CARMINAWOOD
DESIGN

STORMWATER POLLUTION PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES

At

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Town of Amherst, Erie County, New York

Prepared for

4780 Sheridan Drive LLC

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East Amherst, NY 14051

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101 SCOPE

A. **PURPOSE:** 4780 Sheridan Drive LLC (4780) 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 4780; and/or liquidated damages. This section provides a descriptive explanation of 4780'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, 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 <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 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.

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. **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;

   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.

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 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.

102 PROJECT NAME AND LOCATION

Proposed Multi-Family

4774 and 4780 Sheridan Drive

Town of Amherst, County of Erie, New York

Easting: 193693

Northing: 4765310

Estimated Area of Site ≈ 5.02 acres

Estimated Area to be disturbed by Construction Activities ≈ 5.0 acres

A general location map is included as Appendix A.

103 OPERATOR'S NAME AND ADDRESS

4780 Sheridan Drive LLC

4758 North French Road

East Amherst, NY 14051

Contact Person: Rob Savarino

Telephone: 716-908-8322

104 PROJECT DESCRIPTION

This project is a redevelopment of a 5.02 acre site located on the north side of Sheridan Drive in the Town of Amherst for a multi-family residential. Construction will consist of a 11, 2-unit buildings with attached garages with associated site, utility, lighting and landscaping improvements. Currently the site consists of a landscape nursery and two single family houses, all of which are to be demolished. The proposed site development area to be disturbed for this project is approximately 5.0 acres when construction is completed.

Soil disturbing activities will include:

A. Construction of temporary construction exit points

B. Clearing & grubbing of the site within disturbance limits

C. Installation of the detention basin topsoil & seed

D. Installation of storm sewer pipes and inlets

E. Construction of utilities

F. Construction of roadway

G. Final grading & landscaping

H. Construction of buildings

This project is owned by 4780 Sheridan Drive LLC and will be developed by the same. The work area consists of approximately 5.02 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" = 84. The post-construction runoff curve number for the site will be "CN" = 88. The site is 5.02 acres of which approximately 5.0 acres 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 the drainage system on Sheridan Drive which is believed to ultimately discharge 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.

110 HISTORIC PLACES

The assessed property is shown on the NYSHPO map as an archeologically sensitive area. The Cultural Resources Study performed by James Hartner and Kathryn Whalen, dated December 2018 found no items of significance. The NYSHPO clearance letter is included in Appendix K of this report.

111 WETLANDS AND/OR OTHER SURFACE WATERS

There are no Federal or State wetlands located on the project 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.

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 may 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. Install 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 basins

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. Installation of proposed utilities

H. Finalize pavement subgrade preparation.

I. 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.

J. Dust control.

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

L. Install base material as required for pavement.

M. Carry out final grading and seeding and planting.

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

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

P. 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 currently sheet drains in multiple directions, to the north and to the south. Stormwater that drains to the south sheet drains towards Sheridan Drive and is collected offsite by storm catch basins along the north side of Sheridan Drive. Stormwater that drains to the north is directed to one of two existing swales in either the northeast or northwest portions of the site and outlets offsite.

Stormwater runoff collected onsite as a result of the proposed development will be routed through the proposed storm sewer system consisting of bioretention area and dry detention basin connected by a series of catch basins, yard drains and smooth interior HDPE pipe. The bioretention area on site is designed to provide 100% of the required runoff reduction volume (RRv) and water quality volume treatment (WQv) for the 5.02 acre tributary area. The soils in the vicinity of the bioretention area are mainly USDA hydrologic group ‘D’ and therefore the system will be installed with underdrains per NYSDEC requirements. The bioretention area will consist of 6” perforated HDPE underdrains in 12” of drainage gravel, followed by filter fabric and then finally 18” minimum of planting soil. Overflow yard drains will be installed to allow 6” maximum ponding for RRv treatment. A 12” outlet control pipe will be provided within the dry detention pond. Discharge from the outlet pipe will outlet to the existing NYSDOT storm sewer system along Sheridan Drive.

The proposed detention pond is designed to capture and retain all stormwater runoff within the 5.02 acre project limits. It has also been designed to accommodate stormwater runoff for an additional 1.20 acres of surrounding residential area rear yards based on the assumption some neighboring runoff will outlet onto the proposed projects site and be captured within the proposed onsite storm sewer system. The additional area is an assumption made to include the surrounding areas based on topography mapping provided by the Town of Amherst Engineering. The survey provided for this project did not extend beyond the project limits enough to determine an actual watershed area of neighboring properties that will contribute to the stormwater runoff rates of the proposed subdivision. Below are two summary event tables, one listing the runoff discharge for only the proposed subdivision project limits, the second listing the runoff discharge for both the proposed subdivision and the surrounding neighbors. The NYSDEC calculation sheets and the hydrocad printouts found in Attachment B of this report only pertain to the proposed subdivision area (5.02 acres).

Chapter 9 of the NYSDEC Stormwater Management Design Manual details design requirements for redevelopment projects, which this project is categorized as. Runoff reduction is required for this project, since the proposed impervious area (2.25 ac) is greater than existing impervious area (1.40 ac). Water Quality is required since the proposed increase in impervious area (0.85 ac) is greater than 25% of the existing impervious area (0.35 ac) of the site. Water quality and volume attenuation for the redevelopment have been designed in accordance with Chapter 4 of the manual.

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.
    - The minimum amount of impervious area is to be constructed on site to serve the proposed development.
2. Calculation of Water Quality Volume (WQv=RRv) for site.
    - See Stormwater Drainage Calculations.
3. Incorporation of Green Infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity.
    - Bioretention area was incorporated into the site design to provide required RRv for the development. See Stormwater 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.
    - Since the provided RRv is greater than the WQv required, use of standard SMPs to treat the remaining WQv is not applicable.
5. Design of volume and peak rate control practices where required.
    - See Stormwater 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 & Runoff Reduction Volume:

The NYSDEC requires reduction of the total water quality volume by green infrastructure techniques and SMP's to replicate pre-development hydrology. A bioretention area was incorporated into the site layout to provide the required RRv for contributing WQv runoff area for the development. The bioretention area will provide 3,760 cf RRv. The minimum RRv required is 828 cf. The bioretention area will treat the remaining 1,072 cf of WQv. The required WQv = 4,832 cf. The sum of the WQv treated and the RRv is equal to the required WQv, therefore the practice is acceptable.

Channel Protection:

The NYSDEC requires that 24-Hour extended detention be provided for the proposed 1-year storm event. A volume of 3,387 cf is accommodated in the detention basin at elevation 605.64.

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. A volume of 8,713 cf is accommodated in the detention basin at elevation 606.38.

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. A volume of 20,946 cf is accommodated in the detention basin at elevation 607.61.

Town of Amherst Requirement:
The Town of Amherst 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. This volume of 12,248 cf is accommodated in the detention basin at elevation 606.78. At this elevation, the outlet discharge will be restricted to 3.57 cfs, which is less than the existing 10-year peak runoff outflow of 8.06 cfs.

Refer to engineer's report for storm sewer design, runoff summary table and stormwater drainage calculations.

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:

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 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.

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 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.
    - Clean treatment structures per manufacturer's recommendations
    - 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.

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.

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.

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 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.

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 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 area shall match the frequencies listed on the "Bioretention Operation, Maintenance and Management Inspection Checklist" in Appendix K 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.

Appendix A

Site Location Map

Erie County On-Line Mapping Application

Legend

- Parcels
- Municipal Boundaries

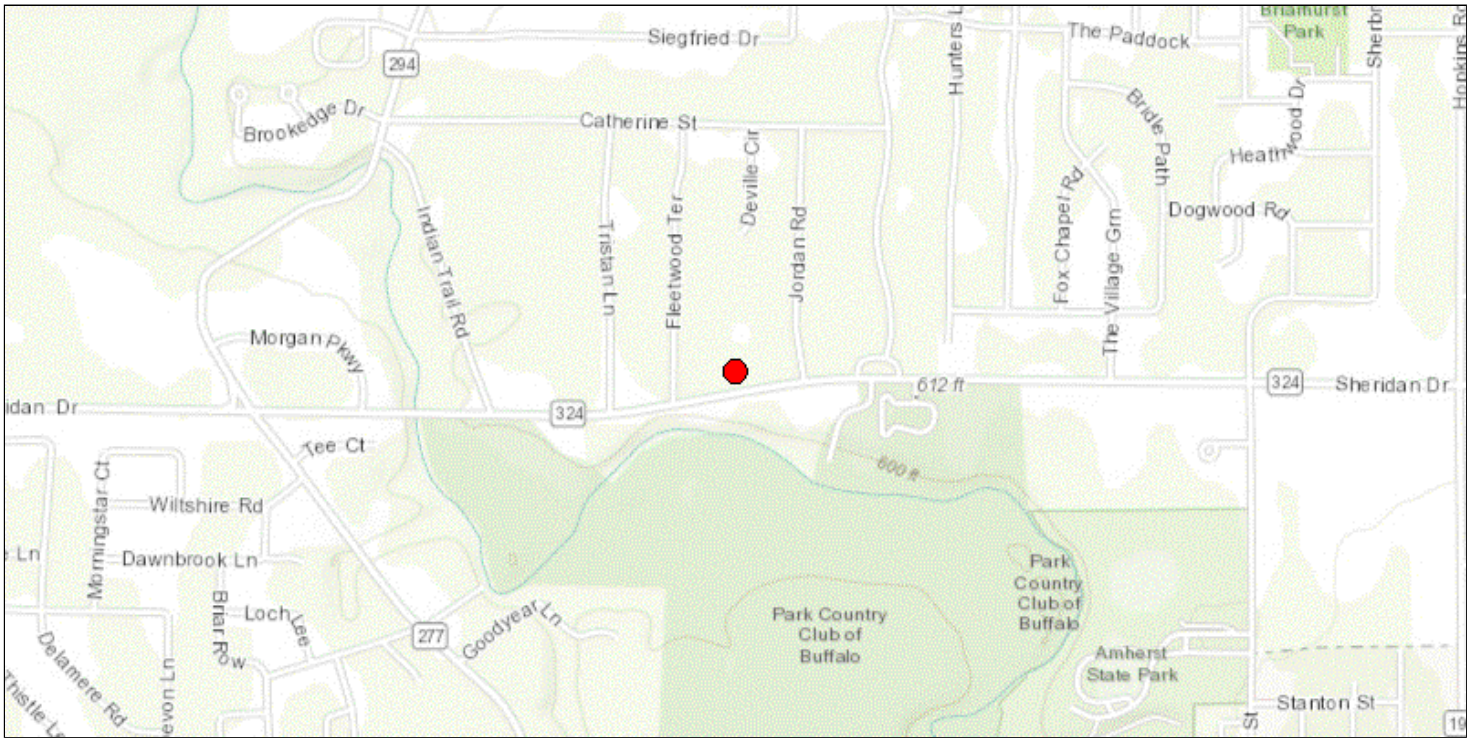
0 376.17 752.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

1: 4,514

Stormwater Interactive Map



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	193693.088	**Northing:**	4765310.135
Longitude/Latitude	**Longitude:**	-78.757	**Latitude:**	42.979

The approximate address of the point you clicked on is:
4784 Sheridan Dr, Buffalo, New York, 14221

County: Erie
Town: Amherst
USGS Quad: BUFFALO NE

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

Appendix B

NYSDEC Notice of Intent (NOI)

0644089821

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)
4780 Sheridan Drive LLC

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

Owner/Operator Contact Person First Name
Rob

Owner/Operator Mailing Address
4758 North French Road

City
East Amherst

State
NY

Zip
14051 -

Phone (Owner/Operator)
716 - 908 - 8322

Fax (Owner/Operator)
___ - ___ - ____

Email (Owner/Operator)
robert.savarino@ccim.net

FED TAX ID
__ - _____ (not required for individuals)

Project Site Information

Project/Site Name
Sheridan Drive Subdivision

Street Address (NOT P.O. BOX)
4774 & 4780 Sheridan Drive

Side of Street
● **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Amherst

State: NY
Zip: 14221 -
County: Erie
DEC Region: 9

Name of Nearest Cross Street
Fleetwood Terrace

Distance to Nearest Cross Street (Feet)
200

Project In Relation to Cross Street
○ **North** ○ **South** ● **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
68.12-1-10

Tax Map Numbers
68.12-1-11

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)
-78.757
Ex. -73.749

Y Coordinates (Northing)
42.979
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**

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
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ 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

***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
5.0	5.0	1.4	2.2

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 / / – **End Date** / /

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**

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?

New York State Department of Transportation

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**

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 500

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 04/22/2024

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

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	.	2	2	4	**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.

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)			
○ 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)			

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

0.90 **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

0.043 **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.

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

0.134 **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).

0.224

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

0.077 **acre-feet**

CPv Provided

0.077 **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

8.06 **CFS**

Post-development

2.96 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

17.58 **CFS**

Post-development

4.57 **CFS**

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

4	7	8	0		S	h	e	r	i	d	a	n		D	r	i	v	e		L	L	C

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.

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][ ][ ][ ][ ][ ][ ]

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

Paul

MI

Print Last Name

Bliss

Owner/Operator Signature

Date

/ /

Appendix C

MS4 SWPPP Acceptance Form

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:	4780 Sheridan Drive LLC
2. Contact Person:	Rob Savarino
3. Street Address:	4758 North French Road
4. City/State/Zip:	East Amherst, NY 14051
II. Project Site Information	
5. Project/Site Name:	Proposed Multi-Family
6. Street Address:	4774 & 4780 Sheridan Drive
7. City/State/Zip:	Amherst, NY 14221
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:	
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

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)

Appendix D

Engineer's Report

CARMINAWOOD
DESIGN

ENGINEER'S REPORT

for

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Town of Amherst, Erie County, New York

Prepared for

4780 Sheridan Drive LLC

4758 North French Road
East Amherst, NY 14051

Prepared by

Carmina Wood Design

487 Main Street, Suite 500
Buffalo, NY 14203

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

April 2024

Table of Contents

Section 1 - Location & Description

This project is a redevelopment of a 5.02 acre site located on the north side of Sheridan Drive in the Town of Amherst for a multi-family residential. Construction will consist of a 11, 2-unit buildings with attached garages with associated site, utility, lighting and landscaping improvements. Currently the site consists of a landscape nursery and two single family houses, all of which are to be demolished. The proposed site development area to be disturbed for this project is approximately 5.0 acres when construction is completed.

Section 2 - Water Service

Water service for the multi-family buildings will be tapped off the existing 8" ECWA water main on the north side of Sheridan Drive. The service will be an 8" Class 52 DI combined water service that will continue into an external hot box enclosure where the combined service will have a meter and RPZ. Proper heat and lighting will be provided to the enclosure, drainage due to testing or failure of the RPZ will be to the outside grade. The owner will be responsible for keeping the drainage ports clear of snow and debris. Water inside the multi-family buildings will be used for typical domestic uses.

Two private hydrants will be installed on site and one existing public hydrant (to be relocated) along Sheridan Drive will ensure fire hose coverage not exceeding 400'.

Domestic Summary:	
Peak Operating Demand:	13.31 gpm
Water Main:	8" on Sheridan Drive
Static Pressure:	84 psi (ECWA)
Friction Loss:	0.0 psi
Loss through meter/RPZ:	12.0 psi
Elevation Loss:	0.0 psi
Pressure after RPZ:	71.0 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

Proposed is 920 lf of 8" SDR-35 PVC private sanitary sewer, connected to the existing 8" public sanitary sewer main along the north side of Sheridan Drive. Each unit wye connect to the proposed 8" sanitary sewer via a 4" SDR-35 PVC sanitary lateral at 1.0% minimum slope.

Design Parameters

2-bedroom unit:	220 gal/day/house x 22 houses = 4,480 gpd
4,480 gpd * 4.32 = 20,897 gpd	*use peaking factor of 4.32

The hydraulic loading rate is per "Design Standards for Intermediate Sized Wastewater Treatment Systems" 2014, NYSDEC.

Downstream sewer capacity analysis is included within Attachment A of this report.

Section 4 - Storm Sewer Service

The existing site currently sheet drains in multiple directions, to the north and to the south. Stormwater that drains to the south sheet drains towards Sheridan Drive and is collected offsite by storm catch basins along the north side of Sheridan Drive. Stormwater that drains to the north

is directed to one of two existing swales in either the northeast or northwest portions of the site and outlets offsite.

Stormwater runoff collected onsite as a result of the proposed development will be routed through the proposed storm sewer system consisting of bioretention area and dry detention basin connected by a series of catch basins, yard drains and smooth interior HDPE pipe. The bioretention area on site is designed to provide 100% of the required runoff reduction volume (RRv) and water quality volume treatment (WQv) for the 5.02 acre tributary area. The soils in the vicinity of the bioretention area are mainly USDA hydrologic group 'D' and therefore the system will be installed with underdrains per NYSDEC requirements. The bioretention area will consist of 6" perforated HDPE underdrains in 12" of drainage gravel, followed by filter fabric and then finally 18" minimum of planting soil. Overflow yard drains will be installed to allow 6" maximum ponding for RRv treatment. A 12" outlet control pipe will be provided within the dry detention pond. Discharge from the outlet pipe will outlet to the existing NYSDOT storm sewer system along Sheridan Drive.

The proposed detention pond is designed to capture and retain all stormwater runoff within the 5.02 acre project limits. It has also been designed to accommodate stormwater runoff for an additional 1.20 acres of surrounding residential area rear yards based on the assumption some neighboring runoff will outlet onto the proposed projects site and be captured within the proposed onsite storm sewer system. The additional area is an assumption made to include the surrounding areas based on topography mapping provided by the Town of Amherst Engineering. The survey provided for this project did not extend beyond the project limits enough to determine an actual watershed area of neighboring properties that will contribute to the stormwater runoff rates of the proposed subdivision. Below are two summary event tables, one listing the runoff discharge for only the proposed subdivision project limits, the second listing the runoff discharge for both the proposed subdivision and the surrounding neighbors. The NYSDEC calculation sheets and the hydrocad printouts found in Attachment B of this report only pertain to the proposed subdivision area (5.02 acres).

Chapter 9 of the NYSDEC Stormwater Management Design Manual details design requirements for redevelopment projects, which this project is categorized as. Runoff reduction is required for this project, since the proposed impervious area (2.25 ac) is greater than existing impervious area (1.40 ac). Water Quality is required since the proposed increase in impervious area (0.85 ac) is greater than 25% of the existing impervious area (0.35 ac) of the site. Water quality and volume attenuation for the redevelopment have been designed in accordance with Chapter 4 of the manual.

Town of Amherst Requirement:
The Town of Amherst 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. This volume of 12,248 cf is accommodated in the detention basin at elevation 606.78. At this elevation, the outlet discharge will be restricted to 3.57 cfs, which is less than the existing 10-year peak runoff outflow of 8.06 cfs.

Detention Pond Summary:
Top of basin elevation = 609.00
Bottom of basin elevation = 605.00
100-yr storm storage volume = 20,946 cf @ 607.61

Water Quality Summary:
WQv req'd = 4,832 cf (0.111 ac-ft)
RRv min. req'd = 828 cf (0.019 ac-ft)
RRv provided - bioretention area = 3,760 cf (0.086 ac-ft)
WQv provided – bioretention area = 1,072 cf (0.025 ac-ft)
Total RRv + WQv provided = 3,760 cf + 1,072 cf = 4,832 cf (0.111 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 10-year vs. the proposed 25-year runoff
Comparison of the existing 100-year vs. the proposed 100-year runoff

RUNOFF SUMMARY

EVENT	EX. RUNOFF (cfs)*	PRO. RUNOFF (cfs)**	RESULT (cfs)
1-year	2.96	1.64	-1.32
10-year	8.06	2.96	-5.10
25-year	11.18	3.57	-7.61
100-year	17.58	4.57	-13.01

*Existing runoff flowrate is the total of the existing runoff flow rates from existing subcatchment areas 1S and 2S. See attached hydrocad printouts in the storm drainage calculations found in Attachment B for additional information.

**Proposed runoff flowrate is the rate controlled by the outlet pipe from the detention pond which discharges to an existing catch basin along Sheridan Drive as shown Attachment B of this report.

RUNOFF SUMMARY W/ NEIGHBORING PROPERTIES

EVENT	EX. RUNOFF (cfs)*	PRO. RUNOFF (cfs)**	RESULT (cfs)
1-year	3.66	1.66	-2.00
10-year	10.18	3.15	-7.03
25-year	14.19	3.90	-10.29
100-year	22.44	4.96	-17.48

*Existing runoff flowrate is the total of the existing runoff flow rates from existing subcatchment areas 1S and 2S and the assumed neighboring properties of 1.20 acres.

**Proposed runoff flowrate is the rate controlled by the outlet pipe from the detention pond which discharges to an existing catch basin along Sheridan Drive as shown Attachment B of this report.

Appendix A

Sanitary Sewer and Water Demand Calculations

CARMINA WOOD DESIGN
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 23-4091 Date: 4/22/2024
Project Name: Proposed Multi-Family
Project Address: 4774 & 4780 Sheridan Drive Amherst, NY
Subject: Sanitary Sewer & Water Demand Calcs
Sheet: 1 of 1

Sanitary Sewage Demand Calculations:

220 gal/d/unit x 22 units = 4,840 gpd *use 220 gallons per unit per day (2-bdrm)

Total Site Sanitary Demand: = 4,840 gpd

Find Peak Sanitary Demand:

Peaking Factor based on Population:

Total demand: 4,840 gpd / 100 gpcd = 48 per capita

Population (P) = 48 people

Peaking Factor : (18 +/P) / (4 + /P) where P is in thousands

Peaking Factor = 4.32

Peak Sanitary Demand = 4,840 x 4.32 = 20,897 gpd
= 0.021 MGD
= 0.032 cfs

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow = 20,897 gpd = 14.51 gpm

4:1 offset flow per NYSDEC requirements = 14.51 x 4 = 58.05 gpm req'd

Mitigation Credit = $250 / gpm

Mitigation Agreement Amount = $14,511.72

CARMINA WOOD DESIGN
487 MAIN STREET, SUITE 500
BUFFALO, NEW YORK, 14203
(716) 842-3165
FAX (716) 842-0263

Project No.: 23-4091 Date: 4/22/2024
Project Name: Proposed Multi-Family
Project Address: 4774 & 4780 Sheridan Drive Amherst, NY
Subject: Sanitary Sewer & Water Demand Calcs
Sheet: 2 of 2

Water Demand Calculations (domestic):

4,840 gpd x 1.1 = 5,324 gpd *use 110% of sewage demand

*use 1.8 peaking factor and assume a 12 hour day

5,324 gpm x 1day/12hr x 1hr/60min = 7.39 gpm

7.39 gpm x 1.8 = 13.31 gpm Q_{peak}

Headlosses:

Q_{peak} = 13.31 gpm
Pipe = 8 inch Ductile Iron C = 140
Length = 25 LF (approx. distance from tap to RPZ in hot box)

$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(25)(13.31)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.00 \text{ ft} = 0.00 \text{ psi}$$

Δ elev = 0 ft = 0.00 psi
Loss through meter = 1 psi
Loss through RPZ = 12 psi
Total Losses = 13.0 psi
Static Pressure = 84 psi (per ECWA)
Residual Pressure Following RPZ = 84 - 13.0 = 71.0 psi (available after rpz & meter)

Water Demand Calculations (fire):

Proposed Mixed Use

Q = 1,000 gpd

Headlosses:

Q_{peak} = 1000 gpm
Pipe = 8 inch Ductile Iron C = 140
Length = 25 LF (approx. distance from tap to RPDA in hot box)

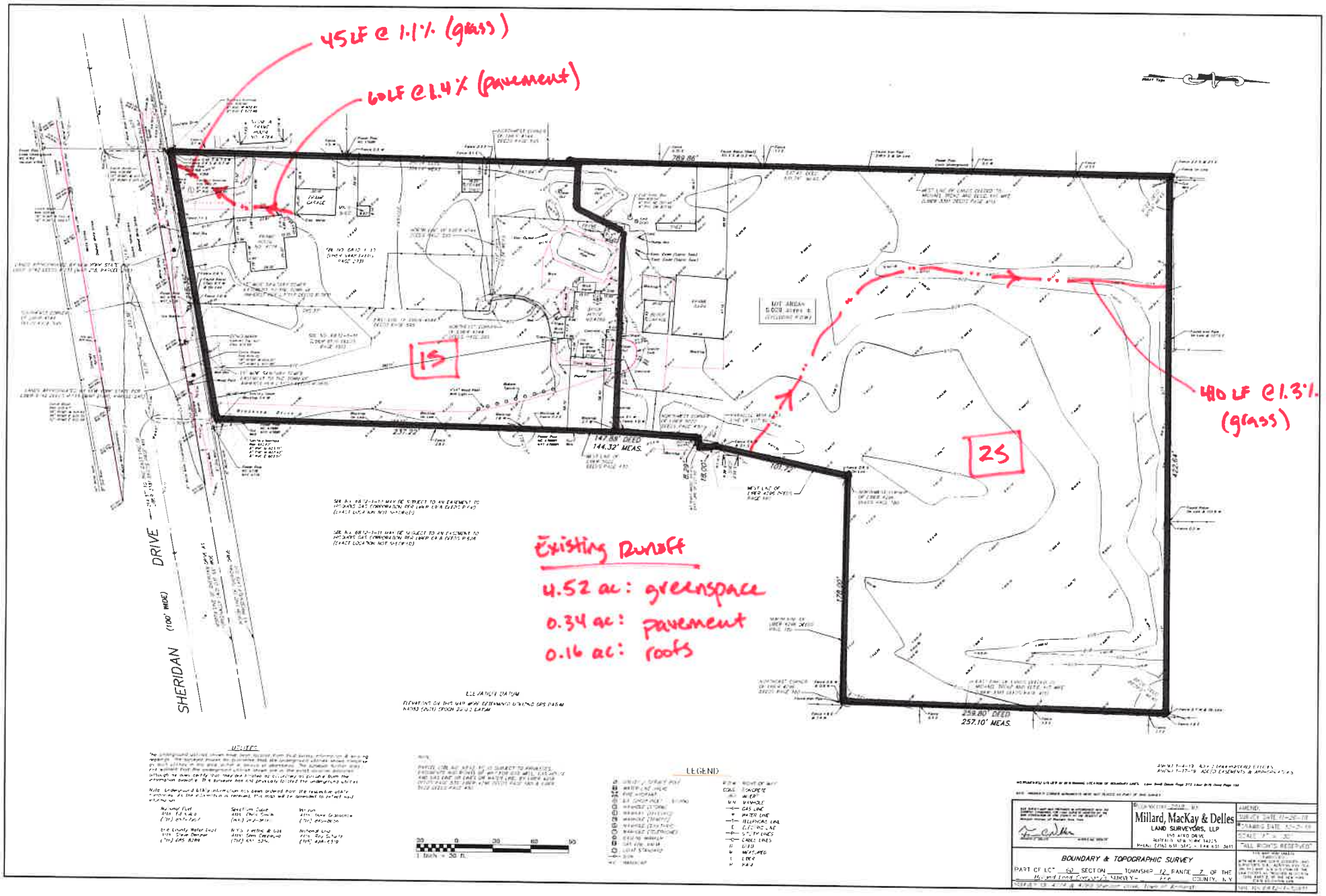
$$H_L = \frac{10.44\ L\ Q^{1.85}}{C^{1.85}\ D^{4.866}} = \frac{10.44(25)(1000)^{1.85}}{(140)^{1.85}\ (8)^{4.866}} = 0.40 \text{ ft} = 0.17 \text{ psi}$$

Δ elev = 0 ft = 0.00 psi
Loss Through RPZ = 12.0 psi
Total Losses = 12.2 psi
Static Pressure = 84.0 psi (per ECWA)
Residual Pressure after RPDA = 84 - 12.2 = 71.8 psi

Appendix B

Storm Sewer System Drainage Calculations

Existing Runoff

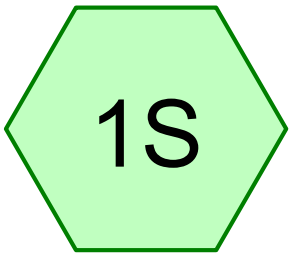

45 LF @ 1.1% (grass)
60 LF @ 1.4% (pavement)
410 LF @ 1.3% (grass)
15
25
SHERIDAN DRIVE (100' WIDE)
Existing Runoff
4.52 ac: greenspace
0.34 ac: pavement
0.16 ac: roofs
LEGEND
Millard, MacKay & Delles
LAND SURVEYORS, LLP
BOUNDARY & TOPOGRAPHIC SURVEY

Events for Subcatchment 1S: Existing

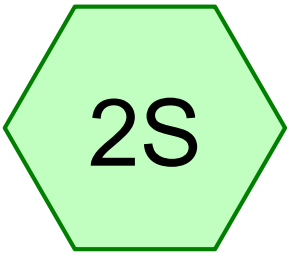
Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-Year	1.87	1.69	3,795	0.65
2-Year	2.20	2.31	5,161	0.89
5-Year	2.69	3.30	7,349	1.27
10-Year	3.14	4.25	9,480	1.63
25-Year	3.84	5.77	12,956	2.23
50-Year	4.48	7.18	16,254	2.80
100-Year	**5.23**	**8.85**	**20,220**	**3.48**

Events for Subcatchment 2S: Existing

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-Year	1.87	1.27	6,503	0.52
2-Year	2.20	1.87	9,124	0.73
5-Year	2.69	2.85	13,409	1.08
10-Year	3.14	3.81	17,654	1.42
25-Year	3.84	5.41	24,676	1.99
50-Year	4.48	6.92	31,419	2.53
100-Year	**5.23**	**8.73**	**39,596**	**3.19**



Existing



Existing

Subcat Reach Pond Link

Routing Diagram for 23-4091 existing
Prepared by Carmina Wood Morris, PC, Printed 4/21/2024

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	1.87	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.14	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.84	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.23	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
196,891	80	>75% Grass cover, Good, HSG D (1S, 2S)
14,810	98	Paved parking, HSG D (1S, 2S)
6,970	98	Roofs, HSG D (1S, 2S)
218,671	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
218,671	HSG D	1S, 2S
0	Other	
218,671		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	196,891	0	196,891	>75% Grass cover, Good	
0	0	0	14,810	0	14,810	Paved parking	
0	0	0	6,970	0	6,970	Roofs	
0	**0**	**0**	**218,671**	**0**	**218,671**	**TOTAL AREA**	

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

Subcatchment1S: Existing Runoff Area=1.600 ac 21.88% Impervious Runoff Depth=0.65"
Flow Length=105' Tc=8.5 min CN=84 Runoff=1.69 cfs 3,795 cf

Subcatchment2S: Existing Runoff Area=3.420 ac 4.39% Impervious Runoff Depth=0.52"
Flow Length=410' Slope=0.0130 '/' Tc=34.0 min CN=81 Runoff=1.27 cfs 6,503 cf

Total Runoff Area = 218,671 sf Runoff Volume = 10,297 cf Average Runoff Depth = 0.57"
90.04% Pervious = 196,891 sf 9.96% Impervious = 21,780 sf

Summary for Subcatchment 1S: Existing

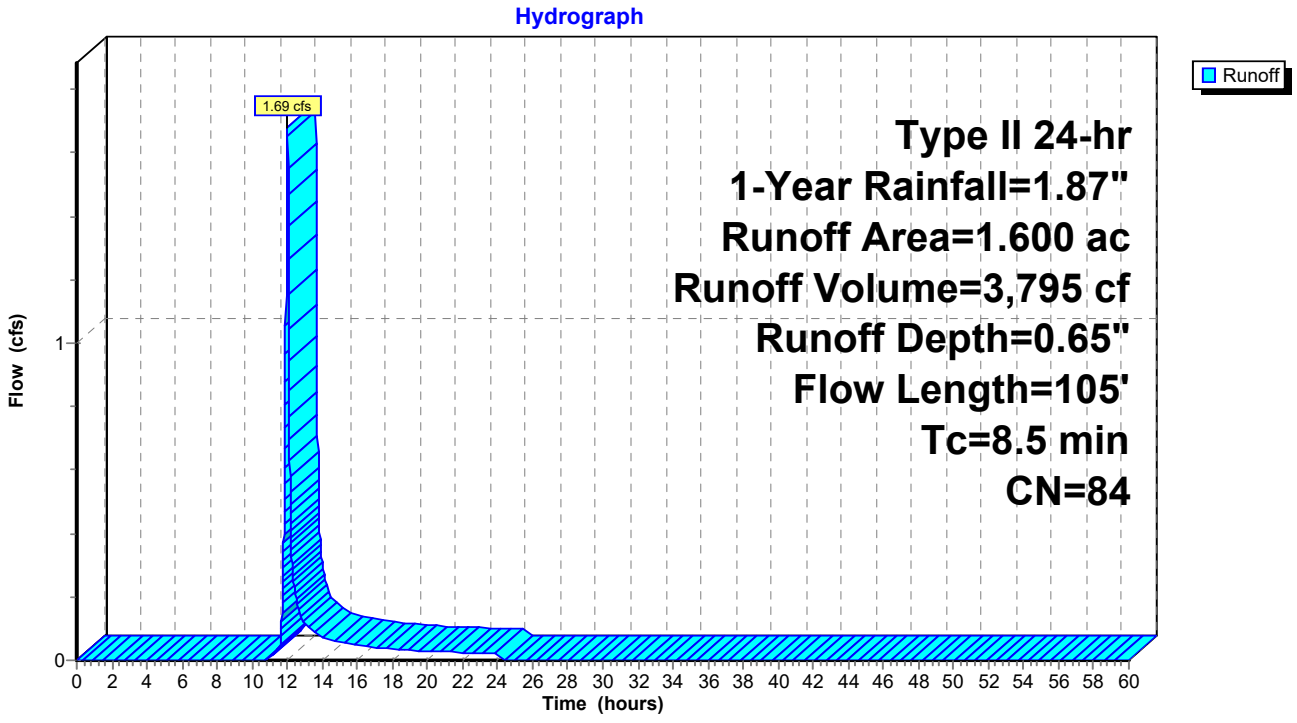
Runoff = 1.69 cfs @ 12.01 hrs, Volume= 3,795 cf, Depth= 0.65"

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=1.87"

Area (ac)	CN	Description
1.250	80	>75% Grass cover, Good, HSG D
0.250	98	Paved parking, HSG D
0.100	98	Roofs, HSG D
1.600	84	Weighted Average
1.250		78.13% Pervious Area
0.350		21.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0140	0.95		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
7.4	45	0.0110	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
8.5	105	Total			

Subcatchment 1S: Existing



Summary for Subcatchment 2S: Existing

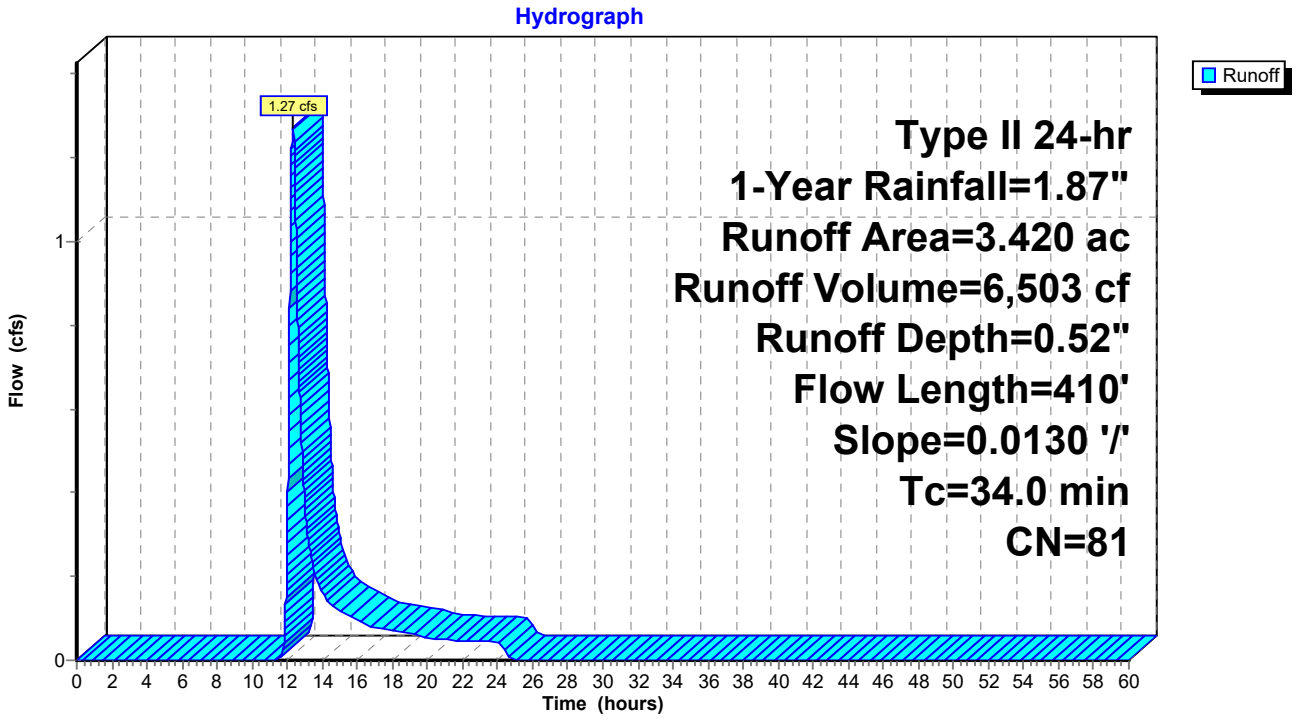
Runoff = 1.27 cfs @ 12.32 hrs, Volume= 6,503 cf, Depth= 0.52"

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 1-Year Rainfall=1.87"

Area (ac)	CN	Description
3.270	80	>75% Grass cover, Good, HSG D
0.090	98	Paved parking, HSG D
0.060	98	Roofs, HSG D
3.420	81	Weighted Average
3.270		95.61% Pervious Area
0.150		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.7	300	0.0130	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.3	110	0.0130	0.80		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
34.0	410	Total			

Subcatchment 2S: Existing



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

Subcatchment1S: Existing Runoff Area=1.600 ac 21.88% Impervious Runoff Depth=1.63"
Flow Length=105' Tc=8.5 min CN=84 Runoff=4.25 cfs 9,480 cf

Subcatchment2S: Existing Runoff Area=3.420 ac 4.39% Impervious Runoff Depth=1.42"
Flow Length=410' Slope=0.0130 '/' Tc=34.0 min CN=81 Runoff=3.81 cfs 17,654 cf

Total Runoff Area = 218,671 sf Runoff Volume = 27,133 cf Average Runoff Depth = 1.49"
90.04% Pervious = 196,891 sf 9.96% Impervious = 21,780 sf

Summary for Subcatchment 1S: Existing

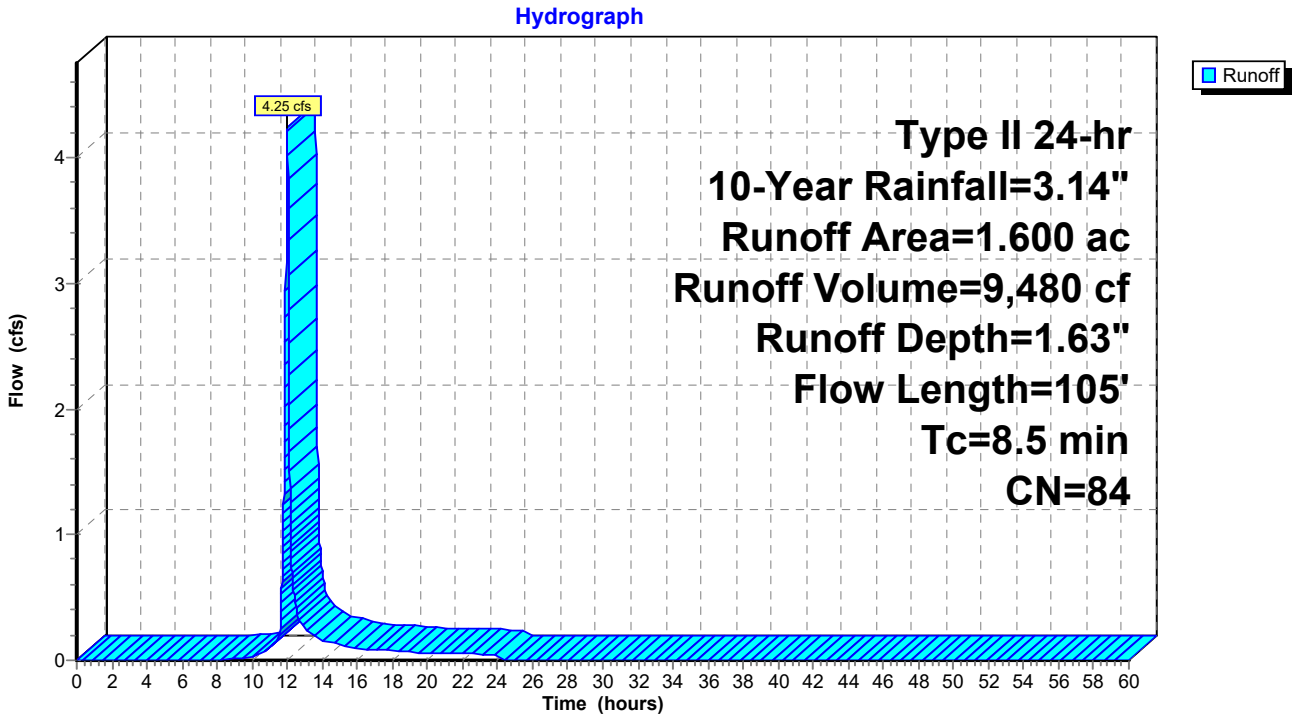
Runoff = 4.25 cfs @ 12.00 hrs, Volume= 9,480 cf, Depth= 1.63"

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=3.14"

Area (ac)	CN	Description
1.250	80	>75% Grass cover, Good, HSG D
0.250	98	Paved parking, HSG D
0.100	98	Roofs, HSG D
1.600	84	Weighted Average
1.250		78.13% Pervious Area
0.350		21.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0140	0.95		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
7.4	45	0.0110	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
8.5	105	Total			

Subcatchment 1S: Existing



Summary for Subcatchment 2S: Existing

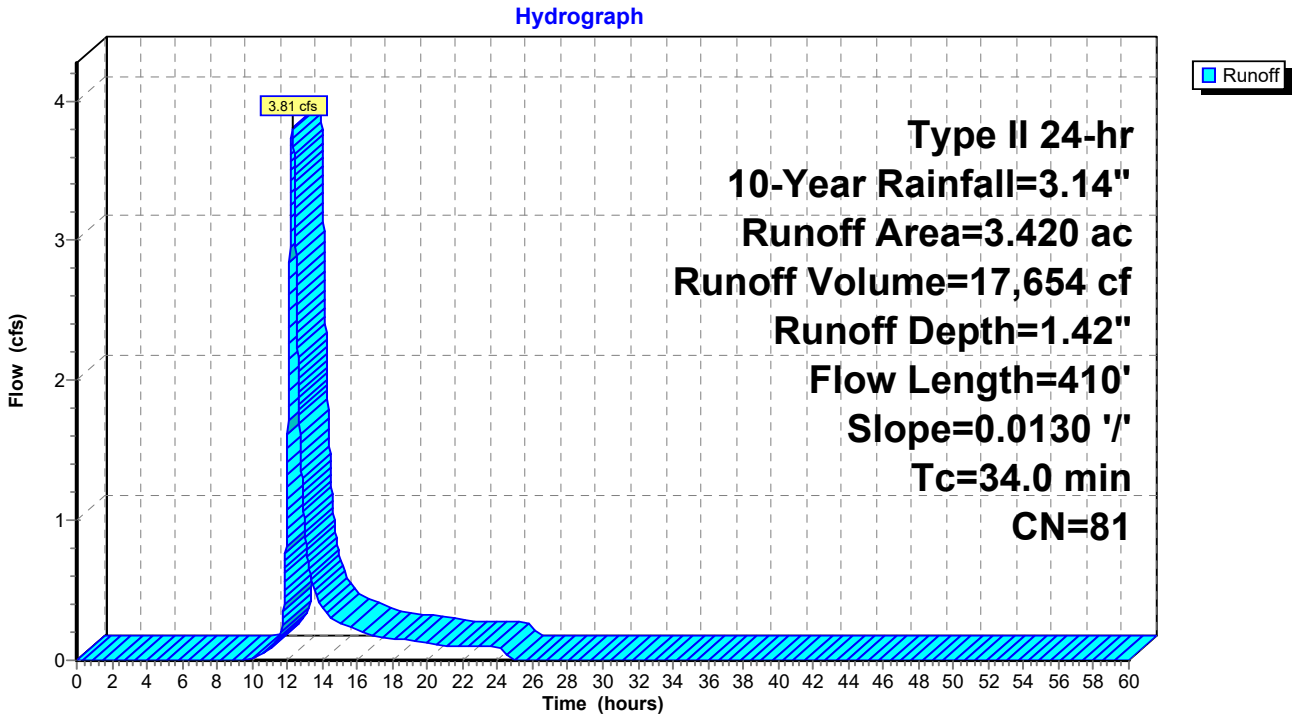
Runoff = 3.81 cfs @ 12.28 hrs, Volume= 17,654 cf, Depth= 1.42"

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 10-Year Rainfall=3.14"

Area (ac)	CN	Description
3.270	80	>75% Grass cover, Good, HSG D
0.090	98	Paved parking, HSG D
0.060	98	Roofs, HSG D
3.420	81	Weighted Average
3.270		95.61% Pervious Area
0.150		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.7	300	0.0130	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.3	110	0.0130	0.80		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
34.0	410	Total			

Subcatchment 2S: Existing



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

Subcatchment1S: Existing Runoff Area=1.600 ac 21.88% Impervious Runoff Depth=2.23"
Flow Length=105' Tc=8.5 min CN=84 Runoff=5.77 cfs 12,956 cf

Subcatchment2S: Existing Runoff Area=3.420 ac 4.39% Impervious Runoff Depth=1.99"
Flow Length=410' Slope=0.0130 '/' Tc=34.0 min CN=81 Runoff=5.41 cfs 24,676 cf

Total Runoff Area = 218,671 sf Runoff Volume = 37,632 cf Average Runoff Depth = 2.07"
90.04% Pervious = 196,891 sf 9.96% Impervious = 21,780 sf

