

Stormwater Pollution Prevention Plan

Prepared for:
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North Greenbush Hotel

Town of North Greenbush, Rensselaer County, New York

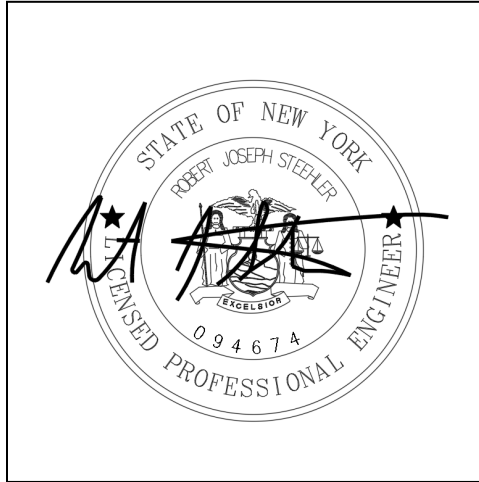
DATE: OCTOBER 2024
LAST REVISED: OCTOBER 2024
LBA PROJECT NO. 2243194

PREPARER OF THE SWPPP

“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.”

Name and Title¹: Robert Steehler, P.E.

Date: October 2024



¹ This is a signature of a New York State licensed Professional Engineer employed by LaBella Associates that is duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), NOIs, and NOTs prepared under their direct supervision. Refer to Appendix B for the SWPPP Preparer Certification Form, and Appendix I for the LaBella Certifying Professionals Letter.

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1.0 EXECUTIVE SUMMARY

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for major activities associated with construction of 5 story, 99 room hotel and associated hardscapes in the Town of North Greenbush. This SWPPP includes the elements necessary to comply with the national baseline general permit for construction activities enacted by the U.S. Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES) program and all local governing agency requirements. This SWPPP must be executed, and permit coverage must be obtained prior to the commencement of construction activity.

This SWPPP has been developed in accordance with the “New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity,” Permit No. GP-0-20-001, effective January 29, 2020 through January 28, 2025. The SWPPP and accompanying plans identify and detail stormwater management, pollution prevention, and erosion and sediment control measures necessary during and following completion of construction.

This SWPPP and the accompanying plans entitled “Engineering Plans Proposed Hotel” have been submitted as a set. These engineering drawings are considered an integral part of this SWPPP. Therefore, this SWPPP is not considered complete without them. References made herein to “the plans” or to a specific “sheet” refer to these drawings.

This report considers the impacts associated with the intended development with the purpose of:

1. Maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff;
2. Controlling increases in the rate of stormwater runoff resulting from the proposed development so as not to adversely alter downstream conditions; and
3. Mitigating potential stormwater quality impacts and preventing soil erosion and sedimentation resulting from stormwater runoff generated both during and after construction.

The analysis and design completed and documented in this report is intended to be part of the application made for a commercial development project completed on behalf of the Owner/Operator.

1.1 Project Description

OM Hospitality is proposing a new development project, to include: an approximately 16,000 sf hotel with 99 rooms and associated hardscapes, utility infrastructure and stormwater treatment facility. The project will disturb greater than 1-acre of land. A Site Location Map has been provided in Appendix A, as Figure A-1.

This type of project is included in Table 2 of Appendix B of GP-0-20-001; and the project site is not located in one of the watersheds listed in Appendix C of GP-0-20-001. Therefore, this SWPPP includes post-construction stormwater management practices, as well as erosion and sediment controls.

This project is located within the Town Of North Greenbush regulated, traditional land use control Municipal Separate Stormwater Sewer System (MS4). Therefore, an MS4 SWPPP Acceptance Form is required to accompany NOIs submitted to the NYSDEC.

Runoff from the project site will discharge to the Hudson River, which is not included in the list of Section 303(d) water bodies included in Appendix E of GP-0-20-001.

Project construction activities will consist primarily of site grading, paving, building construction, and the installation of storm drainage, water supply, sanitary sewer, and public utility infrastructure necessary to support the proposed development project. Construction phase pollutant sources anticipated at the site are disturbed (exposed) soil, vehicle fuels and lubricants, chemicals associated with building construction, and building materials. Without adequate control there is the potential for each type of pollutant to be transported by stormwater.

1.2 Stormwater Pollution Controls

The stormwater pollution controls outlined herein have been designed and evaluated in accordance with the following standards and guidelines:

- New York State Stormwater Management Design Manual, dated July 31, 2024 (Design Manual).
- New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 (SSESC).

Stormwater quality will be enhanced through the implementation of temporary and permanent erosion and sediment control measures, the proposed stormwater management practice(s), and other construction-phase pollution controls outlined herein.

The proposed stormwater management approach consisting of pipes and on-site stormwater management practices will adequately collect, treat, and convey the stormwater runoff.

An underground chamber infiltration system will be used to manage and treat stormwater runoff generated by the proposed development project.

Pre- and post-development surface runoff rates have been evaluated for the 1-, 10-, and 100-year 24-hour storm events. Comparison of pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the project site will not be increased.

The post-construction stormwater management practice(s) will be privately owned by OM Hospitality. Deed restrictions will be in place, which require operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

2.0 SITE CHARACTERISTICS

2.1 Land Use and Topography

The project site is located within the general business (BG) zoning district. A hotel is a permitted use within this district.

The overall site is moderately sloping, with slopes ranging from 8 to 15 percent. Site elevations range from approximately 230 feet above mean sea level (MSL) to 270 feet MSL. The site is generally sloping to the South towards an existing wetland area.

2.2 Soils and Groundwater

The US Department of Agriculture (USDA) Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>) was used to obtain surficial soil conditions for the study area, as follows:

Table 1: USDA Soil Data

| Map Symbol & Description | Hydrologic Soil Group | Permeability (inches/hour) | Erosion Factor K | Depth to Water Table (feet) | Depth to Bedrock (feet) |
|--|-----------------------|----------------------------|------------------|-----------------------------|-------------------------|
| HuC – Hudson silt loam, 8 to 15 percent slopes | C/D | 0.06 – 0.20 | 0.49 | 1.5 - 2.0 | >6.0 |
| HuE – Hudson silt loam, steep | C/D | 0.06 – 0.20 | 0.49 | 1.5 - 2.0 | >6.0 |
| RhB – Rhinebeck silt loam, 3 to 8 percent slopes | C/D | 0.06 – 0.20 | 0.49 | 0.5 – 1.5 | >6.0 |

Although the project site is located within the soils slope phase E, the project is not located within a class AA or AA-S watershed. As such, the project is still eligible for coverage under GP-0-20-001.

The project site is composed of HSG C soils, and HSG D soils, as shown in the table below. For the purposes of this report, HSG C/D soils were modeled as HSG D soils to reflect the undrained condition.

Table 2: Project Site HSG Data

| HSG A | HSG B | HSG C | HSG D |
|-------|-------|-------|-------|
| 0% | 0% | 0% | 100% |

The Soil Conservation Service defines the hydrologic soil groups as follows:

- **Type C Soils:** Soils having a low infiltration rate when thoroughly wet and consisting chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine-to-fine texture. These soils have a low rate of water transmission.
- **Type D Soils:** Soils having a very low infiltration rate and high runoff potential when thoroughly wet. These soils consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very low rate of water transmission.

An on-site geotechnical investigation was performed by LaBella on August 9, 2024. Six (6) test boring explorations were performed on the project site to obtain representative subsurface information within the limits of the proposed stormwater practices. Ground water was observed at a depth of 16-21 feet, bedrock was not encountered during the borings, and infiltration test FH2 and FH3 had a falling head permeability of 0.5 in/hr. For detailed geotechnical information, refer to the Geotechnical Interpretive Report entitled, “Geotechnical Subsurface Investigation and Report North Greenbush Hotel” dated 08/28/2024 as prepared by LaBella Associates.

The soils map for the study area is presented in Appendix A, as Figure A-2.

2.3 Watershed Designation

The project site is not located in a restricted watershed identified in Appendix C of GP-0-20-001.

2.4 Receiving Water Bodies

The nearest natural classified water course into which runoff from the project site will discharge is the Hudson River. The Hudson River is classified by NYSDEC as a Class C water course, and is not included in the Section 303(d) list of impaired waters found in Appendix E of GP-0-20-001.

2.5 Aquifer Designation

The project site is not located over a US EPA designated Sole Source aquifer; nor is it located over a Primary or Principal aquifer listed in the NYSDEC Technical and Operational Guidance Series (TOGS) 2.1.3 (1980).

2.6 Wetlands

Wetlands depicted on the accompanying plan set were delineated by Environmental Design Partnership (EDP) in February 2009. The wetland boundary was surveyed by EDP in the summer of 2007 and presented on a map entitled "Environmental Resources Map" and dated August 2, 2007. These wetlands are Federally regulated wetlands that encompass approximately 0.44 acres of the 3.89 acre property. No disturbance of the regulated wetlands are proposed.

2.7 Flood Plains

According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM), Town of North Greenbush, New York, Community Panel Number 3611640007A, the project site lies within Flood Zone C, areas of minimal flooding. The FEMA Flood Map has been provided in Appendix A, as Figure A-5.

2.8 Listed, Endangered, or Threatened Species

A search was performed on the NYSDEC Environmental Resource Mapper on September 13, 2024, and determined that the project site has no known occurrences of threatened or endangered species, or critical habitat. An Environmental Resource Map has been provided in Appendix A, as Figure A-4.

2.9 Historic Places

A search on the New York State Cultural Resource Information System (CRIS) database, performed on September 13, 2024, revealed that the property is not located within an archeologically sensitive area, and 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. Additionally, the construction activity does not include the construction of a new building within 20 feet of any structure more than 50 years old. A printout of the historic places screening map is presented in Appendix A, as Figure A-3.

2.10 Rainfall Data

Rainfall data utilized in the modeling and analysis was obtained from the Cornell University online Extreme Precipitation in New York & New England website (<http://precip.eas.cornell.edu/>). A local IDF file was imported, and specific mass curves were generated, in HydroCAD to evaluate the pre- and post-

development stormwater runoff characteristics. Rainfall data specific to the portion of Rensselaer County under consideration, for various 24-hour storm events, is presented in the following Table:

Table 3: Rainfall Data

| Storm Event Return Period | 24-Hour Rainfall (inches) |
|----------------------------------|----------------------------------|
| 1-year | 2.25 |
| 10-year | 3.82 |
| 100-year | 6.53 |

2.11 Pre-development Watershed Conditions

The pre-development project site is covered predominantly by grass, woods, and an existing wetlands to the south. Analysis of pre-development conditions considered existing drainage patterns, soil types, ground cover, and topography. The Pre-Development Watershed Delineation Map has been provided in Appendix A, as Figure A-5.

The results of the computer modeling used to analyze the overall watershed under pre-development conditions are presented in Appendix D. A summary of the pre-development watershed runoff rates at each analysis point is presented in Table 8.

2.12 Post-development Watershed Conditions

The post-development project site is covered predominantly by grass, woods, hotel and associated asphalt pavement and concrete sidewalk. The analysis of post-development conditions considered existing drainage patterns, soil types, ground cover to remain, planned site development, site grading, and stormwater management facilities proposed as part of site improvements. The Post-Development Watershed Delineation Map has been provided in Appendix A, as Figure A-6.

The results of the computer modeling used to analyze the overall watershed under post-development conditions are presented in Appendix E. A summary of the post-development watershed runoff rates at each analysis point is presented in Table 8.

There are numerous locations and methods for providing controls of off-site discharge of stormwater from the project site. Each has been designed to provide the above quantity controls by attenuating stormwater runoff and releasing runoff to off-site locations at a rate equal to or less than that which existed prior to development of the site. Each device is detailed on the accompanying plans. A Post-Development Watershed Delineation Map, with the tributary areas to each stormwater management practice proposed, has been provided in Appendix A, as Figure A-6.

2.13 Description of Analysis Points

The study area consists of an overall watershed that encompasses the approximately 16,556 acres, including the 3.89 acre project site and 2.04 acre area of disturbance. The overall watershed was broken down into smaller watersheds, or subcatchments, to allow for analysis of runoff conditions at study area. The location is defined as an Analysis Point (AP) in order to compare the effects resulting from stormwater management facilities proposed as part of the project. Descriptions of the analysis point are provided below.

- Analysis Point 1: On-site existing federally regulated wetland located to the south of the proposed development.

3.0 STORMWATER MANAGEMENT PLANNING

Chapter 3 of the Design Manual outlines a six-step planning process for site planning and selection of stormwater management practices that must be implemented for both new development and redevelopment projects. This process is intended to develop a design that maintains pre-construction hydrologic conditions through the application of environmentally sound development principles, as well as treatment and control of runoff discharges from the site. The following sections outline the step-by-step process and how it has been applied to this project.

The goals of this Stormwater Management Plan are to analyze the peak rate of runoff under pre- and post-development conditions, to maintain the pre-development rate of runoff in order to minimize impacts to adjacent or downstream properties, and to minimize the impact to the quality of runoff exiting the site.

The Design Manual provides both water quality and water quantity objectives to be met by projects requiring a “Full SWPPP”. These objectives will be met by applying stormwater control practices to limit peak runoff rates and improve the quality of runoff leaving the developed site.

3.1 STEP 1 – Site Planning

During the Site Planning process, the project site is evaluated for implementation of the green infrastructure planning measures identified in Table 3.1 of the Design Manual, in order to preserve natural resources and reduce impervious cover. Appendix C provides a description of each green infrastructure planning measure, along with a project specific evaluation.

3.2 STEP 2 – Calculate Water Quality Treatment Volume (WQv)

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

3.2.1 NYSDEC Requirements for Water Quality Volume

The Design Manual requires that water quality treatment be provided for the initial flush of runoff from every storm. The NYSDEC refers to the amount of runoff to be treated as the “Water Quality Volume” (WQv). Section 4.2 of the Design Manual defines the Water Quality Volume as follows:

$$WQv = \frac{[(P)(R_v)(A)]}{12}$$

Where: P = 90% Rainfall Event Number
 R_v = 0.05 + 0.009 (I)
 I = Impervious Cover (Percent)
 A = Contributing Area in Acres

This definition ensures that, all other things being equal, the Water Quality Volume will increase along with the impervious cover percentage.

3.2.2 Methodology for New Development

The Water Quality Volume equation has been applied to the drainage area tributary to each of the stormwater quality practices proposed for this project. The practices have been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 5 and/or Chapter 6 of the Design Manual. Water quality volume calculations for each of the proposed practices are presented in Appendix C.

Table 4: Required WQv Summary

| Required WQv | |
|--------------|---------|
| 6,696 cf | 0.15 af |

The Water Quality Volume equation has been applied to the drainage area tributary to each of the stormwater quality practices proposed for this project. The practices have been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 6 of the Design Manual. Water quality volume calculations for each of the proposed practices are presented in Appendix C.

3.3 STEP 3 – Apply RR Techniques and Standard SMPs with RRv Capacity to Reduce Total WQv

Land use change and development in the watershed increases the volume of runoff. As such, reductions in the amount of runoff from new development, accomplished through the implementation of a stormwater management plan for the site, will play an important role in the success or failure of the watershed-wide stormwater management plan. Runoff reduction techniques can be applied to manage, reduce, and treat stormwater, while maintaining and restoring natural hydrology through infiltration, evapo-transpiration, and the capture and reuse of stormwater. Volume reduction techniques by themselves typically are not sufficient to provide adequate attenuation of stormwater runoff, but they can decrease the size of the peak runoff rate reduction facilities.

3.3.1 NYSDEC Requirements for New Development

The Design Manual states that runoff reduction shall be achieved through infiltration, groundwater recharge, reuse, recycle, and/or evaporation/evapotranspiration of 100-percent of the post-development water quality volume to replicate pre-development hydrology. Runoff control techniques provide treatment in a distributed manner before runoff reaches the collection system, by maintaining pre-construction infiltration, peak runoff flow, discharge volume, as well as minimizing concentrated flow. This can be accomplished by applying a combination of Runoff Reduction Techniques, standard Stormwater Management Practices (SMPs) with RRv capacity, and good operation and maintenance.

3.3.2 Application of Standard Stormwater Management Practices (SMPs) with RRv Capacity

The following Table demonstrates a summary of the standard SMP(s) with RRv capacity that have been incorporated into the stormwater management plan for this project. The standard SMP(s) with RRv capacity have been designed in accordance with Chapter 6 of the Design Manual. Refer to the contract drawings for practice dimensions, material specifications, and installation details. Practice specific calculations are presented in Appendix C.

Table 5: Summary of Standard SMPs with RRv Capacity being Applied

| Standard SMP with RRv Capacity | Design Variant | Pretreatment Volume Required (% of WQv) | Pretreatment Volume Provided (CF) | RRv Capacity | WQv Required (CF) | WQv Reduced /RRv Provided (CF) | WQv Treated ¹ (CF) | Total WQv Provided ² (CF) |
|---|----------------|---|-----------------------------------|--------------|-------------------|--------------------------------|-------------------------------|--------------------------------------|
| Underground Infiltration System | I-4 | 25 | 2,941 | 100% | 6,696 | 6,696 | 0 | 6,696 |
| Footnotes: ¹ WQv Treated = WQV Required - RRv Provided ² Total WQv Provided = WQV Treated + RRv Provided | | | | | | | | |

3.3.3 RRv Performance Summary

A summary of the RRv provided is presented in the following table:

Table 6: RRv Summary

| WQv Required (CF) | RRv Provided WQv Reduced (CF) | % RRv Provided/ WQv Reduced |
|-------------------|-------------------------------|-----------------------------|
| 6,696 | 6,696 | 100 |

As indicated in the above table, the RRv provided is greater than the RRv required for the project site. As such, the RRv criteria has been met and the designer can proceed to Step 6.

3.4 STEP 4 – Calculate the Minimum RRv Required

As previously discussed, the RRv provided is greater than the RRv required for this project. As such, the runoff reduction volume criteria has been met, and minimum RRv is not applicable

3.5 STEP 5 – Apply Standard SMPs to Address Remaining Water Quality Volume

As previously discussed, 100% of the required WQv is being provided and reduced through RRv practice. As such, the water quality and runoff reduction volume criteria have been met and no other standard SMPs are required

3.6 STEP 6 - Apply Volume and Peak Rate Control

This report presents the pre-development and post-development features and conditions associated with the rate of surface water runoff within the study area. For both cases, the drainage patterns, drainage structures, soil types, and ground cover types are considered in this study.

3.6.1 NYSDEC Requirements for New Development

Chapter 4 of the Design Manual requires that projects meet three separate stormwater quantity criteria:

1. The Channel Protection (CPv) requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 1-year, 24-hour storm event. The Manual defines the CPv detention time as the center of mass detention time through each stormwater management practice.
2. The Overbank Flood Control (Qp) requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and therefore must spill over into the floodplain. This is accomplished by providing detention storage to ensure that, at each analysis point, the post-development 10-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.
3. The Extreme Flood Control (Qf) requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. This is accomplished by providing detention storage to ensure that, at each analysis point, the post-development 100-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3.6.2 Methodology

In order to demonstrate that the NYSDEC detention requirements are being met, the Design Manual requires that a hydrologic and hydraulic analysis of the pre- and post-development conditions be performed using the Natural Resources Conservation Service Technical Release 20 (TR-20) and Technical Release 55 (TR-55) methodologies. HydroCAD, developed by HydroCAD Software Solutions LLC of Tamworth, New Hampshire, is a Computer-Aided-Design (CAD) program for analyzing the hydrologic and hydraulic characteristics of a given watershed and associated stormwater management facilities. HydroCAD uses the TR-20 algorithms and TR-55 methods to create and route runoff hydrographs.

HydroCAD has the capability of computing hydrographs (which represent discharge rates characteristic of specified watershed conditions, precipitation, and geologic factors) combining hydrographs and routing flows through pipes, streams and ponds. HydroCAD can also calculate the center of mass detention time for various hydraulic features. Documentation for HydroCAD can be found on their website: <http://www.hydrocad.net/>.

For this analysis, the watershed and drainage system was broken down into a network consisting of three types of components as described below:

1. Subcatchment: A relatively homogeneous area of land, which produces a volume and rate of runoff unique to that area.
2. Reach: Uniform streams, channels, or pipes that convey stormwater from one point to another.
3. Pond: Natural or man-made impoundment, which temporarily stores stormwater runoff and empties in a manner determined by its geometry and the hydraulic structure located at its outlets.

Subcatchments, reaches, and ponds are represented by hexagons, squares, and triangles, respectively, on the watershed routing diagrams provided with the computations included in Appendix D and Appendix E.

The analysis of hydrologic and hydraulic conditions and proposed stormwater management facilities, servicing the study area, was performed by dividing the tributary watershed into relatively homogeneous subcatchments. The separation of the watershed into subcatchments was dictated by watershed

conditions, methods of collection, conveyance, and points of discharge. Watershed characteristics for each subcatchment were then assessed from United States Geological Service (USGS) 7.5-minute topographic maps, aerial photographs, a topographical survey, soil surveys, site investigations, and land use maps.

Proposed stormwater management practices were designed and evaluated in accordance with the Design Manual and local regulatory requirements. A local IDF file was imported, and specific mass curves were generated, in HydroCAD to evaluate the pre- and post-development stormwater runoff characteristics for various 24-hour storm events identified in the following Table.

Table 7: Design Events

| Facility | 24-hour Storm Event |
|-----------------------------------|---------------------|
| Storm Sewer | 10-year |
| Stormwater Management Practice(s) | 1-year |
| | 10-year |
| | 100-year |
| Flood Conditions | 100-year |

3.6.3 Performance Summary

Per Section 4.6 of the Design Manual, the CPv requirement does not apply as the reduction of the entire CPv is achieved by application of infiltration systems.

A comparison of the pre- and post-development watershed conditions was performed for all analysis points and storm events evaluated herein. For all analysis points and design storms, this comparison demonstrates that the peak rate of runoff will not be increased. Therefore, the project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The results of the computer modeling used to analyze the pre- and post-development watersheds are presented in Appendix D and Appendix E, respectively. The following Table summarizes the results of this analysis.

Table 8: Summary of Pre- and Post-Development Peak Discharge Rates

| Pre- vs. Post-Development Discharge Rate (cfs) | | | | | | |
|--|----------------------------|------|-----------------------------|------|------------------------------|------|
| Analysis Point (AP) | 1-year 24-hour storm event | | 10-year 24-hour storm event | | 100-year 24-hour storm event | |
| | Pre | Post | Pre | Post | Pre | Post |
| 1 | 0.98 | 0.31 | 2.70 | 0.85 | 5.80 | 5.54 |

4.0 CONSTRUCTION SEQUENCE

This project has not received written approval from the Town of North Greenbush allowing the disturbance of more than five acres of land at any one time. Therefore, if the Contractor's construction sequence requires the disturbance of more than five acres at any one time, written approval must be obtained from the Town of North Greenbush prior to disturbing more than five acres at once.

The “Erosion and Sediment Control Plan” in the accompanying drawings identifies the major construction activities that are the subject of this SWPPP. The order (or sequence) in which the major activities are expected to begin is presented on the accompanying drawings, though each activity will not necessarily be completed before the next begins. In addition, these activities could occur in a different order if necessary to maintain adequate erosion and sediment control. If this is the case, the contractor shall notify the Owner’s/Operator’s Engineer overseeing the implementation of the SWPPP.

The Contractor will be responsible for implementing the erosion and sediment control measures identified on the plans. The Contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and ensuring their proper function remains with the Contractor.

Refer to the accompanying plans for details and specifications regarding the construction sequencing schedule.

5.0 CONSTRUCTION-PHASE POLLUTION CONTROL

The SWPPP and accompanying plans identify the temporary and permanent erosion and sediment control measures that have been incorporated into the design of this project. These measures will be implemented during construction, to minimize soil erosion and control sediment transport off-site, and after construction, to control the quality and quantity of stormwater runoff from the developed site.

Erosion control measures, designed to minimize soil loss, and sediment control measures, intended to retain eroded soil and prevent it from reaching water bodies or adjoining properties, have been developed in accordance with the following documents:

- NYSDEC SPDES General Permit for Stormwater Discharges From Construction Activity, Permit No. GP-0-20-001 (effective January 29, 2020 through January 28, 2025)
- New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (November 2016)

The SWPPP and accompanying plans outline the construction scheduling for implementing the erosion and sediment control measures. These documents include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion and sediment control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

Temporary and permanent erosion and sediment control measures that shall be applied during construction generally include:

1. Minimizing soil erosion and sedimentation by stabilization of disturbed areas and by removing sediment from construction site discharges.
2. Preservation of existing vegetation to the greatest extent practical. Following the completion of construction activities in any portion of the site, permanent vegetation shall be established on all exposed soils.
3. Site preparation activities to minimize the area and duration of soil disruption.
4. Establishment of permanent traffic corridors to ensure that “routes of convenience” are avoided.

5.1 Temporary Erosion and Sediment Control Measures

The temporary erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.1.1 *Stabilized Construction Access*

Prior to construction, stabilized construction access(es) will be installed, per accompanying plans, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the site at the stabilized construction access(es). The intent is to trap dust and mud that would otherwise be carried off-site by construction traffic.

The access(es) shall be maintained in a condition, which will control tracking of sediment onto public rights-of-way or streets. When necessary, additional aggregate will be placed atop the filter fabric to assure the minimum thickness is maintained. All sediment and/or soil spilled, dropped, or washed onto public rights-of-way must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

5.1.2 *Dust Control*

Water trucks shall be used as needed during construction to reduce dust generated on-site. Dust control must be provided by the Contractor(s) to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

5.1.3 *Temporary Soil Stockpile*

Materials, such as topsoil, will be temporarily stockpiled (if necessary) on the site during the construction process. Stockpiles shall be located in an area away from storm drainage, water bodies and/or courses, and will be properly protected from erosion by a surrounding silt fence barrier.

5.1.4 *Silt Fencing*

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) will be established downgradient of all disturbed areas. These barriers may extend into non-impact areas to provide adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To facilitate effectiveness of the silt fencing, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s). Maintenance of the fence will be performed as needed.

5.1.5 *Temporary Seeding*

For areas undergoing clearing, grading, and disturbance as part of construction activities, where work has temporarily ceased, temporary soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has temporarily ceased.

5.1.6 *Manufactured Inlet Protection*

Install insert inlet protection beneath the grate of all catch basins, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace insert as necessary to ensure proper function.

5.1.7 *Erosion Control Blanket*

Erosion control blankets shall be installed in accordance with manufacturer's requirements on all slopes exceeding 3:1. Erosion control blankets provide temporary erosion protection, rapid vegetative establishment, and long-term erosion resistance to shear stresses generated by high runoff flow velocities associated with steep slopes.

5.2 Permanent Erosion and Sediment Control Measures

The permanent erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.2.1 *Establishment of Permanent Vegetation*

Disturbed areas that will be vegetated must be seeded in accordance with the contract documents. The type of seed, mulch, and maintenance measures as described in the contract documents shall also be followed.

Permanent soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has permanently ceased.

Final site stabilization is achieved when all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80 percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

5.2.2 *Rock Outlet Protection*

Rock outlet protection shall be installed at the locations as indicated and detailed on the accompanying plans. The installation of rock outlet protection will reduce the velocity and energy of water, such that the flow will not erode downstream surfaces.

5.3 Other Pollutant Controls

Part I.B.1.e of GP-0-20-001 prohibits discharges from construction material wastewater, pollutants used in vehicle and equipment operation and maintenance, vehicle and equipment washing and toxic or hazardous substances.

The following table identifies materials and/or chemicals commonly used and/or stored on construction sites and should be addressed in the site-specific spill prevention and response plan:

Table 9: Common Construction Pollutants

| Material/Chemical | Physical Description | Stormwater Pollutants | Location* |
|---|---|---|---|
| Pesticides (insecticides, fungicides, herbicides, rodenticides) | Various colored to colorless liquid, powder, pellets, or grains | Chlorinated hydrocarbons, organophosphates, carbamates, arsenic | Herbicides used for noxious weed control |
| Fertilizer | Liquid or solid grains | Nitrogen, phosphorous | Newly seeded areas |
| Cleaning solvents | Colorless, blue, or yellow-green liquid | Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates | No equipment cleaning allowed in project limits |
| Asphalt | Black solid | Oil, petroleum distillates | Streets and roofing |
| Concrete | White solid/grey liquid | Limestone, sand, pH, chromium | Curb and gutter, building construction |
| Curing compounds | Creamy white liquid | Naphtha | Curb and gutter |
| Hydraulic oil/fluids | Brown oily petroleum hydrocarbon | Mineral oil | Leaks or broken hoses from equipment |
| Gasoline | Colorless, pale brown or pink petroleum hydrocarbon | Benzene, ethyl benzene, toluene, xylene, MTBE | Secondary containment / staging area |
| Diesel Fuel | Clear, blue-green to yellow liquid | Petroleum distillate, oil & grease, naphthalene, xylenes | Secondary containment / staging area |
| Kerosene | Pale yellow liquid petroleum hydrocarbon | Coal oil, petroleum distillates | Secondary containment / staging area |
| Antifreeze/coolant | Clear green/yellow liquid | Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc) | Leaks or broken hoses from equipment |
| Sanitary toilets | Various colored liquid | Bacteria, parasites, and viruses | Staging area |
| Construction materials | | | |
| Granular fill | Various colored solids | Sediment | Stockpile / fill areas |
| Subbase course | Gray/brown solid | Sediment, dust | Stockpile |
| Topsoil | Brown solid | Sediment | Stockpile |
| Mulch | Various colored solid | Sediment, debris | Staging area |
| Seed | Brown/yellow solid | Nutrients, debris | Staging area |
| HDPE Storm Pipe | Black solid | | Staging area |
| SDR-35, SDR-21 PVC Pipe | Various colored solid | | Staging area |
| Metals Frames and Grates | Gray solid | | Staging area |
| Joint Sealant | Light gray viscous solid | Polyurethane | Staging area |

*(Area where material/chemical is used on-site)

5.4 Construction Housekeeping Practices

During the construction phase, the Contractor(s) will implement the following measures:

5.4.1 *Sediment Sweeping/Vacuuming*

Any sediment that is tracked by construction vehicles or erosion onto adjacent public or private impervious surfaces must be swept or vacuumed, utilizing self-propelled and/or walk-behind equipment, and removed on a daily basis. Kick brooms and sweeper attachments are not an acceptable means of sweeping. Sweeping or vacuuming should not take place while tracked sediment is wet. If tracked sediment is compacted, the sediment must be scraped loose prior to sweeping or vacuuming.

5.4.2 *Material Stockpiles*

Material resulting from clearing and grubbing operations that will be stockpiled on-site, must be adequately protected with downgradient erosion and sediment controls.

5.4.3 *Equipment Cleaning and Maintenance*

The Contractor(s) will designate areas for equipment cleaning, maintenance, and repair. The Contractor(s) and subcontractor(s) will utilize those areas. The areas will be protected by a temporary perimeter berm.

5.4.4 *Detergents*

The use of detergents for large-scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.)

5.4.5 *Spill Prevention and Response*

A Spill Prevention and Response Plan shall be developed, for the pollutants identified in Section 5.3, for the site by the Contractor(s) that addresses the following:

1. Reducing chance of spills
2. Stopping the source of spills
3. Containing and cleaning up spills
4. Disposing of materials contaminated by spills
5. Training personnel responsible for spill prevention/response
6. Material handling procedures
7. Material storage requirements

The plan shall detail the steps required in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Safety Data Sheets (SDS) for all materials to be stored on-site. All workers on-site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction. Regular tailgate safety meetings shall be held and all workers that are expected on the site during the week shall be required to attend.

5.4.6 *Concrete Washout Areas*

A temporary concrete washout area shall be provided for every project where concrete will be poured or otherwise formed on-site and shall consist of an excavated or above-ground lined construction pit where concrete trucks or equipment can be washed out after their loads have been discharged. Waste generated from concrete wash water that shall not be allowed to flow into drainage ways, inlets, receiving

waters, highway right-of-way, or any location other than the designated concrete washout area(s). Proper signage shall be placed adjacent to the facility to designate the "Concrete Washout Area". Locate the facility a minimum of 100-feet from drainage swales, storm drain inlets, wetlands, streams, and other surface waters. Prevent surface water from entering the washout area.

The hardened residue from the concrete wash areas will be disposed of in the same manner as other non-hazardous construction waste materials. Maintenance of the washout area shall include removal of hardened material when 75% of the storage capacity is filled, and a minimum freeboard of 12 inches shall be maintained. The Contractor will be responsible for seeing that these procedures are followed. The project may require the use of multiple concrete washout areas based on the frequency of concrete pours.

5.4.7 *Material Storage*

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that prevents negative impacts of construction materials on stormwater quality.

Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed of at an approved solid waste or chemical disposal facility.

6.0 INSPECTIONS, MAINTENANCE, AND REPORTING

6.1 Inspection and Maintenance Requirements

6.1.1 *Pre-Construction Inspection and Certification*

Prior to the commencement of construction, the Qualified Inspector/Qualified Professional shall conduct an assessment of the site and certify that the appropriate erosion and sediment control measures have been adequately installed and implemented. The Contractor shall contact the Qualified Inspector/Qualified Professional once the erosion and sediment control measures have been installed.

6.1.2 *Construction Phase Inspections and Maintenance*

A Qualified Inspector/Qualified Professional, as defined in Appendix A of the General Permit GP-0-20-001, shall conduct regular site inspections between the time this SWPPP is implemented and final site stabilization. Site inspections shall occur at an interval of at least once every seven (7) calendar days.

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector/Qualified Professional will decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the site via stormwater runoff. The general contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

1. Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction access will be constructed where vehicles enter and exit. This access will be maintained or supplemented as necessary to prevent sediment from leaving the site on vehicles.
2. Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up slope side. Additional sediment barriers must be constructed as needed.
3. Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.
4. Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with at least 80 percent density. The density of 80 percent or greater must be maintained to be considered as stabilized. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.
5. All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

The inspection reports must be completed entirely and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Within one (1) business day of the completion of an inspection, the *Qualified Inspector/Qualified Professional* shall notify the Owner/Operator and appropriate contractor or subcontractor of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one (1) business day of the notification and shall complete the corrective actions in a reasonable time frame.

In addition to the inspections performed by the *Qualified Inspector/Qualified Professional*, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the accompanying plans. Sediment removed from erosion and sediment control measures will be exported from the site, stockpiled for later use, or used immediately for general non-structural fill.

It is the responsibility of the general contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more structural controls than are shown on the accompanying plans. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers, sediment traps, etc.) Assessing the need for additional controls and implementing them or adjusting existing controls will be a continuing aspect of this SWPPP until the site achieves final stabilization.

6.1.3 *Temporary Suspension of Construction Activities*

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 frequency

of Qualified Inspector/Qualified Professional inspections can be reduced to once every 30 calendar days. Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Region 4 stormwater contact person and the Town of North Greenbush in writing.

6.1.4 *Partial Project Completion*

For construction sites where soil disturbance activities have been shut down with partial project completion, 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 inspections by the Qualified Inspector/Qualified Professional can stop. Prior to the shutdown, the Owner/Operator shall notify the NYSDEC Region 4 stormwater contact person and the Town of North Greenbush in writing.

If soil disturbance activities have not resumed within two years from the date of shutdown, a Notice of Termination (NOT) shall be properly completed and submitted to the NYSDEC.

6.1.5 *Post-Construction Inspections and Maintenance*

Inspections and maintenance of final stabilization measures and post-construction stormwater management practices shall be performed in accordance with Appendix G, once all disturbed areas are stabilized and all stormwater management systems are in place and operable.

6.2 Reporting Requirements

6.2.1 *Inspection Reports*

Pursuant to Part IV.C of GP-0-20-001, inspection reports shall be prepared for the duration of construction, as outlined herein, and shall be signed by the *Qualified Inspector* or *Qualified Professional*. A sample inspection form is provided in Appendix F.

At a minimum, each inspection report shall record the following information:

1. Date and time of inspection.
2. Name and title of person(s) performing inspection.
3. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection.
4. 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.
5. 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.
6. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance.
7. 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.

8. 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.
9. Indication of the 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.
10. 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).
11. Identification and status of all corrective actions that were required by previous inspection.
12. Color photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *Qualified Inspector/Qualified Professional* 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/Qualified Professional* 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/Qualified Professional* shall attach the 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.

6.2.2 Site Log Book

Pursuant to Part II.D.2 of GP-0-20-001, the Owner/Operator shall retain a copy of the General Permit, NOI, NOI Acknowledgment Letter, MS4 SWPPP Acceptance Form (if applicable), inspection reports, contractor and subcontractor certification forms, and all documentation necessary to demonstrate eligibility under the permit, at the construction site from commencement of construction activity until the date that all areas of disturbance have achieved final stabilization and the Notice of Termination has been submitted to the NYSDEC.

The Site Log Book shall be maintained on-site in a secure location (i.e. job trailer, on-site construction office, or mailbox with lock) and must be accessible during normal business hours to an individual performing a compliance inspection.

6.2.3 Post Construction Records and Archiving

Following construction, the Owner/Operator shall retain copies of the SWPPP, the complete construction Site Log Book, and records of all data used to complete the NOI to be covered by this permit, for a period of at least five years from the date that the site is finally stabilized. This period may be extended by the NYSDEC, at its sole discretion, at any time upon written notification.

Records shall be maintained of all post construction inspections and maintenance work performed in accordance with the requirements outlined in Appendix G.

7.0 SWPPP IMPLEMENTATION RESPONSIBILITIES

A summary of the responsibilities and obligations of all parties involved with compliance with the NYSDEC SPDES General Permit GP-0-20-00 conditions is outlined in the subsequent sections. For a complete listing of the definitions, responsibilities, and obligations, refer to the SPDES General Permit GP-0-20-001 presented in Appendix J.

7.1 Owner's/Operator's Responsibilities

1. Ensure that control measures are selected, designed, installed, implemented and maintained to minimize the discharge of pollutants and prevent a violation of the water quality standards, meeting the non-numeric effluent limitations in Part I.B.1.(a)-(f) of the SPDES General Permit and in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
2. Ensure that practices are selected, designed, installed, and maintained to meet the performance criteria in the Design Manual. Practices must be designed to meet the applicable sizing criteria in Part I.C.2.a., b., c. or d. of GP-0-20-001.
3. Retain the services of a "Qualified Inspector" or "Qualified Professional" as defined under Section 2.1, to provide the services outlined in Section 2.5 "Qualified Inspector's/Qualified Professional's Responsibilities."
4. Retain the services of a "Qualified Professional," as defined under Section 2.1, to provide the services outlined in Section 2.3 "Owner's/Operator's Engineers Responsibilities."
5. Have an authorized corporate officer sign the Owner/Operator Certification Form to accompany the eNOI. A copy of the completed NOI is included in Appendix B.
6. Submit the electronic version of the NOI (eNOI) along with the MS4 SWPPP acceptance form using the NYSDEC's website (<http://www.dec.ny.gov/chemical/43133.html>).
7. Pay the required initial and annual fees upon receipt of invoices from NYSDEC. These invoices are generally issued in the fall of each year. The initial fee is calculated as \$110.00 per acre disturbed plus \$675.00 per acre of net increase in impervious cover, and the annual fee is \$110.00.
8. Prior to the commencement of construction activity, identify the contractor(s) and subcontractor(s) that will be responsible for implementing the erosion and sediment control measures and stormwater management practices described in this SWPPP. Have each of these contractors and subcontractors identify at least one "Trained Contractor", as defined under Section 2.1 that will be responsible for the implementation of the SWPPP. Ensure that the Contractor has at least one "Trained Contractor" on site on a daily basis when soil disturbance activities are being performed.
9. Schedule a pre-construction meeting which shall include the Town of North Greenbush representative, Owner's/Operator's Engineer, Qualified Inspector, Contractor, and their sub-contractors to discuss responsibilities as they relate to the implementation of this SWPPP.
10. Retain the services of an independent certified materials testing and inspection firm operating under the direction of a licensed Professional Engineer to perform regular tests, inspections, and certifications of the construction materials used in the construction of all post-construction stormwater management practices.
11. Retain the services of a NYS licensed land surveyor to perform an as-built topographic survey of the completed post-construction stormwater management facilities.
12. Require the Contractor to fully implement the SWPPP prepared for the site by the Owner/Operator's Engineer to 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 NYSDEC.

