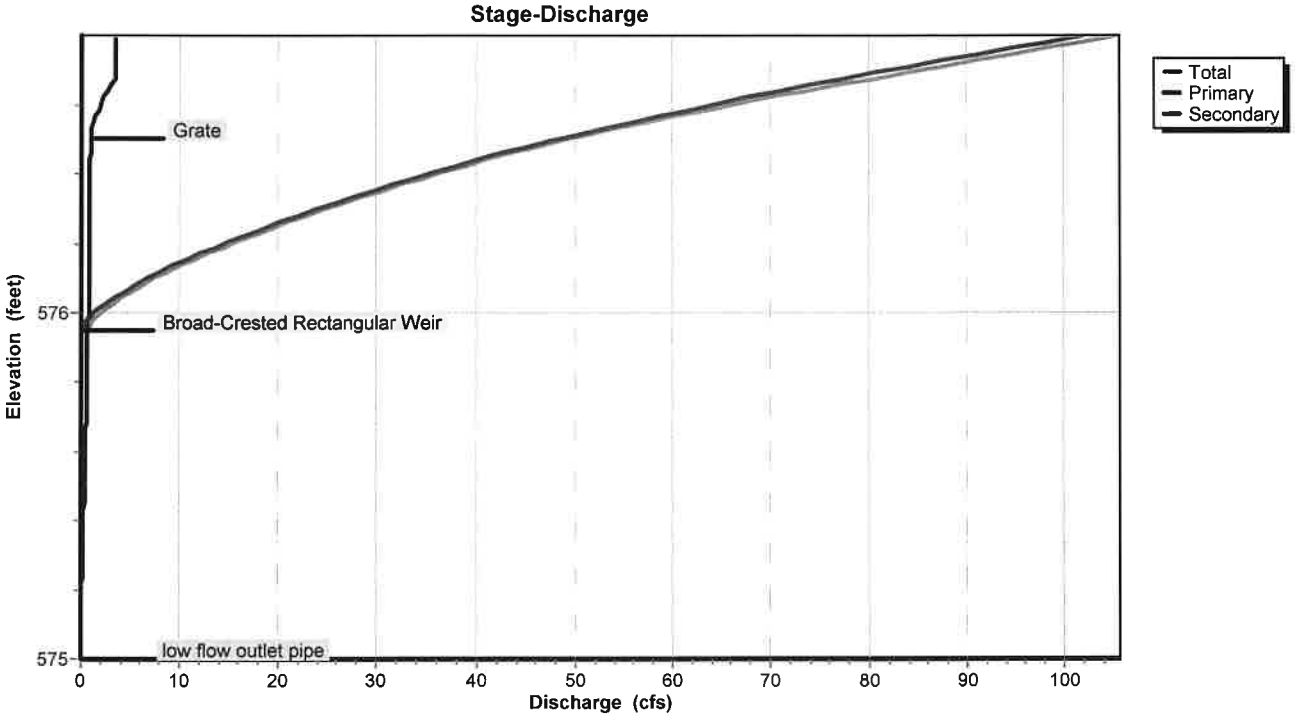
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

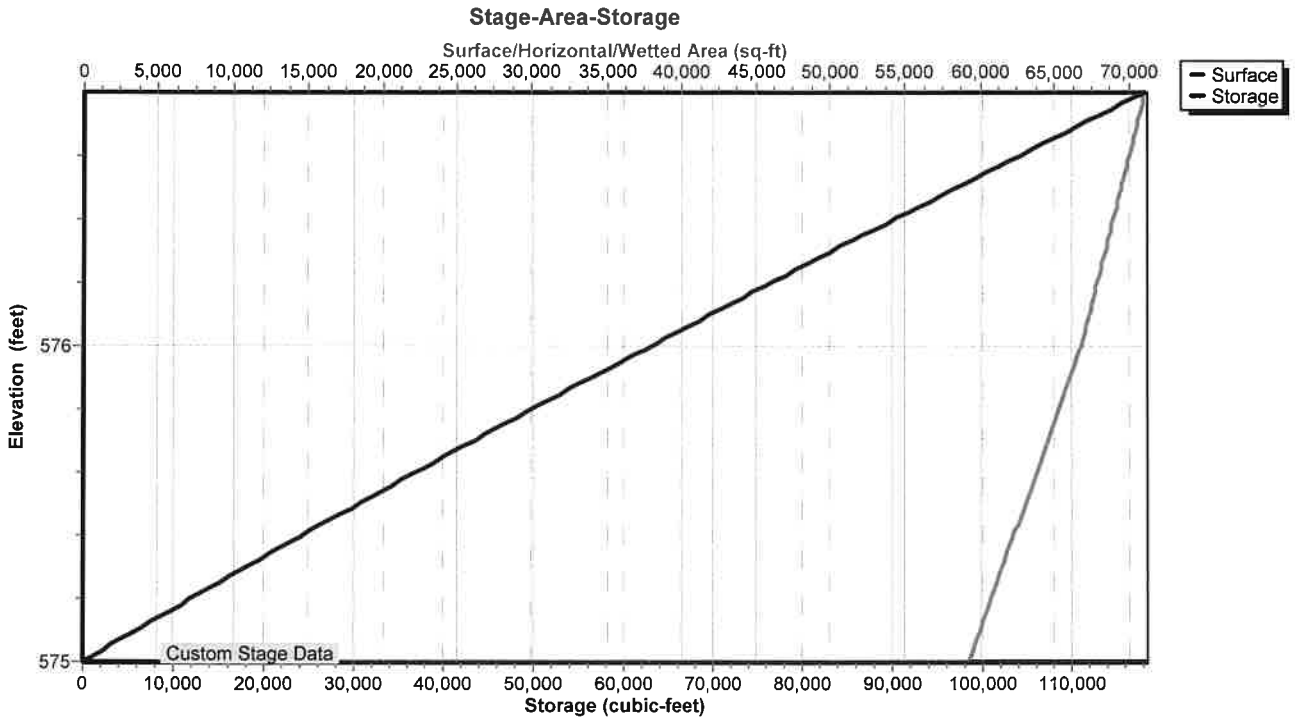


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.02	28	575.00	0.00	0.00	0.00
8.00	0.08	376	575.01	0.00	0.00	0.00
10.00	0.23	1,427	575.02	0.00	0.00	0.00
12.00	**20.19**	11,922	575.20	0.08	0.08	0.00
14.00	**0.53**	**37,087**	**575.60**	**0.47**	**0.47**	0.00
16.00	0.32	**36,669**	**575.60**	**0.46**	**0.46**	0.00
18.00	0.24	35,374	575.58	0.44	0.44	0.00
20.00	0.18	33,764	575.55	0.42	0.42	0.00
22.00	0.16	32,024	575.52	0.39	0.39	0.00
24.00	0.15	30,385	575.50	0.37	0.37	0.00
26.00	0.00	28,005	575.46	0.33	0.33	0.00
28.00	0.00	25,794	575.42	0.29	0.29	0.00
30.00	0.00	23,836	575.39	0.26	0.26	0.00
32.00	0.00	22,102	575.36	0.23	0.23	0.00
34.00	0.00	20,561	575.34	0.20	0.20	0.00
36.00	0.00	19,188	575.32	0.18	0.18	0.00
38.00	0.00	17,961	575.30	0.16	0.16	0.00
40.00	0.00	16,860	575.28	0.14	0.14	0.00
42.00	0.00	15,870	575.26	0.13	0.13	0.00
44.00	0.00	14,975	575.25	0.12	0.12	0.00
46.00	0.00	14,165	575.24	0.11	0.11	0.00
48.00	0.00	13,428	575.22	0.10	0.10	0.00
50.00	0.00	12,756	575.21	0.09	0.09	0.00
52.00	0.00	12,141	575.20	0.08	0.08	0.00
54.00	0.00	11,578	575.19	0.08	0.08	0.00
56.00	0.00	11,059	575.18	0.07	0.07	0.00
58.00	0.00	10,581	575.18	0.06	0.06	0.00
60.00	0.00	10,139	575.17	0.06	0.06	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

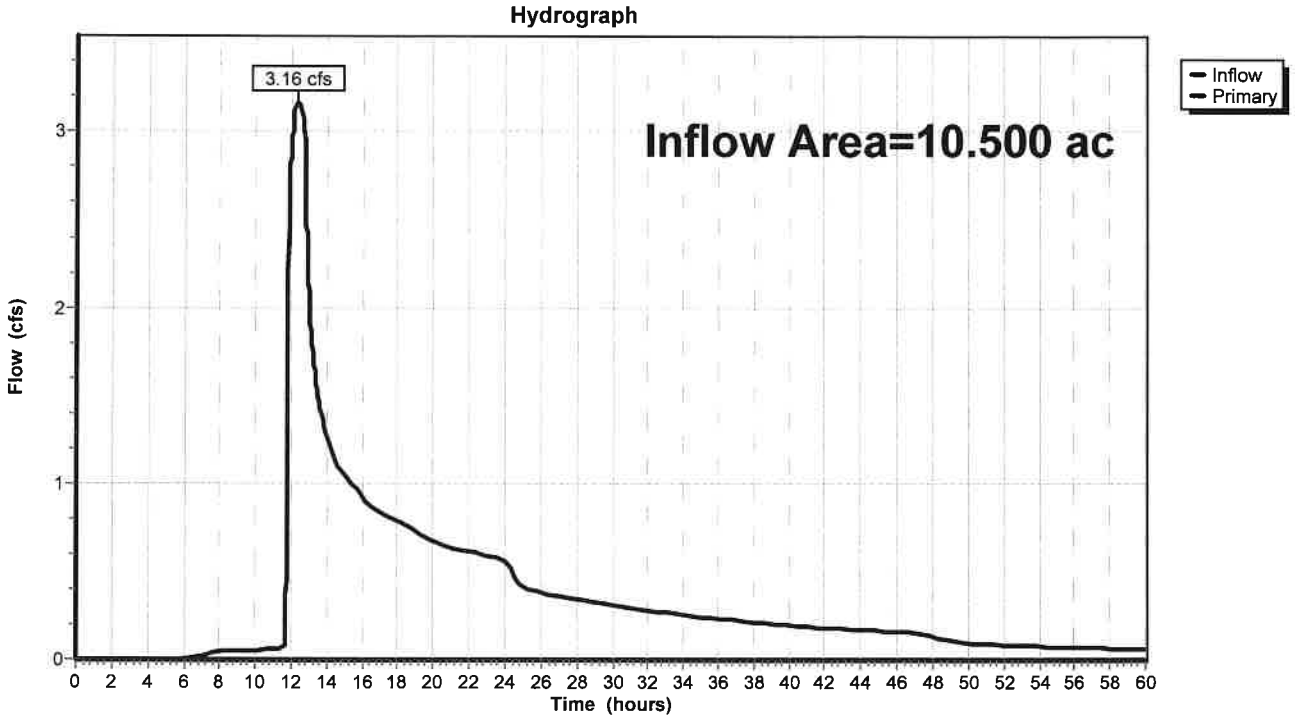
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 1.89" for 10-Year event
Inflow = 3.16 cfs @ 12.39 hrs, Volume= 1.657 af
Primary = 3.16 cfs @ 12.39 hrs, Volume= 1.657 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.08	0.00	0.08
1.00	0.00	0.00	0.00	53.00	0.08	0.00	0.08
2.00	0.00	0.00	0.00	54.00	0.08	0.00	0.08
3.00	0.00	0.00	0.00	55.00	0.07	0.00	0.07
4.00	0.00	0.00	0.00	56.00	0.07	0.00	0.07
5.00	0.00	0.00	0.00	57.00	0.07	0.00	0.07
6.00	0.00	0.00	0.00	58.00	0.06	0.00	0.06
7.00	0.02	0.00	0.02	59.00	0.06	0.00	0.06
8.00	0.05	0.00	0.05	60.00	0.06	0.00	0.06
9.00	0.05	0.00	0.05				
10.00	0.05	0.00	0.05				
11.00	0.06	0.00	0.06				
12.00	**2.90**	0.00	**2.90**				
13.00	**2.02**	0.00	**2.02**				
14.00	1.26	0.00	1.26				
15.00	1.05	0.00	1.05				
16.00	0.92	0.00	0.92				
17.00	0.84	0.00	0.84				
18.00	0.78	0.00	0.78				
19.00	0.73	0.00	0.73				
20.00	0.67	0.00	0.67				
21.00	0.63	0.00	0.63				
22.00	0.61	0.00	0.61				
23.00	0.59	0.00	0.59				
24.00	0.57	0.00	0.57				
25.00	0.40	0.00	0.40				
26.00	0.38	0.00	0.38				
27.00	0.36	0.00	0.36				
28.00	0.34	0.00	0.34				
29.00	0.33	0.00	0.33				
30.00	0.31	0.00	0.31				
31.00	0.29	0.00	0.29				
32.00	0.28	0.00	0.28				
33.00	0.27	0.00	0.27				
34.00	0.26	0.00	0.26				
35.00	0.24	0.00	0.24				
36.00	0.23	0.00	0.23				
37.00	0.22	0.00	0.22				
38.00	0.21	0.00	0.21				
39.00	0.20	0.00	0.20				
40.00	0.20	0.00	0.20				
41.00	0.19	0.00	0.19				
42.00	0.18	0.00	0.18				
43.00	0.18	0.00	0.18				
44.00	0.17	0.00	0.17				
45.00	0.16	0.00	0.16				
46.00	0.16	0.00	0.16				
47.00	0.15	0.00	0.15				
48.00	0.13	0.00	0.13				
49.00	0.11	0.00	0.11				
50.00	0.09	0.00	0.09				
51.00	0.09	0.00	0.09				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=2.80"
Flow Length=652' Tc=13.3 min CN=90 Runoff=22.74 cfs 1.421 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=2.89"
Flow Length=683' Tc=14.4 min CN=91 Runoff=16.27 cfs 1.061 af

Pond 1P: Bioretention Area 3 Peak Elev=576.11' Storage=10,375 cf Inflow=22.74 cfs 1.421 af
Primary=2.89 cfs 0.934 af Secondary=18.84 cfs 0.487 af Outflow=21.73 cfs 1.421 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=575.83' Storage=51,963 cf Inflow=34.94 cfs 1.548 af
Primary=0.64 cfs 1.276 af Secondary=0.00 cfs 0.000 af Outflow=0.64 cfs 1.276 af

Link 5L: Outflow (@ CB 54) Inflow=3.36 cfs 2.210 af
Primary=3.36 cfs 2.210 af

Total Runoff Area = 10.500 ac Runoff Volume = 2.482 af Average Runoff Depth = 2.84"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

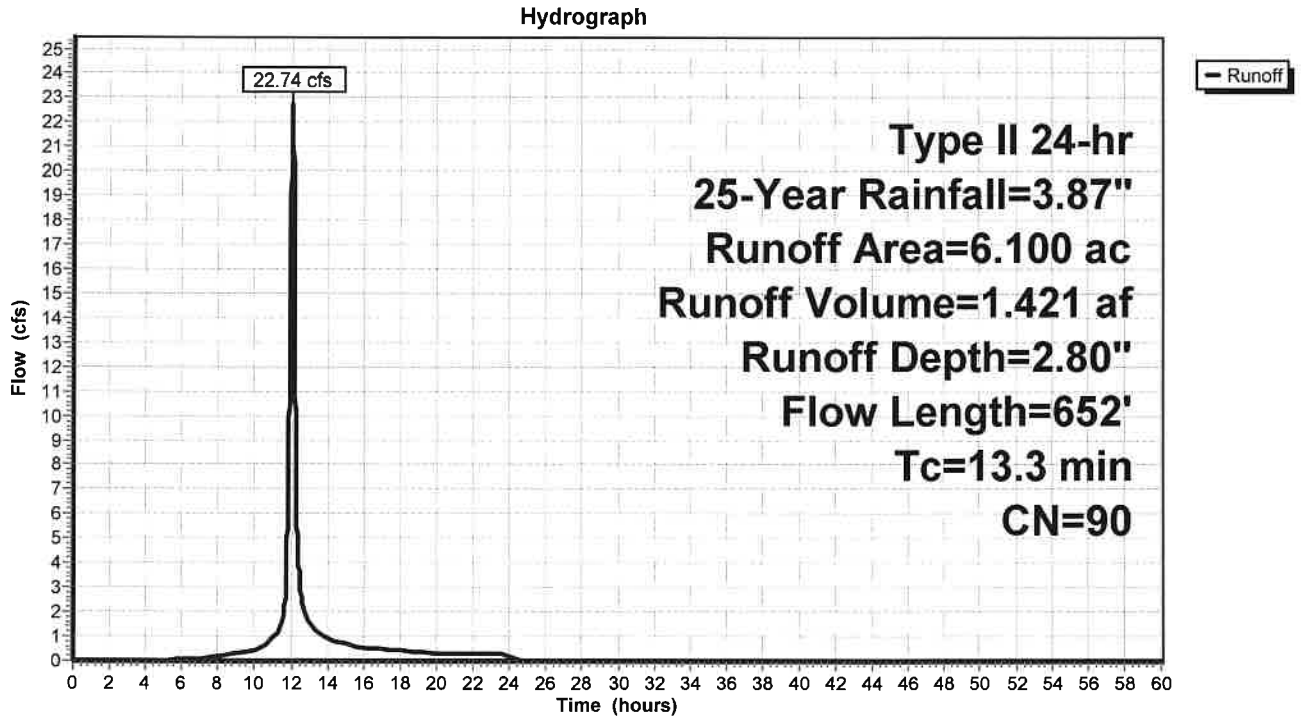
Runoff = 22.74 cfs @ 12.05 hrs, Volume= 1.421 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.00	0.01
6.00	0.31	0.01	0.05
7.00	0.38	0.02	0.10
8.00	0.46	0.04	0.16
9.00	0.57	0.08	0.28
10.00	0.70	0.14	0.43
11.00	0.91	0.26	0.90
12.00	2.57	1.59	**20.75**
13.00	2.99	1.97	**1.57**
14.00	3.17	2.14	0.90
15.00	3.30	2.26	0.70
16.00	3.41	2.36	0.54
17.00	3.49	2.44	0.47
18.00	3.56	2.51	0.41
19.00	3.63	2.57	0.36
20.00	3.68	2.62	0.30
21.00	3.73	2.67	0.28
22.00	3.78	2.71	0.27
23.00	3.83	2.75	0.26
24.00	**3.87**	**2.80**	0.25
25.00	3.87	2.80	0.00
26.00	3.87	2.80	0.00
27.00	3.87	2.80	0.00
28.00	3.87	2.80	0.00
29.00	3.87	2.80	0.00
30.00	3.87	2.80	0.00
31.00	3.87	2.80	0.00
32.00	3.87	2.80	0.00
33.00	3.87	2.80	0.00
34.00	3.87	2.80	0.00
35.00	3.87	2.80	0.00
36.00	3.87	2.80	0.00
37.00	3.87	2.80	0.00
38.00	3.87	2.80	0.00
39.00	3.87	2.80	0.00
40.00	3.87	2.80	0.00
41.00	3.87	2.80	0.00
42.00	3.87	2.80	0.00
43.00	3.87	2.80	0.00
44.00	3.87	2.80	0.00
45.00	3.87	2.80	0.00
46.00	3.87	2.80	0.00
47.00	3.87	2.80	0.00
48.00	3.87	2.80	0.00
49.00	3.87	2.80	0.00
50.00	3.87	2.80	0.00
51.00	3.87	2.80	0.00
52.00	3.87	2.80	0.00
53.00	3.87	2.80	0.00
54.00	3.87	2.80	0.00
55.00	3.87	2.80	0.00
56.00	3.87	2.80	0.00
57.00	3.87	2.80	0.00
58.00	3.87	2.80	0.00
59.00	3.87	2.80	0.00
60.00	3.87	2.80	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

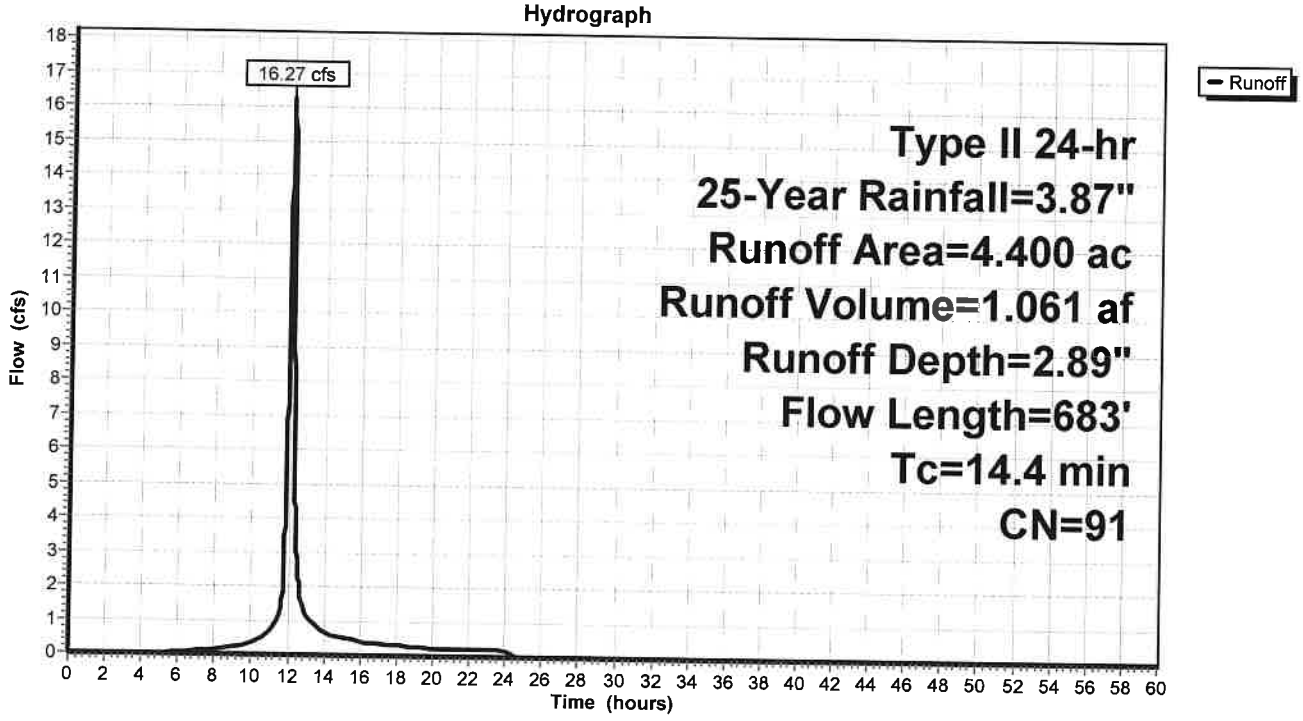
Runoff = 16.27 cfs @ 12.06 hrs, Volume= 1.061 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.00	0.02
6.00	0.31	0.01	0.05
7.00	0.38	0.03	0.09
8.00	0.46	0.06	0.13
9.00	0.57	0.10	0.23
10.00	0.70	0.17	0.34
11.00	0.91	0.30	0.69
12.00	2.57	1.67	**14.36**
13.00	2.99	2.06	**1.16**
14.00	3.17	2.23	0.67
15.00	3.30	2.36	0.51
16.00	3.41	2.45	0.40
17.00	3.49	2.53	0.34
18.00	3.56	2.60	0.30
19.00	3.63	2.66	0.26
20.00	3.68	2.72	0.22
21.00	3.73	2.76	0.21
22.00	3.78	2.81	0.20
23.00	3.83	2.85	0.19
24.00	**3.87**	**2.89**	0.18
25.00	3.87	2.89	0.00
26.00	3.87	2.89	0.00
27.00	3.87	2.89	0.00
28.00	3.87	2.89	0.00
29.00	3.87	2.89	0.00
30.00	3.87	2.89	0.00
31.00	3.87	2.89	0.00
32.00	3.87	2.89	0.00
33.00	3.87	2.89	0.00
34.00	3.87	2.89	0.00
35.00	3.87	2.89	0.00
36.00	3.87	2.89	0.00
37.00	3.87	2.89	0.00
38.00	3.87	2.89	0.00
39.00	3.87	2.89	0.00
40.00	3.87	2.89	0.00
41.00	3.87	2.89	0.00
42.00	3.87	2.89	0.00
43.00	3.87	2.89	0.00
44.00	3.87	2.89	0.00
45.00	3.87	2.89	0.00
46.00	3.87	2.89	0.00
47.00	3.87	2.89	0.00
48.00	3.87	2.89	0.00
49.00	3.87	2.89	0.00
50.00	3.87	2.89	0.00
51.00	3.87	2.89	0.00
52.00	3.87	2.89	0.00
53.00	3.87	2.89	0.00
54.00	3.87	2.89	0.00
55.00	3.87	2.89	0.00
56.00	3.87	2.89	0.00
57.00	3.87	2.89	0.00
58.00	3.87	2.89	0.00
59.00	3.87	2.89	0.00
60.00	3.87	2.89	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 2.80" for 25-Year event
Inflow = 22.74 cfs @ 12.05 hrs, Volume= 1.421 af
Outflow = 21.73 cfs @ 12.08 hrs, Volume= 1.421 af, Atten= 4%, Lag= 2.0 min
Primary = 2.89 cfs @ 12.08 hrs, Volume= 0.934 af
Secondary = 18.84 cfs @ 12.08 hrs, Volume= 0.487 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.11' @ 12.08 hrs Surf.Area= 10,069 sf Storage= 10,375 cf

Plug-Flow detention time= 127.9 min calculated for 1.421 af (100% of inflow)
Center-of-Mass det. time= 128.1 min (931.5 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

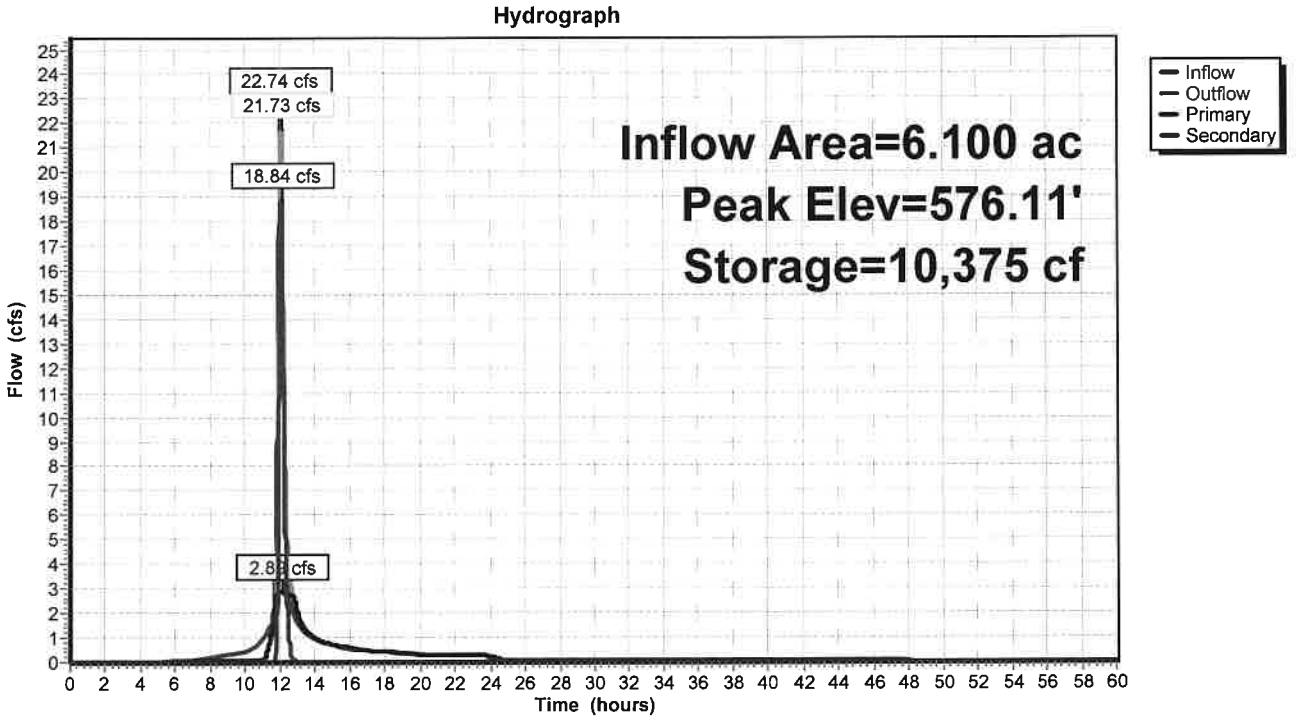
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.89 cfs @ 12.08 hrs HW=576.11' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.89 cfs @ 8.27 fps)
  └**2=Grate** (Passes < 5.25 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

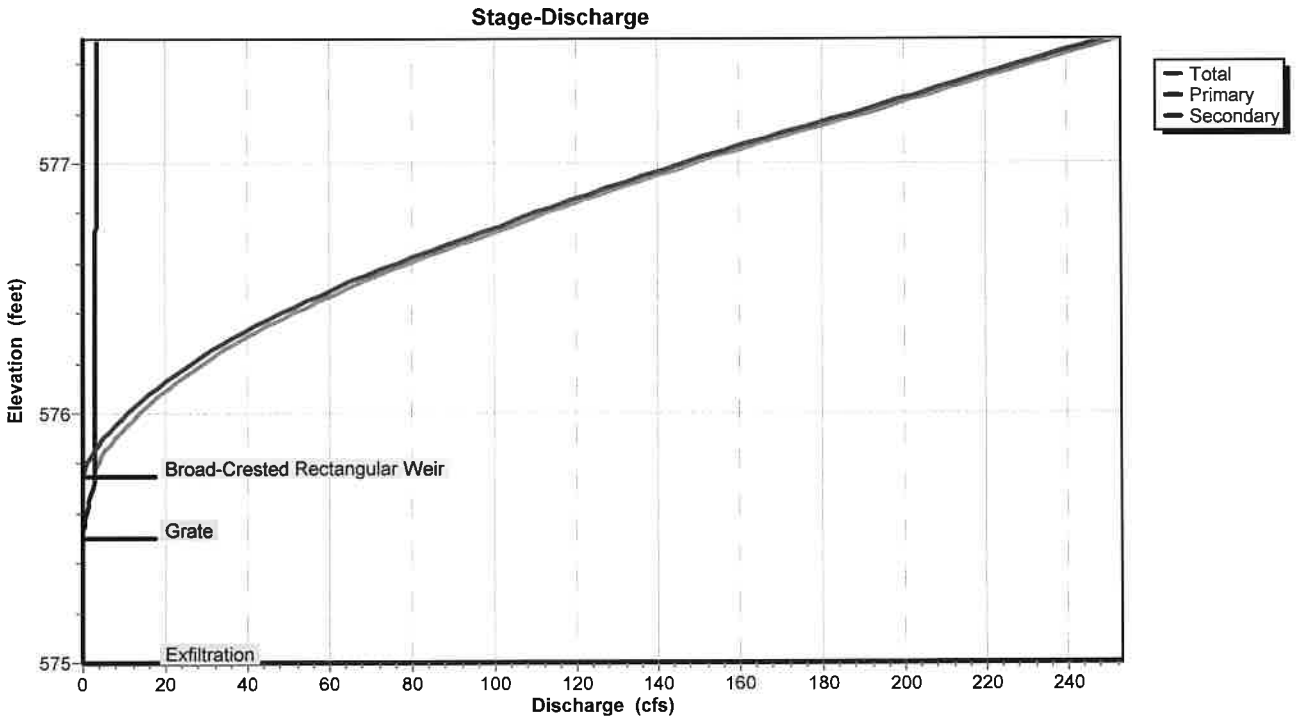
Secondary OutFlow Max=18.83 cfs @ 12.08 hrs HW=576.11' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 18.83 cfs @ 1.75 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

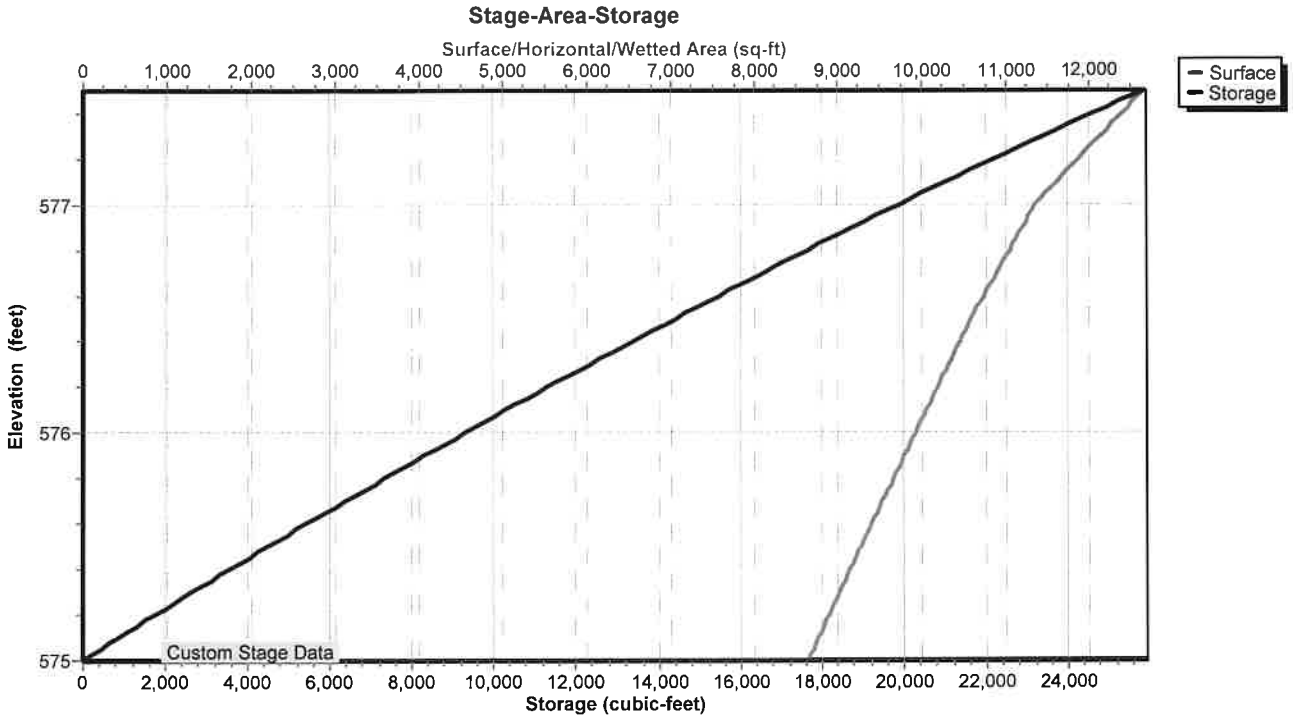


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.05	75	575.01	0.02	0.02	0.00
8.00	0.16	510	575.06	0.05	0.05	0.00
10.00	0.43	2,153	575.24	0.05	0.05	0.00
12.00	**20.75**	**9,748**	**576.05**	**16.99**	**2.86**	**14.14**
14.00	**0.90**	**5,469**	**575.61**	**1.00**	**1.00**	**0.00**
16.00	0.54	5,148	575.57	0.58	0.58	0.00
18.00	0.41	5,009	575.56	0.43	0.43	0.00
20.00	0.30	4,900	575.54	0.32	0.32	0.00
22.00	0.27	4,847	575.54	0.28	0.28	0.00
24.00	0.25	4,821	575.54	0.25	0.25	0.00
26.00	0.00	4,285	575.48	0.06	0.06	0.00
28.00	0.00	3,889	575.44	0.05	0.05	0.00
30.00	0.00	3,497	575.39	0.05	0.05	0.00
32.00	0.00	3,108	575.35	0.05	0.05	0.00
34.00	0.00	2,722	575.31	0.05	0.05	0.00
36.00	0.00	2,339	575.27	0.05	0.05	0.00
38.00	0.00	1,960	575.22	0.05	0.05	0.00
40.00	0.00	1,584	575.18	0.05	0.05	0.00
42.00	0.00	1,211	575.14	0.05	0.05	0.00
44.00	0.00	842	575.10	0.05	0.05	0.00
46.00	0.00	475	575.05	0.05	0.05	0.00
48.00	0.00	134	575.02	0.03	0.03	0.00
50.00	0.00	25	575.00	0.01	0.01	0.00
52.00	0.00	5	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 4.22" for 25-Year event
Inflow = 34.94 cfs @ 12.07 hrs, Volume= 1.548 af
Outflow = 0.64 cfs @ 14.10 hrs, Volume= 1.276 af, Atten= 98%, Lag= 121.4 min
Primary = 0.64 cfs @ 14.10 hrs, Volume= 1.276 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.83' @ 14.10 hrs Surf.Area= 65,573 sf Storage= 51,963 cf

Plug-Flow detention time= 951.6 min calculated for 1.276 af (82% of inflow)
Center-of-Mass det. time= 890.6 min (1,667.8 - 777.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

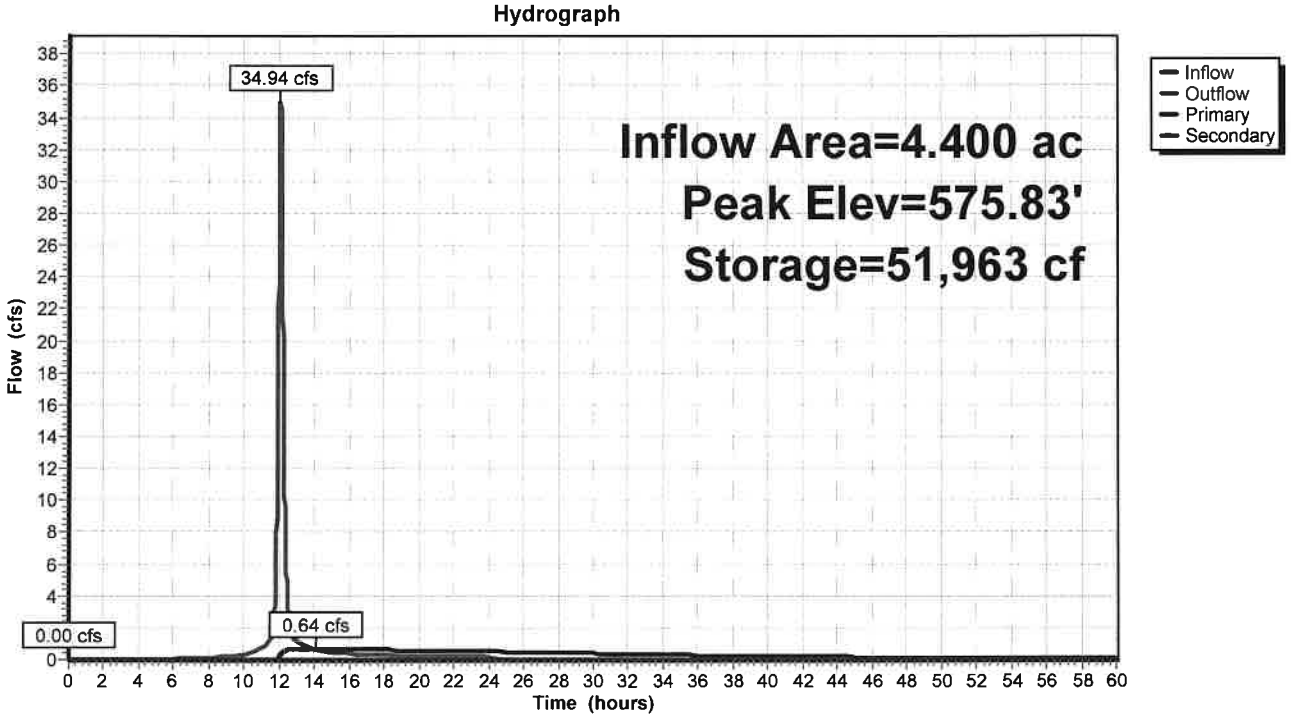
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.64 cfs @ 14.10 hrs HW=575.83' (Free Discharge)
↑—**1=12" outlet pipe** (Passes 0.64 cfs of 2.52 cfs potential flow)
↑—**2=low flow outlet pipe** (Inlet Controls 0.64 cfs @ 3.24 fps)
—**3=Grate** (Controls 0.00 cfs)

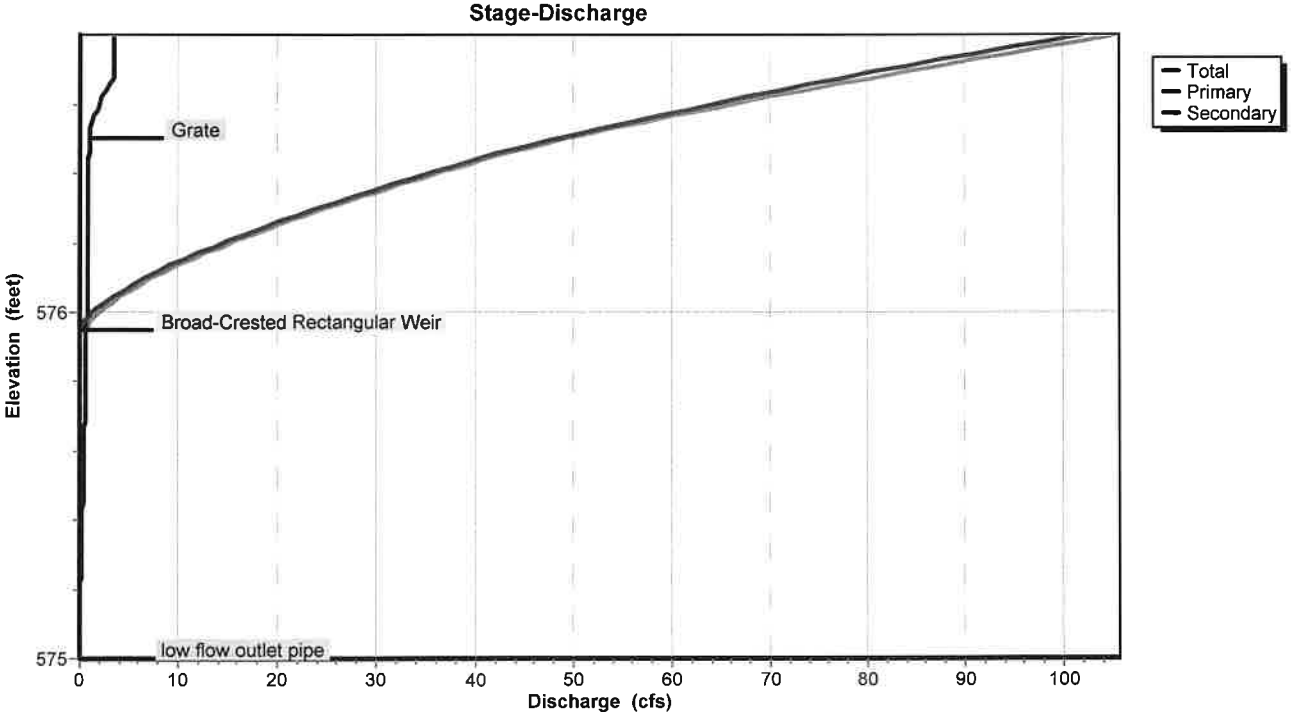
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.00' (Free Discharge)
↑—**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

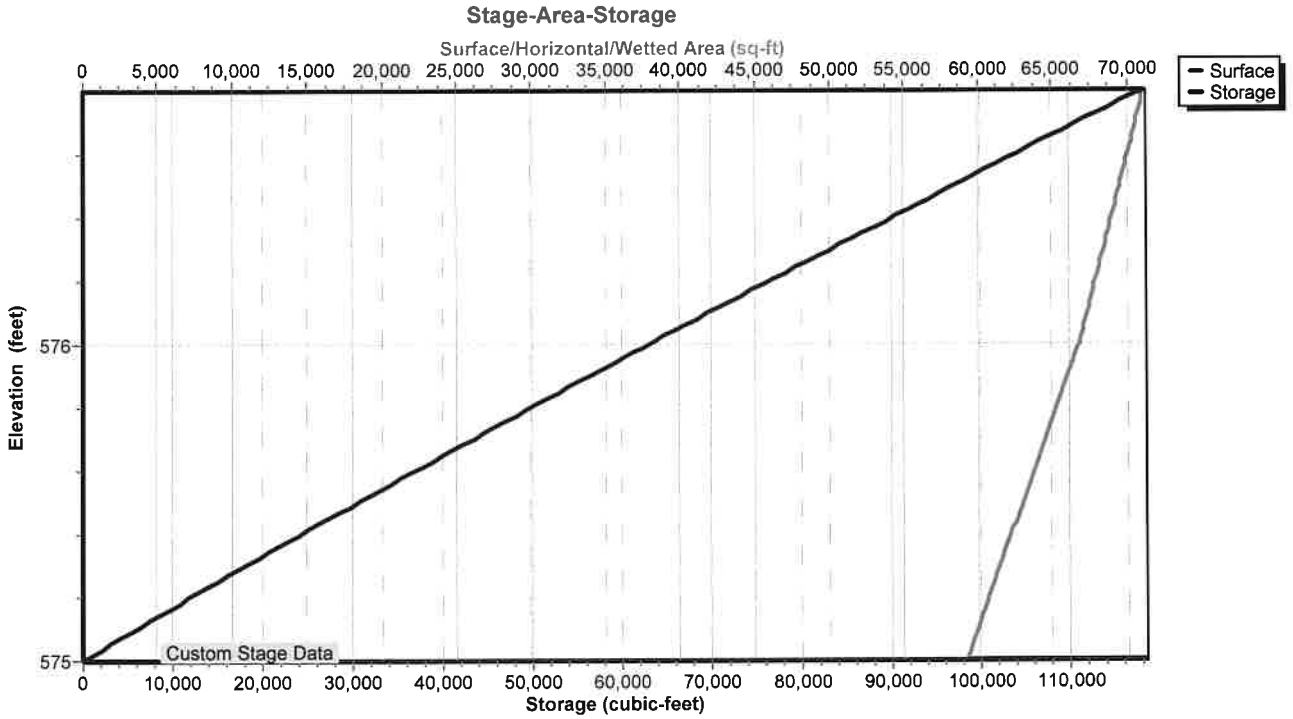


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	**0.00**
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.05	138	575.00	0.00	0.00	0.00
8.00	0.13	792	575.01	0.00	0.00	0.00
10.00	0.34	2,407	575.04	0.00	0.00	0.00
12.00	**28.50**	18,305	575.30	0.17	0.17	0.00
14.00	**0.67**	**51,959**	**575.83**	**0.64**	**0.64**	0.00
16.00	0.40	**51,083**	**575.82**	**0.63**	**0.63**	0.00
18.00	0.30	49,081	575.79	0.61	0.61	0.00
20.00	0.22	46,637	575.75	0.59	0.59	0.00
22.00	0.20	44,041	575.71	0.55	0.55	0.00
24.00	0.18	41,619	575.67	0.51	0.51	0.00
26.00	0.00	38,209	575.62	0.48	0.48	0.00
28.00	0.00	34,905	575.57	0.44	0.44	0.00
30.00	0.00	31,923	575.52	0.39	0.39	0.00
32.00	0.00	29,266	575.48	0.35	0.35	0.00
34.00	0.00	26,910	575.44	0.31	0.31	0.00
36.00	0.00	24,824	575.41	0.27	0.27	0.00
38.00	0.00	22,978	575.38	0.24	0.24	0.00
40.00	0.00	21,340	575.35	0.21	0.21	0.00
42.00	0.00	19,882	575.33	0.19	0.19	0.00
44.00	0.00	18,582	575.31	0.17	0.17	0.00
46.00	0.00	17,418	575.29	0.15	0.15	0.00
48.00	0.00	16,372	575.27	0.14	0.14	0.00
50.00	0.00	15,429	575.26	0.12	0.12	0.00
52.00	0.00	14,576	575.24	0.11	0.11	0.00
54.00	0.00	13,802	575.23	0.10	0.10	0.00
56.00	0.00	13,098	575.22	0.09	0.09	0.00
58.00	0.00	12,454	575.21	0.09	0.09	0.00
60.00	0.00	11,865	575.20	0.08	0.08	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

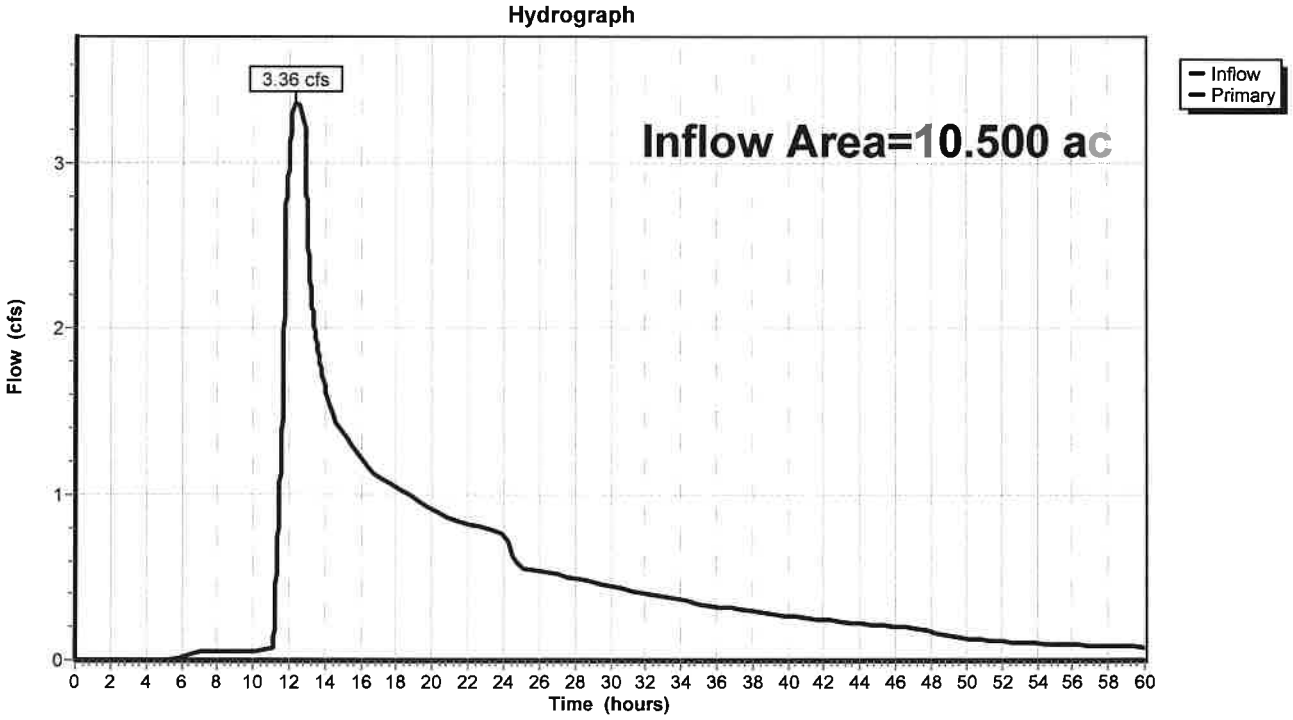
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 2.53" for 25-Year event
Inflow = 3.36 cfs @ 12.37 hrs, Volume= 2.210 af
Primary = 3.36 cfs @ 12.37 hrs, Volume= 2.210 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.11	0.00	0.11
1.00	0.00	0.00	0.00	53.00	0.11	0.00	0.11
2.00	0.00	0.00	0.00	54.00	0.10	0.00	0.10
3.00	0.00	0.00	0.00	55.00	0.10	0.00	0.10
4.00	0.00	0.00	0.00	56.00	0.09	0.00	0.09
5.00	0.00	0.00	0.00	57.00	0.09	0.00	0.09
6.00	0.02	0.00	0.02	58.00	0.09	0.00	0.09
7.00	0.05	0.00	0.05	59.00	0.08	0.00	0.08
8.00	0.05	0.00	0.05	60.00	0.08	0.00	0.08
9.00	0.05	0.00	0.05				
10.00	0.06	0.00	0.06				
11.00	0.07	0.00	0.07				
12.00	**3.02**	0.00	**3.02**				
13.00	**2.64**	0.00	**2.64**				
14.00	1.63	0.00	1.63				
15.00	1.36	0.00	1.36				
16.00	1.21	0.00	1.21				
17.00	1.10	0.00	1.10				
18.00	1.04	0.00	1.04				
19.00	0.97	0.00	0.97				
20.00	0.91	0.00	0.91				
21.00	0.85	0.00	0.85				
22.00	0.82	0.00	0.82				
23.00	0.79	0.00	0.79				
24.00	0.76	0.00	0.76				
25.00	0.55	0.00	0.55				
26.00	0.53	0.00	0.53				
27.00	0.51	0.00	0.51				
28.00	0.49	0.00	0.49				
29.00	0.47	0.00	0.47				
30.00	0.45	0.00	0.45				
31.00	0.42	0.00	0.42				
32.00	0.40	0.00	0.40				
33.00	0.38	0.00	0.38				
34.00	0.36	0.00	0.36				
35.00	0.34	0.00	0.34				
36.00	0.33	0.00	0.33				
37.00	0.31	0.00	0.31				
38.00	0.29	0.00	0.29				
39.00	0.28	0.00	0.28				
40.00	0.27	0.00	0.27				
41.00	0.25	0.00	0.25				
42.00	0.24	0.00	0.24				
43.00	0.23	0.00	0.23				
44.00	0.22	0.00	0.22				
45.00	0.21	0.00	0.21				
46.00	0.20	0.00	0.20				
47.00	0.20	0.00	0.20				
48.00	0.17	0.00	0.17				
49.00	0.14	0.00	0.14				
50.00	0.13	0.00	0.13				
51.00	0.12	0.00	0.12				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=3.41"
Flow Length=652' Tc=13.3 min CN=90 Runoff=27.50 cfs 1.736 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=3.52"
Flow Length=683' Tc=14.4 min CN=91 Runoff=19.58 cfs 1.290 af

Pond 1P: Bioretention Area 3 Peak Elev=576.17' Storage=10,953 cf Inflow=27.50 cfs 1.736 af
Primary=2.91 cfs 1.092 af Secondary=23.52 cfs 0.644 af Outflow=26.43 cfs 1.736 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=576.00' Storage=62,935 cf Inflow=42.93 cfs 1.933 af
Primary=0.72 cfs 1.504 af Secondary=1.25 cfs 0.131 af Outflow=1.97 cfs 1.635 af

Link 5L: Outflow (@ CB 54) Inflow=3.48 cfs 2.596 af
Primary=3.48 cfs 2.596 af

Total Runoff Area = 10.500 ac Runoff Volume = 3.026 af Average Runoff Depth = 3.46"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

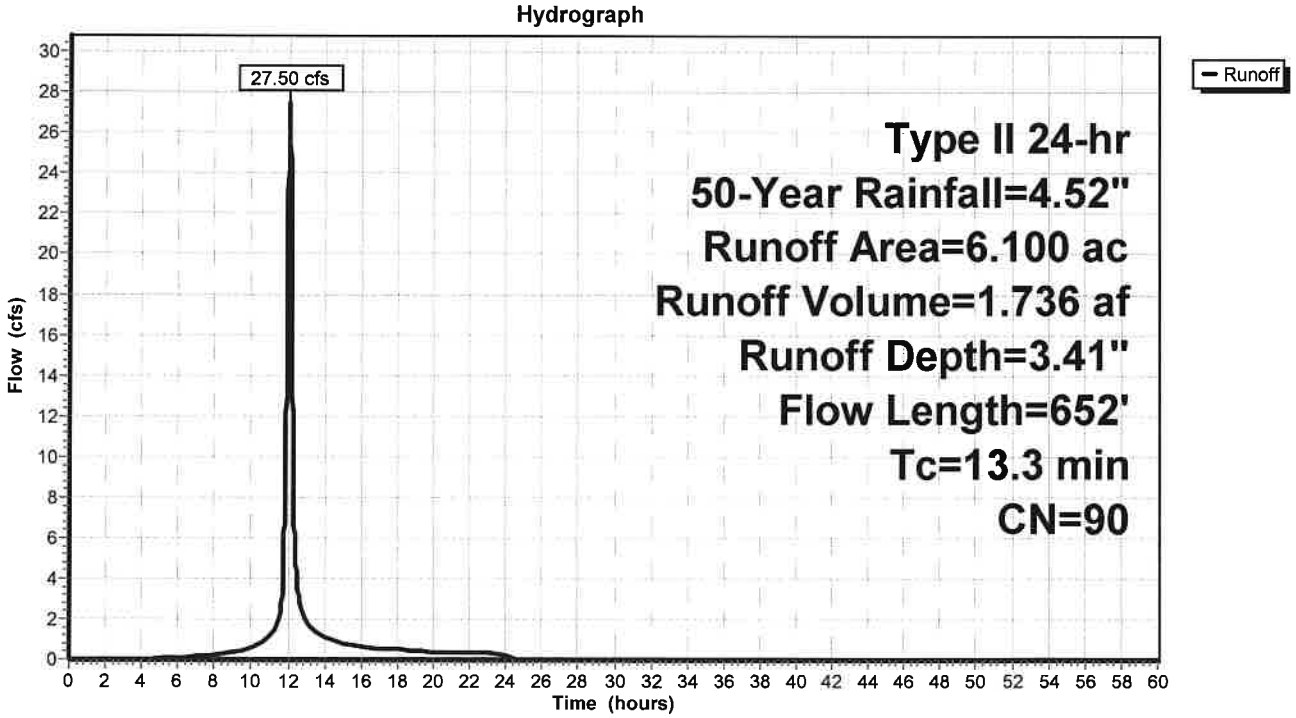
Runoff = 27.50 cfs @ 12.05 hrs, Volume= 1.736 af, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.00
5.00	0.28	0.00	0.04
6.00	0.36	0.02	0.09
7.00	0.45	0.04	0.16
8.00	0.54	0.07	0.23
9.00	0.66	0.13	0.39
10.00	0.82	0.21	0.57
11.00	1.06	0.36	1.16
12.00	3.00	1.98	**25.18**
13.00	3.49	2.44	**1.87**
14.00	3.71	2.64	1.08
15.00	3.86	2.78	0.83
16.00	3.98	2.90	0.64
17.00	4.08	2.99	0.55
18.00	4.16	3.07	0.49
19.00	4.24	3.15	0.42
20.00	4.30	3.21	0.36
21.00	4.36	3.26	0.33
22.00	4.42	3.32	0.32
23.00	4.47	3.37	0.31
24.00	**4.52**	**3.41**	0.30
25.00	4.52	3.41	0.00
26.00	4.52	3.41	0.00
27.00	4.52	3.41	0.00
28.00	4.52	3.41	0.00
29.00	4.52	3.41	0.00
30.00	4.52	3.41	0.00
31.00	4.52	3.41	0.00
32.00	4.52	3.41	0.00
33.00	4.52	3.41	0.00
34.00	4.52	3.41	0.00
35.00	4.52	3.41	0.00
36.00	4.52	3.41	0.00
37.00	4.52	3.41	0.00
38.00	4.52	3.41	0.00
39.00	4.52	3.41	0.00
40.00	4.52	3.41	0.00
41.00	4.52	3.41	0.00
42.00	4.52	3.41	0.00
43.00	4.52	3.41	0.00
44.00	4.52	3.41	0.00
45.00	4.52	3.41	0.00
46.00	4.52	3.41	0.00
47.00	4.52	3.41	0.00
48.00	4.52	3.41	0.00
49.00	4.52	3.41	0.00
50.00	4.52	3.41	0.00
51.00	4.52	3.41	0.00
52.00	4.52	3.41	0.00
53.00	4.52	3.41	0.00
54.00	4.52	3.41	0.00
55.00	4.52	3.41	0.00
56.00	4.52	3.41	0.00
57.00	4.52	3.41	0.00
58.00	4.52	3.41	0.00
59.00	4.52	3.41	0.00
60.00	4.52	3.41	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

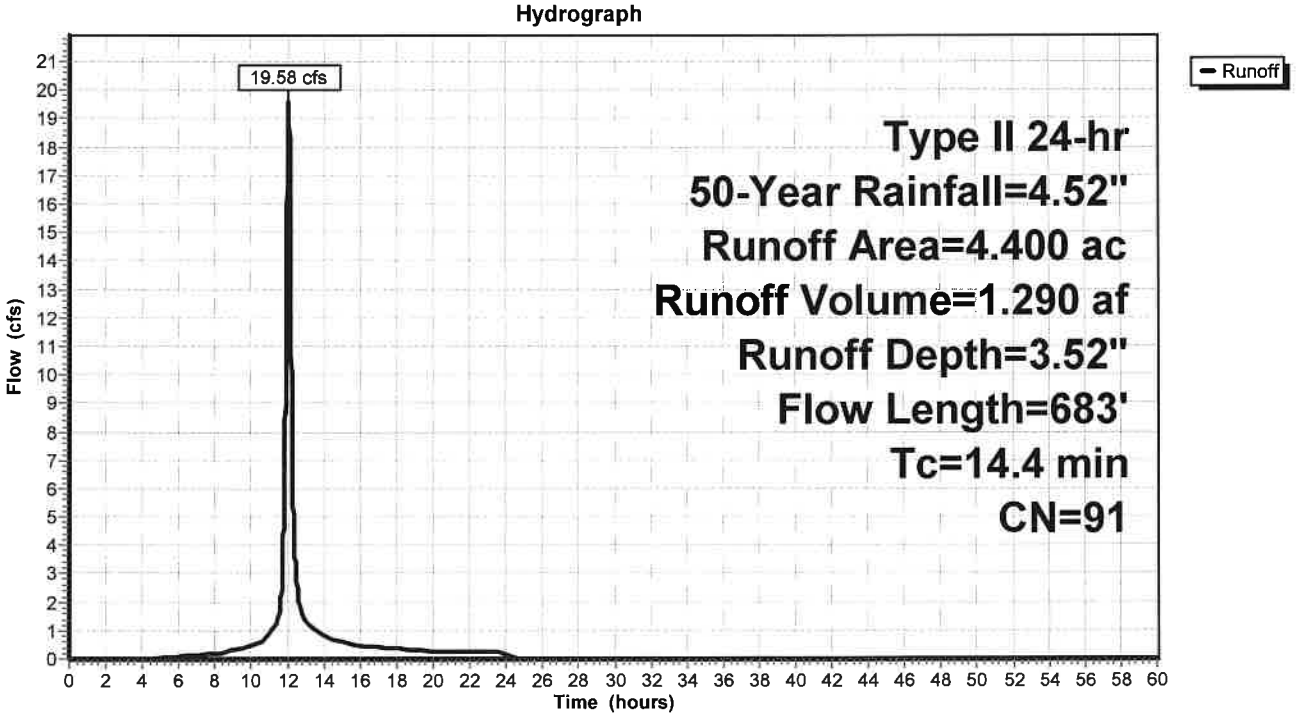
Runoff = 19.58 cfs @ 12.06 hrs, Volume= 1.290 af, Depth= 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.00
5.00	0.28	0.01	0.04
6.00	0.36	0.02	0.08
7.00	0.45	0.05	0.13
8.00	0.54	0.09	0.19
9.00	0.66	0.15	0.31
10.00	0.82	0.24	0.44
11.00	1.06	0.40	0.88
12.00	3.00	2.07	**17.36**
13.00	3.49	2.53	**1.38**
14.00	3.71	2.74	0.79
15.00	3.86	2.88	0.60
16.00	3.98	3.00	0.47
17.00	4.08	3.09	0.40
18.00	4.16	3.17	0.36
19.00	4.24	3.25	0.31
20.00	4.30	3.31	0.26
21.00	4.36	3.36	0.24
22.00	4.42	3.42	0.23
23.00	4.47	3.47	0.22
24.00	**4.52**	**3.52**	0.21
25.00	4.52	3.52	0.00
26.00	4.52	3.52	0.00
27.00	4.52	3.52	0.00
28.00	4.52	3.52	0.00
29.00	4.52	3.52	0.00
30.00	4.52	3.52	0.00
31.00	4.52	3.52	0.00
32.00	4.52	3.52	0.00
33.00	4.52	3.52	0.00
34.00	4.52	3.52	0.00
35.00	4.52	3.52	0.00
36.00	4.52	3.52	0.00
37.00	4.52	3.52	0.00
38.00	4.52	3.52	0.00
39.00	4.52	3.52	0.00
40.00	4.52	3.52	0.00
41.00	4.52	3.52	0.00
42.00	4.52	3.52	0.00
43.00	4.52	3.52	0.00
44.00	4.52	3.52	0.00
45.00	4.52	3.52	0.00
46.00	4.52	3.52	0.00
47.00	4.52	3.52	0.00
48.00	4.52	3.52	0.00
49.00	4.52	3.52	0.00
50.00	4.52	3.52	0.00
51.00	4.52	3.52	0.00
52.00	4.52	3.52	0.00
53.00	4.52	3.52	0.00
54.00	4.52	3.52	0.00
55.00	4.52	3.52	0.00
56.00	4.52	3.52	0.00
57.00	4.52	3.52	0.00
58.00	4.52	3.52	0.00
59.00	4.52	3.52	0.00
60.00	4.52	3.52	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 3.41" for 50-Year event
Inflow = 27.50 cfs @ 12.05 hrs, Volume= 1.736 af
Outflow = 26.43 cfs @ 12.08 hrs, Volume= 1.736 af, Atten= 4%, Lag= 1.9 min
Primary = 2.91 cfs @ 12.08 hrs, Volume= 1.092 af
Secondary = 23.52 cfs @ 12.08 hrs, Volume= 0.644 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.17' @ 12.08 hrs Surf.Area= 10,144 sf Storage= 10,953 cf

Plug-Flow detention time= 109.3 min calculated for 1.736 af (100% of inflow)
Center-of-Mass det. time= 109.3 min (907.1 - 797.8)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

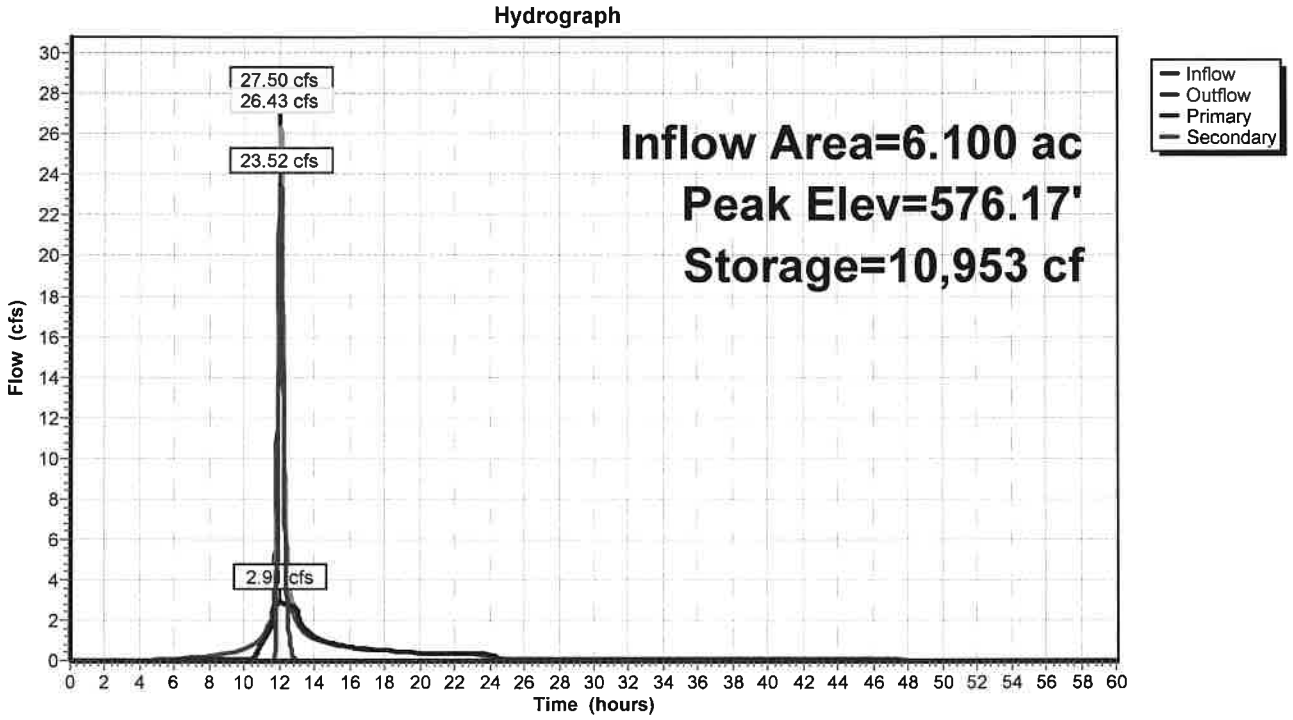
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.91 cfs @ 12.08 hrs HW=576.17' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.91 cfs @ 8.34 fps)
└**2=Grate** (Passes < 5.49 cfs potential flow)
└**3=Exfiltration** (Passes < 0.06 cfs potential flow)

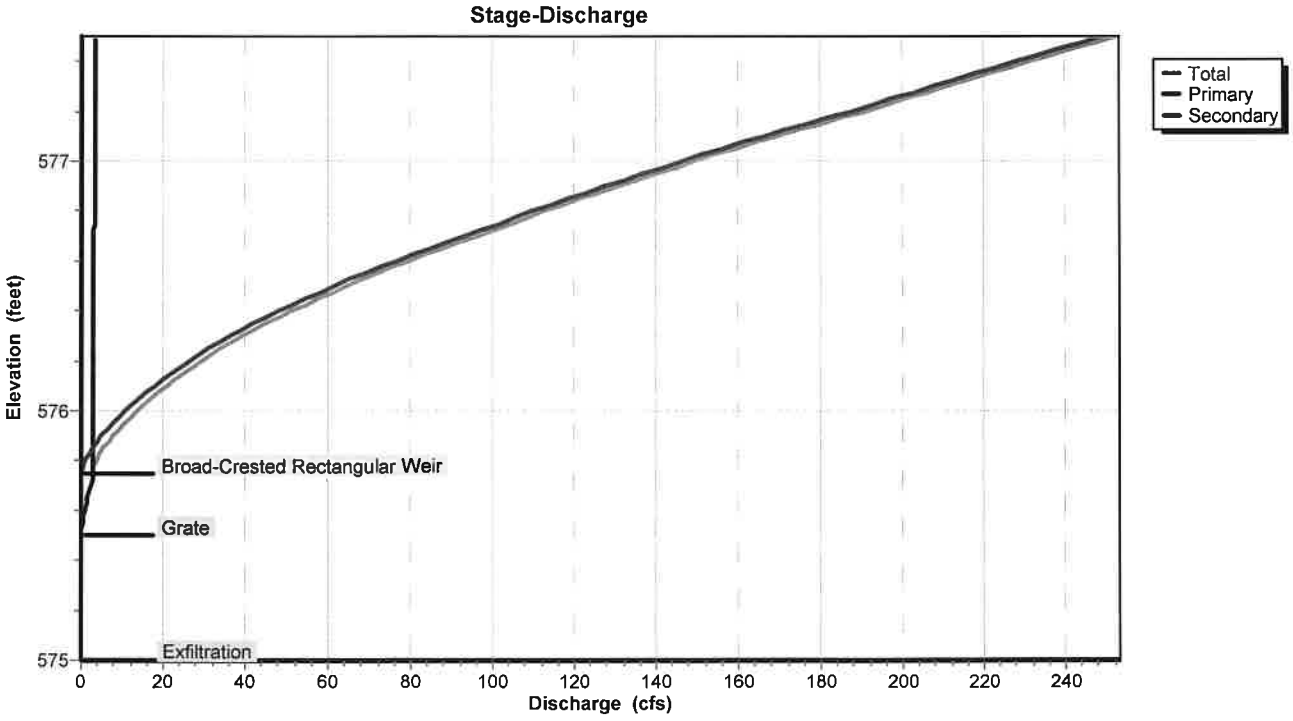
Secondary OutFlow Max=23.50 cfs @ 12.08 hrs HW=576.17' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 23.50 cfs @ 1.88 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

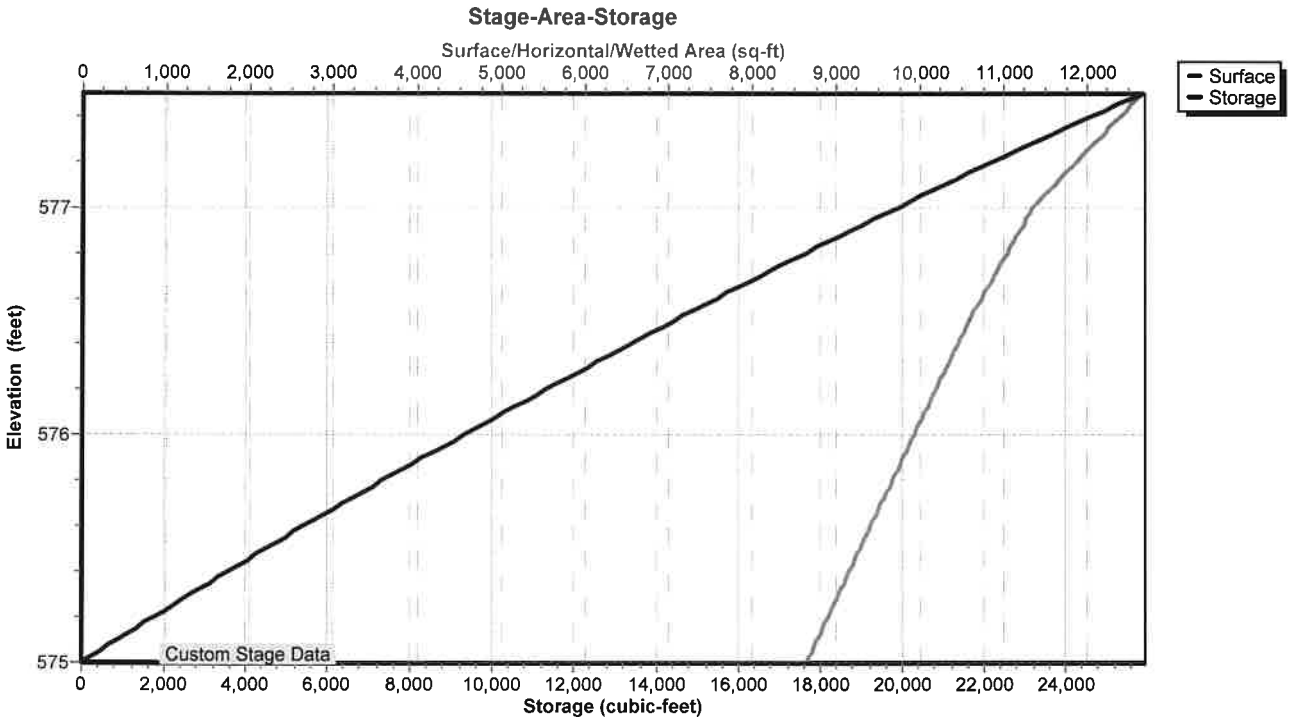


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	0	575.00	0.00	0.00	0.00
6.00	0.09	180	575.02	0.04	0.04	0.00
8.00	0.23	959	575.11	0.05	0.05	0.00
10.00	0.57	3,333	575.38	0.05	0.05	0.00
12.00	**25.18**	**10,302**	**576.10**	**21.15**	**2.88**	**18.27**
14.00	**1.08**	**5,594**	**575.62**	**1.18**	**1.18**	**0.00**
16.00	0.64	5,233	575.58	0.68	0.68	0.00
18.00	0.49	5,081	575.56	0.51	0.51	0.00
20.00	0.36	4,961	575.55	0.38	0.38	0.00
22.00	0.32	4,907	575.55	0.33	0.33	0.00
24.00	0.30	4,876	575.54	0.30	0.30	0.00
26.00	0.00	4,297	575.48	0.06	0.06	0.00
28.00	0.00	3,900	575.44	0.05	0.05	0.00
30.00	0.00	3,508	575.39	0.05	0.05	0.00
32.00	0.00	3,118	575.35	0.05	0.05	0.00
34.00	0.00	2,732	575.31	0.05	0.05	0.00
36.00	0.00	2,350	575.27	0.05	0.05	0.00
38.00	0.00	1,970	575.22	0.05	0.05	0.00
40.00	0.00	1,594	575.18	0.05	0.05	0.00
42.00	0.00	1,221	575.14	0.05	0.05	0.00
44.00	0.00	852	575.10	0.05	0.05	0.00
46.00	0.00	486	575.06	0.05	0.05	0.00
48.00	0.00	140	575.02	0.03	0.03	0.00
50.00	0.00	26	575.00	0.01	0.01	0.00
52.00	0.00	5	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 5.27" for 50-Year event
Inflow = 42.93 cfs @ 12.07 hrs, Volume= 1.933 af
Outflow = 1.97 cfs @ 12.73 hrs, Volume= 1.635 af, Atten= 95%, Lag= 39.8 min
Primary = 0.72 cfs @ 12.73 hrs, Volume= 1.504 af
Secondary = 1.25 cfs @ 12.73 hrs, Volume= 0.131 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.00' @ 12.73 hrs Surf.Area= 66,838 sf Storage= 62,935 cf

Plug-Flow detention time= 900.4 min calculated for 1.635 af (85% of inflow)
Center-of-Mass det. time= 844.0 min (1,616.3 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

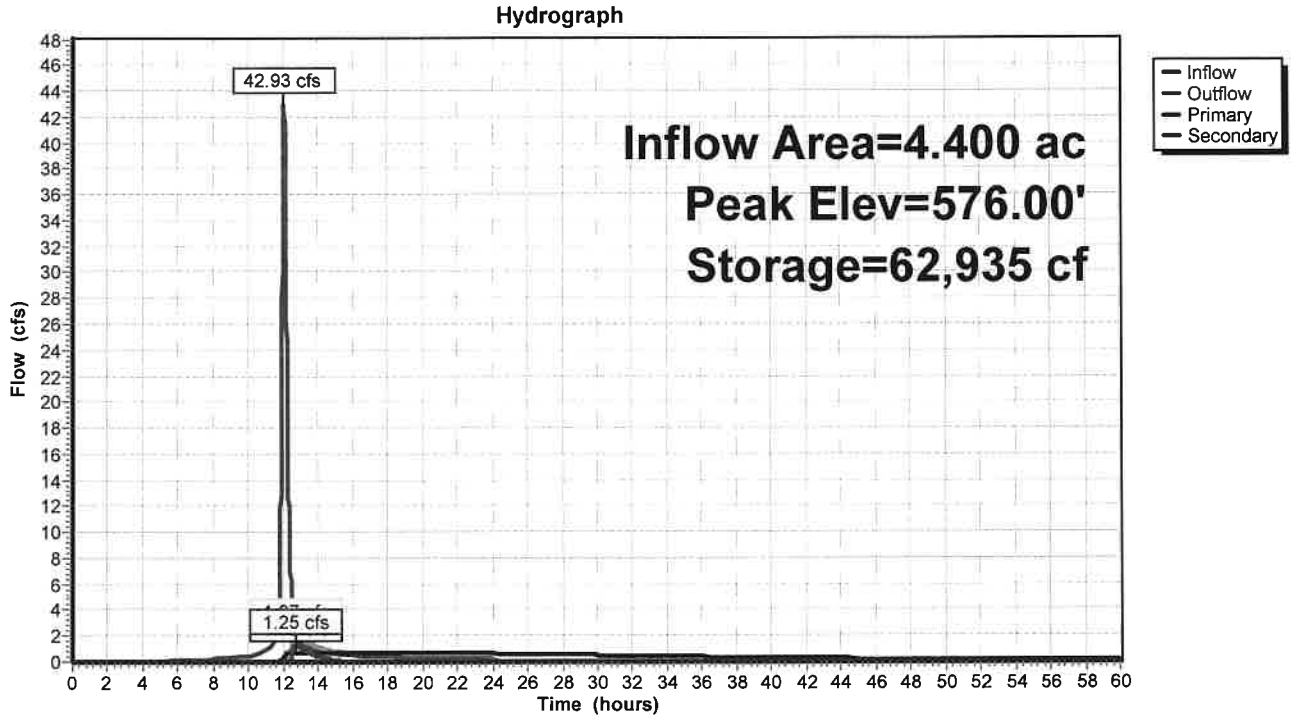
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.72 cfs @ 12.73 hrs HW=576.00' (Free Discharge)
↑—**1=12" outlet pipe** (Passes 0.72 cfs of 2.71 cfs potential flow)
↑—**2=low flow outlet pipe** (Inlet Controls 0.72 cfs @ 3.68 fps)
—**3=Grate** (Controls 0.00 cfs)

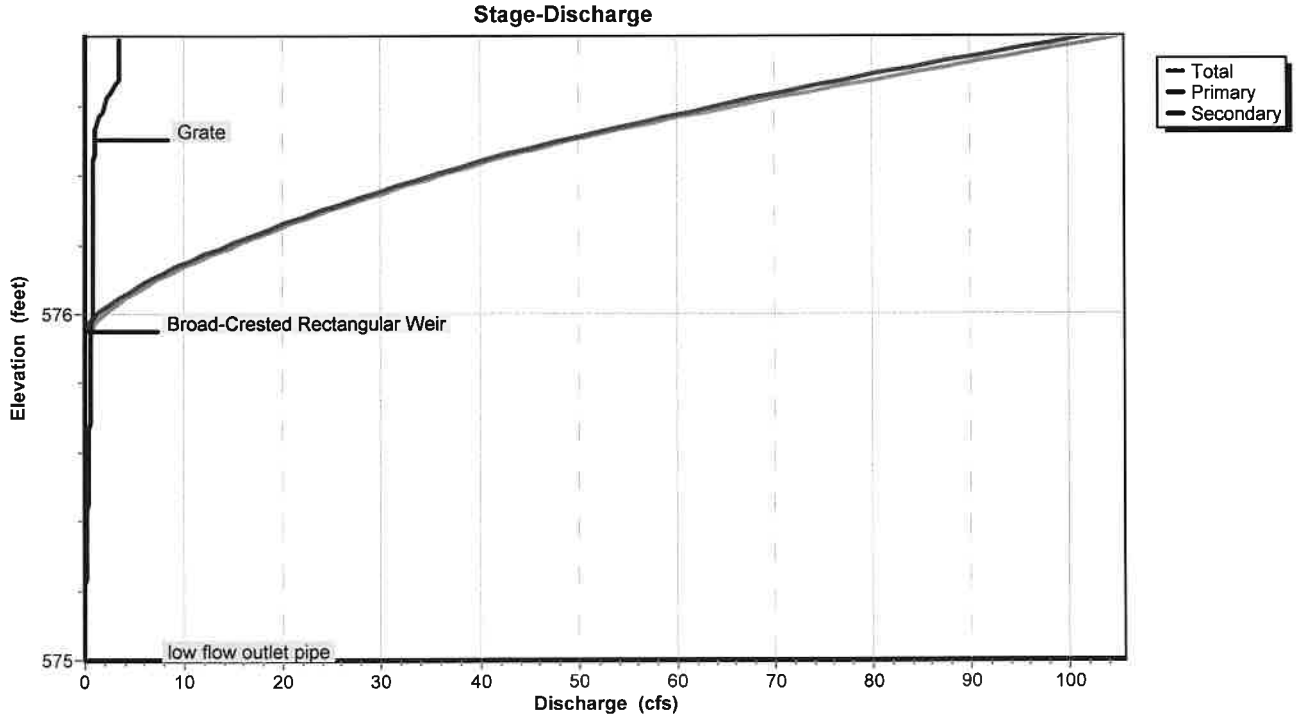
Secondary OutFlow Max=1.25 cfs @ 12.73 hrs HW=576.00' (Free Discharge)
↑—**4=Broad-Crested Rectangular Weir** (Weir Controls 1.25 cfs @ 0.64 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

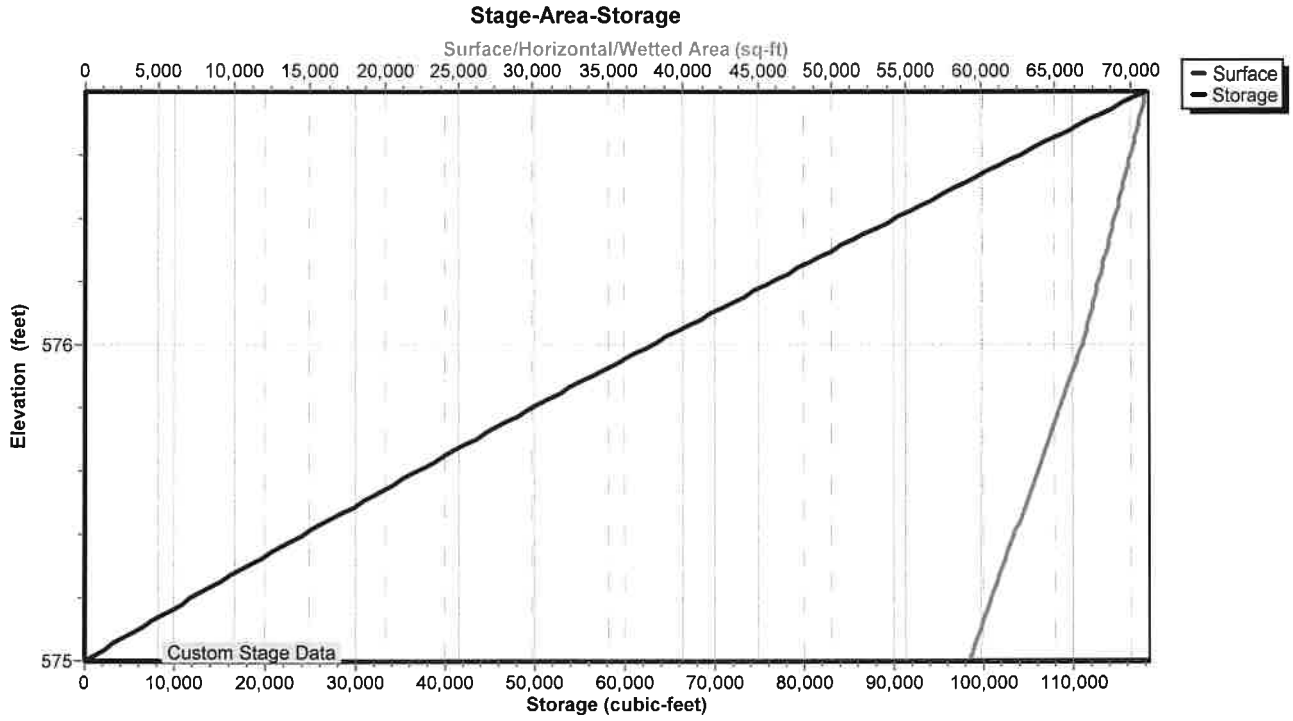


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.00	1	575.00	0.00	0.00	0.00
6.00	0.08	300	575.01	0.00	0.00	0.00
8.00	0.19	1,265	575.02	0.00	0.00	0.00
10.00	0.44	3,420	575.06	0.01	0.01	0.00
12.00	**35.63**	**24,163**	**575.40**	**0.26**	**0.26**	**0.00**
14.00	**0.79**	**61,204**	**575.97**	**1.11**	**0.71**	**0.40**
16.00	0.47	59,536	575.95	0.70	0.70	0.00
18.00	0.36	57,495	575.92	0.68	0.68	0.00
20.00	0.26	54,889	575.88	0.66	0.66	0.00
22.00	0.23	51,975	575.83	0.64	0.64	0.00
24.00	0.21	49,094	575.79	0.61	0.61	0.00
26.00	0.00	45,010	575.73	0.56	0.56	0.00
28.00	0.00	41,189	575.67	0.50	0.50	0.00
30.00	0.00	37,665	575.61	0.47	0.47	0.00
32.00	0.00	34,410	575.56	0.43	0.43	0.00
34.00	0.00	31,481	575.51	0.38	0.38	0.00
36.00	0.00	28,873	575.47	0.34	0.34	0.00
38.00	0.00	26,562	575.44	0.30	0.30	0.00
40.00	0.00	24,517	575.40	0.27	0.27	0.00
42.00	0.00	22,705	575.37	0.24	0.24	0.00
44.00	0.00	21,097	575.35	0.21	0.21	0.00
46.00	0.00	19,666	575.33	0.19	0.19	0.00
48.00	0.00	18,389	575.30	0.17	0.17	0.00
50.00	0.00	17,245	575.29	0.15	0.15	0.00
52.00	0.00	16,216	575.27	0.14	0.14	0.00
54.00	0.00	15,288	575.25	0.12	0.12	0.00
56.00	0.00	14,449	575.24	0.11	0.11	0.00
58.00	0.00	13,686	575.23	0.10	0.10	0.00
60.00	0.00	12,992	575.22	0.09	0.09	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

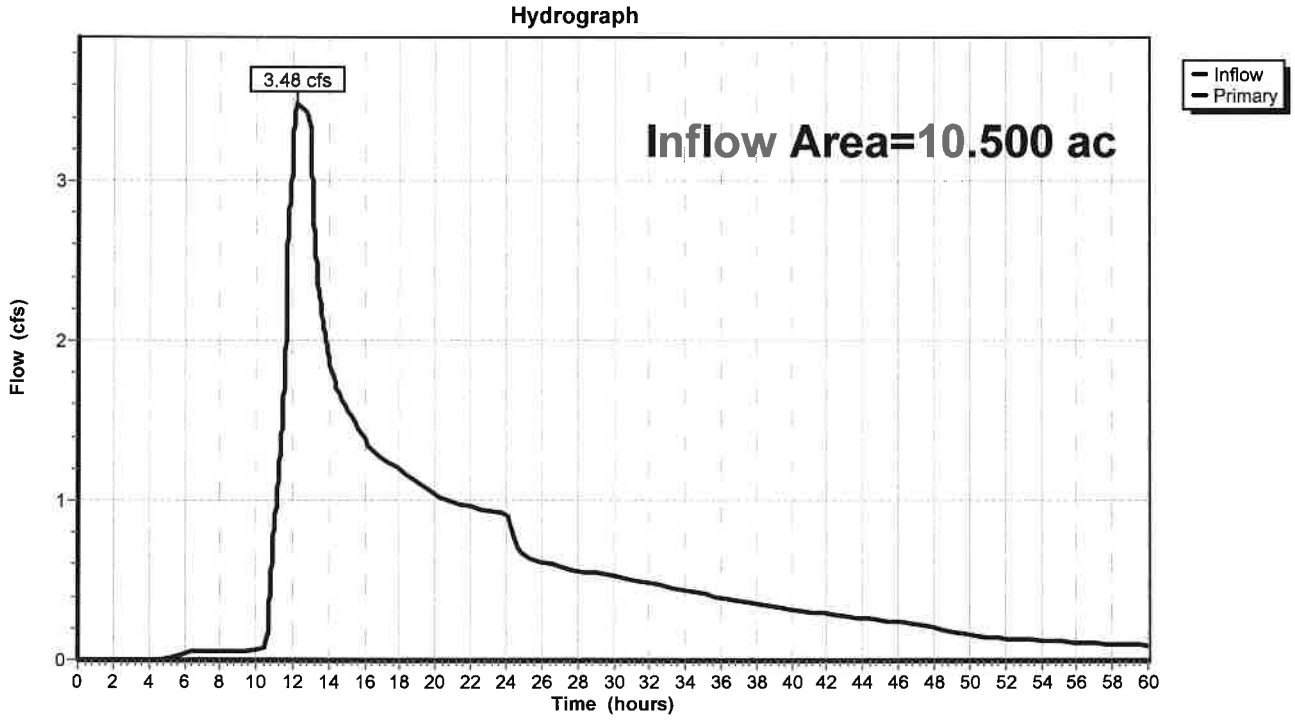
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 2.97" for 50-Year event
Inflow = 3.48 cfs @ 12.21 hrs, Volume= 2.596 af
Primary = 3.48 cfs @ 12.21 hrs, Volume= 2.596 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.14	0.00	0.14
1.00	0.00	0.00	0.00	53.00	0.13	0.00	0.13
2.00	0.00	0.00	0.00	54.00	0.12	0.00	0.12
3.00	0.00	0.00	0.00	55.00	0.12	0.00	0.12
4.00	0.00	0.00	0.00	56.00	0.11	0.00	0.11
5.00	0.01	0.00	0.01	57.00	0.11	0.00	0.11
6.00	0.04	0.00	0.04	58.00	0.10	0.00	0.10
7.00	0.05	0.00	0.05	59.00	0.10	0.00	0.10
8.00	0.05	0.00	0.05	60.00	0.09	0.00	0.09
9.00	0.06	0.00	0.06				
10.00	0.06	0.00	0.06				
11.00	0.88	0.00	0.88				
12.00	**3.14**	0.00	**3.14**				
13.00	**3.25**	0.00	**3.25**				
14.00	1.89	0.00	1.89				
15.00	1.57	0.00	1.57				
16.00	1.38	0.00	1.38				
17.00	1.26	0.00	1.26				
18.00	1.19	0.00	1.19				
19.00	1.11	0.00	1.11				
20.00	1.04	0.00	1.04				
21.00	0.99	0.00	0.99				
22.00	0.96	0.00	0.96				
23.00	0.94	0.00	0.94				
24.00	0.91	0.00	0.91				
25.00	0.65	0.00	0.65				
26.00	0.62	0.00	0.62				
27.00	0.59	0.00	0.59				
28.00	0.56	0.00	0.56				
29.00	0.55	0.00	0.55				
30.00	0.53	0.00	0.53				
31.00	0.51	0.00	0.51				
32.00	0.48	0.00	0.48				
33.00	0.46	0.00	0.46				
34.00	0.44	0.00	0.44				
35.00	0.42	0.00	0.42				
36.00	0.39	0.00	0.39				
37.00	0.37	0.00	0.37				
38.00	0.35	0.00	0.35				
39.00	0.34	0.00	0.34				
40.00	0.32	0.00	0.32				
41.00	0.30	0.00	0.30				
42.00	0.29	0.00	0.29				
43.00	0.27	0.00	0.27				
44.00	0.26	0.00	0.26				
45.00	0.25	0.00	0.25				
46.00	0.24	0.00	0.24				
47.00	0.23	0.00	0.23				
48.00	0.20	0.00	0.20				
49.00	0.17	0.00	0.17				
50.00	0.16	0.00	0.16				
51.00	0.15	0.00	0.15				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Front Area 1 Runoff Area=6.100 ac 54.10% Impervious Runoff Depth=4.15"
Flow Length=652' Tc=13.3 min CN=90 Runoff=33.05 cfs 2.108 af

Subcatchment 2S: Rear Area 1 Runoff Area=4.400 ac 61.36% Impervious Runoff Depth=4.25"
Flow Length=683' Tc=14.4 min CN=91 Runoff=23.44 cfs 1.560 af

Pond 1P: Bioretention Area 3 Peak Elev=576.23' Storage=11,585 cf Inflow=33.05 cfs 2.108 af
Primary=2.94 cfs 1.275 af Secondary=28.98 cfs 0.833 af Outflow=31.92 cfs 2.108 af

Pond 3P: Detention Basin (SMA #1) Peak Elev=576.11' Storage=70,722 cf Inflow=52.24 cfs 2.392 af
Primary=0.78 cfs 1.554 af Secondary=7.80 cfs 0.534 af Outflow=8.57 cfs 2.088 af

Link 5L: Outflow (@ CB 54) Inflow=3.60 cfs 2.829 af
Primary=3.60 cfs 2.829 af

Total Runoff Area = 10.500 ac Runoff Volume = 3.668 af Average Runoff Depth = 4.19"
42.86% Pervious = 4.500 ac 57.14% Impervious = 6.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 1S: Front Area 1

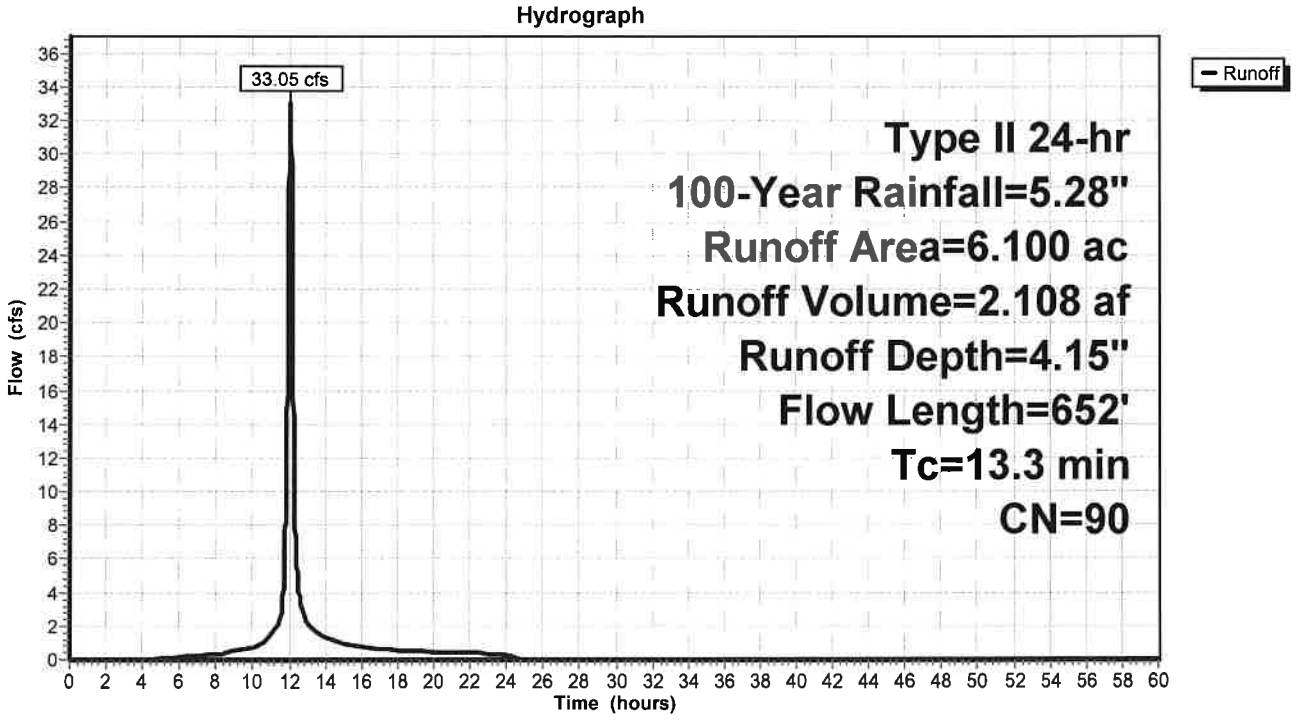
Runoff = 33.05 cfs @ 12.05 hrs, Volume= 2.108 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.800	98	Paved parking, HSG D
1.500	98	Roofs, HSG D
2.800	80	>75% Grass cover, Good, HSG D
6.100	90	Weighted Average
2.800		45.90% Pervious Area
3.300		54.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	37	0.0100	0.06		**Sheet Flow, grass** Grass: Dense n= 0.240 P2= 2.50"
0.4	15	0.0120	0.68		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
3.3	600		3.00		**Direct Entry, pipe flow**
13.3	652	Total			

Subcatchment 1S: Front Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 1S: Front Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.00	0.01
5.00	0.33	0.01	0.08
6.00	0.42	0.03	0.15
7.00	0.52	0.06	0.23
8.00	0.63	0.11	0.32
9.00	0.78	0.18	0.52
10.00	0.96	0.29	0.74
11.00	1.24	0.49	1.47
12.00	3.50	2.45	**30.36**
13.00	4.08	2.99	**2.21**
14.00	4.33	3.23	1.27
15.00	4.51	3.40	0.98
16.00	4.65	3.54	0.76
17.00	4.76	3.65	0.66
18.00	4.86	3.74	0.58
19.00	4.95	3.83	0.50
20.00	5.03	3.90	0.42
21.00	5.09	3.97	0.40
22.00	5.16	4.03	0.38
23.00	5.22	4.09	0.36
24.00	**5.28**	**4.15**	0.35
25.00	5.28	4.15	0.00
26.00	5.28	4.15	0.00
27.00	5.28	4.15	0.00
28.00	5.28	4.15	0.00
29.00	5.28	4.15	0.00
30.00	5.28	4.15	0.00
31.00	5.28	4.15	0.00
32.00	5.28	4.15	0.00
33.00	5.28	4.15	0.00
34.00	5.28	4.15	0.00
35.00	5.28	4.15	0.00
36.00	5.28	4.15	0.00
37.00	5.28	4.15	0.00
38.00	5.28	4.15	0.00
39.00	5.28	4.15	0.00
40.00	5.28	4.15	0.00
41.00	5.28	4.15	0.00
42.00	5.28	4.15	0.00
43.00	5.28	4.15	0.00
44.00	5.28	4.15	0.00
45.00	5.28	4.15	0.00
46.00	5.28	4.15	0.00
47.00	5.28	4.15	0.00
48.00	5.28	4.15	0.00
49.00	5.28	4.15	0.00
50.00	5.28	4.15	0.00
51.00	5.28	4.15	0.00
52.00	5.28	4.15	0.00
53.00	5.28	4.15	0.00
54.00	5.28	4.15	0.00
55.00	5.28	4.15	0.00
56.00	5.28	4.15	0.00
57.00	5.28	4.15	0.00
58.00	5.28	4.15	0.00
59.00	5.28	4.15	0.00
60.00	5.28	4.15	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 2S: Rear Area 1

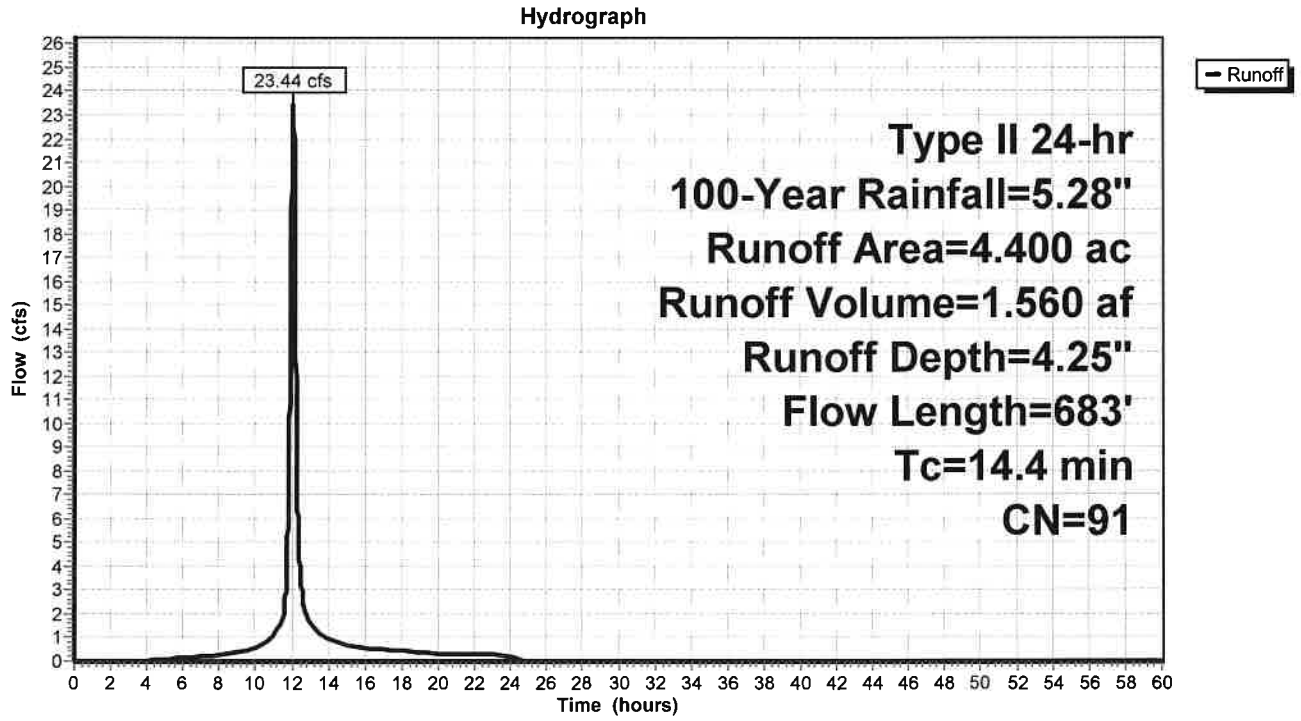
Runoff = 23.44 cfs @ 12.06 hrs, Volume= 1.560 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG D
1.300	98	Roofs, HSG D
1.700	80	>75% Grass cover, Good, HSG D
4.400	91	Weighted Average
1.700		38.64% Pervious Area
2.700		61.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	90	0.0200	0.15		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
1.3	75	0.0130	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
2.9	518		3.00		**Direct Entry, Pipe flow**
14.4	683	Total			