Summary for Subcatchment 1S: Existing

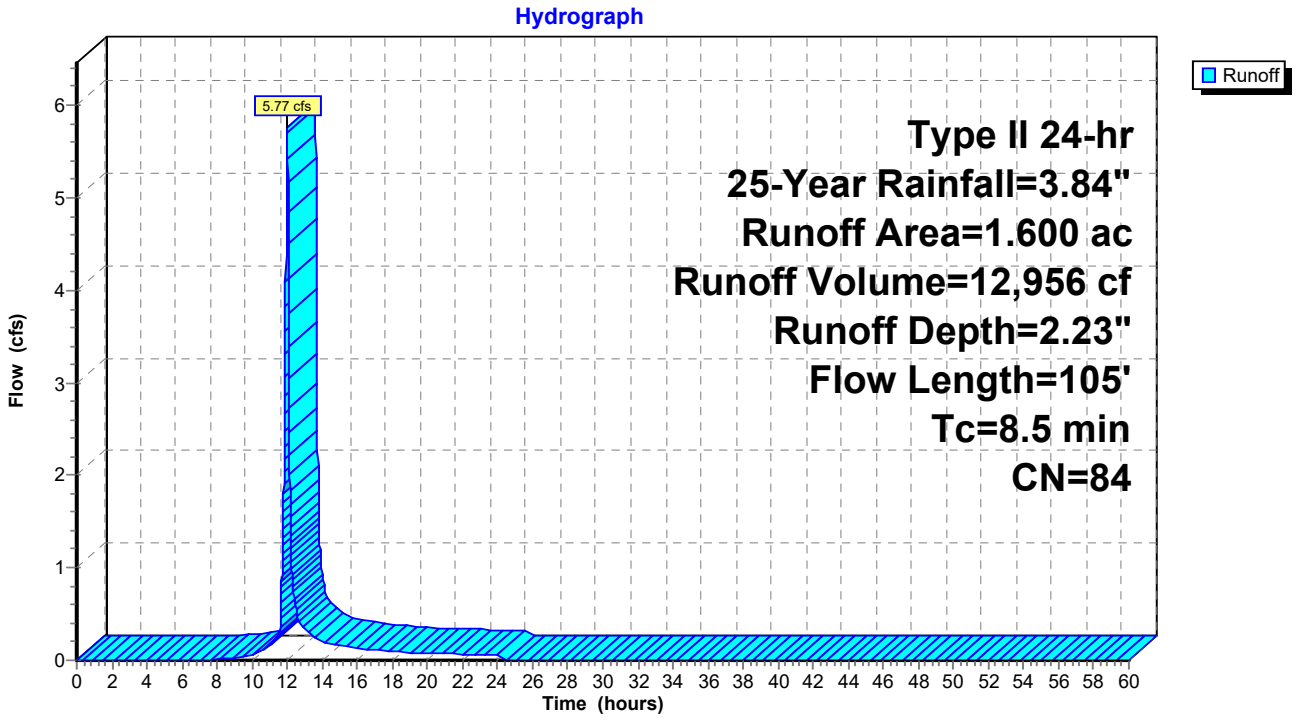
Runoff = 5.77 cfs @ 12.00 hrs, Volume= 12,956 cf, Depth= 2.23"

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=3.84"

Area (ac)	CN	Description
1.250	80	>75% Grass cover, Good, HSG D
0.250	98	Paved parking, HSG D
0.100	98	Roofs, HSG D
1.600	84	Weighted Average
1.250		78.13% Pervious Area
0.350		21.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0140	0.95		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
7.4	45	0.0110	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
8.5	105	Total			

Subcatchment 1S: Existing



Summary for Subcatchment 2S: Existing

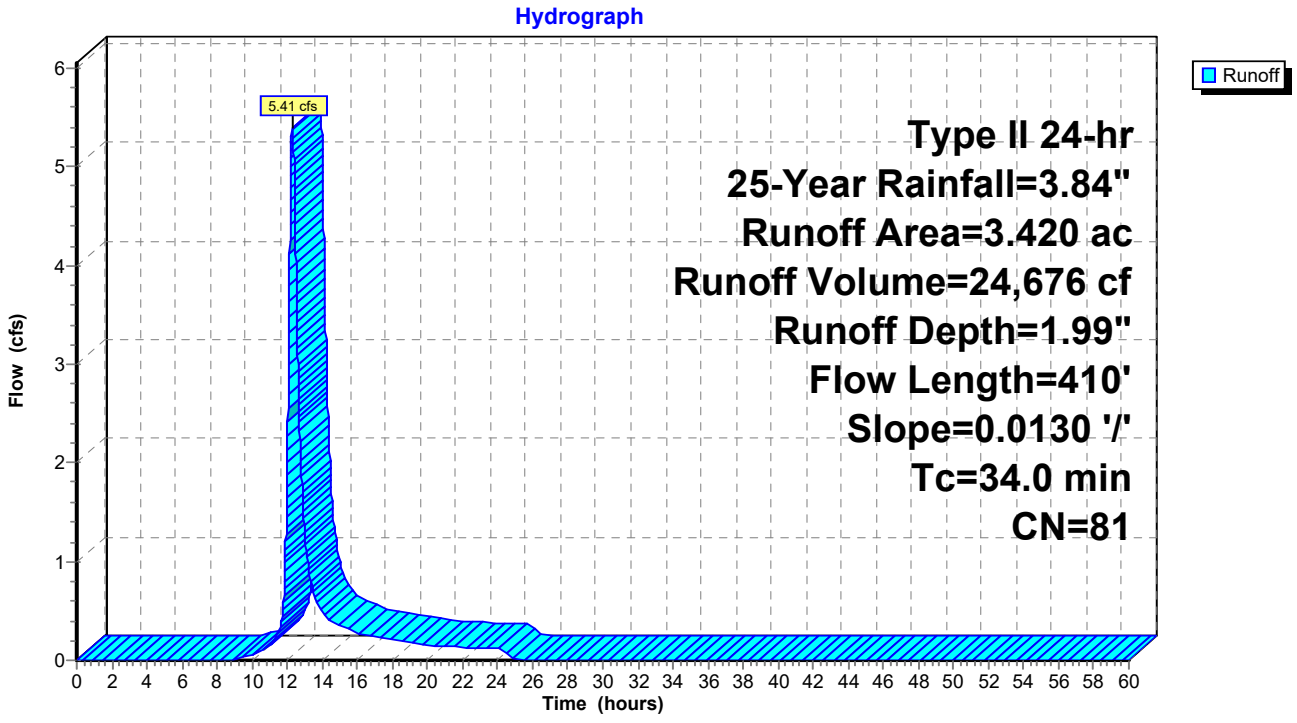
Runoff = 5.41 cfs @ 12.28 hrs, Volume= 24,676 cf, Depth= 1.99"

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=3.84"

Area (ac)	CN	Description
3.270	80	>75% Grass cover, Good, HSG D
0.090	98	Paved parking, HSG D
0.060	98	Roofs, HSG D
3.420	81	Weighted Average
3.270		95.61% Pervious Area
0.150		4.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.7	300	0.0130	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.3	110	0.0130	0.80		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
34.0	410	Total			

Subcatchment 2S: Existing



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

Subcatchment1S: Existing Runoff Area=1.600 ac 21.88% Impervious Runoff Depth=3.48"
Flow Length=105' Tc=8.5 min CN=84 Runoff=8.85 cfs 20,220 cf

Subcatchment2S: Existing Runoff Area=3.420 ac 4.39% Impervious Runoff Depth=3.19"
Flow Length=410' Slope=0.0130 '/' Tc=34.0 min CN=81 Runoff=8.73 cfs 39,596 cf

Total Runoff Area = 218,671 sf Runoff Volume = 59,816 cf Average Runoff Depth = 3.28"
90.04% Pervious = 196,891 sf 9.96% Impervious = 21,780 sf

Summary for Subcatchment 1S: Existing

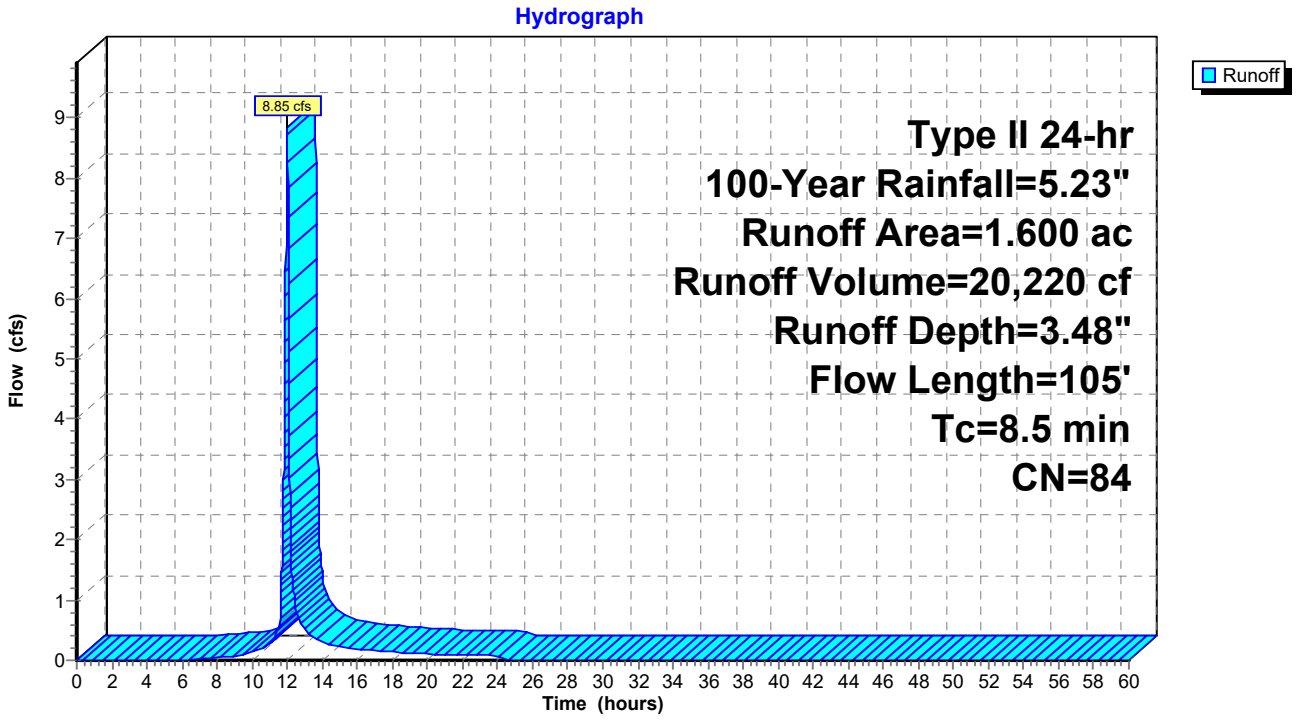
Runoff = 8.85 cfs @ 12.00 hrs, Volume= 20,220 cf, Depth= 3.48"

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=5.23"

Area (ac)	CN	Description
1.250	80	>75% Grass cover, Good, HSG D
0.250	98	Paved parking, HSG D
0.100	98	Roofs, HSG D
1.600	84	Weighted Average
1.250		78.13% Pervious Area
0.350		21.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	60	0.0140	0.95		**Sheet Flow, pavement** Smooth surfaces n= 0.011 P2= 2.50"
7.4	45	0.0110	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
8.5	105	Total			

Subcatchment 1S: Existing



Summary for Subcatchment 2S: Existing

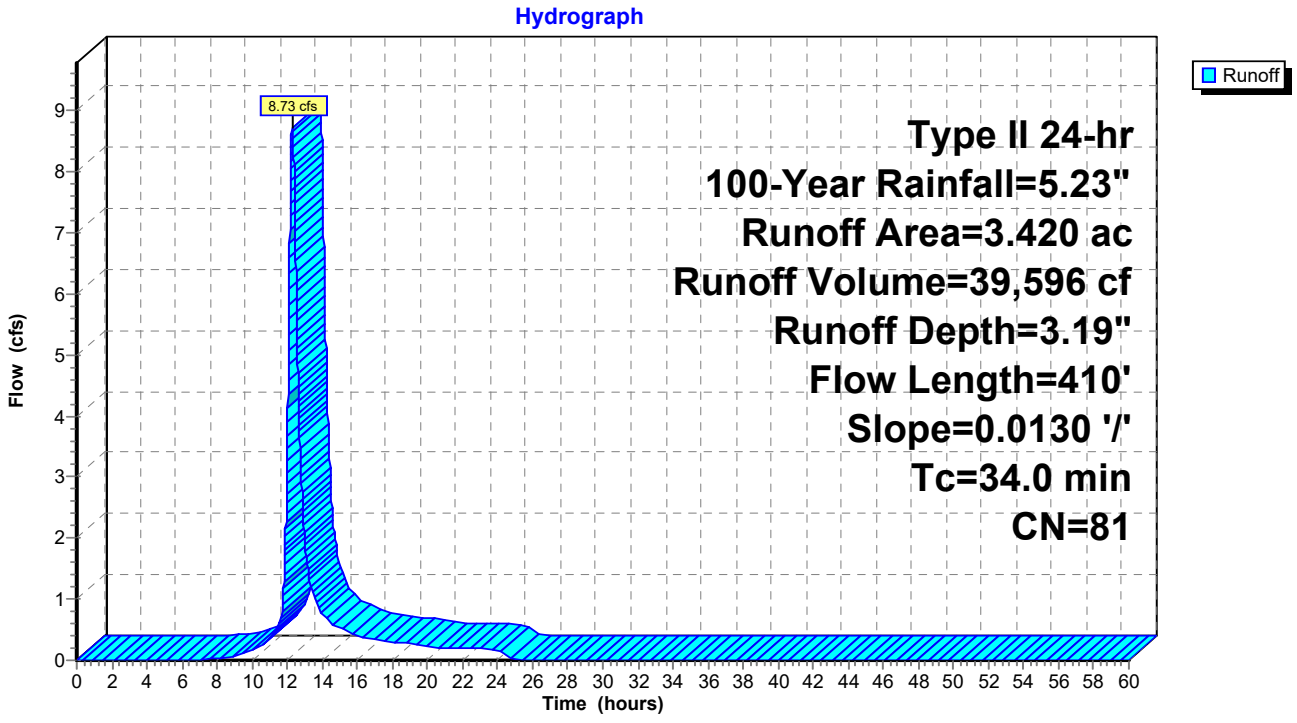
Runoff = 8.73 cfs @ 12.28 hrs, Volume= 39,596 cf, Depth= 3.19"

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=5.23"

Area (ac)	CN	Description
3.270	80	>75% Grass cover, Good, HSG D
0.090	98	Paved parking, HSG D
0.060	98	Roofs, HSG D
3.420	81	Weighted Average
3.270		95.61% Pervious Area
0.150		4.39% Impervious Area

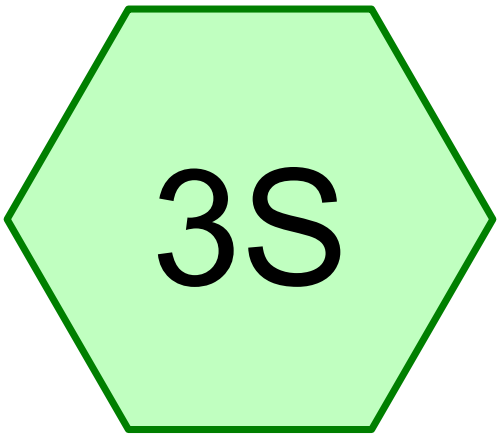
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.7	300	0.0130	0.16		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.3	110	0.0130	0.80		**Shallow Concentrated Flow, grass** Short Grass Pasture Kv= 7.0 fps
34.0	410	Total			

Subcatchment 2S: Existing



Events for Subcatchment 3S: Neighbors

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
1-Year	1.87	0.70	2,113	0.48
2-Year	2.20	1.04	2,997	0.69
5-Year	2.69	1.58	4,455	1.02
10-Year	3.14	2.12	5,907	1.36
25-Year	3.84	3.01	8,321	1.91
50-Year	4.48	3.85	10,648	2.44
100-Year	**5.23**	**4.86**	**13,479**	**3.09**



Neighbors

Subcat Reach Pond Link

Routing Diagram for 23-4091 existing with neighbors
Prepared by Carmina Wood Morris, PC, Printed 4/21/2024

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	1.87	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.14	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.84	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.23	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
52,272	80	>75% Grass cover, Good, HSG D (3S)
52,272	**80**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
52,272	HSG D	3S
0	Other	
52,272		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	52,272	0	52,272	>75% Grass cover, Good	
0	**0**	**0**	**52,272**	**0**	**52,272**	**TOTAL AREA**	

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

Subcatchment3S: Neighbors Runoff Area=1.200 ac 0.00% Impervious Runoff Depth=0.48"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=0.70 cfs 2,113 cf

Total Runoff Area = 52,272 sf Runoff Volume = 2,113 cf Average Runoff Depth = 0.48"
100.00% Pervious = 52,272 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 3S: Neighbors

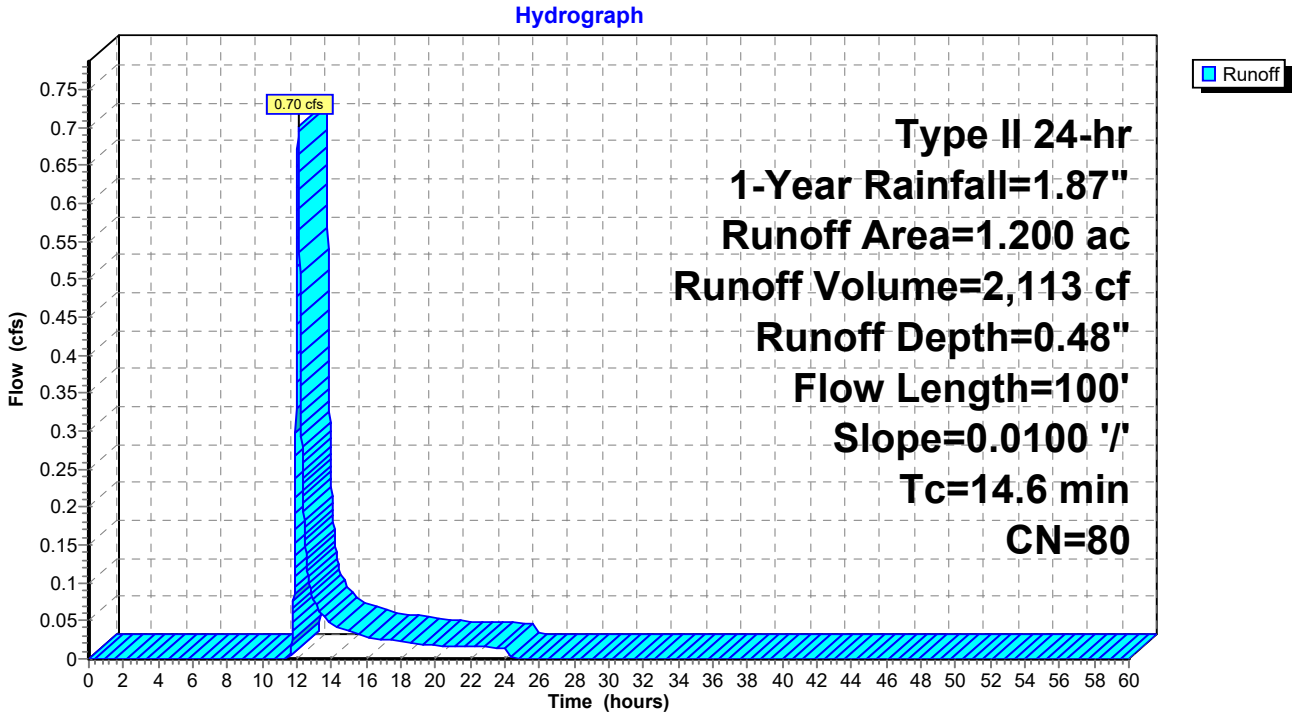
Runoff = 0.70 cfs @ 12.08 hrs, Volume= 2,113 cf, Depth= 0.48"

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=1.87"

Area (ac)	CN	Description
1.200	80	>75% Grass cover, Good, HSG D
1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors



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

Subcatchment3S: Neighbors Runoff Area=1.200 ac 0.00% Impervious Runoff Depth=1.36"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=2.12 cfs 5,907 cf

Total Runoff Area = 52,272 sf Runoff Volume = 5,907 cf Average Runoff Depth = 1.36"
100.00% Pervious = 52,272 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 3S: Neighbors

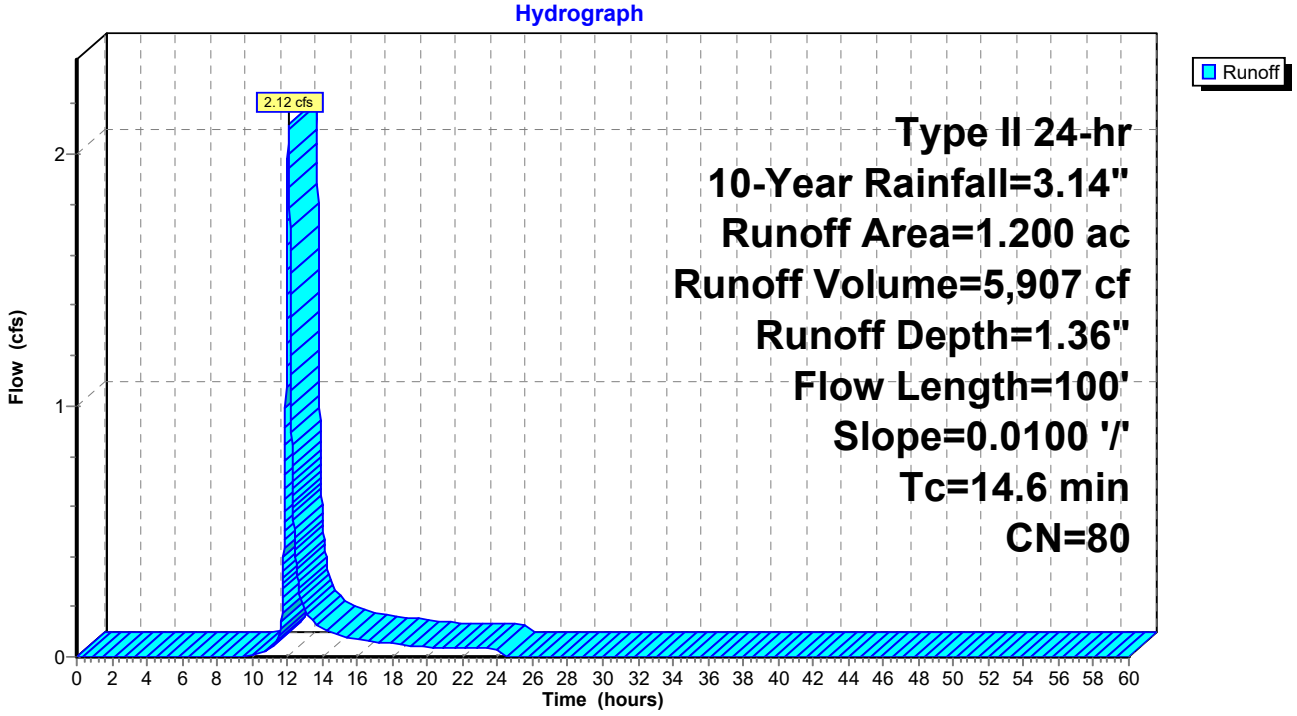
Runoff = 2.12 cfs @ 12.07 hrs, Volume= 5,907 cf, Depth= 1.36"

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 10-Year Rainfall=3.14"

Area (ac)	CN	Description
1.200	80	>75% Grass cover, Good, HSG D
1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors



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

Subcatchment3S: Neighbors Runoff Area=1.200 ac 0.00% Impervious Runoff Depth=1.91"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=3.01 cfs 8,321 cf

Total Runoff Area = 52,272 sf Runoff Volume = 8,321 cf Average Runoff Depth = 1.91"
100.00% Pervious = 52,272 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 3S: Neighbors

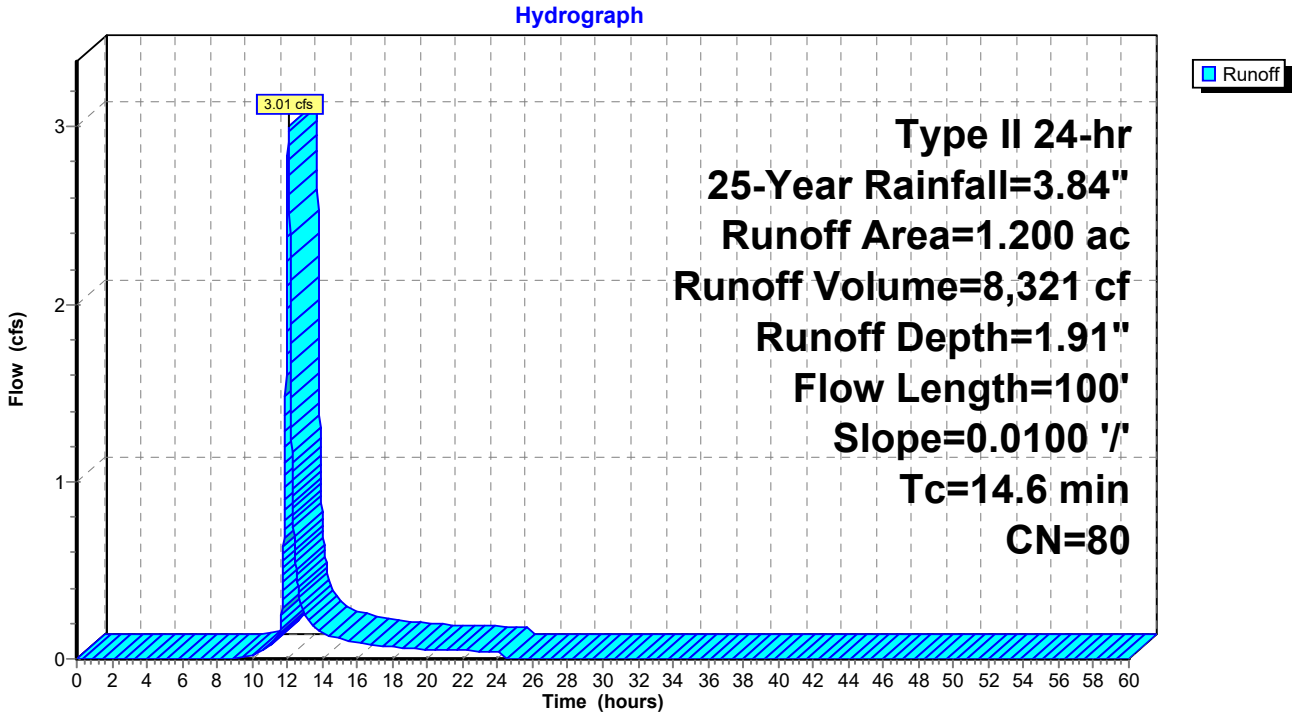
Runoff = 3.01 cfs @ 12.07 hrs, Volume= 8,321 cf, Depth= 1.91"

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=3.84"

Area (ac)	CN	Description
1.200	80	>75% Grass cover, Good, HSG D
1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors



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

Subcatchment3S: Neighbors Runoff Area=1.200 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=4.86 cfs 13,479 cf

Total Runoff Area = 52,272 sf Runoff Volume = 13,479 cf Average Runoff Depth = 3.09"
100.00% Pervious = 52,272 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 3S: Neighbors

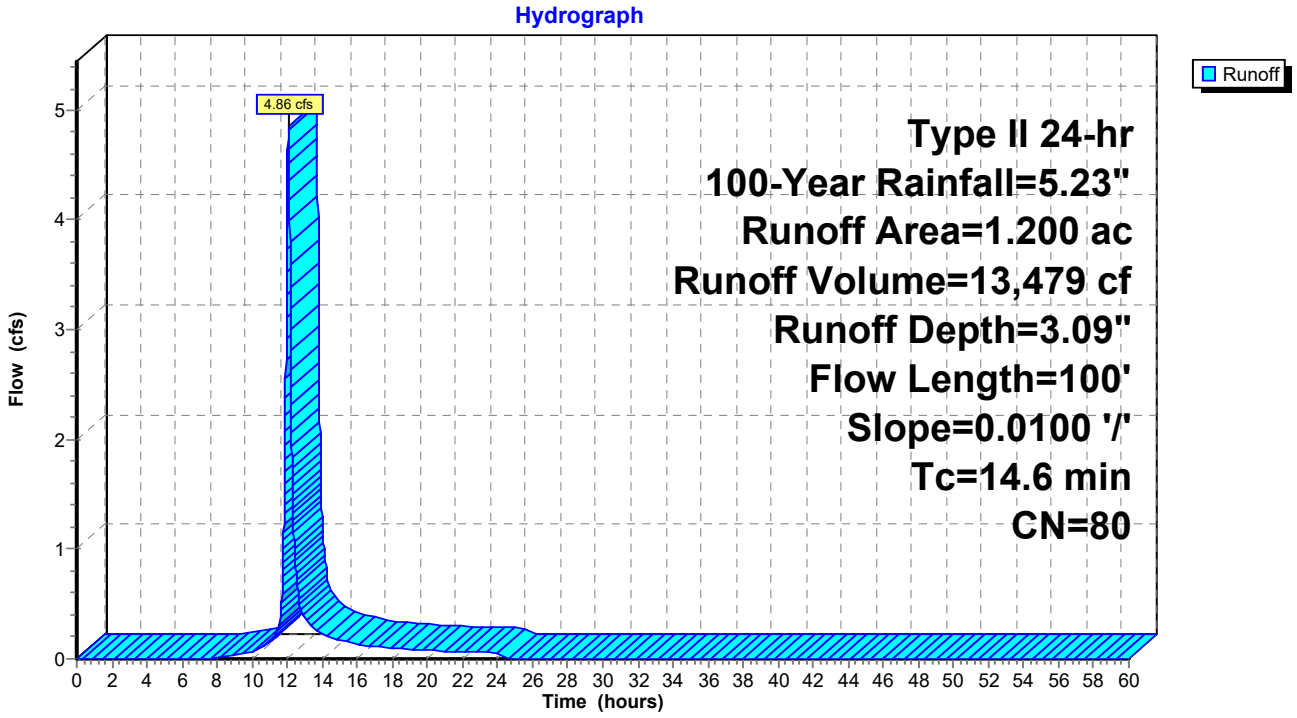
Runoff = 4.86 cfs @ 12.07 hrs, Volume= 13,479 cf, Depth= 3.09"

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=5.23"

Area (ac)	CN	Description
1.200	80	>75% Grass cover, Good, HSG D
1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

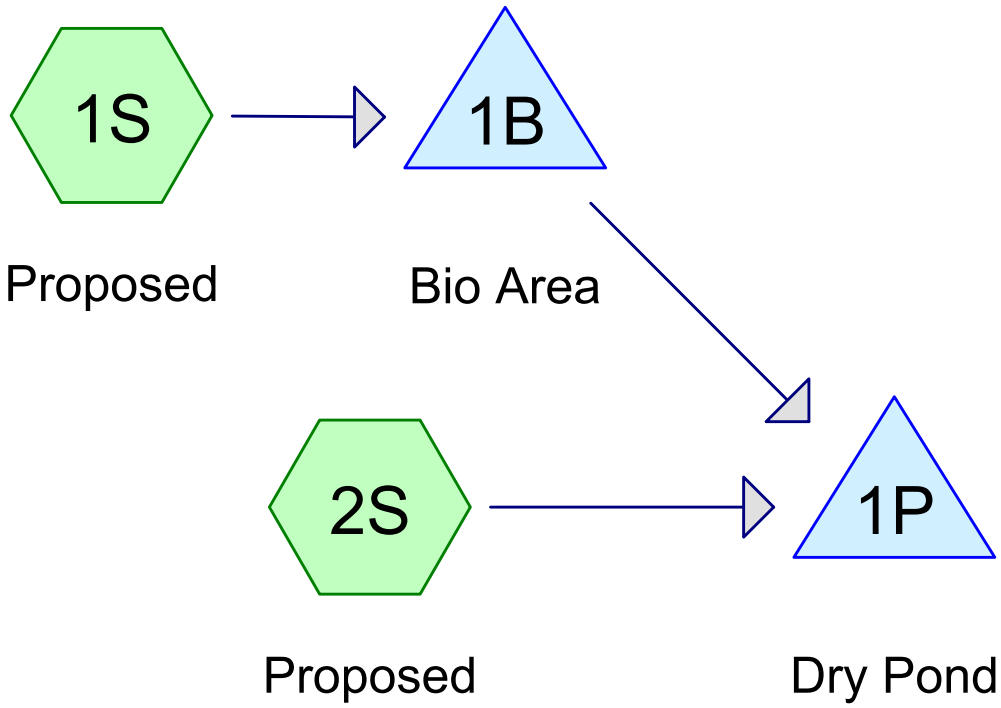
Subcatchment 3S: Neighbors



Proposed Runoff

Events for Pond 1P: Dry Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	2.79	1.64	605.64	3,387
2-Year	3.64	2.10	605.82	4,507
5-Year	4.95	2.47	606.11	6,585
10-Year	6.18	2.96	606.38	8,713
25-Year	8.11	3.57	606.78	12,248
50-Year	9.88	4.04	607.15	15,877
100-Year	**12.31**	**4.57**	**607.61**	**20,946**



Subcat Reach Pond Link

Routing Diagram for 23-4091 proposed
Prepared by Carmina Wood Morris, PC, Printed 4/21/2024

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	1.87	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.14	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.84	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.23	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
121,097	80	>75% Grass cover, Good, HSG D (1S, 2S)
98,010	98	Paved parking, HSG D (2S)
219,107	**88**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
219,107	HSG D	1S, 2S
0	Other	
219,107		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	121,097	0	121,097	>75% Grass cover, Good	
0	0	0	98,010	0	98,010	Paved parking	
0	**0**	**0**	**219,107**	**0**	**219,107**	**TOTAL AREA**	

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	2S	0.00	0.00	310.0	0.0030	0.013	0.0	12.0	0.0
2	1B	606.50	605.60	180.0	0.0050	0.013	0.0	6.0	0.0
3	1P	604.75	604.50	80.0	0.0031	0.013	0.0	12.0	0.0

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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=0.48"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=0.62 cfs 1,109 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=0.92"
Flow Length=585' Tc=42.4 min CN=89 Runoff=2.76 cfs 14,713 cf

Pond 1B: Bio Area Peak Elev=609.09' Storage=451 cf Inflow=0.62 cfs 1,109 cf
Outflow=0.03 cfs 1,109 cf

Pond 1P: Dry Pond Peak Elev=605.64' Storage=3,387 cf Inflow=2.79 cfs 15,823 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=1.64 cfs 15,823 cf

Total Runoff Area = 219,107 sf Runoff Volume = 15,823 cf Average Runoff Depth = 0.87"
55.27% Pervious = 121,097 sf 44.73% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

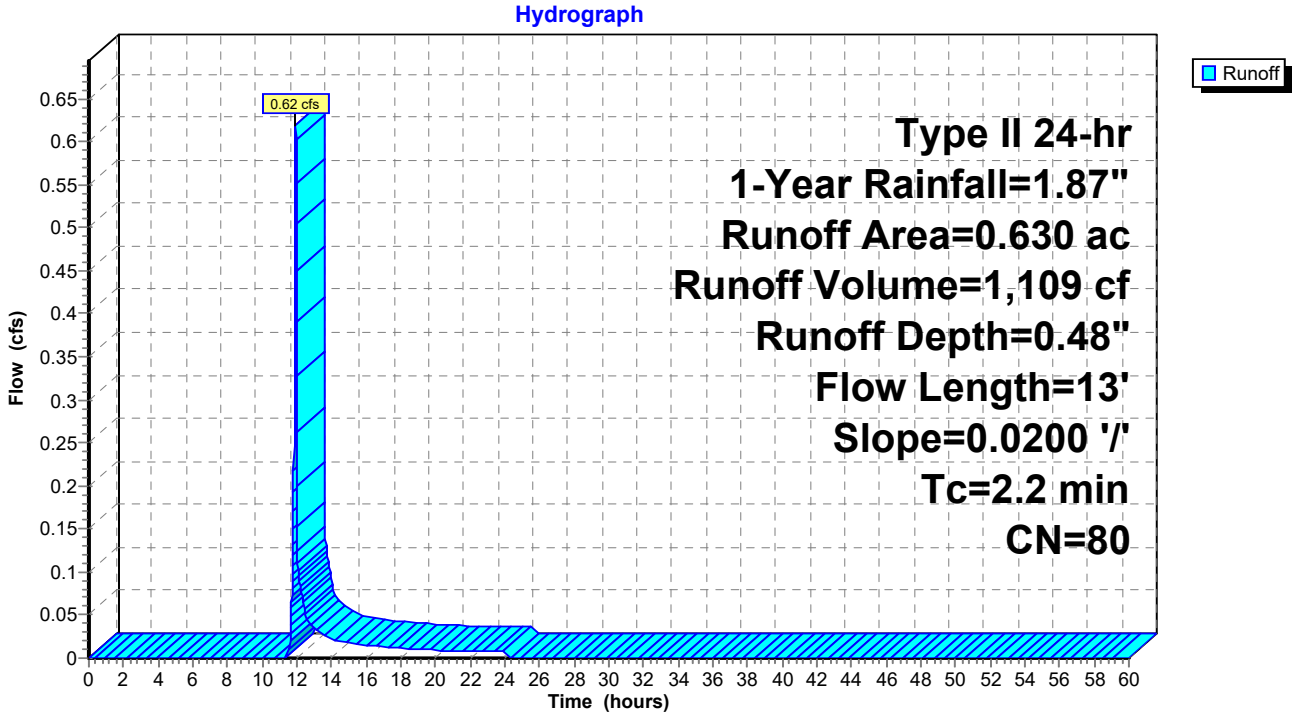
Runoff = 0.62 cfs @ 11.93 hrs, Volume= 1,109 cf, Depth= 0.48"
Routed to Pond 1B : Bio Area

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=1.87"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 141% of capacity of segment #2

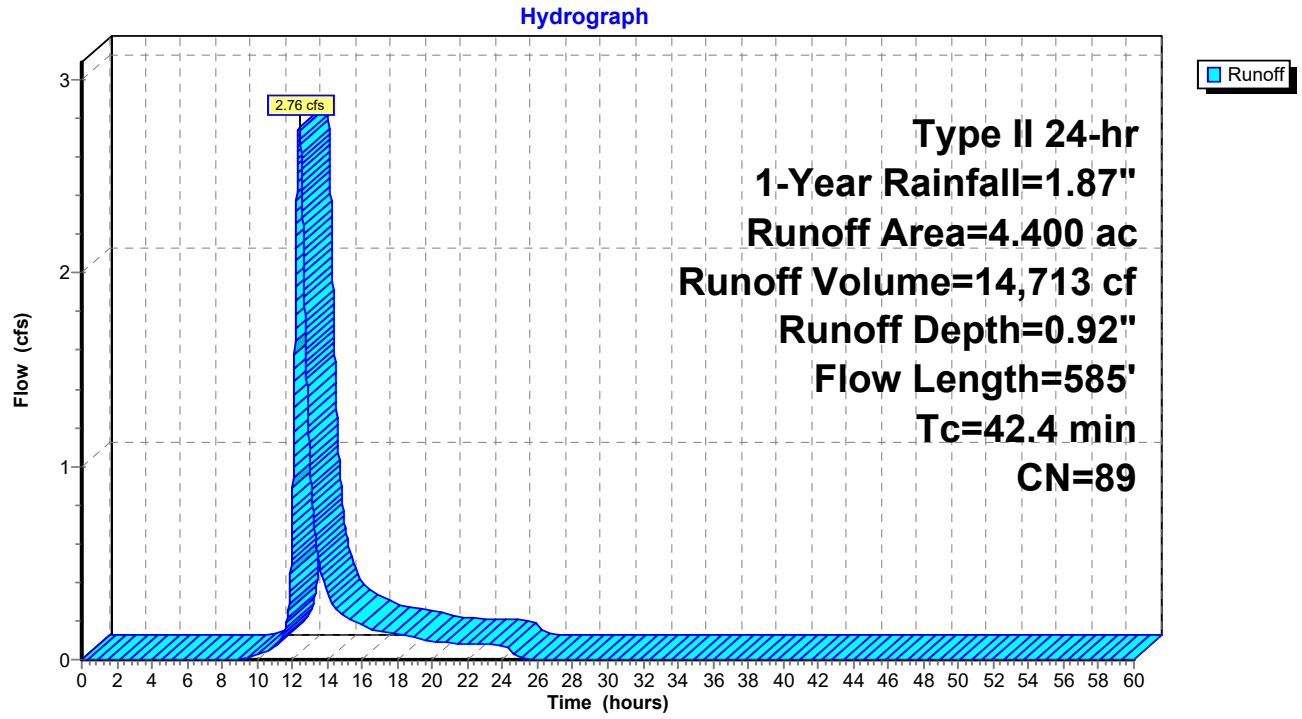
Runoff = 2.76 cfs @ 12.39 hrs, Volume= 14,713 cf, Depth= 0.92"
Routed to Pond 1P : Dry Pond

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=1.87"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Pond 1B: Bio Area

Inflow Area = 27,443 sf, 0.00% Impervious, Inflow Depth = 0.48" for 1-Year event
Inflow = 0.62 cfs @ 11.93 hrs, Volume= 1,109 cf
Outflow = 0.03 cfs @ 13.29 hrs, Volume= 1,109 cf, Atten= 95%, Lag= 81.6 min
Primary = 0.03 cfs @ 13.29 hrs, Volume= 1,109 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.09' @ 13.29 hrs Surf.Area= 5,288 sf Storage= 451 cf

Plug-Flow detention time= 148.1 min calculated for 1,109 cf (100% of inflow)
Center-of-Mass det. time= 148.1 min (1,017.1 - 869.0)

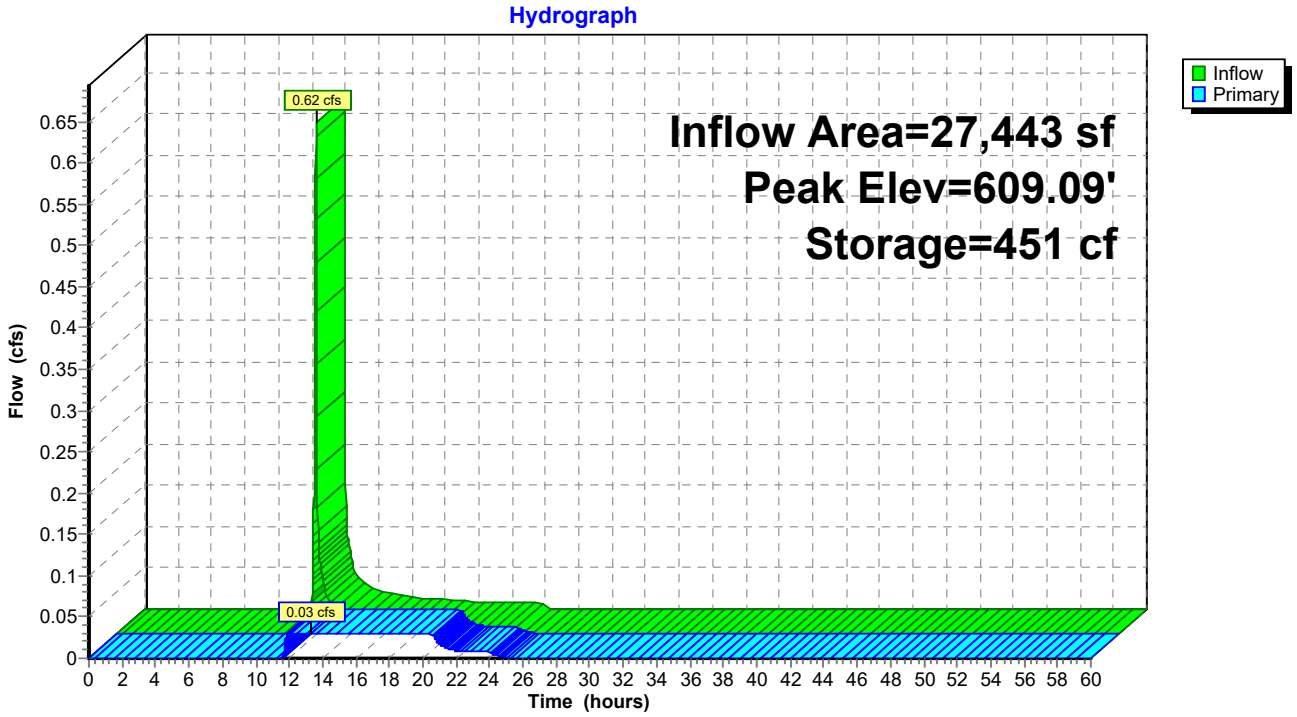
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=0.03 cfs @ 13.29 hrs HW=609.09' (Free Discharge)
└**1=Culvert** (Passes 0.03 cfs of 1.37 cfs potential flow)
  ├**2=Orifice/Grate** (Controls 0.00 cfs)
  └**3=Exfiltration** (Controls 0.03 cfs)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 OUTLET by 0.04'

Inflow Area = 219,107 sf, 44.73% Impervious, Inflow Depth = 0.87" for 1-Year event
Inflow = 2.79 cfs @ 12.39 hrs, Volume= 15,823 cf
Outflow = 1.64 cfs @ 12.77 hrs, Volume= 15,823 cf, Atten= 41%, Lag= 22.6 min
Primary = 1.64 cfs @ 12.77 hrs, Volume= 15,823 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 605.64' @ 12.77 hrs Surf.Area= 6,159 sf Storage= 3,387 cf

Plug-Flow detention time= 26.4 min calculated for 15,823 cf (100% of inflow)
Center-of-Mass det. time= 26.4 min (902.1 - 875.7)