13. Forward a copy of the NOI Acknowledgement Letter received from the regulatory agency to the Owner's/Operator's Engineer for project records, and to the Contractor for display at the construction site.
14. Maintain a copy of the General Permit (GP-0-20-001), NOI, NOI Acknowledgement Letter, SWPPP, MS4 SWPPP Acceptance Form, inspection reports, Spill Prevention, Countermeasures, Cleanup ("SPCC") Plan, and all documentation in accordance with Part I.F.8.a-d of GP-0-20-001 necessary to demonstrate eligibility with the permit at the construction site, until all disturbed areas have achieved final stabilization and the NOT has been submitted to the NYSDEC. Place documents in a secure location that must be accessible during normal business hours to an individual performing a compliance inspection.
15. Prior to submitting a Notice of Termination, ensure for post-construction stormwater management practice(s) that are privately owned, the Owner/Operator has a deed restriction in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.
16. Submit a Notice of Termination (NOT) form (see Appendix B) within 48 hours of receipt of the Owner's/Operator's Engineer's certification of final site stabilization to the following:

NOTICE OF TERMINATION
NYS DEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505

Town of North Greenbush
Department of Stormwater
2 Douglas Street,
Wynantskill, NY 12198

17. Request and receive all SWPPP records from the Owner's/Operator's Engineer and archive those records for a minimum of five (5) years after the NOT is filed.
18. Implement the Post-Construction Inspections and Maintenance procedures outlined in Appendix G.
19. The NOI, SWPPP, and inspection reports required by GP-0-20-001 are public documents that the Owner/Operator must make available for review and copying by any person within five (5) business days of the Owner/Operator receiving a written request by any such person to review the NOI, SWPPP, or inspection reports. Copying of documents will be done at the requester's expense.
20. The Owner/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/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 project 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; and
 - c) To address issues or deficiencies identified during an inspection by the “Qualified Inspector,” the Department, or other Regulatory Authority.
 - d) To document the final construction conditions.
21. 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.
- a) 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 the 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.
 - b) 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.

7.2 Owner’s/Operator’s Engineer’s Responsibilities

1. Prepare the SWPPP using good engineering practices, best management practices, and in compliance with all federal, state, and local regulatory requirements.
2. Prepare the electronic Notice of Intent (eNOI) (see Appendix B) and sign the “SWPPP Preparer Certification Form.” Forward the Owner/Operator Certification Form to the Owner/Operator for signature.
3. Provide copies of the SWPPP to the Town of North Greenbush once all signatures and attachments are complete.
4. Enter Contractor’s information in Section 2.5 “SWPPP Participants” once a Contractor is selected by the Owner/Operator.
5. Participate in a pre-construction meeting which shall include the Town of North Greenbush representative, Owner/Operator, Qualified Inspector, Contractor, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.
6. Update the SWPPP each time there is a significant modification to the pollution prevention measures or a change of the principal Contractor working on the project who may disturb site soil.

7.3 Contractor's Responsibilities

1. Sign the SWPPP Contractor's Certification Form contained within Appendix B and forward to the Owner’s/Operator’s Engineer for inclusion in the Site Log Book.

2. Identify at least one Trained Contractor that will be responsible for implementation of this SWPPP. Ensure that at least one Trained Contractor is on site on a daily basis when soil disturbance activities are being performed. The Trained Contractor shall 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 conditions 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.
3. Provide the names and addresses of all subcontractors working on the project site. Require all subcontractors who will be involved with construction activities that will result in soil disturbance to identify at least one Trained Contractor that will be on site on a daily basis when soil disturbance activities are being performed; and to sign a copy of the Subcontractor's Certification Form contained within Appendix B, then forward to the Owner's/Operator's Engineer for inclusion into the Site Log Book. This information must be retained as part of the Site Log Book.
4. Maintain a Spill Prevention and Response Plan in accordance with requirements outlined in Section 5 of this SWPPP. This plan shall be provided to the Owner's/Operator's Engineer for inclusion in the Site Log Book, prior to mobilization on-site.
5. Participate in a pre-construction meeting which shall include the Town of North Greenbush representative, Owner/Operator, Owner's/Operator's Engineer, Qualified Inspector, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.
6. If Contractor plans on utilizing adjacent properties for material, waste, borrow, or equipment storage areas, or if Contractor plans to engage in industrial activity other than construction (such as operating asphalt and/or concrete plants) at the site, Contractor shall submit appropriate documentation to the Owner's/Operator's Engineer so that the SWPPP can be modified accordingly.
7. Implement site stabilization, erosion and sediment control measures, and other requirements of the SWPPP.
8. In accordance with the requirements in the most current version of the NYS Standards and Specifications for Erosion and Sediment Control, conduct inspections of erosion and sediment control measures installed at the site to ensure that they remain in effective operating condition at all times. Prepare and retain written documentation of inspections as well as of all repairs/maintenance activities performed. This information must be retained as part of the Site Log Book.
9. Begin implementing corrective actions within one (1) business day of receipt of notification by the Qualified Inspector/Qualified Professional that deficiencies exist with the erosion and sediment control measures employed at the site. Corrective actions shall be completed within a reasonable time frame.
10. Maintain a record of the date(s) and location(s) that soil restoration is performed in accordance with the accompanying plans and NYSDEC Division of Water's publication "Deep-Ripping and Decomposition," dated April 2008. A copy of this publication is provided in Appendix H. The record that is to be maintained shall be a copy of the overall site grading plan delineating the area(s) and date(s) that the soil was restored.

11. Upon completion of all construction at the site, the contractor responsible for overall SWPPP Compliance shall sign the certification on their Contractor Certification Form indicating that: a.) all temporary erosion and sediment control measures have been removed from the site, b.) the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," and c.) all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents.

7.4 Qualified Inspector's/Qualified Professional's Responsibilities

1. Participate in a pre-construction meeting with the Town of North Greenbush representative, Owner/Operator, Owner/Operator's Engineer, Contractor, and their subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.
2. Conduct an initial assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment control measures described within this SWPPP have been adequately installed and implemented to ensure overall preparedness of the site.
3. Provide on-site inspections to determine compliance with the SWPPP. Site inspections shall occur at an interval of at least once every seven calendar days. A written inspection report shall be provided to the Owner/Operator and general contractor within one business day of the completion of the inspection, with any deficiencies identified. A sample inspection form is provided in Appendix F.
4. Prepare an inspection report subsequent to each and every inspection that shall include/address the items listed in Part IV.C.4.a-k of GP-0-20-001. Sign all inspection reports and maintain on site with the SWPPP.
5. Notify the owner/operator and appropriate contractor or subcontractor of any corrective actions that need to be taken.
6. Prepare a construction Site Log Book to be used as a record of all inspection reports generated throughout the duration of construction. Ensure that the construction Site Log Book is maintained and kept up-to-date throughout the duration of construction.
7. Review the Contractor's SWPPP records on a periodic basis to ensure compliance with the requirements for daily reports, soil restoration, inspections, and maintenance logs.
8. Based on the as-built survey and material testing certifications performed by others, the Qualified Professional shall perform evaluations of the completed stormwater management practices to determine whether they were constructed in accordance with this SWPPP.
9. The Qualified Professional shall conduct a final site assessment and prepare a certification letter to the Owner/Operator indicating that, upon review of the material testing and inspection reports prepared by the firm retained by the Owner/Operator, review of the completed topographic survey, and evaluation of the completed stormwater management facilities, the stormwater management facilities have been constructed substantially in accordance with the contract documents and should function as designed.
10. Prepare the Notice of Termination (NOT). The Qualified Professional shall sign the NOT Certifications VI (Final Stabilization) and VII (Post-construction Stormwater Management

Practices) and forward the NOT to the Owner/Operator for signature on Certification VIII (Owner/Operator Certification).

11. Transfer the SWPPP documents, along with all NOI's, permit certificates, NOT's, construction Site Log Book, and written records required by the General Permit to the Owner/Operator for archiving.

7.5 SWPPP Participants

1. Owner's/Operator's Engineer ³: Robert Steehler, P.E.
LaBella Associates, DPC
300 State Street, Suite 201
Rochester, NY 12110
(585) 454-6110

2. Owner/Operator ⁴: OM Hospitality, LLC
C/O Miren Patel
256 Birchwood Hills Drive
Troy, NY 12180

3. Contractor^{5,6}:
Name and Title: _____
Company Name: _____
Mailing Address: _____

Phone: _____
Fax: _____

³ Refer to Appendix B for the SWPPP Preparer Certification Form.

⁴ Refer to Appendix B for the Owner/Operator Certification Form.

⁵ Refer to Appendix B for Contractor and Subcontractor Certification Form.

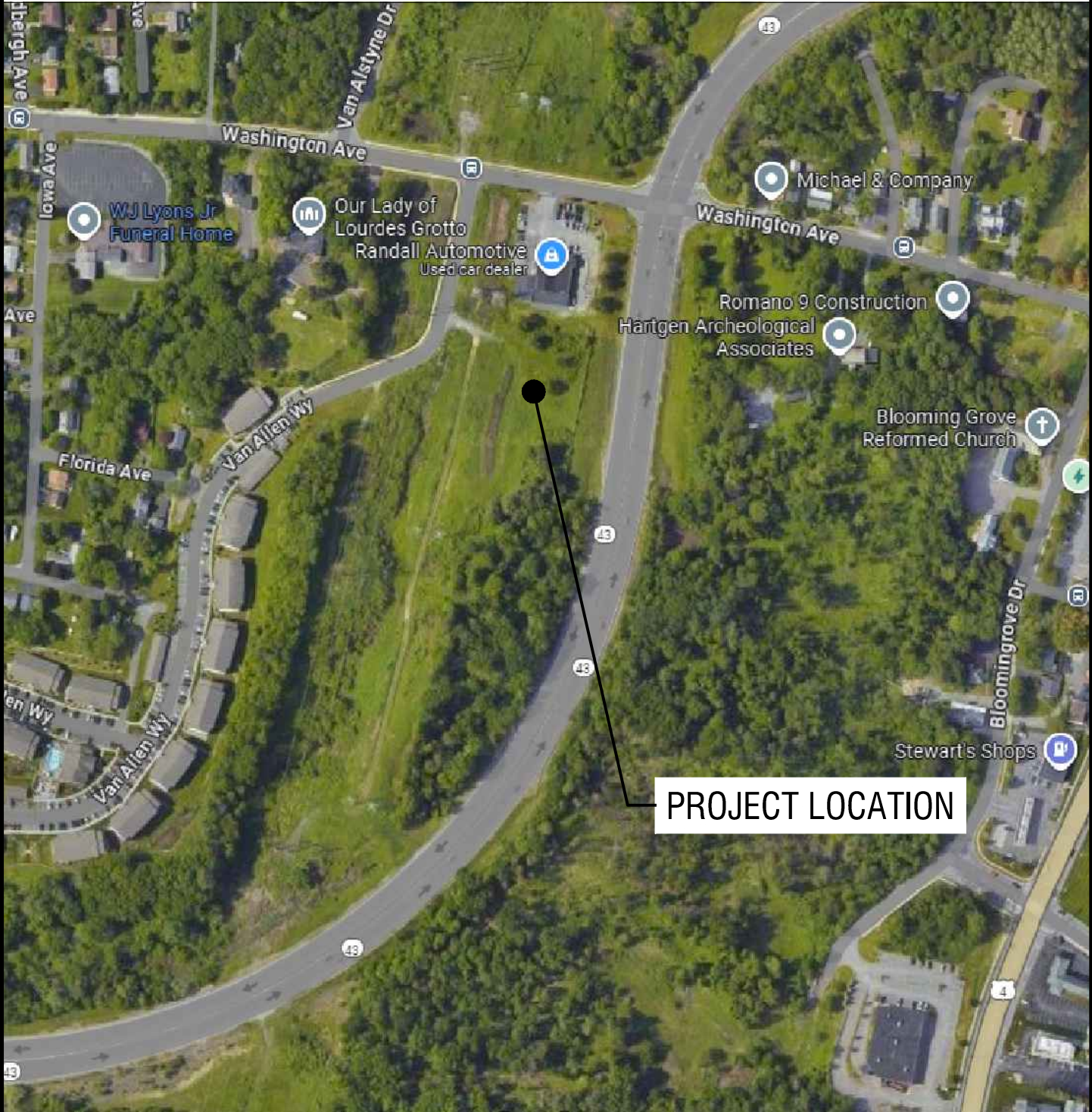
⁶ Contractor's information to be entered once the Contractor has been selected.




APPENDIX A: FIGURES

- A-1: Site Location Map
- A-2: Soils Map
- A-3: Historic Places Screening Map
- A-4: Environmental Resource Map
- A-5: Pre-Development Watershed Delineation Map
- A-6: Post-Development Watershed Delineation Map

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|--|--|--|--|---------------------|-------------------------|
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| | DRAWING NAME: SITE LOCATION MAP | | DRAWN BY: SCB | DATE: 10/14/2024 | PROJECT NO.: 2243194 |
| | PROJECT NAME: PROPOSED HOTEL 1 HOTEL WAY, RENSSELAER, NY 12144 | | DRAWING NUMBER: A-1 | | |

Custom Soil Resource Report
Soil Map



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DRAWING NAME:

SOILS MAP

PROJECT NAME:

PROPOSED HOTEL

1 HOTEL WAY, RENSSELAER, NY 12144

ISSUED FOR:

SWPPP FIGURE - NOT FOR CONSTRUCTION

DRAWN BY:

SCB

DATE:

10/14/2024

PROJECT NO.:

2243194

DRAWING NUMBER:

A-2

Custom Soil Resource Report

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: Rensselaer County, New York
 Survey Area Data: Version 20, Sep 6, 2023

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

Date(s) aerial images were photographed: Aug 15, 2021—Nov 8, 2021

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

| | | | | | | |
|--|---|----------------|---|------------------|---------------------|-------------------------|
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| | DRAWING NAME: | SOILS LEGEND | | DRAWN BY: SCB | DATE: 10/14/2024 | PROJECT NO.: 2243194 |
| | PROJECT NAME: | PROPOSED HOTEL | | A-2 | | |
| | 1 HOTEL WAY, RENSSELAER, NY 12144 | | | | | |

Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| HuC | Hudson silt loam, 8 to 15 percent slopes | 1.7 | 43.9% |
| HuE | Hudson silt loam, steep | 1.8 | 46.9% |
| RhB | Rhinebeck silt loam, 3 to 8 percent slopes | 0.4 | 9.3% |
| Totals for Area of Interest | | 3.9 | 100.0% |

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The



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DRAWING NAME:

SOILS TABLE

PROJECT NAME:

PROPOSED HOTEL

1 HOTEL WAY, RENSSELAER, NY 12144

ISSUED FOR:

SWPPP FIGURE - NOT FOR CONSTRUCTION

DRAWN BY:

SCB

DATE:

10/14/2024

PROJECT NO.:

2243194

DRAWING NUMBER:

A-2



Consultation Projects (View)



Survey Archaeology Areas (View)



Survey Building Areas (View)



LPC Historic Districts



Archeologically Sensitive Areas



National Register Building Sites (View)



USN Building Districts (View)



LPC Landmarks



USN Building Points (View)



Eligible



Listed



Not Eligible



Not Eligible - Demolished



Undetermined

Cemeteries



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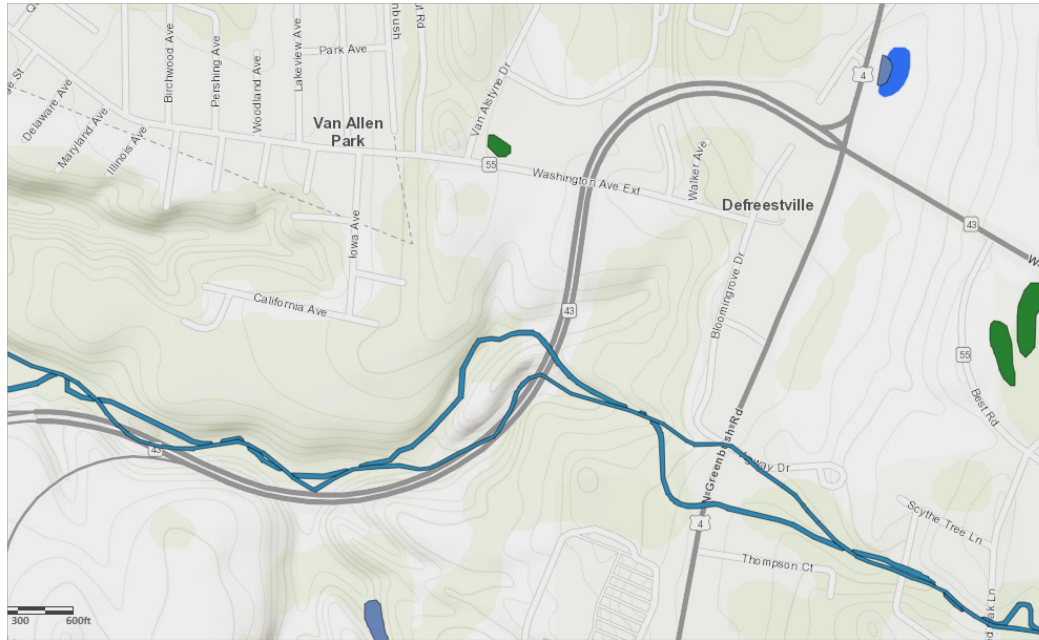
DRAWING NAME:
HISTORIC PLACES SCREENING MAP

PROJECT NAME:
PROPOSED HOTEL
1 HOTEL WAY, RENSSELAER, NY 12144

ISSUED FOR:
SWPPP FIGURE - NOT FOR CONSTRUCTION

| | | |
|-----------------|---------------------|-------------------------|
| DRAWN BY: -- | DATE: 10/14/2024 | PROJECT NO.: 2243194 |
|-----------------|---------------------|-------------------------|

DRAWING NUMBER:
A-3



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DRAWING NAME:
ENVIRONMENTAL RESOURCE MAP

PROJECT NAME:
PROPOSED HOTEL
1 HOTEL WAY, RENSSELAER, NY 12144

ISSUED FOR:
SWPPP FIGURE - NOT FOR CONSTRUCTION

| | | |
|------------------|---------------------|-------------------------|
| DRAWN BY: SCB | DATE: 10/14/2024 | PROJECT NO.: 2243194 |
|------------------|---------------------|-------------------------|

DRAWING NUMBER:
A-4



KEY TO MAP

100-Year Flood Boundary
 500-Year Flood Boundary
 Zone Designation with 100-Year Flood Boundary
 100-Year Flood Boundary
 500-Year Flood Boundary
 Flood Hazard Boundary Line
 Wetland in Feet
 Elevation Reference Mark
 Spot Elevation
 *Adapted to the National Geodetic Vertical Datum of 1929

***EXPLANATION OF ZONE DESIGNATIONS**

ZONE **EXPLANATION**

A Area of 100-year flood, high flood elevation, and flood hazard boundary. This zone is the area of 100-year flood, high flood elevation, and flood hazard boundary, which applies to the entire area of the flood hazard boundary, but is not subject to flood insurance.

A0 Area of 100-year flood, high flood elevation, and flood hazard boundary, which applies to the entire area of the flood hazard boundary, but is not subject to flood insurance.

A1 Area of 100-year flood, high flood elevation, and flood hazard boundary, which applies to the entire area of the flood hazard boundary, but is not subject to flood insurance.

A1-0.8 Area of 100-year flood, high flood elevation, and flood hazard boundary, which applies to the entire area of the flood hazard boundary, but is not subject to flood insurance.

A0.8 Area of 100-year flood, high flood elevation, and flood hazard boundary, which applies to the entire area of the flood hazard boundary, but is not subject to flood insurance.

B Area between limits of the 100-year flood and 500-year flood, or that area which is 100-year flood, but is not subject to flood insurance.

C Area of minimal flooding, (the shading)

D Area of unshaded, low quality, flood hazard

V Area of 100-year coastal flood with velocity (area subject to flood insurance and flood hazard boundary)

V1-0.8 Area of 100-year coastal flood with velocity (area subject to flood insurance and flood hazard boundary)

NOTES TO USER

Circle areas used to indicate flood hazard (see Section A and V).
 The map is the flood hazard boundary map only and does not show any data of area subject to flooding, or the contents of flood insurance policies, or other flood hazard data.
 For additional map panels, see separate printed index to Map sheets.

INITIAL IDENTIFICATION:
 OCTOBER 1, 1988
FLOOD HAZARD BOUNDARY MAP REVISIONS:

FLOOD INSURANCE RATE MAP EFFECTIVE:
 JUNE 10, 1990
FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown in the title block to determine which insurance rate area is applicable in the areas where elevations or depths have been adjusted.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (202) 646-6242, or (202) 646-6257.

APPROXIMATE SCALE
 1" = 400'

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
NORTH GREENBUSH,
NEW YORK
RENSSELAER COUNTY

PANEL 7 OF 8
THIS MAP PANEL IS A PANEL NOT PRINTED

COMMUNITY PANEL NUMBER
 15154-007-A

EFFECTIVE DATE:
 JUNE 10, 1990

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

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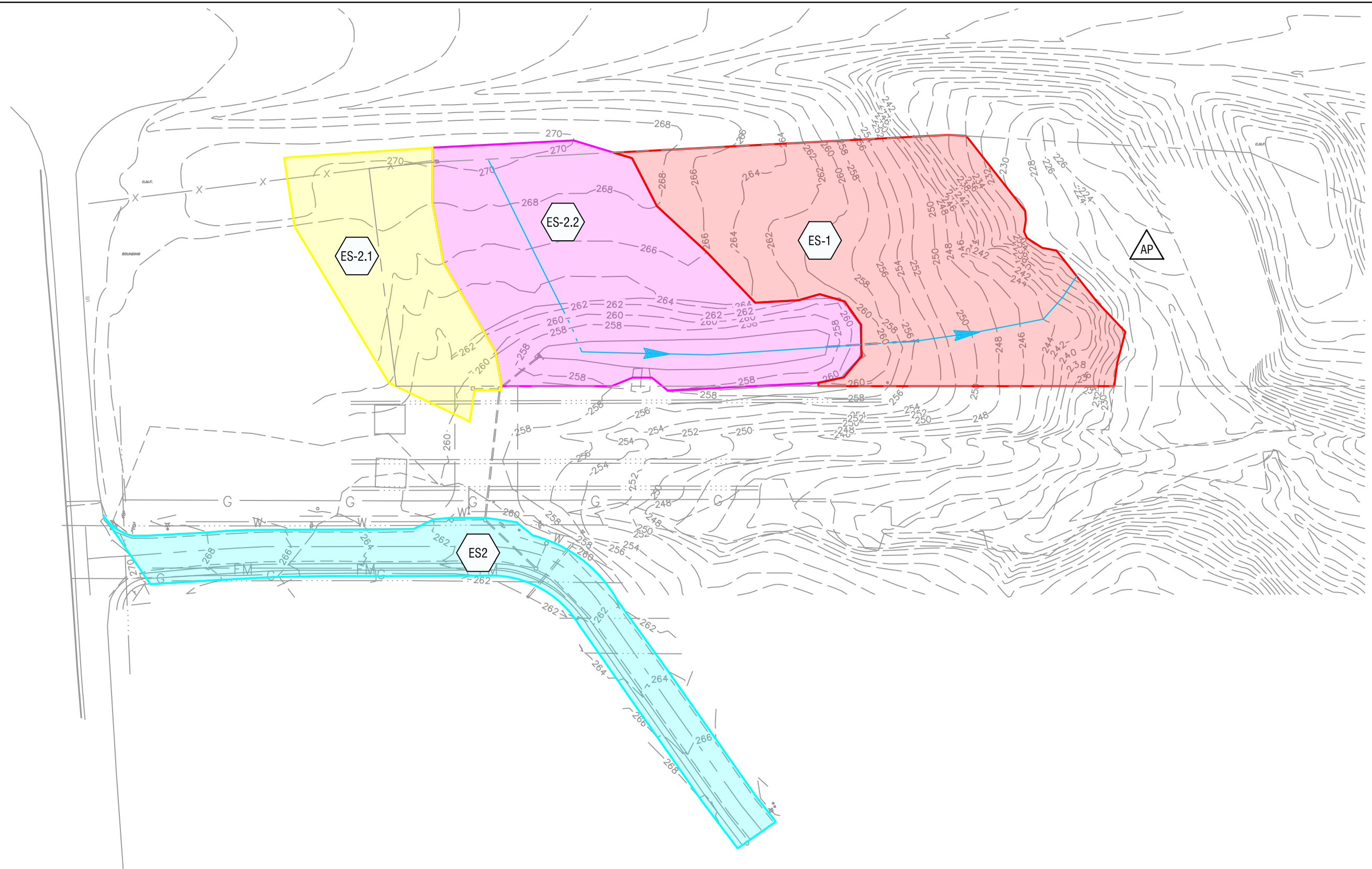
It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way, if an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

DRAWING NAME:
FEMA FIRM MAP

PROJECT NAME:
PROPOSED HOTEL
 1 HOTEL WAY, RENSSELAER, NY 12144

ISSUED FOR:
 SWPPP FIGURE - NOT FOR CONSTRUCTION

| | | |
|--------------------------------------|----------------------------|--------------------------------|
| DRAWN BY: SCB | DATE: 10/14/2024 | PROJECT NO.: 2243194 |
| DRAWING NUMBER: A-5 | | |



LEGEND

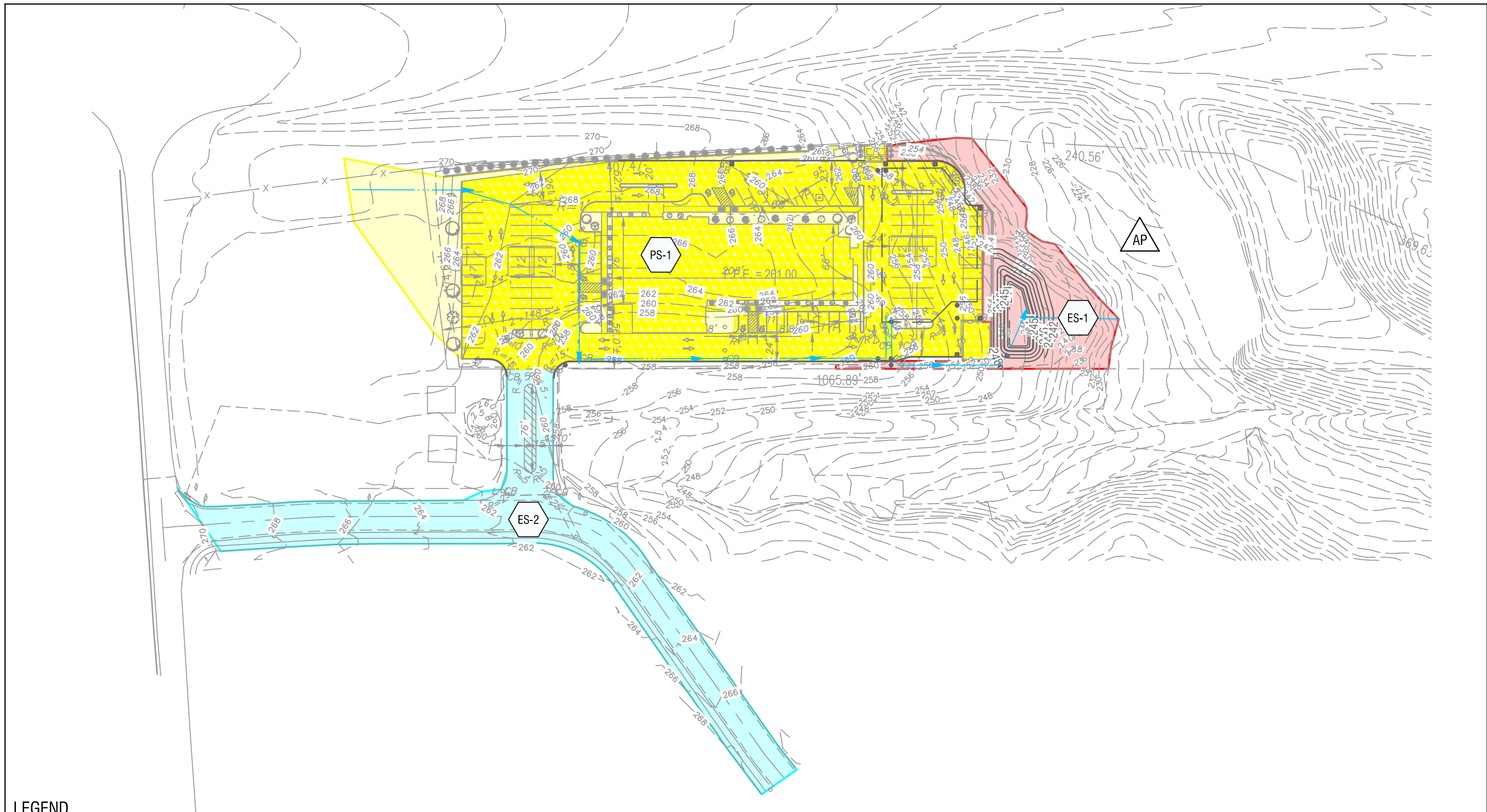
| | | | |
|--|-------------------------|--|----------------|
| | ANALYSIS POINT | | Tc PATH |
| | ANALYSIS POINT LOCATION | | CATCHMENT AREA |



PROJECT
PROPOSED HOTEL
 1 HOTEL WAY, RENSSELAER, NY 12144

DRAWING TITLE
FIGURE A6
PRE-DEVELOPMENT WATERSHED MAP

| | |
|--------------------------|------------|
| BY: SCB | DATE: |
| DRAWING SCALE: 1"=80' | 10/14/2024 |



LEGEND

| | | | |
|--|-------------------------|--|----------------|
| | ANALYSIS POINT | | Tc PATH |
| | ANALYSIS POINT LOCATION | | CATCHMENT AREA |



PROJECT
PROPOSED HOTEL
 1 HOTEL WAY, RENSSELAER, NY 12144

DRAWING TITLE
FIGURE A7
POST-DEVELOPMENT WATERSHED MAP

| | |
|--------------------------|------------|
| BY: SCB | DATE: |
| DRAWING SCALE: 1"=80' | 10/14/2024 |



APPENDIX B: FORMS

Notice of Intent
MS4 SWPPP Acceptance Form
SWPPP Preparer Certification Form
Owner/Operator Certification Form
Contractor and Subcontractor Certification Forms
Notice of Termination (NOT)

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| Details | 2 |
| Form Input | 2 |
| Owner/Operator Information | 2 |
| Project Location | 3 |
| Project Details | 4 |
| Required SWPPP Components | 6 |
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NOI for coverage under Stormwater General Permit for Construction Activity

version 1.40

(Submission #: HQ7-CE6R-Z40MM, version 1)

Details

Originally Started By Spencer Buckert
Alternate Identifier North Greenbush Home2 Suites Hotel
Submission ID HQ7-CE6R-Z40MM
Submission Reason New
Status Draft
Active Steps Form Submitted

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
OM Hospitality

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

Owner/Operator Contact Person First Name
Hiren

Owner/Operator Mailing Address
256 Birchwood Hills Drive

City
Troy

State
NY

Zip
12180

Phone
9143740044

Email
hir.m.patel@gmail.com

Federal Tax ID
37-2130318

If the owner/operator is an organization, provide the Federal Tax ID number, or Employer Identification Number (EIN), in the format xx-xxxxxx. If the owner/operator is an individual and not an organization, enter "Not Applicable" or "N/A" and do not provide the individual's social security number.

Project Location

Project/Site Name

North Greenbush Home2 Suites Hotel

Street Address (Not P.O. Box)

1 Hotel Way

Side of Street

East

City/Town/Village (THAT ISSUES BUILDING PERMIT)

North Greenbush

State

NY

Zip

12144

DEC Region

4

The DEC Region must be provided. Please use the NYSDEC Stormwater Interactive Map (<https://gisservices.dec.ny.gov/gis/stormwater/>) to confirm which DEC Region this site is located in. To view the DEC Regions, click on **Other Useful Reference Layers** on the left side of the map, then click on **DEC Administrative Boundary**. Zoom out as needed to see the Region boundaries.

For projects that span multiple Regions, please select a primary Region and then provide the additional Regions as a note in Question 39.

County

RENSSELAER

Name of Nearest Cross Street

Washington Ave

Distance to Nearest Cross Street (Feet)

240

Project In Relation to Cross Street

North

Tax Map Numbers Section-Block-Parcel

144.0-10-33.13

Tax Map Numbers

144.0-10-33.13

If the project does not have tax map numbers (e.g. linear projects), enter **Not Applicable** or "N/A".

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:

- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates

42.653401600697734,-73.70050869004064

Project Details

2. What is the nature of this project?

New Construction

For the purposes of this eNOI, **New Construction** refers to any project that does not involve the disturbance of existing impervious area (i.e. 0 acres). If existing impervious area will be disturbed on the project site, it is considered redevelopment with either increase in impervious area or no increase in impervious area.

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse

Forest

Post-Development Future Land Use

Commercial

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.

NONE PROVIDED

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)

3.9

Total Area to be Disturbed (acres)

2.0

Existing Impervious Area to be Disturbed (acres)

0.0

Future Impervious Area Within Disturbed Area (acres)

1.7

5. Do you plan to disturb more than 5 acres of soil at any one time?

No

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

A (%)

0

B (%)

0

C (%)

0

D (%)

100

7. Is this a phased project?

No

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

Start Date

01/01/2025

End Date

12/31/2027

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

On-site wetland

Drainage ditches and storm sewer systems are not considered surface waterbodies. Please identify the surface waterbody that they discharge to. If the nearest surface waterbody is unnamed, provide a description of the waterbody, such as, ♦ Unnamed tributary to Niagara River. ♦

9a. Type of waterbody identified in question 9?

Wetland/Federal Jurisdiction On Site (Answer 9b)

Other Waterbody Type Off Site Description

NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?

Delineated by Army Corps of Engineers

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?

No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?

No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?

No

Please use the DEC Stormwater Interactive Map (<https://gisservices.dec.ny.gov/gis/stormwater/>) to confirm if this site is located in one of the watersheds of an AA or AA-S classified water. To view the watershed areas, click on ♦ Permit Related Layers ♦ on the left side of the map, then click on ♦ Class AA AAS Watersheds. ♦

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 D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?**

NONE PROVIDED

If Yes, what is the acreage to be disturbed?

NONE PROVIDED

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?

No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?

No

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

NONE PROVIDED

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?

No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?

No

19. Is this property owned by a state authority, state agency, federal government or local government?

No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)

No

Required SWPPP Components

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

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

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the 2015 or 2024 NYS Stormwater Management Design Manual?

Yes

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

Professional Engineer (P.E.)

SWPPP Preparer

LaBella Associates

Contact Name (Last, First)

Steehler, Robert

Mailing Address

300 State Street, Suite 201

City

Rochester

State

NY

Zip

14614

Phone

585-454-6110

Email

rsteehler@labellapc.com

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

- 1) Click on the link below to download a blank certification form
- 2) The certified SWPPP preparer should sign this form
- 3) Scan the signed form
- 4) Upload the scanned document

[Download SWPPP Preparer Certification Form](#)

Please upload the SWPPP Preparer Certification

2_App B3_eNOI SWPPP Preparer Certification_GP-0-20-001_Signed.pdf - 10/14/2024 02:36 PM

Comment

NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?

Yes

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

Temporary Structural

Dust Control
Silt Fence
Stabilized Construction Entrance
Storm Drain Inlet Protection

Biotechnical

None

Vegetative Measures

Mulching
Protecting Vegetation
Seeding
Topsoiling

Permanent Structural

Rock Outlet Protection
Land Grading

Other

NONE PROVIDED

Post-Construction Criteria

*** 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 Area

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.

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).

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

0.15

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing 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 the Post-Construction SMP Identification section 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.

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

0.15

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

Yes

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)] (acre-feet)

NONE PROVIDED

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

NONE PROVIDED

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; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section 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. (acre-feet)

NONE PROVIDED

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 - 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).

NONE PROVIDED

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?

NONE PROVIDED

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, 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 (acre-feet)

NONE PROVIDED

CPv Provided (acre-feet)

NONE PROVIDED

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

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.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)

2.70

Post-Development (CFS)

0.85

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)

5.80

Post-Development (CFS)

5.54

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

NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?

Yes

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

OM Hospitality

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.

NONE PROVIDED

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing 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.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)

NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)

NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)

NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)

NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)

NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)

NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)

NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)

NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)

NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)

NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

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

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

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

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.

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. 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.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?

No

Please note that per Part VII.H.4. of GP-0-20-001, the MS4 SWPPP Acceptance Form must be signed by a principal executive officer or ranking elected official of the MS4, or a duly authorized representative of that person.

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.

[MS4 SWPPP Acceptance Form](#)

MS4 Acceptance Form Upload

NONE PROVIDED

Comment

NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

[Owner/Operator Certification Form \(PDF, 45KB\)](#)

Upload Owner/Operator Certification Form

NONE PROVIDED

Comment

NONE PROVIDED

Attachments

| Date | Attachment Name | Context | User |
|--------------------|---|------------|-----------------|
| 10/14/2024 2:36 PM | 2_App B3_eNOI SWPPP Preparer Certification_GP-0-20-001_Signed.pdf | Attachment | Spencer Buckert |

Status History

| | User | Processing Status |
|-----------------------|-----------------|-------------------|
| 10/14/2024 1:00:24 PM | Spencer Buckert | Draft |

Processing Steps

| Step Name | Assigned To/Completed By | Date Completed |
|----------------|--------------------------|----------------|
| Form Submitted | | |
| Under Review | Daniel von Schilgen | |



Department of
Environmental
Conservation

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

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



SWPPP Preparer Certification Form

*SPDES General Permit for Stormwater
Discharges From Construction Activity
(GP-0-20-001)*

Project Site Information Project/Site Name

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

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.

First name

MI

Last Name

Signature

Date



Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: _____

eNOI Submission Number: _____

eNOI Submitted by: Owner/Operator SWPPP Preparer Other

Certification Statement - Owner/Operator

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

Owner/Operator First Name

M.I. Last Name

Signature

Date

**Stormwater Pollution Prevention Plan
Contractor Certification Statement
(Responsible for overall SWPPP Compliance)**

Proposed Hotel
1 Hotel Way, Town of North Greenbush, Rensselaer County, New York

This is to certify that the following contracting firm will be responsible for installing, constructing, repairing, inspecting and/or maintaining the erosion and sediment control practices and post-construction stormwater management control practices required by the SWPPP.

Contracting Firm Information

Name: _____
Address: _____
Telephone & Fax: _____

Trained Contractor(s)¹ Responsible for SWPPP Implementation (Provide name, title, and date of last training)

Prior to commencement of construction activity, the following certification shall be issued:

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 *discharges* 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.

Printed Name: _____
Title/Position: _____
Signature: _____ Date: _____

Upon completion of construction activities, the following certification shall be issued, prior to issuance of the NOT:

I hereby certify that that all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents. I further certify that all temporary erosion and sediment control measures have been removed from the site, and that the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction".

Printed Name: _____
Title/Position: _____
Signature: _____ Date: _____

¹ "Trained Contractor" means an employee from a contracting (construction) company 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 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" will be responsible for the day to day implementation of the SWPPP.

² Signatory Requirements:

- a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle 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, this form shall be signed by a general partner or the proprietor, respectively.
- c. For a municipality, State, Federal, or other public agency, this form 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).

**Stormwater Pollution Prevention Plan
Subcontractor Certification Statement
(whose work involves soil disturbance)**

Proposed Hotel
1 Hotel Way, Town of North Greenbush, Rensselaer County, New York

Each Subcontractor whose work will involve soil disturbance of any kind is required to complete and sign this Certification Statement before commencing any construction activity at the site. This completed Certification Statement(s) shall be maintained at the construction site in the Site Log Book.

Subcontracting Firm Information

Name: _____

Address: _____

Telephone & Fax: _____

Trained Contractor(s)² Responsible for SWPPP Implementation (Provide name, title, and date of last training)

Prior to commencement of construction activities, the following certification shall be issued:

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 *discharges* 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.

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

² "Trained Contractor" means an employee from a contracting (construction) company 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 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" will be responsible for the day to day implementation of the SWPPP.

² Signatory Requirements:

- a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle 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, this form shall be signed by a general partner or the proprietor, respectively.
- c. For a municipality, State, Federal, or other public agency, this form 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).