Subcatchment 2S: Rear Area 1



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 2S: Rear Area 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.00	0.02
5.00	0.33	0.02	0.07
6.00	0.42	0.04	0.13
7.00	0.52	0.08	0.19
8.00	0.63	0.13	0.25
9.00	0.78	0.21	0.41
10.00	0.96	0.33	0.57
11.00	1.24	0.54	1.10
12.00	3.50	2.54	**20.85**
13.00	4.08	3.09	**1.64**
14.00	4.33	3.33	0.94
15.00	4.51	3.50	0.71
16.00	4.65	3.64	0.56
17.00	4.76	3.75	0.48
18.00	4.86	3.85	0.42
19.00	4.95	3.93	0.36
20.00	5.03	4.01	0.31
21.00	5.09	4.07	0.29
22.00	5.16	4.14	0.28
23.00	5.22	4.20	0.26
24.00	**5.28**	**4.25**	0.25
25.00	5.28	4.25	0.00
26.00	5.28	4.25	0.00
27.00	5.28	4.25	0.00
28.00	5.28	4.25	0.00
29.00	5.28	4.25	0.00
30.00	5.28	4.25	0.00
31.00	5.28	4.25	0.00
32.00	5.28	4.25	0.00
33.00	5.28	4.25	0.00
34.00	5.28	4.25	0.00
35.00	5.28	4.25	0.00
36.00	5.28	4.25	0.00
37.00	5.28	4.25	0.00
38.00	5.28	4.25	0.00
39.00	5.28	4.25	0.00
40.00	5.28	4.25	0.00
41.00	5.28	4.25	0.00
42.00	5.28	4.25	0.00
43.00	5.28	4.25	0.00
44.00	5.28	4.25	0.00
45.00	5.28	4.25	0.00
46.00	5.28	4.25	0.00
47.00	5.28	4.25	0.00
48.00	5.28	4.25	0.00
49.00	5.28	4.25	0.00
50.00	5.28	4.25	0.00
51.00	5.28	4.25	0.00
52.00	5.28	4.25	0.00
53.00	5.28	4.25	0.00
54.00	5.28	4.25	0.00
55.00	5.28	4.25	0.00
56.00	5.28	4.25	0.00
57.00	5.28	4.25	0.00
58.00	5.28	4.25	0.00
59.00	5.28	4.25	0.00
60.00	5.28	4.25	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 1P: Bioretention Area 3

Inflow Area = 6.100 ac, 54.10% Impervious, Inflow Depth = 4.15" for 100-Year event
Inflow = 33.05 cfs @ 12.05 hrs, Volume= 2.108 af
Outflow = 31.92 cfs @ 12.08 hrs, Volume= 2.108 af, Atten= 3%, Lag= 1.8 min
Primary = 2.94 cfs @ 12.08 hrs, Volume= 1.275 af
Secondary = 28.98 cfs @ 12.08 hrs, Volume= 0.833 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.23' @ 12.08 hrs Surf.Area= 10,226 sf Storage= 11,585 cf

Plug-Flow detention time= 93.7 min calculated for 2.108 af (100% of inflow)
Center-of-Mass det. time= 93.9 min (886.3 - 792.4)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	25,904 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	8,648	0	0
576.00	9,925	9,287	9,287
576.50	10,585	5,128	14,414
577.00	11,350	5,484	19,898
577.50	12,675	6,006	25,904

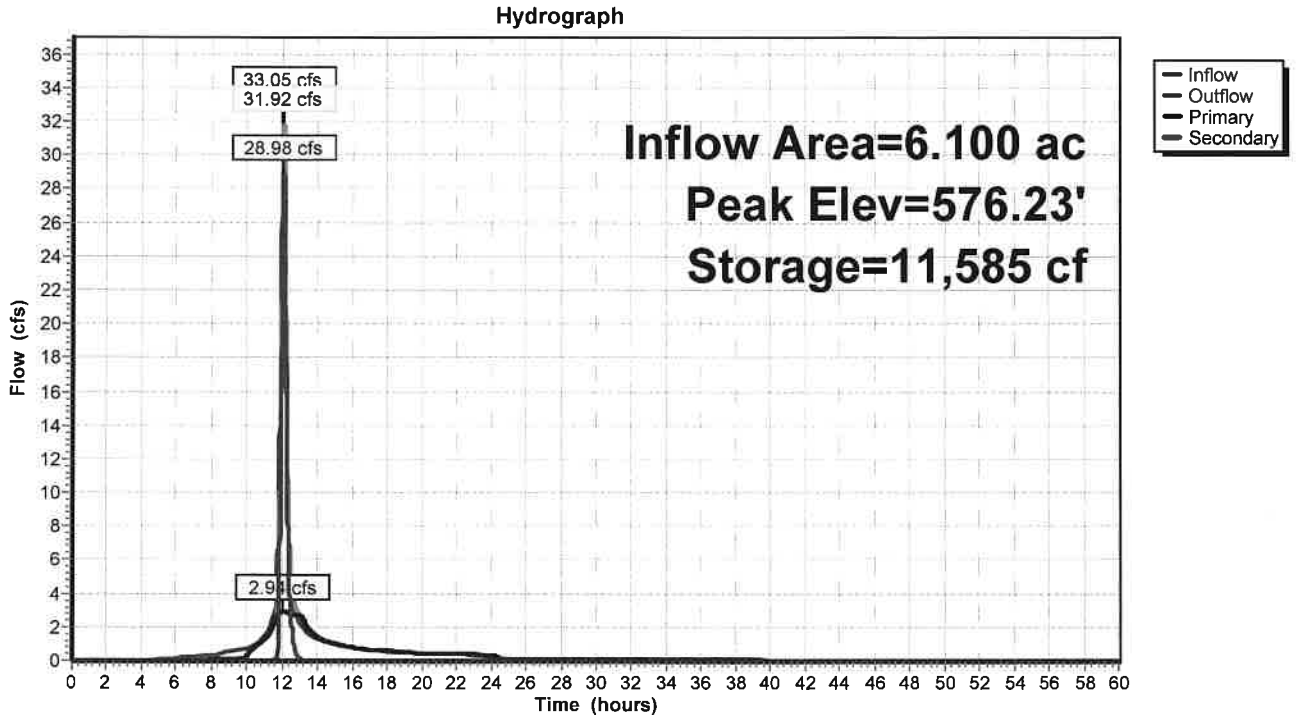
Device	Routing	Invert	Outlet Devices
#1	Primary	572.50'	**8.0" Round 8" pipe** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 572.50' / 572.42' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Device 1	575.50'	**8.0" Horiz. Grate X 4.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	575.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Secondary	575.75'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=2.94 cfs @ 12.08 hrs HW=576.23' (Free Discharge)
└**1=8" pipe** (Barrel Controls 2.94 cfs @ 8.43 fps)
  ├**2=Grate** (Passes < 5.74 cfs potential flow)
  └**3=Exfiltration** (Passes < 0.06 cfs potential flow)

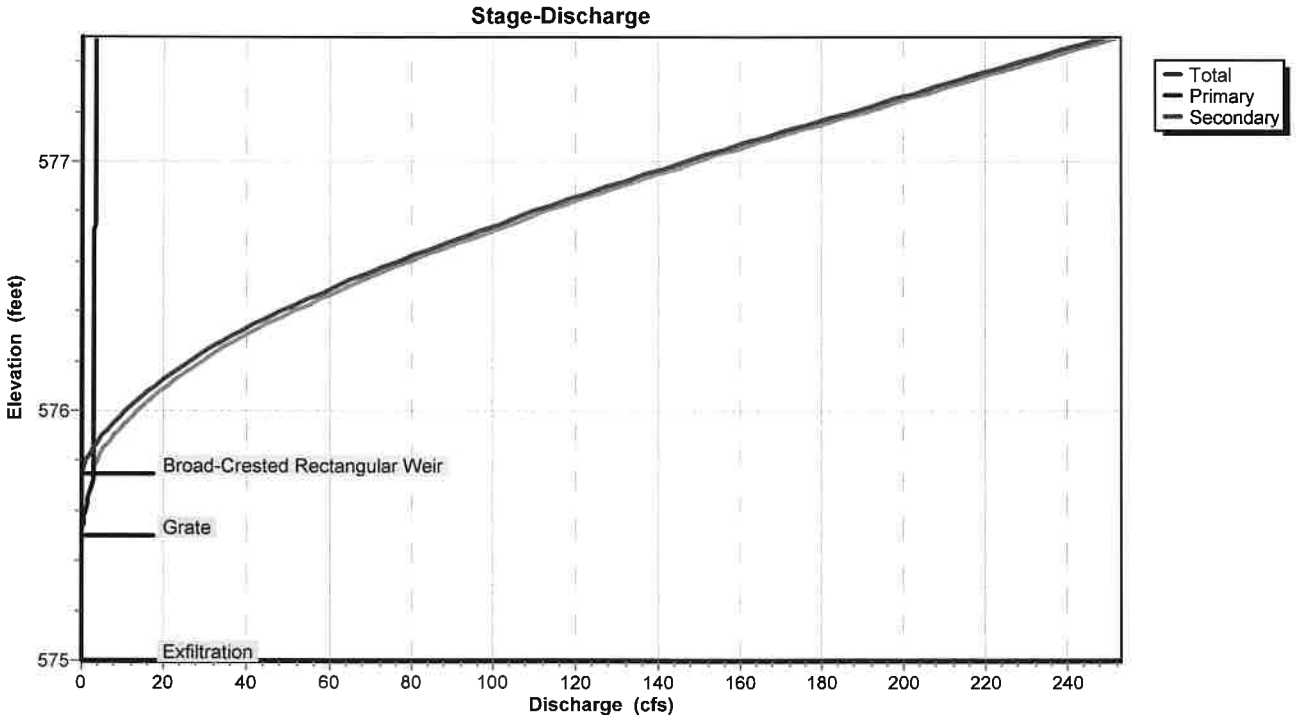
Secondary OutFlow Max=28.93 cfs @ 12.08 hrs HW=576.23' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 28.93 cfs @ 2.02 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3

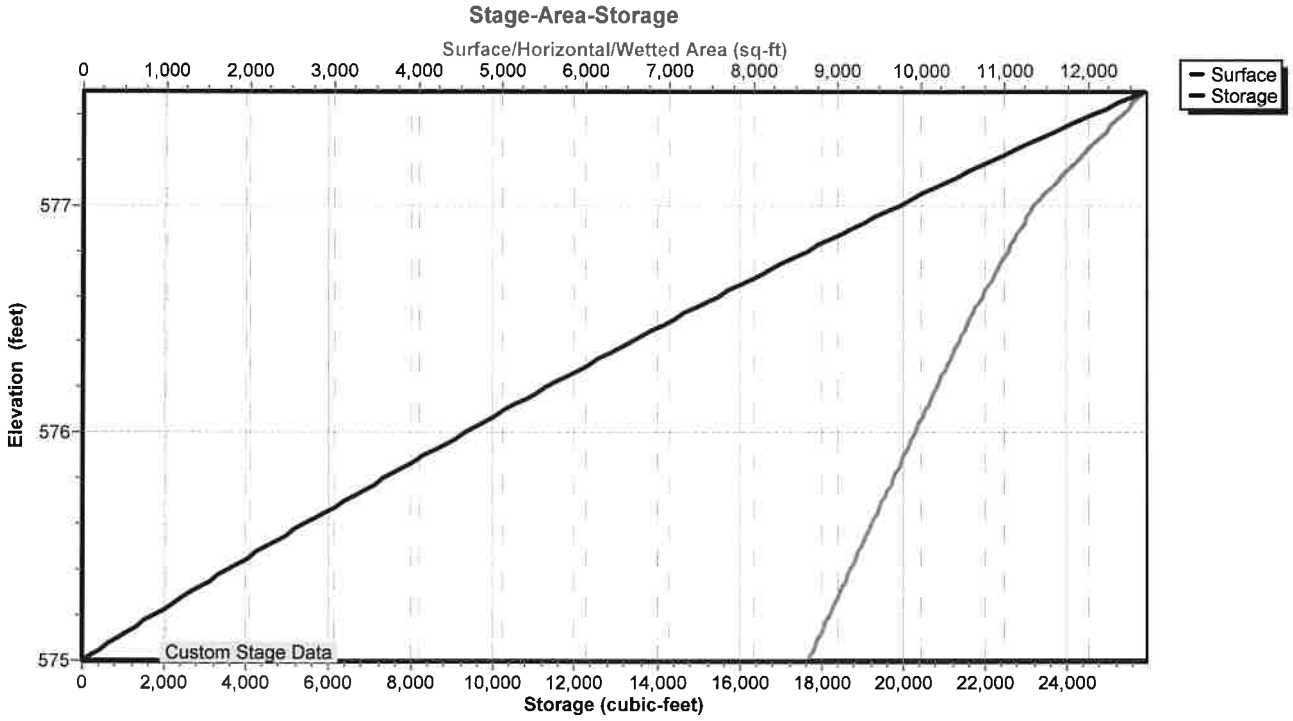


Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 1P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 1P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.01	6	575.00	0.00	0.00	0.00
6.00	0.15	359	575.04	0.05	0.05	0.00
8.00	0.32	1,651	575.19	0.05	0.05	0.00
10.00	0.74	4,857	575.54	0.28	0.28	0.00
12.00	**30.36**	**10,896**	**576.16**	**25.95**	**2.91**	**23.04**
14.00	**1.27**	**5,731**	**575.63**	**1.39**	**1.39**	**0.00**
16.00	0.76	5,329	575.59	0.81	0.81	0.00
18.00	0.58	5,164	575.57	0.60	0.60	0.00
20.00	0.42	5,023	575.56	0.44	0.44	0.00
22.00	0.38	4,969	575.55	0.38	0.38	0.00
24.00	0.35	4,939	575.55	0.35	0.35	0.00
26.00	0.00	4,307	575.48	0.06	0.06	0.00
28.00	0.00	3,911	575.44	0.05	0.05	0.00
30.00	0.00	3,518	575.40	0.05	0.05	0.00
32.00	0.00	3,129	575.35	0.05	0.05	0.00
34.00	0.00	2,743	575.31	0.05	0.05	0.00
36.00	0.00	2,360	575.27	0.05	0.05	0.00
38.00	0.00	1,981	575.23	0.05	0.05	0.00
40.00	0.00	1,604	575.18	0.05	0.05	0.00
42.00	0.00	1,232	575.14	0.05	0.05	0.00
44.00	0.00	862	575.10	0.05	0.05	0.00
46.00	0.00	496	575.06	0.05	0.05	0.00
48.00	0.00	147	575.02	0.03	0.03	0.00
50.00	0.00	28	575.00	0.01	0.01	0.00
52.00	0.00	5	575.00	0.00	0.00	0.00
54.00	0.00	1	575.00	0.00	0.00	0.00
56.00	0.00	0	575.00	0.00	0.00	0.00
58.00	0.00	0	575.00	0.00	0.00	0.00
60.00	0.00	0	575.00	0.00	0.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 1P: Bioretention Area 3

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.05	0.05	0.05	0.00
575.10	0.05	0.05	0.00
575.15	0.05	0.05	0.00
575.20	0.05	0.05	0.00
575.25	0.05	0.05	0.00
575.30	0.05	0.05	0.00
575.35	0.05	0.05	0.00
575.40	0.05	0.05	0.00
575.45	0.05	0.05	0.00
575.50	0.06	0.06	0.00
575.55	0.36	0.36	0.00
575.60	0.92	0.92	0.00
575.65	1.65	1.65	0.00
575.70	2.51	2.51	0.00
575.75	2.71	2.71	0.00
575.80	3.71	2.73	0.98
575.85	5.53	2.76	2.77
575.90	7.87	2.78	5.09
575.95	10.64	2.81	7.84
576.00	13.78	2.83	10.95
576.05	17.25	2.86	14.39
576.10	21.02	2.88	18.14
576.15	25.07	2.91	22.16
576.20	29.37	2.93	26.44
576.25	34.02	2.95	31.07
576.30	39.38	2.98	36.41
576.35	45.12	3.00	42.12
576.40	51.24	3.02	48.22
576.45	57.74	3.04	54.69
576.50	64.62	3.07	61.55
576.55	71.88	3.09	68.79
576.60	79.53	3.11	76.42
576.65	87.57	3.13	84.44
576.70	96.00	3.16	92.85
576.75	104.54	3.18	101.36
576.80	112.97	3.20	109.77
576.85	121.69	3.22	118.47
576.90	130.69	3.24	127.45
576.95	139.98	3.26	136.72
577.00	149.56	3.28	146.27
577.05	159.42	3.30	156.11
577.10	169.57	3.33	166.24
577.15	180.00	3.35	176.66
577.20	190.72	3.37	187.36
577.25	201.24	3.39	197.86
577.30	211.24	3.41	207.83
577.35	221.40	3.43	217.97
577.40	231.71	3.45	228.27
577.45	242.19	3.47	238.72
577.50	**252.82**	**3.49**	**249.33**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 1P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	8,648	0
575.05	8,712	434
575.10	8,776	871
575.15	8,840	1,312
575.20	8,903	1,755
575.25	8,967	2,202
575.30	9,031	2,652
575.35	9,095	3,105
575.40	9,159	3,561
575.45	9,223	4,021
575.50	9,287	4,484
575.55	9,350	4,950
575.60	9,414	5,419
575.65	9,478	5,891
575.70	9,542	6,366
575.75	9,606	6,845
575.80	9,670	7,327
575.85	9,733	7,812
575.90	9,797	8,300
575.95	9,861	8,792
576.00	9,925	9,287
576.05	9,991	9,784
576.10	10,057	10,286
576.15	10,123	10,790
576.20	10,189	11,298
576.25	10,255	11,809
576.30	10,321	12,323
576.35	10,387	12,841
576.40	10,453	13,362
576.45	10,519	13,886
576.50	10,585	14,414
576.55	10,661	14,945
576.60	10,738	15,480
576.65	10,814	16,019
576.70	10,891	16,562
576.75	10,968	17,108
576.80	11,044	17,658
576.85	11,121	18,212
576.90	11,197	18,770
576.95	11,274	19,332
577.00	11,350	19,898
577.05	11,482	20,469
577.10	11,615	21,046
577.15	11,747	21,630
577.20	11,880	22,221
577.25	12,013	22,818
577.30	12,145	23,422
577.35	12,278	24,033
577.40	12,410	24,650
577.45	12,543	25,274
577.50	**12,675**	**25,904**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 3P: Detention Basin (SMA #1)

Inflow Area = 4.400 ac, 61.36% Impervious, Inflow Depth = 6.52" for 100-Year event
Inflow = 52.24 cfs @ 12.07 hrs, Volume= 2.392 af
Outflow = 8.57 cfs @ 12.41 hrs, Volume= 2.088 af, Atten= 84%, Lag= 20.7 min
Primary = 0.78 cfs @ 12.41 hrs, Volume= 1.554 af
Secondary = 7.80 cfs @ 12.41 hrs, Volume= 0.534 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 576.11' @ 12.41 hrs Surf.Area= 67,462 sf Storage= 70,722 cf

Plug-Flow detention time= 739.0 min calculated for 2.088 af (87% of inflow)
Center-of-Mass det. time= 688.7 min (1,456.5 - 767.8)

Volume	Invert	Avail.Storage	Storage Description
#1	575.00'	118,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
575.00	59,213	0	0
576.00	66,849	63,031	63,031
576.80	71,134	55,193	118,224

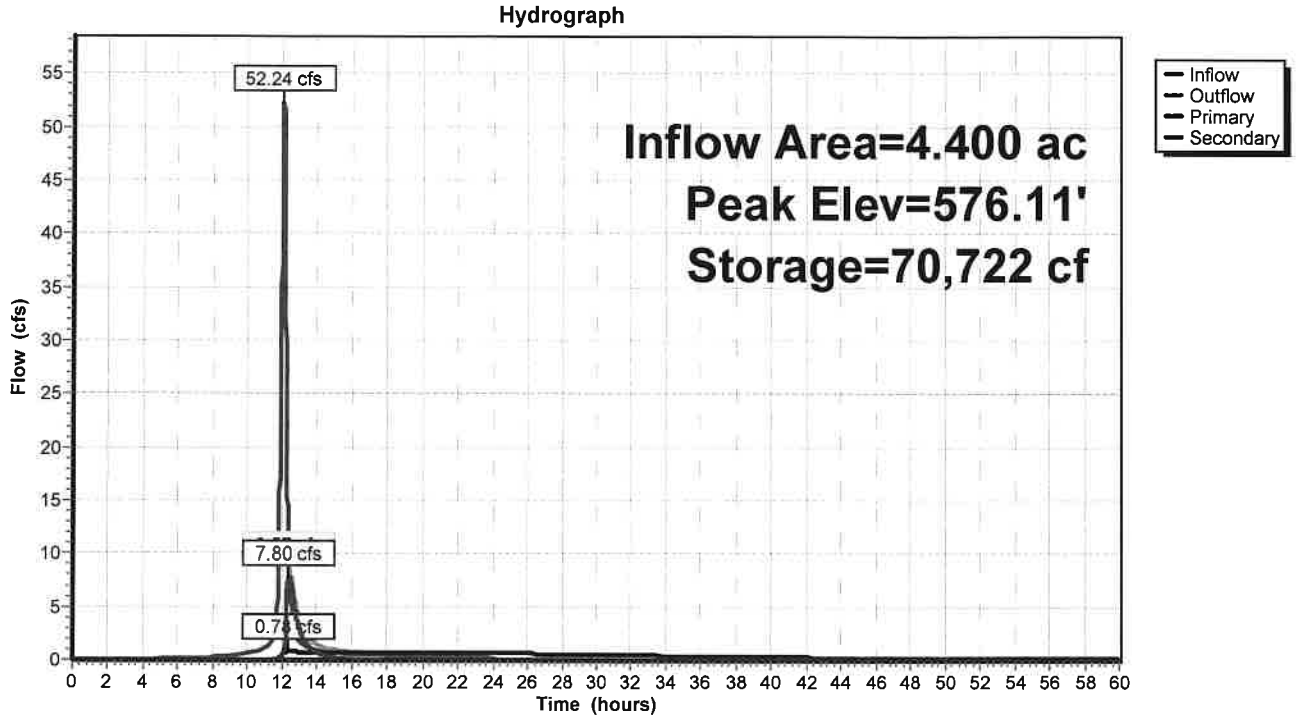
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**12.0" Round 12" outlet pipe** L= 160.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 574.00' / 573.79' S= 0.0013 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	575.00'	**6.0" Round low flow outlet pipe** L= 10.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 575.00' / 574.95' S= 0.0050 '/' Cc= 0.900 n= 0.010 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#3	Device 1	576.50'	**30.0" x 30.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	575.95'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=0.78 cfs @ 12.41 hrs HW=576.11' (Free Discharge)
└**1=12" outlet pipe** (Passes 0.78 cfs of 2.84 cfs potential flow)
  ├**2=low flow outlet pipe** (Inlet Controls 0.78 cfs @ 3.95 fps)
  └**3=Grate** (Controls 0.00 cfs)

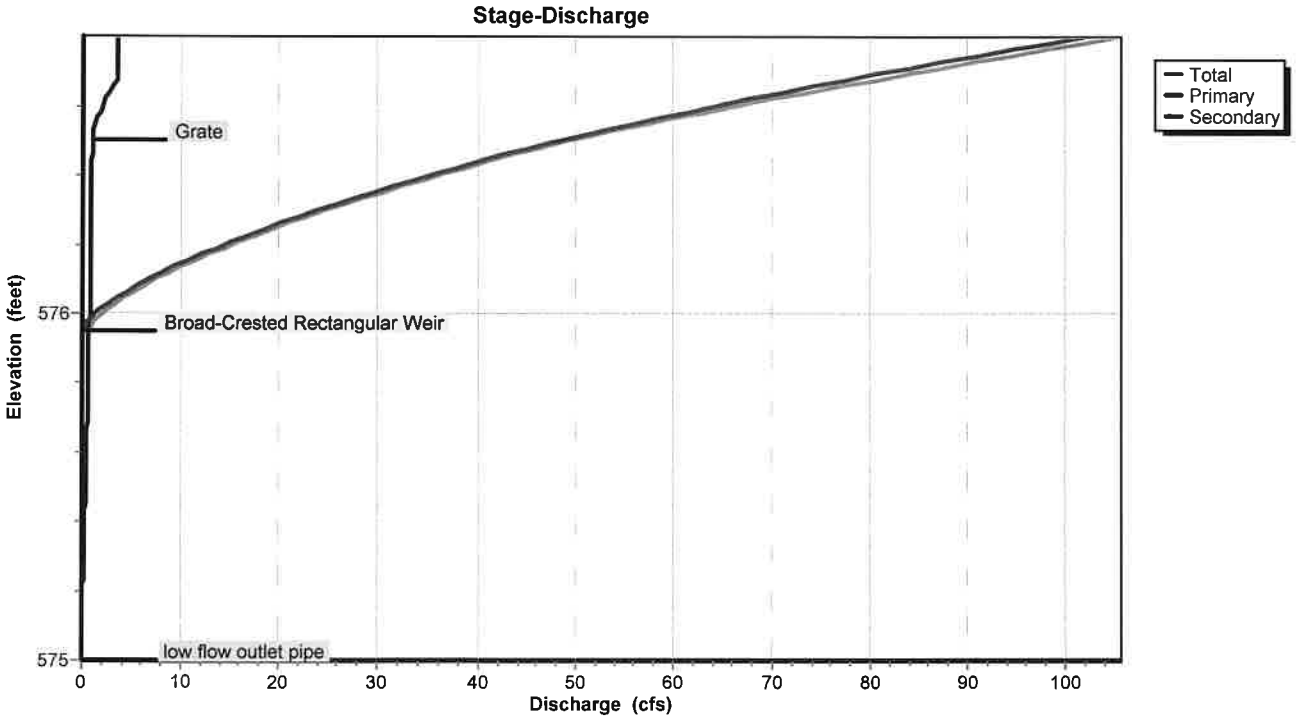
Secondary OutFlow Max=7.79 cfs @ 12.41 hrs HW=576.11' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 7.79 cfs @ 1.18 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)

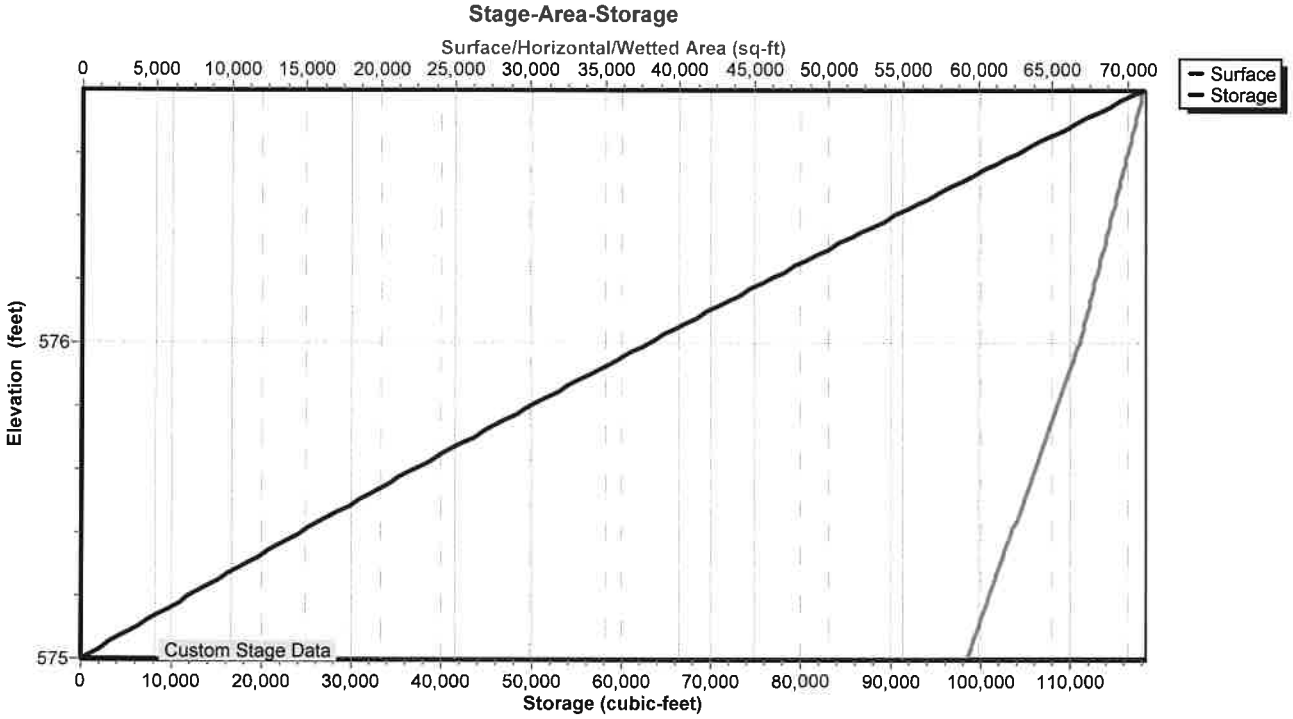


Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 3P: Detention Basin (SMA #1)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 3P: Detention Basin (SMA #1)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	575.00	0.00	0.00	0.00
2.00	0.00	0	575.00	0.00	0.00	0.00
4.00	0.02	25	575.00	0.00	0.00	0.00
6.00	0.13	556	575.01	0.00	0.00	0.00
8.00	0.25	1,914	575.03	0.00	0.00	0.00
10.00	0.57	4,720	575.08	0.01	0.01	0.00
12.00	**43.89**	**31,253**	**575.51**	**0.38**	**0.38**	**0.00**
14.00	**0.94**	**61,894**	**575.98**	**1.43**	**0.71**	**0.72**
16.00	0.56	59,972	575.95	0.73	0.70	0.03
18.00	0.42	58,398	575.93	0.69	0.69	0.00
20.00	0.31	56,130	575.90	0.67	0.67	0.00
22.00	0.28	53,450	575.86	0.65	0.65	0.00
24.00	0.25	50,762	575.81	0.63	0.63	0.00
26.00	0.00	46,581	575.75	0.59	0.59	0.00
28.00	0.00	42,588	575.69	0.52	0.52	0.00
30.00	0.00	38,979	575.63	0.49	0.49	0.00
32.00	0.00	35,609	575.58	0.45	0.45	0.00
34.00	0.00	32,555	575.53	0.40	0.40	0.00
36.00	0.00	29,827	575.49	0.36	0.36	0.00
38.00	0.00	27,407	575.45	0.32	0.32	0.00
40.00	0.00	25,264	575.42	0.28	0.28	0.00
42.00	0.00	23,368	575.39	0.25	0.25	0.00
44.00	0.00	21,686	575.36	0.22	0.22	0.00
46.00	0.00	20,191	575.33	0.20	0.20	0.00
48.00	0.00	18,858	575.31	0.17	0.17	0.00
50.00	0.00	17,665	575.29	0.16	0.16	0.00
52.00	0.00	16,594	575.28	0.14	0.14	0.00
54.00	0.00	15,630	575.26	0.13	0.13	0.00
56.00	0.00	14,758	575.25	0.12	0.12	0.00
58.00	0.00	13,967	575.23	0.10	0.10	0.00
60.00	0.00	13,248	575.22	0.10	0.10	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
575.00	0.00	0.00	0.00
575.02	0.00	0.00	0.00
575.04	0.00	0.00	0.00
575.06	0.01	0.01	0.00
575.08	0.01	0.01	0.00
575.10	0.02	0.02	0.00
575.12	0.03	0.03	0.00
575.14	0.04	0.04	0.00
575.16	0.05	0.05	0.00
575.18	0.07	0.07	0.00
575.20	0.08	0.08	0.00
575.22	0.09	0.09	0.00
575.24	0.11	0.11	0.00
575.26	0.13	0.13	0.00
575.28	0.15	0.15	0.00
575.30	0.16	0.16	0.00
575.32	0.18	0.18	0.00
575.34	0.20	0.20	0.00
575.36	0.22	0.22	0.00
575.38	0.24	0.24	0.00
575.40	0.26	0.26	0.00
575.42	0.28	0.28	0.00
575.44	0.31	0.31	0.00
575.46	0.33	0.33	0.00
575.48	0.35	0.35	0.00
575.50	0.37	0.37	0.00
575.52	0.39	0.39	0.00
575.54	0.41	0.41	0.00
575.56	0.43	0.43	0.00
575.58	0.45	0.45	0.00
575.60	0.46	0.46	0.00
575.62	0.48	0.48	0.00
575.64	0.49	0.49	0.00
575.66	0.50	0.50	0.00
575.68	0.51	0.51	0.00
575.70	0.54	0.54	0.00
575.72	0.56	0.56	0.00
575.74	0.58	0.58	0.00
575.76	0.60	0.60	0.00
575.78	0.61	0.61	0.00
575.80	0.62	0.62	0.00
575.82	0.63	0.63	0.00
575.84	0.64	0.64	0.00
575.86	0.65	0.65	0.00
575.88	0.66	0.66	0.00
575.90	0.67	0.67	0.00
575.92	0.68	0.68	0.00
575.94	0.69	0.69	0.00
575.96	0.82	0.70	0.12
575.98	1.32	0.71	0.61
576.00	2.03	0.72	1.31
576.02	2.90	0.73	2.16
576.04	3.90	0.74	3.15
576.06	5.01	0.75	4.26
576.08	6.23	0.76	5.47
576.10	7.55	0.77	6.79
576.12	8.96	0.78	8.19
576.14	10.46	0.79	9.67
576.16	12.04	0.80	11.24
576.18	13.69	0.80	12.88
576.20	15.41	0.81	14.60
576.22	17.21	0.82	16.39
576.24	19.07	0.83	18.24
576.26	21.00	0.84	20.16
576.28	22.99	0.85	22.14
576.30	25.04	0.85	24.18
576.32	27.15	0.86	26.29
576.34	29.32	0.87	28.45
576.36	31.54	0.88	30.66
576.38	33.82	0.89	32.93
576.40	36.15	0.89	35.26
576.42	38.54	0.90	37.63
576.44	40.97	0.91	40.06
576.46	43.73	0.92	42.81
576.48	46.56	0.93	45.63
576.50	49.47	0.93	48.54
576.52	52.56	1.03	51.53
576.54	55.81	1.21	54.60
576.56	59.18	1.44	57.75
576.58	62.68	1.70	60.98
576.60	66.29	2.00	64.29
576.62	70.02	2.34	67.68
576.64	73.85	2.70	71.16
576.66	77.79	3.08	74.71
576.68	81.74	3.39	78.35
576.70	85.48	3.41	82.07
576.72	89.30	3.43	85.87
576.74	93.20	3.45	89.75
576.76	97.18	3.46	93.72
576.78	101.25	3.48	97.76
576.80	**105.39**	**3.50**	**101.90**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 3P: Detention Basin (SMA #1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
575.00	59,213	0
575.02	59,366	1,186
575.04	59,518	2,375
575.06	59,671	3,567
575.08	59,824	4,761
575.10	59,977	5,959
575.12	60,129	7,161
575.14	60,282	8,365
575.16	60,435	9,572
575.18	60,587	10,782
575.20	60,740	11,995
575.22	60,893	13,212
575.24	61,046	14,431
575.26	61,198	15,653
575.28	61,351	16,879
575.30	61,504	18,108
575.32	61,657	19,339
575.34	61,809	20,574
575.36	61,962	21,811
575.38	62,115	23,052
575.40	62,267	24,296
575.42	62,420	25,543
575.44	62,573	26,793
575.46	62,726	28,046
575.48	62,878	29,302
575.50	63,031	30,561
575.52	63,184	31,823
575.54	63,336	33,088
575.56	63,489	34,357
575.58	63,642	35,628
575.60	63,795	36,902
575.62	63,947	38,180
575.64	64,100	39,460
575.66	64,253	40,744
575.68	64,405	42,030
575.70	64,558	43,320
575.72	64,711	44,613
575.74	64,864	45,908
575.76	65,016	47,207
575.78	65,169	48,509
575.80	65,322	49,814
575.82	65,475	51,122
575.84	65,627	52,433
575.86	65,780	53,747
575.88	65,933	55,064
575.90	66,085	56,384
575.92	66,238	57,708
575.94	66,391	59,034
575.96	66,544	60,363
575.98	66,696	61,696
576.00	66,849	63,031
576.02	66,956	64,369
576.04	67,063	65,709
576.06	67,170	67,052
576.08	67,278	68,396
576.10	67,385	69,743
576.12	67,492	71,091
576.14	67,599	72,442
576.16	67,706	73,795
576.18	67,813	75,151
576.20	67,920	76,508
576.22	68,027	77,867
576.24	68,135	79,229
576.26	68,242	80,593
576.28	68,349	81,959
576.30	68,456	83,327
576.32	68,563	84,697
576.34	68,670	86,069
576.36	68,777	87,444
576.38	68,884	88,820
576.40	68,992	90,199
576.42	69,099	91,580
576.44	69,206	92,963
576.46	69,313	94,348
576.48	69,420	95,736
576.50	69,527	97,125
576.52	69,634	98,517
576.54	69,741	99,910
576.56	69,848	101,306
576.58	69,956	102,704
576.60	70,063	104,105
576.62	70,170	105,507
576.64	70,277	106,911
576.66	70,384	108,318
576.68	70,491	109,727
576.70	70,598	111,138
576.72	70,706	112,551
576.74	70,813	113,966
576.76	70,920	115,383
576.78	71,027	116,803
576.80	**71,134**	**118,224**

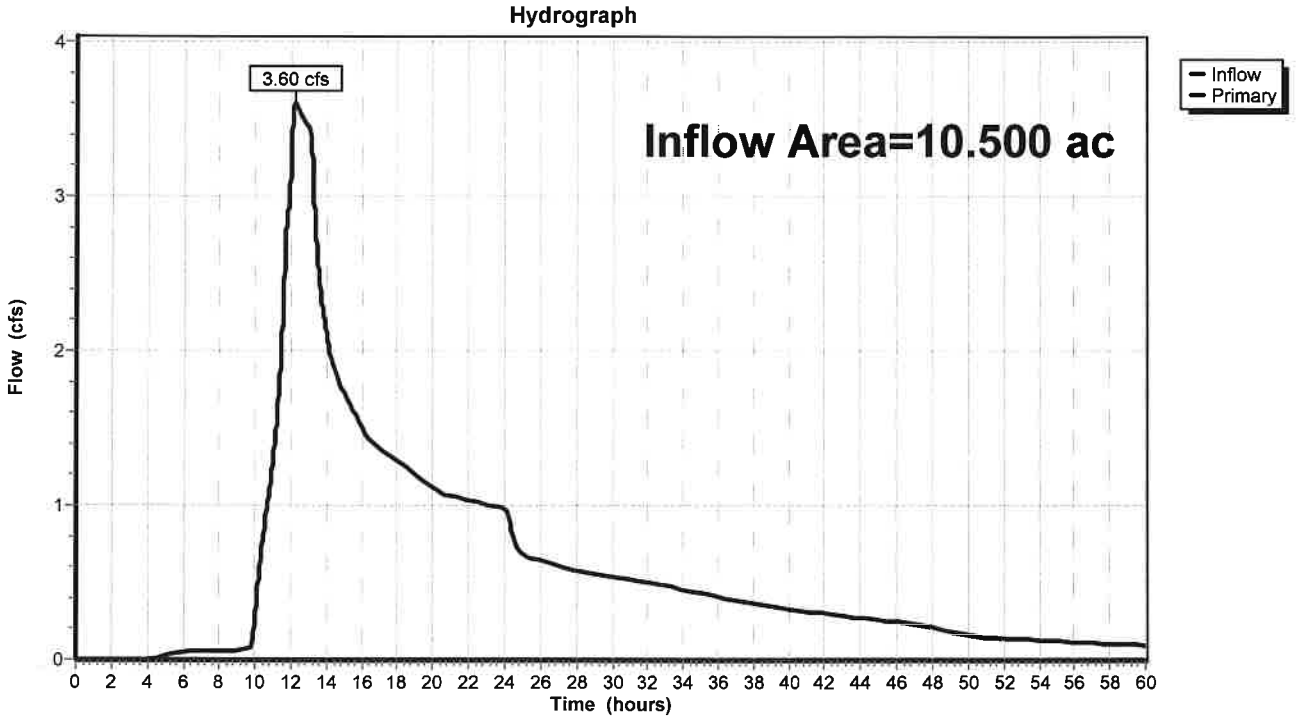
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Link 5L: Outflow (@ CB 54)

Inflow Area = 10.500 ac, 57.14% Impervious, Inflow Depth > 3.23" for 100-Year event
Inflow = 3.60 cfs @ 12.19 hrs, Volume= 2.829 af
Primary = 3.60 cfs @ 12.19 hrs, Volume= 2.829 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 5L: Outflow (@ CB 54)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

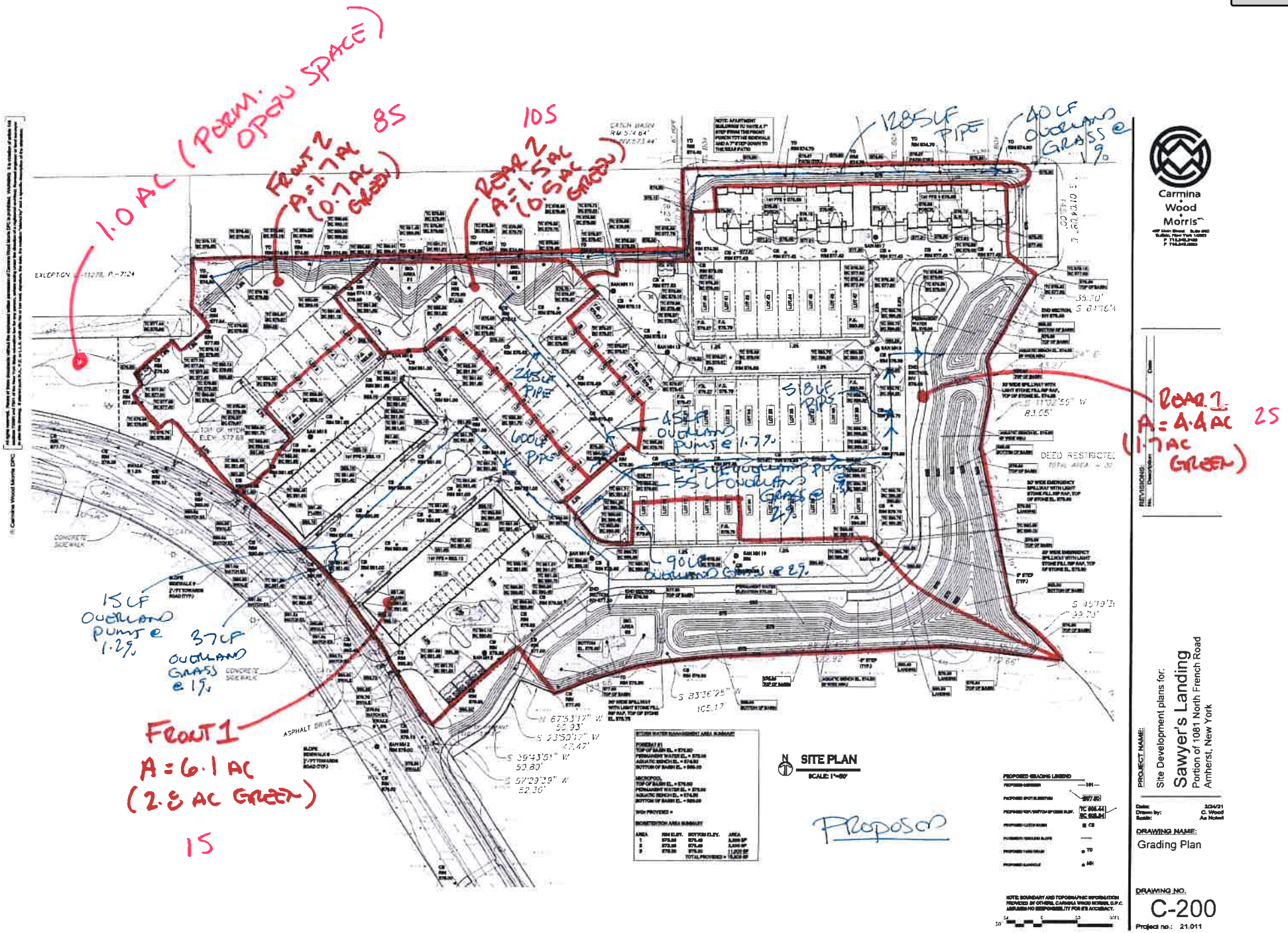
Hydrograph for Link 5L: Outflow (@ CB 54)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	52.00	0.14	0.00	0.14
1.00	0.00	0.00	0.00	53.00	0.13	0.00	0.13
2.00	0.00	0.00	0.00	54.00	0.13	0.00	0.13
3.00	0.00	0.00	0.00	55.00	0.12	0.00	0.12
4.00	0.00	0.00	0.00	56.00	0.12	0.00	0.12
5.00	0.03	0.00	0.03	57.00	0.11	0.00	0.11
6.00	0.05	0.00	0.05	58.00	0.10	0.00	0.10
7.00	0.05	0.00	0.05	59.00	0.10	0.00	0.10
8.00	0.05	0.00	0.05	60.00	0.10	0.00	0.10
9.00	0.06	0.00	0.06				
10.00	0.30	0.00	0.30				
11.00	1.31	0.00	1.31				
12.00	**3.29**	0.00	**3.29**				
13.00	**3.44**	0.00	**3.44**				
14.00	2.10	0.00	2.10				
15.00	1.72	0.00	1.72				
16.00	1.51	0.00	1.51				
17.00	1.37	0.00	1.37				
18.00	1.29	0.00	1.29				
19.00	1.20	0.00	1.20				
20.00	1.11	0.00	1.11				
21.00	1.06	0.00	1.06				
22.00	1.03	0.00	1.03				
23.00	1.01	0.00	1.01				
24.00	0.98	0.00	0.98				
25.00	0.68	0.00	0.68				
26.00	0.64	0.00	0.64				
27.00	0.61	0.00	0.61				
28.00	0.58	0.00	0.58				
29.00	0.55	0.00	0.55				
30.00	0.54	0.00	0.54				
31.00	0.52	0.00	0.52				
32.00	0.50	0.00	0.50				
33.00	0.48	0.00	0.48				
34.00	0.45	0.00	0.45				
35.00	0.43	0.00	0.43				
36.00	0.41	0.00	0.41				
37.00	0.39	0.00	0.39				
38.00	0.37	0.00	0.37				
39.00	0.35	0.00	0.35				
40.00	0.33	0.00	0.33				
41.00	0.32	0.00	0.32				
42.00	0.30	0.00	0.30				
43.00	0.28	0.00	0.28				
44.00	0.27	0.00	0.27				
45.00	0.26	0.00	0.26				
46.00	0.25	0.00	0.25				
47.00	0.24	0.00	0.24				
48.00	0.21	0.00	0.21				
49.00	0.18	0.00	0.18				
50.00	0.16	0.00	0.16				
51.00	0.15	0.00	0.15				

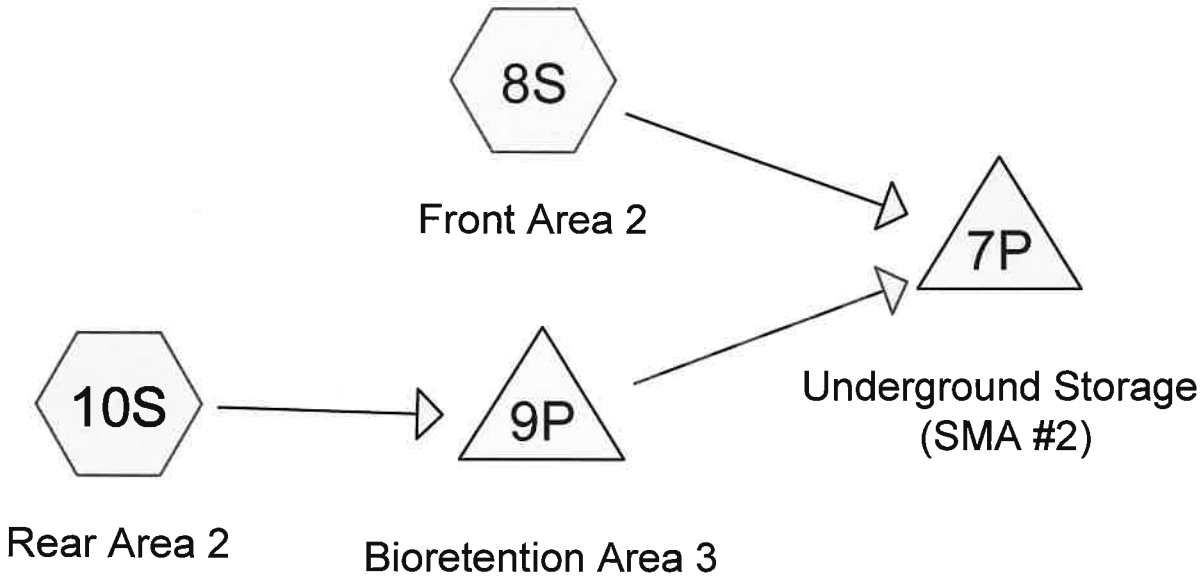
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Proposed Runoff - West

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Subcat Reach Pond Link

Routing Diagram for 21.011 Proposed
Prepared by Hewlett-Packard Company, Printed 3/4/2021
HydroCAD® 10.00-18 s/n 05019 © 2016 HydroCAD Software Solutions LLC

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Events for Pond 7P: Underground Storage

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	2.40	0.33	570.29	4,537
2-Year	4.15	0.68	570.46	5,990
5-Year	7.03	1.05	570.79	8,639
10-Year	9.17	1.28	571.13	11,342
25-Year	11.11	1.61	571.73	15,804
50-Year	12.80	3.61	572.23	18,836
100-Year	**14.92**	**4.83**	**572.92**	**21,772**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.200	80	>75% Grass cover, Good, HSG D (8S, 10S)
1.200	98	Paved parking, HSG D (8S, 10S)
0.800	98	Roofs, HSG D (8S, 10S)
3.200	**91**	**TOTAL AREA**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.200	HSG D	8S, 10S
0.000	Other	
3.200		**TOTAL AREA**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchmer Numbers
0.000	0.000	0.000	1.200	0.000	1.200	>75% Grass cover, Good	8S, 10S
0.000	0.000	0.000	1.200	0.000	1.200	Paved parking	8S, 10S
0.000	0.000	0.000	0.800	0.000	0.800	Roofs	8S, 10S
0.000	**0.000**	**0.000**	**3.200**	**0.000**	**3.200**	**TOTAL AREA**	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=1.04"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=2.36 cfs 0.148 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=1.11"
Flow Length=345' Tc=9.1 min CN=92 Runoff=2.63 cfs 0.139 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=570.29' Storage=4,537 cf Inflow=2.40 cfs 0.287 af
Outflow=0.33 cfs 0.243 af

Pond 9P: Bioretention Area 3 Peak Elev=574.54' Storage=2,922 cf Inflow=2.63 cfs 0.139 af
Outflow=0.43 cfs 0.139 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.287 af Average Runoff Depth = 1.08"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

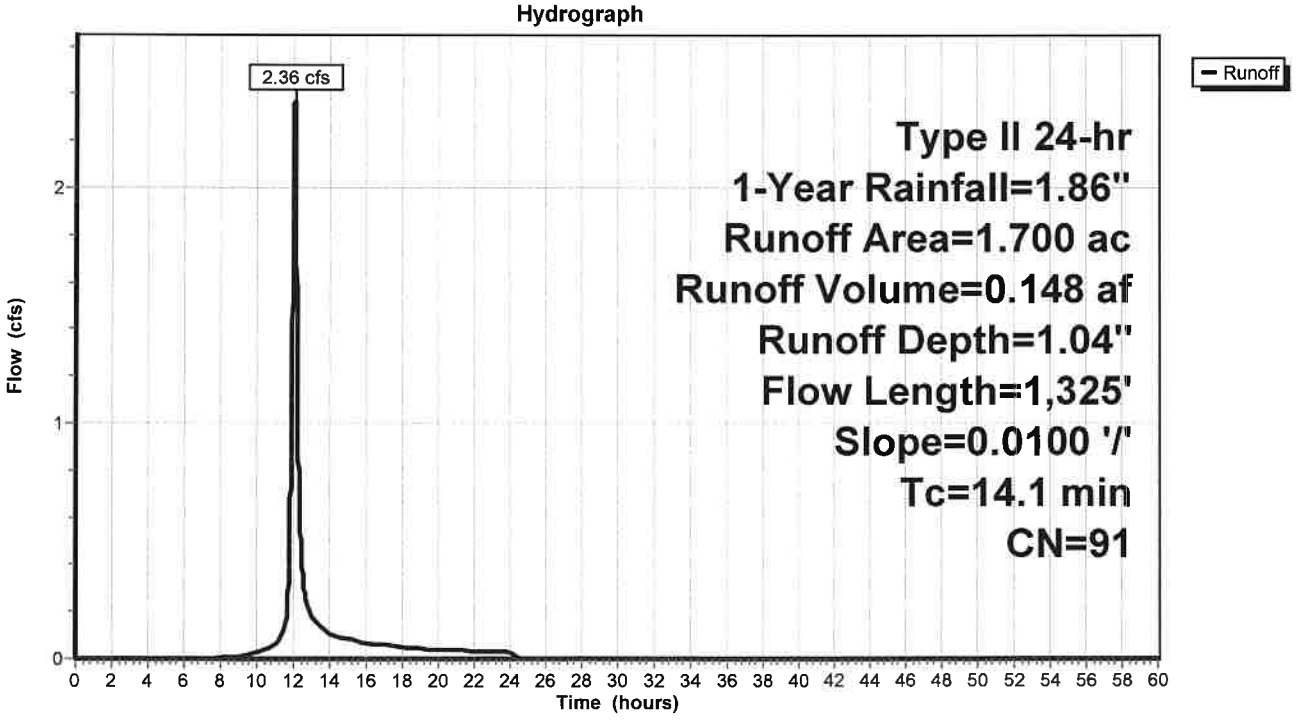
Runoff = 2.36 cfs @ 12.06 hrs, Volume= 0.148 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.00
9.00	0.27	0.01	0.01
10.00	0.34	0.02	0.02
11.00	0.44	0.05	0.07
12.00	1.23	0.53	**2.04**
13.00	1.44	0.69	**0.18**
14.00	1.53	0.76	0.11
15.00	1.59	0.81	0.08
16.00	1.64	0.85	0.07
17.00	1.68	0.89	0.06
18.00	1.71	0.92	0.05
19.00	1.74	0.94	0.04
20.00	1.77	0.97	0.04
21.00	1.79	0.99	0.03
22.00	1.82	1.01	0.03
23.00	1.84	1.02	0.03
24.00	**1.86**	**1.04**	0.03
25.00	1.86	1.04	0.00
26.00	1.86	1.04	0.00
27.00	1.86	1.04	0.00
28.00	1.86	1.04	0.00
29.00	1.86	1.04	0.00
30.00	1.86	1.04	0.00
31.00	1.86	1.04	0.00
32.00	1.86	1.04	0.00
33.00	1.86	1.04	0.00
34.00	1.86	1.04	0.00
35.00	1.86	1.04	0.00
36.00	1.86	1.04	0.00
37.00	1.86	1.04	0.00
38.00	1.86	1.04	0.00
39.00	1.86	1.04	0.00
40.00	1.86	1.04	0.00
41.00	1.86	1.04	0.00
42.00	1.86	1.04	0.00
43.00	1.86	1.04	0.00
44.00	1.86	1.04	0.00
45.00	1.86	1.04	0.00
46.00	1.86	1.04	0.00
47.00	1.86	1.04	0.00
48.00	1.86	1.04	0.00
49.00	1.86	1.04	0.00
50.00	1.86	1.04	0.00
51.00	1.86	1.04	0.00
52.00	1.86	1.04	0.00
53.00	1.86	1.04	0.00
54.00	1.86	1.04	0.00
55.00	1.86	1.04	0.00
56.00	1.86	1.04	0.00
57.00	1.86	1.04	0.00
58.00	1.86	1.04	0.00
59.00	1.86	1.04	0.00
60.00	1.86	1.04	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

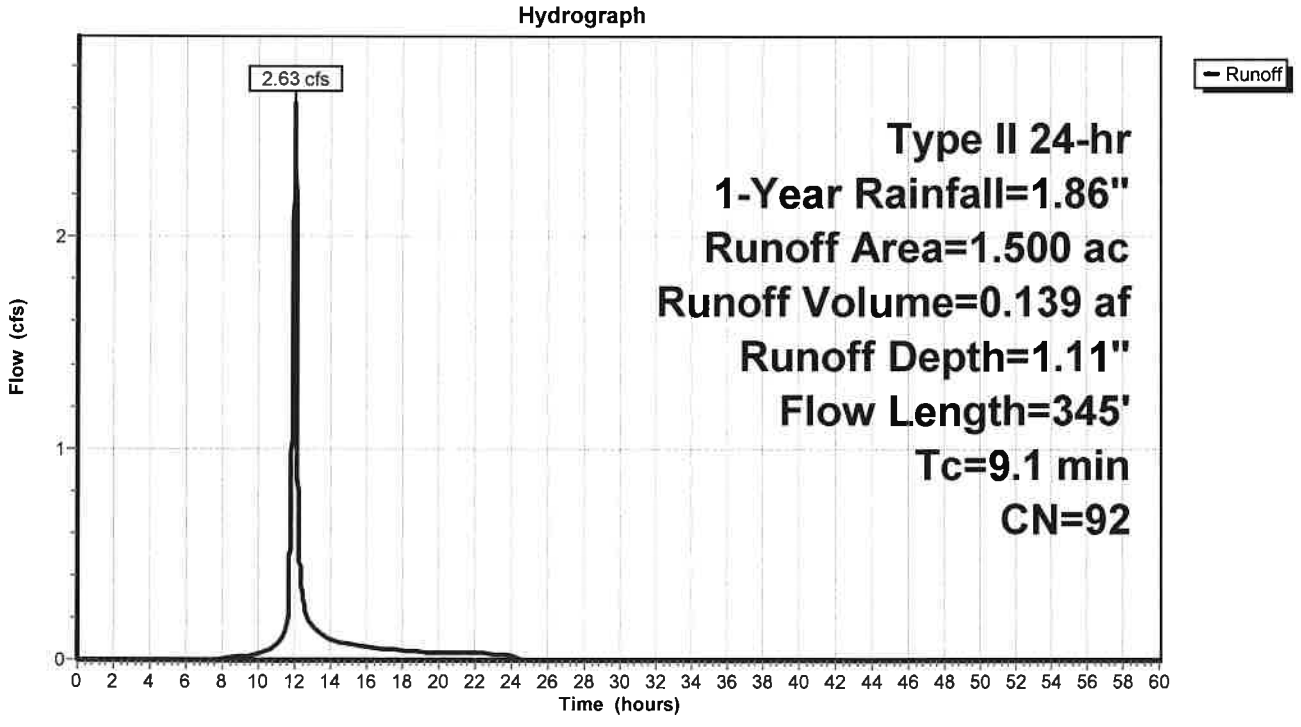
Runoff = 2.63 cfs @ 12.01 hrs, Volume= 0.139 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=1.86"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.04	0.00	0.00
3.00	0.06	0.00	0.00
4.00	0.09	0.00	0.00
5.00	0.12	0.00	0.00
6.00	0.15	0.00	0.00
7.00	0.18	0.00	0.00
8.00	0.22	0.00	0.01
9.00	0.27	0.01	0.02
10.00	0.34	0.03	0.03
11.00	0.44	0.06	0.07
12.00	1.23	0.58	**2.63**
13.00	1.44	0.75	**0.16**
14.00	1.53	0.82	0.09
15.00	1.59	0.88	0.07
16.00	1.64	0.92	0.06
17.00	1.68	0.95	0.05
18.00	1.71	0.98	0.04
19.00	1.74	1.01	0.04
20.00	1.77	1.03	0.03
21.00	1.79	1.05	0.03
22.00	1.82	1.07	0.03
23.00	1.84	1.09	0.03
24.00	**1.86**	**1.11**	0.03
25.00	1.86	1.11	0.00
26.00	1.86	1.11	0.00
27.00	1.86	1.11	0.00
28.00	1.86	1.11	0.00
29.00	1.86	1.11	0.00
30.00	1.86	1.11	0.00
31.00	1.86	1.11	0.00
32.00	1.86	1.11	0.00
33.00	1.86	1.11	0.00
34.00	1.86	1.11	0.00
35.00	1.86	1.11	0.00
36.00	1.86	1.11	0.00
37.00	1.86	1.11	0.00
38.00	1.86	1.11	0.00
39.00	1.86	1.11	0.00
40.00	1.86	1.11	0.00
41.00	1.86	1.11	0.00
42.00	1.86	1.11	0.00
43.00	1.86	1.11	0.00
44.00	1.86	1.11	0.00
45.00	1.86	1.11	0.00
46.00	1.86	1.11	0.00
47.00	1.86	1.11	0.00
48.00	1.86	1.11	0.00
49.00	1.86	1.11	0.00
50.00	1.86	1.11	0.00
51.00	1.86	1.11	0.00
52.00	1.86	1.11	0.00
53.00	1.86	1.11	0.00
54.00	1.86	1.11	0.00
55.00	1.86	1.11	0.00
56.00	1.86	1.11	0.00
57.00	1.86	1.11	0.00
58.00	1.86	1.11	0.00
59.00	1.86	1.11	0.00
60.00	1.86	1.11	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 1.08" for 1-Year event
Inflow = 2.40 cfs @ 12.06 hrs, Volume= 0.287 af
Outflow = 0.33 cfs @ 13.18 hrs, Volume= 0.243 af, Atten= 86%, Lag= 67.2 min
Primary = 0.33 cfs @ 13.18 hrs, Volume= 0.243 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 570.29' @ 13.18 hrs Surf.Area= 10,145 sf Storage= 4,537 cf

Plug-Flow detention time= 493.3 min calculated for 0.243 af (85% of inflow)
Center-of-Mass det. time= 283.3 min (1,405.6 - 1,122.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

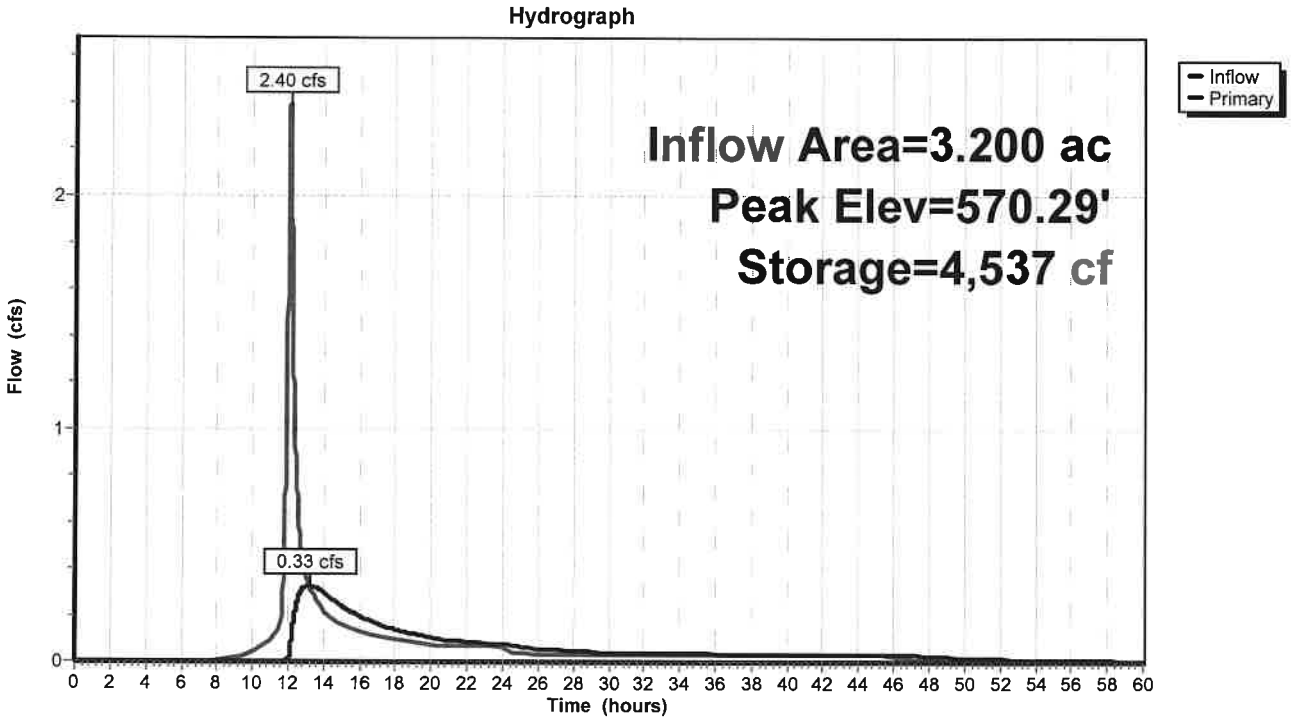
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

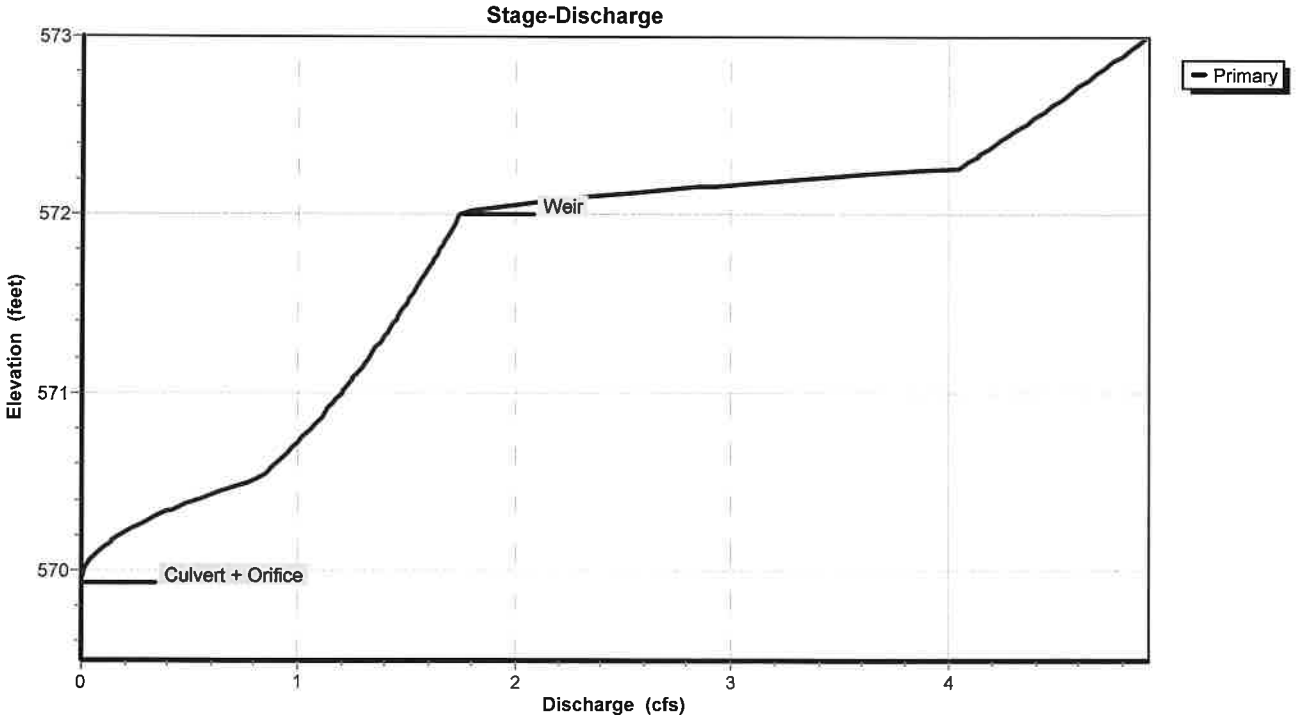
Primary OutFlow Max=0.32 cfs @ 13.18 hrs HW=570.29' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.32 cfs @ 1.88 fps)
  ├**2=Orifice** (Passes 0.32 cfs of 0.56 cfs potential flow)
  └**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

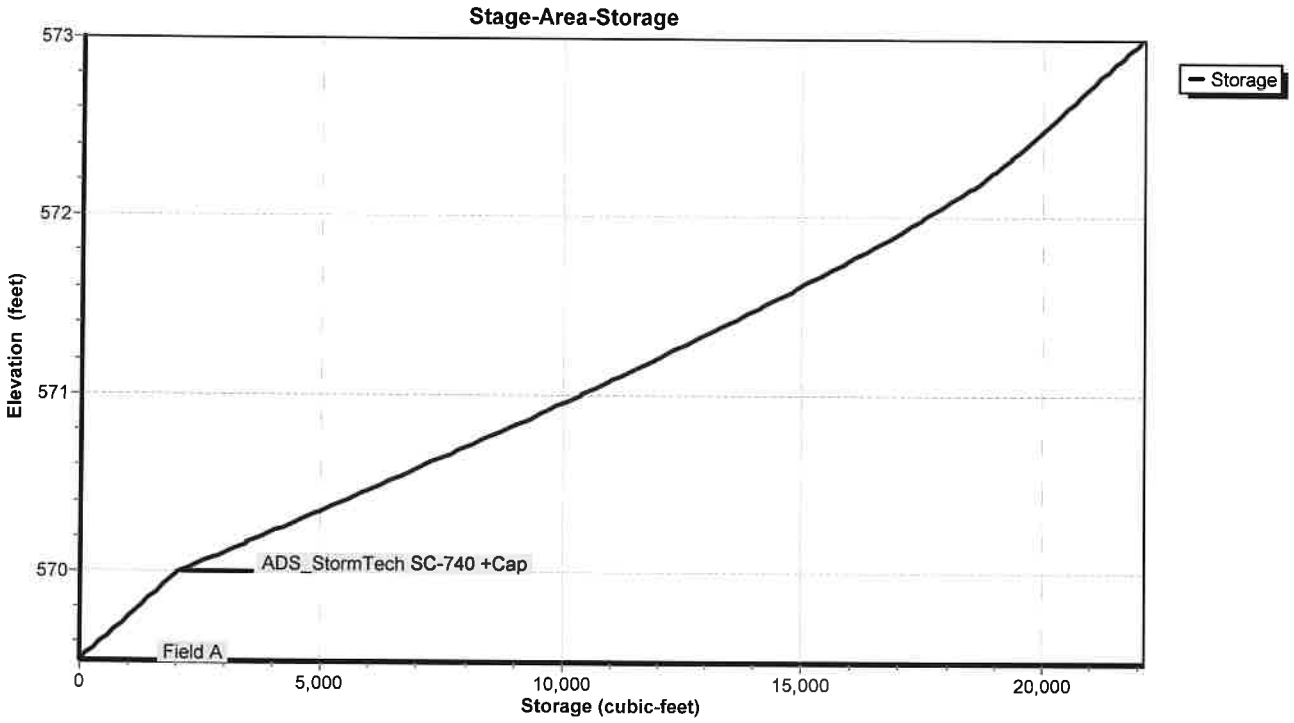


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.00	0	569.50	0.00
8.00	0.00	4	569.50	0.00
10.00	0.04	139	569.53	0.00
12.00	**2.08**	**1,735**	**569.93**	**0.00**
14.00	**0.22**	**4,393**	**570.28**	**0.30**
16.00	0.13	3,835	570.21	0.20
18.00	0.10	3,452	570.17	0.14
20.00	0.07	3,194	570.14	0.10
22.00	0.07	3,023	570.12	0.08
24.00	0.06	2,931	570.10	0.07
26.00	0.03	2,737	570.08	0.06
28.00	0.03	2,618	570.07	0.05
30.00	0.03	2,550	570.06	0.04
32.00	0.03	2,506	570.06	0.04
34.00	0.03	2,476	570.05	0.04
36.00	0.03	2,453	570.05	0.03
38.00	0.03	2,436	570.05	0.03
40.00	0.03	2,422	570.05	0.03
42.00	0.03	2,410	570.04	0.03
44.00	0.03	2,399	570.04	0.03
46.00	0.03	2,388	570.04	0.03
48.00	0.01	2,288	570.03	0.02
50.00	0.00	2,166	570.02	0.02
52.00	0.00	2,066	570.00	0.01
54.00	0.00	1,993	569.99	0.01
56.00	0.00	1,945	569.98	0.01
58.00	0.00	1,910	569.97	0.00
60.00	0.00	1,885	569.96	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)
569.50	0
569.55	203
569.60	406
569.65	609
569.70	812
569.75	1,014
569.80	1,217
569.85	1,420
569.90	1,623
569.95	1,826
570.00	2,029
570.05	2,459
570.10	2,889
570.15	3,318
570.20	3,746
570.25	4,173
570.30	4,598
570.35	5,022
570.40	5,444
570.45	5,865
570.50	6,284
570.55	6,701
570.60	7,116
570.65	7,529
570.70	7,940
570.75	8,349
570.80	8,756
570.85	9,160
570.90	9,562
570.95	9,962
571.00	10,359
571.05	10,754
571.10	11,145
571.15	11,534
571.20	11,919
571.25	12,301
571.30	12,680
571.35	13,056
571.40	13,428
571.45	13,797
571.50	14,161
571.55	14,522
571.60	14,879
571.65	15,230
571.70	15,577
571.75	15,917
571.80	16,252
571.85	16,582
571.90	16,906
571.95	17,224
572.00	17,535
572.05	17,838
572.10	18,133
572.15	18,417
572.20	18,690
572.25	18,946
572.30	19,188
572.35	19,417
572.40	19,637
572.45	19,850
572.50	20,057
572.55	20,260
572.60	20,463
572.65	20,665
572.70	20,868
572.75	21,071
572.80	21,274
572.85	21,477
572.90	21,680
572.95	21,883
573.00	**22,086**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 1.11" for 1-Year event
Inflow = 2.63 cfs @ 12.01 hrs, Volume= 0.139 af
Outflow = 0.43 cfs @ 12.29 hrs, Volume= 0.139 af, Atten= 84%, Lag= 17.0 min
Primary = 0.43 cfs @ 12.29 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.54' @ 12.29 hrs Surf.Area= 5,881 sf Storage= 2,922 cf

Plug-Flow detention time= 615.0 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 615.0 min (1,433.7 - 818.7)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

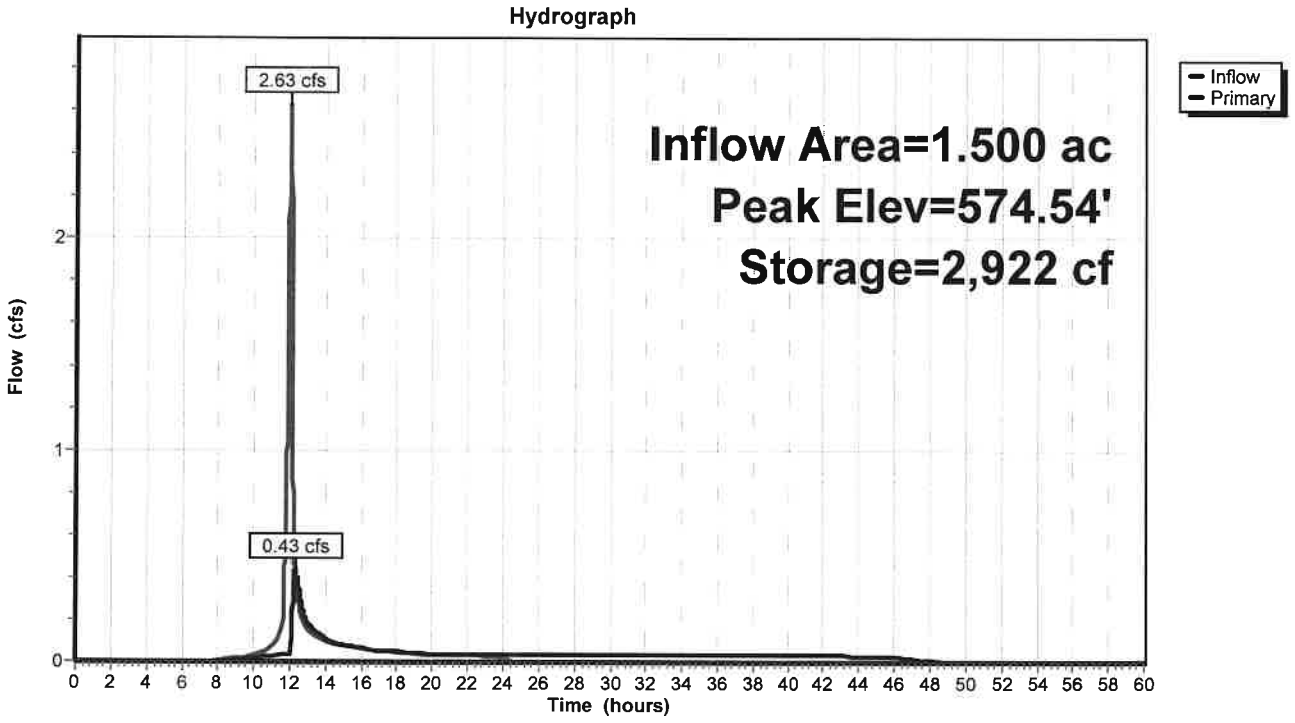
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

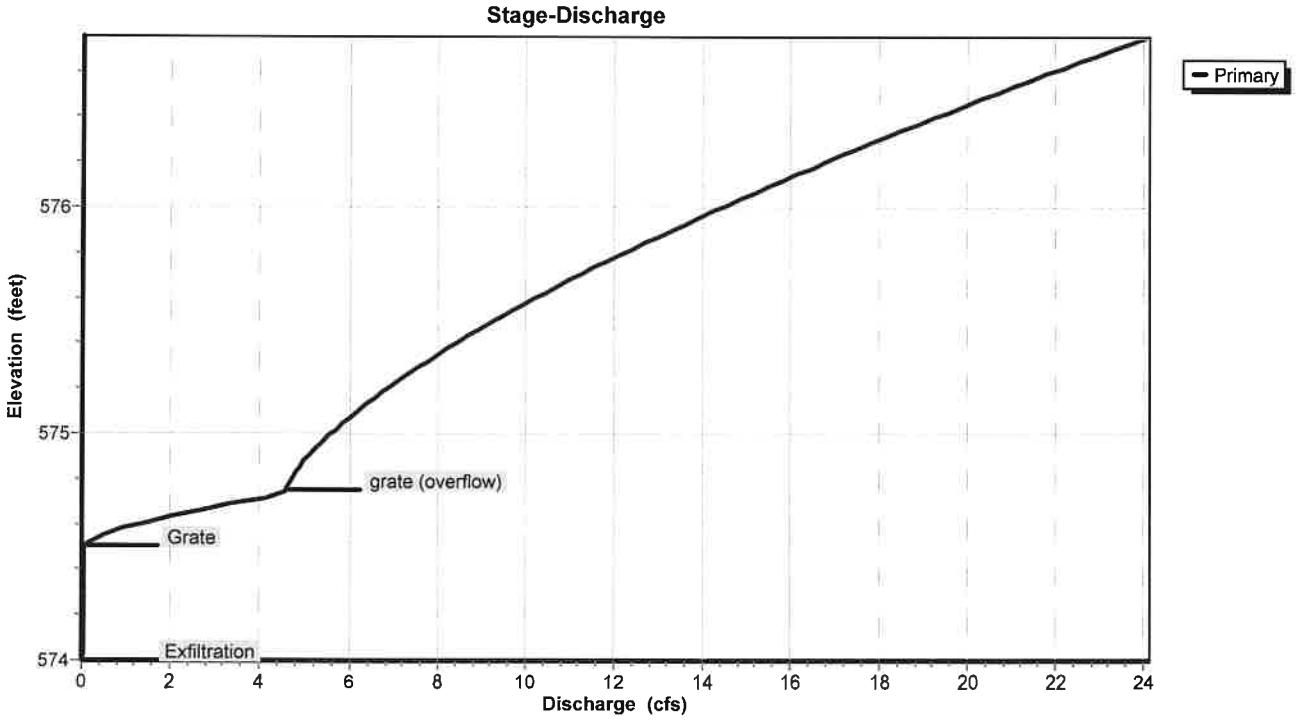
Primary OutFlow Max=0.42 cfs @ 12.29 hrs HW=574.54' (Free Discharge)
- **1=8" pipe** (Passes 0.42 cfs of 4.43 cfs potential flow)
  - **2=Grate** (Weir Controls 0.39 cfs @ 0.69 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

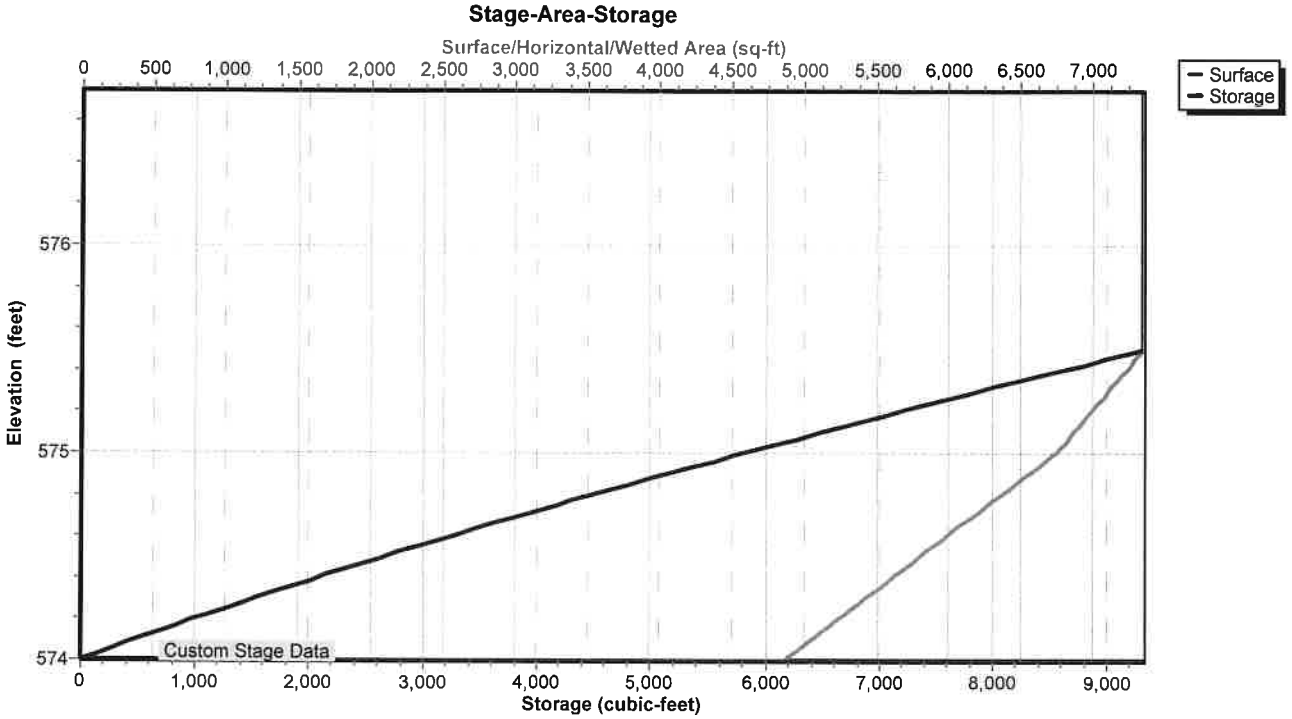


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.00	0	574.00	0.00
8.00	0.01	9	574.00	0.00
10.00	0.03	70	574.01	0.01
12.00	**2.63**	**1,806**	**574.35**	**0.03**
14.00	**0.09**	**2,731**	**574.51**	**0.11**
16.00	0.06	2,688	574.50	0.06
18.00	0.04	2,673	574.50	0.05
20.00	0.03	2,662	574.50	0.03
22.00	0.03	2,636	574.50	0.03
24.00	0.03	2,594	574.49	0.03
26.00	0.00	2,362	574.45	0.03
28.00	0.00	2,119	574.40	0.03
30.00	0.00	1,881	574.36	0.03
32.00	0.00	1,647	574.32	0.03
34.00	0.00	1,417	574.28	0.03
36.00	0.00	1,190	574.23	0.03
38.00	0.00	968	574.19	0.03
40.00	0.00	750	574.15	0.03
42.00	0.00	536	574.11	0.03
44.00	0.00	326	574.07	0.03
46.00	0.00	120	574.02	0.03
48.00	0.00	26	574.01	0.01
50.00	0.00	6	574.00	0.00
52.00	0.00	1	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=1.34"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=3.03 cfs 0.190 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=1.42"
Flow Length=345' Tc=9.1 min CN=92 Runoff=3.32 cfs 0.177 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=570.46' Storage=5,990 cf Inflow=4.15 cfs 0.367 af
Outflow=0.68 cfs 0.324 af

Pond 9P: Bioretention Area 3 Peak Elev=574.60' Storage=3,274 cf Inflow=3.32 cfs 0.177 af
Outflow=1.41 cfs 0.177 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.367 af Average Runoff Depth = 1.38"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

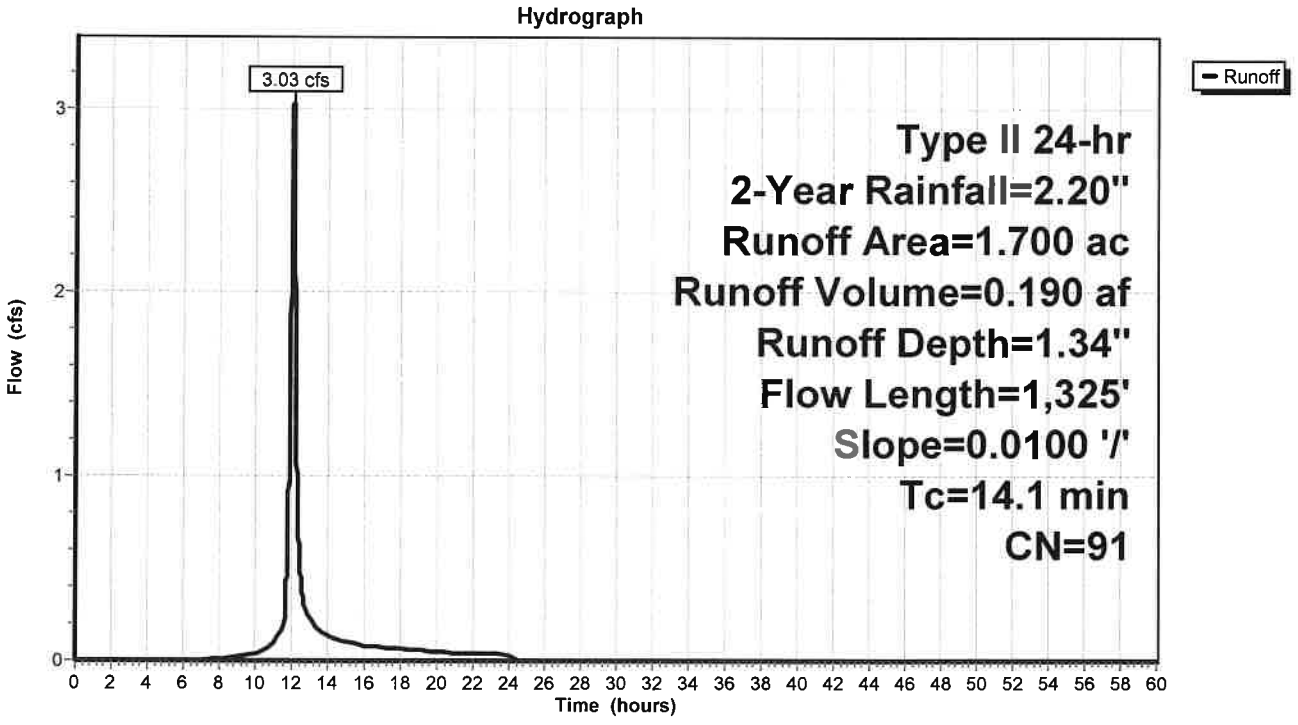
Runoff = 3.03 cfs @ 12.06 hrs, Volume= 0.190 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass**
					Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.00
8.00	0.26	0.00	0.01
9.00	0.32	0.01	0.02
10.00	0.40	0.03	0.04
11.00	0.52	0.08	0.10
12.00	1.46	0.71	**2.64**
13.00	1.70	0.90	**0.23**
14.00	1.80	0.99	0.13
15.00	1.88	1.06	0.10
16.00	1.94	1.11	0.08
17.00	1.98	1.15	0.07
18.00	2.03	1.19	0.06
19.00	2.06	1.22	0.05
20.00	2.09	1.25	0.05
21.00	2.12	1.27	0.04
22.00	2.15	1.30	0.04
23.00	2.18	1.32	0.04
24.00	**2.20**	**1.34**	0.04
25.00	2.20	1.34	0.00
26.00	2.20	1.34	0.00
27.00	2.20	1.34	0.00
28.00	2.20	1.34	0.00
29.00	2.20	1.34	0.00
30.00	2.20	1.34	0.00
31.00	2.20	1.34	0.00
32.00	2.20	1.34	0.00
33.00	2.20	1.34	0.00
34.00	2.20	1.34	0.00
35.00	2.20	1.34	0.00
36.00	2.20	1.34	0.00
37.00	2.20	1.34	0.00
38.00	2.20	1.34	0.00
39.00	2.20	1.34	0.00
40.00	2.20	1.34	0.00
41.00	2.20	1.34	0.00
42.00	2.20	1.34	0.00
43.00	2.20	1.34	0.00
44.00	2.20	1.34	0.00
45.00	2.20	1.34	0.00
46.00	2.20	1.34	0.00
47.00	2.20	1.34	0.00
48.00	2.20	1.34	0.00
49.00	2.20	1.34	0.00
50.00	2.20	1.34	0.00
51.00	2.20	1.34	0.00
52.00	2.20	1.34	0.00
53.00	2.20	1.34	0.00
54.00	2.20	1.34	0.00
55.00	2.20	1.34	0.00
56.00	2.20	1.34	0.00
57.00	2.20	1.34	0.00
58.00	2.20	1.34	0.00
59.00	2.20	1.34	0.00
60.00	2.20	1.34	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

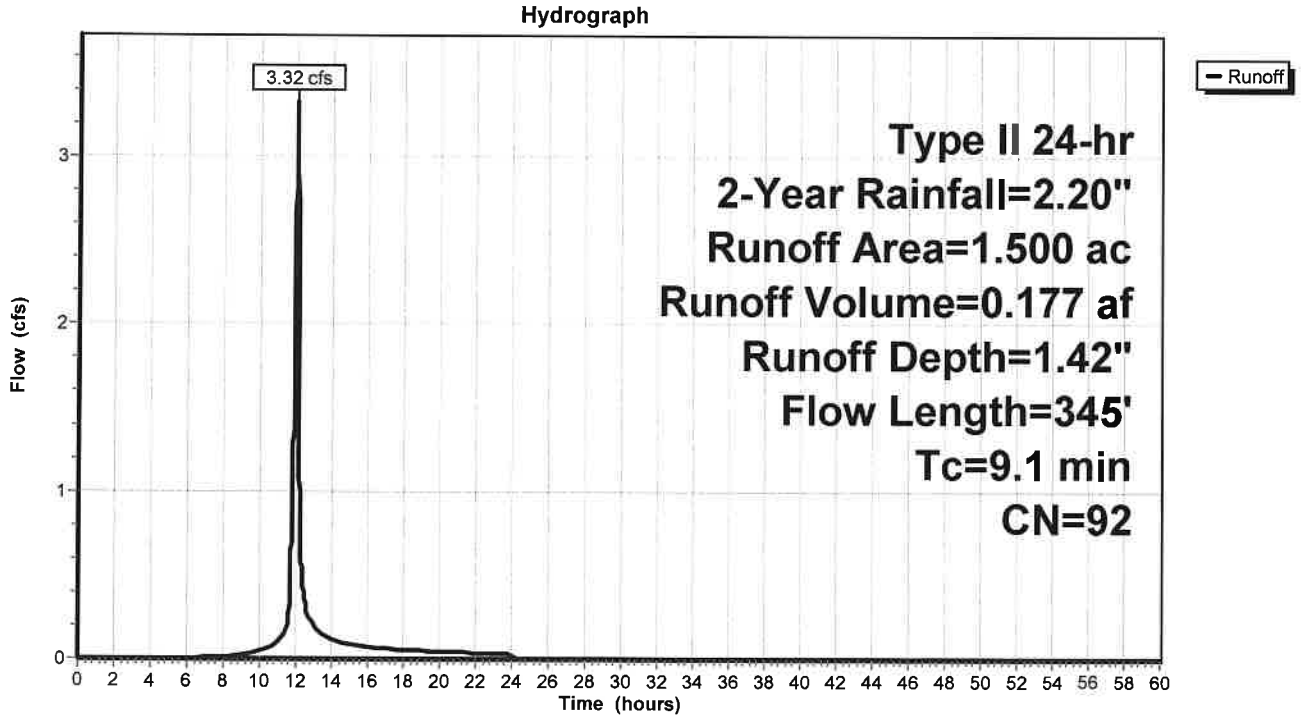
Runoff = 3.32 cfs @ 12.00 hrs, Volume= 0.177 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.20"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.02	0.00	0.00
2.00	0.05	0.00	0.00
3.00	0.08	0.00	0.00
4.00	0.11	0.00	0.00
5.00	0.14	0.00	0.00
6.00	0.18	0.00	0.00
7.00	0.22	0.00	0.01
8.00	0.26	0.01	0.01
9.00	0.32	0.02	0.03
10.00	0.40	0.05	0.04
11.00	0.52	0.10	0.10
12.00	1.46	0.77	**3.32**
13.00	1.70	0.97	0.20
14.00	1.80	1.06	0.12
15.00	1.88	1.13	0.09
16.00	1.94	1.18	0.07
17.00	1.98	1.22	0.06
18.00	2.03	1.26	0.05
19.00	2.06	1.29	0.05
20.00	2.09	1.32	0.04
21.00	2.12	1.35	0.04
22.00	2.15	1.37	0.04
23.00	2.18	1.40	0.03
24.00	**2.20**	**1.42**	0.03
25.00	2.20	1.42	0.00
26.00	2.20	1.42	0.00
27.00	2.20	1.42	0.00
28.00	2.20	1.42	0.00
29.00	2.20	1.42	0.00
30.00	2.20	1.42	0.00
31.00	2.20	1.42	0.00
32.00	2.20	1.42	0.00
33.00	2.20	1.42	0.00
34.00	2.20	1.42	0.00
35.00	2.20	1.42	0.00
36.00	2.20	1.42	0.00
37.00	2.20	1.42	0.00
38.00	2.20	1.42	0.00
39.00	2.20	1.42	0.00
40.00	2.20	1.42	0.00
41.00	2.20	1.42	0.00
42.00	2.20	1.42	0.00
43.00	2.20	1.42	0.00
44.00	2.20	1.42	0.00
45.00	2.20	1.42	0.00
46.00	2.20	1.42	0.00
47.00	2.20	1.42	0.00
48.00	2.20	1.42	0.00
49.00	2.20	1.42	0.00
50.00	2.20	1.42	0.00
51.00	2.20	1.42	0.00
52.00	2.20	1.42	0.00
53.00	2.20	1.42	0.00
54.00	2.20	1.42	0.00
55.00	2.20	1.42	0.00
56.00	2.20	1.42	0.00
57.00	2.20	1.42	0.00
58.00	2.20	1.42	0.00
59.00	2.20	1.42	0.00
60.00	2.20	1.42	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 1.38" for 2-Year event
Inflow = 4.15 cfs @ 12.10 hrs, Volume= 0.367 af
Outflow = 0.68 cfs @ 12.65 hrs, Volume= 0.324 af, Atten= 84%, Lag= 33.2 min
Primary = 0.68 cfs @ 12.65 hrs, Volume= 0.324 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 570.46' @ 12.65 hrs Surf.Area= 10,145 sf Storage= 5,990 cf

Plug-Flow detention time= 401.0 min calculated for 0.324 af (88% of inflow)
Center-of-Mass det. time= 229.7 min (1,287.9 - 1,058.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

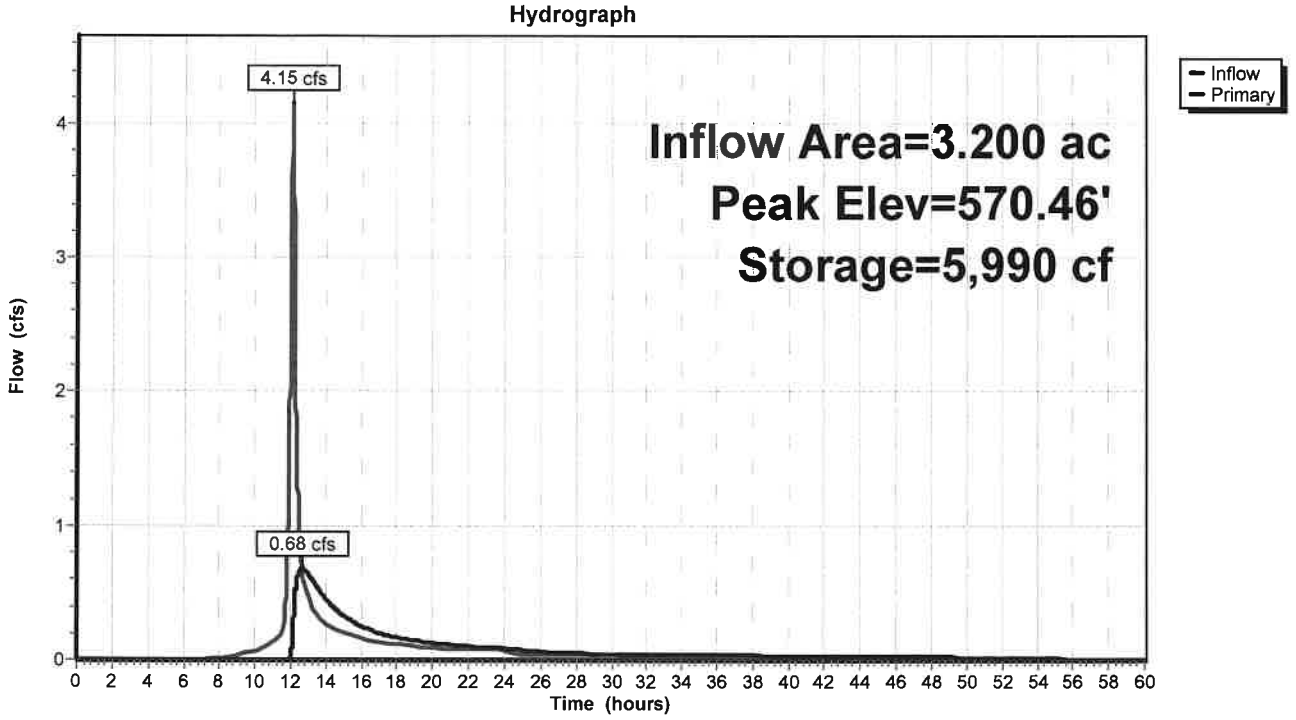
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

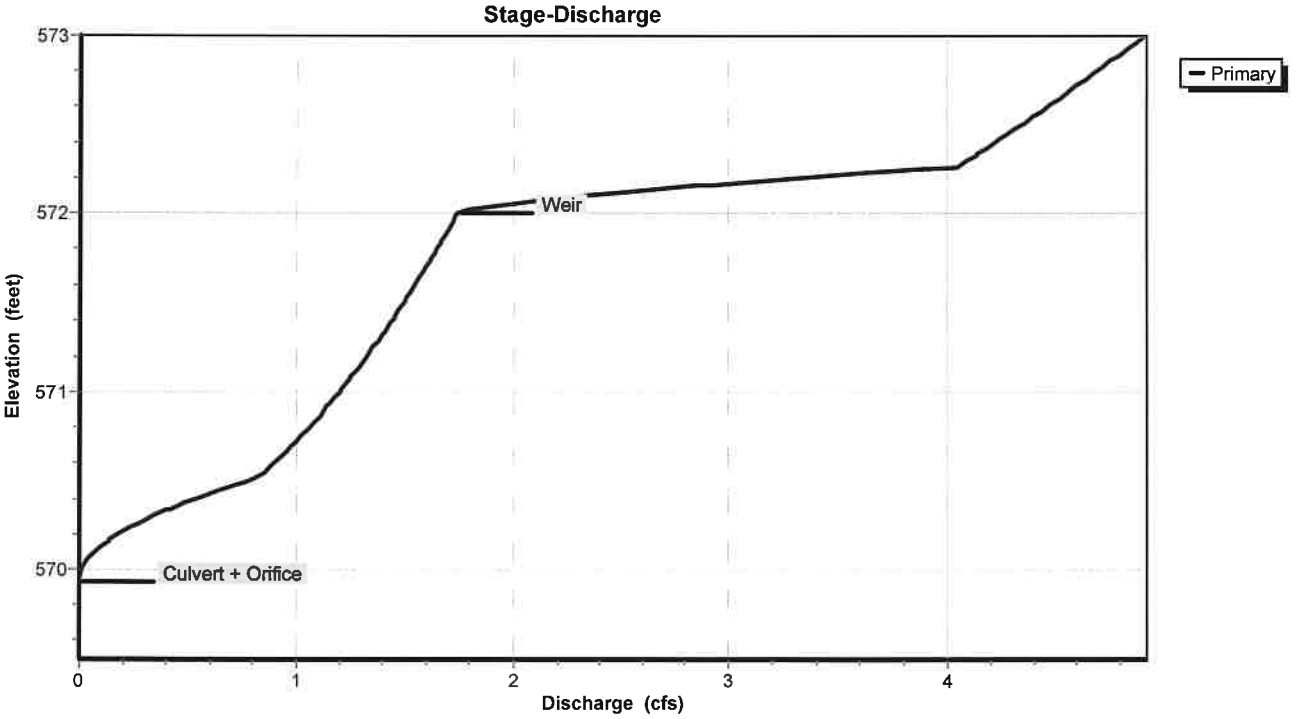
Primary OutFlow Max=0.68 cfs @ 12.65 hrs HW=570.46' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.68 cfs @ 2.31 fps)
└**2=Orifice** (Passes 0.68 cfs of 0.76 cfs potential flow)
└**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