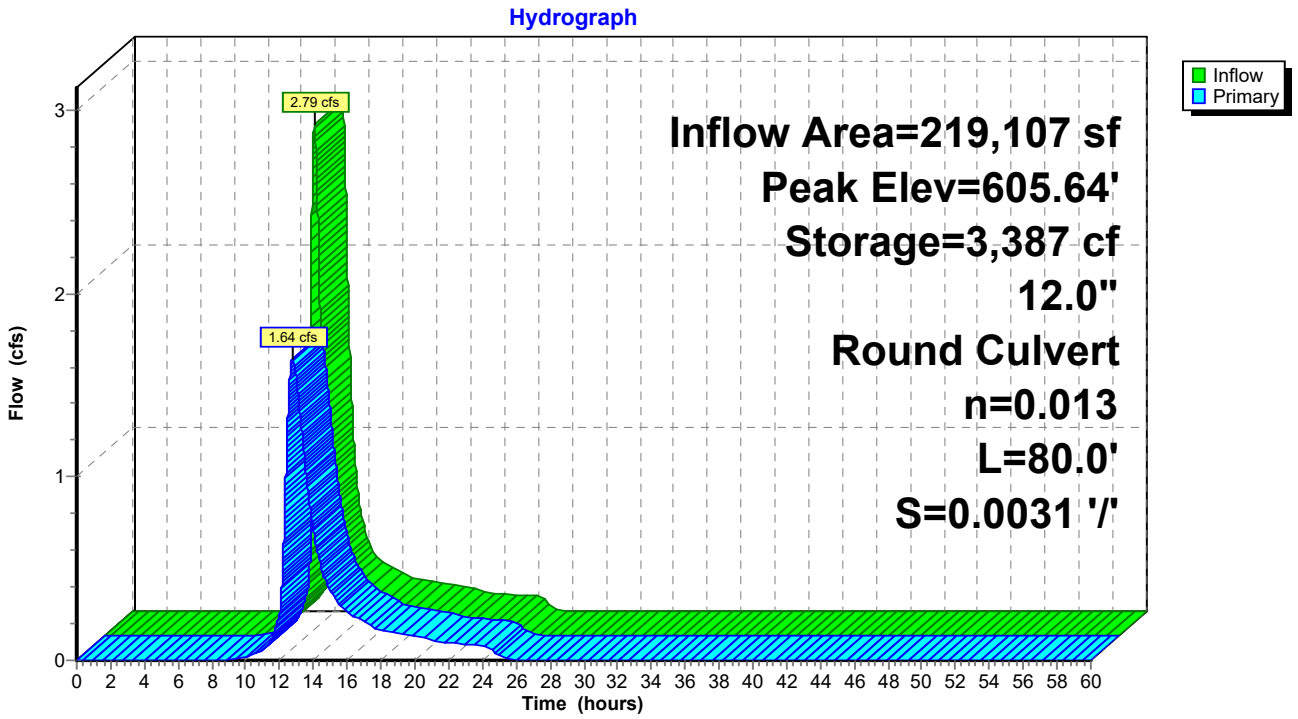
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.64 cfs @ 12.77 hrs HW=605.64' (Free Discharge)
1=Culvert (Barrel Controls 1.64 cfs @ 2.93 fps)

Pond 1P: Dry Pond



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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=1.36"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=1.77 cfs 3,101 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=2.03"
Flow Length=585' Tc=42.4 min CN=89 Runoff=6.14 cfs 32,373 cf

Pond 1B: Bio Area Peak Elev=609.33' Storage=1,819 cf Inflow=1.77 cfs 3,101 cf
Outflow=0.04 cfs 3,101 cf

Pond 1P: Dry Pond Peak Elev=606.38' Storage=8,713 cf Inflow=6.18 cfs 35,474 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=2.96 cfs 35,474 cf

Total Runoff Area = 219,107 sf Runoff Volume = 35,474 cf Average Runoff Depth = 1.94"
55.27% Pervious = 121,097 sf 44.73% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

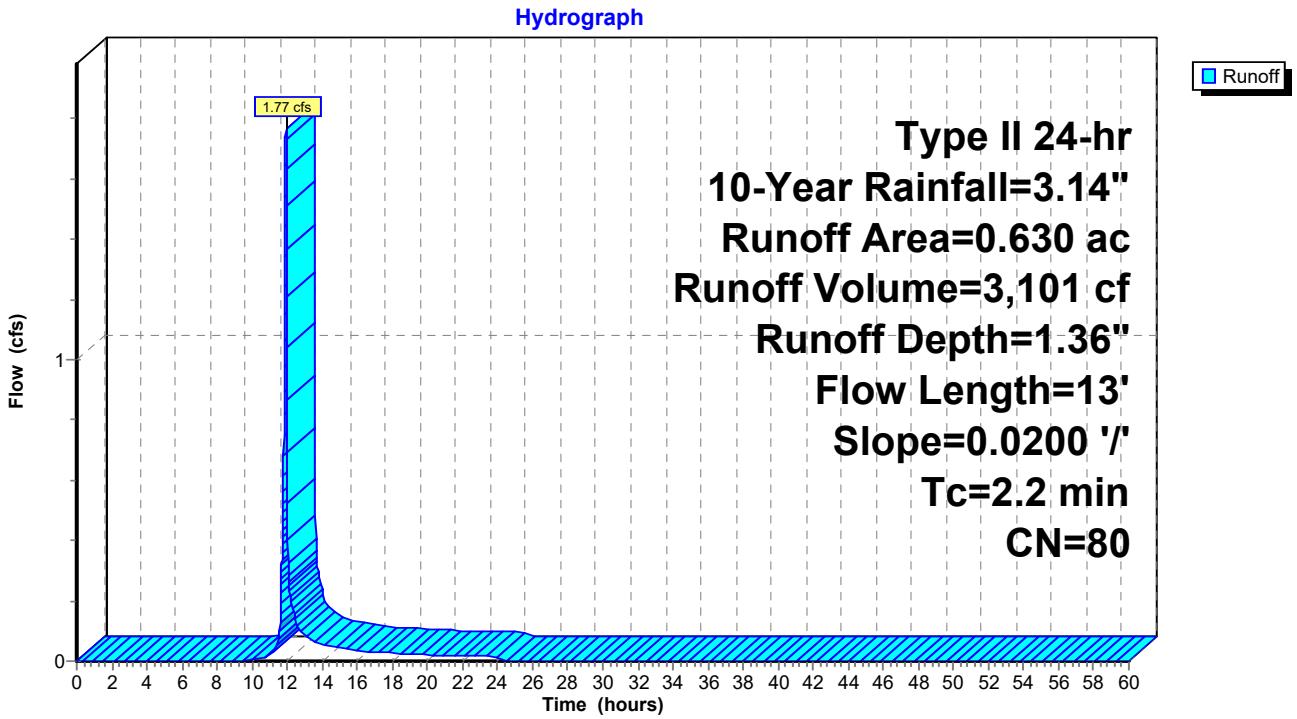
Runoff = 1.77 cfs @ 11.93 hrs, Volume= 3,101 cf, Depth= 1.36"
Routed to Pond 1B : Bio Area

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=3.14"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 315% of capacity of segment #2

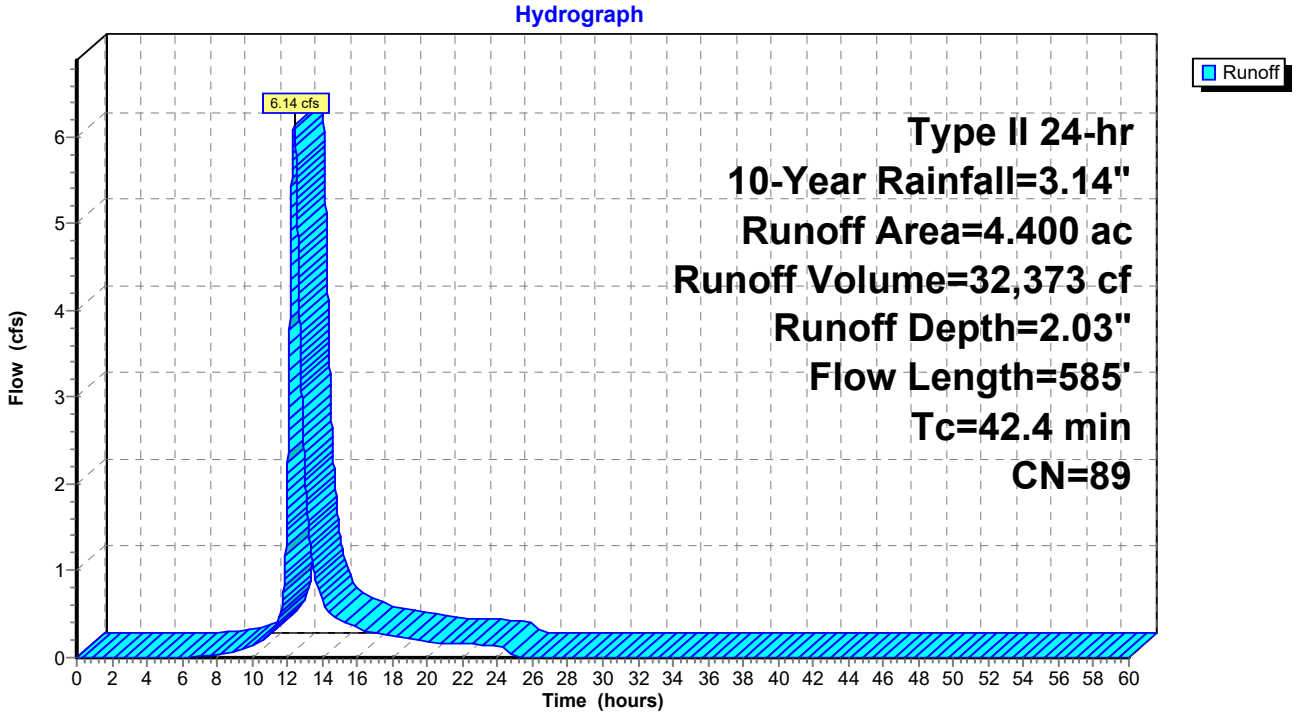
Runoff = 6.14 cfs @ 12.39 hrs, Volume= 32,373 cf, Depth= 2.03"
Routed to Pond 1P : Dry Pond

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=3.14"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Pond 1B: Bio Area

Inflow Area = 27,443 sf, 0.00% Impervious, Inflow Depth = 1.36" for 10-Year event
Inflow = 1.77 cfs @ 11.93 hrs, Volume= 3,101 cf
Outflow = 0.04 cfs @ 15.66 hrs, Volume= 3,101 cf, Atten= 98%, Lag= 223.8 min
Primary = 0.04 cfs @ 15.66 hrs, Volume= 3,101 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.33' @ 15.66 hrs Surf.Area= 6,272 sf Storage= 1,819 cf

Plug-Flow detention time= 557.8 min calculated for 3,100 cf (100% of inflow)
Center-of-Mass det. time= 557.9 min (1,394.8 - 836.9)

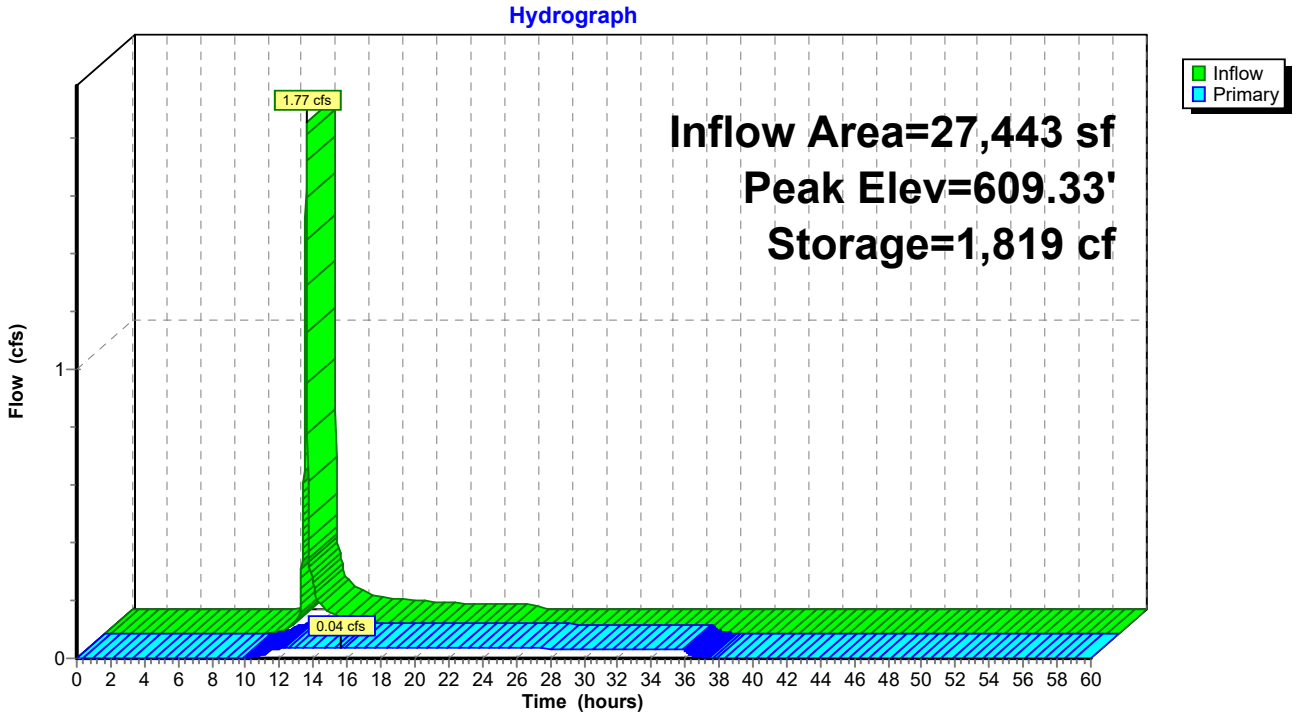
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=0.04 cfs @ 15.66 hrs HW=609.33' (Free Discharge)
└**1=Culvert** (Passes 0.04 cfs of 1.43 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Exfiltration** (Controls 0.04 cfs)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 OUTLET by 0.78'

Inflow Area = 219,107 sf, 44.73% Impervious, Inflow Depth = 1.94" for 10-Year event
Inflow = 6.18 cfs @ 12.39 hrs, Volume= 35,474 cf
Outflow = 2.96 cfs @ 12.85 hrs, Volume= 35,474 cf, Atten= 52%, Lag= 27.3 min
Primary = 2.96 cfs @ 12.85 hrs, Volume= 35,474 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 606.38' @ 12.85 hrs Surf.Area= 8,243 sf Storage= 8,713 cf

Plug-Flow detention time= 33.4 min calculated for 35,468 cf (100% of inflow)
Center-of-Mass det. time= 33.4 min (924.2 - 890.8)

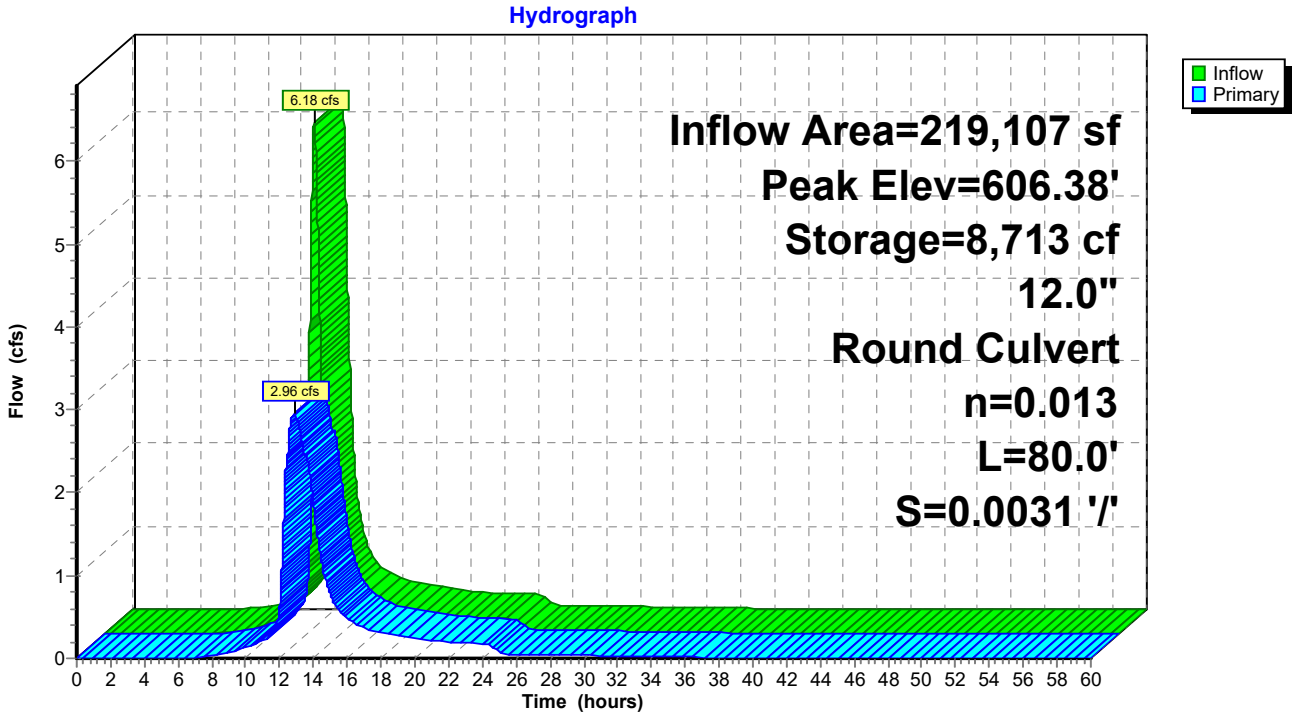
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.96 cfs @ 12.85 hrs HW=606.38' (Free Discharge)
↑**1=Culvert** (Barrel Controls 2.96 cfs @ 3.77 fps)

Pond 1P: Dry Pond



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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=1.91"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=2.47 cfs 4,368 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=2.67"
Flow Length=585' Tc=42.4 min CN=89 Runoff=8.07 cfs 42,696 cf

Pond 1B: Bio Area Peak Elev=609.47' Storage=2,768 cf Inflow=2.47 cfs 4,368 cf
Outflow=0.04 cfs 4,368 cf

Pond 1P: Dry Pond Peak Elev=606.78' Storage=12,248 cf Inflow=8.11 cfs 47,065 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=3.57 cfs 47,065 cf

Total Runoff Area = 219,107 sf Runoff Volume = 47,065 cf Average Runoff Depth = 2.58"
55.27% Pervious = 121,097 sf 44.73% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

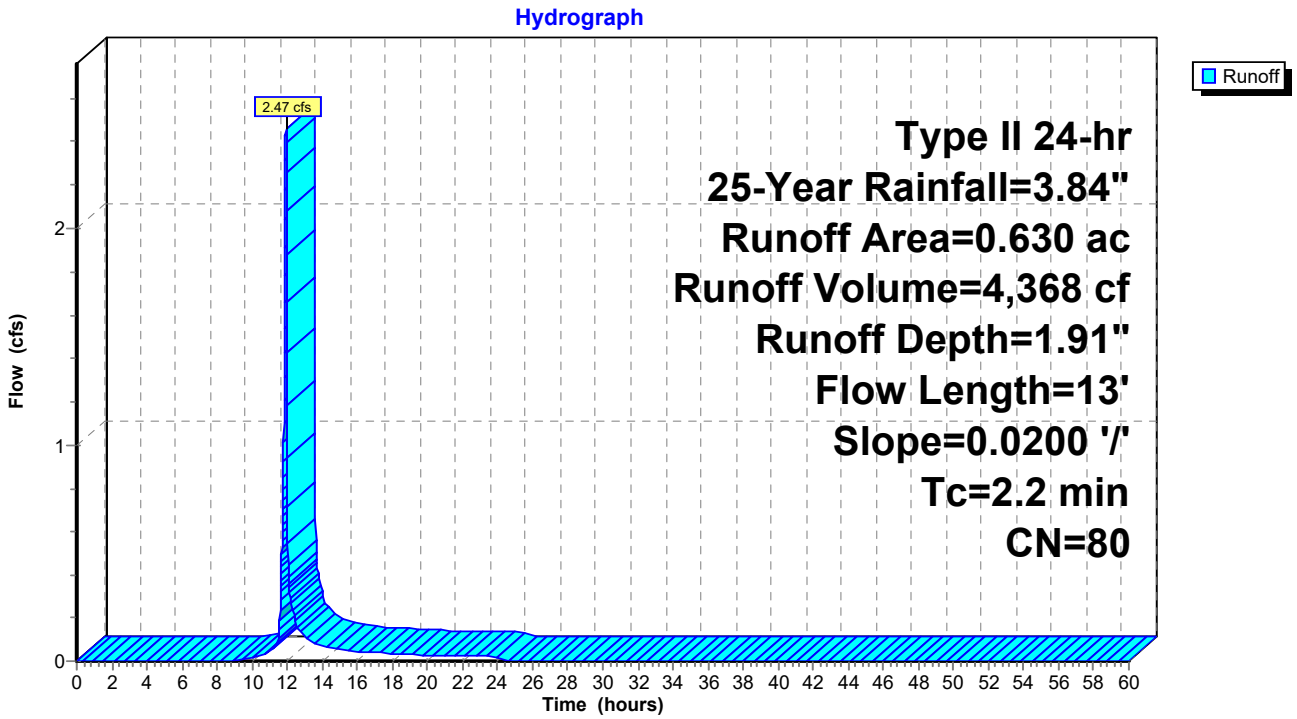
Runoff = 2.47 cfs @ 11.93 hrs, Volume= 4,368 cf, Depth= 1.91"
Routed to Pond 1B : Bio Area

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=3.84"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 414% of capacity of segment #2

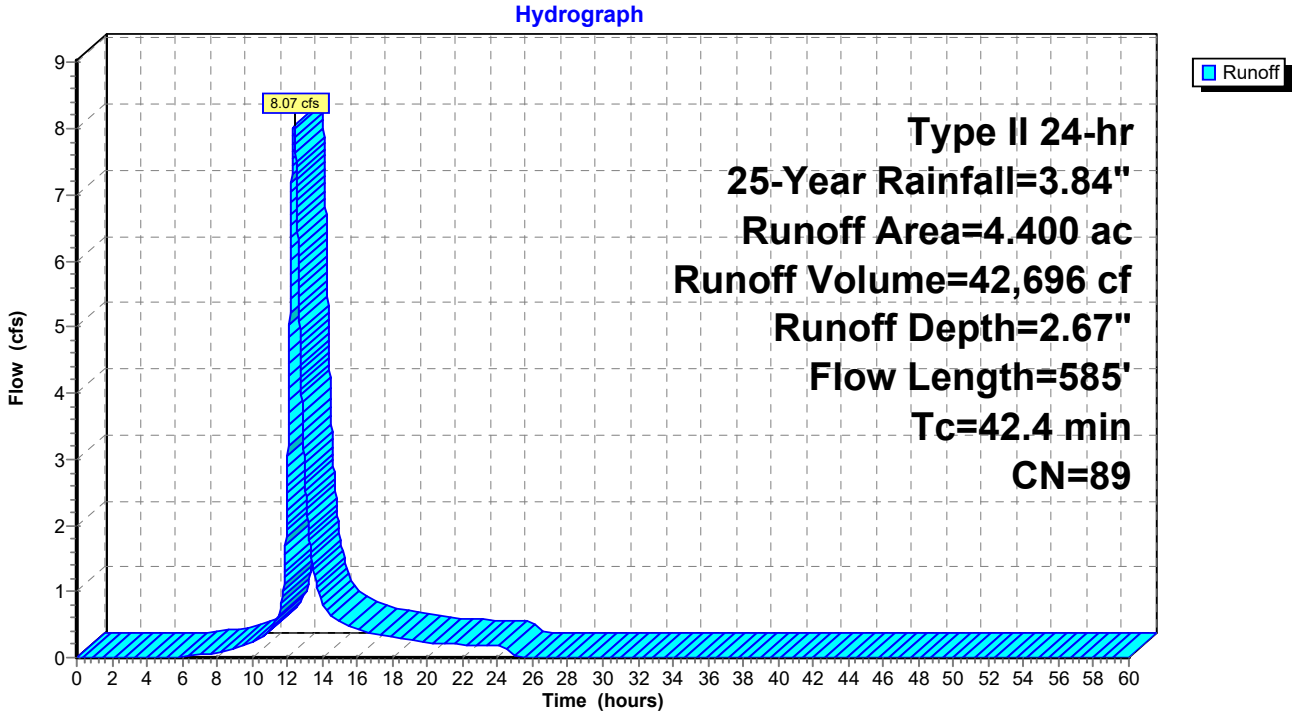
Runoff = 8.07 cfs @ 12.39 hrs, Volume= 42,696 cf, Depth= 2.67"
Routed to Pond 1P : Dry Pond

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=3.84"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Pond 1B: Bio Area

Inflow Area = 27,443 sf, 0.00% Impervious, Inflow Depth = 1.91" for 25-Year event
Inflow = 2.47 cfs @ 11.93 hrs, Volume= 4,368 cf
Outflow = 0.04 cfs @ 16.79 hrs, Volume= 4,368 cf, Atten= 98%, Lag= 292.0 min
Primary = 0.04 cfs @ 16.79 hrs, Volume= 4,368 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.47' @ 16.79 hrs Surf.Area= 6,873 sf Storage= 2,768 cf

Plug-Flow detention time= 758.9 min calculated for 4,368 cf (100% of inflow)
Center-of-Mass det. time= 759.0 min (1,586.0 - 827.0)

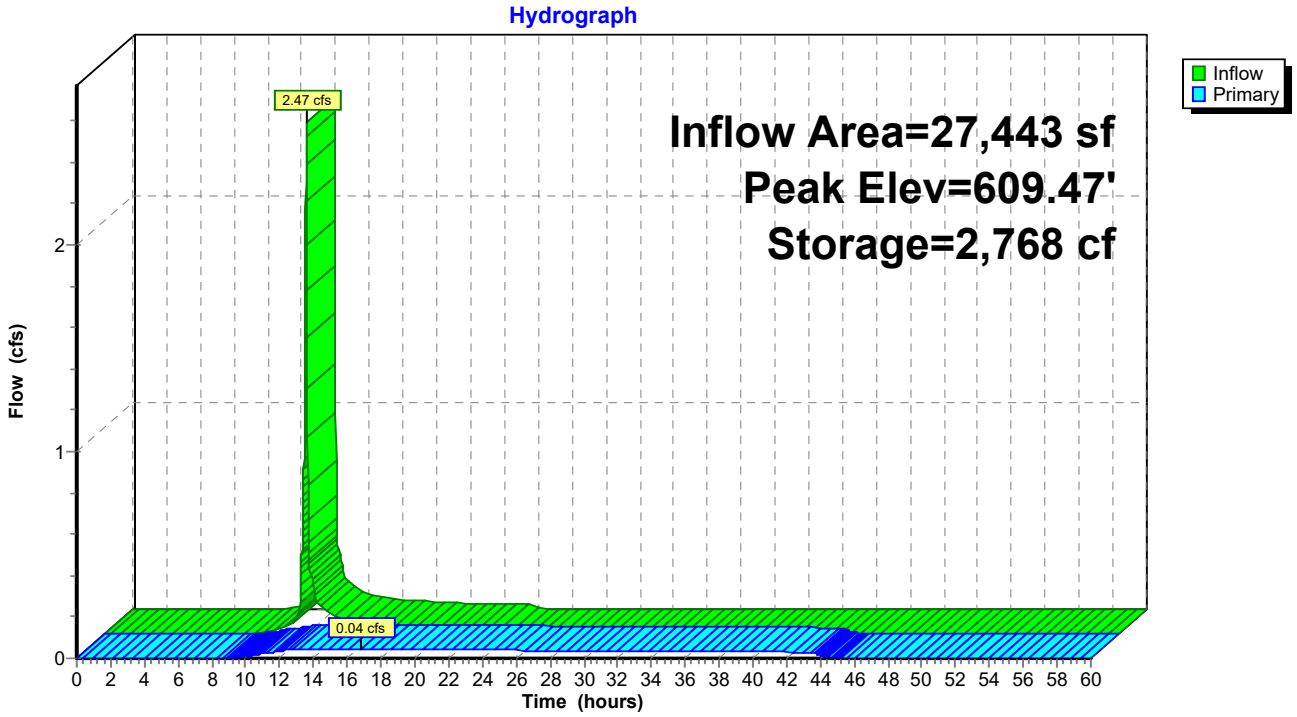
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=0.04 cfs @ 16.79 hrs HW=609.47' (Free Discharge)
└**1=Culvert** (Passes 0.04 cfs of 1.46 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Exfiltration** (Controls 0.04 cfs)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 INLET by 0.28'

Inflow Area = 219,107 sf, 44.73% Impervious, Inflow Depth = 2.58" for 25-Year event
Inflow = 8.11 cfs @ 12.39 hrs, Volume= 47,065 cf
Outflow = 3.57 cfs @ 12.88 hrs, Volume= 47,065 cf, Atten= 56%, Lag= 29.4 min
Primary = 3.57 cfs @ 12.88 hrs, Volume= 47,065 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 606.78' @ 12.88 hrs Surf.Area= 9,386 sf Storage= 12,248 cf

Plug-Flow detention time= 37.7 min calculated for 47,057 cf (100% of inflow)
Center-of-Mass det. time= 37.7 min (942.1 - 904.4)

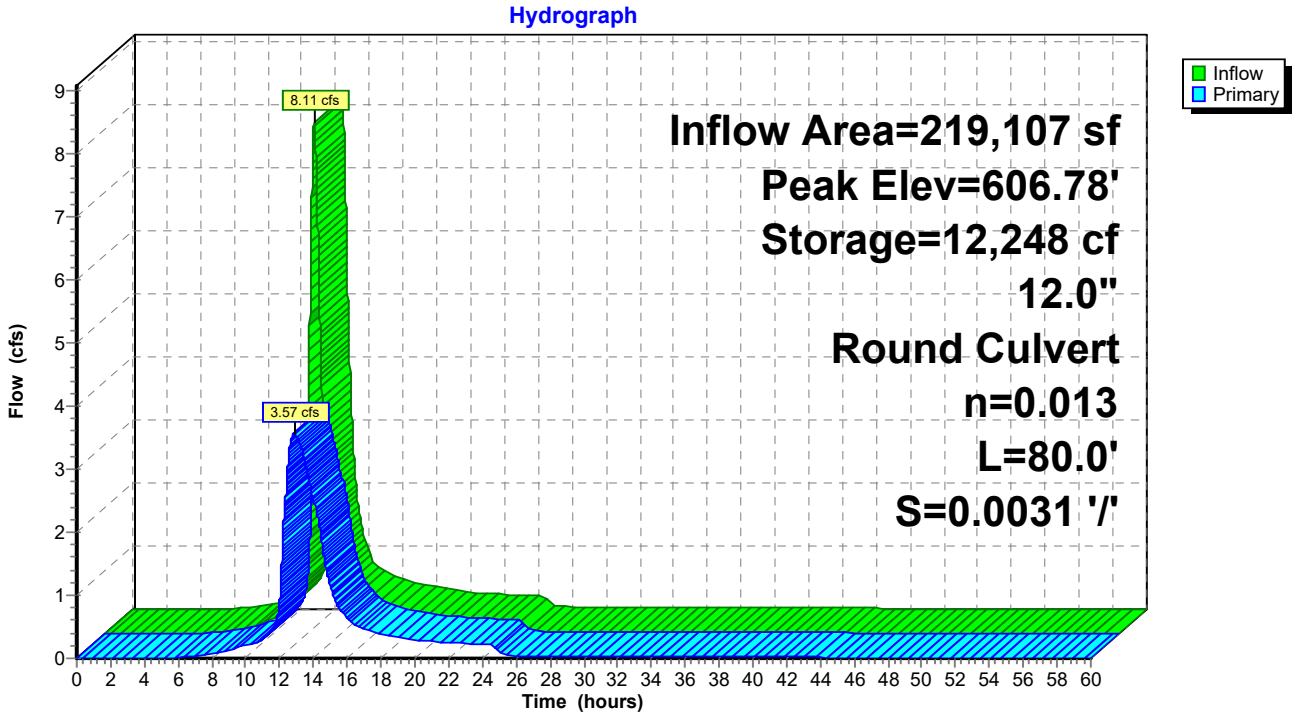
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.57 cfs @ 12.88 hrs HW=606.78' (Free Discharge)
↑**1=Culvert** (Barrel Controls 3.57 cfs @ 4.54 fps)

Pond 1P: Dry Pond



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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=3.92 cfs 7,077 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=3.99"
Flow Length=585' Tc=42.4 min CN=89 Runoff=11.92 cfs 63,768 cf

Pond 1B: Bio Area Peak Elev=609.54' Storage=3,273 cf Inflow=3.92 cfs 7,077 cf
Outflow=0.62 cfs 7,077 cf

Pond 1P: Dry Pond Peak Elev=607.61' Storage=20,946 cf Inflow=12.31 cfs 70,845 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=4.57 cfs 70,845 cf

Total Runoff Area = 219,107 sf Runoff Volume = 70,845 cf Average Runoff Depth = 3.88"
55.27% Pervious = 121,097 sf 44.73% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

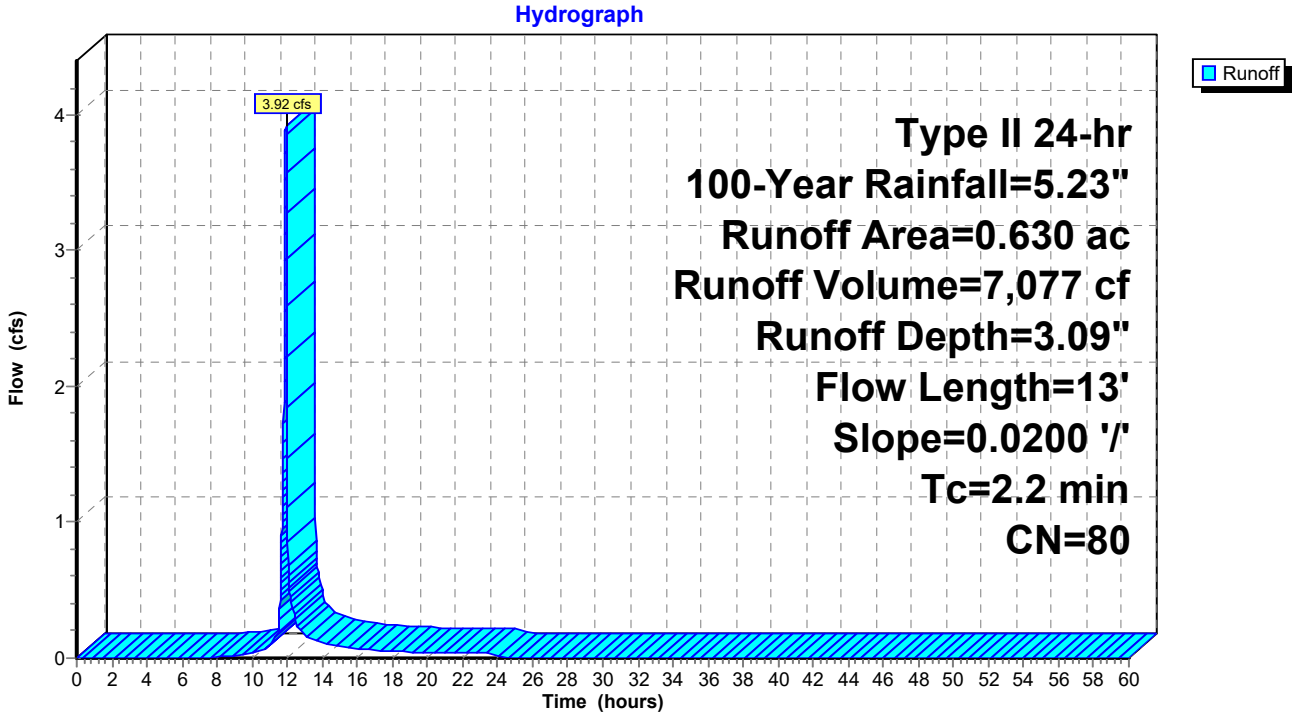
Runoff = 3.92 cfs @ 11.93 hrs, Volume= 7,077 cf, Depth= 3.09"
Routed to Pond 1B : Bio Area

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=5.23"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 611% of capacity of segment #2

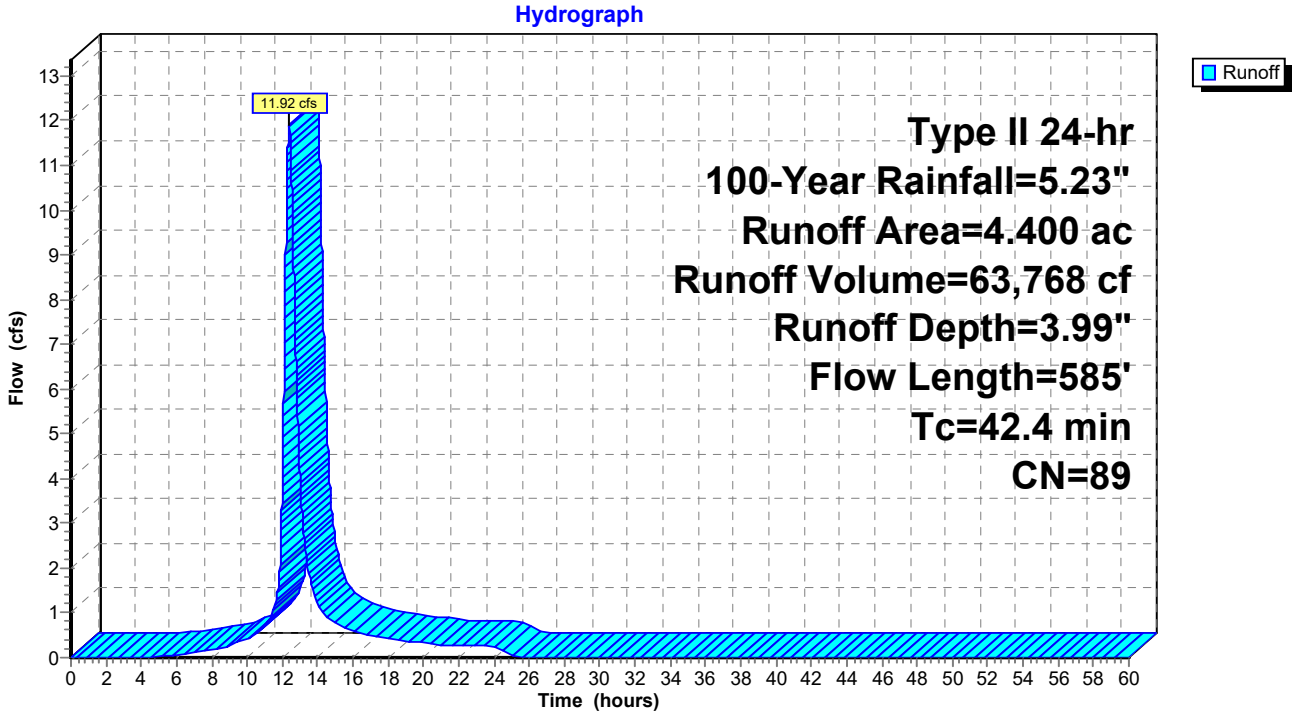
Runoff = 11.92 cfs @ 12.39 hrs, Volume= 63,768 cf, Depth= 3.99"
Routed to Pond 1P : Dry Pond

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=5.23"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Pond 1B: Bio Area

Inflow Area = 27,443 sf, 0.00% Impervious, Inflow Depth = 3.09" for 100-Year event
Inflow = 3.92 cfs @ 11.93 hrs, Volume= 7,077 cf
Outflow = 0.62 cfs @ 12.05 hrs, Volume= 7,077 cf, Atten= 84%, Lag= 7.3 min
Primary = 0.62 cfs @ 12.05 hrs, Volume= 7,077 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.54' @ 12.05 hrs Surf.Area= 7,182 sf Storage= 3,273 cf

Plug-Flow detention time= 579.0 min calculated for 7,076 cf (100% of inflow)
Center-of-Mass det. time= 579.2 min (1,392.4 - 813.3)

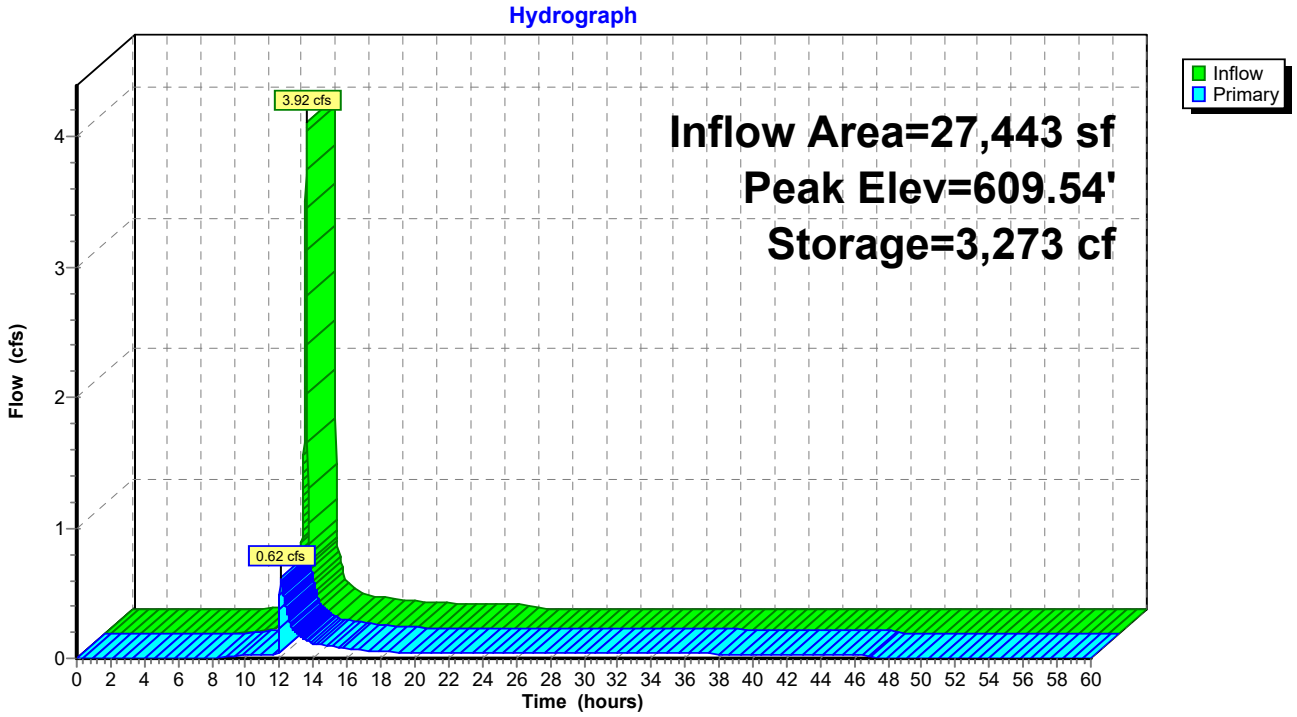
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=0.62 cfs @ 12.05 hrs HW=609.54' (Free Discharge)
└**1=Culvert** (Passes 0.62 cfs of 1.47 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.57 cfs @ 0.66 fps)
└**3=Exfiltration** (Controls 0.04 cfs)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 INLET by 1.11'

Inflow Area = 219,107 sf, 44.73% Impervious, Inflow Depth = 3.88" for 100-Year event
Inflow = 12.31 cfs @ 12.39 hrs, Volume= 70,845 cf
Outflow = 4.57 cfs @ 12.96 hrs, Volume= 70,845 cf, Atten= 63%, Lag= 34.3 min
Primary = 4.57 cfs @ 12.96 hrs, Volume= 70,845 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 607.61' @ 12.96 hrs Surf.Area= 11,762 sf Storage= 20,946 cf

Plug-Flow detention time= 47.9 min calculated for 70,833 cf (100% of inflow)
Center-of-Mass det. time= 47.8 min (928.1 - 880.2)

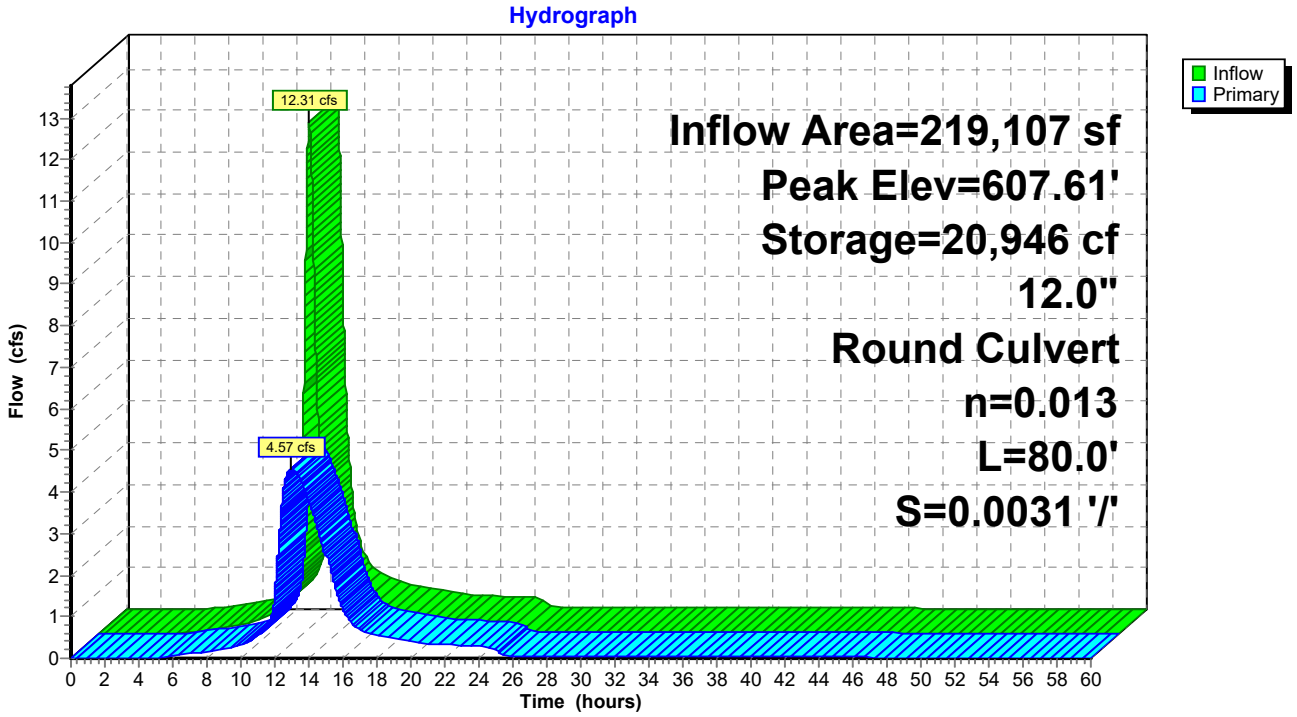
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