**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:



APPENDIX C:
PROJECT EVALUATION AND
DESIGN CALCULATIONS

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Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal? No

What is the nature of this construction project? New Construction

| | | | |
|---------------|------|--------|--------------------------------------|
| Design Point: | 1 | | <i>Enter 90% Rainfall Event as P</i> |
| P= | 1.10 | inches | |

Calculate Required WQv

| Drainage Area Number | Contributing Area (Acres) | Impervious Area (Acres) | Percent Impervious % | Rv | WQv (cf) | SMP Description |
|----------------------|---------------------------|-------------------------|----------------------|------|-------------|---------------------------------|
| 1 | 2.04 | 1.75 | 86 | 0.82 | 6,696 | Underground Infiltration System |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
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| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| Total | 2.04 | 1.75 | 86 | 0.82 | 6696 | Required WQv |

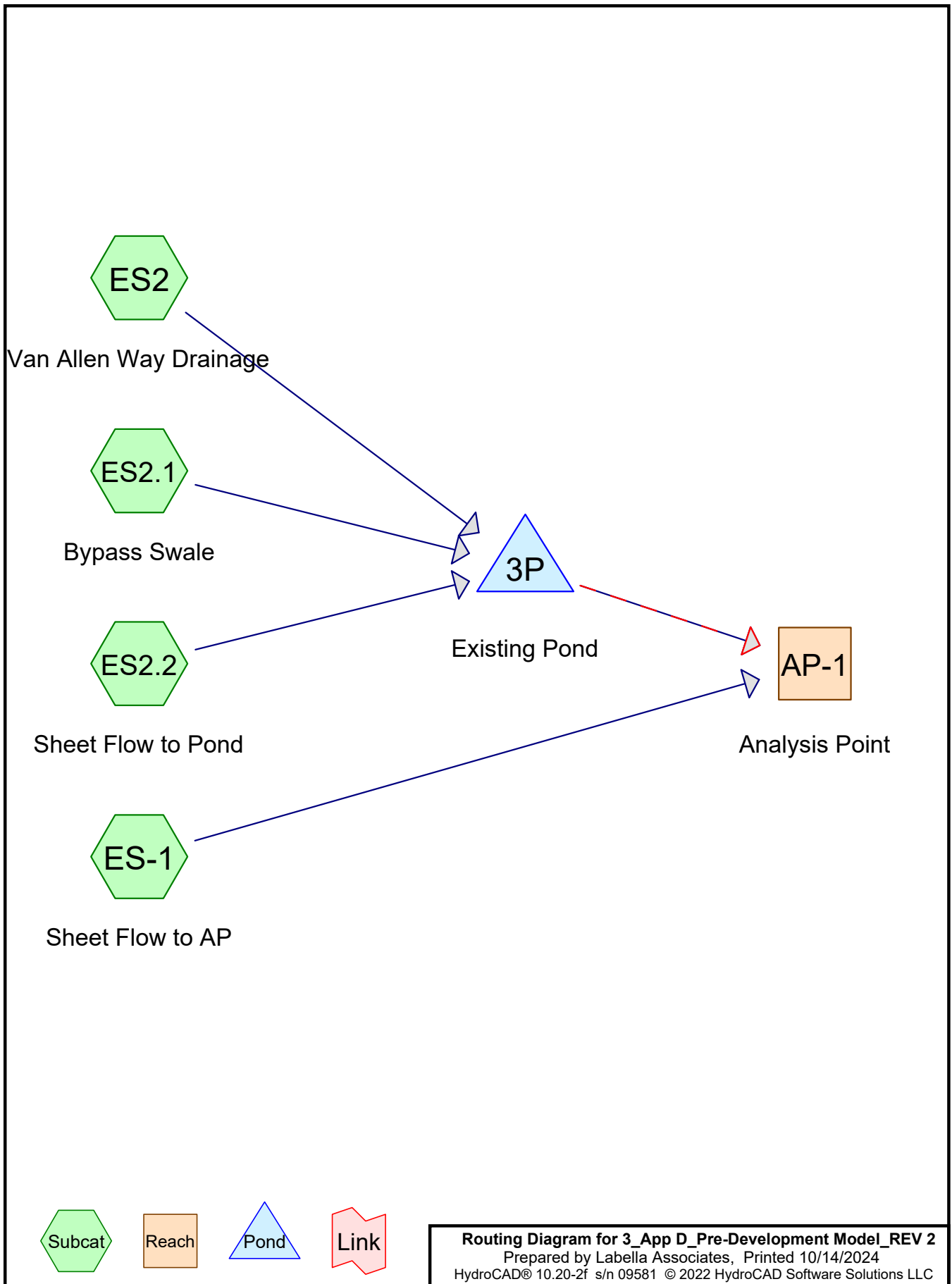
Underground Infiltration (I-4)

| Design Point: | 1 | | | | | | |
|--|---------------------------|-------------------------|----------------------|-------|---|--------------------|---------------------------------|
| Enter Site Data For Drainage Area to be Treated by Practice | | | | | | | |
| Drainage Area Number | Contributing Area (Acres) | Impervious Area (Acres) | Percent Impervious % | Rv | WQv (cf) | Precipitation (in) | Description |
| 1 | 2.04 | 1.75 | 86 | 0.82 | 6,696 | 1.10 | Underground Infiltration System |
| Design Criteria | | | | | | | |
| Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D) | | | 0.5 | | | | |
| Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot? | | | No | | | | |
| Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot? | | | No | | | | |
| Is the contributing area greater than 10 acres? | | | No | | | | |
| Enter depth to seasonal high water table (ft) | | | 16 | | | | |
| Enter depth to bedrock (ft) | | | 22 | | | | |
| Enter pretreatment volume provided (cf) | | | 2527 | | | | |
| Sizing Criteria | | | | | | | |
| | | Value | Units | Notes | | | |
| Water Quality Volume | | WQv | 6696 | cf | | | |
| Depth of Bottom Stone | | db | 1.0 | ft | | | |
| Required Surface Area | | Ab | 6,696 | sf | | | |
| Enter Surface Area Provided | | Ab | 7024.4 | sf | | | |
| Enter Volume of Stone | | Vs | 7613.5 | cf | Volume of stone shall account for 40% voids | | |
| Enter Volume of System | | Vsys | 9062.9 | cf | Volume of system shall exclude stone | | |
| Water Quality Volume Provided | | WQv | 16676.4 | cf | | | |
| Determine Runoff Reduction | | | | | | | |
| RRv Provided | | 6,696 | cf | | | | |



APPENDIX D:
PRE-DEVELOPMENT STORMWATER
MODELING

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Routing Diagram for 3_App D_Pre-Development Model_REV 2
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3_App D_Pre-Development Model_REV 2

Prepared by Labella Associates

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Page 2

Rainfall Events Listing

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|--------------------|--------|---------|------------------|-----|----------------|-----|
| 1 | 1-yr | NY-Albany 24-hr S1 | 1-yr | Default | 24.00 | 1 | 2.25 | 2 |
| 2 | 10-yr | NY-Albany 24-hr S1 | 10-yr | Default | 24.00 | 1 | 3.82 | 2 |
| 3 | 100-yr | NY-Albany 24-hr S1 | 100-yr | Default | 24.00 | 1 | 6.53 | 2 |

3_App D_Pre-Development Model_REV 2

Prepared by Labella Associates

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Page 3

Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|----|--|
| 2.598 | 80 | >75% Grass cover, Good, HSG D (ES-1, ES2.1, ES2.2) |
| 0.534 | 98 | Paved parking, HSG D (ES2) |

3_App D_Pre-Development Model_REV 2

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Page 4

Soil Listing (all nodes)

| Area (acres) | Soil Group | Subcatchment Numbers |
|-----------------|---------------|-------------------------|
| 0.000 | HSG A | |
| 0.000 | HSG B | |
| 0.000 | HSG C | |
| 3.132 | HSG D | ES-1, ES2, ES2.1, ES2.2 |
| 0.000 | Other | |

Summary for Subcatchment ES-1: Sheet Flow to AP

Runoff = 0.98 cfs @ 12.06 hrs, Volume= 0.068 af, Depth= 0.72"
 Routed to Reach AP-1 : Analysis Point

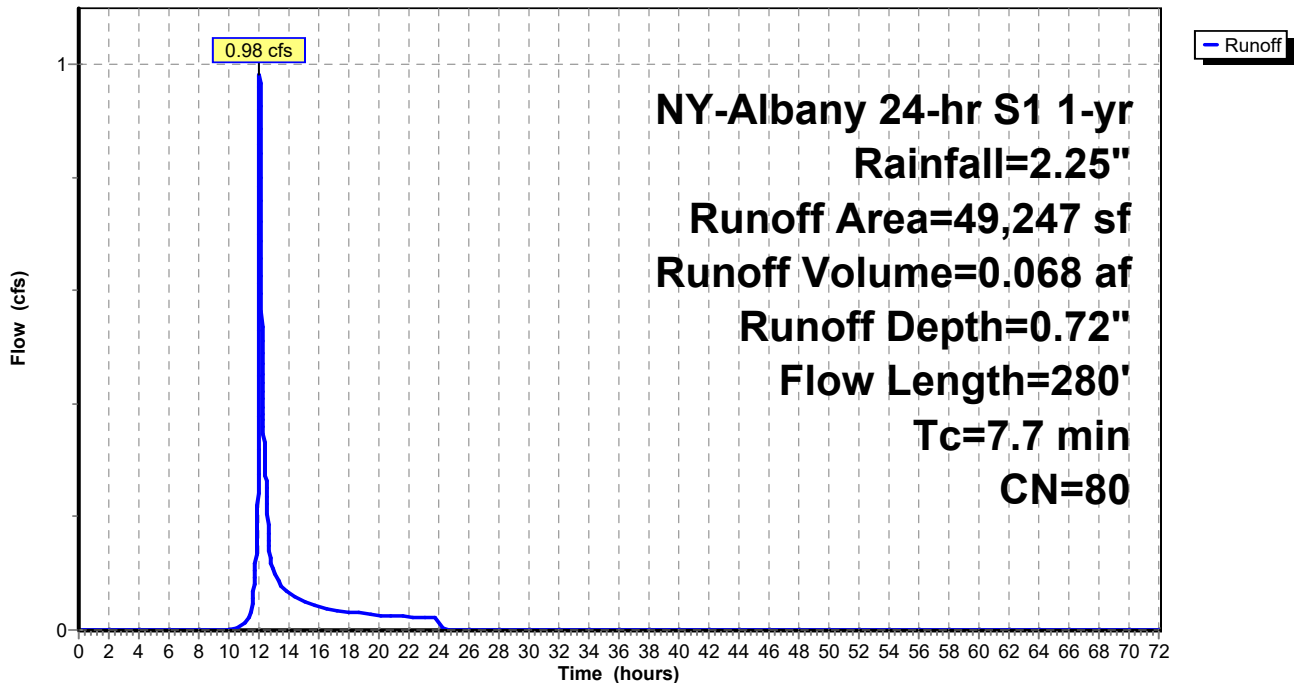
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 49,247 | 80 | >75% Grass cover, Good, HSG D |
| 49,247 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 6.5 | 100 | 0.0700 | 0.26 | | Sheet Flow, SF |
| 1.2 | 180 | 0.1280 | 2.50 | | Shallow Concentrated Flow, SCF |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 280 | Total | | | |

Subcatchment ES-1: Sheet Flow to AP

Hydrograph



Summary for Subcatchment ES2: Van Allen Way Drainage

Runoff = 1.43 cfs @ 12.04 hrs, Volume= 0.090 af, Depth= 2.02"

Routed to Pond 3P : Existing Pond

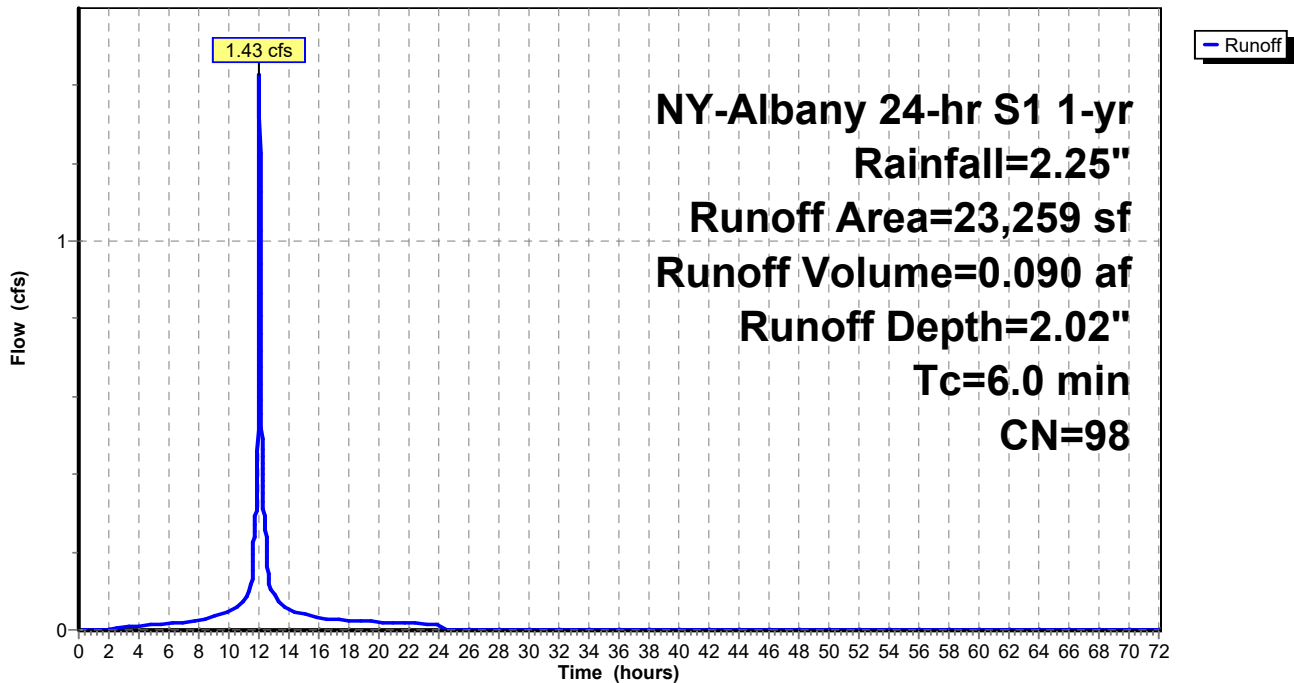
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (sf) | CN | Description |
|-----------|----|-------------------------|
| 23,259 | 98 | Paved parking, HSG D |
| 23,259 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment ES2: Van Allen Way Drainage

Hydrograph



Summary for Subcatchment ES2.1: Bypass Swale

Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.028 af, Depth= 0.72"

Routed to Pond 3P : Existing Pond

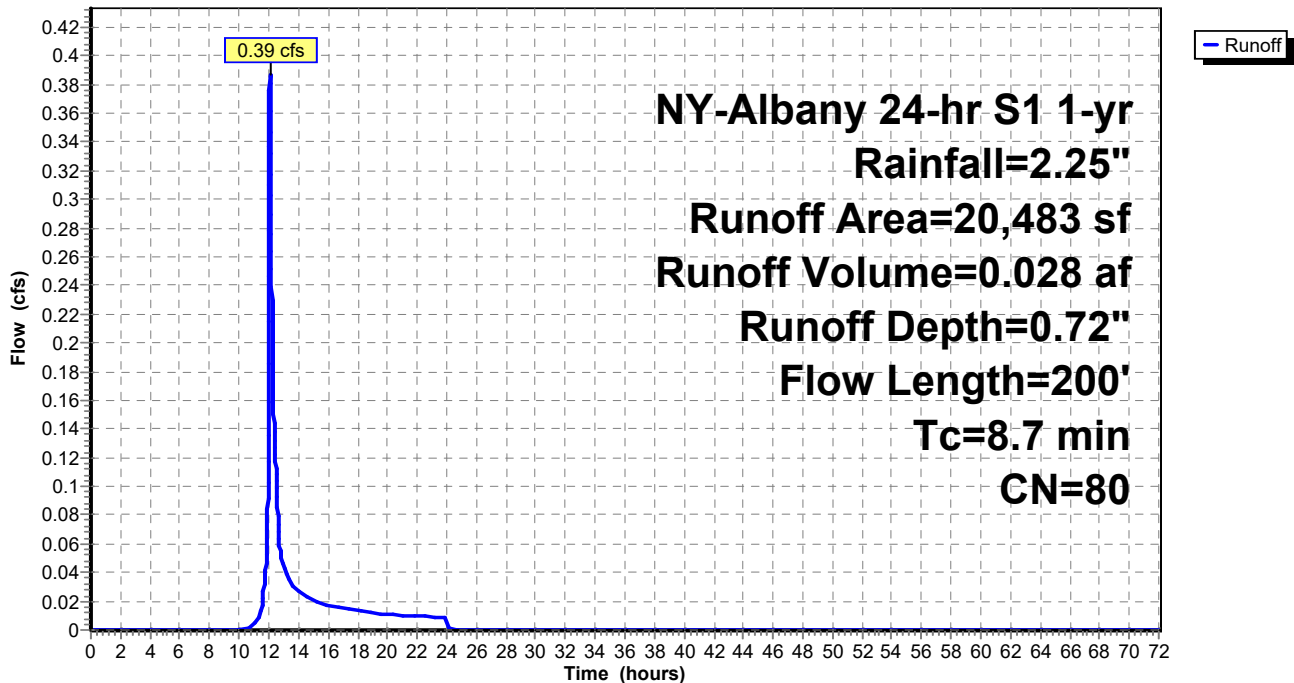
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 20,483 | 80 | >75% Grass cover, Good, HSG D |
| 20,483 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.8 | 100 | 0.0450 | 0.21 | | Sheet Flow, sf Grass: Short n= 0.150 P2= 2.64" |
| 0.9 | 100 | 0.0700 | 1.85 | | Shallow Concentrated Flow, scf Short Grass Pasture Kv= 7.0 fps |
| 8.7 | 200 | Total | | | |

Subcatchment ES2.1: Bypass Swale

Hydrograph



Summary for Subcatchment ES2.2: Sheet Flow to Pond

Runoff = 0.89 cfs @ 12.06 hrs, Volume= 0.060 af, Depth= 0.72"
 Routed to Pond 3P : Existing Pond

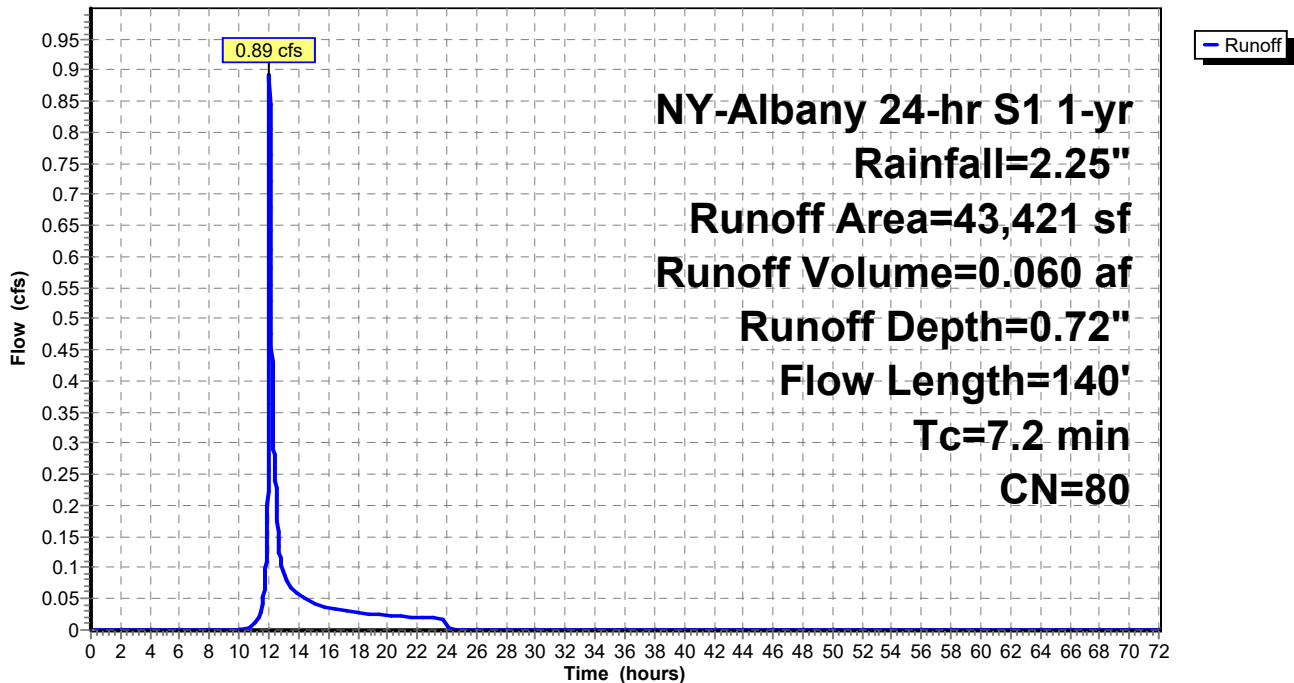
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 43,421 | 80 | >75% Grass cover, Good, HSG D |
| 43,421 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 7.0 | 100 | 0.0600 | 0.24 | | Sheet Flow, SF |
| | | | | | Grass: Short n= 0.150 P2= 2.64" |
| 0.2 | 40 | 0.1500 | 2.71 | | Shallow Concentrated Flow, SCF |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.2 | 140 | Total | | | |

Subcatchment ES2.2: Sheet Flow to Pond

Hydrograph



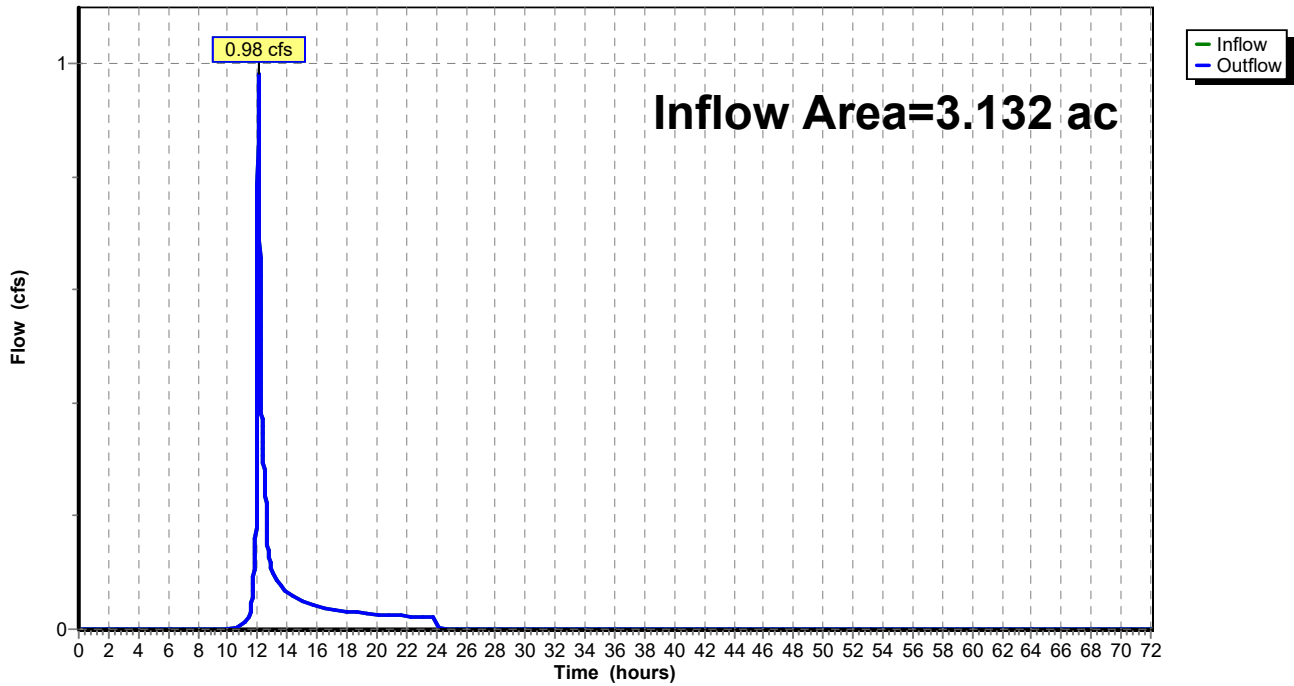
Summary for Reach AP-1: Analysis Point

Inflow Area = 3.132 ac, 17.05% Impervious, Inflow Depth = 0.26" for 1-yr event
Inflow = 0.98 cfs @ 12.06 hrs, Volume= 0.068 af
Outflow = 0.98 cfs @ 12.06 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach AP-1: Analysis Point

Hydrograph



Summary for Pond 3P: Existing Pond

Inflow Area = 2.001 ac, 26.68% Impervious, Inflow Depth = 1.07" for 1-yr event
 Inflow = 2.64 cfs @ 12.05 hrs, Volume= 0.178 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 256.79' @ 24.51 hrs Surf.Area= 10,500 sf Storage= 7,757 cf
 Flood Elev= 258.50' Surf.Area= 10,500 sf Storage= 25,725 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 256.05' | 25,725 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 256.05 | 10,500 | 0 | 0 |
| 258.50 | 10,500 | 25,725 | 25,725 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 257.17' | 12.0" Round Culvert L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.17' / 255.53' S= 0.0228 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf |
| #2 | Secondary | 258.00' | 15.0' long + 10.0 ' SideZ x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=256.05' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=256.05' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Subcatchment ES-1: Sheet Flow to AP

Runoff = 2.70 cfs @ 12.06 hrs, Volume= 0.178 af, Depth= 1.89"
 Routed to Reach AP-1 : Analysis Point

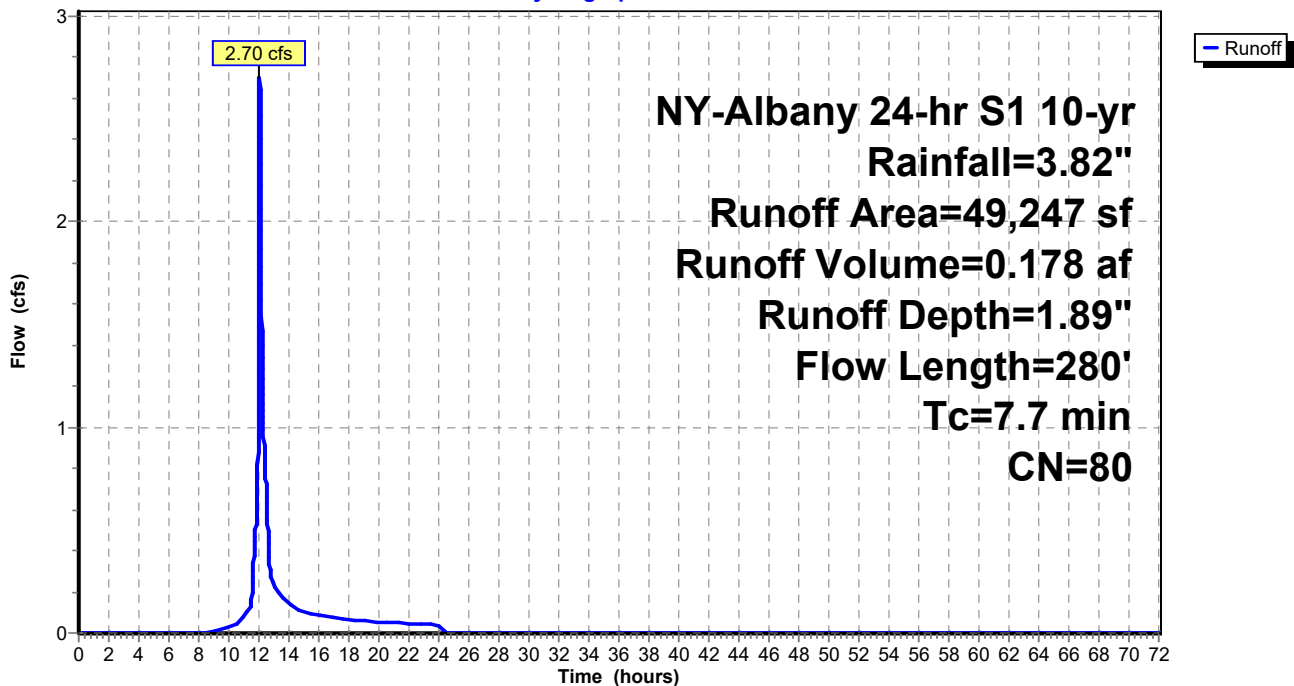
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 49,247 | 80 | >75% Grass cover, Good, HSG D |
| 49,247 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 6.5 | 100 | 0.0700 | 0.26 | | Sheet Flow, SF Grass: Short n= 0.150 P2= 2.64" |
| 1.2 | 180 | 0.1280 | 2.50 | | Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 280 | Total | | | |

Subcatchment ES-1: Sheet Flow to AP

Hydrograph



Summary for Subcatchment ES2: Van Allen Way Drainage

Runoff = 2.39 cfs @ 12.04 hrs, Volume= 0.160 af, Depth= 3.59"

Routed to Pond 3P : Existing Pond

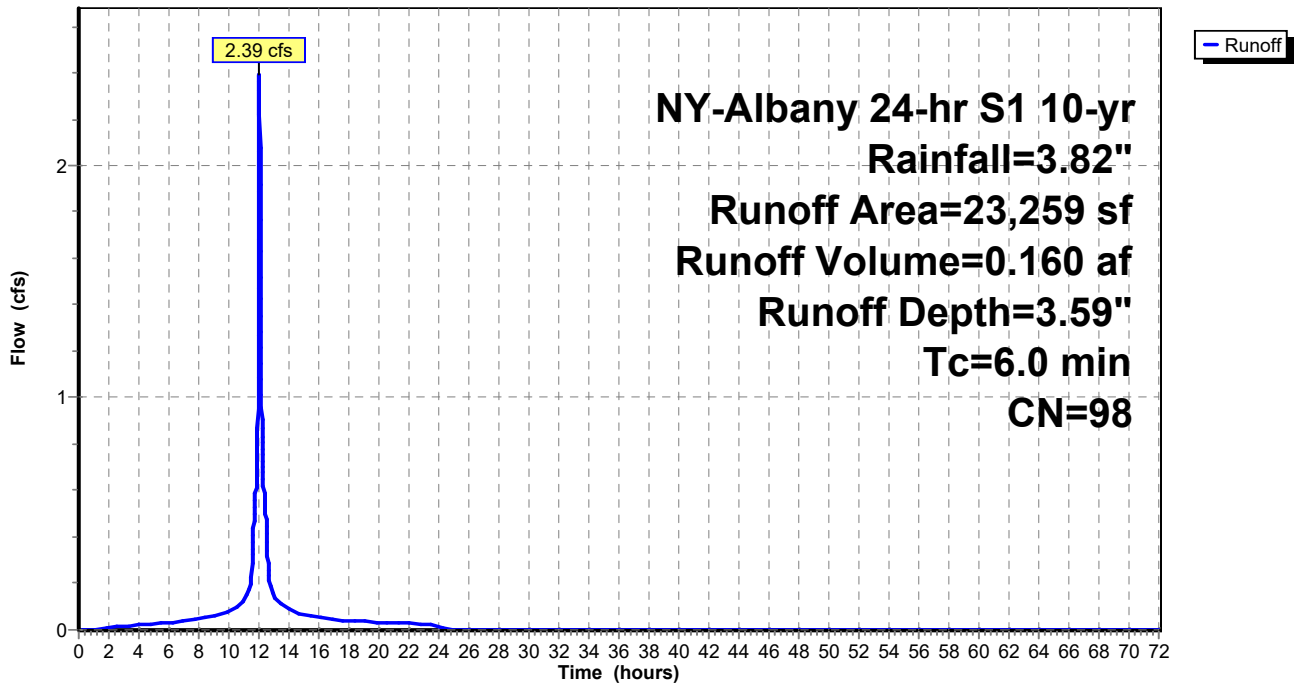
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (sf) | CN | Description |
|-----------|----|-------------------------|
| 23,259 | 98 | Paved parking, HSG D |
| 23,259 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment ES2: Van Allen Way Drainage

Hydrograph



Summary for Subcatchment ES2.1: Bypass Swale

Runoff = 1.07 cfs @ 12.07 hrs, Volume= 0.074 af, Depth= 1.89"
 Routed to Pond 3P : Existing Pond

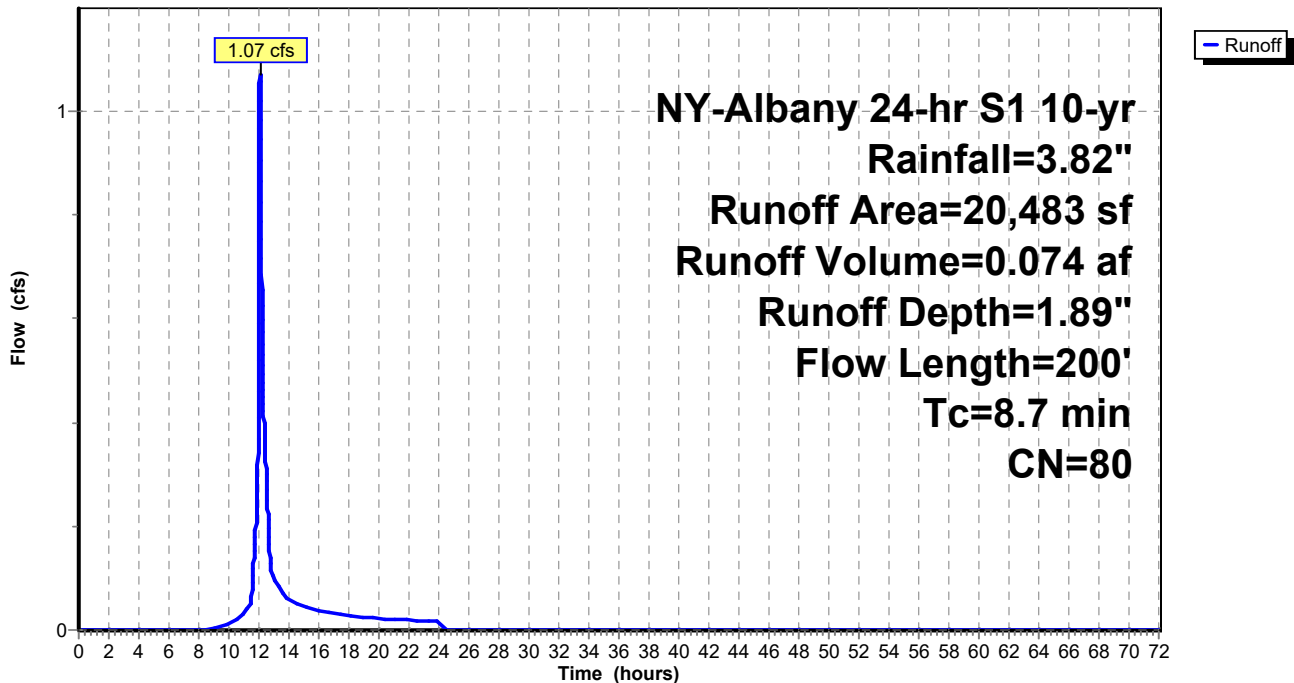
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 20,483 | 80 | >75% Grass cover, Good, HSG D |
| 20,483 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.8 | 100 | 0.0450 | 0.21 | | Sheet Flow, sf Grass: Short n= 0.150 P2= 2.64" |
| 0.9 | 100 | 0.0700 | 1.85 | | Shallow Concentrated Flow, scf Short Grass Pasture Kv= 7.0 fps |
| 8.7 | 200 | Total | | | |

Subcatchment ES2.1: Bypass Swale

Hydrograph



Summary for Subcatchment ES2.2: Sheet Flow to Pond

Runoff = 2.45 cfs @ 12.05 hrs, Volume= 0.157 af, Depth= 1.89"
 Routed to Pond 3P : Existing Pond

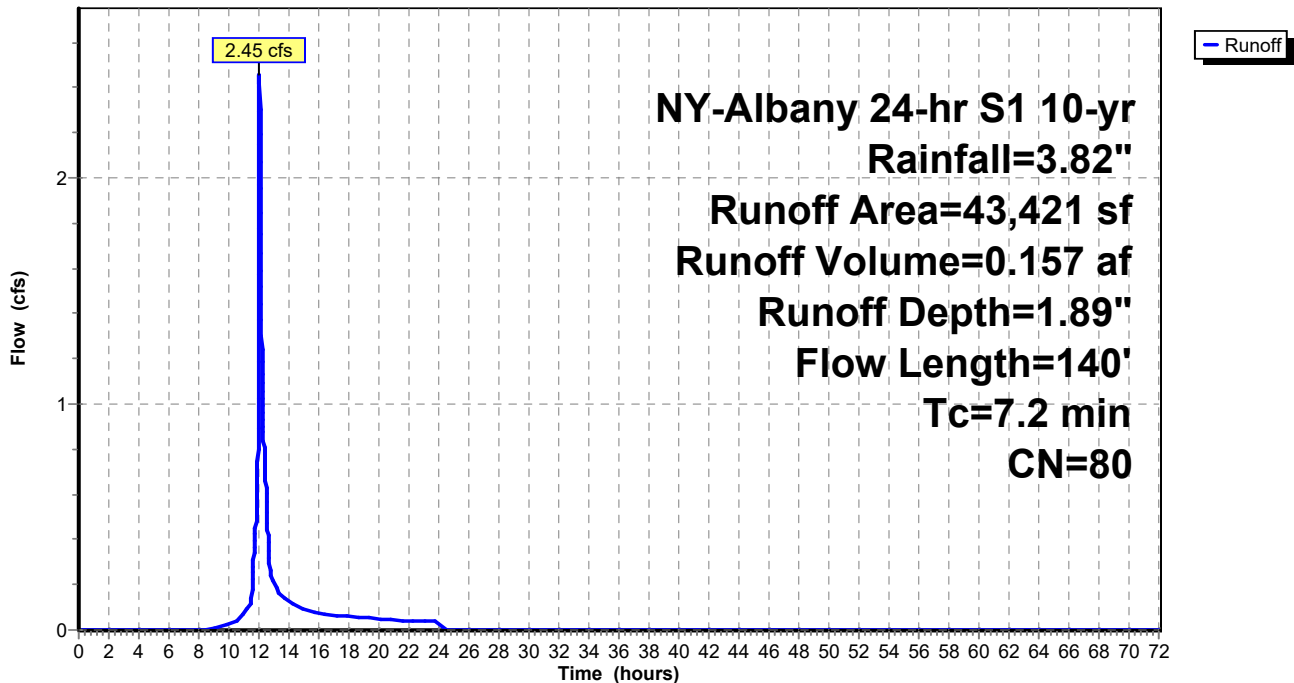
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 43,421 | 80 | >75% Grass cover, Good, HSG D |
| 43,421 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 7.0 | 100 | 0.0600 | 0.24 | | Sheet Flow, SF |
| | | | | | Grass: Short n= 0.150 P2= 2.64" |
| 0.2 | 40 | 0.1500 | 2.71 | | Shallow Concentrated Flow, SCF |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.2 | 140 | Total | | | |

Subcatchment ES2.2: Sheet Flow to Pond

Hydrograph



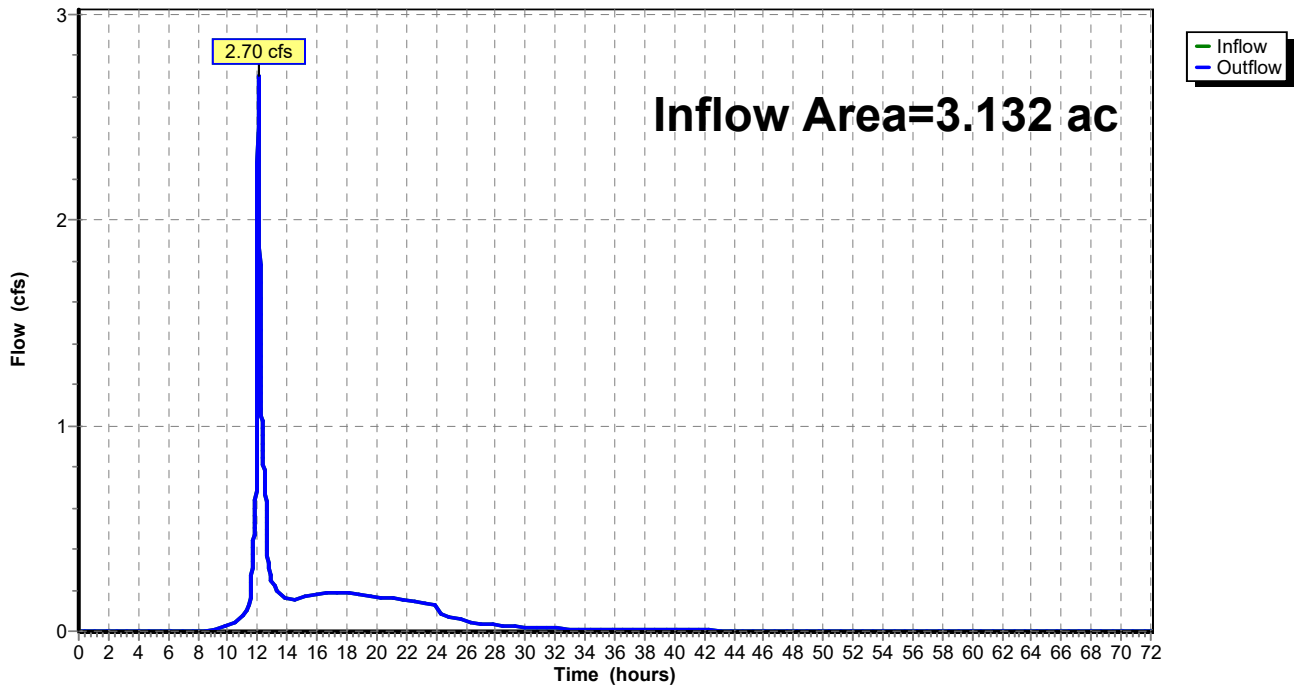
Summary for Reach AP-1: Analysis Point

Inflow Area = 3.132 ac, 17.05% Impervious, Inflow Depth > 1.13" for 10-yr event
Inflow = 2.70 cfs @ 12.06 hrs, Volume= 0.296 af
Outflow = 2.70 cfs @ 12.06 hrs, Volume= 0.296 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach AP-1: Analysis Point

Hydrograph



Summary for Pond 3P: Existing Pond

Inflow Area = 2.001 ac, 26.68% Impervious, Inflow Depth = 2.35" for 10-yr event
 Inflow = 5.80 cfs @ 12.05 hrs, Volume= 0.391 af
 Outflow = 0.12 cfs @ 18.36 hrs, Volume= 0.117 af, Atten= 98%, Lag= 378.6 min
 Primary = 0.12 cfs @ 18.36 hrs, Volume= 0.117 af
 Routed to Reach AP-1 : Analysis Point
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 257.36' @ 18.36 hrs Surf.Area= 10,500 sf Storage= 13,736 cf
 Flood Elev= 258.50' Surf.Area= 10,500 sf Storage= 25,725 cf