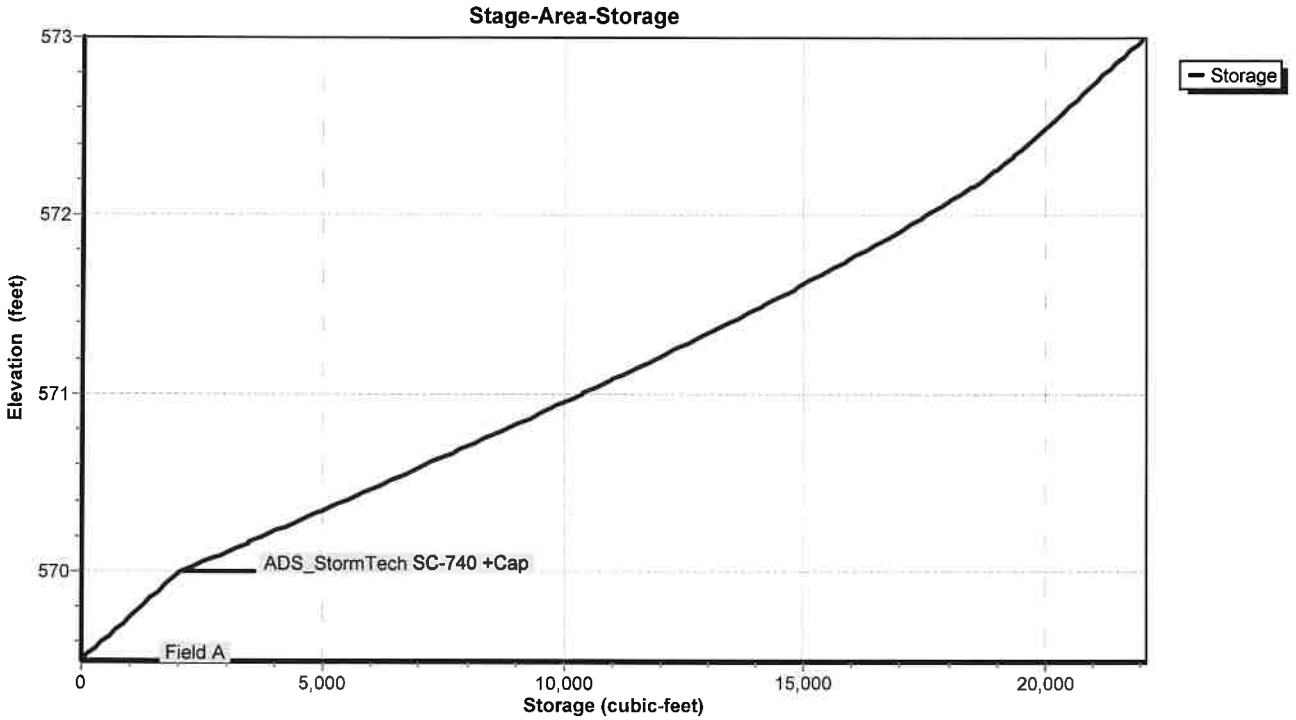


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.00	0	569.50	0.00
8.00	0.01	32	569.51	0.00
10.00	0.06	286	569.57	0.00
12.00	**2.68**	**2,414**	**570.04**	**0.03**
14.00	**0.27**	**5,111**	**570.36**	**0.45**
16.00	0.16	4,155	570.25	0.25
18.00	0.12	3,660	570.19	0.17
20.00	0.09	3,359	570.15	0.12
22.00	0.08	3,149	570.13	0.10
24.00	0.07	3,029	570.12	0.09
26.00	0.03	2,788	570.09	0.06
28.00	0.03	2,647	570.07	0.05
30.00	0.03	2,566	570.06	0.04
32.00	0.03	2,517	570.06	0.04
34.00	0.03	2,484	570.05	0.04
36.00	0.03	2,459	570.05	0.03
38.00	0.03	2,441	570.05	0.03
40.00	0.03	2,426	570.05	0.03
42.00	0.03	2,413	570.04	0.03
44.00	0.03	2,402	570.04	0.03
46.00	0.03	2,392	570.04	0.03
48.00	0.01	2,323	570.03	0.03
50.00	0.00	2,199	570.02	0.02
52.00	0.00	2,091	570.01	0.01
54.00	0.00	2,010	570.00	0.01
56.00	0.00	1,957	569.98	0.01
58.00	0.00	1,919	569.97	0.00
60.00	0.00	1,891	569.97	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 1.42" for 2-Year event
Inflow = 3.32 cfs @ 12.00 hrs, Volume= 0.177 af
Outflow = 1.41 cfs @ 12.13 hrs, Volume= 0.177 af, Atten= 58%, Lag= 7.6 min
Primary = 1.41 cfs @ 12.13 hrs, Volume= 0.177 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.60' @ 12.13 hrs Surf.Area= 5,993 sf Storage= 3,274 cf

Plug-Flow detention time= 499.6 min calculated for 0.177 af (100% of inflow)
Center-of-Mass det. time= 499.8 min (1,311.6 - 811.8)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

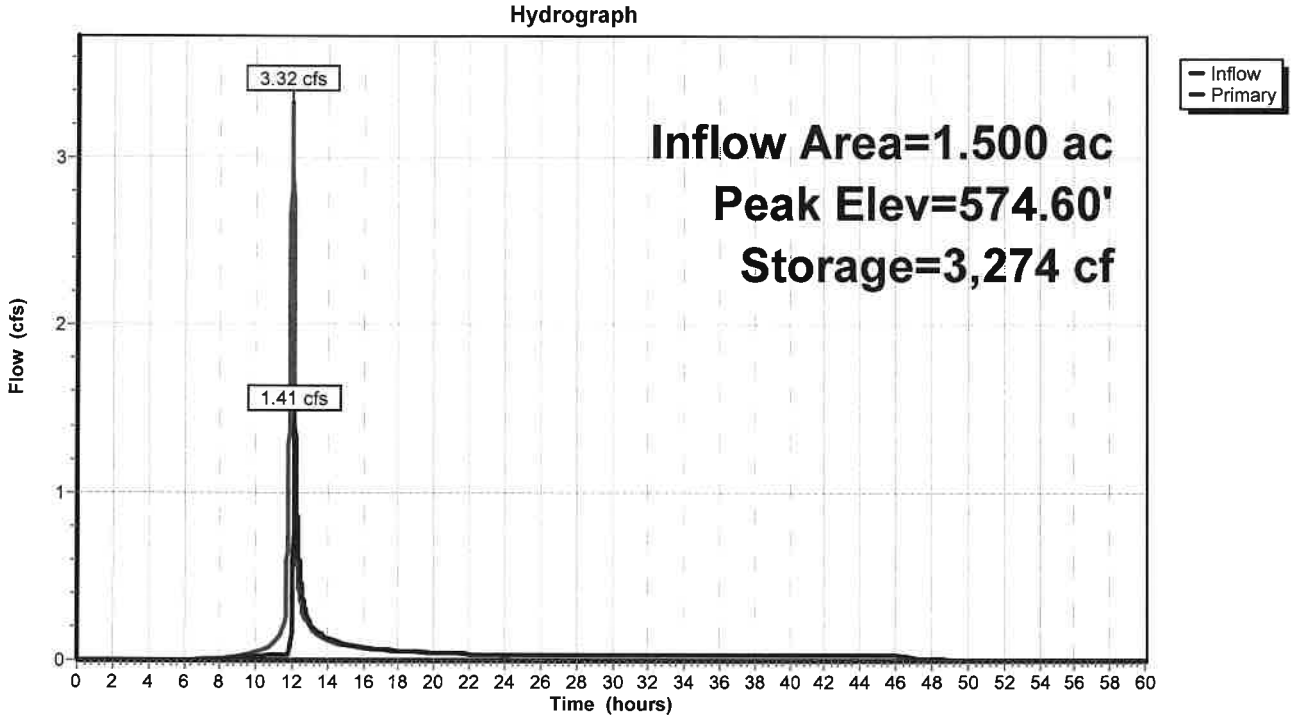
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

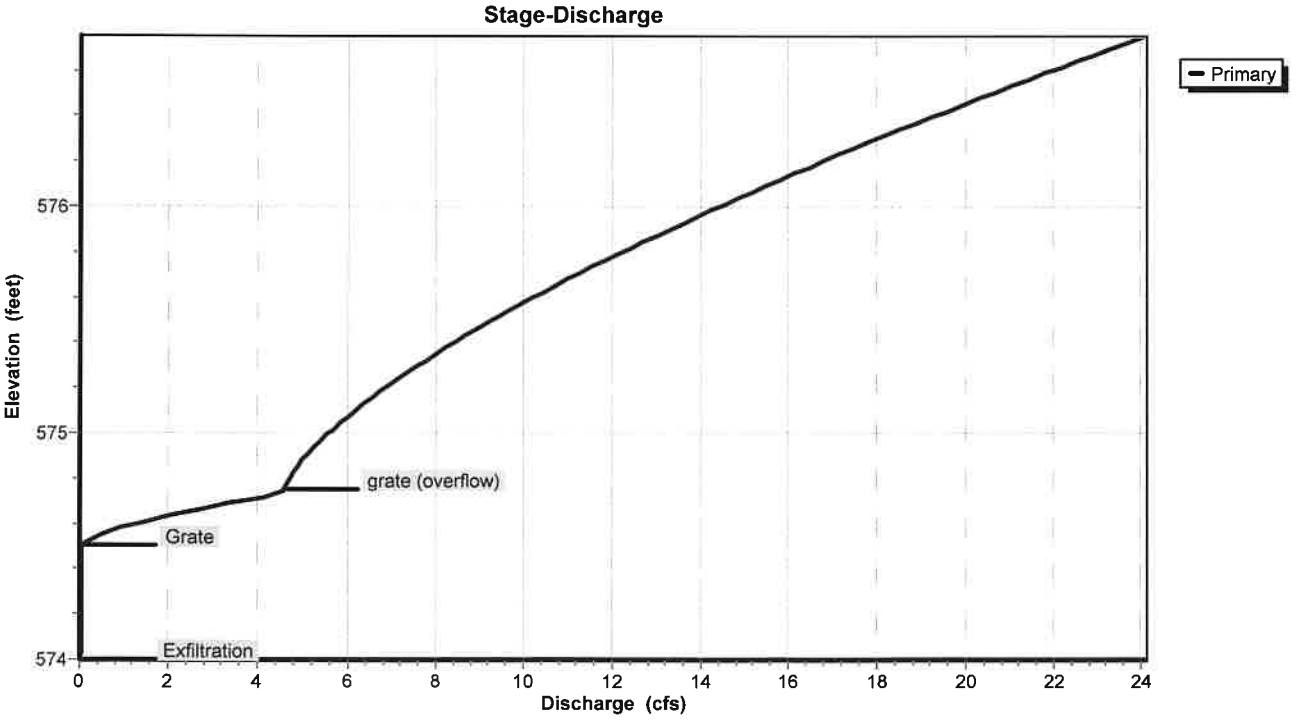
Primary OutFlow Max=1.41 cfs @ 12.13 hrs HW=574.60' (Free Discharge)
└─**1=8" pipe** (Passes 1.41 cfs of 4.48 cfs potential flow)
  └─**2=Grate** (Weir Controls 1.37 cfs @ 1.05 fps)
  └─**3=Exfiltration** (Controls 0.04 cfs)
└─**4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

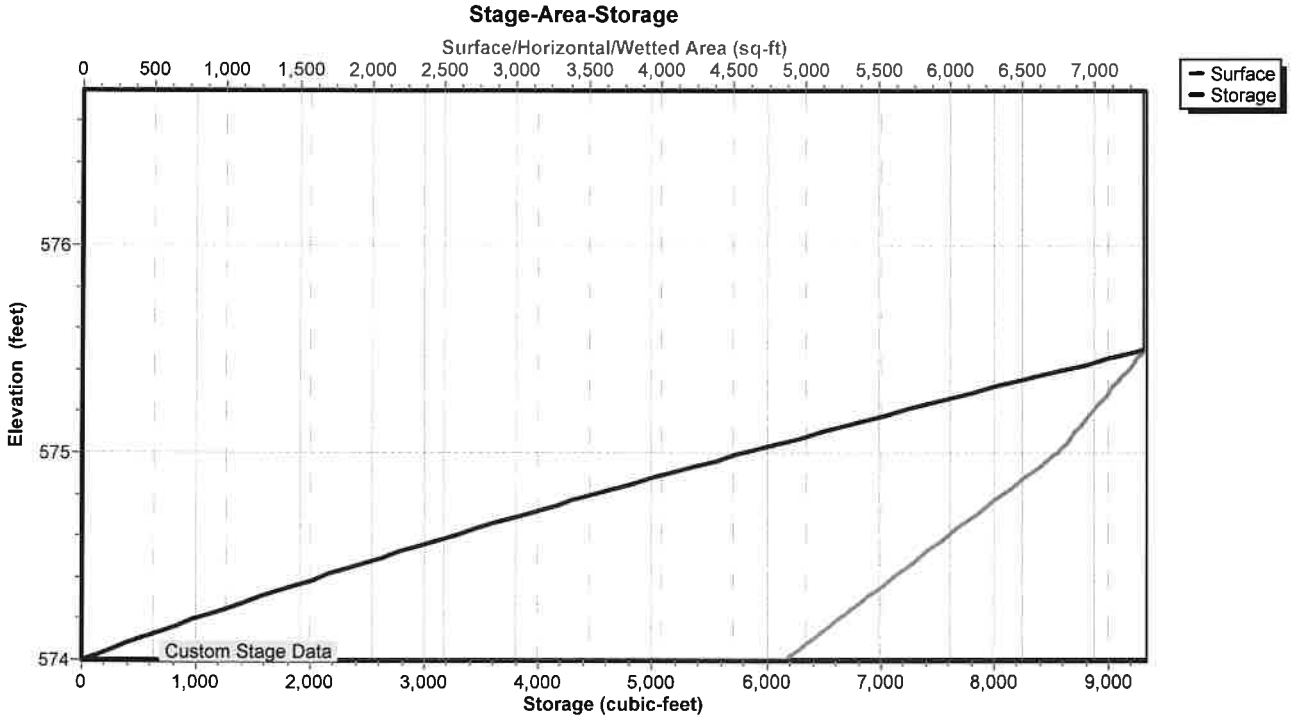


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.00	0	574.00	0.00
8.00	0.01	26	574.01	0.01
10.00	0.04	116	574.02	0.02
12.00	**3.32**	**2,442**	**574.46**	**0.03**
14.00	0.12	**2,754**	**574.52**	**0.13**
16.00	0.07	2,701	574.51	0.08
18.00	0.05	2,683	574.50	0.06
20.00	0.04	2,669	574.50	0.04
22.00	0.04	2,664	574.50	0.04
24.00	0.03	2,661	574.50	0.03
26.00	0.00	2,430	574.46	0.03
28.00	0.00	2,186	574.42	0.03
30.00	0.00	1,947	574.37	0.03
32.00	0.00	1,712	574.33	0.03
34.00	0.00	1,480	574.29	0.03
36.00	0.00	1,253	574.25	0.03
38.00	0.00	1,030	574.20	0.03
40.00	0.00	810	574.16	0.03
42.00	0.00	595	574.12	0.03
44.00	0.00	384	574.08	0.03
46.00	0.00	176	574.04	0.03
48.00	0.00	40	574.01	0.01
50.00	0.00	9	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=1.79"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=4.02 cfs 0.254 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=1.88"
Flow Length=345' Tc=9.1 min CN=92 Runoff=4.35 cfs 0.235 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=570.79' Storage=8,639 cf Inflow=7.03 cfs 0.489 af
Outflow=1.05 cfs 0.446 af

Pond 9P: Bioretention Area 3 Peak Elev=574.68' Storage=3,708 cf Inflow=4.35 cfs 0.235 af
Outflow=3.06 cfs 0.235 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.489 af Average Runoff Depth = 1.83"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

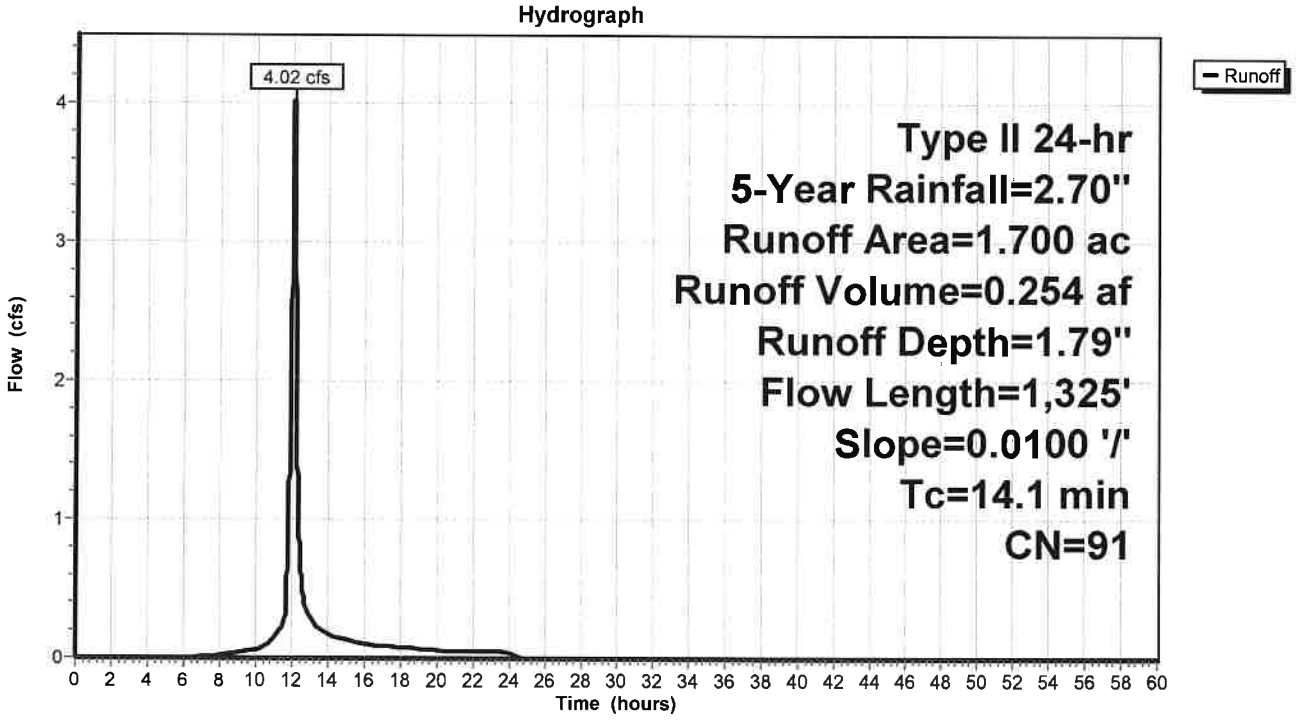
Runoff = 4.02 cfs @ 12.06 hrs, Volume= 0.254 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass**
					Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.00
7.00	0.27	0.00	0.01
8.00	0.32	0.01	0.02
9.00	0.40	0.03	0.04
10.00	0.49	0.07	0.06
11.00	0.63	0.13	0.14
12.00	1.79	0.98	**3.54**
13.00	2.08	1.24	**0.30**
14.00	2.21	1.35	0.17
15.00	2.30	1.43	0.13
16.00	2.38	1.50	0.10
17.00	2.43	1.55	0.09
18.00	2.49	1.60	0.08
19.00	2.53	1.64	0.07
20.00	2.57	1.67	0.06
21.00	2.60	1.71	0.05
22.00	2.64	1.74	0.05
23.00	2.67	1.77	0.05
24.00	**2.70**	**1.79**	0.05
25.00	2.70	1.79	0.00
26.00	2.70	1.79	0.00
27.00	2.70	1.79	0.00
28.00	2.70	1.79	0.00
29.00	2.70	1.79	0.00
30.00	2.70	1.79	0.00
31.00	2.70	1.79	0.00
32.00	2.70	1.79	0.00
33.00	2.70	1.79	0.00
34.00	2.70	1.79	0.00
35.00	2.70	1.79	0.00
36.00	2.70	1.79	0.00
37.00	2.70	1.79	0.00
38.00	2.70	1.79	0.00
39.00	2.70	1.79	0.00
40.00	2.70	1.79	0.00
41.00	2.70	1.79	0.00
42.00	2.70	1.79	0.00
43.00	2.70	1.79	0.00
44.00	2.70	1.79	0.00
45.00	2.70	1.79	0.00
46.00	2.70	1.79	0.00
47.00	2.70	1.79	0.00
48.00	2.70	1.79	0.00
49.00	2.70	1.79	0.00
50.00	2.70	1.79	0.00
51.00	2.70	1.79	0.00
52.00	2.70	1.79	0.00
53.00	2.70	1.79	0.00
54.00	2.70	1.79	0.00
55.00	2.70	1.79	0.00
56.00	2.70	1.79	0.00
57.00	2.70	1.79	0.00
58.00	2.70	1.79	0.00
59.00	2.70	1.79	0.00
60.00	2.70	1.79	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

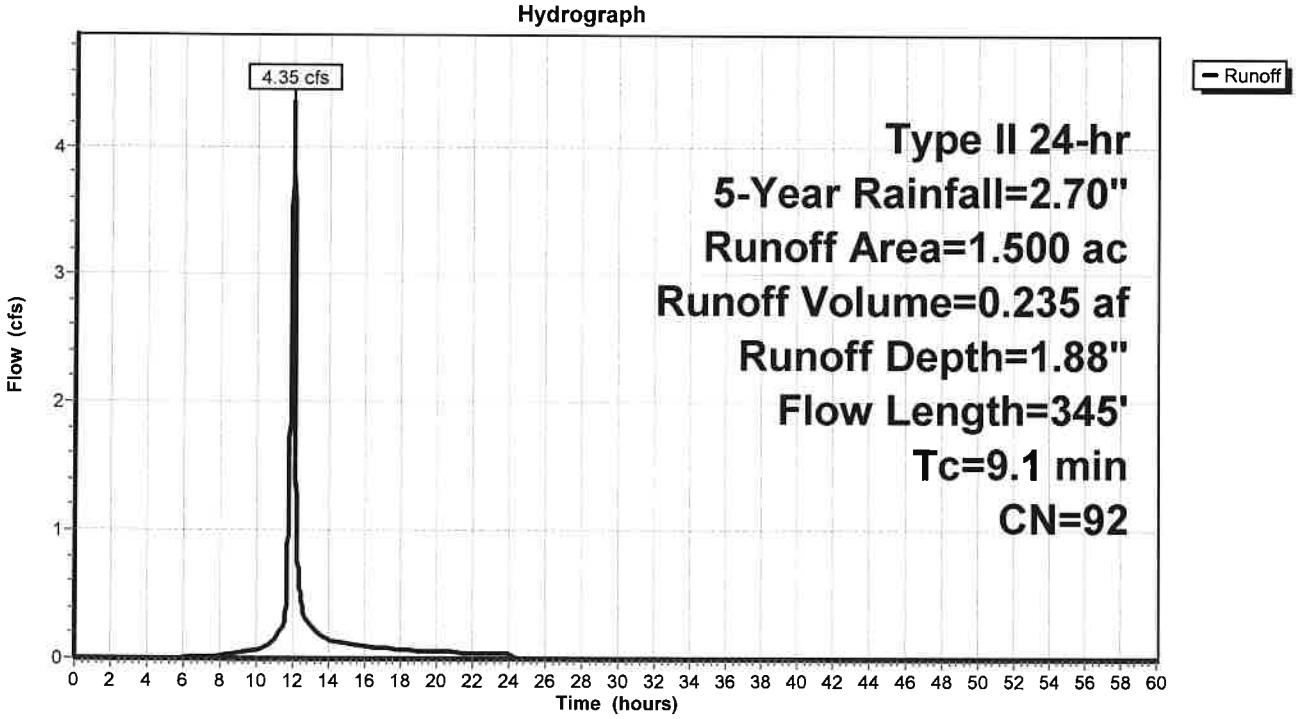
Runoff = 4.35 cfs @ 12.00 hrs, Volume= 0.235 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=2.70"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.06	0.00	0.00
3.00	0.09	0.00	0.00
4.00	0.13	0.00	0.00
5.00	0.17	0.00	0.00
6.00	0.22	0.00	0.01
7.00	0.27	0.01	0.01
8.00	0.32	0.02	0.02
9.00	0.40	0.05	0.04
10.00	0.49	0.08	0.07
11.00	0.63	0.16	0.15
12.00	1.79	1.05	**4.35**
13.00	2.08	1.31	0.25
14.00	2.21	1.43	0.15
15.00	2.30	1.51	0.12
16.00	2.38	1.58	0.09
17.00	2.43	1.63	0.08
18.00	2.49	1.68	0.07
19.00	2.53	1.72	0.06
20.00	2.57	1.76	0.05
21.00	2.60	1.79	0.05
22.00	2.64	1.82	0.05
23.00	2.67	1.85	0.04
24.00	**2.70**	**1.88**	0.04
25.00	2.70	1.88	0.00
26.00	2.70	1.88	0.00
27.00	2.70	1.88	0.00
28.00	2.70	1.88	0.00
29.00	2.70	1.88	0.00
30.00	2.70	1.88	0.00
31.00	2.70	1.88	0.00
32.00	2.70	1.88	0.00
33.00	2.70	1.88	0.00
34.00	2.70	1.88	0.00
35.00	2.70	1.88	0.00
36.00	2.70	1.88	0.00
37.00	2.70	1.88	0.00
38.00	2.70	1.88	0.00
39.00	2.70	1.88	0.00
40.00	2.70	1.88	0.00
41.00	2.70	1.88	0.00
42.00	2.70	1.88	0.00
43.00	2.70	1.88	0.00
44.00	2.70	1.88	0.00
45.00	2.70	1.88	0.00
46.00	2.70	1.88	0.00
47.00	2.70	1.88	0.00
48.00	2.70	1.88	0.00
49.00	2.70	1.88	0.00
50.00	2.70	1.88	0.00
51.00	2.70	1.88	0.00
52.00	2.70	1.88	0.00
53.00	2.70	1.88	0.00
54.00	2.70	1.88	0.00
55.00	2.70	1.88	0.00
56.00	2.70	1.88	0.00
57.00	2.70	1.88	0.00
58.00	2.70	1.88	0.00
59.00	2.70	1.88	0.00
60.00	2.70	1.88	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 1.83" for 5-Year event
Inflow = 7.03 cfs @ 12.07 hrs, Volume= 0.489 af
Outflow = 1.05 cfs @ 12.55 hrs, Volume= 0.446 af, Atten= 85%, Lag= 29.0 min
Primary = 1.05 cfs @ 12.55 hrs, Volume= 0.446 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 570.79' @ 12.55 hrs Surf.Area= 10,145 sf Storage= 8,639 cf

Plug-Flow detention time= 321.6 min calculated for 0.446 af (91% of inflow)
Center-of-Mass det. time= 190.4 min (1,183.7 - 993.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

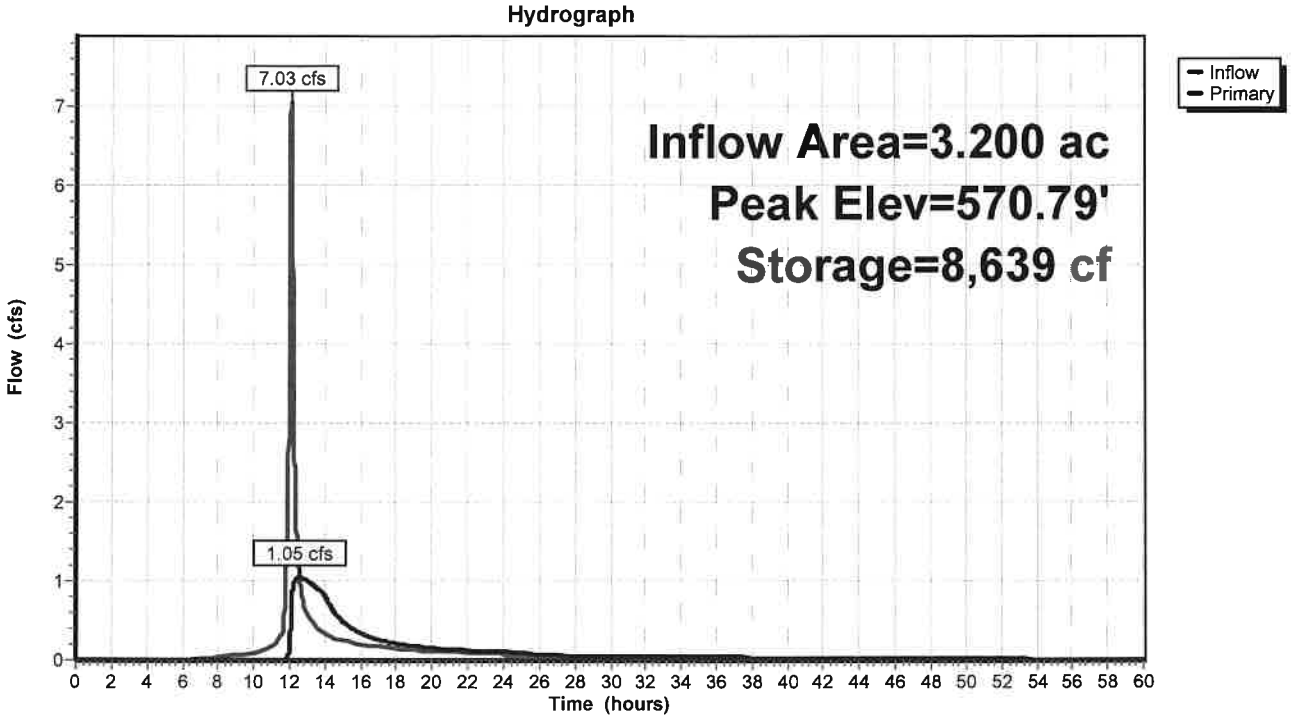
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

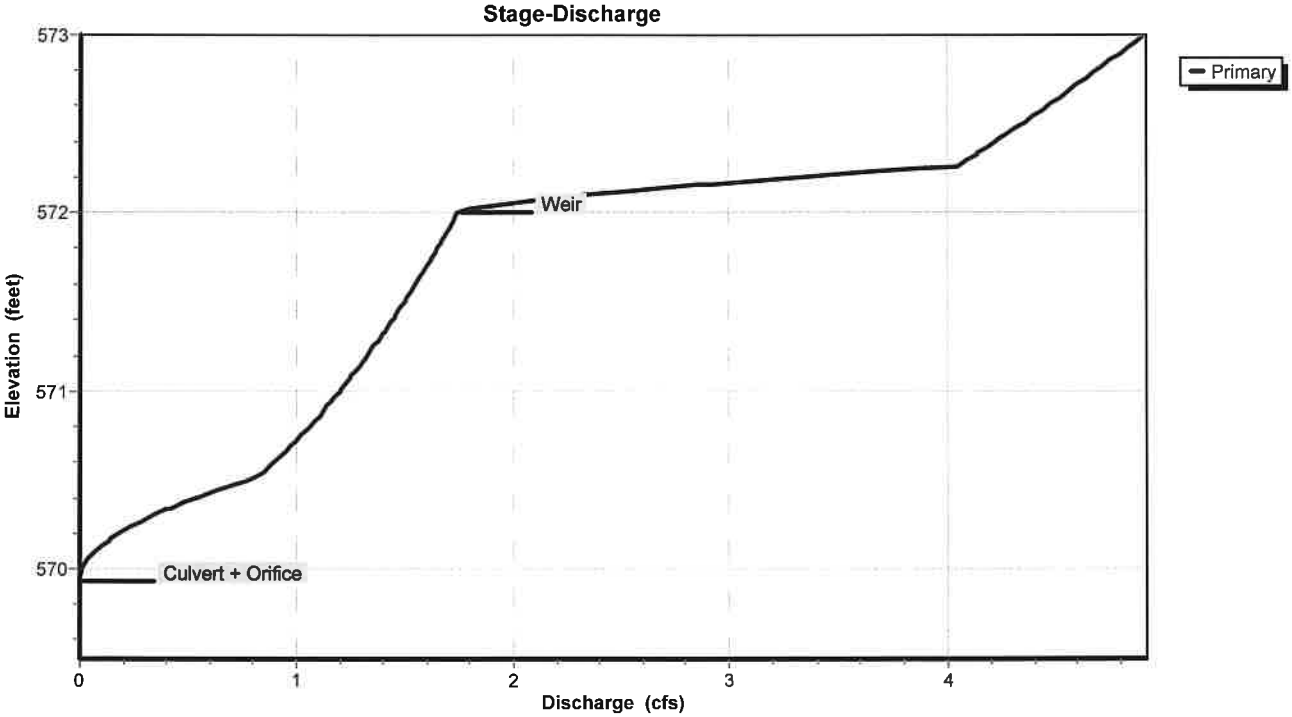
Primary OutFlow Max=1.05 cfs @ 12.55 hrs HW=570.79' (Free Discharge)
↑—**1=Culvert** (Passes 1.05 cfs of 1.53 cfs potential flow)
↑—**2=Orifice** (Orifice Controls 1.05 cfs @ 4.00 fps)
—**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

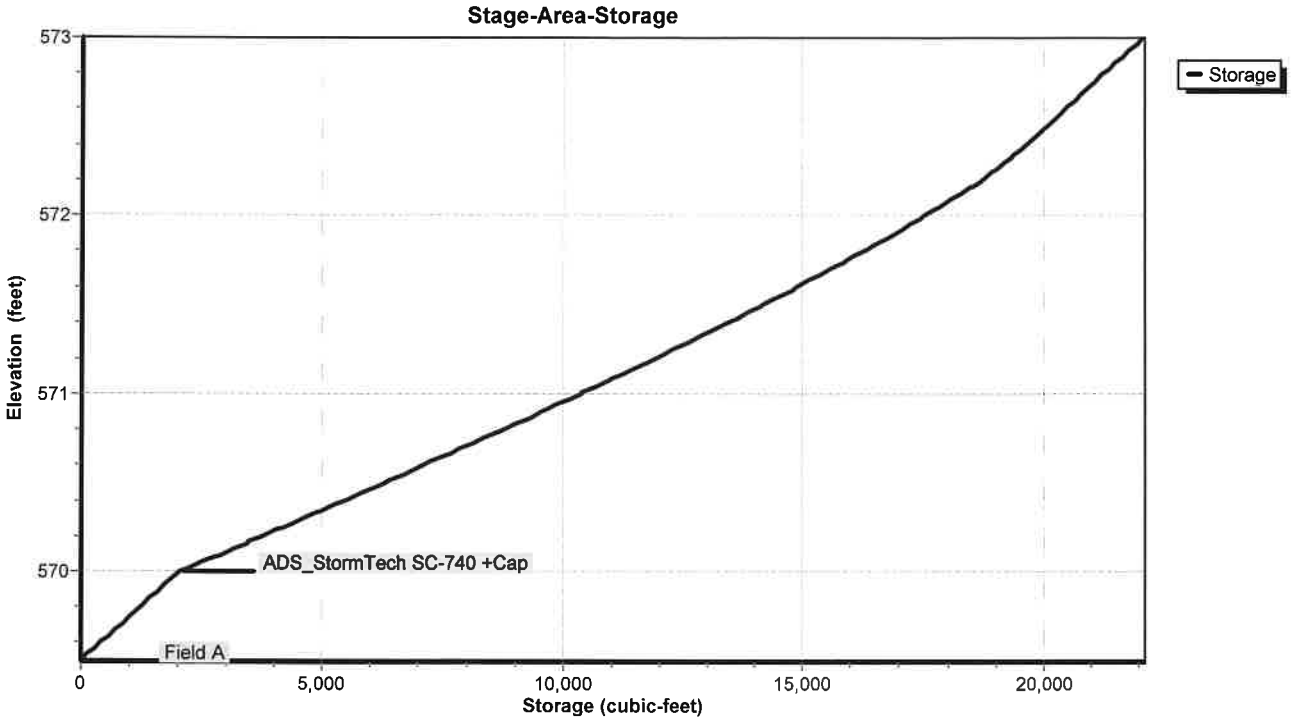


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.00	2	569.50	0.00
8.00	0.03	119	569.53	0.00
10.00	0.09	566	569.64	0.00
12.00	**5.13**	**3,593**	**570.18**	**0.16**
14.00	**0.33**	**6,444**	**570.52**	**0.81**
16.00	0.20	4,602	570.30	0.34
18.00	0.15	3,932	570.22	0.21
20.00	0.11	3,570	570.18	0.15
22.00	0.10	3,332	570.15	0.12
24.00	0.09	3,200	570.14	0.10
26.00	0.03	2,873	570.10	0.07
28.00	0.03	2,693	570.08	0.05
30.00	0.03	2,592	570.07	0.04
32.00	0.03	2,532	570.06	0.04
34.00	0.03	2,493	570.05	0.04
36.00	0.03	2,465	570.05	0.03
38.00	0.03	2,445	570.05	0.03
40.00	0.03	2,428	570.05	0.03
42.00	0.03	2,415	570.04	0.03
44.00	0.03	2,403	570.04	0.03
46.00	0.03	2,393	570.04	0.03
48.00	0.01	2,328	570.03	0.03
50.00	0.00	2,203	570.02	0.02
52.00	0.00	2,095	570.01	0.01
54.00	0.00	2,013	570.00	0.01
56.00	0.00	1,959	569.98	0.01
58.00	0.00	1,920	569.97	0.00
60.00	0.00	1,892	569.97	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 1.88" for 5-Year event
Inflow = 4.35 cfs @ 12.00 hrs, Volume= 0.235 af
Outflow = 3.06 cfs @ 12.08 hrs, Volume= 0.235 af, Atten= 30%, Lag= 4.6 min
Primary = 3.06 cfs @ 12.08 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.68' @ 12.08 hrs Surf.Area= 6,129 sf Storage= 3,708 cf

Plug-Flow detention time= 384.2 min calculated for 0.235 af (100% of inflow)
Center-of-Mass det. time= 384.1 min (1,187.9 - 803.8)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

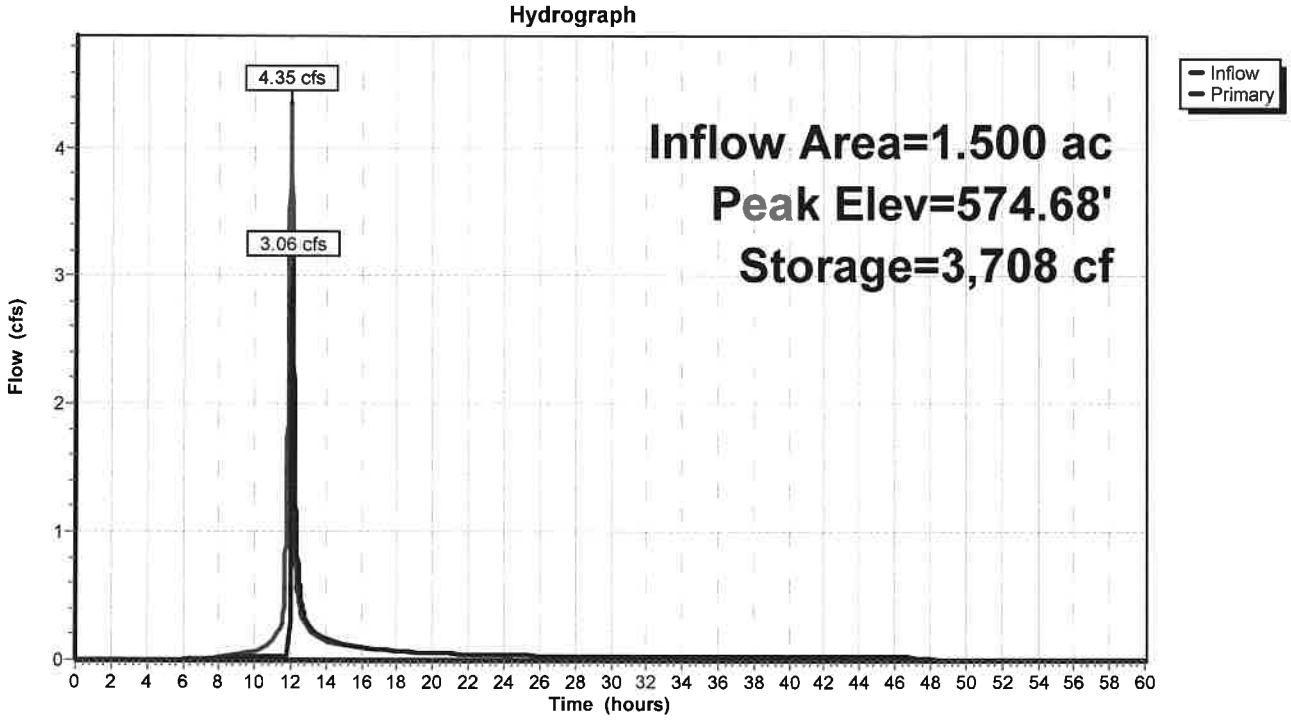
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

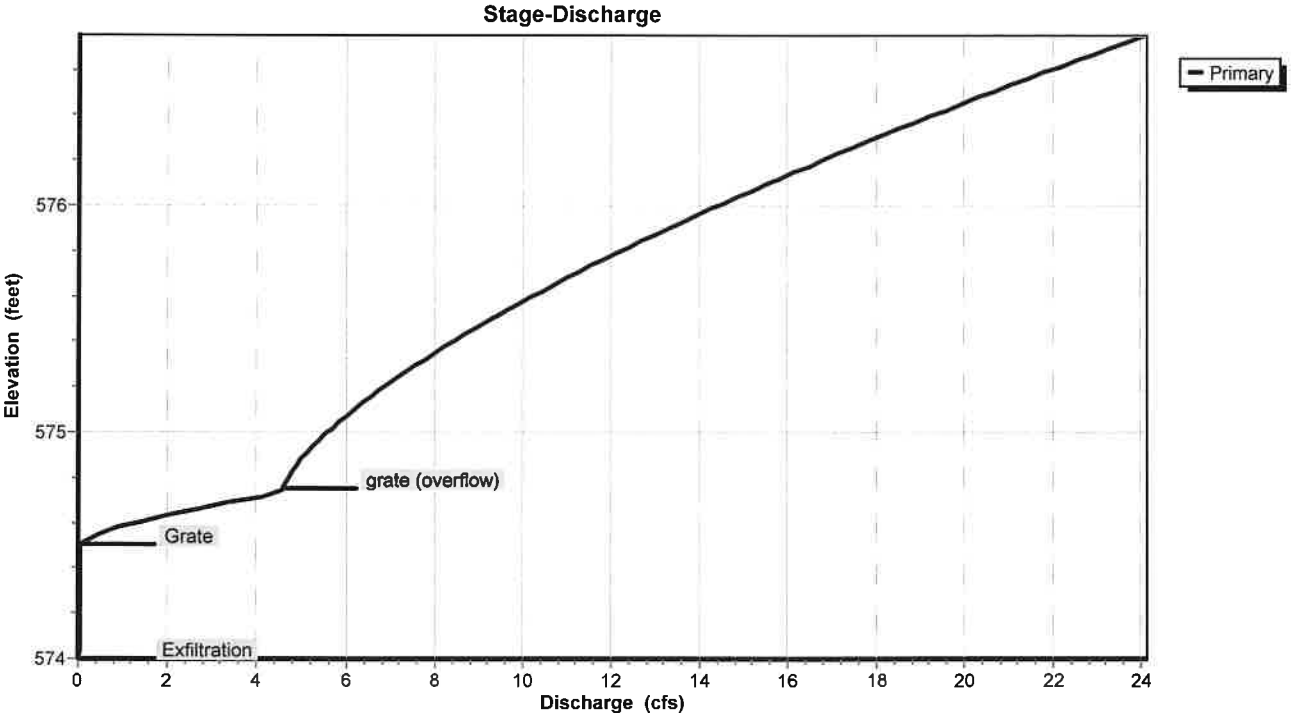
Primary OutFlow Max=3.05 cfs @ 12.08 hrs HW=574.68' (Free Discharge)
- **1=8" pipe** (Passes 3.05 cfs of 4.54 cfs potential flow)
  - **2=Grate** (Weir Controls 3.02 cfs @ 1.37 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

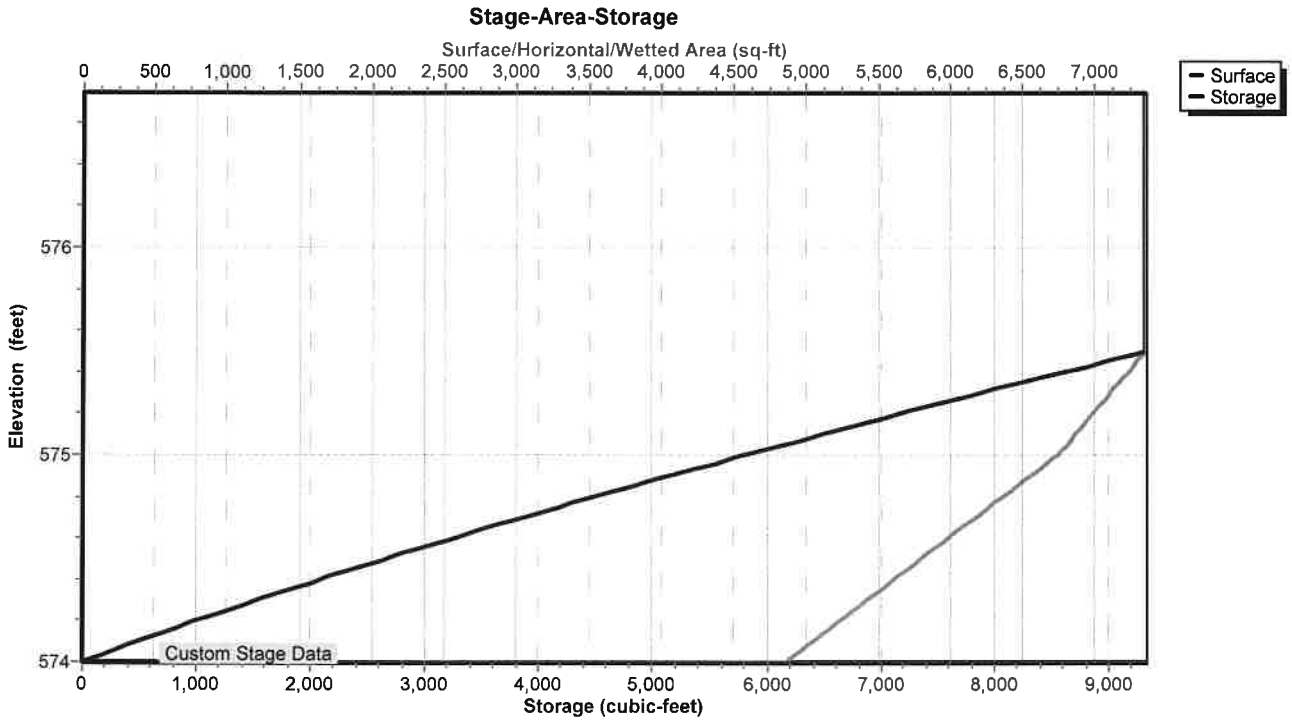


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.01	6	574.00	0.00
8.00	0.02	61	574.01	0.01
10.00	0.07	208	574.04	0.03
12.00	**4.35**	**3,326**	**574.61**	**1.59**
14.00	0.15	**2,783**	**574.52**	**0.16**
16.00	0.09	2,721	574.51	0.10
18.00	0.07	2,697	574.51	0.07
20.00	0.05	2,679	574.50	0.05
22.00	0.05	2,673	574.50	0.05
24.00	0.04	2,670	574.50	0.04
26.00	0.00	2,439	574.46	0.03
28.00	0.00	2,196	574.42	0.03
30.00	0.00	1,956	574.38	0.03
32.00	0.00	1,720	574.33	0.03
34.00	0.00	1,489	574.29	0.03
36.00	0.00	1,262	574.25	0.03
38.00	0.00	1,038	574.21	0.03
40.00	0.00	819	574.16	0.03
42.00	0.00	603	574.12	0.03
44.00	0.00	392	574.08	0.03
46.00	0.00	184	574.04	0.03
48.00	0.00	42	574.01	0.01
50.00	0.00	9	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=2.21"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=4.91 cfs 0.313 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=2.30"
Flow Length=345' Tc=9.1 min CN=92 Runoff=5.28 cfs 0.288 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=571.13' Storage=11,342 cf Inflow=9.17 cfs 0.601 af
Outflow=1.28 cfs 0.558 af

Pond 9P: Bioretention Area 3 Peak Elev=574.72' Storage=4,001 cf Inflow=5.28 cfs 0.288 af
Outflow=4.27 cfs 0.288 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.601 af Average Runoff Depth = 2.25"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

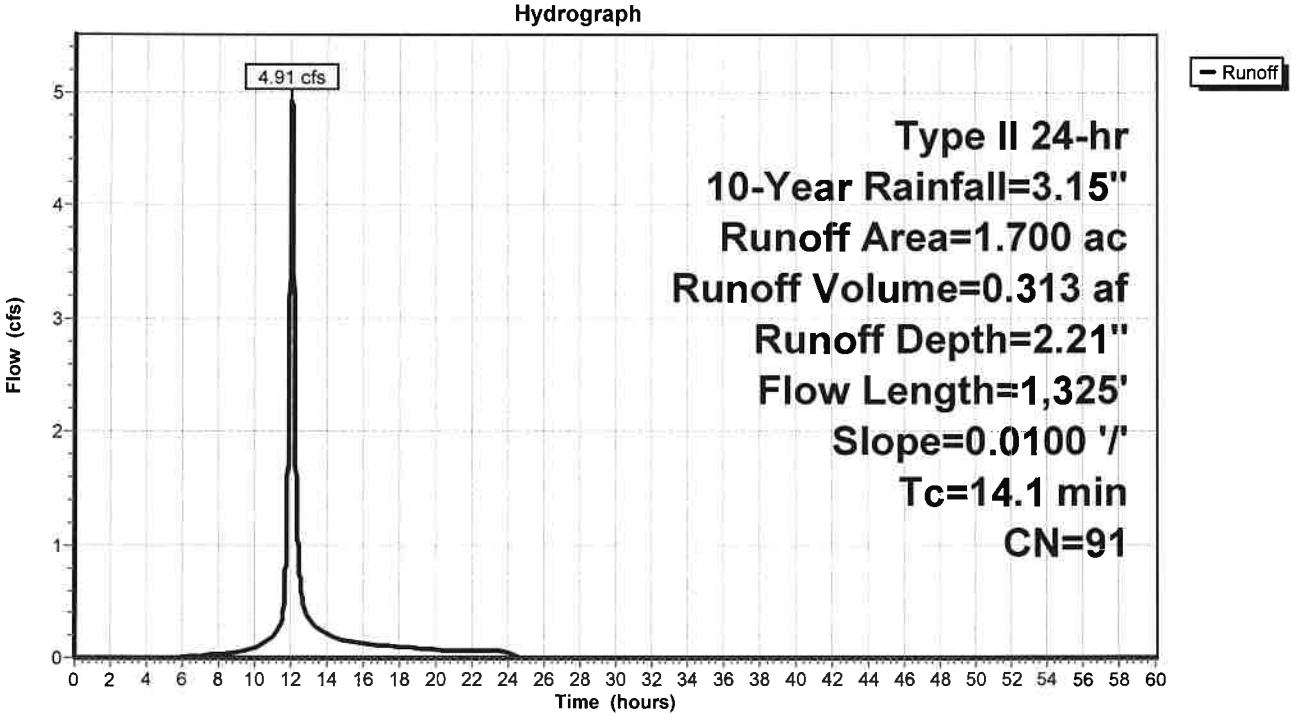
Runoff = 4.91 cfs @ 12.05 hrs, Volume= 0.313 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	52.00	3.15	2.21	0.00
1.00	0.03	0.00	0.00	53.00	3.15	2.21	0.00
2.00	0.07	0.00	0.00	54.00	3.15	2.21	0.00
3.00	0.11	0.00	0.00	55.00	3.15	2.21	0.00
4.00	0.15	0.00	0.00	56.00	3.15	2.21	0.00
5.00	0.20	0.00	0.00	57.00	3.15	2.21	0.00
6.00	0.25	0.00	0.01	58.00	3.15	2.21	0.00
7.00	0.31	0.01	0.02	59.00	3.15	2.21	0.00
8.00	0.38	0.03	0.03	60.00	3.15	2.21	0.00
9.00	0.46	0.06	0.06				
10.00	0.57	0.10	0.09				
11.00	0.74	0.19	0.19				
12.00	2.09	1.24	**4.35**				
13.00	2.43	1.55	**0.35**				
14.00	2.58	1.69	0.20				
15.00	2.69	1.78	0.16				
16.00	2.77	1.86	0.12				
17.00	2.84	1.92	0.11				
18.00	2.90	1.98	0.09				
19.00	2.95	2.03	0.08				
20.00	3.00	2.07	0.07				
21.00	3.04	2.11	0.06				
22.00	3.08	2.14	0.06				
23.00	3.11	2.18	0.06				
24.00	**3.15**	**2.21**	0.06				
25.00	3.15	2.21	0.00				
26.00	3.15	2.21	0.00				
27.00	3.15	2.21	0.00				
28.00	3.15	2.21	0.00				
29.00	3.15	2.21	0.00				
30.00	3.15	2.21	0.00				
31.00	3.15	2.21	0.00				
32.00	3.15	2.21	0.00				
33.00	3.15	2.21	0.00				
34.00	3.15	2.21	0.00				
35.00	3.15	2.21	0.00				
36.00	3.15	2.21	0.00				
37.00	3.15	2.21	0.00				
38.00	3.15	2.21	0.00				
39.00	3.15	2.21	0.00				
40.00	3.15	2.21	0.00				
41.00	3.15	2.21	0.00				
42.00	3.15	2.21	0.00				
43.00	3.15	2.21	0.00				
44.00	3.15	2.21	0.00				
45.00	3.15	2.21	0.00				
46.00	3.15	2.21	0.00				
47.00	3.15	2.21	0.00				
48.00	3.15	2.21	0.00				
49.00	3.15	2.21	0.00				
50.00	3.15	2.21	0.00				
51.00	3.15	2.21	0.00				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

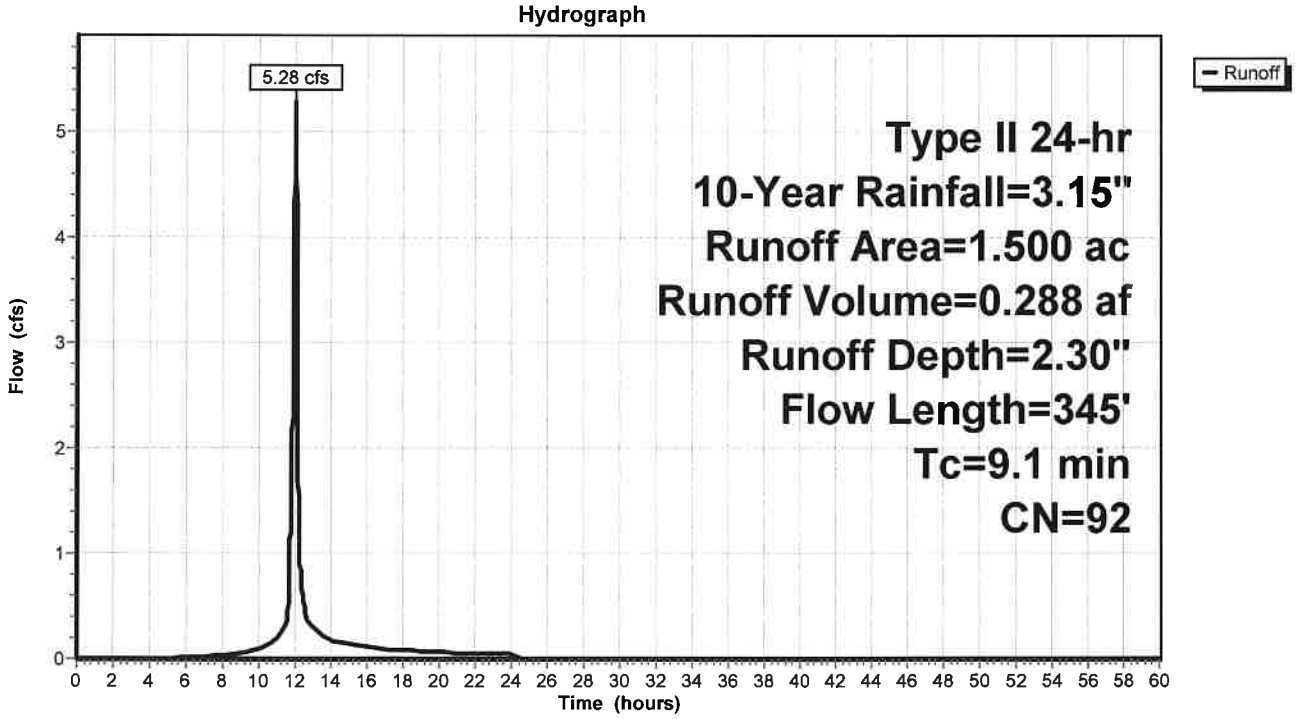
Runoff = 5.28 cfs @ 12.00 hrs, Volume= 0.288 af, Depth= 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.15"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.03	0.00	0.00
2.00	0.07	0.00	0.00
3.00	0.11	0.00	0.00
4.00	0.15	0.00	0.00
5.00	0.20	0.00	0.00
6.00	0.25	0.01	0.01
7.00	0.31	0.02	0.02
8.00	0.38	0.04	0.03
9.00	0.46	0.07	0.06
10.00	0.57	0.12	0.09
11.00	0.74	0.22	0.20
12.00	2.09	1.32	**5.27**
13.00	2.43	1.63	0.30
14.00	2.58	1.77	0.18
15.00	2.69	1.87	0.14
16.00	2.77	1.95	0.11
17.00	2.84	2.01	0.09
18.00	2.90	2.07	0.08
19.00	2.95	2.12	0.07
20.00	3.00	2.16	0.06
21.00	3.04	2.20	0.06
22.00	3.08	2.23	0.05
23.00	3.11	2.27	0.05
24.00	**3.15**	**2.30**	0.05
25.00	3.15	2.30	0.00
26.00	3.15	2.30	0.00
27.00	3.15	2.30	0.00
28.00	3.15	2.30	0.00
29.00	3.15	2.30	0.00
30.00	3.15	2.30	0.00
31.00	3.15	2.30	0.00
32.00	3.15	2.30	0.00
33.00	3.15	2.30	0.00
34.00	3.15	2.30	0.00
35.00	3.15	2.30	0.00
36.00	3.15	2.30	0.00
37.00	3.15	2.30	0.00
38.00	3.15	2.30	0.00
39.00	3.15	2.30	0.00
40.00	3.15	2.30	0.00
41.00	3.15	2.30	0.00
42.00	3.15	2.30	0.00
43.00	3.15	2.30	0.00
44.00	3.15	2.30	0.00
45.00	3.15	2.30	0.00
46.00	3.15	2.30	0.00
47.00	3.15	2.30	0.00
48.00	3.15	2.30	0.00
49.00	3.15	2.30	0.00
50.00	3.15	2.30	0.00
51.00	3.15	2.30	0.00
52.00	3.15	2.30	0.00
53.00	3.15	2.30	0.00
54.00	3.15	2.30	0.00
55.00	3.15	2.30	0.00
56.00	3.15	2.30	0.00
57.00	3.15	2.30	0.00
58.00	3.15	2.30	0.00
59.00	3.15	2.30	0.00
60.00	3.15	2.30	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 2.25" for 10-Year event
Inflow = 9.17 cfs @ 12.06 hrs, Volume= 0.601 af
Outflow = 1.28 cfs @ 12.54 hrs, Volume= 0.558 af, Atten= 86%, Lag= 29.2 min
Primary = 1.28 cfs @ 12.54 hrs, Volume= 0.558 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 571.13' @ 12.54 hrs Surf.Area= 10,145 sf Storage= 11,342 cf

Plug-Flow detention time= 284.1 min calculated for 0.558 af (93% of inflow)
Center-of-Mass det. time= 176.3 min (1,132.0 - 955.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

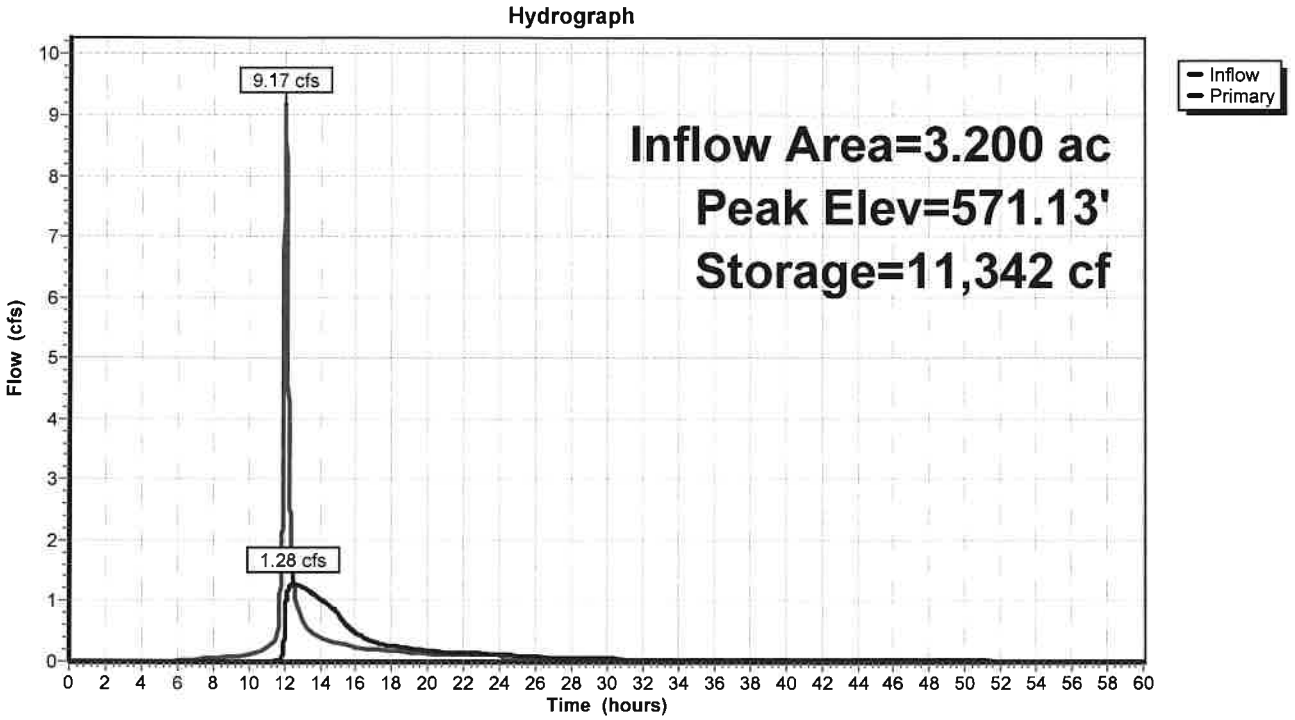
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

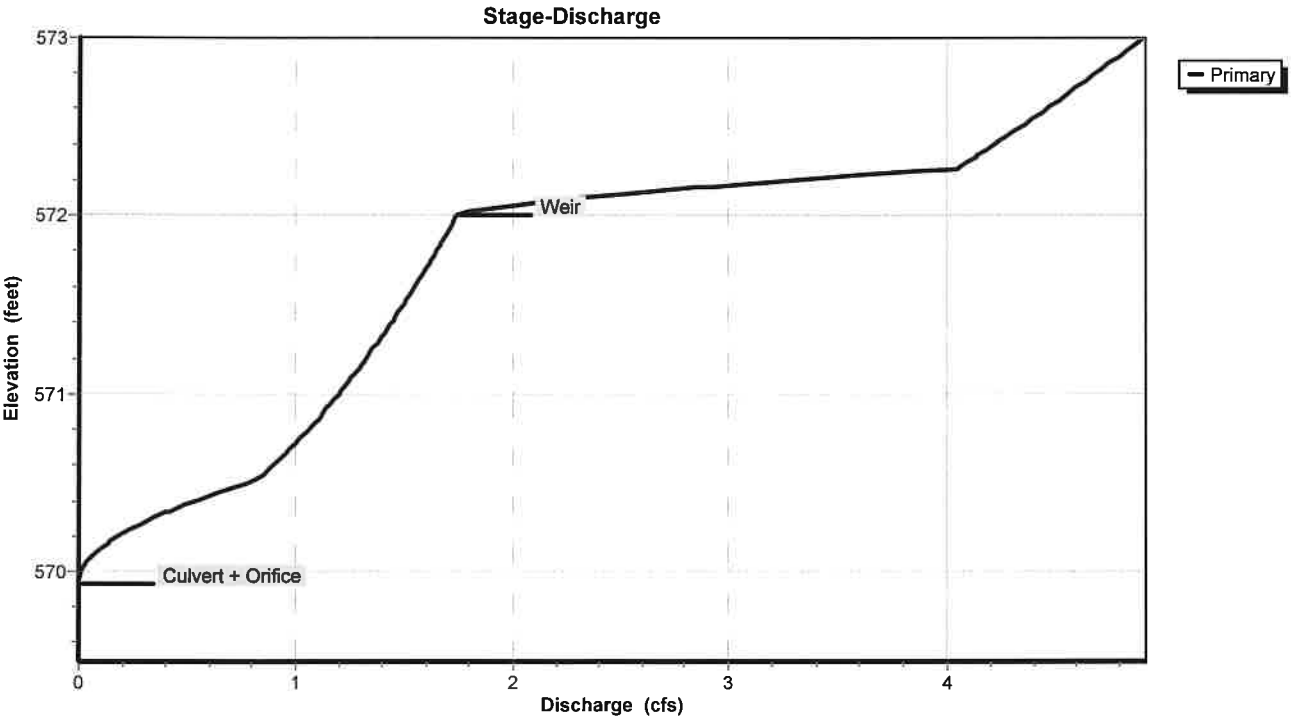
Primary OutFlow Max=1.28 cfs @ 12.54 hrs HW=571.13' (Free Discharge)
└**1=Culvert** (Passes 1.28 cfs of 2.37 cfs potential flow)
├**2=Orifice** (Orifice Controls 1.28 cfs @ 4.88 fps)
└**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

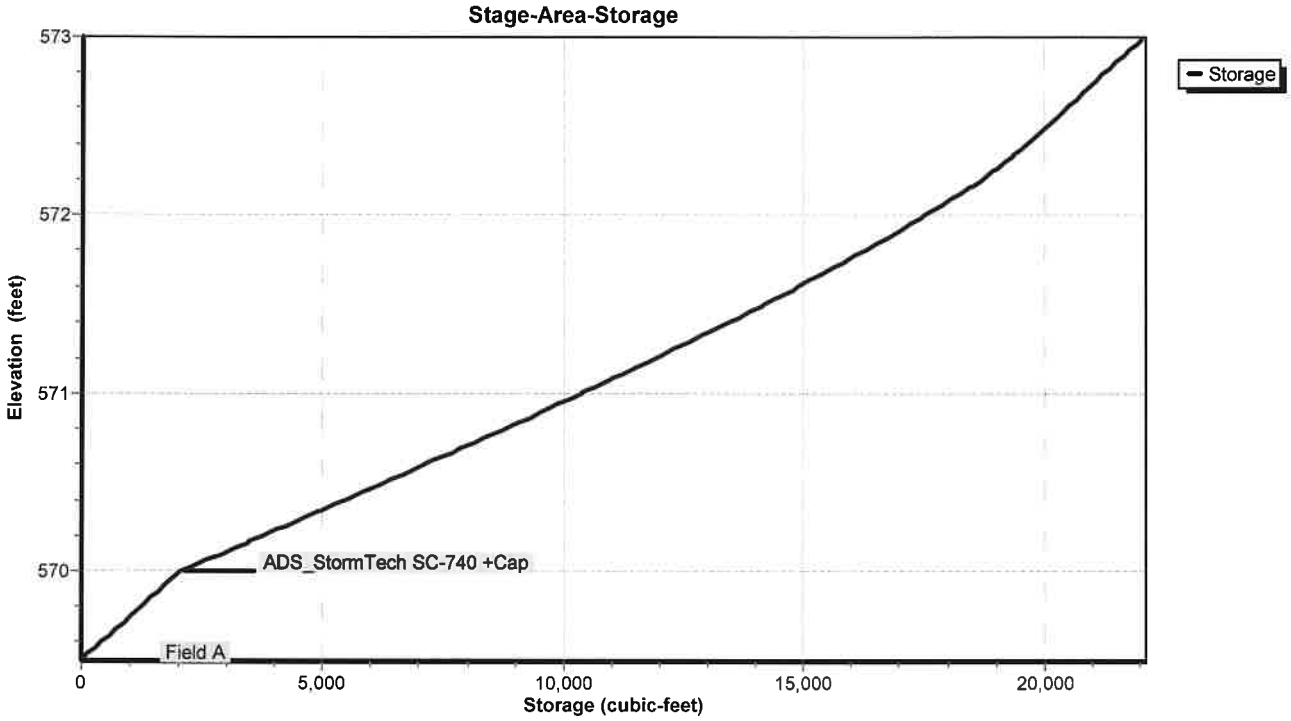


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.01	18	569.50	0.00
8.00	0.05	241	569.56	0.00
10.00	0.12	846	569.71	0.00
12.00	**7.80**	**5,030**	**570.35**	**0.43**
14.00	**0.39**	**8,504**	**570.77**	**1.03**
16.00	0.24	5,183	570.37	0.47
18.00	0.18	4,195	570.25	0.26
20.00	0.13	3,754	570.20	0.18
22.00	0.12	3,484	570.17	0.14
24.00	0.11	3,343	570.15	0.12
26.00	0.03	2,942	570.11	0.08
28.00	0.03	2,728	570.08	0.05
30.00	0.03	2,611	570.07	0.05
32.00	0.03	2,544	570.06	0.04
34.00	0.03	2,500	570.05	0.04
36.00	0.03	2,470	570.05	0.03
38.00	0.03	2,448	570.05	0.03
40.00	0.03	2,430	570.05	0.03
42.00	0.03	2,416	570.05	0.03
44.00	0.03	2,404	570.04	0.03
46.00	0.03	2,393	570.04	0.03
48.00	0.01	2,331	570.04	0.03
50.00	0.00	2,206	570.02	0.02
52.00	0.00	2,098	570.01	0.01
54.00	0.00	2,015	570.00	0.01
56.00	0.00	1,960	569.98	0.01
58.00	0.00	1,921	569.97	0.00
60.00	0.00	1,893	569.97	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 2.30" for 10-Year event
Inflow = 5.28 cfs @ 12.00 hrs, Volume= 0.288 af
Outflow = 4.27 cfs @ 12.06 hrs, Volume= 0.288 af, Atten= 19%, Lag= 3.5 min
Primary = 4.27 cfs @ 12.06 hrs, Volume= 0.288 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.72' @ 12.06 hrs Surf.Area= 6,219 sf Storage= 4,001 cf

Plug-Flow detention time= 318.6 min calculated for 0.288 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,116.8 - 798.1)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

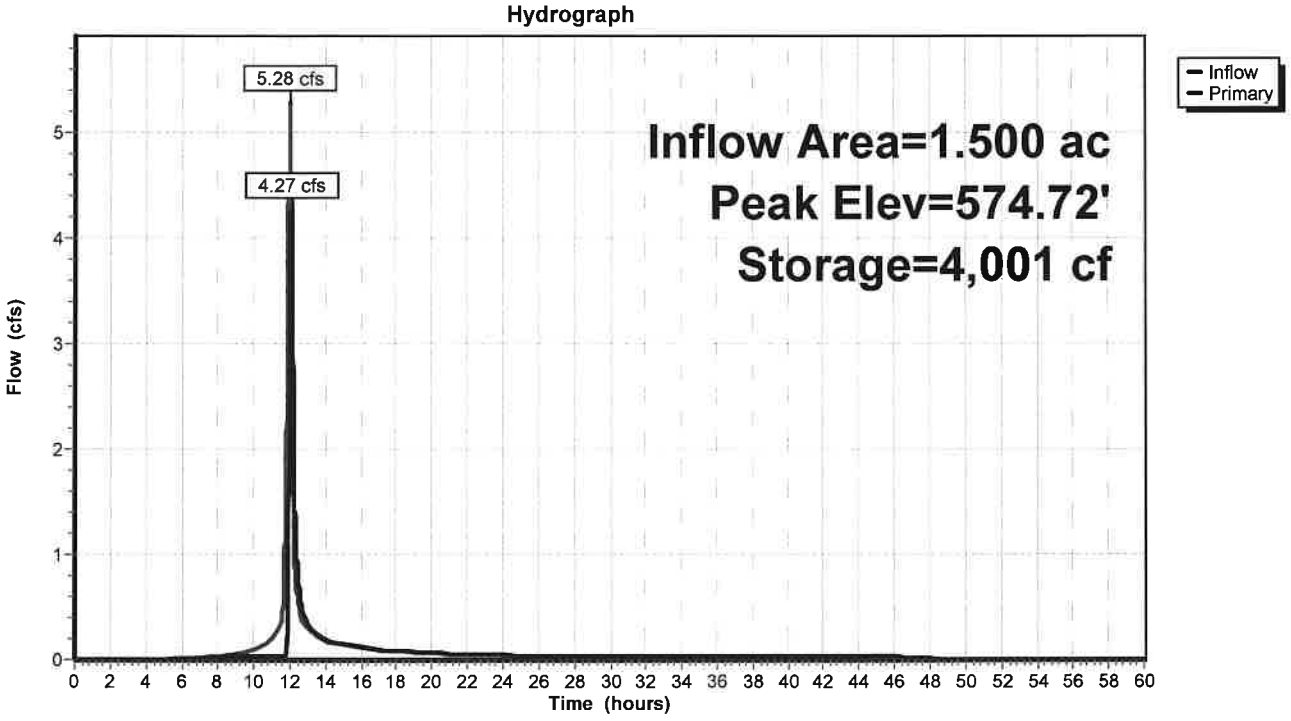
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

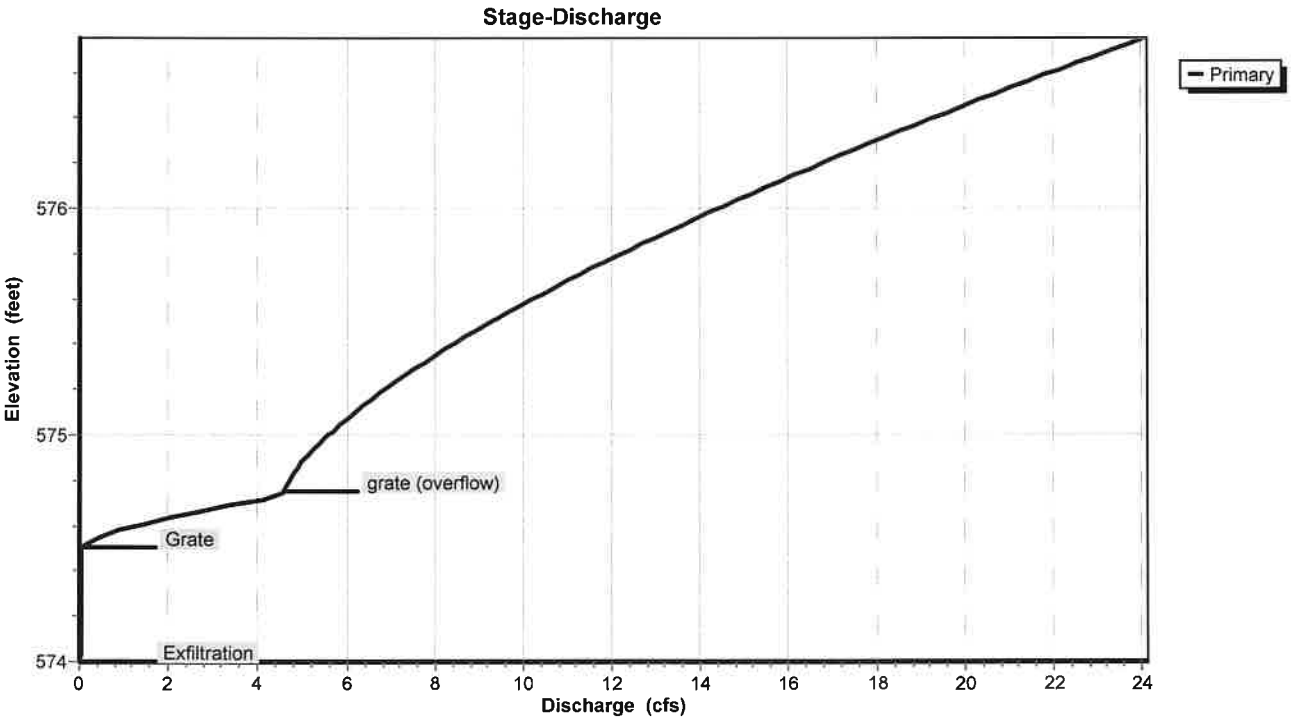
Primary OutFlow Max=4.36 cfs @ 12.06 hrs HW=574.72' (Free Discharge)
- **1=8" pipe** (Passes 4.36 cfs of 4.57 cfs potential flow)
  - **2=Grate** (Weir Controls 4.32 cfs @ 1.54 fps)
  - **3=Exfiltration** (Controls 0.04 cfs)
- **4=grate (overflow)** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

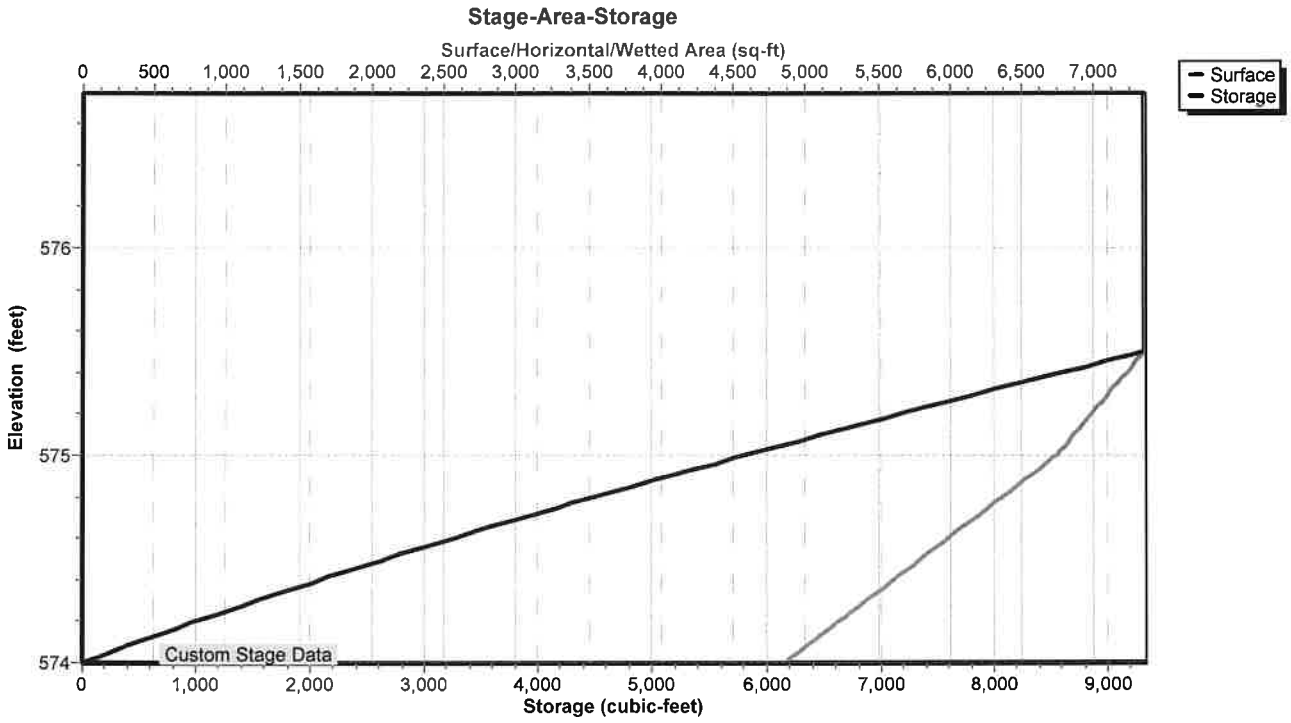


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.01	21	574.00	0.00
8.00	0.03	99	574.02	0.02
10.00	0.09	335	574.07	0.03
12.00	**5.27**	**3,799**	**574.69**	**3.45**
14.00	0.18	**2,801**	**574.52**	**0.19**
16.00	0.11	2,738	574.51	0.12
18.00	0.08	2,710	574.51	0.09
20.00	0.06	2,689	574.50	0.06
22.00	0.05	2,681	574.50	0.06
24.00	0.05	2,677	574.50	0.05
26.00	0.00	2,445	574.46	0.03
28.00	0.00	2,201	574.42	0.03
30.00	0.00	1,961	574.38	0.03
32.00	0.00	1,726	574.33	0.03
34.00	0.00	1,494	574.29	0.03
36.00	0.00	1,267	574.25	0.03
38.00	0.00	1,043	574.21	0.03
40.00	0.00	824	574.16	0.03
42.00	0.00	608	574.12	0.03
44.00	0.00	397	574.08	0.03
46.00	0.00	189	574.04	0.03
48.00	0.00	44	574.01	0.01
50.00	0.00	10	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=2.89"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=6.35 cfs 0.410 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=2.99"
Flow Length=345' Tc=9.1 min CN=92 Runoff=6.75 cfs 0.374 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=571.73' Storage=15,804 cf Inflow=11.11 cfs 0.784 af
Outflow=1.61 cfs 0.740 af

Pond 9P: Bioretention Area 3 Peak Elev=574.82' Storage=4,638 cf Inflow=6.75 cfs 0.374 af
Outflow=4.78 cfs 0.374 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.784 af Average Runoff Depth = 2.94"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

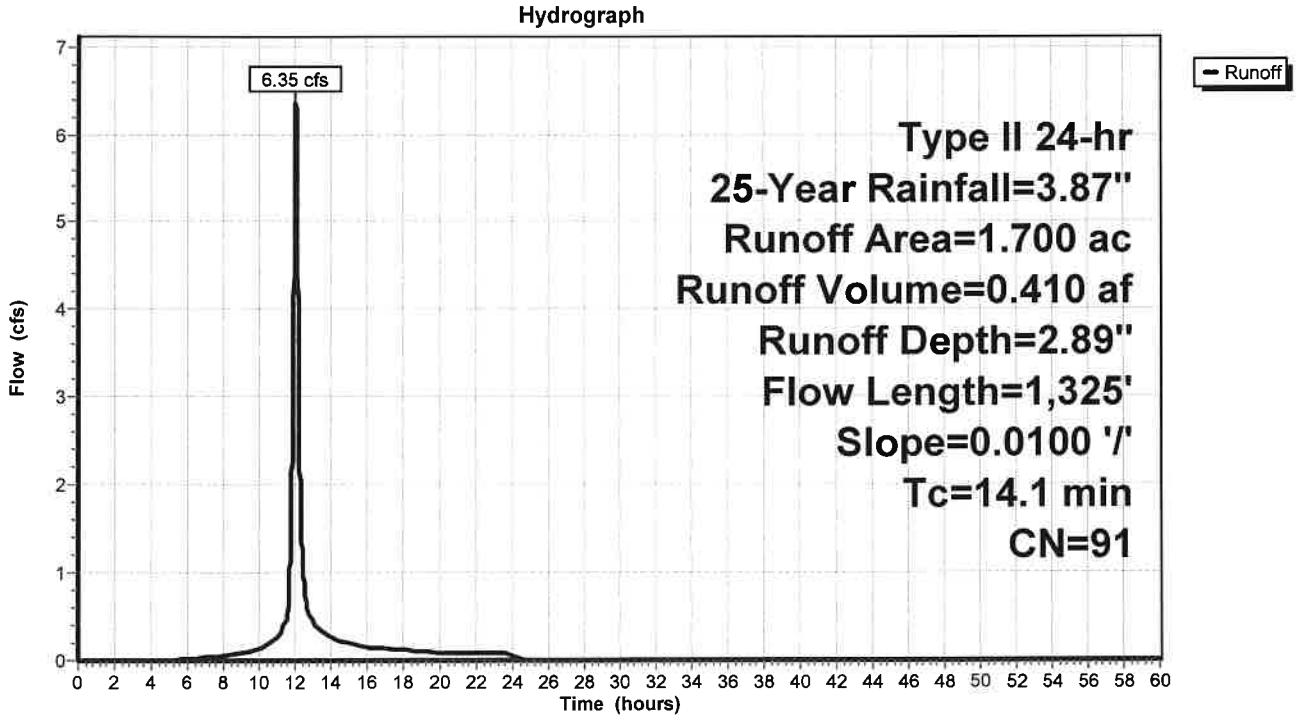
Runoff = 6.35 cfs @ 12.05 hrs, Volume= 0.410 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.00	0.01
6.00	0.31	0.01	0.02
7.00	0.38	0.03	0.04
8.00	0.46	0.06	0.05
9.00	0.57	0.10	0.09
10.00	0.70	0.17	0.13
11.00	0.91	0.30	0.27
12.00	2.57	1.67	**5.66**
13.00	2.99	2.06	**0.45**
14.00	3.17	2.23	0.26
15.00	3.30	2.36	0.20
16.00	3.41	2.45	0.15
17.00	3.49	2.53	0.13
18.00	3.56	2.60	0.12
19.00	3.63	2.66	0.10
20.00	3.68	2.72	0.09
21.00	3.73	2.76	0.08
22.00	3.78	2.81	0.08
23.00	3.83	2.85	0.07
24.00	**3.87**	**2.89**	0.07
25.00	3.87	2.89	0.00
26.00	3.87	2.89	0.00
27.00	3.87	2.89	0.00
28.00	3.87	2.89	0.00
29.00	3.87	2.89	0.00
30.00	3.87	2.89	0.00
31.00	3.87	2.89	0.00
32.00	3.87	2.89	0.00
33.00	3.87	2.89	0.00
34.00	3.87	2.89	0.00
35.00	3.87	2.89	0.00
36.00	3.87	2.89	0.00
37.00	3.87	2.89	0.00
38.00	3.87	2.89	0.00
39.00	3.87	2.89	0.00
40.00	3.87	2.89	0.00
41.00	3.87	2.89	0.00
42.00	3.87	2.89	0.00
43.00	3.87	2.89	0.00
44.00	3.87	2.89	0.00
45.00	3.87	2.89	0.00
46.00	3.87	2.89	0.00
47.00	3.87	2.89	0.00
48.00	3.87	2.89	0.00
49.00	3.87	2.89	0.00
50.00	3.87	2.89	0.00
51.00	3.87	2.89	0.00
52.00	3.87	2.89	0.00
53.00	3.87	2.89	0.00
54.00	3.87	2.89	0.00
55.00	3.87	2.89	0.00
56.00	3.87	2.89	0.00
57.00	3.87	2.89	0.00
58.00	3.87	2.89	0.00
59.00	3.87	2.89	0.00
60.00	3.87	2.89	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

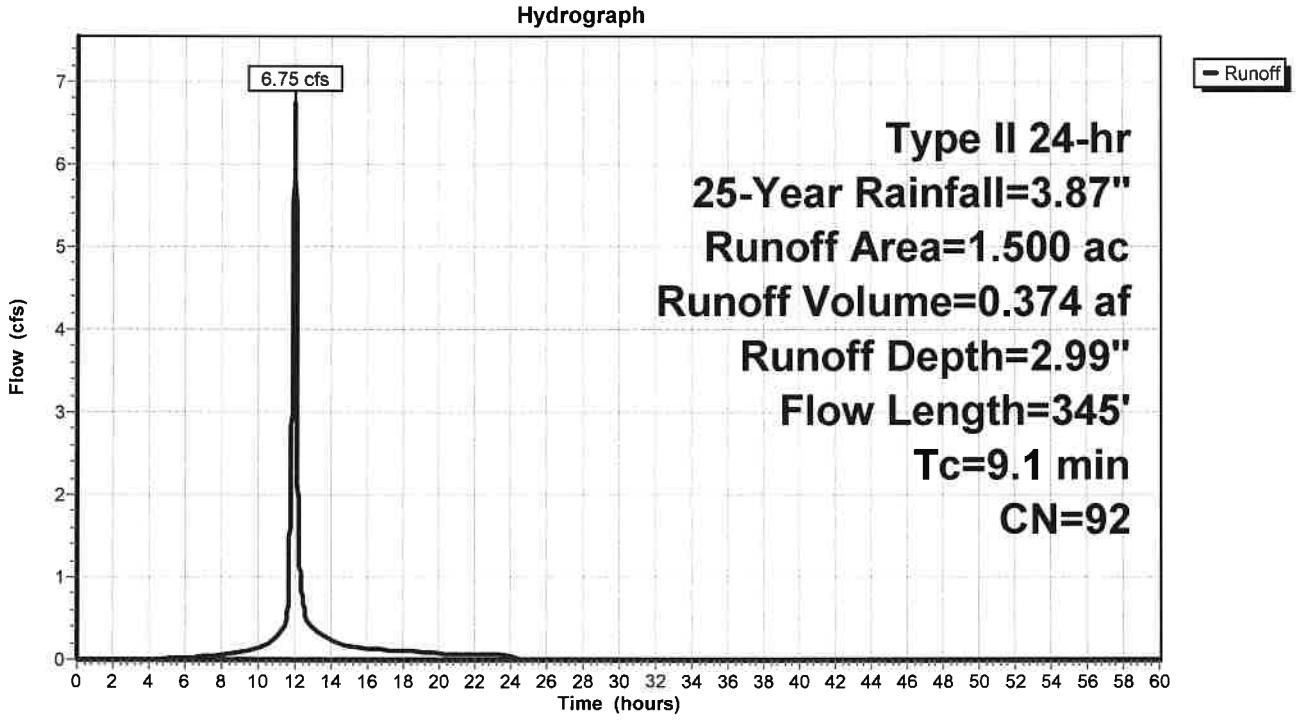
Runoff = 6.75 cfs @ 12.00 hrs, Volume= 0.374 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=3.87"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.09	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.19	0.00	0.00
5.00	0.24	0.01	0.01
6.00	0.31	0.02	0.02
7.00	0.38	0.04	0.04
8.00	0.46	0.07	0.05
9.00	0.57	0.12	0.09
10.00	0.70	0.20	0.13
11.00	0.91	0.34	0.27
12.00	2.57	1.75	**6.75**
13.00	2.99	2.15	0.38
14.00	3.17	2.33	0.22
15.00	3.30	2.45	0.17
16.00	3.41	2.55	0.13
17.00	3.49	2.63	0.12
18.00	3.56	2.70	0.10
19.00	3.63	2.76	0.09
20.00	3.68	2.81	0.08
21.00	3.73	2.86	0.07
22.00	3.78	2.91	0.07
23.00	3.83	2.95	0.07
24.00	**3.87**	**2.99**	0.06
25.00	3.87	2.99	0.00
26.00	3.87	2.99	0.00
27.00	3.87	2.99	0.00
28.00	3.87	2.99	0.00
29.00	3.87	2.99	0.00
30.00	3.87	2.99	0.00
31.00	3.87	2.99	0.00
32.00	3.87	2.99	0.00
33.00	3.87	2.99	0.00
34.00	3.87	2.99	0.00
35.00	3.87	2.99	0.00
36.00	3.87	2.99	0.00
37.00	3.87	2.99	0.00
38.00	3.87	2.99	0.00
39.00	3.87	2.99	0.00
40.00	3.87	2.99	0.00
41.00	3.87	2.99	0.00
42.00	3.87	2.99	0.00
43.00	3.87	2.99	0.00
44.00	3.87	2.99	0.00
45.00	3.87	2.99	0.00
46.00	3.87	2.99	0.00
47.00	3.87	2.99	0.00
48.00	3.87	2.99	0.00
49.00	3.87	2.99	0.00
50.00	3.87	2.99	0.00
51.00	3.87	2.99	0.00
52.00	3.87	2.99	0.00
53.00	3.87	2.99	0.00
54.00	3.87	2.99	0.00
55.00	3.87	2.99	0.00
56.00	3.87	2.99	0.00
57.00	3.87	2.99	0.00
58.00	3.87	2.99	0.00
59.00	3.87	2.99	0.00
60.00	3.87	2.99	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 2.94" for 25-Year event
Inflow = 11.11 cfs @ 12.06 hrs, Volume= 0.784 af
Outflow = 1.61 cfs @ 12.54 hrs, Volume= 0.740 af, Atten= 85%, Lag= 29.2 min
Primary = 1.61 cfs @ 12.54 hrs, Volume= 0.740 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 571.73' @ 12.54 hrs Surf.Area= 10,145 sf Storage= 15,804 cf

Plug-Flow detention time= 252.2 min calculated for 0.740 af (94% of inflow)
Center-of-Mass det. time= 168.6 min (1,084.7 - 916.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

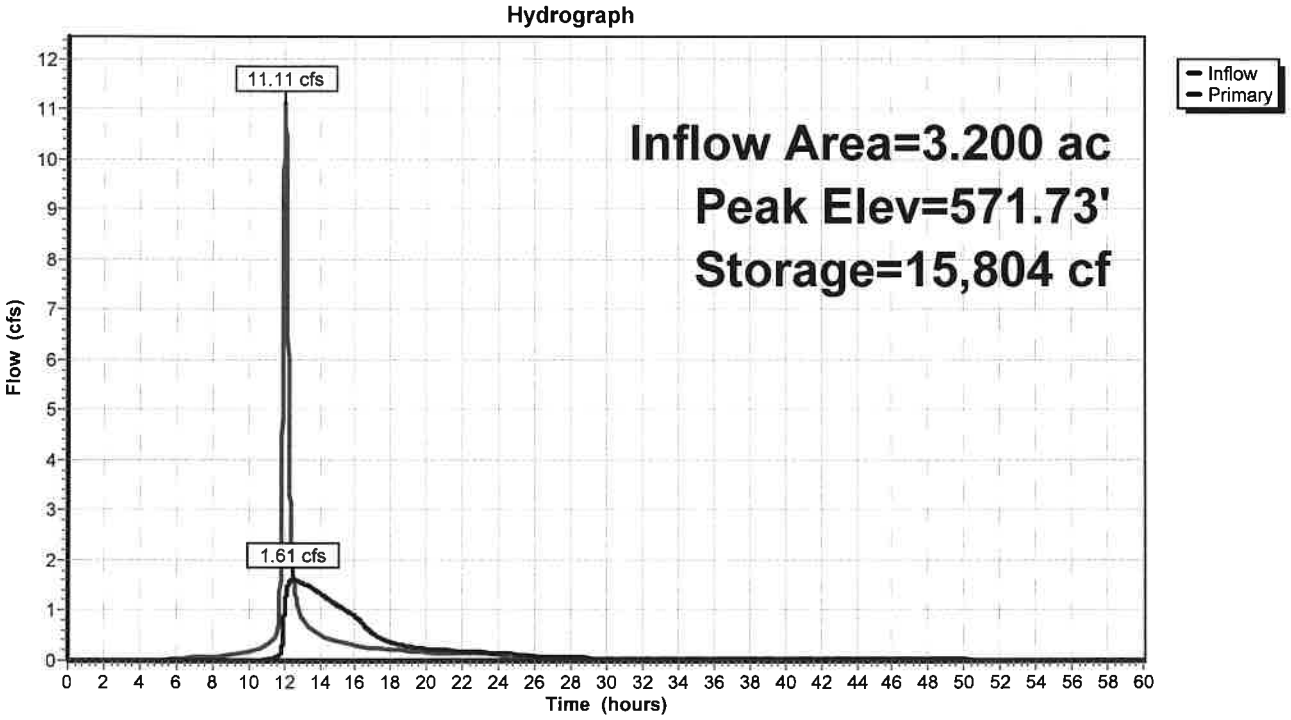
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

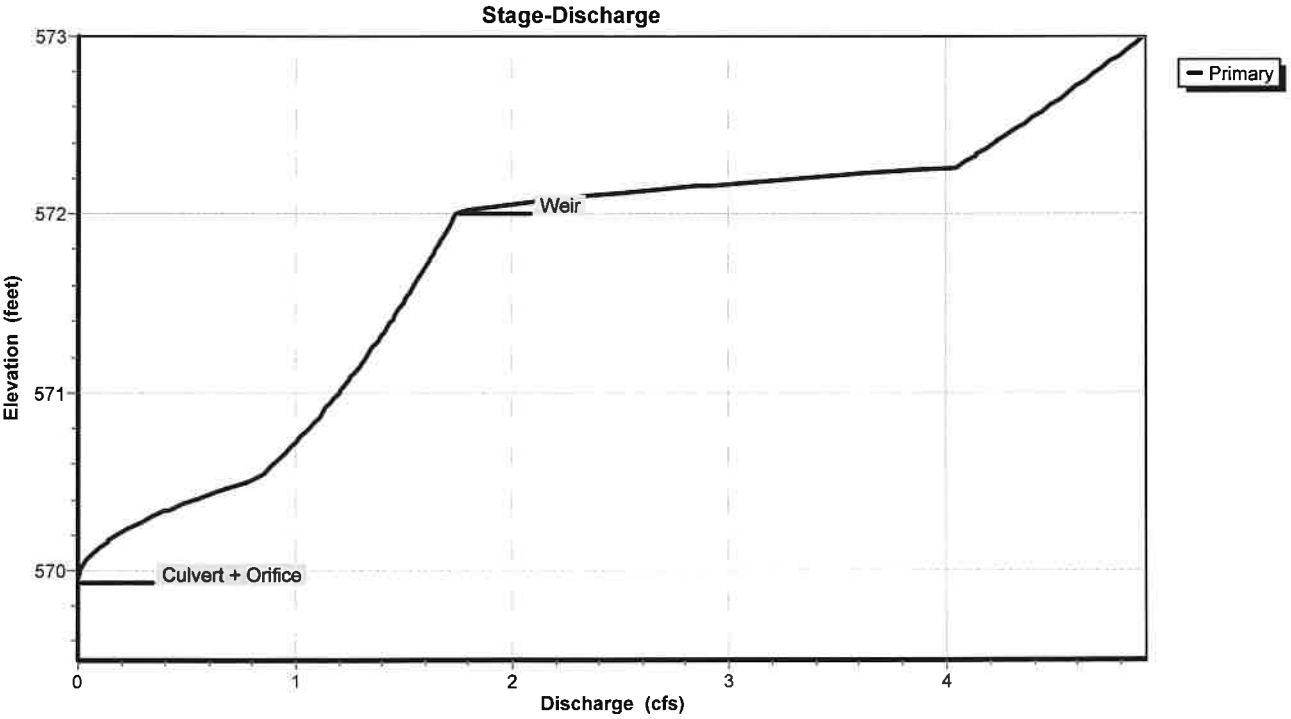
Primary OutFlow Max=1.61 cfs @ 12.54 hrs HW=571.73' (Free Discharge)
└**1=Culvert** (Passes 1.61 cfs of 3.29 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 1.61 cfs @ 6.16 fps)
  └**3=Weir** (Controls 0.00 cfs)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

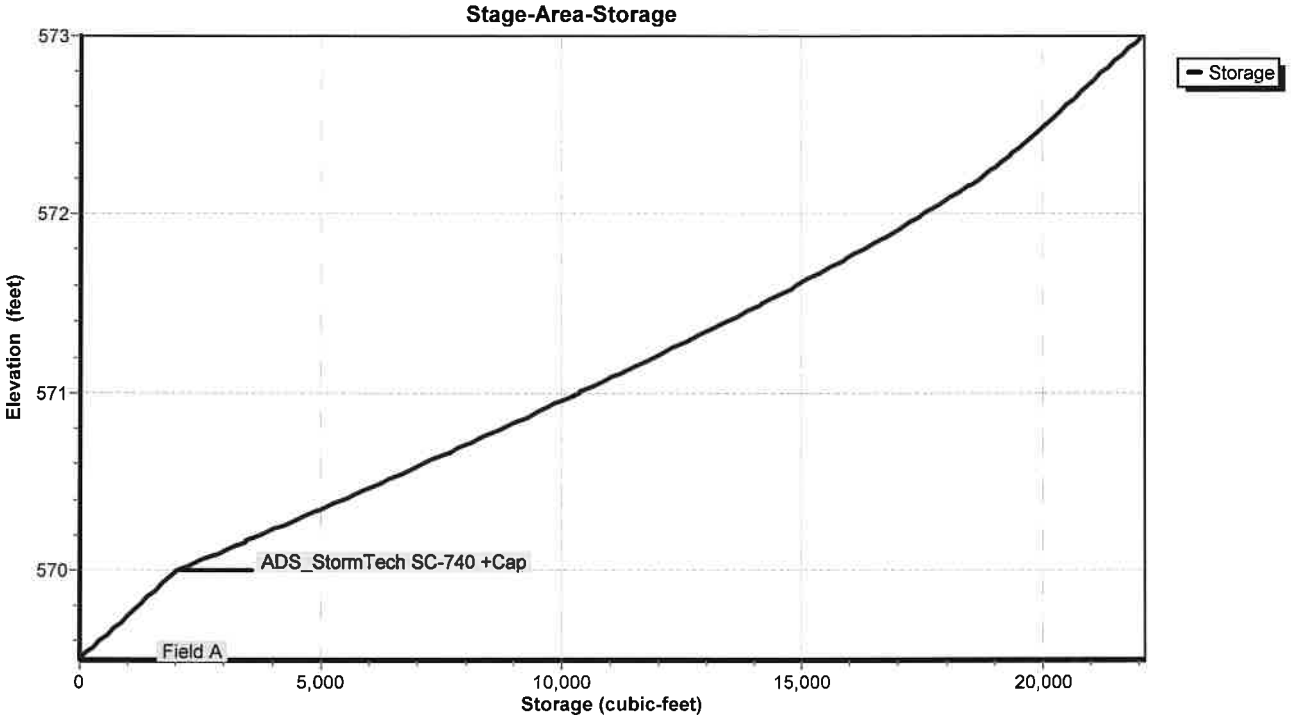


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	0	569.50	0.00
6.00	0.03	85	569.52	0.00
8.00	0.08	499	569.62	0.00
10.00	0.16	1,337	569.83	0.00
12.00	**10.28**	**7,562**	**570.65**	**0.94**
14.00	**0.49**	**12,132**	**571.23**	**1.34**
16.00	0.30	6,914	570.58	0.87
18.00	0.22	4,703	570.31	0.36
20.00	0.16	4,045	570.24	0.23
22.00	0.15	3,711	570.20	0.17
24.00	0.13	3,549	570.18	0.15
26.00	0.03	3,038	570.12	0.09
28.00	0.03	2,775	570.09	0.06
30.00	0.03	2,637	570.07	0.05
32.00	0.03	2,558	570.06	0.04
34.00	0.03	2,510	570.06	0.04
36.00	0.03	2,476	570.05	0.04
38.00	0.03	2,451	570.05	0.03
40.00	0.03	2,433	570.05	0.03
42.00	0.03	2,418	570.05	0.03
44.00	0.03	2,405	570.04	0.03
46.00	0.03	2,394	570.04	0.03
48.00	0.01	2,335	570.04	0.03
50.00	0.00	2,210	570.02	0.02
52.00	0.00	2,101	570.01	0.01
54.00	0.00	2,017	570.00	0.01
56.00	0.00	1,961	569.98	0.01
58.00	0.00	1,922	569.97	0.00
60.00	0.00	1,894	569.97	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 2.99" for 25-Year event
Inflow = 6.75 cfs @ 12.00 hrs, Volume= 0.374 af
Outflow = 4.78 cfs @ 12.08 hrs, Volume= 0.374 af, Atten= 29%, Lag= 4.5 min
Primary = 4.78 cfs @ 12.08 hrs, Volume= 0.374 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.82' @ 12.08 hrs Surf.Area= 6,409 sf Storage= 4,638 cf

Plug-Flow detention time= 252.6 min calculated for 0.374 af (100% of inflow)
Center-of-Mass det. time= 252.8 min (1,043.6 - 790.7)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

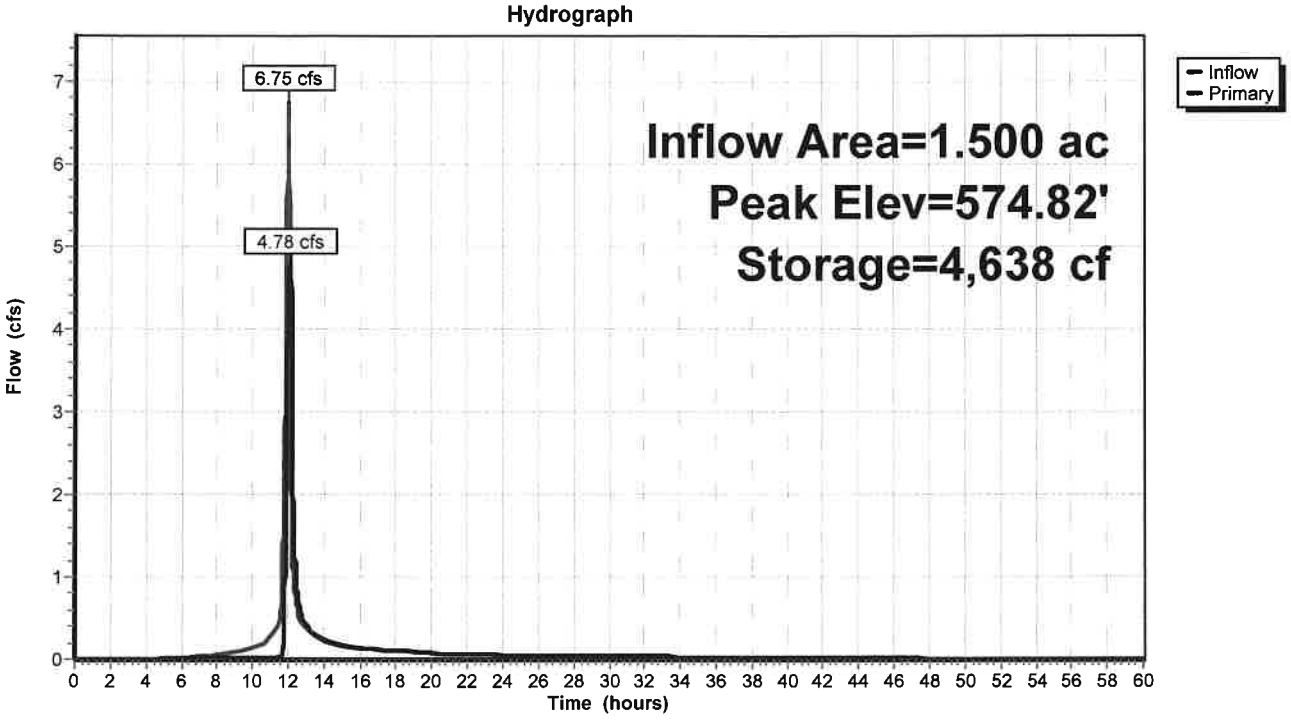
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