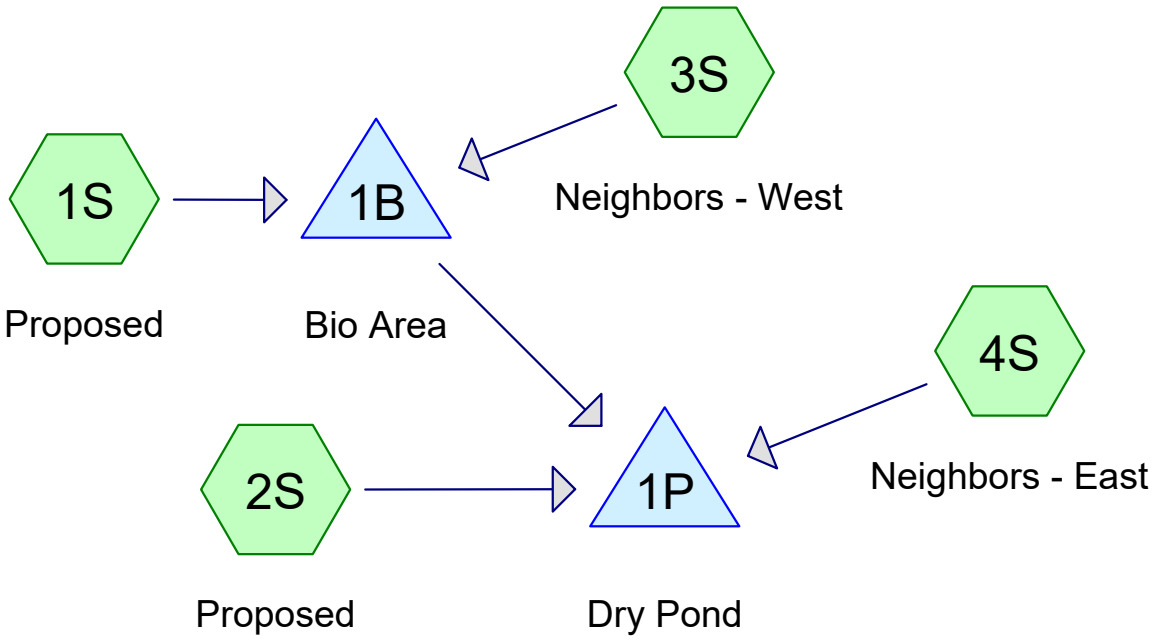
Primary OutFlow Max=4.57 cfs @ 12.96 hrs HW=607.61' (Free Discharge)
1=Culvert (Barrel Controls 4.57 cfs @ 5.82 fps)

Pond 1P: Dry Pond



Events for Pond 1P: Dry Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	2.81	1.66	605.65	3,440
2-Year	3.67	2.13	605.83	4,589
5-Year	4.99	2.51	606.13	6,749
10-Year	6.80	3.15	606.50	9,683
25-Year	9.61	3.90	607.04	14,726
50-Year	11.43	4.48	607.53	19,991
100-Year	**13.57**	**4.96**	**607.98**	**25,550**



Subcat Reach Pond Link

Routing Diagram for 23-4091 proposed with neighbors
Prepared by Carmina Wood Morris, PC, Printed 4/21/2024

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	1.87	2
2	10-Year	Type II 24-hr		Default	24.00	1	3.14	2
3	25-Year	Type II 24-hr		Default	24.00	1	3.84	2
4	100-Year	Type II 24-hr		Default	24.00	1	5.23	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
166,835	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S)
98,010	98	Paved parking, HSG D (2S)
264,845	**87**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
264,845	HSG D	1S, 2S, 3S, 4S
0	Other	
264,845		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	166,835	0	166,835	>75% Grass cover, Good	
0	0	0	98,010	0	98,010	Paved parking	
0	**0**	**0**	**264,845**	**0**	**264,845**	**TOTAL AREA**	

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	2S	0.00	0.00	310.0	0.0030	0.013	0.0	12.0	0.0
2	1B	606.50	605.60	180.0	0.0050	0.013	0.0	6.0	0.0
3	1P	604.75	604.50	80.0	0.0031	0.013	0.0	12.0	0.0

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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=0.48"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=0.62 cfs 1,109 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=0.92"
Flow Length=585' Tc=42.4 min CN=89 Runoff=2.76 cfs 14,713 cf

Subcatchment3S: Neighbors - West Runoff Area=0.900 ac 0.00% Impervious Runoff Depth=0.48"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=0.53 cfs 1,584 cf

Subcatchment4S: Neighbors - East Runoff Area=0.150 ac 0.00% Impervious Runoff Depth=0.48"
Flow Length=50' Slope=0.0100 '/' Tc=8.4 min CN=80 Runoff=0.11 cfs 264 cf

Pond 1B: Bio Area Peak Elev=609.27' Storage=1,452 cf Inflow=0.84 cfs 2,694 cf
Outflow=0.04 cfs 2,694 cf

Pond 1P: Dry Pond Peak Elev=605.65' Storage=3,440 cf Inflow=2.81 cfs 17,671 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=1.66 cfs 17,671 cf

Total Runoff Area = 264,845 sf Runoff Volume = 17,671 cf Average Runoff Depth = 0.80"
62.99% Pervious = 166,835 sf 37.01% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

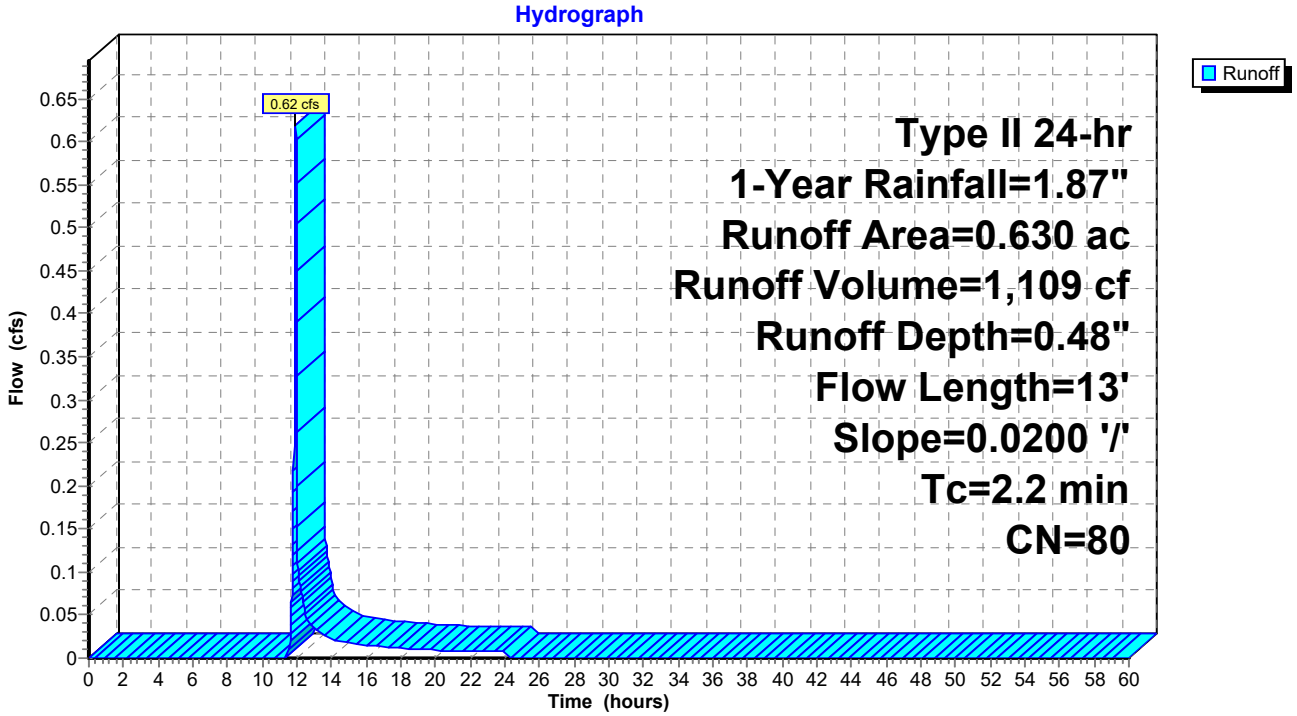
Runoff = 0.62 cfs @ 11.93 hrs, Volume= 1,109 cf, Depth= 0.48"
Routed to Pond 1B : Bio Area

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=1.87"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 141% of capacity of segment #2

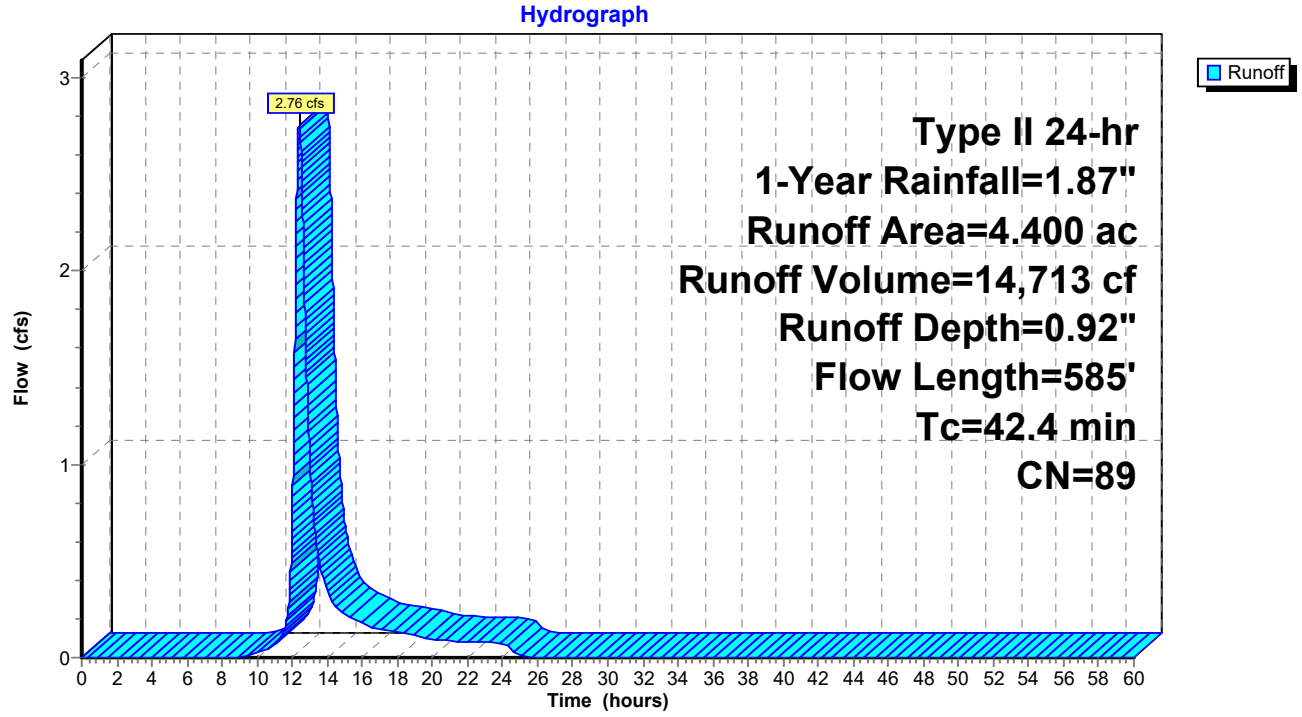
Runoff = 2.76 cfs @ 12.39 hrs, Volume= 14,713 cf, Depth= 0.92"
Routed to Pond 1P : Dry Pond

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=1.87"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Subcatchment 3S: Neighbors - West

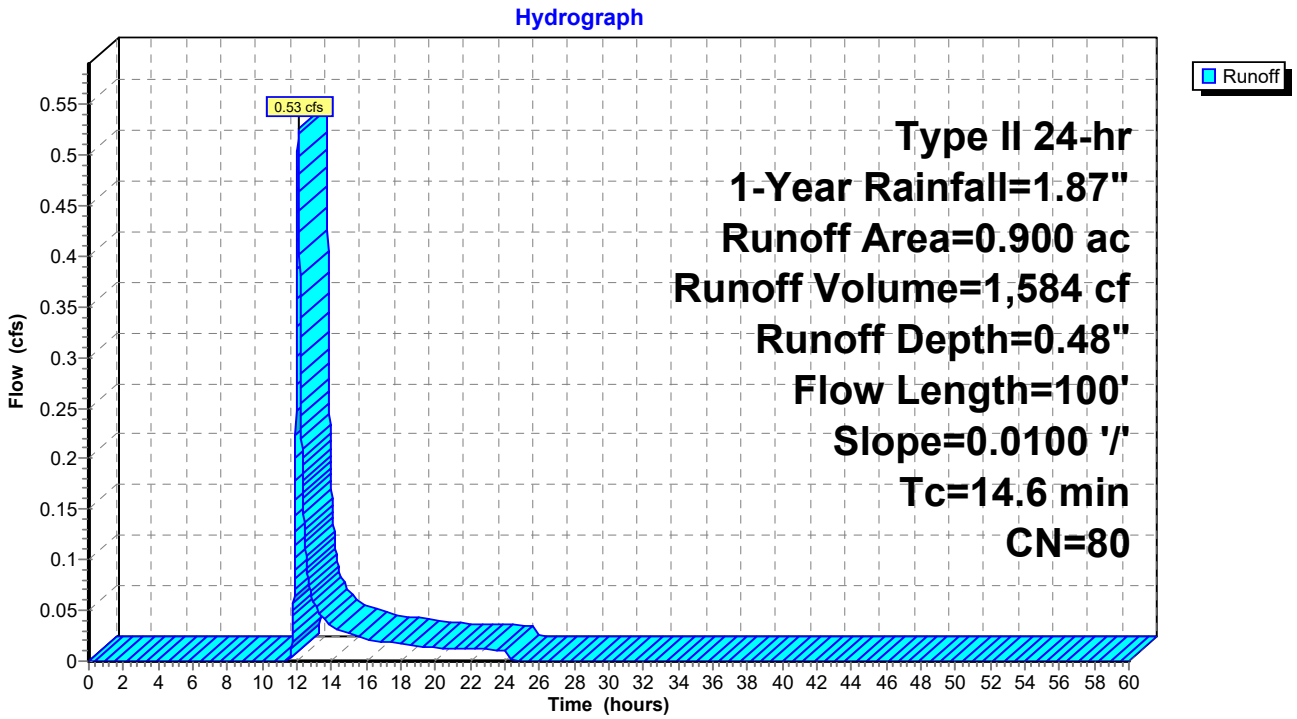
Runoff = 0.53 cfs @ 12.08 hrs, Volume= 1,584 cf, Depth= 0.48"
Routed to Pond 1B : Bio Area

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=1.87"

Area (ac)	CN	Description
0.900	80	>75% Grass cover, Good, HSG D
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors - West



Summary for Subcatchment 4S: Neighbors - East

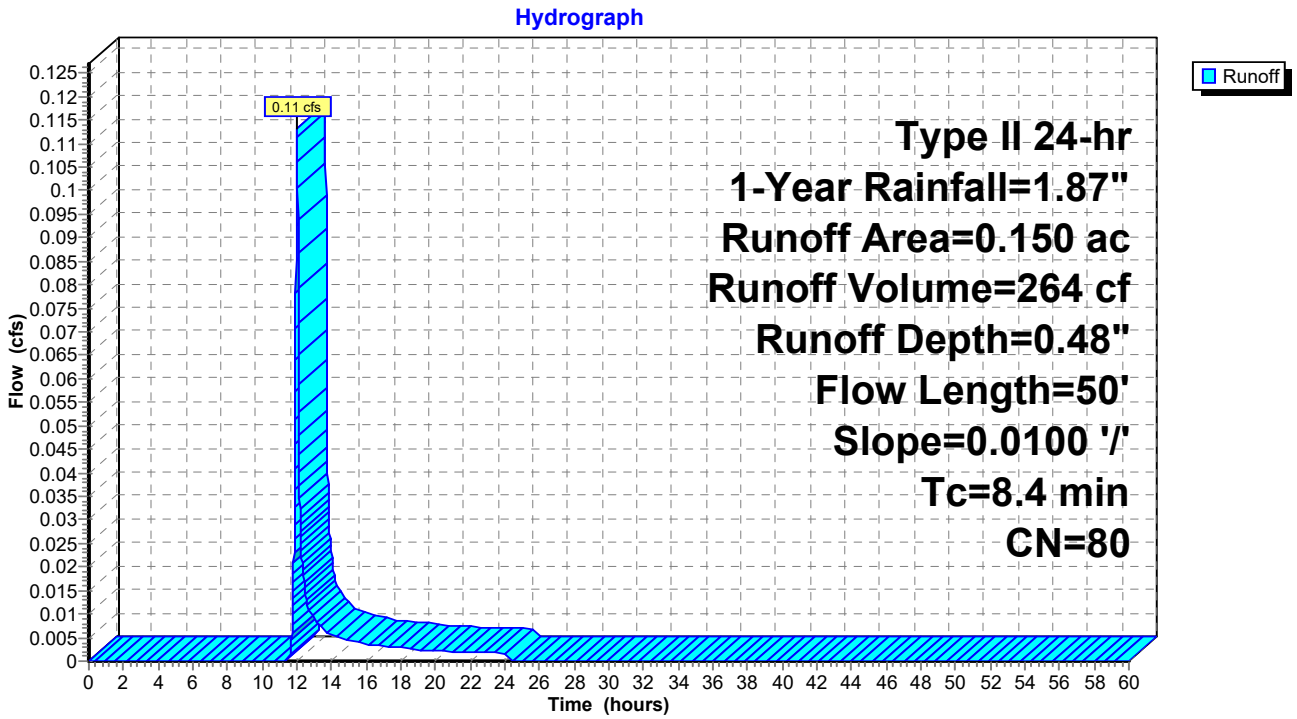
Runoff = 0.11 cfs @ 12.01 hrs, Volume= 264 cf, Depth= 0.48"
Routed to Pond 1P : Dry Pond

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=1.87"

Area (ac)	CN	Description
0.150	80	>75% Grass cover, Good, HSG D
0.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0100	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 4S: Neighbors - East



Summary for Pond 1B: Bio Area

Inflow Area = 66,647 sf, 0.00% Impervious, Inflow Depth = 0.48" for 1-Year event
Inflow = 0.84 cfs @ 11.95 hrs, Volume= 2,694 cf
Outflow = 0.04 cfs @ 16.18 hrs, Volume= 2,694 cf, Atten= 96%, Lag= 254.1 min
Primary = 0.04 cfs @ 16.18 hrs, Volume= 2,694 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.27' @ 16.18 hrs Surf.Area= 6,024 sf Storage= 1,452 cf

Plug-Flow detention time= 485.7 min calculated for 2,693 cf (100% of inflow)
Center-of-Mass det. time= 485.7 min (1,361.4 - 875.7)

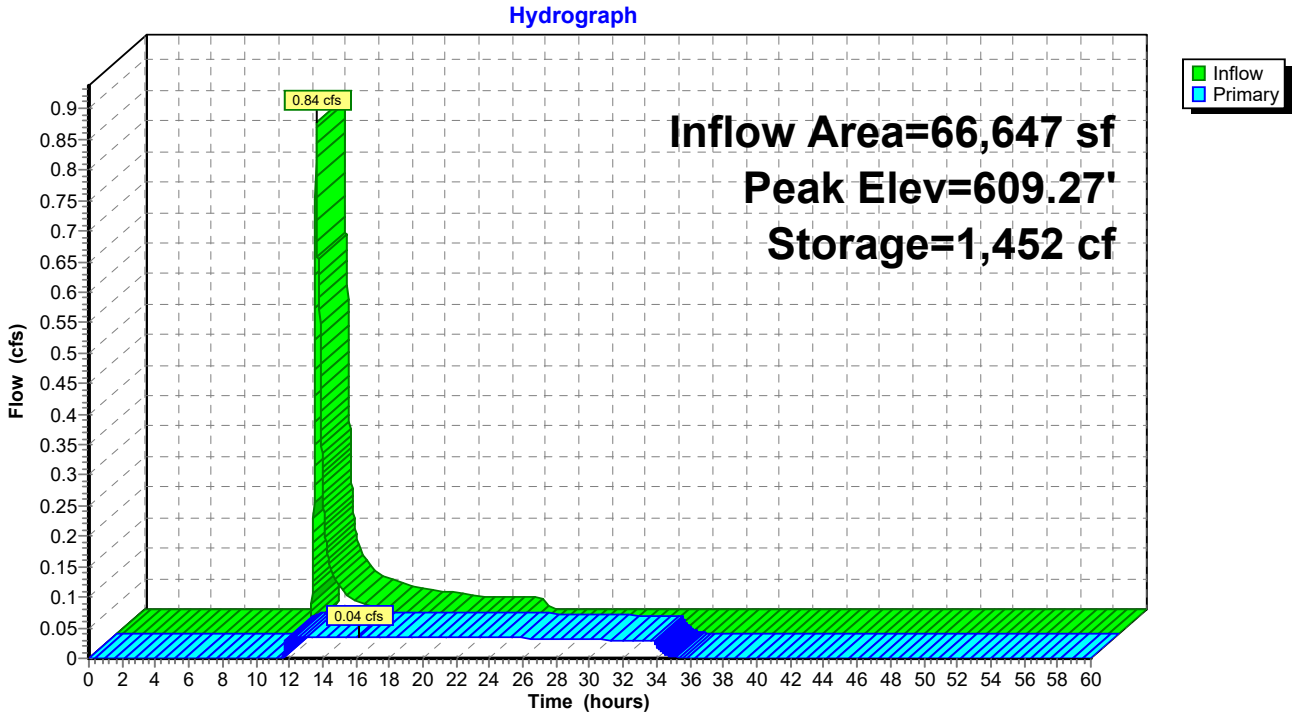
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=0.04 cfs @ 16.18 hrs HW=609.27' (Free Discharge)
└**1=Culvert** (Passes 0.04 cfs of 1.41 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Exfiltration** (Controls 0.04 cfs)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 OUTLET by 0.05'

Inflow Area = 264,845 sf, 37.01% Impervious, Inflow Depth = 0.80" for 1-Year event
Inflow = 2.81 cfs @ 12.39 hrs, Volume= 17,671 cf
Outflow = 1.66 cfs @ 12.77 hrs, Volume= 17,671 cf, Atten= 41%, Lag= 22.4 min
Primary = 1.66 cfs @ 12.77 hrs, Volume= 17,671 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 605.65' @ 12.77 hrs Surf.Area= 6,182 sf Storage= 3,440 cf

Plug-Flow detention time= 25.3 min calculated for 17,668 cf (100% of inflow)
Center-of-Mass det. time= 25.3 min (966.1 - 940.8)

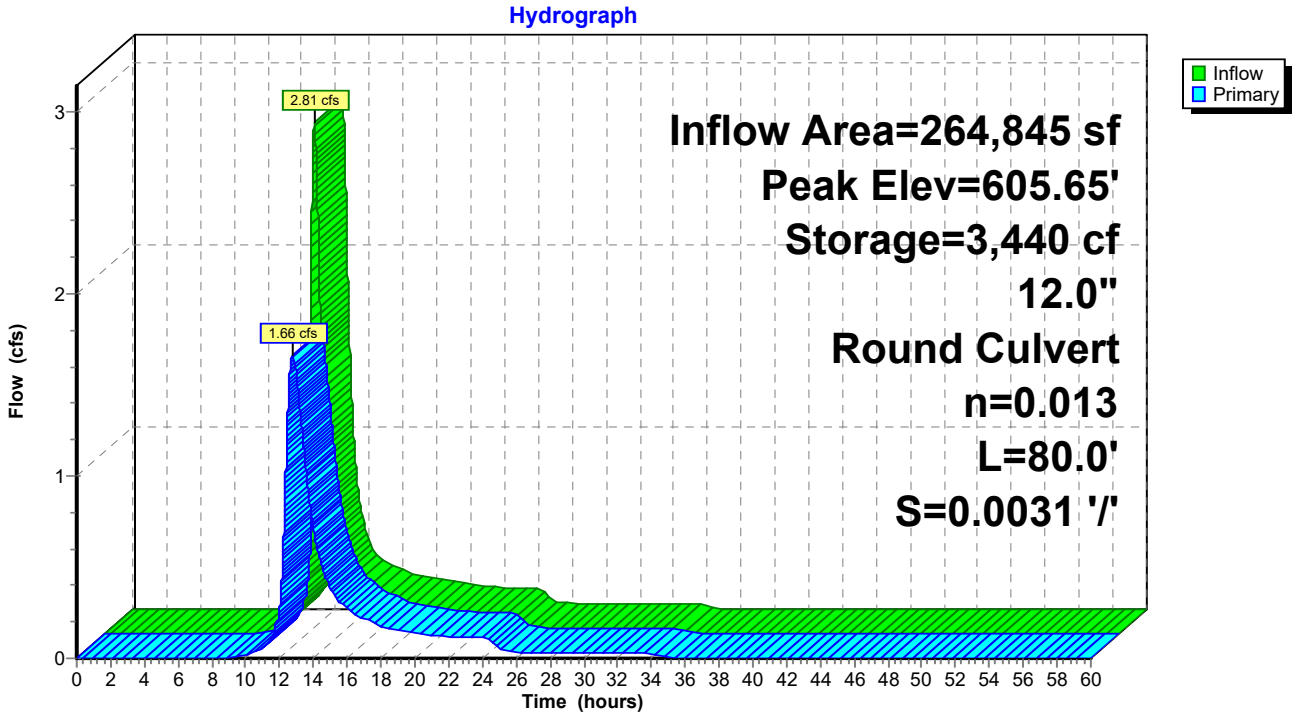
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.66 cfs @ 12.77 hrs HW=605.65' (Free Discharge)
↑**1=Culvert** (Barrel Controls 1.66 cfs @ 2.94 fps)

Pond 1P: Dry Pond



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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=1.36"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=1.77 cfs 3,101 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=2.03"
Flow Length=585' Tc=42.4 min CN=89 Runoff=6.14 cfs 32,373 cf

Subcatchment3S: Neighbors - West Runoff Area=0.900 ac 0.00% Impervious Runoff Depth=1.36"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=1.59 cfs 4,430 cf

Subcatchment4S: Neighbors - East Runoff Area=0.150 ac 0.00% Impervious Runoff Depth=1.36"
Flow Length=50' Slope=0.0100 '/' Tc=8.4 min CN=80 Runoff=0.33 cfs 738 cf

Pond 1B: Bio Area Peak Elev=609.54' Storage=3,277 cf Inflow=2.59 cfs 7,531 cf
Outflow=0.63 cfs 7,531 cf

Pond 1P: Dry Pond Peak Elev=606.50' Storage=9,683 cf Inflow=6.80 cfs 40,642 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=3.15 cfs 40,642 cf

Total Runoff Area = 264,845 sf Runoff Volume = 40,642 cf Average Runoff Depth = 1.84"
62.99% Pervious = 166,835 sf 37.01% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

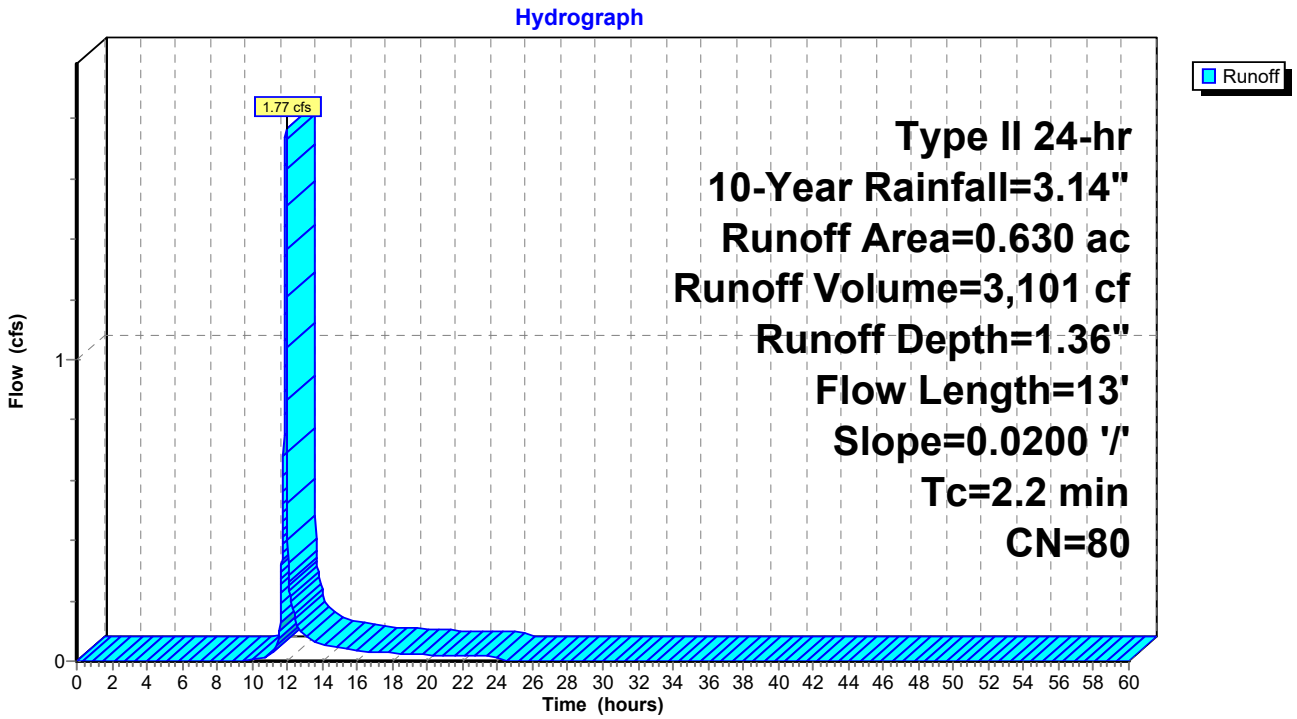
Runoff = 1.77 cfs @ 11.93 hrs, Volume= 3,101 cf, Depth= 1.36"
Routed to Pond 1B : Bio Area

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=3.14"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 315% of capacity of segment #2

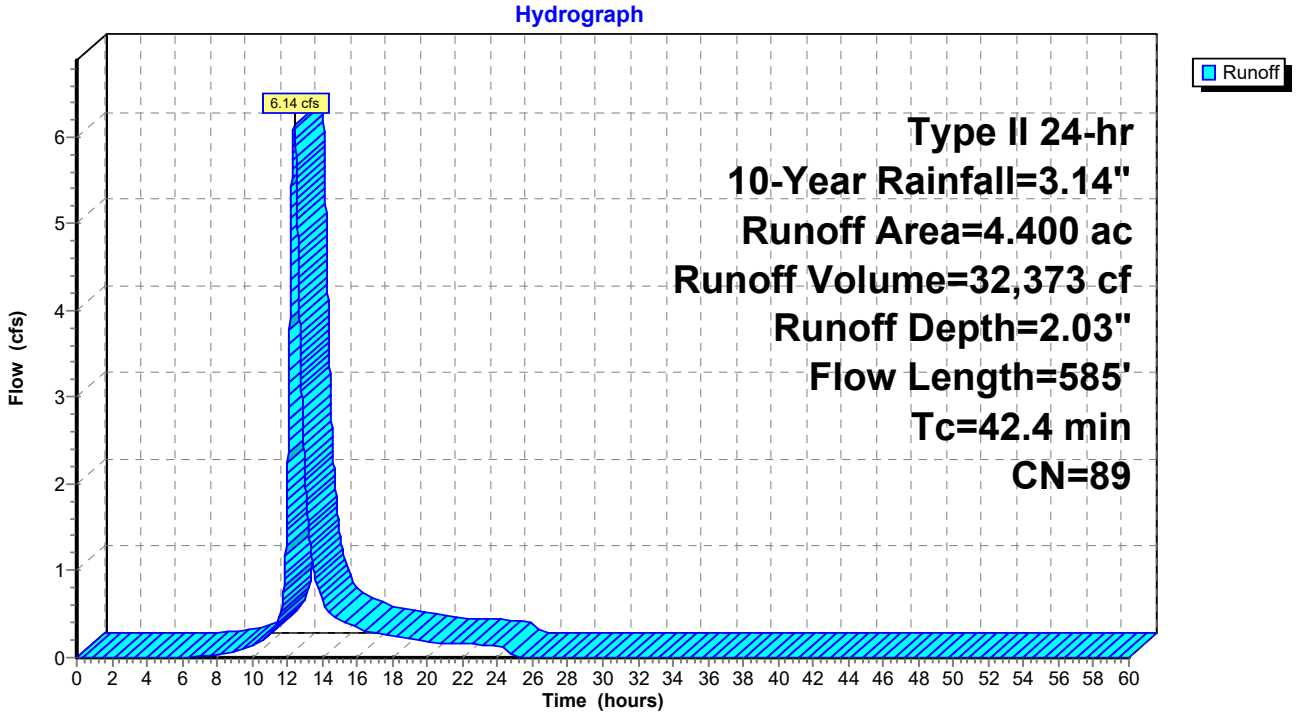
Runoff = 6.14 cfs @ 12.39 hrs, Volume= 32,373 cf, Depth= 2.03"
Routed to Pond 1P : Dry Pond

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=3.14"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Subcatchment 3S: Neighbors - West

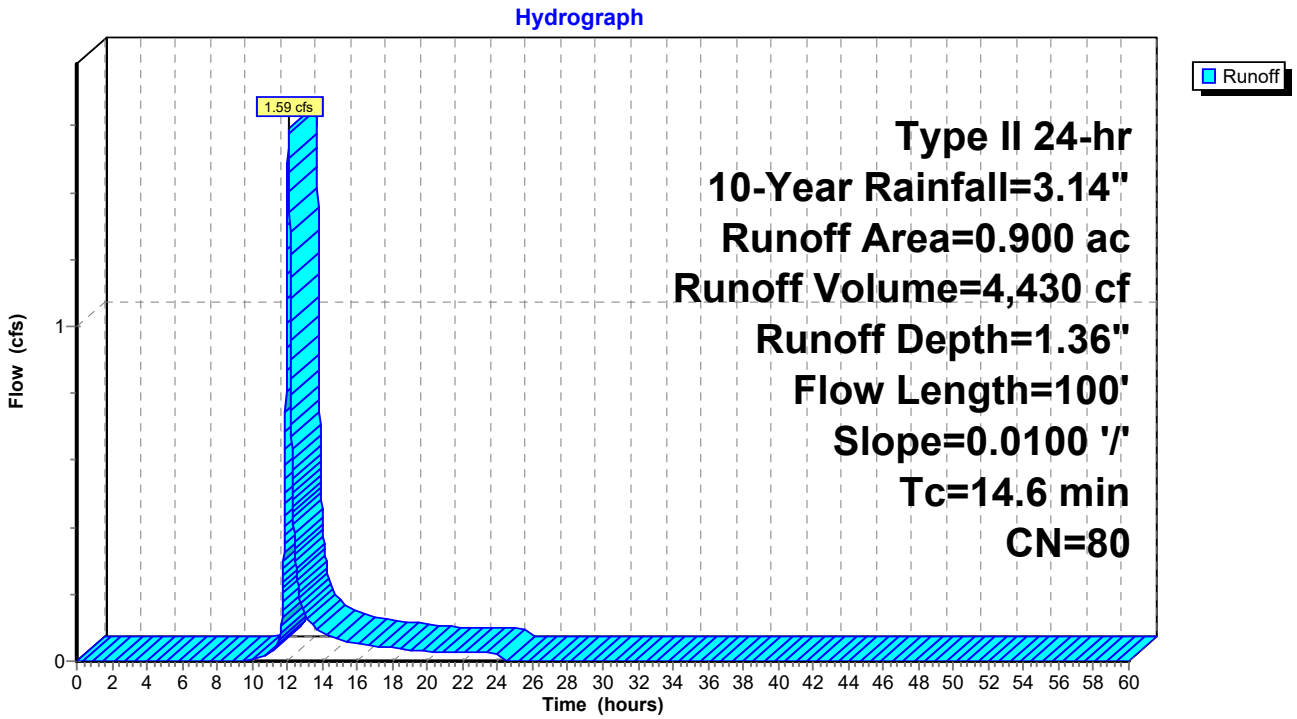
Runoff = 1.59 cfs @ 12.07 hrs, Volume= 4,430 cf, Depth= 1.36"
Routed to Pond 1B : Bio Area

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=3.14"

Area (ac)	CN	Description
0.900	80	>75% Grass cover, Good, HSG D
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors - West



Summary for Subcatchment 4S: Neighbors - East

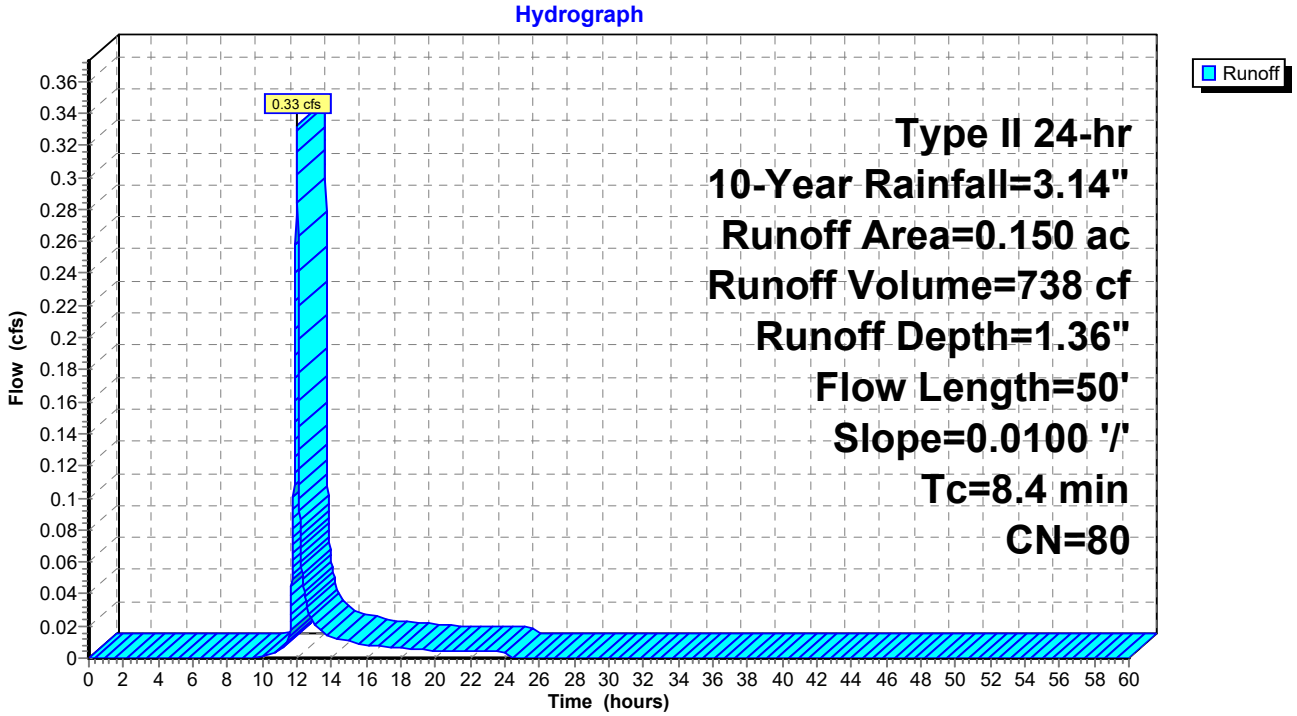
Runoff = 0.33 cfs @ 12.00 hrs, Volume= 738 cf, Depth= 1.36"
Routed to Pond 1P : Dry Pond

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=3.14"

Area (ac)	CN	Description
0.150	80	>75% Grass cover, Good, HSG D
0.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0100	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 4S: Neighbors - East



Summary for Pond 1B: Bio Area

Inflow Area = 66,647 sf, 0.00% Impervious, Inflow Depth = 1.36" for 10-Year event
Inflow = 2.59 cfs @ 11.94 hrs, Volume= 7,531 cf
Outflow = 0.63 cfs @ 12.34 hrs, Volume= 7,531 cf, Atten= 76%, Lag= 24.1 min
Primary = 0.63 cfs @ 12.34 hrs, Volume= 7,531 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.54' @ 12.34 hrs Surf.Area= 7,184 sf Storage= 3,277 cf

Plug-Flow detention time= 559.3 min calculated for 7,531 cf (100% of inflow)
Center-of-Mass det. time= 559.3 min (1,403.0 - 843.7)

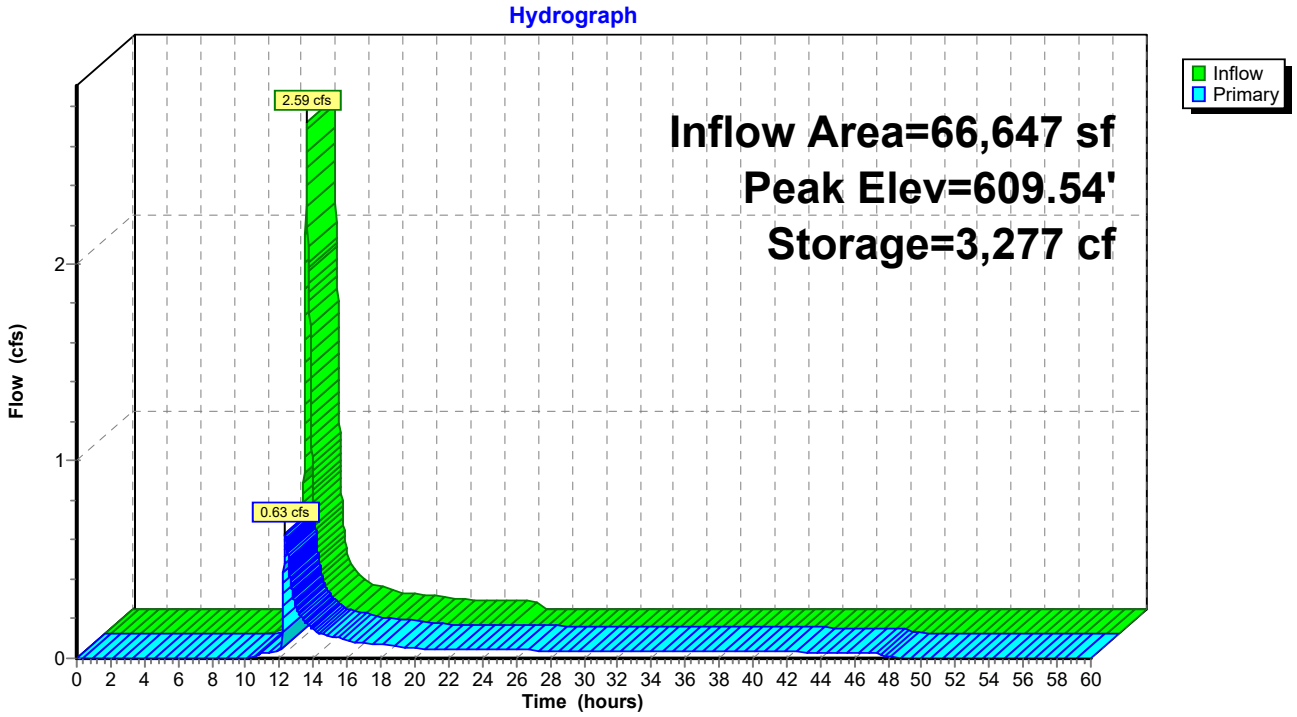
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=0.63 cfs @ 12.34 hrs HW=609.54' (Free Discharge)
└**1=Culvert** (Passes 0.63 cfs of 1.47 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.59 cfs @ 0.67 fps)
└**3=Exfiltration** (Controls 0.04 cfs)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 OUTLET by 0.90'

Inflow Area = 264,845 sf, 37.01% Impervious, Inflow Depth = 1.84" for 10-Year event
Inflow = 6.80 cfs @ 12.39 hrs, Volume= 40,642 cf
Outflow = 3.15 cfs @ 12.86 hrs, Volume= 40,642 cf, Atten= 54%, Lag= 28.4 min
Primary = 3.15 cfs @ 12.86 hrs, Volume= 40,642 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 606.50' @ 12.86 hrs Surf.Area= 8,572 sf Storage= 9,683 cf

Plug-Flow detention time= 34.2 min calculated for 40,635 cf (100% of inflow)
Center-of-Mass det. time= 34.2 min (980.6 - 946.4)

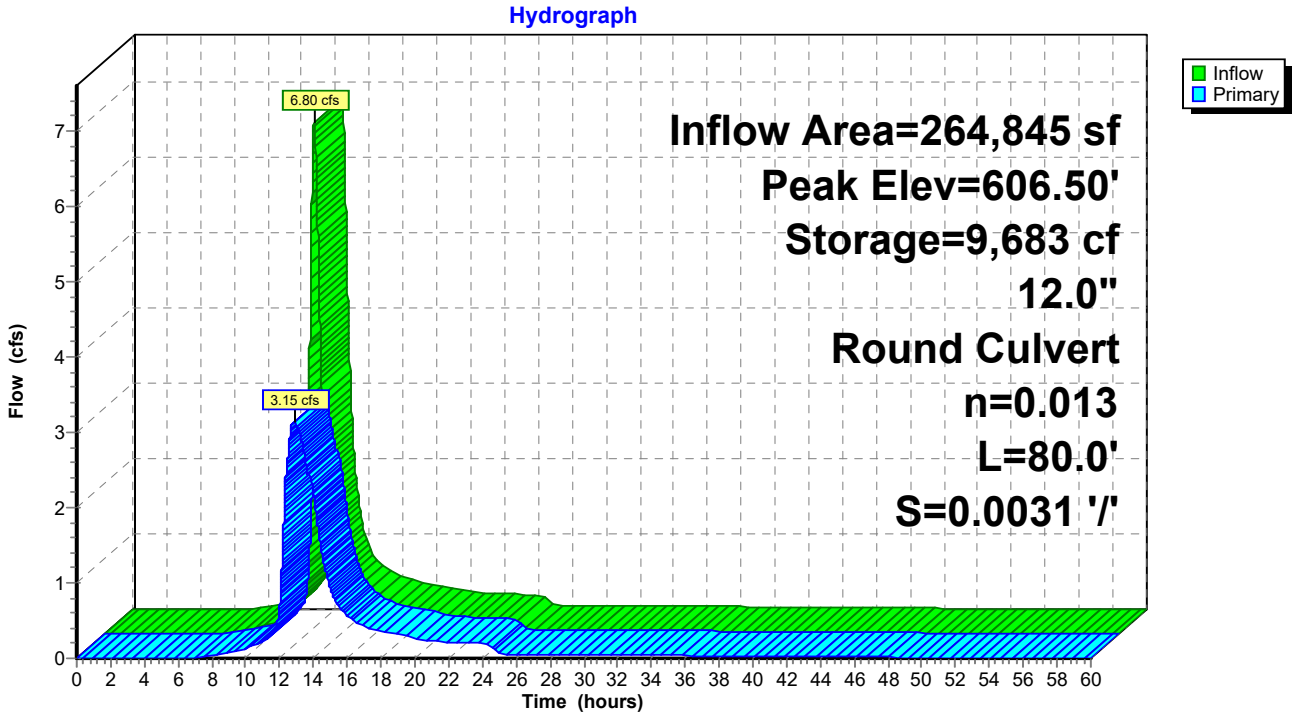
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.15 cfs @ 12.86 hrs HW=606.50' (Free Discharge)
1=Culvert (Barrel Controls 3.15 cfs @ 4.00 fps)