Plug-Flow detention time= 759.2 min calculated for 0.117 af (30% of inflow)
 Center-of-Mass det. time= 590.4 min (1,397.1 - 806.8)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 256.05' | 25,725 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 256.05 | 10,500 | 0 | 0 |
| 258.50 | 10,500 | 25,725 | 25,725 |

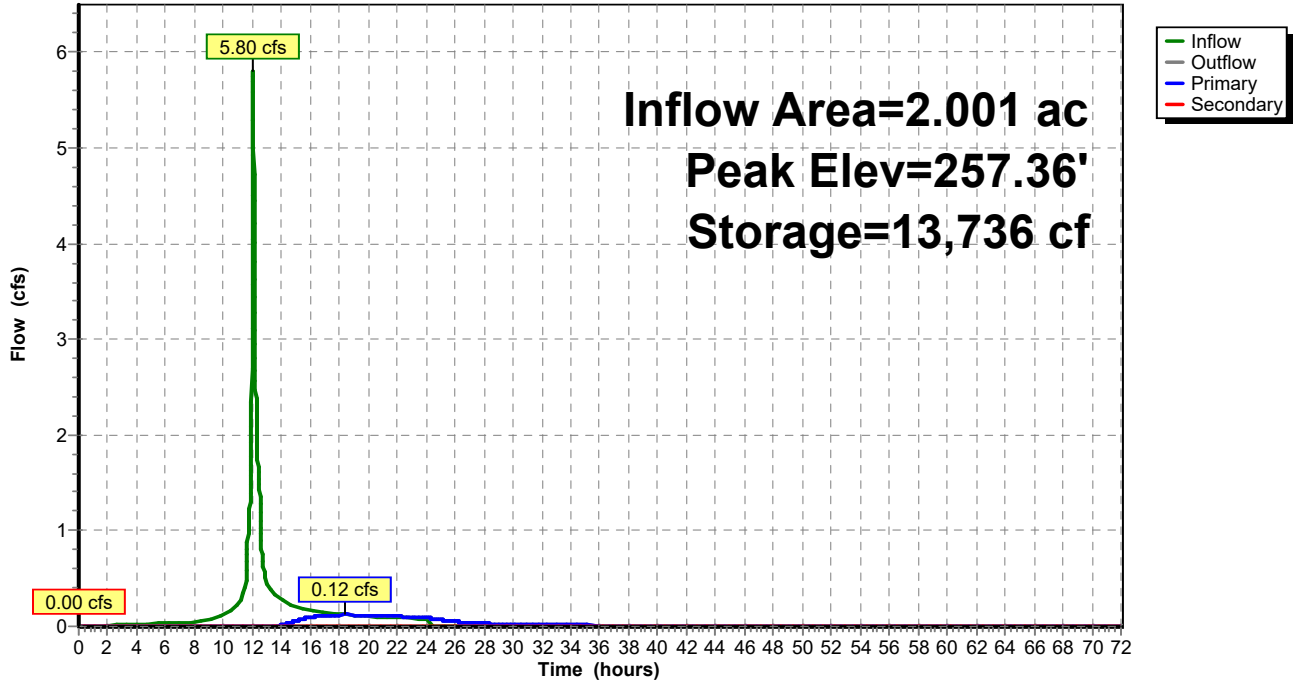
| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 257.17' | 12.0" Round Culvert L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.17' / 255.53' S= 0.0228 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf |
| #2 | Secondary | 258.00' | 15.0' long + 10.0 ' SideZ x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=0.12 cfs @ 18.36 hrs HW=257.36' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.12 cfs @ 1.17 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=256.05' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

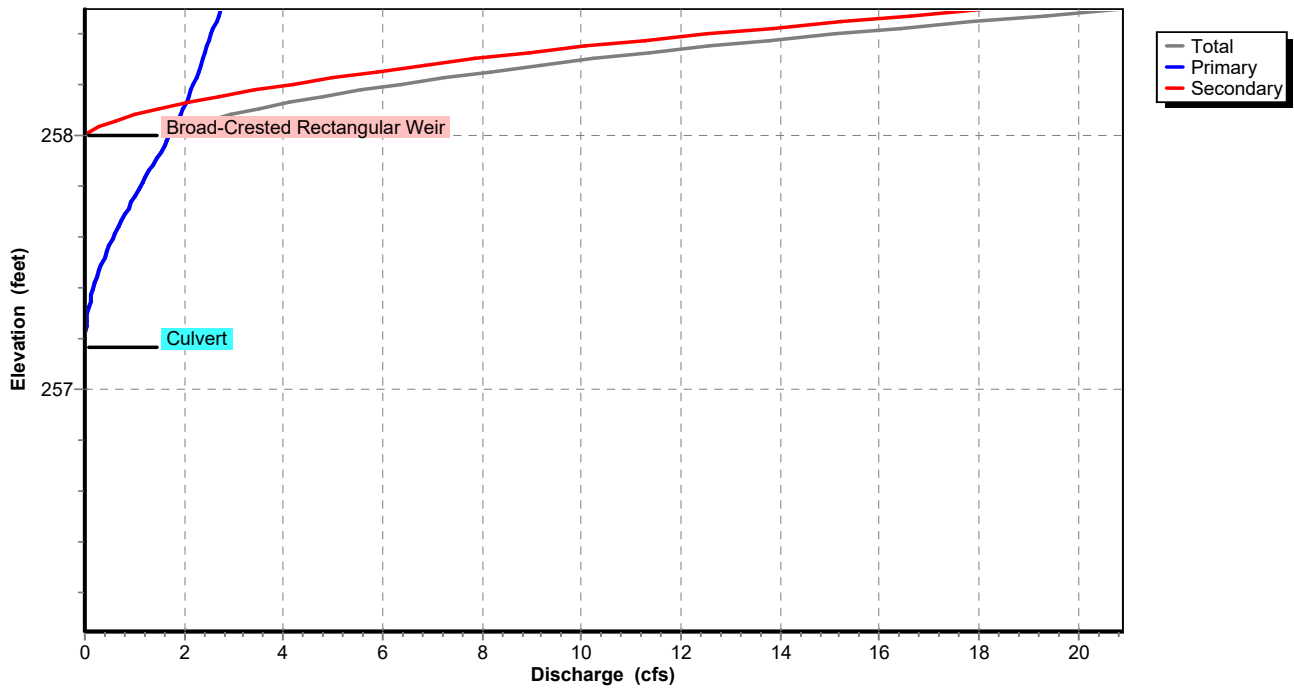
Pond 3P: Existing Pond

Hydrograph



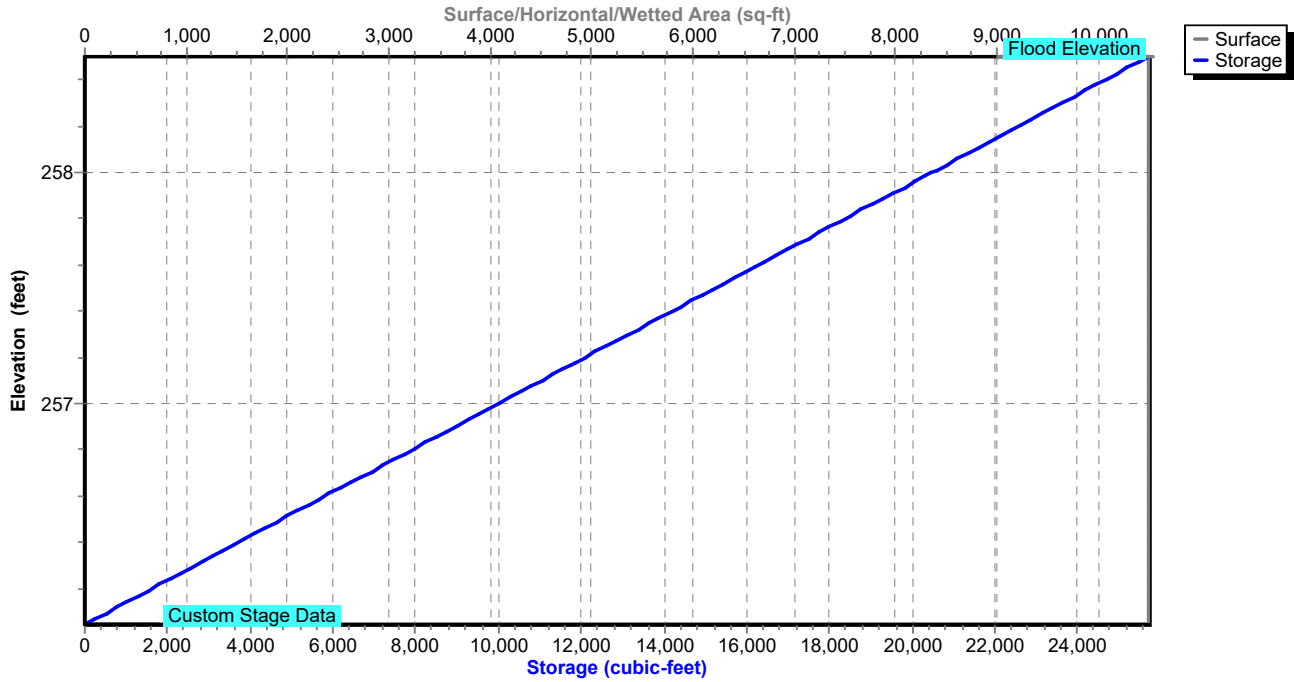
Pond 3P: Existing Pond

Stage-Discharge



Pond 3P: Existing Pond

Stage-Area-Storage



Summary for Subcatchment ES-1: Sheet Flow to AP

Runoff = 5.75 cfs @ 12.06 hrs, Volume= 0.402 af, Depth= 4.26"
 Routed to Reach AP-1 : Analysis Point

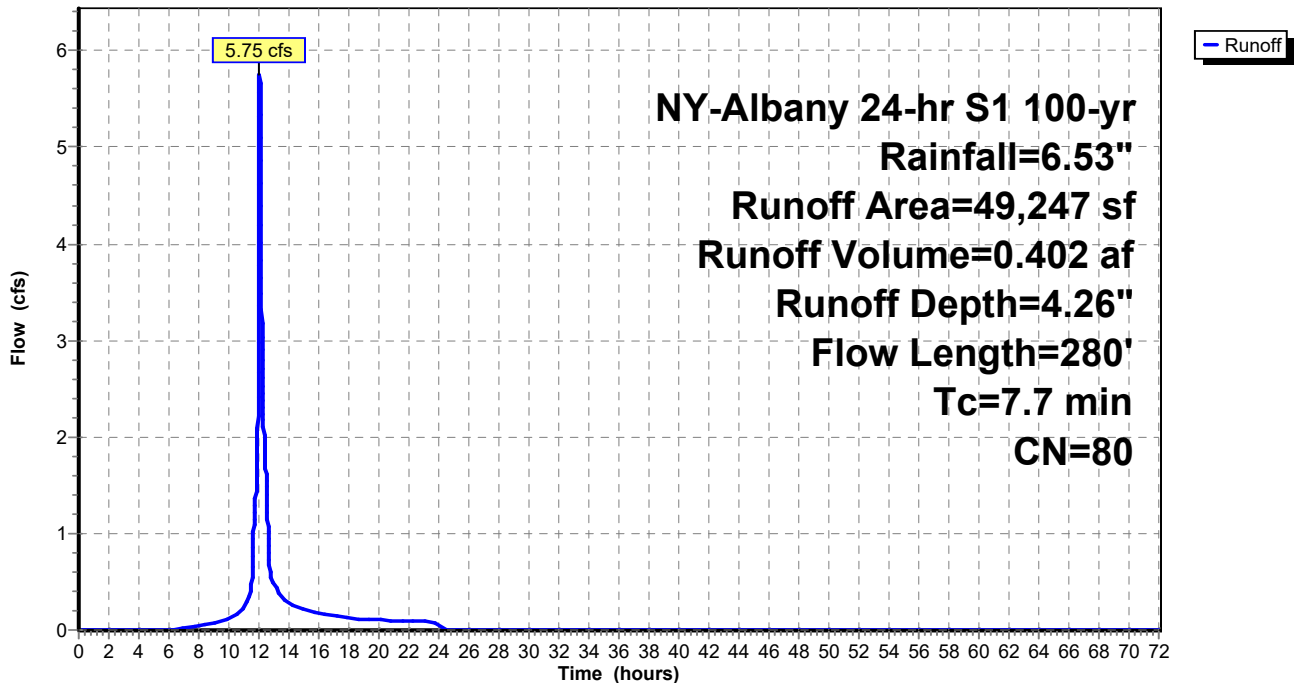
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 49,247 | 80 | >75% Grass cover, Good, HSG D |
| 49,247 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 6.5 | 100 | 0.0700 | 0.26 | | Sheet Flow, SF |
| | | | | | Grass: Short n= 0.150 P2= 2.64" |
| 1.2 | 180 | 0.1280 | 2.50 | | Shallow Concentrated Flow, SCF |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 280 | Total | | | |

Subcatchment ES-1: Sheet Flow to AP

Hydrograph



Summary for Subcatchment ES2: Van Allen Way Drainage

Runoff = 3.85 cfs @ 12.04 hrs, Volume= 0.280 af, Depth= 6.29"

Routed to Pond 3P : Existing Pond

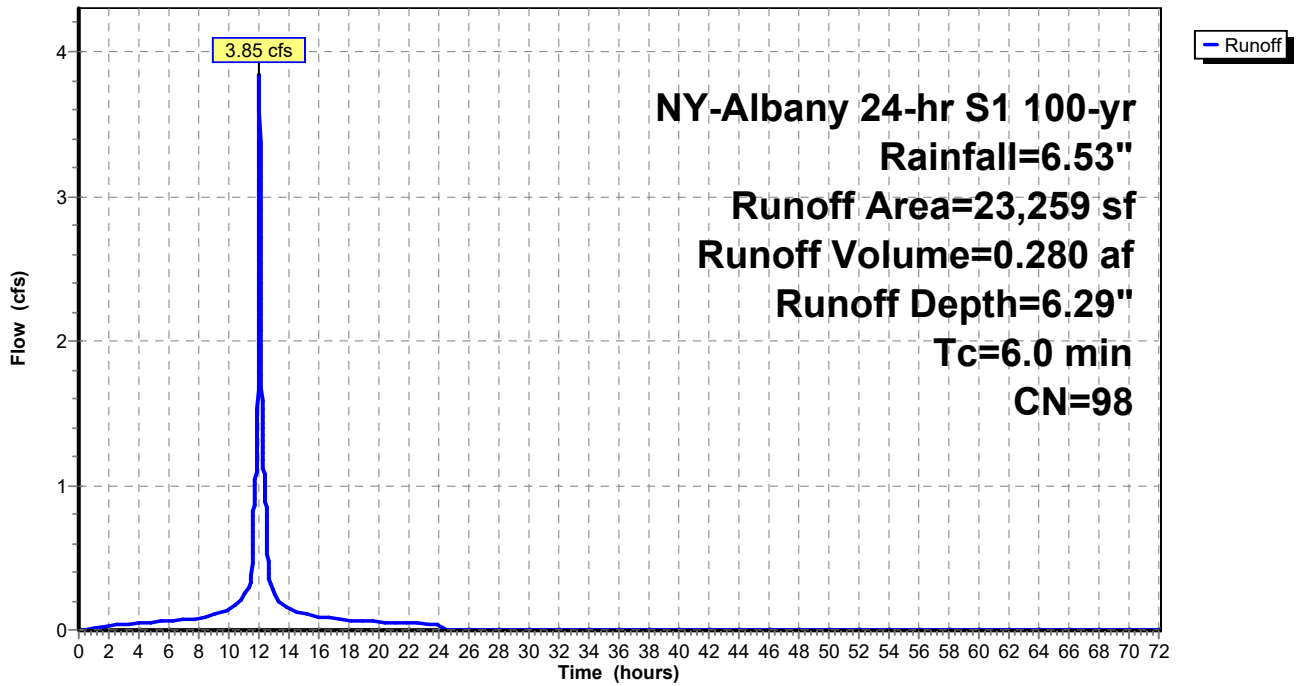
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (sf) | CN | Description |
|-----------|----|-------------------------|
| 23,259 | 98 | Paved parking, HSG D |
| 23,259 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment ES2: Van Allen Way Drainage

Hydrograph



Summary for Subcatchment ES2.1: Bypass Swale

Runoff = 2.29 cfs @ 12.07 hrs, Volume= 0.167 af, Depth= 4.26"
 Routed to Pond 3P : Existing Pond

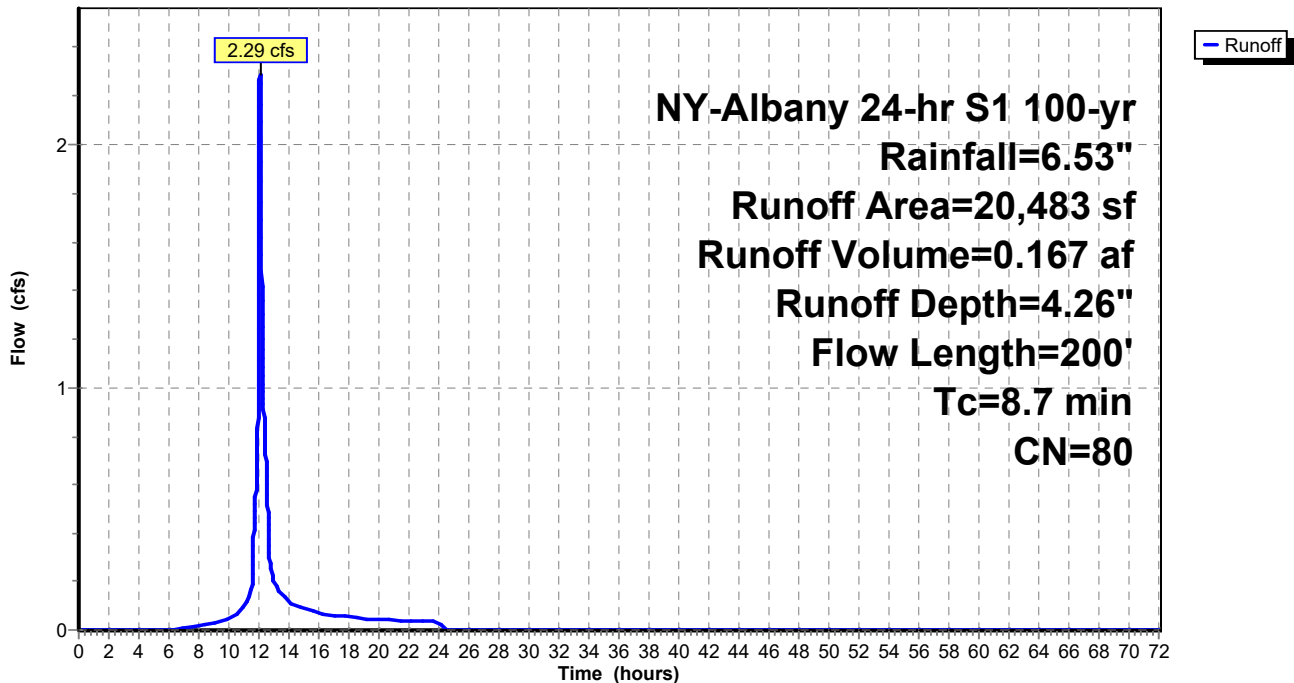
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 20,483 | 80 | >75% Grass cover, Good, HSG D |
| 20,483 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 7.8 | 100 | 0.0450 | 0.21 | | Sheet Flow, sf |
| | | | | | Grass: Short n= 0.150 P2= 2.64" |
| 0.9 | 100 | 0.0700 | 1.85 | | Shallow Concentrated Flow, scf |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 8.7 | 200 | Total | | | |

Subcatchment ES2.1: Bypass Swale

Hydrograph



Summary for Subcatchment ES2.2: Sheet Flow to Pond

Runoff = 5.21 cfs @ 12.05 hrs, Volume= 0.354 af, Depth= 4.26"
 Routed to Pond 3P : Existing Pond

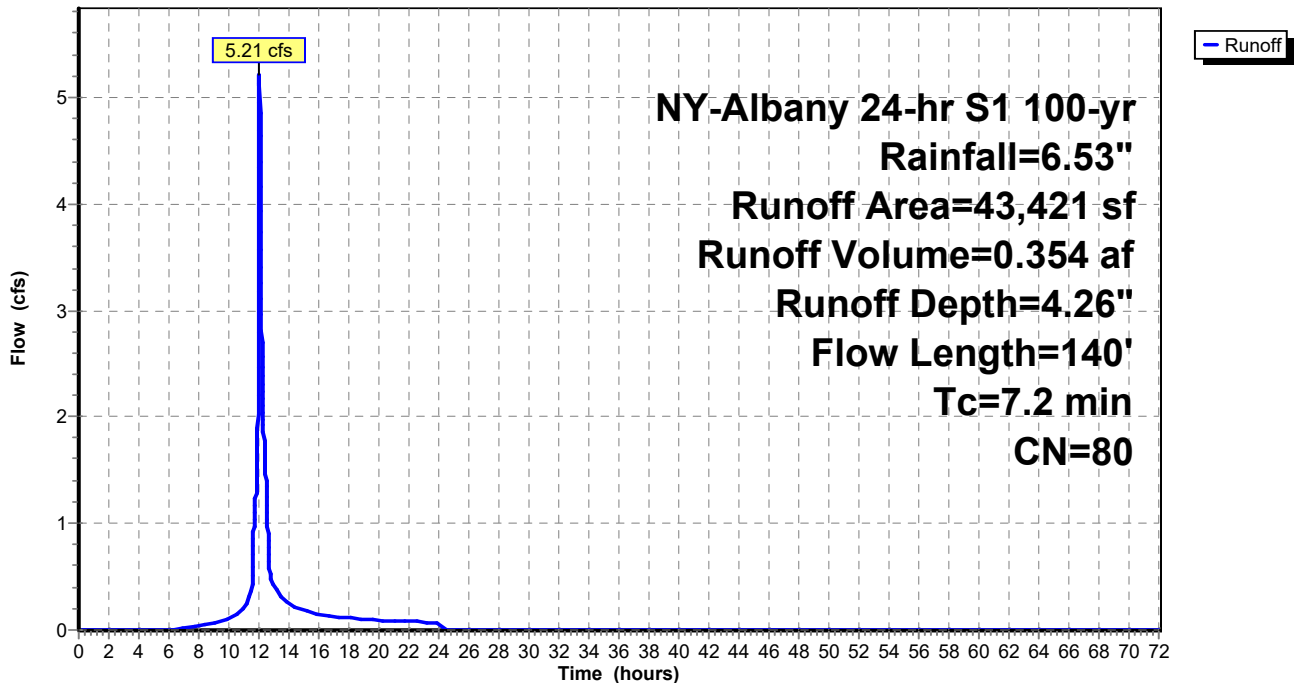
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 43,421 | 80 | >75% Grass cover, Good, HSG D |
| 43,421 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 7.0 | 100 | 0.0600 | 0.24 | | Sheet Flow, SF |
| | | | | | Grass: Short n= 0.150 P2= 2.64" |
| 0.2 | 40 | 0.1500 | 2.71 | | Shallow Concentrated Flow, SCF |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.2 | 140 | Total | | | |

Subcatchment ES2.2: Sheet Flow to Pond

Hydrograph



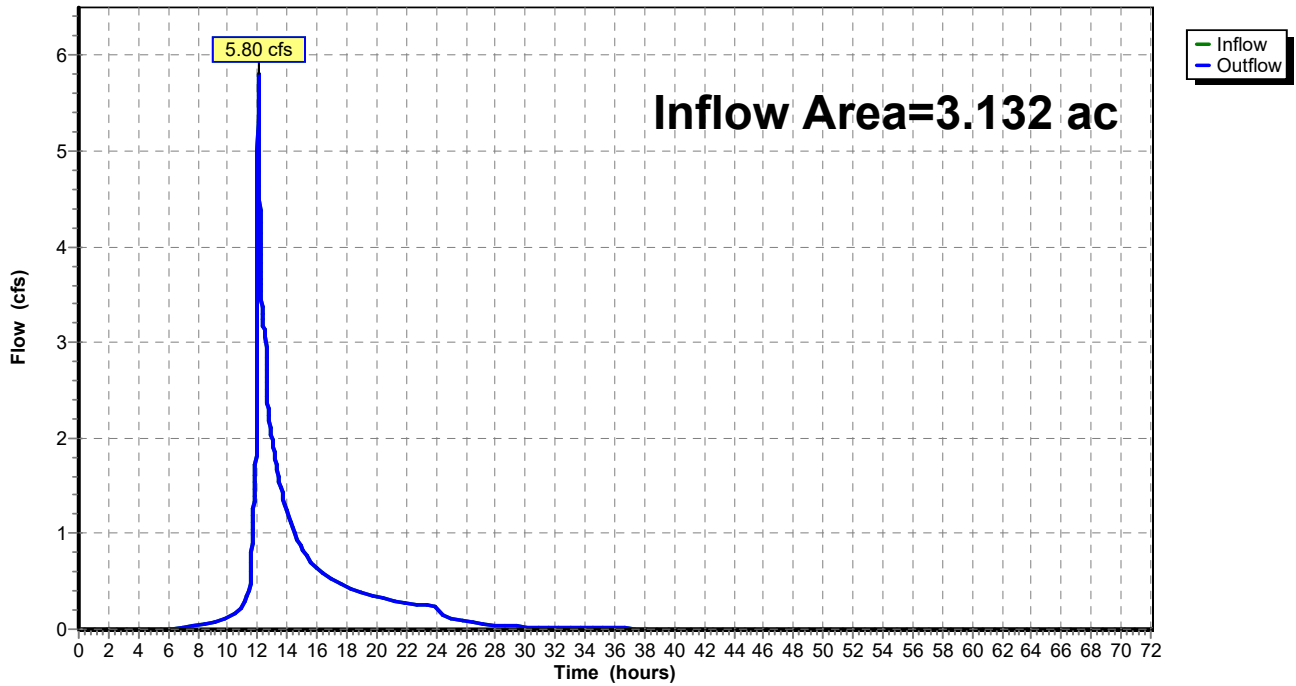
Summary for Reach AP-1: Analysis Point

Inflow Area = 3.132 ac, 17.05% Impervious, Inflow Depth > 3.56" for 100-yr event
Inflow = 5.80 cfs @ 12.06 hrs, Volume= 0.929 af
Outflow = 5.80 cfs @ 12.06 hrs, Volume= 0.929 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach AP-1: Analysis Point

Hydrograph



Summary for Pond 3P: Existing Pond

Inflow Area = 2.001 ac, 26.68% Impervious, Inflow Depth = 4.80" for 100-yr event
 Inflow = 11.18 cfs @ 12.05 hrs, Volume= 0.801 af
 Outflow = 1.63 cfs @ 12.63 hrs, Volume= 0.527 af, Atten= 85%, Lag= 35.1 min
 Primary = 1.63 cfs @ 12.63 hrs, Volume= 0.527 af
 Routed to Reach AP-1 : Analysis Point
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 257.97' @ 12.63 hrs Surf.Area= 10,500 sf Storage= 20,211 cf
 Flood Elev= 258.50' Surf.Area= 10,500 sf Storage= 25,725 cf

Plug-Flow detention time= 346.6 min calculated for 0.527 af (66% of inflow)
 Center-of-Mass det. time= 238.3 min (1,030.1 - 791.8)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 256.05' | 25,725 cf | Custom Stage Data (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 256.05 | 10,500 | 0 | 0 |
| 258.50 | 10,500 | 25,725 | 25,725 |

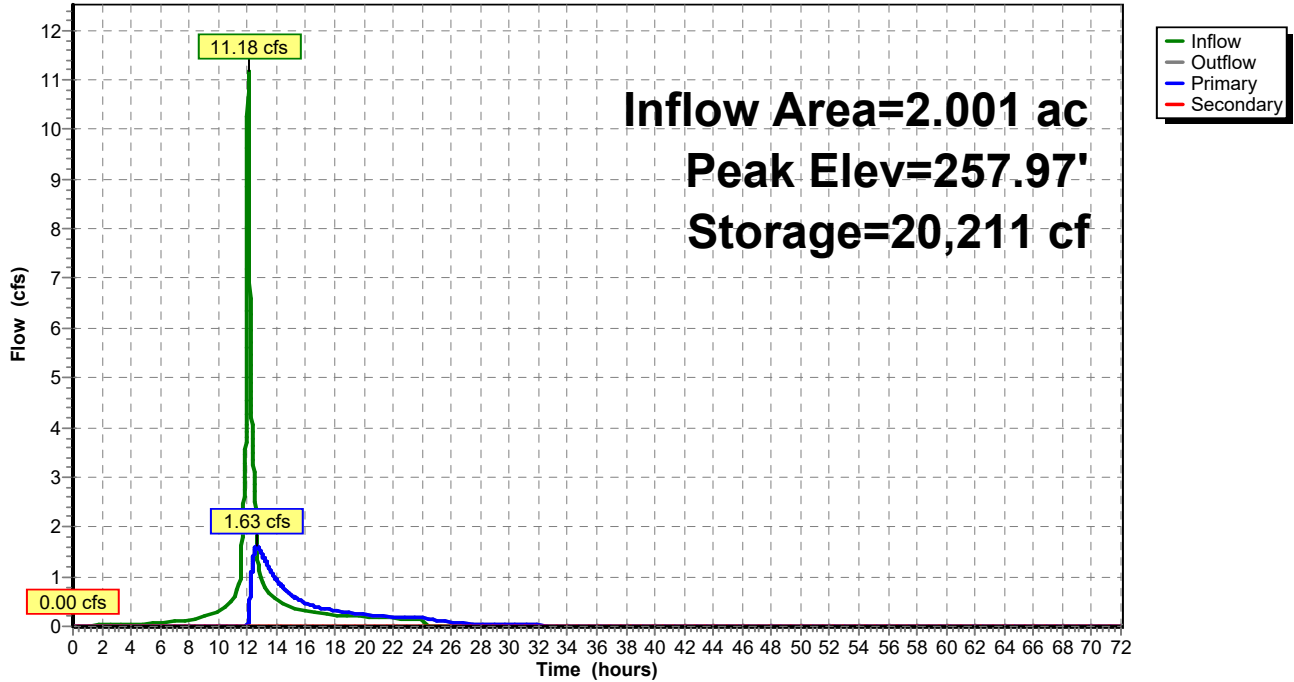
| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 257.17' | 12.0" Round Culvert L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.17' / 255.53' S= 0.0228 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf |
| #2 | Secondary | 258.00' | 15.0' long + 10.0 ' SideZ x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=1.63 cfs @ 12.63 hrs HW=257.97' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 1.63 cfs @ 2.41 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=256.05' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

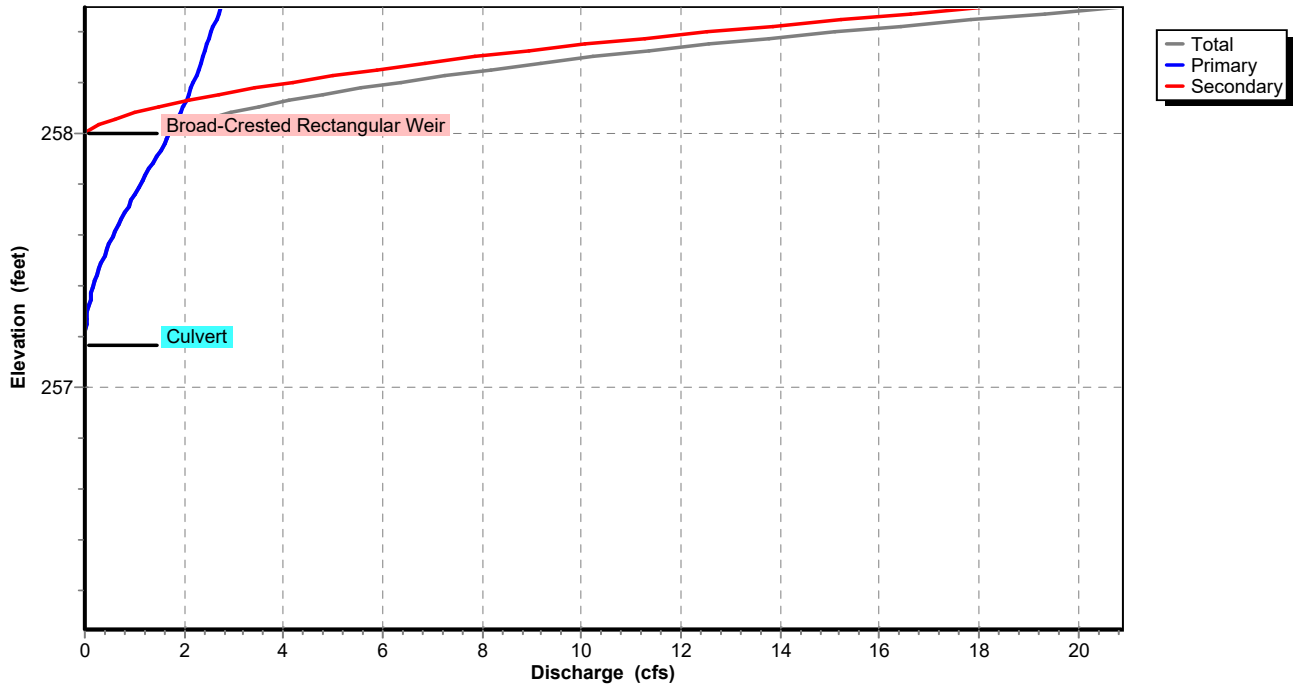
Pond 3P: Existing Pond

Hydrograph

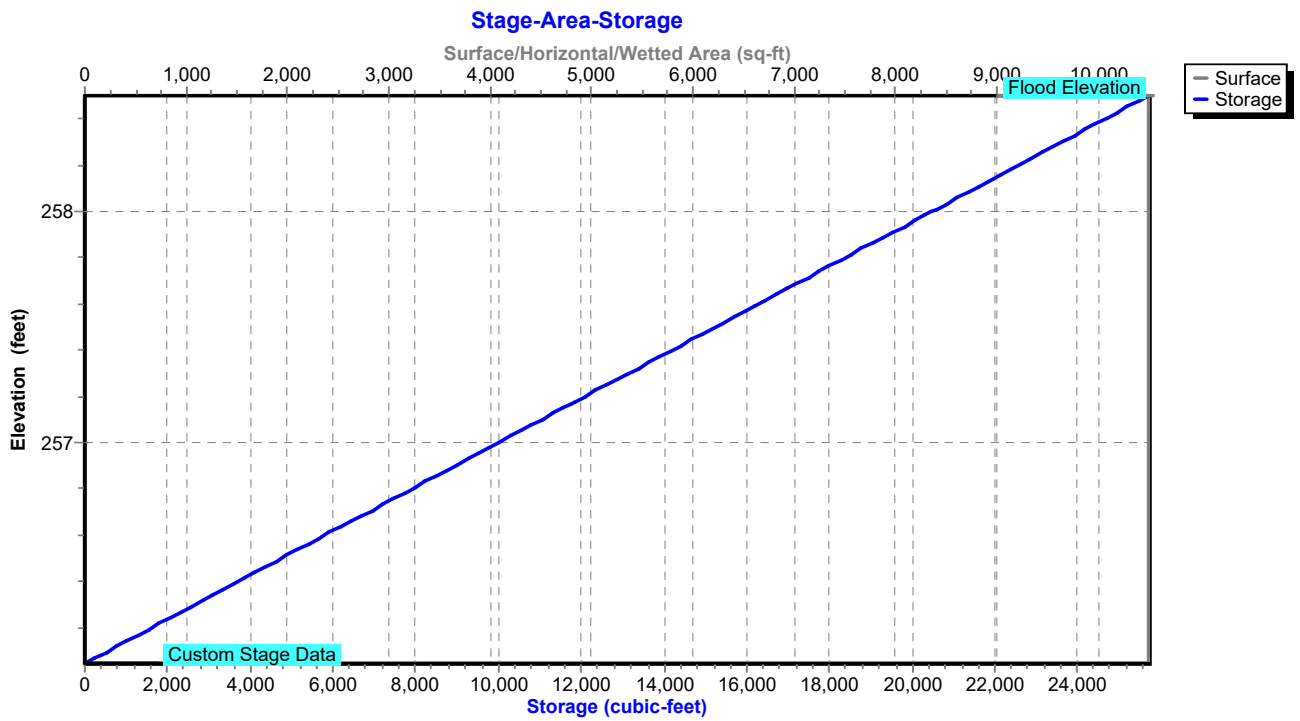


Pond 3P: Existing Pond

Stage-Discharge



Pond 3P: Existing Pond



3_App D_Pre-Development Model_REV 2

Prepared by Labella Associates

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Multi-Event Tables

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Events for Reach AP-1: Analysis Point

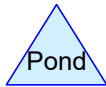
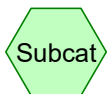
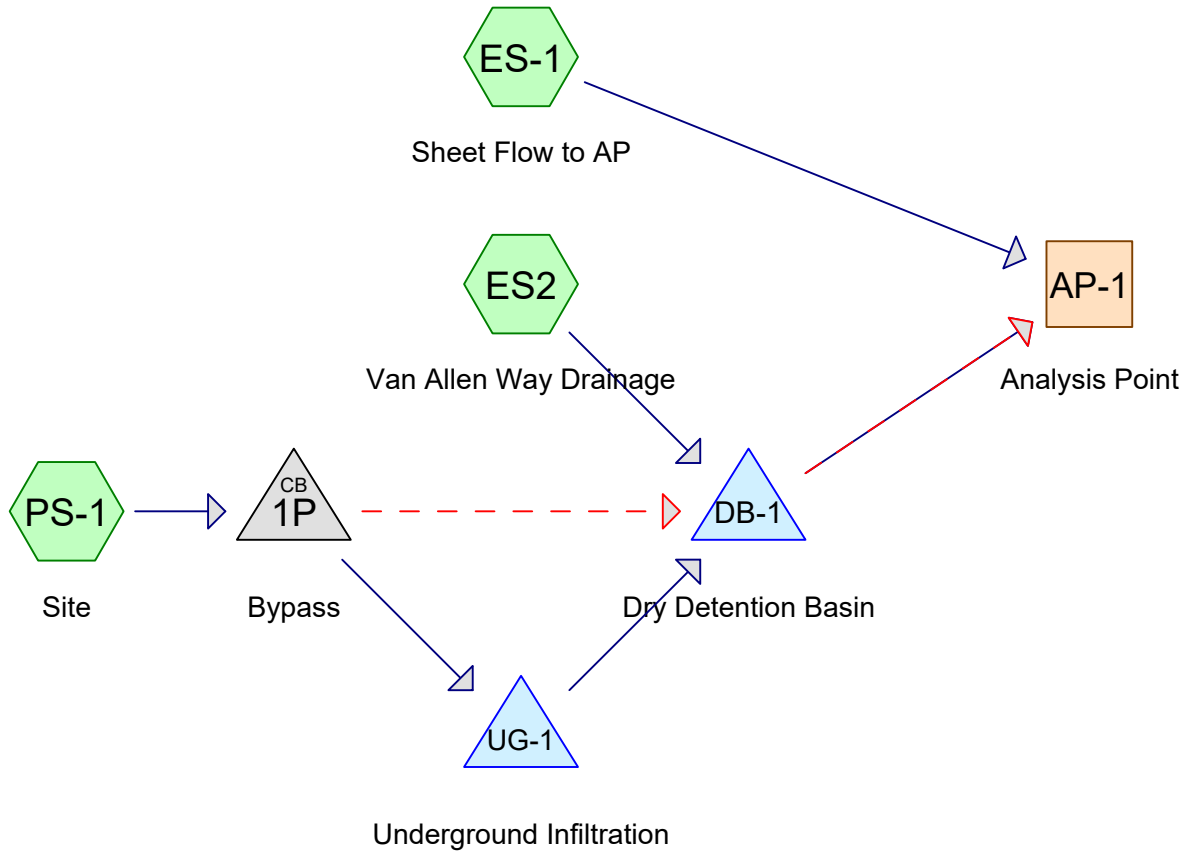
| Event | Inflow (cfs) | Outflow (cfs) | Elevation (feet) | Storage (cubic-feet) |
|--------|-----------------|------------------|---------------------|-------------------------|
| 1-yr | 0.98 | 0.98 | 0.00 | 0 |
| 10-yr | 2.70 | 2.70 | 0.00 | 0 |
| 100-yr | 5.80 | 5.80 | 0.00 | 0 |

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APPENDIX E:
POST DEVELOPMENT STORMWATER
MODELING

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Routing Diagram for 3_App E_2024_Post-Development Model_REV3

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3_App E_2024_Post-Development Model_REV 3

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Rainfall Events Listing

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|--------------------|--------|---------|------------------|-----|----------------|-----|
| 1 | 1-yr | NY-Albany 24-hr S1 | 1-yr | Default | 24.00 | 1 | 2.25 | 2 |
| 2 | 10-yr | NY-Albany 24-hr S1 | 10-yr | Default | 24.00 | 1 | 3.82 | 2 |
| 3 | 100-yr | NY-Albany 24-hr S1 | 100-yr | Default | 24.00 | 1 | 6.53 | 2 |