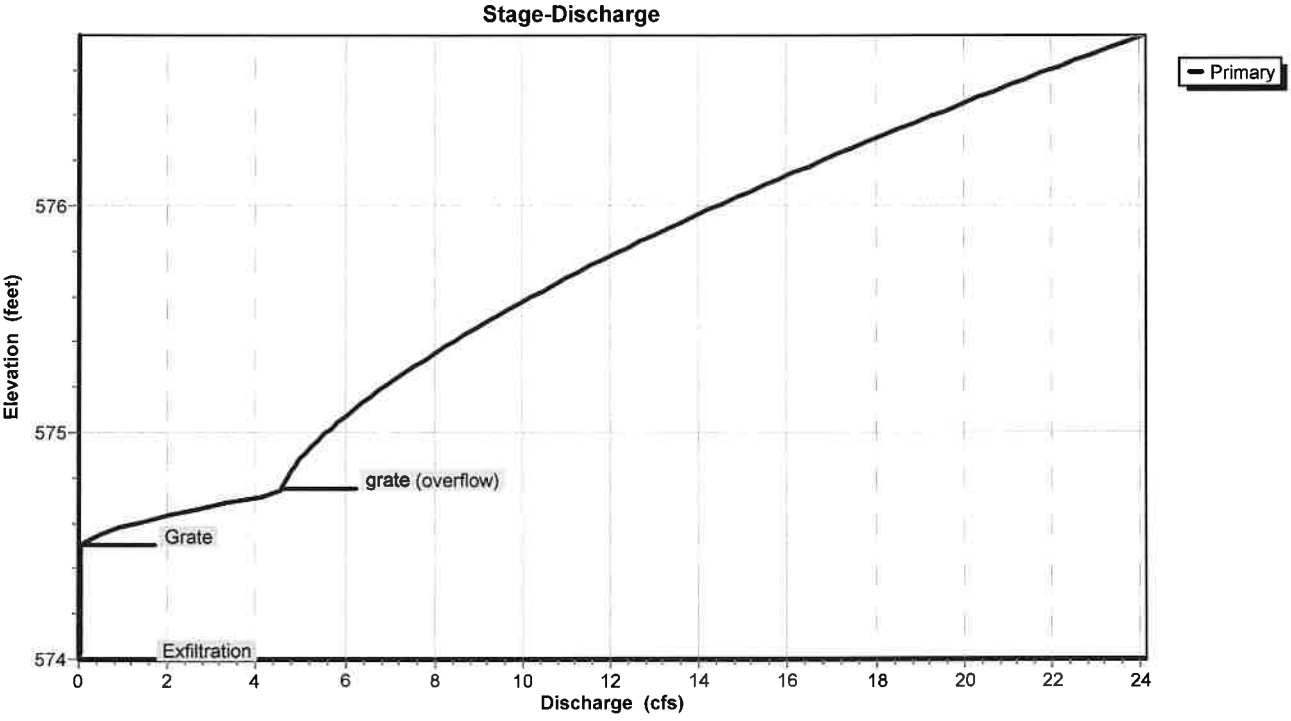
Primary OutFlow Max=4.78 cfs @ 12.08 hrs HW=574.82' (Free Discharge)
- **1=8" pipe** (Barrel Controls 4.65 cfs @ 5.92 fps)
  - **2=Grate** (Passes < 5.74 cfs potential flow)
  - **3=Exfiltration** (Passes < 0.04 cfs potential flow)
- **4=grate (overflow)** (Orifice Controls 0.13 cfs @ 0.87 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

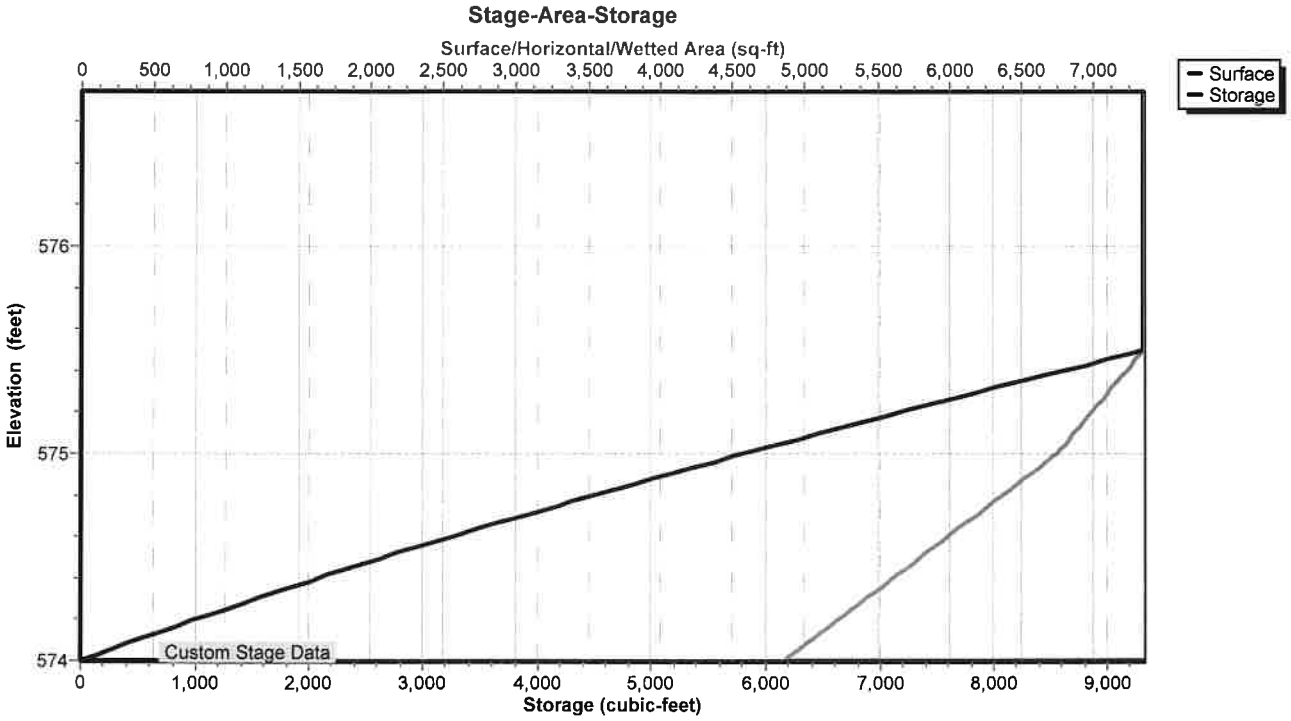


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.00	0	574.00	0.00
6.00	0.02	55	574.01	0.01
8.00	0.05	177	574.04	0.03
10.00	0.13	612	574.12	0.03
12.00	**6.75**	**4,265**	**574.77**	**4.62**
14.00	0.22	**2,825**	**574.53**	**0.24**
16.00	0.13	2,765	574.52	0.14
18.00	0.10	2,730	574.51	0.11
20.00	0.08	2,704	574.51	0.08
22.00	0.07	2,694	574.51	0.07
24.00	0.06	2,689	574.50	0.06
26.00	0.00	2,452	574.46	0.03
28.00	0.00	2,208	574.42	0.03
30.00	0.00	1,968	574.38	0.03
32.00	0.00	1,733	574.34	0.03
34.00	0.00	1,501	574.29	0.03
36.00	0.00	1,273	574.25	0.03
38.00	0.00	1,050	574.21	0.03
40.00	0.00	830	574.17	0.03
42.00	0.00	614	574.12	0.03
44.00	0.00	403	574.08	0.03
46.00	0.00	195	574.04	0.03
48.00	0.00	46	574.01	0.01
50.00	0.00	10	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=3.52"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=7.64 cfs 0.498 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=3.62"
Flow Length=345' Tc=9.1 min CN=92 Runoff=8.07 cfs 0.453 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=572.23' Storage=18,837 cf Inflow=12.80 cfs 0.951 af
Outflow=3.61 cfs 0.907 af

Pond 9P: Bioretention Area 3 Peak Elev=574.93' Storage=5,333 cf Inflow=8.07 cfs 0.453 af
Outflow=5.22 cfs 0.453 af

Total Runoff Area = 3.200 ac Runoff Volume = 0.951 af Average Runoff Depth = 3.57"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

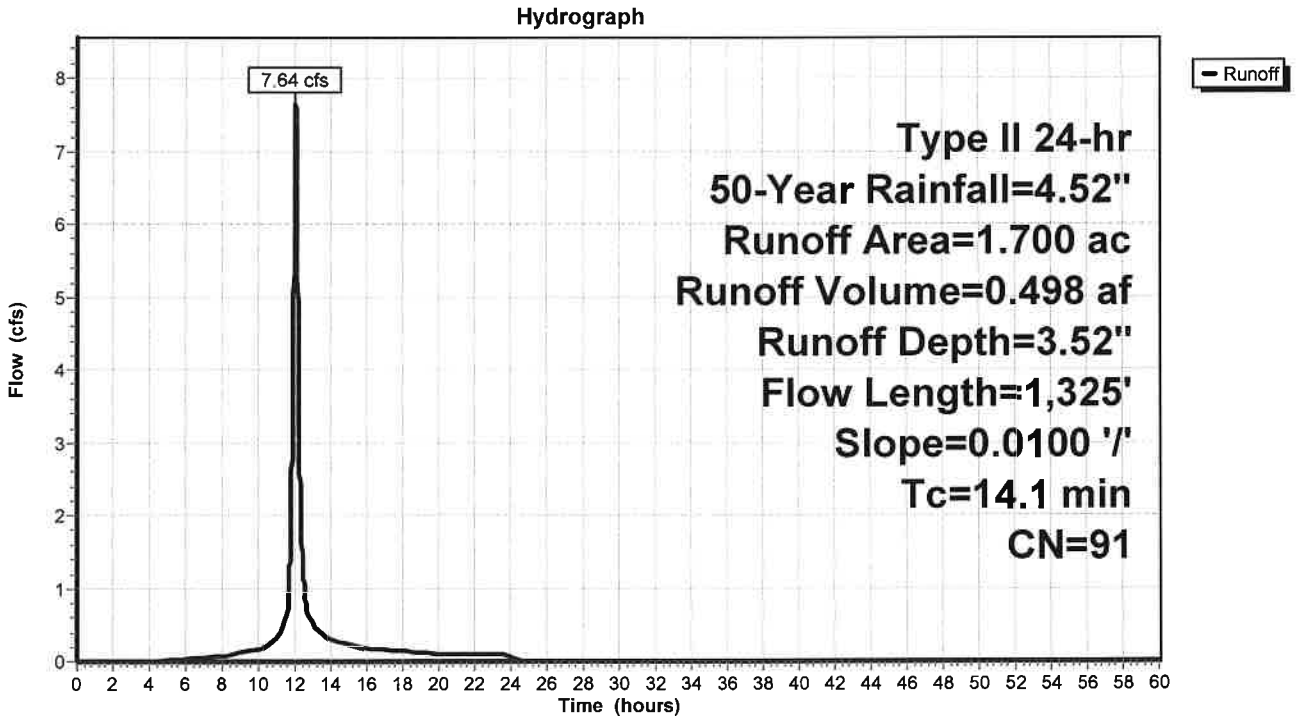
Runoff = 7.64 cfs @ 12.05 hrs, Volume= 0.498 af, Depth= 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.00
5.00	0.28	0.01	0.02
6.00	0.36	0.02	0.03
7.00	0.45	0.05	0.05
8.00	0.54	0.09	0.07
9.00	0.66	0.15	0.12
10.00	0.82	0.24	0.17
11.00	1.06	0.40	0.34
12.00	3.00	2.07	**6.84**
13.00	3.49	2.53	**0.53**
14.00	3.71	2.74	0.30
15.00	3.86	2.88	0.23
16.00	3.98	3.00	0.18
17.00	4.08	3.09	0.16
18.00	4.16	3.17	0.14
19.00	4.24	3.25	0.12
20.00	4.30	3.31	0.10
21.00	4.36	3.36	0.09
22.00	4.42	3.42	0.09
23.00	4.47	3.47	0.09
24.00	**4.52**	**3.52**	0.08
25.00	4.52	3.52	0.00
26.00	4.52	3.52	0.00
27.00	4.52	3.52	0.00
28.00	4.52	3.52	0.00
29.00	4.52	3.52	0.00
30.00	4.52	3.52	0.00
31.00	4.52	3.52	0.00
32.00	4.52	3.52	0.00
33.00	4.52	3.52	0.00
34.00	4.52	3.52	0.00
35.00	4.52	3.52	0.00
36.00	4.52	3.52	0.00
37.00	4.52	3.52	0.00
38.00	4.52	3.52	0.00
39.00	4.52	3.52	0.00
40.00	4.52	3.52	0.00
41.00	4.52	3.52	0.00
42.00	4.52	3.52	0.00
43.00	4.52	3.52	0.00
44.00	4.52	3.52	0.00
45.00	4.52	3.52	0.00
46.00	4.52	3.52	0.00
47.00	4.52	3.52	0.00
48.00	4.52	3.52	0.00
49.00	4.52	3.52	0.00
50.00	4.52	3.52	0.00
51.00	4.52	3.52	0.00
52.00	4.52	3.52	0.00
53.00	4.52	3.52	0.00
54.00	4.52	3.52	0.00
55.00	4.52	3.52	0.00
56.00	4.52	3.52	0.00
57.00	4.52	3.52	0.00
58.00	4.52	3.52	0.00
59.00	4.52	3.52	0.00
60.00	4.52	3.52	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

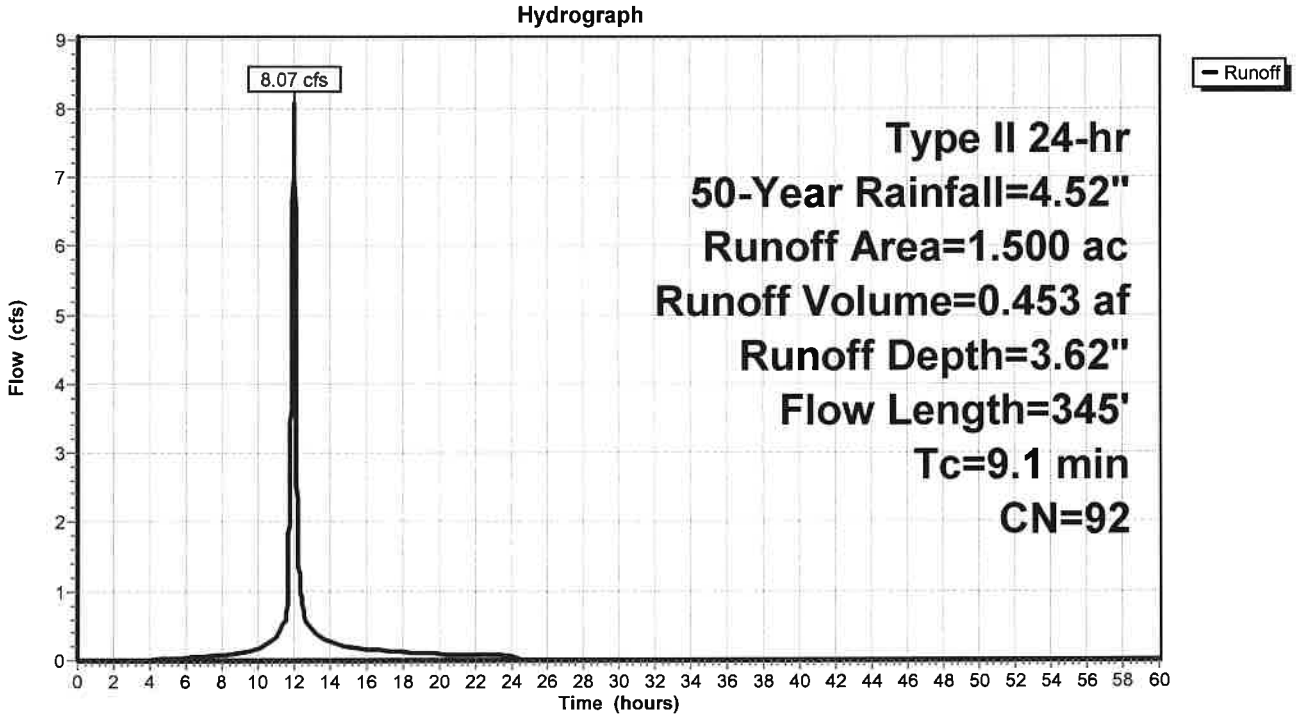
Runoff = 8.07 cfs @ 12.00 hrs, Volume= 0.453 af, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=4.52"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.05	0.00	0.00
2.00	0.10	0.00	0.00
3.00	0.16	0.00	0.00
4.00	0.22	0.00	0.01
5.00	0.28	0.01	0.02
6.00	0.36	0.03	0.04
7.00	0.45	0.07	0.06
8.00	0.54	0.11	0.07
9.00	0.66	0.18	0.12
10.00	0.82	0.27	0.17
11.00	1.06	0.45	0.34
12.00	3.00	2.16	**8.07**
13.00	3.49	2.63	0.45
14.00	3.71	2.83	0.26
15.00	3.86	2.98	0.20
16.00	3.98	3.10	0.16
17.00	4.08	3.19	0.14
18.00	4.16	3.28	0.12
19.00	4.24	3.35	0.11
20.00	4.30	3.41	0.09
21.00	4.36	3.47	0.08
22.00	4.42	3.52	0.08
23.00	4.47	3.57	0.08
24.00	**4.52**	**3.62**	0.07
25.00	4.52	3.62	0.00
26.00	4.52	3.62	0.00
27.00	4.52	3.62	0.00
28.00	4.52	3.62	0.00
29.00	4.52	3.62	0.00
30.00	4.52	3.62	0.00
31.00	4.52	3.62	0.00
32.00	4.52	3.62	0.00
33.00	4.52	3.62	0.00
34.00	4.52	3.62	0.00
35.00	4.52	3.62	0.00
36.00	4.52	3.62	0.00
37.00	4.52	3.62	0.00
38.00	4.52	3.62	0.00
39.00	4.52	3.62	0.00
40.00	4.52	3.62	0.00
41.00	4.52	3.62	0.00
42.00	4.52	3.62	0.00
43.00	4.52	3.62	0.00
44.00	4.52	3.62	0.00
45.00	4.52	3.62	0.00
46.00	4.52	3.62	0.00
47.00	4.52	3.62	0.00
48.00	4.52	3.62	0.00
49.00	4.52	3.62	0.00
50.00	4.52	3.62	0.00
51.00	4.52	3.62	0.00
52.00	4.52	3.62	0.00
53.00	4.52	3.62	0.00
54.00	4.52	3.62	0.00
55.00	4.52	3.62	0.00
56.00	4.52	3.62	0.00
57.00	4.52	3.62	0.00
58.00	4.52	3.62	0.00
59.00	4.52	3.62	0.00
60.00	4.52	3.62	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 3.57" for 50-Year event
Inflow = 12.80 cfs @ 12.06 hrs, Volume= 0.951 af
Outflow = 3.61 cfs @ 12.36 hrs, Volume= 0.907 af, Atten= 72%, Lag= 17.7 min
Primary = 3.61 cfs @ 12.36 hrs, Volume= 0.907 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 572.23' @ 12.36 hrs Surf.Area= 10,145 sf Storage= 18,837 cf

Plug-Flow detention time= 228.3 min calculated for 0.907 af (95% of inflow)
Center-of-Mass det. time= 158.8 min (1,051.4 - 892.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

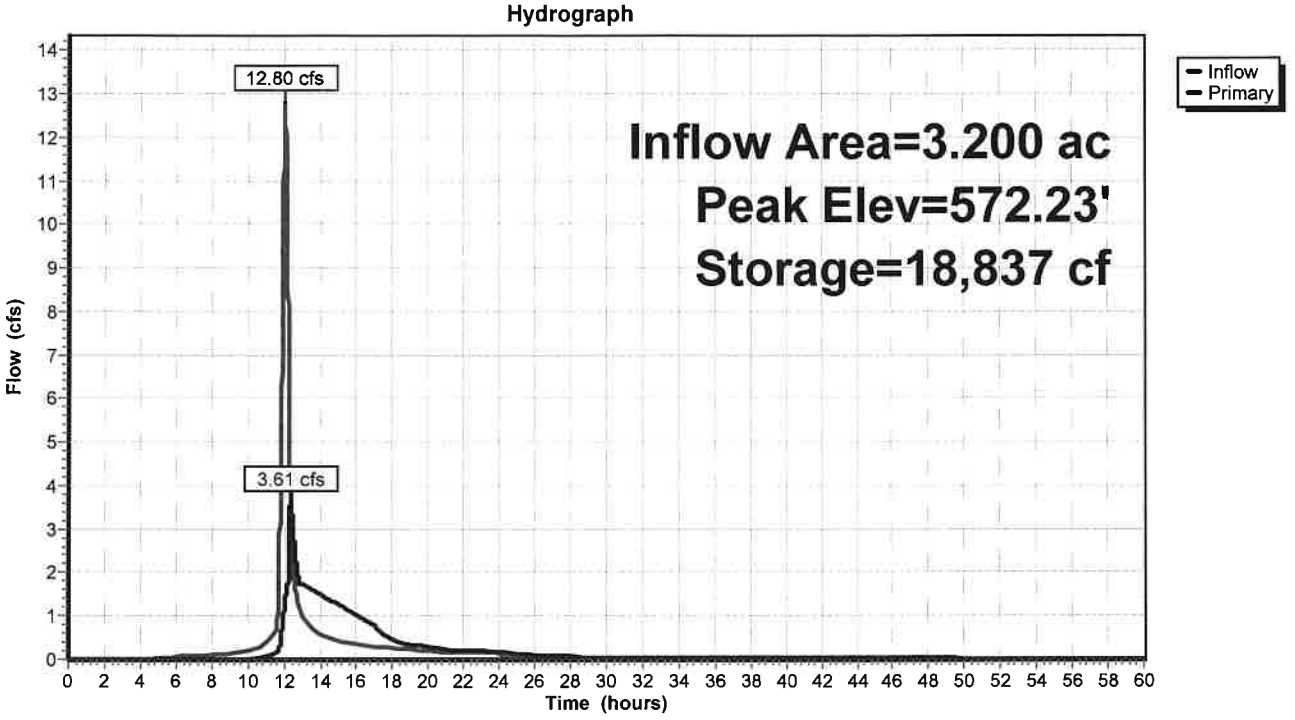
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

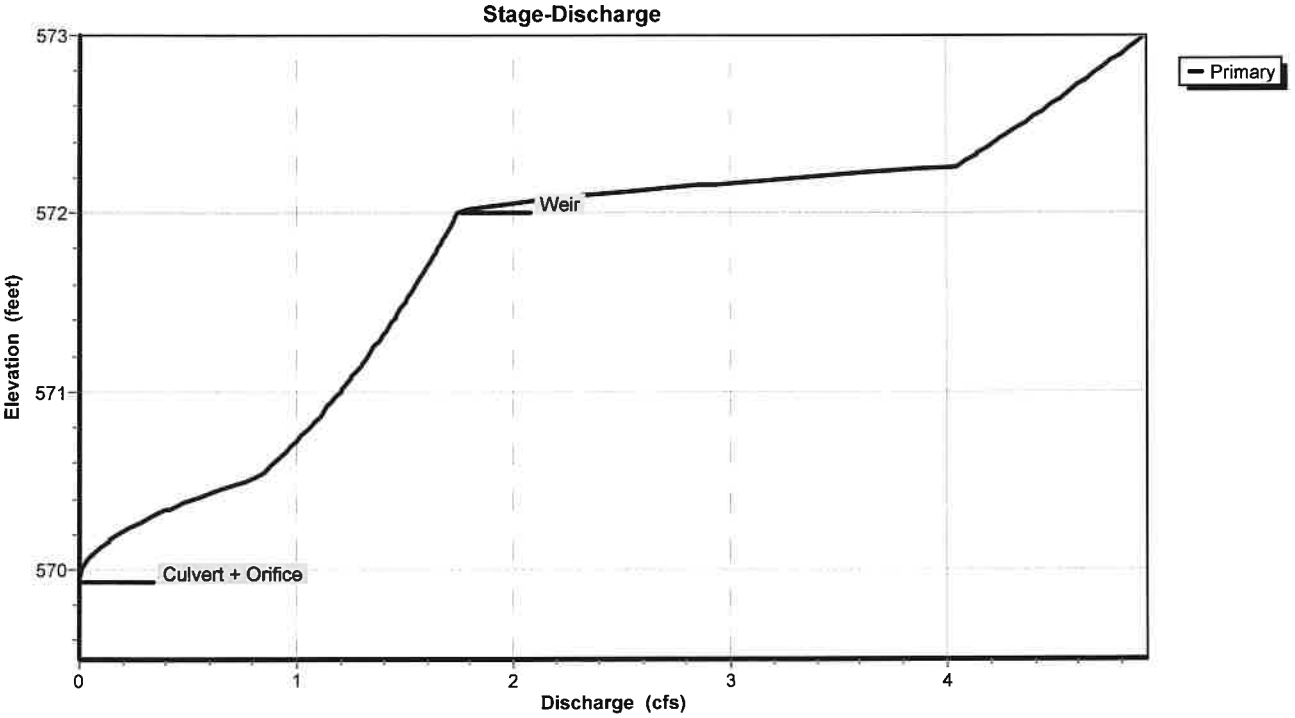
Primary OutFlow Max=3.60 cfs @ 12.36 hrs HW=572.23' (Free Discharge)
└**1=Culvert** (Passes 3.60 cfs of 4.00 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 1.84 cfs @ 7.03 fps)
  └**3=Weir** (Weir Controls 1.76 cfs @ 1.56 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

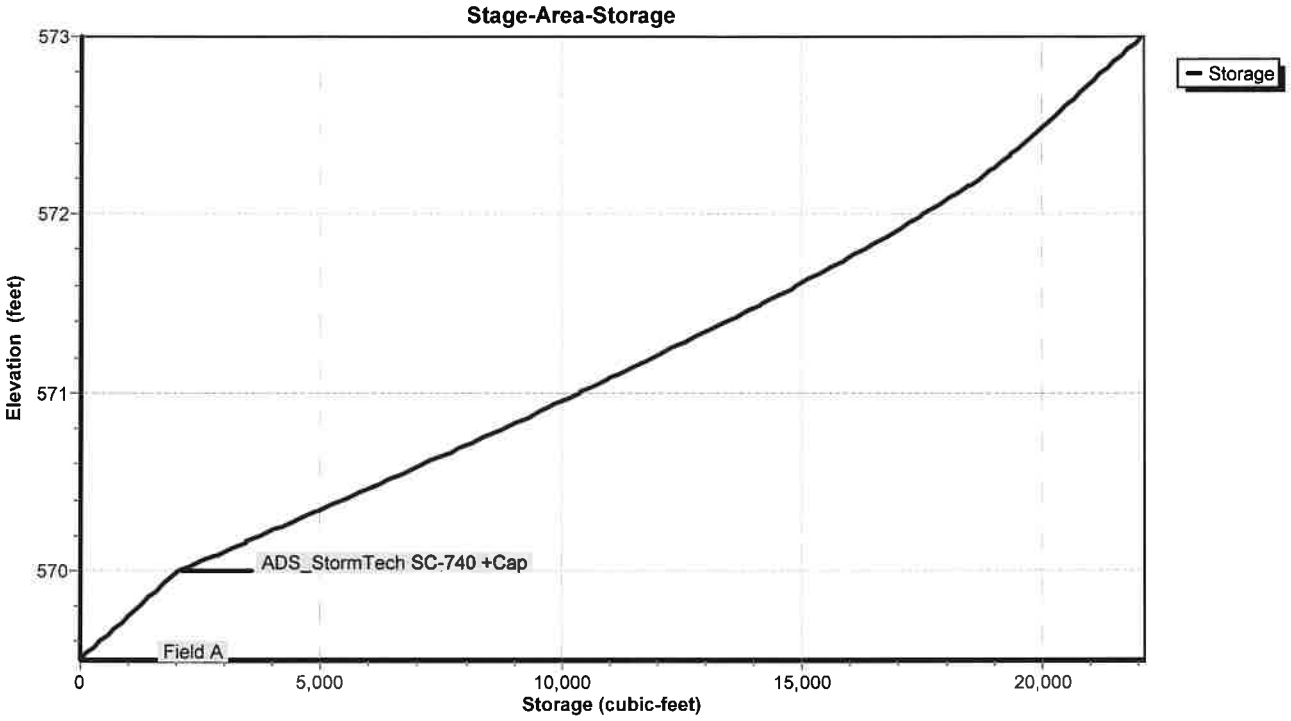


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.00	1	569.50	0.00
6.00	0.05	184	569.55	0.00
8.00	0.10	755	569.69	0.00
10.00	0.20	1,811	569.95	0.00
12.00	**11.66**	**9,752**	**570.92**	**1.15**
14.00	**0.59**	**14,219**	**571.51**	**1.50**
16.00	0.35	8,385	570.75	1.02
18.00	0.26	5,166	570.37	0.47
20.00	0.19	4,282	570.26	0.27
22.00	0.17	3,893	570.22	0.20
24.00	0.16	3,718	570.20	0.18
26.00	0.03	3,113	570.13	0.09
28.00	0.03	2,810	570.09	0.06
30.00	0.03	2,657	570.07	0.05
32.00	0.03	2,569	570.06	0.04
34.00	0.03	2,516	570.06	0.04
36.00	0.03	2,480	570.05	0.04
38.00	0.03	2,454	570.05	0.03
40.00	0.03	2,435	570.05	0.03
42.00	0.03	2,419	570.05	0.03
44.00	0.03	2,406	570.04	0.03
46.00	0.03	2,395	570.04	0.03
48.00	0.01	2,338	570.04	0.03
50.00	0.00	2,213	570.02	0.02
52.00	0.00	2,103	570.01	0.01
54.00	0.00	2,018	570.00	0.01
56.00	0.00	1,962	569.98	0.01
58.00	0.00	1,923	569.97	0.00
60.00	0.00	1,894	569.97	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 3.62" for 50-Year event
Inflow = 8.07 cfs @ 12.00 hrs, Volume= 0.453 af
Outflow = 5.22 cfs @ 12.09 hrs, Volume= 0.453 af, Atten= 35%, Lag= 5.1 min
Primary = 5.22 cfs @ 12.09 hrs, Volume= 0.453 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 574.93' @ 12.09 hrs Surf.Area= 6,611 sf Storage= 5,333 cf

Plug-Flow detention time= 214.9 min calculated for 0.453 af (100% of inflow)
Center-of-Mass det. time= 215.2 min (1,000.7 - 785.5)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

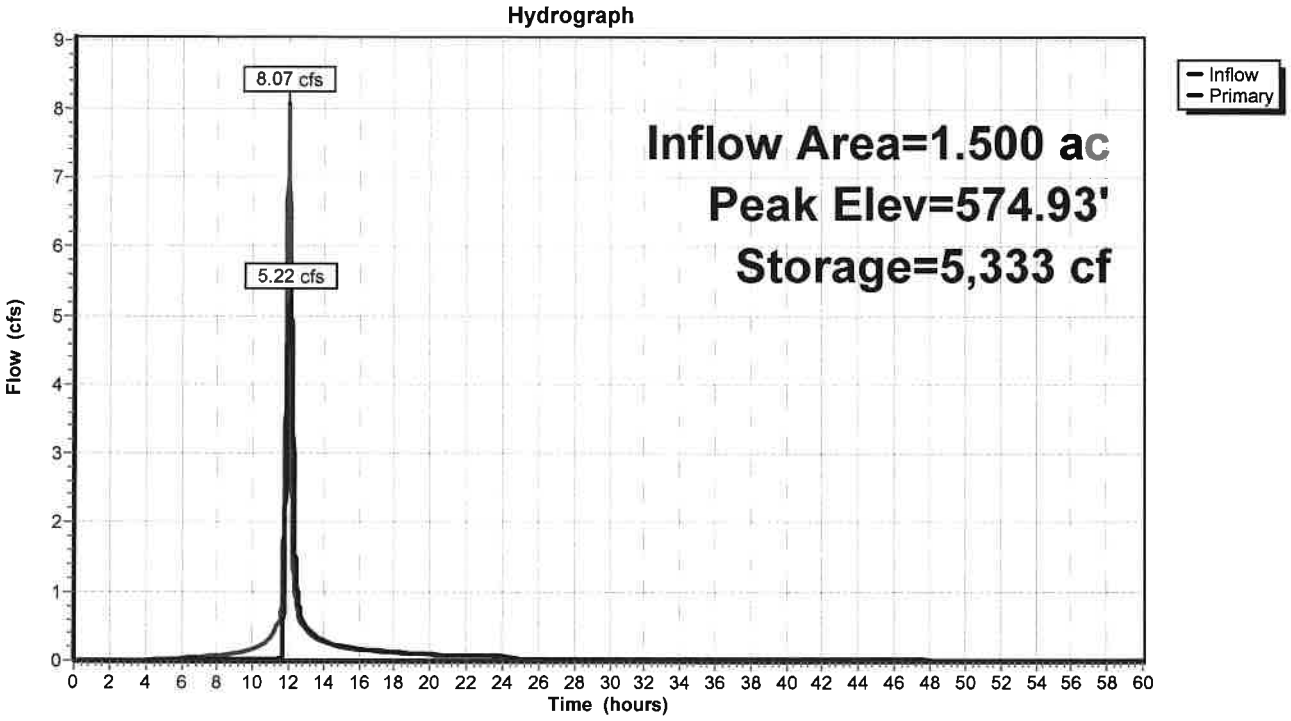
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

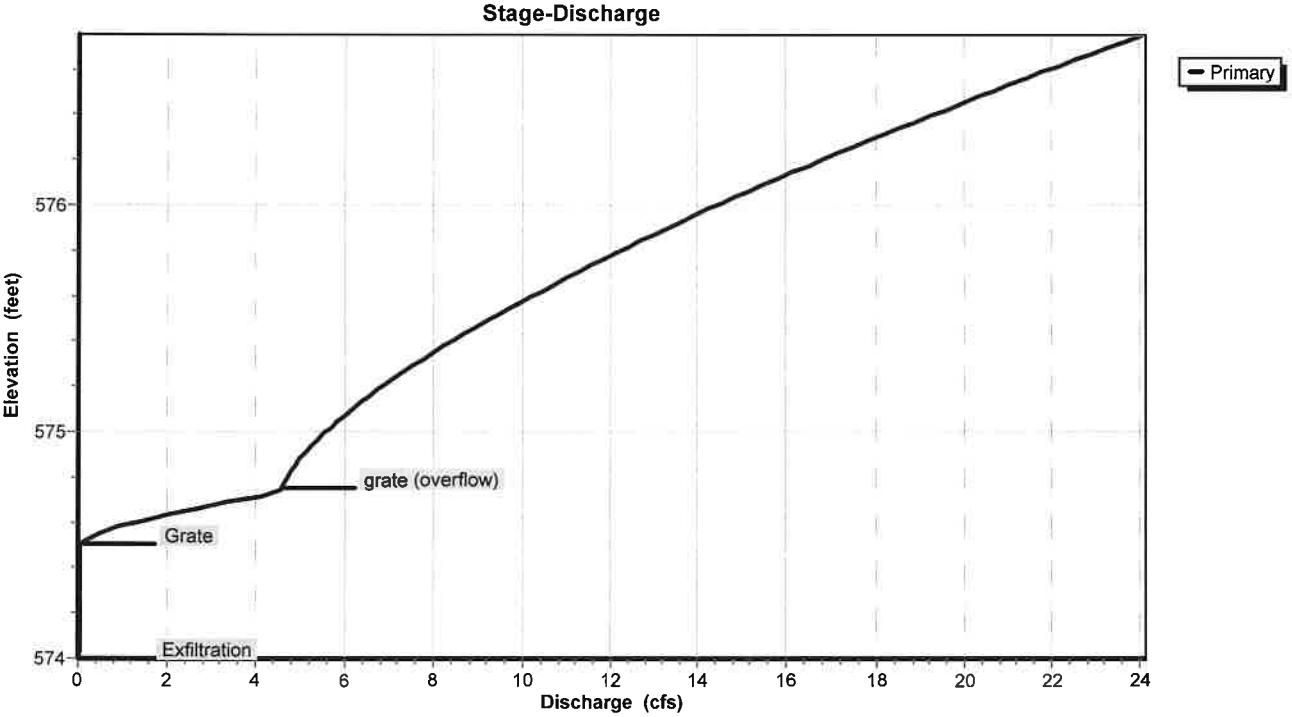
Primary OutFlow Max=5.22 cfs @ 12.09 hrs HW=574.93' (Free Discharge)
- **1=8" pipe** (Barrel Controls 4.73 cfs @ 6.02 fps)
  - **2=Grate** (Passes < 6.61 cfs potential flow)
  - **3=Exfiltration** (Passes < 0.04 cfs potential flow)
- **4=grate (overflow)** (Orifice Controls 0.49 cfs @ 1.36 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

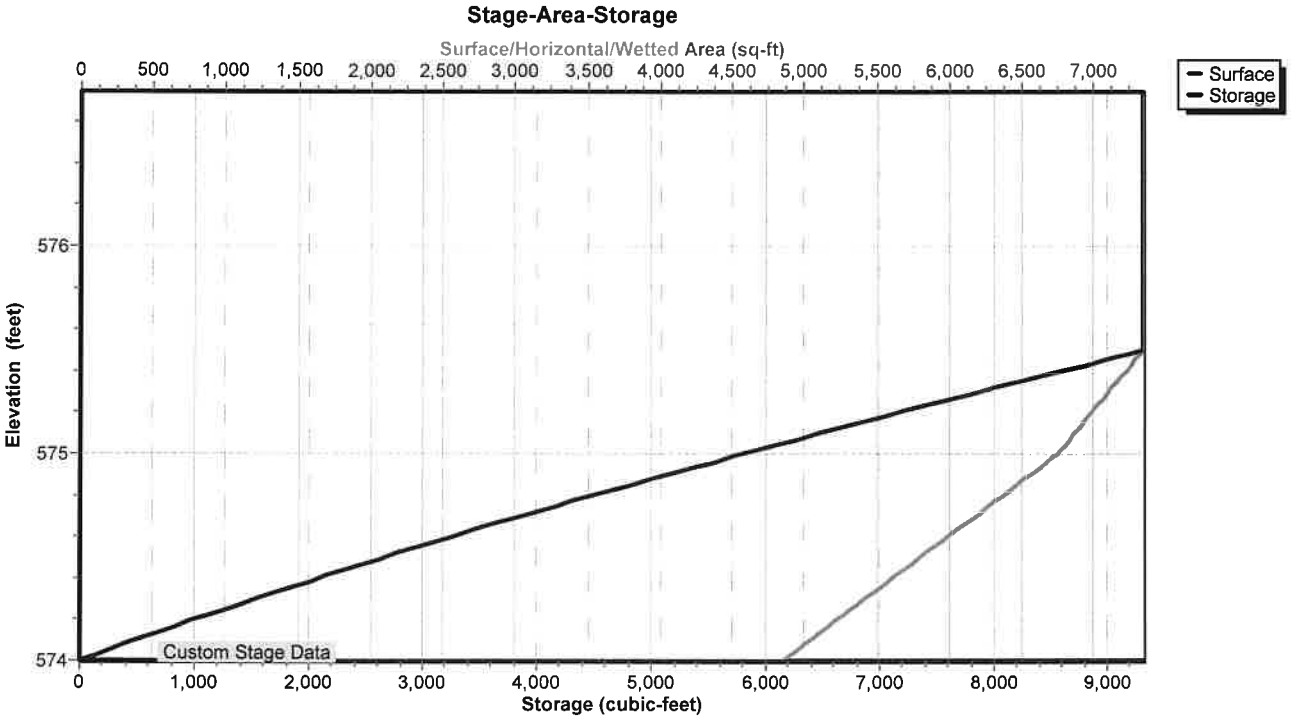


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.01	6	574.00	0.00
6.00	0.04	95	574.02	0.02
8.00	0.07	296	574.06	0.03
10.00	0.17	928	574.18	0.03
12.00	**8.07**	**4,720**	**574.84**	**4.83**
14.00	0.26	**2,846**	**574.53**	**0.28**
16.00	0.16	2,787	574.52	0.17
18.00	0.12	2,748	574.51	0.13
20.00	0.09	2,717	574.51	0.09
22.00	0.08	2,706	574.51	0.08
24.00	0.07	2,699	574.51	0.07
26.00	0.00	2,457	574.46	0.03
28.00	0.00	2,213	574.42	0.03
30.00	0.00	1,974	574.38	0.03
32.00	0.00	1,738	574.34	0.03
34.00	0.00	1,506	574.29	0.03
36.00	0.00	1,278	574.25	0.03
38.00	0.00	1,055	574.21	0.03
40.00	0.00	835	574.17	0.03
42.00	0.00	619	574.12	0.03
44.00	0.00	407	574.08	0.03
46.00	0.00	199	574.04	0.03
48.00	0.00	47	574.01	0.01
50.00	0.00	10	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	0	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 8S: Front Area 2 Runoff Area=1.700 ac 58.82% Impervious Runoff Depth=4.25"
Flow Length=1,325' Slope=0.0100 '/' Tc=14.1 min CN=91 Runoff=9.15 cfs 0.603 af

Subcatchment 10S: Rear Area 2 Runoff Area=1.500 ac 66.67% Impervious Runoff Depth=4.36"
Flow Length=345' Tc=9.1 min CN=92 Runoff=9.61 cfs 0.545 af

Pond 7P: Underground Storage (SMA #2) Peak Elev=572.92' Storage=21,772 cf Inflow=14.92 cfs 1.148 af
Outflow=4.83 cfs 1.105 af

Pond 9P: Bioretention Area 3 Peak Elev=575.05' Storage=6,150 cf Inflow=9.61 cfs 0.545 af
Outflow=5.89 cfs 0.545 af

Total Runoff Area = 3.200 ac Runoff Volume = 1.148 af Average Runoff Depth = 4.31"
37.50% Pervious = 1.200 ac 62.50% Impervious = 2.000 ac

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 8S: Front Area 2

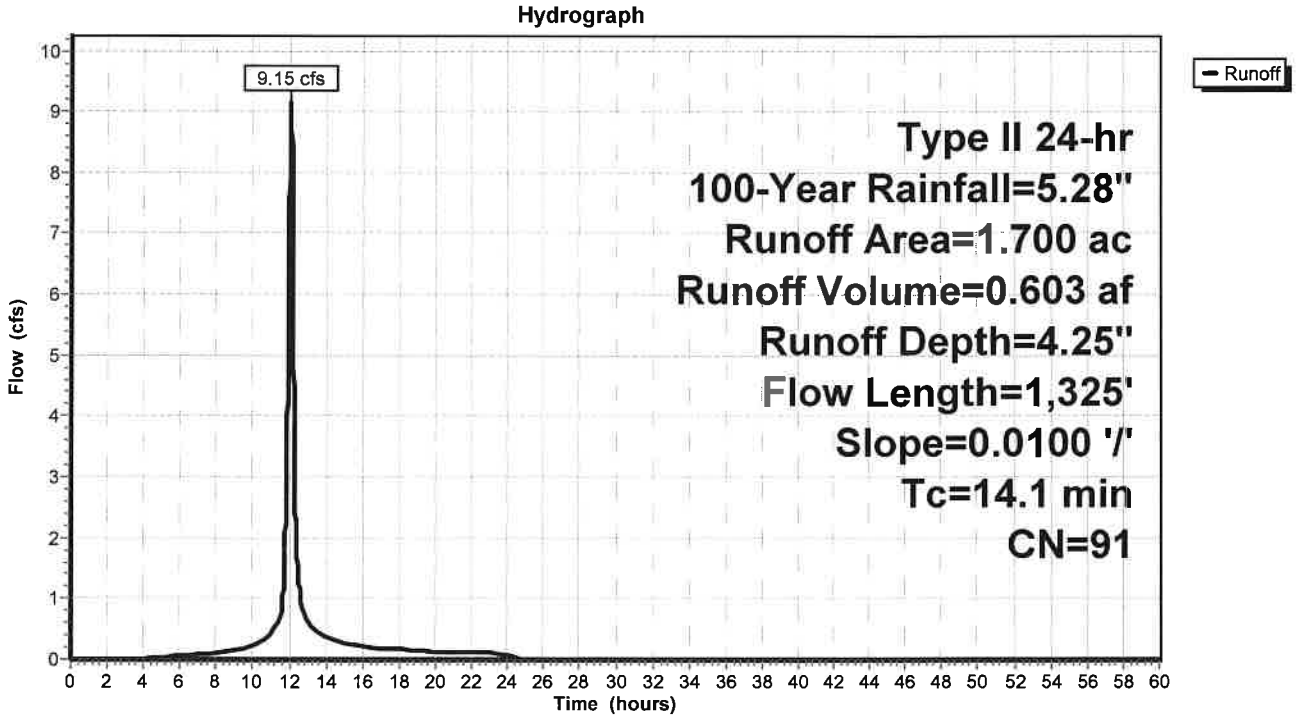
Runoff = 9.15 cfs @ 12.05 hrs, Volume= 0.603 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.700	98	Paved parking, HSG D
0.300	98	Roofs, HSG D
0.700	80	>75% Grass cover, Good, HSG D
1.700	91	Weighted Average
0.700		41.18% Pervious Area
1.000		58.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	40	0.0100	0.09		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
7.1	1,285		3.00		**Direct Entry, Pipe flow**
14.1	1,325	Total			

Subcatchment 8S: Front Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 8S: Front Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.00	0.01
5.00	0.33	0.02	0.03
6.00	0.42	0.04	0.05
7.00	0.52	0.08	0.07
8.00	0.63	0.13	0.10
9.00	0.78	0.21	0.16
10.00	0.96	0.33	0.22
11.00	1.24	0.54	0.43
12.00	3.50	2.54	**8.21**
13.00	4.08	3.09	**0.63**
14.00	4.33	3.33	0.36
15.00	4.51	3.50	0.28
16.00	4.65	3.64	0.21
17.00	4.76	3.75	0.18
18.00	4.86	3.85	0.16
19.00	4.95	3.93	0.14
20.00	5.03	4.01	0.12
21.00	5.09	4.07	0.11
22.00	5.16	4.14	0.11
23.00	5.22	4.20	0.10
24.00	**5.28**	**4.25**	0.10
25.00	5.28	4.25	0.00
26.00	5.28	4.25	0.00
27.00	5.28	4.25	0.00
28.00	5.28	4.25	0.00
29.00	5.28	4.25	0.00
30.00	5.28	4.25	0.00
31.00	5.28	4.25	0.00
32.00	5.28	4.25	0.00
33.00	5.28	4.25	0.00
34.00	5.28	4.25	0.00
35.00	5.28	4.25	0.00
36.00	5.28	4.25	0.00
37.00	5.28	4.25	0.00
38.00	5.28	4.25	0.00
39.00	5.28	4.25	0.00
40.00	5.28	4.25	0.00
41.00	5.28	4.25	0.00
42.00	5.28	4.25	0.00
43.00	5.28	4.25	0.00
44.00	5.28	4.25	0.00
45.00	5.28	4.25	0.00
46.00	5.28	4.25	0.00
47.00	5.28	4.25	0.00
48.00	5.28	4.25	0.00
49.00	5.28	4.25	0.00
50.00	5.28	4.25	0.00
51.00	5.28	4.25	0.00
52.00	5.28	4.25	0.00
53.00	5.28	4.25	0.00
54.00	5.28	4.25	0.00
55.00	5.28	4.25	0.00
56.00	5.28	4.25	0.00
57.00	5.28	4.25	0.00
58.00	5.28	4.25	0.00
59.00	5.28	4.25	0.00
60.00	5.28	4.25	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Subcatchment 10S: Rear Area 2

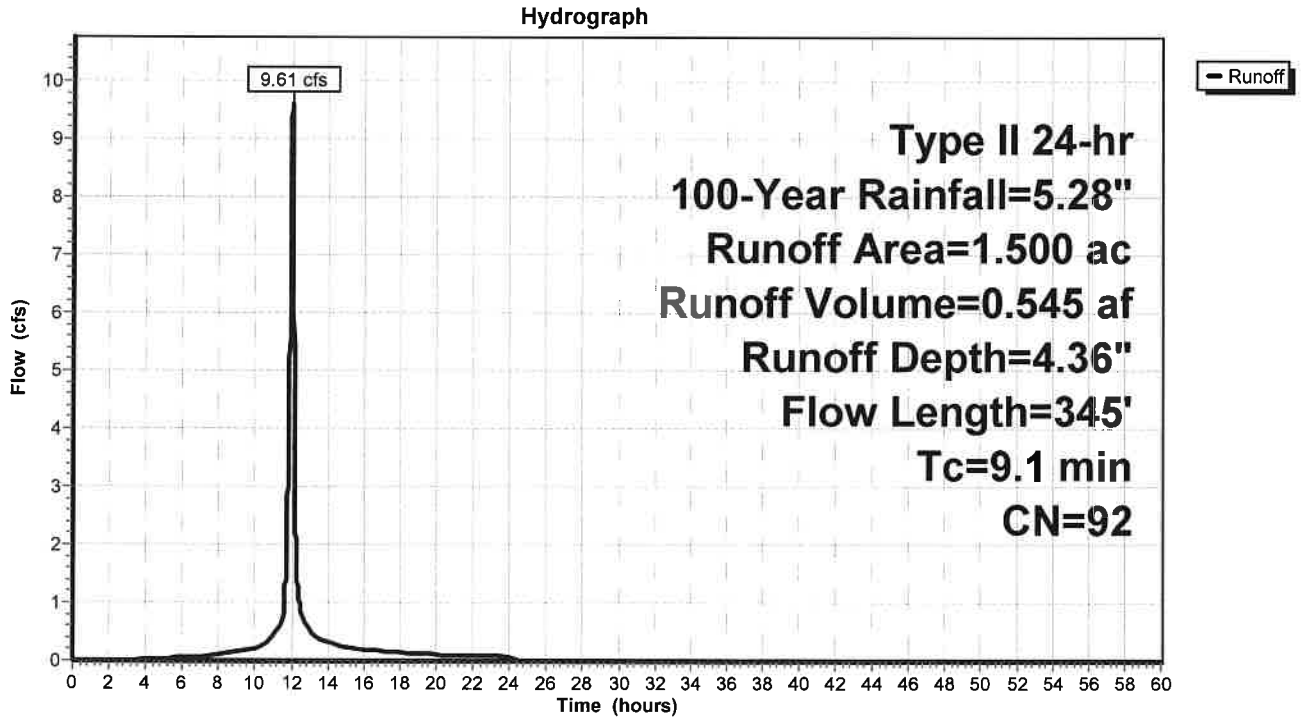
Runoff = 9.61 cfs @ 12.00 hrs, Volume= 0.545 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.500	98	Roofs, HSG D
0.500	80	>75% Grass cover, Good, HSG D
1.500	92	Weighted Average
0.500		33.33% Pervious Area
1.000		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	55	0.0200	0.13		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
0.8	45	0.0170	0.97		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
1.4	245		3.00		**Direct Entry, Pipe flow**
9.1	345	Total			

Subcatchment 10S: Rear Area 2



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Subcatchment 10S: Rear Area 2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.12	0.00	0.00
3.00	0.18	0.00	0.00
4.00	0.25	0.01	0.02
5.00	0.33	0.02	0.03
6.00	0.42	0.06	0.05
7.00	0.52	0.10	0.08
8.00	0.63	0.16	0.10
9.00	0.78	0.25	0.16
10.00	0.96	0.37	0.22
11.00	1.24	0.59	0.42
12.00	3.50	2.64	**9.61**
13.00	4.08	3.19	0.53
14.00	4.33	3.44	0.31
15.00	4.51	3.61	0.24
16.00	4.65	3.74	0.19
17.00	4.76	3.86	0.16
18.00	4.86	3.96	0.14
19.00	4.95	4.04	0.12
20.00	5.03	4.12	0.10
21.00	5.09	4.18	0.10
22.00	5.16	4.24	0.09
23.00	5.22	4.30	0.09
24.00	**5.28**	**4.36**	0.09
25.00	5.28	4.36	0.00
26.00	5.28	4.36	0.00
27.00	5.28	4.36	0.00
28.00	5.28	4.36	0.00
29.00	5.28	4.36	0.00
30.00	5.28	4.36	0.00
31.00	5.28	4.36	0.00
32.00	5.28	4.36	0.00
33.00	5.28	4.36	0.00
34.00	5.28	4.36	0.00
35.00	5.28	4.36	0.00
36.00	5.28	4.36	0.00
37.00	5.28	4.36	0.00
38.00	5.28	4.36	0.00
39.00	5.28	4.36	0.00
40.00	5.28	4.36	0.00
41.00	5.28	4.36	0.00
42.00	5.28	4.36	0.00
43.00	5.28	4.36	0.00
44.00	5.28	4.36	0.00
45.00	5.28	4.36	0.00
46.00	5.28	4.36	0.00
47.00	5.28	4.36	0.00
48.00	5.28	4.36	0.00
49.00	5.28	4.36	0.00
50.00	5.28	4.36	0.00
51.00	5.28	4.36	0.00
52.00	5.28	4.36	0.00
53.00	5.28	4.36	0.00
54.00	5.28	4.36	0.00
55.00	5.28	4.36	0.00
56.00	5.28	4.36	0.00
57.00	5.28	4.36	0.00
58.00	5.28	4.36	0.00
59.00	5.28	4.36	0.00
60.00	5.28	4.36	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 7P: Underground Storage (SMA #2)

Inflow Area = 3.200 ac, 62.50% Impervious, Inflow Depth = 4.31" for 100-Year event
Inflow = 14.92 cfs @ 12.06 hrs, Volume= 1.148 af
Outflow = 4.83 cfs @ 12.36 hrs, Volume= 1.105 af, Atten= 68%, Lag= 18.1 min
Primary = 4.83 cfs @ 12.36 hrs, Volume= 1.105 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 572.92' @ 12.36 hrs Surf.Area= 10,145 sf Storage= 21,772 cf

Plug-Flow detention time= 201.7 min calculated for 1.105 af (96% of inflow)
Center-of-Mass det. time= 143.6 min (1,016.5 - 873.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	569.50'	8,947 cf	**53.75'W x 188.74'L x 3.50'H Field A** 35,506 cf Overall - 13,139 cf Embedded = 22,367 cf x 40.0% Voids
#2A	570.00'	13,139 cf	**ADS_StormTech SC-740 +Cap** x 286 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 11 Rows of 26 Chambers
		22,086 cf	Total Available Storage

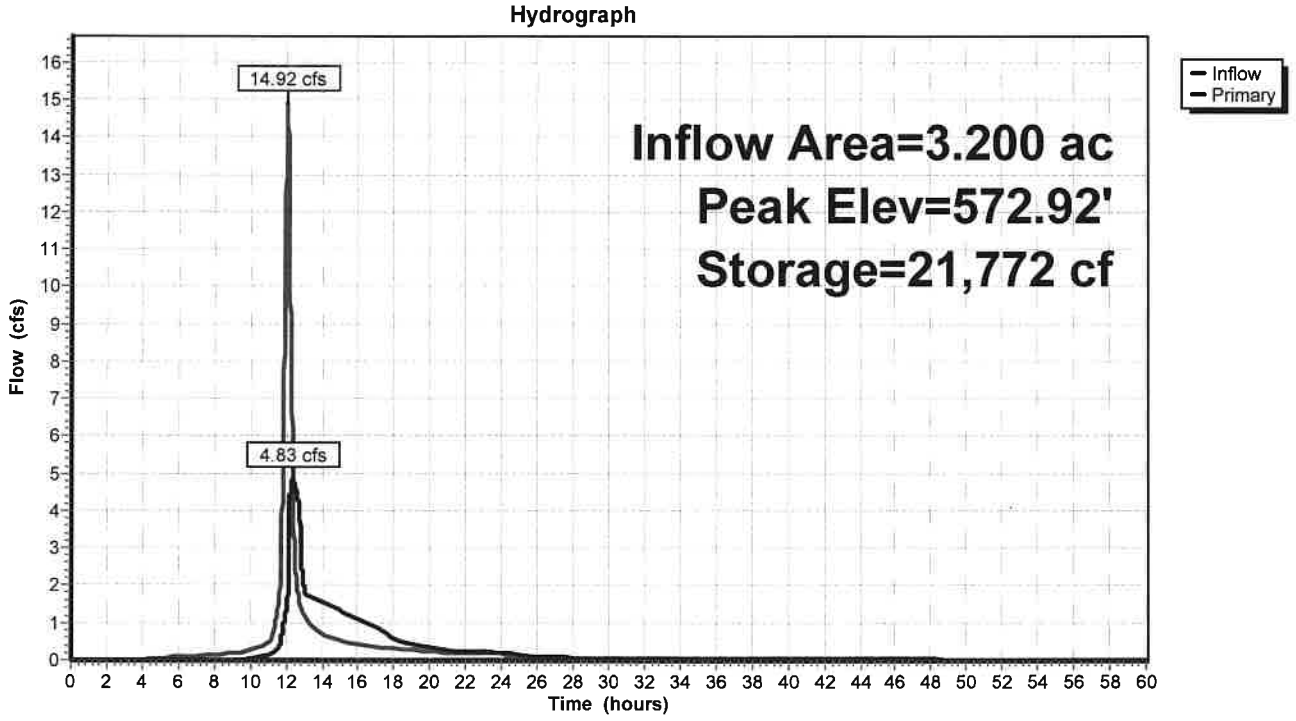
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	569.93'	**12.0" Round Culvert** L= 72.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.93' / 569.71' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	569.93'	**4.0" Vert. Orifice X 3.00** C= 0.600
#3	Device 1	572.00'	**5.0' long Weir** 2 End Contraction(s)

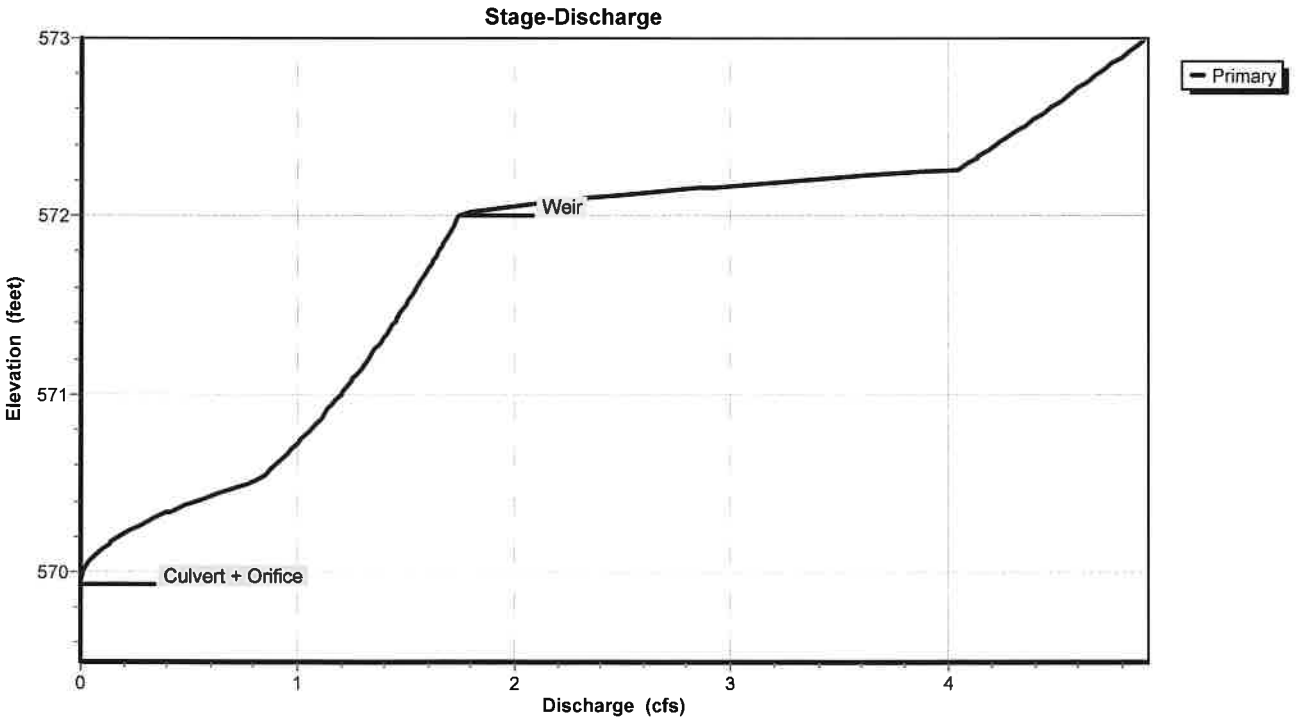
Primary OutFlow Max=4.83 cfs @ 12.36 hrs HW=572.92' (Free Discharge)
↑**1=Culvert** (Barrel Controls 4.83 cfs @ 6.16 fps)
↑**2=Orifice** (Passes < 2.12 cfs potential flow)
3=Weir (Passes < 13.95 cfs potential flow)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)

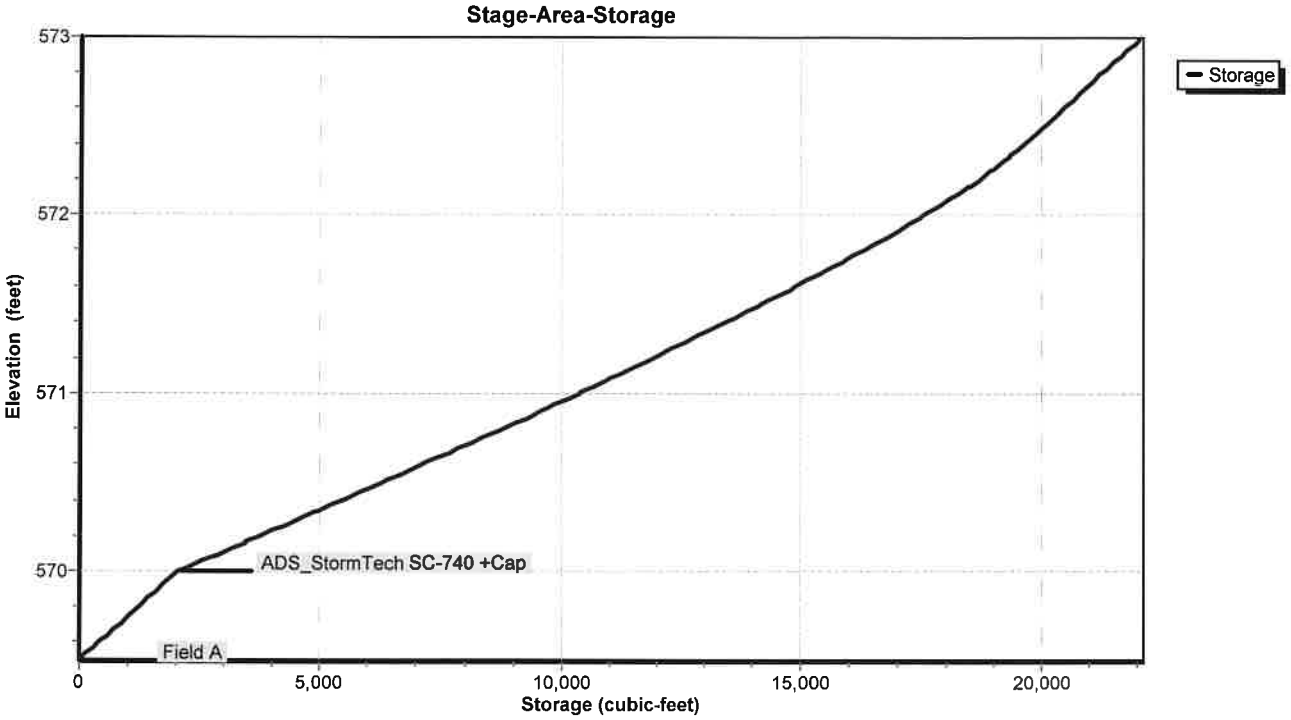


Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 7P: Underground Storage (SMA #2)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 7P: Underground Storage (SMA #2)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	569.50	0.00
2.00	0.00	0	569.50	0.00
4.00	0.01	16	569.50	0.00
6.00	0.08	340	569.58	0.00
8.00	0.13	1,076	569.77	0.00
10.00	0.25	2,364	570.04	0.03
12.00	**13.40**	**12,150**	**571.23**	**1.34**
14.00	**0.69**	**15,059**	**571.63**	**1.56**
16.00	0.41	9,280	570.86	1.10
18.00	0.31	5,592	570.42	0.57
20.00	0.23	4,514	570.29	0.32
22.00	0.20	4,084	570.24	0.24
24.00	0.19	3,896	570.22	0.21
26.00	0.03	3,188	570.13	0.10
28.00	0.03	2,846	570.09	0.07
30.00	0.03	2,675	570.08	0.05
32.00	0.03	2,579	570.06	0.04
34.00	0.03	2,522	570.06	0.04
36.00	0.03	2,484	570.05	0.04
38.00	0.03	2,457	570.05	0.03
40.00	0.03	2,436	570.05	0.03
42.00	0.03	2,420	570.05	0.03
44.00	0.03	2,407	570.04	0.03
46.00	0.03	2,395	570.04	0.03
48.00	0.01	2,341	570.04	0.03
50.00	0.00	2,216	570.02	0.02
52.00	0.00	2,105	570.01	0.01
54.00	0.00	2,020	570.00	0.01
56.00	0.00	1,963	569.98	0.01
58.00	0.00	1,923	569.97	0.00
60.00	0.00	1,895	569.97	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
569.50	0.00	570.54	0.84	571.58	1.54	572.62	4.49
569.52	0.00	570.56	0.86	571.60	1.55	572.64	4.52
569.54	0.00	570.58	0.88	571.62	1.56	572.66	4.54
569.56	0.00	570.60	0.89	571.64	1.57	572.68	4.56
569.58	0.00	570.62	0.91	571.66	1.58	572.70	4.58
569.60	0.00	570.64	0.93	571.68	1.59	572.72	4.61
569.62	0.00	570.66	0.95	571.70	1.60	572.74	4.63
569.64	0.00	570.68	0.96	571.72	1.61	572.76	4.65
569.66	0.00	570.70	0.98	571.74	1.62	572.78	4.68
569.68	0.00	570.72	1.00	571.76	1.63	572.80	4.70
569.70	0.00	570.74	1.01	571.78	1.64	572.82	4.72
569.72	0.00	570.76	1.03	571.80	1.65	572.84	4.74
569.74	0.00	570.78	1.04	571.82	1.65	572.86	4.77
569.76	0.00	570.80	1.06	571.84	1.66	572.88	4.79
569.78	0.00	570.82	1.07	571.86	1.67	572.90	4.81
569.80	0.00	570.84	1.09	571.88	1.68	572.92	4.83
569.82	0.00	570.86	1.10	571.90	1.69	572.94	4.85
569.84	0.00	570.88	1.12	571.92	1.70	572.96	4.88
569.86	0.00	570.90	1.13	571.94	1.71	572.98	4.90
569.88	0.00	570.92	1.14	571.96	1.72	573.00	**4.92**
569.90	0.00	570.94	1.16	571.98	1.73		
569.92	0.00	570.96	1.17	572.00	1.74		
569.94	0.00	570.98	1.18	572.02	1.79		
569.96	0.00	571.00	1.20	572.04	1.89		
569.98	0.01	571.02	1.21	572.06	2.01		
570.00	0.01	571.04	1.22	572.08	2.14		
570.02	0.02	571.06	1.24	572.10	2.30		
570.04	0.03	571.08	1.25	572.12	2.47		
570.06	0.04	571.10	1.26	572.14	2.65		
570.08	0.05	571.12	1.28	572.16	2.85		
570.10	0.07	571.14	1.29	572.18	3.06		
570.12	0.09	571.16	1.30	572.20	3.28		
570.14	0.11	571.18	1.31	572.22	3.51		
570.16	0.13	571.20	1.32	572.24	3.75		
570.18	0.15	571.22	1.34	572.26	4.00		
570.20	0.18	571.24	1.35	572.28	4.07		
570.22	0.21	571.26	1.36	572.30	4.10		
570.24	0.24	571.28	1.37	572.32	4.12		
570.26	0.27	571.30	1.38	572.34	4.15		
570.28	0.30	571.32	1.39	572.36	4.17		
570.30	0.34	571.34	1.41	572.38	4.20		
570.32	0.37	571.36	1.42	572.40	4.23		
570.34	0.41	571.38	1.43	572.42	4.25		
570.36	0.45	571.40	1.44	572.44	4.27		
570.38	0.49	571.42	1.45	572.46	4.30		
570.40	0.53	571.44	1.46	572.48	4.32		
570.42	0.58	571.46	1.47	572.50	4.35		
570.44	0.62	571.48	1.48	572.52	4.37		
570.46	0.67	571.50	1.49	572.54	4.40		
570.48	0.72	571.52	1.50	572.56	4.42		
570.50	0.76	571.54	1.51	572.58	4.44		
570.52	0.81	571.56	1.52	572.60	4.47		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 7P: Underground Storage (SMA #2)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
569.50	0	572.10	18,133
569.55	203	572.15	18,417
569.60	406	572.20	18,690
569.65	609	572.25	18,946
569.70	812	572.30	19,188
569.75	1,014	572.35	19,417
569.80	1,217	572.40	19,637
569.85	1,420	572.45	19,850
569.90	1,623	572.50	20,057
569.95	1,826	572.55	20,260
570.00	2,029	572.60	20,463
570.05	2,459	572.65	20,665
570.10	2,889	572.70	20,868
570.15	3,318	572.75	21,071
570.20	3,746	572.80	21,274
570.25	4,173	572.85	21,477
570.30	4,598	572.90	21,680
570.35	5,022	572.95	21,883
570.40	5,444	573.00	**22,086**
570.45	5,865		
570.50	6,284		
570.55	6,701		
570.60	7,116		
570.65	7,529		
570.70	7,940		
570.75	8,349		
570.80	8,756		
570.85	9,160		
570.90	9,562		
570.95	9,962		
571.00	10,359		
571.05	10,754		
571.10	11,145		
571.15	11,534		
571.20	11,919		
571.25	12,301		
571.30	12,680		
571.35	13,056		
571.40	13,428		
571.45	13,797		
571.50	14,161		
571.55	14,522		
571.60	14,879		
571.65	15,230		
571.70	15,577		
571.75	15,917		
571.80	16,252		
571.85	16,582		
571.90	16,906		
571.95	17,224		
572.00	17,535		
572.05	17,838		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary for Pond 9P: Bioretention Area 3

Inflow Area = 1.500 ac, 66.67% Impervious, Inflow Depth = 4.36" for 100-Year event
Inflow = 9.61 cfs @ 12.00 hrs, Volume= 0.545 af
Outflow = 5.89 cfs @ 12.09 hrs, Volume= 0.545 af, Atten= 39%, Lag= 5.5 min
Primary = 5.89 cfs @ 12.09 hrs, Volume= 0.545 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 575.05' @ 12.09 hrs Surf.Area= 6,805 sf Storage= 6,150 cf

Plug-Flow detention time= 184.7 min calculated for 0.545 af (100% of inflow)
Center-of-Mass det. time= 185.0 min (965.5 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1	574.00'	9,318 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

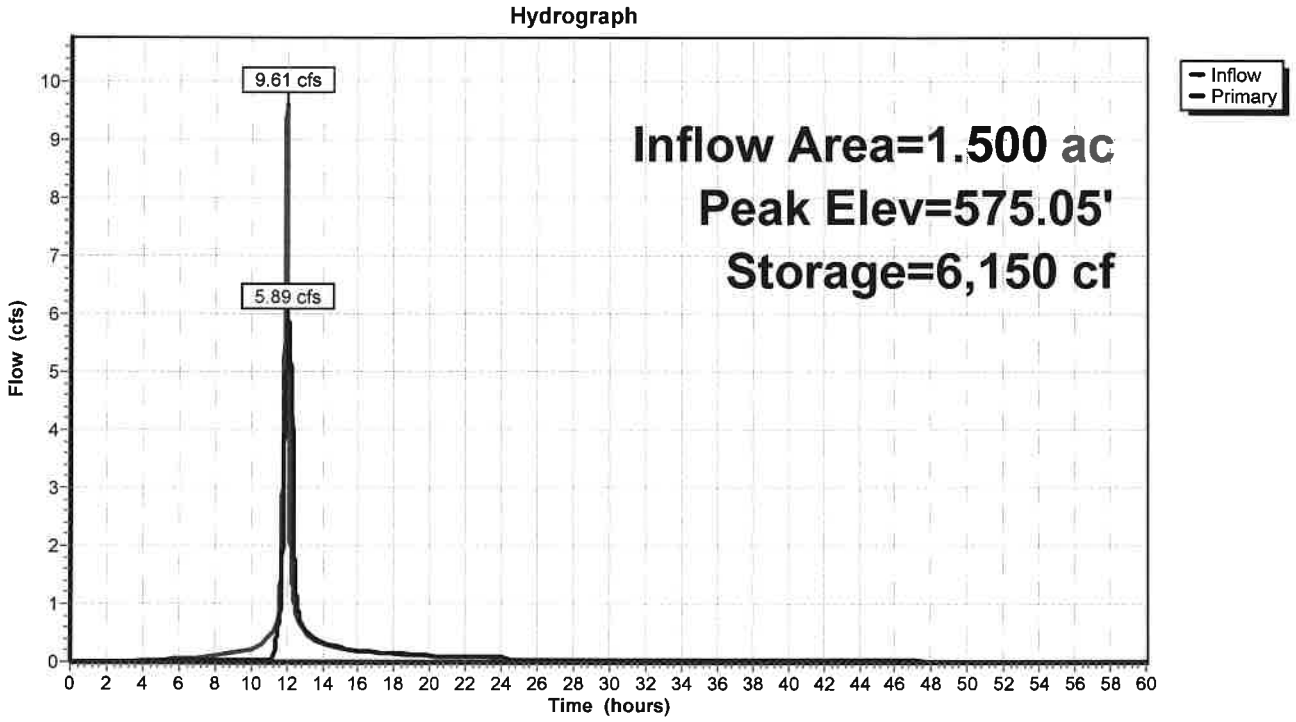
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
574.00	4,851	0	0
575.00	6,743	5,797	5,797
575.50	7,342	3,521	9,318

Device	Routing	Invert	Outlet Devices
#1	Primary	571.41'	**12.0" Round 8" pipe** L= 132.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 571.41' / 570.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	574.50'	**8.0" Horiz. Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	574.00'	**0.250 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 560.00'
#4	Primary	574.75'	**24.0" W x 24.0" H Vert. grate (overflow)** C= 0.600

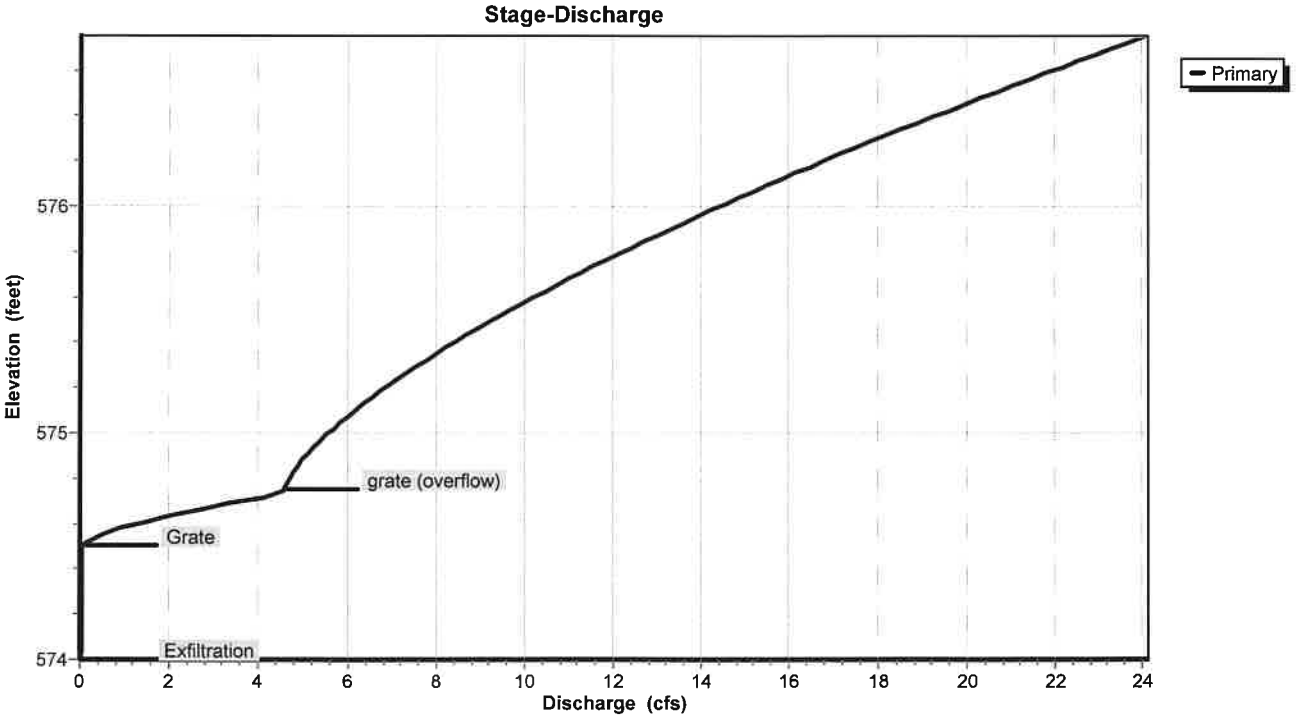
Primary OutFlow Max=5.88 cfs @ 12.09 hrs HW=575.05' (Free Discharge)
- **1=8" pipe** (Barrel Controls 4.82 cfs @ 6.14 fps)
  - **2=Grate** (Passes < 7.49 cfs potential flow)
  - **3=Exfiltration** (Passes < 0.04 cfs potential flow)
- **4=grate (overflow)** (Orifice Controls 1.06 cfs @ 1.76 fps)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3

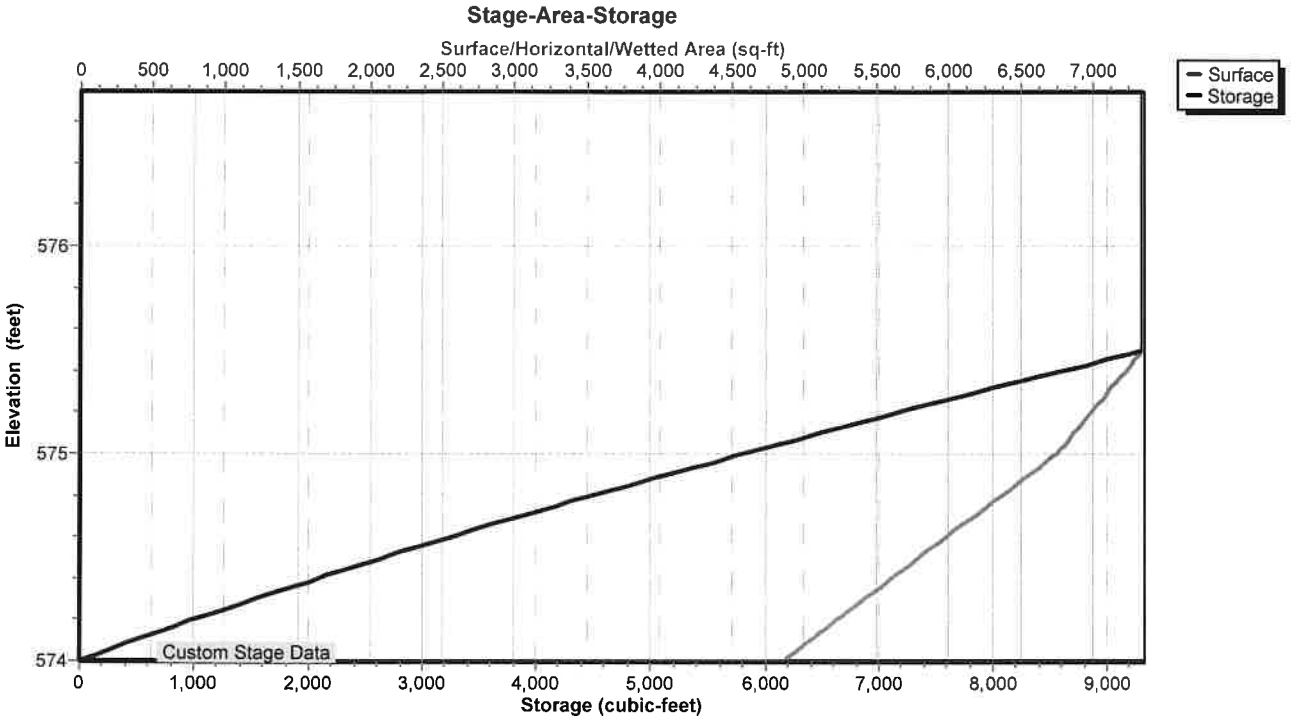


Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Pond 9P: Bioretention Area 3



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Hydrograph for Pond 9P: Bioretention Area 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	574.00	0.00
2.00	0.00	0	574.00	0.00
4.00	0.02	22	574.00	0.00
6.00	0.05	149	574.03	0.03
8.00	0.10	484	574.10	0.03
10.00	0.22	1,353	574.27	0.03
12.00	**9.61**	**5,288**	**574.92**	**5.19**
14.00	0.31	**2,872**	**574.54**	**0.33**
16.00	0.19	2,803	574.52	0.19
18.00	0.14	2,769	574.52	0.15
20.00	0.10	2,732	574.51	0.11
22.00	0.09	2,719	574.51	0.10
24.00	0.09	2,712	574.51	0.09
26.00	0.00	2,463	574.47	0.03
28.00	0.00	2,219	574.42	0.03
30.00	0.00	1,979	574.38	0.03
32.00	0.00	1,743	574.34	0.03
34.00	0.00	1,511	574.29	0.03
36.00	0.00	1,283	574.25	0.03
38.00	0.00	1,059	574.21	0.03
40.00	0.00	839	574.17	0.03
42.00	0.00	624	574.13	0.03
44.00	0.00	412	574.08	0.03
46.00	0.00	204	574.04	0.03
48.00	0.00	49	574.01	0.01
50.00	0.00	11	574.00	0.00
52.00	0.00	2	574.00	0.00
54.00	0.00	1	574.00	0.00
56.00	0.00	0	574.00	0.00
58.00	0.00	0	574.00	0.00
60.00	0.00	0	574.00	0.00

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Discharge for Pond 9P: Bioretention Area 3

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
574.00	0.00	575.04	5.81	576.08	15.37
574.02	0.03	575.06	5.93	576.10	15.60
574.04	0.03	575.08	6.06	576.12	15.84
574.06	0.03	575.10	6.18	576.14	16.08
574.08	0.03	575.12	6.31	576.16	16.32
574.10	0.03	575.14	6.45	576.18	16.56
574.12	0.03	575.16	6.58	576.20	16.81
574.14	0.03	575.18	6.72	576.22	17.05
574.16	0.03	575.20	6.87	576.24	17.30
574.18	0.03	575.22	7.01	576.26	17.55
574.20	0.03	575.24	7.16	576.28	17.80
574.22	0.03	575.26	7.31	576.30	18.05
574.24	0.03	575.28	7.46	576.32	18.30
574.26	0.03	575.30	7.62	576.34	18.56
574.28	0.03	575.32	7.78	576.36	18.81
574.30	0.03	575.34	7.94	576.38	19.07
574.32	0.03	575.36	8.10	576.40	19.33
574.34	0.03	575.38	8.26	576.42	19.59
574.36	0.03	575.40	8.43	576.44	19.85
574.38	0.03	575.42	8.60	576.46	20.11
574.40	0.03	575.44	8.78	576.48	20.38
574.42	0.03	575.46	8.95	576.50	20.64
574.44	0.03	575.48	9.13	576.52	20.91
574.46	0.03	575.50	9.31	576.54	21.18
574.48	0.03	575.52	9.49	576.56	21.45
574.50	0.03	575.54	9.67	576.58	21.72
574.52	0.15	575.56	9.86	576.60	22.00
574.54	0.36	575.58	10.05	576.62	22.27
574.56	0.64	575.60	10.24	576.64	22.55
574.58	0.97	575.62	10.43	576.66	22.83
574.60	1.34	575.64	10.62	576.68	23.10
574.62	1.74	575.66	10.82	576.70	23.38
574.64	2.19	575.68	11.02	576.72	23.67
574.66	2.67	575.70	11.22	576.74	**23.95**
574.68	3.18	575.72	11.42		
574.70	3.71	575.74	11.62		
574.72	4.28	575.76	11.83		
574.74	4.59	575.78	12.04		
574.76	4.61	575.80	12.25		
574.78	4.65	575.82	12.46		
574.80	4.70	575.84	12.67		
574.82	4.77	575.86	12.89		
574.84	4.84	575.88	13.10		
574.86	4.91	575.90	13.32		
574.88	4.99	575.92	13.54		
574.90	5.08	575.94	13.76		
574.92	5.17	575.96	13.99		
574.94	5.27	575.98	14.21		
574.96	5.37	576.00	14.44		
574.98	5.48	576.02	14.67		
575.00	5.59	576.04	14.90		
575.02	5.70	576.06	15.13		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 9P: Bioretention Area 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
574.00	4,851	0
574.05	4,946	245
574.10	5,040	495
574.15	5,135	749
574.20	5,229	1,008
574.25	5,324	1,272
574.30	5,419	1,540
574.35	5,513	1,814
574.40	5,608	2,092
574.45	5,702	2,375
574.50	5,797	2,662
574.55	5,892	2,954
574.60	5,986	3,251
574.65	6,081	3,553
574.70	6,175	3,859
574.75	6,270	4,170
574.80	6,365	4,486
574.85	6,459	4,807
574.90	6,554	5,132
574.95	6,648	5,462
575.00	6,743	5,797
575.05	6,803	6,136
575.10	6,863	6,477
575.15	6,923	6,822
575.20	6,983	7,170
575.25	7,043	7,520
575.30	7,102	7,874
575.35	7,162	8,230
575.40	7,222	8,590
575.45	7,282	8,953
575.50	**7,342**	**9,318**
575.55	7,342	9,318
575.60	7,342	9,318
575.65	7,342	9,318
575.70	7,342	9,318
575.75	7,342	9,318
575.80	7,342	9,318
575.85	7,342	9,318
575.90	7,342	9,318
575.95	7,342	9,318
576.00	7,342	9,318
576.05	7,342	9,318
576.10	7,342	9,318
576.15	7,342	9,318
576.20	7,342	9,318
576.25	7,342	9,318
576.30	7,342	9,318
576.35	7,342	9,318
576.40	7,342	9,318
576.45	7,342	9,318
576.50	7,342	9,318
576.55	7,342	9,318
576.60	7,342	9,318
576.65	7,342	9,318
576.70	7,342	9,318
576.75	7,342	9,318

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Green Infrastructure & Water Quality Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Version 1.7
Last Updated: 2/22/21

Total Water Quality Volume Calculation
WQv(acre-feet) = [(P)(Rv)(A)] /12

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	

Design Point:	1	
P=	1.00	*inch*

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	6.10	3.30	54%	0.54	11,888	
2	1.00	0.00	0%	0.05	182	
3	4.40	2.70	61%	0.60	9,620	
4	1.70	1.00	59%	0.58	3,576	
5	1.50	1.00	67%	0.65	3,539	
6						
7						
8						
9						
10						
Subtotal (1-30)	14.70	8.00	54%	0.54	**28,804**	**Subtotal 1**
Total	14.70	8.00	54%	0.54	**28,804**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

Technique	Total Contributing Area *(Acre)*	Contributing Impervious Area *(Acre)*	Notes
Conservation of Natural Areas	1.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to 150 feet*
Filter Strips	0.00	0.00	
Tree Planting	0.00	0.00	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**1.00**	**0.00**	

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	14.70	8.00	54%	0.54	28,804
Subtract Area	-1.00	0.00			
WQv adjusted after Area Reductions	**13.70**	**8.00**	58%	0.58	28,623
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	13.70	8.00	58%	0.58	**28,623**
WQv reduced by Area Reduction techniques					182

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Total Water Quality Volume Calculation

WQv(acre-feet) = [(P)(Rv)(A)] /12

All Subcatchments						
Catchment	**Total Area** *(Acres)*	**Impervious Cover** *(Acres)*	**Percent Impervious** *%*	**Runoff Coefficient** *Rv*	**WQv** *(ft^3)*	**Description**
1	6.10	3.30	0.54	0.54	11888.25	
2	1.00	0.00	0.00	0.05	182	
3	4.40	2.70	0.61	0.60	9619.50	
4	1.70	1.00	0.59	0.58	3575.55	
5	1.50	1.00	0.67	0.65	3539.25	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
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24						
25						
26						
27						
28						
29						
30						

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	6.10	3.30	0.54	0.54	11888.25	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	54%	0.54	11,888	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.						*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate	0.00	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		11,888	*ft^3*	
Enter Depth of Soil Media	*df*	1.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**8916**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	100	*ft*	
Filter Length	110	*ft*	
Filter Area	11000	*ft^2*	
Actual Volume Provided	14667	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?			Select Practice	
RRv	5,867			
RRv applied	**5,867**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	6,022	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	OK		*Check to be sure Area provided ≥ Af*	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Worksheet

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor & Schueler, 1996)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
5	1.50	1.00	0.67	0.65	3539.25	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	67%	0.65	3,539	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.						*ft^3*	

Soil Information			
Soil Group	D		
Soil Infiltration Rate	0.00	*in/hour*	*Okay*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area				
		Value	Units	Notes
WQv		3,539	*ft^3*	
Enter Depth of Soil Media	*df*	1.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2	*days*	
Required Filter Area	***Af***	**2654**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	49	*ft*	
Filter Length	100	*ft*	
Filter Area	4900	*ft^2*	
Actual Volume Provided	6533	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?		No	Select Practice	
RRv	2,613			
RRv applied	**2,613**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	926	*ft^3*	*This is the portion of the WQv that is not reduced in the practice.*	
Volume Directed	0	*ft^3*	This volume is directed another practice	
Sizing √	OK		*Check to be sure Area provided ≥ Af*	

(For use on HSG C or D Soils with underdrains)

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Conservation of Natural Areas

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft^3)	Precipitation (in)	Description
2	1.00	0.00	0.00	0.05	181.50	1.00	

Design Elements

Is Contiguous Area ≥ 10,000 ft2?	*Yes*
Will limits of disturbance be clearly shown on all construction drawings and marked in field/project development site with structural barriers?	*Yes*
Is the Conservation area located in an acceptable conservation easement instrument that ensures perpetual protection of proposed area?	*Yes*
Does the easement specify how the natural area vegetation will be managed and boundaries will be marked?	*Yes*
Does the conservation area receive runoff from other contributing areas?	*No*
Does Conservation Area drain to a Design Point?	*No*
Is Sheet Flow to Riparian Buffer or another area based practice already being Used for this area?	*No*

Are All Criteria in Section 5.3.1 Met?	*Yes*

Area Reduction Adjustments

Subtract	***1.00***	***Acres from Total Area***
Subtract	***0.00***	***Acres from Total Impervious Area***

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**17.40**	20%
Total Area	17.4	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	8.00	*acre*
Precipitation	1	*in*
Rv	0.95	
Minimum RRv	**5,518**	***ft3***
	0.13	af

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	28804	*0.661*
30	Total RRV Provided	8662	*0.199*
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	5518	*0.127*
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	159626	*3.664*
34	Sum of Volume Reduced & Treated	168287	*3.863*
34	Sum of Volume Reduced and Treated	168287	*3.863*
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Apply Peak Flow Attenuation			
36	Channel Protection	*Cpv*	
37	Overbank	*Qp*	
37	Extreme Flood Control	*Qf*	
	Are Quantity Control requirements met?		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	1.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00			
	Bioretention & Infiltration Bioretention	F-5	7.60	4.30	8480	6948
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5	9.8	3.40		152678.000
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction →			1.00	0.00	182	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			7.60	4.30	8480	6948
Totals by Standard SMP →			9.80	3.40		152678
Totals (Area + Volume + all SMPs) →			18.40	7.70	8,662	159,626
	Impervious Cover √	error				

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Stage-Area-Storage for Pond 6P: WQv

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
563.00	710	0
563.15	776	111
563.30	843	233
563.45	909	364
563.60	975	506
563.75	1,042	657
563.90	1,108	818
564.05	1,181	989
564.20	1,267	1,173
564.35	1,353	1,369
564.50	1,439	1,579
564.65	1,524	1,801
564.80	1,610	2,036
564.95	1,696	2,284
565.10	1,796	2,546
565.25	1,901	2,823
565.40	2,007	3,116
565.55	2,113	3,425
565.70	2,219	3,750
565.85	2,324	4,090
566.00	2,430	4,447
566.15	2,561	4,821
566.30	2,692	5,215
566.45	2,822	5,629
566.60	2,953	6,062
566.75	3,084	6,515
566.90	3,215	6,987
567.05	3,356	7,479
567.20	3,519	7,995
567.35	3,681	8,535
567.50	3,844	9,100
567.65	4,007	9,688
567.80	4,169	10,301
567.95	4,332	10,939
568.10	4,731	11,613
568.25	5,249	12,361
568.40	5,767	13,188
568.55	6,285	14,091
568.70	6,802	15,073
568.85	7,320	16,132
569.00	7,838	17,269
569.15	8,402	18,487
569.30	8,965	19,790
569.45	9,529	21,177
569.60	10,093	22,648
569.75	10,657	24,204
569.90	11,220	25,845
570.05	11,796	27,571
570.20	12,398	29,385
570.35	13,000	31,290
570.50	13,601	33,285
570.65	14,202	35,371
570.80	14,804	37,546
570.95	15,406	39,812
571.10	16,056	42,170
571.25	16,731	44,629
571.40	17,406	47,189
571.55	18,081	49,851
571.70	18,756	52,614
571.85	19,431	55,478
572.00	20,106	58,443
572.15	20,820	61,512
572.30	21,534	64,689
572.45	22,248	67,973
572.60	22,961	71,363
572.75	23,675	74,861
572.90	24,389	78,466
573.05	25,107	82,178
573.20	25,834	85,998
573.35	26,561	89,928
573.50	27,288	93,967
573.65	28,014	98,114
573.80	28,741	102,371
573.95	29,468	106,737
574.10	32,660	111,335
574.25	37,086	116,565
574.40	41,511	122,460
574.55	45,937	129,019
574.70	50,362	136,241
574.85	54,788	144,127
575.00	**59,213**	**152,678**

WQv

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix O

NYSDEC Stormwater Management Inspection Lists

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretetion Areas (F-5)



Description: Shallow stormwater basin or landscaped area which utilizes engineered soils and vegetation to capture and treat runoff. The practice is often located in parking lot islands, and can also be used to treat residential areas.

KEY CONSIDERATIONS

CONVEYANCE

- Provide overflow for the 10-year storm to the conveyance system.
- Conveyance to the system is typically overland flow delivered to the surface of the system, typically through curb cuts or over a concrete lip.

PRETREATMENT

- Pretreatment consists of a grass channel or grass filter strip, a gravel diaphragm, and a mulch layer, sized based on the methodologies described in Section 6.4.2.

TREATMENT

- Treatment area should have a four foot deep planting soil bed, a surface mulch layer, and a 6" ponding layer.
- Size the treatment area using equations provided in Chapter 6.

LANDSCAPING

- Detailed landscaping plan required.

MAINTENANCE

- Inspect and repair/replace treatment area components
- Stone drop (at least 6") provided at the inlet
- Remulch annually

STORMWATER MANAGEMENT SUITABILITY

- [X] Water Quality
- [ ] Channel Protection
- [ ] Overbank Flood Protection
- [ ] Extreme Flood Protection

Accepts Hotspot Runoff: *Yes*
(requires impermeable liner)

IMPLEMENTATION CONSIDERATIONS

- [M] Capital Cost
- [M] Maintenance Burden

Residential
Subdivision Use: *Yes*

High Density/Ultra-Urban: *Yes*

Drainage Area: *5 acres max.*

Soils: *Planting soils must meet specified criteria; No restrictions on surrounding soils*

Other Considerations:

- *Use of native plants is recommended*

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

	Key: **L**=Low **M**=Medium **H**=High **POLLUTANT REMOVAL** G Phosphorus G Nitrogen G Metals - Cadmium, Copper, Lead, and Zinc removal F Pathogens – Coliform, Streptococci, E.Coli removal Key: **G**=Good **F**=Fair **P**=Poor

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Comments:

Actions to be Taken:

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Comments:

Actions to be Taken:

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Appendix P

StormTech O&M Manual

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Isolator® Row
O&M Manual



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

The Isolator® Row

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

The Isolator Row

The Isolator Row is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-7200 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row and passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow stormwater to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the chamber's sidewall. The non-woven fabric is not required over the SC-160, DC-780, MC-3500 or MC-7200 models as these chambers do not have perforated side walls.

The Isolator Row is designed to capture the "first flush" runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row. After Stormwater flows through the Isolator Row and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row to minimize maintenance requirements and maintenance costs.

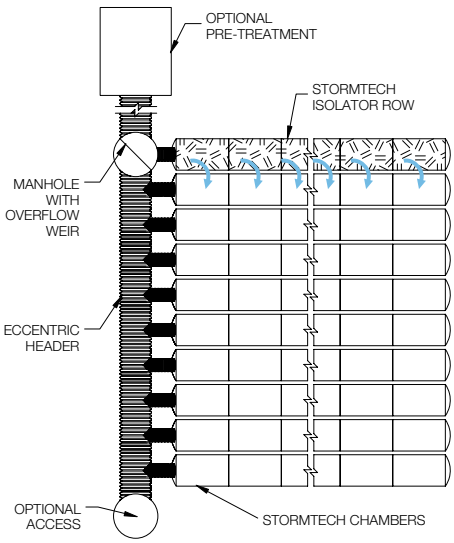
Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.*



Looking down the Isolator Row from the manhole opening, woven geotextile Fabric is shown between the chamber and stone base.



StormTech Isolator Row with Overflow Spillway (*not to scale*)



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Isolator Row Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the **actual frequency of inspection and maintenance practices.**

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

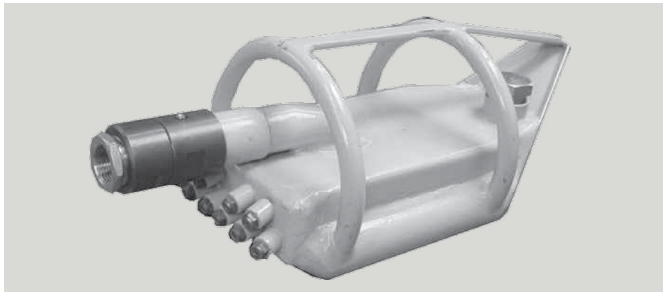
The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

Maintenance

The Isolator Row was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row lengths up to 200" (61 m). **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

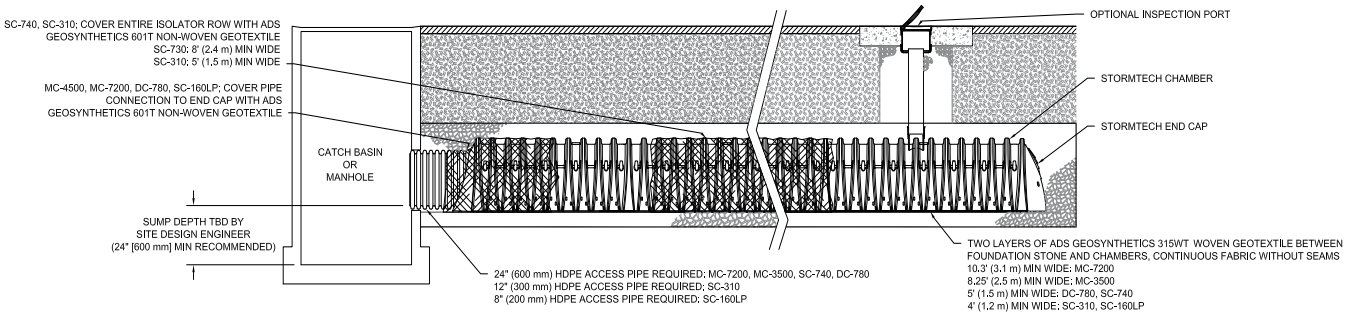






StormTech Isolator Row (not to scale)

Note: *Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-7200 chamber models and is not required over the entire Isolator Row.*



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Isolator Row Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row
   i. Remove cover from manhole at upstream end of Isolator Row
   ii. Using a flashlight, inspect down Isolator Row through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

Step 2

Clean out Isolator Row using the JetVac process.

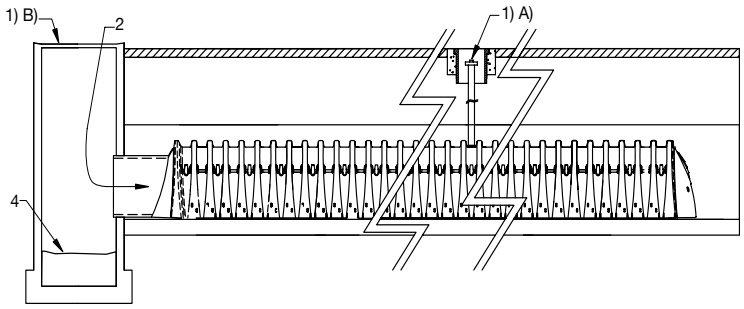
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sedi-ment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
The ADS logo and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
Stormtech® and the Isolator® Row are registered trademarks of StormTech, Inc.
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adspipe.com
800-821-6710

TRAFFIC IMPACT REPORT UPDATE

June 24, 2024

20243845.0001

SAWYER'S LANDING DEVELOPMENT UPDATE

TOWN OF AMHERST, NY

PREPARED FOR:
Severyn Development, Inc.
Attn: William Severyn // Chief Executive Officer
43 Central Ave Suite 300
Lancaster, New York 14086

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1.0 EXECUTIVE SUMMARY

The purpose of this updated report is to evaluate the potential traffic impacts related to the proposed Sawyer's Landing development to be located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). Within this report, the operating characteristics of the proposed access points and impacts to the adjacent roadway network are evaluated and mitigating measures are identified (if needed) to minimize operational concerns.

To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

Project Location and Description

The project site is located along the north side of Dodge Road, west of Interstate 990, in the Town of Amherst, Erie County, New York. The project site is bounded by a residential development and Heritage Heights Elementary School to the north, vacant land to the east, offices to the south, and a medical plaza to the west. Land uses in the vicinity of the project site include residential, office, medical, and educational uses. The project site currently consists of a vacant building.

The proposed Sawyer's Landing development will consist of constructing:

- Mixed-Use Building 1 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) restaurant,
  - a ±432 SF leasing office,
  - and an ±8,002 SF membership-based gym
- Mixed-Use Building 2 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) retail store,
  - a ±8,953 square foot (SF) retail store,
  - and a ±2,300 SF office
- a four-story ±26,400 SF self-storage building (±105,600 SF in total),
- 22 two-story duplex townhome buildings containing two units each for a total of 44 duplex townhome units,
- 63 two-story townhomes with attached garages.

Access to the site will be provided via one enter only driveway and one exit only driveway along Dodge Rd and one full access driveway along Dodge Rd to the south of the enter only driveway. There will also be an emergency access driveway along Dodge Road to the north of the exit only driveway with an emergency gate.

Study Area

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following two (2) intersections:

1. Dodge Road/Sweet Home Road
2. Dodge Road/North Forest Road

Existing and Background Conditions

Turning movement traffic counts were collected by Passero Associates on Thursday, March 3, 2022, at the Dodge Rd/North Forest Rd study intersection for both the weekday AM and PM peak hour periods. Turning movement traffic counts were collected by the Town of Amherst on Tuesday May 14, 2024, at the Dodge Rd/Sweet Home Rd study

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intersection for both the weekday AM and PM peak hour periods. Traffic counts were conducted between 7:00-9:00 AM for the weekday AM peak period and 4:00-6:00 PM for the weekday PM peak period. The peak hour traffic periods generally occurred between 7:30-8:30 AM and 4:30-5:30 PM.