Pond 1P: Dry Pond



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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=1.91"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=2.47 cfs 4,368 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=2.67"
Flow Length=585' Tc=42.4 min CN=89 Runoff=8.07 cfs 42,696 cf

Subcatchment3S: Neighbors - West Runoff Area=0.900 ac 0.00% Impervious Runoff Depth=1.91"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=2.26 cfs 6,241 cf

Subcatchment4S: Neighbors - East Runoff Area=0.150 ac 0.00% Impervious Runoff Depth=1.91"
Flow Length=50' Slope=0.0100 '/' Tc=8.4 min CN=80 Runoff=0.47 cfs 1,040 cf

Pond 1B: Bio Area Peak Elev=609.62' Storage=3,838 cf Inflow=3.69 cfs 10,609 cf
Outflow=1.49 cfs 10,609 cf

Pond 1P: Dry Pond Peak Elev=607.04' Storage=14,726 cf Inflow=9.61 cfs 54,346 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=3.90 cfs 54,346 cf

Total Runoff Area = 264,845 sf Runoff Volume = 54,346 cf Average Runoff Depth = 2.46"
62.99% Pervious = 166,835 sf 37.01% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

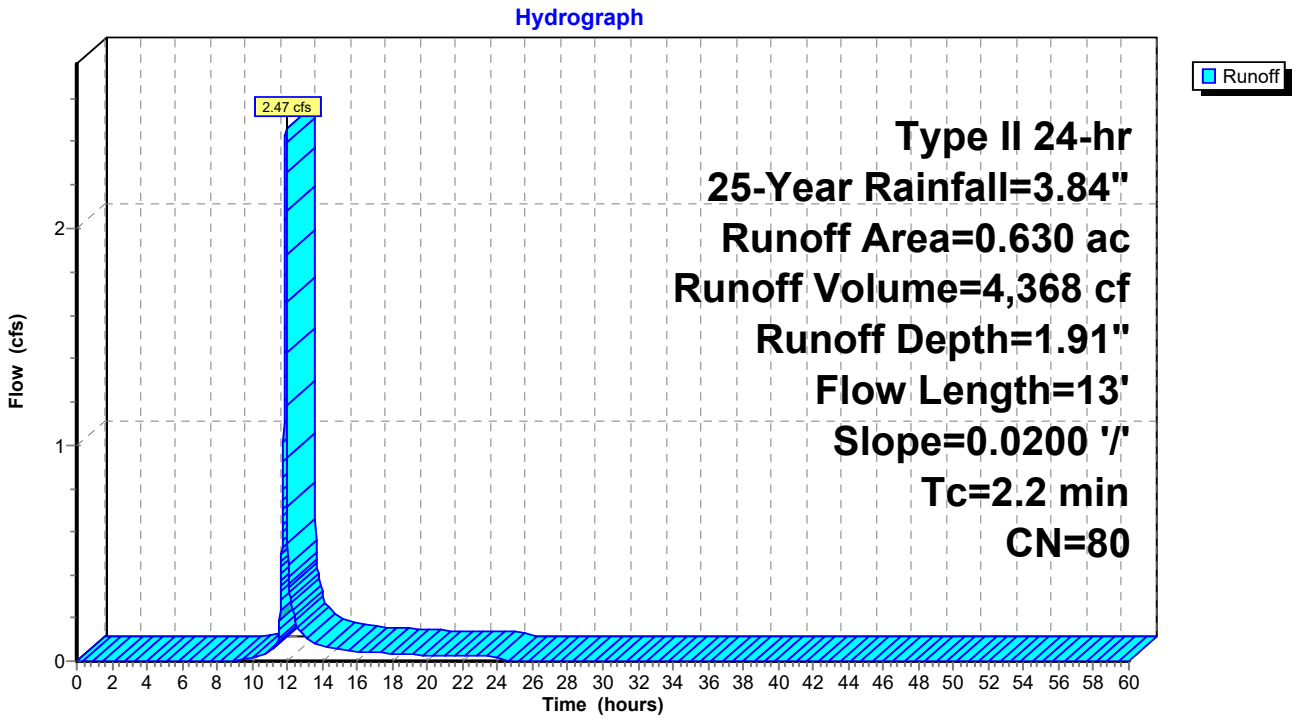
Runoff = 2.47 cfs @ 11.93 hrs, Volume= 4,368 cf, Depth= 1.91"
Routed to Pond 1B : Bio Area

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=3.84"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 414% of capacity of segment #2

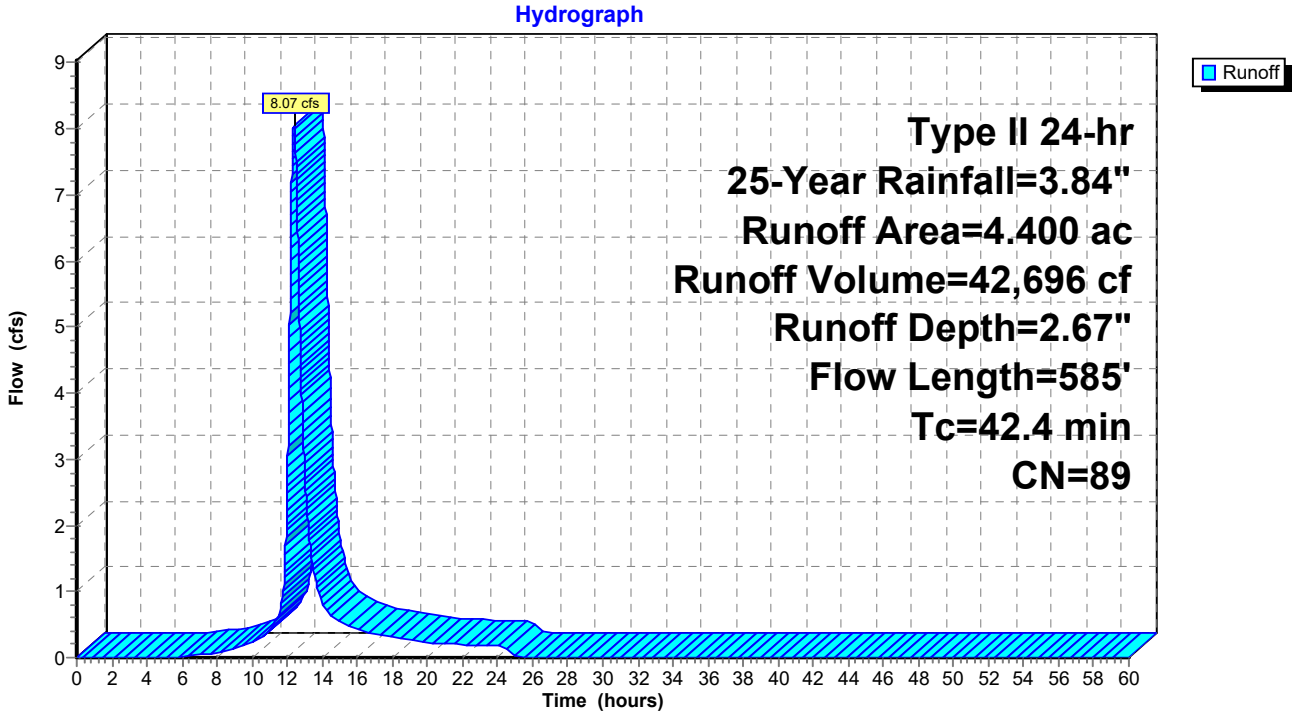
Runoff = 8.07 cfs @ 12.39 hrs, Volume= 42,696 cf, Depth= 2.67"
Routed to Pond 1P : Dry Pond

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=3.84"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Subcatchment 3S: Neighbors - West

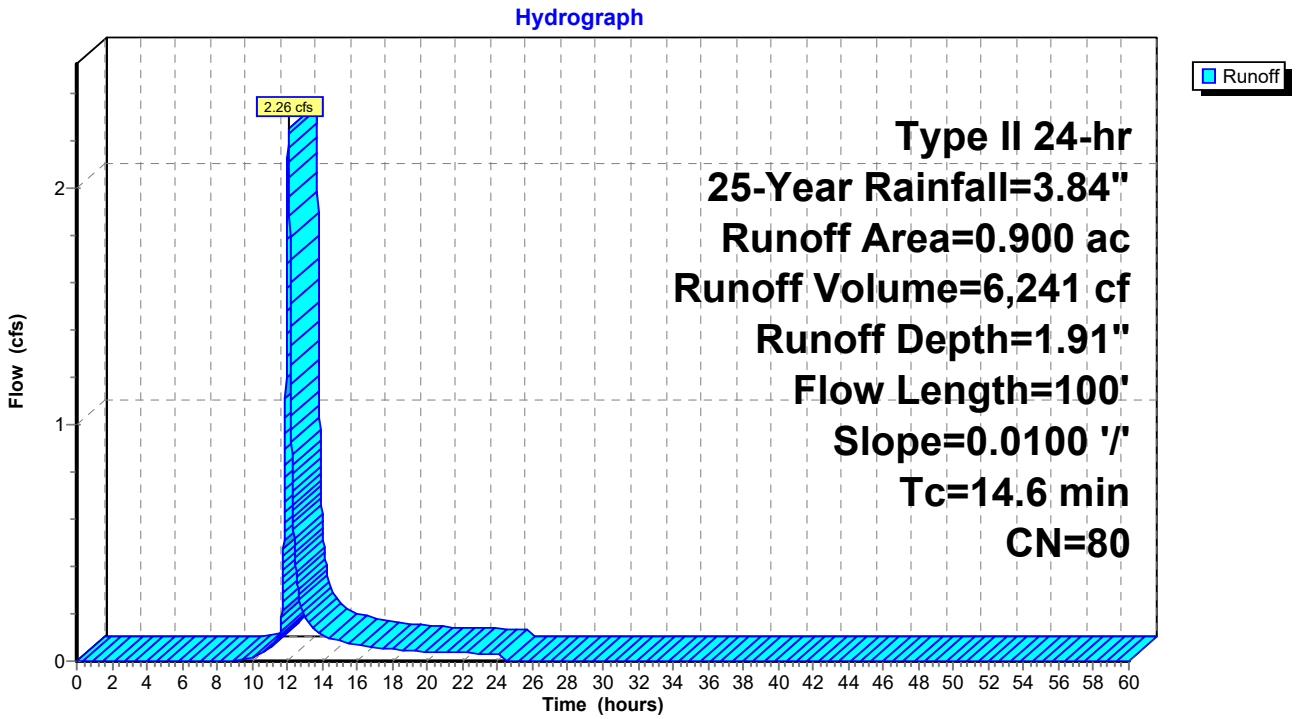
Runoff = 2.26 cfs @ 12.07 hrs, Volume= 6,241 cf, Depth= 1.91"
Routed to Pond 1B : Bio Area

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=3.84"

Area (ac)	CN	Description
0.900	80	>75% Grass cover, Good, HSG D
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors - West



Summary for Subcatchment 4S: Neighbors - East

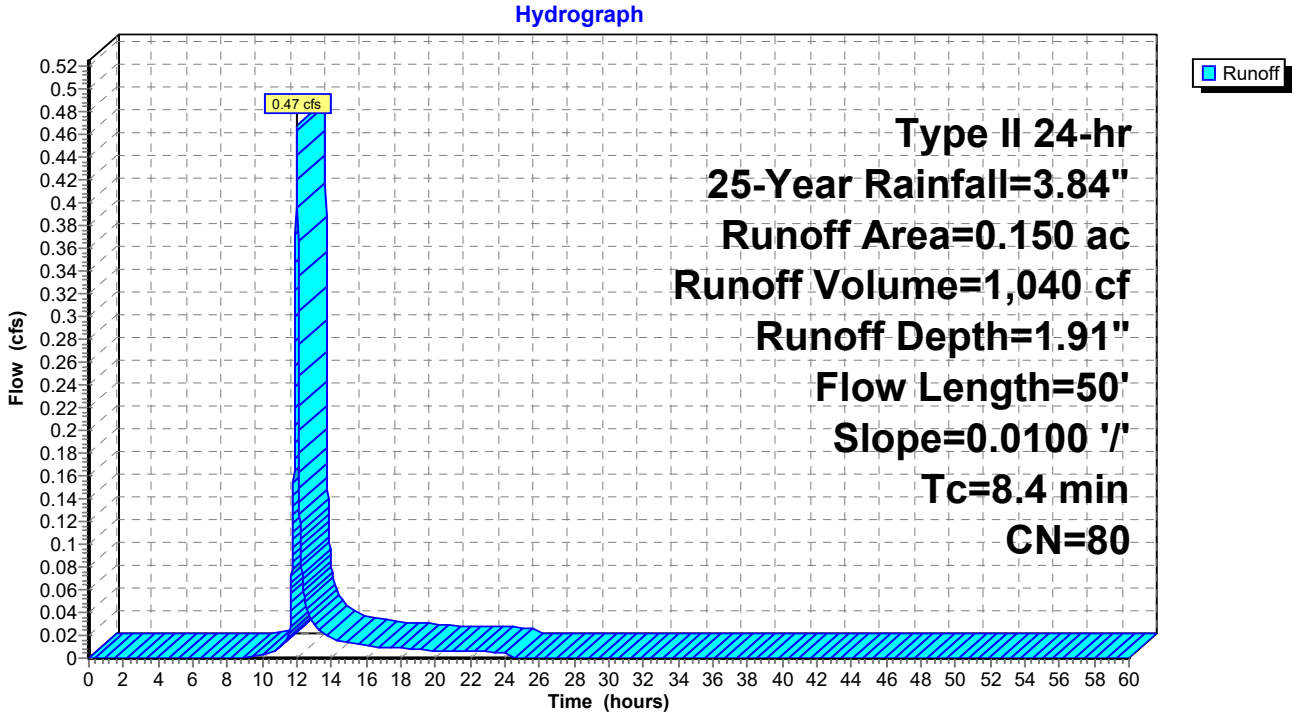
Runoff = 0.47 cfs @ 12.00 hrs, Volume= 1,040 cf, Depth= 1.91"
Routed to Pond 1P : Dry Pond

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=3.84"

Area (ac)	CN	Description
0.150	80	>75% Grass cover, Good, HSG D
0.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0100	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 4S: Neighbors - East



Summary for Pond 1B: Bio Area

Inflow Area = 66,647 sf, 0.00% Impervious, Inflow Depth = 1.91" for 25-Year event
Inflow = 3.69 cfs @ 11.94 hrs, Volume= 10,609 cf
Outflow = 1.49 cfs @ 12.21 hrs, Volume= 10,609 cf, Atten= 60%, Lag= 16.6 min
Primary = 1.49 cfs @ 12.21 hrs, Volume= 10,609 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.62' @ 12.21 hrs Surf.Area= 7,520 sf Storage= 3,838 cf

Plug-Flow detention time= 403.7 min calculated for 10,607 cf (100% of inflow)
Center-of-Mass det. time= 403.8 min (1,237.6 - 833.8)

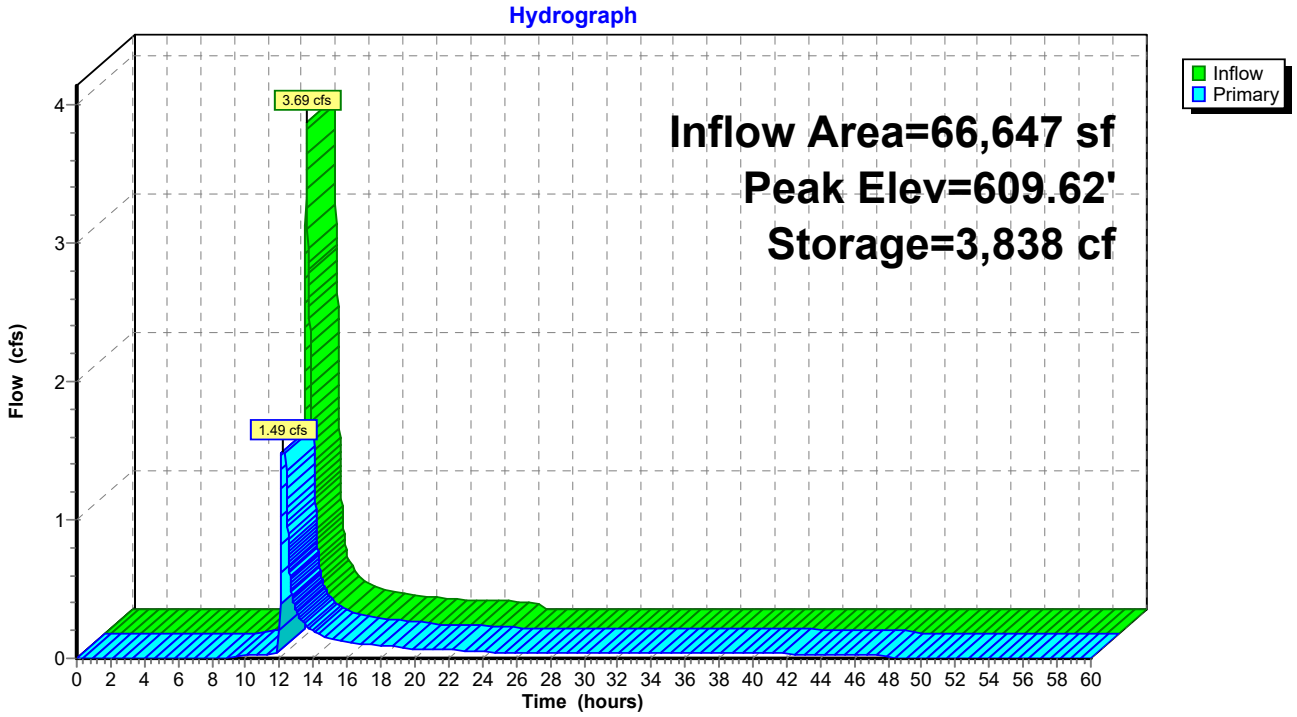
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=1.49 cfs @ 12.21 hrs HW=609.62' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.49 cfs @ 3.79 fps)
└**2=Orifice/Grate** (Passes < 2.78 cfs potential flow)
└**3=Exfiltration** (Passes < 0.04 cfs potential flow)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 INLET by 0.54'

Inflow Area = 264,845 sf, 37.01% Impervious, Inflow Depth = 2.46" for 25-Year event
Inflow = 9.61 cfs @ 12.39 hrs, Volume= 54,346 cf
Outflow = 3.90 cfs @ 12.88 hrs, Volume= 54,346 cf, Atten= 59%, Lag= 29.9 min
Primary = 3.90 cfs @ 12.88 hrs, Volume= 54,346 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 607.04' @ 12.88 hrs Surf.Area= 10,113 sf Storage= 14,726 cf

Plug-Flow detention time= 40.9 min calculated for 54,337 cf (100% of inflow)
Center-of-Mass det. time= 40.9 min (954.1 - 913.3)

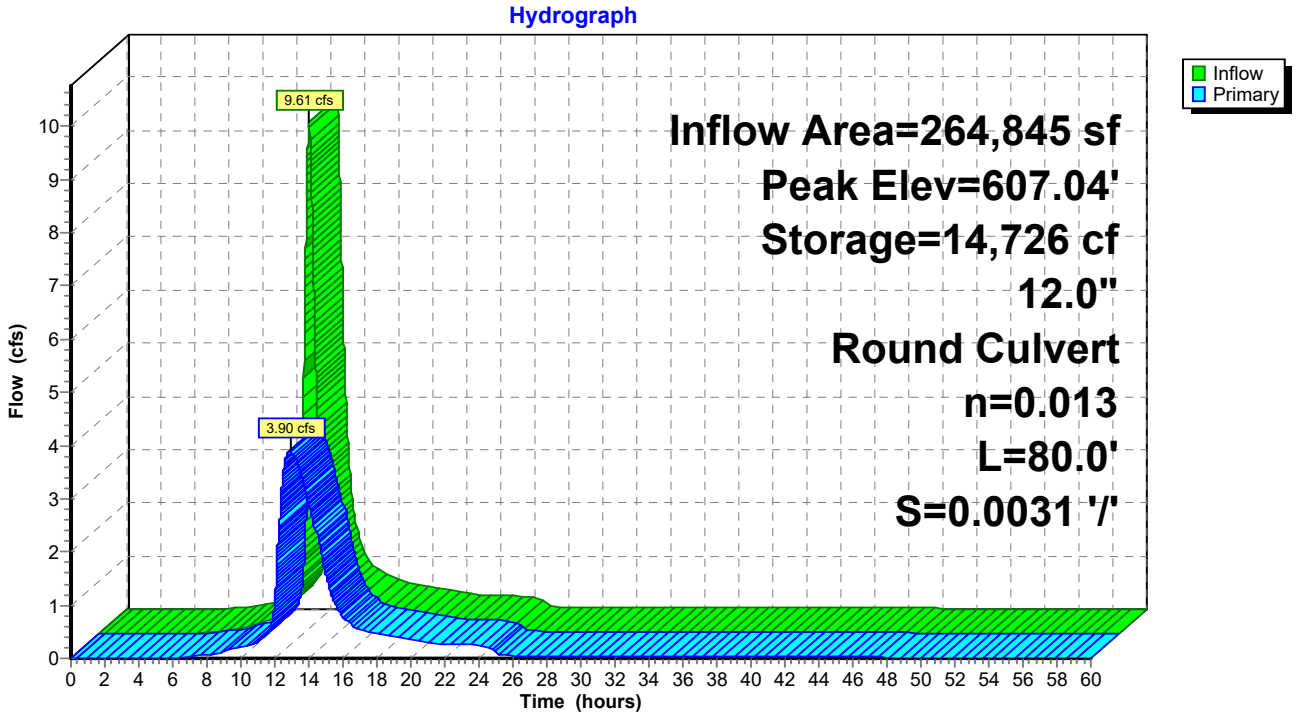
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.90 cfs @ 12.88 hrs HW=607.04' (Free Discharge)
1=Culvert (Barrel Controls 3.90 cfs @ 4.97 fps)

Pond 1P: Dry Pond



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

Subcatchment1S: Proposed Runoff Area=0.630 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=13' Slope=0.0200 '/' Tc=2.2 min CN=80 Runoff=3.92 cfs 7,077 cf

Subcatchment2S: Proposed Runoff Area=4.400 ac 51.14% Impervious Runoff Depth=3.99"
Flow Length=585' Tc=42.4 min CN=89 Runoff=11.92 cfs 63,768 cf

Subcatchment3S: Neighbors - West Runoff Area=0.900 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=100' Slope=0.0100 '/' Tc=14.6 min CN=80 Runoff=3.64 cfs 10,110 cf

Subcatchment4S: Neighbors - East Runoff Area=0.150 ac 0.00% Impervious Runoff Depth=3.09"
Flow Length=50' Slope=0.0100 '/' Tc=8.4 min CN=80 Runoff=0.75 cfs 1,685 cf

Pond 1B: Bio Area Peak Elev=609.97' Storage=6,722 cf Inflow=5.99 cfs 17,186 cf
Outflow=1.56 cfs 17,186 cf

Pond 1P: Dry Pond Peak Elev=607.98' Storage=25,550 cf Inflow=13.57 cfs 82,639 cf
12.0" Round Culvert n=0.013 L=80.0' S=0.0031 '/' Outflow=4.96 cfs 82,639 cf

Total Runoff Area = 264,845 sf Runoff Volume = 82,639 cf Average Runoff Depth = 3.74"
62.99% Pervious = 166,835 sf 37.01% Impervious = 98,010 sf

Summary for Subcatchment 1S: Proposed

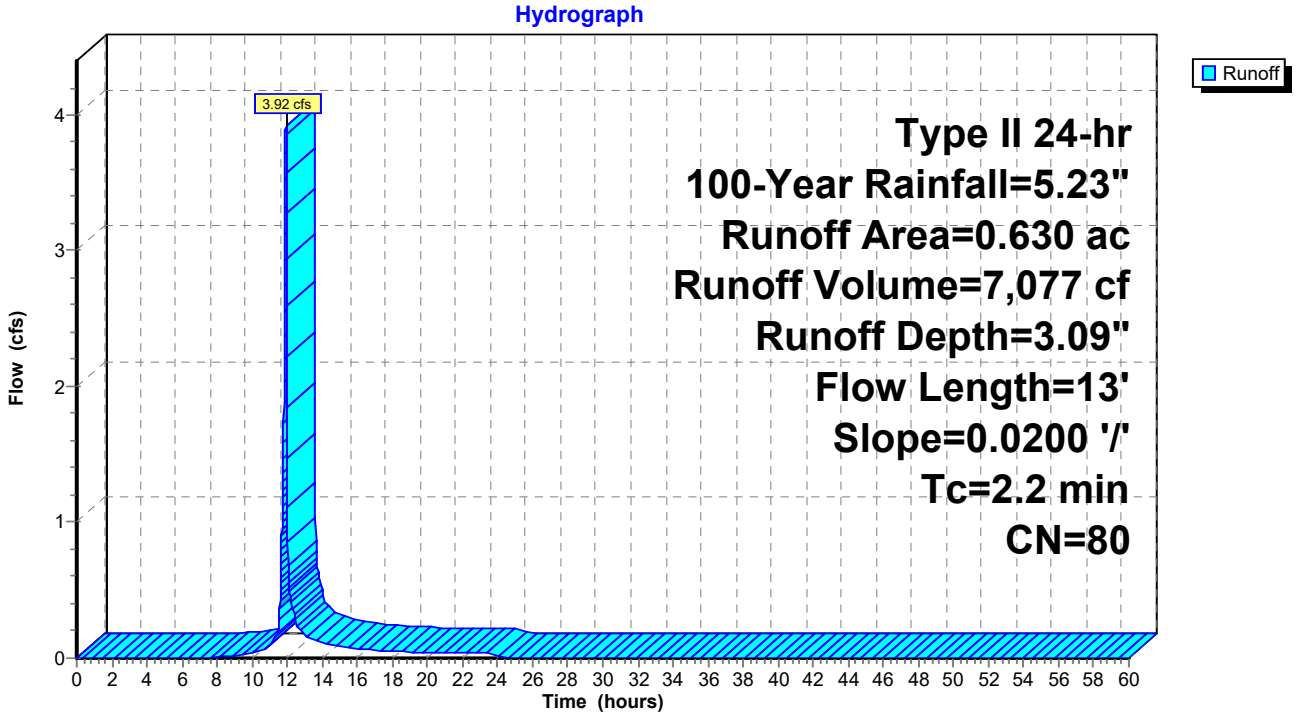
Runoff = 3.92 cfs @ 11.93 hrs, Volume= 7,077 cf, Depth= 3.09"
Routed to Pond 1B : Bio Area

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=5.23"

Area (ac)	CN	Description
0.630	80	>75% Grass cover, Good, HSG D
0.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	13	0.0200	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 1S: Proposed



Summary for Subcatchment 2S: Proposed

[47] Hint: Peak is 611% of capacity of segment #2

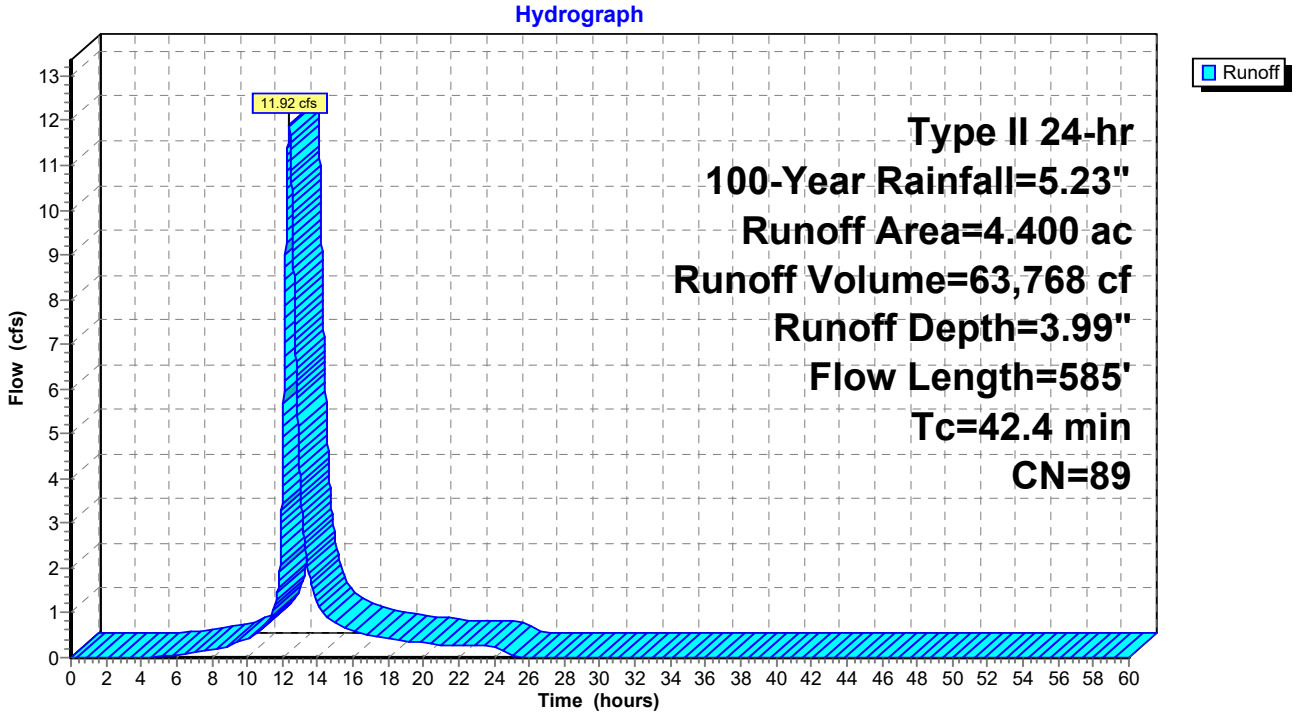
Runoff = 11.92 cfs @ 12.39 hrs, Volume= 63,768 cf, Depth= 3.99"
Routed to Pond 1P : Dry Pond

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=5.23"

Area (ac)	CN	Description
2.250	98	Paved parking, HSG D
2.150	80	>75% Grass cover, Good, HSG D
4.400	89	Weighted Average
2.150		48.86% Pervious Area
2.250		51.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.3	275	0.0060	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"
2.1	310	0.0030	2.48	1.95	**Pipe Channel, pipe flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
42.4	585	Total			

Subcatchment 2S: Proposed



Summary for Subcatchment 3S: Neighbors - West

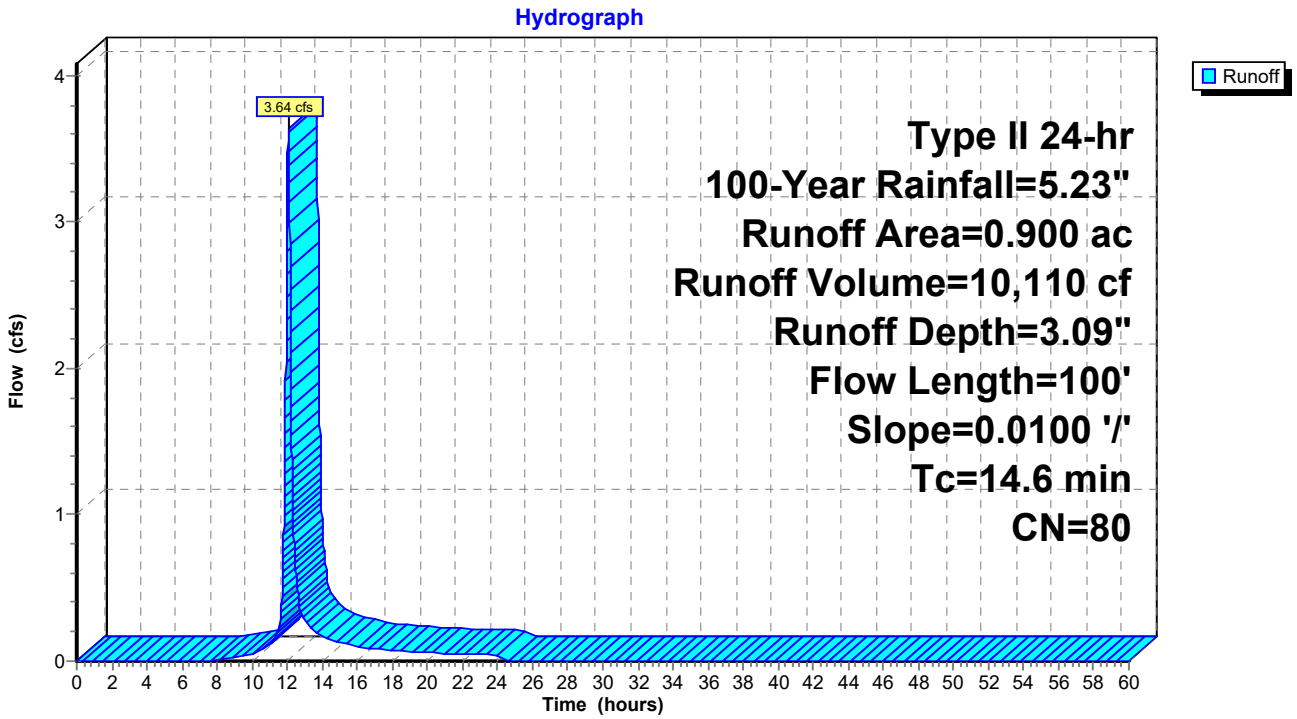
Runoff = 3.64 cfs @ 12.07 hrs, Volume= 10,110 cf, Depth= 3.09"
Routed to Pond 1B : Bio Area

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=5.23"

Area (ac)	CN	Description
0.900	80	>75% Grass cover, Good, HSG D
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0100	0.11		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 3S: Neighbors - West



Summary for Subcatchment 4S: Neighbors - East

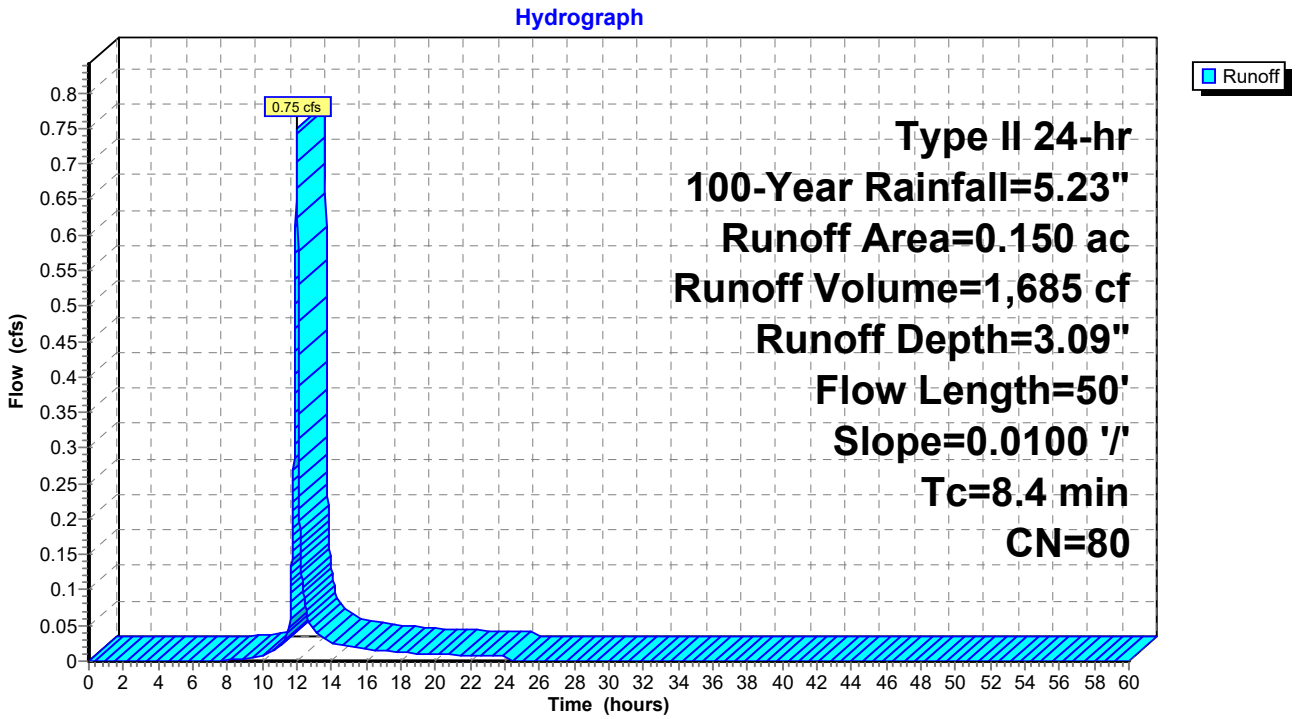
Runoff = 0.75 cfs @ 12.00 hrs, Volume= 1,685 cf, Depth= 3.09"
Routed to Pond 1P : Dry Pond

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=5.23"

Area (ac)	CN	Description
0.150	80	>75% Grass cover, Good, HSG D
0.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0100	0.10		**Sheet Flow, grass** Grass: Short n= 0.150 P2= 2.50"

Subcatchment 4S: Neighbors - East



Summary for Pond 1B: Bio Area

Inflow Area = 66,647 sf, 0.00% Impervious, Inflow Depth = 3.09" for 100-Year event
Inflow = 5.99 cfs @ 11.94 hrs, Volume= 17,186 cf
Outflow = 1.56 cfs @ 12.30 hrs, Volume= 17,186 cf, Atten= 74%, Lag= 21.8 min
Primary = 1.56 cfs @ 12.30 hrs, Volume= 17,186 cf
Routed to Pond 1P : Dry Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 609.97' @ 12.30 hrs Surf.Area= 9,051 sf Storage= 6,722 cf

Plug-Flow detention time= 265.8 min calculated for 17,183 cf (100% of inflow)
Center-of-Mass det. time= 266.0 min (1,086.0 - 820.0)

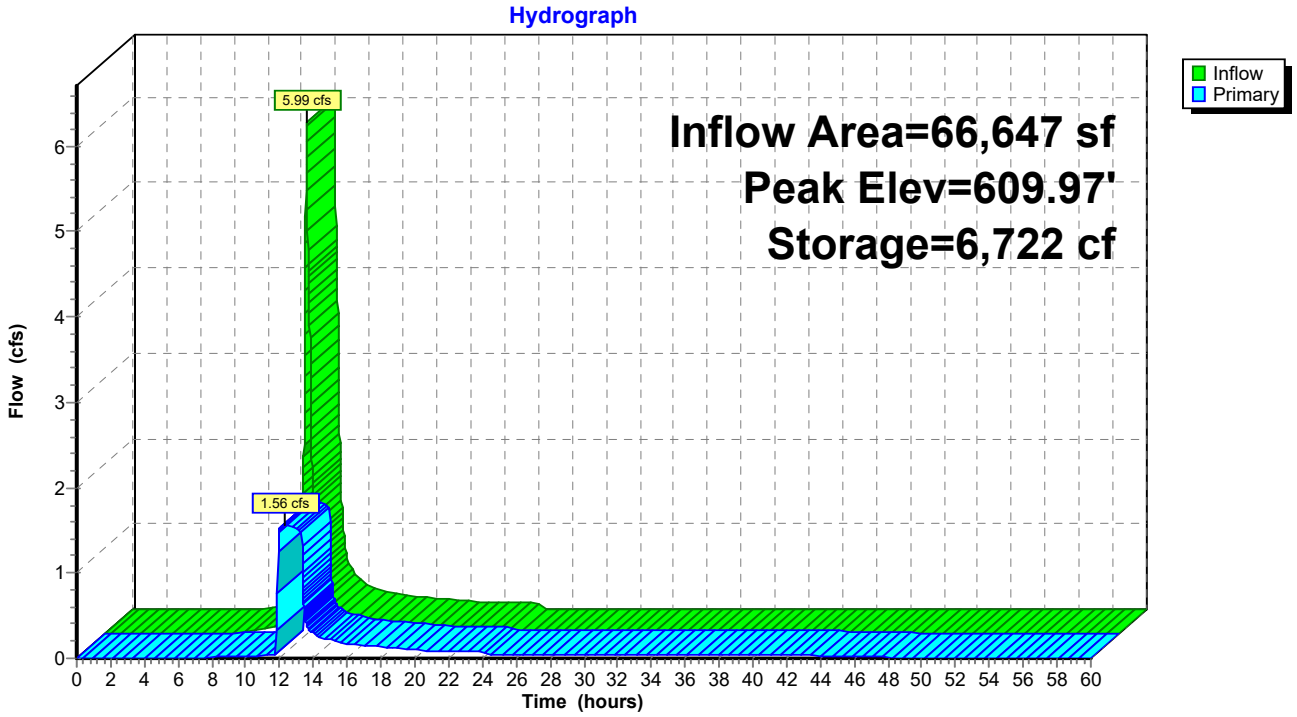
Volume	Invert	Avail.Storage	Storage Description
#1	609.00'	7,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
609.00	4,920	0	0
609.50	7,000	2,980	2,980
610.00	9,200	4,050	7,030

Device	Routing	Invert	Outlet Devices
#1	Primary	606.50'	**6.0" Round Culvert X 2.00** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 606.50' / 605.60' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	609.50'	**8.0" Horiz. Orifice/Grate X 10.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	609.00'	**0.250 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 590.00'

Primary OutFlow Max=1.56 cfs @ 12.30 hrs HW=609.97' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.56 cfs @ 3.98 fps)
└**2=Orifice/Grate** (Passes < 11.48 cfs potential flow)
└**3=Exfiltration** (Passes < 0.05 cfs potential flow)

Pond 1B: Bio Area



Summary for Pond 1P: Dry Pond

[44] Hint: Outlet device #1 is below defined storage
[79] Warning: Submerged Pond 1B Primary device # 1 INLET by 1.48'

Inflow Area = 264,845 sf, 37.01% Impervious, Inflow Depth = 3.74" for 100-Year event
Inflow = 13.57 cfs @ 12.39 hrs, Volume= 82,639 cf
Outflow = 4.96 cfs @ 13.09 hrs, Volume= 82,639 cf, Atten= 63%, Lag= 42.1 min
Primary = 4.96 cfs @ 13.09 hrs, Volume= 82,639 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 607.98' @ 13.09 hrs Surf.Area= 12,847 sf Storage= 25,550 cf

Plug-Flow detention time= 53.6 min calculated for 82,626 cf (100% of inflow)
Center-of-Mass det. time= 53.6 min (931.5 - 877.9)

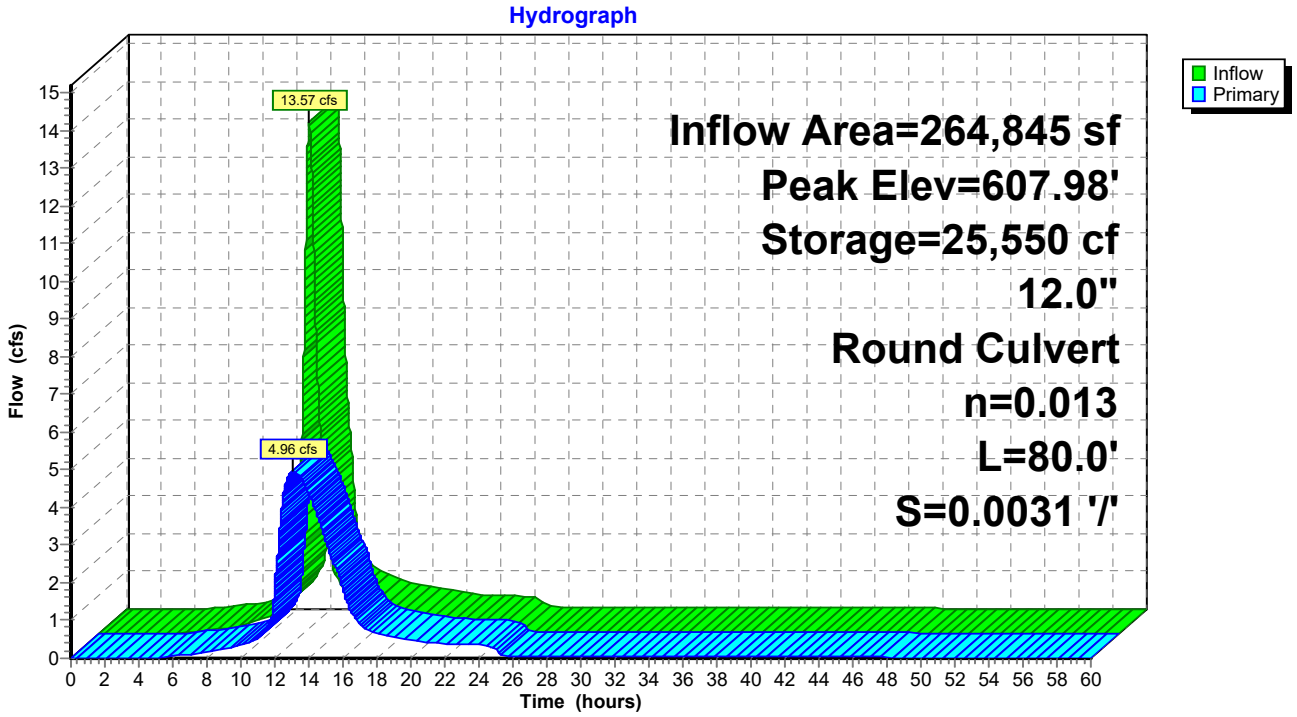
Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	25,785 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	4,370	0	0
606.00	7,150	5,760	5,760
607.00	10,000	8,575	14,335
608.00	12,900	11,450	25,785

Device	Routing	Invert	Outlet Devices
#1	Primary	604.75'	**12.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.75' / 604.50' S= 0.0031 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.96 cfs @ 13.09 hrs HW=607.98' (Free Discharge)
1=Culvert (Barrel Controls 4.96 cfs @ 6.31 fps)

Pond 1P: Dry Pond



Green Infrastructure & Water Quality Calculations

Proposed Multi-Family - 4774 4780 Sheridan Drive
Town of Amherst, Erie County, New York

WATER QUALITY REQUIRED FOR PROPOSED DEVELOPMENT AREA Area, Acres = 5.02
(Note: Reference Chap. 9 NYSDEC Stormwater Design Manual)

"Redevelopment Activity", Acres = 1.4 "New development", Acres = 3.62
(existing, disturbed impervious area)

Total proposed impervious, Acres = 2.25 Adjusted impervious, Acres = 1.20
"New" impervious, Acres = 0.85 (25% redevelopment, 100% new development)

Water Quality Volume (WQv) WQv=(P*Rv*A)/12

Where:	P=90% Rainfall Event Number	P= 1
	Rv= 0.05+0.009*(I)	Rv= 0.27
	IC=Impervious Cover, Acres	IC= 1.20
	I=Impervious Cover (%)	I= 24
	A=Runoff Area, Acres	A= 5.02

WQv (ac-ft)= 0.1110
WQv (cf)= 4,835

RRv PROVIDED FOR PROPOSED DEVELOPMENT AREA (See NYSDEC worksheets)

		WQv, cf	RRv, cf
Min. RRv Req'd, cf = 828	RRv, Bioretention Areas	1072	3760
Min. RRv Req'd, ac-ft = 0.019	WQv, Detention Pond	0	0
	TOTAL, cf	1072	3760
	TOTAL, ac-ft	0.025	0.086

WQ & RR SUMMARY (ac-ft):

TOTAL WATER QUALITY PROVIDED FOR PROPOSED DEVELOPMENT AREA 0.111

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 08/09/2016

Version 1.7
Last Updated: 10/02/2015

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	5.02	1.20	24%	0.27	4,832	
2						
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	5.02	1.20	24%	0.27	**4,832**	**Subtotal 1**
Total	5.02	1.20	24%	0.27	**4,832**	**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	0.00	0.00	*Up to 100 sf directly connected impervious area may be subtracted per tree*
Total	**0.00**	**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"	5.02	1.20	24%	0.27	4,832
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	**5.02**	**1.20**	24%	0.27	4,832
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	5.02	1.20	24%	0.27	**4,832**
WQv reduced by Area Reduction techniques					0

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C		30%
D	**5.02**	20%
Total Area	5.02	
Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	1.20	*acre*
Precipitation	1	*in*
Rv	0.95	
Minimum RRv	**828**	***ft3***
	0.02	af

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	5.02	1.20	0.24	0.27	4831.53	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops			24%	0.27	4,832	<<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		4,832	*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***	**3624**	***ft^2***	

Determine Actual Bio-Retention Area			
Filter Width	10	*ft*	
Filter Length	705	*ft*	
Filter Area	7050	*ft^2*	
Actual Volume Provided	9400	*ft^3*	

Determine Runoff Reduction				
Is the Bioretention contributing flow to another practice?			Select Practice	
RRv	3,760			
RRv applied	**3,760**	***ft^3***	***This is 40% of the storage provided or WQv whichever is less.***	
Volume Treated	1,072	*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*	

Appendix E

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

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

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.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

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

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

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;

(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.