3_App E_2024_Post-Development Model_REV 3

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Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|----|--|
| 0.764 | 80 | >75% Grass cover, Good, HSG D (ES-1, PS-1) |
| 2.368 | 98 | Paved parking, HSG D (ES2, PS-1) |

3_App E_2024_Post-Development Model_REV 3

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Soil Listing (all nodes)

| Area (acres) | Soil Group | Subcatchment Numbers |
|-----------------|---------------|-------------------------|
| 0.000 | HSG A | |
| 0.000 | HSG B | |
| 0.000 | HSG C | |
| 3.132 | HSG D | ES-1, ES2, PS-1 |
| 0.000 | Other | |

Summary for Subcatchment ES-1: Sheet Flow to AP

Runoff = 0.31 cfs @ 12.06 hrs, Volume= 0.021 af, Depth= 0.72"
 Routed to Reach AP-1 : Analysis Point

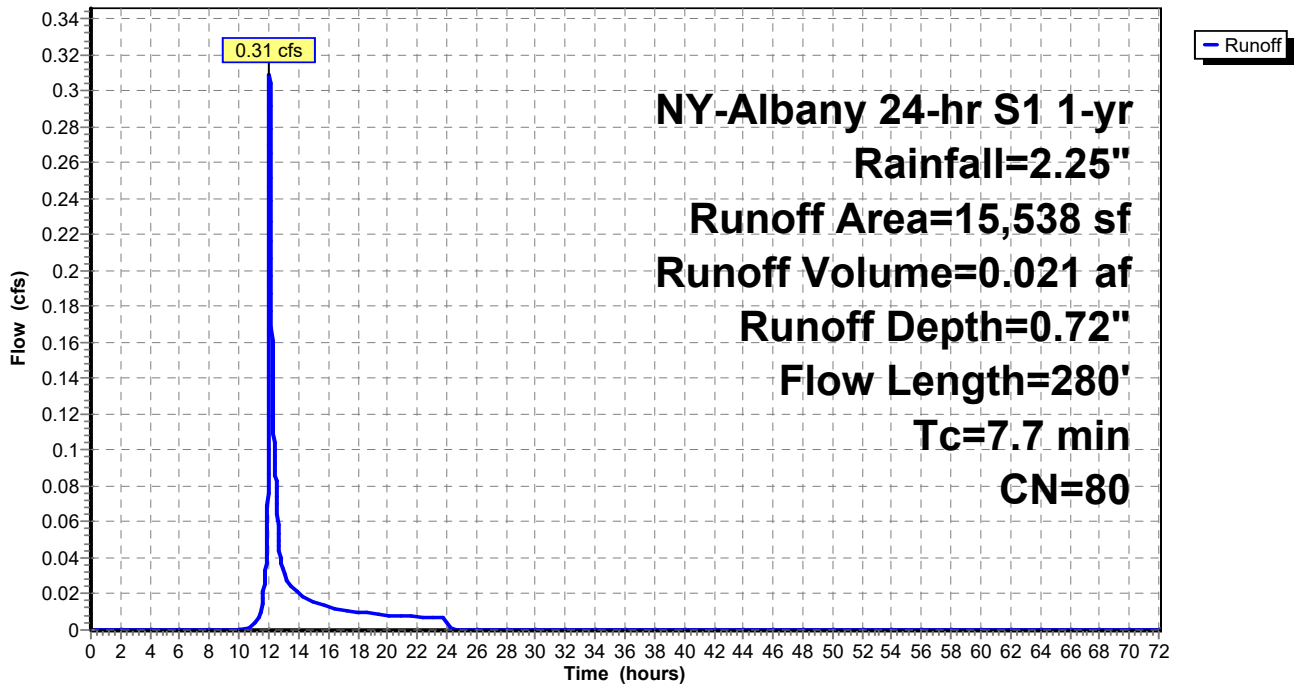
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 15,538 | 80 | >75% Grass cover, Good, HSG D |
| 15,538 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 6.5 | 100 | 0.0700 | 0.26 | | Sheet Flow, SF Grass: Short n= 0.150 P2= 2.64" |
| 1.2 | 180 | 0.1280 | 2.50 | | Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 280 | Total | | | |

Subcatchment ES-1: Sheet Flow to AP

Hydrograph



Summary for Subcatchment ES2: Van Allen Way Drainage

Runoff = 1.93 cfs @ 12.04 hrs, Volume= 0.122 af, Depth= 2.02"
 Routed to Pond DB-1 : Dry Detention Basin

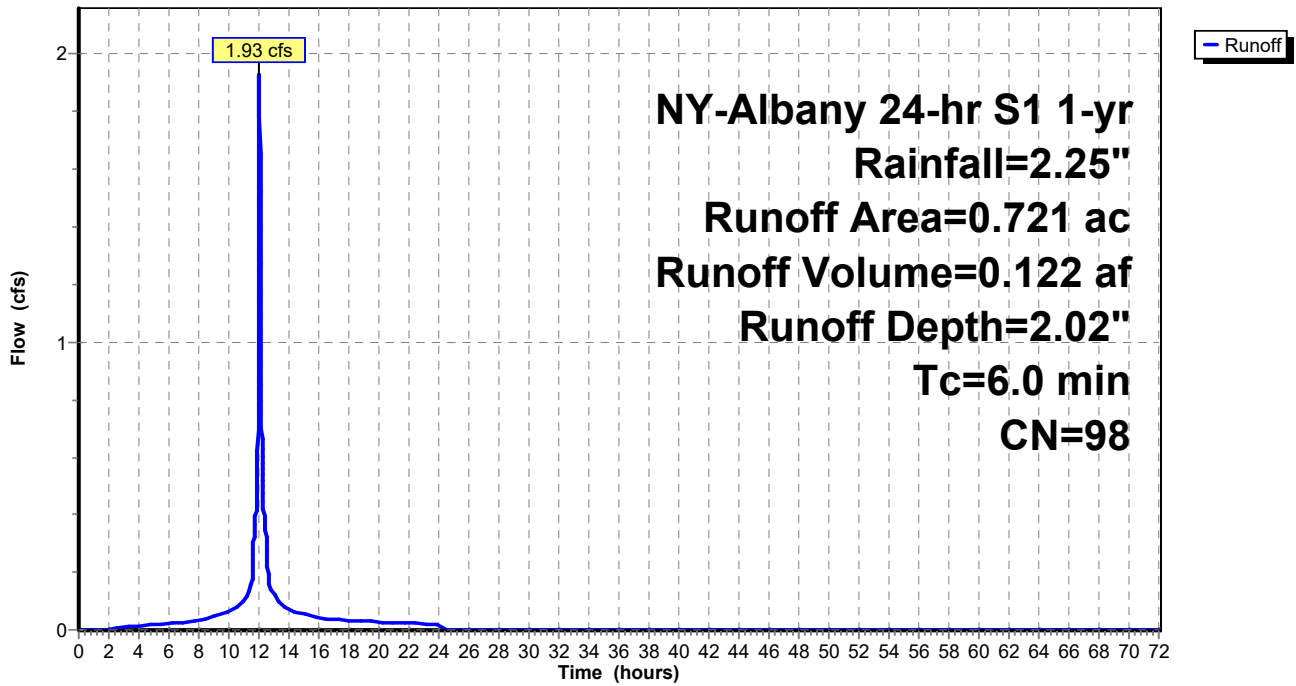
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| 0.721 | 98 | Paved parking, HSG D |
| 0.721 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment ES2: Van Allen Way Drainage

Hydrograph



Summary for Subcatchment PS-1: Site

Runoff = 4.75 cfs @ 12.04 hrs, Volume= 0.279 af, Depth= 1.63"
 Routed to Pond 1P : Bypass

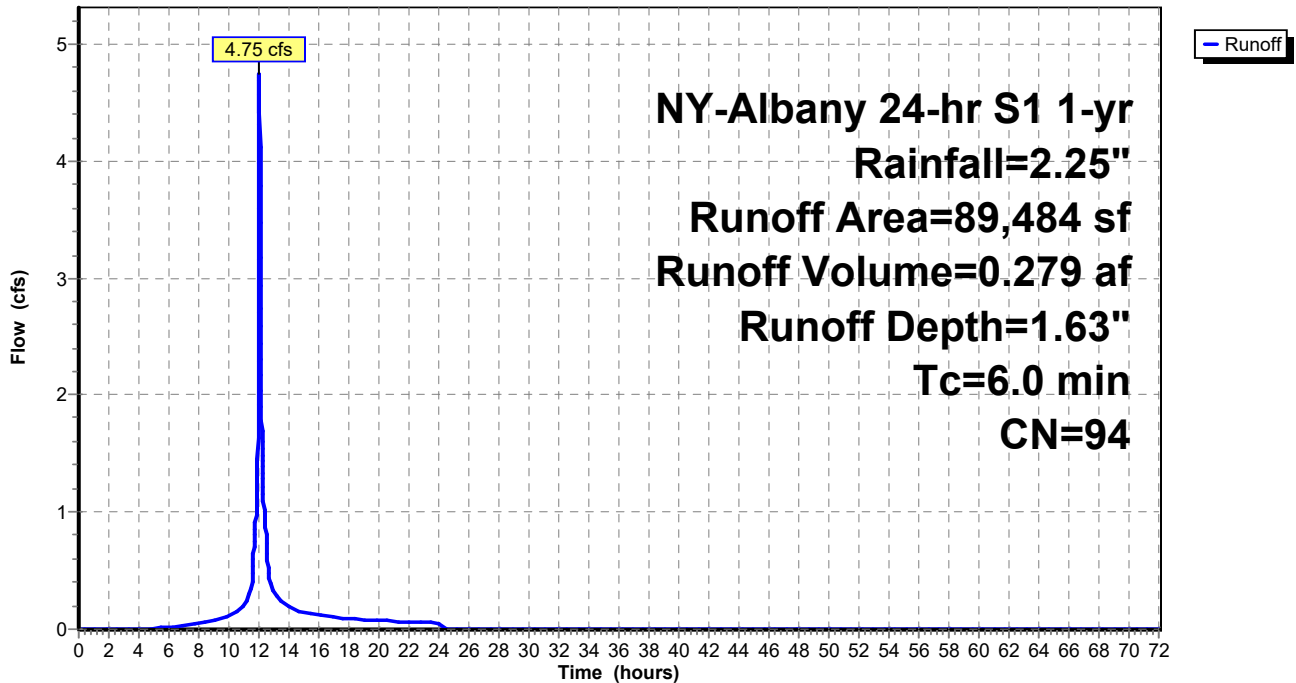
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 1-yr Rainfall=2.25"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 71,733 | 98 | Paved parking, HSG D |
| 17,751 | 80 | >75% Grass cover, Good, HSG D |
| 89,484 | 94 | Weighted Average |
| 17,751 | | 19.84% Pervious Area |
| 71,733 | | 80.16% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment PS-1: Site

Hydrograph



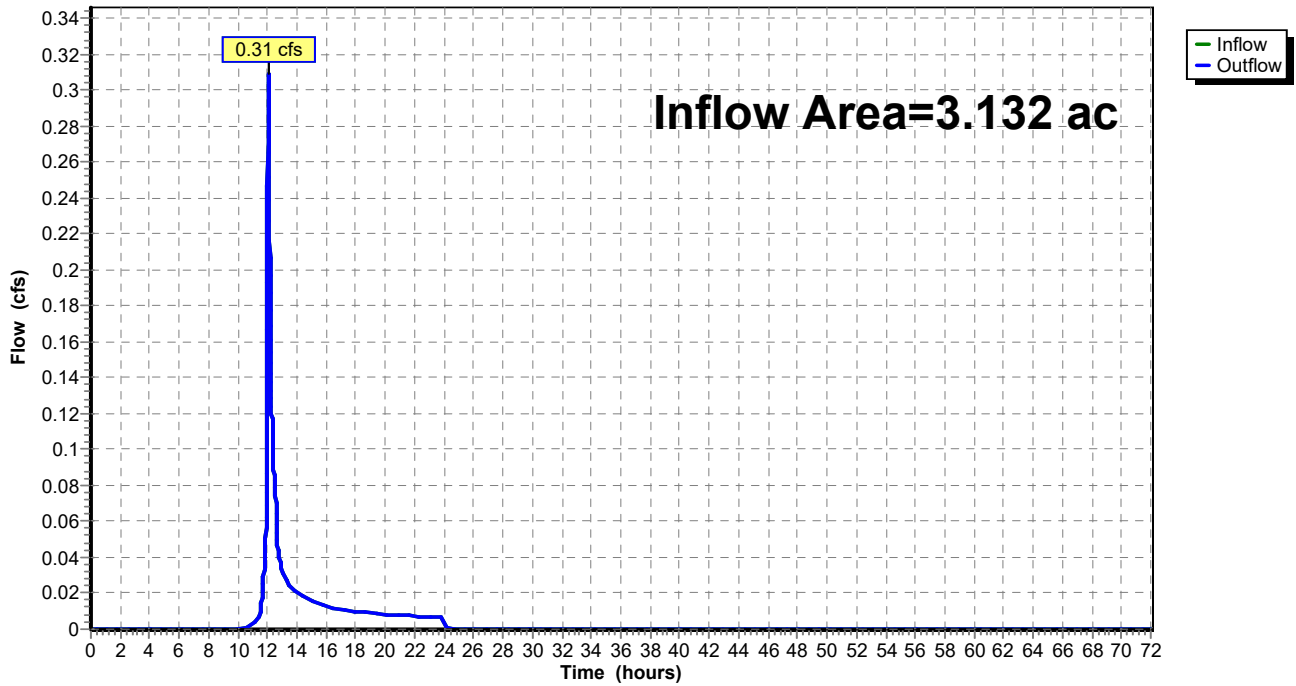
Summary for Reach AP-1: Analysis Point

Inflow Area = 3.132 ac, 75.60% Impervious, Inflow Depth = 0.08" for 1-yr event
Inflow = 0.31 cfs @ 12.06 hrs, Volume= 0.021 af
Outflow = 0.31 cfs @ 12.06 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach AP-1: Analysis Point

Hydrograph



Summary for Pond 1P: Bypass

Inflow Area = 2.054 ac, 80.16% Impervious, Inflow Depth = 1.63" for 1-yr event
 Inflow = 4.75 cfs @ 12.04 hrs, Volume= 0.279 af
 Outflow = 4.75 cfs @ 12.04 hrs, Volume= 0.279 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.75 cfs @ 12.04 hrs, Volume= 0.279 af
 Routed to Pond UG-1 : Underground Infiltration
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond DB-1 : Dry Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 253.02' @ 12.04 hrs
 Flood Elev= 258.20'

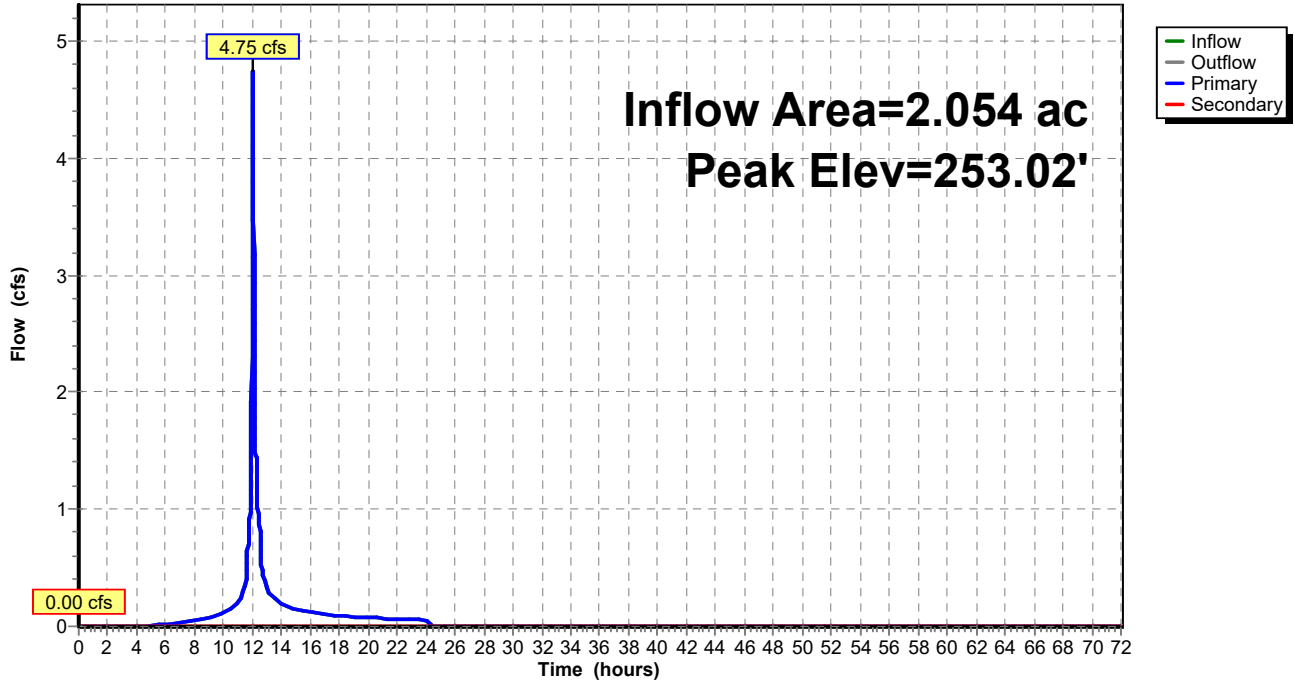
| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 251.92' | 24.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 251.92' / 251.67' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf |
| #2 | Secondary | 253.04' | 24.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.04' / 252.79' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf |

Primary OutFlow Max=4.73 cfs @ 12.04 hrs HW=253.01' TW=250.41' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 4.73 cfs @ 3.90 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=251.92' TW=243.50' (Dynamic Tailwater)
 ↑2=Culvert (Controls 0.00 cfs)

Pond 1P: Bypass

Hydrograph



Summary for Pond DB-1: Dry Detention Basin

Inflow Area = 2.775 ac, 85.32% Impervious, Inflow Depth = 0.53" for 1-yr event
 Inflow = 1.93 cfs @ 12.04 hrs, Volume= 0.122 af
 Outflow = 0.50 cfs @ 11.96 hrs, Volume= 0.122 af, Atten= 74%, Lag= 0.0 min
 Discarded = 0.50 cfs @ 11.96 hrs, Volume= 0.122 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 244.09' @ 12.27 hrs Surf.Area= 1,546 sf Storage= 765 cf
 Flood Elev= 247.00' Surf.Area= 3,000 sf Storage= 7,375 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 6.2 min (773.0 - 766.8)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 243.50' | 7,375 cf | Detention Storage (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 243.50 | 1,000 | 0 | 0 |
| 244.00 | 1,500 | 625 | 625 |
| 245.00 | 2,000 | 1,750 | 2,375 |
| 246.00 | 2,500 | 2,250 | 4,625 |
| 247.00 | 3,000 | 2,750 | 7,375 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 243.60' | 12.0" Round Culvert L= 35.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 243.60' / 241.50' S= 0.0600 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf |
| #2 | Secondary | 246.85' | 10.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88 |
| #3 | Discarded | 243.50' | 0.50 cfs Exfiltration at all elevations |
| #4 | Device 1 | 246.00' | 24.0" x 24.0" Horiz. CB Grate C= 0.600 Limited to weir flow at low heads |
| #5 | Device 1 | 245.50' | 3.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads |

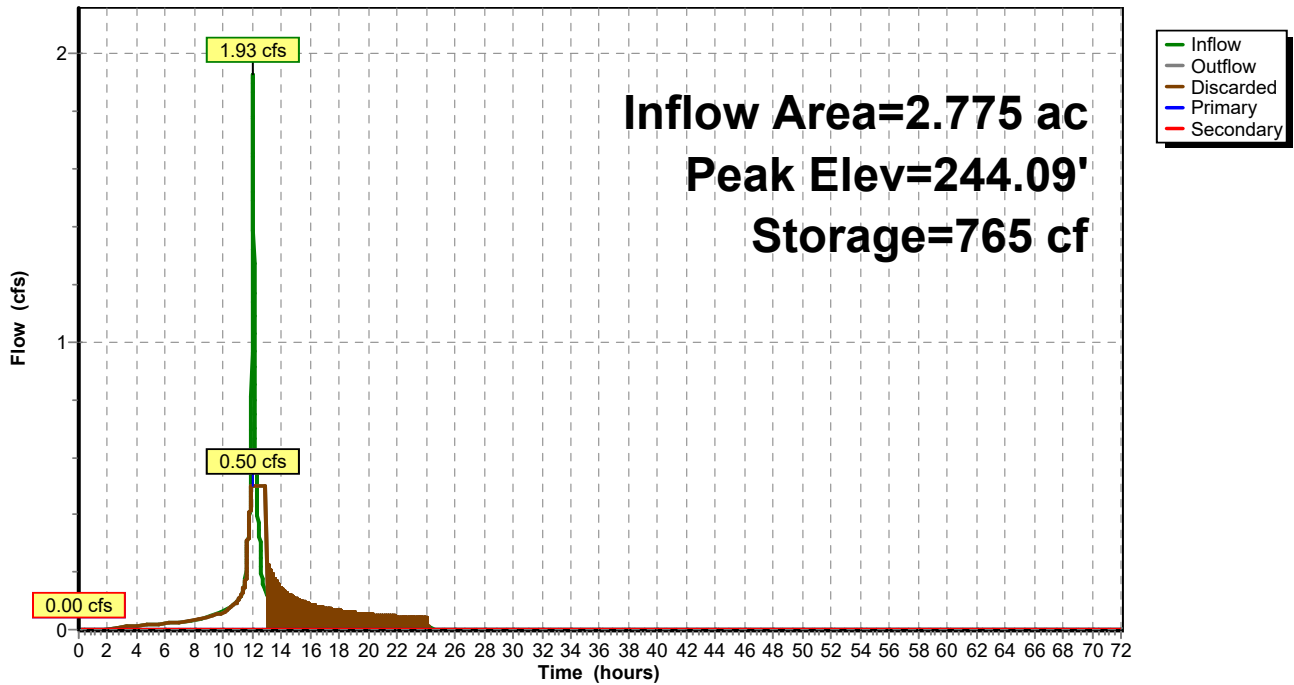
Discarded OutFlow Max=0.50 cfs @ 11.96 hrs HW=243.54' (Free Discharge)
 ↳ **3=Exfiltration** (Exfiltration Controls 0.50 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.50' TW=0.00' (Dynamic Tailwater)
 ↳ **1=Culvert** (Controls 0.00 cfs)
 ↳ **4=CB Grate** (Controls 0.00 cfs)
 ↳ **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.50' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond DB-1: Dry Detention Basin

Hydrograph



Summary for Pond UG-1: Underground Infiltration

Inflow Area = 2.054 ac, 80.16% Impervious, Inflow Depth = 1.63" for 1-yr event
 Inflow = 4.75 cfs @ 12.04 hrs, Volume= 0.279 af
 Outflow = 0.11 cfs @ 10.97 hrs, Volume= 0.279 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.11 cfs @ 10.97 hrs, Volume= 0.279 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond DB-1 : Dry Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 251.09' @ 16.60 hrs Surf.Area= 9,109 sf Storage= 6,896 cf
 Flood Elev= 253.67' Surf.Area= 9,109 sf Storage= 21,677 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 624.3 min (1,431.3 - 807.0)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1A | 249.67' | 9,840 cf | 77.50'W x 117.54'L x 4.00'H Field A 36,436 cf Overall - 11,837 cf Embedded = 24,599 cf x 40.0% Voids |
| #2A | 250.67' | 11,837 cf | ADS_StormTech DC-780 +Cap_1' Bedding x 256 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 256 Chambers in 16 Rows |
| | | 21,677 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 249.67' | 0.500 in/hr Exfiltration over Surface area |
| #2 | Primary | 251.56' | 12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 251.56' / 251.26' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.11 cfs @ 10.97 hrs HW=249.71' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=249.67' TW=243.50' (Dynamic Tailwater)

↑2=Culvert (Controls 0.00 cfs)

Pond UG-1: Underground Infiltration - Chamber Wizard Field A

Chamber Model = ADS_StormTechDC-780 +Cap_1' Bedding (ADS StormTech®DC-780 with cap length)

Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

16 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 115.54' Row Length +12.0" End Stone x 2 = 117.54' Base Length

16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width

12.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

256 Chambers x 46.2 cf = 11,837.2 cf Chamber Storage

36,436.4 cf Field - 11,837.2 cf Chambers = 24,599.2 cf Stone x 40.0% Voids = 9,839.7 cf Stone Storage

Chamber Storage + Stone Storage = 21,676.9 cf = 0.498 af

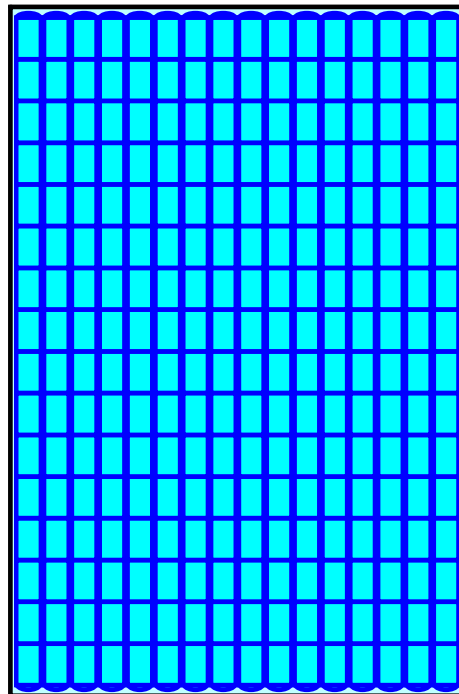
Overall Storage Efficiency = 59.5%

Overall System Size = 117.54' x 77.50' x 4.00'

256 Chambers

1,349.5 cy Field

911.1 cy Stone



Summary for Subcatchment ES-1: Sheet Flow to AP

Runoff = 0.85 cfs @ 12.06 hrs, Volume= 0.056 af, Depth= 1.89"
 Routed to Reach AP-1 : Analysis Point

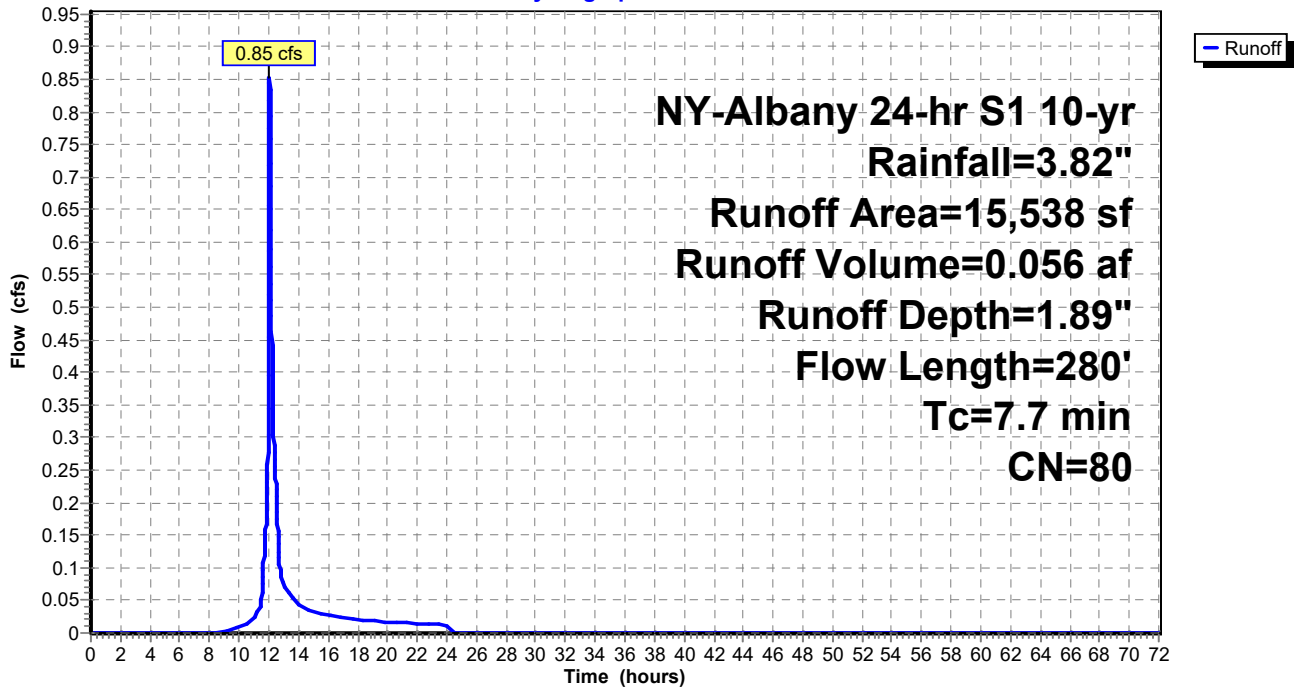
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 15,538 | 80 | >75% Grass cover, Good, HSG D |
| 15,538 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 6.5 | 100 | 0.0700 | 0.26 | | Sheet Flow, SF Grass: Short n= 0.150 P2= 2.64" |
| 1.2 | 180 | 0.1280 | 2.50 | | Shallow Concentrated Flow, SCF Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 280 | Total | | | |

Subcatchment ES-1: Sheet Flow to AP

Hydrograph



Summary for Subcatchment ES2: Van Allen Way Drainage

Runoff = 3.23 cfs @ 12.04 hrs, Volume= 0.215 af, Depth= 3.59"
 Routed to Pond DB-1 : Dry Detention Basin

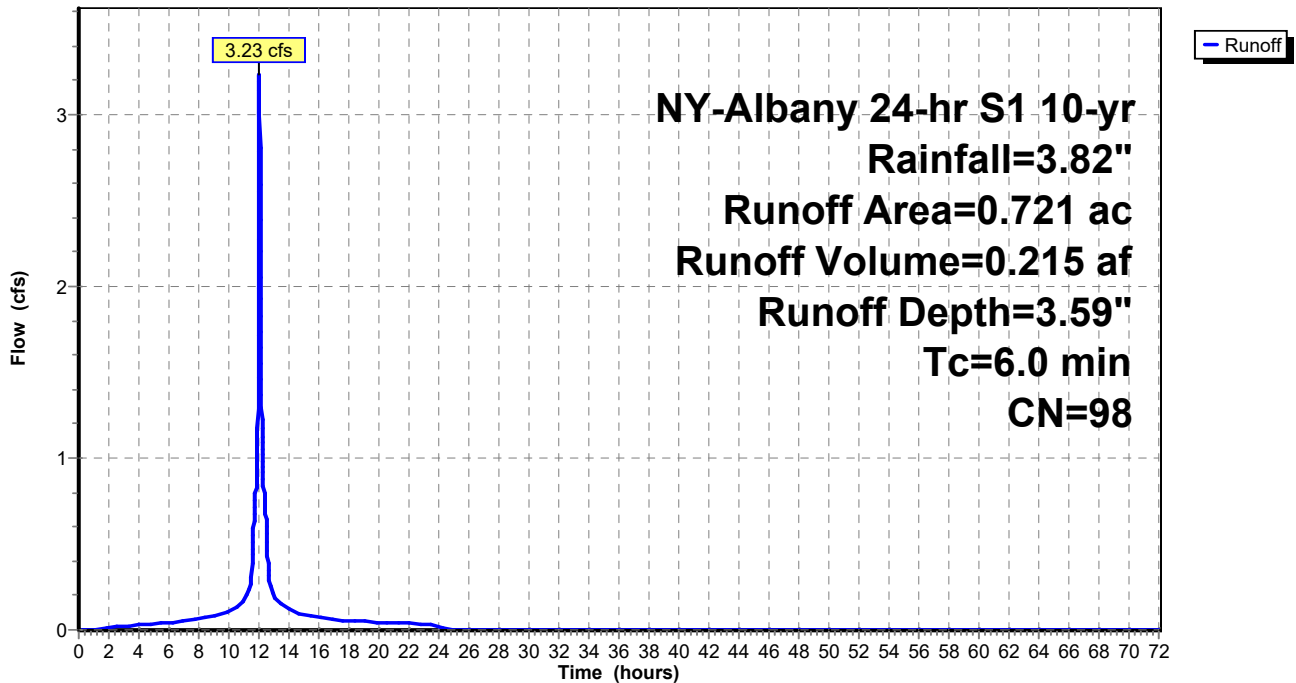
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| 0.721 | 98 | Paved parking, HSG D |
| 0.721 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment ES2: Van Allen Way Drainage

Hydrograph



Summary for Subcatchment PS-1: Site

Runoff = 8.61 cfs @ 12.04 hrs, Volume= 0.539 af, Depth= 3.15"
 Routed to Pond 1P : Bypass

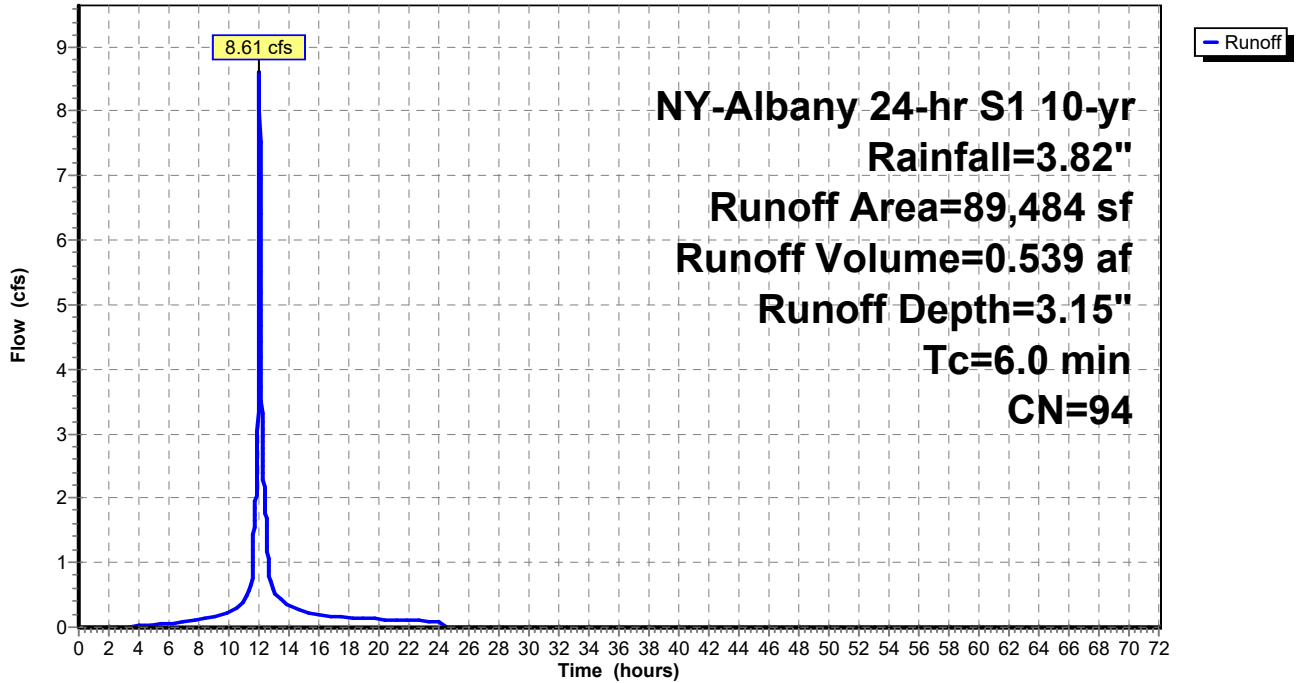
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 10-yr Rainfall=3.82"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 71,733 | 98 | Paved parking, HSG D |
| 17,751 | 80 | >75% Grass cover, Good, HSG D |
| 89,484 | 94 | Weighted Average |
| 17,751 | | 19.84% Pervious Area |
| 71,733 | | 80.16% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment PS-1: Site

Hydrograph



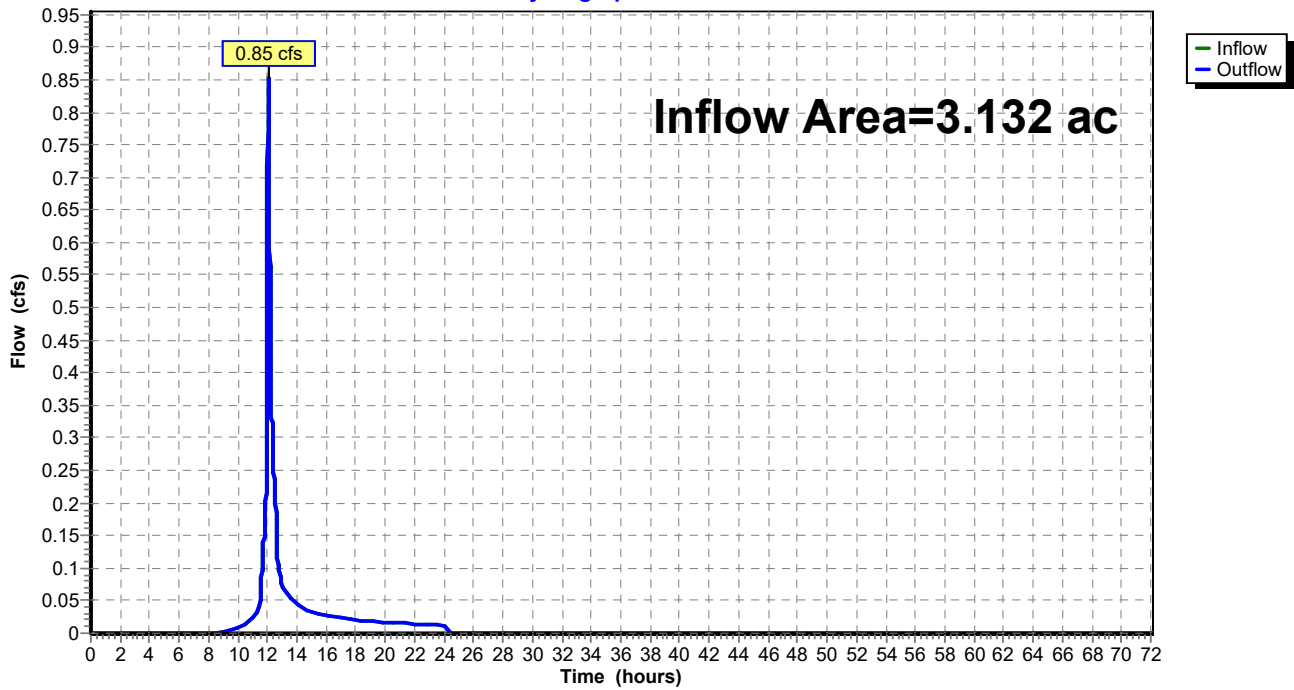
Summary for Reach AP-1: Analysis Point

Inflow Area = 3.132 ac, 75.60% Impervious, Inflow Depth = 0.22" for 10-yr event
Inflow = 0.85 cfs @ 12.06 hrs, Volume= 0.056 af
Outflow = 0.85 cfs @ 12.06 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach AP-1: Analysis Point

Hydrograph



Summary for Pond 1P: Bypass

Inflow Area = 2.054 ac, 80.16% Impervious, Inflow Depth = 3.15" for 10-yr event
 Inflow = 8.61 cfs @ 12.04 hrs, Volume= 0.539 af
 Outflow = 8.61 cfs @ 12.04 hrs, Volume= 0.539 af, Atten= 0%, Lag= 0.0 min
 Primary = 7.91 cfs @ 12.04 hrs, Volume= 0.535 af
 Routed to Pond UG-1 : Underground Infiltration
 Secondary = 0.70 cfs @ 12.04 hrs, Volume= 0.004 af
 Routed to Pond DB-1 : Dry Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 253.42' @ 12.04 hrs
 Flood Elev= 258.20'