Construction of the proposed project is anticipated to reach full build-out within approximately two years. The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. The following projects were identified and are listed below:

- Aspen Heights Student Housing – Traffic generated by this student housing development was added to the study intersections.
- 480 Dodge Road - Traffic generated by this approved but not yet constructed multifamily project was added to the study intersections.
- 775 John James Audubon Pkwy – Traffic generated by this approved project is included in the background growth rate.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic has decreased between 2010 and 2019 in the study area. To account for normal increases in background traffic growth, including the approved development noted above as well as any unforeseen developments in the study area, a growth rate of 1.0% per year was applied to the existing traffic volumes for the two-year build out period.

Conclusions and Recommendations

This updated Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Sawyer's Landing development to be located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

Conclusions

1. The proposed project is expected to generate approximately 76 entering/102 exiting vehicle trips during the AM peak hour and 163 entering/136 exiting vehicle trips during the PM peak hour.

2. However, not all these driveway volumes are new, but instead a portion of the proposed volumes will visit more than one land use during one trip to the site. Thus, based upon internal capture rates from the NCHRP 684 model and professional judgement, the proposed site is expected to generate approximately 69 entering/92 exiting new vehicle trips during the AM peak hour and 133 entering/110 exiting new vehicle trips during the PM peak hour.

3. Based upon the results of the traffic signal warrant at the Dodge Rd/North Forest Rd intersection, a traffic signal is not warranted at this intersection.

4. All movements generally operate at an acceptable LOS "D" or better under existing, projected background, and full build conditions (with proposed development) during both peak hours at all study intersections except for the northbound left approach at the Sweet Home Rd/Dodge Rd intersection during the AM peak hour, which

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operates at LOS "F" under background and full build conditions. There are no LOS changes at any of the study intersections that require mitigation.

5. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Recommendations

1. The proposed exit driveway along Dodge Rd should be designed to provide one exiting lane.

2. The proposed enter driveway along Dodge Rd should be designed to provide one entering lane.

3. The proposed southerly driveway along Dodge Rd should be designed to provide one entering and one exiting lane.

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2.0 INTRODUCTION

2.1 Study Purpose and Objectives

The purpose of this updated report is to evaluate the potential traffic impacts related to the proposed Sawyer's Landing development to be l located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). Within this report, the operating characteristics of the proposed access points and impacts to the adjacent roadway network are evaluated and mitigating measures are identified (if needed) to minimize operational concerns.

To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

2.2 Project Location

The project site is located along the north side of Dodge Road, west of Interstate 990, in the Town of Amherst, Erie County, New York. The project site is bounded by a residential development and Heritage Heights Elementary School to the north, vacant land to the east, offices to the south, and a medical plaza to the west. Land uses in the vicinity of the project site include residential, office, medical, and educational uses. The project site currently consists of a vacant building.

Study Area

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following two (2) intersections:

1. Dodge Road/Sweet Home Road
2. Dodge Road/North Forest Road

The project site location and study area are illustrated in **Figure 1** (all figures are included at the end of this report).

3.0 TRANSPORTATION SETTING

3.1 Description of Study Area Roadways

The information outlined in **Table 1** provides a description of the existing roadway network within the study area. **Figure 2** illustrates the lane geometry and traffic control at each of the study intersections and the Annual Average Daily Traffic (AADT) volumes on the study roadways. The AADTs reflect the most recently collected data obtained from the NYSDOT.

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Table 1: *Existing Highway System*

ROADWAY	CLASS[1]	AGENCY[2]	SPEED LIMIT[3]	TRAVEL LANES[4]	ORIENTATION OF TRAVEL	AADT[5]
Dodge Road	16	ECDPW	40	2	Two-Way/ East-West	6,738 NYSDOT (2017)
Sweet Home Road	16	ECDPW	45	4	Two-way/ North-South	18,050 NYSDOT (2019)
North Forest Road	19	Town of Amherst	35	2	Two-way/ North-South	1,797 NYSDOT (2019)

Notes:
1. State functional classification of roadway
2. Jurisdictional agency of roadway.
3. Posted or statewide limit in miles per hour (mph).
4. Number of travel lanes. Excludes turning/auxiliary lanes developed at intersections.
5. Estimated AADT in vehicles per day (vpd). AADT source (Year).

The Highway Functional Classification System defines the role a roadway plays in the overall road network. Functional classification of highways within the study area is determined by the NYSDOT and the Federal Highway Administration (FHWA).

Urban Minor Arterial (Class 16)

An urban minor arterial interconnects and augments the higher-level arterials as well as serves trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials. They distribute traffic to smaller geographic areas than those served by higher-level Arterials and provide more land access than Principal Arterials without penetrating identifiable neighborhoods. They also provide urban connections for Rural Collectors.

Urban Local (Class 19)

According to the FHWA, this class of roadway includes all facilities not in one of the higher systems (e.g., arterial, collector, etc.). It primarily permits direct access to abutting lands and connections to the higher order systems and is not intended for use in long distance travel. As public roads, they should be accessible for public use throughout the year. Generally, the streets carry little to no through-traffic flows.

3.2 Description of Multimodal Network

Table 2 summarizes the traffic controls, pedestrian, bicycle, and transit accommodations within the study area.

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Table 2: *Multimodal Network*

INTERSECTION	Dodge Rd/Sweet Home Rd	Dodge Rd/North Forest Rd
Intersection Control Type	Signalized	Unsignalized
Sidewalks	◍	○
Crosswalks	●	○
Curb Ramps	●	○
Pedestrian Signal	●	○
Pedestrian Push Button	●	○
Pedestrian Countdown	●	○
Bicycle Facilities	○	○
Street Lighting	●	○
Transit Route	N/A	N/A

● Present at entire intersection
◍ Present at portion of intersection
○ Not present at intersection

3.3 Planned/Programmed Highway Improvements

There are no planned highway improvement projects in the study area.

4.0 EXISTING CONDITIONS ANALYSIS

4.1 Peak Intervals for Analysis

Given the functional characteristics of the corridors, adjacent land uses, and the proposed land use for the project site, the peak hours selected for analysis are the weekday AM and weekday PM peak periods. The combination of site traffic and adjacent street traffic produces the greatest demand during these time periods.

4.2 Existing Traffic Volume Data

Turning movement traffic counts were collected by Passero Associates on Thursday, March 3, 2022, at the Dodge Rd/North Forest Rd study intersection for both the weekday AM and PM peak hour periods. Turning movement traffic counts were collected by the Town of Amherst on Tuesday May 14, 2024, at the Dodge Rd/Sweet Home Rd study intersection for both the weekday AM and PM peak hour periods. Traffic counts were conducted between 7:00-9:00 AM for the weekday AM peak period and 4:00-6:00 PM for the weekday PM peak period. The peak hour traffic periods generally occurred between 7:30-8:30 AM and 4:30-5:30 PM.

All turning movement count data was collected on a typical weekday while local schools were in session. No adverse weather conditions impacted the traffic counts. The traffic volumes were reviewed for seasonality and to confirm the accuracy and relative balance of the collective traffic counts. The actual differences in traffic volumes can be attributed to temporal variations in traffic volumes as well as activity related to driveways located in the segments between the study intersections. Additionally, the volumes at the Dodge Rd/North Forest Rd intersection were increased using a

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0.5% growth rate based on the historical traffic data described in Section 5.0 to account for any growth in traffic between the time of data collection and now. The existing peak hour traffic volumes are shown in **Figure 3**.

4.3 Existing Crash Investigation

The purpose of this crash analysis is to identify inherent safety issues by studying and quantifying historical crashes at the study intersections and identifying potential crash patterns and clusters.

A crash cluster is defined as an abnormal occurrence of similar crash types occurring at approximately the same location or involving the same geometric features. The severity of the crashes should also be considered. A history of crashes is an indication that further analysis is required to determine the cause(s) of the crash(es) and to identify what actions, if any, could be taken to mitigate the crashes.

A crash investigation within the study area was conducted to assess the safety history from January 1, 2019, through December 31, 2023.

Reportable (non-injury, injury, and fatal injury) type crashes are defined as damage to one person's property in the amount of $1,001 or more. The Non-Reportable type crashes result in property damage of $1,000 or less. Crash rates were computed for the study intersections and compared with NYSDOT average crash rates for similar intersections, as summarized in **Table 3**. Intersection rates are listed as crashes per million entering vehicle (CR/MEV).

Table 3: *Intersection Crash Rate Analysis*

INTERSECTION	NUMBER OF CRASHES	NUMBER OF ENTERING VEHICLES	ACTUAL CRASH RATE	STATEWIDE AVERAGE CRASH RATE
Sweet Home Rd at Dodge Rd	30	29,442 vpd	0.56	0.26
Dodge Rd at North Forest Rd	6	6,379 vpd	0.52	0.19

Notable crash clusters are approaches with three or greater identifiable consistent crash types.

1. **Sweet Home Rd at Dodge Rd**

As shown in **Table 3**, the intersection has a crash rate that is approximately 2.15 times higher than the statewide average crash rate for similar intersections. The following crashes occurred: rear end (7), left turn (9), right angle (8), sideswipe (3), and backing (2). The following crash patterns were reported:

- Left Turn
  - Northbound (three crashes)
  - Southbound (four crashes)
- Rear End
  - Southbound (three crashes)
- Right Angle
  - Northbound (five crashes)

The reported rear end crashes (23%) are characteristic of moderate to heavily trafficked signalized intersections. The causes of the rear end crashes were generally due to driver inattention, driver error, unsafe speeds, or following too closely. The causes of the left turn crashes were generally due to failure to yield the right of way. The causes of the right angle crashes were generally driver inattention, driver error, and brake failure. Flashing yellow left turn arrows were installed sometime after June 2022 based on review of historical aerial imagery of the intersection. Based on the

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descriptions in the MV-104 crash reports, there has only been one left turn crash and three right angle crashes at the intersection since the new traffic signal was installed. No other discernible crash patterns exist; thus, no geometric improvements are recommended.

2. **Dodge Rd at North Forest Rd**

As shown in **Table 3**, the intersection has a crash rate that is approximately 2.73 times higher than the statewide average crash rate for similar intersections. The following crashes occurred: rear end (2), right angle (1), and fixed object (3). No discernible crash patterns exist; thus, no geometric improvements are recommended.

5.0 BACKGROUND (NO BUILD) CONDITIONS

Construction of the proposed project is anticipated to reach full build-out within approximately two years. The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. The following projects were identified and are listed below:

- Aspen Heights Student Housing – Traffic generated by this student housing development was added to the study intersections.
- 480 Dodge Road - Traffic generated by this approved but not yet constructed multifamily project was added to the study intersections.
- 775 John James Audubon Pkwy – Traffic generated by this approved project is included in the background growth rate.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic has decreased between 2010 and 2019 in the study area. To account for normal increases in background traffic growth, including the approved development noted above as well as any unforeseen developments in the study area, a growth rate of 1.0% per year was applied to the existing traffic volumes for the two-year build out period. The background traffic volumes are depicted in **Figure 4.**

6.0 PROPOSED DEVELOPMENT CONDITIONS

6.1 Project Description

The proposed Sawyer's Landing development will consist of constructing:

- Mixed-Use Building 1 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) restaurant,
  - a ±432 SF leasing office,
  - and an ±8,002 SF membership-based gym
- Mixed-Use Building 2 (four-stories)
  - 51 Mid-Rise apartment units,
  - a ±3,901 square foot (SF) retail store,
  - a ±8,953 square foot (SF) retail store,

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  - and a ±2,300 SF office
- a four-story ±26,400 SF self-storage building (±105,600 SF in total),
- 22 two-story duplex townhome buildings containing two units each for a total of 44 duplex townhome units,
- 63 two-story townhomes with attached garages.

Access to the site will be provided via one enter only driveway and one exit only driveway along Dodge Rd and one full access driveway along Didge Rd, to the south of the enter only driveway. There will also be an emergency access driveway along Dodge Road to the north of the exit only driveway with an emergency gate.

6.2 Proposed Traffic Generation

The volume of traffic generated by a site is dependent on the intended land use and size of the development. Trip generation is an estimate of the number of trips generated by a specific building or land use. These trips represent the volume of traffic entering and exiting the development. *Trip Generation Manual* (11th Edition) published by the Institute of Transportation Engineers (ITE) is used as a reference for this information. The trip rate for the peak hour of the generator may or may not coincide in time or volume with the trip rate for the peak hour of adjacent street traffic. Volumes generated during the peak hour of the adjacent street traffic and proposed land uses, in this case, the weekday commuter AM and PM peak hours, represent a more critical volume when analyzing the capacity of the system; those intervals will provide the basis of this analysis.

The proposed project consists of multiple different land uses (residential, office, retail, and restaurant) and is considered mixed-use (multi-use). According to the Institute of Transportation Engineers Trip Generation Handbook, (3rd Edition), "…a multi-use development is typically a single real-estate project that consists of two or more ITE land use classifications between which trips can be made without using the off-site road system. Because of the nature of these land uses, the trip-making characteristics are interrelated, and some trips are made among the on-site uses. This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system (compared to the total number of trips generated by comparable, standalone sites)." "In some multi-use developments, these internal trips can be made by walking or by vehicles entirely on internal pathways or internal roadways without using streets external to the site."

The Handbook indicates internal capture rates for trips within a multi-use development to vary between residential, office, retail, restaurant, and entertainment and recreational uses during the AM and PM peak hours. Given the proposed land use components and interconnection between these components, multi-use total volume trips will likely occur.

Methodology contained in National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Development was consulted to perform the mixed-use adjustment. The interactive spreadsheet considers baseline mode shares and vehicle occupancy factors for the proposed land uses, as described in the Handbook, as well as average land use interchange distances (feet walking distance) to determine the internal capture percentage. In order to accurately capture the internal site trips that will occur in the site, the existing office land use that will remain was included in the internal capture calculations. This completed spreadsheet model is included in the Appendices.

The NCHRP 684 model reported an internal baseline capture percentage of 13% during the AM peak hour, and 26% during the PM peak hour. In order to be conservative, an internal baseline capture percentage of 10% was used during the AM peak hour, and 20% was used during the PM peak hour. These multi-use trip projection adjustments were applied to the respective site generated trips and subtracted from the traffic entering and exiting the site during the peak periods.

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Table 4 shows the estimated site generated trips that will be added to the existing roadway system under full project development.

Table 4: *Site Generated Trips*

DESCRIPTION	ITE LUC[1]	SIZE	PM PEAK HOUR		SAT PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
General Office Building	710	±2,300 sf	6	1	1	6
Strip Retail Plaza (<40k)	822	±12,854 sf	18	12	47	47
High-Turnover (Sit-Down) Restaurant	932	±3,901 sf	21	17	22	14
Single Family Attached Housing	215	107 units	12	37	36	25
Multifamily Housing (Mid-Rise)	221	102 units	8	26	24	16
Mini-Warehouse	151	±105,600 sf	6	4	7	8
Health/Fitness Club	492	±8,002 sf	5	5	26	20
Total Site Generated Trips			**76**	**102**	**163**	**136**
Internal Capture Adjustment			*-7*	*-10*	*-30*	*-26*
Total Primary Site Generated Trips			**69**	**92**	**133**	**110**

Note:
1. LUC = Land Use Code.

The proposed project is expected to generate approximately 76 entering/102 exiting vehicle trips during the AM peak hour and 163 entering/136 exiting vehicle trips during the PM peak hour. However, not all these driveway volumes are new, but instead a portion of the proposed volumes will visit more than one land use during one trip to the site. Thus, based upon internal capture rates from the NCHRP 684 model and professional judgement, the proposed site is expected to generate approximately 69 entering/92 exiting new vehicle trips during the AM peak hour and 133 entering/110 exiting new vehicle trips during the PM peak hour.

6.3 Trip Distribution

The cumulative effect of site-generated traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives serving the site. The proposed arrival/departure distribution of traffic generated by the proposed project is considered a function of several parameters, including:

- Employment centers in the local area and region.
- Population centers in the local area and region.
- Proximity and access to Interstate 990.
- Proximity to the North Campus of the University at Buffalo.
- Site access drive locations and internal roadway circulation.
- Existing highway network.
- Existing traffic patterns.
- Existing traffic conditions and controls.

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Figure 5 shows the anticipated trip distribution pattern percentage for the project site. **Figures 6** illustrate the total peak hour site-generated traffic.

6.4 Full Development Volumes

The proposed design hour traffic volumes are developed for the peak hours by combining the background traffic conditions (Figure 4) and the new site-generated traffic volumes (Figure 6) to yield the traffic volumes under full development conditions. **Figure 7** illustrates the total peak hour volumes anticipated for the proposed project under full build-out conditions.

7.0 TRAFFIC OPERATIONS AND ANALYSIS

7.1 Traffic Signal Warrant Investigation

A traffic signal warrant analysis was conducted at the existing Dodge Rd/North Forest Rd intersection under full build conditions. The evaluation is based on traffic exiting North Forest Rd (i.e. northbound traffic). The need for a traffic signal is determined by comprehensive investigation of existing traffic conditions and physical characteristics at the location. The *Standard Specifications Update for the adoption of the National MUTCD (FHWA)* and the *New York State Supplement* were reviewed to investigate the need for a traffic control signal at this location. There are nine (9) warrants, and they are as follows:

- Warrant 1 Eight-Hour Vehicular Volume
- Warrant 2 Four-Hour Vehicular Volume
- Warrant 3 Peak Hour Vehicular Volume
- Warrant 4 Pedestrian Volume
- Warrant 5 School Crossing
- Warrant 6 Coordinated Signal System
- Warrant 7 Crash Experience
- Warrant 8 Roadway Network
- Warrant 9 Intersection Near a Grade Crossing

Prior to applying warrants, the MUTCD suggests consideration of the effects of right-turn volumes on the minor street approach, a 20% reduction was taken in the number of right turning vehicles to be conservative. ITE data and the trip distribution percentages from Figure 5 were used to project the hourly distribution of traffic going to and from the proposed project through this intersection. The posted speed limit on Dodge Rd is 40 MPH, thus 70% thresholds in Table 4C-1, Figure 4C-2, and Figure 4C-4 are used as a basis for analysis.

1. Warrant 1 is subdivided into Condition A and Condition B. The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. These conditions are satisfied when, for each of any eight hours of an average day, anticipated volumes on the artery and side road are more than the minimum values presented in Tables 4C-1 in the MUTCD. **The warrant for Condition A is not met, and the warrant for Condition B is not met.**

2. Warrant 2, the Four-Hour Vehicular Volume signal warrant conditions, are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. This warrant

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stipulates that for any four hours of a day, minimum threshold volumes are met on the artery and side road. **This warrant is not met.**

3. Warrant 3 is intended for application where minor street traffic suffers undue delay in entering or crossing the major street for one hour of the day. It stipulates that the warrant shall be applied in unusual cases (high-occupancy vehicle facilities – i.e., shopping centers, office parks) where a large number of vehicles discharge over a short period of time. **This warrant is not met.**

4. Warrant 4 is met when pedestrians experience excessive delay in crossing the major street because the traffic volumes are so heavy. The intersection currently has low pedestrian activity and is not likely to increase significantly under future development phases. **This warrant is not met.**

5. Warrant 5 is met when a sufficient number of gaps in traffic do not exist for certain size and frequency of school children to cross the major roadway. **This warrant is not met.**

6. Warrant 6 is met when a traffic signal is needed to maintain progressive movement and vehicle platooning in a coordinated signal system. The intersection would likely be coordinated with adjacent signals, if warranted. There is currently no issue with platooning along the Dodge Rd corridor, therefore, **this warrant is not met.**

7. Warrant 7 is intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. The need for a traffic control signal shall be considered if *all* of the following criteria are met:

    a. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce crash frequency.

    b. Five (5) or more reported crashes, of types susceptible to correction by a traffic signal, to have occurred within a 12-month period, each crash involving a personal injury or property damage.

    This warrant is not met.

8. Warrant 8 is met when a traffic signal might encourage concentration and organization of traffic flow on a roadway network. This warrant primarily focuses on two major intersecting roadways, which is not the case at the study intersection. **This warrant is not met.**

9. Warrant 9 is applicable when an intersection is located near an at-grade rail crossing. **This warrant is not met.**

Table 5: *Signal Warrant Analysis Results*

WARRANT	SATISFACTION OF WARRANTS
1A – Eight-Hour Condition A	NO
1B – Eight-Hour Condition B	NO
2 – Four-Hour	NO
3 – Peak-Hour	NO
4 – Pedestrian Volume	NO
5 – School Crossing	NO
6 – Coordinated Signal System	NO

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WARRANT	SATISFACTION OF WARRANTS
7 – Crash Experience	NO
8 – Roadway Network	NO
9 – Intersection Near a Grade Crossing	NO

Table 5 summarizes the signal warrant findings at the existing Dodge Rd/North Forest Rd intersection under full build conditions. Based upon the results, a traffic signal is not warranted at this intersection.

7.2 Description of Capacity Analysis

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service (LOS). Levels of service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis focuses on intersections, as opposed to highway segments.

The standard procedure for capacity analysis of signalized and unsignalized intersections is outlined in the *Highway Capacity Manual* (HCM) 7th Edition published by the Transportation Research Board (TRB). Traffic analysis software, Synchro 12, which is based on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a level of service based on the HCM as an indicator of how well intersections operate.

Six levels of service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the conditions with little to no delay, and LOS "F" conditions with very long delays. Suggested ranges of service capacity and an explanation of levels of service are included in the Appendices. LOS "C" or better is desirable, but LOS "D" for signalized locations and LOS "E" for unsignalized locations are generally thresholds of acceptable operation during peak periods so long as the volume to capacity ratio (v/c) is below 1.0. **Table 6** depicts level of service criteria for both signalized and unsignalized intersections.

Table 6: *Level of Service Criteria*

LEVEL OF SERVICE	SIGNALIZED CONTROL DELAY PER VEHICLE (seconds)	STOP CONTROL DELAY PER VEHICLE (seconds)
A	< 10	< 10
B	10 – 20	10 – 15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	> 80	> 50

LOS for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15-minute analysis period. LOS for unsignalized intersections, however, are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals.

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The v/c ratio, also referred to as degree of saturation, represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur.

7.3 Capacity Analysis Results

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. The future traffic conditions generated by the project were analyzed to assess the operation of the study area intersections. Capacity results for existing, background, and full development conditions are listed in **Table 7**. The discussion following the table summarizes capacity conditions. The detailed Synchro capacity analysis worksheets are contained in the Appendices.

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TABLE 7: CAPACITY ANALYSIS RESULTS

INTERSECTION	2024 EXISTING BASE CONDITIONS				2026 BACKGROUND CONDITIONS				2026 FULL BUILD CONDITIONS			
	AM		PM		PM		SAT		PM		SAT	
1. Sweet Home Rd/Dodge Rd/Commerce Dr (S)												
EB Left - Commmerce Dr	C	20.7	C	21.3	C	20.7	C	21.5	C	20.4	C	22.7
EB Thru/Right - Commerce Dr	C	31.9	C	34.3	C	33.4	C	34.6	C	34.0	D	36.1
WB Left - Dodge Rd	A	8.9	B	16.4	A	9.1	B	19.2	A	9.0	C	21.5
WB Thru - Dodge Rd	C	21.7	C	22.9	C	22.1	C	24.0	C	23.0	C	27.0
WB Right - Dodge Rd	C	25.3	C	21.1	C	25.2	C	25.4	C	25.7	C	30.4
NB Left - Sweet Home Rd	E	72.5	B	15.6	F	106.1	B	16.0	F	112.6	B	16.3
NB Thru/Right - Sweet Home Rd	B	19.2	D	36.2	C	20.5	D	38.2	C	21.4	D	45.4
SB Left- Sweet Home Rd	B	11.4	C	21.9	B	12.8	C	22.9	B	14.4	C	27.7
SB Thru/Right - Sweet Home Rd	C	24.2	C	25.3	C	26.0	C	25.7	C	26.7	C	25.5
Overall LOS	**C**	**29.6**	**C**	**27.1**	**D**	**36.0**	**C**	**28.9**	**D**	**37.1**	**C**	**32.7**
Volume-to-Capacity (v/c) Ratio	**1.03**		**0.83**		**1.12**		**0.86**		**1.14**		**0.92**	
2. Dodge Rd/Proposed Exit Only Driveway (U)												
SB - Proposed Exit Only Driveway	N/A		N/A		N/A		N/A		B	11.6	B	12.8
4. Dodge Rd/Proposed Southerly Driveway (U)												
EB Left - Dodge Rd	N/A		N/A		N/A		N/A		A	7.9	A	8.3
SB - Proposed Southerly Driveway									B	12.1	B	13.6
5. Dodge Rd/N Forest Rd (U)												
WB Left - Dodge Rd	A	7.9	A	7.8	A	7.9	A	7.9	A	8.0	A	8.0
NB - N Forest Rd	B	11.9	B	14.5	B	12.4	C	15.9	B	13.1	C	18.7

Notes:

1. A(2.8) = Level of Service (Delay in seconds per vehicle)
2. NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
3. (S) = Signalized; (U) = Unsignalized
4. N/A = Approach does not exist and/or was not analyzed during this condition
5. Green shaded cells indicate low delays, yellow shaded cells indicate moderate delays, red shaded cells indicate long delays.

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Dodge Road/Sweet Home Road (Signalized)
All approaches operate at LOS "D" or better under all conditions during both peak hours with the exception of the northbound left approach which operates at LOS "F" during the AM peak hour under background and full build conditions. In between background and full build conditions, the eastbound thru/right approach is projected to change from LOS "C" to "D" during the PM peak hour period, however, this is considered a borderline condition as the threshold between LOS "C" and "D" is 35.0 seconds per vehicle and the actual increase in delay projected is 1.5 seconds per vehicle. Also, between background and full build conditions, the westbound left approach is projected to change from LOS "B" to "C" during the PM peak hour period, however, this is also considered a borderline condition as the threshold between LOS "B" and "C" is 20.0 seconds per vehicle and the actual increase in delay projected is 2.3 seconds per vehicle. No other changes in levels of service are anticipated and no improvements are warranted nor recommended at this location.

Dodge Road/Proposed Exit Driveway (Unsignalized)
The southbound approach operates at LOS "B" under full build conditions during both peak hours. The proposed exit driveway should consist of one exiting lane.

Dodge Road/Proposed Southerly Driveway (Unsignalized)
All approaches operate at LOS "B" or better under full build conditions during both peak hours. The proposed southerly driveway should consist of one entering and one exiting lane.

Dodge Road/North Forest Road (Signalized)
All approaches operate at LOS "C" or better under all conditions during both peak hours. No changes in level of service are anticipated and no improvements are warranted nor recommended at this location.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This updated Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Sawyer's Landing development to be located on the property at 50 Dodge Road, which is along the north side of Dodge Road in the Town of Amherst, NY (Commonly referred to as Site "A" of the Muir Woods Project Site"). The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

Conclusions

1. The proposed project is expected to generate approximately 76 entering/102 exiting vehicle trips during the AM peak hour and 163 entering/136 exiting vehicle trips during the PM peak hour.

2. However, not all these driveway volumes are new, but instead a portion of the proposed volumes will visit more than one land use during one trip to the site. Thus, based upon internal capture rates from the NCHRP 684 model and professional judgement, the proposed site is expected to generate approximately 69 entering/92 exiting new vehicle trips during the AM peak hour and 133 entering/110 exiting new vehicle trips during the PM peak hour.

3. Based upon the results of the traffic signal warrant at the Dodge Rd/North Forest Rd intersection, a traffic signal is not warranted at this intersection.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

4. All movements generally operate at an acceptable LOS "D" or better under existing, projected background, and full build conditions (with proposed development) during both peak hours at all study intersections except for the northbound left approach at the Sweet Home Rd/Dodge Rd intersection during the AM peak hour, which operates at LOS "F" under background and full build conditions. There are no LOS changes at any of the study intersections that require mitigation.

5. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Recommendations

1. The proposed exit driveway along Dodge Rd should be designed to provide one exiting lane.

2. The proposed enter driveway along Dodge Rd should be designed to provide one entering lane.

3. The proposed southerly driveway along Dodge Rd should be designed to provide one entering and one exiting lane.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

9.0 REFERENCES

- Synchro 12 Software. Cubic ITS.
- Highway Capacity Manual (HCM 7th Edition). Transportation Research Board (TRB). Washington, DC. 2016.
- Highway Functional Classification Concepts, Criteria, and Procedures. FHWA. 2013.
- Trip Generation (11th Edition). Institute of Transportation Engineers (ITE). Washington, DC. 2021.
- OnTheMap. US Census Bureau. 2023.
- NCHRP Report 684 Enhancing Internal Trip Capture Estimation for Mixed-Use Develpoments. TRB. 1985.
- Traffic Data Viewer. New York State Department of Transportation (NYSDOT). 2023.

10.0 FIGURES

Figures 1 through 7 are included on the following pages.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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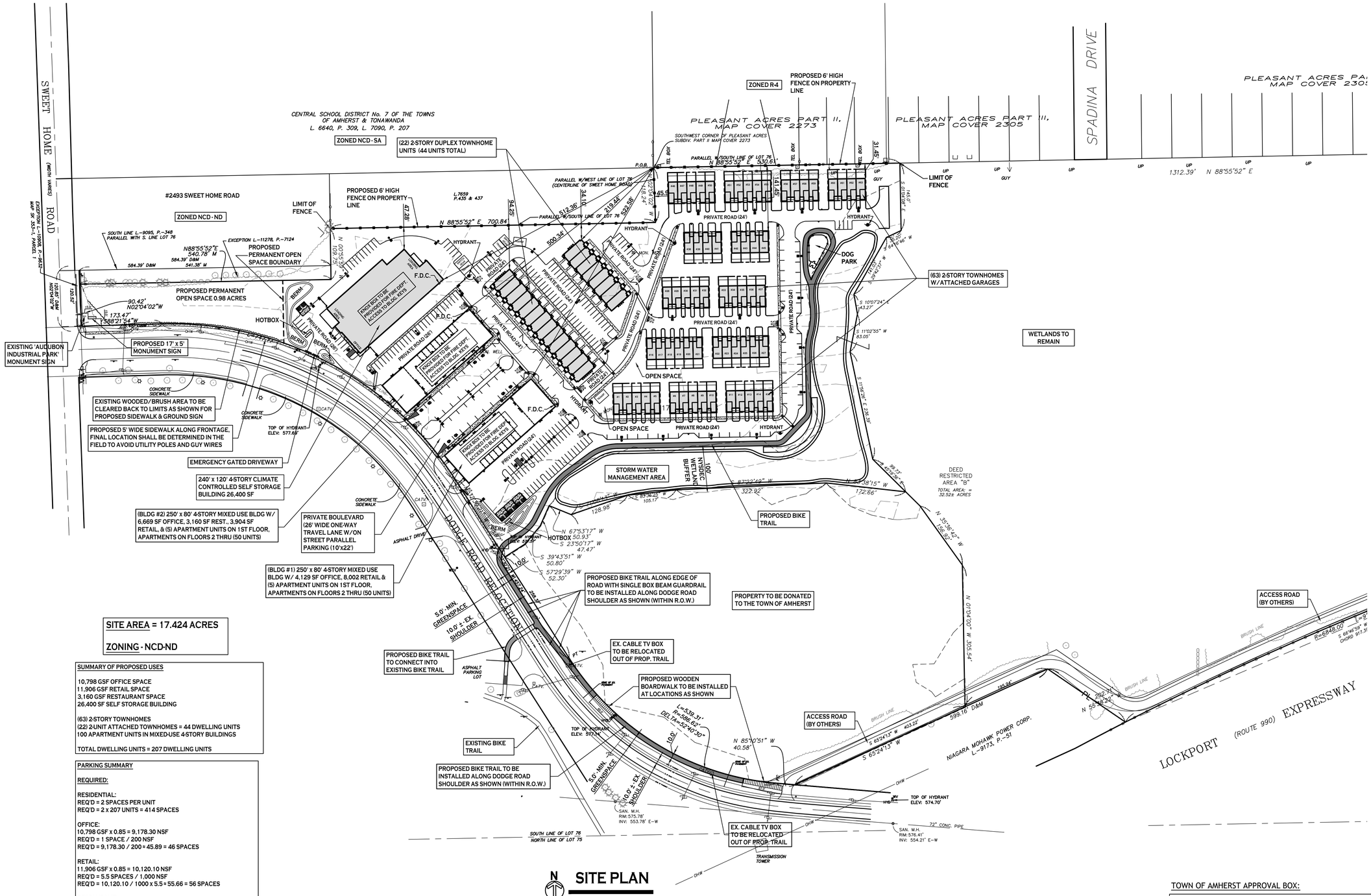


SITE PLAN

SCALE: 1"=100'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

100' 100 0 100 200Ft.

SITE AREA = 17.424 ACRES

ZONING - NCD-ND

SUMMARY OF PROPOSED USES

10,798 GSF OFFICE SPACE
11,906 GSF RETAIL SPACE
3,160 GSF RESTAURANT SPACE
26,400 SF SELF STORAGE BUILDING

(63) 2-STORY TOWNHOMES
(22) 2-UNIT ATTACHED TOWNHOMES = 44 DWELLING UNITS
100 APARTMENT UNITS IN MIXED-USE 4-STORY BUILDINGS

TOTAL DWELLING UNITS = 207 DWELLING UNITS

PARKING SUMMARY

REQUIRED:

RESIDENTIAL:
REQ'D = 2 SPACES PER UNIT
REQ'D = 2 x 207 UNITS = 414 SPACES

OFFICE:
10,798 GSF x 0.85 = 9,178.30 NSF
REQ'D = 1 SPACE / 200 NSF
REQ'D = 9,178.30 / 200 = 45.89 = 46 SPACES

RETAIL:
11,906 GSF x 0.85 = 10,120.10 NSF
REQ'D = 5.5 SPACES / 1,000 NSF
REQ'D = 10,120.10 / 1000 x 5.5 = 55.66 = 56 SPACES

RESTAURANT:
REQ'D = 1 SPACE / 3 SEATS + 1 SPACE / 100 SF TAKE OUT AREA
REQ'D = 100 SEAT / 3 + 500 SF / 100 = 38 SPACES

SELF STORAGE:
REQ'D = 1 SPACE / 5,000 AREA DEVOTED TO STORAGE
REQ'D = (26,400 SF x 4) / 5,000 SF = 22 SPACES

TOTAL REQ'D = 576 SPACES

PROVIDED:

94 PARALLEL PARKING SPACES
171 9'x19' SPACES
63 TOWNHOUSE GARAGE SPACES
63 SPACES IN FRONT OF TOWNHOUSE GARAGE SPACES
16 GARAGE SPACES IN 4-STORY BLDGS.
407 TOTAL SPACES

PERMANENT OPEN SPACE SUMMARY

TOTAL PROPOSED PERMANENT OPEN SPACE = 0.98 ACRES

WETLAND SUMMARY

FEDERAL IMPACTS PROPOSED = 6.089 AC
FEDERAL IMPACTS PREVIOUSLY PROPOSED = 13.01 AC
DECREASE = 6.921 AC (53% DECREASE)

NYSDEC IMPACTS PROPOSED = 1.20 AC
NYSDEC IMPACTS PREVIOUSLY PROPOSED = 9.46 AC
DECREASE = 8.26 AC (87% DECREASE)

NYSDEC BUFFER IMPACT PROPOSED = 3.65 AC
NYSDEC BUFFER IMPACTS PREVIOUSLY PROPOSED = 4.20 AC
DECREASE = 0.55 AC (13% DECREASE)

NOTE: NYSDEC IMPACTS INCLUDES FEDERAL WETLAND IMPACT OVERLAP AREAS

TOWN OF AMHERST APPROVAL BOX:

Carmina Wood Morris DPC
487 Main Street Suite 500
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

REVISIONS:

No.	Description	Date

PROJECT NAME:

Site Development plans for:

Sawyer's Landing

Portion of 1081 North French Road
Amherst, New York

Date: 2/22/24
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

Overall Site Plan

DRAWING NO.

C-100

Project no.: 21-011

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 1

PASSERO engineering architecture



Sawyer's Landing Development | Town of Amherst, Erie County, NY

0 400 800 1,600 Feet N

Site Location and Study Area

Key:
- # Study Intersection
- # Proposed Intersection

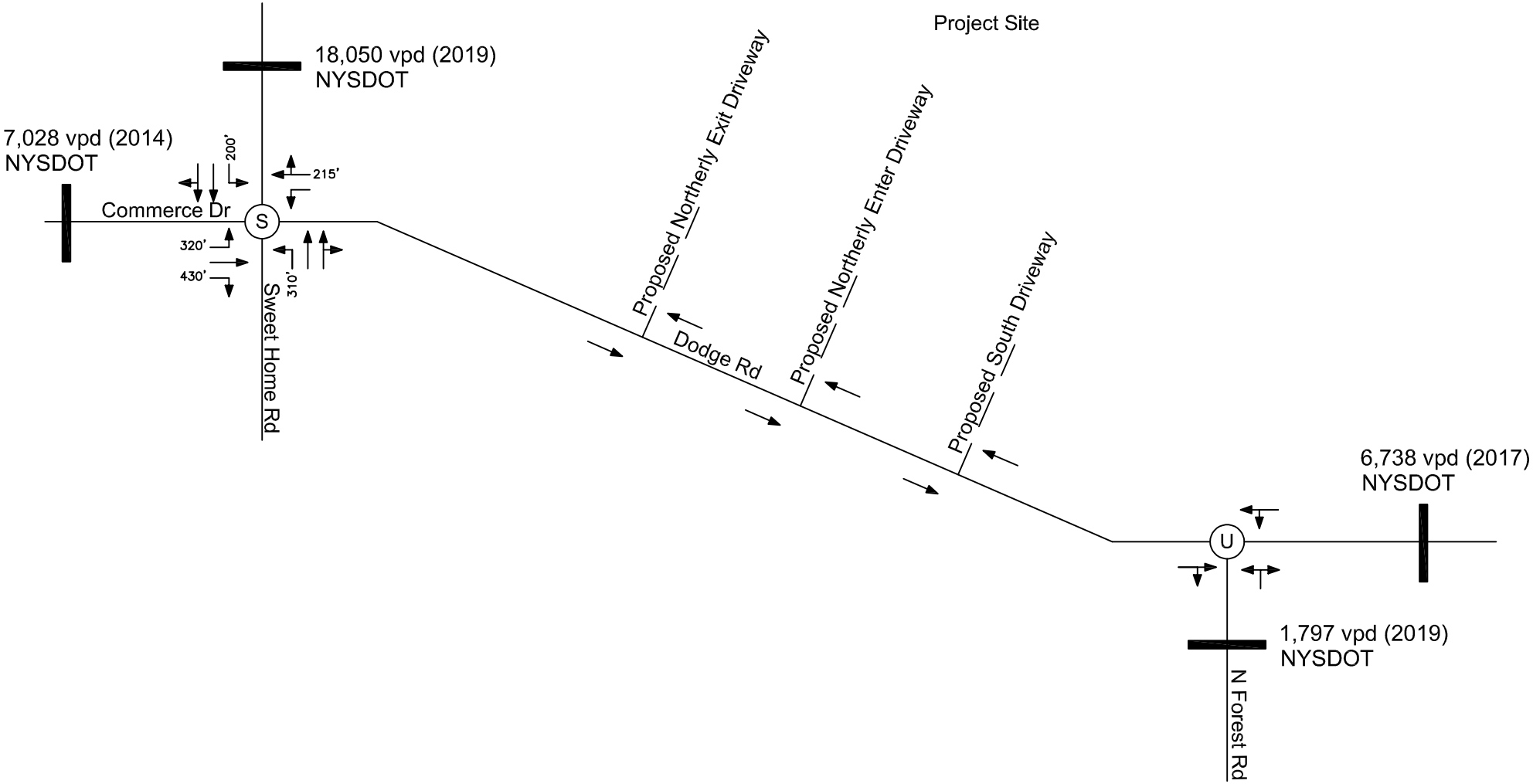
Proje

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 2

PASSERO engineering architecture

Notes:
1. All AADT volumes by those noted:
   1.1. NYSDOT = New York State Department of Transportation.
2. vpd = Vehicles per day.
3. The planned NYSDOT project will include the indicated storage lengths.



Sawyer's Landing Development | Town of Amherst, NY

Lane Geometry and Intersection Control

N
NOT TO SCALE

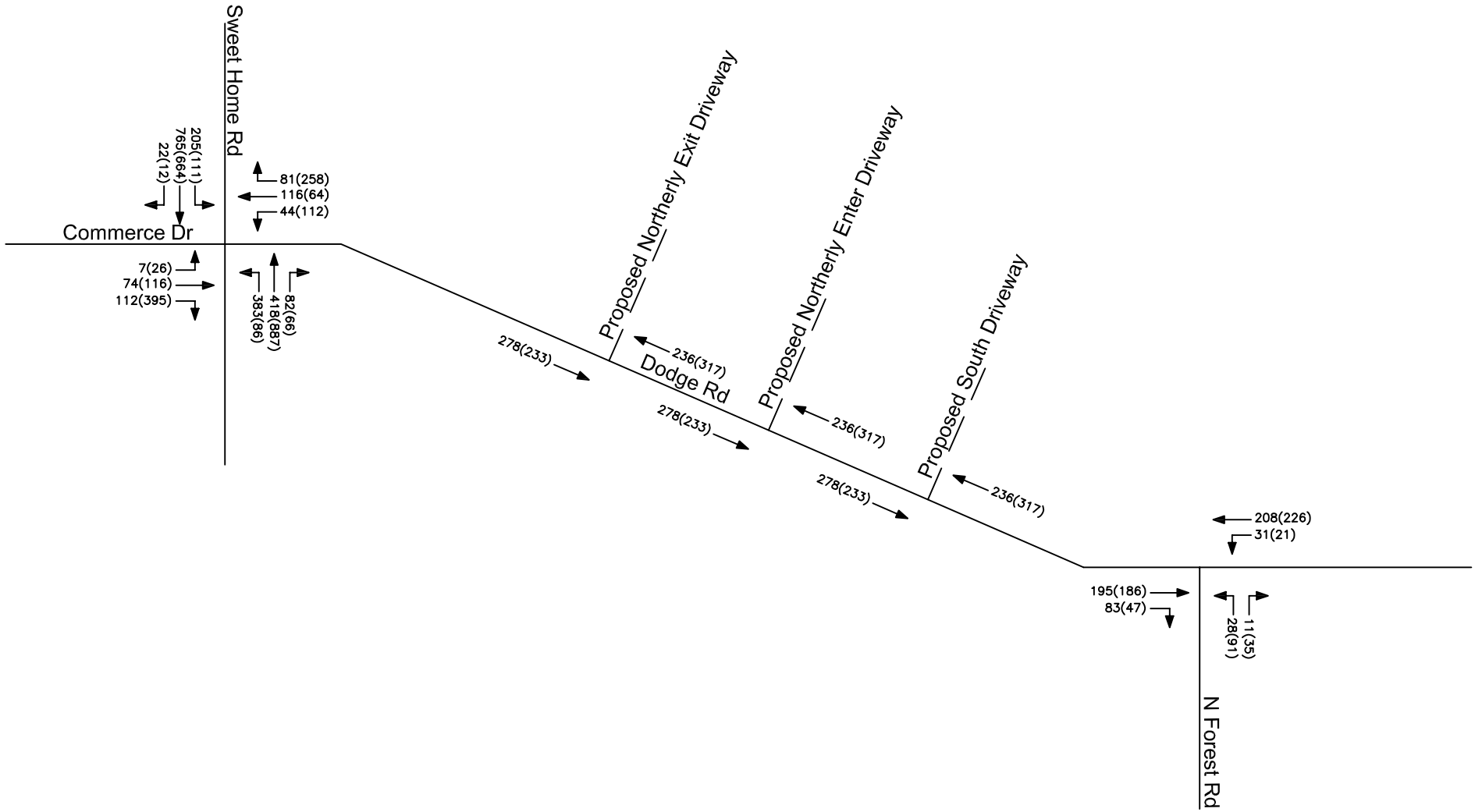
KEY:
– – – Proposed Access
U = Unsignalized

Project

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 3

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

N
NOT TO SCALE

Peak Hour Volumes
2024 Existing Base Conditions

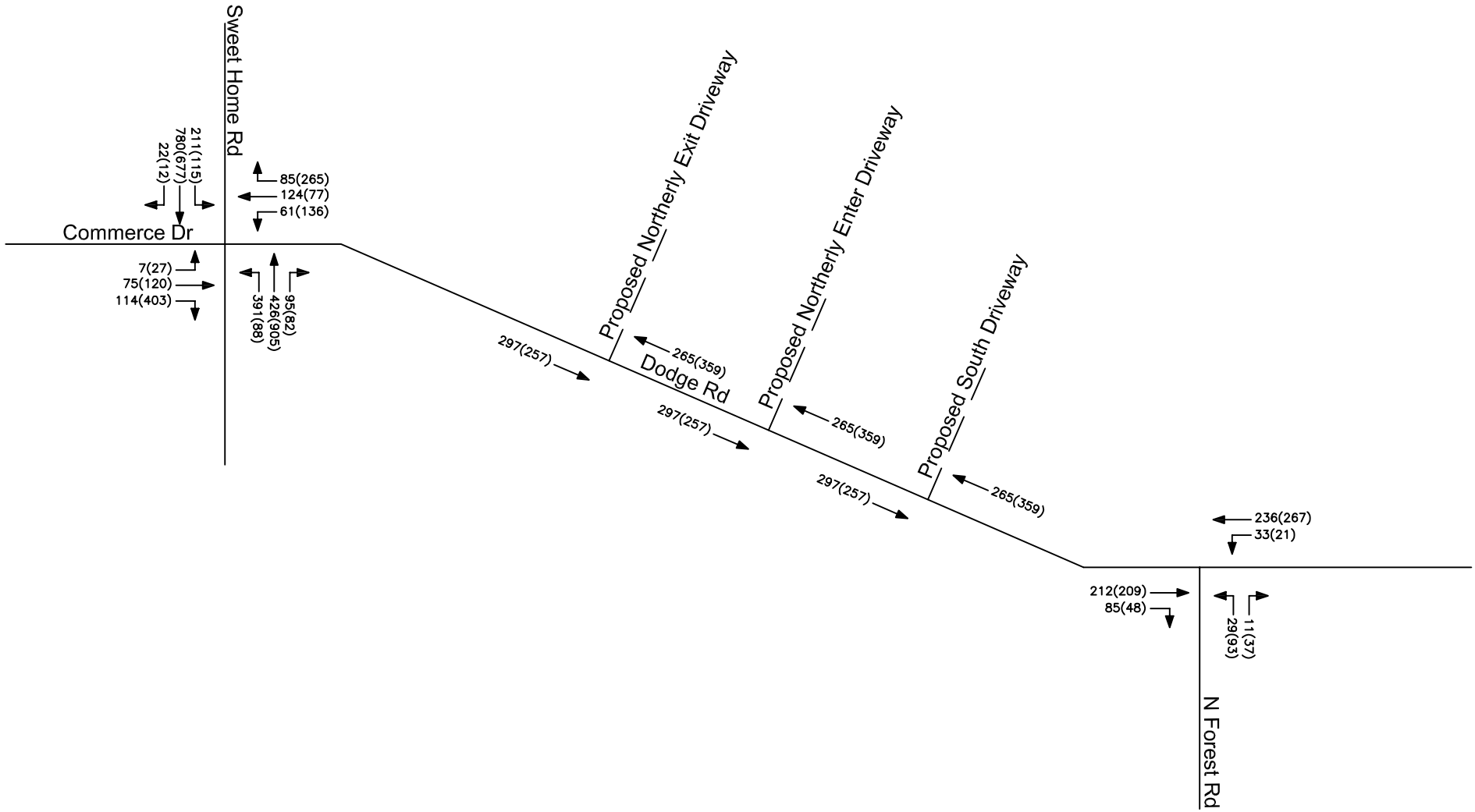
KEY:
00(00) = AM(PM)
– – – Proposed Access

Project

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 4

PASSERO engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

N
NOT TO SCALE

Peak Hour Volumes
2026 Background Conditions

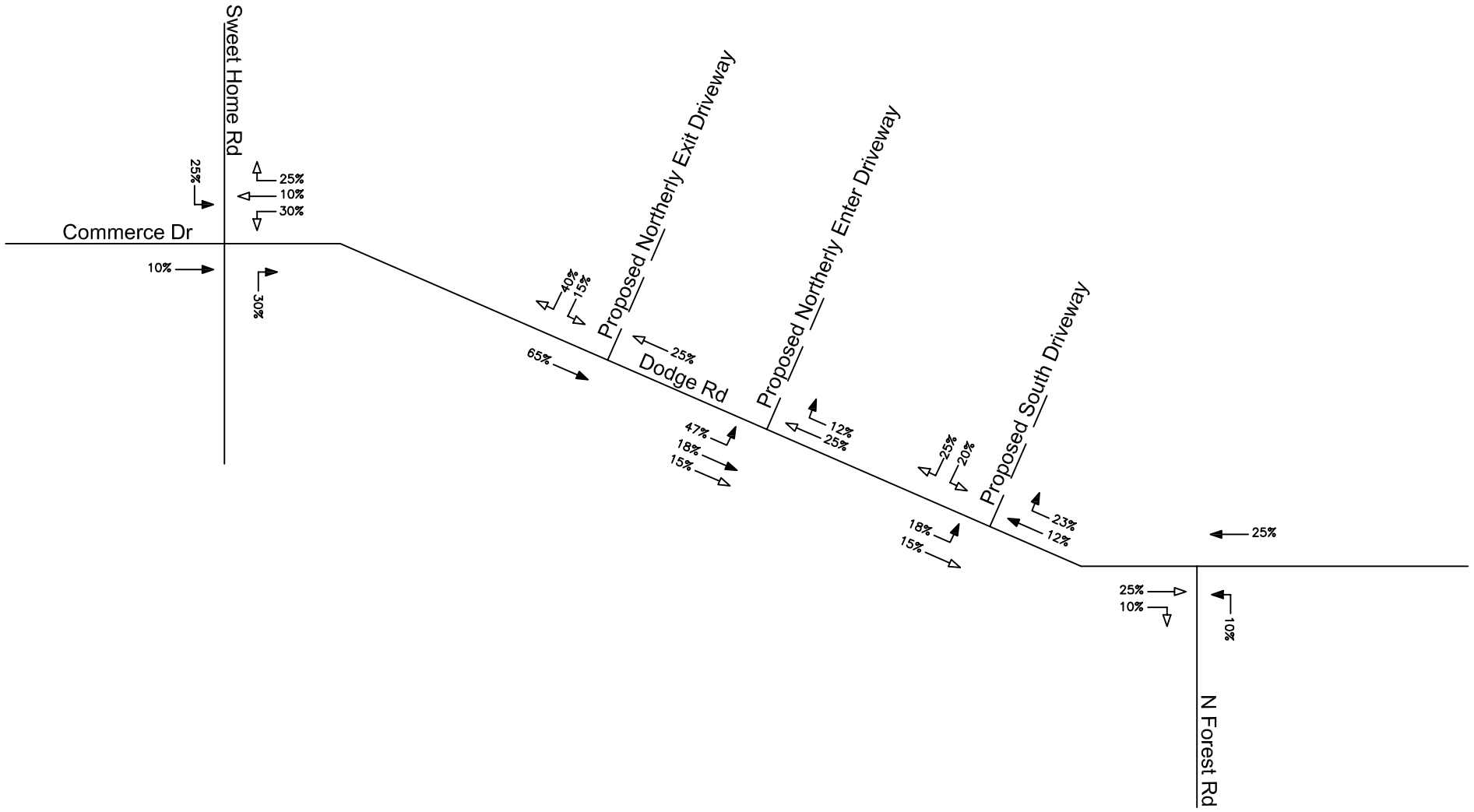
KEY:
00(00) = AM(PM)
– – – Proposed Access

Project

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 5

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Trip Distribution

N
NOT TO SCALE

KEY:
00(00) = AM(PM)
→ Entering Trip

Packet Pg. 2653

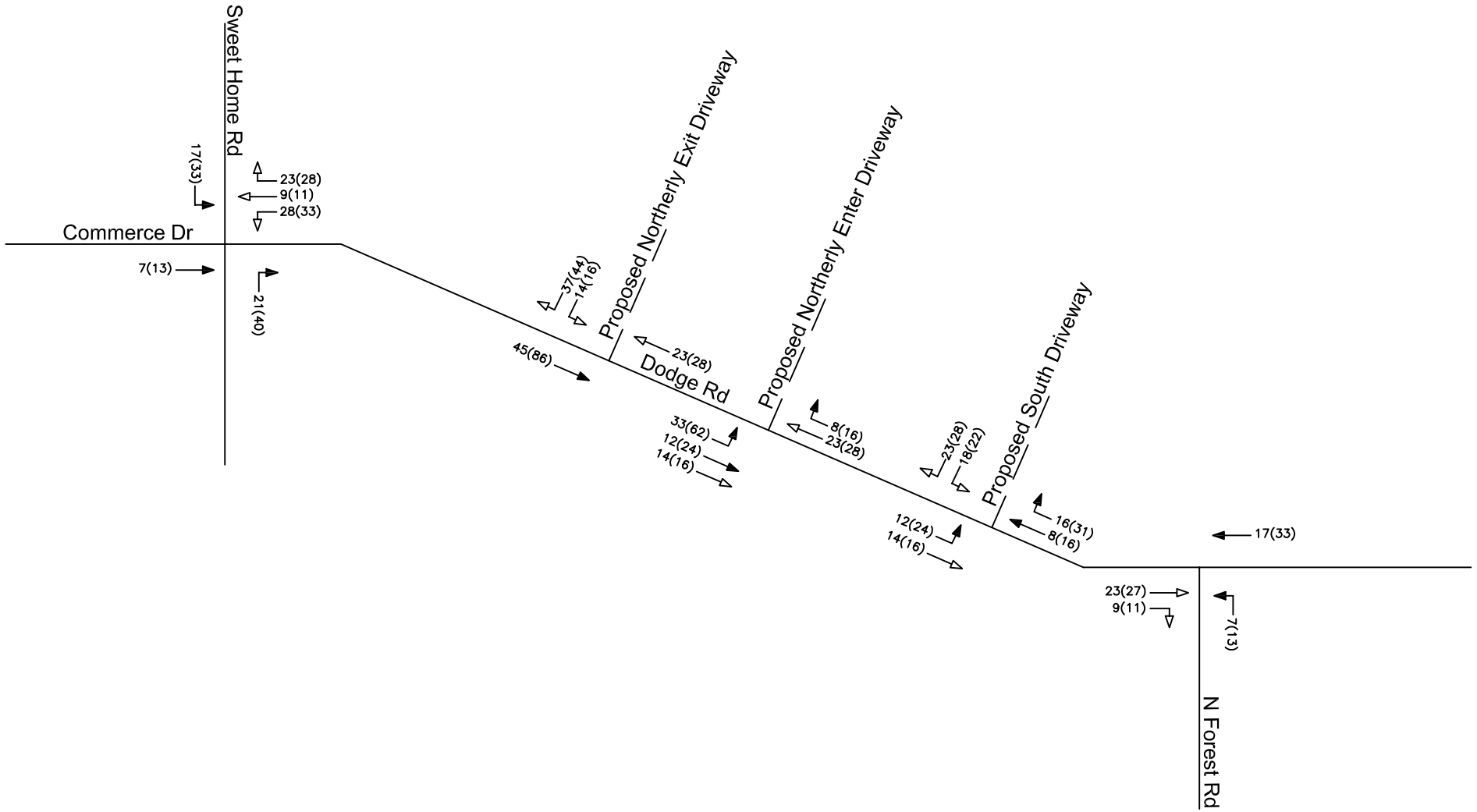
2.c

Project

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 6

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Site Generated Trips

N
NOT TO SCALE

KEY:
00(00) = AM(PM)
→ Entering Trip

Packet Pg. 2654

2.c

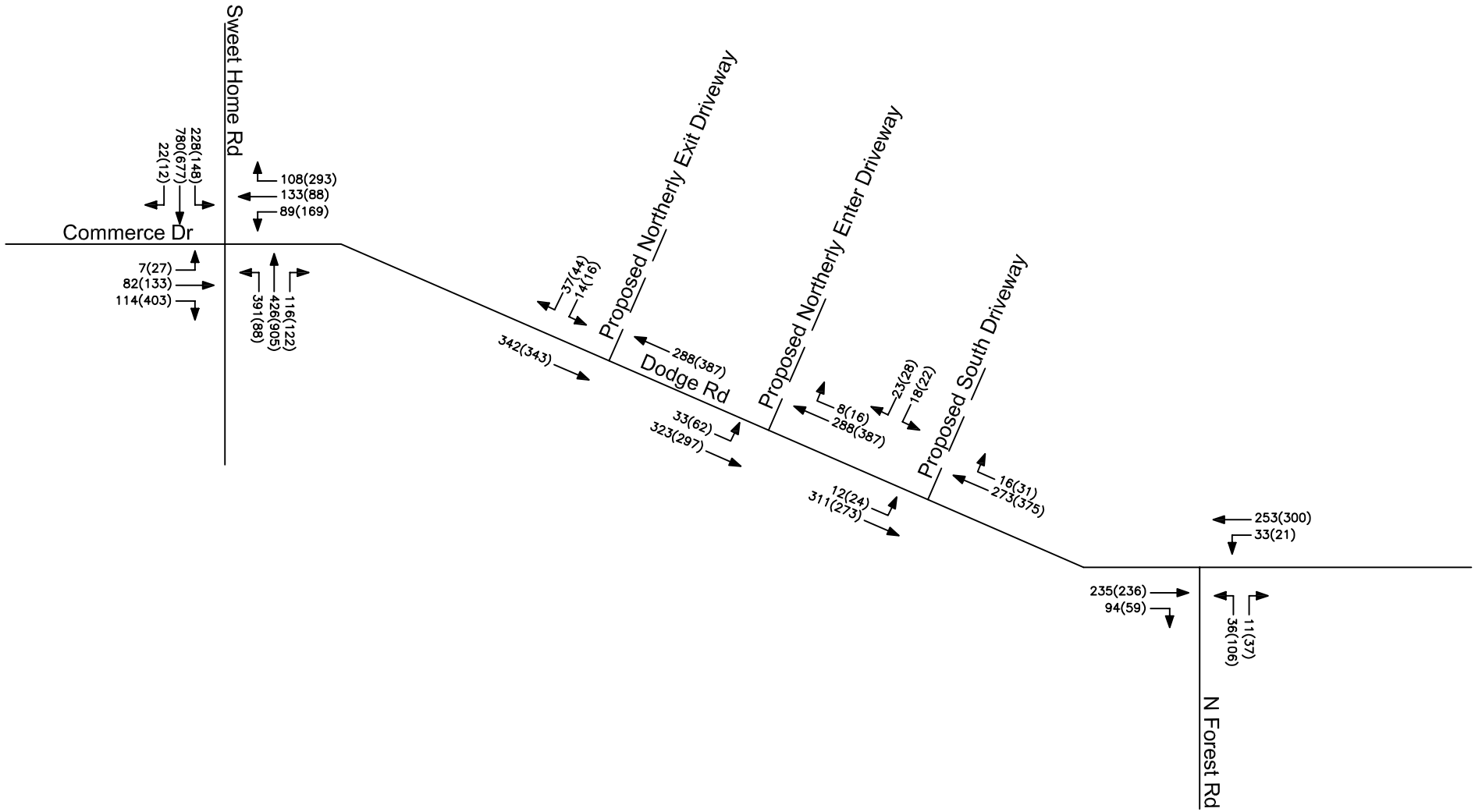
Project

:cess

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Figure 7

PASSERO
engineering architecture



Sawyer's Landing Development | Town of Amherst, NY

Peak Hour Volumes
Full Development Conditions

N
NOT TO SCALE

KEY:
00(00) = AM(PM)
– – – Proposed Access

Project

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDICES

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX A: EXISTING TRAFFIC COUNT DATA

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
Full Length (7 AM-7 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

Leg / Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2022-03-03 7:00AM	23	2	0	**25**	0	2	4	0	**6**	0	9	25	0	**34**	0	**65**
7:15AM	27	6	0	**33**	0	0	1	0	**1**	0	14	38	0	**52**	0	**86**
7:30AM	54	5	0	**59**	0	3	6	0	**9**	0	23	48	0	**71**	0	**139**
7:45AM	56	9	0	**65**	0	0	5	0	**5**	0	24	44	0	**68**	0	**138**
Hourly Total	160	22	0	**182**	0	5	16	0	**21**	0	70	155	0	**225**	0	**428**
8:00AM	48	12	0	**60**	0	4	8	0	**12**	0	17	50	0	**67**	0	**139**
8:15AM	48	5	0	**53**	0	4	9	0	**13**	0	18	51	0	**69**	0	**135**
8:30AM	35	5	0	**40**	0	2	9	0	**11**	0	13	46	0	**59**	0	**110**
8:45AM	41	3	0	**44**	0	6	10	0	**16**	0	18	56	0	**74**	0	**134**
Hourly Total	172	25	0	**197**	0	16	36	0	**52**	0	66	203	0	**269**	0	**518**
9:00AM	37	3	0	**40**	0	0	7	0	**7**	0	10	38	0	**48**	0	**95**
9:15AM	35	4	0	**39**	0	5	9	0	**14**	0	18	41	0	**59**	0	**112**
9:30AM	30	6	0	**36**	0	2	5	0	**7**	0	15	46	0	**61**	0	**104**
9:45AM	35	7	0	**42**	0	4	9	0	**13**	0	8	32	0	**40**	0	**95**
Hourly Total	137	20	0	**157**	0	11	30	0	**41**	0	51	157	0	**208**	0	**406**
10:00AM	27	6	0	**33**	0	5	14	0	**19**	0	10	34	0	**44**	0	**96**
10:15AM	35	4	0	**39**	0	3	9	0	**12**	0	8	32	0	**40**	0	**91**
10:30AM	32	3	0	**35**	0	2	13	0	**15**	0	11	32	0	**43**	0	**93**
10:45AM	26	2	0	**28**	0	2	8	0	**10**	0	13	35	0	**48**	0	**86**
Hourly Total	120	15	0	**135**	0	12	44	0	**56**	0	42	133	0	**175**	0	**366**
11:00AM	34	1	0	**35**	0	2	13	0	**15**	0	11	31	0	**42**	0	**92**
11:15AM	32	5	0	**37**	0	3	12	0	**15**	0	9	38	0	**47**	0	**99**
11:30AM	33	4	0	**37**	0	3	12	0	**15**	0	12	29	0	**41**	0	**93**
11:45AM	31	7	0	**38**	0	4	17	0	**21**	0	16	38	0	**54**	0	**113**
Hourly Total	130	17	0	**147**	0	12	54	0	**66**	0	48	136	0	**184**	0	**397**
12:00PM	40	6	0	**46**	0	4	12	0	**16**	0	17	41	0	**58**	0	**120**
12:15PM	31	6	0	**37**	0	7	13	0	**20**	0	15	36	0	**51**	0	**108**
12:30PM	36	2	0	**38**	0	5	22	0	**27**	0	19	38	0	**57**	0	**122**
12:45PM	32	6	0	**38**	0	2	13	0	**15**	0	10	40	0	**50**	0	**103**
Hourly Total	139	20	0	**159**	0	18	60	0	**78**	0	61	155	0	**216**	0	**453**
1:00PM	42	7	0	**49**	0	5	12	2	**19**	0	13	25	0	**38**	0	**106**
1:15PM	40	6	0	**46**	0	1	15	0	**16**	0	20	36	0	**56**	0	**118**
1:30PM	32	5	0	**37**	0	6	16	0	**22**	0	7	21	0	**28**	0	**87**
1:45PM	35	2	0	**37**	0	2	15	0	**17**	0	12	34	0	**46**	0	**100**
Hourly Total	149	20	0	**169**	0	14	58	2	**74**	0	52	116	0	**168**	0	**411**
2:00PM	36	2	0	**38**	0	7	14	0	**21**	0	11	38	0	**49**	0	**108**
2:15PM	39	5	0	**44**	0	3	18	0	**21**	0	10	31	0	**41**	0	**106**
2:30PM	38	3	0	**41**	0	6	13	0	**19**	0	18	44	0	**62**	0	**122**
2:45PM	34	6	0	**40**	0	4	13	0	**17**	0	7	39	0	**46**	0	**103**
Hourly Total	147	16	0	**163**	0	20	58	0	**78**	0	46	152	0	**198**	0	**439**
3:00PM	49	8	0	**57**	0	4	20	0	**24**	0	11	49	0	**60**	0	**141**
3:15PM	42	2	0	**44**	0	5	15	0	**20**	0	14	43	0	**57**	0	**121**
3:30PM	43	6	0	**49**	0	6	12	0	**18**	0	15	49	0	**64**	0	**131**
3:45PM	51	5	0	**56**	0	6	15	0	**21**	0	15	50	0	**65**	0	**142**
Hourly Total	185	21	0	**206**	0	21	62	0	**83**	0	55	191	0	**246**	0	**535**
4:00PM	48	2	0	**50**	0	15	36	0	**51**	0	14	47	0	**61**	0	**162**
4:15PM	47	3	0	**50**	0	5	14	0	**19**	0	14	51	0	**65**	0	**134**
4:30PM	56	5	0	**61**	0	10	22	0	**32**	0	14	47	0	**61**	0	**154**
4:45PM	59	3	0	**62**	0	8	23	0	**31**	0	7	36	0	**43**	0	**136**
Hourly Total	210	13	0	**223**	0	38	95	0	**133**	0	49	181	0	**230**	0	**586**
5:00PM	62	8	0	**70**	0	13	28	0	**41**	0	17	53	0	**70**	0	**181**
5:15PM	47	5	0	**52**	0	4	17	0	**21**	0	9	48	0	**57**	0	**130**
5:30PM	38	4	0	**42**	0	5	15	0	**20**	0	2	39	0	**41**	0	**103**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

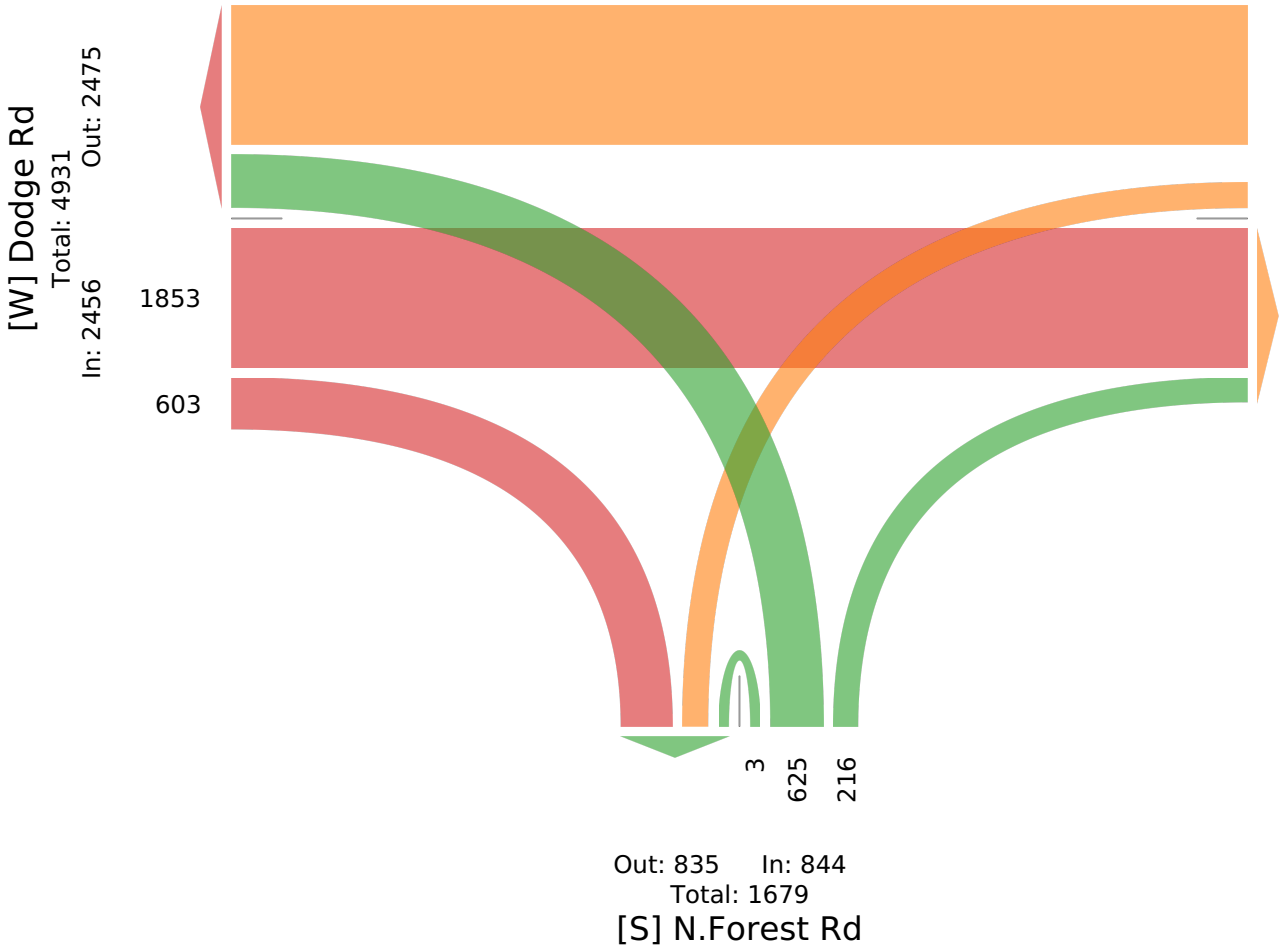
Leg	Dodge Rd					N.Forest Rd					Dodge Rd					
Direction	Westbound					Northbound					Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
5:45PM	37	4	0	**41**	0	3	7	0	**10**	0	10	31	0	**41**	0	**92**
Hourly Total	184	21	0	**205**	0	25	67	0	**92**	0	38	171	0	**209**	0	**506**
6:00PM	33	2	0	**35**	0	8	19	1	**28**	0	6	27	0	**33**	0	**96**
6:15PM	23	3	0	**26**	0	6	7	0	**13**	0	8	29	0	**37**	0	**76**
6:30PM	34	6	0	**40**	0	4	13	0	**17**	0	9	26	0	**35**	0	**92**
6:45PM	27	8	0	**35**	0	6	6	0	**12**	0	2	21	0	**23**	0	**70**
Hourly Total	117	19	0	**136**	0	24	45	1	**70**	0	25	103	0	**128**	0	**334**
Total	1850	229	0	**2079**	0	216	625	3	**844**	0	603	1853	0	**2456**	0	**5379**
% Approach	89.0%	11.0%	0%	**-**	-	25.6%	74.1%	0.4%	**-**	-	24.6%	75.4%	0%	**-**	-	-
% Total	34.4%	4.3%	0%	**38.7%**	-	4.0%	11.6%	0.1%	**15.7%**	-	11.2%	34.4%	0%	**45.7%**	-	-
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	1808	227	0	**2035**	-	211	616	3	**830**	-	591	1796	0	**2387**	-	5252
% Lights	97.7%	99.1%	0%	**97.9%**	-	97.7%	98.6%	100%	**98.3%**	-	98.0%	96.9%	0%	**97.2%**	-	97.6%
Heavy	42	2	0	**44**	-	5	9	0	**14**	-	12	57	0	**69**	-	127
% Heavy	2.3%	0.9%	0%	**2.1%**	-	2.3%	1.4%	0%	**1.7%**	-	2.0%	3.1%	0%	**2.8%**	-	2.4%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
Full Length (7 AM-7 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

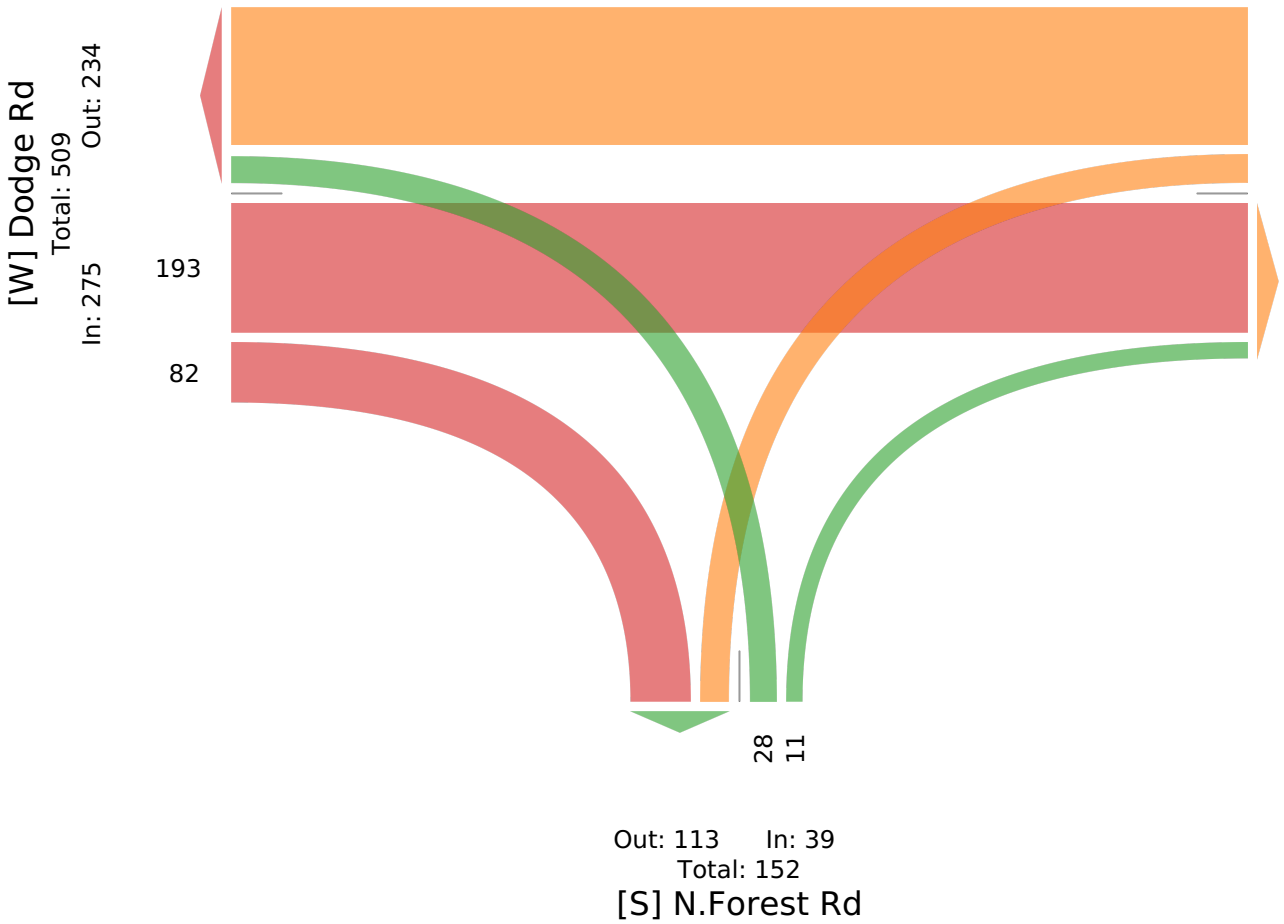
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 7:30AM	54	5	0	**59**	0	3	6	0	**9**	0	23	48	0	**71**	0	**139**
7:45AM	56	9	0	**65**	0	0	5	0	**5**	0	24	44	0	**68**	0	**138**
8:00AM	48	12	0	**60**	0	4	8	0	**12**	0	17	50	0	**67**	0	**139**
8:15AM	48	5	0	**53**	0	4	9	0	**13**	0	18	51	0	**69**	0	**135**
Total	206	31	0	**237**	0	11	28	0	**39**	0	82	193	0	**275**	0	**551**
% Approach	86.9%	13.1%	0%	**-**	-	28.2%	71.8%	0%	**-**	-	29.8%	70.2%	0%	**-**	-	-
% Total	37.4%	5.6%	0%	**43.0%**	-	2.0%	5.1%	0%	**7.1%**	-	14.9%	35.0%	0%	**49.9%**	-	-
PHF	0.920	0.646	-	**0.912**	-	0.688	0.778	-	**0.750**	-	0.854	0.946	-	**0.968**	-	0.991
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	202	31	0	**233**	-	11	27	0	**38**	-	81	188	0	**269**	-	540
% Lights	98.1%	100%	0%	**98.3%**	-	100%	96.4%	0%	**97.4%**	-	98.8%	97.4%	0%	**97.8%**	-	98.0%
Heavy	4	0	0	**4**	-	0	1	0	**1**	-	1	5	0	**6**	-	11
% Heavy	1.9%	0%	0%	**1.7%**	-	0%	3.6%	0%	**2.6%**	-	1.2%	2.6%	0%	**2.2%**	-	2.0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

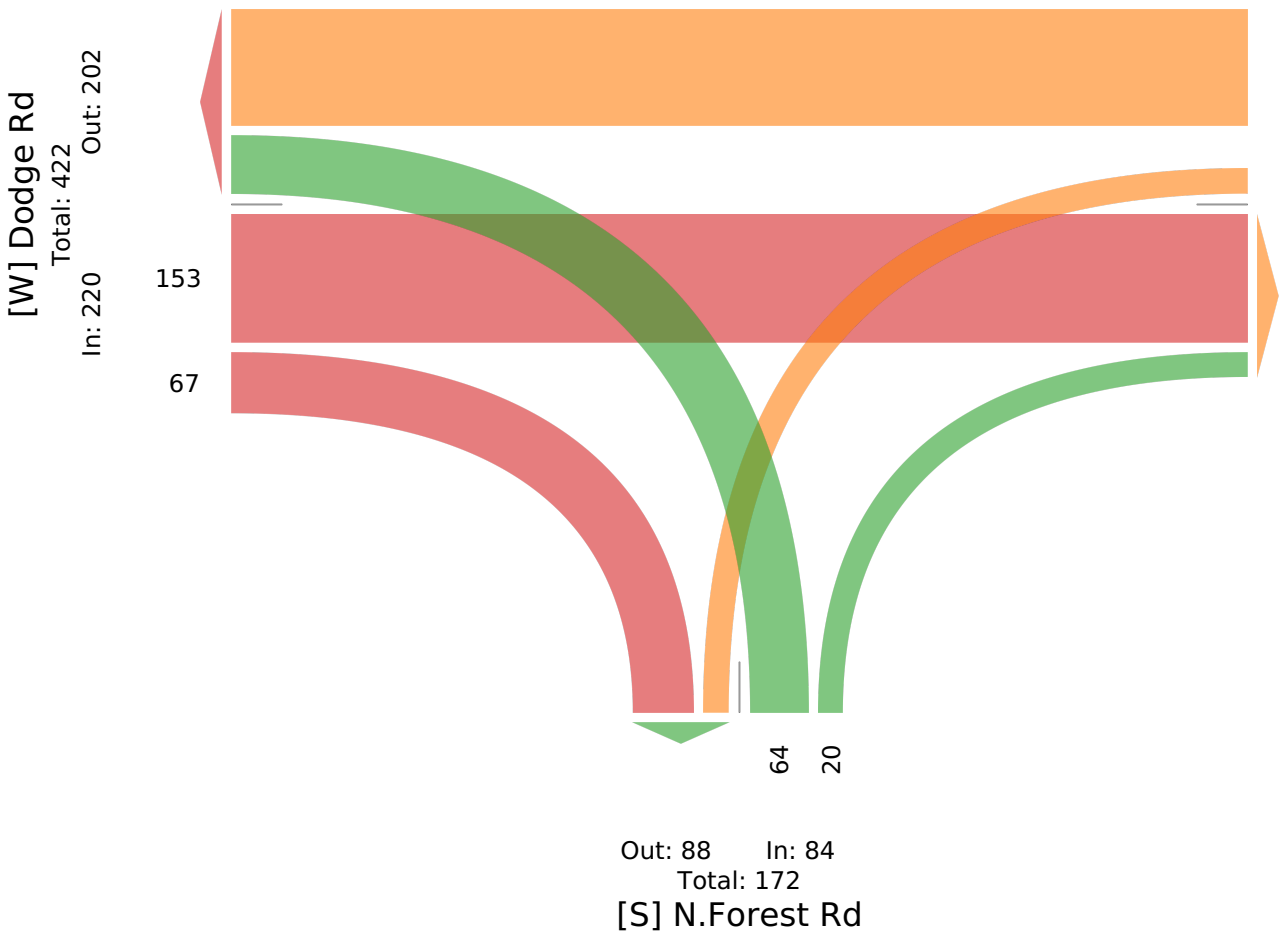
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 11:45AM	31	7	0	**38**	0	4	17	0	**21**	0	16	38	0	**54**	0	**113**
12:00PM	40	6	0	**46**	0	4	12	0	**16**	0	17	41	0	**58**	0	**120**
12:15PM	31	6	0	**37**	0	7	13	0	**20**	0	15	36	0	**51**	0	**108**
12:30PM	36	2	0	**38**	0	5	22	0	**27**	0	19	38	0	**57**	0	**122**
Total	138	21	0	**159**	0	20	64	0	**84**	0	67	153	0	**220**	0	**463**
% Approach	86.8%	13.2%	0%	**-**	-	23.8%	76.2%	0%	**-**	-	30.5%	69.5%	0%	**-**	-	-
% Total	29.8%	4.5%	0%	**34.3%**	-	4.3%	13.8%	0%	**18.1%**	-	14.5%	33.0%	0%	**47.5%**	-	-
PHF	0.863	0.750	-	**0.864**	-	0.714	0.727	-	**0.778**	-	0.882	0.933	-	**0.948**	-	0.949
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	137	21	0	**158**	-	18	62	0	**80**	-	65	150	0	**215**	-	453
% Lights	99.3%	100%	0%	**99.4%**	-	90.0%	96.9%	0%	**95.2%**	-	97.0%	98.0%	0%	**97.7%**	-	97.8%
Heavy	1	0	0	**1**	-	2	2	0	**4**	-	2	3	0	**5**	-	10
% Heavy	0.7%	0%	0%	**0.6%**	-	10.0%	3.1%	0%	**4.8%**	-	3.0%	2.0%	0%	**2.3%**	-	2.2%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

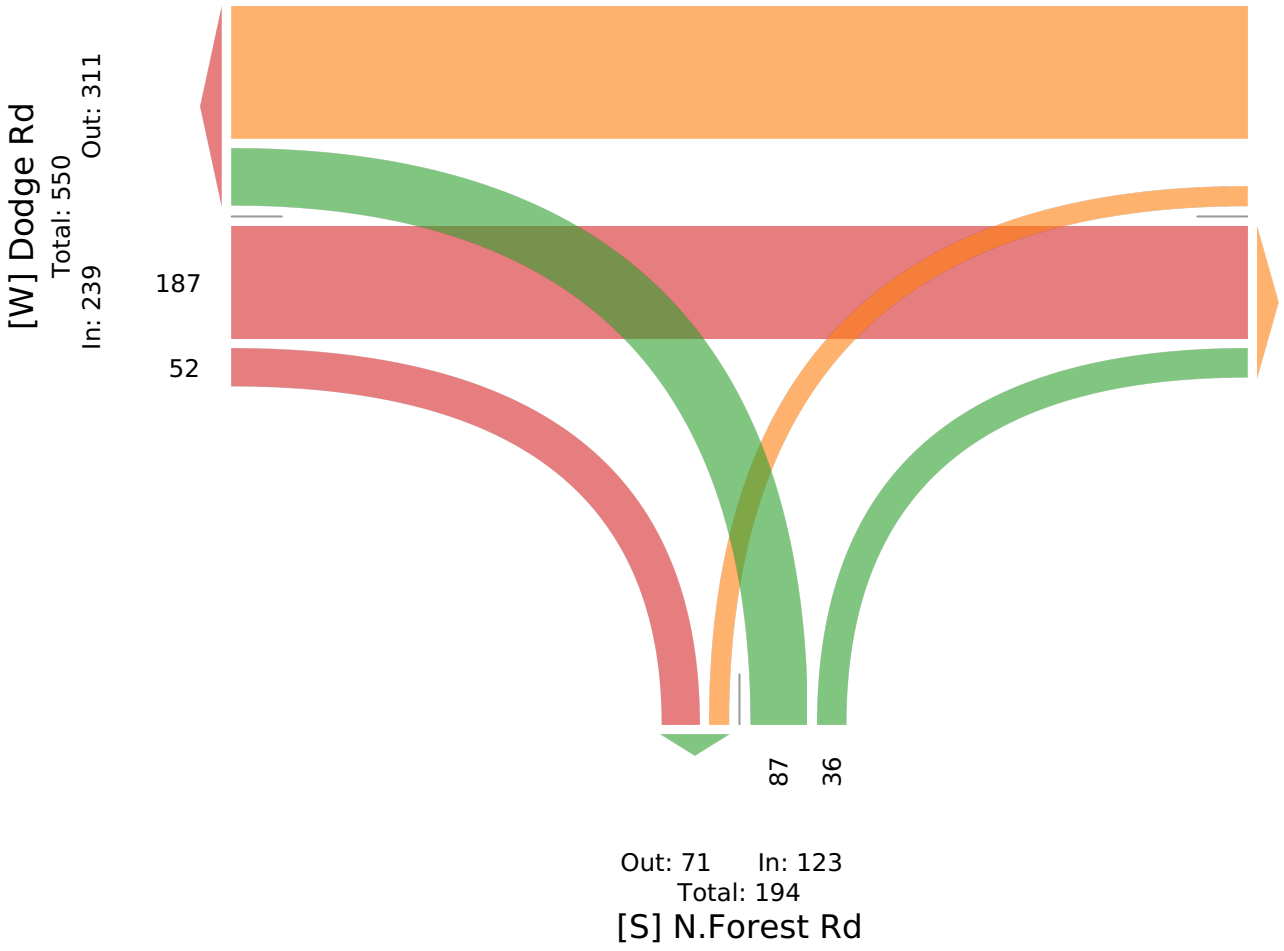
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 4:15PM	47	3	0	**50**	0	5	14	0	**19**	0	14	51	0	**65**	0	**134**
4:30PM	56	5	0	**61**	0	10	22	0	**32**	0	14	47	0	**61**	0	**154**
4:45PM	59	3	0	**62**	0	8	23	0	**31**	0	7	36	0	**43**	0	**136**
5:00PM	62	8	0	**70**	0	13	28	0	**41**	0	17	53	0	**70**	0	**181**
Total	224	19	0	**243**	0	36	87	0	**123**	0	52	187	0	**239**	0	**605**
% Approach	92.2%	7.8%	0%	**-**	-	29.3%	70.7%	0%	**-**	-	21.8%	78.2%	0%	**-**	-	-
% Total	37.0%	3.1%	0%	**40.2%**	-	6.0%	14.4%	0%	**20.3%**	-	8.6%	30.9%	0%	**39.5%**	-	-
PHF	0.903	0.594	-	**0.868**	-	0.692	0.777	-	**0.750**	-	0.765	0.882	-	**0.854**	-	0.836
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	221	19	0	**240**	-	36	86	0	**122**	-	52	185	0	**237**	-	599
% Lights	98.7%	100%	0%	**98.8%**	-	100%	98.9%	0%	**99.2%**	-	100%	98.9%	0%	**99.2%**	-	99.0%
Heavy	3	0	0	**3**	-	0	1	0	**1**	-	0	2	0	**2**	-	6
% Heavy	1.3%	0%	0%	**1.2%**	-	0%	1.1%	0%	**0.8%**	-	0%	1.1%	0%	**0.8%**	-	1.0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC

Thu Mar 3, 2022
Forced Peak (4:30 PM - 5:30 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US

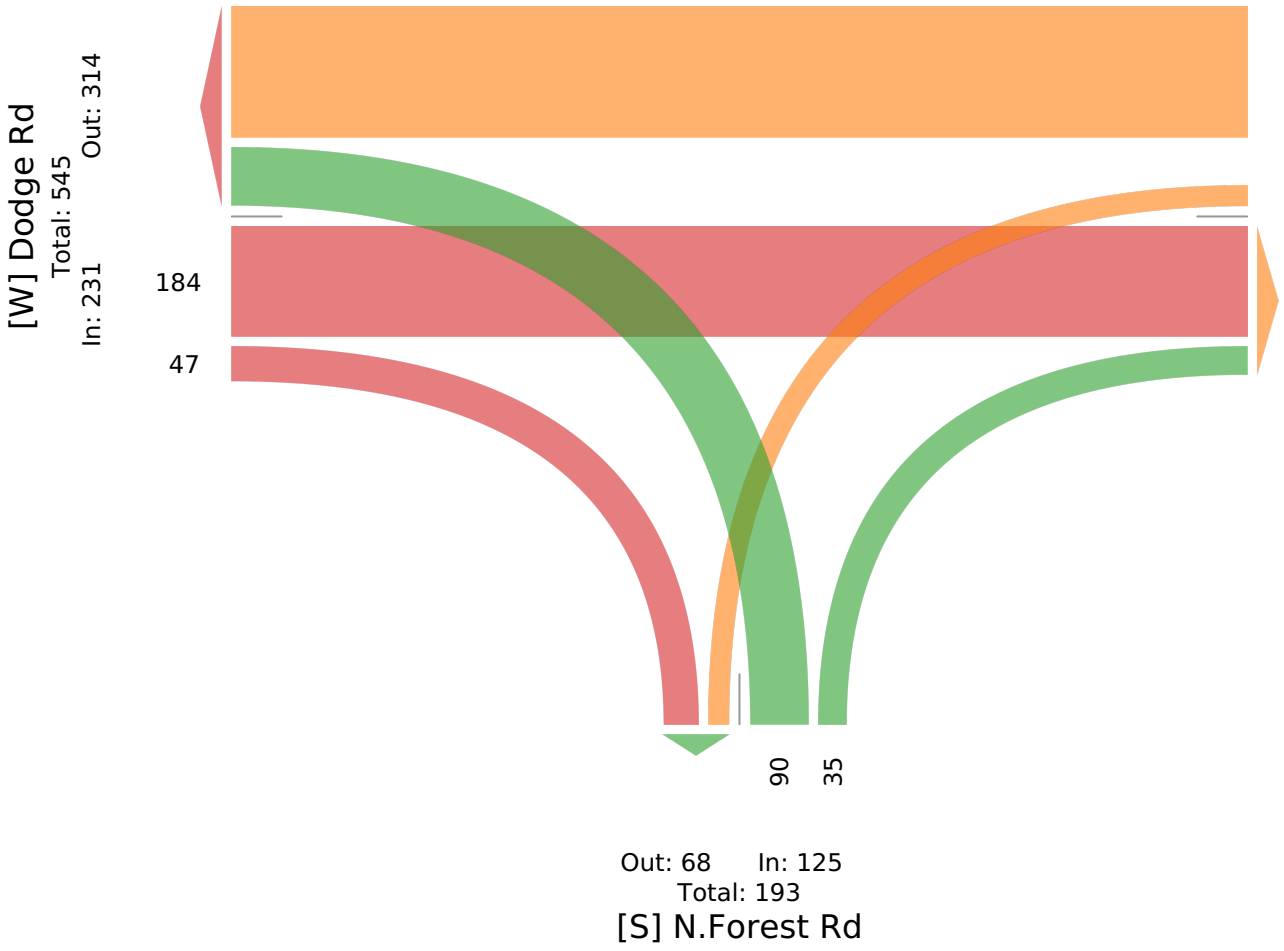
Leg Direction	Dodge Rd Westbound					N.Forest Rd Northbound					Dodge Rd Eastbound					
Time	T	L	U	**App**	Ped*	R	L	U	**App**	Ped*	R	T	U	**App**	Ped*	**Int**
2022-03-03 4:30PM	56	5	0	**61**	0	10	22	0	**32**	0	14	47	0	**61**	0	**154**
4:45PM	59	3	0	**62**	0	8	23	0	**31**	0	7	36	0	**43**	0	**136**
5:00PM	62	8	0	**70**	0	13	28	0	**41**	0	17	53	0	**70**	0	**181**
5:15PM	47	5	0	**52**	0	4	17	0	**21**	0	9	48	0	**57**	0	**130**
Total	224	21	0	**245**	0	35	90	0	**125**	0	47	184	0	**231**	0	**601**
% Approach	91.4%	8.6%	0%	**-**	-	28.0%	72.0%	0%	**-**	-	20.3%	79.7%	0%	**-**	-	-
% Total	37.3%	3.5%	0%	**40.8%**	-	5.8%	15.0%	0%	**20.8%**	-	7.8%	30.6%	0%	**38.4%**	-	-
PHF	0.903	0.656	-	**0.875**	-	0.673	0.804	-	**0.762**	-	0.691	0.868	-	**0.825**	-	0.830
Motorcycles	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Lights	223	21	0	**244**	-	35	89	0	**124**	-	47	183	0	**230**	-	598
% Lights	99.6%	100%	0%	**99.6%**	-	100%	98.9%	0%	**99.2%**	-	100%	99.5%	0%	**99.6%**	-	99.5%
Heavy	1	0	0	**1**	-	0	1	0	**1**	-	0	1	0	**1**	-	3
% Heavy	0.4%	0%	0%	**0.4%**	-	0%	1.1%	0%	**0.8%**	-	0%	0.5%	0%	**0.4%**	-	0.5%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

N.Forest Rd/Dodge Rd - TMC
Thu Mar 3, 2022
Forced Peak (4:30 PM - 5:30 PM)
All Classes (Motorcycles, Lights, Heavy, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 927236, Location: 43.023705, -78.787962

Provided by: Tri-State Traffic Data: New York Division
1016 Hoosick Rd, Troy, NY, 12180, US



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Summary

Study Name	Sweet Home Road @ Dodge Rd. & Commerce Rd.
Project	
Project Code	
Legs and Movements	
Bin Size	15 minutes
Time Zone	
Start Time	2024-05-14 00:00:00 +0000
End Time	2024-05-17 00:00:00 +0000
Location	Sweet Home Road @ Dodge Rd. & Commerce Rd.
Latitude and Longitude	43.02669108,-78.79913032

AM Peak	7:30-8:30
Midday Peak	15:00-16:00
PM Peak (Overall Peak Hour)	16:30-17:30

ArticulatedTruck

Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	1		
2024-05-14 07:15:00 +0000	0	0	0	0	0	0	0	1	0	0	0	0	1		
2024-05-14 07:30:00 +0000	0	1	0	0	0	0	0	1	1	0	0	0	0	3	
2024-05-14 07:45:00 +0000	0	0	0	0	0	0	0	1	0	0	0	0	1	2	
2024-05-14 08:00:00 +0000	0	1	0	0	0	0	0	2	1	0	0	0	0	4	
2024-05-14 08:15:00 +0000	0	0	0	0	0	0	0	1	1	0	0	0	2	4	
2024-05-14 08:30:00 +0000	0	0	0	0	0	0	0	0	1	0	0	0	0		
2024-05-14 08:45:00 +0000	0	0	0	0	0	0	0	1	1	0	0	0	1		
2024-05-14 16:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0		
2024-05-14 16:15:00 +0000	0	1	0	0	0	0	0	1	1	0	0	0	1		
2024-05-14 16:30:00 +0000	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
2024-05-14 16:45:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
2024-05-14 17:00:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	1	2	
2024-05-14 17:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
2024-05-14 17:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	1		
2024-05-14 17:45:00 +0000	0	0	0	0	0	1	0	0	1	0	0	0	1	0	
7:30-8:30	0	2	0	0	0	0	0	5	3	0	0	0	0	3	
4:30-5:30	0	2	0	0	0	1	0	0	0	0	0	0	0	2	

Bicycle															
Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:45:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30-5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Bus																
Entry	North				East			South				West				
Direction	Southbound				Westbound			Northbound				Eastbound				
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right		
2024-05-14 07:00:00 +0000	0	15	1	0	0	0	0	0	3	0	0	0	0	1		
2024-05-14 07:15:00 +0000	1	1	0	0	0	0	1	0	9	0	0	1	0	0		
2024-05-14 07:30:00 +0000	0	4	1	0	0	0	0	0	5	0	0	0	0	0	10	
2024-05-14 07:45:00 +0000	1	2	0	0	0	0	1	0	3	1	0	1	0	0	9	
2024-05-14 08:00:00 +0000	0	8	0	0	0	0	0	2	6	0	0	0	0	0	16	
2024-05-14 08:15:00 +0000	0	3	0	0	0	0	0	3	3	0	0	1	0	0	10	
2024-05-14 08:30:00 +0000	0	5	1	0	0	0	0	3	4	0	0	1	1	4		
2024-05-14 08:45:00 +0000	0	8	0	0	0	3	0	3	2	0	0	2	7	4		
2024-05-14 16:00:00 +0000	0	6	1	0	0	0	0	0	10	0	0	0	0	0		
2024-05-14 16:15:00 +0000	0	8	0	0	0	0	0	0	2	0	0	1	0	1		
2024-05-14 16:30:00 +0000	1	3	1	0	0	0	0	0	1	0	0	0	0	1	7	
2024-05-14 16:45:00 +0000	0	1	0	0	0	0	0	0	1	0	0	1	0	0	3	
2024-05-14 17:00:00 +0000	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	
2024-05-14 17:15:00 +0000	0	1	1	0	0	0	0	0	1	0	0	1	0	0	4	
2024-05-14 17:30:00 +0000	0	1	0	0	0	0	0	0	0	0	0	0	0	0		
2024-05-14 17:45:00 +0000	0	0	1	0	0	0	0	0	1	0	0	1	0	0		
7:30-8:30	1	17	1	0	0	0	1	5	17	1	0	2	0	0		
4:30-5:30	1	5	2	0	0	0	0	0	4	0	0	2	0	2		

Lights

Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	27	164	3	0	3	14	9	60	61	7	0	1	7	38	
2024-05-14 07:15:00 +0000	35	183	3	0	6	13	15	76	97	11	0	3	14	30	
2024-05-14 07:30:00 +0000	49	202	5	0	7	19	21	78	99	15	0	1	27	32	555
2024-05-14 07:45:00 +0000	58	194	6	0	6	39	20	113	96	18	0	0	18	21	589
2024-05-14 08:00:00 +0000	47	150	5	0	10	32	19	93	97	17	0	1	16	27	514
2024-05-14 08:15:00 +0000	47	190	5	0	8	26	18	84	103	17	0	3	13	24	538
2024-05-14 08:30:00 +0000	40	162	1	0	12	22	22	71	84	19	0	3	10	30	
2024-05-14 08:45:00 +0000	41	158	5	0	7	18	19	65	101	21	0	1	14	24	
2024-05-14 16:00:00 +0000	27	141	3	0	22	13	56	21	222	15	0	7	20	88	
2024-05-14 16:15:00 +0000	20	141	2	0	26	14	52	19	208	13	0	4	19	69	
2024-05-14 16:30:00 +0000	26	160	2	0	25	12	68	19	221	17	0	11	28	104	693
2024-05-14 16:45:00 +0000	29	155	4	0	28	13	59	19	226	16	0	2	29	92	672
2024-05-14 17:00:00 +0000	24	176	1	0	34	18	80	21	208	17	0	6	37	131	753
2024-05-14 17:15:00 +0000	29	163	1	0	24	17	50	22	222	16	0	5	22	59	630
2024-05-14 17:30:00 +0000	28	170	4	0	18	10	54	17	207	19	0	5	17	47	
2024-05-14 17:45:00 +0000	27	142	3	0	20	9	42	15	174	12	0	3	15	35	
7:30-8:30	201	736	21	0	31	116	78	368	395	67	0	5	74	104	
4:30-5:30	108	654	8	0	111	60	257	81	877	66	0	24	116	386	

MotorizedVehicle

Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 07:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 07:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 07:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 08:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 08:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 16:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 16:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 16:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 16:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:00:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:15:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024-05-14 17:30:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2024-05-14 17:45:00 +0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30-5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

SingleUnitTruck

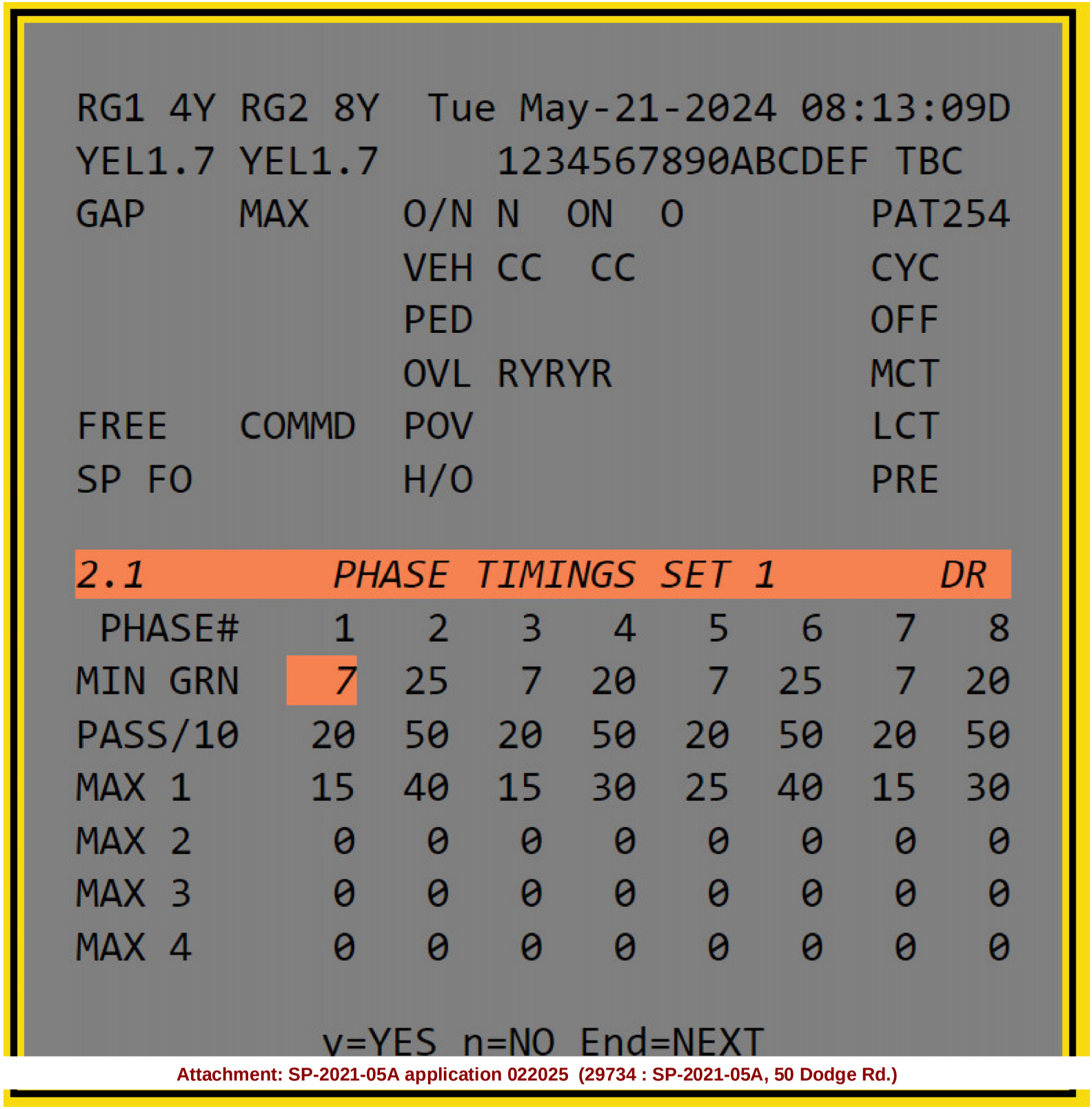
Entry	North				East			South				West			
Direction	Southbound				Westbound			Northbound				Eastbound			
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	
2024-05-14 07:00:00 +0000	0	1	0	0	1	0	0	0	1	1	0	0	1	2	
2024-05-14 07:15:00 +0000	0	1	0	0	2	0	0	1	0	2	0	0	0	2	
2024-05-14 07:30:00 +0000	0	3	0	0	3	0	1	0	0	5	0	0	0	2	14
2024-05-14 07:45:00 +0000	1	1	0	0	3	0	0	1	0	4	0	0	0	1	11
2024-05-14 08:00:00 +0000	1	3	0	0	4	0	1	2	1	2	0	0	0	1	15
2024-05-14 08:15:00 +0000	1	3	0	0	3	0	0	2	2	3	0	0	0	1	15
2024-05-14 08:30:00 +0000	2	1	0	0	3	0	1	3	3	3	0	0	0	2	
2024-05-14 08:45:00 +0000	0	4	0	0	2	0	2	2	2	2	0	0	0	2	
2024-05-14 16:00:00 +0000	0	2	0	0	0	1	0	2	2	0	0	0	0	1	
2024-05-14 16:15:00 +0000	1	1	0	0	0	1	0	1	1	0	0	1	0	1	
2024-05-14 16:30:00 +0000	0	1	0	0	0	1	1	1	2	0	0	0	0	2	8
2024-05-14 16:45:00 +0000	1	2	0	0	0	2	0	1	1	0	0	0	0	1	8
2024-05-14 17:00:00 +0000	1	0	1	0	0	0	0	1	1	0	0	0	0	1	5
2024-05-14 17:15:00 +0000	0	0	1	0	1	0	0	2	2	0	0	0	0	1	7
2024-05-14 17:30:00 +0000	0	1	1	0	0	2	1	0	1	0	0	0	0	0	
2024-05-14 17:45:00 +0000	0	2	0	0	0	0	0	1	1	0	0	0	0	1	
7:30-8:30	3	10	0	0	13	0	2	5	3	14	0	0	0	5	
4:30-5:30	2	3	2	0	1	3	1	5	6	0	0	0	0	5	