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

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.

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

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.

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. *Discharge*s 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*

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.

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:

(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.

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

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.

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*

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

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*

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;

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

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

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

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;

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.

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

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

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.

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:

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

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;

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,

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

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.

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:

(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,

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

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

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.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

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

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

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.

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.

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 .

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

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.

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

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.

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

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

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

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

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

Figure 1 - New York City Watershed East of the Hudson

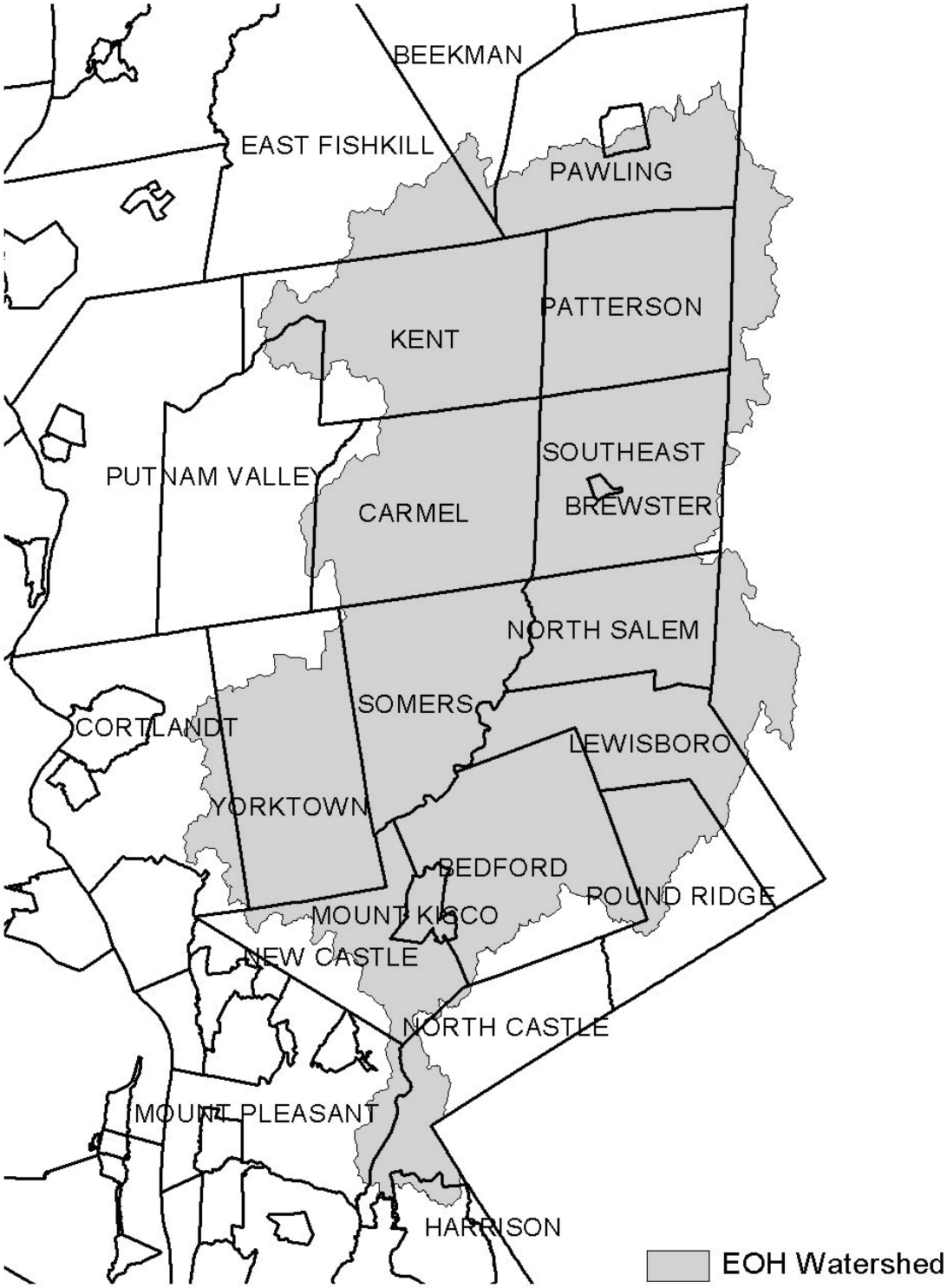


Figure 2 - Onondaga Lake Watershed

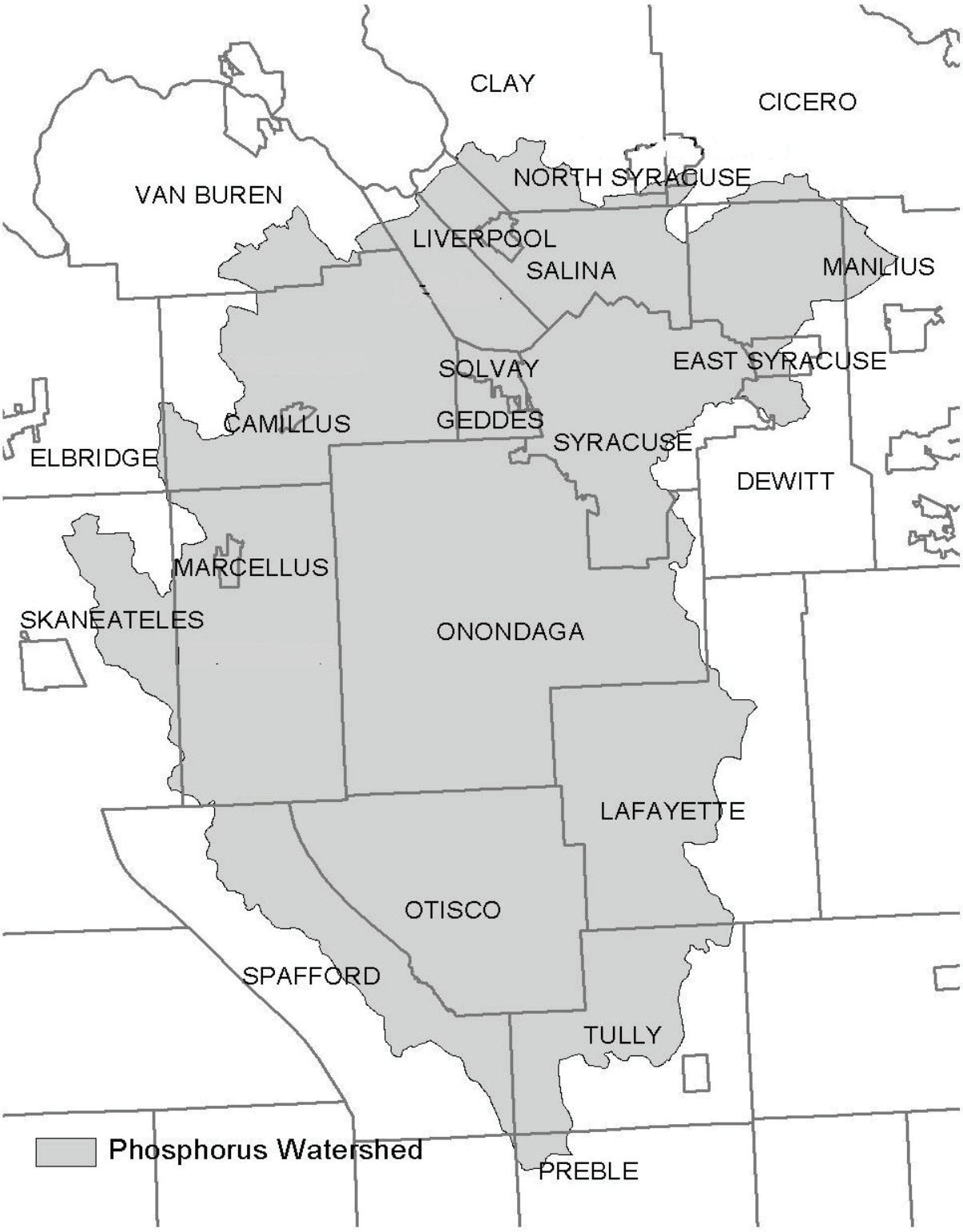


Figure 3 - Greenwood Lake Watershed

Figure 4 - Oscawana Lake Watershed

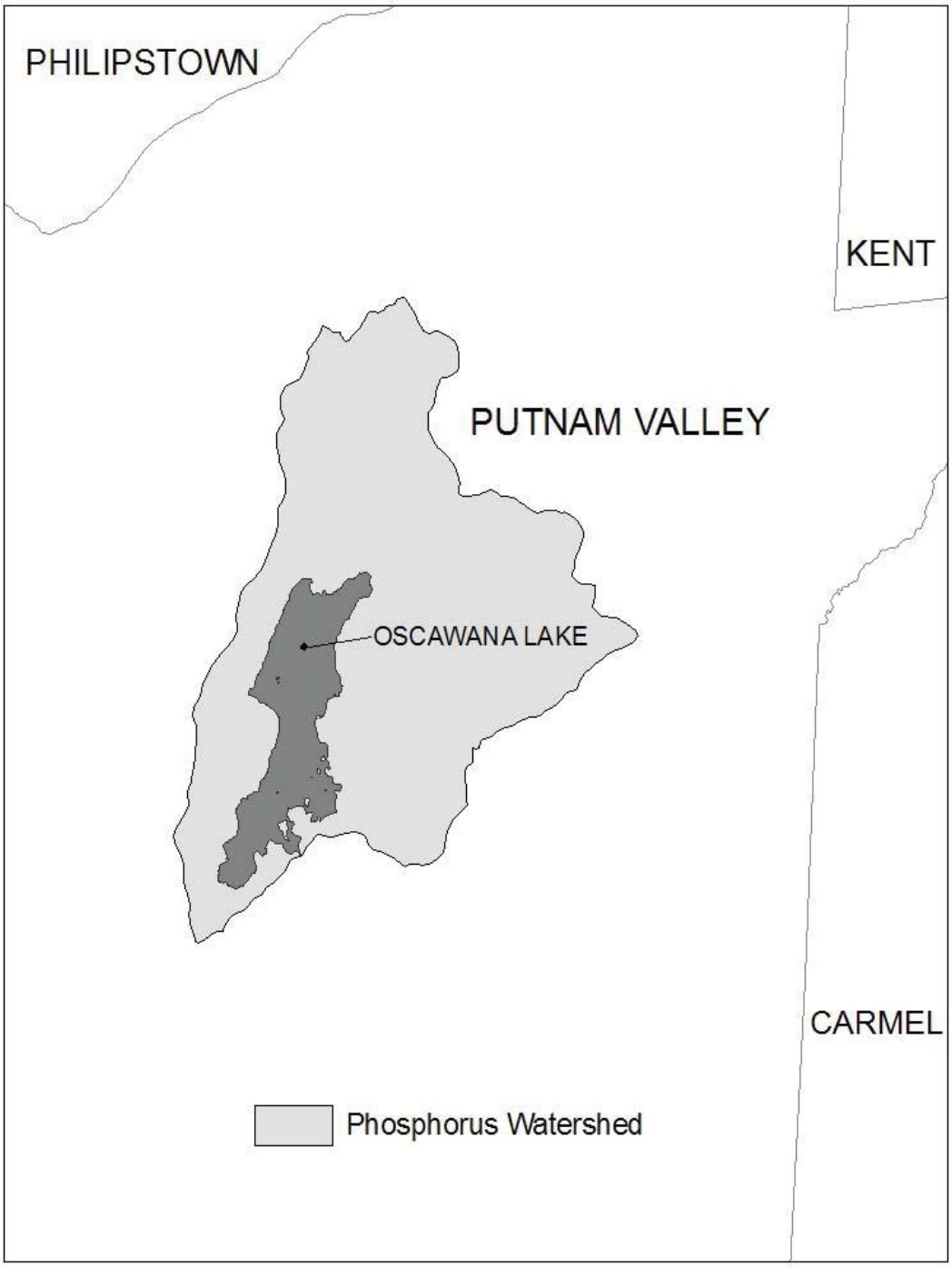
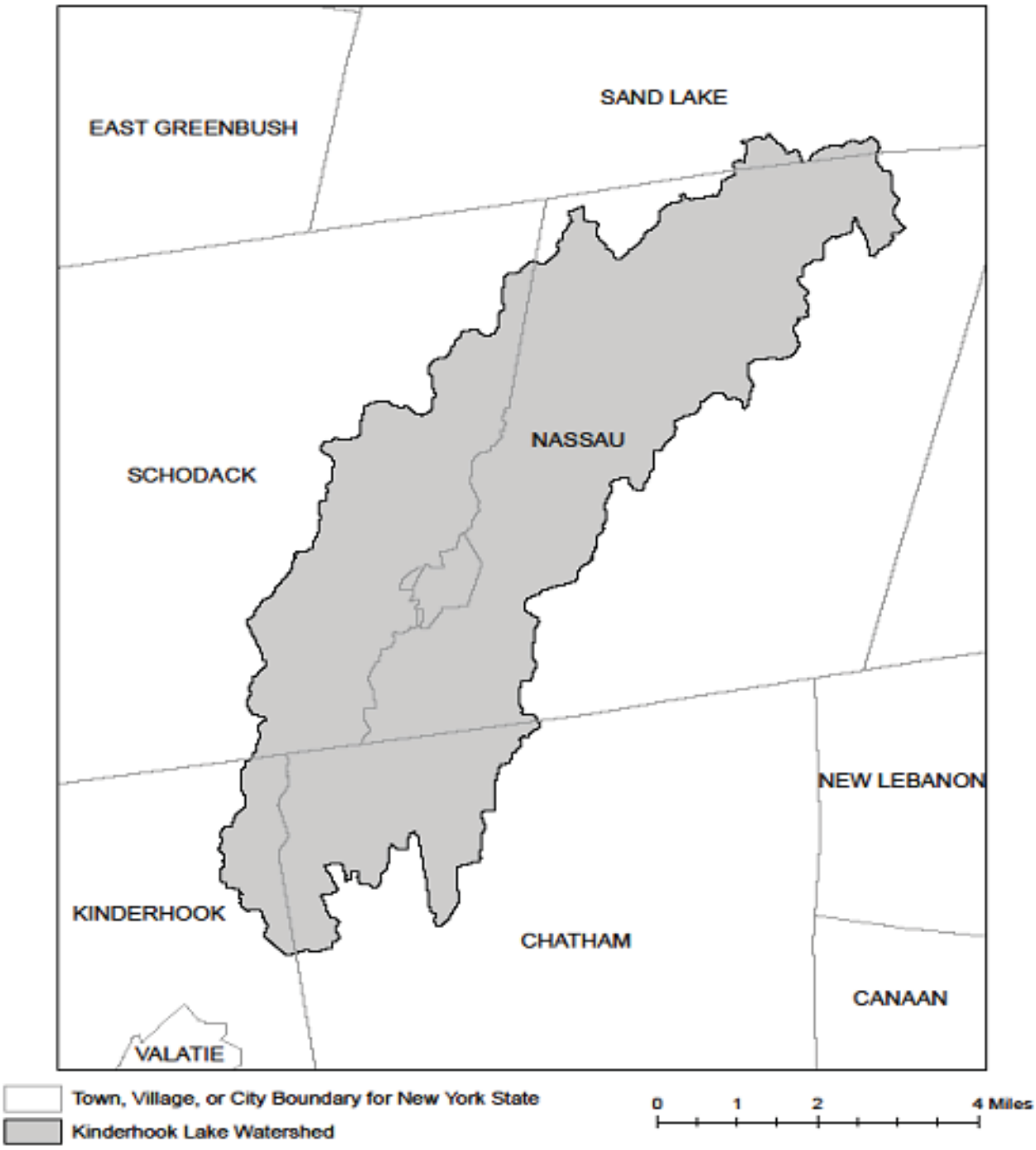


Figure 5 - Kinderhook Lake Watershed



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

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

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

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

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

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

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

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

Appendix F

Forms

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION STATEMENT

Proposed Multi-Family

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.

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

Proposed Multi-Family

Owner/Operator Information

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

4780 Sheridan Drive 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

4/22/24

Date

Revised: January 2020

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: Proposed Multi-Family

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
Robert		Savarino

_____

Signature

_____

Date

Appendix G

NYSDEC Notice of Termination (NOT)

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)?

_____

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:

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

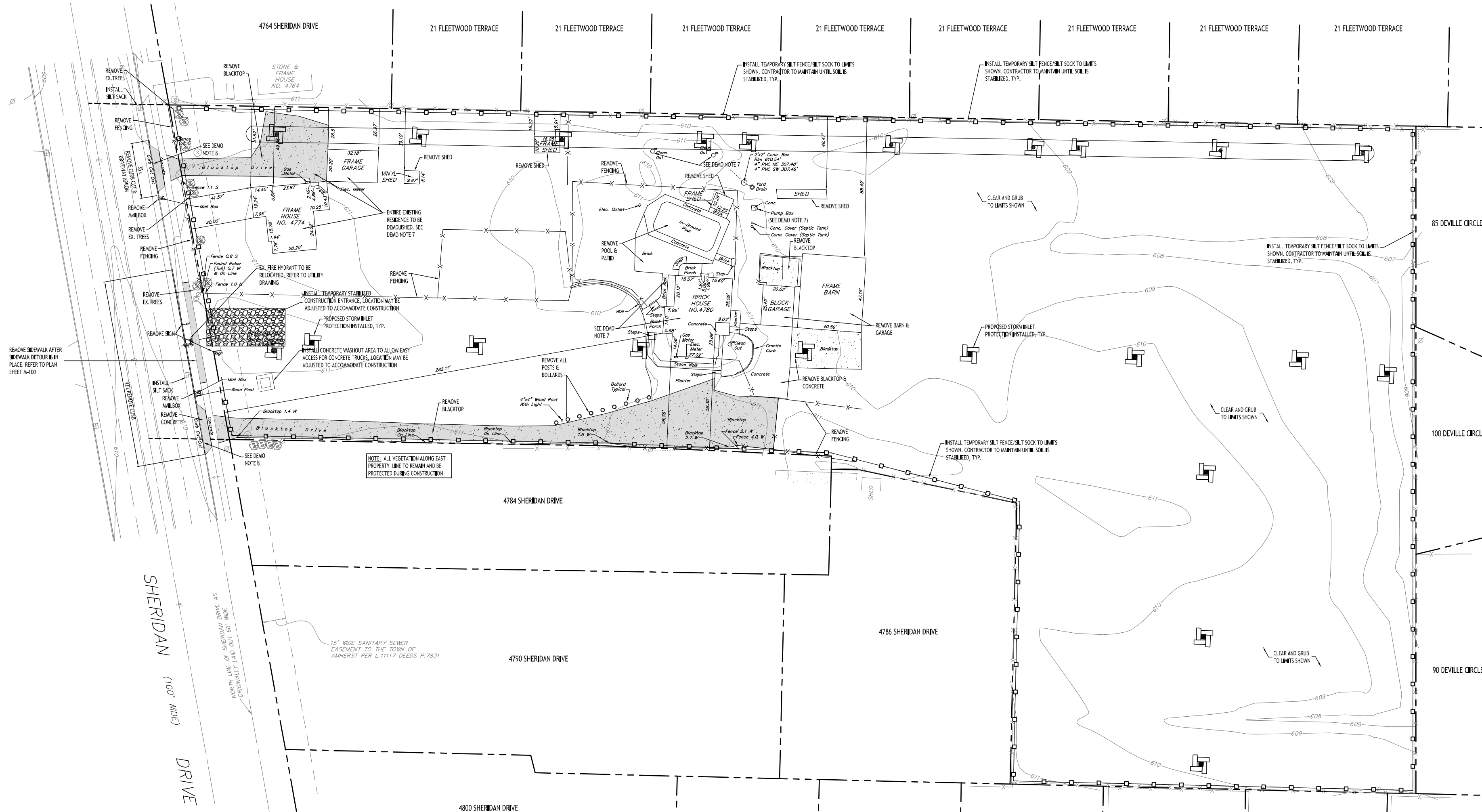
I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document 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)

Appendix H

Construction Documents



Demolition & Erosion Control Plan

SCALE: 1"=30'

EROSION CONTROL NOTES

THE FOLLOWING EROSION CONTROL PROCEDURES SHALL BE ADHERED TO BY THE CONTRACTOR:

1. INSTALL TEMPORARY SILT SOCK BARRIERS AS DIRECTED BY THE OWNER AND AT ALL EXISTING STORMWATER CATCH BASINS WITHIN THE WORK AREA TO PREVENT SEDIMENT MIGRATION. ALL SILT SOCK BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
2. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR RE-USE AS DIRECTED BY THE OWNER. ALL LOCAL ORDINANCES REGARDING THE SALE OF TOPSOIL MUST BE FOLLOWED. TOPSOIL MAY NOT BE REMOVED WITHOUT A PERMIT.
3. ALL SILT SOCK BARRIERS SHALL BE REPLACED WHEREVER THEY BECOME CLOGGED OR INOPERABLE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.
5. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER-SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR, AND SPREAD WATER AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.
6. 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.
7. ALL DISTURBED AREAS (EXCEPT AREAS TO BE PAVED OR BUILT UPON) SHALL BE TOPSOILED TO A MINIMUM 4" DEPTH AND SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE AND AS SOON AS PHYSICALLY POSSIBLE.
8. 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/CITY.
9. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE IN PLACE PRIOR TO BEGINNING EARTHWORK OPERATIONS AND SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION, AS DIRECTED BY THE ENGINEER.
10. INSTALL TEMPORARY SILT SOCK AROUND THE BASE OF STOCKPILES. STOCKPILES NOT BEING ACTIVELY USED FOR MORE THAN SEVEN (7) DAYS SHALL BE STABILIZED.
11. THE PROFESSIONAL CERTIFYING COMPLIANCE TO NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS MUST INSPECT AT A MINIMUM WEEKLY, AND WHEN DISTURBING MORE THAN 5 ACRES TWICE A WEEK, AND SHALL PROVIDE THESE INSPECTION REPORT WITH A WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE TO THE TOWN OF AMHERST (BI)WEEKLY.
12. THE ENGINEER OF RECORD FOR THIS PROJECT CERTIFIES THAT THESE DESIGN PLANS MEET THE REQUIREMENTS AND ARE IN COMPLIANCE WITH THE NEW YORK STORMWATER MANAGEMENT DESIGN MANUAL AND NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS.

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. INSTALL STABILIZED CONSTRUCTION ENTRANCE
B. INSTALL PERIMETER SILT FENCES/SILT SOCK IN THE LOCATIONS SHOWN ON THE DEMOLITION AND EROSION CONTROL PLAN SHEET.
C. CLEAR & GRUB SITE.
D. INSTALLATION OF UNDERGROUND DETENTION BASIN.
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 PLANS. INSTALL TEMPORARY INLET PROTECTION AT THE LOCATION OF ALL INLETS.
K. DUCT 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 PLANTINGS.
O. CLEAN STORM SYSTEM FOLLOWING CONSTRUCTION, CLEAN UNDERGROUND DETENTION BASIN AS PER MANUFACTURER RECOMMENDATIONS.
P. REMOVE SILT FENCE/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.

DEMOLITION NOTES:

1. ALL PERIMETER SILT SOCK TO BE INSTALLED PRIOR TO CONSTRUCTION ACTIVITY BEGINNING.
2. 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.
3. TEMPORARY SILT SOCK TO BE INSTALLED AS DIRECTED BY THE OWNERS FIELD REPRESENTATIVE. MAINTAIN UNTIL VEGETATION IS ESTABLISHED AND PAVEMENT IS INSTALLED.
4. AS NECESSARY, COVERED DUMPSTERS SHALL BE PROVIDED ONSITE AS REQUIRED FOR CONSTRUCTION WASTE.
5. REMOVE ALL TREES AND STUMPS AS SHOWN AND DISPOSE OF OFF SITE. CONTRACTOR TO PROTECT ALL TREES/BRUSH NOT DISTURBED BY CONSTRUCTION ACTIVITY. LOCATIONS OF TREES SHOWN ON PLAN ARE APPROXIMATE, CONTRACTOR TO CONFIRM LOCATION PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO COORDINATE WITH TOWN LANDSCAPE ARCHITECT WHICH TREES SHALL BE REMOVED AND WHICH SHALL REMAIN AND BE PROTECTED DURING CONSTRUCTION.
7. EXISTING CURB AND REMOVAL OF EXISTING ENTRANCE SHALL BE SAW CUT FULL-DEPTH AND NEATLY REMOVED FROM THE BACKSIDE, EXISTING PAVEMENT SHALL NOT BE DISTURBED AND THE PAVEMENT EDGE SHALL BE USED AS FORM FOR PLACING NEW CURB.

DEMOLITION & EROSION CONTROL LEGEND

EXISTING PAVEMENT TO BE SAWCUT & REMOVED	
PROPOSED SILT SOCK	
EXISTING TREE TO BE REMOVED	
PROPOSED STORM INLET PROTECTION	

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

CARMINA WOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

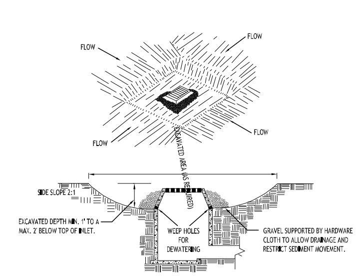
REVISIONS:
No. Description Date

DRAWING NAME:
Demolition & Erosion Control Plan

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-001

Project No: 23-4091



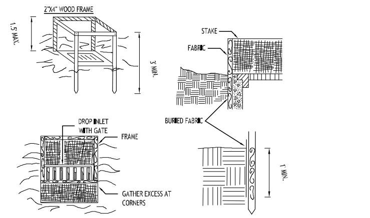
CONSTRUCTION SPECIFICATIONS

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

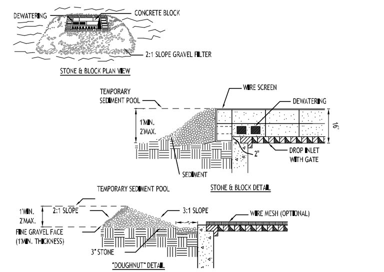
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH 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

NOTE: INSTALL ONE OF THE INLET PROTECTION OPTIONS SHOWN PRIOR TO CONSTRUCTION



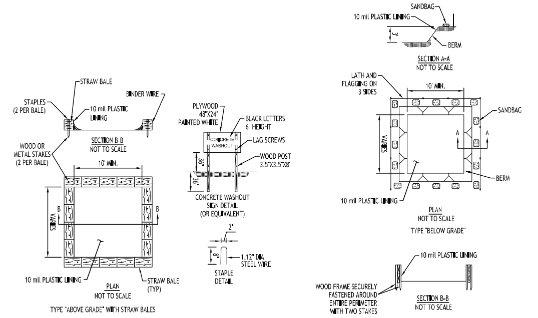
CONSTRUCTION SPECIFICATIONS

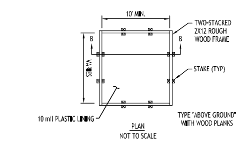
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 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



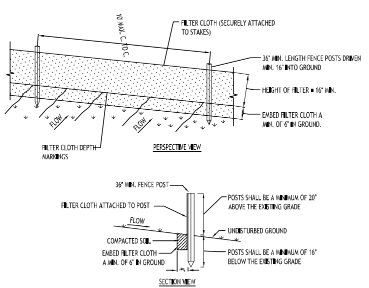


NOTES

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

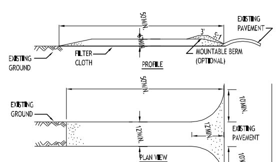


CONSTRUCTION SPECIFICATIONS

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 DETAIL

NOT TO SCALE

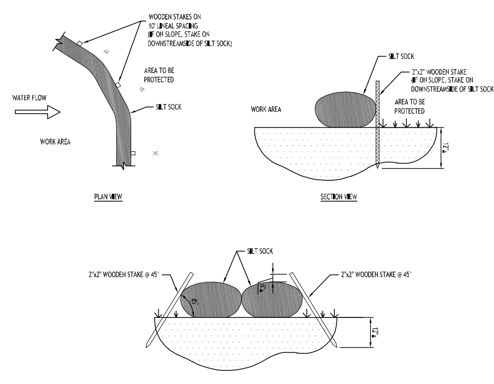


CONSTRUCTION SPECIFICATIONS

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:

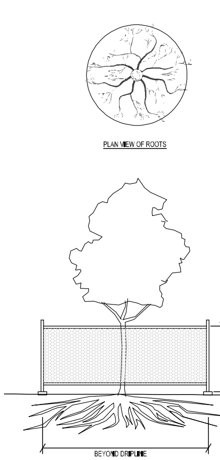
CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ 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

NOT TO SCALE



EXISTING TREE PROTECTION FENCE

MATERIALS

MATERIALS FOR TEMPORARY PLASTIC BARRIER FENCES SHALL MEET THE FOLLOWING REQUIREMENTS:
- FENCE: HIGH-DENSITY POLYETHYLENE MESH, ULTRAVIOLET-STABILIZED MIN. 2 YEARS; MINIMUM HEIGHT 4.0 FEET. COLOR: HIGH-VISIBILITY ORANGE OR GREEN. WHEN USED TO PROTECT TREES OR OTHER VEGETATION, COLOR SHALL BE HIGH-VISIBILITY ORANGE.
- POSTS: RIGID METAL OR WOOD POSTS, MINIMUM LENGTH 6.0 FEET.
- TIES: STEEL WIRE, #14 GAUGE OR NYLON CABLE TIES.
- WARNING SIGNS: SHEET METAL, PLASTIC OR OTHER RIGID, WATERPROOF MATERIAL, 1.5 FEET BY 2.0 FEET WITH 4 INCH BLACK LETTERS ON A WHITE BACKGROUND. TEXT SHALL BE: "PROTECTED SITE - KEEP OUT" UNLESS OTHERWISE SPECIFIED.

DETAILS

FENCES SHALL BE ERECTED PRIOR TO MOVING CONSTRUCTION EQUIPMENT ONTO ANY AREA DESIGNATED FOR PROTECTION.

THE LINE OF FENCES SHALL BE STAKED OR MARKED OUT ON THE GROUND BY THE CONTRACTOR AND APPROVED BY THE ENGINEER/OWNER BEFORE ANY FENCE IS INSTALLED. WHERE USED FOR PROTECTION OF INDIVIDUAL TREES, FENCE SHALL BE PLACED AT THE DRIP LINE (EXTENT OF CANOPY). IF NOT POSSIBLE, PLACEMENT SHALL BE AS CLOSE TO THE DRIP LINE AS POSSIBLE AND IN NO CASE LESS THAN 5.0 FEET AWAY FROM THE TREE TRUNK.

ON APPROVAL OF THE STAKEOUT, POSTS SHALL BE SECURELY DRIVEN ON 6.0 FOOT-MAXIMUM CENTERS, NORMAL TO THE GROUND, TO A DEPTH 1/3 OF THE TOTAL POST LENGTH. PLASTIC BARRIER FENCE SHALL BE PLACED ALONG THE SIDE OF ALL POSTS. ENDS OF FENCING SEGMENTS SHALL OVERLAP A DISTANCE OF AT LEAST ONE HALF THE FENCE HEIGHT.

FENCING SHALL BE SECURED TO POSTS WITH WIRE OR CABLE TIES AT TOP, MIDDLE AND BOTTOM OF POST. FASTENER SHALL BE TIGHT ENOUGH TO PREVENT THE FENCING FROM SLIPPING DOWN. OVERLAPS SHALL ALSO BE SECURELY FASTENED.

BARRIER FENCE WHICH IS NOT ORANGE IN COLOR SHALL BE FLAGGED AT 6.0 FOOT INTERVALS WITH RED OR ORANGE FLORESCENT TAPE. WARNING SIGNS SHALL BE MOUNTED ON THE FENCE AT NO MORE THAN 100 FOOT INTERVALS.

MAINTENANCE SHALL COMMENCE IMMEDIATELY AFTER ERECTION OF THE FENCE AND CONTINUE UNTIL ONE WEEK PRIOR TO ACCEPTANCE OF THE CONTRACT, AND SHALL CONSIST OF: REPLACING DAMAGED POST(S) AND FENCING; RE-FASTENING AND TIGHTENING FENCING; AND RESTORING FENCE TO ITS INTENDED HEIGHT.

FENCING USED FOR TREE OR OTHER VEGETATION PROTECTION SHALL NOT BE TEMPORARILY REMOVED TO ALLOW EQUIPMENT ACCESS OVER A PROTECTED AREA, EXCEPT AS REQUIRED FOR ITEMS OF WORK SPECIFICALLY SHOWN ON THE PLANS AND APPROVED BY THE ENGINEER IN WRITING.

TREE PROTECTION DETAIL

NOT TO SCALE

CARMINA WOOD
DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

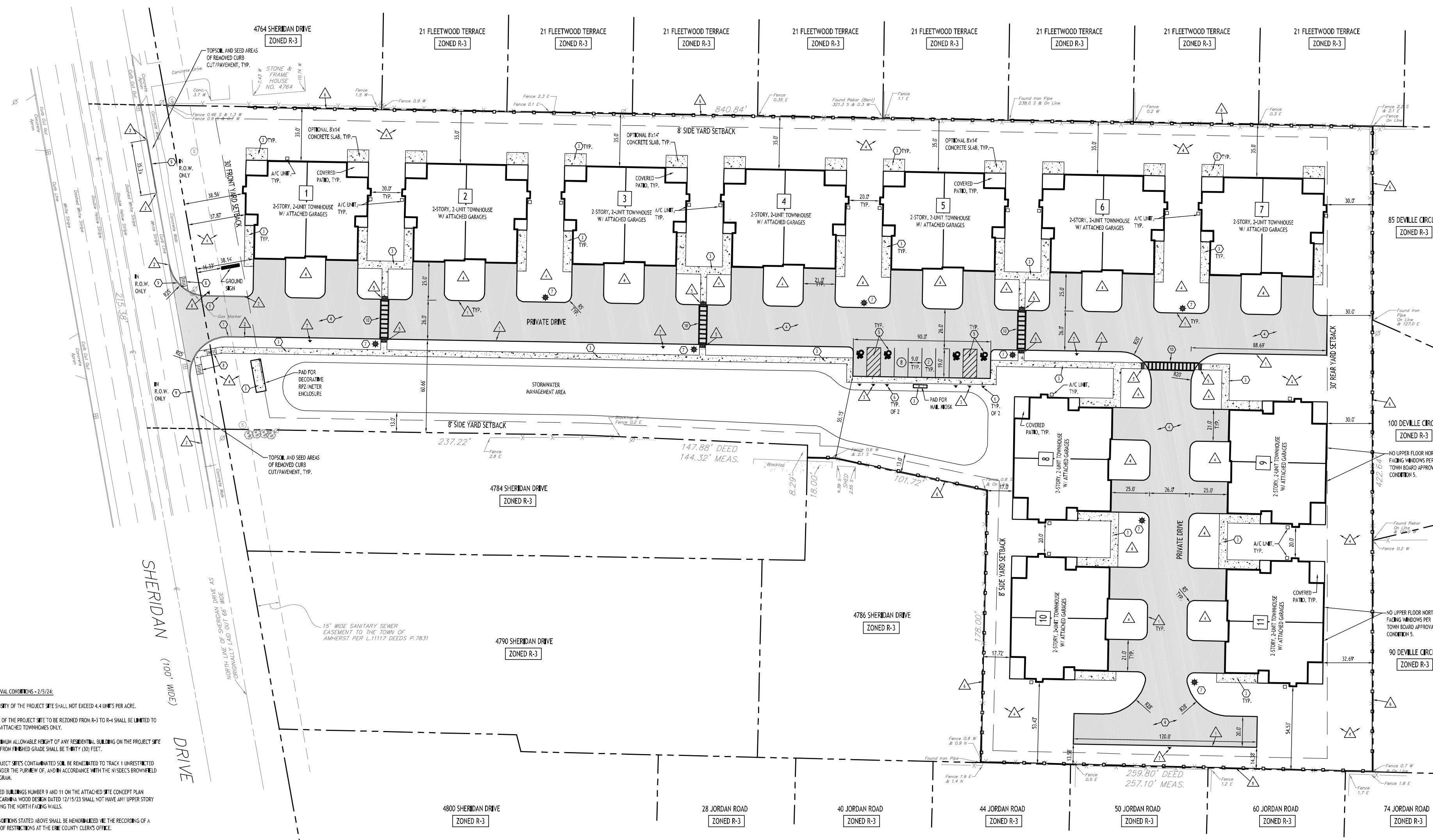
No.	Description	Date

DRAWING NAME:
Demolition & Erosion Control Details

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-002

Project No: 23-4091



TOWN BOARD APPROVAL CONDITIONS - 2/5/24:

1. THAT THE DENSITY OF THE PROJECT SITE SHALL NOT EXCEED 4.4 UNITS PER ACRE.
2. THAT THE USE OF THE PROJECT SITE TO BE REZONED FROM R-3 TO R-4 SHALL BE LIMITED TO TWO (2) UNIT-ATTACHED TOWNHOMES ONLY.
3. THAT THE MAXIMUM ALLOWABLE HEIGHT OF ANY RESIDENTIAL BUILDING ON THE PROJECT SITE AS MEASURED FROM FINISHED GRADE SHALL BE THIRTY (30) FEET.
4. THAT THE PROJECT SITE'S CONTAMINATED SOIL BE REMEDIATED TO TRACK 1 UNRESTRICTED STANDARDS UNDER THE PURVIEW OF, AND IN ACCORDANCE WITH THE NYSDEC'S BROWNFIELD CLEANUP PROGRAM.
5. THAT PROPOSED BUILDINGS NUMBER 9 AND 11 ON THE ATTACHED SITE CONCEPT PLAN PREPARED BY CARMINA WOOD DESIGN DATED 12/15/23 SHALL NOT HAVE ANY UPPER STORY WINDOWS ALONG THE NORTH FACING WALLS.
6. THAT THE CONDITIONS STATED ABOVE SHALL BE MEMORIALIZED VIZ THE RECORDING OF A DECLARATION OF RESTRICTIONS AT THE ERIE COUNTY CLERK'S OFFICE.

Site Data

SITE AREA = 5.03 AC TOTAL
ZONED: R-4
PROPOSED USE: 2-UNIT RESIDENTIAL TOWNHOUSE BUILDINGS WITH ATTACHED GARAGES (22 UNITS TOTAL)

SETBACKS (BLDG)	REQUIRED	PROVIDED
FRONT	30 FT.	37.87 FT. MIN.
SIDE	8 FT. / 20 FT. (COMBINED)	17 FT. MIN. / > 20 FT. (COMBINED)
REAR	30 FT.	30 FT. MIN.
BUILDING DENSITY:	37	22
MIN. FLOOR AREA (2-BDRM):	760 SF	> 760 SF
MAX. BUILDING COVERAGE:	35% (1.76 AC)	1.14 AC (22.7%)
MAX. BUILDING HEIGHT:	35 FT.	< 35 FT.
PARKING: (9'x19')	44	52 SURFACE + 44 GARAGE SPACES = 96 TOTAL
GREENSPACE		
OVERALL:	1.25 AC (25%)	2.77 AC (55.2%)

PARKING CALCULATION:

"MULTI-FAMILY"
2 SPACES PER UNIT
22 UNITS x 2 = 44 SPACES REQ'D (9'x19')

BUILDING DENSITY REQUIREMENTS:

PER R-4 ZONING REQUIREMENTS

5,850 SF / DWELLING
5.03 AC * 43,560 SF = 219,106 SF / 5,850 SF = 37.5

37 UNITS ALLOWED

Site Plan

SCALE: 1"=30'

DETAIL LEGEND SEE SITE DETAIL SHEET

1. TYPE 'A' CONCRETE CURBING
2. 90° PARKING STALL
3. CONCRETE SIDEWALK, 5' WIDE UNLESS OTHERWISE NOTED
4. STANDARD DUTY ASPHALT
5. HANDICAP PAVEMENT MARKINGS
6. HANDICAPPED PARKING SIGN
7. LIGHT POLE FOUNDATION
8. SIDEWALK CURB RAMP
9. NYSDOT CONCRETE CURB
10. CROSSWALK STRIPING

NOTE LEGEND

1. EDGE OF PAVEMENT
2. RUNOUT CURB IN 2' OR MATCH EXISTING CURB
3. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. R7-1C
4. LANDSCAPED AREA - SEE LANDSCAPE PLAN, IF NO PLANTINGS, INSTALL TOPSOIL & SEED
5. DETECTABLE WARNING STRIP
6. 6' HT. WHITE VINYL FENCE
7. INSTALL "NO PARKING FIRE LANE" SIGN
8. INSTALL "STOP" SIGN, M.U.T.C.D. SIGN NO. R1-1

SITE NOTES:

1. ALL RADII SHALL BE 3'-0" UNLESS OTHERWISE NOTED.
2. ALL DISTURBED AREAS: SHALL HAVE 4" MIN. OF TOPSOIL AND SEED.
3. ALL DIMENSIONS FROM PROPERTY LINES SHALL BE MEASURED PERPENDICULAR TO THE PROPERTY LINE.
4. CENTER ENTRANCE SIDEWALKS ON DOOR OPENINGS.
5. BUILDING DIMENSIONS ARE APPROXIMATE, REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
6. ALL HANDICAP RAMPS (NOT WITHIN THE NYSDOT R.O.W.) AND/OR SIDEWALKS FLUSH TO PAVEMENT SHALL HAVE ADA COMPLIANT TACTILE WARNING STRIPS WHERE ENTERING PARKING AREAS/DRIVEWAYS. SIDEWALKS FLUSH TO PAVEMENT WITHIN THE NYSDOT R.O.W. SHALL ADHERE TO THE NOTES AND DESIGN REGULATIONS AS STATED ON NYSDOT STANDARD SHEET 608-01.
7. EXISTING TREE LOCATIONS ARE APPROXIMATE, CONTRACTOR TO LOCATE LOCATIONS PRIOR TO CONSTRUCTION AND COORDINATE WITH TOWN LANDSCAPE ARCHITECT WHICH TREES SHALL BE REMOVED AND WHICH SHALL REMAIN AND BE PROTECTED DURING CONSTRUCTION.

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. 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 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. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. ALL OTHER PERMITS REQUIRED BY STATE OF NEW YORK, COUNTY OF ERIE, AND TOWN OF CLARENCE ARE THE RESPONSIBILITY OF THE CONTRACTOR/DEVELOPER/OWNER.
9. EXISTING CURB AND REMOVAL OF EXISTING ENTRANCE SHALL BE SAW CUT FULL-DEPTH AND NEATLY REMOVED FROM THE BACKSIDE, EXISTING PAVEMENT SHALL NOT BE DISTURBED AND THE PAVEMENT EDGE SHALL BE USED AS FORM FOR PLACING NEW CURB.

SITE LEGEND

PROPERTY LINE	
PROPOSED SIDEWALK / CONCRETE PAD	
NUMBER OF PARKING SPACES	27
PROPOSED SIGN	
PROPOSED STANDARD DUTY ASPHALT PAVEMENT	
PROPOSED LIGHT POLE	

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

CARMINAWOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family

4774 & 4780 Sheridan Drive
Amherst, NY

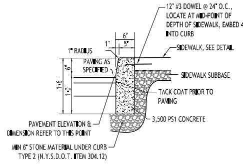
REVISIONS:
No. Description Date

DRAWING NAME:
Site Plan

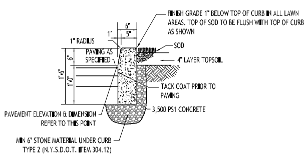
Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-100

Project No: 23-4091



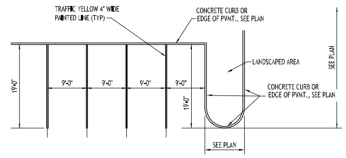
ABUTTING SIDEWALK



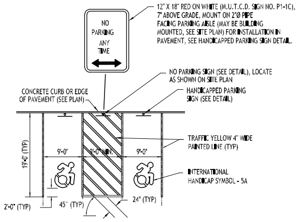
ABUTTING LANDSCAPE/GRASS

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.