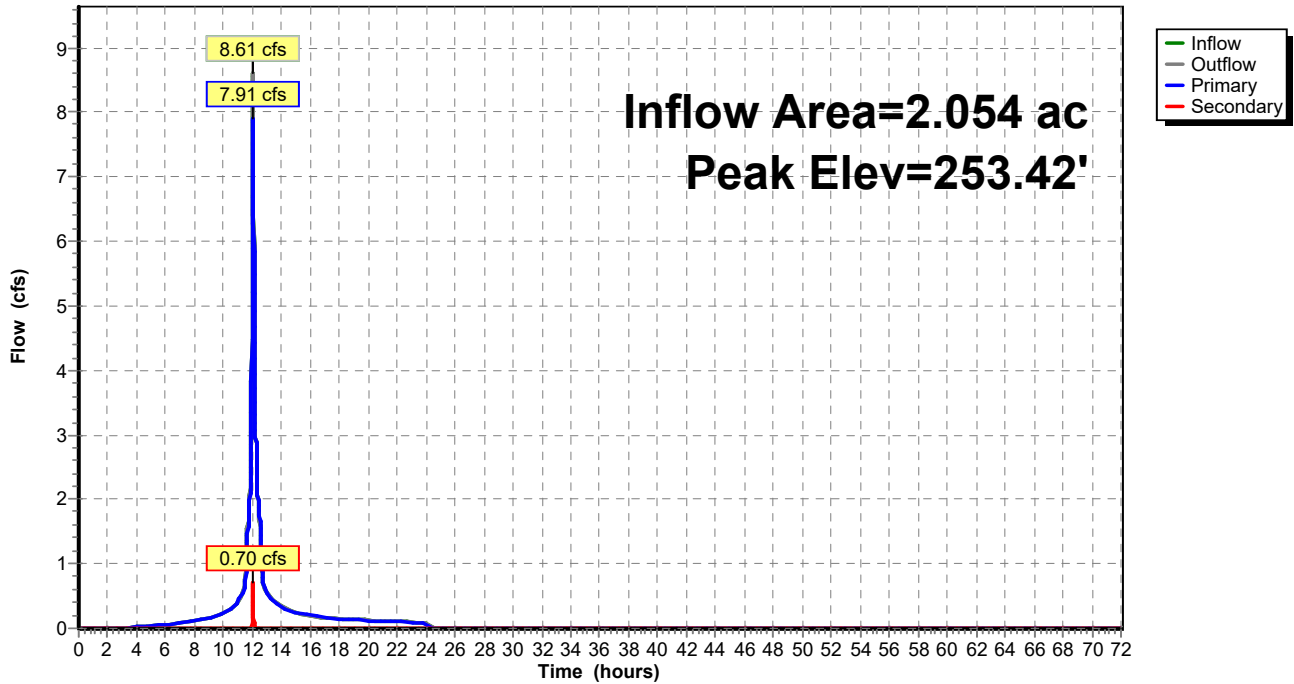
| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 251.92' | 24.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 251.92' / 251.67' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf |
| #2 | Secondary | 253.04' | 24.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.04' / 252.79' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf |

Primary OutFlow Max=7.89 cfs @ 12.04 hrs HW=253.42' TW=251.06' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 7.89 cfs @ 4.34 fps)

Secondary OutFlow Max=0.69 cfs @ 12.04 hrs HW=253.42' TW=244.30' (Dynamic Tailwater)
 ↑2=Culvert (Inlet Controls 0.69 cfs @ 1.66 fps)

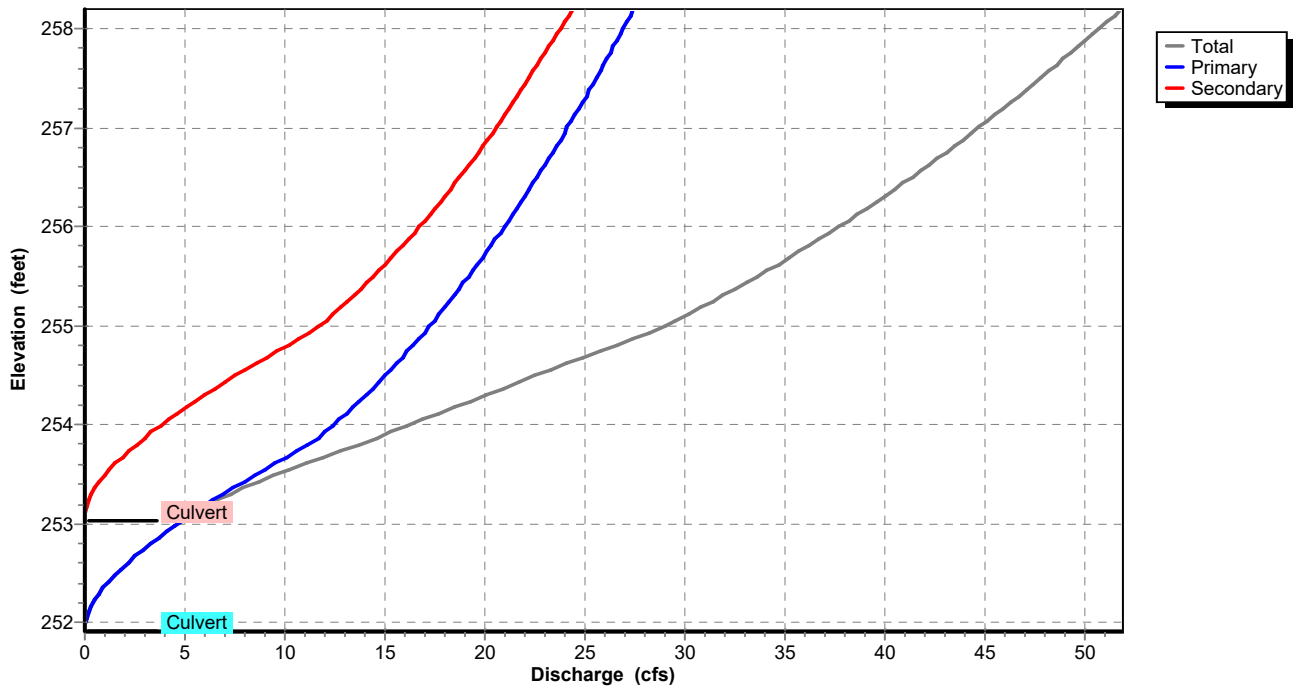
Pond 1P: Bypass

Hydrograph

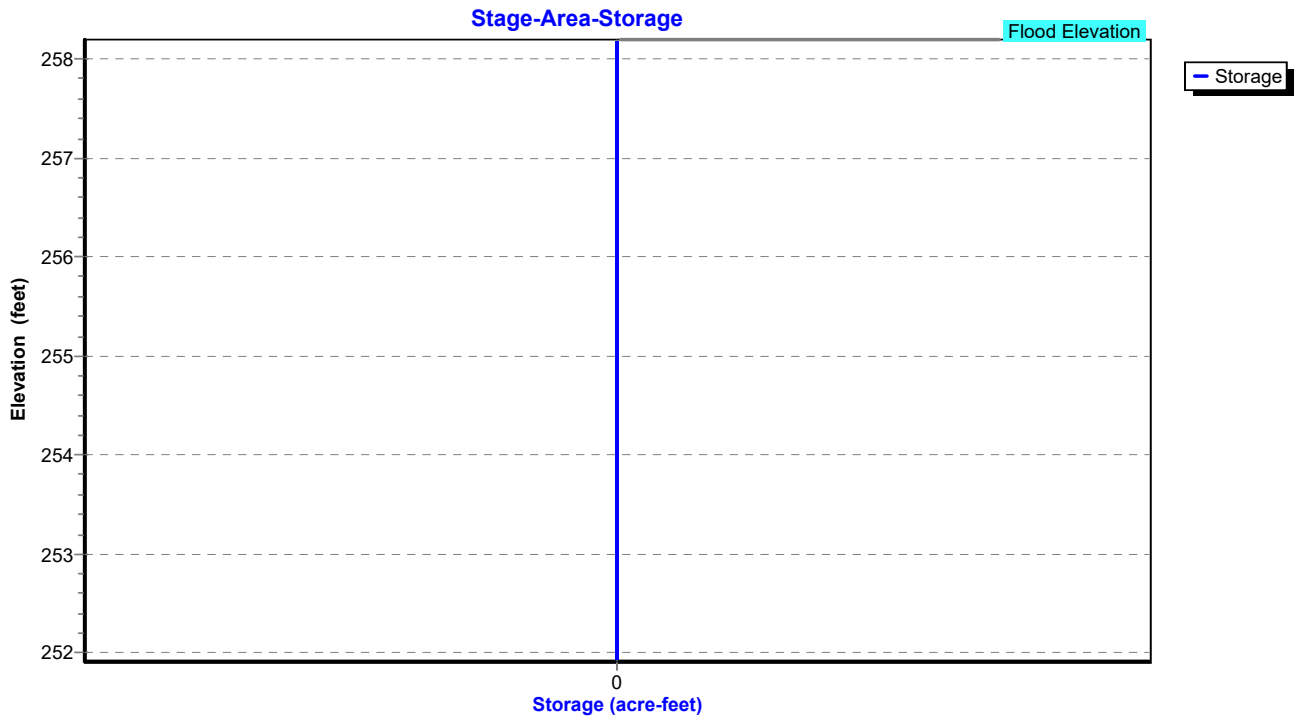


Pond 1P: Bypass

Stage-Discharge



Pond 1P: Bypass



Summary for Pond DB-1: Dry Detention Basin

Inflow Area = 2.775 ac, 85.32% Impervious, Inflow Depth = 1.49" for 10-yr event
 Inflow = 3.93 cfs @ 12.04 hrs, Volume= 0.345 af
 Outflow = 0.50 cfs @ 11.71 hrs, Volume= 0.345 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.50 cfs @ 11.71 hrs, Volume= 0.345 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 245.25' @ 13.65 hrs Surf.Area= 2,126 sf Storage= 2,895 cf
 Flood Elev= 247.00' Surf.Area= 3,000 sf Storage= 7,375 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 45.0 min (862.0 - 816.9)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 243.50' | 7,375 cf | Detention Storage (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 243.50 | 1,000 | 0 | 0 |
| 244.00 | 1,500 | 625 | 625 |
| 245.00 | 2,000 | 1,750 | 2,375 |
| 246.00 | 2,500 | 2,250 | 4,625 |
| 247.00 | 3,000 | 2,750 | 7,375 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 243.60' | 12.0" Round Culvert L= 35.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 243.60' / 241.50' S= 0.0600 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf |
| #2 | Secondary | 246.85' | 10.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88 |
| #3 | Discarded | 243.50' | 0.50 cfs Exfiltration at all elevations |
| #4 | Device 1 | 246.00' | 24.0" x 24.0" Horiz. CB Grate C= 0.600 Limited to weir flow at low heads |
| #5 | Device 1 | 245.50' | 3.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads |

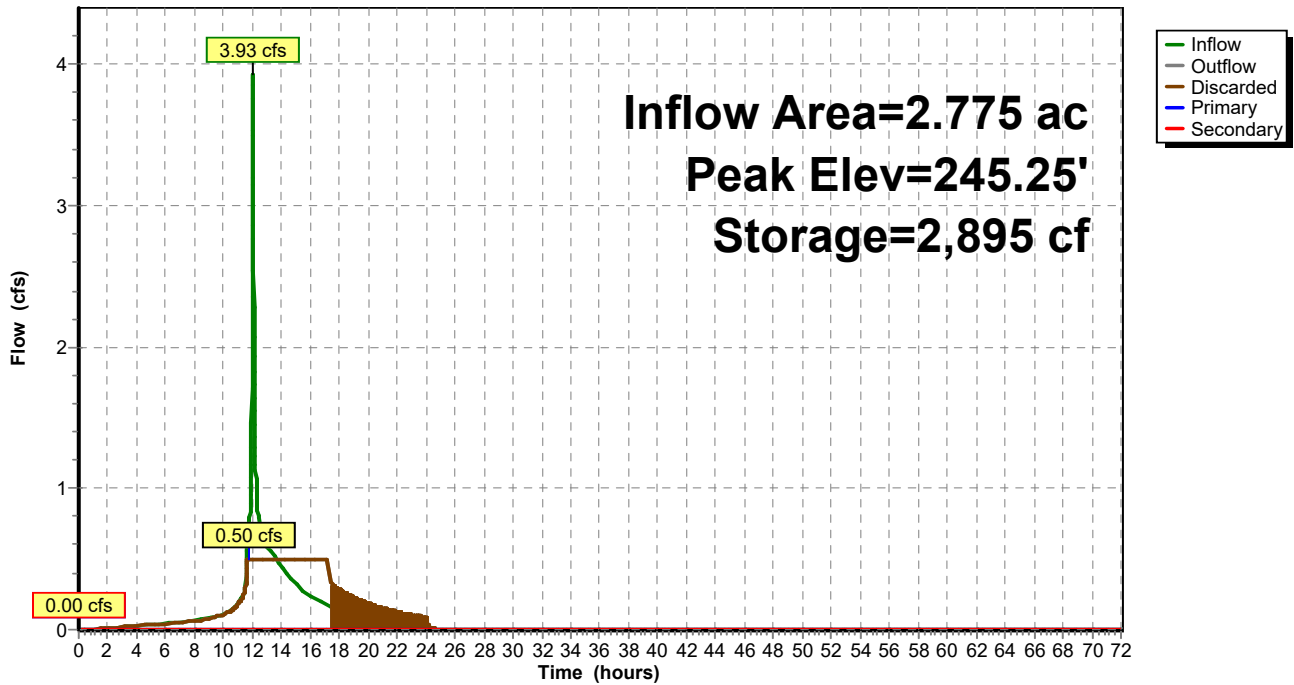
Discarded OutFlow Max=0.50 cfs @ 11.71 hrs HW=243.54' (Free Discharge)
 ↳ **3=Exfiltration** (Exfiltration Controls 0.50 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.50' TW=0.00' (Dynamic Tailwater)
 ↳ **1=Culvert** (Controls 0.00 cfs)
 ↳ **4=CB Grate** (Controls 0.00 cfs)
 ↳ **5=Orifice/Grate** (Controls 0.00 cfs)

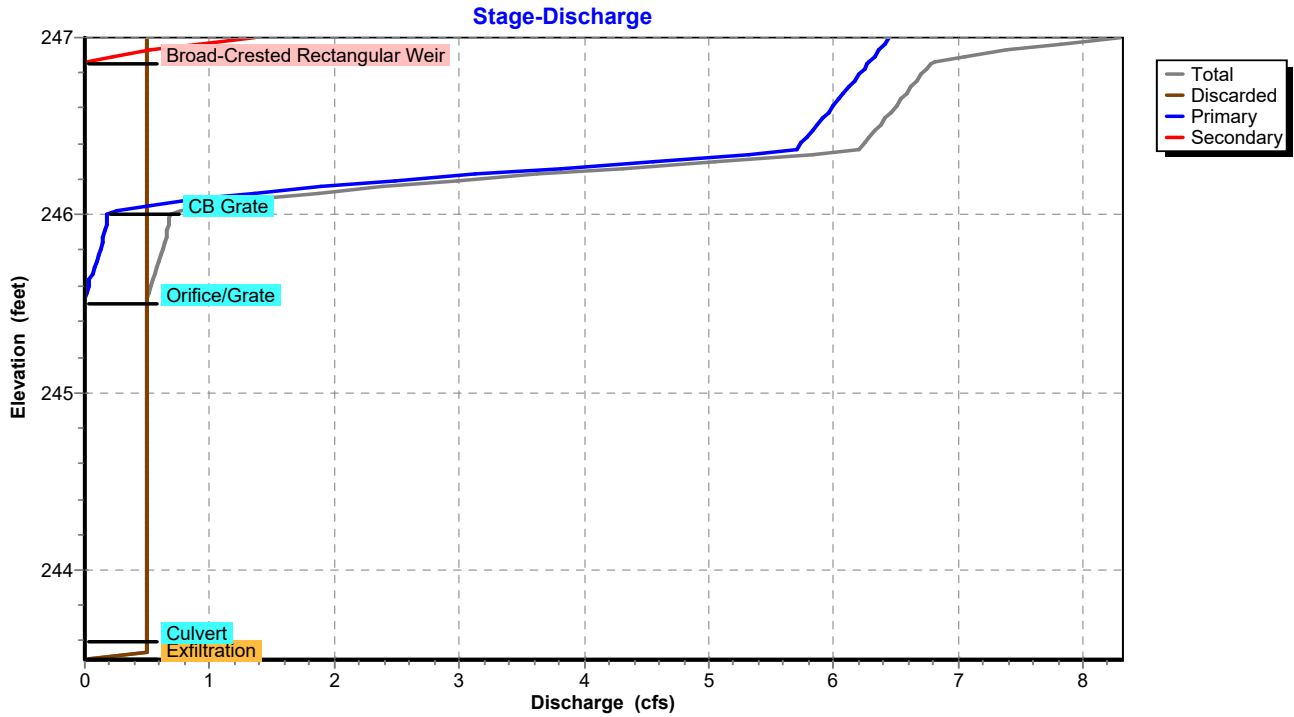
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.50' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond DB-1: Dry Detention Basin

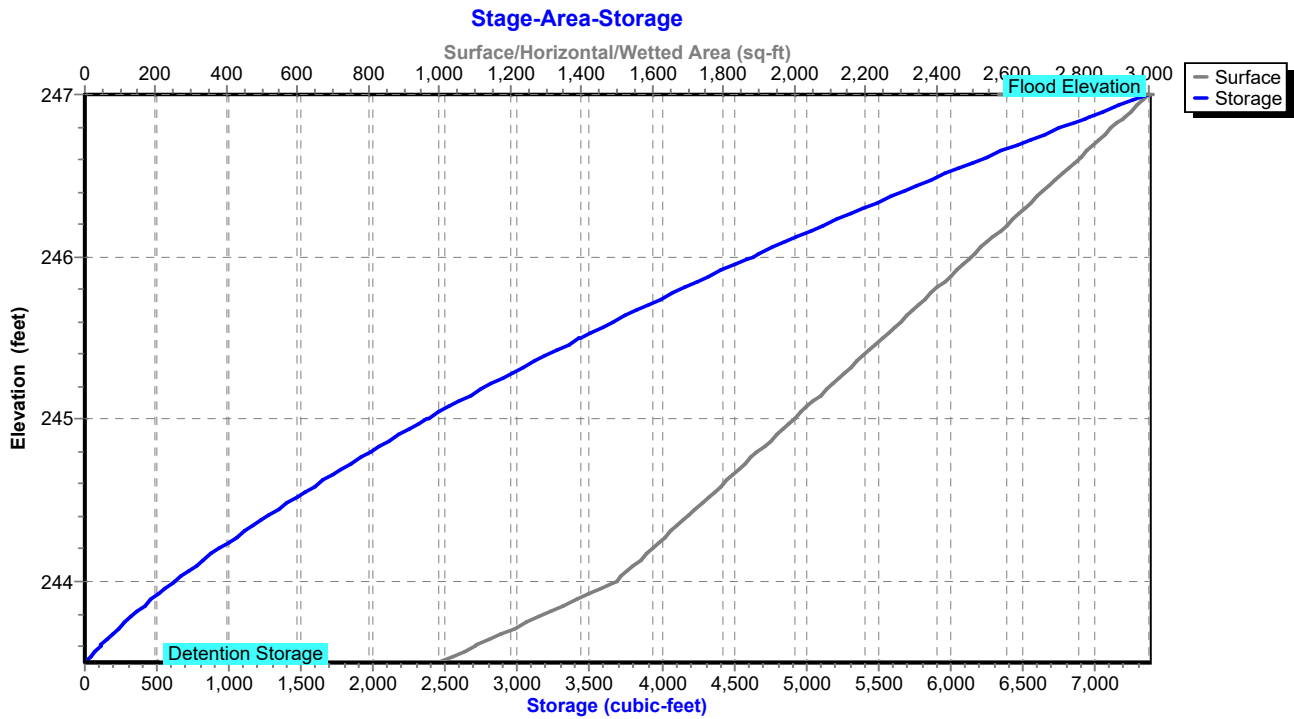
Hydrograph



Pond DB-1: Dry Detention Basin



Pond DB-1: Dry Detention Basin



Summary for Pond UG-1: Underground Infiltration

Inflow Area = 2.054 ac, 80.16% Impervious, Inflow Depth = 3.12" for 10-yr event
 Inflow = 7.91 cfs @ 12.04 hrs, Volume= 0.535 af
 Outflow = 0.49 cfs @ 13.17 hrs, Volume= 0.535 af, Atten= 94%, Lag= 68.0 min
 Discarded = 0.11 cfs @ 9.10 hrs, Volume= 0.409 af
 Primary = 0.39 cfs @ 13.17 hrs, Volume= 0.126 af
 Routed to Pond DB-1 : Dry Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 251.91' @ 13.17 hrs Surf.Area= 9,109 sf Storage= 12,815 cf
 Flood Elev= 253.67' Surf.Area= 9,109 sf Storage= 21,677 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 760.1 min (1,545.2 - 785.1)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|---|
| #1A | 249.67' | 9,840 cf | 77.50'W x 117.54'L x 4.00'H Field A 36,436 cf Overall - 11,837 cf Embedded = 24,599 cf x 40.0% Voids |
| #2A | 250.67' | 11,837 cf | ADS_StormTech DC-780 +Cap_1' Beddingx 256 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 256 Chambers in 16 Rows |
| | | 21,677 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 249.67' | 0.500 in/hr Exfiltration over Surface area |
| #2 | Primary | 251.56' | 12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 251.56' / 251.26' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.11 cfs @ 9.10 hrs HW=249.71' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.39 cfs @ 13.17 hrs HW=251.91' TW=245.22' (Dynamic Tailwater)
 ↑2=Culvert (Inlet Controls 0.39 cfs @ 1.59 fps)

Pond UG-1: Underground Infiltration - Chamber Wizard Field A

Chamber Model = ADS_StormTechDC-780 +Cap_1' Bedding (ADS StormTech®DC-780 with cap length)

Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

16 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 115.54' Row Length +12.0" End Stone x 2 = 117.54' Base Length

16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width

12.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

256 Chambers x 46.2 cf = 11,837.2 cf Chamber Storage

36,436.4 cf Field - 11,837.2 cf Chambers = 24,599.2 cf Stone x 40.0% Voids = 9,839.7 cf Stone Storage

Chamber Storage + Stone Storage = 21,676.9 cf = 0.498 af

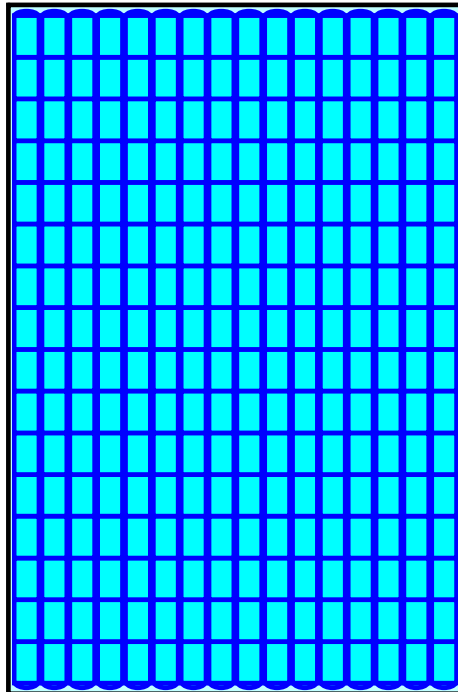
Overall Storage Efficiency = 59.5%

Overall System Size = 117.54' x 77.50' x 4.00'

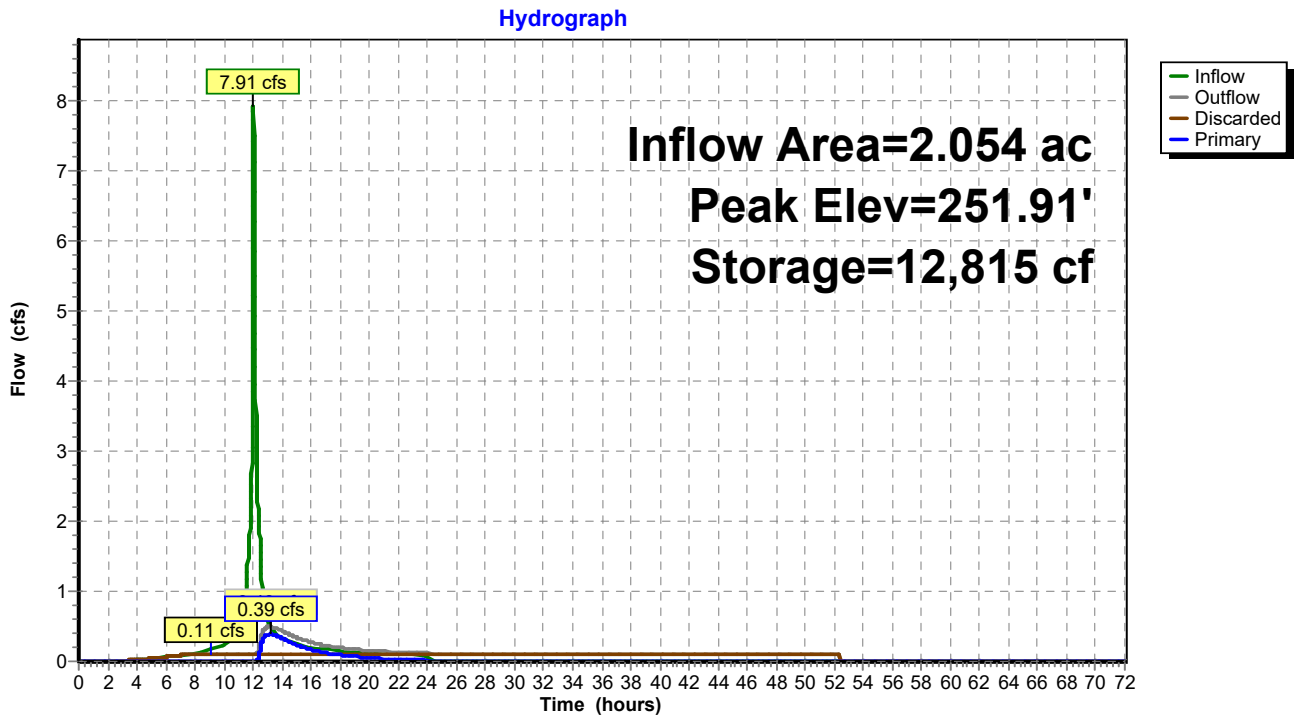
256 Chambers

1,349.5 cy Field

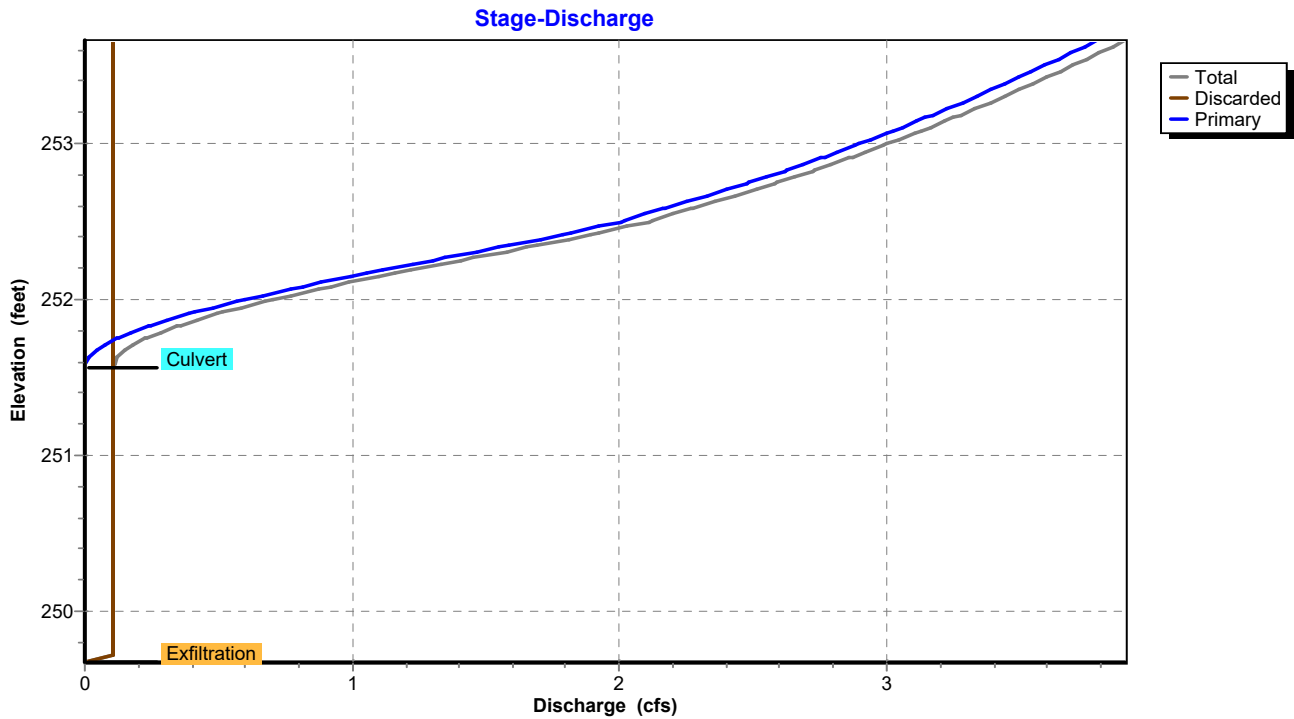
911.1 cy Stone



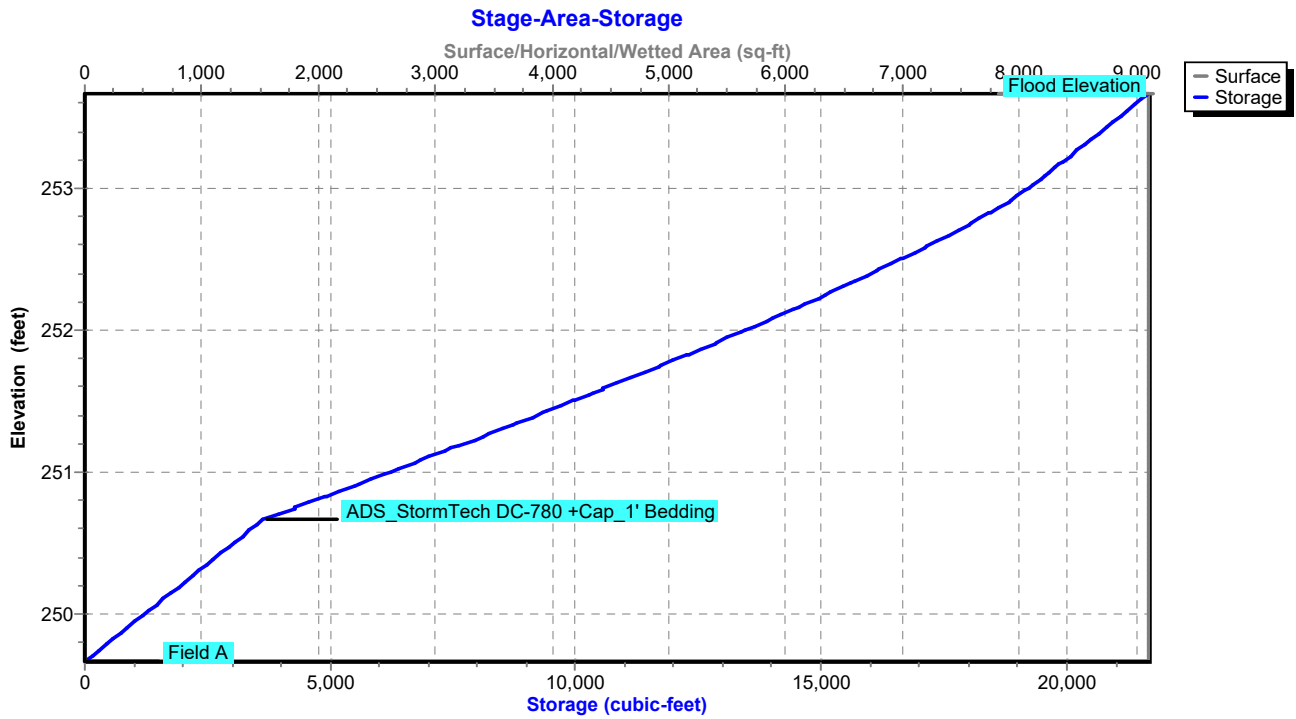
Pond UG-1: Underground Infiltration



Pond UG-1: Underground Infiltration



Pond UG-1: Underground Infiltration



Summary for Subcatchment ES-1: Sheet Flow to AP

Runoff = 1.81 cfs @ 12.06 hrs, Volume= 0.127 af, Depth= 4.26"
 Routed to Reach AP-1 : Analysis Point

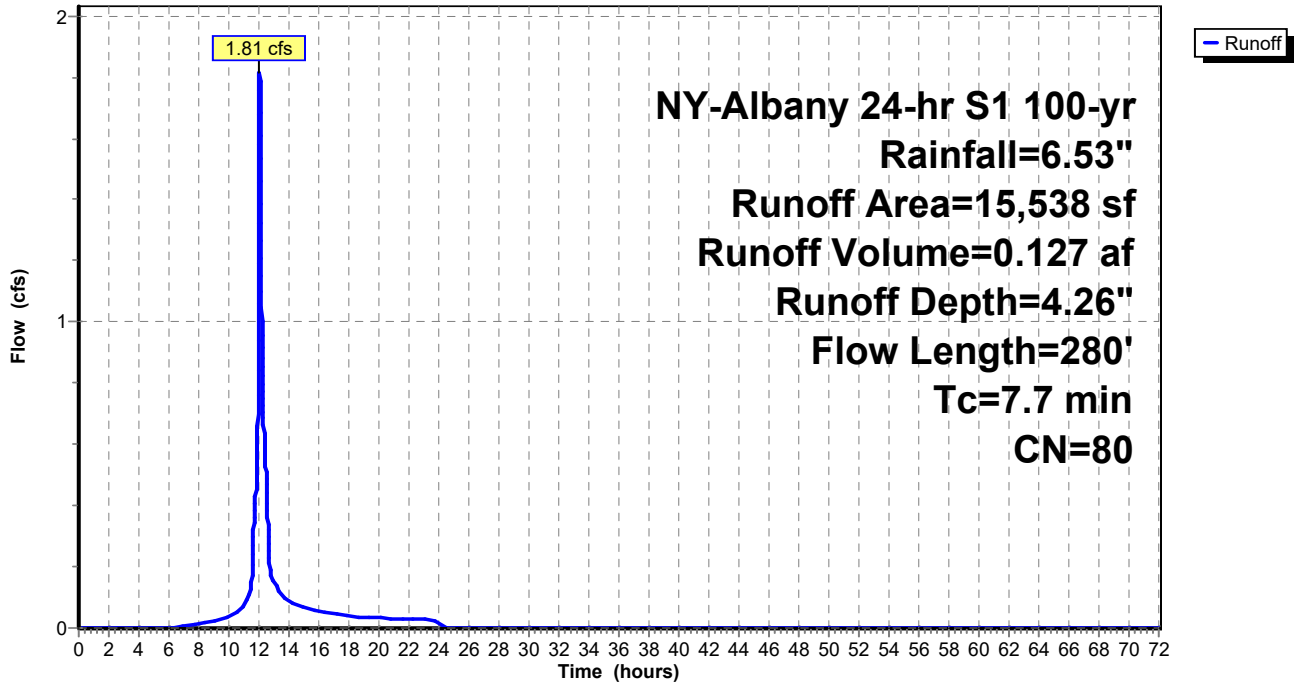
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 15,538 | 80 | >75% Grass cover, Good, HSG D |
| 15,538 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------|
| 6.5 | 100 | 0.0700 | 0.26 | | Sheet Flow, SF |
| 1.2 | 180 | 0.1280 | 2.50 | | Shallow Concentrated Flow, SCF |
| | | | | | Short Grass Pasture Kv= 7.0 fps |
| 7.7 | 280 | Total | | | |

Subcatchment ES-1: Sheet Flow to AP

Hydrograph



Summary for Subcatchment ES2: Van Allen Way Drainage

Runoff = 5.19 cfs @ 12.04 hrs, Volume= 0.378 af, Depth= 6.29"
 Routed to Pond DB-1 : Dry Detention Basin

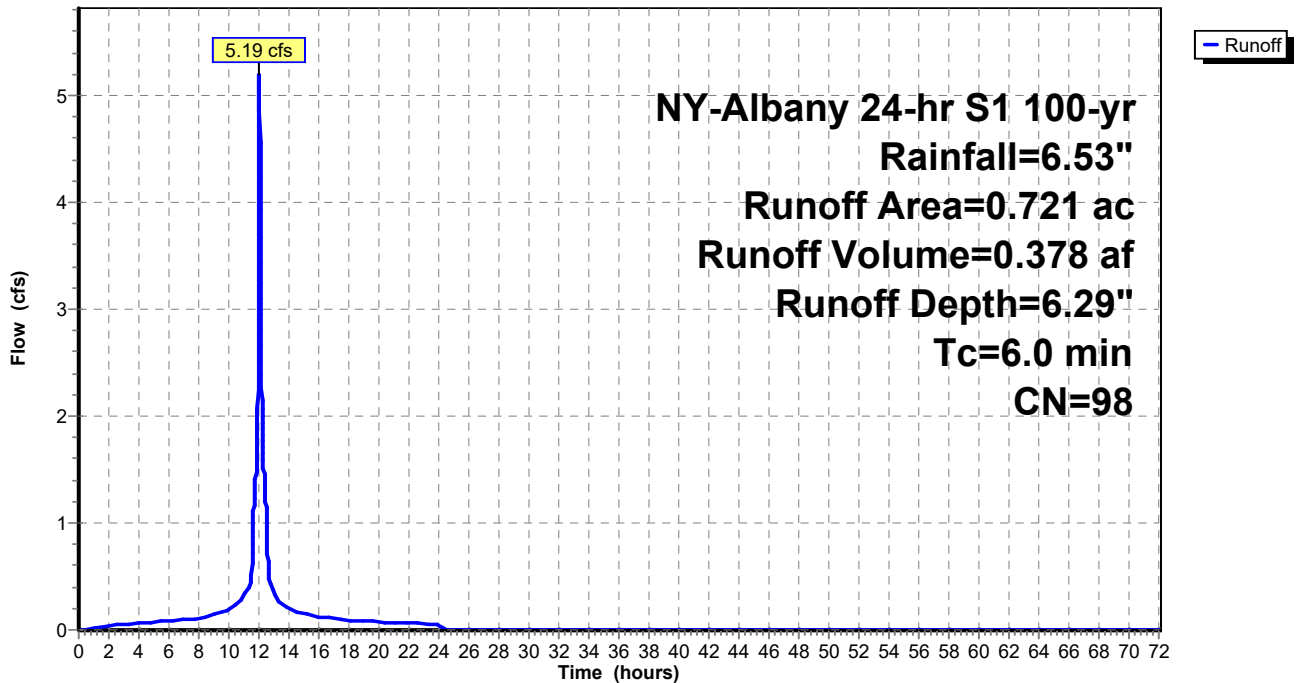
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (ac) | CN | Description |
|-----------|----|-------------------------|
| 0.721 | 98 | Paved parking, HSG D |
| 0.721 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment ES2: Van Allen Way Drainage

Hydrograph



Summary for Subcatchment PS-1: Site

Runoff = 14.40 cfs @ 12.04 hrs, Volume= 0.997 af, Depth= 5.82"
 Routed to Pond 1P : Bypass

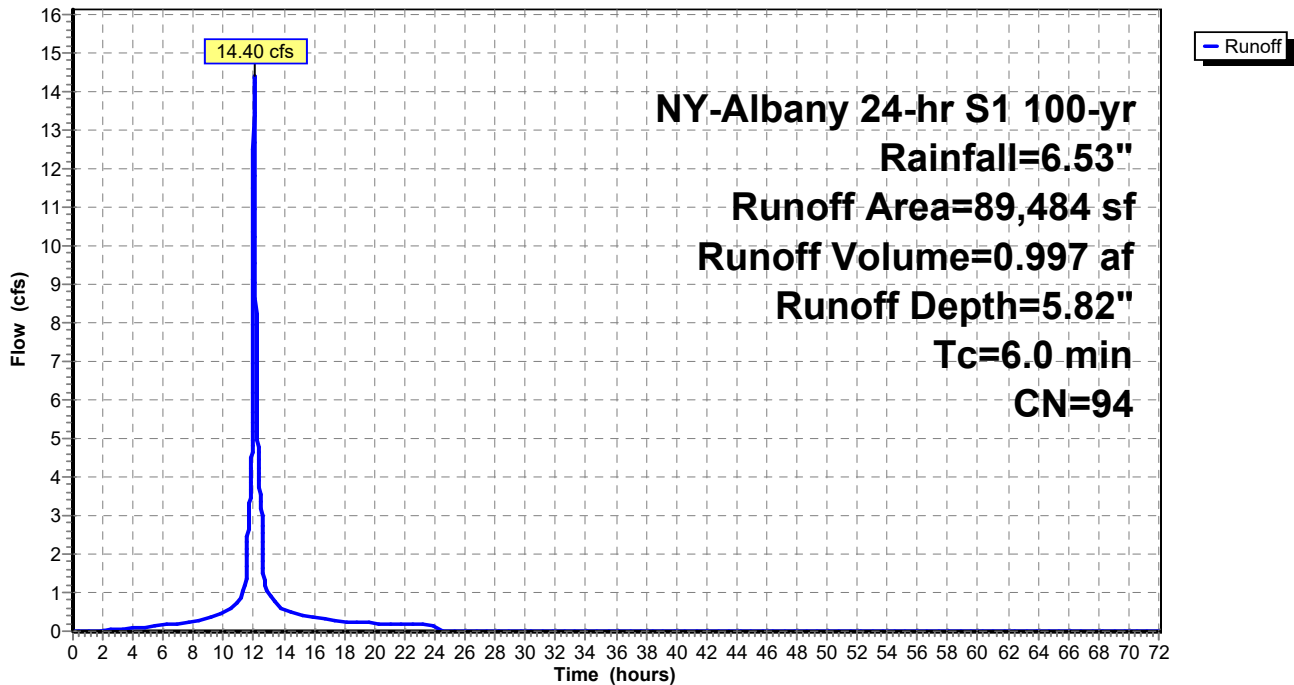
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NY-Albany 24-hr S1 100-yr Rainfall=6.53"

| Area (sf) | CN | Description |
|-----------|----|-------------------------------|
| 71,733 | 98 | Paved parking, HSG D |
| 17,751 | 80 | >75% Grass cover, Good, HSG D |
| 89,484 | 94 | Weighted Average |
| 17,751 | | 19.84% Pervious Area |
| 71,733 | | 80.16% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|----------------------|
| 6.0 | | | | | Direct Entry, Direct |

Subcatchment PS-1: Site

Hydrograph



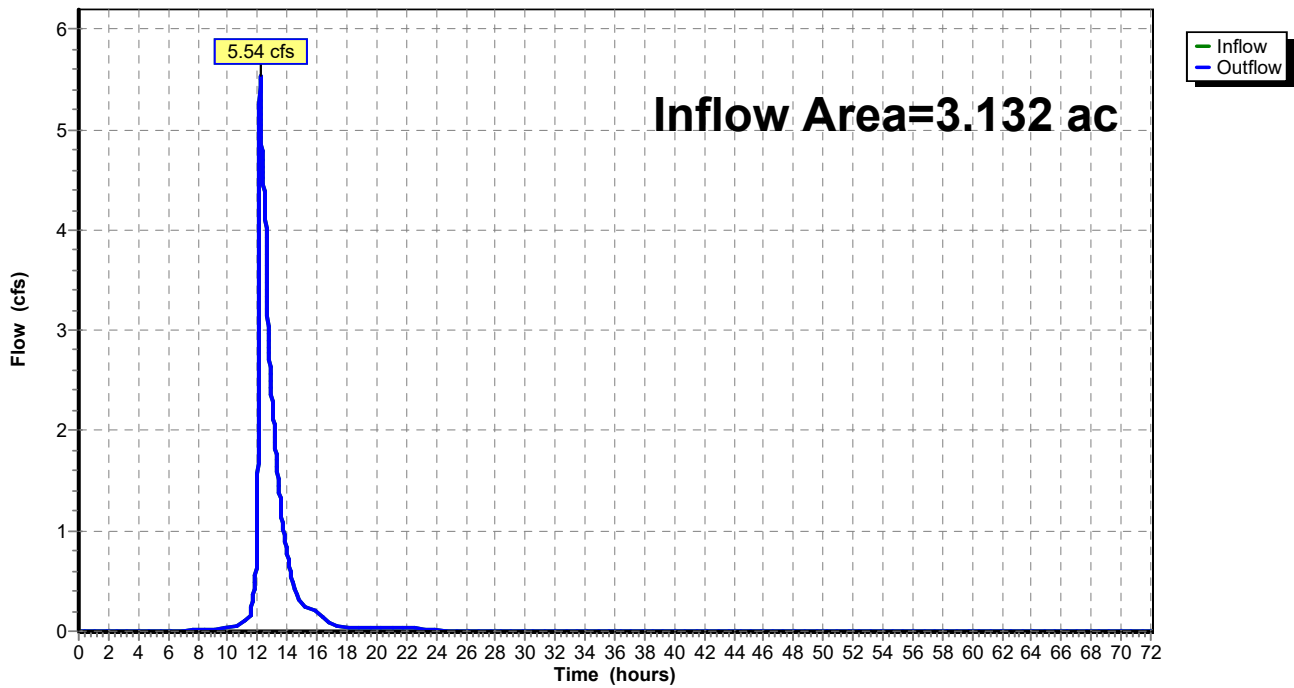
Summary for Reach AP-1: Analysis Point

Inflow Area = 3.132 ac, 75.60% Impervious, Inflow Depth = 2.03" for 100-yr event
Inflow = 5.54 cfs @ 12.18 hrs, Volume= 0.530 af
Outflow = 5.54 cfs @ 12.18 hrs, Volume= 0.530 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach AP-1: Analysis Point

Hydrograph



Summary for Pond 1P: Bypass

Inflow Area = 2.054 ac, 80.16% Impervious, Inflow Depth = 5.82" for 100-yr event
 Inflow = 14.40 cfs @ 12.04 hrs, Volume= 0.997 af
 Outflow = 14.40 cfs @ 12.04 hrs, Volume= 0.997 af, Atten= 0%, Lag= 0.0 min
 Primary = 11.54 cfs @ 12.04 hrs, Volume= 0.964 af
 Routed to Pond UG-1 : Underground Infiltration
 Secondary = 2.86 cfs @ 12.04 hrs, Volume= 0.032 af
 Routed to Pond DB-1 : Dry Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 253.85' @ 12.04 hrs
 Flood Elev= 258.20'

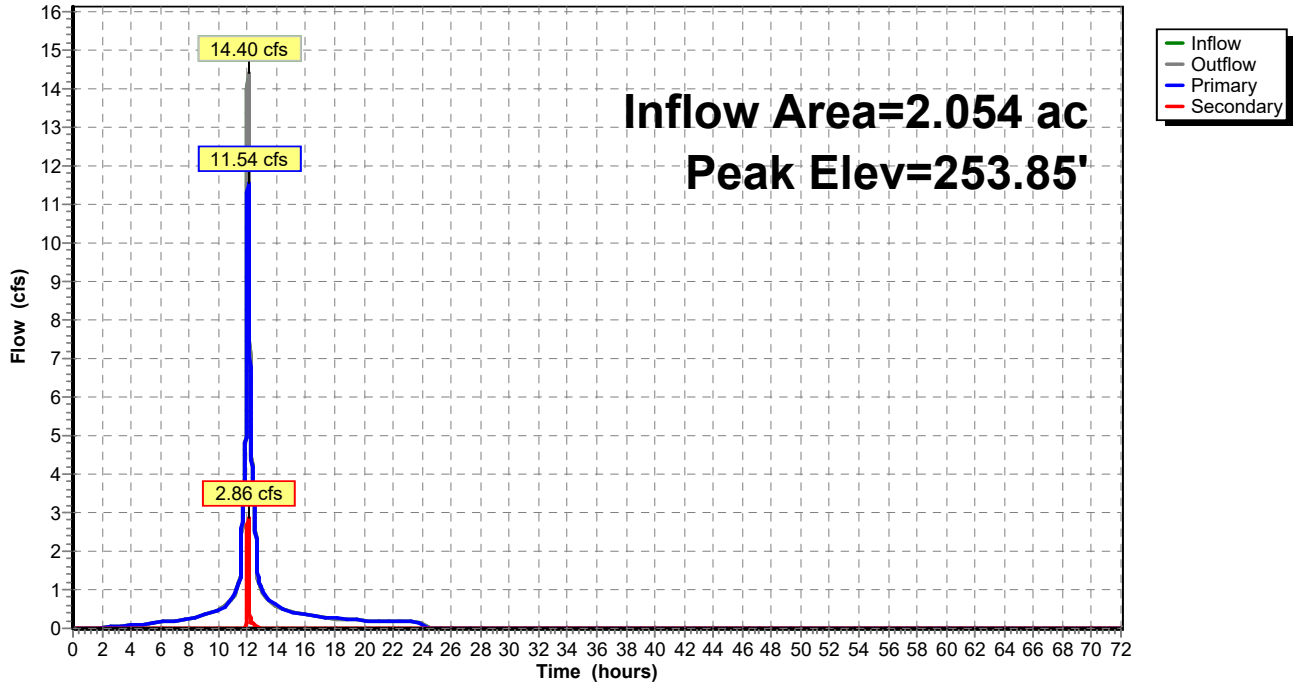
| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 251.92' | 24.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 251.92' / 251.67' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf |
| #2 | Secondary | 253.04' | 24.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.04' / 252.79' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 3.14 sf |

Primary OutFlow Max=11.51 cfs @ 12.04 hrs HW=253.85' TW=252.13' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 11.51 cfs @ 4.73 fps)

Secondary OutFlow Max=2.85 cfs @ 12.04 hrs HW=253.85' TW=245.33' (Dynamic Tailwater)
 ↑2=Culvert (Barrel Controls 2.85 cfs @ 3.53 fps)

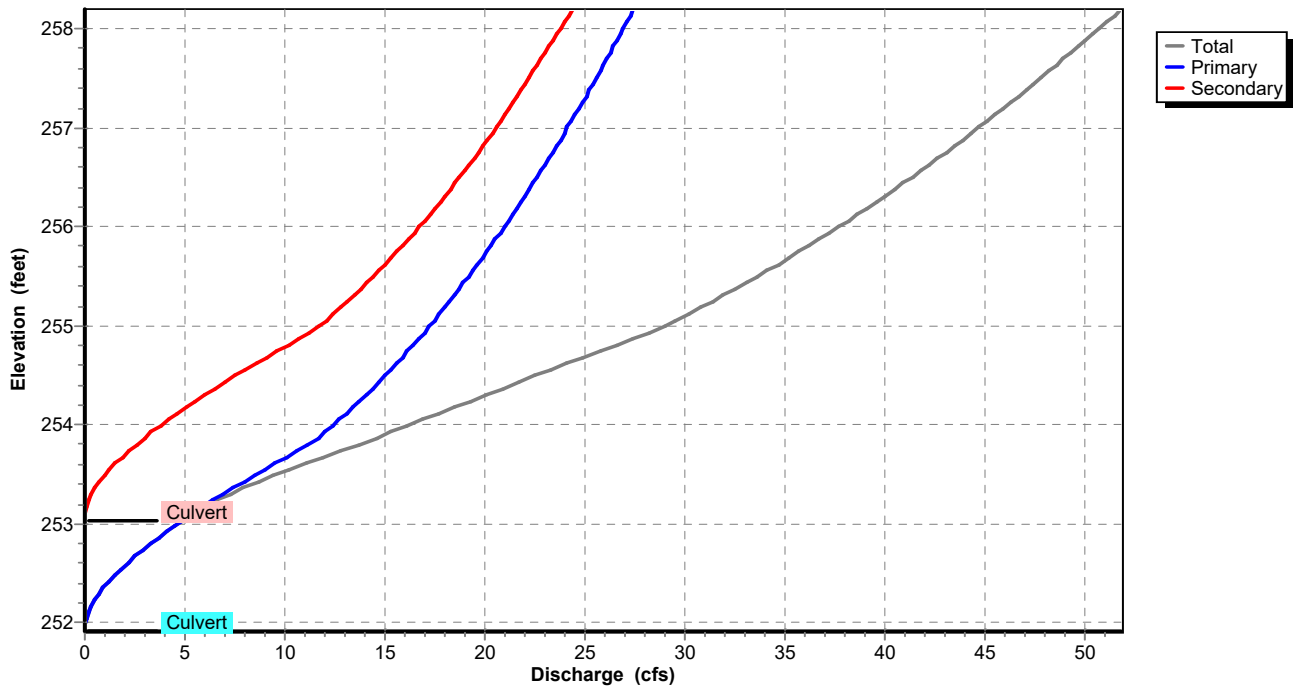
Pond 1P: Bypass

Hydrograph

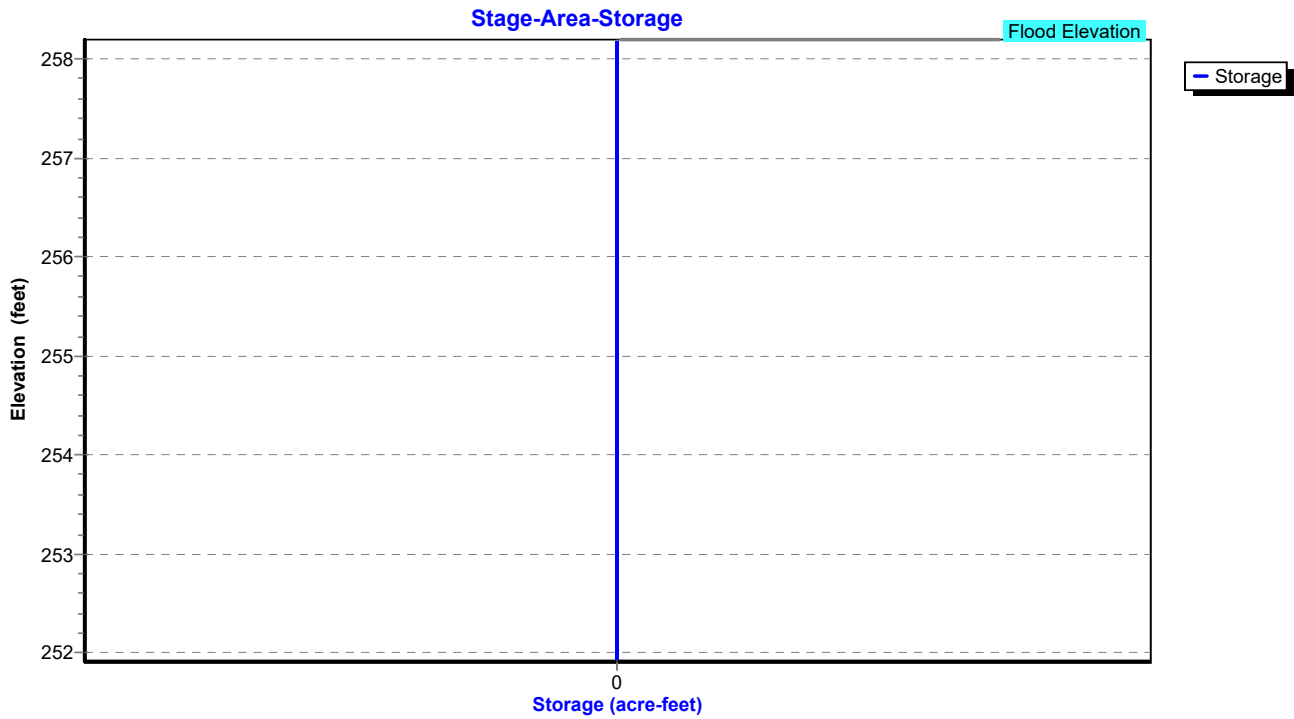


Pond 1P: Bypass

Stage-Discharge



Pond 1P: Bypass



Summary for Pond DB-1: Dry Detention Basin

Inflow Area = 2.775 ac, 85.32% Impervious, Inflow Depth = 4.04" for 100-yr event
 Inflow = 9.05 cfs @ 12.04 hrs, Volume= 0.935 af
 Outflow = 4.95 cfs @ 12.19 hrs, Volume= 0.935 af, Atten= 45%, Lag= 8.9 min
 Discarded = 0.50 cfs @ 11.59 hrs, Volume= 0.531 af
 Primary = 4.45 cfs @ 12.19 hrs, Volume= 0.403 af
 Routed to Reach AP-1 : Analysis Point
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach AP-1 : Analysis Point

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 246.30' @ 12.19 hrs Surf.Area= 2,648 sf Storage= 5,386 cf
 Flood Elev= 247.00' Surf.Area= 3,000 sf Storage= 7,375 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 46.4 min (859.9 - 813.5)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|--|
| #1 | 243.50' | 7,375 cf | Detention Storage (Prismatic) Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|------------------|-------------------|------------------------|------------------------|
| 243.50 | 1,000 | 0 | 0 |
| 244.00 | 1,500 | 625 | 625 |
| 245.00 | 2,000 | 1,750 | 2,375 |
| 246.00 | 2,500 | 2,250 | 4,625 |
| 247.00 | 3,000 | 2,750 | 7,375 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Primary | 243.60' | 12.0" Round Culvert L= 35.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 243.60' / 241.50' S= 0.0600 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf |
| #2 | Secondary | 246.85' | 10.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88 |
| #3 | Discarded | 243.50' | 0.50 cfs Exfiltration at all elevations |
| #4 | Device 1 | 246.00' | 24.0" x 24.0" Horiz. CB Grate C= 0.600 Limited to weir flow at low heads |
| #5 | Device 1 | 245.50' | 3.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads |

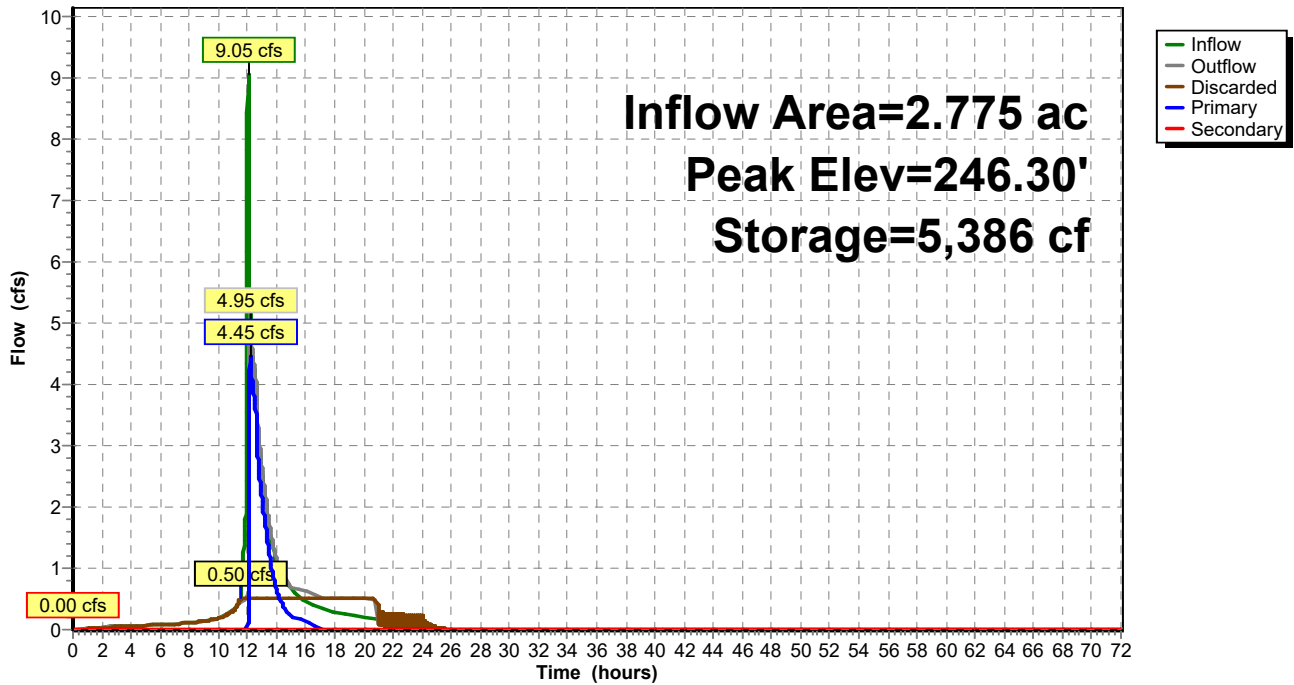
Discarded OutFlow Max=0.50 cfs @ 11.59 hrs HW=243.54' (Free Discharge)
 ↳ **3=Exfiltration** (Exfiltration Controls 0.50 cfs)

Primary OutFlow Max=4.45 cfs @ 12.19 hrs HW=246.30' TW=0.00' (Dynamic Tailwater)
 ↳ **1=Culvert** (Passes 4.45 cfs of 5.60 cfs potential flow)
 ↳ **4=CB Grate** (Weir Controls 4.21 cfs @ 1.78 fps)
 ↳ **5=Orifice/Grate** (Orifice Controls 0.25 cfs @ 3.94 fps)

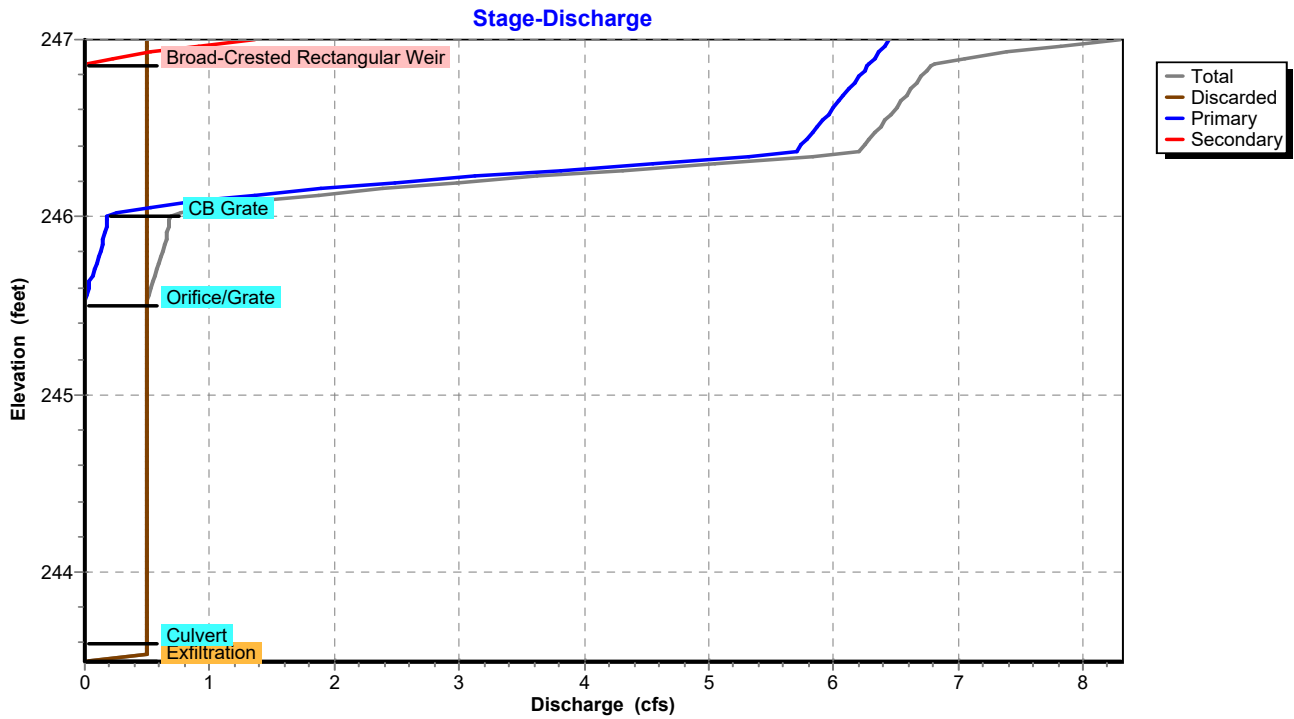
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=243.50' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond DB-1: Dry Detention Basin

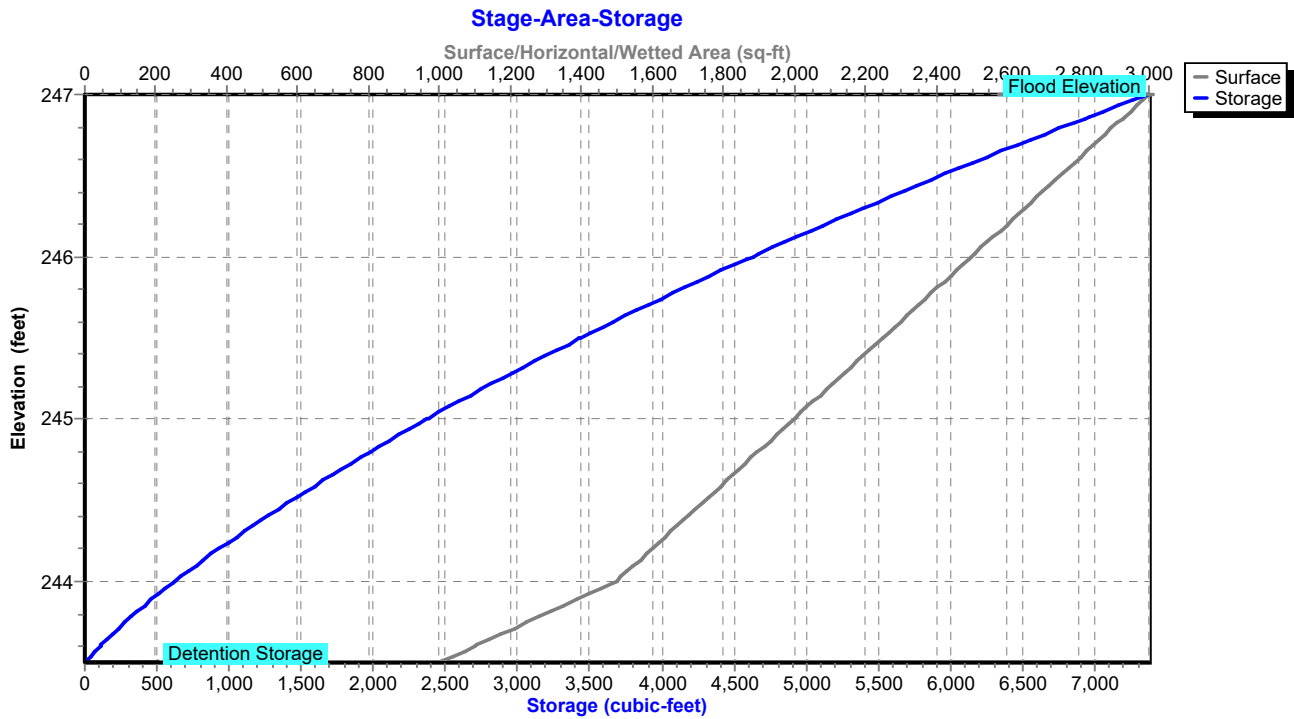
Hydrograph



Pond DB-1: Dry Detention Basin



Pond DB-1: Dry Detention Basin



Summary for Pond UG-1: Underground Infiltration

Inflow Area = 2.054 ac, 80.16% Impervious, Inflow Depth = 5.63" for 100-yr event
 Inflow = 11.54 cfs @ 12.04 hrs, Volume= 0.964 af
 Outflow = 3.06 cfs @ 12.52 hrs, Volume= 0.964 af, Atten= 73%, Lag= 28.7 min
 Discarded = 0.11 cfs @ 6.05 hrs, Volume= 0.440 af
 Primary = 2.95 cfs @ 12.52 hrs, Volume= 0.524 af
 Routed to Pond DB-1 : Dry Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 253.04' @ 12.52 hrs Surf.Area= 9,109 sf Storage= 19,352 cf
 Flood Elev= 253.67' Surf.Area= 9,109 sf Storage= 21,677 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 479.5 min (1,248.7 - 769.2)

| Volume | Invert | Avail.Storage | Storage Description |
|--------|---------|---------------|---|
| #1A | 249.67' | 9,840 cf | 77.50'W x 117.54'L x 4.00'H Field A 36,436 cf Overall - 11,837 cf Embedded = 24,599 cf x 40.0% Voids |
| #2A | 250.67' | 11,837 cf | ADS_StormTech DC-780 +Cap_1' Beddingx 256 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 256 Chambers in 16 Rows |
| | | 21,677 cf | Total Available Storage |

Storage Group A created with Chamber Wizard

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|---------|---|
| #1 | Discarded | 249.67' | 0.500 in/hr Exfiltration over Surface area |
| #2 | Primary | 251.56' | 12.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 251.56' / 251.26' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 0.79 sf |

Discarded OutFlow Max=0.11 cfs @ 6.05 hrs HW=249.71' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=2.95 cfs @ 12.52 hrs HW=253.04' TW=246.26' (Dynamic Tailwater)
 ↑2=Culvert (Inlet Controls 2.95 cfs @ 3.76 fps)

Pond UG-1: Underground Infiltration - Chamber Wizard Field A

Chamber Model = ADS_StormTechDC-780 +Cap_1' Bedding (ADS StormTech®DC-780 with cap length)

Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

16 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 115.54' Row Length +12.0" End Stone x 2 = 117.54' Base Length

16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width

12.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

256 Chambers x 46.2 cf = 11,837.2 cf Chamber Storage

36,436.4 cf Field - 11,837.2 cf Chambers = 24,599.2 cf Stone x 40.0% Voids = 9,839.7 cf Stone Storage

Chamber Storage + Stone Storage = 21,676.9 cf = 0.498 af

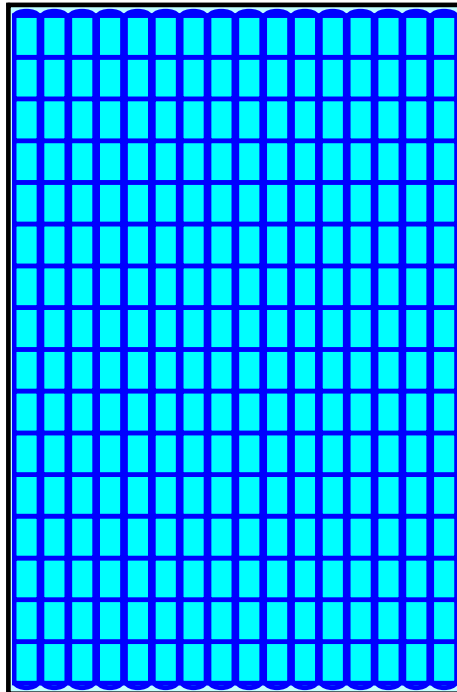
Overall Storage Efficiency = 59.5%

Overall System Size = 117.54' x 77.50' x 4.00'

256 Chambers

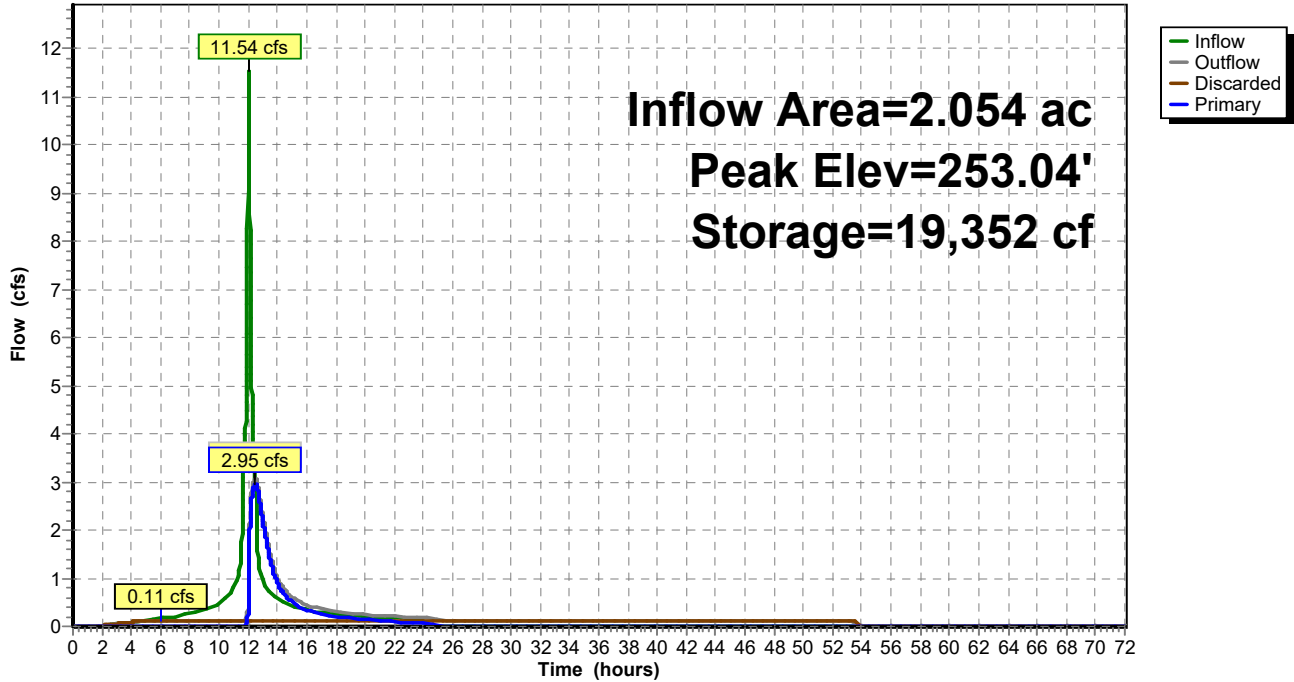
1,349.5 cy Field

911.1 cy Stone



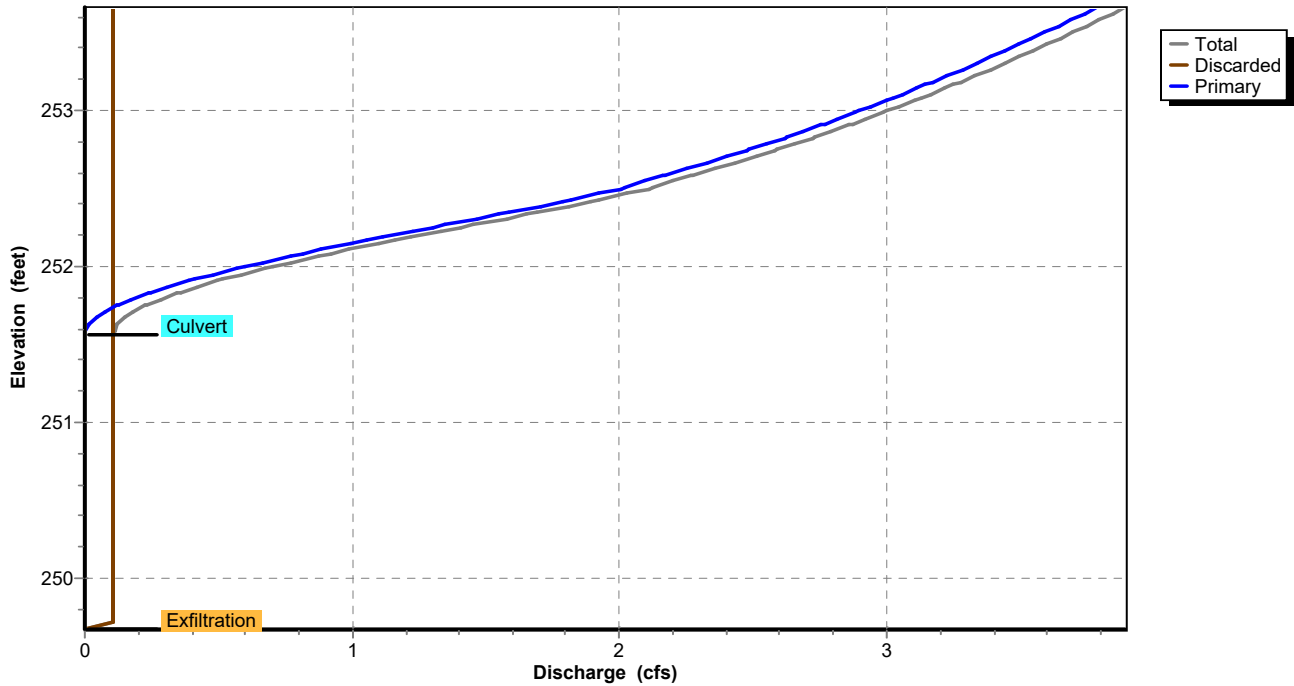
Pond UG-1: Underground Infiltration

Hydrograph

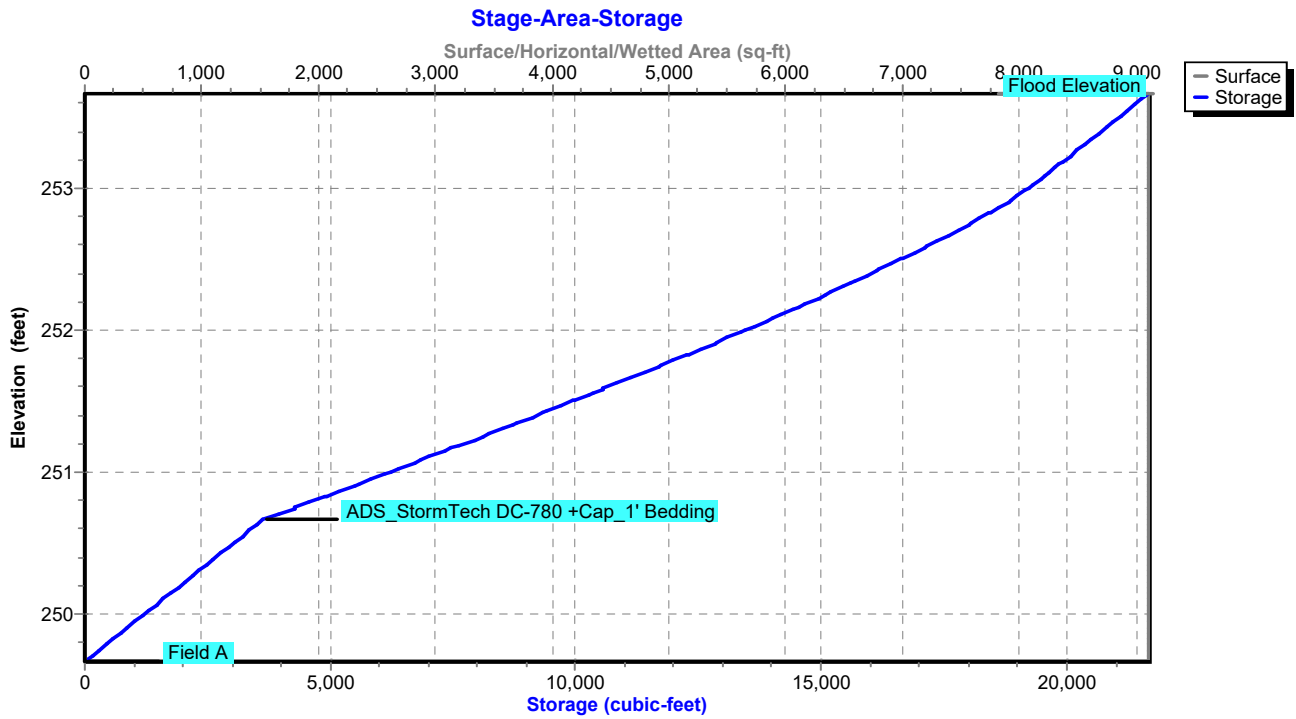


Pond UG-1: Underground Infiltration

Stage-Discharge



Pond UG-1: Underground Infiltration



Events for Reach AP-1: Analysis Point

| Event | Inflow (cfs) | Outflow (cfs) | Elevation (feet) | Storage (cubic-feet) |
|--------|-----------------|------------------|---------------------|-------------------------|
| 1-yr | 0.31 | 0.31 | 0.00 | 0 |
| 10-yr | 0.85 | 0.85 | 0.00 | 0 |
| 100-yr | 5.54 | 5.54 | 0.00 | 0 |

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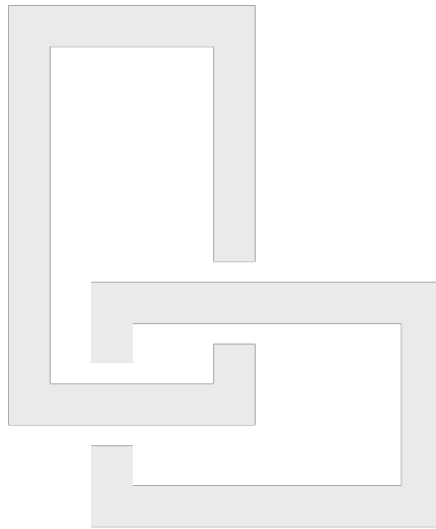
APPENDIX F:
SWPPP INSPECTION REPORT
(SAMPLE FORM)

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Prepared by:
Choose an item.
Choose an item.
Choose an item.
Choose an item.