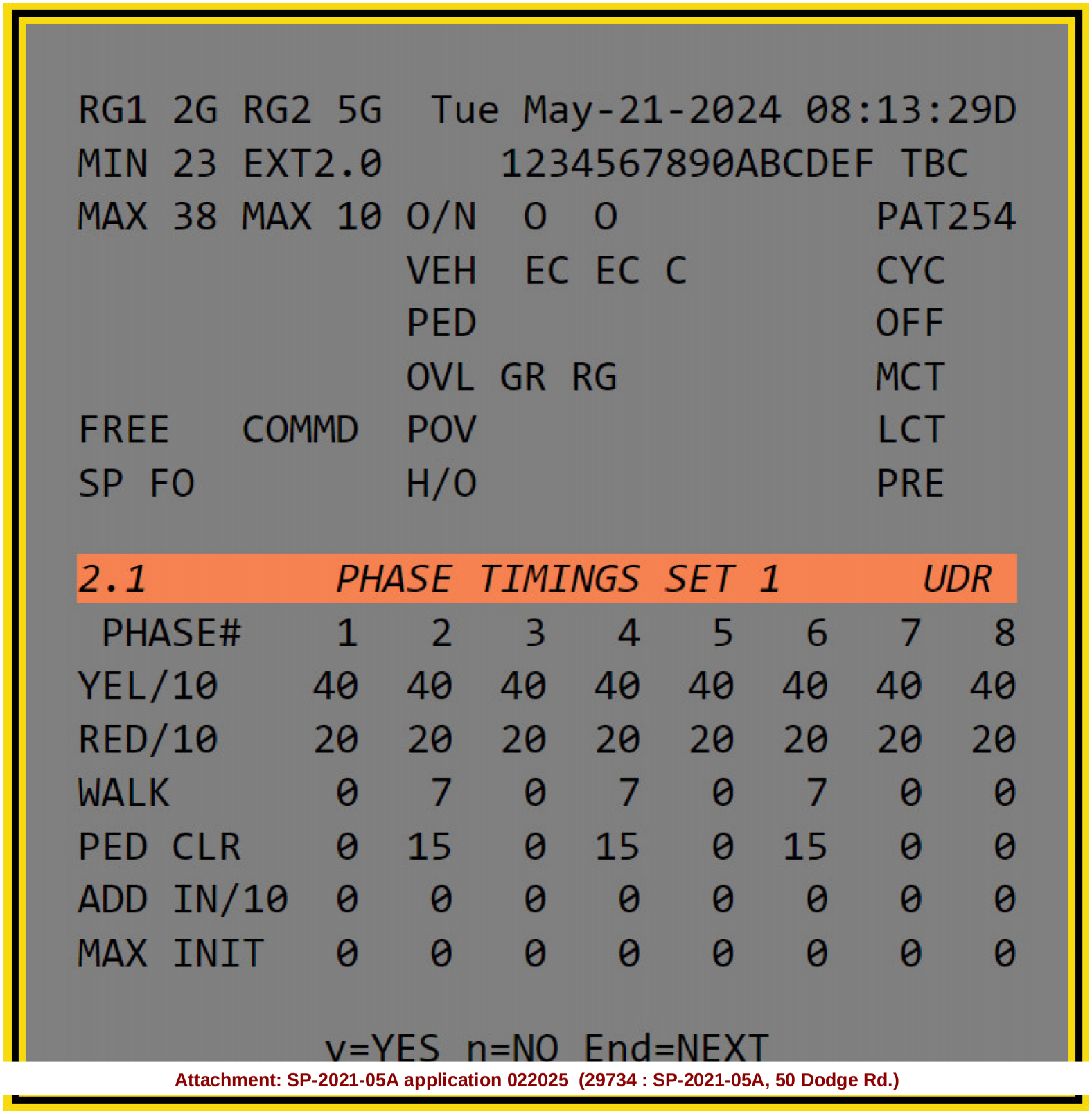
Direction	Southbound				Westbound			Northbound				Eastbound		
Start Time	Left	Thru	Right	U-Turn	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
AM Peak	205	765	22	0	44	116	81	383	418	82	0	7	74	112
PM Peak	111	664	12	0	112	64	258	86	887	66	0	26	116	395
AM HV%	2.00%	3.80%	4.50%	#DIV/0!	29.50%	0.00%	3.70%	3.90%	5.50%	18.30%	#DIV/0!	28.60%	0.00%	7.10%
PM HV%	2.70%	1.50%	33.30%	#DIV/0!	0.90%	6.30%	0.40%	5.80%	1.10%	0.00%	#DIV/0!	7.70%	0.00%	2.30%

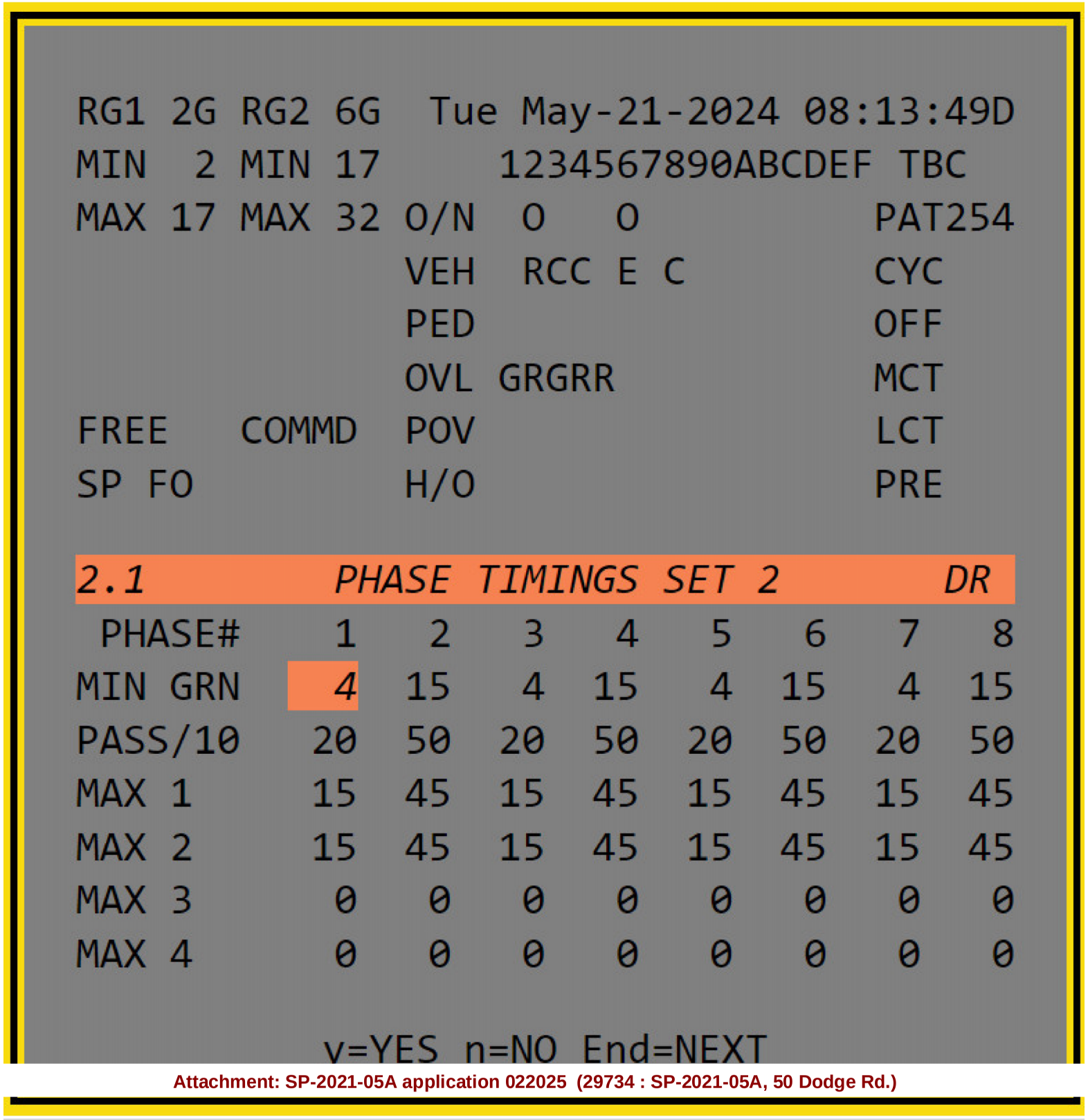
AM PHF:	582	PM PHF:	709
	611		684
	549		762
	567		642
	0.944763		0.917651

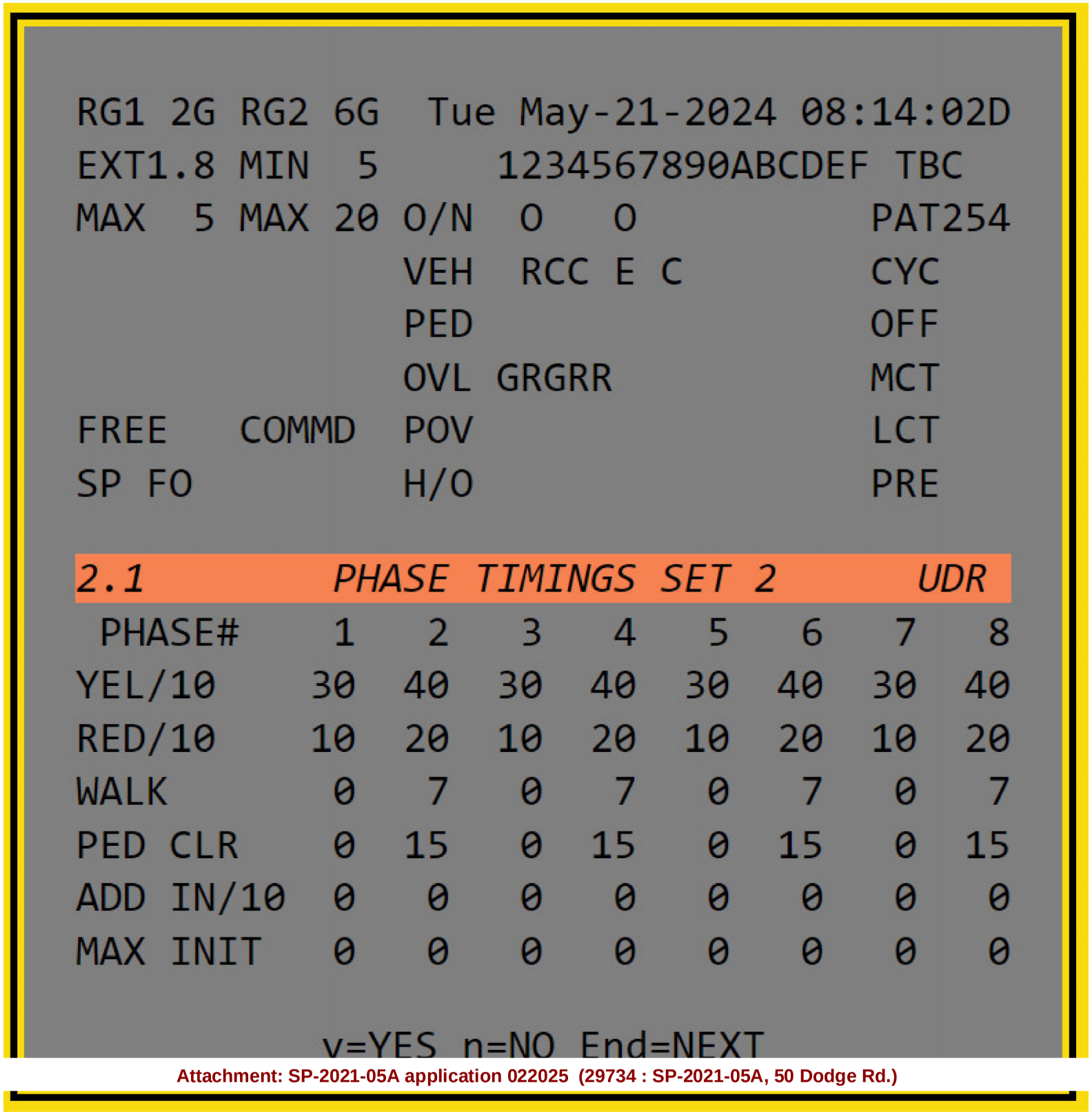
APPENDIX B: MISCELLANEOUS CALCULATIONS

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)


RG1 4Y RG2 8Y Tue May-21-2024 08:13:09D
YEL1.7 YEL1.7 1234567890ABCDEF TBC
GAP MAX O/N N ON O PAT254
VEH CC CC CYC
PED OFF
OVL RYRYR MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 1 DR
PHASE# 1 2 3 4 5 6 7 8
MIN GRN 7 25 7 20 7 25 7 20
PASS/10 20 50 20 50 20 50 20 50
MAX 1 15 40 15 30 25 40 15 30
MAX 2 0 0 0 0 0 0 0 0
MAX 3 0 0 0 0 0 0 0 0
MAX 4 0 0 0 0 0 0 0 0
v=YES n=NO End=NEXT


RG1 2G RG2 5G Tue May-21-2024 08:13:29D
MIN 23 EXT2.0 1234567890ABCDEF TBC
MAX 38 MAX 10 O/N O O PAT254
VEH EC EC C CYC
PED OFF
OVL GR RG MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 1 UDR
PHASE# 1 2 3 4 5 6 7 8
YEL/10 40 40 40 40 40 40 40 40
RED/10 20 20 20 20 20 20 20 20
WALK 0 7 0 7 0 7 0 0
PED CLR 0 15 0 15 0 15 0 0
ADD IN/10 0 0 0 0 0 0 0 0
MAX INIT 0 0 0 0 0 0 0 0
y=YES n=NO End=NEXT


RG1 2G RG2 6G Tue May-21-2024 08:13:49D
MIN 2 MIN 17 1234567890ABCDEF TBC
MAX 17 MAX 32 O/N O O PAT254
VEH RCC E C CYC
PED OFF
OVL GRGRR MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 2 DR
PHASE# 1 2 3 4 5 6 7 8
MIN GRN 4 15 4 15 4 15 4 15
PASS/10 20 50 20 50 20 50 20 50
MAX 1 15 45 15 45 15 45 15 45
MAX 2 15 45 15 45 15 45 15 45
MAX 3 0 0 0 0 0 0 0 0
MAX 4 0 0 0 0 0 0 0 0
v=YES n=NO End=NEXT


RG1 2G RG2 6G Tue May-21-2024 08:14:02D
EXT1.8 MIN 5 1234567890ABCDEF TBC
MAX 5 MAX 20 O/N O O PAT254
VEH RCC E C CYC
PED OFF
OVL GRGRR MCT
FREE COMMD POV LCT
SP FO H/O PRE
2.1 PHASE TIMINGS SET 2 UDR
PHASE# 1 2 3 4 5 6 7 8
YEL/10 30 40 30 40 30 40 30 40
RED/10 10 20 10 20 10 20 10 20
WALK 0 7 0 7 0 7 0 7
PED CLR 0 15 0 15 0 15 0 15
ADD IN/10 0 0 0 0 0 0 0 0
MAX INIT 0 0 0 0 0 0 0 0
y=YES n=NO End=NEXT

PASSERO
engineering architecture

Sawyer's Landing Development, Town of Amherst, NY

Documentation of Ambient Traffic Volume Growth

Roadway	Segment starts at	Segment end at	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth
North Forest Rd	Turtle Creek Apts	Dodge Rd			2,189			1,809		1,825	1,845		-2.81%
Dodge Rd	Sweet Home Rd	Campbell Rd			5,440				7,058	6,738			-4.53%
Sweet Home Rd	Commerce Dr	North French Rd		16,606		15,052			16,008			18,050	2.07%
Sweet Home Rd	N Ellicott Rd	Commerce Dr	21,021						21,437				0.33%
												AVERAGE	**-1.24%**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection Crash Rate Calculations
Sawyer's Landing Development

Intersection #1:	Sweet Home Rd at Dodge Rd
Date of Count:	Tuesday, May 14, 2024
Number of Crashes:	30
Number of Injuries:	11
Number of Fatalities:	0
Entering Vehicles (PM):	2797
ADT:	29442
Start Date:	January 1, 2019
End Date:	December 31, 2023
Number of Years:	5
Intersection Type:	4 Legged
Area Type:	Urban
Control Type:	Signal w/ Left Turn 5 or More Lanes

crash rate = Number of Crashes x 1 Million / ADT x 365 Days per Year x Number of Years

crash rate = 30 x 1,000,000 / 29442 x 365 x 5

	Crash Rate		Fatality Rate	Injury Rate
Study Intersection	**0.56**	**cr/mve**	**0%**	**37%**
Statewide Average*	**0.26**	**cr/mve**		

ADT = Average Daily Total vehicles entering intersection
cr/mve = crashes per million entering vehicles
* Most recent available 2019 Average Crash Rates for State Highways by Facility Type

	Direction					
Type	Northbound	Southbound	Eastbound	Westbound	Unknown	Totals
Left turn	3	4		2		9
Rear-end	1	3	2	1		7
Overtaking						0
Right Angle	5	1	1	1		8
Right Turn				1		1
Head On						0
Side-swipe	1	1	1			3
Fixed Object						0
Backing		1	1			2
Other						0
Bike/Ped						0
Animal						0
Totals	10	10	5	5	0	30

PDO	19
Injury	11
Injury + PDO	
Fatal	
NR	
Total	30

Intersection Crash Rate Calculations
Sawyer's Landing Development

Intersection #5:	Dodge Rd at North Forest Rd
Date of Count:	Thursday, March 3, 2022
Number of Crashes:	6
Number of Injuries:	0
Number of Fatalities:	0
Entering Vehicles (PM):	606
ADT:	6379
Start Date:	January 1, 2019
End Date:	December 31, 2023
Number of Years:	5
Intersection Type:	3 Legged
Area Type:	Urban
Control Type:	Sign 1-3 Lanes

crash rate = Number of Crashes x 1 Million / ADT x 365 Days per Year x Number of Years

crash rate = 6 x 1,000,000 / 6379 x 365 x 5

	Crash Rate		Fatality Rate	Injury Rate
Study Intersection	**0.52**	**cr/mve**	**0%**	**0%**
Statewide Average*	**0.19**	**cr/mve**		

ADT = Average Daily Total vehicles entering intersection
cr/mve = crashes per million entering vehicles
* Most recent available 2019 Average Crash Rates for State Highways by Facility Type

	Direction					
Type	Northbound	Southbound	Eastbound	Westbound	Unknown	Totals
Left turn						0
Rear-end	1			1		2
Overtaking						0
Right Angle	1					1
Right Turn						0
Head On						0
Side-swipe						0
Fixed Object	2		1			3
Backing						0
Other						0
Bike/Ped						0
Animal						0
Totals	4	0	1	1	0	6

PDO	6
Injury	
Injury + PDO	
Fatal	
NR	
Total	6

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROPOSED SAWYER'S LANDING DEVELOPMENT
TOWN OF AMHERST, NY
AM PEAK

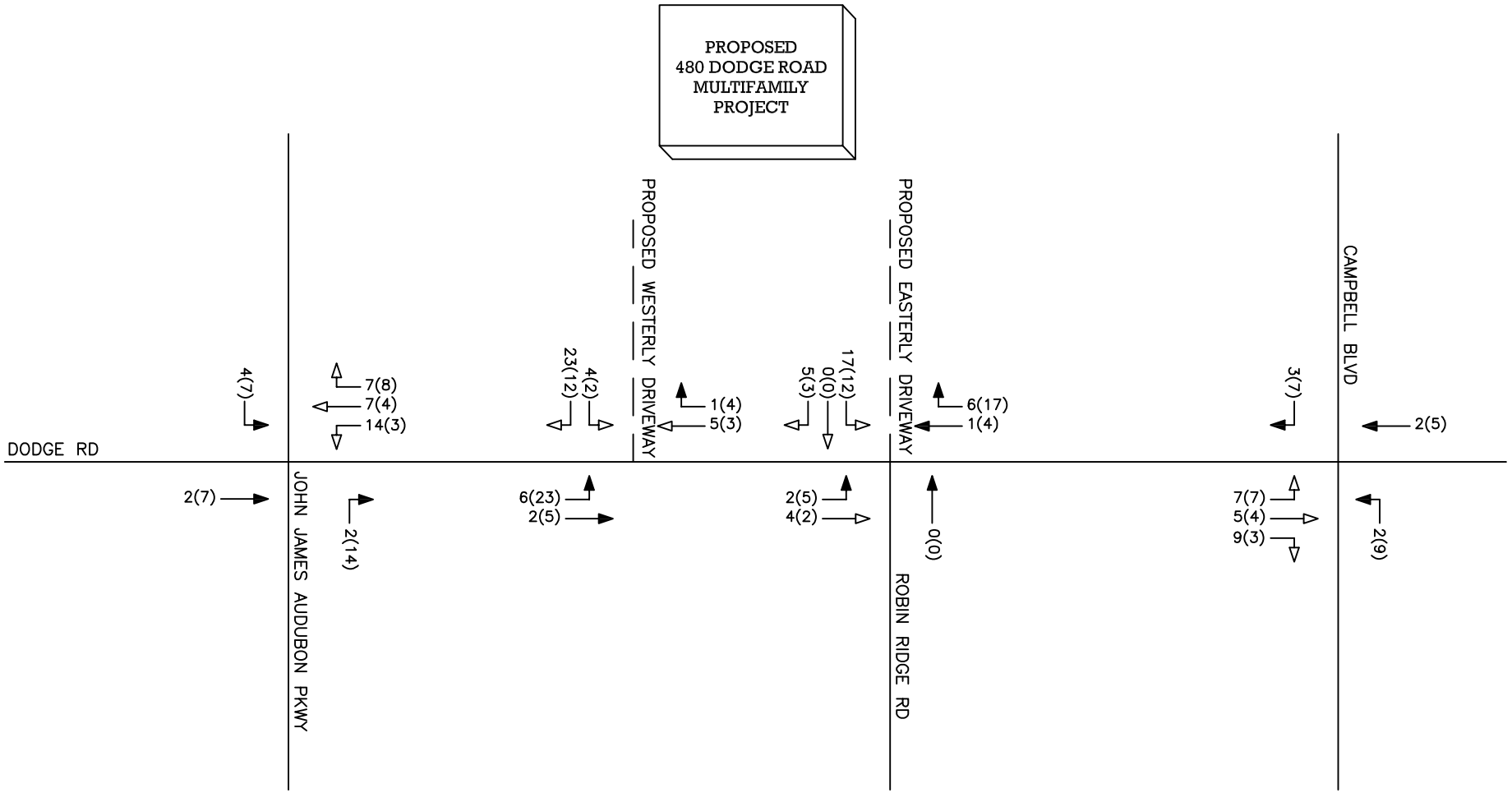
		Fig 3					Fig 4	Fig 6				Fig 7	Fig 8
				Num of yrs									
				2									
LOCATION NUMBER	INTERSECTION DESCRIPTION	Existing Volumes	2024 Existing Volumes	2026 Bkgd Vol	Aspen Heights	480 Dodge Rd	2026 Bkgrd Volumes	Sawyer's Landing				Total Site Trips	FULL Build Volumes
				1.00%				Enter Dist. %	Exit Dist. %	Trips IN 69	Trips OUT 92		
1	Sweet Home Road												
	Dodge Road/Commerce Drive												
	SR	22	22	22			22						22
	ST	765	765	780			780						780
	SL	205	205	209		2	211	25%		17		17	228
	WR	81	81	83		2	85		25%		23	23	108
	WT	116	116	118	3	3	124		10%		9	9	133
	WL	44	44	45	15	1	61		30%		28	28	89
	NR	82	82	84	11		95	30%		21		21	116
	NT	418	418	426			426						426
	NL	383	383	391			391						391
	ER	112	112	114			114						114
	ET	74	74	75			75	10%		7		7	82
	EL	7	7	7			7						7
2	Dodge Road												
	Proposed Northerly Exit Driveway												
	SR								40%		37	37	37
	ST												
	SL								15%		14	14	14
	WR												
	WT	234	236	241	18	6	265		25%		23	23	288
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	275	278	284	11	2	297	65%		45		45	342
	EL												
3	Dodge Road												
	Proposed Northerly Enter Driveway												
	SR												
	ST												
	SL												
	WR							12%		8		8	8
	WT	234	236	241	18	6	265		25%		23	23	288
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	275	278	284	11	2	297	18%	15%	12	14	26	323
	EL							47%		33		33	33
4	Dodge Road												
	Proposed South Driveway												
	SR								25%		23	23	23
	ST												
	SL								20%		18	18	18
	WR							23%		16		16	16
	WT	234	236	241	18	6	265	12%		8		8	273
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	275	278	284	11	2	297		15%		14	14	311
	EL							18%		12		12	12
5	Dodge Road		0.5%										
	North Forest Road		2										
	SR												
	ST												
	SL												
	WR												
	WT	206	208	212	18	6	236	25%		17		17	253
	WL	31	31	32		1	33						33
	NR	11	11	11			11						11
	NT												
	NL	28	28	29			29	10%		7		7	36
	ER	82	83	85			85		10%		9	9	94
	ET	193	195	199	11	2	212		25%		23	23	235
	EL												

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROPOSED SAWYER'S LANDING DEVELOPMENT
TOWN OF AMHERST, NY
PM PEAK

				Fig 3			Fig 4	Fig 6				Fig 7	Fig 8
				Num of yrs									
				2									
LOCATION NUMBER	INTERSECTION DESCRIPTION	Existing Volumes	2024 Existing Volumes	2026 Bkgd Vol 1.00%	Aspen Heights	480 Dodge Rd	2026 Bkgrd Volume	Sawyer's Landing Enter Dist. %	Sawyer's Landing Exit Dist. %	Sawyer's Landing Trips IN 133	Sawyer's Landing Trips OUT 110	Total Site Trips	FULL Build Volumes
1	Sweet Home Road Dodge Road/Commerce Drive												
	SR	12	12	12			12						12
	ST	664	664	677			677						677
	SL	111	111	113		2	115	25%		33		33	148
	WR	258	258	263		2	265		25%		28	28	293
	WT	64	64	65	11	1	77		10%		11	11	88
	WL	112	112	114	21	1	136		30%		33	33	169
	NR	66	66	67	13	2	82	30%		40		40	122
	NT	887	887	905			905						905
	NL	86	86	88			88						88
	ER	395	395	403			403						403
	ET	116	116	118		2	120	10%		13		13	133
	EL	26	26	27			27						27
2	Dodge Road Proposed Northerly Exit Driveway												
	SR								40%		44	44	44
	ST												
	SL								15%		16	16	16
	WR												
	WT	314	317	323	32	4	359		25%		28	28	387
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	231	233	238	13	6	257	65%		86		86	343
	EL												
3	Dodge Road Proposed Northerly Enter Driveway												
	SR												
	ST												
	SL												
	WR							12%		16		16	16
	WT	314	317	323	32	4	359		25%		28	28	387
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	231	233	238	13	6	257	18%	15%	24	16	40	297
	EL							47%		62		62	62
4	Dodge Road Proposed South Driveway												
	SR								25%		28	28	28
	ST												
	SL								20%		22	22	22
	WR							23%		31		31	31
	WT	314	317	323	32	4	359	12%		16		16	375
	WL												
	NR												
	NT												
	NL												
	ER												
	ET	231	233	238	13	6	257		15%		16	16	273
	EL							18%		24		24	24
5	Dodge Road North Forest Road		0.5% 2										
	SR												
	ST												
	SL												
	WR												
	WT	224	226	231	32	4	267	25%		33		33	300
	WL	21	21	21			21						21
	NR	35	35	36		1	37						37
	NT												
	NL	90	91	93			93	10%		13		13	106
	ER	47	47	48			48		10%		11	11	59
	ET	184	186	190	13	6	209		25%		27	27	236
	EL												

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



N

NOT TO SCALE

FIGURE 7

TOTAL SITE GENERATED TRIPS

PROPOSED 480 DODGE ROAD MULTIFAMILY PROJECT
TOWN OF AMHERST, NY

KEY

00(00) = AM(PM)

→ = ENTERING TRIPS

→ = EXITING TRIPS

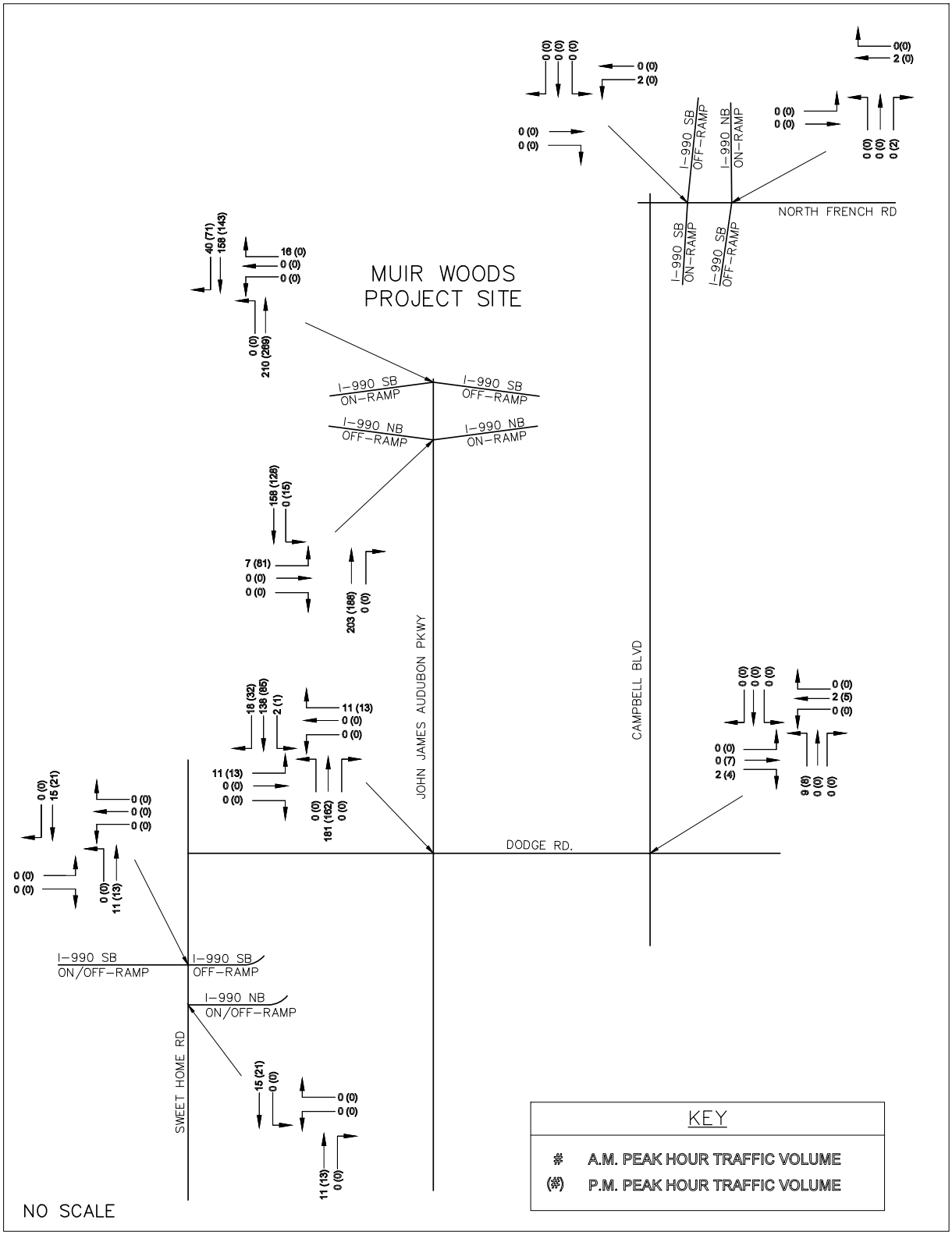


EXHIBIT VII
SITE GENERATED TRAFFIC

Greenman-Pedersen, Inc.
Engineering and Construction Services
Engineering - Surveying - Planning
BUFFALO (716) 852-4644 • ROCHESTER (585) 486-4555 • JAMESTOWN (716) 484-3503

BUF-2013062 MARCH 2020

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROJECT DETAILS

Project Name:	Sawyers Landing	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	5/24/2024	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	2
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak	7	1	0		76	102	178
Scenario - 2	PM Peak	7	1	0		163	136	299

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Scenario - 1

Scenario Name: AM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
710 - General Office Building	General	1000 Sq. Ft. GFA	2.3	Weekday, Peak Hour of	Best Fit (LOG)	6	1	7
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.86Ln(X) + 1.16	88%	12%	
822 - Strip Retail Plaza (<40k)	General	1000 Sq. Ft. GLA	12.85	Weekday, Peak Hour of	Average	18	12	30
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	2.36	60%	40%	
151 - Mini-Warehouse	General	1000 Sq. Ft. GFA	105.6	Weekday, Peak Hour of	Average	6	4	10
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	0.09	59%	41%	
215 - Single-Family Attached Housing	General	Dwelling Units	107	Weekday, Peak Hour of	Best Fit (LIN)	12	37	49
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.52(X) - 5.70	25%	75%	
221 - Multifamily Housing (Mid-Rise) - Not	General	Dwelling Units	102	Weekday, Peak Hour	Best Fit (LIN)	8	26	34
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			of Adjacent Street	T = 0.44(X) - 11.61	23%	77%	
932 - High-Turnover (Sit-Down) Restaurant	General	1000 Sq. Ft. GFA	3.90	Weekday, Peak Hour of	Average	21	17	38
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	9.57	55%	45%	
492 - Health/Fitness Club	General	1000 Sq. Ft. GFA	8.00	Weekday, Peak Hour of	Average	5	5	10
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	1.31	51%	49%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	99	100	1.1	1.1	88	12
822 - Strip Retail Plaza (<40k)	100	100	1	1	60	40
151 - Mini-Warehouse	100	100	1	1	59	41
215 - Single-Family Attached Housing	100	100	1	1	25	75
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	23	77
932 - High-Turnover (Sit-Down) Restaurant	100	100	1	1	55	45
492 - Health/Fitness Club	100	100	1	1	51	49

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	6	1	0	0	6	1
	7		0		7	
822 - Strip Retail Plaza (<40k)	18	12	0	0	18	12
	30		0		30	
151 - Mini-Warehouse	6	4	0	0	6	4
	10		0		10	
215 - Single-Family Attached Housing	12	37	0	0	12	37
	49		0		49	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	8	26	0	0	8	26
	34		0		34	
932 - High-Turnover (Sit-Down) Restaurant	21	17	0	0	21	17

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

932 - High-Turnover (Sit-Down) Restaurant	38		0		38	
492 - Health/Fitness Club	5	5	0	0	5	5
	10		0		10	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	6	1	7
822 - Strip Retail Plaza (<40k)	18	12	30
151 - Mini-Warehouse	6	4	10
215 - Single-Family Attached Housing	12	37	49
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	8	26	34
932 - High-Turnover (Sit-Down) Restaurant	21	17	38
492 - Health/Fitness Club	5	5	10

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	76	102	178
External Vehicle Trips	76	102	178
New Vehicle Trips	76	102	178

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Scenario - 2

Scenario Name: PM Peak
Dev. phase: 1
User Group:
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
710 - General Office Building	General	1000 Sq. Ft. GFA	2.3	Weekday, Peak Hour of	Best Fit (LOG)	1	6	7
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.83Ln(X) + 1.29	17%	83%	
822 - Strip Retail Plaza (<40k)	General	1000 Sq. Ft. GLA	12.85	Weekday, Peak Hour of	Best Fit (LOG)	47	47	94
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.71Ln(X) + 2.72	50%	50%	
151 - Mini-Warehouse	General	1000 Sq. Ft. GFA	105.6	Weekday, Peak Hour of	Average	7	8	15
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	0.15	47%	53%	
215 - Single-Family Attached Housing	General	Dwelling Units	107	Weekday, Peak Hour of	Best Fit (LIN)	36	25	61
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.60(X) - 3.93	59%	41%	
221 - Multifamily Housing (Mid-Rise) - Not	General	Dwelling Units	102	Weekday, Peak Hour	Best Fit (LIN)	24	16	40
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			of Adjacent Street	T = 0.39(X) + 0.34	61%	39%	
932 - High-Turnover (Sit-Down) Restaurant	General	1000 Sq. Ft. GFA	3.90	Weekday, Peak Hour of	Average	22	14	36
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	9.05	61%	39%	
492 - Health/Fitness Club	General	1000 Sq. Ft. GFA	8.00	Weekday, Peak Hour of	Best Fit (LOG)	26	20	46
Data Source: Trip Generation Manual, 11th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.67Ln(X) + 2.44	57%	43%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	99	1.1	1.1	17	83
822 - Strip Retail Plaza (<40k)	100	100	1	1	50	50
151 - Mini-Warehouse	100	100	1	1	47	53
215 - Single-Family Attached Housing	100	100	1	1	59	41
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	61	39
932 - High-Turnover (Sit-Down) Restaurant	100	100	1	1	61	39
492 - Health/Fitness Club	100	100	1	1	57	43

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	1	7	0	0	1	7
	8		0		8	
822 - Strip Retail Plaza (<40k)	47	47	0	0	47	47
	94		0		94	
151 - Mini-Warehouse	7	8	0	0	7	8
	15		0		15	
215 - Single-Family Attached Housing	36	25	0	0	36	25
	61		0		61	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	24	16	0	0	24	16
	40		0		40	
932 - High-Turnover (Sit-Down) Restaurant	22	14	0	0	22	14

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

932 - High-Turnover (Sit-Down) Restaurant	36		0		36	
492 - Health/Fitness Club	26	20	0	0	26	20
	46		0		46	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	1	6	7
822 - Strip Retail Plaza (<40k)	47	47	94
151 - Mini-Warehouse	7	8	15
215 - Single-Family Attached Housing	36	25	61
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	24	16	40
932 - High-Turnover (Sit-Down) Restaurant	22	14	36
492 - Health/Fitness Club	26	20	46

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	163	136	299
External Vehicle Trips	163	136	299
New Vehicle Trips	163	136	299

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Sawyer's Landing Development	**Organization:**	Passero Associates
Project Location:	Town of Amherst, NY	**Performed By:**	Nick Merrifield
Scenario Description:		**Date:**	May 2024
Analysis Year:	2026	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	2,300	SF	7	6	1
Retail	822	12,854	SF	30	18	12
Restaurant	932	3,901	SF	38	21	17
Cinema/Entertainment				0		
Residential	215/221	209	Units	83	20	63
Hotel				0		
All Other Land Uses[2]	492/151	8,002/105,600	SF	20	11	9
Total				178	76	102

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.06	0%	1%	1.06	0%	0%
Retail	1.17	0%	0%	1.16	0%	0%
Restaurant	1.41	0%	1%	1.39	0%	2%
Cinema/Entertainment						
Residential	1.13	0%	3%	1.09	0%	2%
Hotel						
All Other Land Uses[2]	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		2	0	0	0
Restaurant	1	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	6	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	208	91	117
Internal Capture Percentage	13%	14%	11%
External Vehicle-Trips[3]	156	66	90
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	2	1	1

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	17%	0%
Retail	14%	14%
Restaurant	27%	17%
Cinema/Entertainment	N/A	N/A
Residential	4%	10%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project Name:	Sawyer's Landing Development
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.06	6	6	1.06	1	1
Retail	1.17	18	21	1.16	12	14
Restaurant	1.41	21	30	1.39	17	24
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.13	20	23	1.09	63	69
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	1	0	0	0
Retail	4		2	0	2	0
Restaurant	7	3		0	1	1
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	14	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	7	0	0	0
Retail	0		15	0	0	0
Restaurant	1	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	6	0		0
Hotel	0	1	2	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	5	6	5	0	0
Retail	3	18	21	15	0	0
Restaurant	8	22	30	16	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	22	23	19	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	11	11	11	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	1	1	1	0	0
Retail	2	12	14	10	0	0
Restaurant	4	20	24	14	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	62	69	56	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	9	9	9	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Sawyer's Landing Development	**Organization:**	Passero Associates
Project Location:	Town of Amherst, NY	**Performed By:**	Nick Merrifield
Scenario Description:		**Date:**	May 2024
Analysis Year:	2026	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	2,300	SF	7	1	6
Retail	822	12,854	SF	94	47	47
Restaurant	932	3,901	SF	36	22	14
Cinema/Entertainment				0		
Residential	215/221	209	Units	101	60	41
Hotel				0		
All Other Land Uses[2]	492/151	8,002/105,600	SF	61	33	28
Total				299	163	136

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office	1.11	0%	0%	1.07	0%	0%
Retail	1.21	0%	0%	1.18	0%	0%
Restaurant	1.41	0%	1%	1.39	0%	2%
Cinema/Entertainment						
Residential	1.15	0%	3%	1.21	0%	4%
Hotel						
All Other Land Uses[2]	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	194		283	
Retail					283	
Restaurant					283	
Cinema/Entertainment						
Residential		283	283			
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	0		9	0	14	0
Restaurant	0	8		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	6	4	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	349	191	158
Internal Capture Percentage	26%	24%	28%
External Vehicle-Trips[3]	222	125	97
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	4	2	2

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	17%
Retail	26%	42%
Restaurant	42%	58%
Cinema/Entertainment	N/A	N/A
Residential	25%	20%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project Name:	Sawyer's Landing Development
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.11	1	1	1.07	6	6
Retail	1.21	47	57	1.18	47	55
Restaurant	1.41	22	31	1.39	14	19
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.15	60	69	1.21	41	50
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	1		16	2	14	3
Restaurant	1	8		2	3	1
Cinema/Entertainment	0	0	0		0	0
Residential	2	20	10	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	1	0	3	0
Retail	0		9	0	32	0
Restaurant	0	29		0	11	0
Cinema/Entertainment	0	2	1		3	0
Residential	1	6	4	0		0
Hotel	0	1	2	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	1	1	1	0	0
Retail	15	42	57	35	0	0
Restaurant	13	18	31	13	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	17	52	69	43	0	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	33	33	33	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	5	6	5	0	0
Retail	23	32	55	27	0	0
Restaurant	11	8	19	6	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	40	50	31	0	2
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	28	28	28	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	41.0%
	To Restaurant	20.0%	20.5%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	9.8%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	13.7%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project: **Sawyer's Landing Development**
Location: **Town of Amherst, NY**

Description	ITE LUC	SIZE/ UNITS	AM PEAK HOUR Enter	AM PEAK HOUR Exit	PM PEAK HOUR Enter	PM PEAK HOUR Exit	% of Total Trips AM	% of Total Trips PM
General Office Building	710	2,300 SF	6	1	1	6	4%	2%
Strip Retail Plaza (<40k)	822	12,854 SF	18	12	47	47	17%	31%
High-Turnover (Sit-Down) Restaurant	932	3,901 SF	21	17	22	14	21%	12%
Single Family Attached Housing	215	107 Units	12	37	36	25	28%	20%
Multifamily Housing (Mid-Rise)	221	102 Units	8	26	24	16	19%	13%
Mini-Warehouse	151	105,600 SF	6	4	7	8	6%	5%
Health/Fitness Club	492	8,002 SF	5	5	26	20	6%	15%
Sub-Total Site Generated Trips			**76**	**102**	**163**	**136**	100%	100%
General Office Building	710	2,300 SF	5	1	1	5	4%	3%
Strip Retail Plaza (<40k)	822	12,854 SF	16	10	37	33	17%	29%
High-Turnover (Sit-Down) Restaurant	932	3,901 SF	17	14	14	8	19%	9%
Single Family Attached Housing	215	107 Units	12	34	29	21	28%	21%
Multifamily Housing (Mid-Rise)	221	102 Units	8	24	19	14	20%	14%
Mini-Warehouse	151	105,600 SF	6	4	7	8	6%	6%
Health/Fitness Club	492	8,002 SF	5	5	26	20	6%	19%
Total Net Site Generated Trips			**69**	**92**	**133**	**110**	100%	100%
Multi-use Trips			7	10	30	26		

Base Internal Capture Percentages

AM PEAK HOUR Enter	AM PEAK HOUR Exit	PM PEAK HOUR Enter	PM PEAK HOUR Exit
17%	0%	0%	17%
14%	14%	26%	42%
27%	17%	42%	58%
4%	10%	25%	20%
4%	10%	25%	20%
0%	0%	0%	0%
0%	0%	0%	0%

Adjusted Internal Capture Percentages

12%	0%	0%	12%
10%	13%	22%	30%
19%	15%	35%	41%
3%	9%	21%	14%
3%	9%	21%	14%
0%	0%	0%	0%
0%	0%	0%	0%

enter	exit	enter	exit	
14%	11%	24%	28%	**Base %**
10%	10%	20%	20%	**Adjusted %**
29%	9%	17%	29%	**% change**

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Traffic Signal Warrant Analysis

Dodge Rd/North Forest Rd - Full Build Conditions

Town of Amherst, Erie County, NY

Hour			2026 Background Volumes on Dodge Rd	Hourly Fluctuation	**2026 Full Build Artery Volume on Dodge Rd**	2026 Background Volumes on North Forest Rd	**Total Hourly Volumes Exiting North Forest Rd under Full Build Conditions**	Warrant 1 - Condition A	Warrant 1 - Condition B	Warrant 2 - 4 hour	Warrant 3 - Peak hour
			Two-Way	Two-Way	**Total**	SB		350/105	525/53	60 vph	75 vph
7:00 AM	to	8:00 AM	419	5.14%	**464**	20	**28**	N	N	N	N
8:00 AM	to	9:00 AM	480	4.65%	**521**	50	**57**	N	N	N	N
9:00 AM	to	10:00 AM	376	4.04%	**412**	40	**46**	N	N	N	N
10:00 AM	to	11:00 AM	319	4.40%	**358**	55	**61**	N	N	N	N
11:00 AM	to	12:00 PM	341	5.90%	**393**	65	**74**	N	N	N	N
12:00 PM	to	1:00 PM	387	6.65%	**446**	77	**87**	N	N	N	N
1:00 PM	to	2:00 PM	347	6.20%	**402**	71	**80**	N	N	N	N
2:00 PM	to	3:00 PM	372	6.72%	**431**	77	**87**	N	N	N	N
3:00 PM	to	4:00 PM	466	6.90%	**527**	82	**92**	N	Y	N	N
4:00 PM	to	5:00 PM	467	8.63%	**543**	130	**143**	Y	Y	Y	N
5:00 PM	to	6:00 PM	426	9.81%	**513**	90	**104**	N	N	N	N
6:00 PM	to	7:00 PM	272	7.94%	**342**	66	**78**	N	N	N	N
								1	2	1	0

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Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

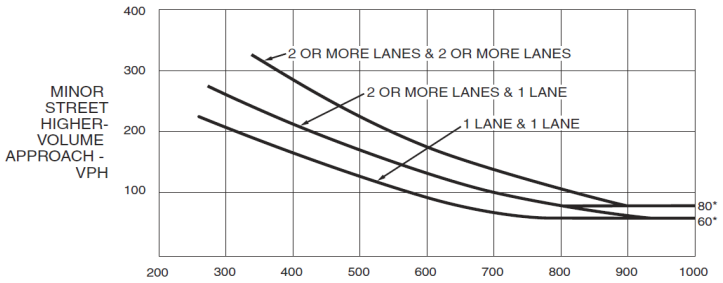
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

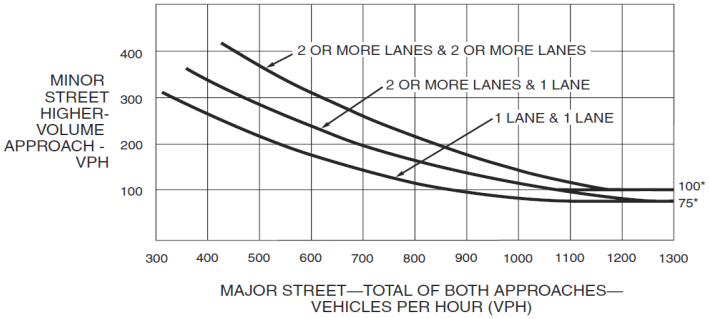
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PROJECT DETAILS

Project Name:	Sawyers Landing - Full Day	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	5/24/2024	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	1
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	Full Day	6	1	0		1260	1260	2520

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Scenario - 1

Scenario Name: Full Day
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
710 - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	2.3	Weekday	Best Fit (LOG)	22	22	44
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.87Ln(X) + 3.05	50%	50%	
822 - Strip Retail Plaza (<40k)	General Urban/Suburban	1000 Sq. Ft. GLA	12.85	Weekday	Average	350	350	700
Data Source: Trip Generation Manual, 11th Ed					54.45	50%	50%	
151 - Mini-Warehouse	General Urban/Suburban	1000 Sq. Ft. GFA	105.6	Weekday	Average	77	77	154
Data Source: Trip Generation Manual, 11th Ed					1.45	50%	50%	
215 - Single-Family Attached Housing	General Urban/Suburban	Dwelling Units	107	Weekday	Best Fit (LIN)	382	382	764
Data Source: Trip Generation Manual, 11th Ed					T = 7.62(X) - 50.48	50%	50%	
221 - Multifamily Housing (Mid-Rise) - Not	General Urban/Suburban	Dwelling Units	102	Weekday	Best Fit (LIN)	220	220	440
Data Source: Trip Generation Manual, 11th Ed					T = 4.77(X) - 46.46	50%	50%	
932 - High-Turnover (Sit-Down) Restaurant	General Urban/Suburban	1000 Sq. Ft. GFA	3.90	Weekday	Average	209	209	418
Data Source: Trip Generation Manual, 11th Ed					107.20	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	100	1.1	1.1	50	50
822 - Strip Retail Plaza (<40k)	100	100	1	1	50	50
151 - Mini-Warehouse	100	100	1.6	1.6	50	50
215 - Single-Family Attached Housing	100	100	1	1	50	50
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	50	50
932 - High-Turnover (Sit-Down) Restaurant	100	100	1.5	1.5	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	24	24	0	0	24	24
	48		0		48	
822 - Strip Retail Plaza (<40k)	350	350	0	0	350	350
	700		0		700	
151 - Mini-Warehouse	122	122	0	0	122	122
	244		0		244	
215 - Single-Family Attached Housing	382	382	0	0	382	382
	764		0		764	
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	220	220	0	0	220	220
	440		0		440	
932 - High-Turnover (Sit-Down) Restaurant	314	314	0	0	314	314
	628		0		628	

NEW VEHICLE TRIPS

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	22	22	44
822 - Strip Retail Plaza (<40k)	350	350	700
151 - Mini-Warehouse	77	77	154
215 - Single-Family Attached Housing	382	382	764
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	220	220	440
932 - High-Turnover (Sit-Down) Restaurant	209	209	418

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	1260	1260	2520
External Vehicle Trips	1260	1260	2520
New Vehicle Trips	1260	1260	2520

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PASSERO ASSOCIATES
engineering architecture

PROJECT: _____ SHEET: ____ OF ____
PROJECT NO: _____ COMPUTED BY: _____
SUBJECT: _____ CHECKED BY: _____
_____ DATE: _____

Health/fitness PM Exiting Trips = 26

% of total weekday vols = 12.3%

Weekday Trips = $\frac{26}{.123}$ = 211

Sawyers Landing Total Trips = 211 + 1260

= 1471

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX C: LOS CALCULATIONS – EXISTING CONDITIONS

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

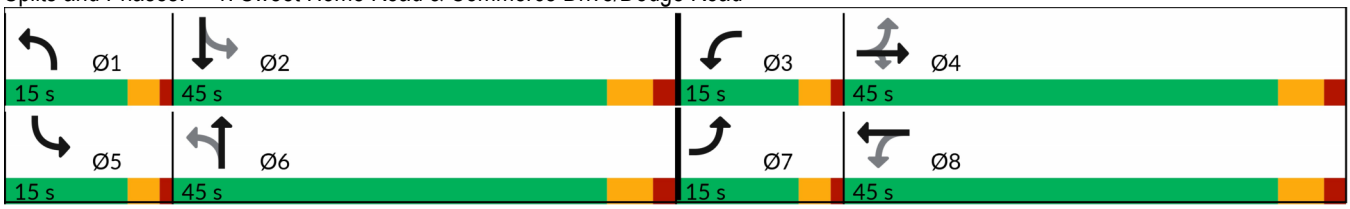
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	74	112	44	116	81	383	418	82	205	765	22
Future Volume (vph)	7	74	112	44	116	81	383	418	82	205	765	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.938			0.975			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1399	1900	1509	1388	1753	0	1736	3260	0	1770	3456	0
Flt Permitted	0.627			0.597			0.197			0.423		
Satd. Flow (perm)	923	1900	1509	873	1753	0	360	3260	0	788	3456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119		31			20			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	29%	0%	7%	30%	0%	4%	4%	6%	18%	2%	4%	5%
Adj. Flow (vph)	7	79	119	47	123	86	407	445	87	218	814	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	79	119	47	209	0	407	532	0	218	837	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	28.0	28.0	8.0	28.0		8.0	28.0		8.0	28.0	
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	45.0		15.0	45.0	
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	11.0	39.0	39.0	11.0	39.0		11.0	39.0		11.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	21.0	16.1	16.1	24.3	20.8		43.8	30.4		40.8	29.0	
Actuated g/C Ratio	0.27	0.20	0.20	0.31	0.26		0.55	0.38		0.52	0.37	
v/c Ratio	0.02	0.20	0.29	0.15	0.43		1.02	0.41		0.41	0.66	
Control Delay (s/veh)	20.7	31.9	8.9	21.7	25.3		72.5	19.2		11.4	24.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.7	31.9	8.9	21.7	25.3		72.5	19.2		11.4	24.2	
LOS	C	C	A	C	C		E	B		B	C	
Approach Delay (s/veh)		18.2			24.7			42.3			21.6	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 79.1			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 29.6		Intersection LOS: C	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	195	83	31	208	28	11
Future Volume (vph)	195	83	31	208	28	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960				0.962	
Flt Protected				0.994	0.965	
Satd. Flow (prot)	1781	0	0	1856	1715	0
Flt Permitted				0.994	0.965	
Satd. Flow (perm)	1781	0	0	1856	1715	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	1%	0%	2%	4%	0%
Adj. Flow (vph)	197	84	31	210	28	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	0	241	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	83	31	208	28	11
Future Vol, veh/h	195	83	31	208	28	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	1	0	2	4	0
Mvmt Flow	197	84	31	210	28	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	281	0	512	239
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1293	-	519	805
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	769	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	504	805
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.02	11.86
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	564	-	-	233	-
HCM Lane V/C Ratio	0.07	-	-	0.024	-
HCM Control Delay (s/veh)	11.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

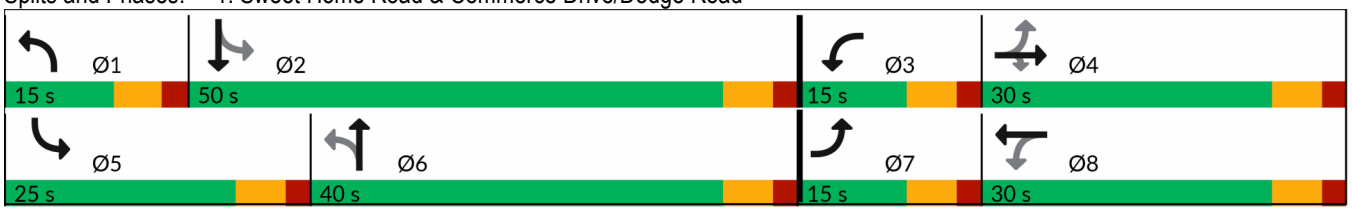
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	116	395	112	64	258	86	887	66	111	664	12
Future Volume (vph)	26	116	395	112	64	258	86	887	66	111	664	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.880			0.990			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1900	1583	1787	1652	0	1703	3541	0	1752	3510	0
Flt Permitted	0.384			0.574			0.285			0.107		
Satd. Flow (perm)	676	1900	1583	1080	1652	0	511	3541	0	197	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			327		167			7			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	0%	2%	1%	6%	0%	6%	1%	0%	3%	2%	33%
Adj. Flow (vph)	28	126	429	122	70	280	93	964	72	121	722	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	126	429	122	350	0	93	1036	0	121	735	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0		7.0	25.0		7.0	25.0	
Minimum Split (s)	13.0	28.0	28.0	13.0	28.0		13.0	31.0		13.0	31.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0		15.0	40.0		25.0	50.0	
Total Split (%)	13.6%	27.3%	27.3%	13.6%	27.3%		13.6%	36.4%		22.7%	45.5%	
Maximum Green (s)	9.0	24.0	24.0	9.0	24.0		9.0	34.0		19.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	28.0	21.0	21.0	32.9	27.7		41.1	33.4		45.0	37.5	
Actuated g/C Ratio	0.29	0.22	0.22	0.34	0.29		0.43	0.35		0.47	0.39	
v/c Ratio	0.10	0.30	0.71	0.28	0.58		0.29	0.83		0.50	0.53	
Control Delay (s/veh)	21.3	34.3	16.4	22.9	21.1		15.6	36.2		21.9	25.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	21.3	34.3	16.4	22.9	21.1		15.6	36.2		21.9	25.3	
LOS	C	C	B	C	C		B	D		C	C	
Approach Delay (s/veh)		20.6			21.6			34.5			24.8	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 95.7			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 27.1		Intersection LOS: C	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	186	47	21	226	91	35
Future Volume (vph)	186	47	21	226	91	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973				0.963	
Flt Protected				0.996	0.965	
Satd. Flow (prot)	1834	0	0	1892	1753	0
Flt Permitted				0.996	0.965	
Satd. Flow (perm)	1834	0	0	1892	1753	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%
Adj. Flow (vph)	224	57	25	272	110	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	0	297	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	186	47	21	226	91	35
Future Vol, veh/h	186	47	21	226	91	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	1	0
Mvmt Flow	224	57	25	272	110	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	281	0	575	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1293	-	481	791
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	470	791
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.67	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	153	-
HCM Lane V/C Ratio	0.287	-	-	0.02	-
HCM Control Delay (s/veh)	14.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX D: LOS CALCULATIONS – BACKGROUND CONDITIONS

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

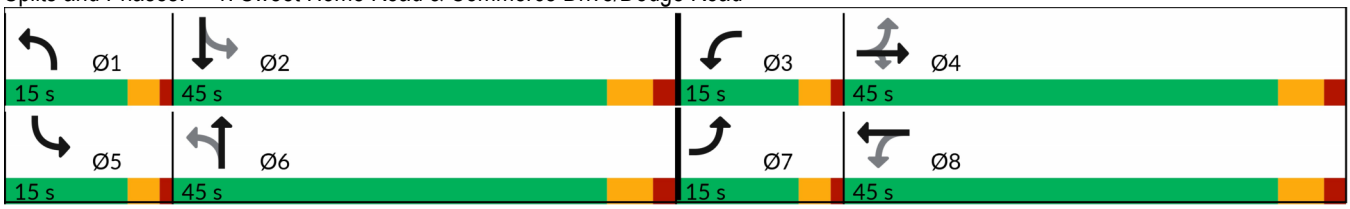
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	75	114	61	124	85	391	426	95	211	780	22
Future Volume (vph)	7	75	114	61	124	85	391	426	95	211	780	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.939			0.973			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1399	1900	1509	1388	1756	0	1736	3247	0	1770	3456	0
Flt Permitted	0.620			0.579			0.181			0.398		
Satd. Flow (perm)	913	1900	1509	846	1756	0	331	3247	0	741	3456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		30			24			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	29%	0%	7%	30%	0%	4%	4%	6%	18%	2%	4%	5%
Adj. Flow (vph)	7	80	121	65	132	90	416	453	101	224	830	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	80	121	65	222	0	416	554	0	224	853	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	28.0	28.0	8.0	28.0		8.0	28.0		8.0	28.0	
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	45.0		15.0	45.0	
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	11.0	39.0	39.0	11.0	39.0		11.0	39.0		11.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	21.9	16.0	16.0	27.2	23.5		44.1	30.8		41.4	29.4	
Actuated g/C Ratio	0.27	0.19	0.19	0.33	0.29		0.54	0.37		0.50	0.36	
v/c Ratio	0.02	0.21	0.30	0.19	0.42		1.12	0.45		0.45	0.68	
Control Delay (s/veh)	20.7	33.4	9.1	22.1	25.2		106.1	20.5		12.8	26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.7	33.4	9.1	22.1	25.2		106.1	20.5		12.8	26.0	
LOS	C	C	A	C	C		F	C		B	C	
Approach Delay (s/veh)		18.9			24.5			57.2			23.3	
Approach LOS		B			C			E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 82.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay (s/veh): 36.0		Intersection LOS: D	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	212	85	33	236	29	11
Future Volume (vph)	212	85	33	236	29	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.963	
Flt Protected				0.994	0.965	
Satd. Flow (prot)	1783	0	0	1856	1716	0
Flt Permitted				0.994	0.965	
Satd. Flow (perm)	1783	0	0	1856	1716	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	1%	0%	2%	4%	0%
Adj. Flow (vph)	214	86	33	238	29	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	300	0	0	271	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	85	33	236	29	11
Future Vol, veh/h	212	85	33	236	29	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	1	0	2	4	0
Mvmt Flow	214	86	33	238	29	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	300	0	562	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1273	-	485	786
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1273	-	470	786
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	721	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.97	12.37
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	529	-	-	221	-
HCM Lane V/C Ratio	0.076	-	-	0.026	-
HCM Control Delay (s/veh)	12.4	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	120	403	136	77	265	88	905	82	115	677	12
Future Volume (vph)	27	120	403	136	77	265	88	905	82	115	677	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.884			0.988			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1900	1583	1787	1657	0	1703	3534	0	1752	3510	0
Flt Permitted	0.347			0.569			0.277			0.105		
Satd. Flow (perm)	610	1900	1583	1070	1657	0	497	3534	0	194	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			311		144			9			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	0%	2%	1%	6%	0%	6%	1%	0%	3%	2%	33%
Adj. Flow (vph)	29	130	438	148	84	288	96	984	89	125	736	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	130	438	148	372	0	96	1073	0	125	749	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

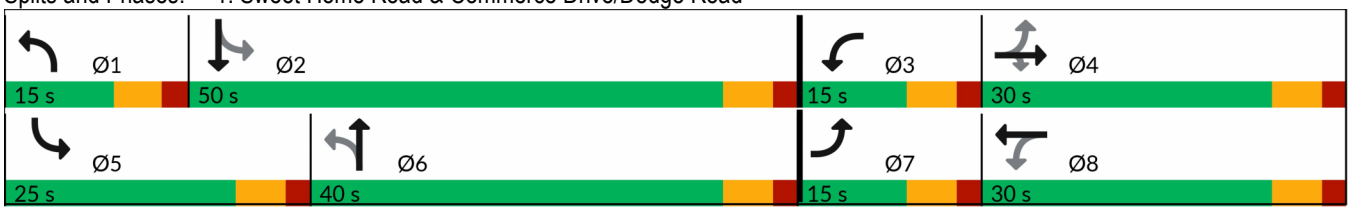
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0		7.0	25.0		7.0	25.0	
Minimum Split (s)	13.0	28.0	28.0	13.0	28.0		13.0	31.0		13.0	31.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0		15.0	40.0		25.0	50.0	
Total Split (%)	13.6%	27.3%	27.3%	13.6%	27.3%		13.6%	36.4%		22.7%	45.5%	
Maximum Green (s)	9.0	24.0	24.0	9.0	24.0		9.0	34.0		19.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	28.4	21.3	21.3	33.4	28.2		41.9	34.1		45.9	38.2	
Actuated g/C Ratio	0.29	0.22	0.22	0.34	0.29		0.43	0.35		0.47	0.39	
v/c Ratio	0.11	0.31	0.74	0.34	0.63		0.30	0.86		0.52	0.54	
Control Delay (s/veh)	21.5	34.6	19.2	24.0	25.4		16.0	38.2		22.9	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	21.5	34.6	19.2	24.0	25.4		16.0	38.2		22.9	25.7	
LOS	C	C	B	C	C		B	D		C	C	
Approach Delay (s/veh)		22.7			25.0			36.4			25.3	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 97.1
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay (s/veh): 28.9 Intersection LOS: C
Intersection Capacity Utilization 71.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	209	48	21	267	93	37
Future Volume (vph)	209	48	21	267	93	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975				0.961	
Flt Protected				0.996	0.966	
Satd. Flow (prot)	1838	0	0	1892	1751	0
Flt Permitted				0.996	0.966	
Satd. Flow (perm)	1838	0	0	1892	1751	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%
Adj. Flow (vph)	252	58	25	322	112	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	0	0	347	157	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	209	48	21	267	93	37
Future Vol, veh/h	209	48	21	267	93	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	1	0
Mvmt Flow	252	58	25	322	112	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	310	0	653	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1262	-	434	763
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	423	763
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.58	15.94
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	484	-	-	131	-
HCM Lane V/C Ratio	0.323	-	-	0.02	-
HCM Control Delay (s/veh)	15.9	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.1	-

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

APPENDIX E: LOS CALCULATIONS – FULL BUILD CONDITIONS

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

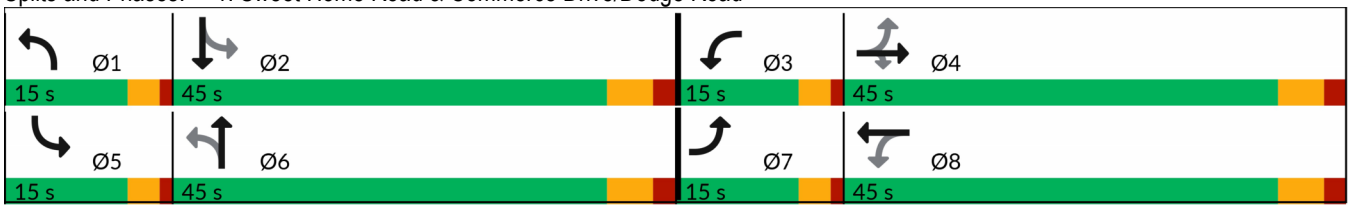
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	82	114	89	133	108	391	426	116	228	780	22
Future Volume (vph)	7	82	114	89	133	108	391	426	116	228	780	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.933			0.968			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1399	1900	1509	1388	1741	0	1736	3219	0	1770	3456	0
Flt Permitted	0.601			0.578			0.184			0.373		
Satd. Flow (perm)	885	1900	1509	845	1741	0	336	3219	0	695	3456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		36			30			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	29%	0%	7%	30%	0%	4%	4%	6%	18%	2%	4%	5%
Adj. Flow (vph)	7	87	121	95	141	115	416	453	123	243	830	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	87	121	95	256	0	416	576	0	243	853	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

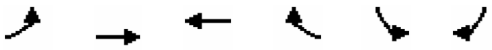
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	15.0	15.0	4.0	15.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	28.0	28.0	8.0	28.0		8.0	28.0		8.0	28.0	
Total Split (s)	15.0	45.0	45.0	15.0	45.0		15.0	45.0		15.0	45.0	
Total Split (%)	12.5%	37.5%	37.5%	12.5%	37.5%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	11.0	39.0	39.0	11.0	39.0		11.0	39.0		11.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	22.3	16.4	16.4	28.5	24.8		44.7	31.3		42.6	30.3	
Actuated g/C Ratio	0.26	0.19	0.19	0.34	0.29		0.53	0.37		0.50	0.36	
v/c Ratio	0.02	0.23	0.31	0.28	0.47		1.14	0.47		0.50	0.68	
Control Delay (s/veh)	20.4	34.0	9.0	23.0	25.7		112.6	21.4		14.4	26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	20.4	34.0	9.0	23.0	25.7		112.6	21.4		14.4	26.7	
LOS	C	C	A	C	C		F	C		B	C	
Approach Delay (s/veh)		19.5			25.0			59.7			24.0	
Approach LOS		B			C			E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 84.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay (s/veh): 37.1		Intersection LOS: D	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	342	288	0	14	37
Future Volume (vph)	0	342	288	0	14	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.902	
Flt Protected					0.987	
Satd. Flow (prot)	0	1845	1863	0	1658	0
Flt Permitted					0.987	
Satd. Flow (perm)	0	1845	1863	0	1658	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		161	84		307	
Travel Time (s)		2.6	1.4		7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	0	372	313	0	15	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	372	313	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.0%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	0.9

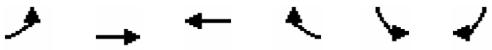
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	342	288	0	14	37
Future Vol, veh/h	0	342	288	0	14	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2
Mvmt Flow	0	372	313	0	15	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	685	313
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	414	727
Stage 1	0	-	-	0	741	-
Stage 2	0	-	-	0	697	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	414	727
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.58
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	602
HCM Lane V/C Ratio	-	-	0.092
HCM Control Delay (s/veh)	-	-	11.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3

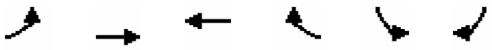
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	323	288	8	0	0
Future Volume (vph)	33	323	288	8	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996			
Flt Protected		0.995				
Satd. Flow (prot)	0	1837	1855	0	0	0
Flt Permitted		0.995				
Satd. Flow (perm)	0	1837	1855	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		84	108		365	
Travel Time (s)		1.4	1.8		8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	36	351	313	9	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	387	322	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	311	273	16	18	23
Future Volume (vph)	12	311	273	16	18	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.925	
Flt Protected		0.998			0.978	
Satd. Flow (prot)	0	1842	1850	0	1685	0
Flt Permitted		0.998			0.978	
Satd. Flow (perm)	0	1842	1850	0	1685	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		108	576		362	
Travel Time (s)		1.8	9.8		8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Adj. Flow (vph)	13	338	297	17	20	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	351	314	0	45	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	311	273	16	18	23
Future Vol, veh/h	12	311	273	16	18	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2
Mvmt Flow	13	338	297	17	20	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	314	0	-	0	670	305
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1246	-	-	-	422	734
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1246	-	-	-	417	734
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.29	0	12.12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	67	-	-	-	550
HCM Lane V/C Ratio	0.01	-	-	-	0.081
HCM Control Delay (s/veh)	7.9	0	-	-	12.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	235	94	33	253	36	11
Future Volume (vph)	235	94	33	253	36	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.961				0.968	
Flt Protected				0.994	0.963	
Satd. Flow (prot)	1783	0	0	1856	1718	0
Flt Permitted				0.994	0.963	
Satd. Flow (perm)	1783	0	0	1856	1718	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	1%	0%	2%	4%	0%
Adj. Flow (vph)	237	95	33	256	36	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	0	0	289	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	235	94	33	253	36	11
Future Vol, veh/h	235	94	33	253	36	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	1	0	2	4	0
Mvmt Flow	237	95	33	256	36	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	332	0	607	285
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	322	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	1238	-	456	759
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	730	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1238	-	442	759
Mov Cap-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.92	13.14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	490	-	-	208	-
HCM Lane V/C Ratio	0.097	-	-	0.027	-
HCM Control Delay (s/veh)	13.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

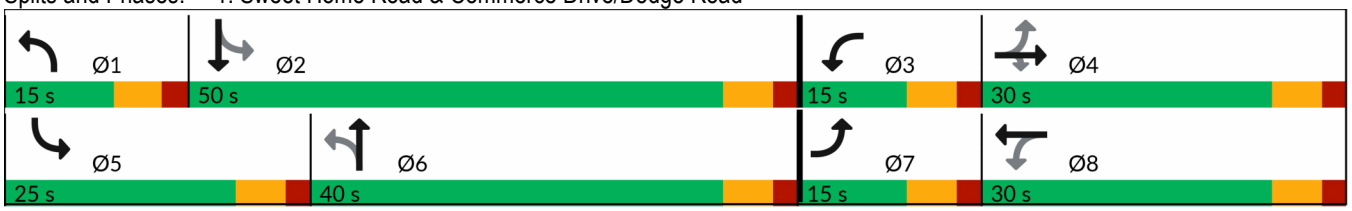
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	133	403	169	88	293	88	905	122	148	677	12
Future Volume (vph)	27	133	403	169	88	293	88	905	122	148	677	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	320		430	0		215	310		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.885			0.982			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1671	1900	1583	1787	1658	0	1703	3514	0	1752	3510	0
Flt Permitted	0.273			0.539			0.293			0.100		
Satd. Flow (perm)	480	1900	1583	1014	1658	0	525	3514	0	184	3510	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295		139			14			2	
Link Speed (mph)		30			40			45			45	
Link Distance (ft)		684			420			772			679	
Travel Time (s)		15.5			7.2			11.7			10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	0%	2%	1%	6%	0%	6%	1%	0%	3%	2%	33%
Adj. Flow (vph)	29	145	438	184	96	318	96	984	133	161	736	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	145	438	184	414	0	96	1117	0	161	749	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2		2	2		2	2	
Detector Template												
Leading Detector (ft)	49	49	49	49	49		49	49		49	49	
Trailing Detector (ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Position(ft)	-1	-1	-1	-1	-1		-1	-1		-1	-1	
Detector 1 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	29	29	29	29	29		29	29		29	29	
Detector 2 Size(ft)	20	20	20	20	20		20	20		20	20	
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		1	6		5	2	

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

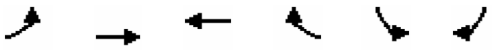
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0		7.0	25.0		7.0	25.0	
Minimum Split (s)	13.0	28.0	28.0	13.0	28.0		13.0	31.0		13.0	31.0	
Total Split (s)	15.0	30.0	30.0	15.0	30.0		15.0	40.0		25.0	50.0	
Total Split (%)	13.6%	27.3%	27.3%	13.6%	27.3%		13.6%	36.4%		22.7%	45.5%	
Maximum Green (s)	9.0	24.0	24.0	9.0	24.0		9.0	34.0		19.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		2.0	5.0		2.0	5.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		15.0	15.0		15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	29.0	22.0	22.0	34.3	29.1		41.9	34.1		49.2	40.0	
Actuated g/C Ratio	0.29	0.22	0.22	0.34	0.29		0.42	0.34		0.49	0.40	
v/c Ratio	0.12	0.34	0.75	0.44	0.71		0.30	0.92		0.61	0.53	
Control Delay (s/veh)	22.7	36.1	21.5	27.0	30.4		16.3	45.4		27.7	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.7	36.1	21.5	27.0	30.4		16.3	45.4		27.7	25.5	
LOS	C	D	C	C	C		B	D		C	C	
Approach Delay (s/veh)		25.1			29.4			43.2			26.0	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 99.7			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 32.7		Intersection LOS: C	
Intersection Capacity Utilization 85.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Sweet Home Road & Commerce Drive/Dodge Road



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	343	387	0	16	44
Future Volume (vph)	0	343	387	0	16	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.900	
Flt Protected					0.987	
Satd. Flow (prot)	0	1881	1792	0	1655	0
Flt Permitted					0.987	
Satd. Flow (perm)	0	1881	1792	0	1655	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		134	50		272	
Travel Time (s)		3.0	1.1		6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	6%	2%	2%	2%
Adj. Flow (vph)	0	373	421	0	17	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	373	421	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.6%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1

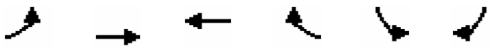
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	343	387	0	16	44
Future Vol, veh/h	0	343	387	0	16	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	6	2	2	2
Mvmt Flow	0	373	421	0	17	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	793	421
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	357	633
Stage 1	0	-	-	0	662	-
Stage 2	0	-	-	0	697	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	357	633
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	12.83
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	525
HCM Lane V/C Ratio	-	-	0.124
HCM Control Delay (s/veh)	-	-	12.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

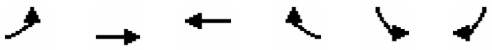
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	62	297	387	16	0	0
Future Volume (vph)	62	297	387	16	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995			
Flt Protected		0.991				
Satd. Flow (prot)	0	1846	1853	0	0	0
Flt Permitted		0.991				
Satd. Flow (perm)	0	1846	1853	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		50	136		277	
Travel Time (s)		0.9	2.3		6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	323	421	17	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	390	438	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.1%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	24	273	375	31	22	28
Future Volume (vph)	24	273	375	31	22	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.925	
Flt Protected		0.996			0.978	
Satd. Flow (prot)	0	1855	1844	0	1685	0
Flt Permitted		0.996			0.978	
Satd. Flow (perm)	0	1855	1844	0	1685	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		136	606		319	
Travel Time (s)		2.3	10.3		7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	297	408	34	24	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	323	442	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	273	375	31	22	28
Future Vol, veh/h	24	273	375	31	22	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	297	408	34	24	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	441	0	-	0	773	424
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1119	-	-	-	367	630
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1119	-	-	-	357	630
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.67	0	13.63
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	145	-	-	-	471
HCM Lane V/C Ratio	0.023	-	-	-	0.115
HCM Control Delay (s/veh)	8.3	0	-	-	13.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	236	59	21	300	106	37
Future Volume (vph)	236	59	21	300	106	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973				0.965	
Flt Protected				0.997	0.964	
Satd. Flow (prot)	1834	0	0	1894	1755	0
Flt Permitted				0.997	0.964	
Satd. Flow (perm)	1834	0	0	1894	1755	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	314			290	218	
Travel Time (s)	7.1			6.6	5.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	0%	0%	0%	1%	0%
Adj. Flow (vph)	284	71	25	361	128	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	355	0	0	386	173	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	236	59	21	300	106	37
Future Vol, veh/h	236	59	21	300	106	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	0	0	0	1	0
Mvmt Flow	284	71	25	361	128	45

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	355	0	732	320
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	412	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1214	-	390	726
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1214	-	380	726
Mov Cap-2 Maneuver	-	-	-	-	380	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.53	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	-	-	118	-
HCM Lane V/C Ratio	0.398	-	-	0.021	-
HCM Control Delay (s/veh)	18.7	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Facility DEC ID 9-1422-00398

PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
SAWYER'S LANDING LLC
43 Central Ave
LANCASTER, NY 14086
(716) 912-0969

CIMINELLI MUIR WOODS, LLC
50 Fountain Plz Ste 500
Buffalo, NY 14202
(716) 631-8000

Facility:
MUIR WOODS DEVELOPMENT
1121 N French Rd
Amherst, NY 14228

Facility Location: in AMHERST in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 191.586 NYTM-N: 4770.823
Latitude: 43°01'38.9" Longitude: 78°47'07.2"
Authorized Activity: Construction of a new bike path, measuring approximately 830 linear feet in length and permanently impacting approximately 0.58-acres of the regulated 100' wide adjacent area of NYSDEC Freshwater Wetland TE-33. No direct impact to Freshwater Wetland TE-33 itself is authorized as part of this project. The project is located at the facility location listed above.

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 9-1422-00398/00003
New Permit Effective Date: 7/25/2024 Expiration Date: 7/24/2027

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ, Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY 14209

Authorized Signature: Lisa M. Czechowicz Date 7 / 25 / 2024

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Distribution List

NYSDEC Region 9 Division of Law Enforcement
Chuck Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health
Molly Bebak, NYSDEC Region 9 Division of Water
Town of Amherst
Jody M. Celeste, Earth Dimensions, Inc.
Ciminelli Muir Woods, LLC

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by various, including pages 1-3 of Joint Application Form (3 pgs), "Overall Site Plan" (1 pg), "Grading Plan - Recreation Trail" (1 pg), and "Monument and Tree Planting Plan" (1 pg), 6 pages DEC date-stamped 3/1/24 attached to this permit.

2. **Conditions Prevail Over Plans** If any condition of this permit conflicts with the approved plans, the permit condition shall prevail over the plans.

3. **Notice of Intent to Commence Work** The Permittee shall notify the Department 3 to 5 days prior to the commencement of work on the project by emailing DEP.R9@dec.ny.gov, at attention to Matthew Smith, Environmental Analyst I, and Charles Rosenburg, NYSDEC Region 9 Bureau of Ecosystem Health. The email needs to include the permit number, permittee name and the project start date.

4. **Siltation Prevention Measures** Siltation prevention measures, such as silt fencing, sediment traps, settling basins and/or filter bags, as deemed necessary and appropriate for the situation, shall be installed and maintained during the project, to prevent movement of silt and turbid waters from the project site into NYS Freshwater Wetland TE-33, its associated 100' wide adjacent area, and/or any other watercourse, stream, water body or wetland.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

5. **Install Monuments** The permittee shall install a minimum of nine (9) monuments along the edge of the bike path as shown in the final NYSDEC approved site plan. The monuments shall be 30-inch long 5/8-inch rebar and cap embedded flush and in the center of the top exposed surface of concrete in a minimum 4-inch diameter, 4.5-foot long section of PVC Schedule 40 drain pipe filled with concrete, extending vertically 1.5 - 2 feet above existing grade at each location. The caps shall say "Wetland Conservation Area, Do Not Disturb, Survey Marker."

6. **Work Within Area Depicted on Plans** No impacts to Freshwater Wetland TE-33 or its 100' wide adjacent area located outside of monuments are authorized by this permit. Other than impacts directly associated with work authorized by this permit, Freshwater Wetland TE-33 and its regulated 100'-wide adjacent area must be left in an undisturbed condition.

7. **Minimize Adverse Impacts to Wetlands, Wildlife, Water** All work must be performed in a manner which minimizes adverse impacts to wetlands, wildlife, water quality and natural resources.

8. **Invasive Species (Non-native Vegetation)** To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment be cleaned of mud, seeds, vegetation and other debris before entering any approved construction areas within the 100' wide regulated wetland adjacent area of NYS Freshwater Wetland TE-33.

9. **Equipment Storage 100' from Wetland, Water Body** All equipment and machinery shall be stored, refueled, and safely contained greater than 100 feet landward of the regulated wetland or water body at the end of each work day. This will serve to avoid the inadvertent leakage of deleterious substances into the regulated area.

10. **Disposal of Material** All excess construction materials shall be immediately removed from the project area upon project completion. Materials may be used at another permitted site, recycled, disposed of at a NYSDEC-approved landfill, or disposed of at an upland site, as appropriate for the material and in accordance with all local, state and federal regulations. Disposal in wetlands and/or regulated 100' wide wetland adjacent areas (including regulated areas of NYS Freshwater Wetland TE-33), other surface waters, or in 100-year floodplains is strictly prohibited.

11. **Seed, Mulch Disturbed Areas** All areas of soil disturbance resulting from this project must be seeded with an appropriate erosion control seed mix and mulched with straw or hydro-mulched immediately upon completion of the project.

12. **Temporary Mulch, Final Seeding** If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth but not more than six months after project completion.

13. **Establish Vegetative Cover** The permittee must ensure the establishment of at least 90 percent vegetative cover across all project disturbed areas by the end of the first complete growing season after completion of construction.

14. **Long-term Plant Survival** The permittee must ensure a minimum of 85% survival of plantings by the end of five growing seasons. If this goal is not met, the permittee must re-evaluate the restoration project in order to determine how to meet the mitigation goal and submit plans to be approved to the NYSDEC Region 9 Bureau of Ecosystem Health via email at R9BEH@dec.ny.gov.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

15. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

16. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

17. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

18. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
700 Delaware Ave
Buffalo, NY14209

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

PASSERO
engineering architecture

242 West Main Street, Suite 100
Rochester, NY 14614
585.325.1000 | passero.com

December 30, 2024

Daniel J. Ulatowski, AICP
Assistant Planning Director / ZEO
Town of Amherst Planning Department
5583 Main Street
Williamsville, New York 14221

Re: Sawyer's Landing Mixed-Use Project
Town of Amherst, NY
50 Dodge Road [Formerly Portion of 1081 North French Road - Site "A" of Muir Woods Property]
Alternative Parking Plan
PA Project No: 20243845.0002

Dear Mr. Ulatowski:

This technical letter provides an updated shared parking demand assessment for the proposed mixed-use project (Sawyer's Landing Development) located in the Town of Amherst in connection with the request for the approval of an Alternate Parking Plan per Section 7-1-7A of the Zoning Code.

This letter updates a previous version of the Alternative Parking Plan dated September 27, 2024, and is consistent with the most recently updated plans prepared by Carmina Wood Design to be submitted in connection with a request to Amend the Findings Statement pursuant to the State Environmental Quality Review Act ("SEQRA"). Additionally, per Town feedback, this letter performs a shared parking sensitivity analysis of residential parking demands should more residents decide to work from home rather than leave the project site. All supporting materials are included in the attachments. The following tasks were undertaken:

- Estimated parking demands using Town Zoning Code requirements.
- Estimated mixed-use parking demands considering shared parking principles based on nationally accepted methodology developed, in part, by the Urban Land Institute (ULI), Institute of Transportation Engineers (ITE), International Council of Shopping Centers (ICSC), and National Parking Association (NPA).

PROJECT DESCRIPTION

The proposed mixed-use project consists of the following:

- **Apartments:** 115 units (12 studios, 88 one-bedroom, 2 two-bedroom, 13 three-bedroom layouts).
- **2-Story Townhomes:** 87 units (assume 100% three-bedroom).
- **Retail:** 3,802 SF
- **Office:** 4,000 SF
- **Self-Storage Building:** 105,600 SF

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

The project will provide **401 total parking spaces** split into:

- **90** parallel spaces
- **121** 9'x19' spaces
- **63+24** townhouse garage spaces
- **63+24** spaces in front of townhouse garage spaces
- **16** garage spaces in 4-story buildings

PARKING REQUIREMENTS PER ZONING CODE

Section 7-1-6A of the Zoning Code sets forth the off-street parking requirements for different categories of land uses. **Table 1** summarizes the parking requirements. Based on the proposed supply of 401 spaces, the site has a theoretical deficit of 60 spaces.

Table 1: Town Code Parking Requirements

USE TYPE	PARKING SPACE REQUIREMENTS	SIZE	RESULT
Residential	2 per unit	202 units	404
Office	1 per 200 NFA	4,000 GFA (3,400 NFA)	17
Retail	5.5 per 1,000 NFA	3,802 GFA (3,231.7 NFA)	18
Self-Storage	1 per 5,000 SF devoted to storage		22
Total Required Parking			461

Note: GFA = gross floor area. NFA = net floor area. For single story, multiple tenant building – 85% of GFA.

PARKING DEMAND ASSESSMENT

SHARED PARKING PRINCIPLES

Shared parking studies are conducted to establish the total number of spaces necessary by mixed-use developments to effectively meet the expected parking demands. The shared parking concept builds upon the premise that land uses in a mixed-use development often do not share the same peak demand period, so spaces can be shared between the different land uses during different peak periods.

Each land use typically has a peak demand period where it would occupy the maximum number of spaces that the use requires and an off-peak period where a lesser percentage of the maximum spaces would be occupied; be it by time of day, day of week, or even month of the year. This allows for the project to provide fewer spaces than would be required if the land uses on a project site were to be treated separately with individual parking demands. The concept of shared parking is well recognized within the real estate and regulatory community and is proven to work.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

DISCUSSION OF METHODOLOGY

To estimate the number of parking spaces required for the proposed project, this assessment used the ULI methodology for shared parking. This methodology is utilized by transportation engineers and planners when evaluating the parking demand for a mixed-use project. The ULI *Shared Parking (3rd Edition)* includes state-of-the-art practice methodologies for determining parking demand in these types of projects.

Accompanying the publication is an interactive Shared Parking Calculation Model (Model) that is used to estimate the shared parking demand. The Model requires a user to input the number of units associated with each proposed land use. Within the Model, 32 land uses are identified – some of which are subdivided into more refined categories – with 44 different recommended base parking ratios based on suburban locations with little or no transit. Data contained within the Model is from a combination of ULI surveys and the ITE *Parking Generation Manual*. Output consists of a summary table describing the base parking demand and shared parking reduction; a monthly demand comparison; weekday and weekend demand by month; and weekday and weekend demand by hour.

Several important factors to consider when estimating demand for residential uses include the following:

- The residential demand is based on the number of units per bedroom type (e.g., studio efficiency, one-bedroom, two-bedroom, and three or more bedrooms).
- Time of day factors for demand vary throughout a typical 24-hour period for both weekday and weekend periods. Demands may also vary based on suburban or urban settings. Reserved spaces are assumed to have a 100% utilization rate for all hours. Reserved spaces are those that are dedicated to tenants. In this case, the garage spaces, and the surface spaces in front of them qualify as reserved. 190 spaces are assumed to be reserved for residential use only.
- For a typical weekday, residential suburban factors vary from 100% between 12:00 AM and 5:00 AM and fall to as low as 40% from 12:00 PM through 3:00 PM. In an urban setting, the demand varies from 100% between 12:00 AM and 5:00 AM and falls to as low as 50% between 12:00 PM and 2:00 PM.
- For a typical weekend, residential suburban factors range from 100% between 12:00 AM and 6:00 AM and fall to as low as 65% from 1:00 PM through 2:00 PM. In an urban setting, the demand varies from 100% between 12:00 AM and 5:00 AM and falls to as low as 50% at 6:00 PM.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

SHARED PARKING ANALYSIS

The peak hour demand, respective to weekday, weekend, and seasonal demands, is projected to occur at **10:00 PM on a December weekend**. The projected peak hour demand (i.e., the busiest hour of the busiest weekday or weekend of the year) is **364 spaces**. The ULI does not have data for Self-Storage; therefore, 22 spaces were conservatively assumed without adjustment during weekdays and weekends. **Table 2** presents the parking demand accumulations for the peak weekday and weekend periods. Weekday shared demand also occurs in December at 10:00 PM.

Table 2: Shared Parking Demand

LAND USE	SIZE	UNIT	WEEKDAY DEMAND		WEEKEND DEMAND	
			MAXIMUM	SHARED	MAXIMUM	SHARED
Residential	202	DU	366	358	376	359
Office	4,000	SF	16	0	3	0
Retail	3,802	SF	15	4	17	5
Self-Storage	105,600	SF	22	0	22	0
Total Parking Demands			419	362	418	364

When considering shared parking, the site's 401 parking spaces will be sufficient to accommodate future demands.

Please feel free to contact me directly with any questions.

Sincerely,

David Kruse, AICP, PTP, RSP1
Senior Transportation Planner
dkruse@passero.com • 585-505-6012

Attachments

cc: William Severyn, Severyn Development, Inc.
Sean Hopkins, Esq., Hopkins Sorgi & McCarthy PLLC
Chris Wood, PE, Carmina Wood Design

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

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Project: Sawyer's Landing
Description:

Shared Parking Demand Summary

Peak Month: DECEMBER -- Peak Period: 10 PM, WEEKEND

Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 10 PM	Peak Mo Adj December	Estimated Parking Demand	Peak Hr Adj 10 PM	Peak Mo Adj December	Estimated Parking Demand
Retail																		
Retail (<400 ksf)	3,802	sf GLA	2.90	100%	93%	2.70	ksf GLA	3.20	100%	91%	2.92	ksf GLA	30%	100%	3	35%	100%	4
Employee			0.70	100%	77%	0.54		0.80	100%	72%	0.58		40%	100%	1	45%	100%	1
Food and Beverage																		
Entertainment and Institutions																		
Hotel and Residential																		
Residential, Suburban																0%		
Studio Efficiency	12	units	0.38	100%	100%	0.38	unit	0.38	100%	100%	0.38	unit	95%	100%	5	89%	100%	4
1 Bedroom	88	units	0.41	100%	100%	0.41	unit	0.41	100%	100%	0.41	unit	95%	100%	34	89%	100%	32
2 Bedrooms	2	units	0.74	100%	100%	0.74	unit	0.74	100%	100%	0.74	unit	95%	100%	2	89%	100%	2
3+ Bedrooms	100	units	1.13	100%	100%	1.13	unit	1.13	100%	100%	1.13	unit	95%	100%	107	89%	100%	101
Reserved	55%	res spaces	0.93	100%	100%	0.93	unit	0.93	100%	100%	0.93	unit	100%	100%	189	100%	100%	189
Visitor	202	units	0.10	100%	100%	0.10	unit	0.15	100%	100%	0.15	unit	100%	100%	21	100%	100%	31
Office																		
Office <25 ksf	4,000	sf GFA	0.30	100%	100%	0.30	ksf GFA	0.03	100%	100%	0.03	ksf GFA	0%	100%	-	0%	100%	-
Reserved		empl	0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
Employee			3.50	100%	48%	1.70		0.35	100%	48%	0.17		1%	100%	-	0%	100%	-
Additional Land Uses																		
Self Storage	105,600	sf GFA	0.20	100%	100%	0.20	sf GFA	0.20	100%	100%	0.20	sf GFA	0%	0%	-	0%	0%	-
Employee			0.00	100%	100%	0.00		0.00	100%	100%	0.00		0%	0%	-	0%	0%	-

Customer/Visitor	24	Customer	35
Employee/Resident	149	Employee/Resident	140
Reserved	189	Reserved	189
Total	362	Total	364

CARMINAWOOD
DESIGN

DOWNSTREAM SANITARY SEWER CAPACITY ANALYSIS REPORT

for

Muir Woods Site

Sweet Home & Dodge Road
Amherst, Erie County, New York

Prepared for

Sawyer's Landing, LLC

c/o Severyn Development
43 Central Ave Suite #300
Lancaster, New York 14086

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

Telephone: (716) 842-3165
Fax: (716) 842-0263

REVISED
November 2024



Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Project Description

This new site development project will consist of the construction of apartment buildings, townhomes, office, restaurant, and retail space as well as self-storage. Construction will also include on-site utility, landscaping improvements, and associated roads and parking. The overall acreage of the site is 28.47 acres. The site is located at Sweet Home Road and Dodge Road on a western portion of parcel 40.08-3-13.1 in the Town of Amherst and is zoned NCD-SA.

The proposed sewer for this project will leave the site via a privately owned sanitary service and cross Dodge Road to connect to a proposed 8" publicly owned sewer extension. The public line will then tie in to the existing 60" RCP Peanut line along Dodge Road. Sewage will then be conveyed west and then eventually north through the 84" West Side Interceptor to the Town of Amherst Wastewater Treatment Facility #16. The proposed public extension from the tie in to the existing 60" RCP line will be owned and maintained by the Town of Amherst.

Node 1 – Dodge Road (60"):

Existing Peak Flow measured (wet weather event)	=	40.602 cfs (21.851 mgd)*
Proposed Muir Woods Peak Flow	=	0.305 cfs **
Proposed Peak Flow	=	40.907 cfs

Theoretical capacity of existing 60" RCP pipe @ 0.07% = 81.366 cfs

Conclusion: The proposed peak flow is less than the capacity of the 60" pipe, therefore there is sufficient capacity. At no time during the monitoring did the flow depth exceed the pipe diameter at Node 1 of the downstream monitoring points during the rain events monitored.

Node 2 – North Ellicott Creek Rd (60")

Existing Peak Flow measured (wet weather event)	=	99.524 cfs (53.561 mgd)*
Proposed Muir Woods Peak Flow	=	0.305 cfs **
Proposed Peak Flow	=	99.829 cfs

Theoretical capacity of existing 60" pipe = 82.873 cfs (44.60 mgd)

Conclusion: Current flows the day following the 1.21" rainfall event exceeded the capacity of the existing 60" sewer pipe, but at no time during the monitoring period did the flow at any point slow or stall which would have caused a backup or flooding at the manhole. In addition, Sanitary Sewer Overflow (SSO) did not occur. I/I mitigation shall be required for the contribution proposed for this project.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Node 3 – Sweet Home (66”)

Existing Peak Flow measured (overall)	=	69.058 cfs (39.601 mgd)*
Proposed Muir Woods Peak Flow	=	0.305cfs **
Proposed Peak Flow	=	69.363 cfs

Capacity of existing 66” pipe = 106.657 cfs (57.40 mgd)

Conclusion: The proposed peak flow is less than the capacity of the 66” pipe, therefore there is sufficient capacity. At no time during the monitoring did the flow depth exceed the pipe diameter at Node 3 of the downstream monitoring points during the rain events monitored.

Foot Notes:

Pipe slopes, sizes and materials provided by Town of Amherst Engineering Department Sewer Maintenance Division

* Converted from measurements in TECSmith report dated 8/12/20

** See Sanitary Sewage Demand Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Location Map

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Muir Woods Site - Sweet Home and Dodge Rd



8/18/2020, 8:51:26 AM

Parcels

Municipal Boundaries

1:9,028

0 300 600 1,200 ft

0 90 180 360 m

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS,

USGS TNM – National Hydrography Dataset. Data Refreshed July, 2020. | NYS GIS Program Office | Telephone: (518) 242-5029 | Email: its.sm.SAM.

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Sanitary Demand Calculations

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

CARMINA WOOD MORRIS, D.P.C.
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 24-4034 Date: 11/19/2024
Project Name: Muir Woods
Project Address: Sweet Home Road and Dodge Road - Amherst, NY
Subject: Sanitary Sewer Demand Calcs
Sheet: 1 of 1

Sanitary Sewage Demand Calculations:

West - Mixed Use Buildings

0.1	gal/d/sf	x	11,906	sf	=	1,191	gpd	*use 0.1 gallons per day per square foot (Retail
35.0	gal/d/seat	x	100	seats	=	3,500	gpd	*use 35 gallons per day per seat (fast food)
0.1	gal/d/sf	x	10,798	sf	=	1,080	gpd	*use 0.1 gallons per day per square foot (Office
15	gal/d/employee	x	5	employees		75	gpd	*use 15 gallons per employee (Self-Storage)

West - Apartments

220	gal/d/unit	x	112	units	=	24,640	gpd	*use 220 gallons per day per 2-bedroom unit

North - Townhomes Buildings

220	gal/d/unit	x	63	units	=	13,860	gpd	*use 220 gallons per day per 2-bedroom unit
220	gal/d/unit	x	24	units	=	5,280	gpd	*use 220 gallons per day per 2-bedroom unit

Total Site Sanitary Demand:	=	49,625	gpd
	=	0.050	MGD
Find Peak Sanitary Demand:	=	0.077	cfs

Peaking Factor based on Population:

Total demand: 49,625 gpd / 100 gpcd = 496 per capita

Population (P) = 496 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 3.98

Peak Sanitary Demand	=	49,625	x	3.98	=	197,306	gpd	
					=	0.197	MGD	
					=	0.305	cfs	

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow	=	197,306	gpd	=	137.02	gpm		
4:1 offset flow per NYSDEC requirements	=	137.0	x	4	=	548.07	gpm req'd	
Mitigation Credit	=	$250	/ gpm					
Mitigation Agreement Amount	**=**	**$137,017.93**						

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TECSmith Monitoring Report

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TECsmith

TECSMITH, Inc.
PO Box 383
Elma, New York 14059-0383
Tel: 716-462-0382
Fax: 716-687-1418

Date: August 12, 2020

SANITARY SEWER FLOW CAPACITY STUDY – Summary Review

Prepared For: Muir Woods Capacity Analysis

Christopher Wood
487 Main Street, Suite 600
Buffalo, New York 14203
P: (716) 842-3165
F: (716) 842-0263

Project Name: Muir Woods Capacity Analysis

Flow Monitoring Period: July 8, 2020 to August 5, 2020

Rain Events (> 0.5-inches) Monitored: July 11 (1.21”), July 16 (0.86”), and August (0.90”)

Number of Monitoring Nodes: Three (3) downstream manholes

Node Locations and Descriptions:

- Node 1 Dodge Rd 60" (60")
- Node 2 North Ellicott Creek Rd. (60")
- Node 3 Sweethome 66 (66")

Summary Conclusion:

Based on the data presented in this report, specifically the flow depth measurements recorded (see graphs below)

- At no time did the flow depth exceed pipe diameter at Node 1 and Node3 of the downstream monitoring points during the rain events monitored.
- One time the flow depth exceed pipe diameter at Node 2 of the downstream monitoring points during the rain events monitored.
- At no time during the monitoring period did the flow at any point slow or stall which would have caused a backup or flooding at the manhole.

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

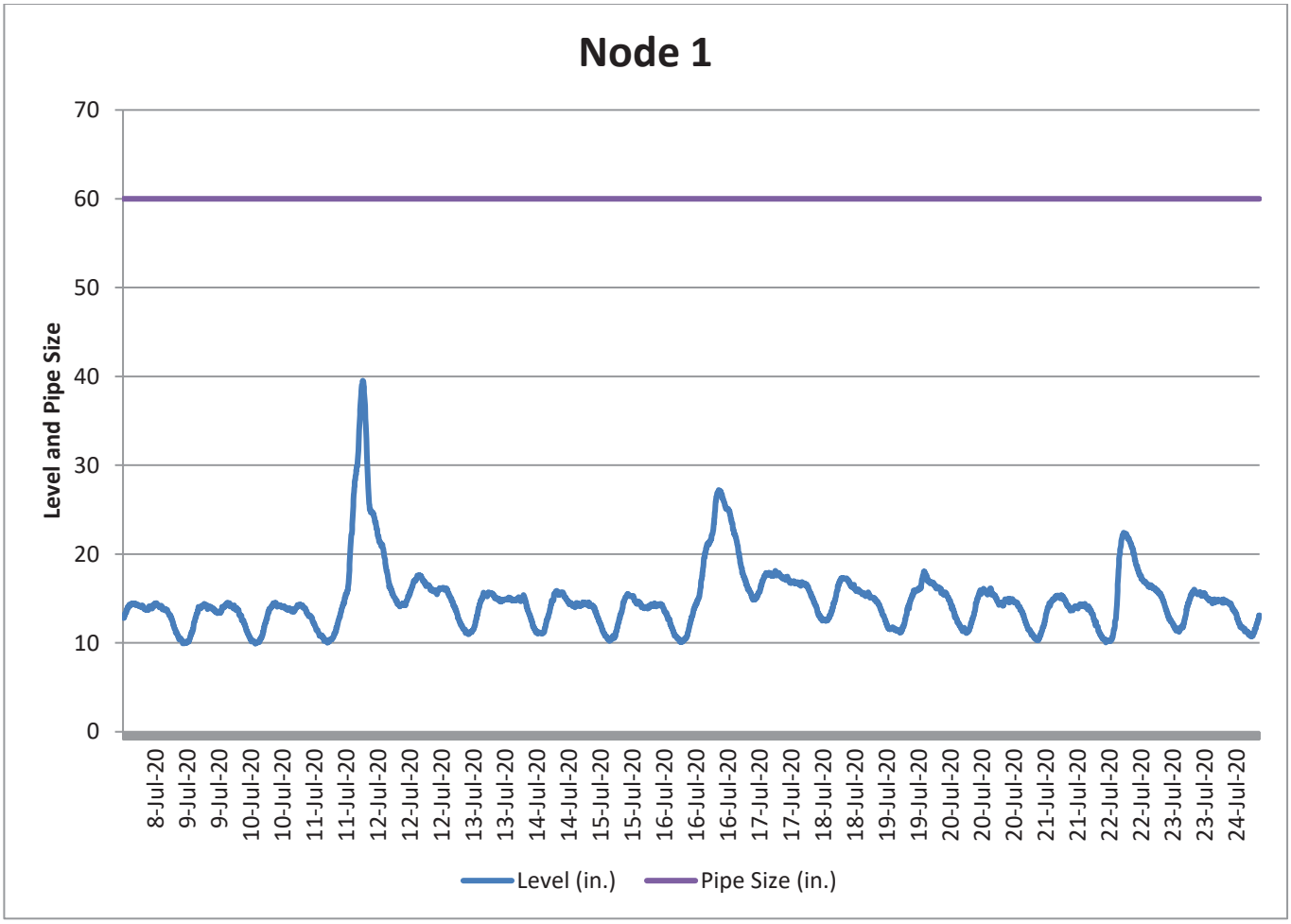
TECsmith

TECSMITH, Inc.
PO Box 383
Elma, New York 14059-0383
Tel: 716-462-0382
Fax: 716-687-1418

Depth of Flow Capacity Summary:

Depth of flow capacity is based on diameter of pipe. See graphs below.

- At no time during the monitoring period did depth of flow exceed pipe diameter at Node 1.



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TECsmith

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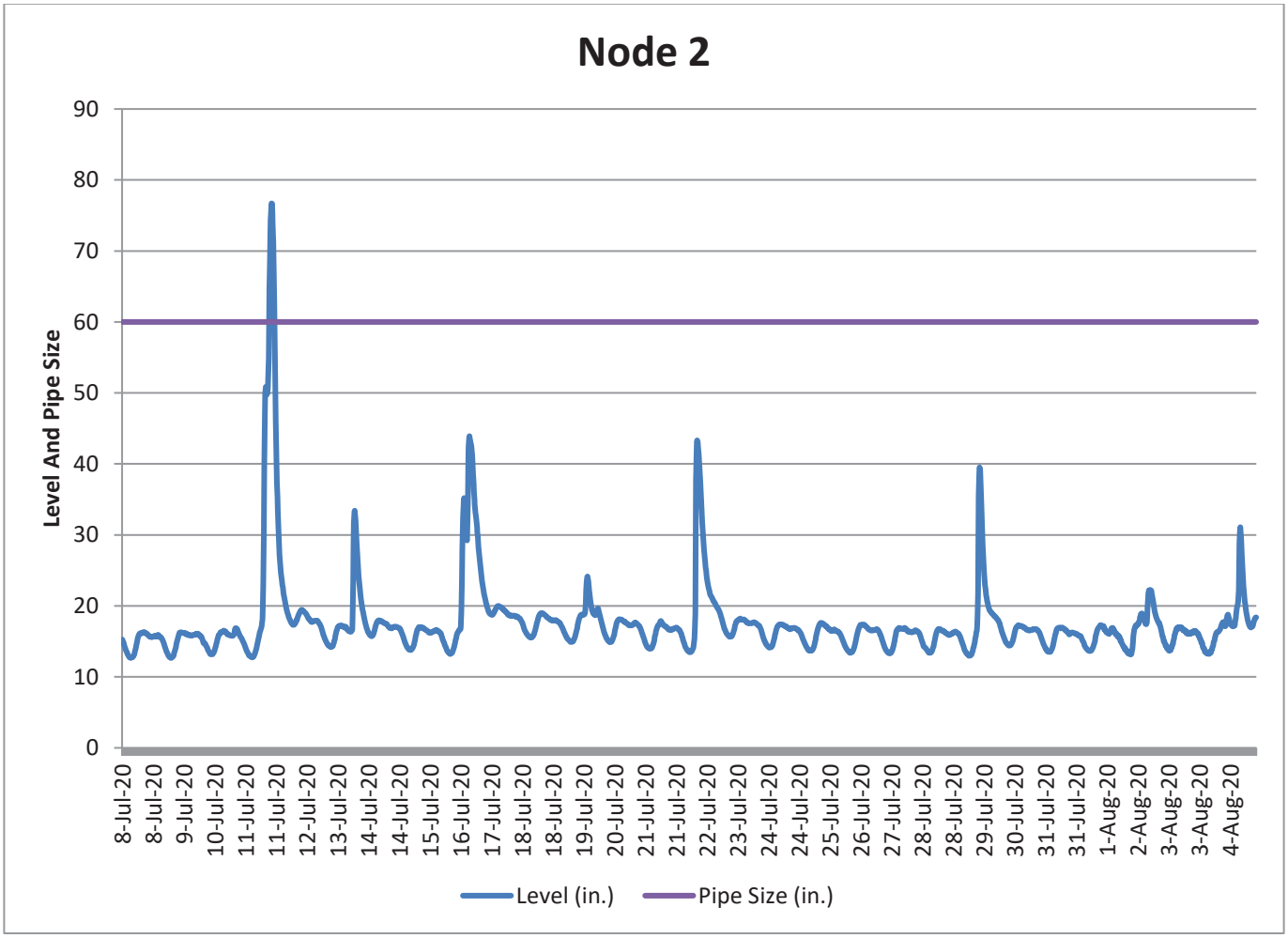
- One time during the monitoring period did depth of flow exceed pipe diameter at Node 2.



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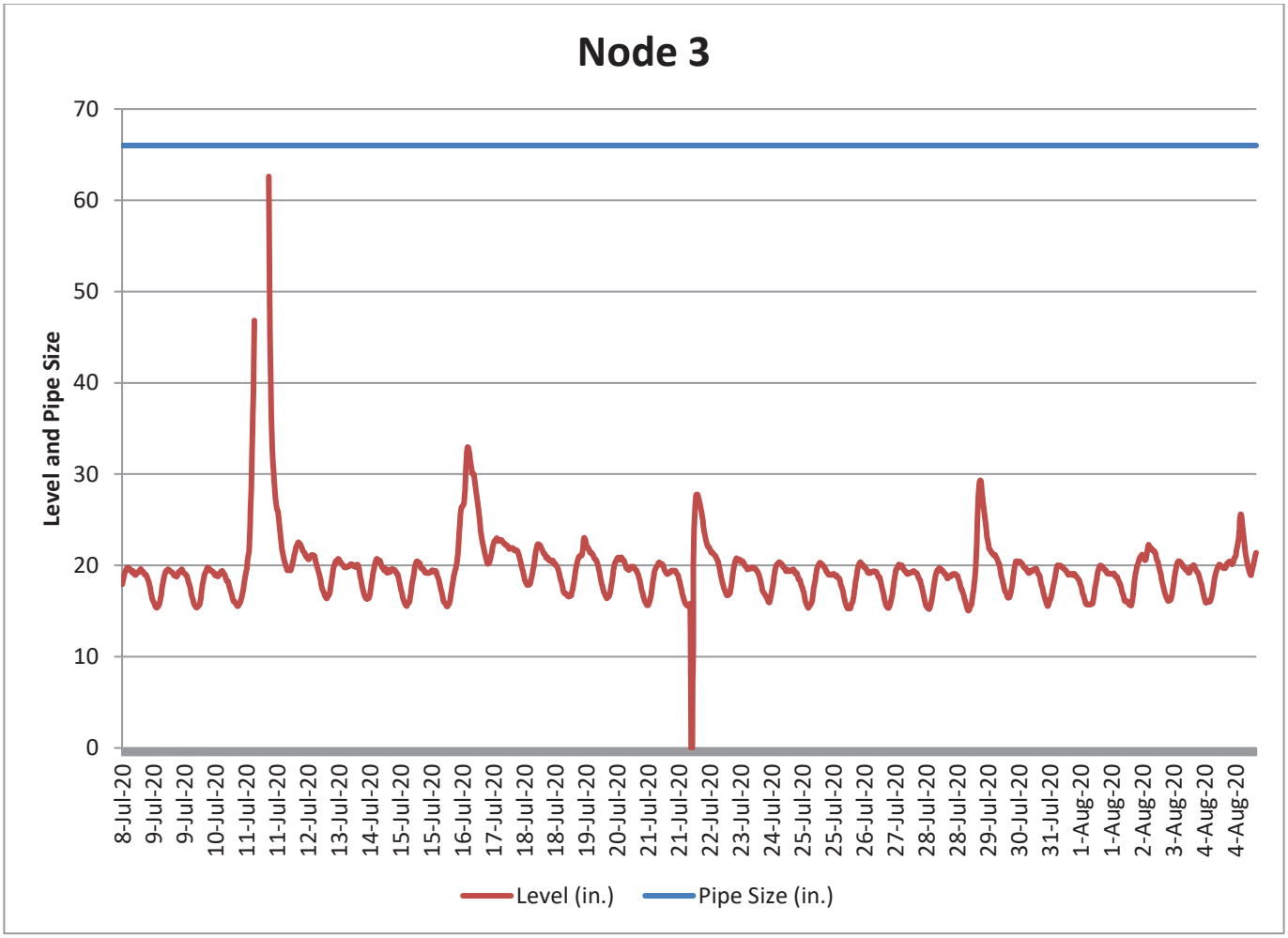
- At no time during the monitoring period did depth of flow exceed pipe diameter at Node 3.



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Date	Node 1			Node 2			Node 3			Rain₂
	Dodge Rd 60" (60")			North Ellicott Creek Rd. (60")			Sweethome 66 (66")			
	FLOW (GAL x 1,000)	PEAK FLOW (MGD)	PEAK LEVEL (IN)	FLOW (GAL x 1,000)	PEAK FLOW (MDG)	PEAK LEVEL (IN)	FLOW (GAL x 1	PEAK FLOW (MDG)	PEAK LEVEL (IN)	(inches)
7/8/2020	4186.283	8.161	14.473	7265.409	8.598	16.319	4800986323.2	8.025	19.770	***0***
7/9/2020	6195.964	8.253	14.556	7387.504	8.661	16.273	6645115872.8	8.044	19.590	***0***
7/10/2020	6231.790	8.143	14.521	7625.321	9.362	16.873	6667623530.3	8.079	19.790	***0***
7/11/2020	10033.769	21.851	39.526	20780.607	53.561	76.701	10540796680.3	28.096	66.000	***1.21***
7/12/2020	9184.078	14.374	22.474	11292.759	17.205	23.420	9306202243.7	13.750	25.810	***0***
7/13/2020	7070.585	9.115	15.714	11243.925	29.525	33.420	7609650153.8	9.108	20.730	***0.47***
7/14/2020	6974.494	9.101	15.869	9685.896	13.288	20.168	7274548275.2	9.280	20.720	***0***
7/15/2020	6591.385	8.845	15.512	8174.879	9.503	17.013	6975378581.5	8.831	20.460	***0***
7/16/2020	9916.241	20.532	27.213	18886.012	44.070	43.892	12067803314.2	39.601	32.990	***0.86***
7/17/2020	10096.644	16.639	23.493	12451.728	18.137	24.043	10307997546.4	14.224	26.250	***0.03***
7/18/2020	8256.593	10.757	17.307	9766.538	11.556	18.960	8664937727.1	10.772	22.350	***0***
7/19/2020	7589.558	11.382	18.060	10166.964	17.245	24.128	8331695207.5	24.048	23.030	***0.21***
7/20/2020	7269.757	9.235	16.144	8853.911	10.160	18.118	7730113857.4	9.669	20.890	***0***
7/21/2020	6681.658	8.895	15.365	8179.097	9.991	17.880	1603593925.8	9.197	20.330	***0***
7/22/2020	8633.887	15.390	22.402	15950.443	42.105	43.300	16326027301.0	29.736	27.790	***0.42***
7/23/2020	7327.211	9.216	16.027	9664.310	11.130	18.508	6916249204.1	19.172	20.800	***0***
7/24/2020	6764.464	8.779	15.317	8434.117	9.760	17.405	8296938032.2	15.723	20.360	***0***
7/25/2020	6426.122	8.861	15.407	8159.333	9.969	17.608	6871634377.4	12.359	20.320	***0***
7/26/2020	6409.255	8.667	15.297	8027.060	9.774	17.372	6816880470.0	9.106	20.360	***0***
7/27/2020	6487.339	8.269	15.107	7871.954	9.244	16.902	6854655651.9	8.336	20.100	***0.03***
7/28/2020	6298.427	8.016	14.780	7696.223	9.134	16.757	6692447010.5	8.080	19.740	***0.01***
7/29/2020	8340.302	16.584	23.592	12134.192	36.728	39.530	9170179156.5	20.222	29.310	***0.18***
7/30/2020	6969.955	8.785	15.769	8383.294	9.650	17.268	7523641190.2	9.272	20.460	***0***
7/31/2020	6450.443	8.415	15.050	7762.583	9.287	16.964	7145517425.5	9.079	20.020	***0***
8/1/2020	6190.340	8.162	14.979	7900.808	9.762	17.305	6954528215.3	13.188	20.010	***0***
8/2/2020	7093.727	10.270	17.033	9801.968	15.922	22.240	7827565960.7	17.585	22.270	***0.29***
8/3/2020	6767.967	8.538	15.346	8117.853	9.663	17.172	7374180322.3	9.104	20.460	***0***
8/4/2020	6796.062	10.365	17.180	8920.731	24.649	28.896	7717920498.0	19.489	24.920	***0.9***
8/5/2020	4464.403	13.072	20.203	5583.196	26.407	31.097	3896577334.0	14.011	25.600	***0***
---	---	---	---	---	---	---	---	---	---	***4.61***

	MGD	CFS		MGD	CFS		MGD	CFS
Wet	21.851	33.808	Wet	53.561	82.871	Wet	39.601	61.271
Overall	16.639	25.744	Overall	42.105	65.146	Overall	29.736	46.008

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

(T) Amherst Engineering Department Sewer Maintenance Division Downstream Routing Map

Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Town of Amherst Engineering Department
Sewer Maintenance Division

Main Sanitary Sewer Interceptors

DOWNSTREAM SEWER

AMHERST PEANUT LINE & WEST SIDE INTERCEPTOR

460 Dodge Road - Proposed 26 Unit Apartment Building - Amherst Consolidated Sewer District

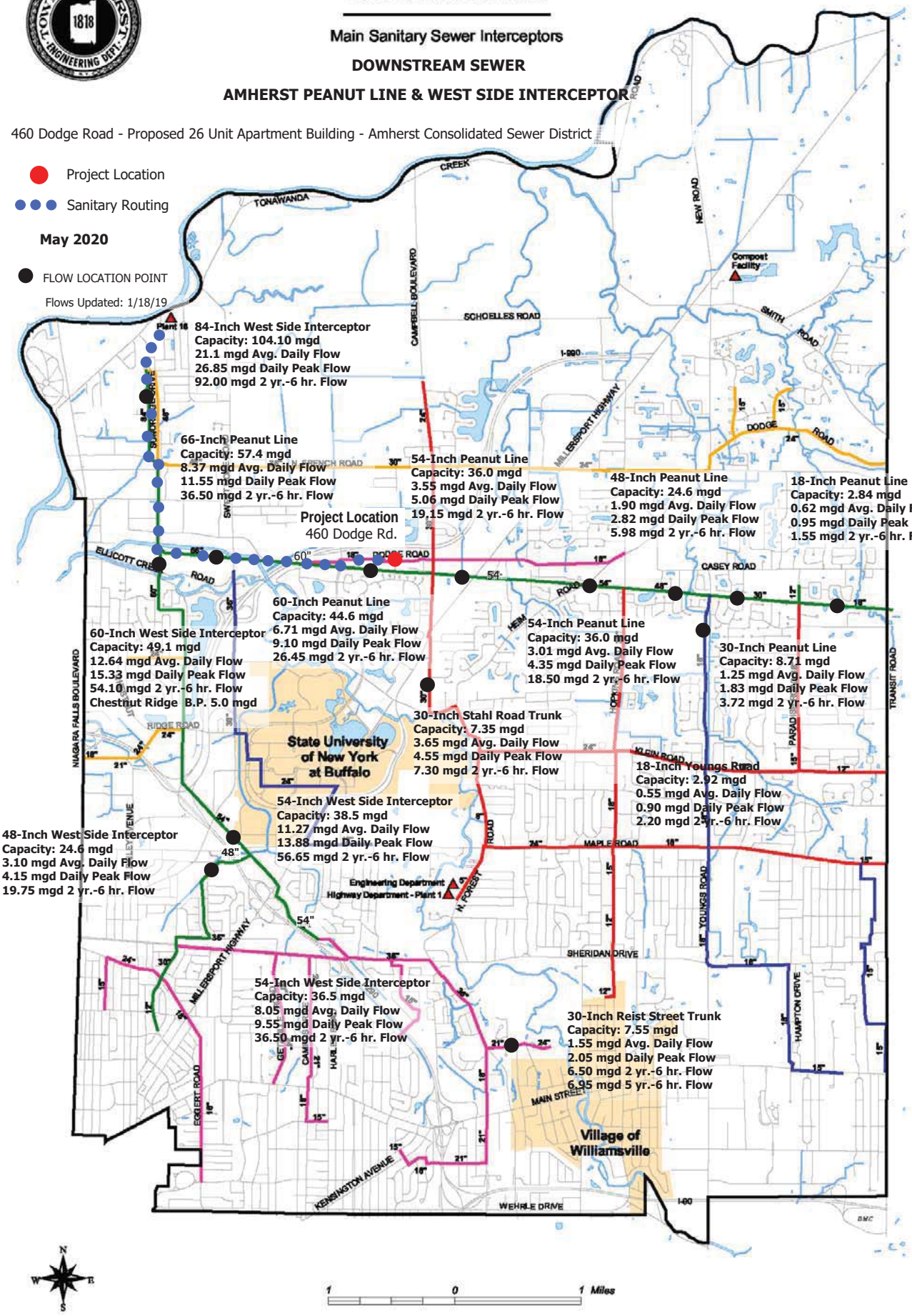
Project Location

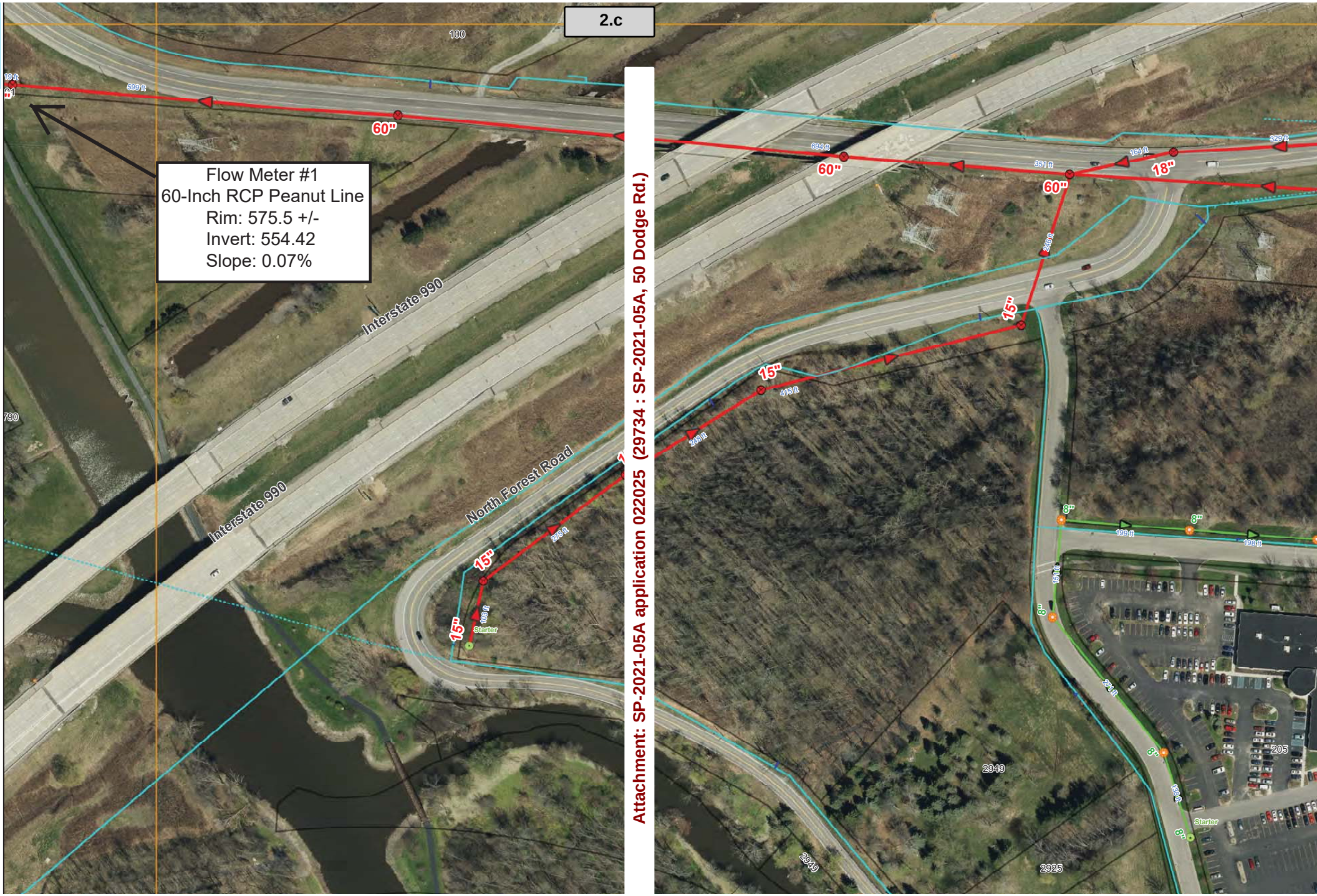
Sanitary Routing

May 2020

FLOW LOCATION POINT

Flows Updated: 1/18/19





Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)


348 N Ellicott Creek Rd
Buffalo, New York
Google
Street View
Flow Meter #2
2.c
Google
Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

Flow Meter #3





Attachment: SP-2021-05A application 022025 (29734 : SP-2021-05A, 50 Dodge Rd.)

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Major Site Plan Review

For Official Use

File #: _____ **Acreage** _____ **Fee $** _____

Address Verified by Assessor's Office _____ VERIFIED BY DATE

Materials Received by Planning Department _____ RECEIVED BY DATE

Fee Paid to Town Clerk _____ RECEIVED BY DATE

Site Plan Review		**Fill In Applicable Fees**
1 acre or less	$1,250.00	_____
Each additional acre or fraction thereof	$ 650.00/acre	_____
Amendments to Site Plans	$1,200.00	_____
Request for Relief of / Change to Conditions of Site Plan Approval	$1,200.00	_____
Request for Extension of Site Plan Approval	$ 450.00	_____
Stormwater Pollution Prevention Plan		
1 - 4.99 Acres	$ 500.00	_____
5 - 10 Acres	$ 750.00	_____
>10 Acres	$1,000.00	_____
Affidavit Fee for Public Hearing	$ 15.00	_____
	TOTAL FEE:	**$**_____

To Be Completed By Applicant

Petitioner:

Name: Town of Amherst - Jessica Boudreau

Address: 1100 N. Forest Rd.

Williamsville (city) NY (state) 14221 (zip code)

Phone: 716-631-7154 Fax: _____

E Mail: jboudreau@amherst.ny.us

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

MAJOR SITE PLAN APPLICATION (con't) ***Page 2***

Representative (Architect, Engineer, Landscape Architect, Surveyor, or Attorney)**:**

Name: Same as above

Address: _____

_____

_____

city state zip code

Phone: _____ Fax: _____

E Mail: _____

Project Location (must be verified by Town Assessor's Office)**:**

Address: 350 John James Audubon Parkway

_____

SBL No(s): 41.03-1-66

Project Name: Audubon Library Playground - TOA 2024.022

Project Description: Installation of a 5,000+/- S.F. playground near the entrance to the Audubon Library.

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

If this petition is an amendment to a previously approved site plan, please describe the proposed changes (include type and size of existing structures and number of existing parking spaces):

	existing	proposed	total
Gross Floor Area (non-residential):	NA	NA	NA
Gross Floor Area Residential:	NA	NA	NA
Number of Residential Units:	NA	NA	NA
Number of Parking Spaces:	NA	NA	NA

Acreage of Parcel: 31.14 acres

(list each parcel separately)

Frontage on Public Roads: 1,262'+/-

(list each road separately)

Existing Zoning District(s) NCD-LC

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:
Audubon Library Playground and Community Park

Project Location (describe, and attach a location map):
350-500 John James Audubon Parkway, Town of Amherst

Brief Description of Proposed Action:
Implementation of the Dormitory Authority's (DASNY) State and Municipal Facilities Program (SAM) grant funds for development of a public park between the Amherst Main Library at Audubon and the Amherst Senior Center to include a playground and community park space with site improvement including grading, drainage and landscaping.

Name of Applicant or Sponsor:	Telephone: (716) 631-7132
Town of Amherst - Jessica Boudreau	E-Mail: jboudreau@amherst.ny.us

Address:
5583 Main Street

City/PO:	State:	Zip Code:
Williamsville	NY	14221

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:	☑	☐

3. a. Total acreage of the site of the proposed action? 0.15 acres
   b. Total acreage to be physically disturbed? 0.15 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 30.14 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:
   ☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban)
   ☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other(Specify): library, senior center
   ☐ Parkland

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		
If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements?		
If the proposed action will exceed requirements, describe design features and technologies: _____ _____	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply?		
If No, describe method for providing potable water: _____ _____	☑	☐

	NO	YES
11. Will the proposed action connect to existing wastewater utilities?		
If No, describe method for providing wastewater treatment: _____ _____	☑	☐

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐	☑

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____		

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☐ Wetland ☐ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☐	☑
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: _____		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)?	☑	☐
If Yes, explain the purpose and size of the impoundment: _____		
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	☑	☐
If Yes, describe: _____		
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?	☑	☐
If Yes, describe: _____		

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: Jessica Boudreau Date: 01/27/2025

Signature: _____ Title: Project Manager

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

PRINT FORM

Agency Use Only [If appl

Project: Audubon Library Playground/Park

Date: 1/27/2025

Short Environmental Assessment Form
Part 2 - Impact Assessment

Part 2 is to be completed by the Lead Agency.
Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☑	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☑	☐
3. Will the proposed action impair the character or quality of the existing community?	☑	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☑	☐
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	☑	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☑	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☑	☐
b. public / private wastewater treatment utilities?	☑	☐
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☑	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☑	☐
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☑	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☑	☐

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

PRINT FORM

Agency Use Only [If appli

Project: Audubon Library Playgr

Date: 1/27/2025

Short Environmental Assessment Form
Part 3 Determination of Significance

For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Name of Lead Agency	Date
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

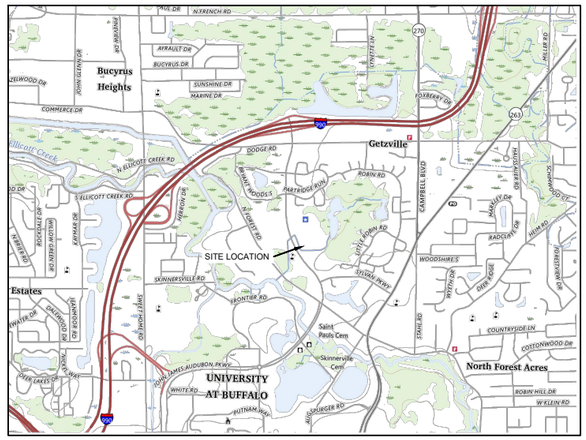
PRINT FORM

Attachment: SP-1986-30_D_application_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

TOWN OF AMHERST

AUDUBON LIBRARY PLAYGROUND

TOWN JOB NO. 2024.022



Town Supervisor
Brian J. Kulpa

Town Councilmembers
Shawn Lavin - Deputy Supervisor
Jacqualine Berger
Angela Marinucci
Michael Szukala

Town Engineer
Jeffrey S. Burroughs, P.E.

Highway Supervisor
Steven Floss

Town Clerk
Francina J. Spoth

January 2025

Jeffrey S. Burroughs, P.E.

DRAWING INDEX

SHEET NO.	DWG. NO.	DESCRIPTION
-	T	TITLE PAGE
1	C1	OVERALL SITE PLAN
2	C2	SITE PLAN
3	C3	DEMO, UTILITY & GRADING PLAN
4	C4	PLAYGROUND PLAN
5	D1	DETAILS
6	D2	DETAILS

P:\prj_parks_recreation\audubon_library\CAD\Audubon Library Playground.dwg

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)



SITE DATA TABLE:

350 JOHN JAMES AUDUBON PARKWAY
SBL 41.03-1-66

PARCEL AREA	30.14 ACRES
PROPOSED PLAYGROUND AREA:	5,042 S.F. (0.12 ACRES)
PROPOSED NEW PARKING:	0

PROJECT LOCATION

PROPOSED PLAYGROUND FOOTPRINT

PROPERTY LINE

RESERVED FOR TOA USE

TOWN OF AMHERST
ENGINEERING DEPARTMENT
1100 NORTH FOREST
WILLIAMSVILLE, NY 14221

AUDUBON LIBRARY PLAYGROUND

OVERALL SITE PLAN

FIELD CREW: JLB
DRAWN BY: JS/JL
JOB NO. 2024.0
CHECKED BY: JB
CHECKED BY:
SCALE: 1" = 1
DATE: 01/20/2

REVISIONS

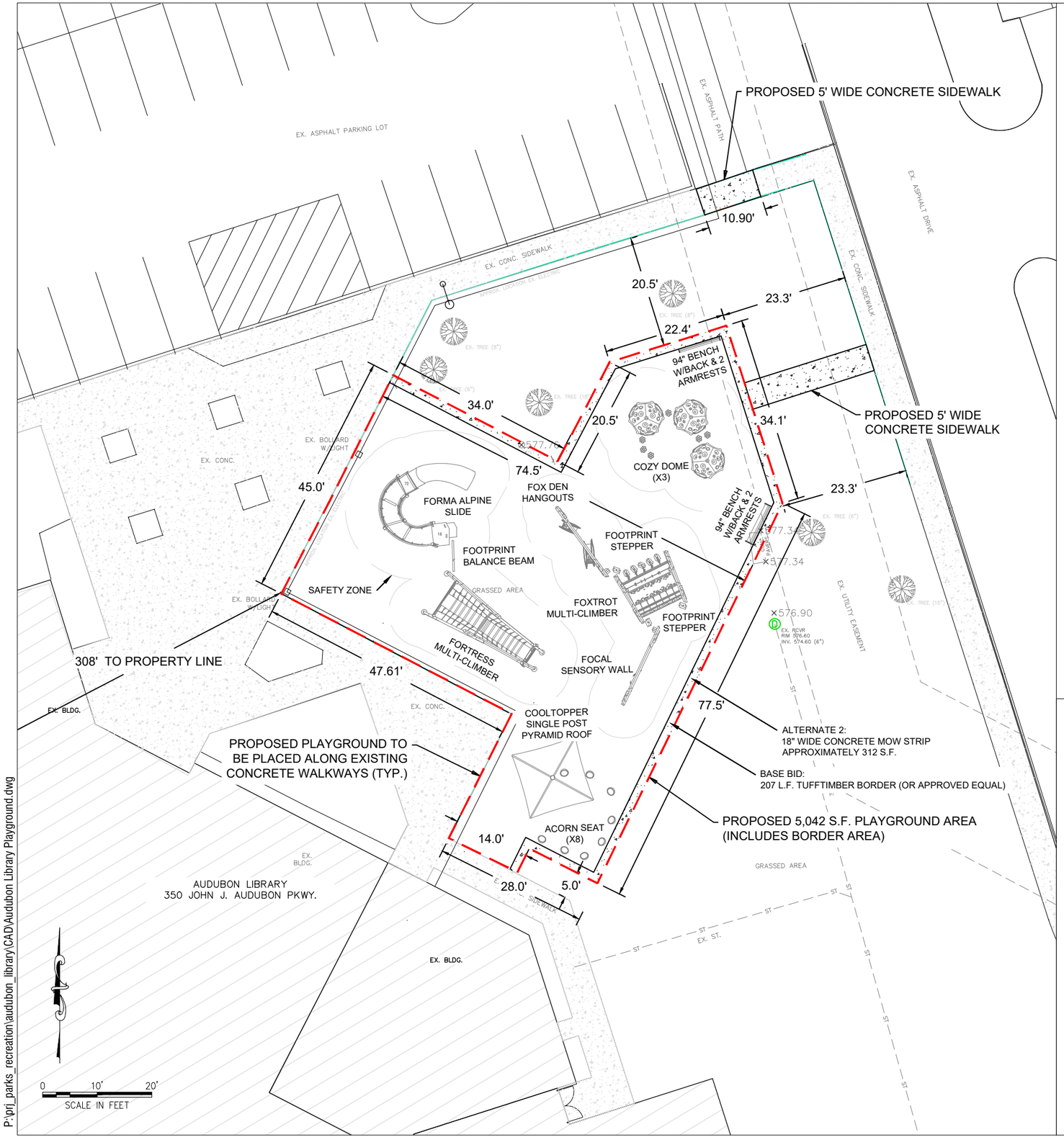
	BY	DATE

DWG. NO.

C1

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

P:\prj_parks_recreation\audubon_library\CAD\Audubon Library Playground_Overall Plan.dwg



SITE DATA TABLE:
AUDUBON LIBRARY PLAYGROUND

PROPOSED AREA: 5,042 S.F. (0.12 ACRES)
PROPOSED NEW PARKING: 0

LEGEND:

- PROPOSED PLAYGROUND FOOTPRINT
- PROPOSED CONCRETE SIDEWALK
- PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING STORM STRUCTURE
- EXISTING CONCRETE
- EXISTING TREE

NOTES:

1. PROPERTY LINE INFORMATION BASED ON TOWN GIS DATA

RESERVED FOR TOA USE

TOWN OF AMHERST
ENGINEERING DEPARTMENT
1100 NORTH FOREST
WILLIAMSVILLE, NY 14221

AUDUBON LIBRARY PLAYGROUND

SITE PLAN

FIELD CREW:	JLB
DRAWN BY:	JS/JL
JOB NO.	2024.0
CHECKED BY:	JB
CHECKED BY:	
SCALE:	1" = 2
DATE:	01/20/2

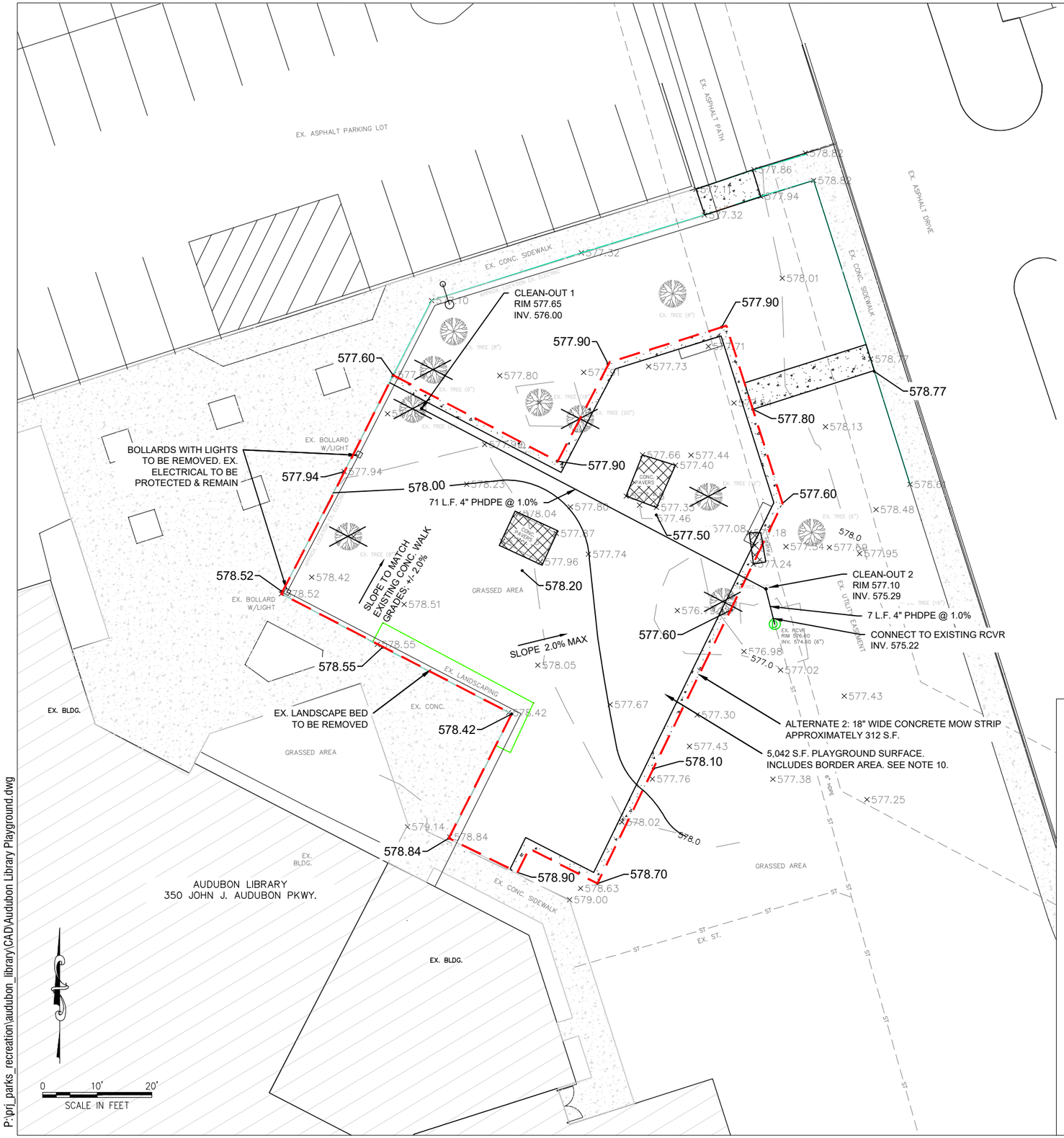
REVISIONS

	BY	DATE

DWG. NO.
C2

P:\prj_parks_recreation\audubon_library\CAD\Audubon Library Playground.dwg

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)



NOTES:

1. UTILITY INFORMATION SHOWN IS APPROXIMATE. THE CONTRACTOR IS TO VERIFY EXACT DEPTHS AND LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL SUBMIT DIG SAFE REQUEST PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION SHALL CONFORM TO TOWN OF AMHERST CONSTRUCTION SPECIFICATIONS AND DETAILS.
4. CONTRACTOR SHALL SECURE SITE AND EQUIPMENT AS NEEDED TO KEEP THE SITE SAFE AND DIRECT PEDESTRIAN TRAFFIC AS NEEDED.
5. AN AUTOCAD FILE WILL BE AVAILABLE FOR THE PURPOSE OF SITE LAYOUT FOR THE SURVEYOR.
6. EXISTING CONCRETE WALKWAY AND SIDEWALKS SHALL REMAIN EXCEPT AS NOTED. ANY DAMAGE TO EXISTING SIDEWALK OR ROADWAY DURING CONSTRUCTION SHALL BE REPAIRED/REPLACED BY CONTRACTOR AT THEIR EXPENSE.
7. THE PROPOSED PLAYGROUND EQUIPMENT HAS BEEN ACQUIRED BY THE TOWN. CONTRACTOR SHALL PICKUP EQUIPMENT FROM THE AMHERST NORTHTOWN CENTER (1615 AMHERST MANOR DRIVE, AMHERST, NY 14221) AND DELIVER TO SITE FOR INSTALLATION.
8. THE CONTRACTOR SHALL USE CARE TO AVOID DAMAGE TO THE EXISTING TREES TO REMAIN.
9. TOPSOIL SHALL ALSO BE PLACED AS NEEDED IN EXISTING GRASSED AREAS TO REMAIN A.O.B.E. BARE SPOTS AND LOW AREAS SHALL BE FINE GRADED AND FILLED AS NEEDED. ALL AREAS SHALL BE SEEDED, FERTILIZED AND MULCHED.
10. ALL GRASSED AREAS ADJACENT TO THE PLAYGROUND FOOTPRINT SHALL BE GRADED TO ALLOW POSITIVE DRAINAGE ONTO THE ADJACENT WALKWAYS OR YARD DRAIN.
11. EXISTING ELECTRICAL SHALL BE PROTECTED AND REMAIN. REMOVAL OF EXISTING BOLLARDS WITH LIGHTS SHALL BE DONE IN ACCORDANCE WITH TOWN CODE.
12. PLAYGROUND SURFACE IS AS FOLLOWS: REFER TO DETAILS AND BID BOOK.
    A. BASE BID: ENGINEERED WOOD FIBER
    B. ALTERNATE 1: TURF
    C. ALTERNATE 3: POURED IN PLACE (PIP) – ONLY APPLICABLE WITH ALTERNATE 2 (CONCRETE MOW STRIP)

LEGEND:

- PROPOSED PLAYGROUND FOOTPRINT
- PROPOSED CONCRETE SIDEWALK
- PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING STORM STRUCTURE
- EXISTING CONCRETE
- EXISTING TREE
- ×577.00 EXISTING SPOT GRADE
- 577.0 EXISTING CONTOUR
- 578.00 PROPOSED CONTOUR
- 578.70 PROPOSED SPOT ELEVATION
- TREE TO BE REMOVED; STUMPS TO BE GRINDED
- CONCRETE PAVERS TO BE REMOVED

TOWN OF AMHERST
ENGINEERING DEPARTMENT
5583 MAIN STREET
WILLIAMSVILLE, NY 14221

AUDUBON LIBRARY PLAYGROUND

DEMO, UTILITY & GRADING PLAN

FIELD CREW:	JLB
DRAWN BY:	JS/JL
JOB NO.	2024.0
CHECKED BY:	JB
CHECKED BY:	
SCALE:	1" = 2
DATE:	01/20/2

REVISIONS

	BY	DATE

DWG. NO.

C3

P:\prj_parks_recreation\audubon_library\CAD\Audubon Library Playground.dwg

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)



NOTES:

1. REFER TO PLAYGROUND EQUIPMENT INSTALLATION GUIDELINES FOR ADDITIONAL INFORMATION.
2. AUTOCAD FILE WILL BE PROVIDED TO CONTRACTOR TO ASSIST WITH SITE LAYOUT.
3. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURE'S REQUIREMENTS.

RESERVED FOR TOA USE

TOWN OF AMHERST
ENGINEERING DEPARTMENT
1100 NORTH FOREST
WILLIAMSVILLE, NY 14221

AUDUBON LIBRARY PLAYGROUND

PLAYGROUND PLAN

FIELD CREW:	JLB
DRAWN BY:	JS/JL
JOB NO.	2024.0
CHECKED BY:	JB
CHECKED BY:	
SCALE:	1" = 2
DATE:	01/20/2

REVISIONS

	BY	DATE

DWG. NO.

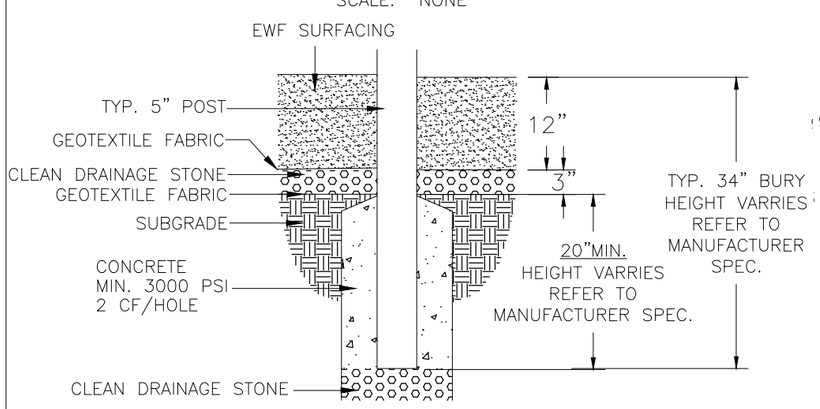
C4

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

P:\prj_parks_recreation\audubon_library\CAD\Audubon Library Playground.dwg

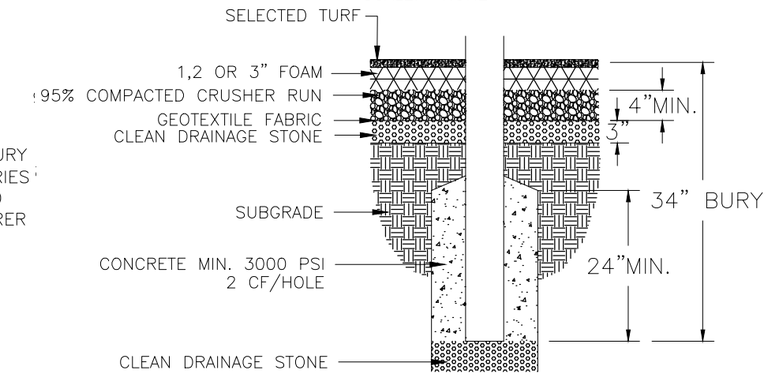
EWF POST DETAIL (PER MANUFACTURER'S REQUIREMENTS)

SCALE: NONE



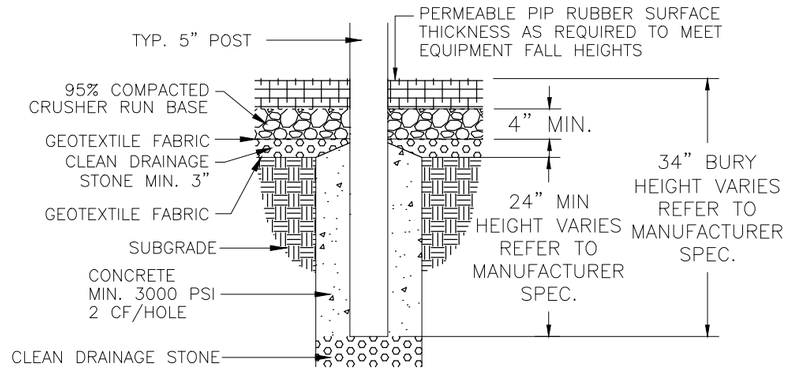
POST DETAIL– TURF (PER MANUFACTURER'S REQUIREMENTS)

SCALE: NONE



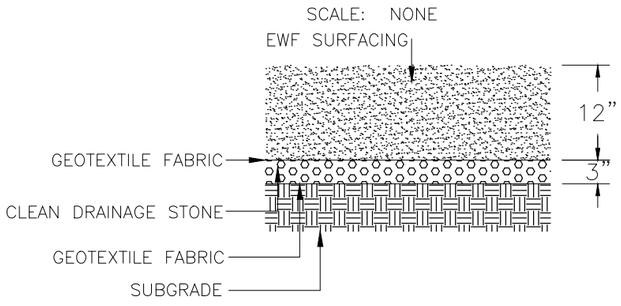
POST DETAIL PIP (PER MANUFACTURER'S REQUIREMENTS)

SCALE: NONE



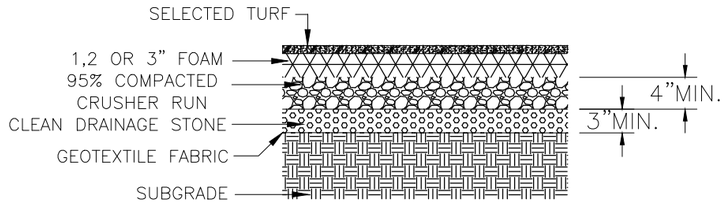
ENGINEERED WOOD FIBER SURFACING DETAIL

SCALE: NONE



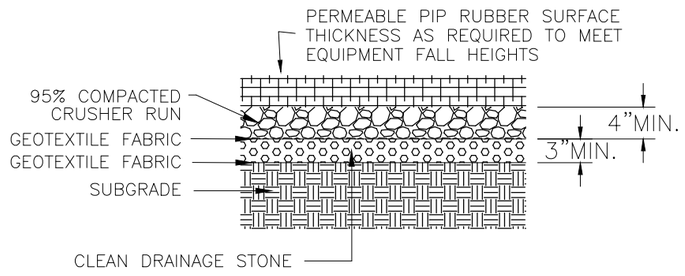
TURF SURFACING DETAIL

SCALE: NONE



PIP SURFACING DETAIL

SCALE: NONE

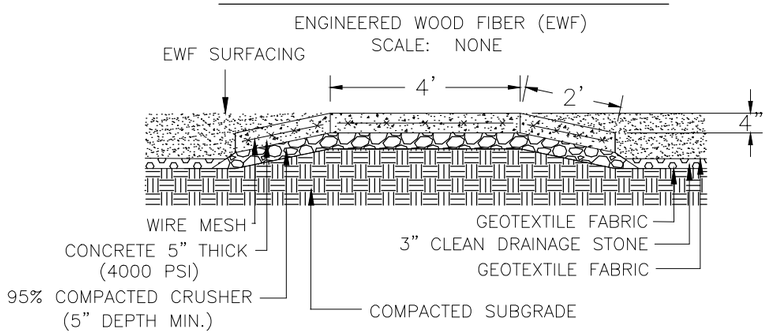


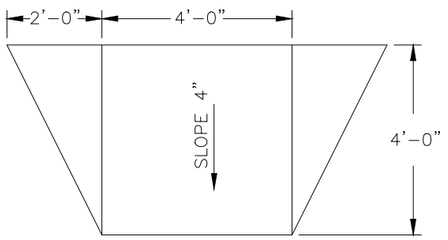
NOTES:

1. ALL PLAYGROUND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES.

CONCRETE ADA RAMP DETAIL

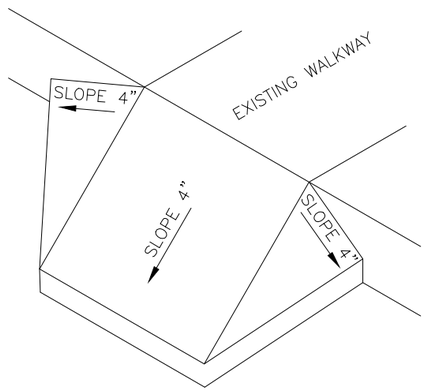
ENGINEERED WOOD FIBER (EWF)
SCALE: NONE





NOTES:

1. CONCRETE ADA RAMP APPLIES TO BASE BID WITH EWF AND SHALL BE INSTALLED AT 2 LOCATIONS TBD PRIOR TO CONSTRUCTION.



TOWN OF AMHERST
ENGINEERING DEPARTMENT
5583 MAIN STREET
WILLIAMSVILLE, NY 14221

AUDUBON LIBRARY PLAYGROUND

DETAILS

FIELD CREW: JLB
DRAWN BY: JS/JL
JOB NO. 2024.0
CHECKED BY: JB
CHECKED BY:
SCALE: 1" = 2
DATE: 01/20/2

REVISIONS

	BY	DATE

DWG. NO.

C5

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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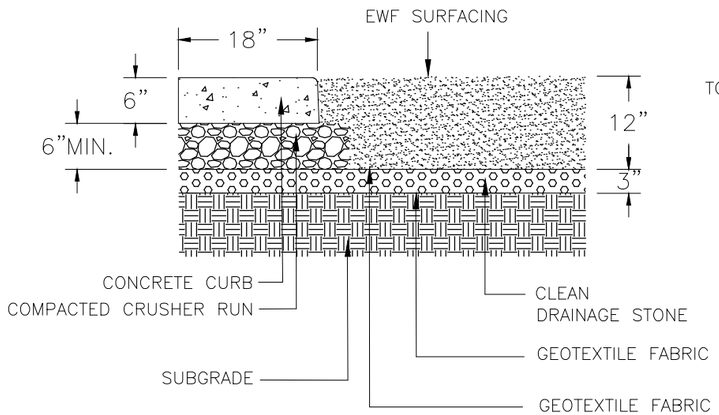
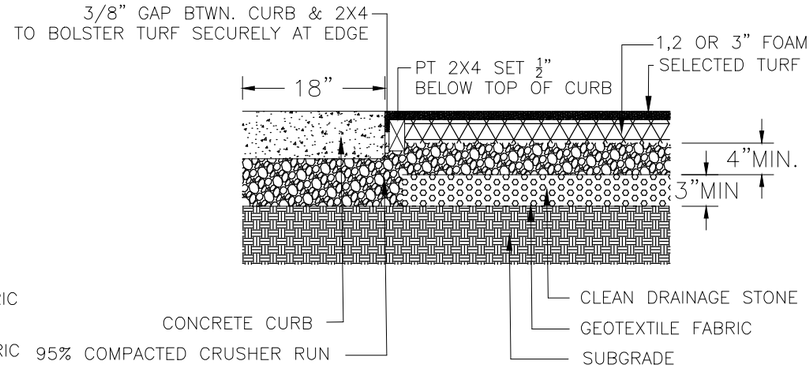
CONCRETE CURB DETAIL – EWF

SCALE: NONE



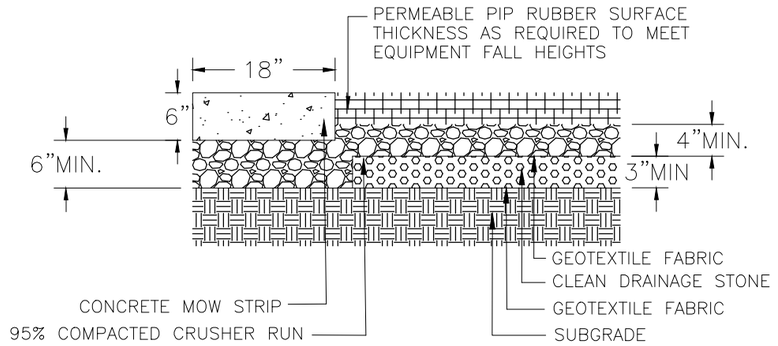
TURF SURFACING WITH CONCRETE BORDER DETAIL

SCALE: NONE



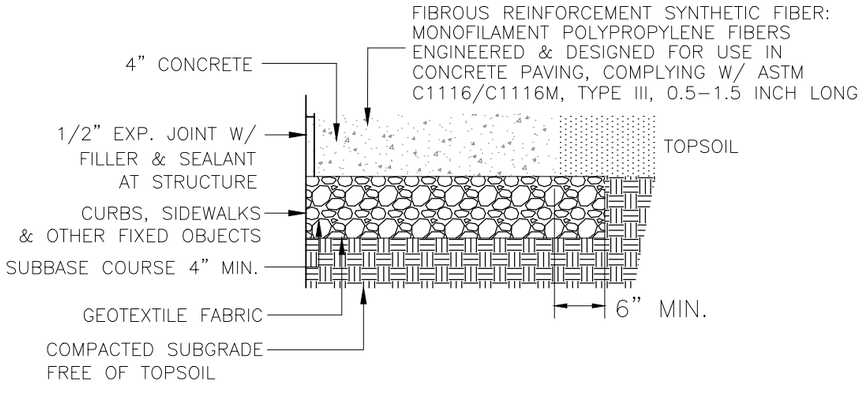
PIP SURFACING WITH CONCRETE BORDER DETAIL

SCALE: NONE



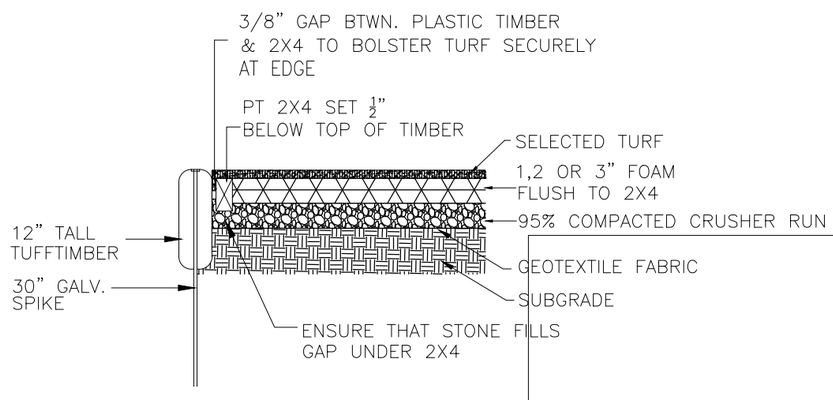
CONCRETE SIDEWALK (& MOW STRIP)

SCALE: NONE



TURF SURFACING WITH TUFFTIMBER BORDER DETAIL

SCALE: NONE

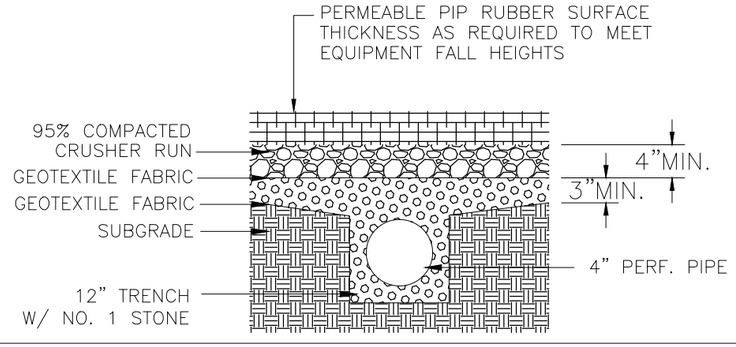


NOTES:

1. ALL PLAYGROUND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES.

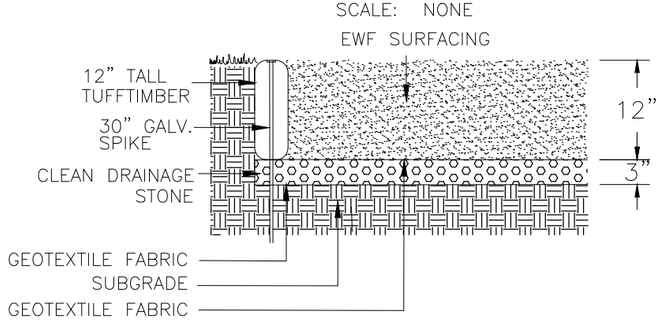
PIP DRAINAGE SECTION

SCALE: NONE



TUFF TIMBER AT GRADE DETAIL

SCALE: NONE



TOWN OF AMHERST
ENGINEERING DEPARTMENT
5583 MAIN STREET
WILLIAMSVILLE, NY 14221

AUDUBON LIBRARY PLAYGROUND

DETAILS

FIELD CREW: JLB
DRAWN BY: JS/JL
JOB NO. 2024.0
CHECKED BY: JB
CHECKED BY:
SCALE: 1" = 2
DATE: 01/20/2

REVISIONS

	BY	DATE

DWG. NO.

C6

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

P:\prj_parks_recreation\audubon_library\CAD\Audubon Library Playground.dwg

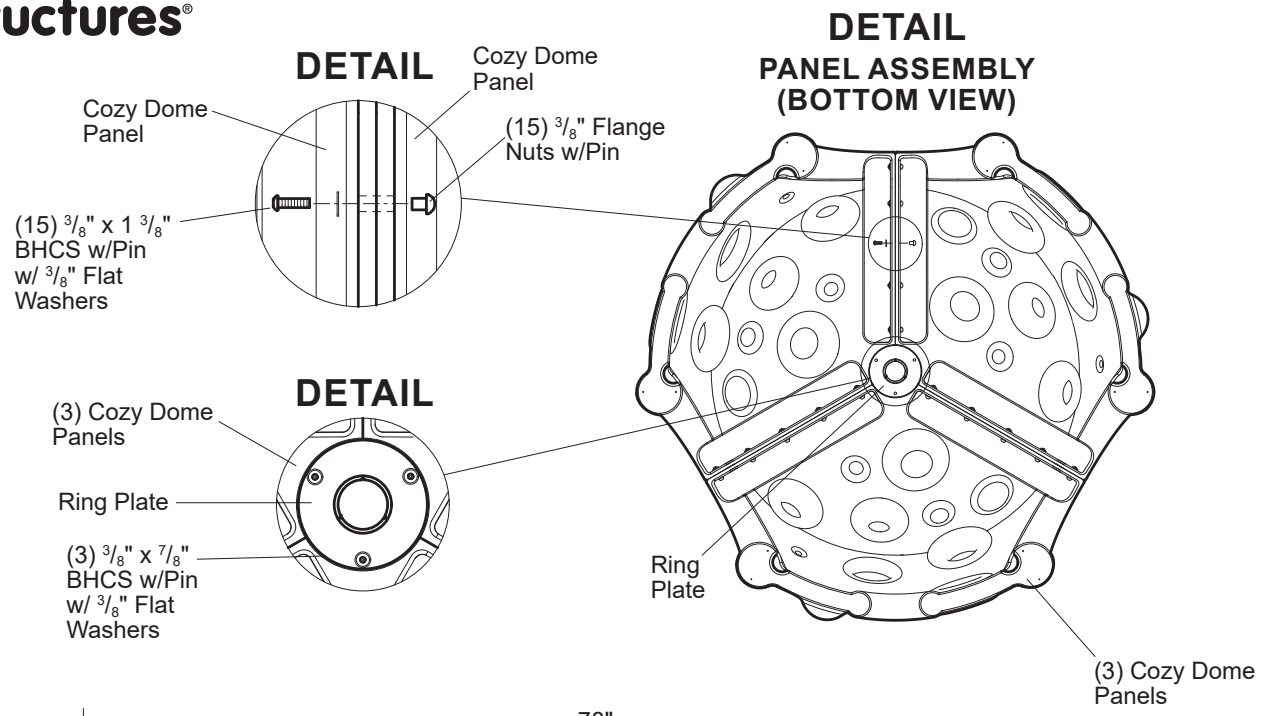
landscape structures®

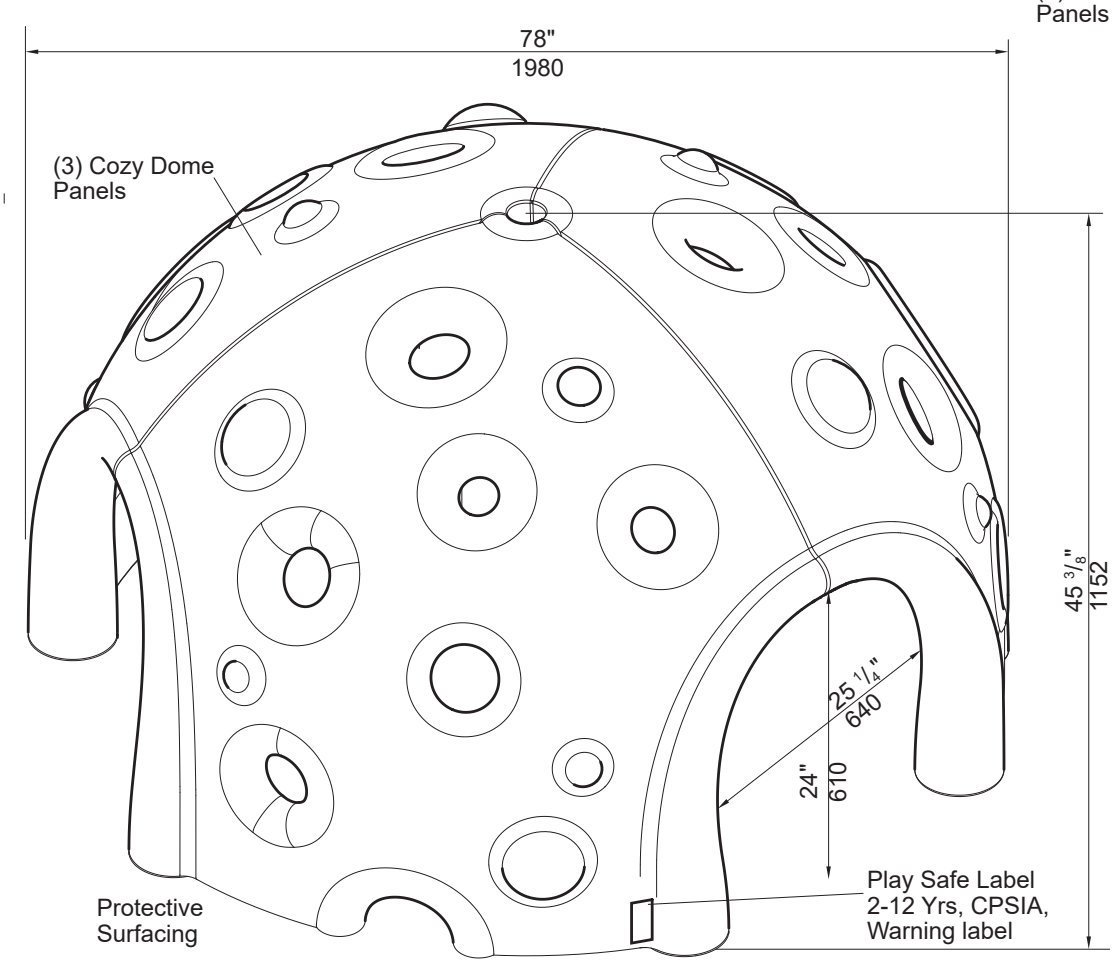
ISO 14001 CERTIFIED

ISO 9001 Certified

SAFETY NOTE

Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/I Height of the adjacent equipment. (F ASTM F1487.)





Sensory Play

168099 Cozy Dome®

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Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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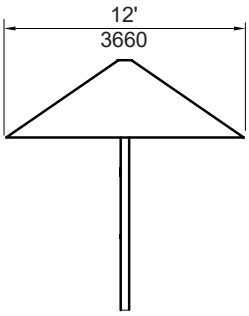
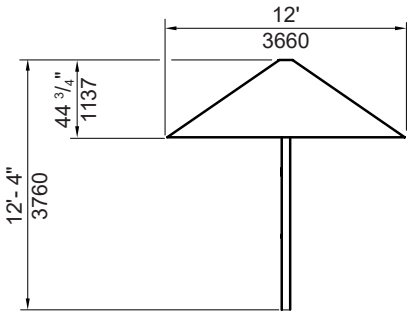
15500

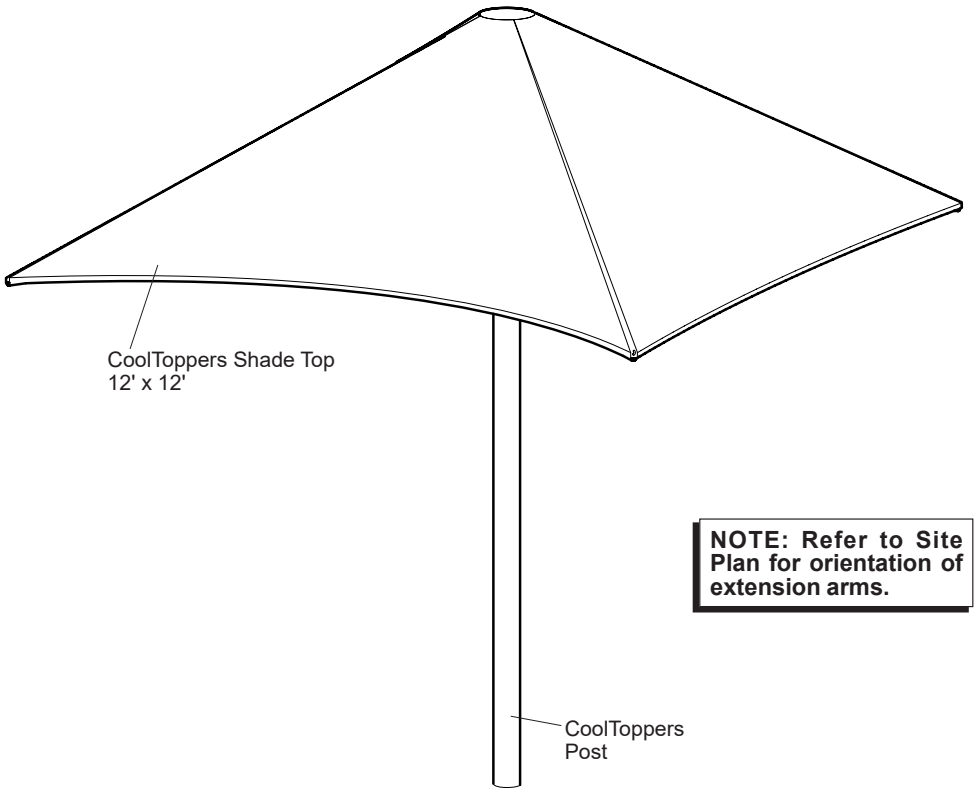
NOTE: Remove fabric when wind speeds are expected to exceed 90 mph and snow loads are expected to exceed 5 psf.

DETAIL
FRONT VIEW



DETAIL
SIDE VIEW





WARNING:
Fabric is designed to fit extremely tight over framework. Failure to follow instructions, resulting in a torn fabric, will not be warrantied by LSI

Refer to video via QR code below for demonstration

NOTE: Refer to Site Plan for orientation of extension arms.

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

CoolToppers® 154397 CoolToppers, Single Post Shade

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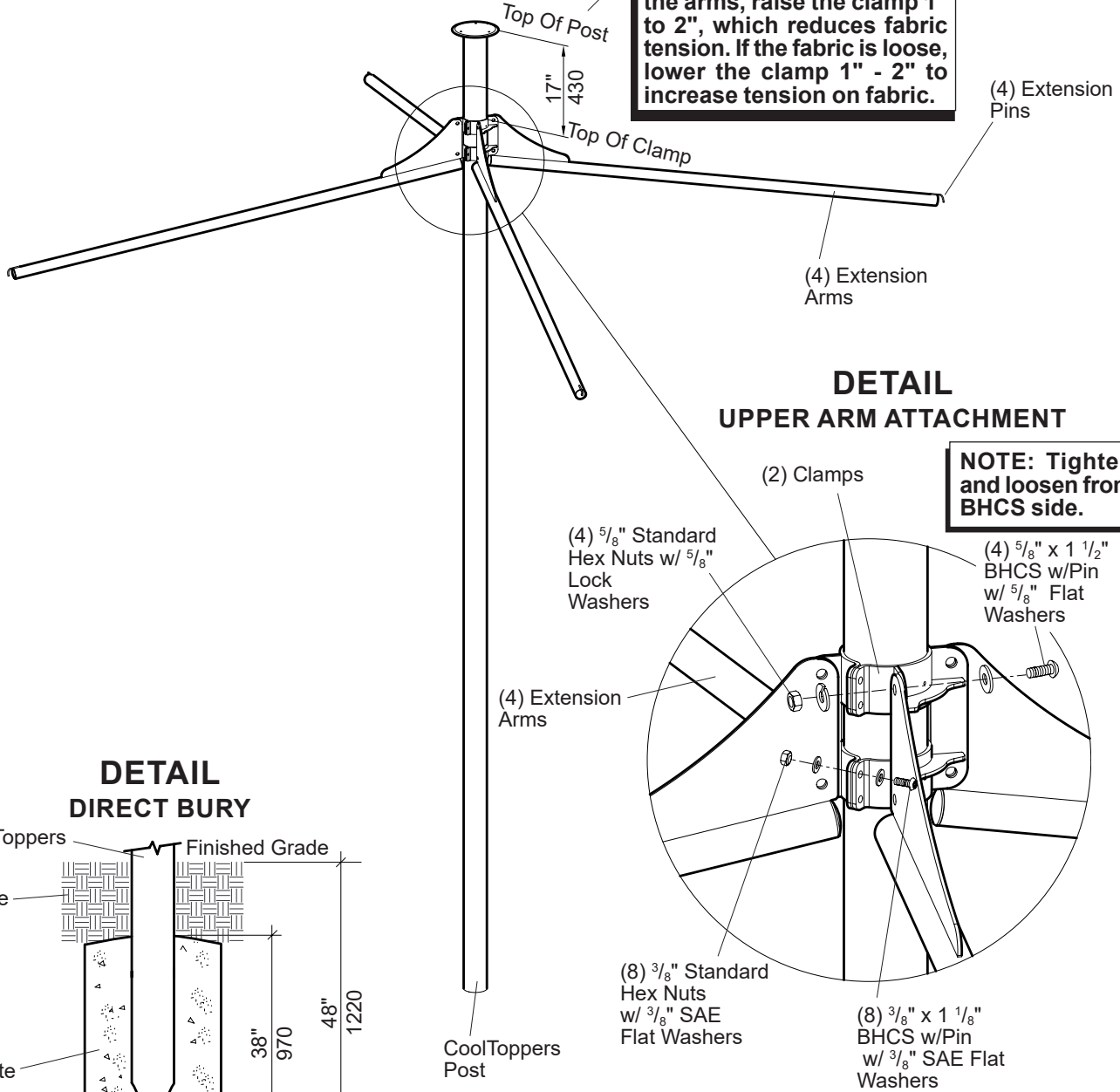
NOTE: 17" is an approximate measurement from the top of post to top of clamp. Field adjustment of the clamp height may be required to achieve proper fabric tension. If fabric seems extremely tight, while attempting to lower the arms, raise the clamp 1" to 2", which reduces fabric tension. If the fabric is loose, lower the clamp 1" - 2" to increase tension on fabric.



DETAIL
UPPER ARM ATTACHMENT

NOTE: Tighten and loosen from BHCS side.

DETAIL
DIRECT BURY

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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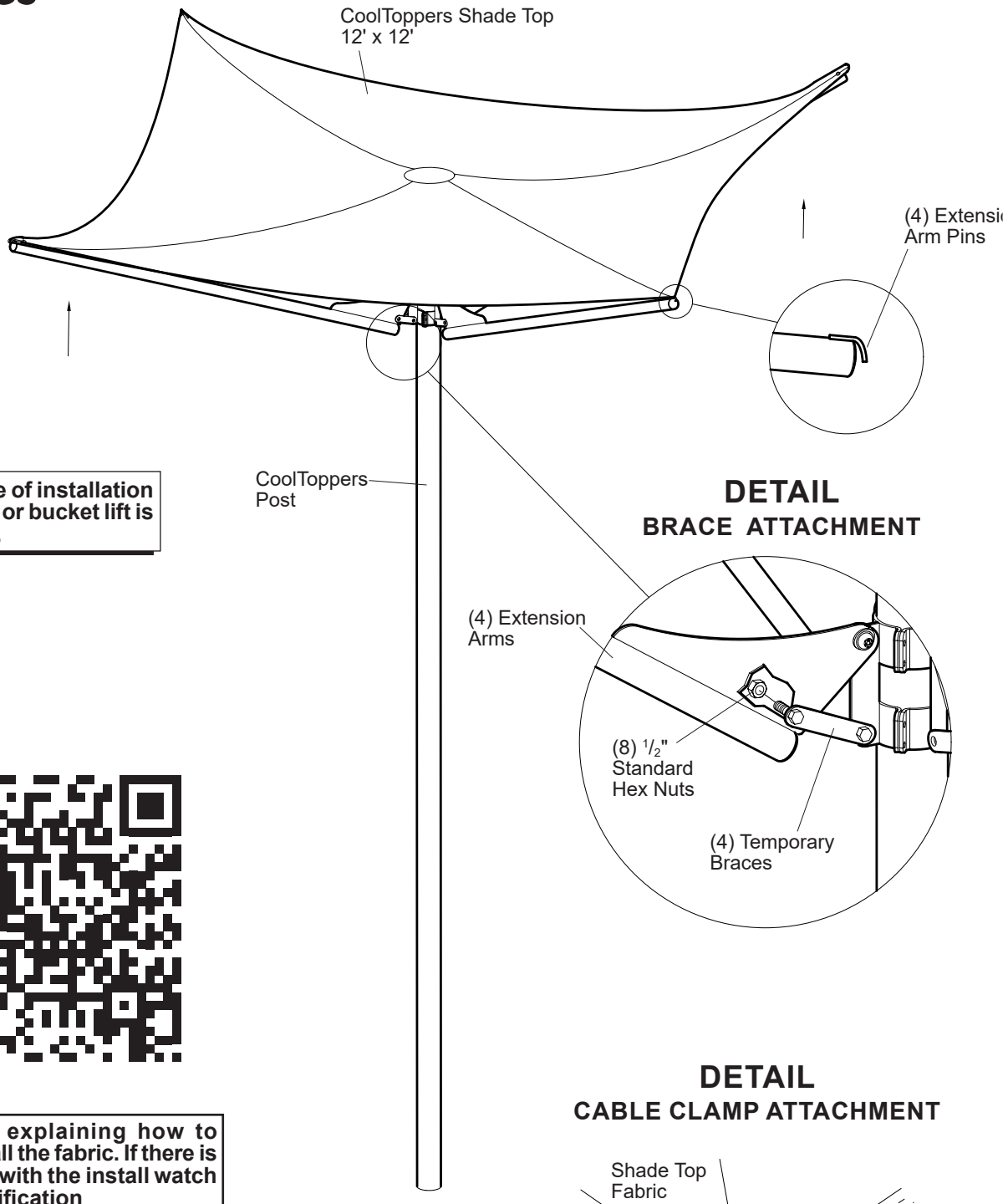
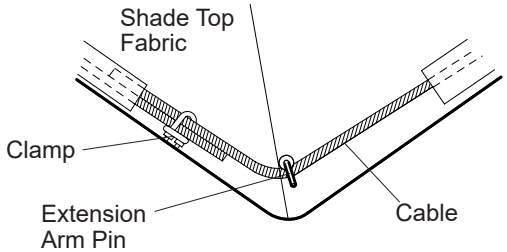


NOTE: For ease of installation a 12'-16' ladder or bucket lift is recommended.

DETAIL
BRACE ATTACHMENT

Note: Video explaining how to properly install the fabric. If there is any difficulty with the install watch video for clarification

DETAIL
CABLE CLAMP ATTACHMENT



Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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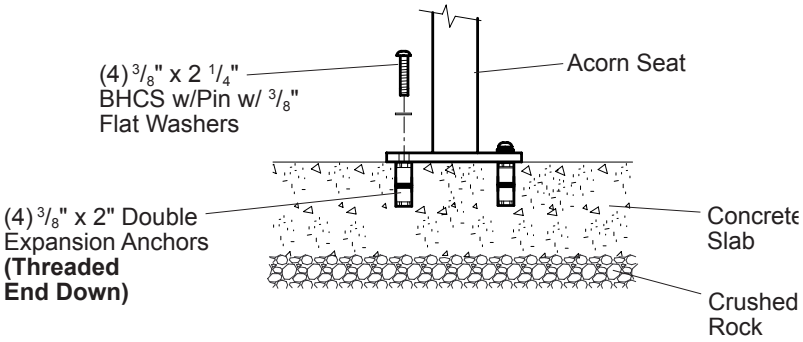
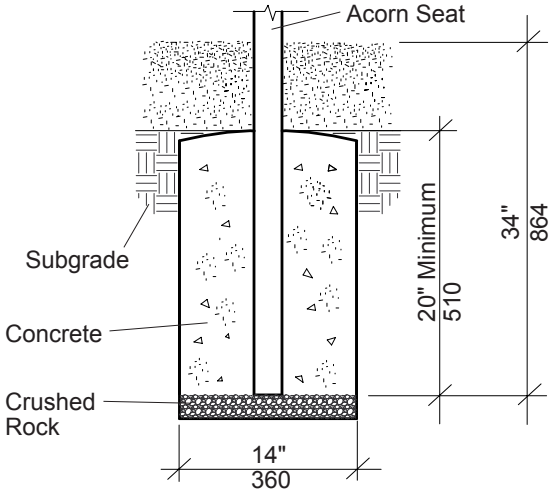
Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)



DETAIL
SURFACE MOUNT



DETAIL
DIRECT BURY



Play Naturally™

Site Furnishings

186579 Acorn Seat

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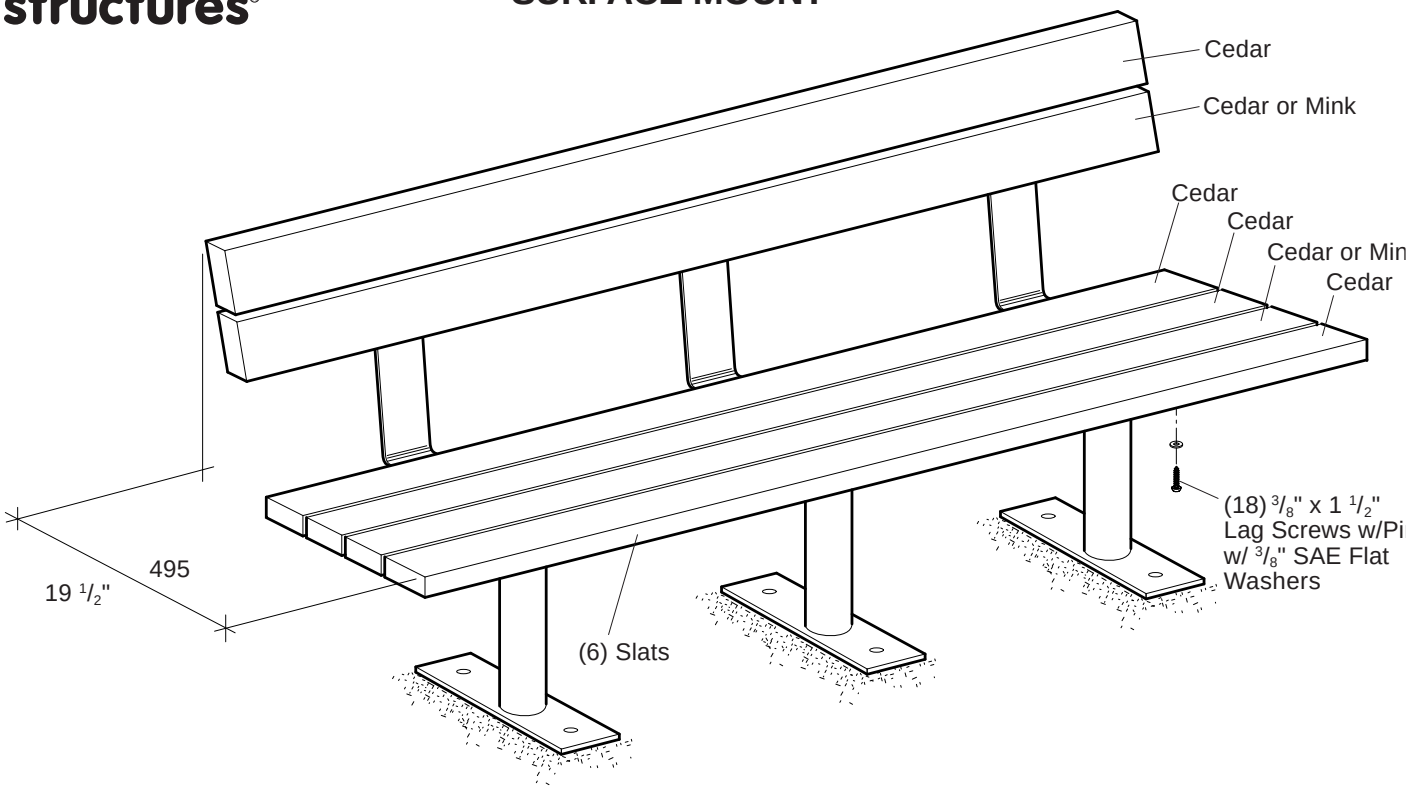
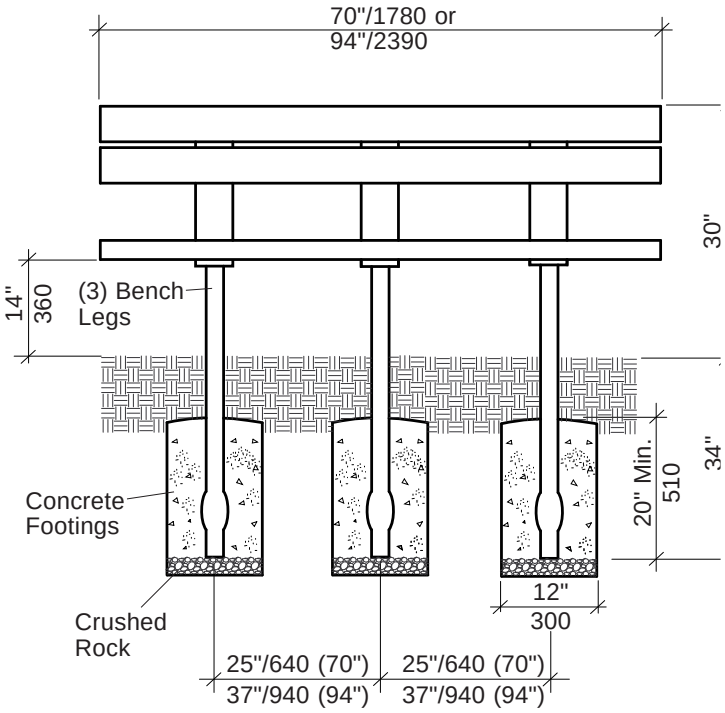
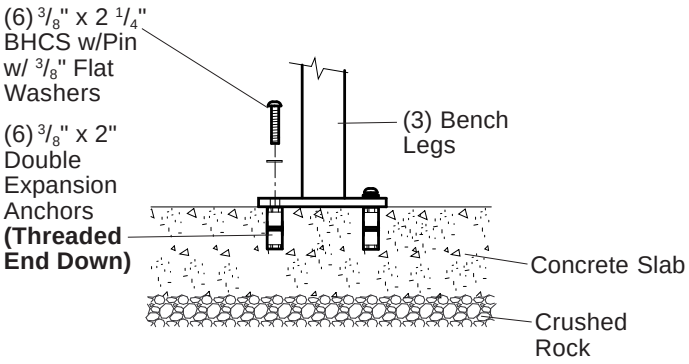
SURFACE MOUNT



DIRECT BURY



SURFACE MOUNT



70", 2 x 4 Cedar Slats, Direct Bury
70", 2 x 4 Cedar Slats, Surface Mount
94", 2 x 4 Cedar Slats, Direct Bury
94", 2 x 4 Cedar Slats, Surfce Mount
70", 2 x 4 Cedar/Mink Slats, Direct Bury
70", 2 x 4 Cedar/Mink Slats, Surface Mount
94", 2 x 4 Cedar/Mink Slats, Direct Bury
94", 2 x 4 Cedar/Mink Slats, Surfce Mount

186583 Wood-Grain Bench, 2 x 4 Cedar Slats, w/Back
186583 Wood-Grain Bench, 2 x 4 Cedar/Mink Slats, w/Ba

Site Furnishings 186583 Wood-Grain Bench, 2 x 4 Slats, w/Back

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D

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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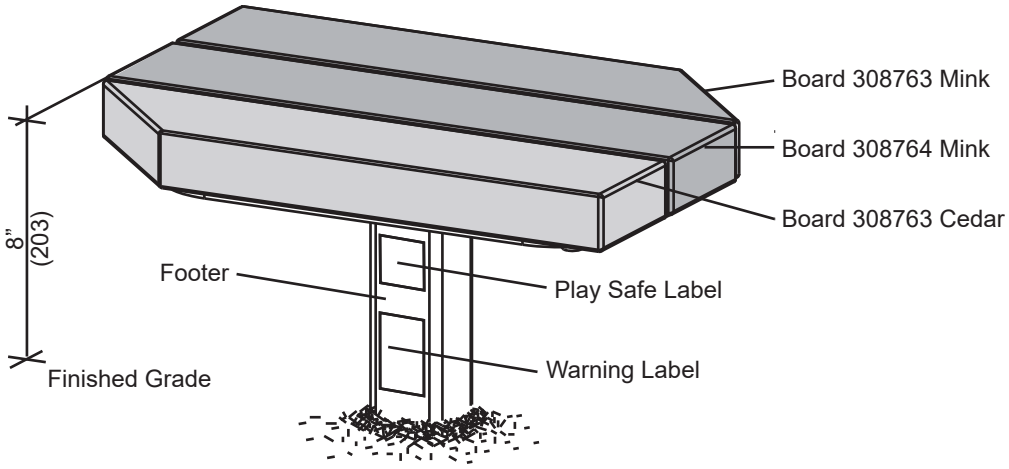
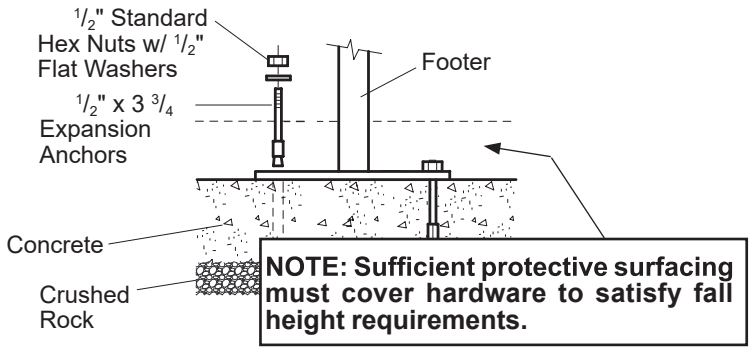
SAFETY NOTE
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)



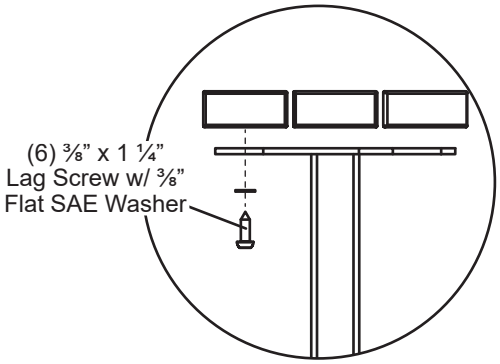
NOTE: Refer to the site Plan for footing location

DETAIL
SURFACE MOUNT

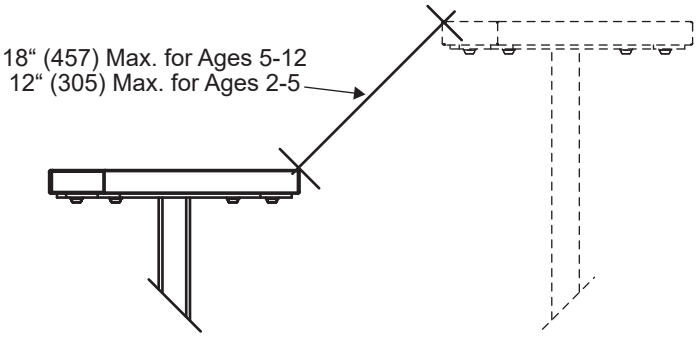


NOTE: Sufficient protective surfacing must cover hardware to satisfy fall height requirements.

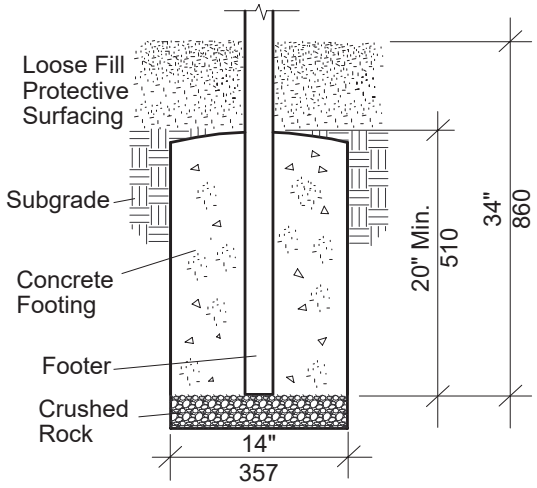
DETAIL
BOARD CONNECTION



STEPPER DISTANCE
(LAYOUT VARIES - SEE YOUR PLAN)



DETAIL
DIRECT BURY



Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

Forma®

307432 Footprint™ Stepper 8”

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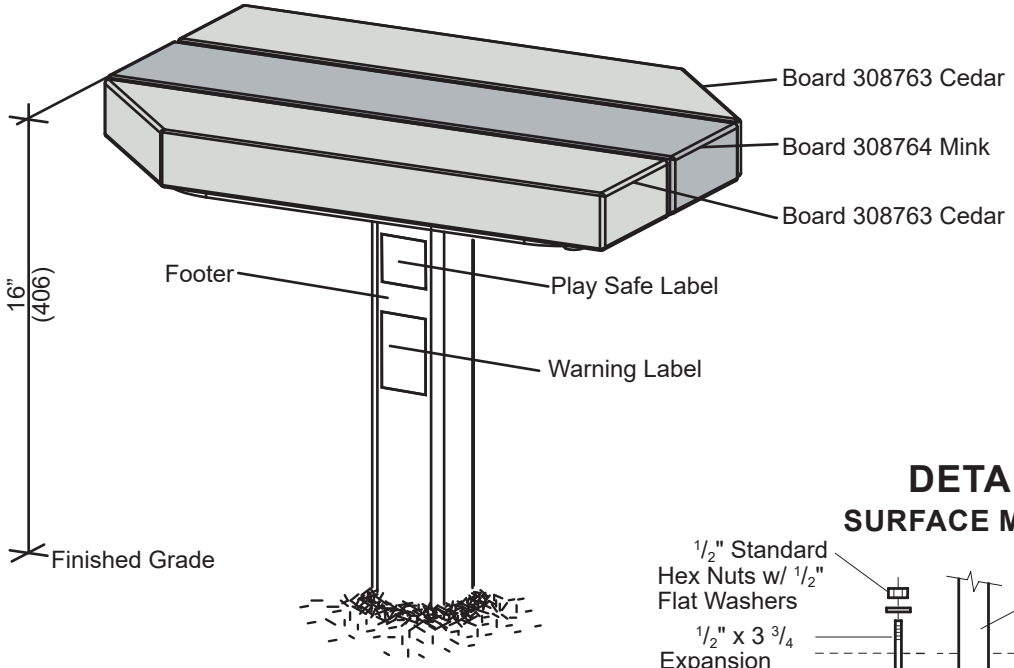
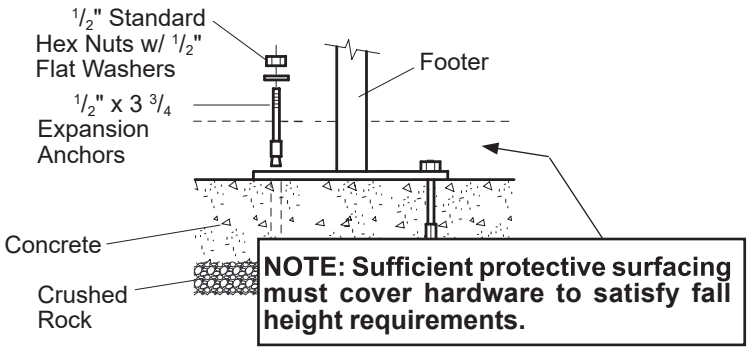
SAFETY NOTE
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)

NOTE: Refer to the site Plan for footing location

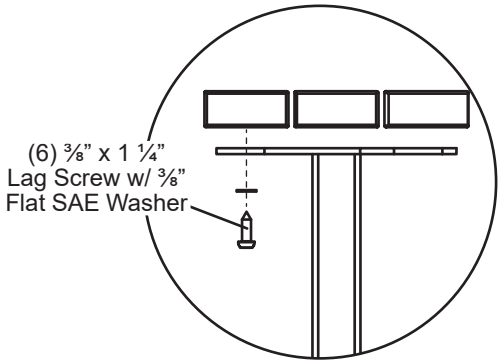


DETAIL
SURFACE MOUNT

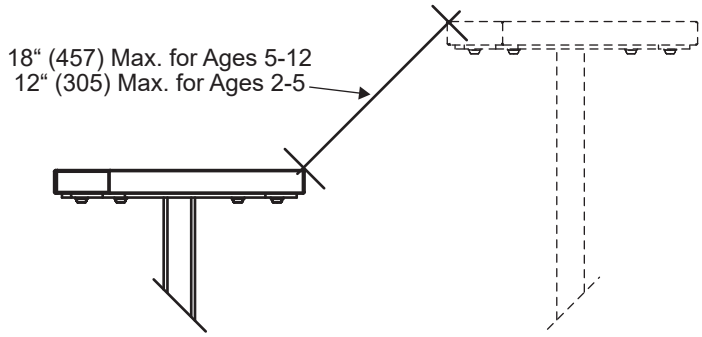


NOTE: Sufficient protective surfacing must cover hardware to satisfy fall height requirements.

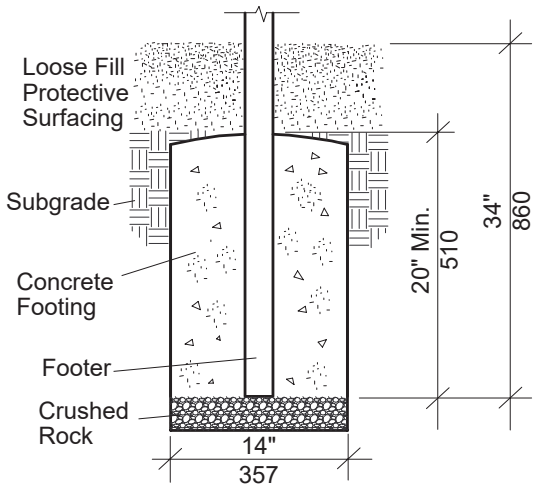
DETAIL
BOARD CONNECTION



STEPPER DISTANCE
(LAYOUT VARIES - SEE YOUR PLAN)



DETAIL
DIRECT BURY



Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

Forma®

307433 Footprint™ Stepper 16”

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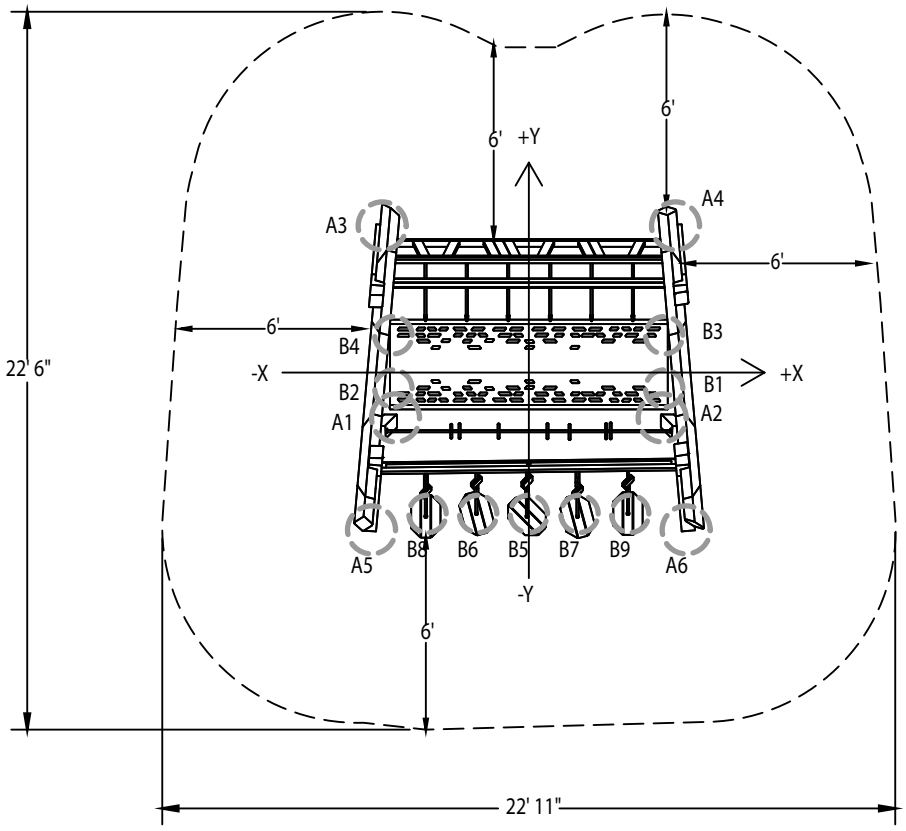

NOTE: Refer to the site Plan for footing location

N.	I.D.	X (ft-in)	Y (ft-in)	Dist. to O	DIA (in)
1	A1	-4'-2"	-1'-5"	4'-5"	18
2	A2	4'-2"	-1'-5"	4'-5"	18
3	A3	-4'-7"	4'-7"	6'-6"	18
4	A4	4'-7"	4'-7"	6'-6"	18
5	A5	-4'-11"	-4'-11"	6'-11 1/2"	18
6	A6	4'-11"	-4'-11"	6'-11 1/2"	18
7	B1	4'-3"	-6"	4'-3"	14
8	B2	-4'-3"	-6"	4'-3"	14
9	B3	4'-3"	1'-2"	4'-4 1/2"	14
10	B4	-4'-3"	1'-2"	4'-4 1/2"	14
11	B5	0"	-4'-5"	4'-5"	14
12	B6	-1'-7"	-4'-5"	4'-8 1/2"	14
13	B7	1'-7"	-4'-5"	4'-8 1/2"	14
14	B8	-3'-2"	-4'-5"	5'-5"	14
15	B9	3'-2"	-4'-5"	5'-5"	14

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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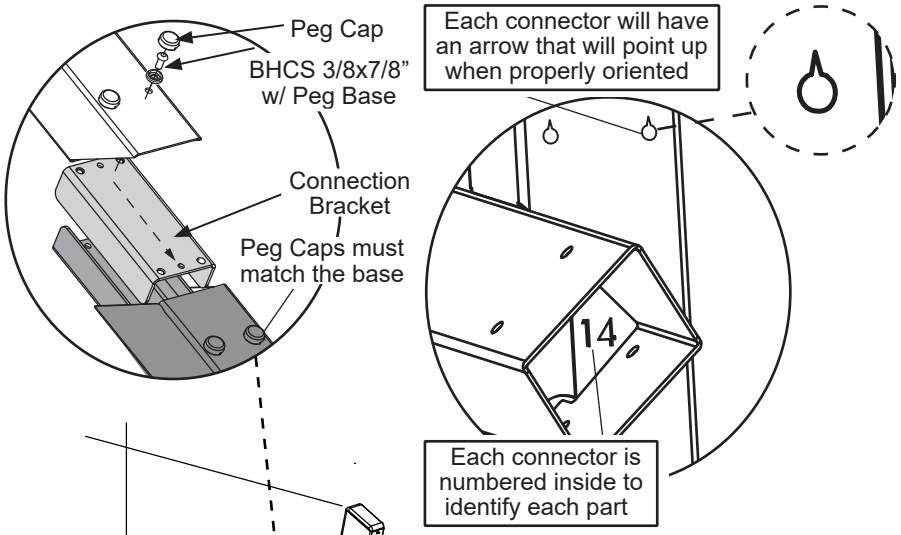
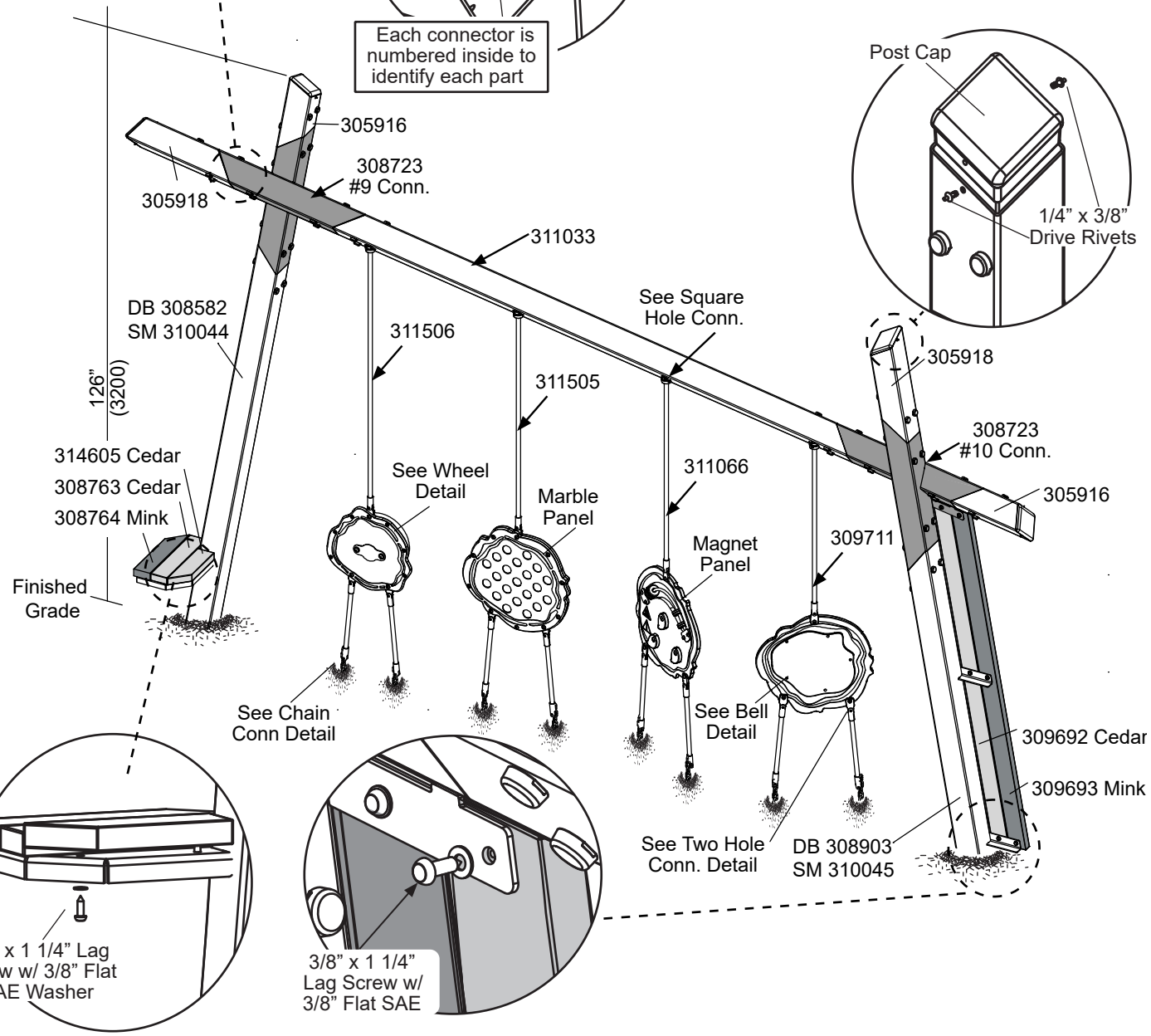
SAFETY NOTE
Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)



FOR EASE OF INSTALLATION, RECOMMEND LIFTING EQUIPMENT CAPABLE OF LIFTING 600 LBS.