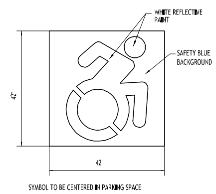
TYPE "A" CONCRETE CURB - 1
NOT TO SCALE



90° PARKING STALL LAYOUT - 2
NOT TO SCALE

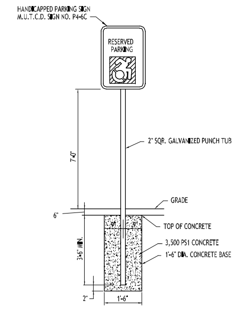


HANDICAPPED PAVEMENT MARKINGS & SIGNAGE - 5
NOT TO SCALE



SYMBOL TO BE CENTERED IN PARKING SPACE

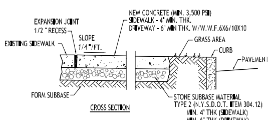
INTERNATIONAL HANDICAP SYMBOL - 5A
NOT TO SCALE



NOTES:
1. HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

GRASS/LAWN AREA

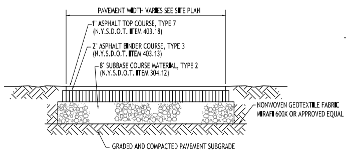
HANDICAPPED PARKING SIGN - 6
NOT TO SCALE



CROSS SECTION

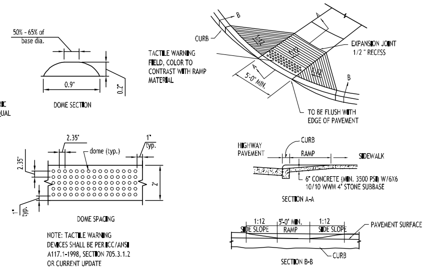
NOTES:
1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTH WAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 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 - 3
NOT TO SCALE



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 - 4
NOT TO SCALE



DOME SECTION

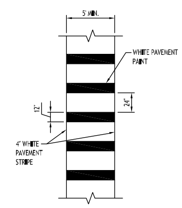
DOME SPACING

NOTE: TACTILE WARNING DEVICES SHALL BE PER ICC/ANSI A117.1-1998, SECTION 705.3.1.2 OR CURRENT UPDATE

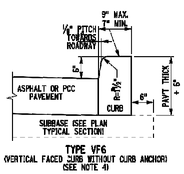
SECTION A-A

SECTION B-B

SIDEWALK CURB RAMP - 8
NOT TO SCALE

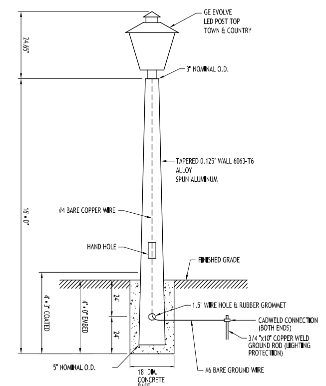


CROSSWALK STRIPING - 10
NOT TO SCALE



TYPE VF6
(VERTICAL FACED CURB WITHOUT CURB ANCHOR)
(SEE NOTE 4)

NYSDOT CONCRETE CURB - 9
NOT TO SCALE



NOTES:
1. LIGHT FIXTURE, POLE & BASE ORDERING INFORMATION, VERIFY WITH OWNER & UTILITY COMPANY PRIOR TO ORDERING.

POST TOP LIGHT POLE & FOUNDATION - 7
NOT TO SCALE

CARMINAWOOD
DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

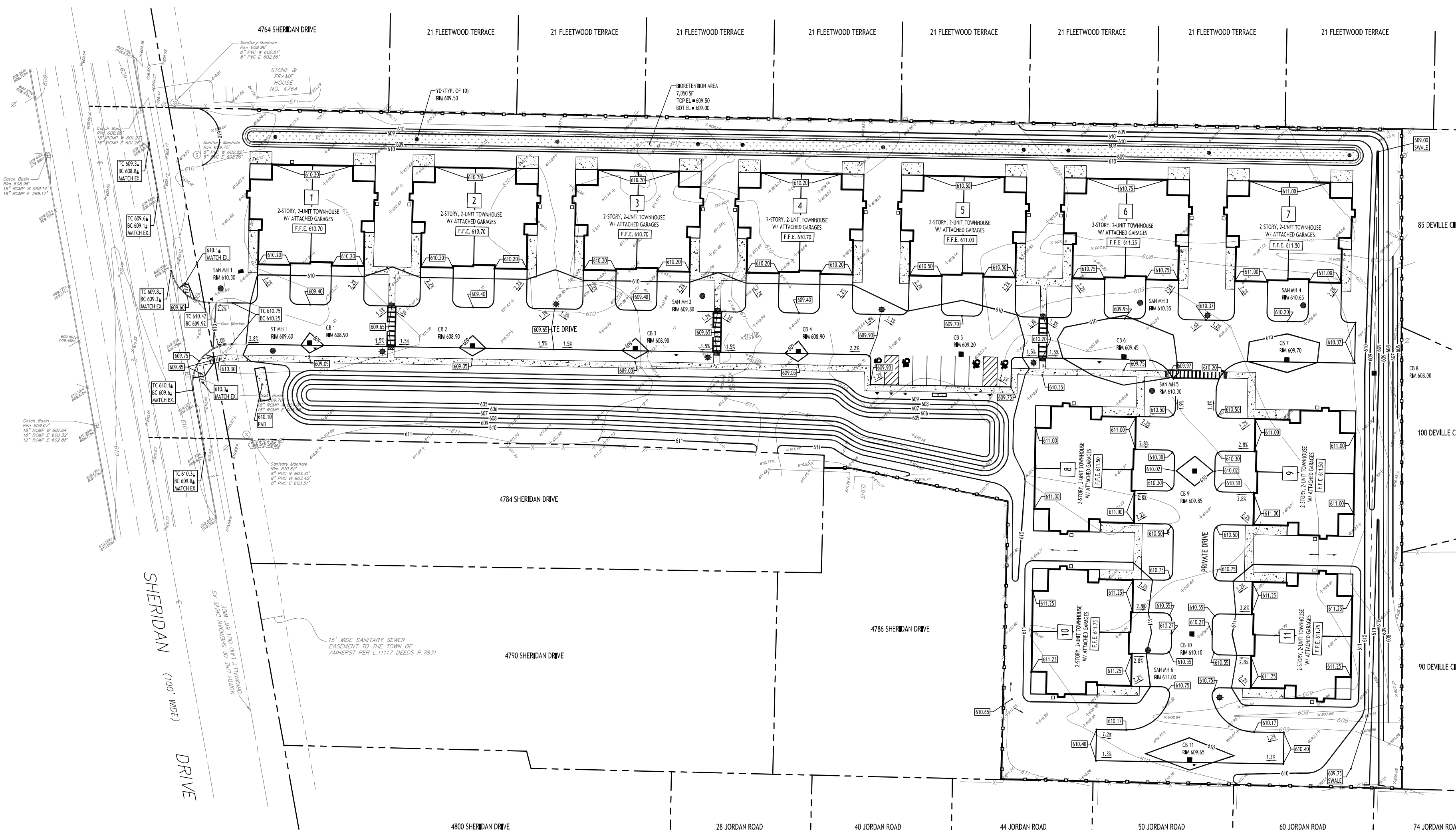
REVISIONS:		
No.	Description	Date

DRAWING NAME:
Site Details

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-101

Project No: 23-4091



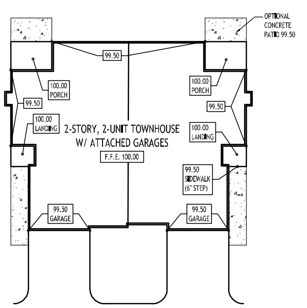
N
Grading Plan
SCALE: 1"=30'

PROPOSED GRADING LEGEND

PROPOSED CONTOUR	101
PROPOSED SPOT ELEVATION	100.00
PROPOSED TOP/BOTTOM OF CURB	TC 100.50 / BC 100.00
PROPOSED CATCH BASIN	CB
PAVEMENT/GROUND SLOPE	
PROPOSED MANHOLE	MH
PROPOSED SWALE	

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR IT'S ACCURACY.

30' 30 0 30 60FT.



Typical Grading Plan
SCALE: 1"=20'

CARMINAWOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

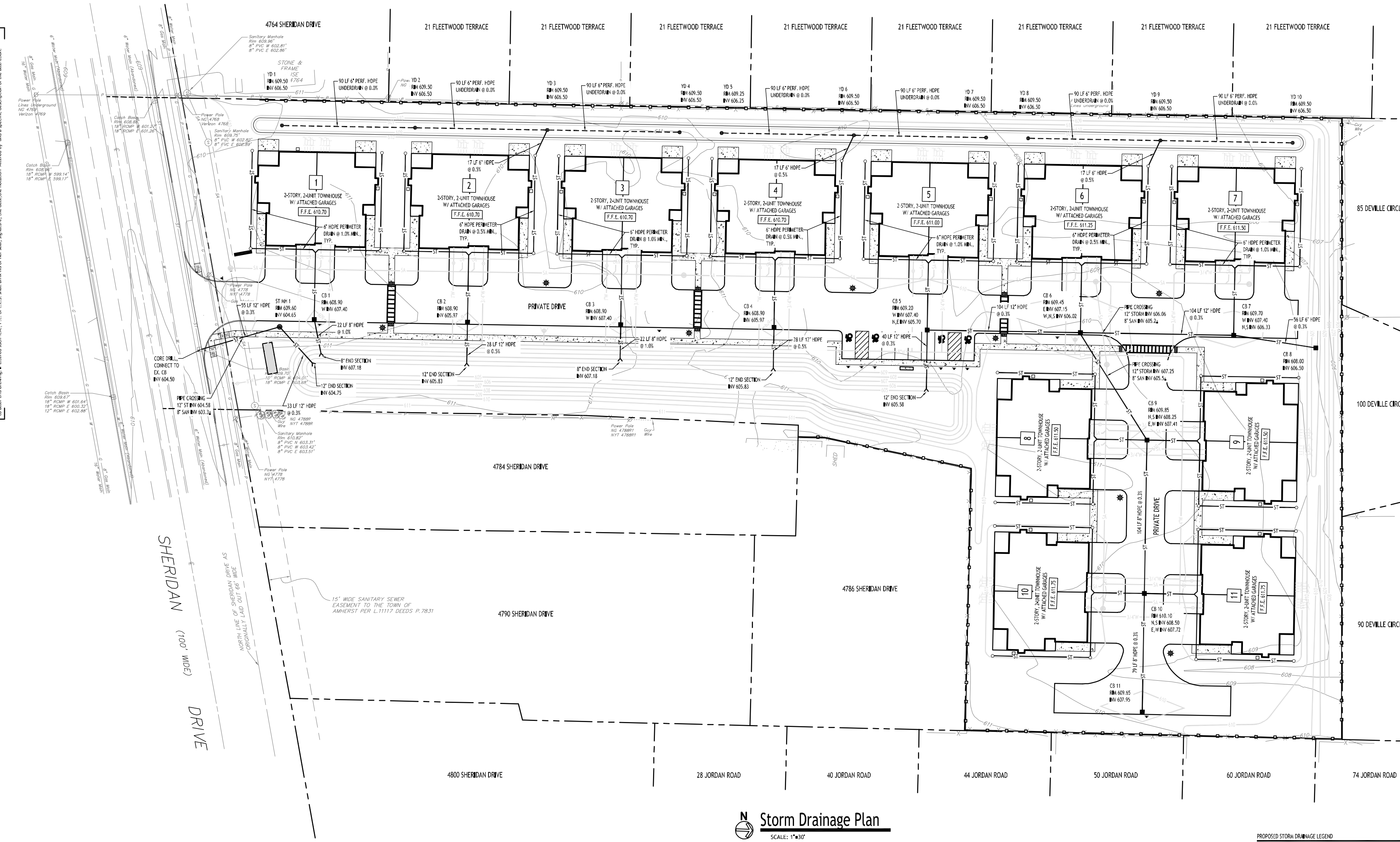
REVISIONS:

No.	Description	Date

DRAWING NAME:
Grading Plan

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-200
Project No: 23-4091



Storm Drainage Plan

SCALE: 1"=30'

PROPOSED STORM DRAINAGE LEGEND

PROPOSED STORM PIPE	— ST —
PROPOSED PERFORATED STORM PIPE	- - - -
PROPOSED CATCH BASIN	■
PROPOSED MANHOLE	●
PROPOSED CLEANOUT	○

CB: CATCH BASIN
MH: MANHOLE
OS: OUTLET STRUCTURE

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR IT'S ACCURACY.

30' 30 0 30 60Ft.

CARMINA-WOOD DESIGN

Buffalo | Utica | Greensboro

Proposed Multi-Family

4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

No.	Description	Date

DRAWING NAME:

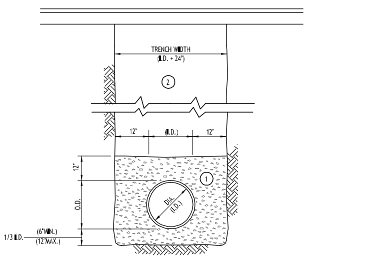
Storm Drainage Plan

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.

C-300

Project No: 23-4091



NOTES:

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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.

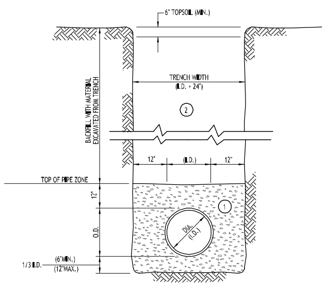
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE 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



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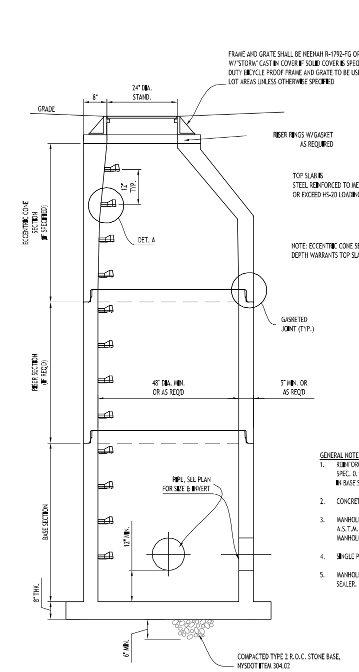
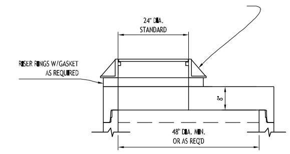
(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

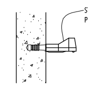
STORM SEWER TRENCH SECTION IN UNPAVED AREAS

NOT TO SCALE





ALTERNATE TOP SLAB



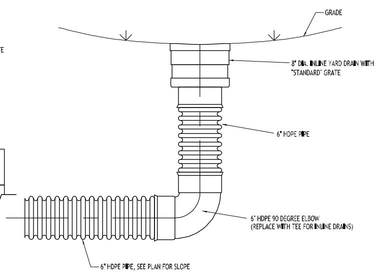
DETAIL A

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 PRE-CAST REINFORCED CON-CRETE MANHOLE SECTIONS.
4. SINGLE POUR MONOLITHIC BASE SECTION.
5. MANHOLE TO BE COATED ON OUTSIDE WITH BITUMASTIC SEALER.

TYPICAL STORM MANHOLE DETAIL

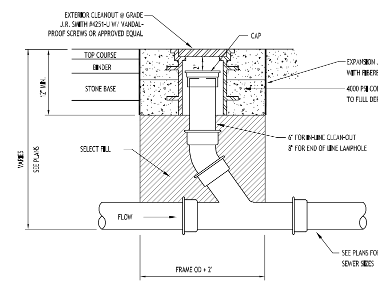
NOT TO SCALE



NOTE:
SEE TYPICAL TRENCH SECTION FOR BEDDING REQUIREMENTS

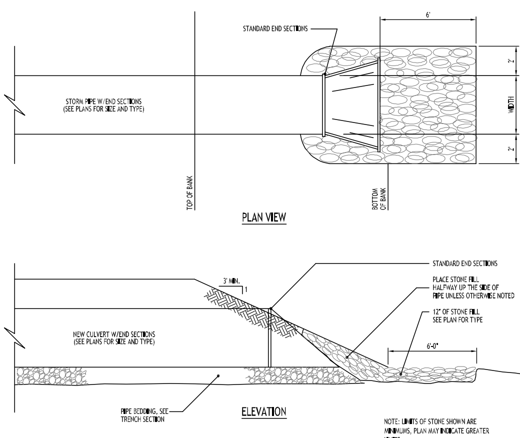
TYPICAL YARD DRAIN DETAIL

NOT TO SCALE



LAMPHOLE/CLEANOUT IN PAVEMENT/SIDEWALK

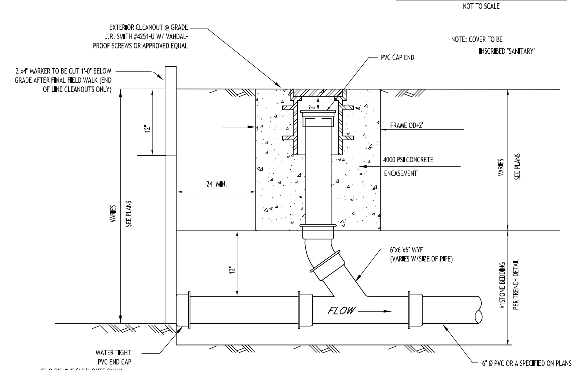
NOT TO SCALE



NOTE: LIMITS OF STONE SHOWN ARE MINIMUMS, PLAN MAY INDICATE GREATER LIMITS

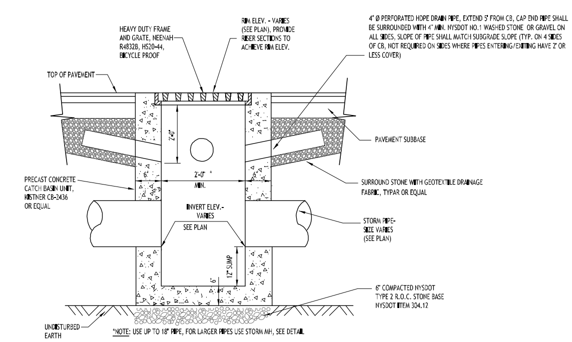
TYPICAL PIPE OUTLET W/ END SECTION & RIP RAP

NOT TO SCALE



LAMPHOLE/CLEANOUT IN LAWN/FIELD AREAS

NOT TO SCALE



TYPICAL PRECAST CATCH BASIN

NOT TO SCALE

CARMINAWOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

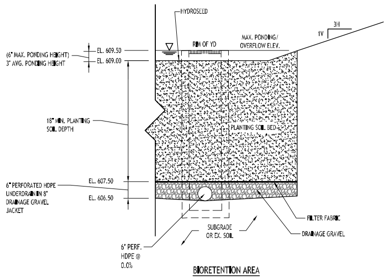
No.	Description	Date

DRAWING NAME:
Storm Drainage Details

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-301

Project No: 23-4091



BIORETENTION AREA - TYPICAL SECTION

NOT TO SCALE

NOTES:

1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180-N OR APPROVED EQUIVALENT
2. DRAINAGE GRAVEL TO MEET AASHTO M-43. NO.67, SIZE 0.25" TO 0.75"
3. 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

CARMINAWOOD
DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family

4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

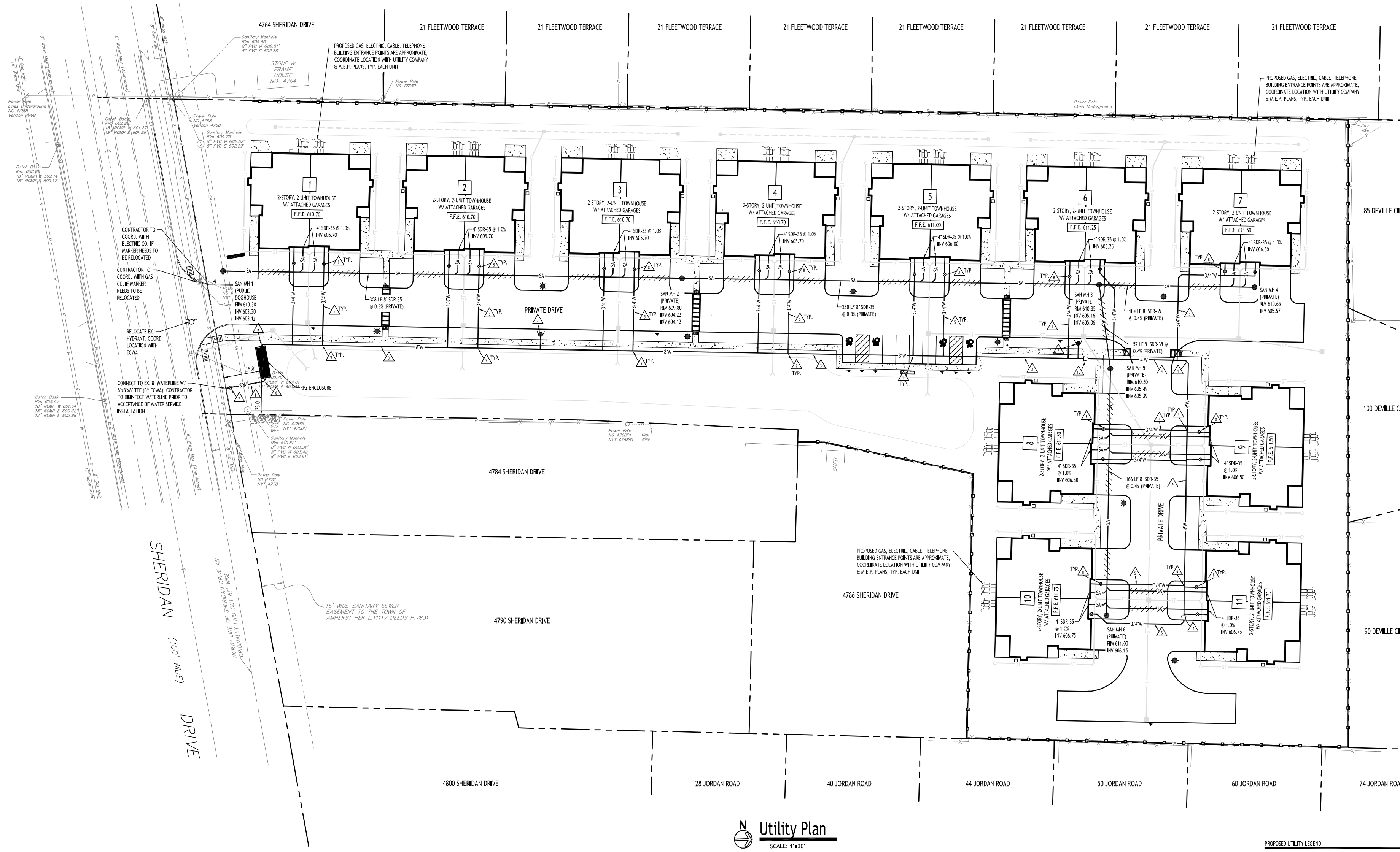
No.	Description	Date

DRAWING NAME:
Storm Drainage Details

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-302

Project No: 23-4091



Utility Plan

SCALE: 1"=30'

WATER NOTE LEGEND

1. 8" CLASS 52 DUCTILE IRON
2. 8" VALVE AND BOX
3. 8" AWWA C-900 PVC COMBINED SERVICE
4. 4" AWWA C-900 PVC DOMESTIC SERVICE
5. 3/4" TYPE 'K' COPPER DOMESTIC SERVICE
6. PROVIDE BENDS AND BLOCKING AS NECESARY
7. HYDRANT ASSEMBLY
8. 3/4" VALVE AND BOX
9. 3/4" CORP. STOP
10. 8"x4" REDUCER
11. 4"x3/4" REDUCER

UTILITY NOTES:

1. FOR ALL SANITARY SEWERS, INSTALL SELECT FILL IN PAVED AREAS, EXTEND 5' MIN. BEYOND PAVEMENT LIMITS
2. BUILDINGS TO HAVE INVERT ELEVATION 5' MIN. BELOW F.F.E. OF THE BUILDING. PIPE TO BE 6" SDR-35 PVC @ 1.0% MIN. WITH MIN 4' OF COVER. ADD CLEANOUTS @ 90' MAX. SPACING FOR 6" LATERALS OVER 90' IN LENGTH.
3. COORDINATE GAS & ELEC. METER BANK LOCATIONS ON BUILDINGS WITH M.E.P. PLANS & UTILITY CO.'S.
4. COORDINATE LOCATION OF CTV & TELEPHONE SERVICE TO BUILDINGS WITH M.E.P. PLANS AND UTILITY CO.'S.
5. ANY EXISTING UTILITIES WHICH ARE TO BE ABANDONED AND FALL UNDER PAVEMENT OR BUILDINGS SHALL BE REMOVED VS. BEING ABANDONED UNLESS THOSE UTILITIES ARE FILLED WITH FLOWABLE FILL.
6. A MINIMUM OF 10 FEET HORIZONTAL AND 18 INCHES OF VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN ALL SANITARY SEWER AND WATER SERVICES.
7. SELECT BACKFILL IS REQUIRED FOR ALL UTILITIES (GAS, WATER, STORM, SANITARY) THAT CROSS THROUGH CONCRETE AND ASPHALT PAVEMENT AREAS.

PROPOSED UTILITY LEGEND

PROPOSED WATER LINE	W
PROPOSED SANITARY SEWER	SA
PROPOSED UTILITY CONNECTIONS (GAS, ELEC., CABLE, TEL., ETC.)	
PROPOSED GATE VALVE	⊗
PROPOSED CLEANOUT	○
INSTALL SELECT BACKFILL	//////

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' — 30 0 30 60Ft.

CARMINA WOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

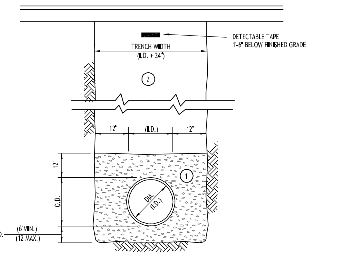
No.	Description	Date

DRAWING NAME:
Utility Plan

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-400

Project No: 23-4091



NOTES:

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MATERIALS

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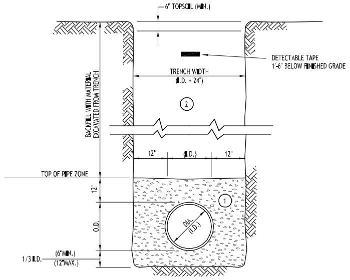
NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

SEWER/WATERLINE TRENCH SECTION IN PAVED AREAS

NOT TO SCALE



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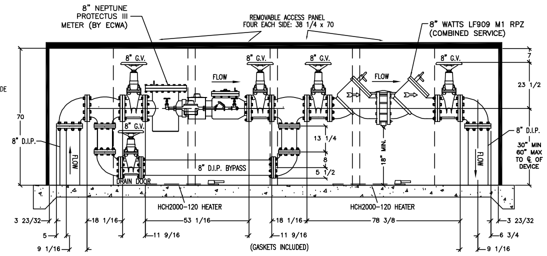
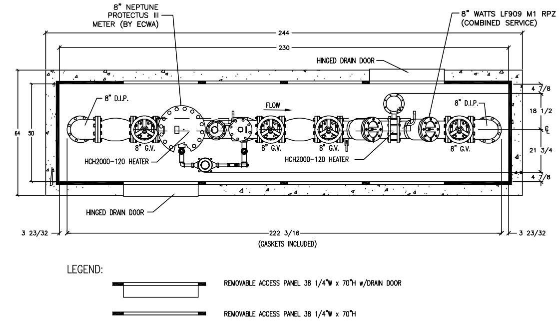


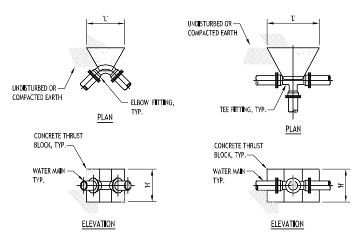


NOTES:

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 LF909 M1.
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.

8"METER & RPZ INSULATED ENCLOSURE

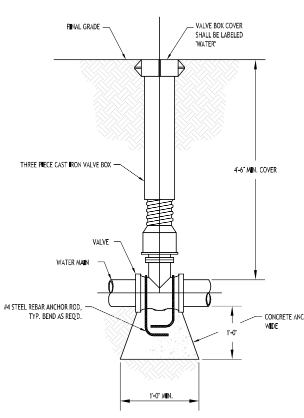
N. T. S.



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'

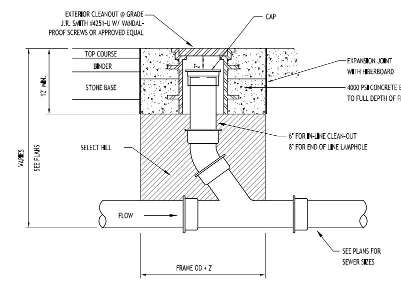
DIMENSION SCHEDULE		
PIPE SIZE	TEE OR TAP SLEEVE	
—	'H'	'L'
4"	1.5'	1.0'
6"	1.5'	2.5'
8"	1.5'	3.5'
10"	2.5'	3.5'
12"	3.5'	3.5'

THRUST BLOCK SCHEDULE



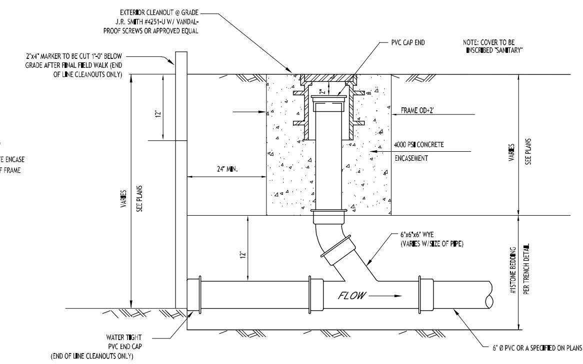
TYPICAL GATE VALVE DETAIL

NOT TO SCALE



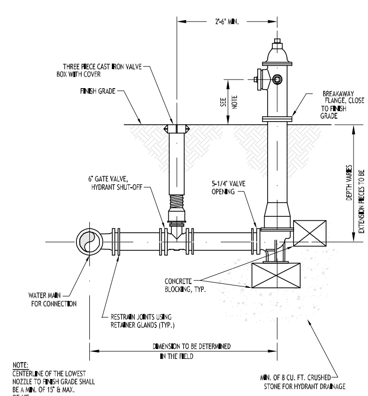
LAMPHOLE/CLEANOUT IN PAVEMENT/SIDEWALK

NOT TO SCALE



LAMPHOLE/CLEANOUT IN LAWN/FIELD AREAS

NOT TO SCALE



TYPICAL FIRE HYDRANT ASSEMBLY DETAIL

NOT TO SCALE

CARMINAWOOD
DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family

4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

No.	Description	Date

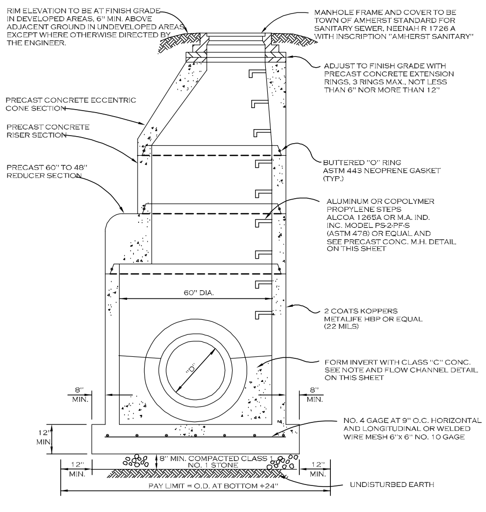
DRAWING NAME:
Utility Details

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

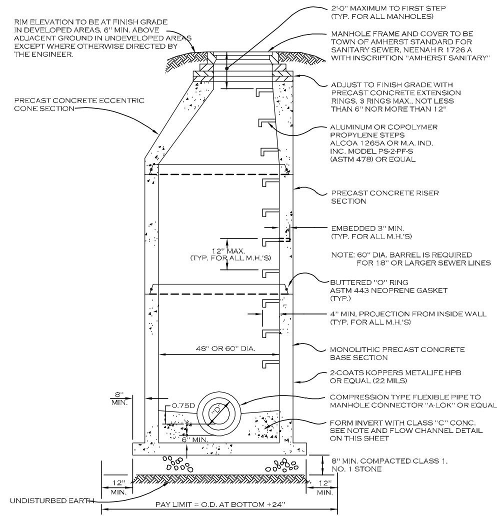
DRAWING NO.
C-401

Project No: 23-4091

PRECAST CONCRETE MANHOLE OVER EXISTING SEWER (18"–30" DIA.)

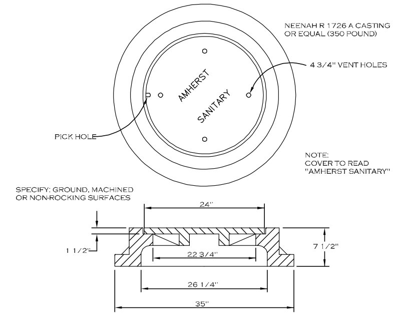


PRECAST CONCRETE MANHOLE

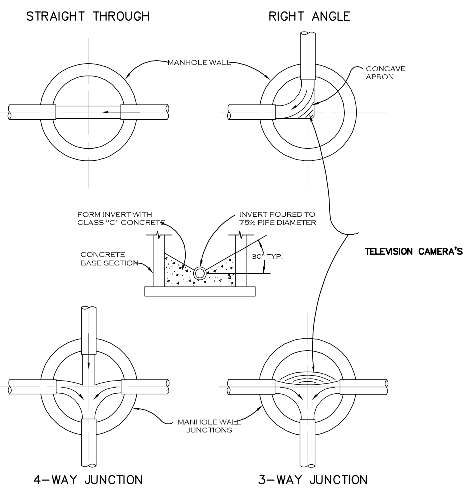


STANDARD MANHOLE FRAME AND COVER

VENTED COVER



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.

CARMINAWOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS: No.	Description	Date

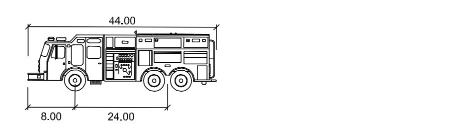
DRAWING NAME:
Sanitary Sewer Details

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
C-402

Project No: 23-4091

N **Site Plan**
SCALE: 1"=30'



Pumper Fire Truck

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 37.8

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR IT'S ACCURACY.

30' 30 0 30 60Ft.

CARMINA WOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

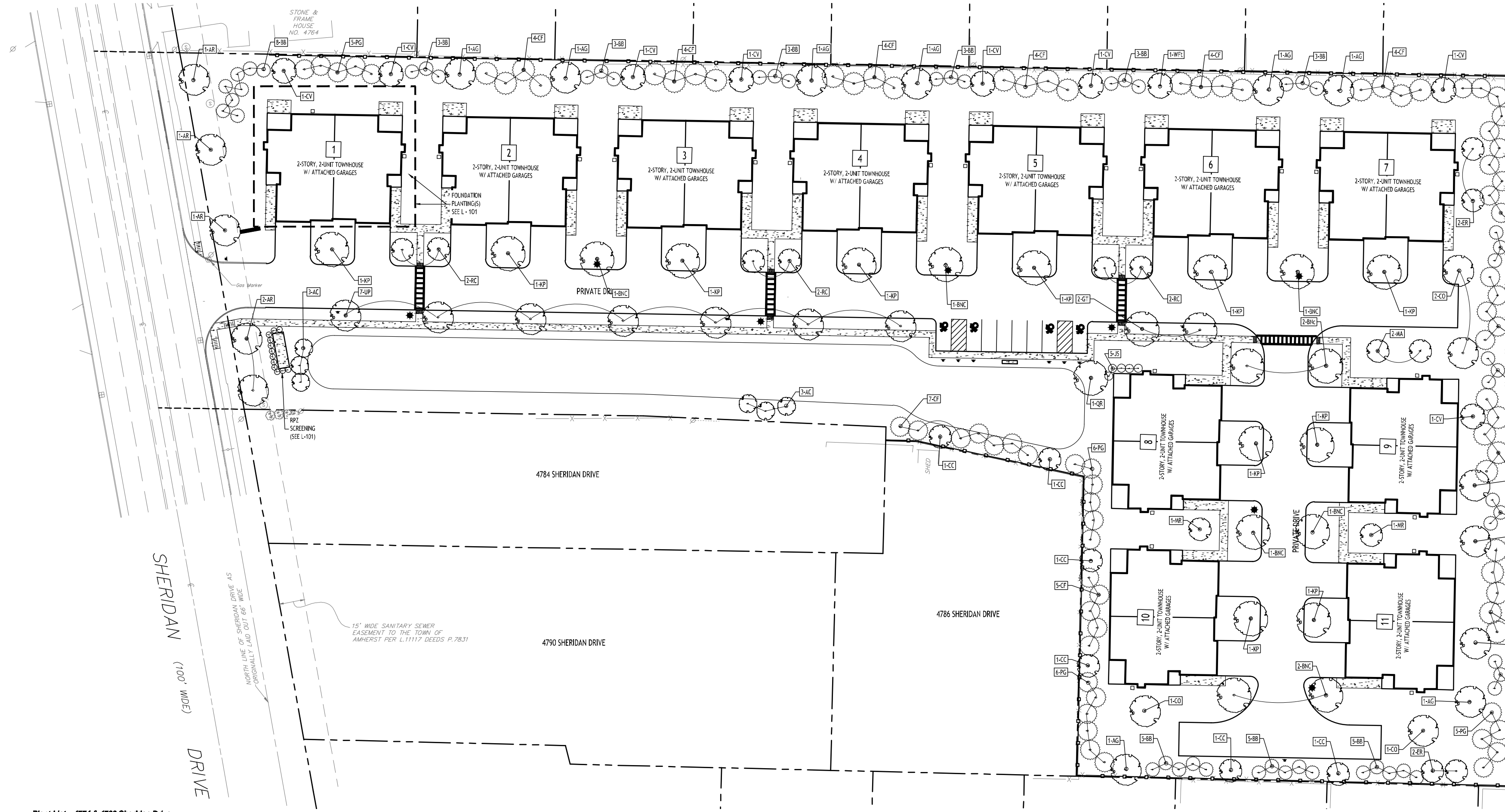
No.	Description	Date

DRAWING NAME:
Truck Turn Plan

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.
CT-100

Project No: 23-4091



Plant List – 4774 & 4780 Sheridan Drive

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
DECIDUOUS TREES					
AR	5	Acer rubrum 'Autumn Flame'	Autumn Flame Maple	2½"-3"Cal.	B&B; Grows to 40 ft, high, 35 ft. wide
BNC	8	Betula nigra 'Cully'	Heritage River Birch	12 ft. high min	B&B; Multi-stem, min. 3 major stems
CO	4	Celtis occidentalis 'Prairie Pride'	Prairie Pride Common Hackberry	2½"-3"Cal.	B&B; Grows to 40 ft, high, 35 ft. wide
GT	7	Gleditsia triacanthos inermis 'Suncole'	Skyline Honeylocust	2½"-3"Cal.	B&B; Grows to 45 ft, high, 35 ft. wide
KP	15	Koelreuteria paniculata	Goldenrain Tree	2½"-3"Cal.	B&B; Grows to 30-40 ft. high and wide
QR	3	Quercus rubra	Red Oak	2½"-3"Cal.	B&B; Grows to 75 ft, high, 60 ft. wide
UA	7	Ulmus americana 'Princeton'	Princeton Elm	2½"-3"Cal.	B&B; Grows to 65 ft, high, 45 ft. wide
SMALL/ORNAMENTAL TREES					
AC	6	Amelanchier canadensis	Shadblow Serviceberry	8' High Min.	B&B; Height to 20 ft., width to 20 ft.
AG	11	Amelancjier grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	8' High Min.	B&B; Height to 20 ft., width to 20 ft.
CC	6	Crataegus crusgalli inermis 'Cruzam'	Crusader Hawthorn	1¼"-2" Cal.	B&B; Height to 15 ft., width to 15 ft.
CV	9	Chionanthus virginicus	White Fringe Tree	8' High Min.	B&B; Height to 18 ft., width to 20 ft.
ER	4	Cercis canadensis	Eastern Redbud	8' High Min.	B&B; Height to 18 ft., width to 20 ft.
MA	4	Malus 'Adirondack'	Adirondack Crabapple	1¾"-2" Cal.	B&B; Height to 18 ft., width to 10 ft.
MR	6	Malus 'JFS KW5'	Royal Raindrops Crabapple	1¾"-2" Cal.	B&B; Height to 20 ft., width to 15 ft.
EVERGREEN TREES					
CF	42	Abies concolor	White Fir	5' High min.*	B&B; Full to Ground
PG	48	Picea glauca	White Spruce	5' High min.*	B&B; Full to Ground
BB	53	Picea pungens 'Baby Blue Eyes'	Baby Blue Eyes Colorado Spruce	5' High min.*	B&B, Full to Ground; grows 15 to 30 ft. tall, 15 ft. wide.
				*Measured from bottom of leader	
SHRUBS					
CP	66	Chamaecyparis pisifera 'FARROWCGMS'	Soft Serve Gold False Cypress	36" High Min.	No. 7 Cont.; Grows 6-10 ft. high, 5-6 ft. wide
DG	66	Diervilla 'G2X88544'	Kodiak Orange Diervilla	24" High Min.	Grows to 4 ft. high and wide
HS	66	Hydrangea serrata 'SMNMAKTSR'	Tuff Stuff Red Hydrangea	24" High Min.	No. 5 Cont.; grows 3-4 ft. high and wide
JS	5	Juniperus scopulorum 'Blue Moffat'	Blue Moffat Juniper	4' High Min.	B&B: Grows to 15 ft. tall, 6 ft. wide.
ORNAMENTAL GRASS/GROUND COVER					
AMU	77	Aronia melanocarpa 'UCONNAM165'	Low Scape Mound Aronia	12" High Min.	No. 2 Cont.; Grows 1-2 feet high and 2-3 ft. wide
CA	12	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	No. 3 Cont.	Grows 2-5 ft. high, 2-3 ft. wide

NOTE: All planting beds and trees shall receive a minimum 3-inch depth of dark shredded hardwood bark mulch

Landscape Plan

N

SCALE: 1"=30'

LANDSCAPE NOTES:

1. ALL PLANTS INSTALLED SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS AS NOTED ON THE PLANS AND IN THE LATEST EDITION ON THE AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN ASSOCIATION OF NURSERYMEN, ANSI 260.1

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY TAKEOFF, THE QUANTITIES SHOWN ARE A MINIMUM AND ARE FOR REFERENCE ONLY.

3. THE CONTRACTOR SHALL PERFORM A ROUGH FIELD STAKEOUT OF ALL PLANTING MATERIAL LOCATIONS AND CONTACT THE OWNERS FIELD REPRESENTATIVE PRIOR TO ACTUALL INSTALLING. THE PLANTING MATERIAL LOCATIONS SHOWN ON THE PLANS ARE TO CONVEY THE DESIGN INTENT ONLY, ACTUAL LOCATIONS WILL BE FINALIZED BY THE OWNERS FIELD REPRESENTATIVE AT THE TIME OF INSTALLATION.

4. THE CONTRACTOR IS HEREBY NOTIFIED THAT IF UNDERGROUND UTILITIES EXIST IN THE VICINITY OF THE PLANTINGS, ALL PROPOSED PLANTINGS SHALL BE INSTALLED A MINIMUM OF 5' FROM ANY UNDERGROUND UTILITY, CONTACT THE OWNERS FIELD REPRESENTATIVE IF PLANTINGS SHOWN ON THE PLANS VIOLATE THIS SITUATION.

5. ALL TREES SHALL BE INSTALLED A MINIMUM OF 20' FROM ANY OVERHEAD ELECTRIC LINES.

6. PLANTING BACKFILL MIXTURE SHALL CONSIST OF 3 PARTS TOPSOIL, 1 PART PEAT MOSS, ⅓ PART MILORGANITE.

7. STAKE TREES IMMEDIATELY FOLLOWING INSTALLATION.

8. ALL PLANTED AREAS SHALL RECEIVE A 3" LAYER OF SHREDDED HARDWOOD BARK MULCH WITH "PREEN".

9. ALL DISTURBED AREAS NOT RECEIVING PLANTINGS (INCLUDING RIGHT-OF-WAYS) SHALL BE SEEDED.

10. THE AREAS ON THE PLAN TO BE SEEDED SHALL HAVE 4" MINIMUM OF TOPSOIL, DISK PLOWED, LEVELED AND HAND RAKED SMOOTH. SURFACE SHALL BE ROLLED TO REMOVE LUMPS.

11. ALL SEEDED AREAS SHALL BE HYDROSEEDED IN ACCORDANCE WITH THE SPECIFICATION INDICATED. WHERE REQUIRED BY CLIMATIC CONDITIONS, SLOPE OR SEASON OF PLANTING, SOD MAY BE SUBSTITUTED FOR SEEDING IN ORDER TO ACHIEVE THE REQUIRED COVERAGE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING, MOWING AND OTHER MAINTENANCE TO SEEDED AREAS UNTIL THE PROJECT IS ACCEPTED BY THE OWNER, THIS SHALL INCLUDE WATERING DAILY FOR 15 DAYS OR AS REQUIRED BY WEATHER CONDITIONS AND RE-SEEDING OF THIN SPOTS FOLLOWING THE GERMINATION OF THE SEEDS.