SWPPP INSPECTION REPORT NUMBER XX
CLIENT NAME
PROJECT NAME
PROJECT ADDRESS, TOWN OF X, X COUNTY, NY



Performed: 9/29/2021 @ 12:00 AM
Report Issued: 9/29/2021

Status: Choose an item.

| | |
|--------------------------------------|---|
| _____ | _____ |
| Qualified Inspector (name and title) | Qualified Professional (name and title) |
| _____ | _____ |
| Date | Date |
| _____ | _____ |
| Signature | Signature |

NYSDEC Documentation and SWPPP Forms

NYSDEC Issued Permit Identification Number: NYRXXXXXX

5-Acre Waiver: N/A (No 5-acre waiver for this project - Contractor not authorized to disturb >5 acres)

303d Status: Project does not directly discharge to a 303d impaired waterbody

Number of Inspections required: 1 / week

Location of SWPPP and Site Log Book on-site:

| YES | NO | N/A | CONTAINED IN SITE LOG BOOK? |
|--------------------------|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Preconstruction Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | NOI Acknowledgement letter |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Copy of eNOI |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Owner / Operator Certification |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | SWPPP Preparer Certification |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | MS4 SWPPP Acceptance Form |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Contractor and Subcontractor Certifications |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | SPDES General Permit |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5 Acre Waiver |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | NOT |

Comments:

Site Conditions

| Approximate Disturbed Area at Time of Inspection: XX Acres | | | |
|--|---------------------|--------------------------------|---|
| Allowable Disturbed Area Per NOI and/or 5-acre waiver: XX Acres | | | |
| Current Status of Construction: Description | | | |
| Weather Conditions: Conditions | | Temperature: XX °F | |
| | | | Soil Conditions: Choose an item. |
| Description of Discharge Point/Natural Surface Waterbody | Condition of Runoff | Sediment Discharge Noted Y / N | Corrective Action |
| | | | |
| | | | |
| | | | |
| | | | |

Erosion and Sediment Control Deficiencies and Corrective Actions

| SWPPP Component | Functional Y / N / NA | Deficiency (See Checklist and/or note) | Deficiency Location | Initial Date | Corrective Action | Corrected Y / N |
|--------------------------------|--------------------------|--|---------------------|-----------------|-------------------|--------------------|
| General Site Conditions | | | | | | |
| Silt Fence | | | | | | |
| Stabilized Construction Access | | | | | | |
| Compost Filter Sock | | | | | | |
| Inlet Protection | | | | | | |
| Soil Stockpiles | | | | | | |
| Temporary Stabilization | | | | | | |
| Permanent Stabilization | | | | | | |
| Dewatering Operations | | | | | | |
| Stone Check Dams | | | | | | |
| Rock Outlet Protection | | | | | | |
| Sediment Traps and Basins | | | | | | |
| Temporary Stream Crossing | | | | | | |
| Pavement Sweeping | | | | | | |
| Concrete Washout | | | | | | |
| Filter Strips | | | | | | |
| Slope Protection Measures | | | | | | |
| Temporary Swales and Berms | | | | | | |
| Temporary Parking Areas | | | | | | |
| Fiber Roll | | | | | | |
| Permanent Turf Reinforcement | | | | | | |
| Water Bars | | | | | | |
| Flow Diffusers | | | | | | |
| Other: | | | | | | |

SWPPP Inspection Checklist and Deficiency Numbers

| 1 | General Site Conditions |
|----------|---|
| 1A | Adjoining properties are not protected from erosion and sediment deposition |
| 1B | Downstream waterways are not protected from erosion and sediment deposition |
| 1C | All E&SC measures have not been constructed as detailed in the SWPPP |
| 1D | Dust is not adequately controlled |
| 1E | Storage areas contain spills, leaks, or harmful materials |
| 1F | Garbage and waste building materials are not being managed properly |
| 1G | Temporary control measures that are no longer needed have not been removed |
| 1H | Permanent SWM practices not constructed per plans |

| 2 | Silt Fence |
|----------|--|
| 2A | Silt fence not installed on contour |
| 2B | Silt fence not across conveyance channels |
| 2C | Silt fence not at least 10 feet from toe of slope |
| 2D | Silt fence not at appropriate spacing intervals based on slope |
| 2E | Silt fence ends are not wrapped for continuous support |
| 2F | Silt fence fabric is loose or contains rips or frayed areas |
| 2G | Silt fence posts are unstable |
| 2H | Silt fence is not buried 6 inches minimum |
| 2I | Silt fence contains bulges or material buildup |

| 3 | Stabilized Construction Access |
|----------|---|
| 3A | Temporary construction access not installed or not per NYS standards |
| 3B | Other access areas have not been stabilized immediately as work takes place |
| 3C | Sediment has tracked onto public streets and is not being cleaned daily |
| 3D | Stone is not clean enough to effectively remove mud from vehicles |
| 3E | Adequate drainage not provided to prevent ponding |

| 4 | Compost Filter Sock |
|----------|--|
| 4A | Filter sock not installed on contour |
| 4B | Filter sock terminal ends do not extend 8' upslope at 45° angle |
| 4C | Inappropriate diameter based on slope steepness and slope length |
| 4D | Filter sock not anchored at 10' intervals |
| 4E | More than 50% sediment has built up |

| 5 | Inlet Protection |
|----------|---|
| 5A | Inlet protection not installed or installation is not per SWPPP or Blue Book specifications |
| 5B | Incorrect type(s) of inlet control installed or is inappropriate for location |
| 5C | Drainage area for inlet protection is greater than 1 acre |
| 5D | Sediment has not been removed when 50% of storage volume has been achieved |
| 5E | A 2" x 4" wood frame and wood posts has not been installed |
| 5F | Filter fabric is not buried a minimum of 1 foot below ground or secured to frame/posts |
| 5G | Posts are unstable, fabric is loose, and contains rips or frayed areas |
| 5H | Post spacing exceeds maximum 3' spacing |

| 6 | Soil Stockpiles |
|----------|--|
| 6A | No sediment controls at downhill slope |

| 7 | Temporary Stabilization |
|----------|--|
| 7A | Areas inactive for 14 days or more have not been stabilized (If <5 acres disturbed) |
| 7B | Areas inactive for 7 days or more have not been stabilized (If >5 acres disturbed or 303d) |
| 7C | Soil preparation has not been applied as specified in the SWPPP or the Blue Book |
| 7D | Rolled EC products specified for steep slopes or channels have not been installed |

| 8 | Permanent Stabilization |
|----------|---|
| 8A | Lawn in disturbed areas has not been established to 80% germination |
| 8B | Soil preparation has not been applied as specified in the SWPPP or the Blue Book |
| 8C | Rolled EC products specified for steep slopes or channels have not been installed |

| 9 | Dewatering Operations |
|----------|---|
| 9A | Upstream and downstream berms are not installed or functioning poorly |
| 9B | Clean water from upstream pool is not being pumped to the downstream pool |
| 9C | Sediment laden water from work area is not being discharged to a silt-trapping device |
| 9D | Groundwater from excavations managed improperly (No sumps/sediment control) |

| 10 | Stone Check Dam |
|-----------|---|
| 10A | Not installed per standards |
| 10B | Channel is unstable (flow is eroding soil underneath or around the structure) |
| 10C | Check dam in poor condition (rocks not in place or lack of geotextile fabric) |
| 10D | Sediment needs to be removed |

| 11 | Rock Outlet Protection |
|-----------|--|
| 11A | Rock outlet protection not installed per plan or Blue Book |
| 11B | Rock outlet protection not installed concurrently with pipe installation |

| 12 | Sediment Traps and Basins |
|-----------|--|
| 12A | Outlet structure constructed improperly |
| 12B | Geotextile fabric has not been placed beneath rock fill |
| 12C | Depth of sediment in basin has exceeded allowable threshold |
| 12D | Basin and outlet structure not constructed per the approved plan |
| 12E | Basin side slopes are not stabilized with seed/mulch |
| 12F | More than 50% capacity has built up |

| 13 | Temporary Stream Crossing |
|-----------|---|
| 13A | Construction crossings at concentrated flow areas have not been culverted |

| 14 | Pavement Sweeping |
|-----------|---|
| 14A | Pavement has not been swept daily and sediment has traveled into road |

Stormwater Management Practice Deficiencies and Corrective Actions

| Practice | Sign Y / N | Current Phase of Construction | Items Not in Conformance with SWPPP | Deficiency Location | Initial Date | Corrective Action | Corrected Y / N |
|-------------|---------------|----------------------------------|---|---------------------|-----------------|-------------------|--------------------|
| Practice 1: | | | | | | | |
| Practice 2: | | | | | | | |
| Practice 3: | | | | | | | |
| Practice 4: | | | | | | | |
| Practice 5: | | | | | | | |
| Practice 6: | | | | | | | |

Photo Log

Photo 1

Date - Item in need of repair or maintenance:

Photo 1A

Date - Corrected Action:

Photo 2

Date - Item in need of repair or maintenance:

Photo 2A

Date - Corrected Action:

Photo 3

Date - Item in need of repair or maintenance:

Photo 3A

Date - Corrected Action:

Photo Log (continued)

| | |
|---|---|
| <p><u>Photo 4</u></p> <p><i>Date - Item in need of repair or maintenance:</i></p> | <p><u>Photo 4A</u></p> <p><i>Date - Corrected Action:</i></p> |
| <p><u>Photo 5</u></p> <p><i>Date - Item in need of repair or maintenance:</i></p> | <p><u>Photo 5A</u></p> <p><i>Date - Corrected Action:</i></p> |
| <p><u>Photo 6</u></p> <p><i>Date - Item in need of repair or maintenance:</i></p> | <p><u>Photo 6A</u></p> <p><i>Date - Corrected Action:</i></p> |

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APPENDIX G:
POST-CONSTRUCTION
INSPECTIONS AND MAINTENANCE


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Infiltration Stormwater Management Practices Level 1 Inspection Checklist

| | | | | |
|---|--|--|--|---|
| SMP ID # | | SMP Owner | | <input type="checkbox"/> Private <input type="checkbox"/> Public |
| SMP Location (Address; Latitude & Longitude) | | | | |
| | Latitude | | Longitude | |
| Party Responsible for Maintenance | System Type | | Type of Site | |
| <input type="checkbox"/> Same as SMP Owner <input type="checkbox"/> Other _____ | <input type="checkbox"/> Seasonal <input type="checkbox"/> Continuous Use <input type="checkbox"/> Other | <input type="checkbox"/> Above Ground <input type="checkbox"/> Below Ground | <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> State | |
| Inspection Date | | Inspection Time | | |
| Inspector | | | | |
| Date of Last Inspection | | | | |




IN Drainage Area

Look for both pervious and impervious areas that are uphill from the Infiltration cell.

| Problem (Check if Present) | Follow-Up Actions |
|--|---|
|  | <input type="checkbox"/> Bare soil, erosion of the ground (rills washing out the dirt) <ul style="list-style-type: none"> <input type="checkbox"/> Seed and straw areas of bare soil to establish vegetation. <input type="checkbox"/> Fill in erosion areas with soil, compact, and seed and straw to get vegetation established. <input type="checkbox"/> If a rill or small channel is forming, try to redirect water flowing to this area by creating a small berm or adding topsoil to areas that are heavily compacted. <input type="checkbox"/> Other: |


IN Drainage Area

Look for both pervious and impervious areas that are uphill from the Infiltration cell.

| Problem (Check if Present) | Follow-Up Actions |
|--|---|
|  <p style="text-align: right; color: orange; font-size: small;">04/11/2011</p> | <input type="checkbox"/> Kick-Out to Level 2 Inspection: Large areas of soil have been eroded, or larger channels are forming. May require rerouting of flow paths. |
| <input type="checkbox"/> For Dry Wells: Leaves, sticks, or other debris in gutters and downspouts | <input type="checkbox"/> Remove all debris by hand. <input type="checkbox"/> Other: |
|  | <input type="checkbox"/> Piles of grass clippings, mulch, dirt, salt, or other materials <input type="checkbox"/> Remove or cover piles of grass clippings, mulch, dirt, etc. <input type="checkbox"/> Other: |
|  | <input type="checkbox"/> Open containers of oil, grease, paint, or other substances <input type="checkbox"/> Cover or properly dispose of materials; consult your local solid waste authority for guidance on materials that may be toxic or hazardous. <input type="checkbox"/> Other: |



IN Inlets

Look for all the places where water flows into the Infiltration practice.

| Problem (Check if Present) | Follow-Up Actions |
|--|---|
| <div style="display: flex; align-items: flex-start;">  <div style="margin-left: 20px;"> <ul style="list-style-type: none"> <input type="checkbox"/> Inlets are collecting grit and debris or grass/weeds are growing. Some water may not be getting into the Infiltration practice. </div> </div> | <ul style="list-style-type: none"> <input type="checkbox"/> Use a flat shovel to remove grit and debris (especially at curb inlets or openings). Parking lots generate fine grit that will accumulate at these spots. <input type="checkbox"/> Pull out clumps of growing grass or weeds and scoop out the soil or grit that the plants are growing in. <input type="checkbox"/> Remove any grass clippings, leaves, sticks, and other debris that is collecting at inlets. <input type="checkbox"/> For pipes and ditches, remove sediment and debris that is partially blocking the pipe or ditch opening where it enters the Infiltration practice. <input type="checkbox"/> Dispose of all material properly in an area where it will not re-enter the practice. <input type="checkbox"/> Other: <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> <input type="checkbox"/> Kick-Out to Level 2 Inspection: Inlets are blocked to the extent that most of the water does not seem to be entering the Infiltration practice. </div> |
| <ul style="list-style-type: none"> <input type="checkbox"/> Some or all of the inlets are eroding so that rills, gullies, and other erosion is present, or there is bare dirt that is washing into the Infiltration practice. | <ul style="list-style-type: none"> <input type="checkbox"/> For small areas of erosion, smooth out the eroded part and apply rock or stone (e.g., river cobble) to prevent further erosion. Usually, filter fabric is placed under the rock or stone. <input type="checkbox"/> In some cases, reseeding and applying erosion-control matting can be used to prevent further erosion. Some of these materials may be available at a garden center, but it may be best to consult a landscape contractor. <input type="checkbox"/> Other: <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> <input type="checkbox"/> Kick-Out to Level 2 Inspection: Erosion is occurring at most of the inlets and it looks like there is too much water that is concentrating at these points. The inlet design may have to be modified. </div> |



IN Infiltration Area

Examine the surface of the infiltration area and the observation well. Note: The following Problem and Follow-Up Actions apply to infiltration practice pretreatment areas also.

| Problem (Check if Present) | Follow-Up Actions |
|---|--|
|  <p><input type="checkbox"/> For grass-covered Infiltration practices: grass has grown very tall,</p> <p><i>Photo credit: Stormwater Maintenance, LLC</i></p> | <ul style="list-style-type: none"> <input type="checkbox"/> Mow infiltration area at least twice per year. <input type="checkbox"/> Other: |
|  <p><input type="checkbox"/> For grass-covered Infiltration practices: sparse vegetation cover or bare spots</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Add topsoil (as needed), grass seed, straw, and water during the growing season to re-establish consistent grass coverage. <input type="checkbox"/> Other: <div style="background-color: #e0e0e0; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> <input type="checkbox"/> Kick-Out to Level 2 Inspection: Sparse vegetation cover can be a sign that the infiltration area is not infiltrating at the proper rate and water is standing too long after a storm. The surface may be saturated or squishy, and the conditions do not enable grass to grow. This situation should be evaluated by a Level 2 Inspection and likely corrected by a qualified contractor. </div> |
| <p><input type="checkbox"/> Minor areas of sediment, grit, trash, or other debris are accumulating on the surface.</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Use a shovel to scoop out minor areas of sediment or grit, especially in the spring after winter sanding materials may wash in and accumulate. Dispose of the material where it cannot re-enter the Infiltration practice. <input type="checkbox"/> If removing the material creates a hole or low area, rake the surface smooth and level. <input type="checkbox"/> Remove trash, debris, and other undesirable materials. <input type="checkbox"/> Other: <div style="background-color: #e0e0e0; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> <input type="checkbox"/> Kick-Out to Level 2 Inspection: Sediment has accumulated more than 2-inches deep and covers 25% or more of the surface of the Infiltration area. </div> |


IN Infiltration Area

Examine the surface of the infiltration area and the observation well. Note: The following Problem and Follow-Up Actions apply to infiltration practice pretreatment areas also.

| Problem (Check if Present) | Follow-Up Actions |
|--|---|
|  <p><input type="checkbox"/> There is erosion on the surface; water seems to be carving out rills as it flows across the surface of the Infiltration area or sinkholes are forming in certain areas.</p> | <p><input type="checkbox"/> For minor areas of erosion, try filling the eroded areas with clean topsoil, sand, or stone (whatever the existing cover is).</p> <p><input type="checkbox"/> If the problem recurs, you may have to use larger stone (e.g., river cobble) to fill in problem areas.</p> <p><input type="checkbox"/> Other:</p> <hr/> <p><input type="checkbox"/> Kick-Out to Level 2 Inspection: The problem persists or the erosion is more than 3-inches deep and seems to be an issue with how water enters and moves through the infiltration area.</p> <p><input type="checkbox"/> Kick-Out to Level 2 Inspection: The problem does not seem to be caused by flowing water but a collapse or sinking of the surface (e.g., "sinkhole") due to some underground problem.</p> |
|  <p><input type="checkbox"/> Observation well is damaged or cap is missing</p> | <p><input type="checkbox"/> Kick-Out to Level 2 Inspection: Requires replacing pipes or caps.</p> |


IN Infiltration Area

Examine the surface of the infiltration area and the observation well. Note: The following Problem and Follow-Up Actions apply to infiltration practice pretreatment areas also.

| Problem (Check if Present) | Follow-Up Actions |
|---|--|
|  <ul style="list-style-type: none"> <input type="checkbox"/> Water still visible in the observation well more than 72 hours after a rain storm. The Infiltration practice does not appear to be draining properly. | <ul style="list-style-type: none"> <input type="checkbox"/> Kick-Out to Level 2 Inspection: This is generally a serious problem, and it will be necessary to activate a Level 2 Inspection. |

IN Outlets

Locate and inspect all outlets.

| Problem (Check if Present) | Follow-Up Actions |
|--|--|
|  <ul style="list-style-type: none"> <input type="checkbox"/> Outlet obstructed with sediment, debris, trash, etc. | <ul style="list-style-type: none"> <input type="checkbox"/> Remove the debris and dispose of it where it cannot re-enter the infiltration area. <input type="checkbox"/> Other: |
| <ul style="list-style-type: none"> <input type="checkbox"/> Rills or gullies are forming at outlet. | <ul style="list-style-type: none"> <input type="checkbox"/> For minor rills, fill in with soil, compact, and seed and straw to establish vegetation. <input type="checkbox"/> Other: |
| | <ul style="list-style-type: none"> <input type="checkbox"/> Kick-Out to Level 2 Inspection: Rills are more than 2" to 3" deep and require more than just hand raking and re-seeding. |

Additional Notes:

Inspector: _____

Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

“I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected.”

Inspector/Operator: _____

Date: _____

Infiltration Stormwater Management Practices Level 2 Inspection Checklist

| | | | | |
|---|--|--|--|----------------------------------|
| SMP ID # | | SMP Owner | | <input type="checkbox"/> Private |
| | | | | <input type="checkbox"/> Public |
| SMP Location (Address; Latitude & Longitude) | | | | |
| | Latitude | | Longitude | |
| Party Responsible for Maintenance | System Type | | Type of Site | |
| <input type="checkbox"/> Same as SMP Owner <input type="checkbox"/> Other _____ | <input type="checkbox"/> Seasonal <input type="checkbox"/> Continuous Use <input type="checkbox"/> Other | <input type="checkbox"/> Above Ground <input type="checkbox"/> Below Ground | <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> State | |
| Inspection Date | | Inspection Time | | |
| Inspector | | | | |
| Date of Last Inspection | | | | |

Level 2 Inspection: INFILTRATION

Recommended Repairs

Triggers for Level 3 Inspection

Observed Condition: Water Stands on Surface for More than 72 Hours after Storm

Condition 1: Small pockets of standing water

For infiltration basins with soil, use a soil probe or auger to examine the soil profile. For gravel infiltration trenches or basins, use a shovel to dig into the gravel layer where the problem is occurring. If isolated areas have accumulated grit, fine silt, or vegetative debris or have bad soil or clogged gravel, try removing and replacing with clean material. If the practice is supposed to have grass cover, it will likely be necessary to replant once the problem is resolved.

Condition 2: Standing water is widespread or covers entire surface

Look in the observation well (if it exists) and use a tape measure to estimate the depth of water standing in the soil or gravel. Requires diagnosis and resolution of problem:

- Too much sediment/grit washing in from drainage area?
- Too much ponding depth?
- Improper infiltration media?
- Underlying soil not suitable for infiltration?

As above, the resolution will likely require replanting and re-establishment of good grass cover if this is part of the design.

- Infiltration media is clogged and problem cannot be diagnosed from Level 2 inspection.
- Level 2 inspection identifies problem, but it cannot be resolved easily or it is associated with the original design of the practice.

Level 3 Inspection necessary

Observed Condition: Severe erosion of infiltration bed, inlets, or around outlets

Condition 1: Erosion at inlets

The lining (e.g., grass, matting, stone, rock) may not be adequate for the actual flow velocities coming through the inlets. First line of defense is to try a less erosive lining and/or extending the lining further down to where inlet slopes meet the infiltration surface. If problem persists, analysis by a Qualified Professional is warranted.

Condition 2: Erosion of infiltration bed

This is often caused by “preferential flow paths” along the surface. The source of flow should be analyzed and methods employed to dissipate energy and disperse the flow (e.g., check dams, rock splash pads).

- Erosion (rills, gullies) is more than 12 inches deep
- The issue is not caused by moving water but some sort of subsurface defect, which may manifest as a sinkhole or linear depression and be associated with problems with the underlying stone or soil.

Level 3 Inspection necessary

Notes:

Inspector: _____

Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

“I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected.”

Inspector/Operator: _____

Date: _____

Recommended Maintenance Activities for Subsurface Systems

| SCHEDULE | ACTIVITY | EQUIPMENT |
|---|---|--|
| Seasonally or as needed | <ul style="list-style-type: none"> • Remove and clean filter bag • Immediately clean up spills on the pavement draining to the green infrastructure • Sweep impervious surfaces that drain to the green infrastructure • Maintain paved cover so that it drains properly to subsurface system • Maintain vegetation cover in good condition with complete coverage (if applicable) • Clean debris from pervious surface over subsurface system, if applicable • Clean perforated pipes (if applicable) | <ul style="list-style-type: none"> • Broom • Shovel • Replacement filter bags • Jet vacuum |
| When 25% of the pipe volume has been filled | <ul style="list-style-type: none"> • Jet-vacuum sediment and debris from the header pipe. Use a high-pressure nozzle with rear-facing jets to wash the sediment and debris into the inlet or pretreatment sump | <ul style="list-style-type: none"> • Jet vacuum |
| When sediment buildup reaches half the sump capacity (e.g., six inches) | <ul style="list-style-type: none"> • Vactor sediment and debris from the pretreatment sump. • Apply multiple passes of jet vacuum until backflush water is clean | <ul style="list-style-type: none"> • Vactor truck • Jet vacuum |
| Semi-annually the first year; annually thereafter | <ul style="list-style-type: none"> • Remove sediment and debris from sumps in pretreatment and outlet control structures using a vacuum truck or similar device, after other system components such as pipes and vaults have been maintained • Replace filter bag | <ul style="list-style-type: none"> • Shovel • Jet vacuum • Replacement filter bags |
| Every five to ten years | <ul style="list-style-type: none"> • Jet-vacuum pipes clear of debris for perforated pipe and gravel bed systems, if scour protection has been installed below the pipes | <ul style="list-style-type: none"> • Jet vacuum |
| Winter considerations | <ul style="list-style-type: none"> • Break up ice formation around inlet hood | <ul style="list-style-type: none"> • Ice pick, or equivalent tool • Manhole bar |

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APPENDIX H:
NYSDEC “DEEP-RIPPING AND
DECOMPACTION,” APRIL 2008

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New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

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NYS Dept. of Agriculture & Markets)

New York State
Department of Environmental Conservation

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) “Deep Ripping,” and 2) “Decompaction” (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil’s water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor’s densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.



Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper “rips” through severely compressed subsoil.

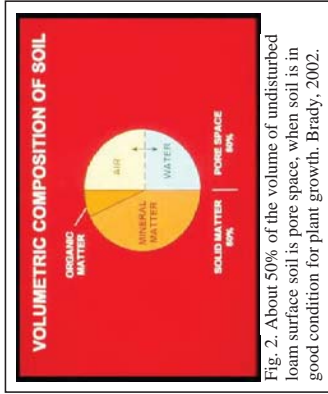


Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterally) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the “two-phase” practice of Deep Ripping and Decompaction first became established as a “best management practice” through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).



Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive “deep ripping” through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by “decompaction,” i.e.: “sub-soiling,” through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area’s direct surface infiltration of rainfall by providing the open site’s mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility/Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implementation maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

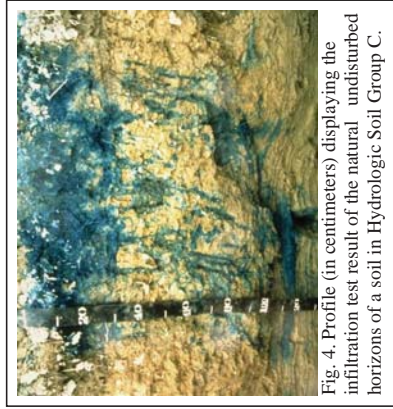


Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompaction (subsoiling); and other measures may be more practical.

Slope

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a “plastic” or “liquid” state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the “slicing and smearing” of the material or added “squeezing and compression” instead of the necessary fracturing. Ample drying time is needed for a “rippable” soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The “poor man’s Atterberg field test” for soil plasticity is a simple “hand-roll” method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a “plastic” state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.



Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistency, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

- 1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and
- 2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, “decompaction,” mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area’s soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implementations

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only “scarify” the uppermost surface portion of the mass of compacted subsoil material. The term “chisel plow” is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).



Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.



Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a “heavy duty” agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like “lifting and shattering” action up through the soil layers as it is pulled.

Pulling-Power of Equipment

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompaction a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are “chained up” so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp. (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or “teeth” of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.



Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.



Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a “normal” maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally “pieced” and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompaction (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.



Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.



Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompaction (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas

For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.
- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.
- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)



Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

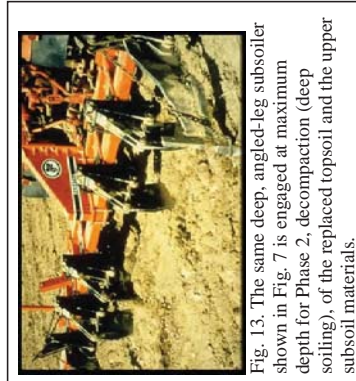


Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors

In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad "S" shaped pattern of rips, continually and gradually alternating the "S" curves between opposite edges inside the compacted corridor.
- The third and final series again uses the broad, alternating S pattern, but it is "flip-flopped" to continually cross the previous S pattern along the corridor's centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompaction is completed, two items are essential for maintaining a site's soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e.: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.



Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months, shown before deep ripping, topsoil replacement, and decompaction.



Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoling of farmland. The cost of deep ripping and decompacting (deep subsoling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at \$1800 per day, the net cost is \$900 per acre. If the Phase 2) Decompacting or deep subsoling takes 3/4 the time as Phase 1, it costs \$675 per acre for a combined total of \$1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

Resources

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- Union Gas Limited, Ontario, Canada. 1984. *Rehabilitation of Agricultural Lands, Damm-Kerwood Loop Pipeline; Technical Report*. Ecological Services for Planning, Ltd.; Robinson, Merritt & Devries, Ltd. and Smith, Hoffman Associates, Ltd.
- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York*. USDA.

Internet Access:

- Examples of implements:
 - V-Rippers. Access by internet search of [John Deere Ag-New Equipment for 915](#) (larger-frame model) *V-Ripper*; and [for 913](#) (smaller-frame model) *V-Ripper*. [Deep-angled-leg subsoiler](#). Access by internet search of: [BigHam Brothers Shear Bolt Paratill-Subsoiler](#).
http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_image/2008/feature/rippers/915v_pattern_frame.html?sub=a&link=product Last visited March 08.
- Soils data of USDA Natural Resources Conservation Service. NRCS Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov/app/> and [USDA-NRCS Official Soil Series Descriptions; View by Name](#). <http://ortho.fvw.nrcs.usda.gov/cgi-bin/losd/oshname.cgi>. Last visited Jan. 08.
- Soil penetrometer information. Access by internet searches of: [Diagnosing Soil Compaction using a Penetrometer \(soil compaction tester\)](#), [PSU Extension](#); as well as [Dickey-John Soil Compaction Tester](#). <http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf> and <http://cropsoil.psu.edu/Extension/Facts/sect178.pdf> Last visited Sept. 07

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APPENDIX I:
LABELLA CERTIFYING
PROFESSIONALS LETTER

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January 26, 2024

RE: LaBella Certifying Professionals for NYSDEC SPDES GP-0-20-001

To Whom it May Concern:

In accordance with the NYSDEC SPDES General Permit GP-0-20-001, Part VII.H.2, Robert Steehler, PE, a New York State Qualified Professional employed by LaBella Associates, is duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), Notice of Intents (NOIs) and Notice of Terminations (NOTs).

Respectfully submitted,

LaBella Associates

Timothy Webber
Vice President, Civil Division Director

Robert Steehler, PE
Senior Civil Engineer
Discipline Leader

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APPENDIX J:
NYSDEC SPDES GENERAL PERMIT
GP-0-20-001

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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


Authorized Signature _____ Date 1-23-20

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**

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater discharges to surface waters of the State from the following construction activities identified within 40 CFR Parts 122.26(b)(14)(X), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. Construction activities involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land; excluding routine maintenance activity that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. Construction activities involving soil disturbances of less than one (1) acre where the Department has determined that a SPDES permit is required for stormwater discharges based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to surface waters of the State.
3. Construction activities located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The owner or operator must select, design, install, implement and maintain control measures to minimize the discharge of pollutants and prevent a violation of the water quality standards. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the owner or operator must include in the Stormwater Pollution Prevention Plan ("SWPPP") the reason(s) for the

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 discharges;
 - (ii) Control stormwater discharges, 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 discharges from the site;
 - (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, 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.** Discharges from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

- (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;
- (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and
- (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited Discharges.** The following *discharges* are prohibited:

- (i) Wastewater from washout of concrete;
- (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

- (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-developed 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-developed 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 *discharges* directly to tidal waters, or fifth order or larger streams.

- (iv) **Overbank Flood Control Criteria (Qp)**: Requires storage to attenuate the post-developed 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-developed 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.

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 (Op): 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 *discharges* 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 *discharges* 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 *discharges* 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 *discharges* 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 *discharges*; 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 *discharges* 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. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;
4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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 *discharges* 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 *discharges* 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. *Discharges* 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 *discharges* 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 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* is not the *owner or operator of 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

1. 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 6 NYCRR 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 §1-1933 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, Cp, 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 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 sources*. 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 sources*, 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**

| | | |
|--|--|--|
| <p>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</p> <ul style="list-style-type: none"> • Single family home <u>not</u> located in one of the watersheds listed in Appendix C or <u>not directly discharging</u> 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 <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E • Construction of a barn or other <i>agricultural building</i>, silo, stock yard or pen. | <p>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</p> <p>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.</p> | <p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none"> • 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

| |
|---|
| <p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none"> • 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 <i>alter hydrology from pre to post development</i> conditions. • Athletic fields (natural grass) that do not include the construction or reconstruction of <i>impervious area and</i> do not <i>alter hydrology from pre to post development</i> 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 <i>impervious cover</i> • 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 <i>impervious area</i> • Temporary access roads, median crossovers, detour roads, lanes, or other temporary <i>impervious</i> 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

| |
|--|
| <p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none"> • Single family home located in one of the watersheds listed in Appendix C or <i>directly discharging</i> 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 <i>directly discharging</i> 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 <i>alter the hydrology from pre to post development</i> conditions • Commercial developments • Churches and other places of worship • Construction of a barn or other <i>agricultural building</i> (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 <i>impervious area</i>, 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

| |
|--|
| <p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none"> • 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 <i>impervious cover</i>, 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 <i>impervious area</i> 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”).

- | |
|--|
| <ul style="list-style-type: none"> • 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

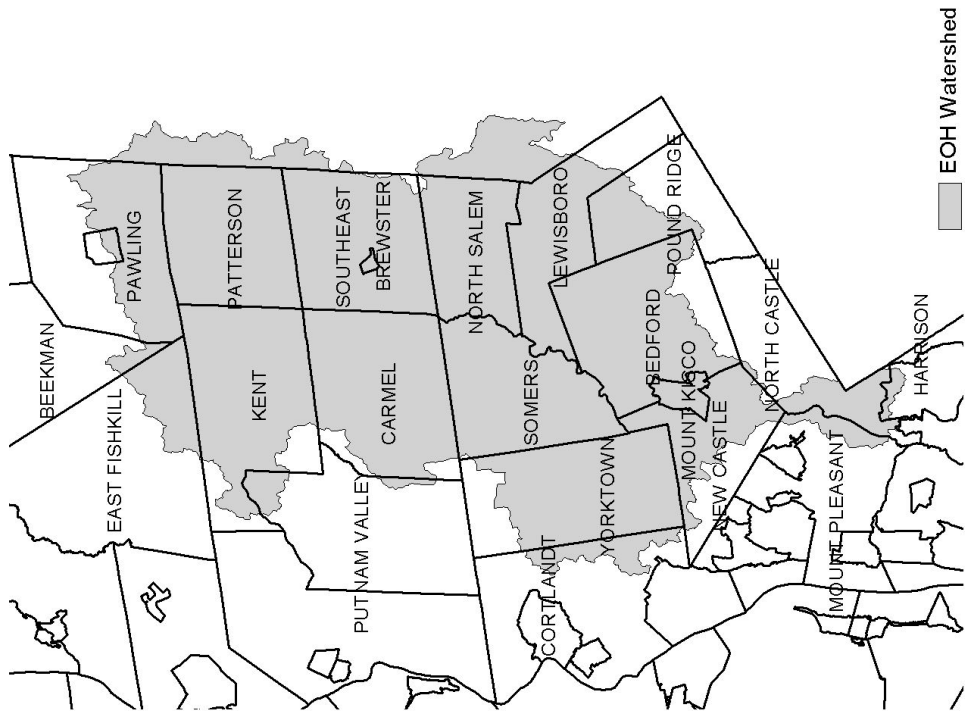


Figure 2 - Onondaga Lake Watershed

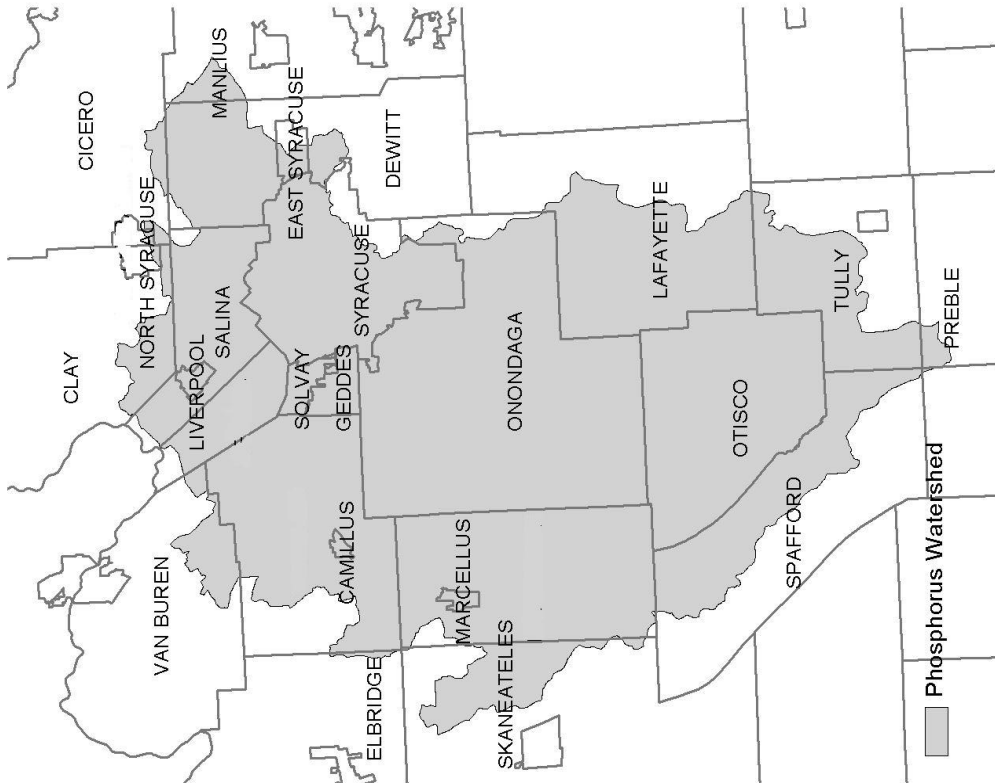


Figure 3 - Greenwood Lake Watershed

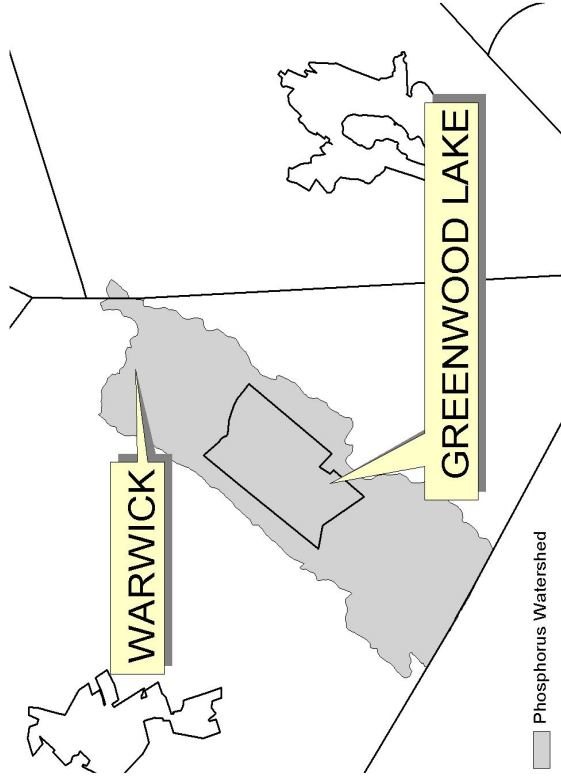


Figure 4 - Oscawana Lake Watershed

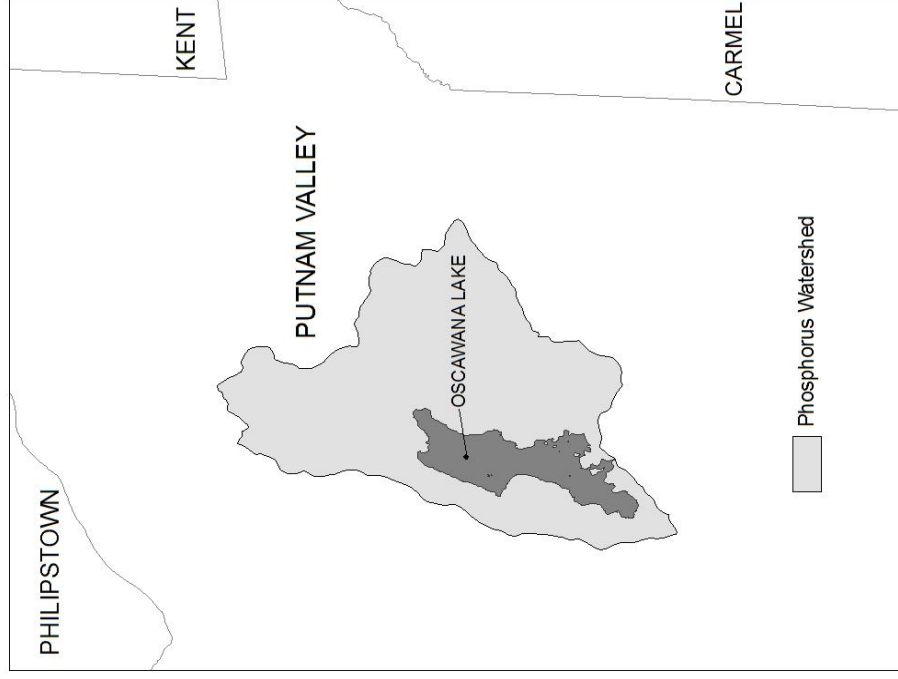
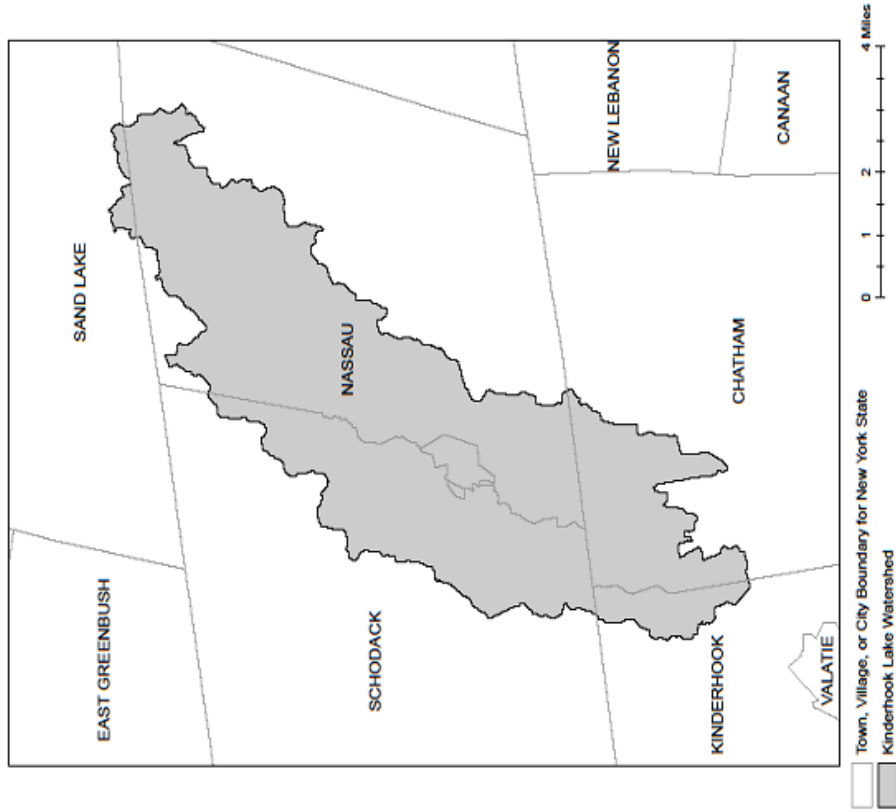


Figure 5 - Kinderhook Lake Watershed



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

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 |

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 | Linyco/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)

| | | |
|----------|--|---------------|
| 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 | Trib (fresh) to East Bay | Nutrients |
| Nassau | Trib (fresh) to East Bay | Silt/Sediment |
| Nassau | Trib 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 | Trib 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 (Maratooka) 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 | BROOK, 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, P O 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 AVONLIMA ROAD AVON, NY 14414-9519 TEL. (685) 226-2466 | 6274 EAST AVONLIMA RD. AVON, NY 14414-9519 TEL. (685) 226-2466 |
| 9 | ALLEGANY, CATTARAUGUS, CHAUTAUGUA, 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 |