307430 Focal™ Sensory Wall

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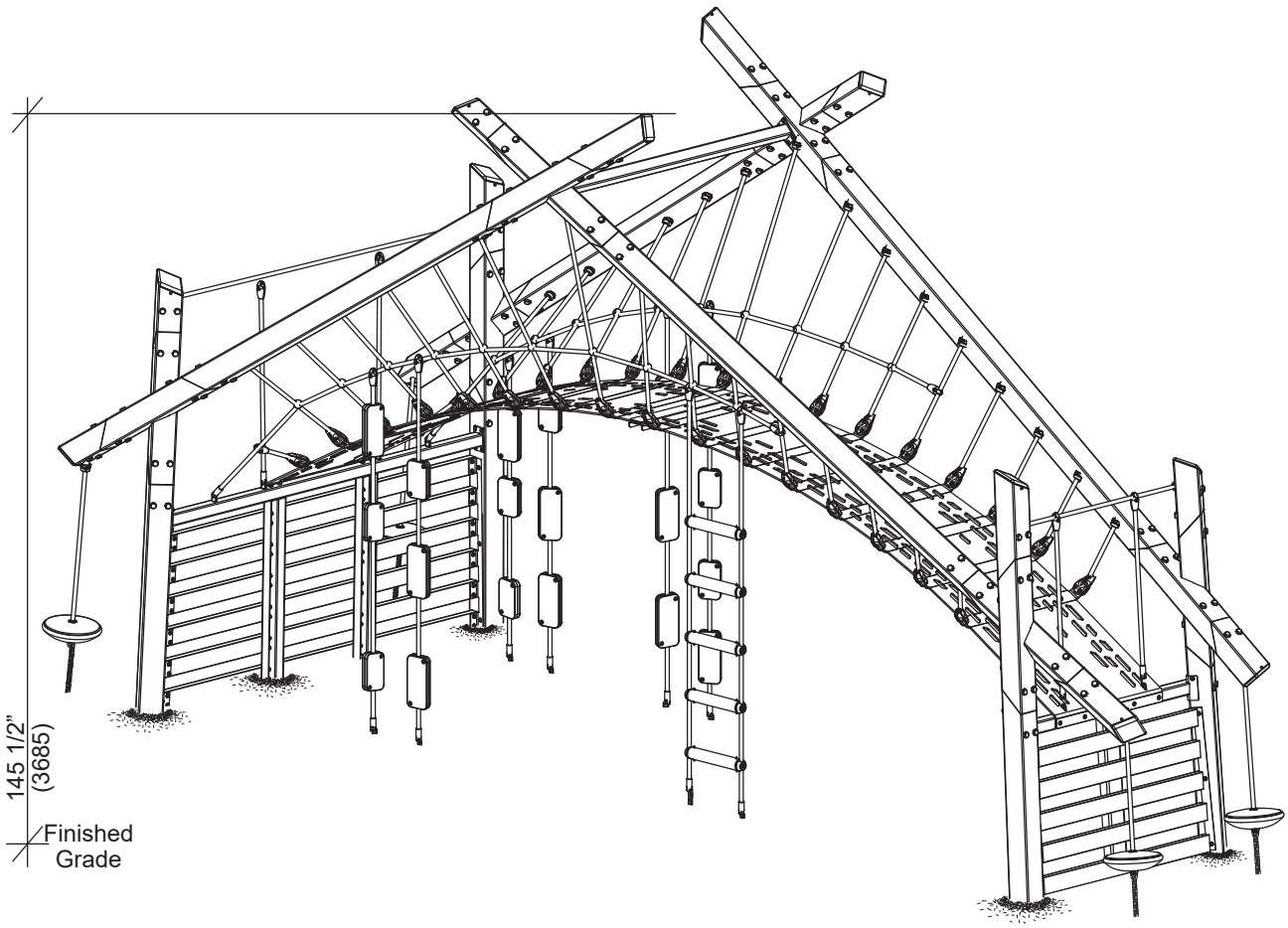
FOR EASE OF INSTALLATION, RECOMMEND LIFTING EQUIPMENT CAPABLE OF LIFTING 600 LBS.



Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

Forma®

307421 Fortress™ Multi-Climber

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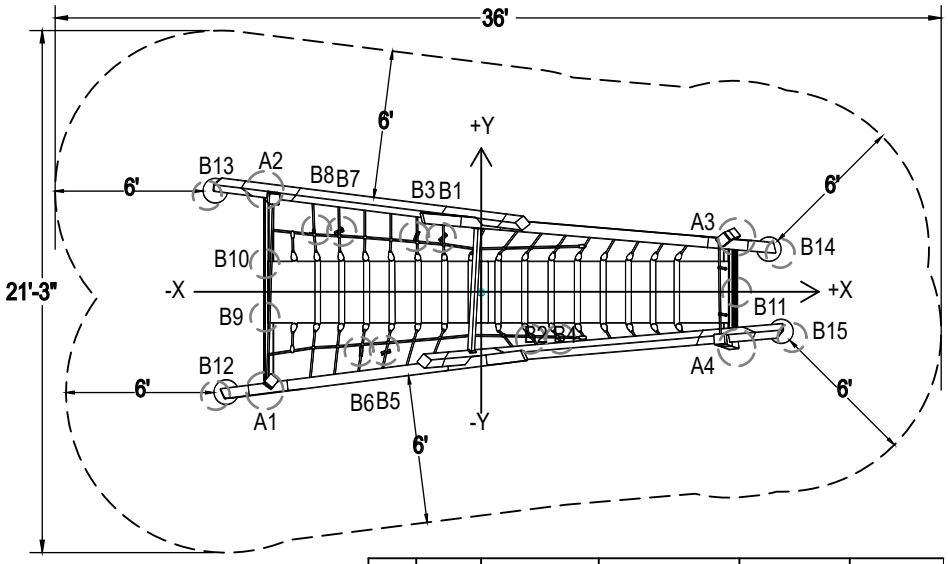
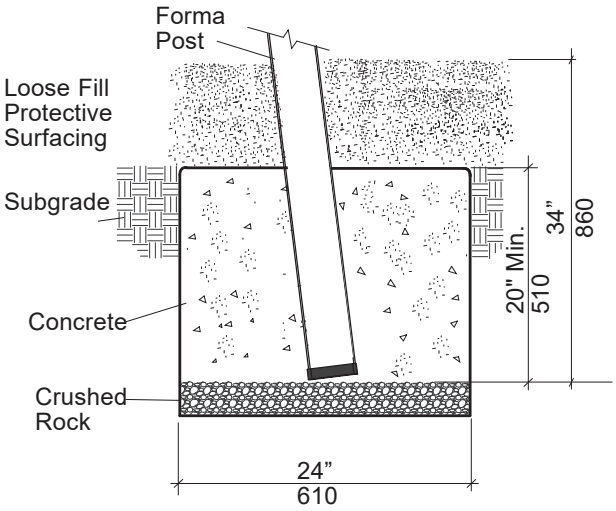


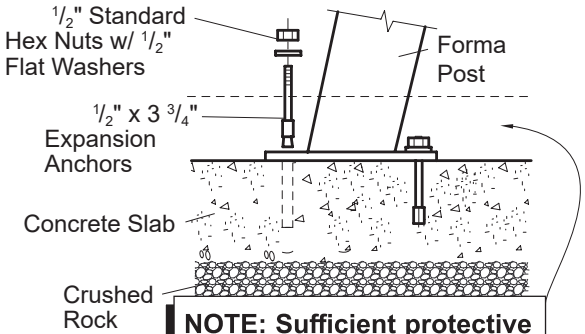
NOTE: Refer to the site Plan for footing location

N.	I.D.	X (ft-in)	Y (ft-in)	Dist. to O	DIA (in)
1	A1	-8'-9 1/2"	-4'-0 1/2"	9'-8"	20
2	A2	-8'-9 1/2"	4'-2"	9'-8 1/2"	20
3	A3	10'-4 1/2"	2'-3"	10'-7 1/2"	20
4	A4	10'-4 1/2"	-2'-3 1/2"	10'-7 1/2"	20
5	B1	-1'-7 1/2"	2'-2 1/2"	2'-9"	14
6	B2	2'	-1'-11"	2'-9"	14
7	B3	-2'-8 1/2"	2'-3"	3'-6 1/2"	14
8	B4	3'-2 1/2"	-1'-11"	3'-9"	14
9	B5	-3'-11 1/2"	-2'-4 1/2"	4'-7"	14
10	B6	-4'-11 1/2"	-2'-5"	5'-6"	14
11	B7	-5'-8"	2'-5 1/2"	6'-2"	14
12	B8	-6'-8 1/2"	2'-6 1/2"	7'-2"	14
13	B9	-8'-9 1/2"	-1'-0 1/2"	8'-10"	14
14	B10	-8'-9 1/2"	1'-2"	8'-10 1/2"	14
15	B11	10'-4 1/2"	0"	10'-4 1/2"	14
16	B12	-10'-9 1/2"	-4'-2 1/2"	11'-7"	14
17	B13	-11'-1 1/2"	3'-11"	11'-9 1/2"	14
18	B14	12'-2"	1'-7"	12'-3"	14
19	B15	12'-7 1/2"	-1'-10 1/2"	12'-9"	14

DETAIL
DIRECT BURY



DETAIL
SURFACE MOUNT



NOTE: Sufficient protective surfacing must cover hardware to satisfy fall height requirements.

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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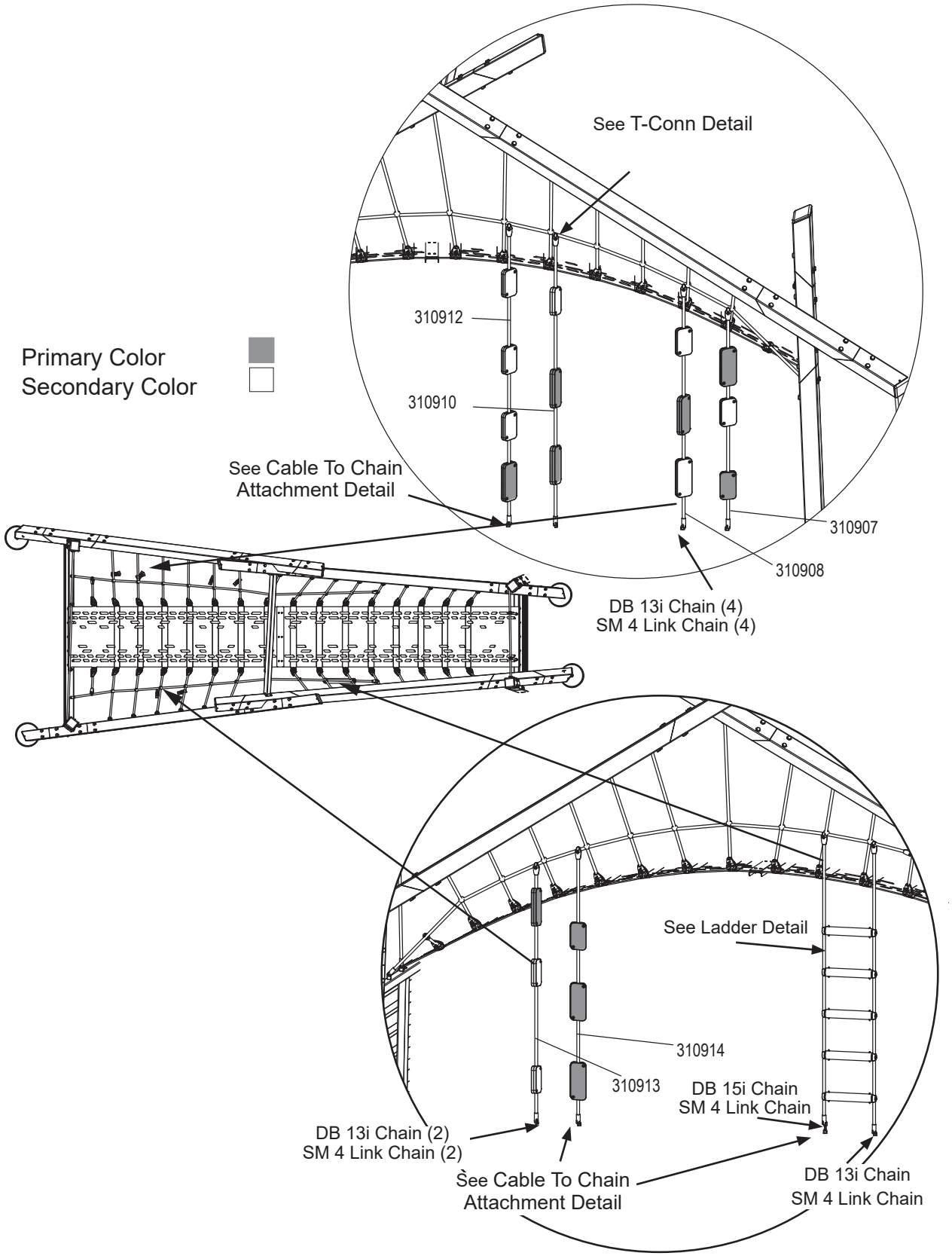
SAFETY NOTE

Choose a protective surfacing material that has a Critical Height Value of at least the height of the Highest Accessible Part/Fall Height of the adjacent equipment. (Ref. ASTM F1487.)



Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

Forma®

307421 Fortress™ Multi-Climber

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SAFETY NOTE
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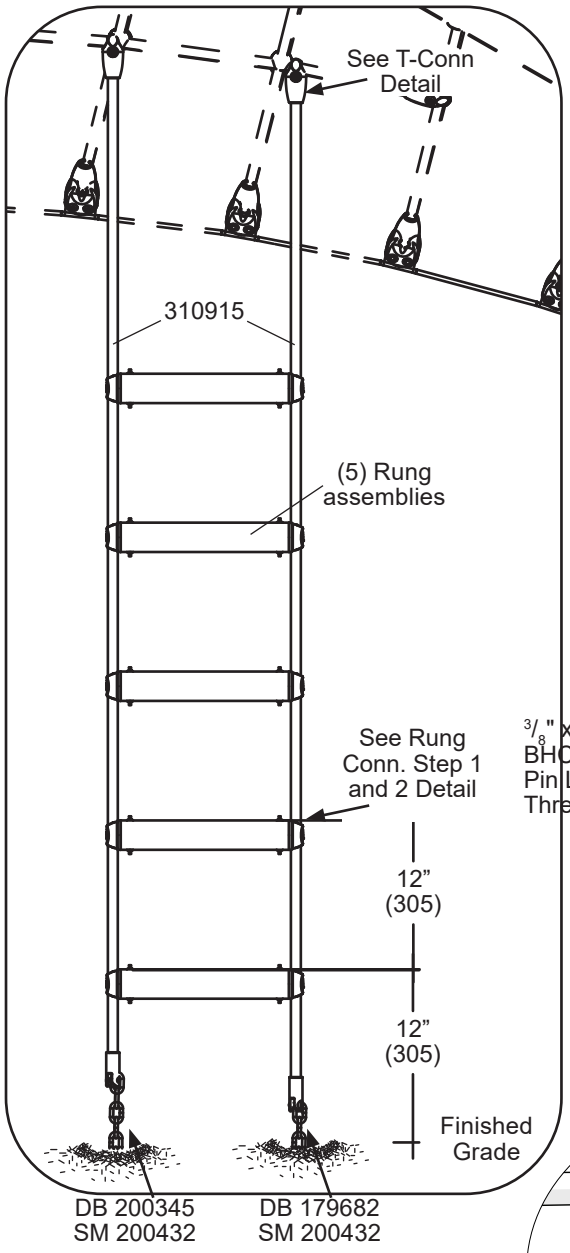
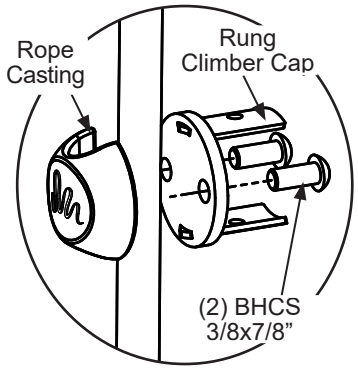
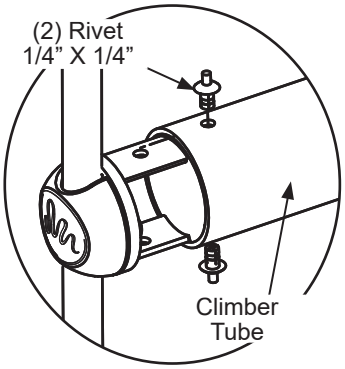
DETAIL LADDER



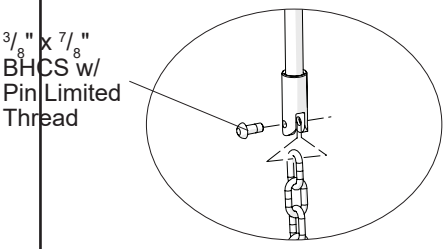
DETAIL RUNG STEP 1



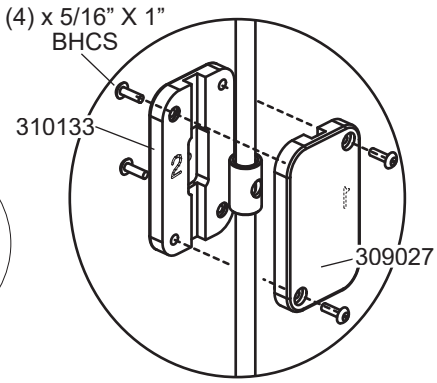
DETAIL RUNG STEP 2



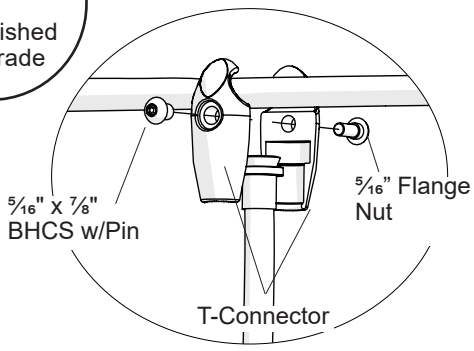
DETAIL CABLE TO CHAIN ATTACHMENT



DETAIL 8" ROPE BLOCK

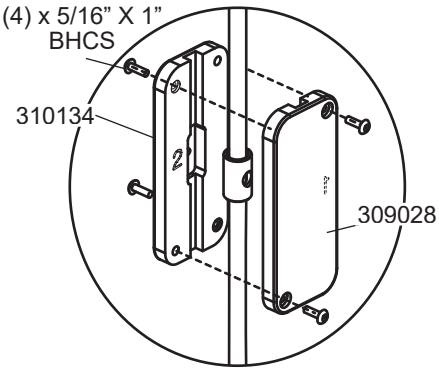


DETAIL T-CONN.



NOTE: Do not overtighten fasteners.

DETAIL 11" PERM BLOCK



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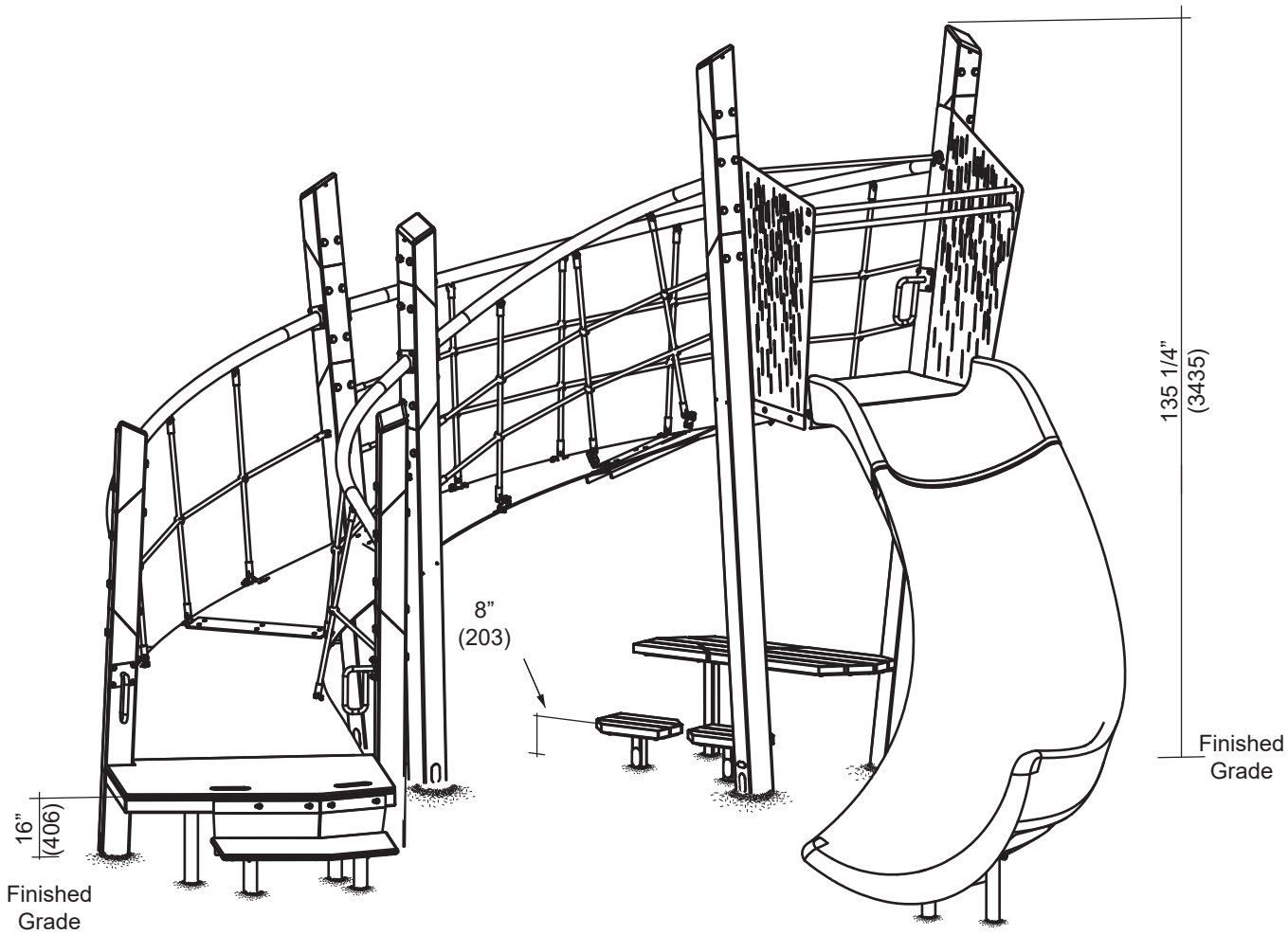
FOR EASE OF INSTALLATION, RECOMMEND LIFTING EQUIPMENT CAPABLE OF LIFTING 600 LBS.



Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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307427 Forma™ Alpine® Slide

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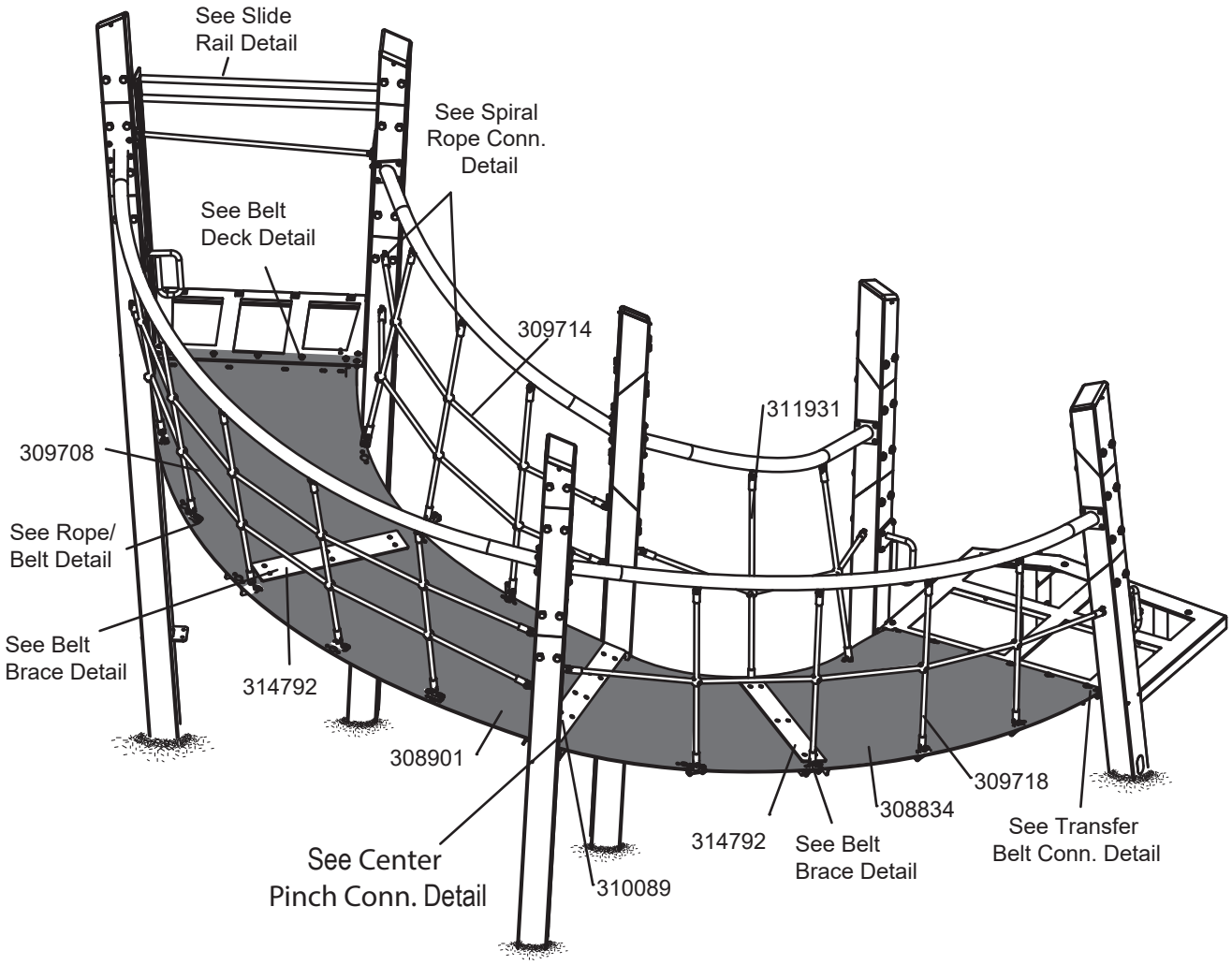

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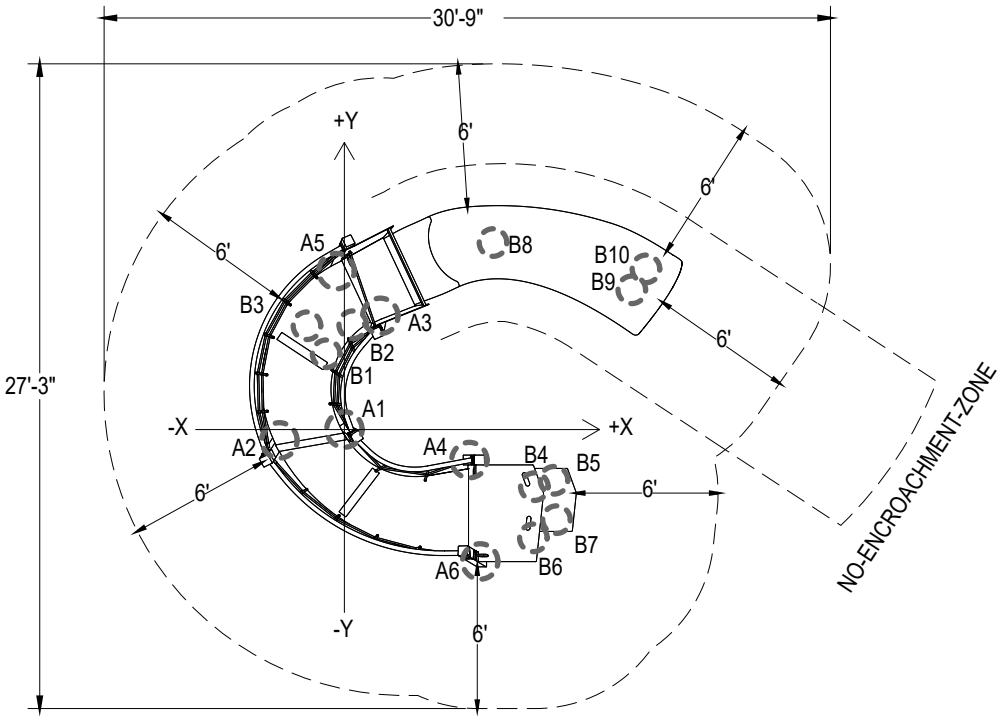

N.	I.D.	X (ft-in)	Y (ft-in)	Dist. to O	DIA (in)
1	A1	0"	0"	0"	18
2	A2	-2'-9"	-5 1/2"	2'-9 1/2"	18
3	A3	1'-6"	4'-10"	5'-0 1/2"	18
4	A4	5'-3 1/2"	-1'-3 1/2"	5'-5 1/2"	18
5	A5	-4"	6'-8 1/2"	6'-8 1/2"	18
6	A6	5'-9"	-5'-7"	8'	18
7	B1	-9 1/2"	3'-2 1/2"	3'-3 1/2"	14
8	B2	4"	4'-5 1/2"	4'-5 1/2"	14
9	B3	-1'-7"	4'-5"	4'-8"	14
10	B4	8'-0 1/2"	-2'-5"	8'-5"	14
11	B5	8'-10 1/2"	-2'-2"	9'-1 1/2"	14
12	B6	8'	-4'-7"	9'-2 1/2"	14
13	B7	9'	-3'-10"	9'-9"	14
14	B8	6'-3 1/2"	7'-11"	10'-1 1/2"	14
15	B9	12'-2"	5'-11"	13'-6 1/2"	14
16	B10	12'-9"	6'-9 1/2"	14'-5 1/2"	14

NOTE: Refer to the site Plan for footing location

Attachment: SP-1986-30_D_drawings_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

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Amherst
Town of Amherst Planning Department
Erie County, New York

Brian J. Kulp
Supervisor

Daniel C. Howard
Planning Direc

Daniel J. Ulatowski
Assistant Planning I

SEQR
Negative Declaration

NOTICE OF DETERMINATION OF NON-SIGNIFICANCE

Lead Agency:	Town of Amherst Planning Board	**Project:**	SP-1986-30_D
Address:	5583 Main Street Williamsville, NY 14221 (716) 631-7051	**Date:**	February 20, 2025

This notice is issued pursuant to Part 617 and Local Law #3-82, as amended, of the implementing regulations pertaining to Article 8 (State Environmental Quality Review) of the Environmental Conservation Law.

The Lead Agency has determined that the proposed action described below will not have a significant adverse effect on the environment.

Title of Action: Site Plan Review

SEQR Status: Unlisted Action

Description of Action: Construction of a 5,000± square foot playground on the north side of the existing Audubon Library located in the southwest portion of the Town Municipal Complex at the subject location. Work will include the site improvements not specifically stated above, including, stormwater, utilities, grading, paving, and landscaping.

Location: 350-500 (#350) John James Audubon Parkway, Amherst, Erie County

Petitioner: Town of Amherst

FEB 28 2025 PM12

Attachment: SP-1986-30_D_Neg_Dec_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

Reasons Supporting This Determination

Based on information submitted by the applicant including a Full Environmental Assessment Form (EAF) - Part I, (as amended) and a complete site plan application, a preliminary staff analysis was undertaken. Compared to the criteria listed in Section 617.7, all indications are that this action will not have a significant impact on the environment, as follows:

1. The project is not expected to cause a substantial adverse change in existing air quality, ground or surface water quality or quantity, or noise levels; a substantial increase in solid waste production; or a substantial increase in the potential for erosion, flooding, leaching or drainage problems. The Engineering Department – Engineering Services Division on February 14, 2025 and Engineering Department – Sanitary Division on February 13, 2025 reviewed the Utility and Grading Plans, submitted on January 28, 2025. Based on its review of these documents, the Department has determined that the project has or will have met all applicable requirements and has no objection to its approval.

2. The project will not result in the removal or destruction of large quantities of vegetation or fauna; or in significant adverse impacts to fish or wildlife species, habitats or other natural resources. The Planning Department also reviewed a Landscape Plan submitted on January 28, 2025 and determined that it meets or exceeds Zoning Ordinance requirements for greenspace. The Site Plan has or will have met all Zoning Ordinance and Town requirements for landscaping.

3. The project is not expected to create any substantive conflict with the Town Comprehensive Plan. The Planning Department in their review of February 5, 2005 and Building Department in their review of February 10, 2025 have reviewed the Site Plan application documents and determined that the subject project has or will have met all International Building Code – 2020 and Zoning Ordinance regulations.

4. The project is within an area identified by the State as having potential archaeological or historical significance. However, the site has been previously disturbed, therefore, the project will not impair the character or quality of important historical resources.

5. The project will not impair the character or quality of important aesthetic resources or of existing community or neighborhood character. The project is located in the New Community District (NCD) zoning district and subject to the Local Center (LC) use regulations of §203-5-2-5 (3) of Town Code; neighboring uses are office buildings and the Town of Amherst Justice Facility, Police Headquarters and Senior Center and zoned NCD; therefore, the project is consistent with surrounding land use.

6. The proposed subject development will include construction of a 5,000± square foot playground addition on the northeast side of the existing Audubon Library located in the southwest portion of the Municipal Complex which will not cause a major change in the use of either the quantity or type of energy.

7. The project will not create any hazard to human health. The Fire Chief's Council on February 11, 2025, has reviewed the project and has no objection to the approval of the site plan, as all requirements of this agency have or will have been met.

Attachment: SP-1986-30_D_Neg_Dec_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

8. The project will not cause a substantial change in the use, or intensity of use, of land including agricultural, open space or recreational resources, or in its capacity to support existing uses. Future construction of a 5,000± square foot playground addition to the northeast side of the existing Audubon Library located in the southwest portion of the Municipal Complex will be consistent with the scale of surrounding land uses.

9. The function of the proposed 5,000± square foot playground addition located in the southwest portion of the Municipal Complex will not significantly increase the number of people using the site over its previous level of use.

10. Review by the Town Traffic/Safety Board dated January 31, 2025, indicates that significant negative traffic impacts are not expected to result from the proposed project.

11. A coordinated review of the project has been undertaken by Town Departments including, in addition to those mentioned above, Highway on February 3, 2025, Assessor on February 4, 2025, Plumbing Division on February 3, 2025, and Right-of-Way Agent on February 4, 2025. These reviews did not identify any potential significant adverse environmental issues and indicated that the proposal will not have a significant damaging impact on the environment.

12. Issues not specifically mentioned above and/or those not specifically reviewed were not raised by Town departments, outside agencies or the public and are not determined to cause significant negative environmental impacts.

Planning Board Approval
Moved by: O'Rourke; Second by: Kahn; Ayes 5; Noes 0; Absent 2 (Davis, Raffaele)

James Quinn, Assistant Planner — 2/25/25 Date

Michael J. Chmiel, Planning Board Chair — 2/27/25 Date

FEB 28 2025 PM12

JQ/ac
X:\Current_Planning\Files\Site Plans\1986\SP-1986-30_D_(350-500_John_James_Audubon_Pkwy_NCD)_2025\SP-1986-30_D_Neg_Dec_022025.doc
cc: Amherst Building Department
ECDEP
Jessica Boudreau, Town of Amherst Engineering Department
Sean Pellow, Town of Amherst Building Maintenance/Facilities
Dan Rizzo, Town of Amherst Building Maintenance/Facilities
Mary-Diana Pouli, Executive Director, Town of Amherst Youth and Recreation

Attachment: SP-1986-30_D_Neg_Dec_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION (NCD)
SP-1986-30_D

PETITIONER

Town of Amherst
Engineering Department
1100 N. Forest Rd.
Amherst, NY 14221

PROPERTY LOCATION

350-500 (350) John James Audubon Parkway

WHEREAS the Town of Amherst Planning Board on Thursday, February 20, 2025 held a public hearing on a site plan for the proposed playground at the Amherst Municipal Complex Library, and

WHEREAS the Planning Board has reviewed the plans and specifications for the proposed project, and

WHEREAS the Site Plan has been referred to the Town's various review agencies and they have made findings on this project, and

WHEREAS the Planning Board finds that:

1. The proposed site plan is consistent with the intent, objectives and specific requirements of the Zoning Ordinance, specifically those of the New Community District, Section 5-2.

2. The proposed site plan is in conformity with the Approved Development Plan for the Audubon New Community.

3. Adequate services and utilities are or will be available prior to occupancy, and

4. Review by the US Army Corps of Engineers under Section 404 of the Clean Water Act may be waived because the parcel is developed.

5. Pursuant to Local Law #3-82, as amended, the Planning Board has determined that the requirements of SEQR are complete and that the subject proposal is not expected to have a significant adverse effect on the environment.

6. The Site Plan is consistent with all other applicable laws.

NOW THEREFORE BE IT RESOLVED that in accordance with 6 NYCRR, Part 617 and Local Law #3-82, as amended, the Planning Board has issued a Negative Declaration attached hereto, and

NOW THEREFORE BE IT FURTHER RESOLVED that the Planning Board, in accordance with Section 8-15-9 of the Zoning Ordinance, approves said Site Plan, subject to the following conditions:

Attachment: SP-1986-30_D_Resolution_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

TOWN OF AMHERST
PLANNING BOARD
SITE PLAN RESOLUTION (NCD)
SP-1986-30_D

PETITIONER	PROPERTY LOCATION
Town of Amherst	350-500 (350) John James Audubon Parkway

1. That the concerns raised in the Town of Amherst Planning Department letter dated February 5, 2025 by the Planning Department Staff and Landscape Architect be addressed to the satisfaction of the department staff and landscape architect.

2. That all dumpsters/trash containers and all mechanical equipment, utility structures, multiple meter boards, generators, and similar appurtenances, including those which are mounted on any part of a primary structure shall be appropriately screened with a fence, wall, and/or landscaping. Provide gate on dumpster enclosure that shall be closed whenever dumpster is not being serviced and enclosure shall be high enough to enclose entire dumpster within.

3. That as-built record drawings, including location of utilities and storm sewer, be provided to the Engineering Department prior to issuance of a Certificate of Occupancy by the Building Department, as requested in the letter dated February 14, 2025 from the Town of Amherst Engineering Department - Engineering Services Division.

The foregoing resolution was adopted by the Town of Amherst Planning Board, February 20, 2025; moved by Penberthy; seconded by O'Rourke; ayes 5; noes 0; absent 2 (Davis, Raffaele).

Michael J. Chmiel, Planning Board Chair

2/27/25
Date

JQ/ac
X:\Current_Planning\Files\Site Plans\1986\SP-1986-30_D_(350-500_John_James_Audubon_Pkwy_NCD)_2025\SP-1986-30_D_Resolution_022025.doc
cc: Commissioner of Building
Town Engineer
Fire Chiefs
Traffic/Safety Coordinator
Highway Superintendent
Jessica Boudreau, Town of Amherst Engineering Department
Sean Pellow, Town of Amherst Building Maintenance/Facilities
Dan Rizzo, Town of Amherst Building Maintenance/Facilities
Mary-Diana Pouli, Executive Director, Town of Amherst Youth and Recreation

Approved Plan: Town of Amherst Engineering Department
Received: January 28, 2025

Attachment: SP-1986-30_D_Resolution_022025 (29967 : SP-1986-30D, 350-500 John James Audubon Pkwy)

FEB 28 2025

Rezoning Application & Supporting Documentation - Rezoning of 1692 Maple Road from R-3 to OB
Ambulatory Surgery Center Project
Applicant: Michael & Corine Cicchetti
c/o Sean Hopkins, Esq., Hopkins Sorgi & McCarthy PLLC

Prepared by: Sean Hopkins, Esq.
Hopkins Sorgi & McCarthy PLLC
35 California Drive, Suite 100
Williamsville, NY 14221
Tel: 716.510-4338
E-mail: shopkins@hsmlegal.com

TOWN OF AMHERST PLANNING DEPARTMENT

Application for Rezoning Review and, if required Comprehensive Plan Amendment

For Official Use

File #: Z-2024-04 **Acreage** .96 Acres **Fee $** $1,265.00

Address Verified by Assessor's Office _____
VERIFIED BY DATE

Materials Accepted by Town Clerk & Fee Paid _____
ACCEPTED BY DATE

Materials Checked by Building Dept. _____
RECEIVED BY DATE

Materials Received by Planning Dept. _____
RECEIVED BY DATE

		Fill In Applicable Fees
2 ACRES OR LESS	**$1,250**	$1,250.00
2 – 20 ACRES **$1,250 + $250/acres or fraction thereof over 2 acres**		_____
20 – 30 ACRES **$5,700 + $150/acre or fraction thereof over 20 acres**		_____
OVER 30 ACRES **$6,900 +$75/acre or fraction thereof over 30 acres**		_____
Request for Relief of/Change to Conditions of Zoning Approval	**$ 1,200**	_____
AFFIDAVIT FEE FOR PUBLIC HEARING	**$ 15.00**	$15.00
TOTAL FEE:	$ 1,265.00	

[Note: A completed Part 1 of the Full Environmental Assessment Form along with Page 5[a] and Attachment "A" is attached as Exhibit "1".]

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

TO BE COMPLETED BY APPLICANT

1. **Petitioner:** Name: Michael & Corine Cicchetti

Address: c/o Sean Hopkins, Esq.
35 California Drive, Suite 100
Williamsville, New York 14221
City State Zip Code

Phone: 716.510-4338 Fax:

E Mail shopkins@hsmlegal.com

2. **The undersigned hereby petitions the Honorable Town Board to rezone the following described property**

From: R-3 District

To: OB District

3. **Street address of land to be rezoned:** (must be verified by Town Assessor's Office)

1692 Maple Road

SBL #: SBL No. 56.19-1-18

4. **Area of land to be rezoned** (in acres): Approximately .96 Acres

5. **Owner of Land**:

Name: Ontrac Systems LLC

Address: PO Box 103

Telephone: Buffalo, New York 14217

6. **Representative** (Architect, Engineer, Landscape Architect, Surveyor or Attorney):

Name: Sean W. Hopkins, Esq.

Address: 35 California Drive, Suite 100
Williamsville, New York 14221
Tel: 716.510-4338 - E-mail: shopkins@hsmlegal.com
City State Zip Code

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

7. Petitioner's interest in property

_____Option to purchase

_____Owner

___X_____Other (explain) [Authorization Letter of Property Owner Attached]

8. The following are all others having an interest in this application and join herein with the petitioner named above: (describe extent of interest; attach sheets as needed)

Not Applicable.

9. Attach Survey and Legal description of land to be rezoned. The Survey must be prepared by a New York State Licensed Land Surveyor. Legal description of the property to be rezoned from R-3 to OB attached as Exhibit "2" and Survey of the Project Site attached as Exhibit "3".

10. Said property has the following deed restrictions or Covenants: (attach copy) Not Applicable.

Liber _____ Page _____

11. Information on proposed project:

A. Description of the character of the proposed development:

See Exhibit 4.

B. Rationale for rezoning request:

1. Why was this site chosen?_____

See Exhibit 4.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

2. Why cannot land be used with the existing zoning?

See Exhibit 4.

3. How will this rezoning impact surrounding properties?

See Exhibit 4.

4. How will this rezoning impact the school system?

See Exhibit 4.

12. Quantitative Data:

A. Total # of dwelling units: Not Applicable

B. Distribution of dwelling units by type: Not Applicable

C. Gross Residential Density per acre: Not Applicable

D. Total amount of Open Space: Not Applicable

E. Proposed Non-Residential Floor Area: 9,000 sq. ft.

[Note: A reduced size copy of the Concept Site Plan for the proposed project is provided at Exhibit "6".]

13. Development Schedule:

Start: 2025

Finish: 2026

Stages (# of): 1

14. If any portion of the proposed development is planned to be sold or leased, please describe:

The Project Site will be leased to a related entity.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

15. **Open Space ownership and maintenance provisions (if applicable):**

Greenspace and landscaping will be privately owned and maintained.

16. **Basis for Findings (Sec. 8-3-5 of the Town Zoning Code) (Attach sheets and supplemental materials as necessary.)**

A. **The proposed zoning and development plan must be generally consistent with the policies of the Comprehensive Plan and the Town Zoning Ordinance.**

1. State in detail why the proposed zoning is consistent with the adopted Town of Amherst Bicentennial Comprehensive Plan. Cite specific sections, maps, and/or figures in the plan that support the proposed zoning at this location (The Comprehensive Plan document is available at the Planning Department, Town Clerk's Office, Amherst libraries, or at www.amherst.ny.us). Add sheets as needed.

See Exhibit 5.

2. Pursuant to NYS Town Law Section 272a(11), "all Town land use regulations must be in accordance with a comprehensive plan adopted pursuant to this Section." The Town Board adopted the Comprehensive Plan pursuant to NYS Town Law 272 on January 2, 2007. If the rezoning is approved, the Town Board may require the Plan to be amended, as applicable.

Cite all text, map, and / or figures that must be amended to support the proposed zoning at this location (attach pages as necessary) and provide detailed suggested amendments.

See Exhibit 5.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

3. State why the proposed zoning is consistent with intent and objectives (Sec. 1-2-2) of the Zoning Ordinance:

See Exhibit 5.

B. Adequate Services and Utilities are available or are proposed to be made available with the construction of the development:

1. Sanitary Sewer
   Yes.
2. Storm Sewer/Drainage
   Yes.
3. Water
   Yes.
4. Other Yes.

C. Compatibility with the present zoning and conforming uses of nearby property and with the character of the neighborhood:

See Exhibit 5.

D. Suitability of the subject property for uses permitted by the current versus the proposed district:

See Exhibit 5.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

E. Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town:

See Exhibit 5.

17. The petitioner encloses herewith the sum of $ 1,265.00 to pay the fee, and consents to the placement of a sign(s) at the described location identifying this request for a period of time to be determined by the Town Clerk.

18. The undersigned certifies that all information required to be disclosed pursuant to Section 809 of the General Municipal Law (see below) is as follows:

The undersigned swears or affirms that all statements made herein are true, that all drawings submitted correctly show the situation involved in this petition.

Sean Hopkins
Signature of Petitioner

Subscribed and sworn to before me this 25th day of November, 20 24

Notary Public, Erie County, New York _____

N.Y.S. General Municipal Law - Section 809 Disclosure in certain applications:

1. Every application, petition or request submitted for a variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license or permit, pursuant to the provision of any ordinance, local law, rule or regulation constituting the zoning and planning regulations of a municipality shall state the name, residence and the nature and extent of the interest of any state office or any office or employee of such municipality or of a municipality of which such municipality is a part, in the person, partnership or association making such application, petition or request (hereinafter called the applicant) to the extent known to such applicant.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

2. For the purpose of this section an officer or employee shall be deemed to have an interest in the applicant when he, his spouse, or their brothers, sisters, parents, children, grandchildren, or the spouse of any of them

   (a) is the applicant, or
   (b) is an officer, director, partner or employee of the applicant, or
   (c) legally or beneficially owns or controls stock of a corporate applicant or is a member of a partnership or association applicant, or
   (d) is a party to an agreement with such an applicant, express or implied, whereby he may receive any payment or other benefit, whether or not for services rendered, dependent or contingent upon the favorable approval of such applicant, petition or request.

3. In the county of Nassau the provisions of subdivisions one and two of this section shall also apply to a party officer. "Party Officer" shall mean any person holding any position or office, whether by election, appointment or otherwise, in any party as defined by subdivision four or section two of the election law.

4. Ownership of less than five per cent of the stock of a corporation whose stock is listed on the New York or American Stock Exchanges shall not constitute an interest for the purposes of this section.

5. A person who knowingly and intentionally violates this section shall be guilty of a misdemeanor.

P/CurrPlan/Applications2007/Rezoning & Comp Plan Amend App.
10/08

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AUTHORIZATION

The undersigned, ONTRAC SYSTEMS LLC ("Seller"), the record owner of real property located in the Town of Amherst, New York located at **1692 Maple Road [SBL No. 56.19-1-1]** (the "Project Site") and MICHAEL CICCHETTI and CORINE CICCHETTI (collectively, the "Purchasers") have entered into a Purchase and Sale Agreement pursuant to which Seller agreed to sell the Project Site to Purchasers, and Purchasers agreed to purchase the Project Site from Seller, contingent upon Purchasers' obtaining certain permits, approvals, and authorizations from the Town of Amherst (the "Town") and other governmental agencies and authorities having jurisdiction.

Accordingly, Seller hereby authorizes Purchasers and their counsel, the law firm of HOPKINS SORGI & MCCARTHY PLLC, to seek all required permits, approvals, and authorizations from the Town and other involved governmental agencies and authorities having jurisdiction relative to Purchasers' intended use of the Project Site as a medical office building, including, but not limited, to an amendment of the zoning classification of the Project Site from Residential District Three District ("R-3") to Office Building District ("OB") by the Town Board, site plan approval by the Town Planning Board, and area variances from the Town Zoning Board of Appeals.

Photocopies, facsimile, and electronic copies of this Authorization shall have the same force and effect as originals.

Dated: November 25, 2024

Ontrac Systems LLC

By: _____
Daniel J. Dirrigl, Manager

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Exhibit 1 – Part 1 of the Full Environmental Assessment Form prepared pursuant to the State Environmental Quality Review Act ("SEQRA") with attached Page 5[a]

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Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Ambulatory Surgery Center Project		
Project Location (describe, and attach a general location map): 1692 Maple Road - Town of Amherst - Erie County		
Brief Description of Proposed Action (include purpose or need): The proposed project ("action") consists of the development of the the parcel at 1692 Maple Road ("Project Site") as a single-story ambulatory surgery center building with all related site improvements. The proposed action has been defined broadly to include all all required discretionary approvals and permits needed from the Town of Amherst municipal boards including but not limited to a rezoning of the Project Site from R-3 to OB. The project purpose is to develop the Project Site as a state-of-the-art ambulatory surgery center, which is a medical office use per the recommended land use in Figure 6 of the Town's adopted Comprehensive Plan. The proposed project is an Unlisted Action pursuant to the State Environmental Quality Review Act ("SEQRA") and will not result in any potentially significant adverse environmental impacts.		
Name of Applicant/Sponsor: Michael and Cornie Cicchetti	Telephone: 716.510-4338 E-Mail: shopkins@hsmlegal.com	
Address: 35 California Drive, Suite 100		
City/PO: Williamsville	State: NY	Zip Code: 14221
Project Contact (if not same as sponsor; give name and title/role): Same as Above.	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Ontrac Systems LLC	Telephone: E-Mail:	
Address: PO Box 103		
City/PO: Buffalo	State: NY	Zip Code: 14217

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B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board - Rezoning from R-3 to OB	November 23, 2024
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Planning Board - Site Plan Approval	To be Determined
c. City, Town or Village Zoning Board of Appeals ☑Yes ☐No	Zoning Board of Appeals - Area Variances	To be Determined
d. Other local agencies ☑Yes ☐No	Building Department - Building Permit and Highway Dept. - Curb Cut Permit	To be Determined
e. County agencies ☑Yes ☐No	ECWA - RPZ	To be Determined
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDOH - Certificate of Need	To be Determined
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☐No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

NYS Heritage Areas:West Erie Canal Corridor

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

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C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Residential District Three ("R-3")

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☑ Yes ☐ No
If Yes,
i. What is the proposed new zoning for the site? Office Building District ("OB")

C.4. Existing community services.

a. In what school district is the project site located? Williamsville Central School District

b. What police or other public protection forces serve the project site?
Town of Amherst Police Department

c. Which fire protection and emergency medical services serve the project site?
Volunteer Fire Department

d. What parks serve the project site?
There are various parks in the vicinity of the Project Site.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? commercial

b. a. Total acreage of the site of the proposed action? 0.96 acres
b. Total acreage to be physically disturbed? 0.85 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.96 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

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f. Does the project include new residential uses? ☐Yes ☐No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 16 height; 90 width; and 100 length

iii. Approximate extent of building space to be heated or cooled: 9,000 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑Yes ☐No

If Yes,

i. Purpose of the impoundment: Stormwater detention

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑Other specify: On-site stormwater runoff

iii. If other than water, identify the type of impounded/contained liquids and their source. Not Applicable

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: 0.7 acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): Stormwater pond

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☐No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☐No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

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ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No
If Yes, describe:

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:

i. Total anticipated water usage/demand per day: 825 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:

- Name of district or service area: Erie County Water Authority
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☐ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:

i. Total anticipated liquid waste generation per day: 750 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
sanitary wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: Town of Amherst WWTP
- Name of district: Town of Amherst
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

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- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☐ No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐ Yes ☐ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐ Yes ☐ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☐ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐ Yes ☐ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

_____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☐ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

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h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☐No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☐No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

Minimal amount

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

Electric Utility provider

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7:00 to 7:00
- Saturday: 7:00 to 5:00
- Sunday: Not Applicable
- Holidays: Not Applicable

ii. During Operations:

- Monday - Friday: 7:00 - 7:00
- Saturday: To be Determined
- Sunday: Not Applicable
- Holidays: Not Applicable

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m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Temporary and unavoidable storm term noise impacts resulting from the use of construction equipment during construction activities.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

The project will include dark-sky compliant per the requirements of the Zoning Code.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☐ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____
- Operation: _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____
- Operation: _____

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s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☐

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

Mixture of uses including offices, apartments for lease and single-family homes.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.0	0.5	+ 0.5
• Forested	0.35	0.1	- 0.25
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0.0	0.0	0.0
• Agricultural (includes active orchards, field, greenhouse etc.)	0.0	0.0	0.0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.0	0.0	0.0
• Wetlands (freshwater or tidal)	0.0	0.0	0.0
• Non-vegetated (bare rock, earth or fill)	0.0	0.0	0.0
• Other Describe: lawn area/landscaping/greenspace	0.61	0.36	- 0.25

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c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☐ No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No
If Yes,
i. Identify Facilities:
St. Gregory the Great, Maple East Elementary Schoo;, Millard Fillmore Hospital, Elderwood Village

e. Does the project site contain an existing dam? ☐ Yes ☐ No
If Yes:
i. Dimensions of the dam and impoundment:
- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection:
_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☐ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No
- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:
_____
iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☐ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:
_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☐ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No
☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____
☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____
☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No
If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

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v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 7 + feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☐ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site: Cosad loamy fine sand 100 %
_____ %
_____ %

d. What is the average depth to the water table on the project site? Average: 1 feet

e. Drainage status of project site soils:
☐ Well Drained: _____% of site
☐ Moderately Well Drained: _____% of site
☑ Poorly Drained 100 % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name Brush Creek (Town of Amherst Ditch #4) Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

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m. Identify the predominant wildlife species that occupy or use the project site:
Typical suburban species

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:
i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☐ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☐ No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

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e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☐ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☐ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Michael and Cornie Cicchetti Date November 25, 2024

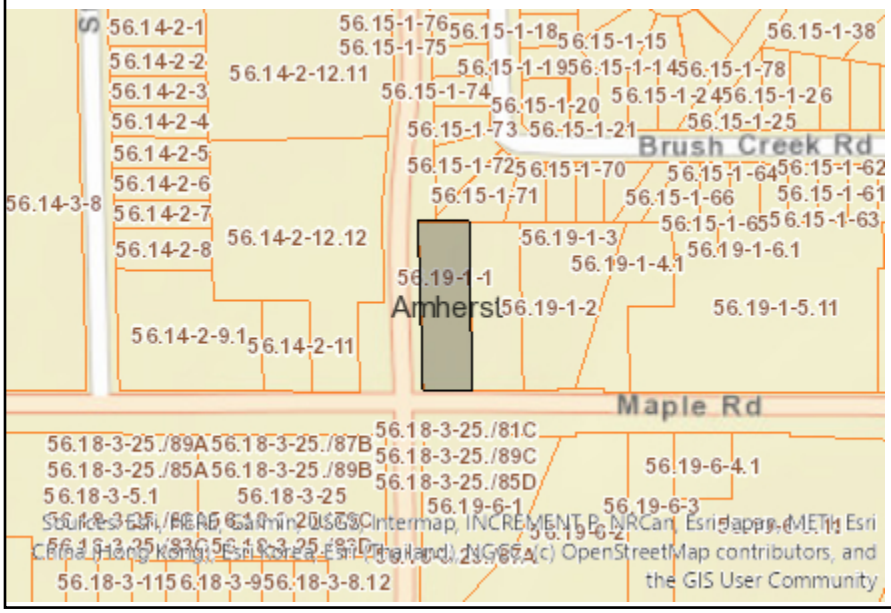
Signature Sean Hopkins Title Attorney for Project Sponsor

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

PRINT FORM

EAF Mapper Summary Report

Friday, November 22, 2024 4:03 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas:West Erie Canal Corridor
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

TOWN OF AMHERST ATTACHMENT
State Environmental Quality Review
ENVIRONMENTAL ASSESSMENT FORM

1. For each applicable category of proposed new structures, including additions to existing structures, provide the following information for all soil types on the project site (*according to Soil Survey of Erie County, NY; Table 11, Building Site Development, pp 294-305):*

Soil Name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Cosad loamy fine sand	✔				

2. If the Soil survey indicates either "severe" or "moderate" suitability for the proposed types of construction, a geotechnical and hydrological analysis based on one test per 3.5 acres of project area must be provided (per Town Board resolution, 3/17/03, amended 6/16/03).

   _____ Geotechnical report attached ✔ Not applicable

3. Is your property located: On Youngs Road between Dodge and Klein Roads? ☐ Yes ☑ No
   On Wehrle Dr. between Spindrift Dr. and Oakwood Rd? ☐ Yes ☑ No

   If so, the property may be within an area of the Town that is affected by a moratorium on connections to the sanitary sewer system.

4. Are there alternative locations on the site for this project? ☐ Yes ☑ No

5. Location and size of real property owned by petitioner within one (1) mile of subject proposal:
   1692 Maple Road - 0.96 ac

6. Are you aware of current or future plans or intentions by others in the Town of Amherst to develop property within 1000± ft. of the present project request: ☑ Yes ☐ No

   Describe Proposed mixed use project at 1720-1760 Maple Road

   (Potential environmental impacts from adjacent or nearby projects undergoing the approval process will receive a coordinated environmental review to determine cumulative effects on common receivers (e.g. traffic and drainage corridors) and other relevant environmental concerns.)

7. Maximum number of vehicular trips to be generated per hour upon completion of project 12
   Source: ITE Trip Generator

8. Will blasting occur during construction? ☐ Yes ☑ No

9. Does the project propose to connect and be tributary to the public sanitary sewer system? ☑ Yes ☐ No

10. Proposed net additional gallons per day (gpd) of sanitary sewer discharge upon completion of project:

    750 average flow 3,000 peak flow.

    (Please note that average flows of 2,500 gpd or greater will require an Engineer's Report that includes a detailed downstream sewer capacity analysis and the identification of and commitment to required I/I offset work during peak wastewater flow conditions.)

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Exhibit 2 - Legal Description of Property to be Rezoned from R-3 to OB

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

EXHIBIT 2 OF REZONING APPLICATION

LEGAL DESCRIPTION OF PROPERTY TO BE REZONED FROM R-3 TO OB

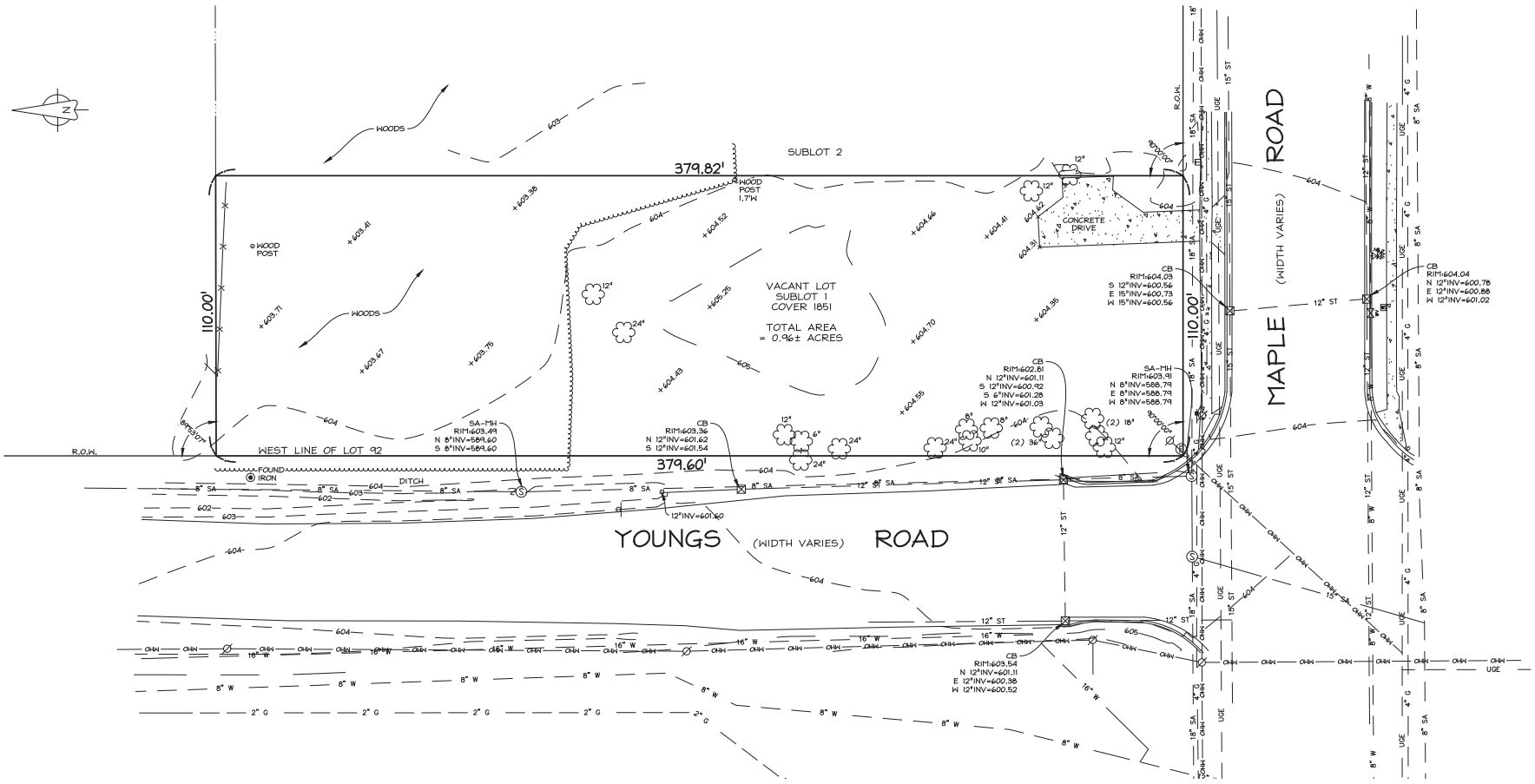
ALL THAT TRACT OR PARCEL OF LAND, situate in the Town of Amherst, County of Erie and State of New York, being part of Lot No. 92, Township 12, Range 7 of the Holland Land Company's Survey and according to map filed in the Erie County Clerk's Office under Cover No. 1851 is known as subdivision lot number one (1), being one hundred ten (ll0) feet front and rear by three hundred seventy-nine and sixty hundredths (379.60) feet in depth west line and three hundred seventy-nine and eighty-two hundredths (379.82) feet in depth east line, situate on the north side of Maple Road at the intersection of said north line of Maple Road and the west line of said Lot No. 92.

EXCEPTING THEREFROM that part conveyed to the County of Erie by deed recorded in the Erie County Clerk's Office in Liber 7456 of Deeds at page 233.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Exhibit 3 – Survey of Project Site

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)



NOTES

1. ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. HORIZONTAL DATUM REFERENCES THE NORTH AMERICAN DATUM 1983 (NAD 83) - NEW YORK STATE PLANE WEST ZONE.
3. THE LOCATION OF ANY UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION ACTIVITIES, ALL UTILITY COMPANIES SHOULD BE NOTIFIED IN ORDER TO VERIFY OR AMEND THEIR LOCATIONS AND/OR EXISTENCE. FOR ASSISTANCE CALL UFPO AT 1-800-962-7962.
4. UDIGNY.ORG DESIGN TICKET No. 10114-000-513 WAS SUBMITTED TO REQUEST UTILITY RECORDS:
   - CHARTER COM NORTHEAST WESTERN NY: HAS RESPONDED, CLEAR NO FACILITIES WITHIN 15FT OF THE EXCAVATOR DEFINED WORK AREA.
   - ERIE COUNTY WATER AUTHORITY: HAS RESPONDED, DRAWN HERON.
   - NATIONAL FUEL GAS / CLARENCE NFG-113: HAS RESPONDED, DRAWN HERON.
   - NATIONAL GRID: HAS RESPONDED, DRAWN HERON.
   - TOWN OF AMHERST:
     FIBER: HAS NOT RESPONDED.
     SANITARY:HAS RESPONDED, DRAWN HERON.
   - VERIZON / BUFFALO: HAS RESPONDED, DRAWN HERON.

LEGEND

HYDRANT	UTILITY POLE
WATER VALVE	ELECTRICAL MANHOLE
WATER SERVICE VALVE	SIGN
SANITARY MANHOLE	GAS MARKER
CATCH BASIN	
W	UNDERGROUND WATER
SA	UNDERGROUND SANITARY SEWER
ST	UNDERGROUND STORM SEWER
G	UNDERGROUND GAS LINE
OHW	OVERHEAD WIRES
UGE	UNDERGROUND ELECTRIC WIRES
	TREE LINE

THIS SURVEY IS NOT VALID WITH AN AFFIDAVIT OF NO CHANGE

NO IRONS SET OR FOUND AT PROPERTY CORNERS UNLESS NOTED HEREON.

3556 Lake Shore Road, Suite 500, Buffalo, NY 14219
p (716) 827-8000 f (716) 270-6091 www.nussclarke.com

This survey was prepared without the benefit of an abstract of title and is subject to any state of facts that may be revealed by an examination of such.

Unauthorized alterations or additions to any survey, drawing, design, specification, plan or report is a violation of section 7209, provision 2 of the New York State Education Law.

NUSSBAUMER & CLARKE, INC. ENGINEERS AND SURVEYORS EST. 1933

TOPOGRAPHIC SURVEY

1692 Maple Road - Vacant Lot

Part of Lot 92, Township 12, Range 7
Holland Land Company's Survey
Town of Amherst
County of Erie, State of New York

Date of Survey: 10/23/2024 Scale : 1" = 30'

Project No. : 24J2

Packet Pg. 2836

4.a

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Exhibit 4 – Responses to Question 11 of the Rezoning Application

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

EXHIBIT 4

REZONING OF 1692 MAPLE ROAD FROM R-3 TO OB

Question 11(A): Description of the character of the proposed development:

Response to Question 11(A): The proposed project consists of the development of 1692 Maple Road rive (the "Project Site") as a state-of-the-art ambulatory surgery center and related site improvements.[1] A full-size copy of the Concept Site Plan [Drawing C-100] prepared by Carmina Wood Design depicting the layout of the proposed project is attached is attached and a reduced-size copy of the Concept Site Plan is also attached as **Exhibit "6"**.

Question 11(B)(1): Rationale for rezoning request: 1. What was this site chosen?

Response to Question 11(B)(1): The Project Site is an appropriate location for the requested rezoning from R-3 to OB to accommodate the proposed residential project since the requested OB zoning classification is consistent with Figure 6 of the adopted Comprehensive Plan that designates the Project Site as appropriate for Commercial-Office. A color copy of Figure 6 of the Comprehensive Plan is attached as **Exhibit "7"**.

Question 11(B)(2): Why cannot land be used with the existing zoning?

Response to Question 11(B)(2): The Project Site could be developed as single-family homes based on the existing R-3 zoning classification but it is not a suitable location for such use and would also be inconsistent with Figure 6 of the Comprehensive Plan.

Question 11(B)(3): How will this rezoning impact surrounding properties?

---

[1] A legal description of the Project is attached as **Exhibit "2"** and a full-size copy of the Survey of the Project Site is attached to this Rezoning Application. A reduced-size copy of the Survey of the Project Site is also attached as **Exhibit "3"**.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Response to Question 11(B)(3): The requested rezoning of the Project Site from R-3 and OB to accommodate the proposed project will not result in any potentially significant adverse impacts on surrounding properties. A completed Part 1 of the Full Environmental Assessment Form with attached Page 5[a] as prepared pursuant to the State Environmental Quality Review Act ("SEQRA") is provided at **Exhibit "1"** of this Rezoning Application. The proposed project will also require site plan approval from the Planning Board which will ensure compliance with the applicable standards for landscaping, lighting, stormwater management, etc.

Question 11(B)(4): How will this rezoning impact the school system?

Response to Question 11(B)(4): The proposed residential project will have positive impacts on the school district since it will generate annual property taxes without any demand for educational services. .

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Exhibit 5 – Responses to Question 16 of Rezoning Application

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

EXHIBIT 5

REZONING OF 1692 MAPLE ROAD FROM R-3 TO OB

Question 16(A)(1): **State in detail why the proposed zoning is consistent with the adopted Town of Amherst Bicentennial Comprehensive Plan. Cite specific sections, maps and/or figures in the plan that support the proposed zoning at this location.**

Response to Question 16(A)(1): The Town of Amherst adopted the Bicentennial Comprehensive Plan in January of 2007 after completing a lengthy planning process that included numerous public meetings and public hearings involving the Comprehensive Plan Advisory Committee, the Planning Board and the Town Board.[1] On December 14, 2020, the Town Board most recently adopted amendments to the Bicentennial Comprehensive Plan. The proposed single-story ambulatory surgery center project is consistent with the adopted Comprehensive Plan and the land uses in the vicinity of the Project Site that include various zoning classifications including OB, MFR-5 and R-3.

Question 16(A)(2): **Cite all text, map, and/or figures that must be amended to support the proposed zoning at this location and provide detailed suggested amendments.**

Response to Question 16(A)(2): The proposed project is consistent with the Comprehensive Plan and such there is not a need to amend the Comprehensive Plan to accommodate the proposed project.

[1] A copy of the resolution adopted by the Town Board for the purpose of adopting the Bicentennial Comprehensive Plan pursuant to Town Law Section 272-a is included at the beginning of the Comprehensive Plan. This resolution recites the lengthy planning history that incorporated numerous opportunities for public input as well as a coordinated environmental review pursuant to SEQRA that involved the preparation a Generic EIS and the issuance of a Findings Statement.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Question 16(A)(3): State why the proposed zoning is consistent with intent and objectives (Sec. 1-2-2) of the Zoning Ordinance:

Response to Question 16(A)(3): Section 1-2-1 of the Zoning Code is titled "Purpose" and it states as follows:

> *"The purpose of this Zoning Ordinance and the intent of the legislative authority in its adoption is to promote the environment of the town and its public health, safety, convenience, comfort, prosperity and the general welfare by regulating the use of buildings, other structures and land for residences, open space, public facilities, business, services, industry or other purposes; by regulating and restricting the bulk, height, design, building coverage and location of structures; by regulating and limiting population density; and for the aforesaid purposes, to divide the land within the limits of the town into districts of such number and dimensions generally consistent with the policies of the Comprehensive Plan and to provide procedures for the administration and amendment of said Zoning Ordinance."*

The requested rezoning of the Project Site from R-3 to OB to accommodate the proposed project consisting of units for sale on the Project Site is consistent with the "Purpose" of the Zoning Code. Section 1-2-2 of the Zoning Code sets forth the objectives of the Zoning Code. This section of the Zoning Code lists thirteen objectives that are discussed below as follows:

A. To protect the character and values of residential, institutional and public uses, business, commercial and manufacturing uses and to insure their orderly and beneficial development;

Response: The proposed rezoning of the Project Site will be consistent with the objective of protecting the character and value of existing land uses.

B. To provide adequate open spaces for light, air and outdoor uses to include public, common and private open space areas;

Response: The proposed rezoning of the Project Site will not be inconsistent with this objective.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

C. To prevent overcrowding of land;

Response: The proposed project will not result in the overcrowding of land. The project is consistent with the type of development designated as appropriate for the Project Site per the adopted Comprehensive Plan.

D. To prevent excessive concentration of population and to prevent spare and uncoordinated development;

Response: The proposed rezoning of the Project Site will not result in excessive concentration of population and the residential project represents an example of coordinated development.

E. To regulate and control the location and spacing of buildings on the lot and in relation to the surrounding property generally consistent with the policies of the Comprehensive Plan.

Response: The responses to the Questions in Section 16 provided above sets forth the reasons the proposed rezoning is consistent with the policies of the Comprehensive Plan.

F. To protect persons and property from damage and injury due to fire or flood;

Response: The Project Site is not located in a regulated floodway or 100 yr. floodplain. The Site Plan Application review process will trigger the need for an Engineer's Report to be prepared by a licensed engineer to be prepared for review and approval by the Town's Engineering Department. The project will not increase the likelihood of damage and injury due to fire and flood. The proposed single-story ambulatory surgery center project will be constructed per the stringent requirements of the NYS Building Code including the fire safety standards contained therein.

G. To preserve and protect significant natural features and vegetation, thereby preventing ecological damage and visual blight which occur when those features or vegetation are eliminated or substantially altered to serve development purposes only.

Response: The proposed rezoning and the proposed project will not be inconsistent with this objective. There are not significant natural features located on the Project Site.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

H. To assure that structure and land use arrangements are aesthetically harmonious with nearby areas and structures.

Response: The development of the Project Site in a manner consistent with the Concept Site Plan [Drawing C-100] prepared by Carmina Wood Design submitted with this Rezoning Application will be aesthetically harmonious with nearby areas and structures.[2]

I. To regulate the location of buildings and intensity of uses in relation to streets according to plans so as to cause the least interference with and be damaged least by traffic movements and hence result in lessened street congestion and improved public safety.

Response: The proposed project will have a driveway connection to Youngs Road.

J. To establish zoning patterns that insure economical extensions for sewers, water supply waste disposal and other public utilities, as well as development of recreation, schools and other public facilities;

Response: The Project Site has access to sanitary sewer and water lines as well as necessary public utilities to service the proposed residential project.

K. To guide the future development of the town so as to being the gradual conformity of land, structures and uses generally consistent with the policies of the Comprehensive Plan.

Response: The proposed rezoning of the Project Site is consistent with this objective since the proposed use is consistent with the policies contained in the Comprehensive Plan.

L. To accomplish the specific intents and goals set forth in the introduction to the respective sections.

Response: The proposed rezoning of the Project Site is consistent with this objective.

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[2] A reduced-size copy of the Concept Site Plan [Drawing C-100] is attached as **Exhibit "6"**.

M. To protect the community from visual pollution resulting from the unregulated use of signs and other advertising devices.

Response: The proposed rezoning and the proposed project will not be inconsistent with this objective.

Question 16(C): Compatibility with the present zoning and conforming uses of nearby property and with the character of the neighborhood:

Response to Question 16(C): The proposed rezoning of the Project Site is compatible with the present zoning and conforming uses of nearby properties and the character of the neighborhood which includes a mixture of uses and zoning classifications.

Question 16(D): Suitability of the subject property for uses permitted by the current versus the proposed district:

Response to Question 16(D): The Project Site is more appropriate for office use than single-family homes and the proposed use is consistent with Figure 6 of the Comprehensive Plan.

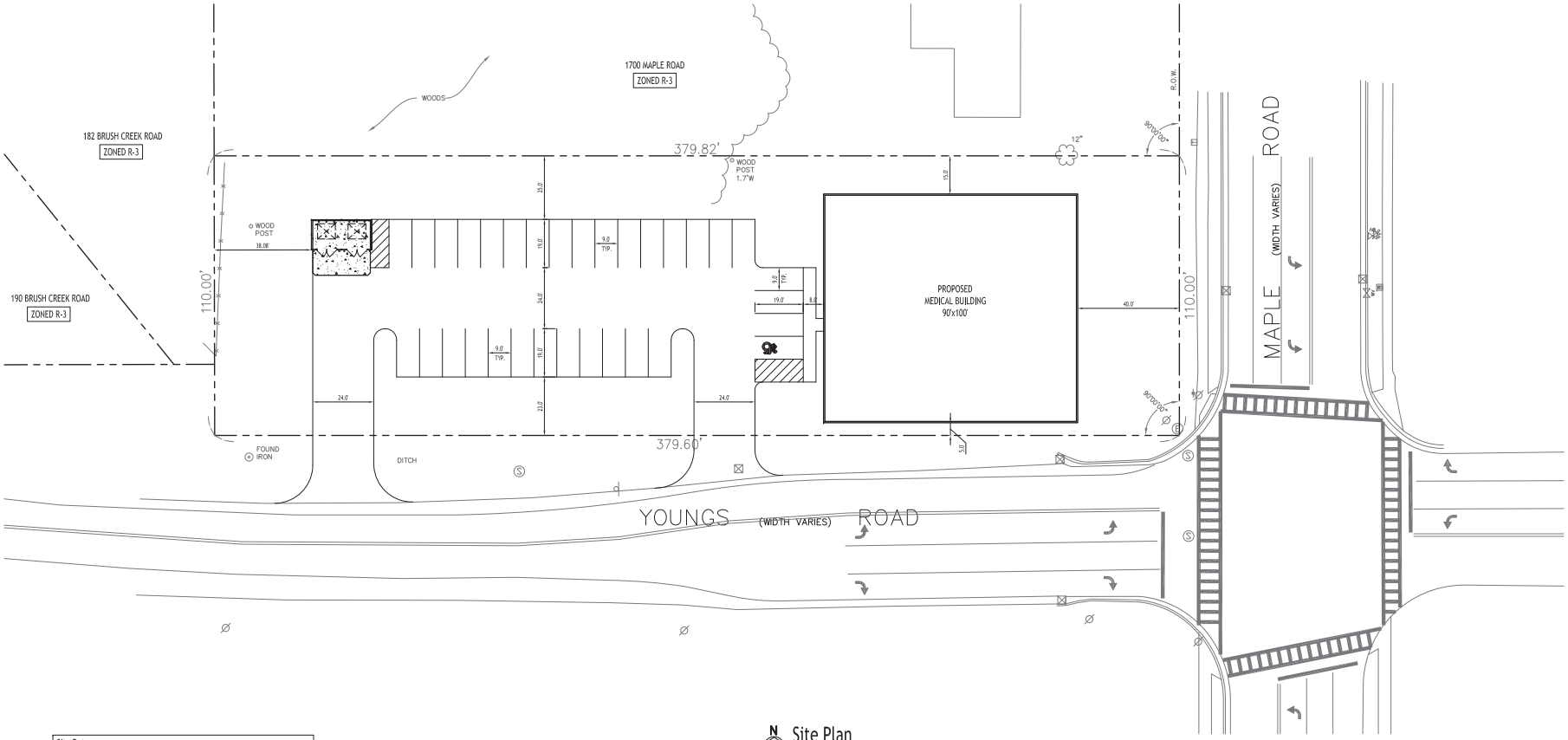
Question 16(E): Whether the proposed change tends to improve the balance of uses, or meets a specific demand in the Town:

Response to Question 16(D): The proposed change in the zoning classification of the Project Site from R-3 to OB to accommodate the proposed project will have positive impacts on the balance of uses in the Town by providing a state-of-the-art ambulatory surgery center.

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Exhibit 6 – Reduced Size Copy of Concept Site Plan as Prepared by Carmina Wood Design

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)



N

Site Plan

SCALE: 1"=20'

Site Data		
TOTAL SITE AREA = 0.96± ACRES ZONED: R-3 (REZONED TO OB: OFFICE BUILDING DISTRICT) USE: PROPOSED MEDICAL BUILDING		
SETBACKS - BUILDING	REQUIRED	PROVIDED
FRONT:	20 FT	5.0 FT *
SIDE (ADJ. RES. / NON-RES.):	30 FT	15.0 FT *
REAR (ADJ. RES. / NON-RES.):	30 FT	N/A
SETBACKS - PARKING		
ADJOINING RESIDENTIAL:	25 FT	25.0 FT
OTHER PROPERTY LINES:	25 FT	23.0 FT *
MAX BUILDING HEIGHT (FLAT ROOF):	30 FT	< 30 FT
LOT COVERAGE (FOR ALL BLDGS):	N/A	25% ±
PARKING: 9' x 19'	32	32
GREENSPACE:		
INTERIOR PARKING (5%)	N/A	> 5%
OVERALL	N/A	50%

*VARIANCE REQUIRED

PARKING CALCULATION:
SURGICAL CENTER/TREATMENT FACILITY
3.5 SPACES PER 1,000 SF OF NET FLOOR AREA

9,000 SF / 1,000 SF * 3.5 = 32 SPACES REQUIRED

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

20' 20 0 20 40Ft.

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Proposed Medical Building

1692 Maple Road
Amherst, NY

REVISIONS:
No. Description Date

PRELIMINARY
NOT FOR CONSTRUCTION

DRAWING NAME:
Site Plan
Concept

Date: 11/22/24
Drawn By: C. Wood
Scale: As Noted

DRAWING NO.
C-100

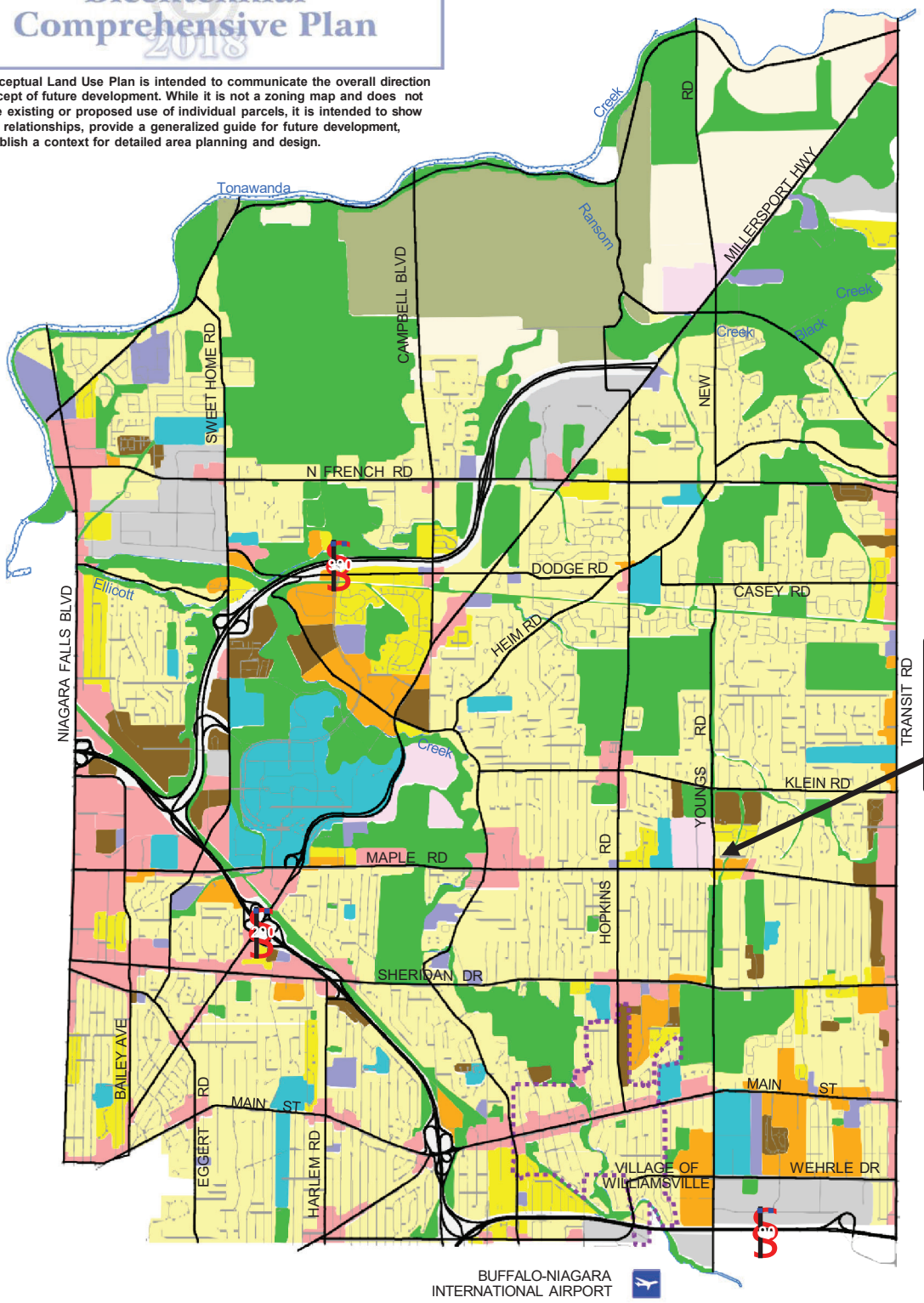
Project No: 24-4153

Exhibit 7 – Figure 6 of Comprehensive Plan

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

Town of Amherst Bicentennial Comprehensive Plan

The Conceptual Land Use Plan is intended to communicate the overall direction and concept of future development. While it is not a zoning map and does not show the existing or proposed use of individual parcels, it is intended to show land use relationships, provide a generalized guide for future development, and establish a context for detailed area planning and design.



Recommende Use: Commercial-Office

Conceptual Land Use Plan

- Rural Residential
- Single Family Residential
- Mixed Residential
- Medium Residential
- Commercial / Mixed Use*
- Special Use Center
- Commercial - Office
- Industrial - Office
- Community Facilities
- Educational Campus
- Recreation, Open Space & Greenways
- Agriculture
- Transportation
- Surface Water
- Village of Williamsville Boundary

* See Map Figure 6-A for Additional Designations

SOURCE NOTES:

Original Source Data Provided by the Town of Amherst Information Technology Department, URS Corporation and Wallace Roberts & Todd, LLC

Map Compiled by the Town of Amherst Planning Department

Date: December 2020

0 0.25 0.5 0.75 1 1.25 Miles

FIGURE 6

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

RANDY SIMONS
Commissioner Pro Tempore

December 12, 2024

Scott Marshall
Principal Planner
Town of Amherst
5583 Main Street
Amherst, NY 14226

Re: SEQRA
Proposed Medical Building
1692 Maple Rd, Amherst, NY 14221
24PR11042

Dear Scott Marshall:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project.

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above. If you have any questions, please contact Campbell Higle at the following email address:

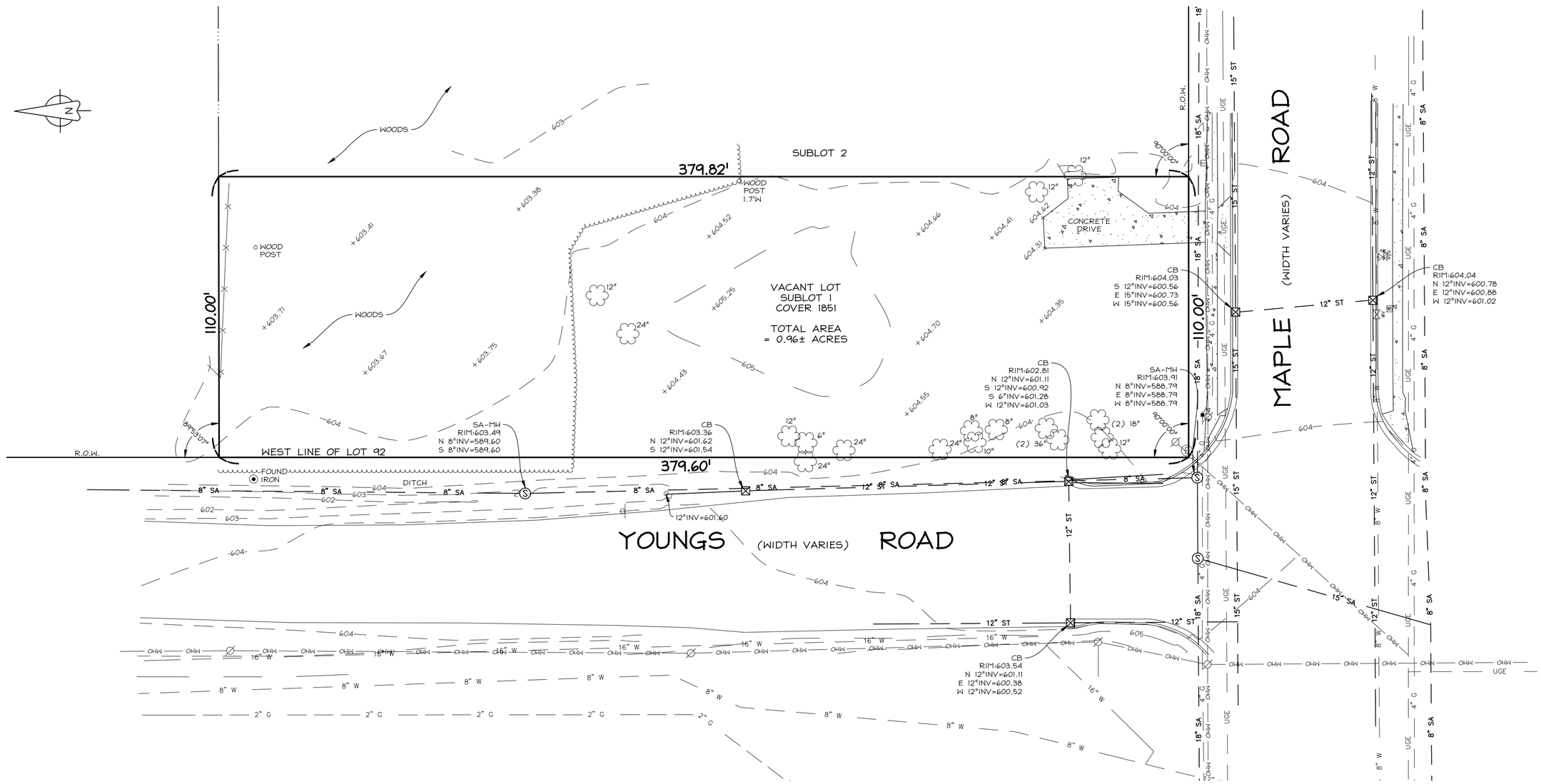
Campbell.Higle@parks.ny.gov

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

Attachment: Z-2024-04_application_022025 (29736 : Z-2024-04, 1692 Maple Rd)



NOTES

1. ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. HORIZONTAL DATUM REFERENCES THE NORTH AMERICAN DATUM 1983 (NAD 83) - NEW YORK STATE PLANE WEST ZONE.
3. THE LOCATION OF ANY UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION ACTIVITIES, ALL UTILITY COMPANIES SHOULD BE NOTIFIED IN ORDER TO VERIFY OR AMEND THEIR LOCATIONS AND/OR EXISTENCE. FOR ASSISTANCE CALL UFPO AT 1-800-962-7962.
4. UDIGNY.ORG DESIGN TICKET No. 10114-000-513 WAS SUBMITTED TO REQUEST UTILITY RECORDS:

- CHARTER COM NORTHEAST WESTERN NY: HAS RESPONDED, CLEAR NO FACILITIES WITHIN 15FT OF THE EXCAVATOR DEFINED WORK AREA.
- ERIE COUNTY WATER AUTHORITY: HAS RESPONDED, DRAWN HERON.
- NATIONAL FUEL GAS / CLARENCE NFG-113: HAS RESPONDED, DRAWN HERON.
- NATIONAL GRID: HAS RESPONDED, DRAWN HERON.
- TOWN OF AMHERST:
  FIBER: HAS NOT RESPONDED.
  SANITARY:HAS RESPONDED, DRAWN HERON.
- VERIZON / BUFFALO: HAS RESPONDED, DRAWN HERON.

LEGEND

HYDRANT	UTILITY POLE
WATER VALVE	ELECTRICAL MANHOLE
WATER SERVICE VALVE	SIGN
SANITARY MANHOLE	GAS MARKER
CATCH BASIN	
W	UNDERGROUND WATER
SA	UNDERGROUND SANITARY SEWER
ST	UNDERGROUND STORM SEWER
G	UNDERGROUND GAS LINE
OHW	OVERHEAD WIRES
UGE	UNDERGROUND ELECTRIC WIRES
	TREE LINE

THIS SURVEY IS NOT VALID WITH AN AFFIDAVIT OF NO CHANGE

NO IRONS SET OR FOUND AT PROPERTY CORNERS UNLESS NOTED HEREON

3556 Lake Shore Road, Suite 500, Buffalo, NY 14219
p (716) 827-8000 f (716) 270-6091 www.nussclarke.com

This survey was prepared without the benefit of an abstract of title and is subject to any state of facts that may be revealed by an examination of such.

Unauthorized alterations or additions to any survey, drawing, design, specification, plan or report is a violation of section 7209, provision 2 of the New York State Education Law.

NUSSBAUMER & CLARKE, INC. ENGINEERS AND SURVEYORS EST. 1933

TOPOGRAPHIC SURVEY

1692 Maple Road - Vacant Lot

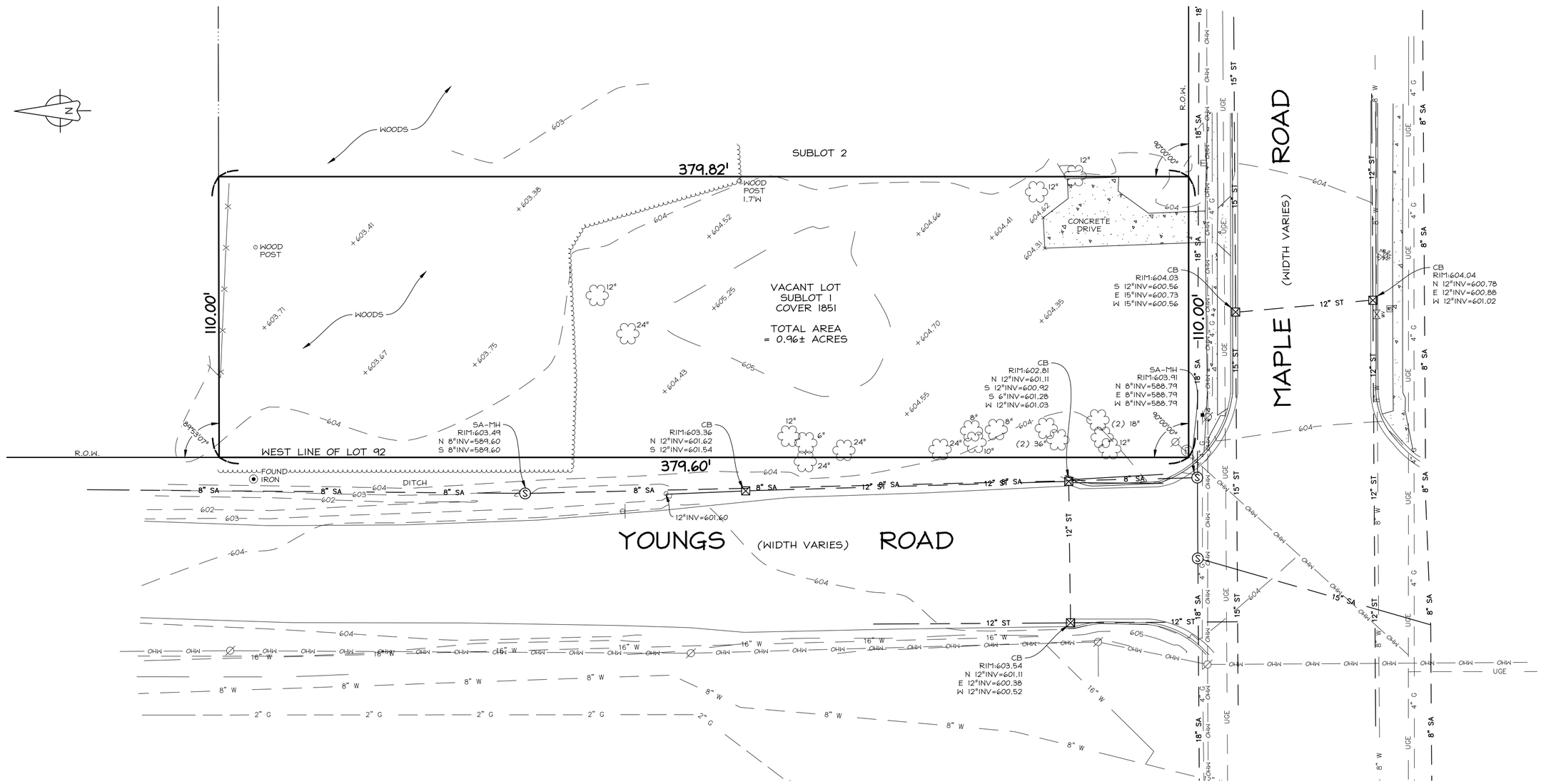
Part of Lot 92, Township 12, Range 7
Holland Land Company's Survey
Town of Amherst
County of Erie, State of New York

Date of Survey: 10/23/2024 Scale : 1" = 30'

Project No. : 24J2-1498

NIAGARA FRONTIER LAND SURVEYORS 19 60 Association Inc. MEMBER

Attachment: Z-2024-04_drawings_022025 (29736 : Z-2024-04, 1692 Maple Rd)



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NIAGARA FRONTIER LAND SURVEYORS 1960 Association Inc. MEMBER

Attachment: Z-2024-04_drawings_022025 (29736 : Z-2024-04, 1692 Maple Rd)

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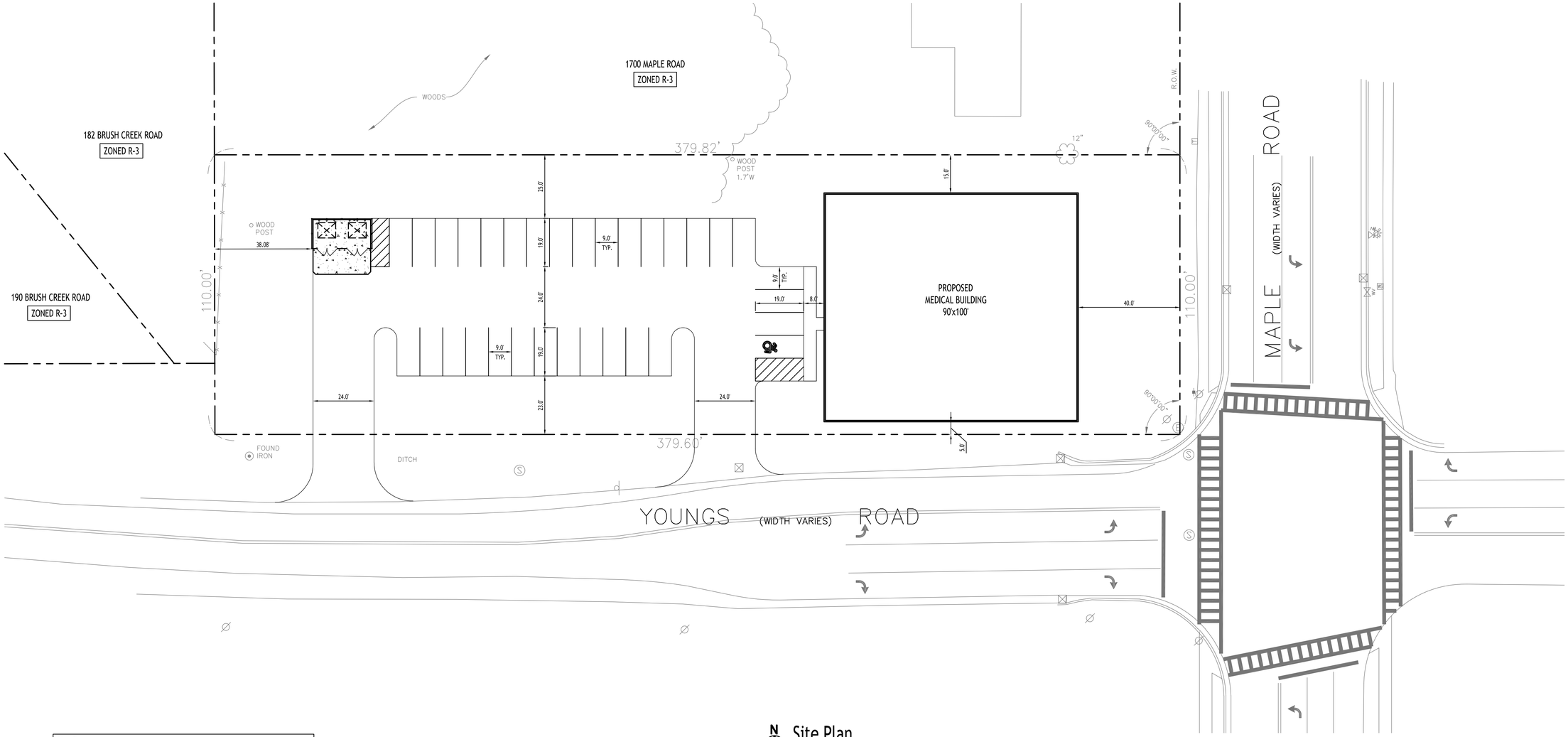

Site Plan

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20' 20 0 20 40Ft.

CARMINAWOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Medical Building

1692 Maple Road
Amherst, NY

REVISIONS:

No.	Description	Date

PRELIMINARY
NOT FOR CONSTRUCTION

DRAWING NAME:
Site Plan
Concept

Date: 11/22
Drawn By: C. W
Scale: As No

DRAWING NO.
C-100

Project No: 24-4153

Attachment: 2-2024-04_drawings_022025 (29736 : 2-2024-04_1692 Maple Rd)

TOWN OF AMHERST
PLANNING BOARD
ZONING RESOLUTION
Z-2024-04

PETITIONER

Michael & Corine Cicchetti
c/o Sean Hopkins, Esq.
Hopkins Sorgi & McCarthy
35 California Drive, Suite 100
Williamsville, NY 14221

PROPERTY LOCATION

1692 Maple Road

WHEREAS the Town of Amherst Planning Board on Thursday, February 20, 2025 held a public hearing on the proposed rezoning of land from Residential District Three (R3) to Office Building District (OB), and

WHEREAS the Planning Board has reviewed plans and other materials regarding the rezoning proposal, and

WHEREAS the materials and plans have been referred to the Town's various review agencies, and

WHEREAS in accordance with Section 8-3-5 of the Zoning Ordinance the Planning Board finds that:

A. The proposed zoning and development plan **is** generally consistent with the policies of the Comprehensive Plan and the Zoning Ordinance.

B. There are adequate services and utilities available or proposed to be made available in the construction of the development.

C. The proposal is compatible with the present zoning and conforming uses of nearby property and with the character of the neighborhood.

D. The subject property is suitable for uses permitted by the current versus the proposed district.

E. The proposed change does tend to improve the balance of uses, or meets a specific demand in the Town.

F. Review by the US Army Corps of Engineers under Section 404 of the Clean Water Act may be waived because the parcel is developed.

WHEREAS pursuant to Local Law #3-82, as amended, the Planning Board recommends that the Town Board determine that the requirements of SEQR are complete and that the subject proposal is not expected to have a significant adverse effect on the environment.

Attachment: Z-2024-04_Resolution_022025 (29736 : Z-2024-04, 1692 Maple Rd)

FEB 28 2025 PM 12:05

TOWN OF AMHERST
PLANNING BOARD
ZONING RESOLUTION
Z-2024-04

PETITIONER

Michael & Corine Cicchetti

PROPERTY LOCATION

1692 Maple Road

NOW THEREFORE BE IT RESOLVED that the Planning Board recommends to the Town Board in accordance with Section 8-3-4 of the Zoning Ordinance, that the rezoning request be approved subject to the following conditions:

1. That a 75 foot wide non-disturbance area or conservation easement be provided along the northerly portion of the site to provide a natural buffer to the existing residences northerly.

2. That future buildings on the site be limited to a maximum of thirty-five (35) feet in height from finished grade.

The foregoing resolution was adopted by the Town of Amherst Planning Board, February 20, 2025; moved by Penberthy; seconded by O'Rourke; ayes 5; noes 0; absent 2 (Davis, Raffaele).

Michael J. Chmiel, Planning Board Chair

2/27/25
Date

Attachment: Z-2024-04_Resolution_022025 (29736 : Z-2024-04, 1692 Maple Rd)

JQ/ac
X:\Current_Planning\Files\Rezonings\2024\Z-2024-04_(1692_Maple_Rd)_2024\Z-2024-04_resolution_022025.doc
cc: Town Clerk
Commissioner of Building
Highway Superintendent
Town Engineer
Traffic/Safety Coordinator
Michael & Corine Cicchetti c/o Sean Hopkins, Esq. 35 California Drive, Suite 100, Williamsville, NY 14221

FEB 28 2025 PM 12:05