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.
3. ALL SEASONAL FLOWER BEDS SHALL BE A MINIMUM OF TWELVE (12) INCHES DEEP WITH A WELL-BLENDED MIXTURE OF 50% PEAT MOSS & 50% SCREENED TOPSOIL. SEASONAL FLOWER BEDS SHALL RECEIVE "PREEN" HERBICIDE. NO MULCH SHALL BE INSTALLED IN THE SEASONAL FLOWER BEDS.
4. ALL DECIDUOUS AND EVERGREEN TREES SHALL BE STAKED WITH THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

LANDSCAPE LEGEND

DECIDUOUS TREE

SMALL TREE

EVERGREEN TREE/SHRUB

SHRUB

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

CARMINAWOOD DESIGN

Buffalo | Utica | Greensboro

REVISIONS:

No.	Description	Date

Proposed Multi-Family

4774 & 4780 Sheridan Drive

Amherst, NY

Robert C. Walter, RLA
Registered Landscape Architect
Member American Society of Landscape Architects
2765 Dodge Road, East Amherst, NY 14051-2113
Phone: 716-364-5564
RCWLandscapeArchitect@gmail.com

DRAWING NAME:

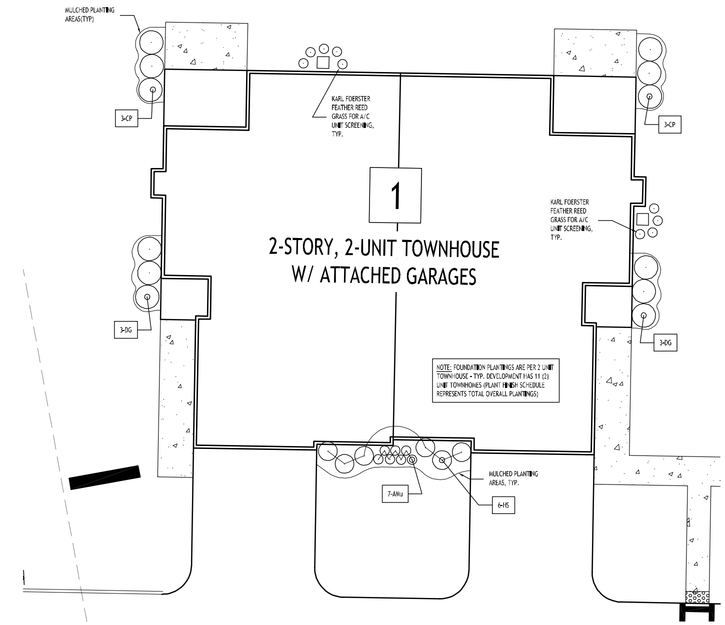
Landscape Plan

Date: 4/22/24
Drawn By: P. Sheedy
Scale: As Noted

DRAWING NO.

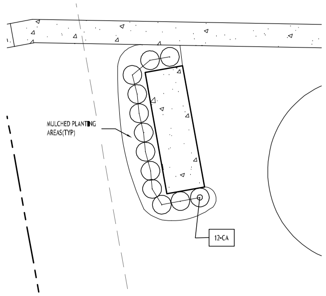
L-100

Project No: 23-4091



Landscape Foundation Planting

SCALE: 1"=10'



RPZ Screen Planting

SCALE: 1"=10'

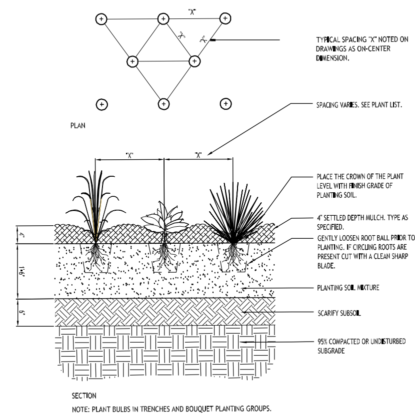
LANDSCAPE LEGEND

DECIDUOUS TREE

SMALL TREE

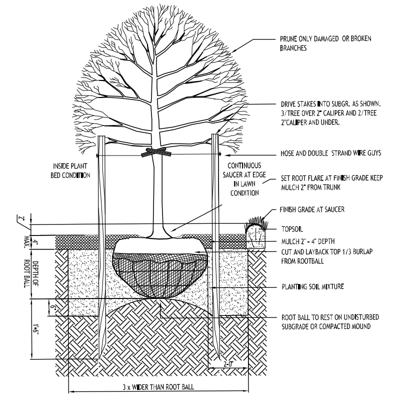
EVERGREEN TREE/SHRUB

SHRUB

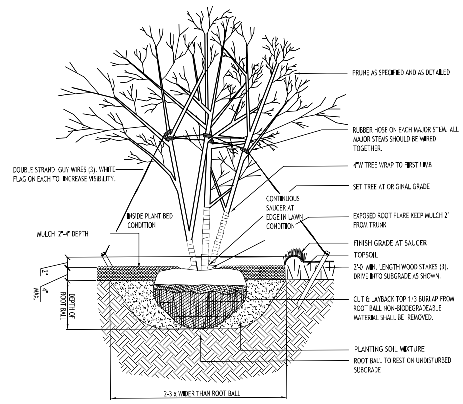


GROUND COVER PLANT SPACING

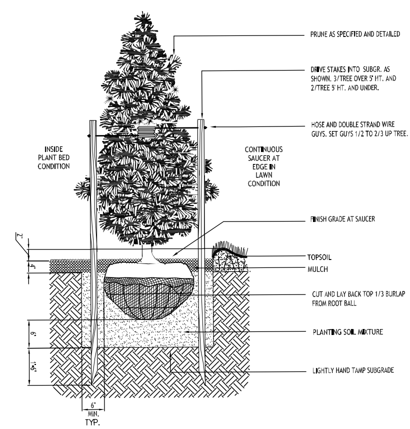
NOT TO SCALE



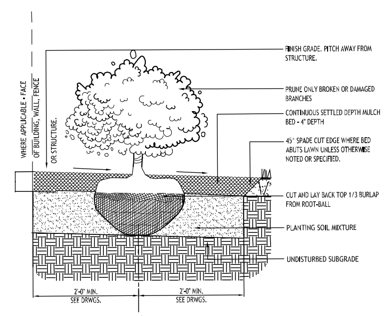
STD. DECIDUOUS TREET PLANTING



MULTI STEM - DECIDUOUS TREET PLANTING



STD. EVERGREEN PLANTING



STD. SHRUB PLANTING

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR IT'S ACCURACY.

30' 0 30 60Ft.

CARMINA WOOD DESIGN

Buffalo | Utica | Greensboro

Proposed Multi-Family

4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

No.	Description	Date

Robert C. Walter, RLA
Registered Landscape Architect
Member American Society of Landscape Architects
2745 Dodge Road, East Amherst, NY 14051-2113
Phone: 716-364-7564
RCWLandscapeArchitect@gmail.com

DRAWING NAME:

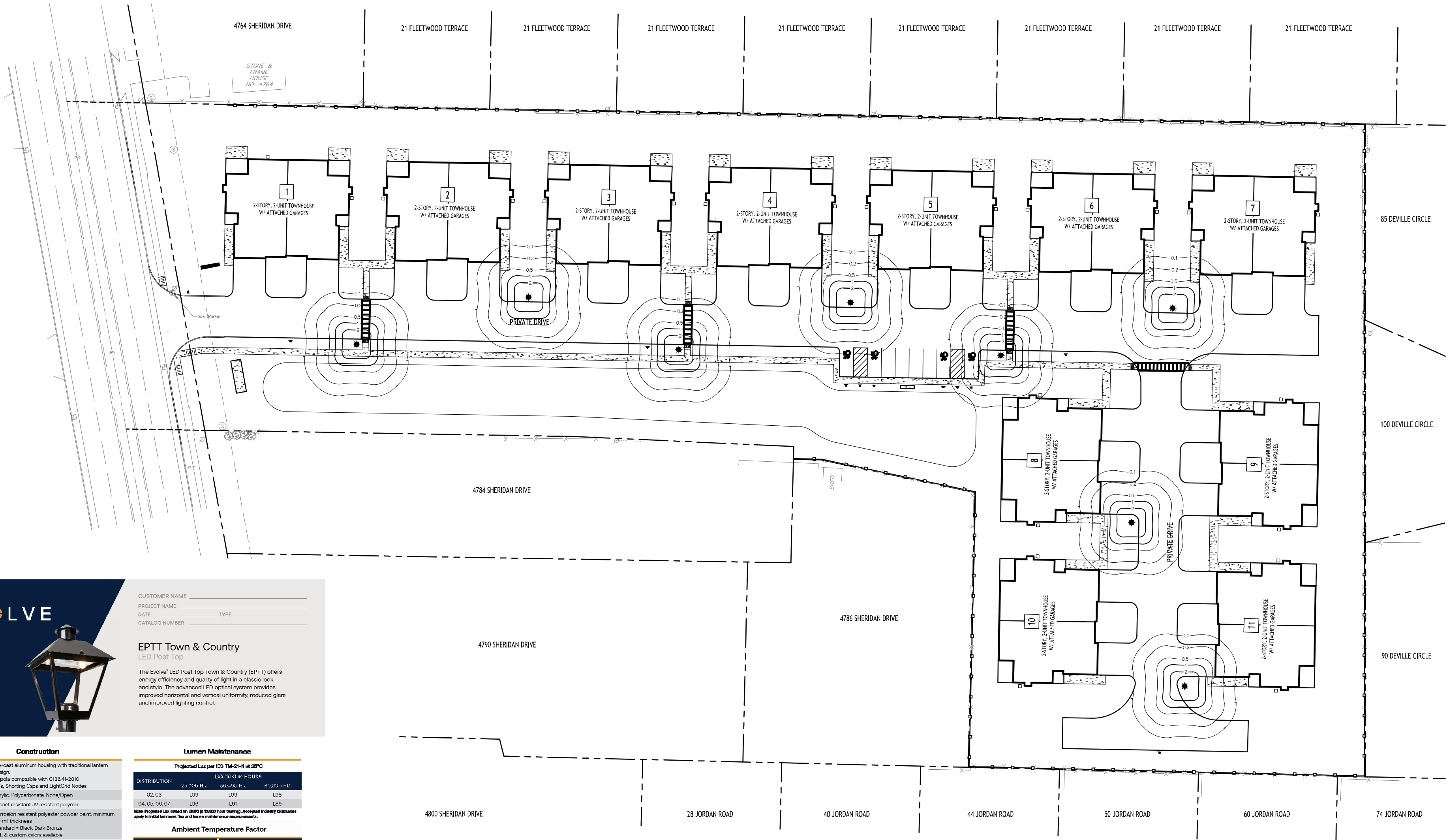
Landscape Foundation Plans Details

Date:	4/22/24
Drawn By:	P. Sheedy
Scale:	As Noted

DRAWING NO.

L-101

Project No: 23-4091



N
Lighting Plan
SCALE: 1"=30'

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60Ft.

CARMINA WOOD DESIGN

EVOLVE

CUSTOMER NAME
PROJECT NAME
DATE TYPE
CATALOG NUMBER

EPTT Town & Country
LED Post Top

The Evolve® LED Post Top Town & Country (EPTT) offers energy efficiency and quality of light in a classic look and style. The advanced LED optical system provides improved horizontal and vertical uniformity, reduced glare and improved lighting control.

Construction

Housing:	Die-cast aluminum housing with traditional lantern design. Cupola compatible with C136.41-2010 PE's, Shorting Caps and LightGrid Nodes
Refractors:	Acrylic, Polycarbonate, None/Open
Lens:	Impact resistant UV resistant polymer
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze RAL & custom colors available
Weight:	14 - 18 lbs (6.2 - 8 kg)

Optical System

Lumens:	2,070-7,970
Distribution:	Symmetric Asymmetric
Efficacy:	72-130
CCT:	2700K, 3000K, 4000K, 5000K
CRI (Min):	≥70

Electrical

Input Voltage:	120-277V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
☐ 10kV/5kA	☐ Secondary 10kV/5kA (R Option)

*Per ANSI C136.2-2015

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

DISTRIBUTION	LXX(10K) @ HOURS 25,000 HR	50,000 HR	60,000 HR
02, 03	L99	L99	L98
04, 05, 06, 07	L96	L91	L89

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Ambient Temperature Factor

AMBIENT TEMP (°C)	INITIAL FLUX FACTOR	AMBIENT TEMP (°C)	INITIAL FLUX FACTOR
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

Ratings

Operating Temperature:	-40°C to 50°C (Optical Code 02-06) -40°C to 40°C (Optical Code 07)
Vibration:	3G per ANSI C136.31-2010
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	Standard - 0-10V ☐ Optional - DALI (Option U) ☐
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

☐ 5 Year (Standard) ☐ 10 Year (Optional)

DLC LISTED · UL LISTED · IP65 Optical · CONTROLS ENABLED

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

Current

LED.com

Page 1 of 5
(Rev 05/01/23)
OLP3210_R02

CARMINA WOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Multi-Family
4774 & 4780 Sheridan Drive
Amherst, NY

REVISIONS:

No.	Description	Date

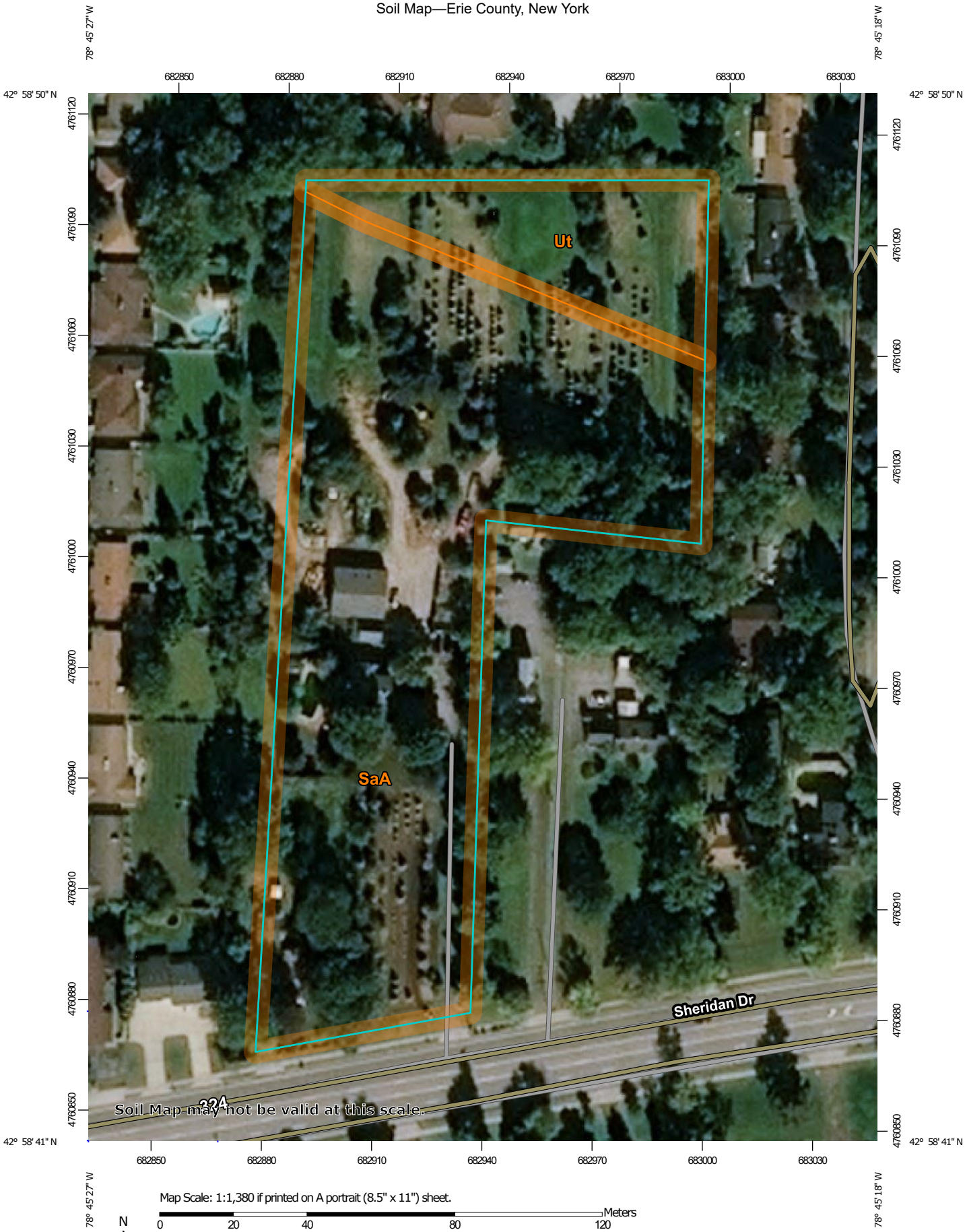
DRAWING NAME:
Lighting Plan

Date:	4/22/24
Drawn By:	P. Sheedy
Scale:	As Noted

DRAWING NO.
LP-100
Project No: 23-4091

Appendix I

Soils Information



Map Scale: 1:1,380 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

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 18, Sep 2, 2018

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

Date(s) aerial images were photographed: Aug 3, 2016—Oct 18, 2017

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SaA	Schoharie silt loam, 0 to 3 percent slopes	3.8	84.0%
Ut	Urban land-Odessa complex, 0 to 3 percent slopes	0.7	16.0%
Totals for Area of Interest		**4.5**	**100.0%**

Erie County, New York

SaA—Schoharie silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xgh1
Elevation: 280 to 970 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Schoharie and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Schoharie

Setting

Landform: Lake terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Red clayey glaciolacustrine deposits derived from calcareous shale

Typical profile

Ap - 0 to 8 inches: silt loam
E - 8 to 11 inches: silt loam
Bt/E - 11 to 18 inches: silty clay
Bt - 18 to 33 inches: clay
C1 - 33 to 52 inches: silty clay
C2 - 52 to 79 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Odessa
Percent of map unit: 5 percent
Landform: Lake terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cazenovia
Percent of map unit: 5 percent
Landform: Reworked lake plains, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Cayuga
Percent of map unit: 3 percent
Landform: Till plains, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, tread
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Collamer
Percent of map unit: 2 percent
Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Erie County, New York
Survey Area Data: Version 18, Sep 2, 2018

Erie County, New York

Ut—Urban land-Odessa complex, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wrdb
Elevation: 560 to 720 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban: 60 percent
Odessa and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Description of Odessa

Setting

Landform: Lake terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Red clayey glaciolacustrine deposits derived from calcareous shale

Typical profile

Ap - 0 to 8 inches: silt loam
Bt/E - 8 to 10 inches: silty clay loam
Bt1 - 10 to 15 inches: silty clay
Bt2 - 15 to 25 inches: silty clay
C - 25 to 79 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Schoharie

Percent of map unit: 5 percent
Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Lakemont

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Churchville

Percent of map unit: 3 percent
Landform: Drumlinoid ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rhinebeck

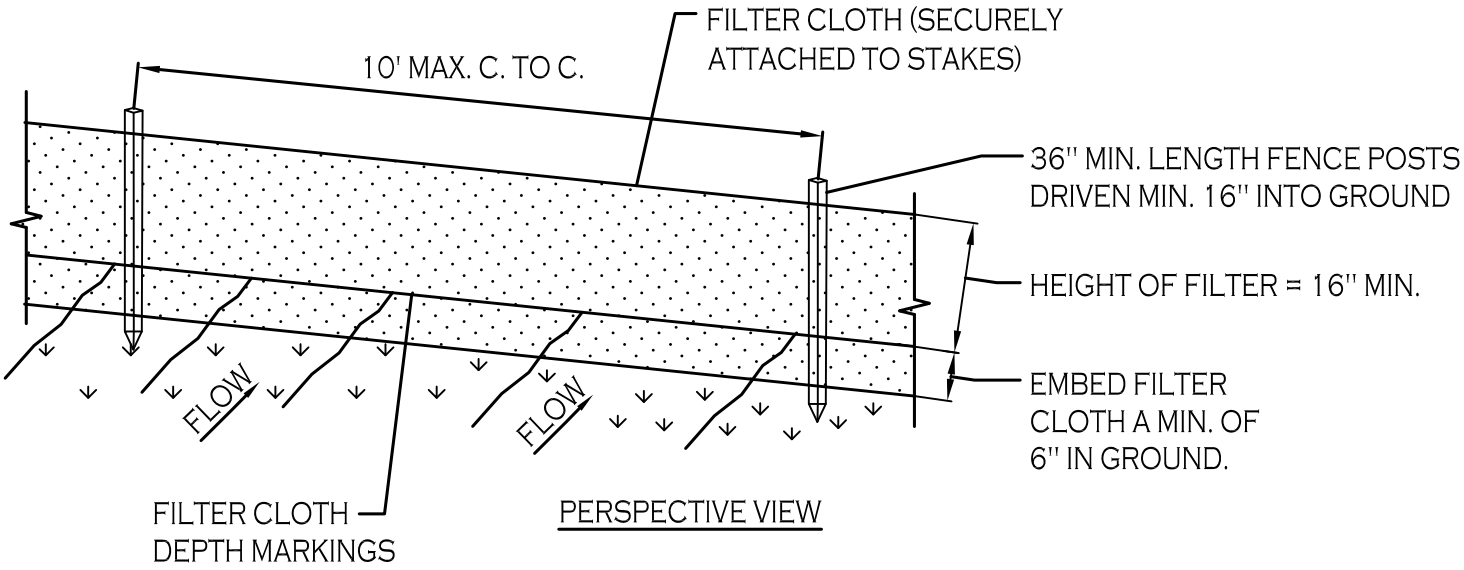
Percent of map unit: 2 percent
Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

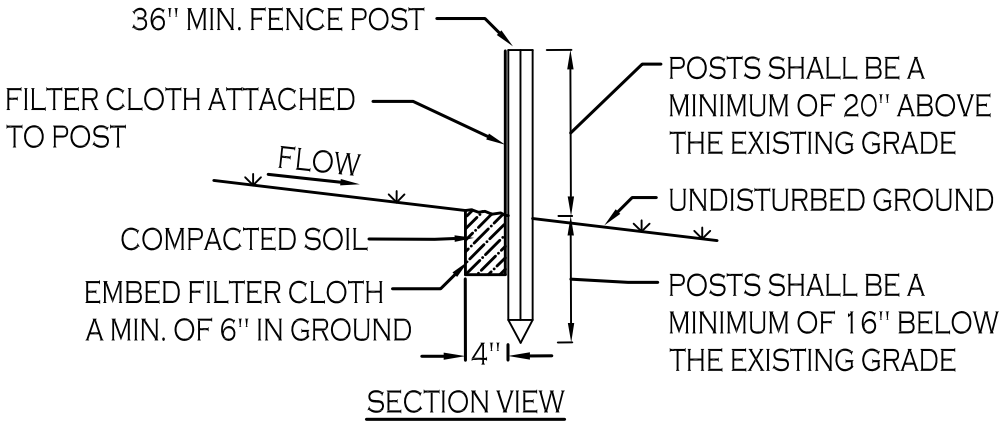
Data Source Information

Soil Survey Area: Erie County, New York
Survey Area Data: Version 18, Sep 2, 2018

Appendix J

Standard Erosion Control Details





CONSTRUCTION SPECIFICATIONS

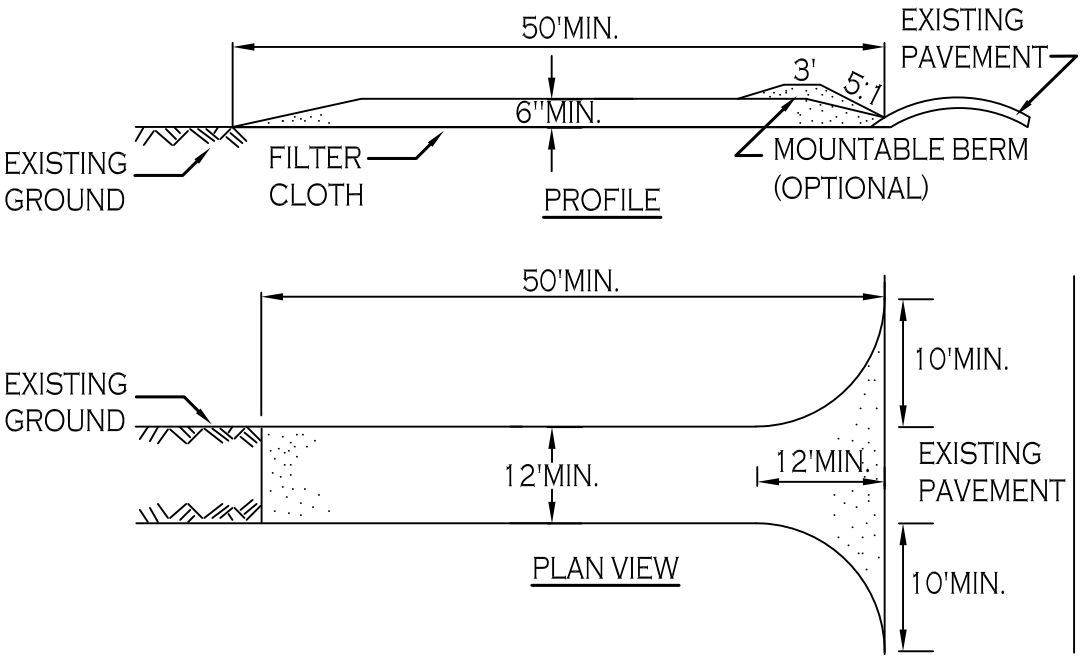
1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.

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.

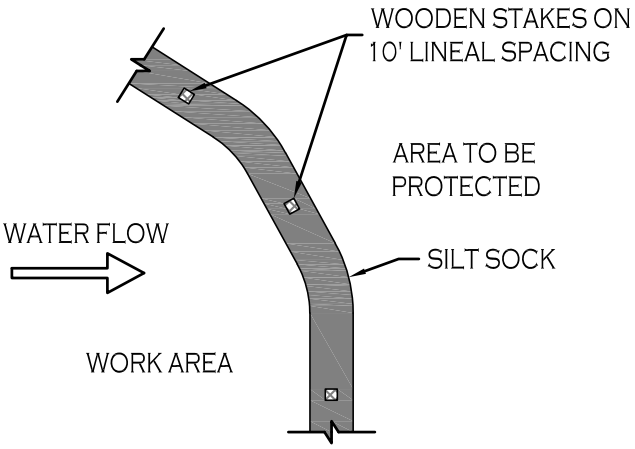
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

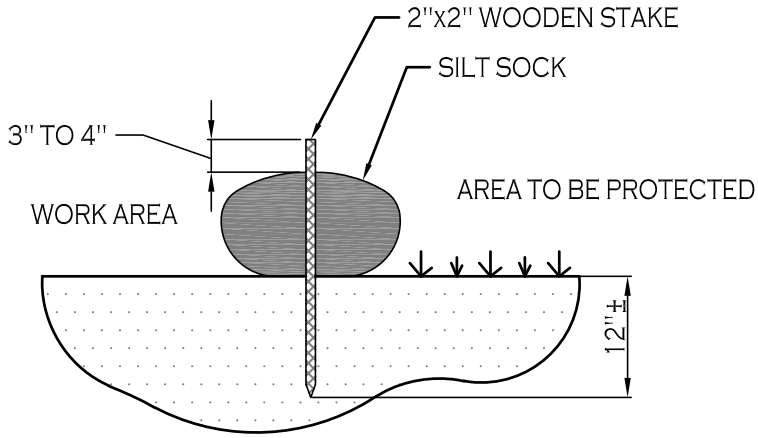
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



PLAN VIEW



SECTION VIEW

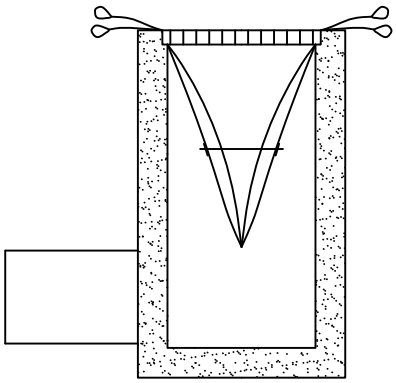
NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

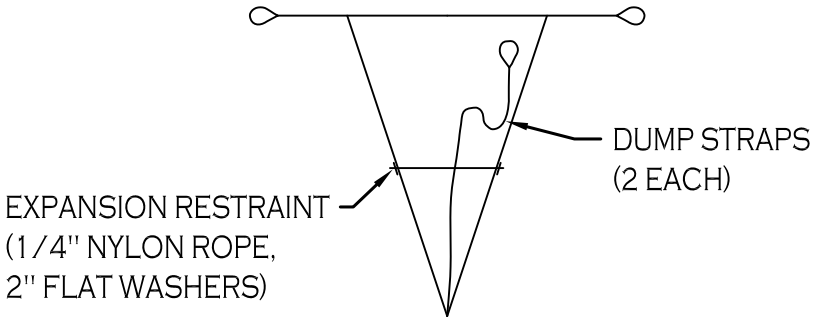
CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED $\frac{1}{2}$ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

SILT SOCK DETAIL

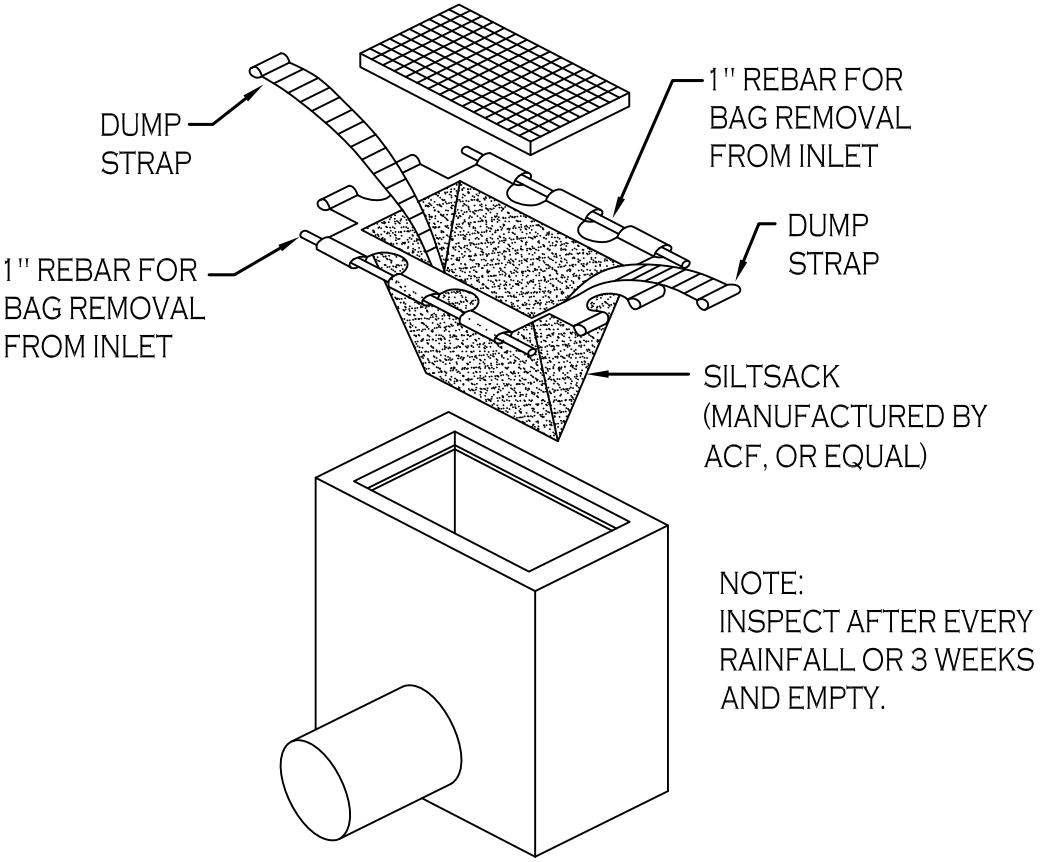
NOT TO SCALE



INSTALLATION DETAIL



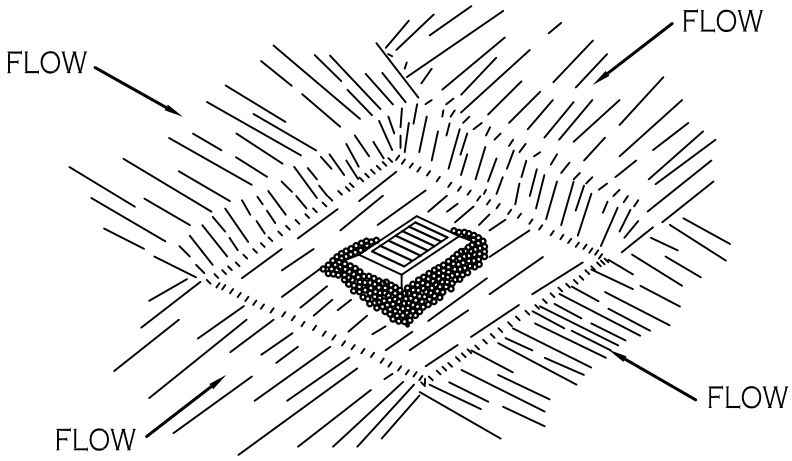
BAG DETAIL

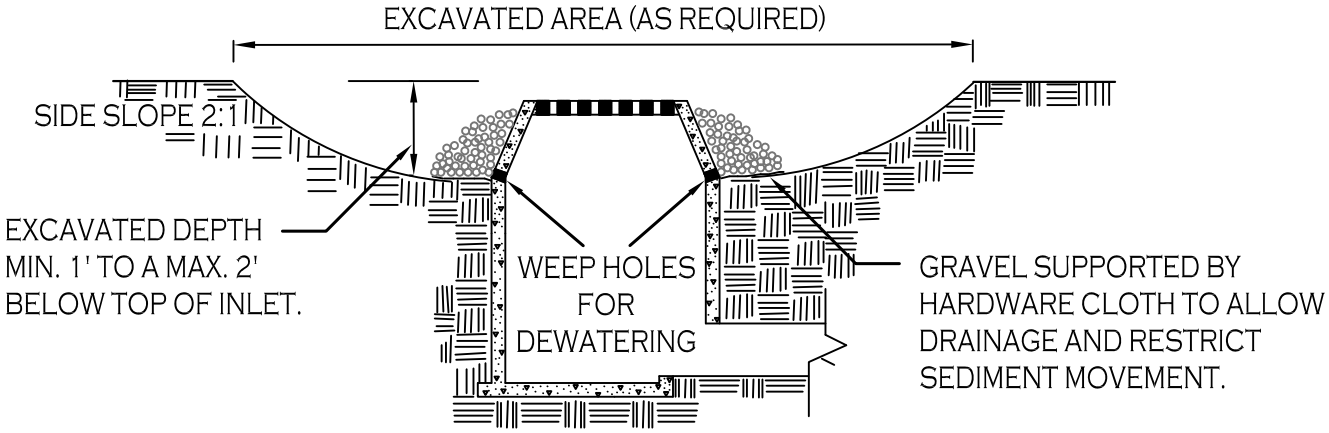


NOTE:
INSPECT AFTER EVERY
RAINFALL OR 3 WEEKS
AND EMPTY.

SILT SACK DETAIL

NOT TO SCALE





CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.

2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.

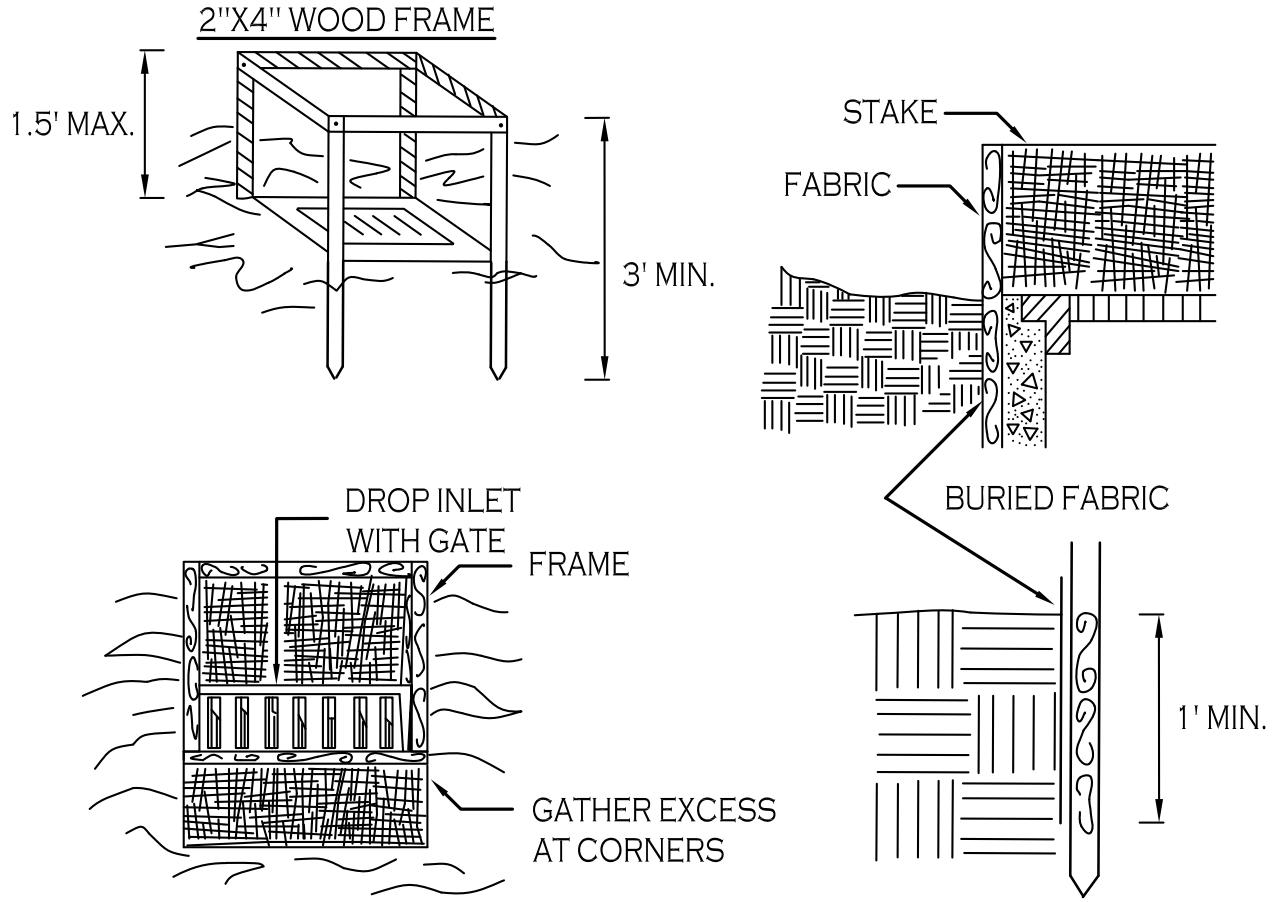
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.

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.

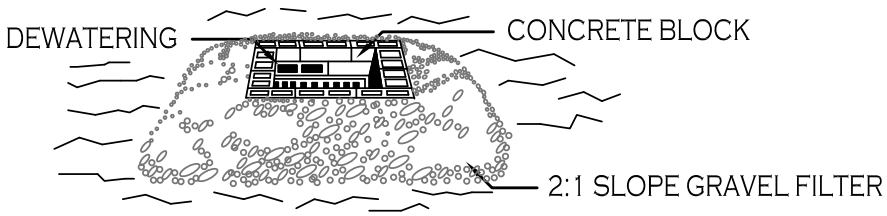
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.

6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

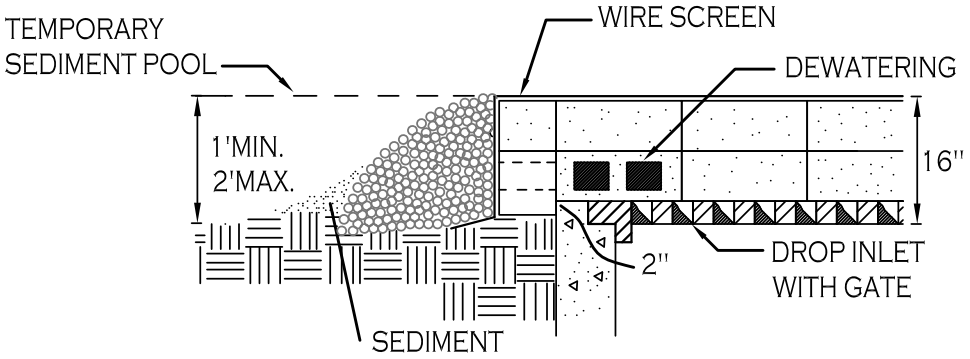
MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2

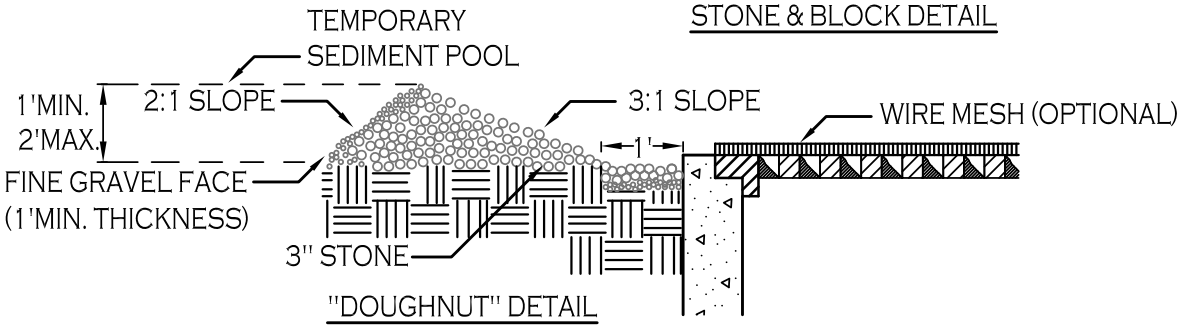
NOT TO SCALE



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

EXISTING TREE PROTECTION FENCE

MATERIALS

MATERIALS FOR TEMPORARY PLASTIC BARRIER FENCES SHALL MEET THE FOLLOWING REQUIREMENTS:

- FENCE: HIGH-DENSITY POLYETHYLENE MESH, ULTRAVIOLET-STABILIZED MIN. 2 YEARS; MINIMUM HEIGHT 4.0 FEET. COLOR: HIGH-VISIBILITY ORANGE OR GREEN. WHEN USED TO PROTECT TREES OR OTHER VEGETATION, COLOR SHALL BE HIGH-VISIBILITY ORANGE.
- POSTS: RIGID METAL OR WOOD POSTS, MINIMUM LENGTH 6.0 FEET.
- TIES: STEEL WIRE, #14 GAUGE OR NYLON CABLE TIES.
- WARNING SIGNS: SHEET METAL, PLASTIC OR OTHER RIGID, WATERPROOF MATERIAL, 1.5 FEET BY 2.0 FEET WITH 4 INCH BLACK LETTERS ON A WHITE BACKGROUND. TEXT SHALL BE: "PROTECTED SITE - KEEP OUT" UNLESS OTHERWISE SPECIFIED.

DETAILS

FENCES SHALL BE ERECTED PRIOR TO MOVING CONSTRUCTION EQUIPMENT ONTO ANY AREA DESIGNATED FOR PROTECTION.

THE LINE OF FENCES SHALL BE STAKED OR MARKED OUT ON THE GROUND BY THE CONTRACTOR AND APPROVED BY THE ENGINEER/OWNER BEFORE ANY FENCE IS INSTALLED. WHERE USED FOR PROTECTION OF INDIVIDUAL TREES, FENCE SHALL BE PLACED AT THE DRIP LINE (EXTENT OF CANOPY). IF NOT POSSIBLE, PLACEMENT SHALL BE AS CLOSE TO THE DRIP LINE AS POSSIBLE AND IN NO CASE LESS THAN 5.0 FEET AWAY FROM THE TREE TRUNK.

ON APPROVAL OF THE STAKEOUT, POSTS SHALL BE SECURELY DRIVEN ON 6.0 FOOT-MAXIMUM CENTERS, NORMAL TO THE GROUND, TO A DEPTH 1/3 OF THE TOTAL POST LENGTH. PLASTIC BARRIER FENCE SHALL BE PLACED ALONG THE SIDE OF ALL POSTS. ENDS OF FENCING SEGMENTS SHALL OVERLAP A DISTANCE OF AT LEAST ONE HALF THE FENCE HEIGHT.

FENCING SHALL BE SECURED TO POSTS WITH WIRE OR CABLE TIES AT TOP, MIDDLE AND BOTTOM OF POST. FASTENER SHALL BE TIGHT ENOUGH TO PREVENT THE FENCING FROM SLIPPING DOWN. OVERLAPS SHALL ALSO BE SECURELY FASTENED.

BARRIER FENCE WHICH IS NOT ORANGE IN COLOR SHALL BE FLAGGED AT 6.0 FOOT INTERVALS WITH RED OR ORANGE FLORESCENT TAPE. WARNING SIGNS SHALL BE MOUNTED ON THE FENCE AT NO MORE THAN 100 FOOT INTERVALS.

MAINTENANCE SHALL COMMENCE IMMEDIATELY AFTER ERECTION OF THE FENCE AND CONTINUE UNTIL ONE WEEK PRIOR TO ACCEPTANCE OF THE CONTRACT, AND SHALL CONSIST OF: REPLACING DAMAGED POST(S) AND FENCING; RE-FASTENING AND TIGHTENING FENCING; AND RESTORING FENCE TO ITS INTENDED HEIGHT.

FENCING USED FOR TREE OR OTHER VEGETATION PROTECTION SHALL NOT BE TEMPORARILY REMOVED TO ALLOW EQUIPMENT ACCESS OVER A PROTECTED AREA, EXCEPT AS REQUIRED FOR ITEMS OF WORK SPECIFICALLY SHOWN ON THE PLANS AND APPROVED BY THE ENGINEER IN WRITING.

Appendix K

NYSHPO Clearance Letter

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

December 14, 2018

Dr. Doug Perrelli
Univ Buffalo Archaeological Survey
Anthropology 380 MFAC Ellicott
Buffalo, NY 14261

Re: DEC
Proposed Residential Development Project
4774 and 4780 Sheridan Drive, Amherst, Erie County, NY
18PR07939

Dear Dr. Perrelli:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the report prepared by the Archaeological Survey (University at Buffalo) entitled "Phase I Archaeological Reconnaissance Survey of a Proposed Residential Development at 4780 Sheridan Drive, Town of Amherst, Erie County, New York" (Hartner & Whalen December 2018), 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 Division for Historic Preservation and relate only to Historic/Cultural resources.

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. This recommendation pertains only to the Project Area examined during the above-referenced investigation. It is not applicable to any other portion of the project property. Should the project design be changed OPRHP recommends further consultation with this office.

If further correspondence is required regarding this project, please refer to the project number (PR) noted above. If you have any questions, I can be reached at 518-268-2218 or via email at Josalyn.Ferguson@parks.ny.gov.

Sincerely,

Josalyn Ferguson (B.A., M.A.)
Historic Preservation Specialist/Archaeology *via e-mail only*

c.c. Charles Vandrei, DEC

Appendix L

NYSDEC Stormwater Management Inspection Lists

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*

	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

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		

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		

Comments:

Actions to be Taken:

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		

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		

Comments:

Actions to be Taken: