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Stormwater Pollution Prevention Plan (SWPPP)

Amherst Central Park

North Forest Road & Sheridan Drive, Amherst, NY

Prepared for:
Town of Amherst
5583 Main Street
Williamsville, NY 14221

July 15, 2026

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Permit No. GP-0-25-001

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1.0 Introduction

The Clean Water Act states that storm water discharges associated with an industrial activity from a point source, including through a separate municipal storm sewer system, is unlawful unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. In New York State, the New York State Department of Environmental Conservation (NYSDEC) administers the NPDES through the State Pollution Discharge Elimination System (SPDES) program. According to the SPDES General Permit, construction sites or common plans of development, that result in soil disturbance of one or more acres that are not classified single family residential or agricultural, are subject to permitting requirements.

This plan outlines the manner in which to reduce the potential of storm water runoff pollution and assigns responsibilities to ensure that the contractor and his subcontractors implement the requirements of the Storm Water Pollution Prevention Plan (SWPPP) during construction activities until the site is stabilized. The SWPPP was developed based on the SPDES General Permit for Storm Water Discharges from Construction Activity Permit No. GP-0-25-001, dated January 29, 2025.

2.0 Notice of Intent Requirements

To obtain coverage under the construction general permit, an electronic Notice of Intent (eNOI) must be submitted using the New York State Department of Environmental Conservation's nForm portal.

A completed copy of the eNOI form has been included in Appendix B.

3.0 Stormwater Pollution Prevention Plan

General

This Storm Water Pollution Prevention Plan (SWPPP) was developed to set operating guidelines during construction activities. A copy of this SWPPP shall be retained at the construction site throughout the duration of this project.

The Contractor shall meet all conditions of this SWPPP and all conditions within the NYSDEC SPDES General Permit for Stormwater discharges from Construction Activities - Permit No. GP-0-25-001 dated January 29, 2025. The contractor shall be responsible for all measures of the SWPPP including being responsible for any subcontractors who may implement the SWPPP.

During the course of the project and upon approval by the owner, the contractor shall amend the plan whenever there is a change in construction, operation, or maintenance, which may have an effect on the potential for the discharge of pollutants. In addition, if a new subcontractor is utilized at the site who will implement tasks included in the plan, the SWPPP shall be amended.

3.1 Site Description

The project site is located at the northwest corner of the intersection of North Forest Road and Sheridan Drive, in the Town of Amherst, New York. (See Location Map in Appendix A). The parcel size is approximately

8.0 +/- acres. The site is currently developed and consists of an existing parking lot with a total of 85 parking space, including 12 HC accessible spaces, an existing tennis court and maintained lawn area.

The soil on site according to the USDA NRCS Soil Survey consists of Claverack loamy fine sand, which is listed as HSG 'C/D'. For soils assigned to a dual hydrologic soil group, the first letter is for drained areas and the second is for undrained areas. Only soils that in their natural condition are in group 'D' are assigned to dual classes.

Upon review of the New York State Historic Preservation Office's GIS for Archeological and National Register online resources tool, no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

Under existing conditions, there are two (2) main drainage areas, labeled "North Drainage Area" and "South Drainage Area", as shown on the Existing Drainage Analysis Map. The North Drainage Area consists of the existing parking lot, existing access drive and some lawn areas. Stormwater runoff from the North Drainage Area flows overland and is collected in the catch basin within the existing parking lot. Stormwater discharges from this catch basin flow further north within an enclosed drainage system within the golf course facility. The South Drainage Area consists of the existing tennis court and lawn areas along the southern portion of the site. Stormwater runoff from the South Drainage Area flows overland and is conveyed to the catch basin within the existing parking lot in the North Drainage Area. Stormwater discharges from this catch basin flow further north within an enclosed drainage system within the golf course facility.

Development will consist of the demolition of the existing tennis court to allow for the construction of an ADA accessible playground, seatwalls, a new parking lot/flexible space for public events and/or vendors, walkways and utility infrastructure (domestic water, sanitary sewer lateral and electric service for a future restroom building). Additionally, a stormwater management system consisting of a bioretention basin, a proprietary stormwater filter and underground detention will be provided for the site.

Stormwater runoff under proposed conditions will continue to follow the same drainage patterns as under existing conditions.

Under proposed conditions, there are two (2) main drainage areas, as shown on the Proposed Drainage Analysis Map. The North Drainage Area consists of the existing parking lot, existing access drive, new concrete sidewalks and lawn areas. Stormwater runoff from the North Drainage Area will continue to flow overland and will be collected in the catch basin within the existing parking lot. Stormwater discharges from this catch basin flow further north within an enclosed drainage system within the golf course facility. The South Drainage Area is broken up into three (3) subareas, labeled "South Drainage Area from Playground", "South Drainage Area to Bioretention" and New Bldg to Filter. The South Drainage Area from Playground consists of the proposed ADA playground area. Stormwater runoff from this area will be collected and piped to the dry detention basin. From the dry detention basin, stormwater discharges will be released at a controlled rate and then piped to the existing catch basin within the existing parking lot in the North Drainage Area. The South Drainage Area to Bioretention consists of the new asphalt paved parking lot/flexible space and lawn areas along the southern portion of the site. Stormwater runoff from this area will be collected and treated within a bioretention basin, prior to be directed to the dry detention basin. From the dry detention

basin, stormwater discharges will be released at a controlled rate and then piped to the existing catch basin within the existing parking lot in the North Drainage Area. The New Bldg to Filter consists of the new restroom building. Stormwater runoff from this area will be piped to a proprietary filter and then piped to the dry detention basin. From the dry detention basin, stormwater discharges will be released at a controlled rate and then piped to the existing catch basin within the existing parking lot in the North Drainage Area.

Upon completion, the proposed project will add 0.55 acres of new impervious cover. The total anticipated ground disturbance during construction of this project will be approximately 2.1 +/- acres.

The proposed building and the proposed playground are not located in the 100-year flood plain. The site is located in "Zone X" per FEMA Firm Panel 36029C0207H, effective date 6/7/2019.

Construction Sequence

Below is a description of the intended sequence of major construction activities which involve soil disturbance:

- ◆ Install erosion and sediment control facilities.
- ◆ Clear, grub and install temporary erosion and sediment controls simultaneously where possible.
- ◆ Remove debris from site. (Debris to be disposed of in a NYSDEC approved landfill approved to accept this type of material.)
- ◆ Remove, stockpile and seed any excess topsoil and install temporary erosion and sediment controls simultaneously.
- ◆ Excavate and rough grade the construction site and stormwater management facilities.
- ◆ Install utilities, construct playground, install pavement and pour concrete sidewalks.
- ◆ Final grade, replace topsoil, seed and mulch all disturbed turf areas outside of pavement limits immediately upon acceptance of the grade.
- ◆ Replace remaining topsoil and seed and mulch all areas disturbed from construction activities.
- ◆ After stabilization, remove temporary erosion and sediment controls.

Contacts

Plans and details for temporary stormwater controls have been included in Appendix G. The plans have been included to indicate grading limits, drainage patterns, grade slopes, and location of erosion and sediment controls and storm water discharge locations.

The owner/operator is: Town of Amherst
5583 Main Street
Williamsville, NY 14221

The contact person is: Vaishali Reberholt
716-631-7154
VReberholt@amherst.ny.us

3.2 Construction Controls

The Contractor shall be required to construct and maintain the following controls in accordance with this document and the associated Contract Documents for this project. There shall not be more than five (5) acres of disturbed soil at any one time, without prior written approval from the MS4. Additionally, the MS4 shall be notified when any shutdown or decrease in inspection frequency is anticipated.

Stabilization Practices

1. Seeding
 - a. Immediately after completion of grading operations, topsoil shall be replaced and all areas disturbed from grading operations shall be seeded in an effort to stabilize the site. Where land disturbance is necessary, temporary seeding or mulching must be used on areas which will be exposed for more than 14 days. Permanent stabilization should be performed as soon as possible after completion of grading.
2. Mulching
 - a. Directly after seeding, all disturbed areas shall be mulched to prevent surface compaction, reduce runoff and erosion, control weeds and help establish plant cover.
3. Preservation of Vegetation
 - a. The contractor shall make every effort to protect trees, shrubs, ground cover and any other vegetation adjacent to the work areas. The purpose of preserving existing vegetation where obtainable is to reduce soil erosion and enhance water quality.
4. Dust Control
 - a. Dust resulting from land-disturbing activities shall be controlled to prevent surface and air movement of dust from disturbed soil surfaces. Dust control measures are necessary on construction roads, access points and other disturbed areas subject to dust movement.
5. Equipment/Material Storage
 - a. An equipment and material storage area is to be determined between the contractor and owner prior to the start of construction. The location of the storage area may be modified if deemed necessary and documented in the SWPPP documents. The storage area will be graded to ensure that any material spillage shall be directed away from the adjacent property. In addition, any identified chemical spills (oil, grease, etc.) shall be addressed immediately, a written log prepared and kept on-site with the SWPPP and appropriate local officials contacted, if necessary.
6. Temporary Soil Stockpiles
 - a. A temporary stockpile area is to be determined between contractor and the owner prior to the start of construction. The shape, size and location of this area may be modified by the site

contractor if deemed necessary and documented in the SWPPP documents. The stockpile area shall be perimeter protected with silt fence and seeded as soon as possible to minimize the potential for sediment transport and erosion.

7. Staging Area

- a. The contractor staging area is to be determined between the contractor and owner prior to the start of construction. The shape, size and location of this area may be modified by the site contractor if deemed necessary and documented in the SWPPP documents.

Structural Practices

1. Silt Fence/Silt Sock (Temporary)

- a. A silt fence/silt sock is used to intercept sheet flow runoff from small drainage areas. The silt fence also reduces runoff velocity and promotes deposition of transported sediment.
- b. Silt fence/silt sock shall be maintained to prevent sediment bypass and shall be removed and replaced when bulges develop in the silt fence.

2. Storm Drain Inlet Protection (Temporary)

- a. A storm drain inlet barrier shall be installed around inlets. The purpose is to prevent sediment - laden water from entering inlets to a storm drain system.
- b. Inspect and clean after every storm. Sediment should be removed when 50 percent of the storage volume is achieved. This material should be incorporated in the site in a stabilized manner.

3. Stabilized Construction Entrance (Temporary)

- a. A stabilized construction entrance shall be constructed where traffic will be entering or leaving a construction site to or from a street, alley, sidewalk or parking area. The purpose of the stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public streets.

4. Concrete Washout (Temporary)

- a. A concrete washout area shall be constructed a minimum of 50' away from open channels, storm drain inlets, sensitive areas, wetlands, buffers, water course, and away from construction traffic. The purpose of the concrete washout area is to capture and collect contaminated water and slurry from washing concrete trucks and equipment and prevent it from entering the environment and the proposed design.

Other Pollution Prevention Measures (Chemicals and Debris)

1. The Contractor shall be responsible for providing onsite trash receptacles appropriate to store all litter, construction chemicals and construction debris. The contents of the receptacles shall be properly disposed of at a NYSDEC licensed waste facility (or equal).

2. Hazardous products shall be maintained in their original containers when possible, and be kept with their original labels and applicable Material Safety Data Sheets (MSDS);
3. Fertilizers shall only be applied as recommended by the manufacturer, and once applied shall be worked into the soil to limit exposure to storm water runoff. Storage shall be within an enclosed or covered area.
4. Paints, coatings and sealants shall be maintained in a tightly enclosed, leak-proof container at all times. Excess materials shall be disposed of as required by applicable laws and regulations.
5. Excess concrete material shall be removed and disposed of off-site in an appropriate manner. Concrete wash water shall not be allowed to discharge to storm water conveyances.
6. All petroleum product spills, if such occurs, shall be cleaned up immediately, the source of the spill be repaired or removed, and contained material shall be disposed of as required by applicable law. In the event a spill, the contractor shall contact the NYSDEC Spills Hotline at 1-800-457-7362 to report such spill. Within 2 hours of discovery, except spills which meet all of the following criteria:
 - a. The quantity is known to be less than 5 gallons; and
 - b. The spill is contained and under the control of the spiller; and
 - c. The spill has not and will not reach the State's water or any land; and
 - d. The spill is cleaned up within 2 hours of discovery.
 - e. A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.

More details on notification and reporting requirements can be found at the NYSDEC Website (<http://www.dec.ny.gov/chemical/8428.html>)

Good Housekeeping and Control of Construction Wastes and Chemicals

1. Good Housekeeping
 - a. It is anticipated that construction materials such as concrete, asphalt, petroleum based products, stone, and fertilizers will be present on-site at various stages during the project. In order to prevent the conveyance to and contamination of any adjacent and/or downstream property, lands or water bodies, good housekeeping practices shall be employed. Such precautions shall include:
 - i. Storing of only enough materials to complete the project, or active phases of the project;
 - ii. Materials stored on-site shall be stored in a neat and orderly manner and in their appropriate containers and, if possible, under a covered area or enclosed structure;

- iii. The manufacturer's recommendations for use and disposal shall be followed at all times;
 - iv. The project site superintendent shall inspect the site daily to ensure proper use, storage and disposal of all materials on-site.
2. Hazardous Products
- a. Hazardous products shall be maintained in their original containers when possible, and be kept with their original labels and applicable Material Safety Data Sheets (MSDS);
 - i. All petroleum product spills, if such occurs, shall be cleaned up immediately, the source of the spill be repaired or removed, and contained material shall be disposed of as required by applicable law.
 - ii. Fertilizers shall only be applied as recommended by the manufacturer, and once applied shall be worked into the soil to limit exposure to storm water runoff. Storage shall be within an enclosed or covered area.
 - iii. Paints, coatings and sealants shall be maintained in a tightly enclosed, leak-proof container at all times. Excess materials shall be disposed of as required by applicable laws and regulations;
 - iv. Excess concrete material shall be removed and disposed of off-site in an appropriate manner. Concrete wash water shall not be allowed to discharge to storm water conveyances.

3.3 Stormwater Management

The best approach to storm water management for construction activities is through the use of self-designed Storm Water Pollution Prevention Plan (SWPPP). The development of the SWPPP through the use of Best Management Practices (BMP) is to prevent erosion and pollutants from the construction materials mixing with storm water runoff and being discharged from the project site. BMP's should be designed to prevent, or at least control, the pollution of storm water before it has a chance to affect receiving waters. Using BMP's in this way improves the discharge water quality.

Specific requirements for management of storm water and maintaining water quality include, but are not limited to:

- 1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural condition;
- 2. There shall be no suspended, colloidal, and 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, visible oil film, globules or grease.

In addition, local ordinances may affect these Best Management Practices. Any conditions or specific local ordinances are to be included in the development of the BMP's for the project.

3.4 Post Construction Water Quality & Quantity Controls

Water Quality

Chapters 3-5 of the NYSDEC Stormwater Management Design Manual (SMDM) provides a green infrastructure approach to stormwater management to reduce a site's impact on the aquatic ecosystem through the use of site planning techniques, runoff reduction techniques, and standard SMP's. Runoff Reduction Volume (RRv) is the reduction of the total Water Quality Volume (WQv) by application of green infrastructure techniques and SMP's to replicate pre-development hydrology.

Outlined below is the NYSDEC SMDM site planning flowchart in relation to this site.

Step 1: Site Planning – Green Infrastructure Method to Preserve Natural Resources and Reduce Impervious Cover

1. Preservation of Undisturbed Areas
 - a. Vegetative areas and natural terrain has been retained to the maximum extent practical/possible.
2. Preservation of Buffer
 - a. Natural vegetative buffer has been retained to the maximum extent practical/possible.
3. Reduction of Clearing and Grading
 - a. Clearing and grading has been limited to the least amount possible while still allowing for development of the site.
4. Locating Development in Less Sensitive Areas
 - a. The proposed development is not located within an area that hosts historic buildings or archeological sensitive areas, as listed on the NYS Office of Parks, Recreation and Historic Preservation website. The project will have no effect upon the buildings or archeological sensitive areas, in or eligible for inclusion in the National Register of Historic Places.
5. Open Space Design
 - a. The impervious cover has been minimized to the smallest extent possible.
6. Soil Restoration
 - a. Soil restoration will be applied to disturbed lawn areas.
7. Roadway Reduction
 - a. Roadway widths and lengths have been minimized to the maximum extent possible while still maintaining the intended use of the site.
8. Sidewalk Reduction
 - a. Sidewalk widths and lengths have been minimized to the smallest extent possible while still maintaining accessibility to the building.
9. Driveway Reduction
 - a. Vehicle access to the building additions will be through the existing driveways and existing access drives on site.
10. Cul-de-sac Reduction

- a. This project does not include a cul-de-sac. Therefore, cul-de-sac reduction is not applicable
- 11. Building Footprint Reduction
 - a. The proposed building has been minimized to the smallest extent possible.
- 12. Parking Reduction
 - a. Parking areas have been reduced to the maximum extent possible.

Step 2: Water Quality Volume

The total water quality volume required is 2,510 cf.

Step 3: Runoff Reduction – Runoff Reduction by Applying Green Infrastructure Techniques and Standard SMPs with RRV Capacity.

1. Conservation of Natural Areas
 - Natural areas and natural terrain have been retained to the maximum extent practical/possible while still allowing for the buildout of the property.
2. Sheet flow to Riparian Buffers or Filter Strips
 - No riparian buffers are present on site.
3. Vegetated Open Swale
 - No vegetated swales are present on site.
4. Tree Planting / Tree Box
 - New trees will be planted on-site to enhance the landscaping on-site and meet the Town's landscaping requirements. Although trees will be planted, RRV credit cannot be used as stormwater runoff will be directed to a proprietary SMP.
5. Disconnection of Rooftop Runoff
 - The building's roof drains will be disconnected and allowed to sheet flow over lawn areas.
6. Stream Daylighting
 - Not applicable – This situation does not exist on this site.
7. Rain Garden
 - This method was considered but a bioretention basin was a more practical application.
8. Green Roof
 - Not applicable – This situation does not exist on this site.
9. Stormwater Planters
 - This method was considered but a bioretention basin was a more practical application.
10. Rain tanks/Cisterns
 - This method was considered, however, landscape irrigation will not be a concern.
11. Porous Pavement
 - Not applicable – Maintenance issues and the use of salts for parking lot deicing make this option impractical. Impervious soils on site make this option infeasible.
12. Standard SMPs with RRV Capacity

- One (1) filtration bioretention basin will be used to meet the RRv minimum and a portion of the Water Quality volume requirement for this project.

The NYSDEC SMDM's intent is for projects to meet 100% of runoff reduction volume through the use of green infrastructure techniques. Projects that do not achieve runoff reduction to pre-construction condition must, at a minimum, provide the minimum RRv as well as provide the remaining WQv in standard SMPs.

One (1) bioretention basin will be used to provide the minimum RRv required and a portion of the water quality volume. Additionally, one (1) proprietary stormwater treatment unit will be used to provide the remainder of the water quality volume.

Below is a summary of the water quality volume and runoff reduction volumes attained on site:

Water Quality Volume Required from New Impervious Area	2,178 cf
Water Quality Volume Required from Redeveloped Impervious Area	1,329 cf
Water Quality Volume Required to be treated with a Standard Practice	2,510 cf
= 100% of WQv from new, impervious area + 25% of WQv from redeveloped, impervious area	
= 2,178 cf + 0.25(1,329 cf) = 2,510 cf	
Minimum Runoff Reduction Volume Required (RRv, min)	379 cf
Bioretention Basin (provided in South Drainage Area to Bioretention):	
WQ _v Required	2,423 cf
Total WQ _v Provided	2,423 cf
RR _v Provided	969 cf
(Filtration Bioretention = 40% of WQv provided)	
WQv provided (Total WQv – RRv Provided)	1,454 cf
Filter #1 (Up-Flo Filter provided for New Restroom Building):	
WQ _v Required	162 cf
WQ _v Provided	162 cf
Water Quality Flowrate	0.07 cfs
WQv Provided	1,616 cf
RRv Provided	969 cf
Total WQv Provided (WQv Provided = RRv Provided)	2,585 cf

Post construction maintenance of the proposed underground detention and the proprietary filter unit will be performed by the Owner. See Appendix H for maintenance guides.

Water Quantity

New York State Department of Environmental Conservation (NYSDEC) regulations require design of stormwater detention facilities to limit the peak discharge produced by the 10-year and 100-year storm events to the pre-developed runoff rates, as well as provide extended detention of the 1-YR, 24-HR storm event (channel protection volume). The proposed stormwater detention system will consist of a dry detention basin and 300 linear feet of 36-inch diameter, perforated, HDPE pipe along with pipe's encasing stone. A minimum 3-inch diameter orifice will be provided within the stormwater control structure to provide the required CPv requirement for the site. A 10-inch diameter outlet pipe and the 10-inch diameter riser pipe within the stormwater control structure, will limit both the 10-year and 100-year discharge rates under post-development conditions, to the existing 10-year and 100-year discharge rates under existing conditions.

Stormwater calculations were completed using HYDROCAD, version 10.0 software, which utilizes the SCS unit hydrograph method (See Appendix B). The following is a summary of the pre- and post-development discharge rates, water surface elevations and detention volumes required and provided for the drainage areas:

Channel Protection Volume Required = 0.255 ac-ft = 11,108 cubic feet

Channel Protection Volume Provided = 0.255 ac-ft = 11,108 cubic feet

Discharge from North Drainage Area:

Storm Event	Pre-Development Discharge Rate (cfs)	Post-Development Discharge Rate (cfs)
10-YR	6.92	7.93
100-YR	11.79	13.30

Discharge from South:

Storm Event	Pre-Development Discharge Rate (cfs)	Post-Development Discharge Rate (cfs)	Proposed Water Surface Elevation in Underground Detention (feet)	Detention Volume Provided in Underground Detention (cf)
10-YR	5.34	1.99	602.21	9,369
100-YR	10.73	2.87	603.81	20,635

Total Site Discharge:

Storm Event	Pre-Development Discharge Rate (cfs)	Post-Development Discharge Rate (cf)
10-YR	9.45	8.17
100-YR	18.71	15.08

3.5 Construction and Waste Materials

Some of the construction materials expected to be stored onsite include precast concrete drainage structures, corrugated HDPE pipe, silt fence, etc. These materials will be stored in the contractor's staging area. The Contractor shall install additional silt fence around the perimeter of both the staging and topsoil stockpile areas, should contaminated runoff flow off the area.

3.6 Other Requirements

1. Any discharges other than storm water must be in compliance with the appropriate SPDES permit (other than this permit).
2. No solid materials including building materials shall be discharged to waters of the United States, except as authorized by a federal or state law.
3. All construction activities shall be in compliance with all federal, state and local laws as required.

3.7 Inspections

1. Inspections are important for visually evaluating potential storm water runoff pollution sources at the facility. All projects should be inspected periodically to ensure contaminants are not present in the storm water exiting a project site. On projects which apply for coverage under the SPDES General Permit, qualified inspectors of the Owner shall inspect and evaluate the site. Qualified inspectors are persons 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), or a soil scientist.
2. The Owner shall have a qualified inspector conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the erosion and sediment controls described in the SWPPP have been installed or implemented. Following the commencement of construction, site inspections shall occur at least once every seven calendar days. For construction sites where soil disturbance activities are on going and the owner or operator has received authorization 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. When performing just two (2) inspections every seven (7) calendar days, the inspections shall be separated by a minimum of two (2)

full calendar days.

3. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the qualified inspector shall conduct a site inspection at least once every thirty (30) calendar days. The owner or operator shall notify the Regional Office stormwater contact person in writing prior to reducing the frequency of inspections.
4. The owner shall prepare a written summary of the project status with respect to compliance with the Permit at a minimum frequency of every three months during which coverage under the Permit exists. The summary should address the status of achieving each component of the SWPPP. The Owner shall post at the site, in a publicly-accessible location, a summary of the site inspection activities on a monthly basis.
5. 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 MS4 stormwater management officer 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(s) 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 Notice of Termination (N.O.T.). The owner or operator shall then submit the completed N.O.T. form to the MS4 stormwater management officer.
6. Each inspection report shall, at the minimum, include 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. On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period.

- f. Indicate on a site map all areas of the site map that have undergone temporary or permanent stabilization.
 - g. Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period.
 - h. Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of the sediment storage volume.
 - i. Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (silt fencing) and containment systems (sediment basins).
 - j. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced
 - k. Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching.
 - l. Document any excessive deposition of sediment or ponding water along barriers or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water.
 - m. Location where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking
 - n. 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
 - o. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s).
7. The process for conducting the evaluation shall follow these steps:
- a. Review the Storm Water Pollution Prevention Plan and draw up a list of any items of concern.
 - b. List all specified control measures and areas covered in the plan.
 - c. Conduct inspections to determine whether all storm water pollution prevention measures are accurately identified in the plan, are in place, and working properly.
 - d. Document findings and inspections in a site log book.
 - e. Modify SWPPP as appropriate. (Note: The plan shall be modified by the contractor and site inspector within 7 days of the inspection).
8. 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 Contractor's Certification Form 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.

9. All inspection reports shall be signed by the qualified inspector. A copy of the inspection reports shall be maintained on site with the SWPPP and submitted to the MS4 stormwater management officer.

A copy of the erosion and sediment control inspection checklist has been included in Appendix D.

3.8 Maintenance

The contractor is required to inspect and maintain all soil erosion and siltation controls throughout the duration of the project and until final stabilization of the site. "Final Stabilization" means that all soil disturbing activities at the site have been completed, and that a uniform, perennial vegetative cover with a density of 80% has been obtained.

Maintenance shall include, but not be limited to, repair or replacement of any existing controls, removal of sediment and any other measures deemed necessary, which would reduce soil erosion and siltation runoff. Sediment shall be removed from sediment traps or sediment basins whenever their capacity has been reduced by fifty (50) percent from the design capacity. Refer to Section 3.2 for maintenance of individual controls.

Post construction maintenance of the dry detention basin, the filtration bioretention basin and the proprietary filter on the property will be performed by the Owner. Maintenance checklists are included in Appendix H.

3.9 Contractors

The contractor must sign a SWPPP certification form before undertaking any construction activity at the site identified in the Storm Water Pollution Prevention Plan. The contractor is responsible for any and all subcontractors working on the SWPPP. A copy of the Contractor's Certification Form has been included in Appendix E.

4.0 Record Retention

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

5.0 Notice of Termination Requirements

1. Prior to filing an electronic Notice of Termination (eNOT) the Owner shall have a qualified inspector perform a final site inspection. The qualified inspector shall 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 eNOT. Additionally,

the eNOT will need to be submitted to the MS4 Stormwater Management Officer for their signature. The MS4 may require a final inspection of the site at that time.

2. Post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, 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.
3. Post-construction stormwater management practices that are privately owned, the owner or operator has a deed restriction in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.
4. Post-construction stormwater management practices that are privately owned, but will be maintained by a municipality, require an executed maintenance agreement be in place with the municipality that will maintain the post-construction stormwater management practice(s). Any right-of-way(s) needed to maintain such practice(s) must have been deeded to the municipality in which the practice(s) is located.

In addition, the Owner must certify that the permanent structure(s) have been constructed as described in the SWPPP.

When the project is completed and the site has been stabilized, the Owner must submit an eNOT through the NYSDEC's nForm portal.

Appendix A

NYSDEC SPDEC General Permit for Storm Water Discharges Associated
from Construction Activity Permit No. GP-0-25-001



Department of
Environmental
Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (NYSDEC)

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-25-001

Construction General Permit (CGP)

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2025

Expiration Date: January 28, 2030

Scott E. Sheeley

Chief Permit Administrator



Authorized Signature

JAN. 29, 2025

Date

Address: NYSDEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act (CWA), and 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), *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 State 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 and 8, and Article 70, as well as 6 NYCRR Parts 621 and 750.

Construction activities constitute construction of a *point source* and, therefore, pursuant to ECL sections 17-0505, 17-0701, and 17-0803, the *owner or operator* must have coverage under a SPDES permit prior to *commencement of construction activities*. 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 CONSTRUCTION GENERAL PERMIT (CGP) GP-0-25-001
FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES**

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Part I. How to Obtain Coverage and General Requirements

To be covered under this permit, the *owner or operator* must meet all eligibility requirements in Part I.A. and follow the requirements for obtaining permit coverage in Part I.D., F., or G.

A. Eligibility Requirements

For a *common plan of development or sale*, the *phase(s)* that meet the eligibility requirements in Part I.A. may obtain coverage under this permit even if other *phase(s)* of the same *common plan of development or sale* do not meet the eligibility requirements and require an individual SPDES permit.

1. The *owner's or operator's construction activities* involve soil disturbances of:
 - a. one or more acres; or
 - b. less than one acre which are part of a *common plan of development or sale* that will ultimately disturb one or more acres; or
 - c. less than one acre where NYSDEC 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*.
 - i. 5,000 square feet or more, but less than one acre, and are in the New York City Watershed located east of the Hudson River, Appendix C Figure 1; or
 - ii. 20,000 square feet or more, but less than one acre, within the municipal boundaries of the City of New York (NYC); or
 - iii. less than 20,000 square feet which are part of a *common plan of development or sale* that will ultimately disturb 20,000 square feet or more, but less than one acre, within the municipal boundaries of NYC; or
 - iv. that creates 5,000 square feet or more of *impervious area* within the municipal boundaries of NYC.

2. *Discharges from the owner's or operator's construction activities* are/were not:

- a. already covered by a different SPDES permit; or
- b. covered under a different SPDES permit that was denied, terminated, or revoked; or
- c. identified in an expired individual SPDES permit that was not renewed; or
- d. required to obtain an individual SPDES permit or another general SPDES permit in accordance with Part VII.K.

3. If *construction activities* may adversely affect a species that is endangered or threatened, the *owner or operator* must obtain a:

- a. permit issued pursuant to 6 NYCRR Part 182 for the project; or
- b. letter issued by NYSDEC of non-jurisdiction pursuant to 6 NYCRR Part 182 for the project.

4. If *construction activities* have the potential to affect an *historic property*, the *owner or operator* must obtain one of the following:

- a. documentation that the *construction activity* is not within an archeological buffer 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:
 - i. 1-5 acres of disturbance - 20 feet; or
 - ii. 5-20 acres of disturbance - 50 feet; or

- iii. 20+ acres of disturbance - 100 feet.
- b. NYSDEC consultation form sent to OPRHP,¹ and copied to NYSDEC's Agency Historic Preservation Officer (APO), and
 - i. the State Environmental Quality Review Act (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 or 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).
- c. documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
 - i. No Affect; or
 - ii. No Adverse Affect; or
 - iii. Executed Memorandum of Agreement.
- d. documentation that SHPA Section 14.09 has been completed by NYSDEC or another state agency.
- 5. If *construction activities* are subject to SEQR, the *owner or operator* must obtain documentation that SEQR has been satisfied.
- 6. If *construction activities* are not subject to SEQR, but subject to the equivalent environmental review from another New York State or federal agency, the

¹ The consultation form can be submitted, along with other project information, through OPRHP's Cultural Resource Information System (CRIS) portal. If submitted through CRIS, paper copies of the consultation form need not be mailed.

Part I.A.6.

owner or operator must obtain documentation that project review, pursuant to a process equivalent to SEQR from another New York State or federal agency, has been satisfied.

7. If *construction activities* require Uniform Procedures Act (UPA) Permits (see 6 NYCRR Part 621) from NYSDEC, or the equivalent from another New York State or federal agency, the *owner or operator* must:
 - a. obtain all such necessary permits; or
 - b. receive notification from NYSDEC pursuant to 6 NYCRR 621.3(a)(4) excepting Part I.A.7.a.
8. *Construction activities* are not eligible if they meet the following criteria in Part I.A.8.a. or b.:
 - a. For linear transportation and linear utility project types, the *construction activities*:
 - i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and
 - ii. are undertaken on land with no existing *impervious cover*; and
 - iii. disturb two or more acres of *steep slope*.
 - b. For all other project types, the *construction activities*:
 - i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and
 - ii. are undertaken on land with no existing *impervious cover*; and
 - iii. disturb one or more acres of *steep slope*.

B. Types of *Discharges* Authorized

1. The following *stormwater discharges* are authorized under this permit:
 - a. *Stormwater discharges*, including *stormwater* runoff, snowmelt runoff, and surface runoff and drainage, associated with *construction activity*, are authorized under this permit provided that appropriate *stormwater* controls are designed, installed, and maintained in accordance with Part II. and Part III.
 - b. *Stormwater discharges* from construction support activities at the *construction site* (including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas) if the following requirements are met:
 - i. The support activity is directly related to the *construction site* required to have permit coverage for *stormwater discharges*; and
 - ii. The support activity is not a commercial operation, nor does it serve multiple unrelated *construction sites*; and
 - iii. The support activity does not continue to operate beyond the completion of the *construction activity* at the site it supports; and
 - iv. *Stormwater* controls are implemented in accordance with Part II. and Part III. for *discharges* from the support activity areas.
2. The following non-*stormwater discharges* associated with *construction activity* are authorized under this permit:
 - a. Non-*stormwater discharges* 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”; and
 - b. Non-*stormwater discharges* of waters to which other components have not been added that are used in accordance with the *SWPPP* to control dust or irrigate vegetation in stabilized areas; and
 - c. Uncontaminated *discharges* from *dewatering* operations

3. Authorized *discharges of stormwater* or authorized *discharges* of non-*stormwater*, commingled with a *discharge* authorized by a different SPDES permit and/or a *discharge* that does not require SPDES permit authorization, are also authorized under this permit.

C. Prohibited *Discharges*

1. Non-*stormwater discharges* prohibited under this permit include but are not limited to:
 - a. Wastewater from washout of concrete; and
 - b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and
 - c. Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance; and
 - d. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and
 - e. Toxic or hazardous substances from a spill or other release.

D. Electronic Notice of Intent (eNOI) Submittal

To receive authorization in accordance with Part I.D.3.b., the *owner or operator* must submit a complete eNOI in accordance with the requirements in Part I.D. The eNOI contains questions to: ensure eligibility requirements in Part I.A. have been met; obtain *owner or operator* contact information; obtain the total area to be disturbed and the existing/future *impervious areas* (rounded to the nearest tenth of an acre); confirm *Traditional Land Use Control MS4 Operator* jurisdiction over construction projects; satisfy the EPA eRule requirements; confirm that the Water Quality-Based Effluent Limitations in Part II. have been met; demonstrate consideration of the future risks due to climate change in accordance with Part III.A.2.; and confirm that the other *Stormwater Pollution Prevention Plan (SWPPP)* requirements in Part III. have been met.

1. An eNOI may be submitted for:
 - a. *construction activities* that are not part of a *common plan of development or sale*; or

- b. an entire *common plan of development or sale*; or
 - c. separate *phase(s)* of a *common plan of development or sale* if the following requirements are met:
 - i. the *common plan of development or sale* meets the eligibility requirements of Part I.A.5. or 6.; and
 - ii. the *phase(s)* meet(s) all other eligibility requirements of Part I.A.; and
 - iii. Part III.C. Required *SWPPP* Components by Project Type is based on the *common plan of development or sale*, not the *phase(s)*; or
 - d. *tree clearing* that is associated with, or will support, a *renewable energy* generation, transmission, or storage project that meets Part I.A.5. and 6., if the *tree clearing*:
 - i. meets all other eligibility requirements of Part I.A.; and
 - ii. will occur in NYSDEC's Regions 3-9; and
 - iii. is not within ¼ mile of a bat hibernaculum protected pursuant to 6 NYCRR Part 182; and
 - iv. will occur between November 1st and March 31st.
2. As prerequisites for submitting an eNOI, the *owner or operator* must:
- a. prepare a *SWPPP* for Part I.D.1.a., b., c., or d. in accordance with Part III.; and
 - b. based on the following criteria, upload the following signature forms signed in accordance with Part VII.J. to the eNOI prior to submission:
 - i. for all eNOIs:
 - 1. the *SWPPP* Preparer Certification Form, Appendix F, signed by the *SWPPP* preparer; and

2. the Owner/Operator Certification Form, Appendix J, signed by the *owner or operator*; and
- ii. if an eNOI includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that will *discharge* to the *MS4(s)*:
 1. determine if the *Traditional Land Use Control MS4 Operator(s)* have review authority. A *Traditional Land Use Control MS4 Operator* does not have review authority where:
 - a. the *owner or operator* of the *construction activities* in Part I.D.2.b.ii. is the same entity as the *Traditional Land Use Control MS4 Operator* identified in Part I.D.2.b.ii.; or
 - b. there is a statute exempting the *owner or operator* from zoning review by the *Traditional Land Use Control MS4 Operator*; or
 - c. there is no such statute per Part I.D.2.b.ii.1.b., the *Traditional Land Use Control MS4 Operator* concludes, after public hearing, that it does not have zoning review authority in accordance with Legal Memorandum LU14 Updated January 2020 “Governmental Immunity from Zoning and Other Legislation”; and
 2. if the *Traditional Land Use Control MS4 Operator(s)* have review authority, submit the *SWPPP* to the *Traditional Land Use Control MS4 Operator(s)* for review and have:
 - a. if outside the municipal boundaries of NYC: the *MS4 SWPPP Acceptance Form*, Appendix G, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator*, or by a duly authorized representative of that person in accordance with Part VII.J.2.; or

- b. if within the municipal boundaries of NYC: The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval Form, Appendix H, signed by the principal executive officer or ranking elected official from the Traditional Land Use Control MS4 Operator, or by a duly authorized representative of that person in accordance with Part VII.J.2.; and
 - 3. if the *Traditional Land Use Control MS4 Operator* does not have review authority, have the MS4 No Jurisdiction Form, Appendix I, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator*, or by a duly authorized representative of that person in accordance with Part VII.J.2.
3. Submitting an eNOI:
- a. The *owner or operator* must submit a complete Notice of Intent electronically using a NYSDEC approved form.²
 - b. The *owner or operator* is authorized to *commence construction activity* as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.
 - i. If an eNOI is received for a *SWPPP* that deviates from one of the technical standards but demonstrates *equivalence* in accordance with Part III.B.1.a.ii. or Part III.B.2.b.ii., if the *SWPPP* includes *construction activities* that are not within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)*, and/or if the *SWPPP* includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that do not have review authority in accordance with Part I.D.2.b.ii.1., the authorization date indicated in the LOA will be 60 business days after the eNOI submission date.

² Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

- c. If *Traditional Land Use Control MS4 Operator(s)* have review authority in accordance with Part I.D.2.b.ii.2., the *owner or operator* must, within five business days of receipt of the LOA, send an electronic copy of the LOA to the *Traditional Land Use Control MS4 Operator(s)* with review authority.

E. General Requirements for Owners or Operators with Permit Coverage

1. As of the date the LOA is received, the *owner or operator* must make the eNOI, *SWPPP*, and LOA available for review and copying in accordance with the requirements in Part VII.H. When applicable, as of the date an updated LOA is received, the *owner or operator* must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.
2. The *owner or operator* must ensure compliance with all requirements of this permit and that the provisions of the *SWPPP*, including any changes made to the *SWPPP* in accordance with Part III.A.5., are properly implemented and maintained from the *commencement of construction activity* until:
 - a. all areas of disturbance have achieved *final stabilization*; and
 - b. the owner's or operator's coverage under this permit is terminated in accordance with Part V.A.5.a.
3. As of the date of the *commencement of construction activities* until Part I.E.2.a. and b. have been met, the *owner or operator* must maintain at the *construction site*, a copy of:
 - a. all documentation necessary to demonstrate eligibility with this permit; and
 - b. this permit; and
 - c. the *SWPPP*; and
 - d. the signed *SWPPP Preparer Certification Form*; and
 - e. the signed *MS4 SWPPP Acceptance Form* or signed *NYCDEP SWPPP Acceptance/Approval Form* or signed *MS4 No Jurisdiction Form* (when applicable); and
 - f. the signed *Owner/Operator Certification Form*; and

- g. the eNOI; and
 - h. the LOA; and
 - i. the LOA transmittal to the Traditional Land Use Control MS4 Operator in accordance with Part I.D.3.c. (when applicable).
4. The *owner or operator* must maintain at the *construction site*, until Part I.E.2.a. and b. have been met, as of the date the documents become final or are received, a copy of the:
- a. responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7.; and
 - b. inspection reports in accordance with Part IV.C.4. and 6.; and
 - c. Request to Disturb Greater Than Five Acres and the Authorization Letter to Disturb Greater Than Five Acres in accordance with Part I.E.6. (when applicable); and
 - d. Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4. (when applicable); and
 - e. The updated LOA(s) in accordance with Part I.E.9. (when applicable).
5. The *owner or operator* must maintain the documents in Part I.E.3. and 4. 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. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the *owner or operator* must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be read in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.
6. The *owner or operator* must meet the following requirements prior to disturbing greater than five acres of soil at any one time:
- a. The *owner or operator* must submit a written Request to Disturb Greater Than Five Acres to:

Part I.E.6.a.i.

- i. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, if a *Traditional Land Use Control MS4 Operator* does not have review authority in accordance with Part I.D.2.b.ii.1.; or
 - ii. the *Traditional Land Use Control MS4 Operator*, if a *Traditional Land Use Control MS4 Operator* has review authority in accordance with Part I.D.2.b.ii.1.; or
 - iii. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, and each involved *Traditional Land Use Control MS4 Operator*, if the project spans multiple municipalities with more than one *Traditional Land Use Control MS4 Operator* involved with review authority in accordance with Part I.D.2.b.ii.1.
- b. The written Request to Disturb Greater Than Five Acres must include:
- i. The SPDES permit identification number (Permit ID); and
 - ii. Full technical justification demonstrating why alternative methods of construction that would result in five acres of soil disturbance or less at any one time are not feasible; and
 - iii. The phasing plan for the project and sequencing plans for all *phases* from the *SWPPP* in accordance with Part III.B.1.d.; and
 - iv. Plans with locations and details of erosion and sediment control practices such that the heightened concern for erosion when disturbing greater than five acres at one time has been addressed; and
 - v. Acknowledgment that "the *owner or operator* will comply with the requirements in Part IV.C.2.b."; and
 - vi. Acknowledgment that "the *owner or operator* will comply with the requirements in Part II.B.1.b."
- c. The *owner or operator* must be in receipt of an Authorization Letter to Disturb Greater Than Five Acres, which will include when the

authorization begins and ends and indicate a maximum area (acres) of soil disturbance allowed at any one time, from:

- i. NYSDEC, if Part I.E.6.a.i. or iii. apply; or
 - ii. the *Traditional Land Use Control MS4 Operator*, if Part I.E.6.a.ii. applies.
7. Upon a finding of significant non-compliance with the practices described in the *SWPPP* or violation of this permit, NYSDEC may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
8. 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).³ *Construction activity* shall not resume until written permission to do so has been received from the RWE.
9. To be authorized to implement modifications to the information previously submitted in the eNOI, the *owner or operator* must:
 - a. notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI; and
 - b. update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D.; and
 - c. receive an updated LOA.
10. The eNOI, *SWPPP*, LOA, updated LOAs (when applicable), 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 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.

³ The Regional Water Manager where a DEC Region does not have a RWE.

F. Permit Coverage for *Discharges* Authorized Under GP-0-20-001

When applicable:

1. Upon the effective date of this permit, an *owner or operator* of a *construction activity*, with coverage under GP-0-20-001, will have interim coverage under GP-0-25-001 for 45 calendar days starting on the effective date of GP-0-25-001 so long as the *owner or operator* maintains compliance with all applicable requirements of this permit.
2. Within 30 calendar days of the effective date of this permit, the *owner or operator*, with coverage under GP-0-20-001, must submit a complete Request to Continue Coverage electronically using a NYSDEC approved form,⁴ which contains the information identified in Part I.F.3. below, if:
 - a. the *owner or operator* continues to implement the SMP component in conformance with the technical standards in place at the time of initial project authorization; and
 - b. the *owner or operator* will comply with all non-design requirements of GP-0-25-001.
3. The Request to Continue Coverage form contains questions to: ensure eligibility requirements in Part I.A. have been met; verify *owner or operator* contact information; verify the permit identification number; verify the original eNOI submission ID, if applicable; verify Part I.F.2.a. and b.; verify the version of the Design Manual that the technical/design components conform to; and receive an updated Owner/Operator Certification Form, Appendix I.
4. The *owner or operator* has obtained continued coverage under GP-0-25-001 as of the date indicated in the LOCC, which is sent by NYSDEC after a complete Request to Continue Coverage form is submitted.
5. If the owner or operator does not submit the Request to Continue Coverage form in accordance with Part I.F.2. and 3., coverage under this permit is automatically terminated after interim coverage expires.

⁴ Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

G. Change of *Owner or Operator*

When applicable:

1. When property ownership changes, or when there is a change in operational control over the construction plans and specifications, the following process applies:
 - a. The new *owner or operator* must meet the applicable prerequisites for submitting an eNOI in accordance with Part I.D.2.; and
 - b. The new *owner or operator* must submit an eNOI in accordance with Part I.D.3.; and
 - c. Permit coverage for the new *owner or operator* will be effective upon receipt of the LOA in accordance with Part I.D.3.b.; and
 - d. The new *owner or operator*, upon receipt of their LOA, must provide their Permit ID to the original *owner or operator*; and
 - e. If the original *owner or operator* will no longer be the *owner or operator* of the *construction activity* identified in the original *owner's or operator's* eNOI, the original *owner or operator*, upon receipt of the new *owner's or operator's* Permit ID in accordance with Part I.G.1.d., must submit to NYSDEC a completed eNOT in accordance with Part V. that includes the name and Permit ID of the new *owner or operator*; or
 - f. If the original *owner or operator* maintains ownership of a portion of the *construction activity*, the original *owner or operator* must maintain their coverage under the permit by modifying their eNOI; modifications to the eNOI must include:
 - i. the revised area of disturbance and/or *impervious area(s)*; and
 - ii. the revised SMP information, if applicable; and
 - iii. a narrative description of what has changed; and
 - iv. the new *owner's or operator's* Permit ID for the portion of the project removed from the eNOI.

Owners or operators must follow Part I.E.9. to modify the eNOI.

Part II. Water Quality-Based Effluent Limitations

A. Maintaining Water Quality

NYSDEC expects that compliance with the requirements 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 the following *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:

1. There must be no increase in turbidity that will cause a substantial visible contrast to natural conditions; and
2. There must be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There must 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 standard*, the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this permit and document in accordance with Part IV.C.4. of this permit. To address the *water quality standard* violation the *owner or operator* must include and implement appropriate controls in the *SWPPP* to correct the problem or obtain an individual SPDES permit.

If, despite compliance with the requirements of this 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 NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharges* from the *construction site*.

B. Effluent Limitations Applicable to *Discharges* from *Construction Activities*

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part II.B.1.a., b., c., d., and e. 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 II.B.1.a., b., c., d., and e. and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (BB), 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 *SWPPP* the reason(s) for the deviation, or alternative design, and provide information in the *SWPPP* demonstrating that the deviation or alternative design is *equivalent* to the technical standard.

- a. **Erosion and Sediment Controls.** At a minimum, erosion and sediment controls must be selected, designed, installed, implemented, and maintained to:
 - i. *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*; and
 - ii. Control *stormwater discharges*, including both peak flow rates and total *stormwater* volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points; and
 - iii. *Minimize* the amount of soil exposed during *construction activity*; and
 - iv. *Minimize* the disturbance of *steep slope*; and
 - v. *Minimize* sediment *discharges* from the site; and
 - vi. Provide and maintain *natural buffers* around surface waters, direct *stormwater* to vegetated areas and maximize *stormwater* infiltration to reduce *pollutant discharges*, unless *infeasible*; and
 - 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; and

- 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 ceased, whether permanently or *temporarily ceased*, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 14 calendar 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 D, or are located in one of the watersheds listed in Appendix C, or are authorized to disturb greater than five acres in accordance with Part I.E.5.a.viii., the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven calendar days from the date the soil disturbance activity 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.** Select, 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 selected, designed, installed, implemented, and maintained to:
- i. *Minimize* the *discharge of pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. Soaps, detergents and solvents cannot be used; and
 - 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. **Surface Outlets.** When discharging from basins and impoundments, the surface outlets must 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 (SMP) Requirements

- 1. The *owner or operator* of a *construction activity* that requires post-construction SMPs, in accordance with Part III.C., must select, design, install, implement, and maintain the SMPs to meet the *performance criteria* in the New York State Stormwater Management Design Manual, dated July 31, 2024 (DM), using sound engineering judgment. Where SMPs are not designed in conformance with the *performance criteria* in the DM, 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 SMPs in accordance with Part III.C., must design the practices to meet the applicable *sizing criteria* in Part II.C.2.a., b., c., or d.

a. Sizing Criteria for *New Development*

- i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):
 - 1. Reduce the total WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv must be calculated in accordance with the criteria in Section 4.2 of the DM; or

2. Minimum RRV and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the requirements in Part II.C.2.a.i.1. due to *site limitations* must 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 must 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 4.4 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

- ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. 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 1-year post-development peak *discharge* is less than or equal to 2.0 cfs without detention or velocity controls; or
 3. The site *directly discharges* into a fifth order or larger water body (stream, river, or lake), or tidal waters, where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

- iii. **Overbank Flood Control Criteria (Qp):** Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
 - 1. the site *directly discharges* to tidal waters or fifth order or larger streams, or
 - 2. A downstream analysis reveals that *overbank* control is not required.
- iv. **Extreme Flood Control Criteria (Qf):** Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
 - 1. the site *directly discharges* 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 Watersheds

- i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):
 - 1. Reduce the 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 must be calculated in accordance with the criteria in Section 4.3 of the DM; or
 - 2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part II.C.2.b.i.1. due to *site limitations* must 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 must 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 4.5 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

- ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. 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 1-year post-development peak *discharge* is less than or equal to 2.0 cfs; or
 - 3. The site *directly discharges* to tidal waters, or a fifth order or larger water body (stream, river, or lake) where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.
- iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
 - 1. the site *directly discharges* to tidal waters or fifth order or larger streams; or
 - 2. A downstream analysis reveals that *overbank* control is not required.

- iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
 - 1. the site *directly discharges* 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* must be addressed by one of the following options, as outlined in Section 9.2.1. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C) must calculate the WQv in accordance with Section 4.3 of the DM. All other *redevelopment activities* must calculate the WQv in accordance with Section 4.2 of the DM.
 - 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 DM must be applied to all newly created pervious areas; or
 - 2. Capture and treat 100% of the required WQv, for a minimum of 25% of the disturbed redevelopment *impervious area*, by implementation of standard SMPs or reduced by application of runoff reduction techniques; or
 - 3. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a volume-based alternative SMP, as defined in Section 9.4 of the DM; or
 - 4. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm; or

5. Application of a combination of 1 through 4 above that provide a weighted average of at least two of the above methods. Application of this method must be in accordance with the criteria in Section 9.2.1(A)(V) of the DM; or
 6. If there is an existing SMP 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 through 5 above.
- ii. Channel Protection Volume (CPv) is not required if there is 0% change to hydrology that increases the *discharge* rate and volume from the project site.
 - iii. *Overbank* Flood Control (Qp) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.
 - iv. Extreme Flood Control (Qf) is not required if there is 0% change to hydrology that increases 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*, must use SMPs that meet the *sizing criteria* calculated as an aggregate of the *sizing criteria* in Part II.C.2.a. or b. for the *new development* portion of the project and Part II.C.2.c. for the *redevelopment activity* portion of the project.

Part III. Stormwater Pollution Prevention Plan (SWPPP)

A. General SWPPP Requirements

1. A SWPPP must be prepared and implemented by the *owner or operator* of all *construction activity* covered by this permit. All authorized *discharges* must be identified in the SWPPP. 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 II.B. and, where applicable, the SMP requirements in Part II.C.

2. The *SWPPP* must demonstrate consideration in narrative format of the future physical risks due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance.

- a. The owner or operator must consider:

- i. the following physical risks due to climate change:

- (i) increasing temperature; and
 - (ii) increasing precipitation; and
 - (iii) increasing variability in precipitation, including chance of drought; and
 - (iv) increasing frequency and severity of flooding; and
 - (v) rising sea level; and
 - (vi) increasing storm surge; and
 - (vii) shifting ecology.

- ii. for each of the following:

- (i) overall site planning; and
 - (ii) location, elevation, and sizing of:
 - a. control measures and practices; and
 - b. conveyance system(s); and
 - c. detention system(s).

3. The *SWPPP* must describe the erosion and sediment control practices and where required, SMPs that will be used and/or constructed to reduce the *pollutants* in *stormwater discharges* and to assure compliance with the

requirements of this permit. In addition, the *SWPPP* must identify potential sources of pollution which may reasonably be expected to affect the quality of *stormwater discharges*.

4. All *SWPPPs*, that require the SMP component in accordance with Part III.B.2., must be prepared by a *qualified professional*.
5. The *owner or operator* must keep the *SWPPP* current so that, at all times, it accurately documents the erosion and sediment control practices that are being used or will be used during construction, and all SMPs that will be constructed on the site. At a minimum, the *owner or operator* must modify the *SWPPP*, including construction drawings:
 - a. whenever the current provisions prove to be ineffective in *minimizing pollutants* in *stormwater discharges* from the site; and
 - 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*, NYSDEC, or other regulatory authority; and
 - d. to document the final construction conditions in an as-built drawing.
6. NYSDEC 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 must 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 NYSDEC, the *owner or operator* must make the required changes to the *SWPPP* and submit written notification to NYSDEC that the changes have been made. If the *owner or operator* does not respond to NYSDEC's comments in the specified time frame, NYSDEC 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.
7. 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 SMPs included in the *SWPPP*. The *owner or operator* must have each of the contractors and subcontractors identify at least one person from their company to be *trained contractor* that will be responsible for implementation of the *SWPPP*. The *owner or operator* must ensure that at least one *trained contractor* is on site daily when soil disturbance activities are being performed.

The *owner or operator* must have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before the *commencement of construction activities*:

"I hereby certify under penalty of law that I understand and agree to comply with the requirements 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 requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) 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* must 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 the *commencement of construction activities*, they must also sign the certification statement and provide the information listed above prior to performing *construction activities*.

B. Required *SWPPP* Contents

1. Erosion and sediment control component - The *owner or operator* must prepare a *SWPPP* that includes erosion and sediment control practices.
 - a. Erosion and sediment control practices must be designed:
 - i. in conformance with the BB; or
 - ii. *equivalent* to the BB if deviating from Part III.B.1.a.i.
 - b. If the erosion and sediment control practices are designed in conformance with Part III.B.1.a.ii., the *SWPPP* must include a demonstration of *equivalence* to the BB.
 - c. At a minimum, the erosion and sediment control component of the *SWPPP* must include the following:
 - i. Background information about the scope of the project, including the location, type and size of project; and
 - ii. A site map/construction drawing(s) with north arrows for the project, including a general location map. At a minimum, the site map must 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)* and receiving surface water(s); and
 - iii. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG); and
 - iv. A phasing plan for the project and sequencing plans for all *phases*, both of which must address clearing and grubbing, excavation and grading, utility and infrastructure installation, *final stabilization*,

and any other *construction activity* at the site that will result in soil disturbance.

1. The phasing plan must include:
 - a. a map delineating and labeling the limits of soil disturbance for all *phases* of a project; and
 - b. a table identifying the order and intended schedule of when each *phase* will begin and end its sequencing plan. The table must identify the total disturbed area for each *phase* at any one time and the total disturbed area for the overall project at any one time all on one timeline showing all overlapping quantities of disturbed area at any one time; and
2. A sequencing plan for a specific *phase* must include:
 - a. a table indicating the order and intended schedule of *construction activities* within a *phase*, and corresponding construction drawings with a description of the work to be performed; and
 - b. all permanent and *temporary stabilization* measures; and
- v. 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; and
- vi. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice; and
- vii. 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; and

- viii. A maintenance inspection schedule for the contractor(s) and subcontractor(s) identified in Part III.A.7. to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule must be in accordance with the requirements in the BB technical standard; and
 - ix. 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*; and
 - x. 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
 - xi. Identification of any elements of the design that are not in conformance with the design criteria in the BB technical standard. 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. SMP component – The *owner or operator* of *construction activity* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs.
- a. SMPs must be designed in conformance with the applicable *sizing criteria* in Part II.C.2.a., c., or d.; and
 - b. SMPs must be designed in conformance with the *performance criteria*:
 - i. in the DM; or
 - ii. *equivalent* to the DM if deviating from Part III.B.2.b.i.; or
 - iii. in the New York State Stormwater Management Design Manual, dated January 2015 (2015 Design Manual), or *equivalent* to it, if the following criteria are met:

1. The eNOI is submitted in accordance with Part I.D. before January 29, 2027 for *construction activities* that are either:
 - a. subject to governmental review and approval:
 - i. where the *owner or operator* made any application to that governmental entity prior to the effective date of this permit; and
 - ii. such application included a *SWPPP* developed using the 2015 Design Manual or *equivalent* to it; or
 - b. not subject to governmental review and approval:
 - i. where a fiscal allocation for the *construction activities* has been developed and approved by a governmental entity; and
 - ii. the *SWPPP* was developed using the 2015 Design Manual or *equivalent* to it; and
 - c. If SMPs are designed in conformance with Part III.B.2.b.ii., the *SWPPP* must include the reason(s) for the deviation or alternative design and a demonstration of *equivalence* to the DM; and
 - d. If SMPs are designed in conformance with Part III.B.2.b.iii., the *SWPPP* must include supporting information or documentation demonstrating that Part III.B.2.b.iii.1.a. or b. apply; and
 - e. The SMP component of the *SWPPP* must include the following:
 - i. Identification of all SMPs to be constructed as part of the project, including which option the SMP designs conform to, either Part III.B.2.b.i., ii., or iii. Include the dimensions, material specifications and installation details for each SMP; and
 - ii. A site map/construction drawing(s) showing the specific location and size of each SMP; and

- iii. 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; and
 - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and SMPs; and
 - (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; and
 - (iv) Summary table, with supporting calculations, which demonstrates that each SMP has been designed in conformance with the *sizing criteria* included in the DM; and
 - (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part II.C.; and
 - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the DM. 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 DM.
- iv. Soil testing results and locations (test pits, borings); and
- v. Infiltration test results, when required in accordance with Part III.B.2.a.; and
- vi. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each SMP. The plan must identify the entity

that will be responsible for the long-term operation and maintenance of each practice; and

3. Enhanced Phosphorus Removal Standards - The *owner or operator* of *construction activity* identified in Table 2 of Appendix B that is located in a watershed identified in Appendix C must prepare a *SWPPP* that includes SMPs designed in conformance with the applicable *sizing criteria* in Part II.C.2.b., c., or d. and the *performance criteria* Enhanced Phosphorus Removal Standards included in the DM. At a minimum, the SMP component of the *SWPPP* must meet the requirements of Part III.B.2.

C. Required *SWPPP* Components by Project Type

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 accordance with Part III.B.1. *Owners or operators* of the *construction activities*, identified in Table 2 of Appendix B, must prepare a *SWPPP* that also includes SMPs designed in accordance with Part III.B.2 or 3.

For the entire area of disturbance, including the entire *common plan of development or sale* if applicable, the owner or operator must evaluate every bullet from Appendix B Table 1 and Table 2 separately. If bullets from both Table 1 and Table 2 apply, the *SWPPP* must include erosion and sediment control practices for all *construction activities* but SMPs for only those portions of the *construction activities* that fall under Table 2 bullet(s).

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 SMPs identified in the *SWPPP*, are inspected and maintained in accordance with Part IV.B. and C.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity*, identified in Tables 1 and 2 of Appendix B, must 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 must:

- a. if the corrective action does not require engineering design:
 - i. begin implementing corrective actions within one business day; and
 - ii. complete the corrective actions within five business days; or
 - b. if the corrective action requires engineering design:
 - i. begin the engineering design process within five business days; and
 - ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.
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 in accordance with Part IV.B.1. The *trained contractor* must begin conducting the maintenance inspections in accordance with Part IV.B.1. 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 in accordance with Part IV.B.1. if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational.

C. Qualified Inspector Inspection Requirements

1. With the exception of the following *construction activities* identified in Tables 1 and 2 of Appendix B, a *qualified inspector* must conduct site inspections for all other *construction activities* identified in Tables 1 and 2 of Appendix B:
 - 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 or equal to 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 D; and

- b. the construction of a single-family home that involves soil disturbances of one (1) or more acres but less than or equal to 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 D; and
 - c. construction on *agricultural property* that involves soil disturbances of one (1) or more acres but less than five (5) acres; and
 - d. *construction activities* located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances of 5,000 square feet or more, but less than one acre.
2. The *qualified inspector* must conduct site inspections in accordance with the following timetable:
- a. For *construction sites* where soil disturbance activities are on-going, the *qualified inspector* must conduct a site inspection at least once every seven (7) calendar days; or
 - b. For *construction sites* where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part I.E.6. to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days; or
 - 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* must conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas under the jurisdiction of a *Traditional Land Use Control MS4 Operator*, the *Traditional Land Use Control MS4 Operator* (provided the *Traditional Land Use Control MS4 Operator* is not the *owner or operator* of the *construction activity*) by hard copy or email prior to reducing the inspections to this frequency and again by hard copy or email prior to re-commencing construction; or

- d. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the requirement to have the *qualified inspector* conduct inspections ceases if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1., the *Traditional Land Use Control MS4 Operator(s)* (provided the *Traditional Land Use Control MS4 Operator(s)* are not the *owners or operators* of the *construction activity*) in writing prior to the shutdown and again in writing prior to resuming *construction activity*. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* must terminate coverage by meeting the requirements of Part V; or
 - e. For *construction sites* involving soil disturbance of one (1) or more acres that *directly discharge* to one of the 303(d) segments listed in Appendix D or is located in one of the watersheds listed in Appendix C, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days.
3. At a minimum, the *qualified inspector* must inspect:
- a. all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness; and
 - b. all SMPs under construction to ensure that they are constructed in conformance with the *SWPPP*; and
 - c. all areas of disturbance that have not achieved *final stabilization*; and
 - d. all points of *discharge to surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site*; and
 - e. all points of *discharge* from the *construction site*.

4. The *qualified inspector* must prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report must include and/or address all of the following, for all *construction activities* except those listed in Part IV.C.1.:
 - a. Permit identification number; and
 - b. Date and time of inspection; and
 - c. Name and title of person(s) performing inspection; and
 - d. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection, including the temperature at the time of the inspection; and
 - e. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This must 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; and
 - f. A description of the condition of all *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This must include identification of any *discharges* of sediment to the *surface waters of the State*; and
 - g. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance; and
 - h. 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; and
 - i. Description and sketch (map) 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; and
 - j. Estimates, in square feet or acres, of the following areas:

- i. Total area with active soil disturbance (not requiring either *temporary stabilization* or *final stabilization*); and
 - ii. Total area with inactive soil disturbance (requiring either *temporary stabilization* or *final stabilization*); and
 - iii. Total area that has achieved *temporary stabilization*; and
 - iv. Total area that has achieved *final stabilization*; and
- k. Current stage of construction of all SMPs and identification of all *construction activity* on site that is not in conformance with the *SWPPP* and technical standards; and
- l. 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 SMP(s); and
- m. Identification and status of all corrective actions that were required by previous inspection; and
- n. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* must attach 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* must 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* must 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* must notify the *owner or operator*, and appropriate contractor or subcontractor identified in Part III.A.7., of any corrective actions that need to be taken. The contractor or subcontractor must:
- a. if the corrective action does not require engineering design:

- i. begin implementing corrective actions within one business day; and
 - ii. complete the corrective actions within five business days; or
 - b. if the corrective action requires engineering design:
 - i. begin the engineering design process within five business days; and
 - ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.
6. All inspection reports must be signed by the *qualified inspector*. In accordance with Part I.E.3., the inspection reports must be maintained on site with the *SWPPP*.

Part V. How to Terminate CGP Coverage

A. Electronic Notice of Termination (eNOT) Submittal

The eNOT contains questions to ensure requirements in Part V.A. have been met.

1. An *owner or operator* must terminate coverage when one or more of the following requirements have been met:
 - a. Total project completion:
 - i. all *construction activity* identified in the *SWPPP* has been completed; and
 - ii. all areas of disturbance have achieved *final stabilization*; and
 - iii. all temporary, structural erosion and sediment control measures have been removed; and
 - iv. all SMPs have been constructed in conformance with the *SWPPP* and are operational; and
 - v. an as-built drawing has been prepared; or

- b. Planned shutdown with partial project completion:
 - i. all soil disturbance activities have ceased; and
 - ii. all areas disturbed as of the project shutdown date have achieved *final stabilization*; and
 - iii. all temporary, structural erosion and sediment control measures have been removed; and
 - iv. all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational; and
 - v. an as-built drawing has been prepared; or
 - c. In accordance with Part I.G. Change of Owner or Operator; or
 - d. The *owner or operator* has obtained coverage under an alternative general SPDES permit or an individual SPDES permit.
2. For *construction activities* that require *qualified inspector* inspections in accordance with Part IV.C.1. and have met Part V.A.1.a. or b., the *owner or operator* must have the *qualified inspector* perform a final site inspection prior to submitting the eNOT. The *qualified inspector* must, by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice(s)” certification statements on the eNOT, certify that all the requirements in Part V.A.1.a. or b. have been achieved.
3. For *construction activities* that are subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1. and meet Part V.A.1.a. or b., the *owner or operator* must have the *Traditional Land Use Control MS4 Operator(s)* sign the “MS4 Acceptance” statement on the eNOT in accordance with the requirements in Part VII.J. A *Traditional Land Use Control MS4 Operator* official, by signing this statement, determined that it is acceptable for the *owner or operator* to submit the eNOT in accordance with the requirements of this Part. A *Traditional Land Use Control MS4 Operator* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) when required in Part V.A.2.

Part V.A.4.

4. For *construction activities* that require SMPs and meet Part V.A.1.a. or b., the *owner or operator* must, prior to submitting the eNOT, ensure one of the following:
 - a. for SMP(s) that were constructed by a private entity, but will be owned, operated, and maintained by a public entity, the SMP(s) and any right-of-way(s) needed to operate and maintain such practice(s) have been deeded to the municipality in which the practice(s) is located; or
 - b. for SMP(s) that are privately owned, but will be operated and maintained by a public entity, an executed operation and maintenance agreement is in place with the municipality that will operate and maintain the SMP(s); or
 - c. for SMP(s) 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; or
 - d. for SMP(s) 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 policies and procedures in place that ensure operation and maintenance of the practices in accordance with the operation and maintenance plan.
5. An *owner or operator* that has met the requirements of Part V.A.1., 2., 3., and 4. must request termination of coverage under this permit by submitting a complete Notice of Termination form electronically using a NYSDEC approved form.⁵
 - a. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

⁵ Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

Part VI. Record Retention and Reporting

A. Record Retention

The *owner or operator* must retain a copy of the documents listed in Part I.E.3. and a copy of the LOT for a period of at least five years from the date that NYSDEC accepts a complete NOT submitted in accordance with Part V.

B. Reporting

Except for the eNOI, the signature forms associated with the eNOI, and the eNOT, all other written correspondence requested by NYSDEC, including individual permit applications, must be sent to the address of the appropriate DOW (SPDES) Program contact at the Regional Office listed in Appendix E.

Part VII. Standard Permit Requirements

For the purposes of this permit, examples of contractors and subcontractors include: third-party maintenance and construction contractors.

A. Duty to Comply

The *owner or operator*, and all contractors or subcontractors, must comply with all requirements of this permit. Any non-compliance with the requirements of this permit constitutes a violation of the New York State Environmental Conservation Law (ECL), and its implementing regulations, and is grounds for enforcement action. Filing of a request for termination of coverage under this permit, or a notification of planned changes or anticipated non-compliance, does not limit, diminish or stay compliance with any requirements of this permit.

B. Need to Halt or Reduce Activity Not a Defense

The necessity to halt or reduce the *construction activity* regulated by this permit, in order to maintain compliance with the requirements of this permit, must not be a defense in an enforcement action.

C. Penalties

There are substantial criminal, civil, and administrative penalties associated with violating the requirements of this permit. Fines of up to \$37,500 per day for each

violation and imprisonment for up to 15 years may be assessed depending upon the nature and degree of the offense.

D. False Statements

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 monitoring reports or reports of compliance or noncompliance must, upon conviction, be punished in accordance with ECL §71-1933 and or New York State Penal Law Articles 175 and 210.

E. Re-Opener Clause

Upon issuance of this permit, a determination has been made on the basis of a submitted Notice of Intent, plans, or other available information, that compliance with the specified permit requirements will reasonably protect classified water use and assure compliance with applicable *water quality standards*. Satisfaction of the requirements of this permit notwithstanding, if operation pursuant to this permit causes or contributes to a condition in contravention of State *water quality standards* or guidance values, or if NYSDEC determines that a modification is necessary to prevent impairment of the best use of the waters or to assure maintenance of *water quality standards* or compliance with other provisions of ECL Article 17 or the Clean Water Act (CWA), or any regulations adopted pursuant thereto, NYSDEC may require such modification and the Commissioner may require abatement action to be taken by the *owner or operator* and may also prohibit such operation until the modification has been implemented.

F. Duty to Mitigate

The *owner or operator*, and its contractors and subcontractors, must 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.

G. Requiring Another General Permit or Individual SPDES Permit

NYSDEC may require any *owner or operator* authorized to *discharge* in accordance with this permit to apply for and obtain an individual SPDES permit or apply for authorization to *discharge* in accordance with another general SPDES permit.

1. Cases where an individual SPDES permit or authorization to discharge in accordance with another general SPDES permit may be required include, but is not limited to the following:

Part VII.G.1.a.

- a. the *owner or operator* is not in compliance with the conditions of this permit or does not meet the requirements for coverage under this permit; and
 - b. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of *pollutants* applicable to the *point source*; and
 - c. new effluent limitation guidelines or new source performance standards are promulgated that are applicable to *point sources* authorized to *discharge* in accordance with this permit; and
 - d. existing effluent limitation guidelines or new source performance standards that are applicable to *point sources* authorized to *discharge* in accordance with this permit are modified; and
 - e. a water quality management plan containing requirements applicable to such *point sources* is approved by NYSDEC; and
 - f. circumstances have changed since the time of the request to be covered so that the *owner or operator* is no longer appropriately controlled under this permit, or either a temporary or permanent reduction or elimination of the authorized *discharge* is necessary; and
 - g. the *discharge* is in violation of section 17-0501 of the ECL; and
 - h. the *discharge(s)* is a significant contributor of *pollutants*. In making this determination, NYSDEC may consider the following factors:
 - i. the location of the *discharge(s)* with respect to *surface waters of the State*; and
 - ii. the size of the *discharge(s)*; and
 - iii. the quantity and nature of the *pollutants discharged* to *surface waters of the State*; and
 - iv. other relevant factors including compliance with other provisions of ECL Article 17, or the CWA.
2. When NYSDEC requires any *owner or operator* authorized by this permit to apply for an individual SPDES permit as provided for in this subdivision, it must notify the *owner or operator* in writing that a permit application is required. This notice must include a brief statement of the reasons for this decision, an application

form, a statement setting a time for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from the *owner's or operator's* receipt of the notification letter, whereby the authorization to *discharge* under this permit must be terminated. NYSDEC may grant additional time upon demonstration, to the satisfaction of the RWE,⁶ that additional time to apply for an alternative authorization is necessary or where NYSDEC has not provided a permit determination in accordance with 6 NYCRR Part 621.

3. When an individual SPDES permit is issued to an *owner or operator* authorized to *discharge* under this permit for the same *discharge(s)*, this permit authorization for *construction activities* authorized under the individual SPDES permit is automatically terminated on the effective date of the individual SPDES permit unless termination is earlier in accordance with 6 NYCRR Part 750.

H. Duty to Provide Information

The *owner or operator* must furnish to NYSDEC, within five business days, unless otherwise set forth by NYSDEC, any information that NYSDEC may request to determine whether cause exists to determine compliance with this permit or to determine whether cause exists for requiring an individual SPDES permit in accordance with 6 NYCRR 750-1.21(e) (see Part VII.G. Requiring Another General Permit or Individual Permit).

The *owner or operator* must make available to NYSDEC, for inspection and copying, or furnish to NYSDEC within 25 business days of receipt of a NYSDEC request for such information, any information retained in accordance with this permit.

Except for Part I.D.4. and 5. and Part I.G., the following applies: where the *owner or operator* becomes aware that it failed to submit any relevant facts on the Notice of Intent, or submitted incorrect information in a Notice of Intent or in any report to NYSDEC, the *owner or operator* must submit such facts or corrected information to NYSDEC within five business days.

I. Extension

In the event a new permit is not issued and effective prior to the expiration of this permit, and this permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the requirements of this permit until a new permit is issued and effective.

⁶ The Regional Water Manager where a DEC Region does not have a RWE.

J. Signatories and Certification

The Notice of Intent, Notice of Termination, and reports required by this permit must be signed as provided in 40 CFR §122.22.

1. All Notices of Intent and Notices of Termination must be signed as follows:

a. For a corporation. 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 Notice of Intent or Notice of Termination requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Note: NYSDEC does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR §122.22(a)(1)(i). NYSDEC will presume that these responsible corporate officers have the requisite authority to sign the Notice of Intent or Notice of Termination unless the corporation has notified NYSDEC to the contrary. Corporate procedures governing authority to sign a Notice of Intent or Notice of Termination may provide for assignment or delegation to applicable corporate positions under 40 CFR §122.22(a)(1)(ii) rather than to specific individuals.

b. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively.

- c. For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - 1. the chief executive officer of the agency; or
 - 2. 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. All reports required by this permit, and other information requested by NYSDEC, must be signed by a person described in Part VII.J.1., 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.J.1. or using the Duly Authorized Form, found on the DEC website; and
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, 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 is submitted to NYSDEC.
- 3. Changes to authorization. If an authorization under Part VII.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the *construction activity*, a new authorization satisfying the requirements of Part VII.J.2. must be submitted to NYSDEC prior to or together with any reports, information, or applications to be signed by an authorized representative.
- 4. Certification. Any person signing a document under Part VII.J.1. or 2. must make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who

manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

5. Electronic reporting. If documents described in Part VII.J.1. or 2. are submitted electronically by or on behalf of the *construction activity* with coverage under this permit, any person providing the electronic signature for such documents must meet all relevant requirements of this section, and must ensure that all of the relevant requirements of 40 CFR Part 3 (including, in all cases, subpart D to Part 3) (Cross-Media Electronic Reporting) and 40 CFR Part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

K. Inspection and Entry

The *owner or operator* must allow NYSDEC, the USEPA Regional Administrator, the applicable county health department, or any authorized representatives of those entities, 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 requirements of this permit; and
2. have access to and copy at reasonable times, any records that must be kept under the requirements of this permit, including records required to be maintained for purposes of operation and maintenance; and
3. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
4. sample or monitor at reasonable times, for the purposes of assuring general SPDES permit compliance or as otherwise authorized by the CWA or ECL, any substances or parameters at any location; and
5. enter upon the property of any contributor to the regulated facility or activity under authority of the *owner or operator*.

L. Confidentiality of Information

The following must not be held confidential: this permit, the fact sheet for this permit, the name and address of any *owner or operator*, effluent data, the Notice of Intent, and information regarding the need to obtain an individual permit or an alternative general SPDES permit. This includes information submitted on forms themselves and any attachments used to supply information required by the forms (except information submitted on usage of substances). Upon the request of the *owner or operator*, NYSDEC must make determinations of confidentiality in accordance with 6 NYCRR Part 616, except as set forth in the previous sentence. Any information accorded confidential status must be disclosed to the Regional Administrator upon his or her written request. Prior to disclosing such information to the Regional Administrator, NYSDEC will notify the Regional Administrator of the confidential status of such information.

M. Other Permits May Be Required

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

N. NYSDEC Orders or Civil Decrees/Judgments

The issuance of this permit by the NYSDEC, and the coverage under this permit by the *owner or operator*, does not supersede, revoke, or rescind any existing order on consent or civil Decree/Judgment, or modification to any such documents or to any order issued by the Commissioner, or any of the terms, conditions, or requirements contained in such order or modification therefore, unless expressly noted.

O. Property Rights

Coverage under this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the *discharge* authorized.

P. Compliance with Interstate Standards

If the *construction activity* covered by this permit originates within the jurisdiction of an interstate water pollution control agency, then the *construction activity* must also comply with any applicable effluent standards or *water quality standards* promulgated by that interstate agency and as set forth in this permit for such *construction activities*.

Q. Oil and Hazardous Substance Liability

Coverage under this permit does not affect the imposition of responsibilities upon, or the institution of any legal action against, the *owner or operator* under section 311 of the CWA, which must be in conformance with regulations promulgated pursuant to section 311 governing the applicability of section 311 of the CWA to *discharges* from facilities with *NPDES* permits, nor must such issuance preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. section 9601 et seq. (CERCLA).

R. 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, must not be affected thereby.

S. NYSDEC Approved Forms

The *owner or operator* must provide all relevant information that is requested by NYSDEC, and required by this permit, on all NYSDEC approved forms.

APPENDIX A – Abbreviations and Definitions

Abbreviations

APO – Agency Preservation Officer
BB – New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016
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)
DM – New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024
DOW – Division of Water
EAF – Environmental Assessment Form
ECL – chapter 43-B of the Consolidated Laws of the State of New York, entitled the 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
NYC – The City of New York
NYCDEP – The City of New York Department of Environmental Protection
NYSDEC – The New York State Department of Environmental Conservation
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RR – Runoff Reduction
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SMP – Post-Construction Stormwater Management Practice
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. If a word is not italicized in the permit, use its common definition.

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 – the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023).

Alter Hydrology from Pre- to Post-Development Conditions – 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 System – a sewer system which conveys sewage and *stormwater* through a single pipe system to a publicly owned treatment works.

Commence (Commencement of) Construction Activities – 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.

Common Plan of Development or Sale – a contiguous area where multiple separate and distinct *construction activities* are occurring, or may occur, under one plan. The “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 (SEQR) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating *construction activities* may occur on a specific plot. A *common plan of development or sale* is comprised of two or more *phases*.

Common plan of development or sale does not include separate and distinct *construction activities* that are occurring, or may occur, under one plan that are at least 1/4 mile apart provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Construction Activity(ies) – identified within 40 CFR 122.26(b)(14)(x), 122.26(b)(15)(i), and 122.26(b)(15)(ii), any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, mechanized 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, which is excluded from the calculation of the soil disturbance for a project. Routine maintenance includes, but is not limited to:

- Re-grading of gravel roads or parking lots; and
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of the ditch; and
- Replacement of existing culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of a ditch; and
- Replacement of existing bridges that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity beneath the bridges; and
- 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); and
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*; and
- 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; and
- Long-term use of equipment storage areas at or near highway maintenance facilities; and
- 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*; and
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts; and
- Maintenance of ski trails including brush hog use and mowing; and
- Above ground snowmaking pipe replacement; and
- Replacement of existing utility poles; etc.

Construction Site – the land area where *construction activity(ies)* will occur. See also the definitions for “*Commence (Commencement of) Construction Activities*” and “*Common Plan of Development or Sale.*”

Dewatering – the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Directly Discharge(s)(ing) (to a specific surface waterbody) – 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)(d) – any addition of any *pollutant* to waters of the State through an outlet or *point source*.

Embankment – an earthen or rock slope that supports a road/highway.

Equivalent (Equivalence) – 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 – 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.

Historic Property – 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) – all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and compacted gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – not technologically possible, or not economically practicable and achievable considering best industry practices.

Minimize(ing)(ation) – 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 System (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):

1. owned or operated by a State, city, town, village, 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*; and
2. designed or used for collecting or conveying *stormwater*; and
3. which is not a *combined sewer system*; and
4. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Natural Buffer(s) – an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – 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.

Nonpoint Source(s) – 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 – flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator – 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 requirements.

Performance Criteria – the six performance criteria for each group of SMPs in Chapters 5 and 6 of the technical standard, New York State Stormwater Management Design Manual (DM), dated July 31, 2024. These include feasibility, conveyance, pretreatment, treatment, landscaping, and maintenance. It does not include the *Sizing Criteria* (i.e. WQv, RRV, CPv, Qp and Qf) in Part I.C.2. of the permit.

Phase – a defined area in which *construction activities* are occurring or will occur separate from other defined area(s).

Point Source – 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(s) – 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 – 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 NYSDEC 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 NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC 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 SMPs that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional – 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 NYSDEC endorsed individual(s). Individuals preparing *SWPPPs* that require the SMP 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) – 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.).

Renewable Energy – electricity or thermal energy generated by renewable energy systems through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.

Site Limitations – 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 – the criteria included in Part I.C.2 of the permit that are used to size SMPs. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank Flood* (Qp), and Extreme Flood (Qf).

Steep Slope – land area designated on the current United States Department of Agriculture (USDA) Soil Survey as Soil Slope Phase D, (provided the map unit name or description 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.

Stormwater – that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the State.

Streambank – 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) – 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 SMPs); and identifies procedures the *owner or operator* will implement to comply with the requirements 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 – an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization – 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 Load (TMDL) – 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 and still meet *water quality standards*, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharges*, Load Allocations (LA) for *nonpoint sources*, and a margin of safety (MOS).

Traditional Land Use Control MS4 Operator – a city, town, or village with land use control authority that is authorized to *discharge* under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Trained Contractor – an employee from the contracting (construction) company, identified in Part III.A.7., that has received four (4) hours of NYSDEC endorsed training

in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC 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.7., 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 NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity).

The *trained contractor* is responsible for the day-to-day implementation of the *SWPPP*.

Tree Clearing – *construction activities* limited to felling and removal of trees.

Tree clearing does not include hand felling and leaving the trees in place with no support from mechanized equipment, which is not considered *construction activity* requiring coverage under this permit.

Water Quality Standard – such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP
THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities* that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single-family home not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions with 25% or less *impervious cover* at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix D
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that include construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.

The following *construction activities* that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Within the municipal boundaries of NYC:

- Stand-alone road reconstruction, where the total soil disturbance from only that road construction, is less than one (1) acre of land.

The following *construction activities*:

- 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, *stormwater* retrofits, stream restoration, and resiliency projects that reconstruct shoreline areas to address sea level rise
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an *impervious cover*
- Cross-country ski trails, walking/hiking trails, and mountain biking trails, including a de minimis parking lot (maximum 10 spaces total, sized for passenger cars) with 35 feet minimum preservation of undisturbed area downgradient from the parking lot
- Dam rehabilitation (the structure of the dam itself)
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are not part of residential, commercial, or institutional development;
- Sidewalks, bike paths, or walking paths, 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.

Table 1 (Continued)
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP
THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities*:

- Slope stabilization
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Vegetated open space (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) that do not *alter hydrology from pre- to post-development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions
- Demolition where vegetation will be established, and no *redevelopment activity* is planned¹
- Installation or replacement of either an overhead electric transmission line or a ski lift tower that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*.
- Solar array field areas that have tables elevated off the ground, spaced one table width apart, do not *alter hydrology from pre- to post-development conditions*, and address water quality volume and runoff reduction volume by maintaining sheet flow on slopes less than 8%.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that do not include construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions.
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary *impervious areas* that will be restored to pre-construction conditions once the *construction activity* is complete (in this context, “temporary” means the *impervious area* will be in place for two years or less)
- Other *construction activities* that do not include the construction or reconstruction of *impervious area*, and do not *alter hydrology from pre- to post-development* conditions, and are not listed in Table 2.

1. If the site is redeveloped in the future, a new eNOI must be submitted.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPs)

The following *construction activities*:

- Single-family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family home that disturbs five (5) or more acres of land
- Single-family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- 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 between 20,000 square feet and one (1) acre of land within the municipal boundaries of NYC 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 *common plan of development or sale* that will ultimately disturb five (5) or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Creation of 5,000 square feet or more of *impervious area* in the municipal boundaries of NYC
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) that involves soil disturbance greater than five acres.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that involves soil disturbance greater than five acres and include the construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
- Facility buildings, including ski lodges, restroom buildings, pumphouses, ski lift terminals, and maintenance and groomer garages
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills; including creation of landfills or capping landfills.
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTWs, water treatment plants, and water storage tanks
- Golf courses
- Office complexes

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPs)

The following *construction activities*:

- Permanent laydown yards and equipment storage lots
- Playgrounds that include the construction or reconstruction of *impervious area*
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surfaces
- Road construction or reconstruction, outside the municipal boundaries of NYC
- Road construction within the municipal boundaries of NYC
- Stand-alone road reconstruction, within the municipal boundaries of NYC where the total soil disturbance from that road reconstruction involves soil disturbance of one (1) acre or more of land
- Parking lot construction or reconstruction (as with all Table 2 bullets, this includes parking lots constructed as part of the *construction activities* listed in Table 1, unless a Table 1 bullet specifies otherwise)
- Athletic fields (natural grass) that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations, and well drilling pads, surfaced with *impervious cover*, and constructed as part of an overhead electric transmission line, wind-power, cell tower, oil or gas well drilling, sewer or water main, ski lift, or other linear utility project
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of a residential, commercial or institutional development
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of highway construction or reconstruction
- Solar array field areas on slopes greater than 8% that cannot maintain sheet flow using management practices identified in the BB or the DM
- Solar array field areas on slopes less than 8% that will *alter the hydrology from pre- to post-development* conditions
- Solar array field areas with tables that are not elevated high enough to achieve *final stabilization* beneath the tables
- Traditional *impervious areas* associated with solar development (e.g. roads, buildings, transformers)
- Utility pads surfaced with *impervious cover*, including electric vehicle charging stations
- All other *construction activities* that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre- to post-development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators of construction activities* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs designed in conformance with the Enhanced Phosphorus Removal Standards included in the DM technical standard.

- 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

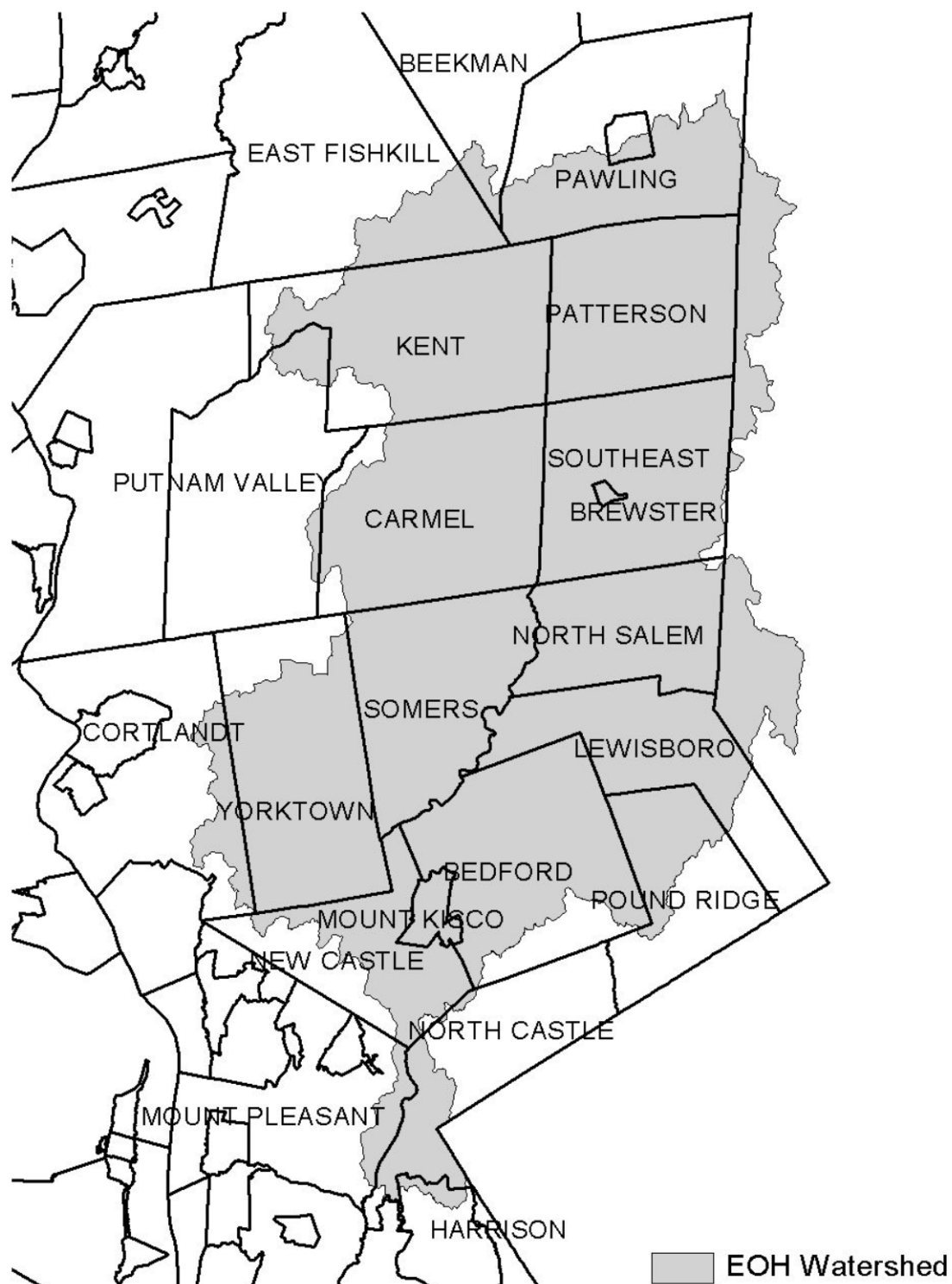


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

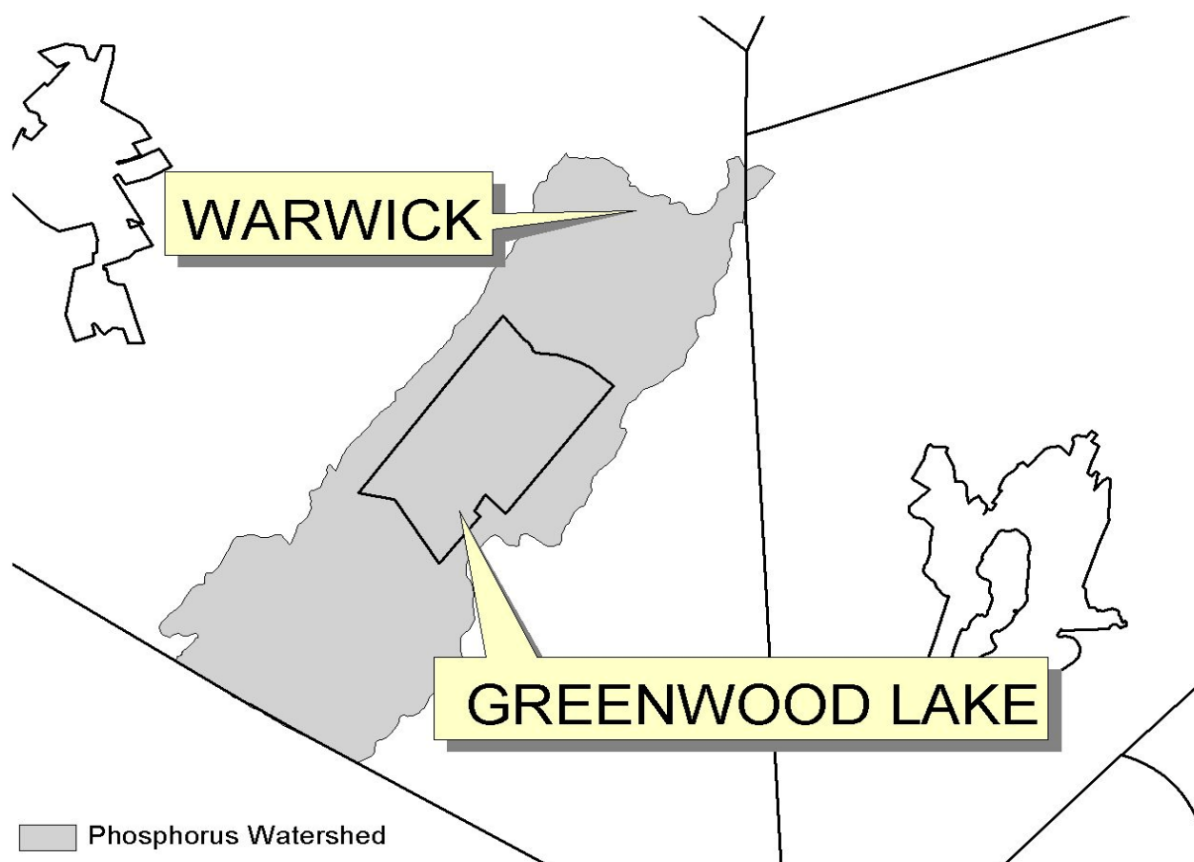


Figure 4 - Oscawana Lake Watershed

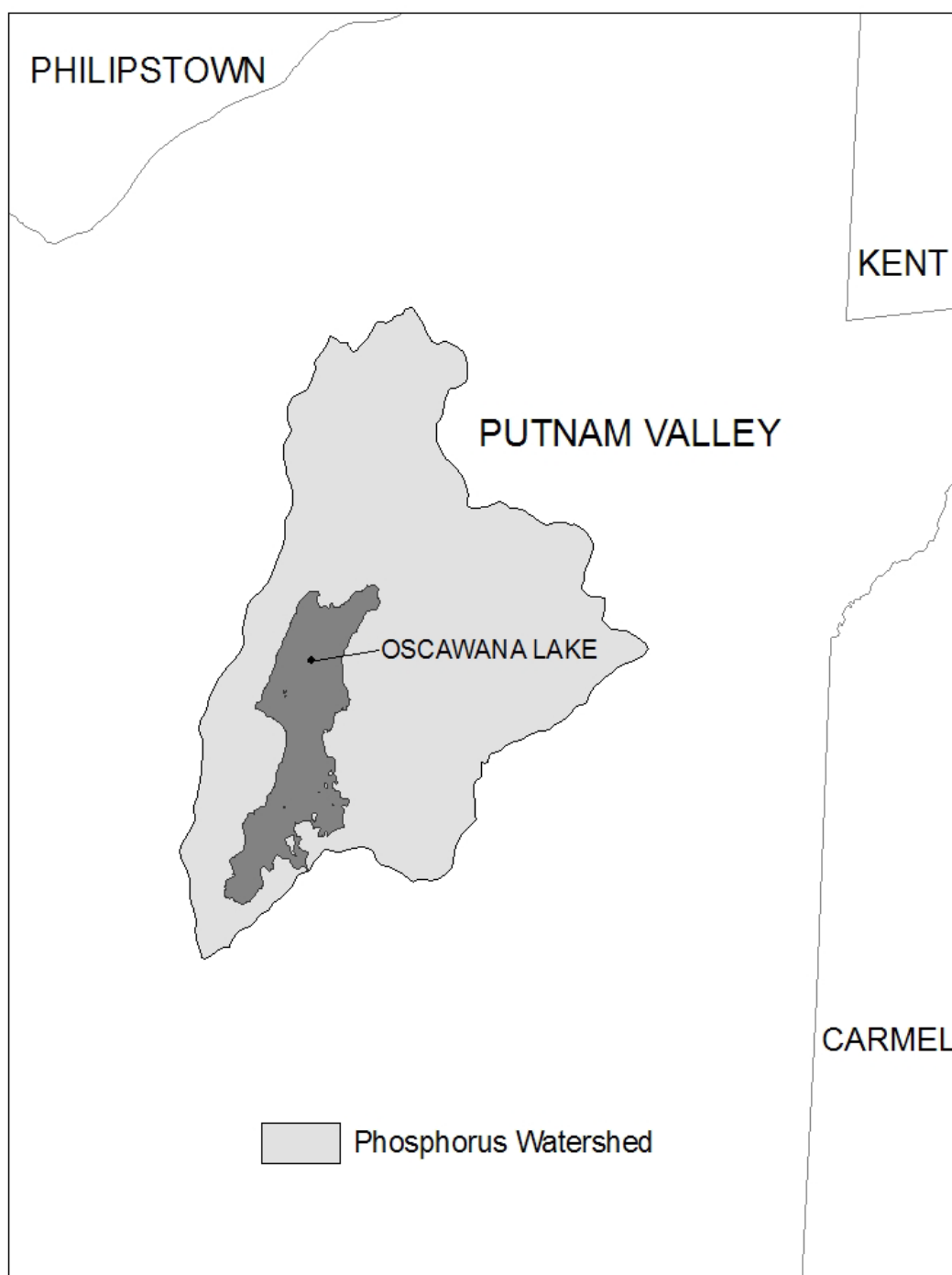
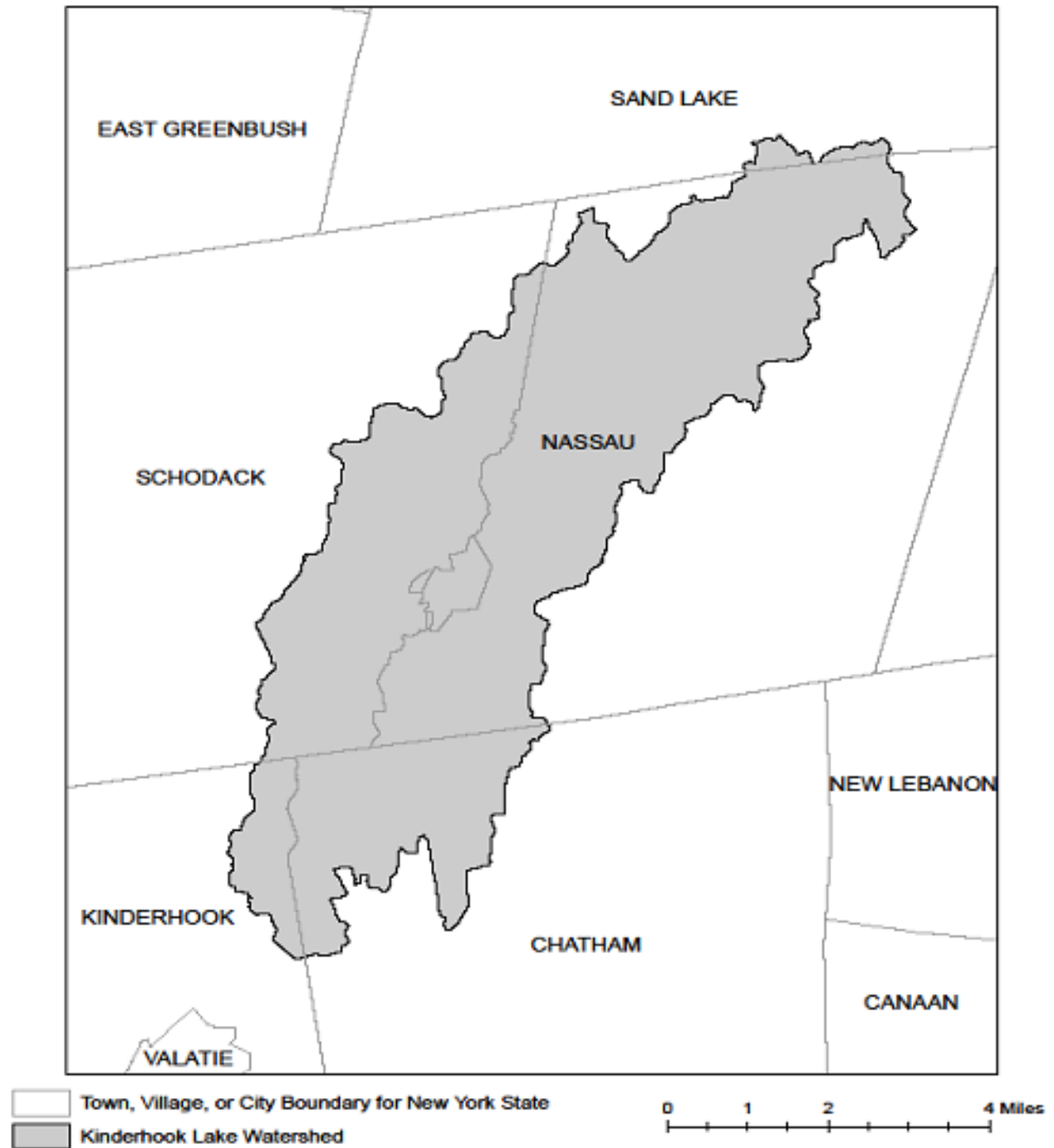


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Impaired Waterbodies (by Construction Related Pollutants)

List of waterbodies impaired by *pollutants* related to *construction activity*, including turbidity, silt/sediment, and nutrients (e.g. nitrogen, phosphorus). This list is a subset of “The Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL” dated June 2020.

County	Waterbody	Pollutant
Albany	Ann Lee (Shakers) Pond, Stump Pond (1201-0096)	Phosphorus
Albany	Lawsons Lake (1301-0235)	Phosphorus
Allegany	Amity Lake, Saunders Pond (0403-0054)	Phosphorus
Allegany	Andover Pond (0403-0056)	Phosphorus
Bronx	Reservoir No.1/Lake Isle (1702-0075)	Phosphorus
Bronx	Van Cortlandt Lake (1702-0008)	Phosphorus
Broome	Blueberry, Laurel Lakes (1404-0033)	Phosphorus
Broome	Fly Pond, Deer Lake (1404-0038)	Phosphorus
Broome	Minor Tribs to Lower Susquehanna (0603-0044)	Phosphorus
Broome	Whitney Point Lake/Reservoir (0602-0004)	Phosphorus
Cattaraugus	Allegheny River/Reservoir (0201-0023)	Phosphorus
Cattaraugus	Beaver Lake/Alma Pond (0201-0073)	Phosphorus
Cattaraugus	Case Lake (0201-0020)	Phosphorus
Cattaraugus	Linlyco/Club Pond (0201-0035)	Phosphorus
Cayuga	Duck Lake (0704-0025)	Phosphorus
Cayuga	Owasco Inlet, Upper, and tribs (0706-0014)	Nutrients
Chautauqua	Chadakoin River and tribs (0202-0018)	Phosphorus
Chautauqua	Hulburt/Clymer Pond (0202-0079)	Phosphorus
Chautauqua	Middle Cassadaga Lake (0202-0002)	Phosphorus
Clinton	Great Chazy River, Lower, Main Stem (1002-0001)	Silt/Sediment
Columbia	Robinson Pond (1308-0003)	Phosphorus
Cortland	Dean Pond (0602-0077)	Phosphorus
Dutchess	Fallkill Creek (1301-0087)	Phosphorus
Dutchess	Hillside Lake (1304-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Silt/Sediment
Erie	Beeman Creek and tribs (0102-0030)	Phosphorus
Erie	Delaware Park Pond (0101-0026)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Silt/Sediment
Erie	Green Lake (0101-0038)	Phosphorus
Erie	Little Sister Creek, Lower, and tribs (0104-0045)	Phosphorus
Erie	Murder Creek, Lower, and tribs (0102-0031)	Phosphorus

Erie	Rush Creek and tribs (0104-0018)	Phosphorus
Erie	Scajaquada Creek, Lower, and tribs (0101-0023)	Phosphorus
Erie	Scajaquada Creek, Middle, and tribs (0101-0033)	Phosphorus
Erie	Scajaquada Creek, Upper, and tribs (0101-0034)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Silt/Sediment
Genesee	Bigelow Creek and tribs (0402-0016)	Phosphorus
Genesee	Black Creek, Middle, and minor tribs (0402-0028)	Phosphorus
Genesee	Black Creek, Upper, and minor tribs (0402-0048)	Phosphorus
Genesee	Bowen Brook and tribs (0102-0036)	Phosphorus
Genesee	LeRoy Reservoir (0402-0003)	Phosphorus
Genesee	Mill Pond (0402-0050)	Phosphorus
Genesee	Oak Orchard Cr, Upper, and tribs (0301-0014)	Phosphorus
Genesee	Oatka Creek, Middle, and minor tribs (0402-0031)	Phosphorus
Genesee	Tonawanda Cr, Middle, Main Stem (0102-0002)	Phosphorus
Greene	Schoharie Reservoir (1202-0012)	Silt/Sediment
Greene	Sleepy Hollow Lake (1301-0059)	Silt/Sediment
Herkimer	Steele Creek tribs (1201-0197)	Phosphorus
Herkimer	Steele Creek tribs (1201-0197)	Silt/Sediment
Kings	Hendrix Creek (1701-0006) 18	Nitrogen
Kings	Prospect Park Lake (1701-0196)	Phosphorus
Lewis	Mill Creek/South Branch, and tribs (0801-0200)	Nutrients
Livingston	Christie Creek and tribs (0402-0060)	Phosphorus
Livingston	Conesus Lake (0402-0004)	Phosphorus
Livingston	Mill Creek and minor tribs (0404-0011)	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs (0402-0033)	Phosphorus
Monroe	Buck Pond (0301-0017)	Phosphorus
Monroe	Cranberry Pond (0301-0016)	Phosphorus
Monroe	Durand, Eastman Lakes (0302-0037)	Phosphorus
Monroe	Lake Ontario Shoreline, Western (0301-0069) 9	Phosphorus
Monroe	Long Pond (0301-0015)	Phosphorus
Monroe	Mill Creek and tribs (0302-0025)	Phosphorus 2
Monroe	Mill Creek/Blue Pond Outlet and tribs (0402-0049)	Phosphorus
Monroe	Minor Tribs to Irondequoit Bay (0302-0038)	Phosphorus
Monroe	Rochester Embayment - East (0302-0002) [9]	Phosphorus
Monroe	Rochester Embayment - West (0301-0068) 9	Phosphorus
Monroe	Shipbuilders Creek and tribs (0302-0026)	Phosphorus 2
Monroe	Thomas Creek/White Brook and tribs (0302-0023)	Phosphorus

Nassau	Bannister Creek/Bay (1701-0380)	Nitrogen
Nassau	Beaver Lake (1702-0152)	Phosphorus
Nassau	Browswere Bay (1701-0383)	Nitrogen
Nassau	Camaans Pond (1701-0052)	Phosphorus
Nassau	East Meadow Brook, Upper, and tribs (1701-0211)	Silt/Sediment
Nassau	East Rockaway Channel (1701-0381)	Nitrogen
Nassau	Glen Cove Creek, Lower, and tribs (1702-0146)	Silt/Sediment
Nassau	Grant Park Pond (1701-0054)	Phosphorus
Nassau	Hempstead Bay, Broad Channel (1701-0032)	Nitrogen
Nassau	Hempstead Lake (1701-0015)	Phosphorus
Nassau	Hewlett Bay (1701-0382)	Nitrogen
Nassau	Hog Island Channel (1701-0220)	Nitrogen
Nassau	Massapequa Creek, Upper, and tribs (1701-0174)	Phosphorus
Nassau	Milburn/Parsonage Creeks, Upp, and tribs (1701-0212)	Phosphorus
Nassau	Reynolds Channel, East (1701-0215) [12]	Nitrogen
Nassau	Reynolds Channel, West (1701-0216) 12	Nitrogen
Nassau	Tidal Tribs to Hempstead Bay (1701-0218)	Nitrogen
Nassau	Tribs (fresh) to East Bay (1701-0204)	Silt/Sediment
Nassau	Tribs (fresh) to East Bay (1701-0204)	Phosphorus
Nassau	Tribs to Smith Pond/Halls Pond (1701-0221)	Phosphorus
Nassau	Woodmere Channel (1701-0219)	Nitrogen
New York	Harlem Meer (1702-0103)	Phosphorus
New York	The Lake in Central Park (1702-0105)	Phosphorus
Niagara	Bergholtz Creek and tribs (0101-0004)	Phosphorus
Niagara	Hyde Park Lake (0101-0030)	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0053) 9	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0072) 9	Phosphorus
Oneida	Ballou, Nail Creeks (1201-0203)	Phosphorus
Onondaga	Ley Creek and tribs (0702-0001) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nitrogen (NH ₃ , NO ₂)
Onondaga	Onondaga Creek, Lower (0702-0023) 10	Nutrients (phosphorus)
Onondaga	Onondaga Creek, Lower, and tribs (0702-0023)	Turbidity
Onondaga	Onondaga Creek, Middle, and tribs (0702-0004)	Turbidity
Onondaga	Onondaga Creek, Upper, and tribs (0702-0024)	Turbidity
Ontario	Great Brook and minor tribs (0704-0034)	Phosphorus 2
Ontario	Great Brook and minor tribs (0704-0034)	Silt/Sediment

Ontario	Hemlock Lake Outlet and minor tribs (0402-0013)	Phosphorus
Ontario	Honeoye Lake (0402-0032)	Phosphorus
Orange	Brown Pond Reservoir (1303-0013)	Phosphorus
Orange	Lake Washington (1303-0012)	Phosphorus
Orange	Minor Tribs to Middle Wallkill (1306-0061)	Phosphorus
Orange	Monhagen Brook and tribs (1306-0074)	Phosphorus
Orange	Orange Lake (1301-0008) [16]	Phosphorus
Orange	Quaker Creek and tribs (1306-0025)	Phosphorus
Orange	Wallkill River, Middle, Main Stem (1306-0038)	Phosphorus
Orange	Wallkill River, Upper, and Minor tribs (1306-0017)	Phosphorus
Orleans	Glenwood Lake (0301-0041)	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0070) 9	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0071) 9	Phosphorus
Oswego	Lake Neatahwanta (0701-0018)	Nutrients (phosphorus)
Oswego	Pleasant Lake (0703-0047)	Phosphorus
Putnam	Lost Lake, Putnam Lake (1302-0053)	Phosphorus
Putnam	Minor Tribs to Croton Falls Reservoir (1302-0001)	Phosphorus
Queens	Bergen Basin (1701-0009) 18	Nitrogen
Queens	Jamaica Bay, Eastern, and tribs, Queens (1701-0005) 18	Nitrogen
Queens	Kissena Lake (1702-0258)	Phosphorus
Queens	Meadow Lake (1702-0030)	Phosphorus
Queens	Shellbank Basin (1701-0001) 18	Nitrogen
Queens	Willow Lake (1702-0031)	Phosphorus
Rensselaer	Nassau Lake (1310-0001)	Phosphorus
Rensselaer	Snyders Lake (1301-0043)	Phosphorus
Richmond	Grassmere Lake/Bradys Pond (1701-0357)	Phosphorus
Rockland	Congers Lake, Swartout Lake (1501-0019)	Phosphorus
Rockland	Rockland Lake (1501-0021)	Phosphorus
Saratoga	Ballston Lake (1101-0036)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Silt/Sediment
Saratoga	Lake Lonely (1101-0034)	Phosphorus
Saratoga	Round Lake (1101-0060)	Phosphorus
Saratoga	Tribs to Lake Lonely (1101-0001)	Phosphorus
Schenectady	Collins Lake (1201-0077)	Phosphorus
Schenectady	Duane Lake (1311-0006)	Phosphorus
Schenectady Lake	Mariaville Lake (1201-0113)	Phosphorus
Schuyler	Cayuta Lake (0603-0005)	Phosphorus

Seneca	Reeder Creek and tribs (0705-0074)	Phosphorus
St.Lawrence	Black Lake Outlet, Black Lake (0906-0001)	Phosphorus
St.Lawrence	Fish Creek and minor tribs (0906-0026)	Phosphorus
Steuben	Smith Pond (0502-0012)	Phosphorus
Suffolk	Agawam Lake (1701-0117)	Phosphorus
Suffolk	Big/Little Fresh Ponds (1701-0125)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Silt/Sediment
Suffolk	Fresh Pond (1701-0241)	Phosphorus
Suffolk	Great South Bay, East (1701-0039)	Nitrogen
Suffolk	Great South Bay, Middle (1701-0040)	Nitrogen
Suffolk	Great South Bay, West (1701-0173)	Nitrogen
Suffolk	Lake Ronkonkoma (1701-0020)	Phosphorus
Suffolk	Mattituck/Marratooka Pond (1701-0129)	Phosphorus
Suffolk	Mill and Seven Ponds (1701-0113)	Phosphorus
Suffolk	Millers Pond (1702-0013)	Phosphorus
Suffolk	Moriches Bay, East (1701-0305)	Nitrogen
Suffolk	Moriches Bay, West (1701-0038)	Nitrogen
Suffolk	Quantuck Bay (1701-0042)	Nitrogen
Suffolk	Shinnecock Bay and Inlet (1701-0033)	Nitrogen
Suffolk	Tidal Tribs to West Moriches Bay (1701-0312)	Nitrogen
Sullivan	Bodine, Montgomery Lakes (1401-0091)	Phosphorus
Sullivan	Davies Lake (1402-0047)	Phosphorus
Sullivan	Evens Lake (1402-0004)	Phosphorus
Sullivan	Pleasure Lake (1402-0055)	Phosphorus
Sullivan	Swan Lake (1401-0063)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Silt/Sediment
Ulster	Ashokan Reservoir (1307-0004)	Silt/Sediment
Ulster	Esopus Creek, Lower, Main Stem (1307-0010) [17]	Turbidity
Ulster	Esopus Creek, Middle, Main Stem (1307-0003) 17	Turbidity
Ulster	Esopus Creek, Upper, and minor tribs (1307-0007)[3]	Silt/Sediment
Ulster	Wallkill River, Lower, Main Stem (1306-0027)	Phosphorus
Warren	Hague Brook and tribs (1006-0006)	Silt/Sediment
Warren	Huddle/Finkle Brooks and tribs (1006-0003)	Silt/Sediment
Warren	Indian Brook and tribs (1006-0002)	Silt/Sediment
Warren	Lake George (1006-0016) and tribs	Silt/Sediment
Warren	Tribs to Lake George, East Shore (1006-0020)	Silt/Sediment
Warren	Tribs to Lake George, Lk.George Village (1006-0008)	Silt/Sediment

Washington	Wood Cr/Champlain Canal and tribs (1005-0036)	Phosphorus
Westchester	Lake Katonah (1302-0136)	Phosphorus
Westchester	Lake Lincolndale (1302-0089)	Phosphorus
Westchester	Lake Meahagh (1301-0053)	Phosphorus
Westchester	Lake Mohegan (1301-0149)	Phosphorus
Westchester	Lake Shenorock (1302-0083)	Phosphorus
Westchester	Mamaroneck River, Lower (1702-0071)	Silt/Sediment
Westchester	Mamaroneck River, Upp, & minor tribs (1702-0123)	Silt/Sediment
Westchester	Saw Mill River (1301-0007)	Phosphorus
Westchester	Saw Mill River, Middle, and tribs (1301-0100)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Silt/Sediment
Westchester	Silver Lake (1702-0040)	Phosphorus
Westchester	Teatown Lake (1302-0150)	Phosphorus
Westchester	Truesdale Lake (1302-0054)	Phosphorus
Westchester	Wallace Pond (1301-0140)	Phosphorus

APPENDIX E – List of NYSDEC Regional Offices

<u>Region</u>	<u>COVERING THE FOLLOWING COUNTIES:</u>	<u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u>	<u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u>
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	220 WHITE PLAINS ROAD, SUITE 110 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, Po Box 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7438	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7165	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7070

Appendix B

Electronic Notice of Intent (eNOI), MS4 SWPPP Acceptance Form

SWPPP Preparer Certification Form

Owner/Operator Certification Form

NYSDEC Letter of Authorization

NYSDEC Confirmation Email – SPDES Permit ID Number

Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001

version 1.18

(Submission #: HQM-MNW6-8AKN2, version 1)

Details

Originally Started By Jason Utzig

Alternate Identifier Amherst Central Park—Region 9

Submission ID HQM-MNW6-8AKN2

Status Draft

Form Input

Eligibility

Disturbance Threshold

1. Will the construction activity involve soil disturbances listed in Part I.A.1 of GP-0-25-001?

Yes

1.a. Will any runoff from the site enter a sewer system classified as a combined sewer?

No

1.b. Is this a remediation project being done under a Department approved work plan (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) with a SWPPP which meets the substantive requirements of GP-0-25-001?

No

1.c. Is the construction activity related to a stormwater discharge that does not require a permit as described in 40 CFR 122.3(e), e.g. non-point source agriculture or silviculture activities?

No

Other SPDES Permits

2. Will the discharge from the construction activity meet all conditions listed in Part I.A.2 of GP-0-25-001?

Yes

Threatened and Endangered Species

3. Will the construction activity potentially adversely affect a species that is endangered or threatened per Part I.A.3.?

No

State Historic Preservation Act (SHPA)

4. Is the construction activity designated by the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP), pursuant to 9 NYCRR §§428.12 or 428.13 as exempt from the SHPA review (see Attachment 2 of the Letter of Resolution between NYSDEC and OPRHP, dated January 9, 2015)?

No

4.a. Will the construction activity:

- a) occur within an archeologically sensitive area indicated on the sensitivity map, or
- b) have the potential to affect a property that is listed or determined to be eligible for listing on the National or State Registers of Historic Places, or
- c) include a new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old and OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined is a historically/archeologically significant building, structure, or object:
 - 1-5 acres of disturbance—20 feet
 - 5-20 acres of disturbance—50 feet
 - 20+ acres of disturbance—100 feet?

No

4.b. Is there documentation at the construction site demonstrating:

- a) that the construction activity is not within an archeologically sensitive area indicated on the sensitivity map, and that the construction activity is not immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and

b) that there is no new permanent building to be built 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 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?

Yes

State Environmental Quality Review (SEQR)

5. Is the construction activity subject to SEQR (Part I.A.5.), or the equivalent environmental review from another NYS or federal agency (Part I.A.6.)?

Yes

5.a. Has the owner/operator obtained documentation that the project review pursuant to SEQR, or the equivalent, has been satisfied per Part I.A.5. or I.A.6. of GP-0-25-001?

Yes

Uniform Procedures Act (UPA) Permits

6. Has the owner/operator obtained all necessary UPA permits from NYSDEC, or the equivalent from another NYS or federal agency per Part I.A.7.a. of GP-0-25-001?

Select "Yes" if no UPA permits, or the equivalent, are required for this construction activity.

Yes

Steep Slope

7. Is the construction activity within the watershed of surface waters of the State classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website?

No

Owner/Operator Information

8. Owner/Operator Name

Town of Amherst

9. Owner/Operator Contact Person Information

First and Last Name	Phone	E-mail
Anne	Dafchik	adafchik@amherst.ny.us

10. Owner/Operator Mailing Address

[NO STREET ADDRESS SPECIFIED]

[NO CITY SPECIFIED], [NO STATE SPECIFIED][NO ZIP CODE SPECIFIED]

USA

Please use the two-character state code for your state or province (e.g. NY or ON).

11. Is the billing contact different from the Owner/Operator Contact?

Yes

11.a. Billing Contact Person Information

First and Last Name	Phone	E-mail
NONE PROVIDED	NONE PROVIDED	NONE PROVIDED

11.b. Billing Mailing Address

[NO STREET ADDRESS SPECIFIED]

[NO CITY SPECIFIED], [NO STATE SPECIFIED][NO ZIP CODE SPECIFIED]

USA

Please use the two-character state code for your state or province (e.g. NY or ON).

12. What type of organization is the owner/operator?

Municipal or Water District

Site Information

13. Project/Site Name

Amherst Central Park

14. Site Address

772 North Forest Road

Williamsville, NY 14221

Erie

DEC Region

9

15. Site Latitude & Longitude

42.97885426582083,-78.7700439685089

Project Details

16. This eNOI submission is for:

A construction activity not part of a common plan of development or sale in accordance with Part I.D.1.a.

17. Does the project type fall under Table 1 or Table 2 of Appendix B of GP-0-25-001? If any portion of the construction activity falls under Table 2, regardless of the size of the disturbance, select "Table 2".

Table 2

18. Consistent with Part III.B.1.c.i. of GP-0-25-001, provide a concise overview of the project. Describe existing and proposed conditions, and include any other relevant information.

The project site is located at the northwest corner of the intersection of North Forest Road and Sheridan Drive, in the Town of Amherst, New York. The parcel size is approximately 8.0 +/- acres. The site is currently developed and consists of an existing parking lot with a total of 85 parking space, including 12 HC accessible spaces, an existing tennis court and maintained lawn area.

Development will consist of the demolition of the existing tennis court to allow for the construction of an ADA accessible playground, seatwalls, a new parking lot/flexible space for public events and/or vendors, walkways and utility infrastructure (domestic water, sanitary sewer lateral and electric service for a future restroom building). Additionally, a stormwater management system consisting of a bioretention basin, a proprietary stormwater filter and underground detention will be provided for the site.

Enter the total project site acreage, the acreage to be disturbed, and the future impervious area (acreage) within the disturbed area, rounded to the nearest tenth of an acre.

19. Total Site Area (acres)

8.0

20. Total Area to be Disturbed (acres)

2.1

21. Existing Impervious Area to be Disturbed (acres)

0.2

22. Future Impervious Area Within Disturbed Area (acres)

0.8

Nature of the project:

Redevelopment with increase in impervious area

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

No

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

A (%)

0

B (%)

0

C (%)

0

D (%)

100

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

Start Date

07/01/2026

End Date

07/01/2027

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

Ellicott Creek, Lower, and tribs - 0102-0018

27. Type of waterbody identified in question 26?

Stream/Creek Off Site

28. Has the surface waterbody in question 26 been identified as a 303(d) segment in Appendix D of GP-0-25-001?

Yes

29. Is this project located in one of the Watersheds identified in Appendix C of GP-0-25-001?

No

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

No

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

No

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

No

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

Yes

Required SWPPP Components

General SWPPP Requirements

34. Has a SWPPP been developed in conformance with the requirements in Part III. of GP-0-25-001?

Yes

35. Does the SWPPP demonstrate consideration of the future physical risks due to climate change pursuant to the CRRRA, 6 NYCRR Part 490, and associated guidance per Part III.A.2. of GP-0-25-001?

Yes

36. 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

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

Yes

37.a. Which version of the NYS Stormwater Management Design Manual was used to develop the SWPPP?

2024

SWPPP Preparer

39. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

40. Name of the person who prepared the SWPPP
Jason P. Utzig

41. SWPPP Preparer Organization Name
C&S Engineers, Inc.

42. SWPPP Preparer Contact Information

First and Last Name	Phone	E-mail
Jason Utzig	716-955-3013	jutzig@cscos.com

43. SWPPP Preparer Address

141 Elm Street, Suite 100
Buffalo, NY 14203

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) Upload the completed form

[Download SWPPP Preparer Certification Form](#)

44. Please upload the SWPPP Preparer Certification

[SWPPP Preparer Certification Form.pdf - 07/15/2026 03:23 PM](#)

Comment

NONE PROVIDED

44.a. Has the SWPPP Preparer Certification Form been signed by the SWPPP preparer in accordance with Part VII.J of GP-0-25-001?
Yes

Erosion & Sediment Control Criteria

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

Post-Construction Criteria

Site Planning and Soil Restoration

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

Preservation of Undisturbed Area
Reduction of Clearing and Grading

47. 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).

Water Quality Criteria

49. Water Quality Sizing Criteria

Total WQv required (acre-feet)	Total RRv provided (acre-feet)	Minimum RRv (acre-feet)	Total WQv provided (acre-feet)	Sum of RRv and WQv provided
0.058	0.022	0.0087	0.037	0.059

Water Quantity Criteria

50. Per Section 9.2.1.C.VI and VII of the 2024 Design Manual, is there 0% change to hydrology that increases the discharge rate and volume from the project site?

No

51. Does one of the waiver conditions apply to the channel protection for this construction activity?

No

51.b.i. CPv Required (acre-feet)

0.255

51.b.ii. CPv Provided (acre-feet)

0.255

52. Does one of the waiver conditions apply to the Qp and Qf for this construction activity?

No

Overbank Flood Control Criteria (Qp)

52.b.i. Pre-Development (CFS)

9.45

52.b.ii. Post-Development (CFS)

8.17

Total Extreme Flood Control Criteria (Qf)

52.b.iii. Pre-Development (CFS)
18.71

52.b.iv. Post-Development (CFS)
15.08

Operation and Maintenance

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

53.a. Identify the entity responsible for the long-term Operation and Maintenance.
Town of Amherst

Post-Construction SMP Identification

54. Post-Construction RR Techniques and Standard SMPs

RR Techniques and SMPs	Contributing Impervious Area (acres)	Total Contributing Area (acres)
Filtration Bioretention (F-5)	0.528	

55. Alternative SMPs

Type of Alternative SMP	Manufacturer of the Alternative SMP	Name of the Alternative SMP	Contributing Impervious Area (acres)
Media Filter	Hydro International	UpFlo Filter	0.047

Other Permits

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

57. Is this NOI for a change in owner/operator per Part I.G.?
No

MS4 SWPPP Acceptance

59. Will the construction activities be within the municipal boundary(ies) of Traditional Land Use Control MS4 Operator(s) and discharge to the MS4(s)?
Yes

59.a. Which form is required per Part I.D.2.b.ii.?

MS4 SWPPP Acceptance Form

MS4 SWPPP Acceptance Form Download

Download the MS4 SWPPP Acceptance Form from the link below.

[MS4 SWPPP Acceptance Form](#)

60. MS4 Acceptance or No Jurisdiction Form Upload

NONE PROVIDED

Comment

NONE PROVIDED

60.a. Has the form been signed by the principal executive officer or ranking elected official—or duly authorized representative of that person—in accordance with Part VII.J. and submitted along with this NOI?

NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the Owner/Operator Certification Form by clicking the link below.

[Owner/Operator Certification Form](#)

61. Upload Owner/Operator Certification Form

NONE PROVIDED

Comment

NONE PROVIDED

61.a. Has the Owner/Operator Certification Form from Appendix J been signed by the owner/operator, or a representative of the owner/operator in accordance with Part VII.J of GP-0-25-001 and uploaded to the eNOI?

Yes

Additional Project Information

62. Enter any additional pertinent project information in the text box below.

NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
7/15/2026 3:23 PM	SWPPP Preparer Certification Form.pdf	Attachment	Jason Utzig



Department of
Environmental
Conservation

MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information

- | | |
|-------------------------|-------------------------|
| 1. Owner/Operator Name: | Town of Amherst |
| 2. Contact Person: | Anne Dafchik |
| 3. Street Address: | 5583 Main Street |
| 4. City/State/Zip: | Williamsville, NY 14221 |

II. Project Site Information

- | | |
|-----------------------|-------------------------|
| 5. Project/Site Name: | Amherst Central Park |
| 6. Street Address: | 772 North Forest Road |
| 7. City/State/Zip: | Williamsville, NY 14221 |

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

- | |
|---|
| 8. SWPPP Reviewed by: |
| 9. Title/Position: |
| 10. Date Final SWPPP Reviewed and Accepted: |

IV. Regulated MS4 Information

- | |
|--|
| 11. Name of MS4 Operator: |
| 12. MS4 SPDES Permit Identification Number: NYR20A |
| 13. Street Address: |
| 14. City/State/Zip: |
| 15. 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 section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, 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 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name¹:

Title/Position:

Signature:

Date:

VI. Additional Information

¹ Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.



SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

Project/Site Name:

Amherst Central Park

eNOI Submission ID:

HQM-MNW6-8AKN2

Owner/Operator Name:

Town of Amherst

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jason

P

Utzig

SWPPP Preparer First Name

MI

SWPPP Preparer Last Name

Utzig Jason

Signature

Digitally signed by Utzig Jason
DN: E=jutzig@cscos.com, CN=Utzig
Jason, OU=Buffalo, OU=XP Users,
DC=cscos, DC=com
Date: 2026.07.15 15:23:15-04'00'

April 7, 2026

Date

Owner/Operator Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.)

Project/Site Name: Amherst Central Park

eNOI Submission ID: HQM-MNW6-8AKN2

eNOI Submitted by: ☐ Owner/Operator ☒ SWPPP Preparer ☐ Other

Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

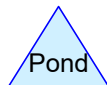
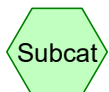
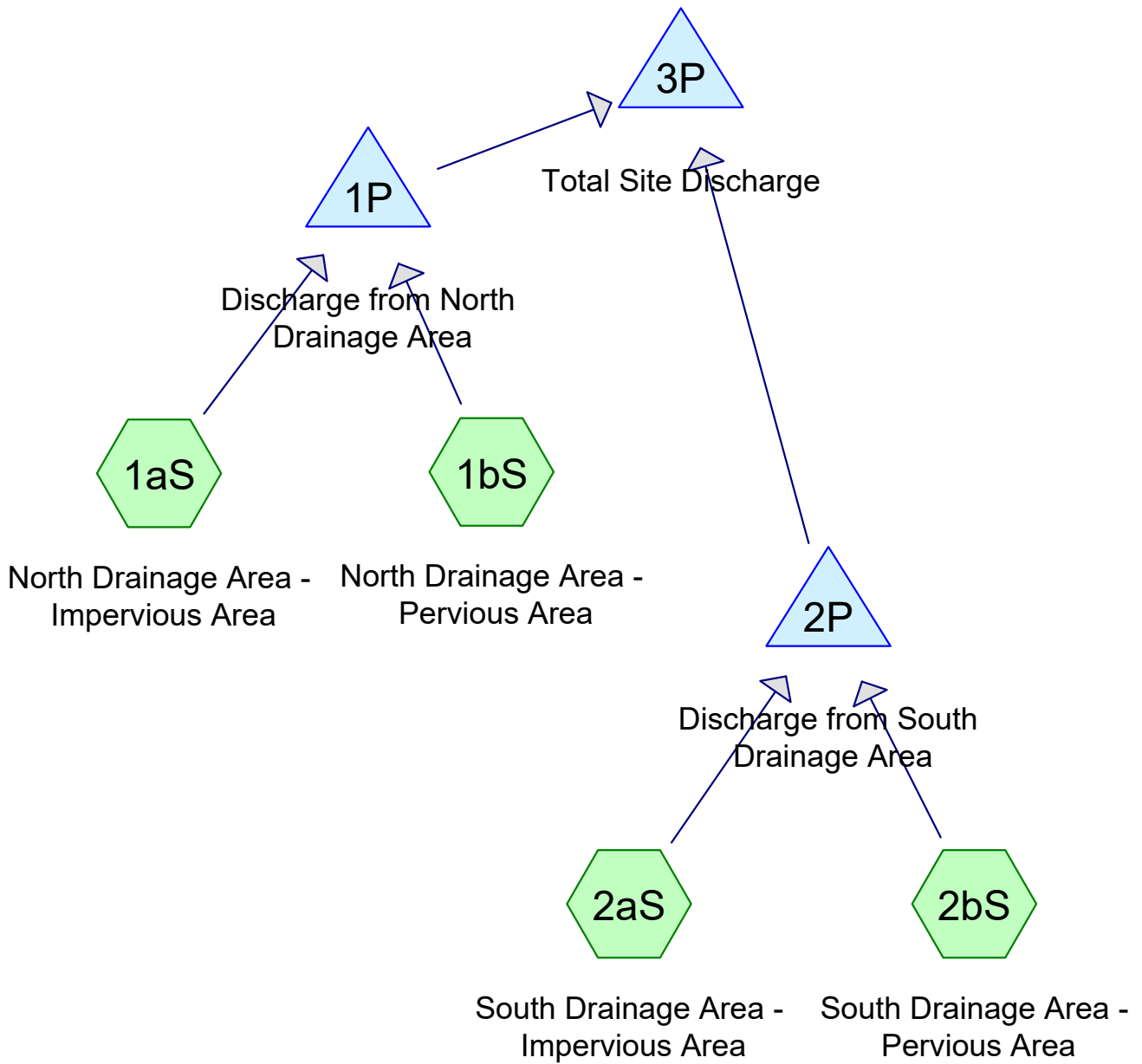
Owner/Operator First Name MI Owner/Operator Last Name

Signature

Date

Appendix C

Drainage Calculations



Existing Drainage Analysis

Prepared by C&S Companies

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-YR	Type II 24-hr		Default	24.00	1	1.92	2
2	10-YR	Type II 24-hr		Default	24.00	1	3.41	2
3	100-YR	Type II 24-hr		Default	24.00	1	5.17	2

Existing Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 1-YR Rainfall=1.92"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1aS: North Drainage Area - Runoff Area=1.100 ac 100.00% Impervious Runoff Depth=1.70"
Tc=6.0 min CN=98 Runoff=2.93 cfs 0.155 af

Subcatchment1bS: North Drainage Area - Runoff Area=2.500 ac 0.00% Impervious Runoff Depth=0.44"
Flow Length=586' Slope=0.0115 '/' Tc=23.2 min CN=78 Runoff=0.96 cfs 0.092 af

Subcatchment2aS: South Drainage Area - Runoff Area=0.290 ac 100.00% Impervious Runoff Depth=1.70"
Flow Length=353' Slope=0.0084 '/' Tc=16.5 min CN=98 Runoff=0.56 cfs 0.041 af

Subcatchment2bS: South Drainage Area - Runoff Area=4.260 ac 0.00% Impervious Runoff Depth=0.44"
Flow Length=809' Slope=0.0084 '/' Tc=32.4 min CN=78 Runoff=1.28 cfs 0.156 af

Pond 1P: Discharge from North Drainage Area

Inflow=3.19 cfs 0.247 af
Primary=3.19 cfs 0.247 af

Pond 2P: Discharge from South Drainage Area

Inflow=1.51 cfs 0.197 af
Primary=1.51 cfs 0.197 af

Pond 3P: Total Site Discharge

Inflow=3.81 cfs 0.444 af
Primary=3.81 cfs 0.444 af

Total Runoff Area = 8.150 ac Runoff Volume = 0.444 af Average Runoff Depth = 0.65"
82.94% Pervious = 6.760 ac 17.06% Impervious = 1.390 ac

Existing Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 1aS: North Drainage Area - Impervious Area

Runoff = 2.93 cfs @ 11.97 hrs, Volume= 0.155 af, Depth= 1.70"

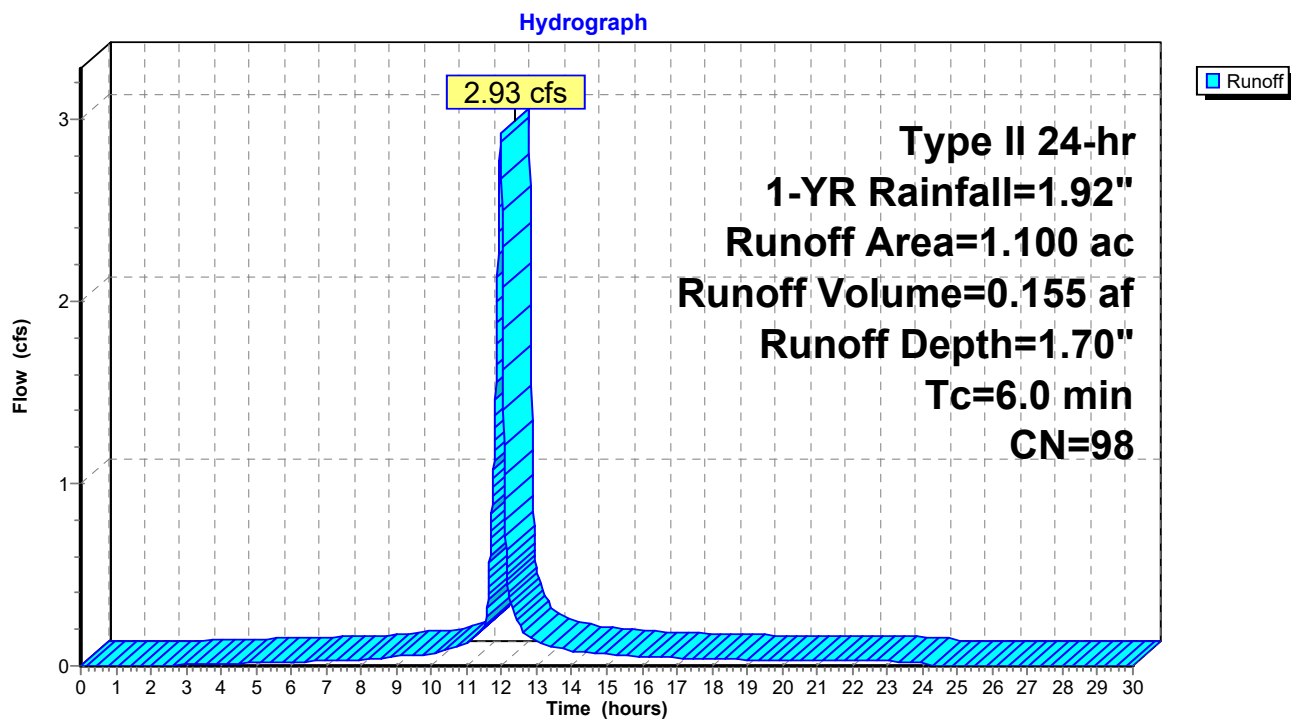
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.100		100.00% Impervious Area

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

Subcatchment 1aS: North Drainage Area - Impervious Area



Existing Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 1bS: North Drainage Area - Pervious Area

Runoff = 0.96 cfs @ 12.19 hrs, Volume= 0.092 af, Depth= 0.44"

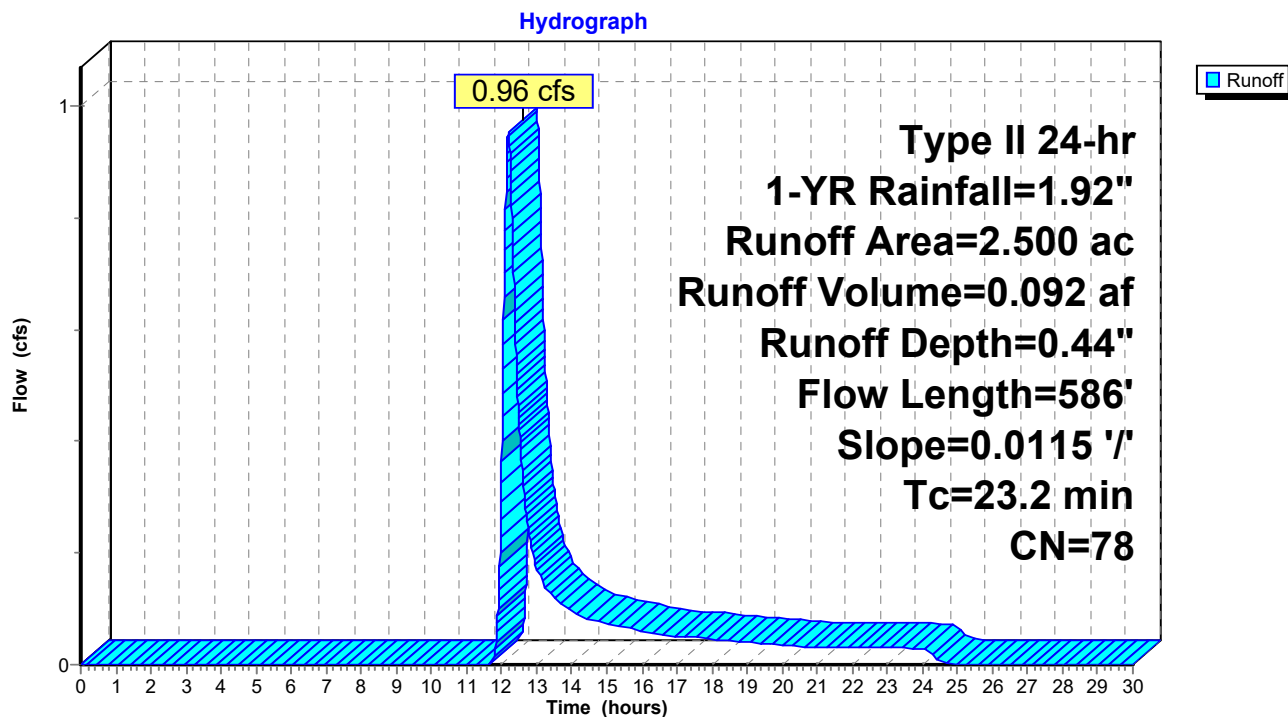
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.050	79	Woods/grass comb., Good, HSG D
2.450	78	Meadow, non-grazed, HSG D
2.500	78	Weighted Average
2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0115	0.13		Sheet Flow, Range n= 0.130 P2= 2.29"
10.0	452	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	34	0.0115	2.18		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.2	586	Total			

Subcatchment 1bS: North Drainage Area - Pervious Area



Existing Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 2aS: South Drainage Area - Impervious Area

Runoff = 0.56 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 1.70"

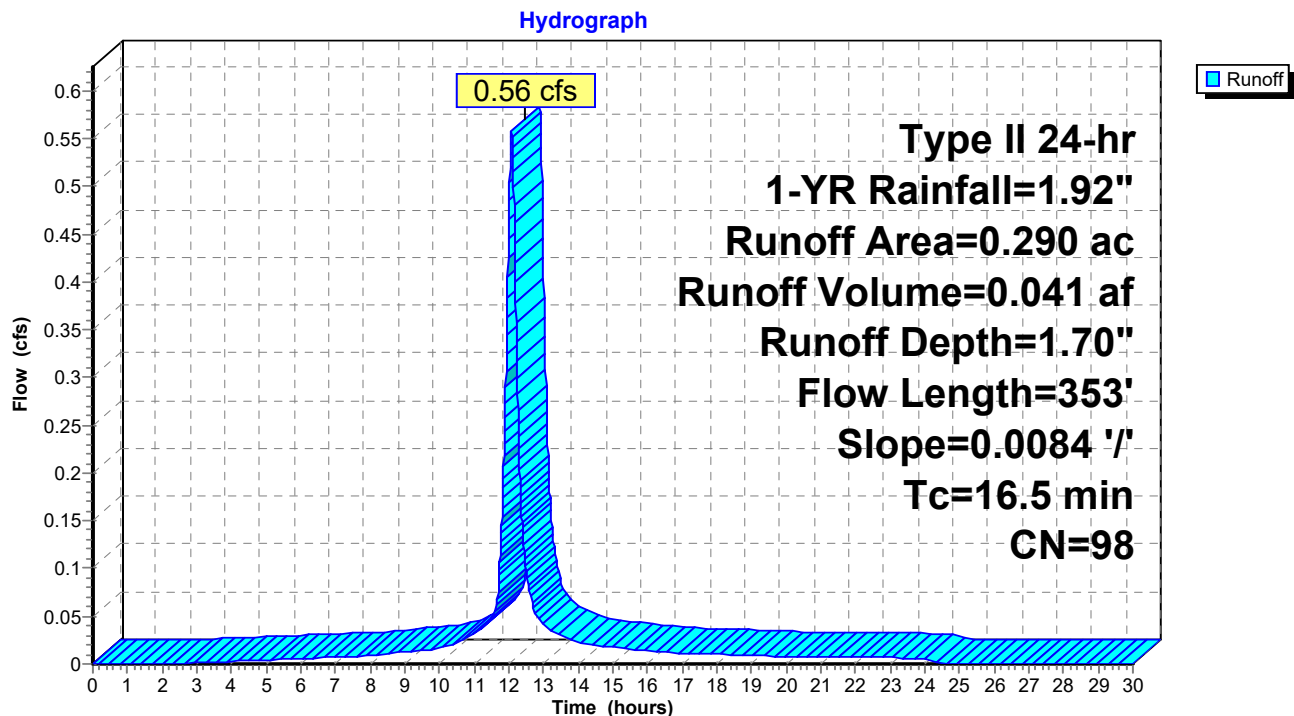
Routed to Pond 2P : Discharge from South Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.290	98	Unconnected pavement, HSG D
0.290		100.00% Impervious Area
0.290		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0084	0.65		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.29"
11.0	70	0.0084	0.11		Sheet Flow, Range n= 0.130 P2= 2.29"
3.8	147	0.0084	0.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	106	0.0084	1.86		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	353	Total			

Subcatchment 2aS: South Drainage Area - Impervious Area



Existing Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 2bS: South Drainage Area - Pervious Area

Runoff = 1.28 cfs @ 12.31 hrs, Volume= 0.156 af, Depth= 0.44"

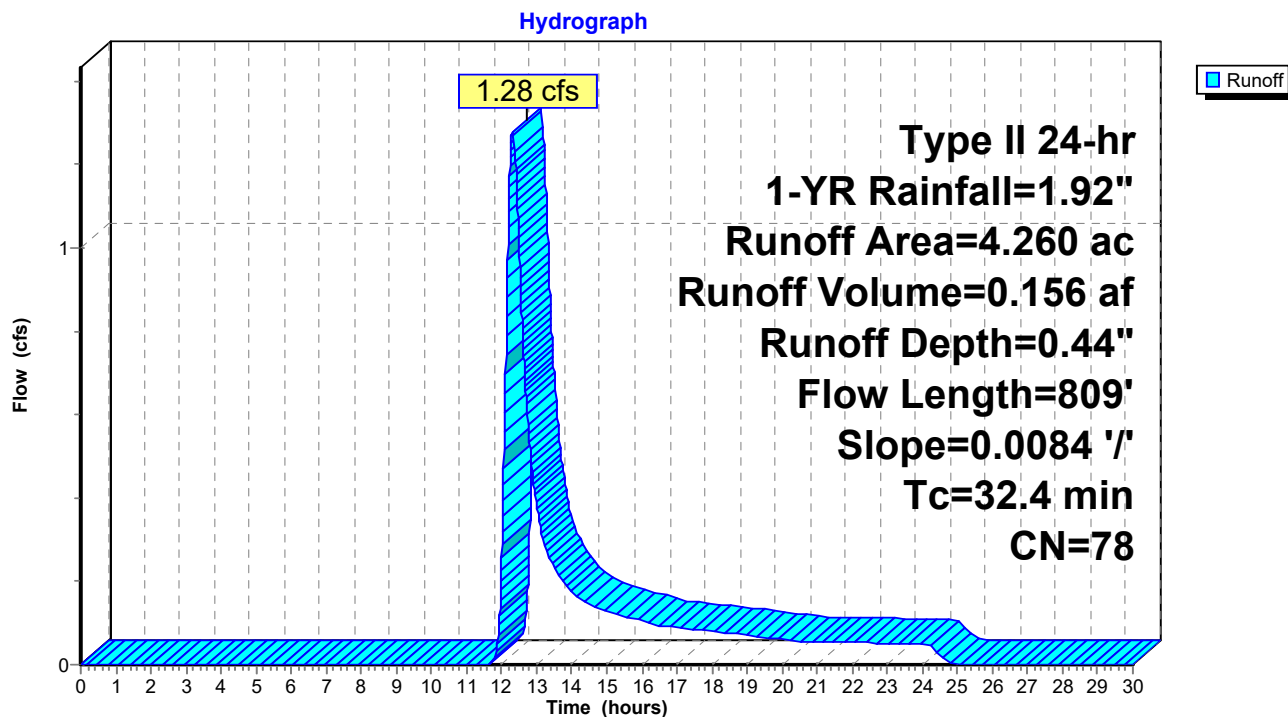
Routed to Pond 2P : Discharge from South Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.330	79	Woods/grass comb., Good, HSG D
3.930	78	Meadow, non-grazed, HSG D
4.260	78	Weighted Average
4.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0084	0.11		Sheet Flow, Range n= 0.130 P2= 2.29"
17.4	669	0.0084	0.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	40	0.0084	1.86		Shallow Concentrated Flow, Paved Kv= 20.3 fps
32.4	809	Total			

Subcatchment 2bS: South Drainage Area - Pervious Area



Existing Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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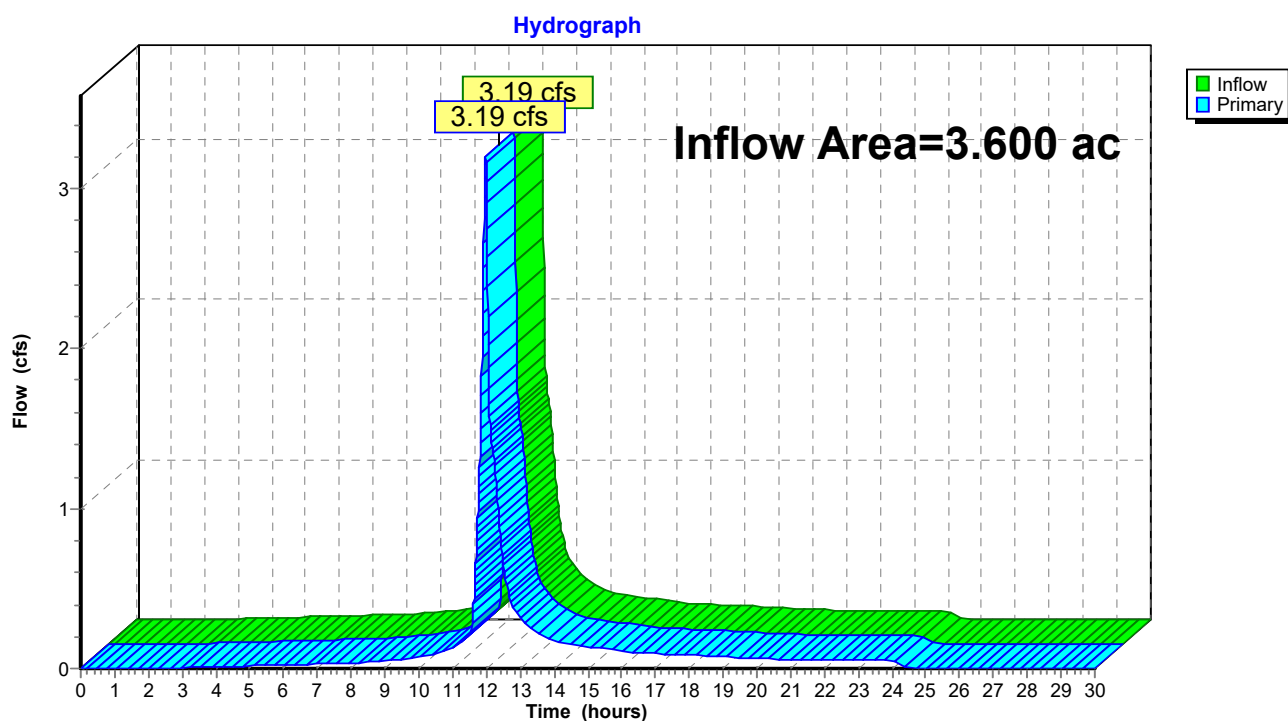
Summary for Pond 1P: Discharge from North Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.600 ac, 30.56% Impervious, Inflow Depth = 0.82" for 1-YR event
Inflow = 3.19 cfs @ 11.97 hrs, Volume= 0.247 af
Primary = 3.19 cfs @ 11.97 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Discharge from North Drainage Area



Existing Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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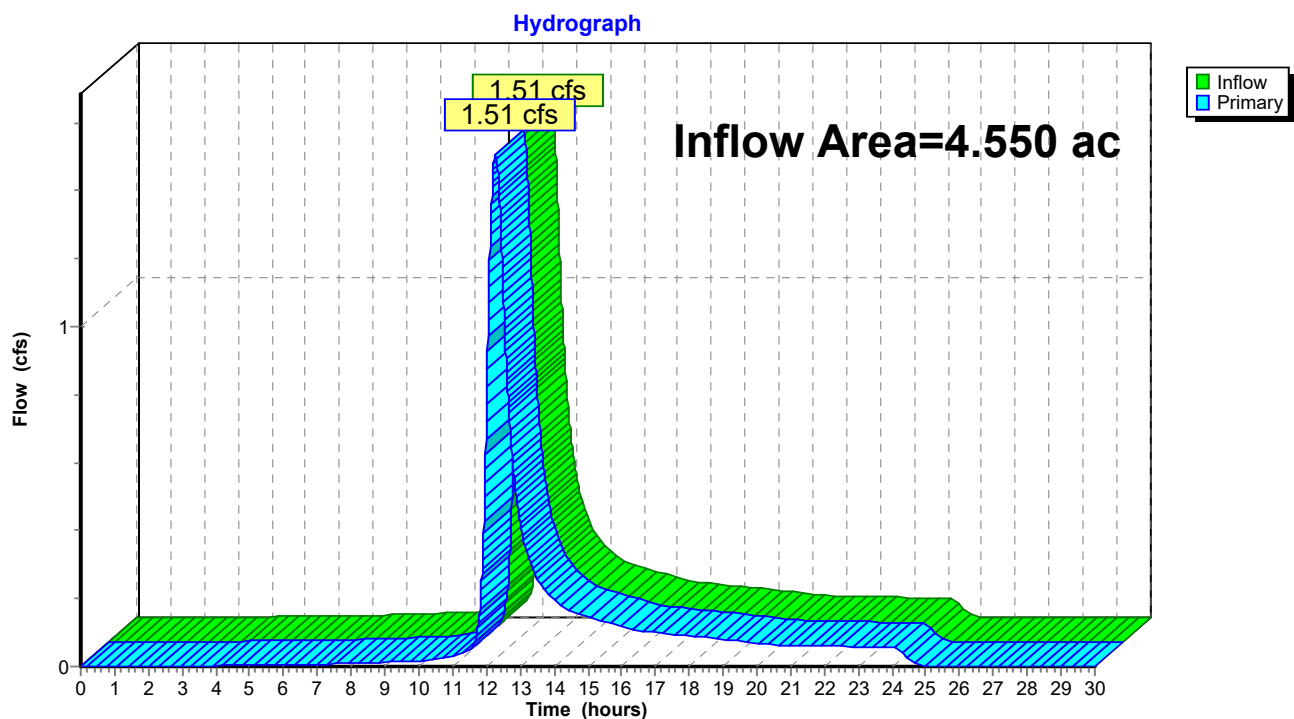
Summary for Pond 2P: Discharge from South Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.550 ac, 6.37% Impervious, Inflow Depth = 0.52" for 1-YR event
Inflow = 1.51 cfs @ 12.27 hrs, Volume= 0.197 af
Primary = 1.51 cfs @ 12.27 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Discharge from South Drainage Area



Existing Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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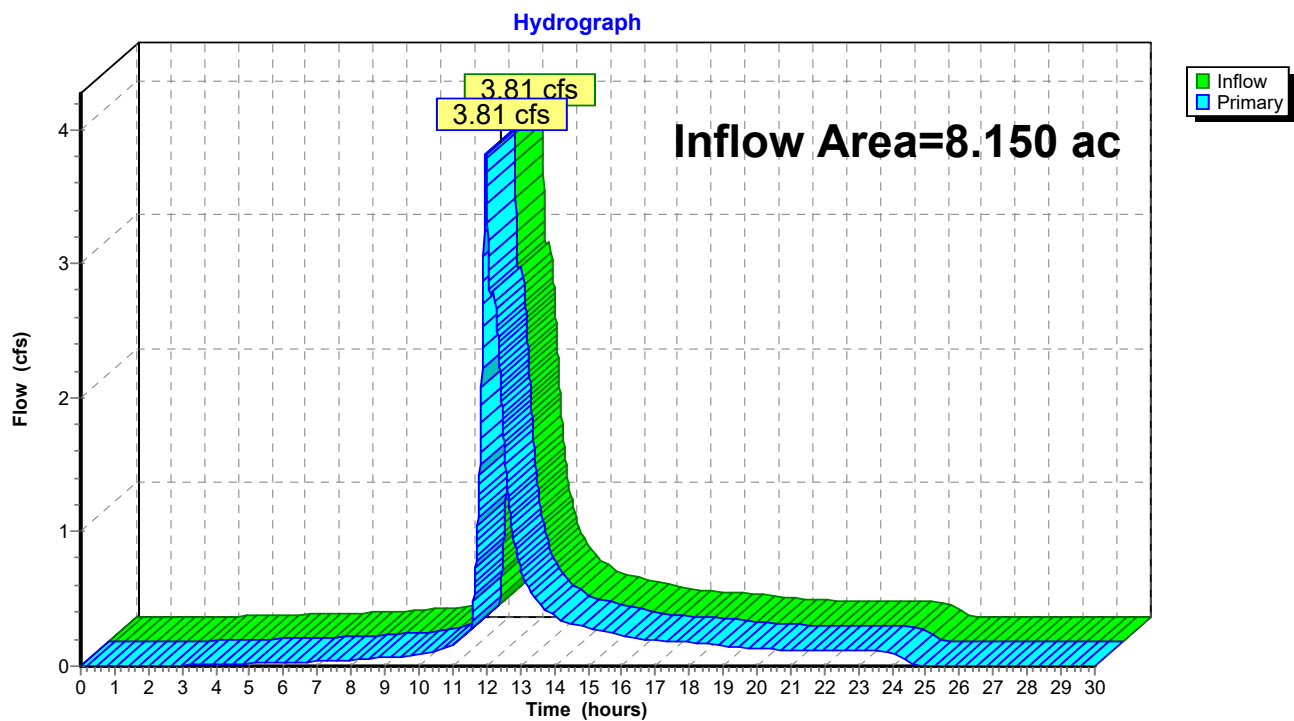
Summary for Pond 3P: Total Site Discharge

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.150 ac, 17.06% Impervious, Inflow Depth = 0.65" for 1-YR event
Inflow = 3.81 cfs @ 11.98 hrs, Volume= 0.444 af
Primary = 3.81 cfs @ 11.98 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 3P: Total Site Discharge



Existing Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1aS: North Drainage Area - Runoff Area=1.100 ac 100.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=98 Runoff=5.31 cfs 0.291 af

Subcatchment1bS: North Drainage Area - Runoff Area=2.500 ac 0.00% Impervious Runoff Depth=1.43"
Flow Length=586' Slope=0.0115 '/' Tc=23.2 min CN=78 Runoff=3.57 cfs 0.298 af

Subcatchment2aS: South Drainage Area - Runoff Area=0.290 ac 100.00% Impervious Runoff Depth=3.18"
Flow Length=353' Slope=0.0084 '/' Tc=16.5 min CN=98 Runoff=1.01 cfs 0.077 af

Subcatchment2bS: South Drainage Area - Runoff Area=4.260 ac 0.00% Impervious Runoff Depth=1.43"
Flow Length=809' Slope=0.0084 '/' Tc=32.4 min CN=78 Runoff=4.90 cfs 0.507 af

Pond 1P: Discharge from North Drainage Area

Inflow=6.92 cfs 0.589 af
Primary=6.92 cfs 0.589 af

Pond 2P: Discharge from South Drainage Area

Inflow=5.34 cfs 0.584 af
Primary=5.34 cfs 0.584 af

Pond 3P: Total Site Discharge

Inflow=9.45 cfs 1.173 af
Primary=9.45 cfs 1.173 af

Total Runoff Area = 8.150 ac Runoff Volume = 1.173 af Average Runoff Depth = 1.73"
82.94% Pervious = 6.760 ac 17.06% Impervious = 1.390 ac

Existing Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 1aS: North Drainage Area - Impervious Area

Runoff = 5.31 cfs @ 11.97 hrs, Volume= 0.291 af, Depth= 3.18"

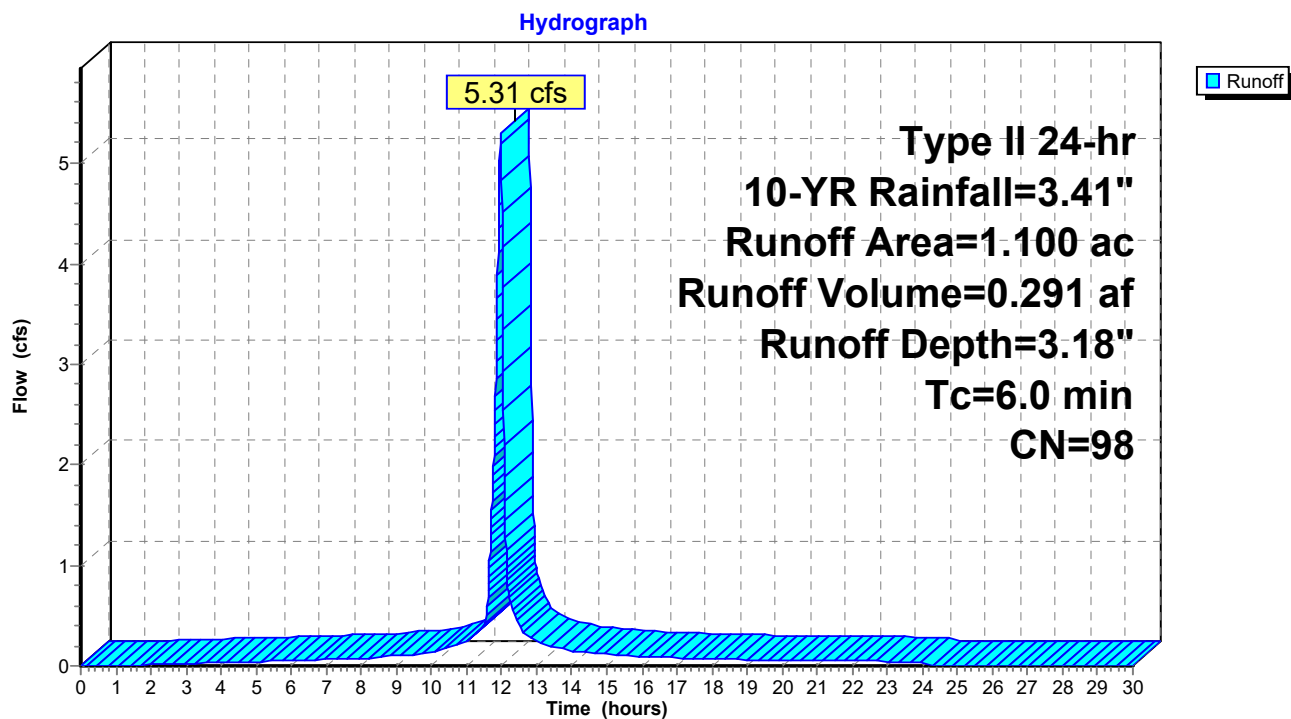
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.100		100.00% Impervious Area

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

Subcatchment 1aS: North Drainage Area - Impervious Area



Existing Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 1bS: North Drainage Area - Pervious Area

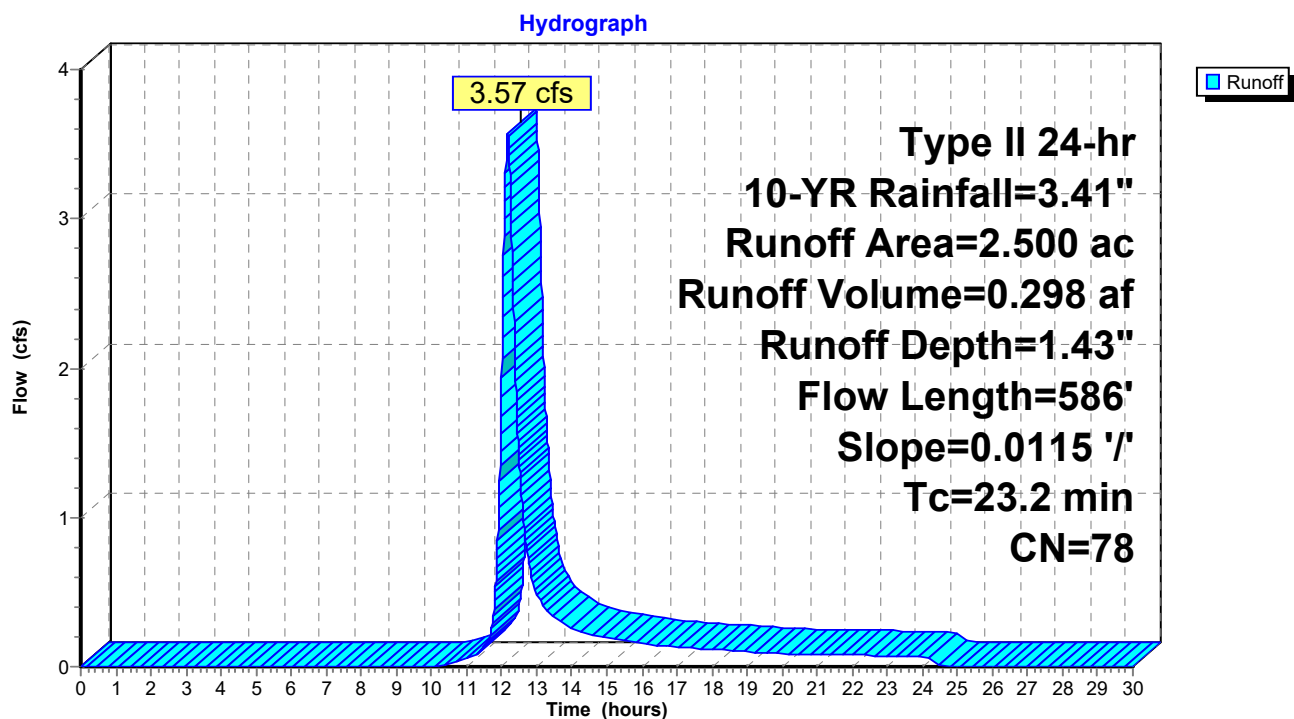
Runoff = 3.57 cfs @ 12.17 hrs, Volume= 0.298 af, Depth= 1.43"
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.050	79	Woods/grass comb., Good, HSG D
2.450	78	Meadow, non-grazed, HSG D
2.500	78	Weighted Average
2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0115	0.13		Sheet Flow, Range n= 0.130 P2= 2.29"
10.0	452	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	34	0.0115	2.18		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.2	586				Total

Subcatchment 1bS: North Drainage Area - Pervious Area



Existing Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 2aS: South Drainage Area - Impervious Area

Runoff = 1.01 cfs @ 12.08 hrs, Volume= 0.077 af, Depth= 3.18"

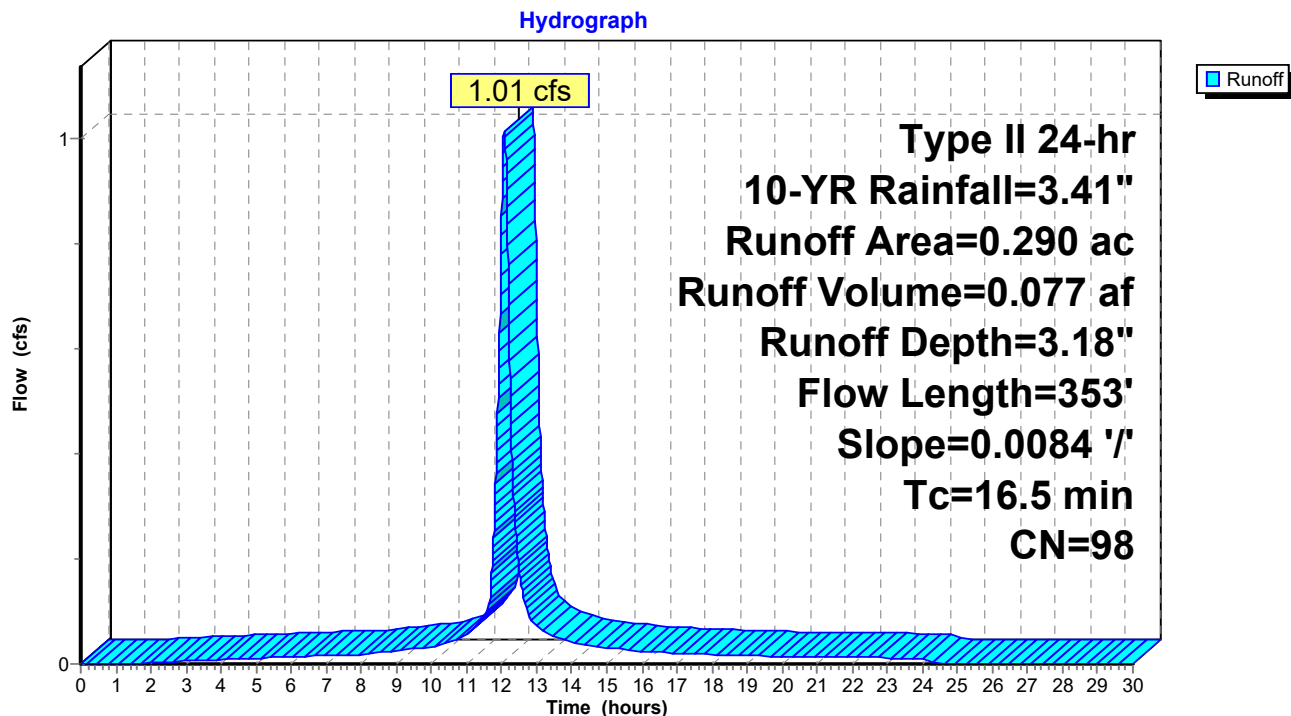
Routed to Pond 2P : Discharge from South Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.290	98	Unconnected pavement, HSG D
0.290		100.00% Impervious Area
0.290		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0084	0.65		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.29"
11.0	70	0.0084	0.11		Sheet Flow, Range n= 0.130 P2= 2.29"
3.8	147	0.0084	0.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	106	0.0084	1.86		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	353	Total			

Subcatchment 2aS: South Drainage Area - Impervious Area



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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 2bS: South Drainage Area - Pervious Area

Runoff = 4.90 cfs @ 12.28 hrs, Volume= 0.507 af, Depth= 1.43"

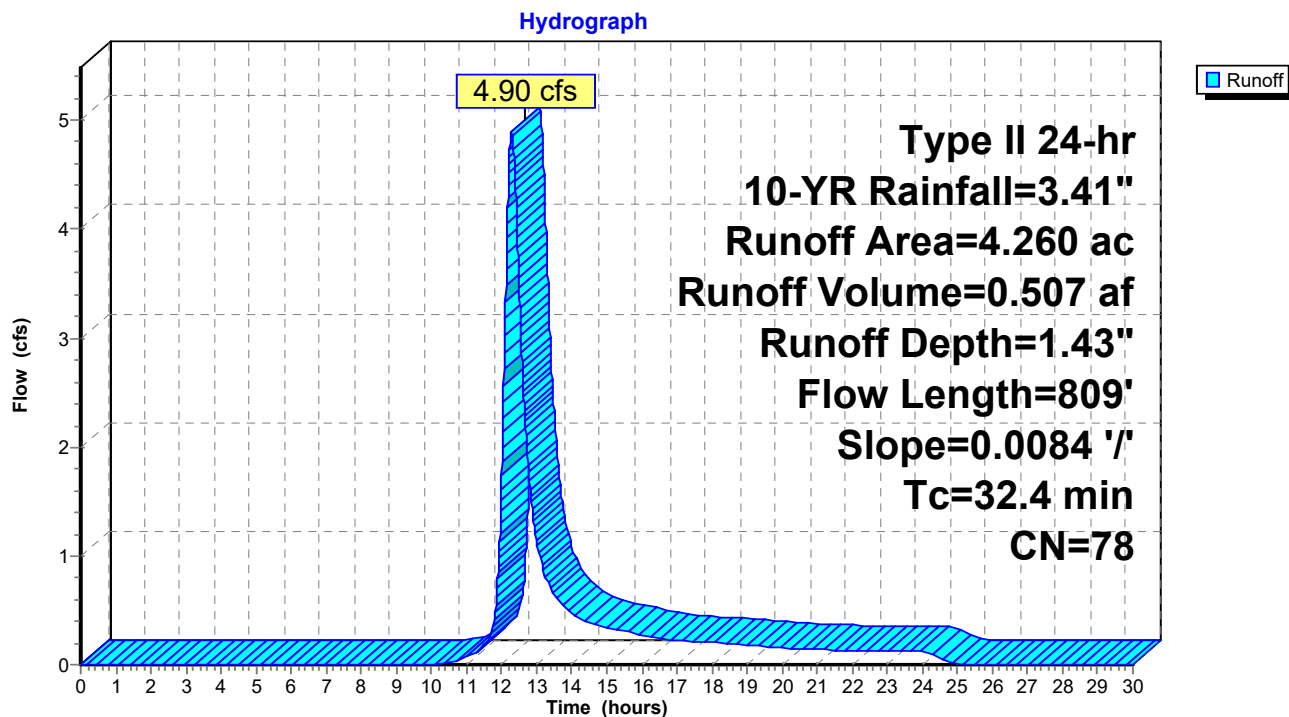
Routed to Pond 2P : Discharge from South Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.330	79	Woods/grass comb., Good, HSG D
3.930	78	Meadow, non-grazed, HSG D
4.260	78	Weighted Average
4.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0084	0.11		Sheet Flow, Range n= 0.130 P2= 2.29"
17.4	669	0.0084	0.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	40	0.0084	1.86		Shallow Concentrated Flow, Paved Kv= 20.3 fps
32.4	809	Total			

Subcatchment 2bS: South Drainage Area - Pervious Area



Existing Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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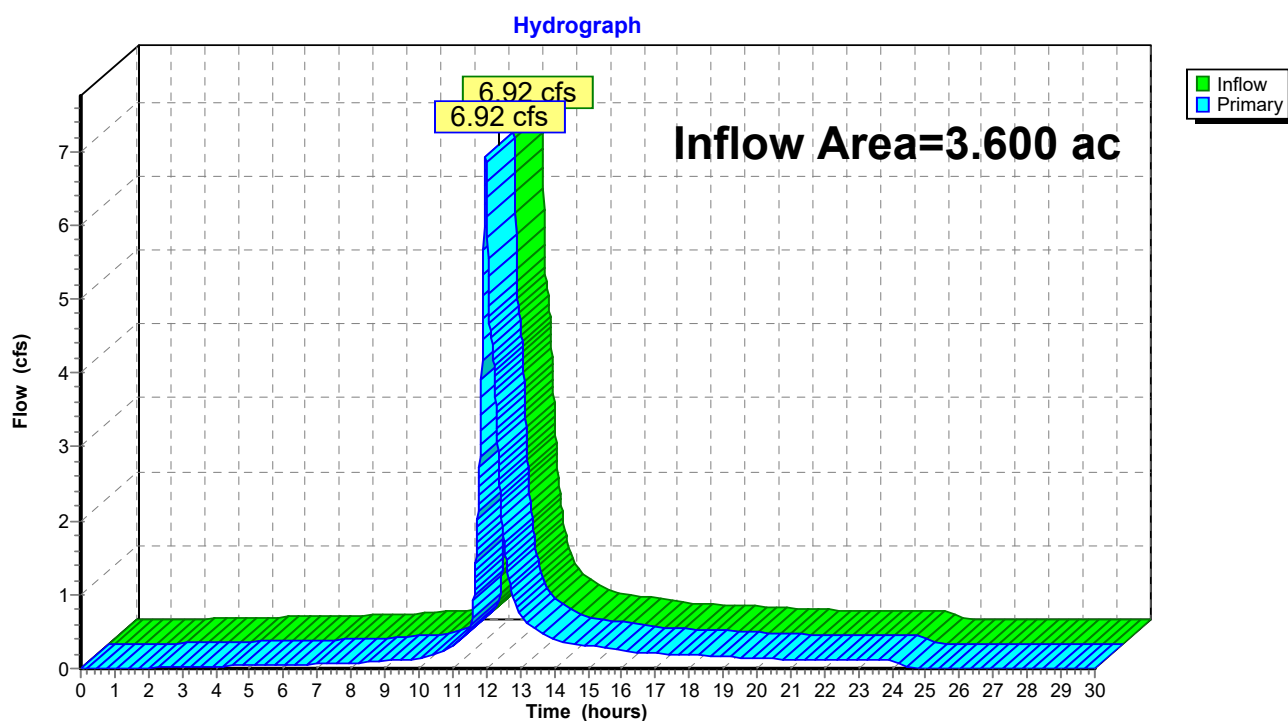
Summary for Pond 1P: Discharge from North Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.600 ac, 30.56% Impervious, Inflow Depth = 1.96" for 10-YR event
Inflow = 6.92 cfs @ 11.98 hrs, Volume= 0.589 af
Primary = 6.92 cfs @ 11.98 hrs, Volume= 0.589 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Discharge from North Drainage Area



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Type II 24-hr 10-YR Rainfall=3.41"

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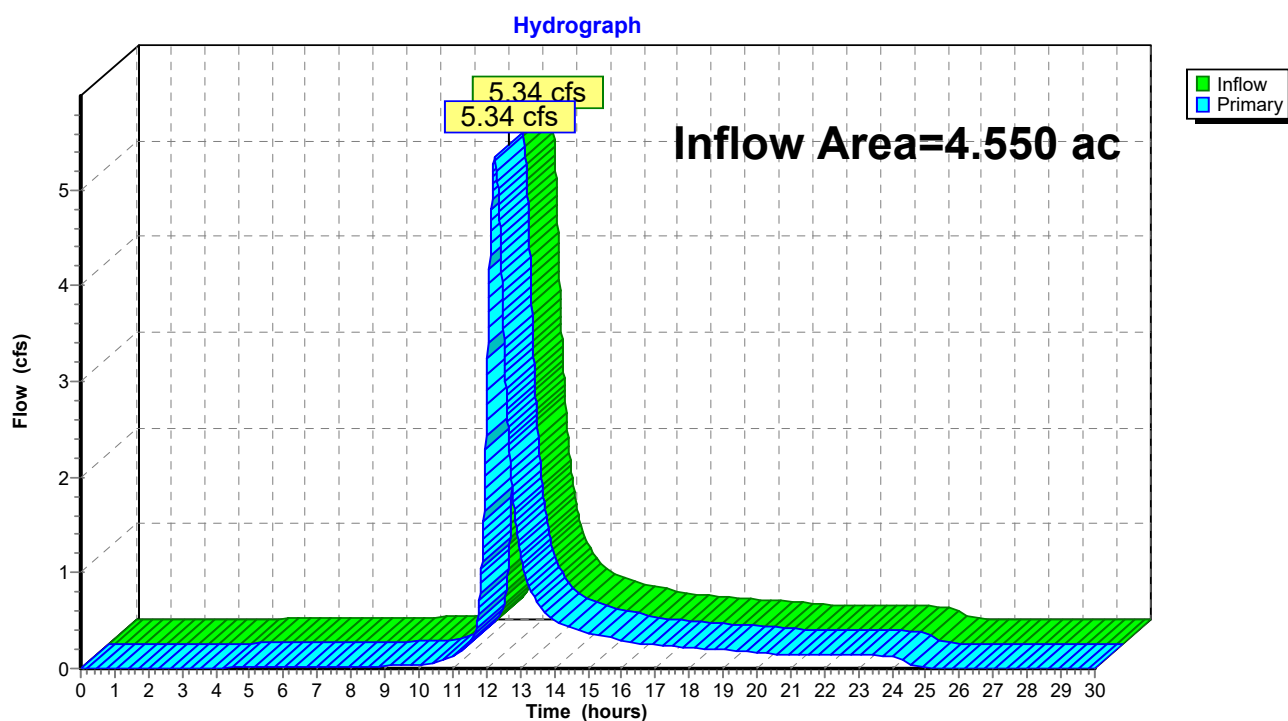
Summary for Pond 2P: Discharge from South Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.550 ac, 6.37% Impervious, Inflow Depth = 1.54" for 10-YR event
Inflow = 5.34 cfs @ 12.27 hrs, Volume= 0.584 af
Primary = 5.34 cfs @ 12.27 hrs, Volume= 0.584 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Discharge from South Drainage Area



Existing Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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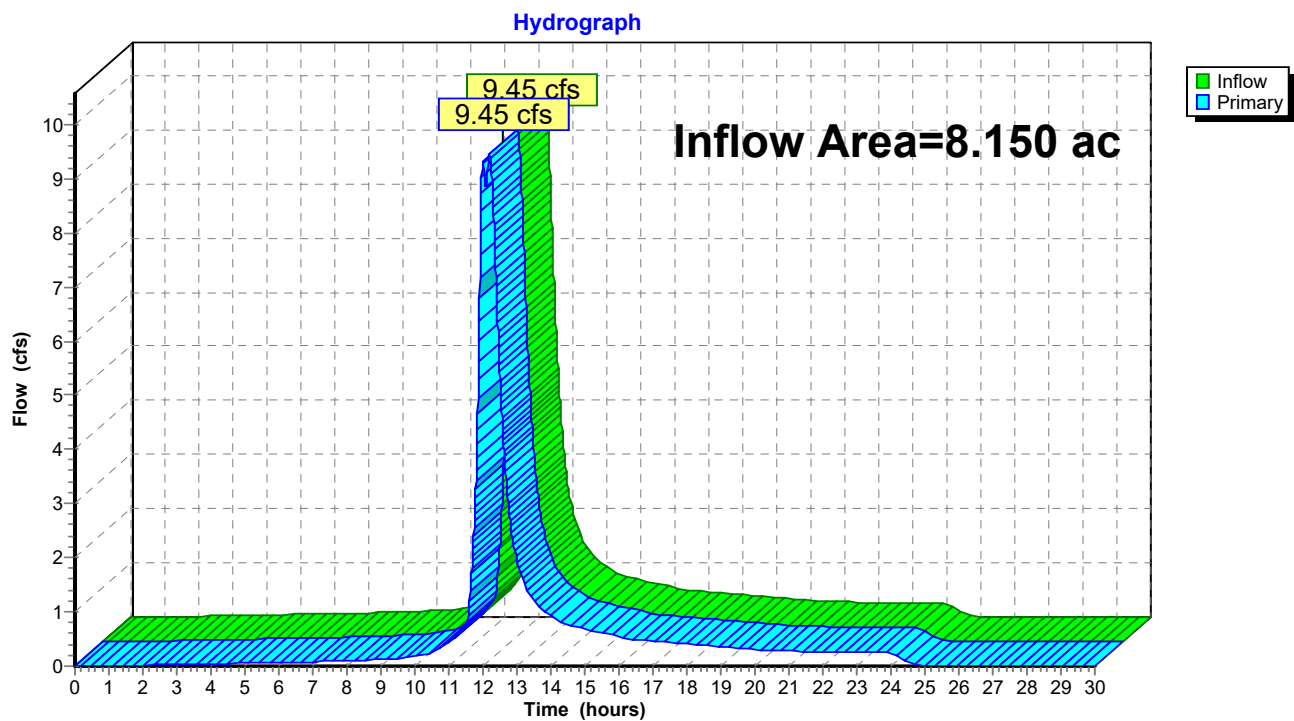
Summary for Pond 3P: Total Site Discharge

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.150 ac, 17.06% Impervious, Inflow Depth = 1.73" for 10-YR event
Inflow = 9.45 cfs @ 12.20 hrs, Volume= 1.173 af
Primary = 9.45 cfs @ 12.20 hrs, Volume= 1.173 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 3P: Total Site Discharge



Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1aS: North Drainage Area - Runoff Area=1.100 ac 100.00% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=98 Runoff=8.10 cfs 0.452 af

Subcatchment1bS: North Drainage Area - Runoff Area=2.500 ac 0.00% Impervious Runoff Depth=2.86"
Flow Length=586' Slope=0.0115 '/' Tc=23.2 min CN=78 Runoff=7.27 cfs 0.595 af

Subcatchment2aS: South Drainage Area - Runoff Area=0.290 ac 100.00% Impervious Runoff Depth=4.93"
Flow Length=353' Slope=0.0084 '/' Tc=16.5 min CN=98 Runoff=1.55 cfs 0.119 af

Subcatchment2bS: South Drainage Area - Runoff Area=4.260 ac 0.00% Impervious Runoff Depth=2.86"
Flow Length=809' Slope=0.0084 '/' Tc=32.4 min CN=78 Runoff=10.04 cfs 1.014 af

Pond 1P: Discharge from North Drainage Area
Inflow=11.79 cfs 1.047 af
Primary=11.79 cfs 1.047 af

Pond 2P: Discharge from South Drainage Area
Inflow=10.73 cfs 1.133 af
Primary=10.73 cfs 1.133 af

Pond 3P: Total Site Discharge
Inflow=18.71 cfs 2.181 af
Primary=18.71 cfs 2.181 af

Total Runoff Area = 8.150 ac Runoff Volume = 2.181 af Average Runoff Depth = 3.21"
82.94% Pervious = 6.760 ac 17.06% Impervious = 1.390 ac

Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 1aS: North Drainage Area - Impervious Area

Runoff = 8.10 cfs @ 11.97 hrs, Volume= 0.452 af, Depth= 4.93"

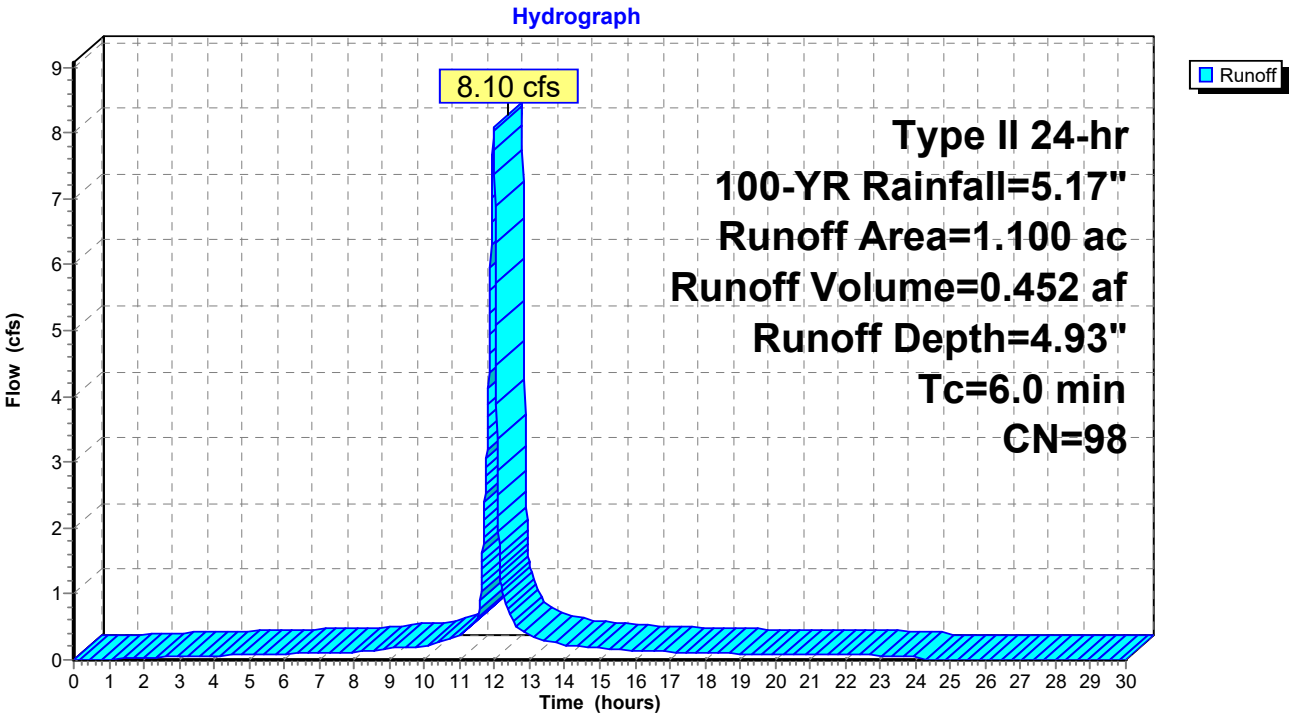
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.100		100.00% Impervious Area

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

Subcatchment 1aS: North Drainage Area - Impervious Area



Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 1bS: North Drainage Area - Pervious Area

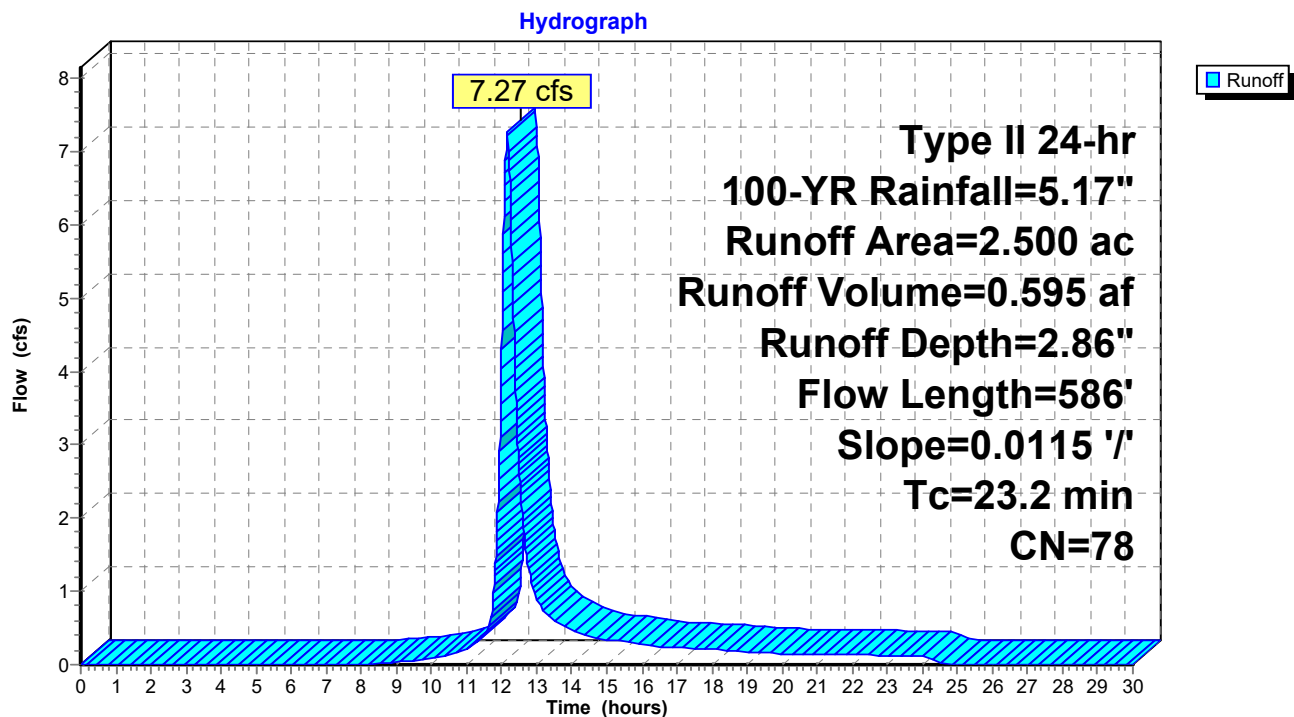
Runoff = 7.27 cfs @ 12.16 hrs, Volume= 0.595 af, Depth= 2.86"
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.050	79	Woods/grass comb., Good, HSG D
2.450	78	Meadow, non-grazed, HSG D
2.500	78	Weighted Average
2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0115	0.13		Sheet Flow, Range n= 0.130 P2= 2.29"
10.0	452	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	34	0.0115	2.18		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.2	586	Total			

Subcatchment 1bS: North Drainage Area - Pervious Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 2aS: South Drainage Area - Impervious Area

Runoff = 1.55 cfs @ 12.08 hrs, Volume= 0.119 af, Depth= 4.93"

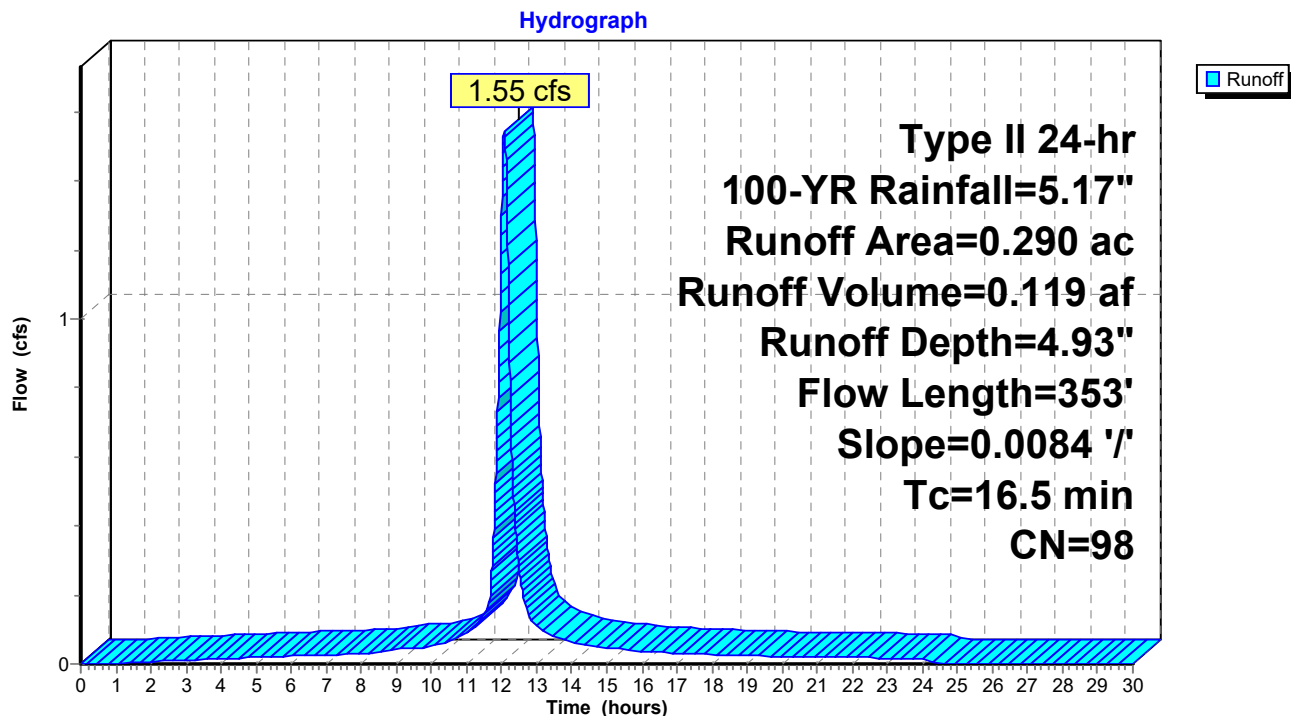
Routed to Pond 2P : Discharge from South Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.290	98	Unconnected pavement, HSG D
0.290		100.00% Impervious Area
0.290		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	30	0.0084	0.65		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.29"
11.0	70	0.0084	0.11		Sheet Flow, Range n= 0.130 P2= 2.29"
3.8	147	0.0084	0.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	106	0.0084	1.86		Shallow Concentrated Flow, Paved Kv= 20.3 fps
16.5	353	Total			

Subcatchment 2aS: South Drainage Area - Impervious Area



Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 2bS: South Drainage Area - Pervious Area

Runoff = 10.04 cfs @ 12.28 hrs, Volume= 1.014 af, Depth= 2.86"

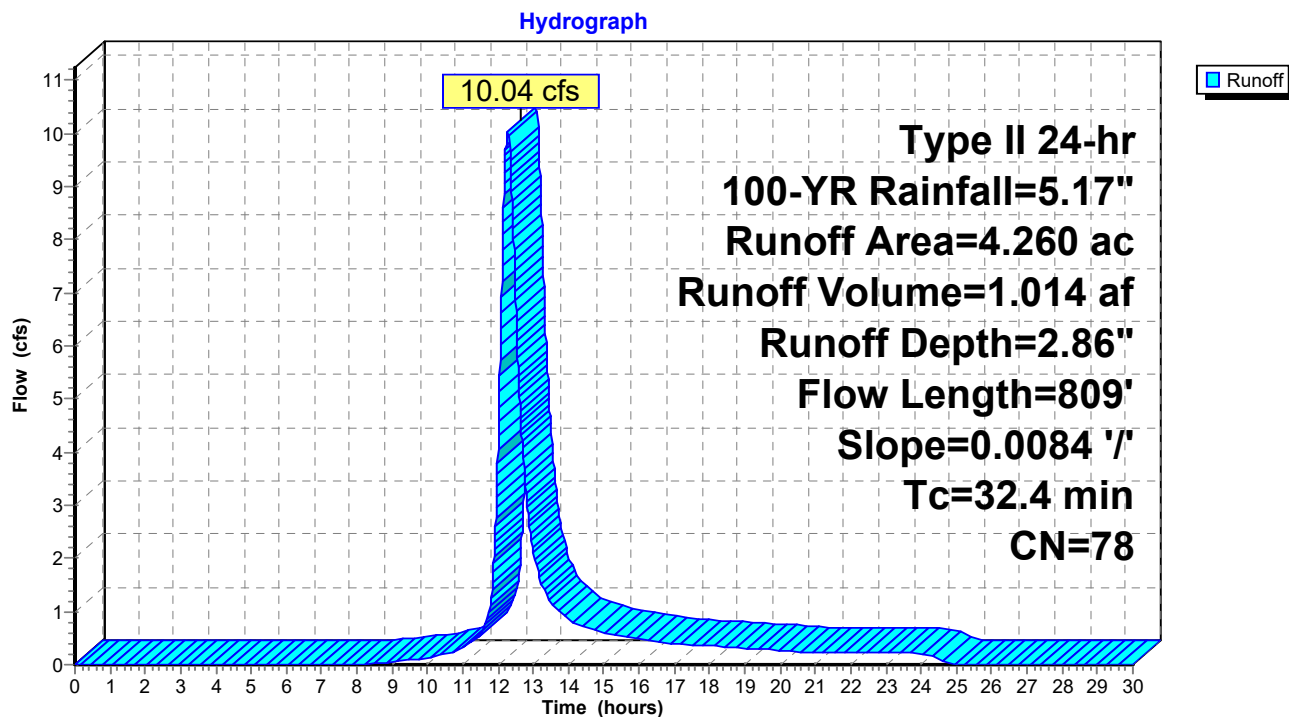
Routed to Pond 2P : Discharge from South Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.330	79	Woods/grass comb., Good, HSG D
3.930	78	Meadow, non-grazed, HSG D
4.260	78	Weighted Average
4.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.6	100	0.0084	0.11		Sheet Flow, Range n= 0.130 P2= 2.29"
17.4	669	0.0084	0.64		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.4	40	0.0084	1.86		Shallow Concentrated Flow, Paved Kv= 20.3 fps
32.4	809				Total

Subcatchment 2bS: South Drainage Area - Pervious Area



Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Pond 1P: Discharge from North Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.600 ac, 30.56% Impervious, Inflow Depth = 3.49" for 100-YR event

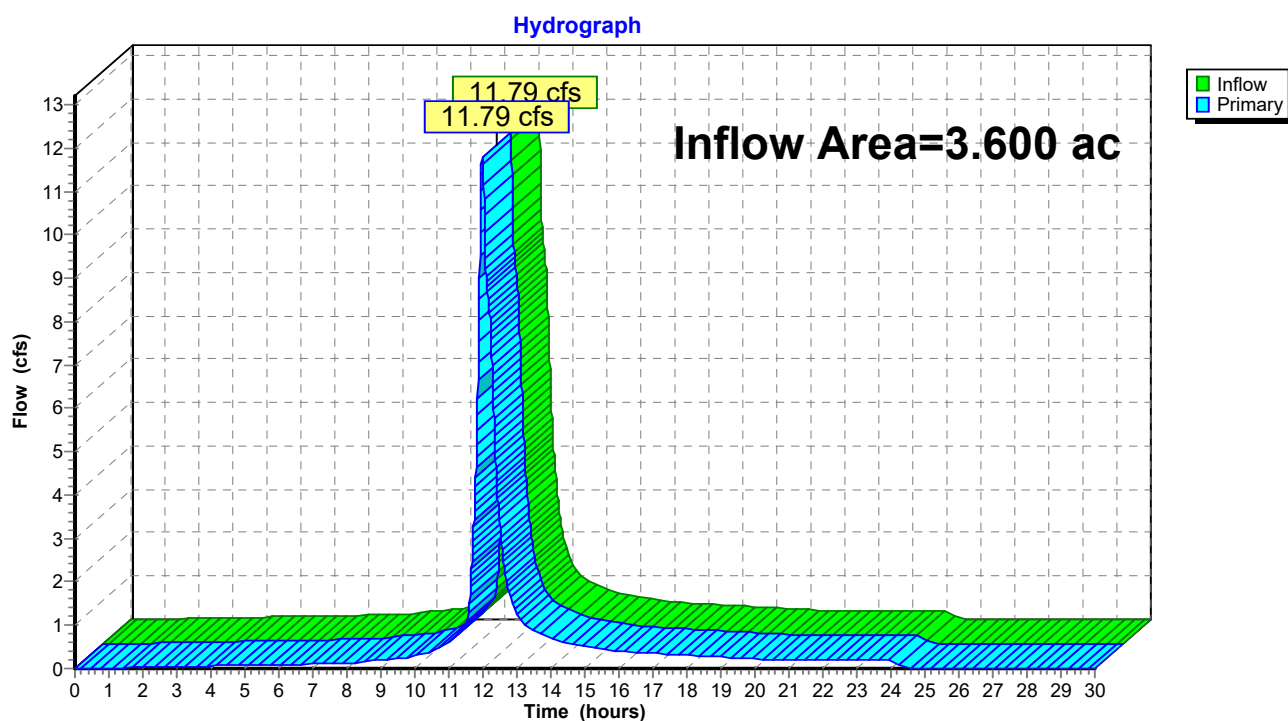
Inflow = 11.79 cfs @ 11.98 hrs, Volume= 1.047 af

Primary = 11.79 cfs @ 11.98 hrs, Volume= 1.047 af, Atten= 0%, Lag= 0.0 min

Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Discharge from North Drainage Area



Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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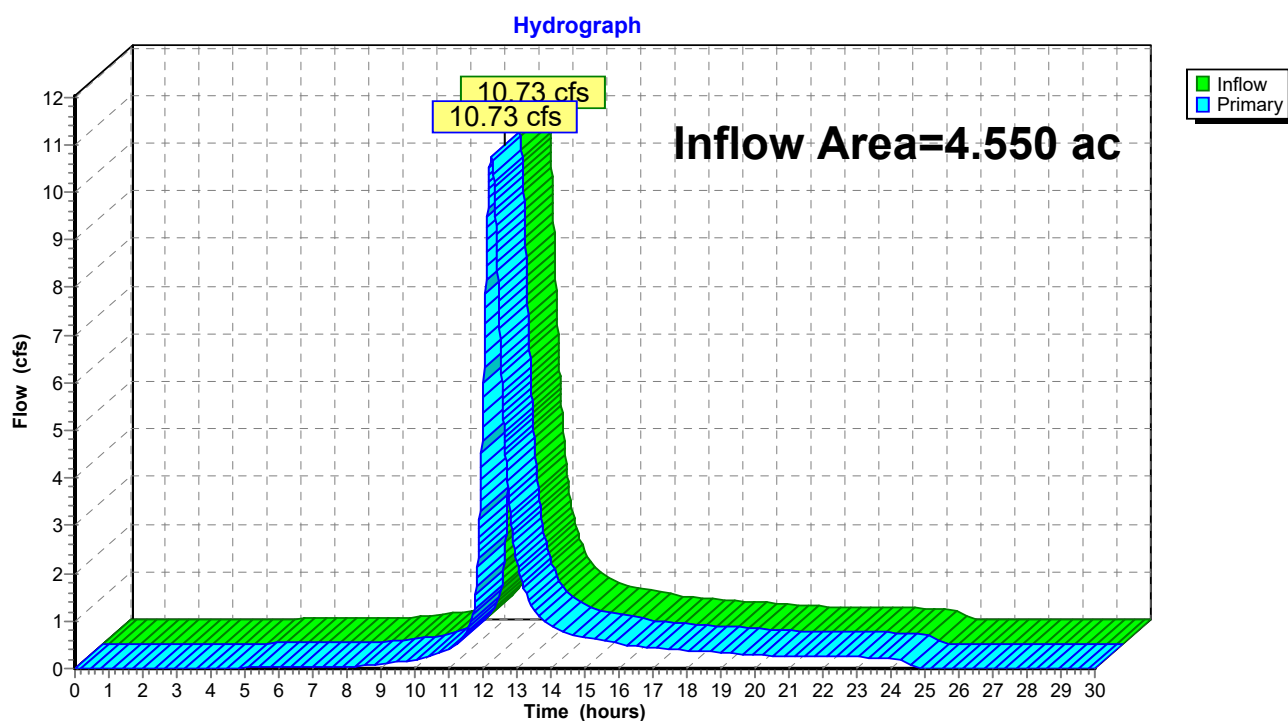
Summary for Pond 2P: Discharge from South Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.550 ac, 6.37% Impervious, Inflow Depth = 2.99" for 100-YR event
Inflow = 10.73 cfs @ 12.24 hrs, Volume= 1.133 af
Primary = 10.73 cfs @ 12.24 hrs, Volume= 1.133 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Discharge from South Drainage Area



Existing Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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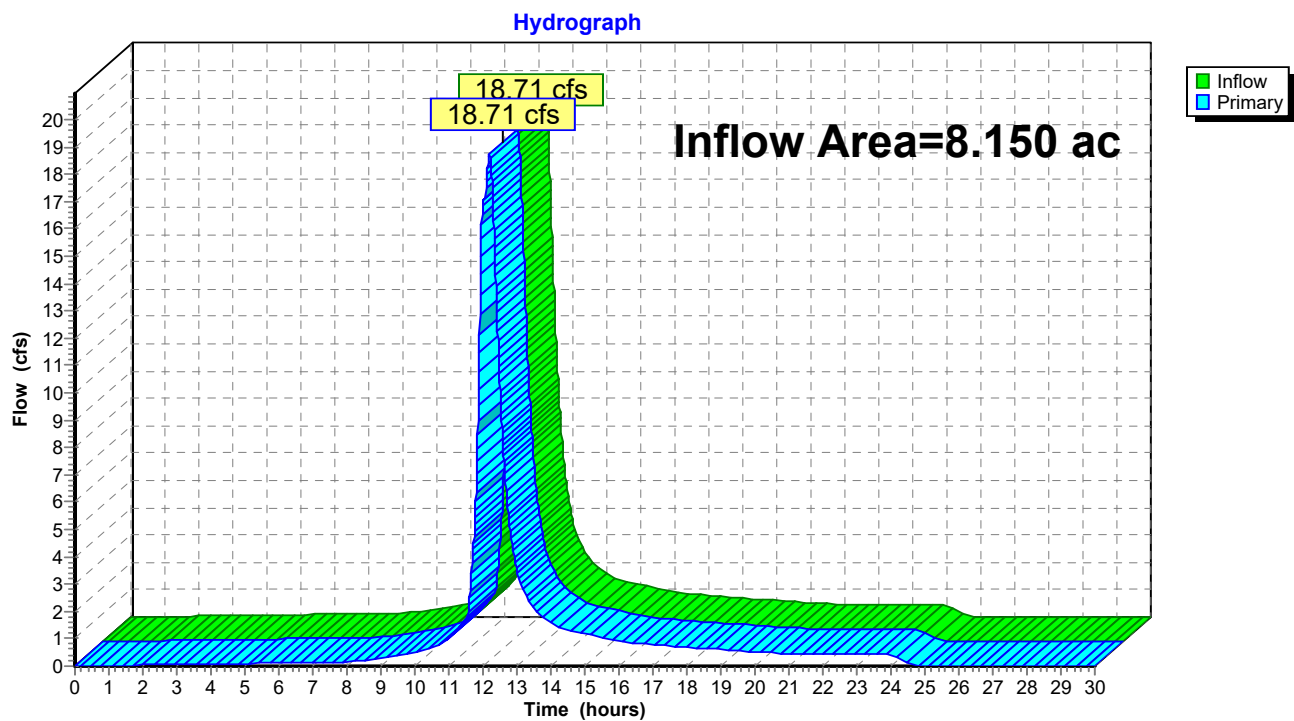
Summary for Pond 3P: Total Site Discharge

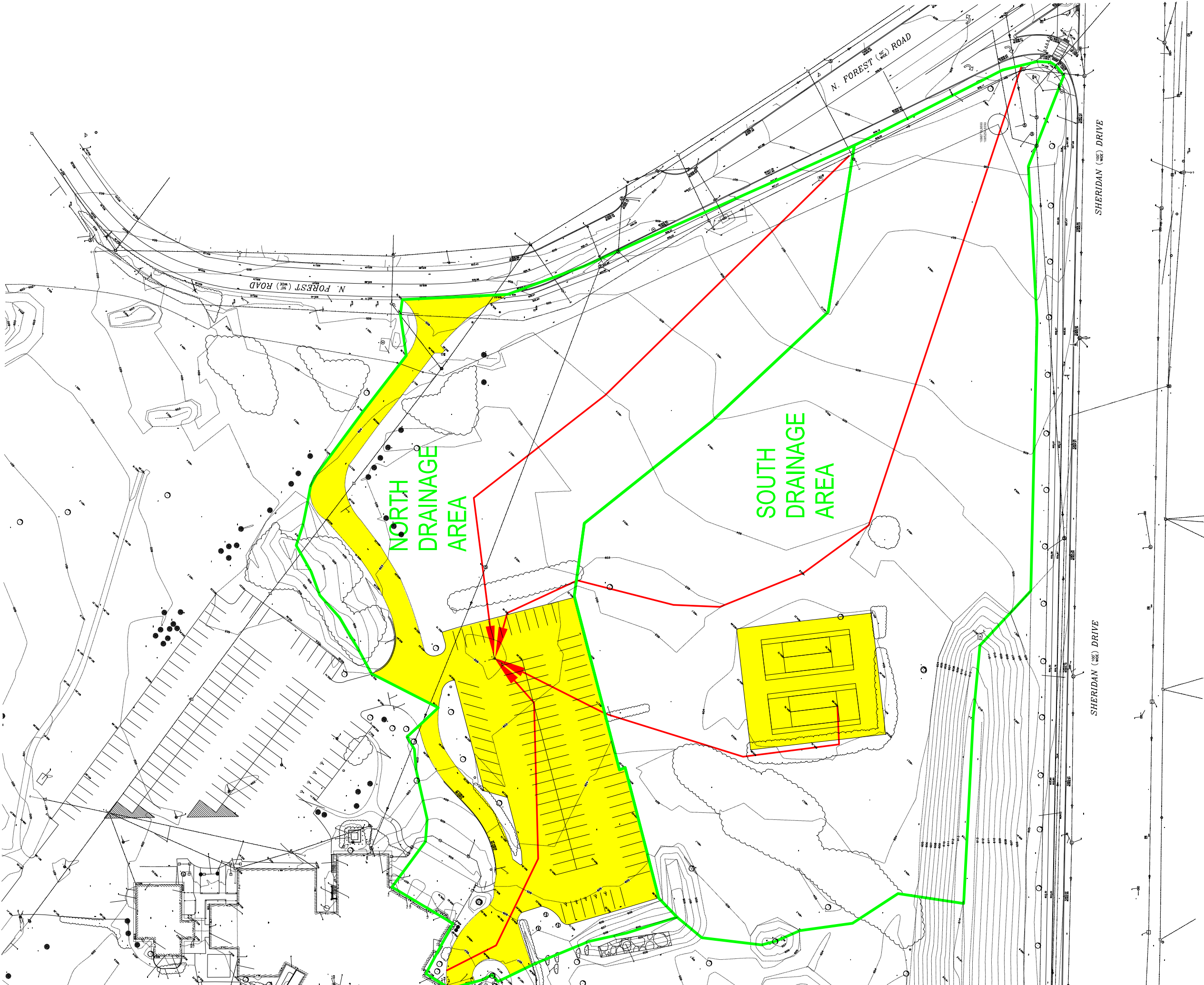
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.150 ac, 17.06% Impervious, Inflow Depth = 3.21" for 100-YR event
Inflow = 18.71 cfs @ 12.20 hrs, Volume= 2.181 af
Primary = 18.71 cfs @ 12.20 hrs, Volume= 2.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 3P: Total Site Discharge

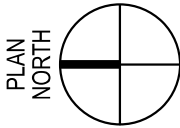


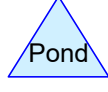
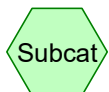
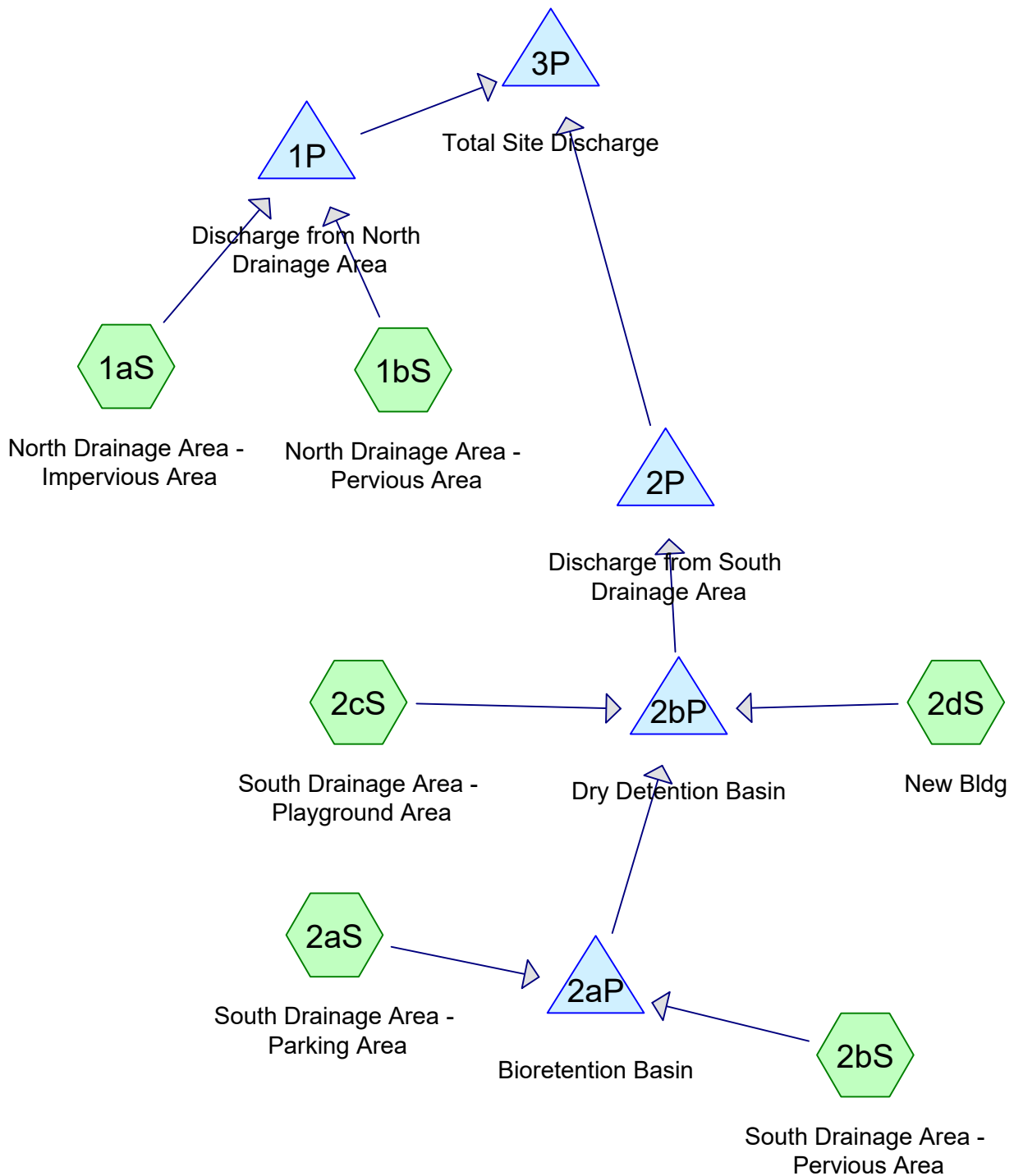


EXISTING DRAINAGE ANALYSIS MAP

LEGEND

DRAINAGE AREA	
IMPERVIOUS AREA	
Tc PATH	





Proposed Drainage Analysis

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-YR	Type II 24-hr		Default	24.00	1	1.92	2
2	10-YR	Type II 24-hr		Default	24.00	1	3.41	2
3	100-YR	Type II 24-hr		Default	24.00	1	5.17	2

Proposed Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1aS: North Drainage Area - Runoff Area=1.317 ac 100.00% Impervious Runoff Depth=1.70"
Tc=6.0 min CN=98 Runoff=3.51 cfs 0.186 af

Subcatchment1bS: North Drainage Area - Runoff Area=2.469 ac 0.00% Impervious Runoff Depth=0.44"
Flow Length=586' Slope=0.0115 '/' Tc=23.2 min CN=78 Runoff=0.94 cfs 0.091 af

Subcatchment2aS: South Drainage Area - Runoff Area=0.528 ac 100.00% Impervious Runoff Depth=1.70"
Tc=6.0 min CN=98 Runoff=1.41 cfs 0.075 af

Subcatchment2bS: South Drainage Area - Runoff Area=3.400 ac 0.00% Impervious Runoff Depth=0.44"
Flow Length=490' Slope=0.0092 '/' Tc=23.8 min CN=78 Runoff=1.28 cfs 0.125 af

Subcatchment2cS: South Drainage Area - Runoff Area=0.407 ac 82.80% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=95 Runoff=0.97 cfs 0.048 af

Subcatchment2dS: New Bldg Runoff Area=0.047 ac 100.00% Impervious Runoff Depth=1.70"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.007 af

Pond 1P: Discharge from North Drainage Area Inflow=3.77 cfs 0.277 af
Primary=3.77 cfs 0.277 af

Pond 2aP: Bioretention Basin Peak Elev=603.13' Storage=1,466 cf Inflow=1.77 cfs 0.199 af
Outflow=1.40 cfs 0.199 af

Pond 2bP: Dry Detention Basin Peak Elev=601.29' Storage=3,873 cf Inflow=1.54 cfs 0.254 af
Outflow=0.26 cfs 0.253 af

Pond 2P: Discharge from South Drainage Area Inflow=0.26 cfs 0.253 af
Primary=0.26 cfs 0.253 af

Pond 3P: Total Site Discharge Inflow=3.93 cfs 0.530 af
Primary=3.93 cfs 0.530 af

Total Runoff Area = 8.168 ac Runoff Volume = 0.530 af Average Runoff Depth = 0.78"
72.71% Pervious = 5.939 ac 27.29% Impervious = 2.229 ac

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 1aS: North Drainage Area - Impervious Area

Runoff = 3.51 cfs @ 11.97 hrs, Volume= 0.186 af, Depth= 1.70"

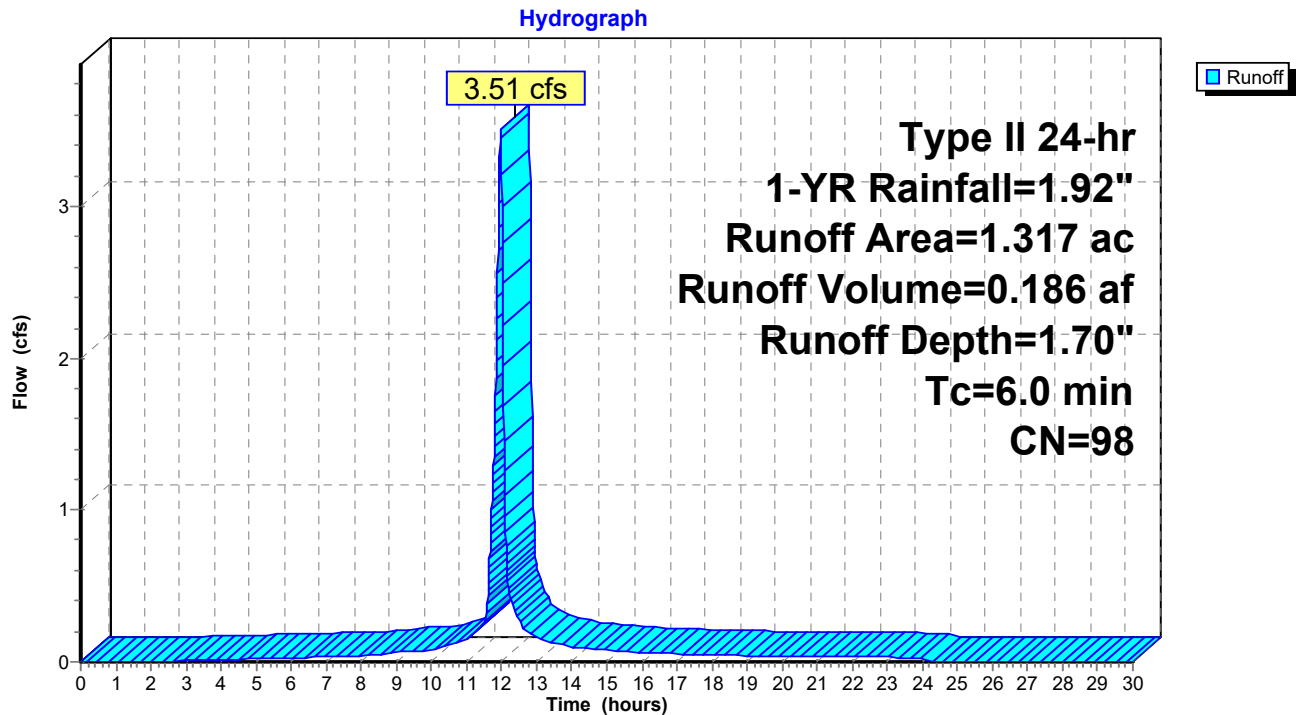
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
1.317	98	Paved parking, HSG D
1.317		100.00% Impervious Area

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

Subcatchment 1aS: North Drainage Area - Impervious Area



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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 1bS: North Drainage Area - Pervious Area

Runoff = 0.94 cfs @ 12.19 hrs, Volume= 0.091 af, Depth= 0.44"

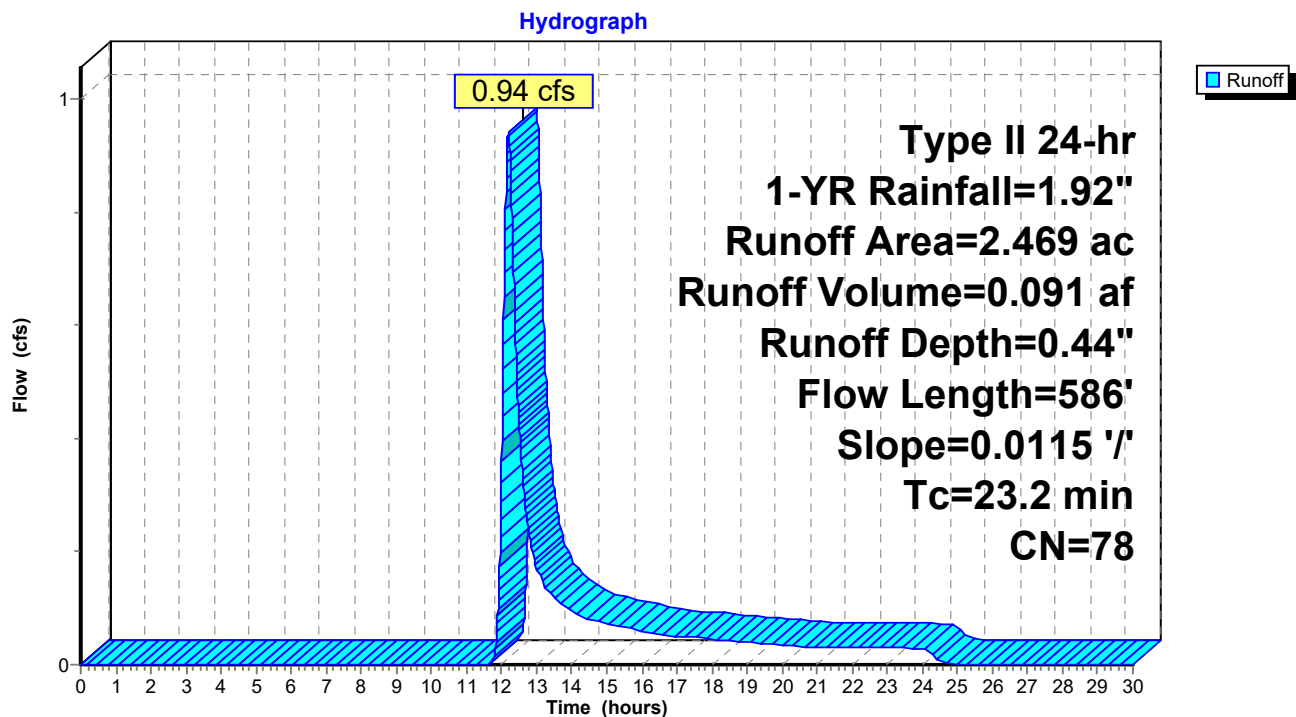
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.152	79	Woods/grass comb., Good, HSG D
2.317	78	Meadow, non-grazed, HSG D
2.469	78	Weighted Average
2.469		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0115	0.13		Sheet Flow, Range n= 0.130 P2= 2.29"
10.0	452	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	34	0.0115	2.18		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.2	586	Total			

Subcatchment 1bS: North Drainage Area - Pervious Area



Proposed Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 2aS: South Drainage Area - Parking Area

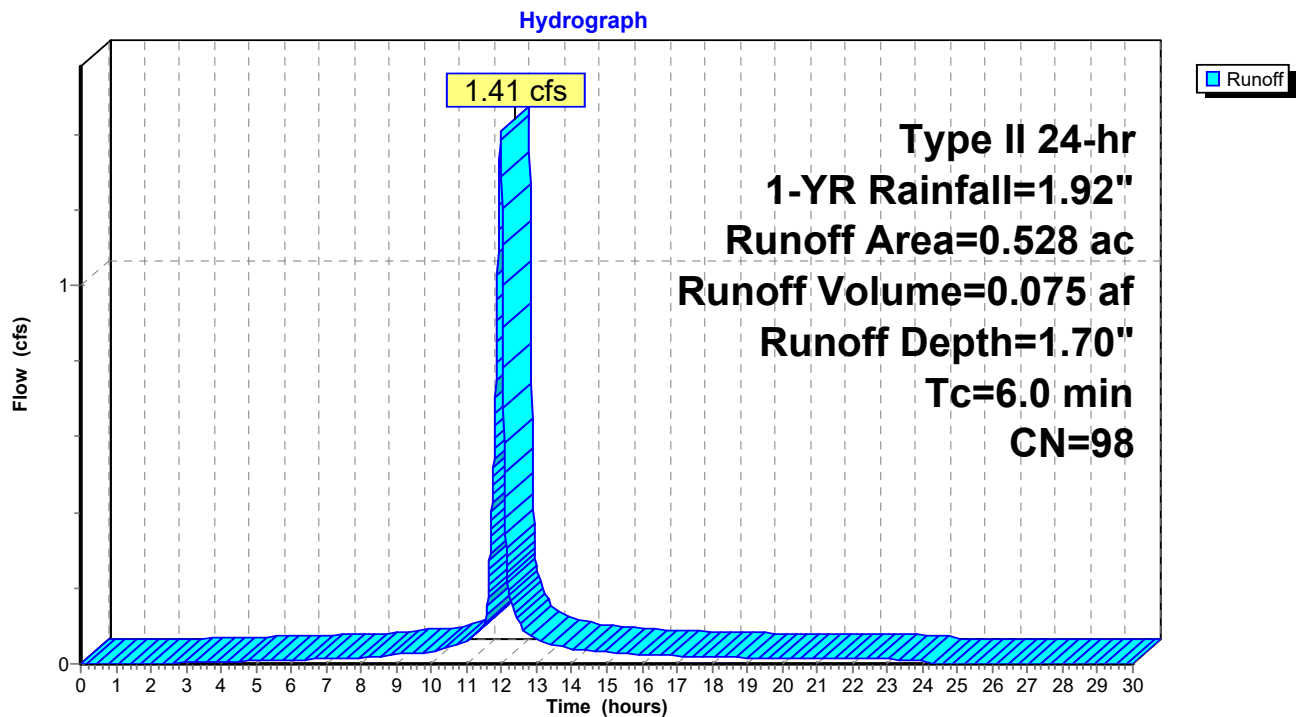
Runoff = 1.41 cfs @ 11.97 hrs, Volume= 0.075 af, Depth= 1.70"
Routed to Pond 2aP : Bioretention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
0.528		100.00% Impervious Area

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

Subcatchment 2aS: South Drainage Area - Parking Area



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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 2bS: South Drainage Area - Pervious Area

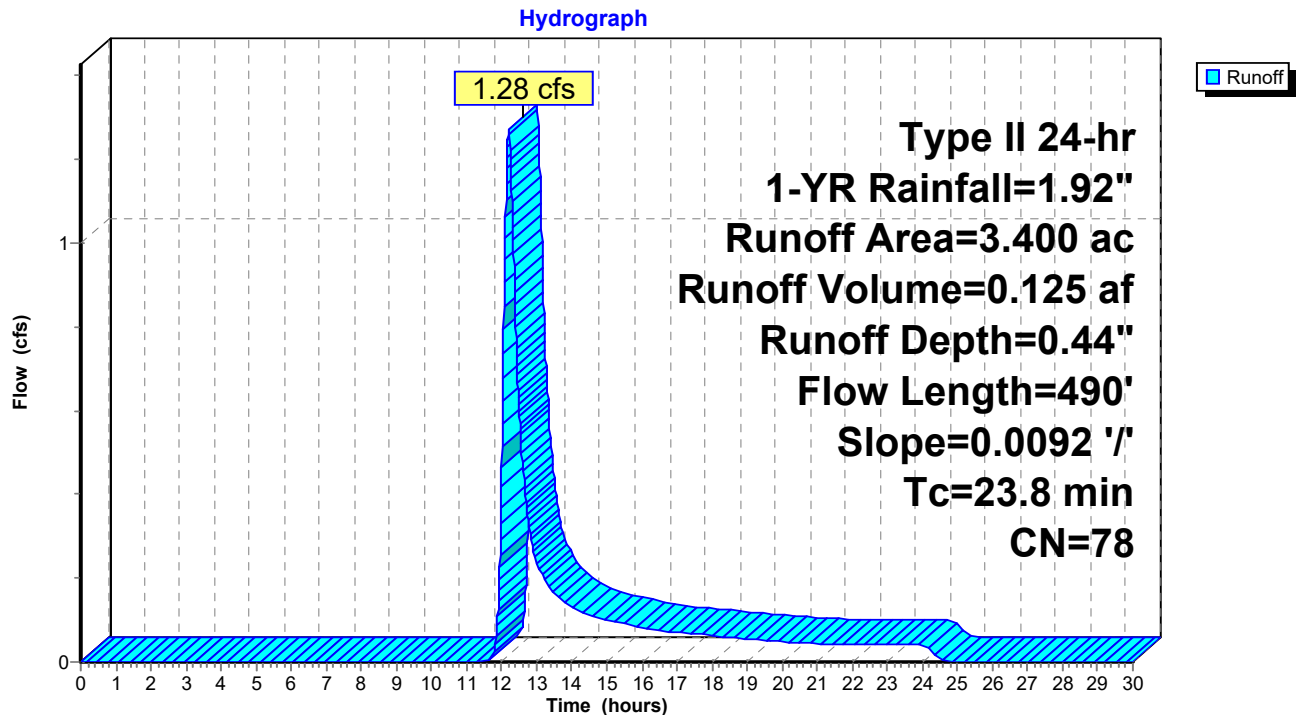
Runoff = 1.28 cfs @ 12.19 hrs, Volume= 0.125 af, Depth= 0.44"
Routed to Pond 2aP : Bioretention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
3.400	78	Meadow, non-grazed, HSG D
3.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0092	0.12		Sheet Flow, Range n= 0.130 P2= 2.29"
9.7	390	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.8	490	Total			

Subcatchment 2bS: South Drainage Area - Pervious Area



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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 2cS: South Drainage Area - Playground Area

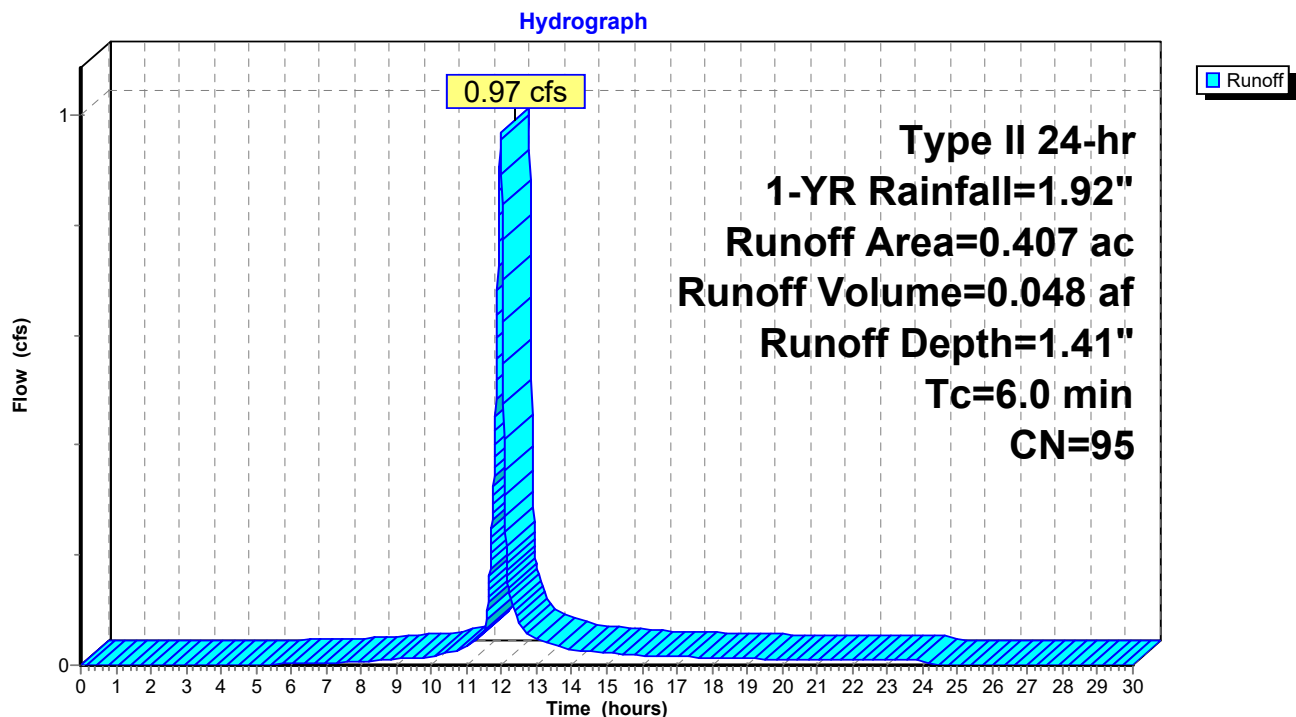
Runoff = 0.97 cfs @ 11.97 hrs, Volume= 0.048 af, Depth= 1.41"
Routed to Pond 2bP : Dry Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.337	98	Roofs, HSG D
0.070	80	>75% Grass cover, Good, HSG D
0.407	95	Weighted Average
0.070		17.20% Pervious Area
0.337		82.80% Impervious Area

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

Subcatchment 2cS: South Drainage Area - Playground Area



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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Subcatchment 2dS: New Bldg

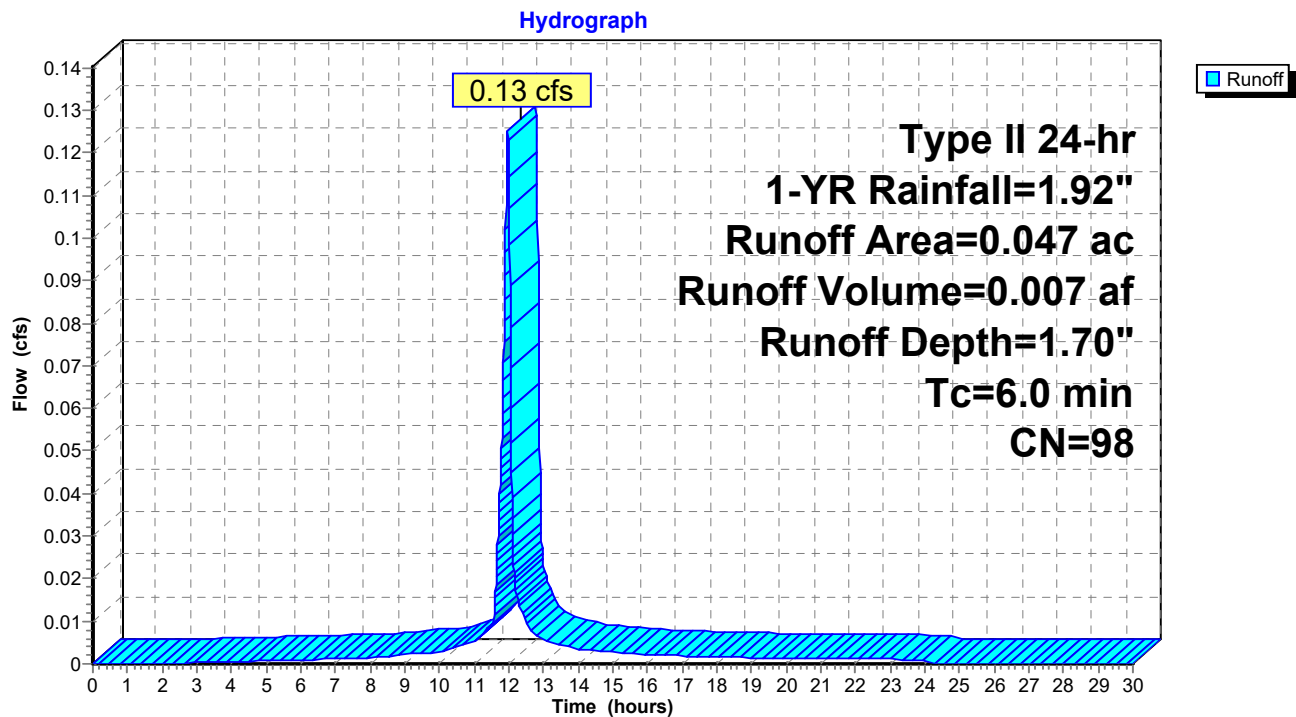
Runoff = 0.13 cfs @ 11.97 hrs, Volume= 0.007 af, Depth= 1.70"
Routed to Pond 2bP : Dry Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-YR Rainfall=1.92"

Area (ac)	CN	Description
0.047	98	Roofs, HSG D
0.047		100.00% Impervious Area

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

Subcatchment 2dS: New Bldg



Proposed Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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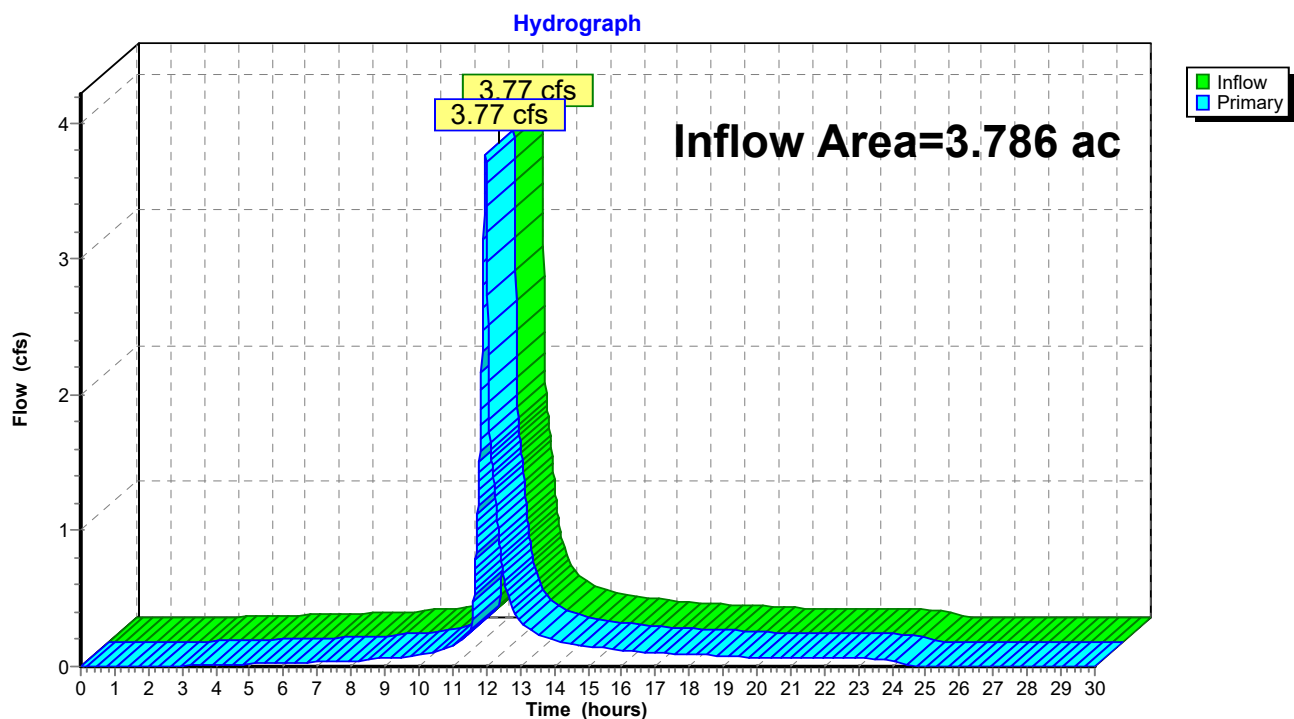
Summary for Pond 1P: Discharge from North Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.786 ac, 34.79% Impervious, Inflow Depth = 0.88" for 1-YR event
Inflow = 3.77 cfs @ 11.97 hrs, Volume= 0.277 af
Primary = 3.77 cfs @ 11.97 hrs, Volume= 0.277 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Discharge from North Drainage Area



Proposed Drainage Analysis

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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Pond 2aP: Bioretention Basin

Inflow Area = 3.928 ac, 13.44% Impervious, Inflow Depth = 0.61" for 1-YR event
Inflow = 1.77 cfs @ 11.99 hrs, Volume= 0.199 af
Outflow = 1.40 cfs @ 12.25 hrs, Volume= 0.199 af, Atten= 21%, Lag= 15.5 min
Primary = 1.40 cfs @ 12.25 hrs, Volume= 0.199 af
Routed to Pond 2bP : Dry Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 603.13' @ 12.25 hrs Surf.Area= 3,662 sf Storage= 1,466 cf

Plug-Flow detention time= 64.4 min calculated for 0.199 af (100% of inflow)
Center-of-Mass det. time= 64.4 min (911.8 - 847.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	602.50'	6,205 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
602.50	1,050	230.0	0	0	1,050
603.00	3,200	432.0	1,014	1,014	11,693
604.00	7,480	724.0	5,191	6,205	38,560

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	18.0" Round Culvert L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 600.00' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	600.00'	8.0" Round Underdrain Pipe L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 600.00' S= 0.0000 ' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#3	Device 2	602.50'	1.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 500.00'
#4	Device 1	603.00'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.40 cfs @ 12.25 hrs HW=603.13' (Free Discharge)

- 1=Culvert (Passes 1.40 cfs of 10.37 cfs potential flow)
- 2=Underdrain Pipe (Passes 0.15 cfs of 1.63 cfs potential flow)
- 3=Exfiltration (Controls 0.15 cfs)
- 4=Orifice/Grate (Weir Controls 1.25 cfs @ 1.19 fps)

Proposed Drainage Analysis

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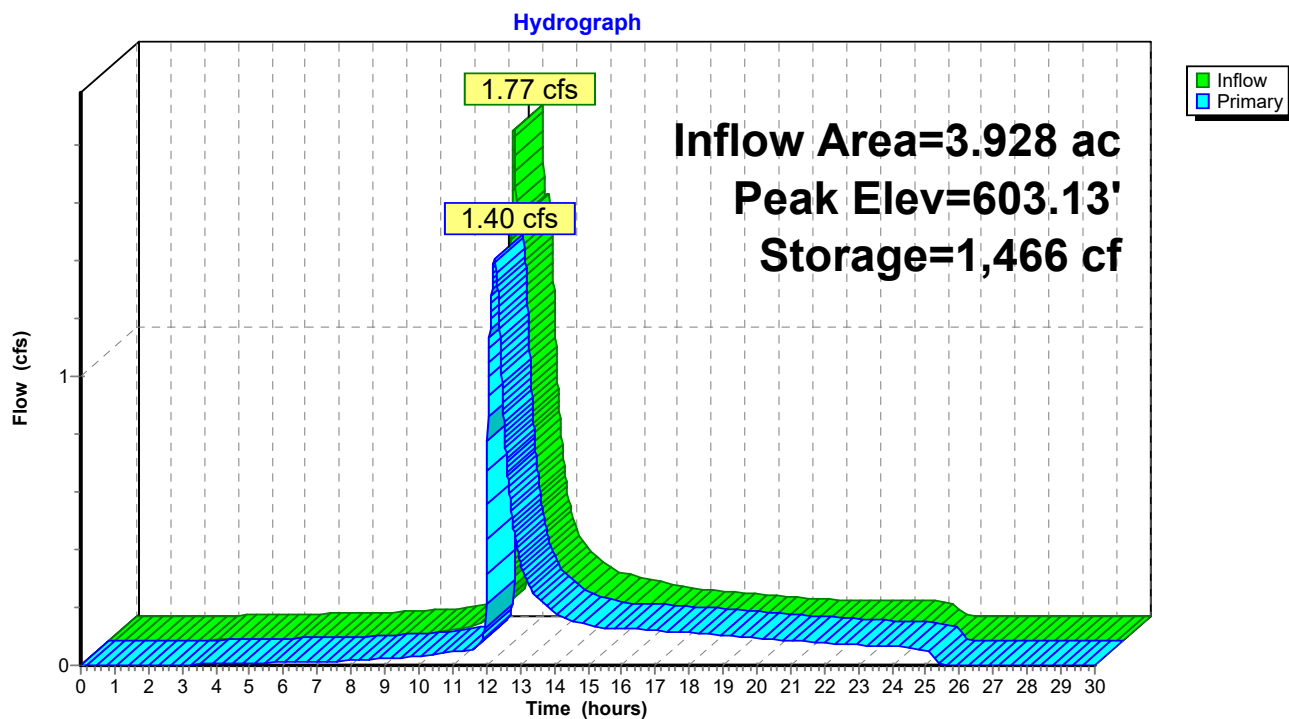
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Type II 24-hr 1-YR Rainfall=1.92"

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Pond 2aP: Bioretention Basin



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Type II 24-hr 1-YR Rainfall=1.92"

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Summary for Pond 2bP: Dry Detention Basin

[79] Warning: Submerged Pond 2aP Primary device # 1 by 1.29'

Inflow Area = 4.382 ac, 20.81% Impervious, Inflow Depth = 0.69" for 1-YR event
Inflow = 1.54 cfs @ 12.24 hrs, Volume= 0.254 af
Outflow = 0.26 cfs @ 13.66 hrs, Volume= 0.253 af, Atten= 83%, Lag= 85.3 min
Primary = 0.26 cfs @ 13.66 hrs, Volume= 0.253 af
Routed to Pond 2P : Discharge from South Drainage Area

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 601.29' @ 13.66 hrs Surf.Area= 5,852 sf Storage= 3,873 cf

Plug-Flow detention time= 165.3 min calculated for 0.253 af (100% of inflow)
Center-of-Mass det. time= 164.0 min (1,049.9 - 885.9)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	1,568 cf	5.00'W x 302.00'L x 4.00'H Stone Encasement 6,040 cf Overall - 2,121 cf Embedded = 3,919 cf x 40.0% Voids
#2	600.00'	2,121 cf	36.0" Round 36" Pipe Inside #1 L= 300.0'
#3	600.00'	26,477 cf	Dry Detention Basin (Irregular) Listed below (Recalc)
		30,165 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
600.00	0	0.0	0	0	0
601.00	4,041	349.0	1,347	1,347	9,694
602.00	5,117	368.0	4,568	5,915	10,836
603.00	6,249	387.0	5,674	11,589	12,038
604.00	7,438	405.0	6,835	18,424	13,240
605.00	8,684	424.0	8,053	26,477	14,560

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	10.0" Round Culvert L= 133.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 599.88' S= 0.0009 ' S= 0.0009 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	600.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	601.30'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 13.66 hrs HW=601.29' (Free Discharge)

- 1=Culvert (Passes 0.26 cfs of 1.24 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.20 fps)
- 3=Orifice/Grate (Controls 0.00 cfs)

Proposed Drainage Analysis

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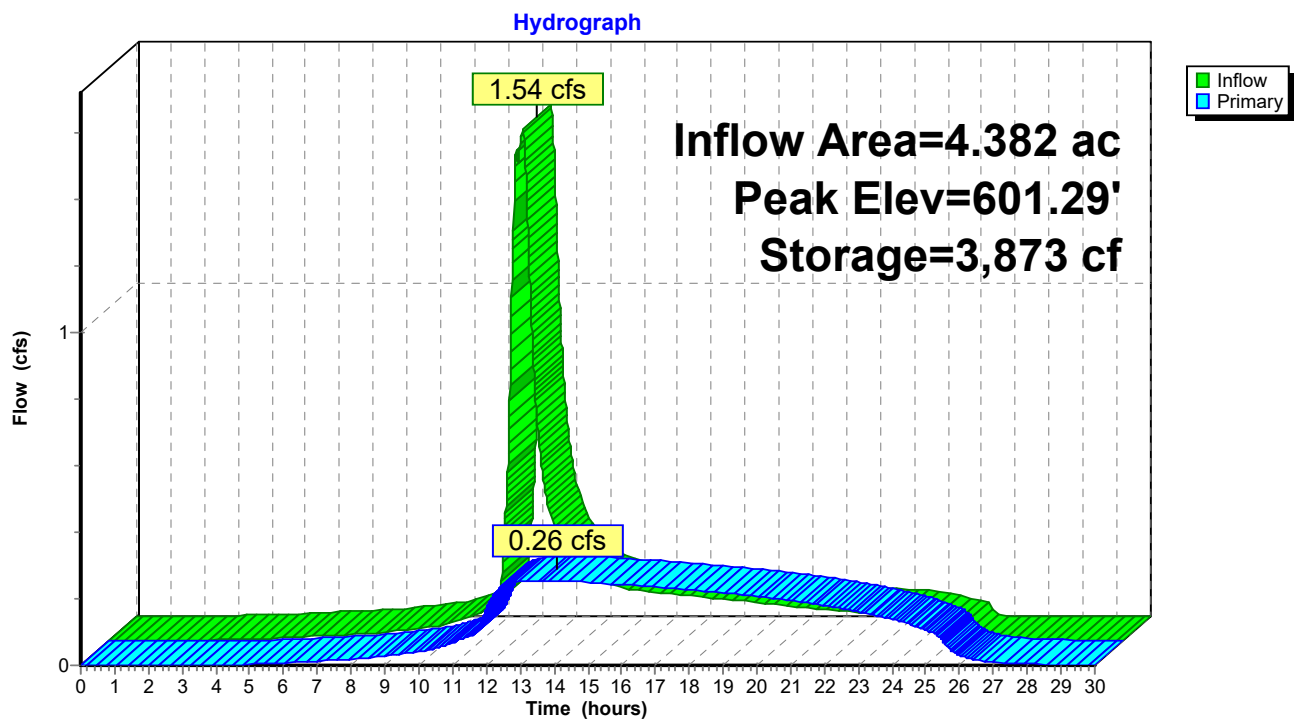
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Type II 24-hr 1-YR Rainfall=1.92"

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Pond 2bP: Dry Detention Basin



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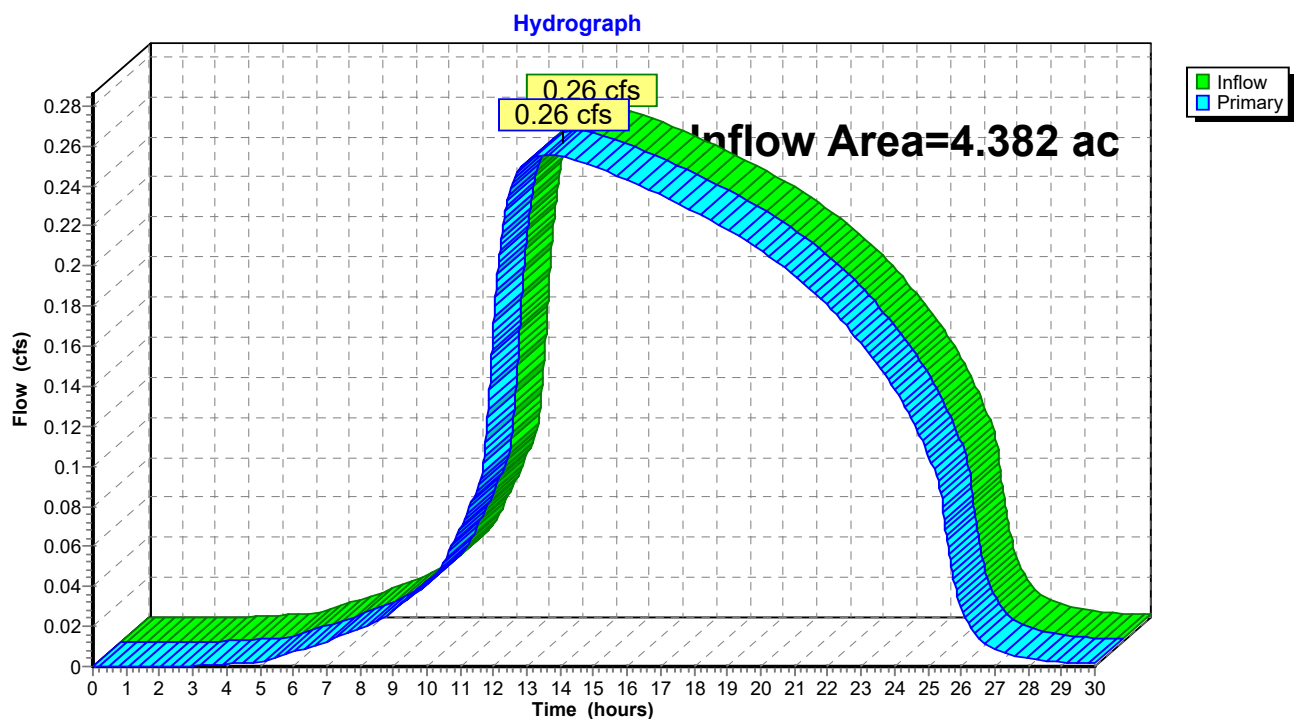
Summary for Pond 2P: Discharge from South Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.382 ac, 20.81% Impervious, Inflow Depth > 0.69" for 1-YR event
Inflow = 0.26 cfs @ 13.66 hrs, Volume= 0.253 af
Primary = 0.26 cfs @ 13.66 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Discharge from South Drainage Area



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Type II 24-hr 1-YR Rainfall=1.92"

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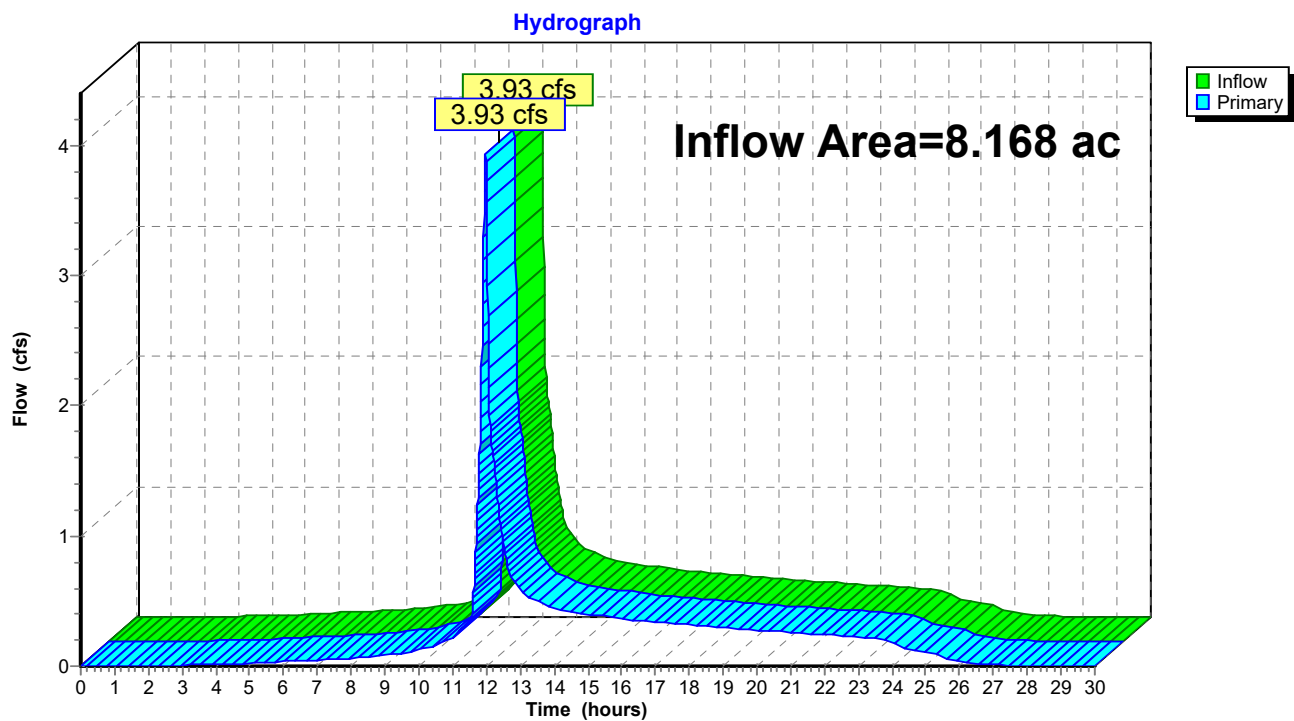
Summary for Pond 3P: Total Site Discharge

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.168 ac, 27.29% Impervious, Inflow Depth > 0.78" for 1-YR event
Inflow = 3.93 cfs @ 11.97 hrs, Volume= 0.530 af
Primary = 3.93 cfs @ 11.97 hrs, Volume= 0.530 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 3P: Total Site Discharge



Proposed Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1aS: North Drainage Area - Runoff Area=1.317 ac 100.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=98 Runoff=6.36 cfs 0.349 af

Subcatchment1bS: North Drainage Area - Runoff Area=2.469 ac 0.00% Impervious Runoff Depth=1.43"
Flow Length=586' Slope=0.0115 '/' Tc=23.2 min CN=78 Runoff=3.53 cfs 0.294 af

Subcatchment2aS: South Drainage Area - Runoff Area=0.528 ac 100.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=98 Runoff=2.55 cfs 0.140 af

Subcatchment2bS: South Drainage Area - Runoff Area=3.400 ac 0.00% Impervious Runoff Depth=1.43"
Flow Length=490' Slope=0.0092 '/' Tc=23.8 min CN=78 Runoff=4.79 cfs 0.405 af

Subcatchment2cS: South Drainage Area - Runoff Area=0.407 ac 82.80% Impervious Runoff Depth=2.85"
Tc=6.0 min CN=95 Runoff=1.88 cfs 0.097 af

Subcatchment2dS: New Bldg Runoff Area=0.047 ac 100.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.012 af

Pond 1P: Discharge from North Drainage Area Inflow=7.93 cfs 0.643 af
Primary=7.93 cfs 0.643 af

Pond 2aP: Bioretention Basin Peak Elev=603.33' Storage=2,249 cf Inflow=5.17 cfs 0.545 af
Outflow=5.06 cfs 0.545 af

Pond 2bP: Dry Detention Basin Peak Elev=602.21' Storage=9,369 cf Inflow=5.91 cfs 0.654 af
Outflow=1.99 cfs 0.652 af

Pond 2P: Discharge from South Drainage Area Inflow=1.99 cfs 0.652 af
Primary=1.99 cfs 0.652 af

Pond 3P: Total Site Discharge Inflow=8.17 cfs 1.295 af
Primary=8.17 cfs 1.295 af

Total Runoff Area = 8.168 ac Runoff Volume = 1.297 af Average Runoff Depth = 1.90"
72.71% Pervious = 5.939 ac 27.29% Impervious = 2.229 ac

Proposed Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 1aS: North Drainage Area - Impervious Area

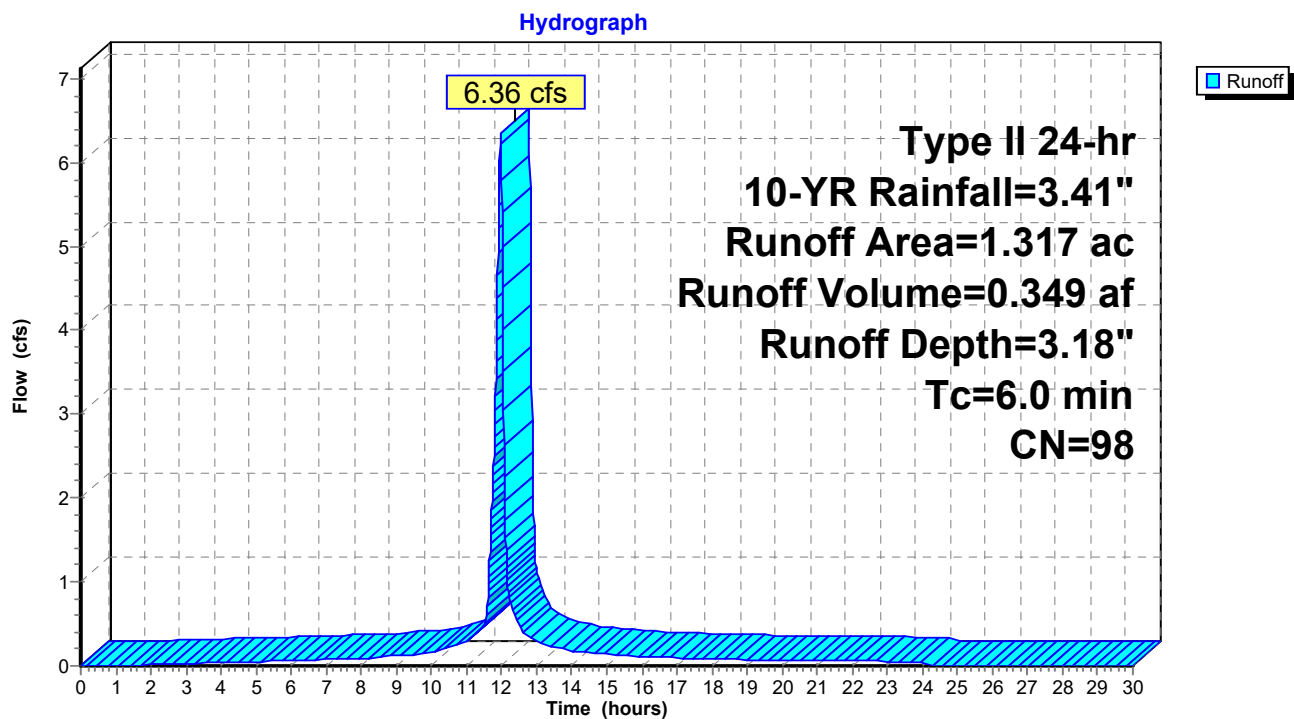
Runoff = 6.36 cfs @ 11.97 hrs, Volume= 0.349 af, Depth= 3.18"
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
1.317	98	Paved parking, HSG D
1.317		100.00% Impervious Area

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

Subcatchment 1aS: North Drainage Area - Impervious Area



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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 1bS: North Drainage Area - Pervious Area

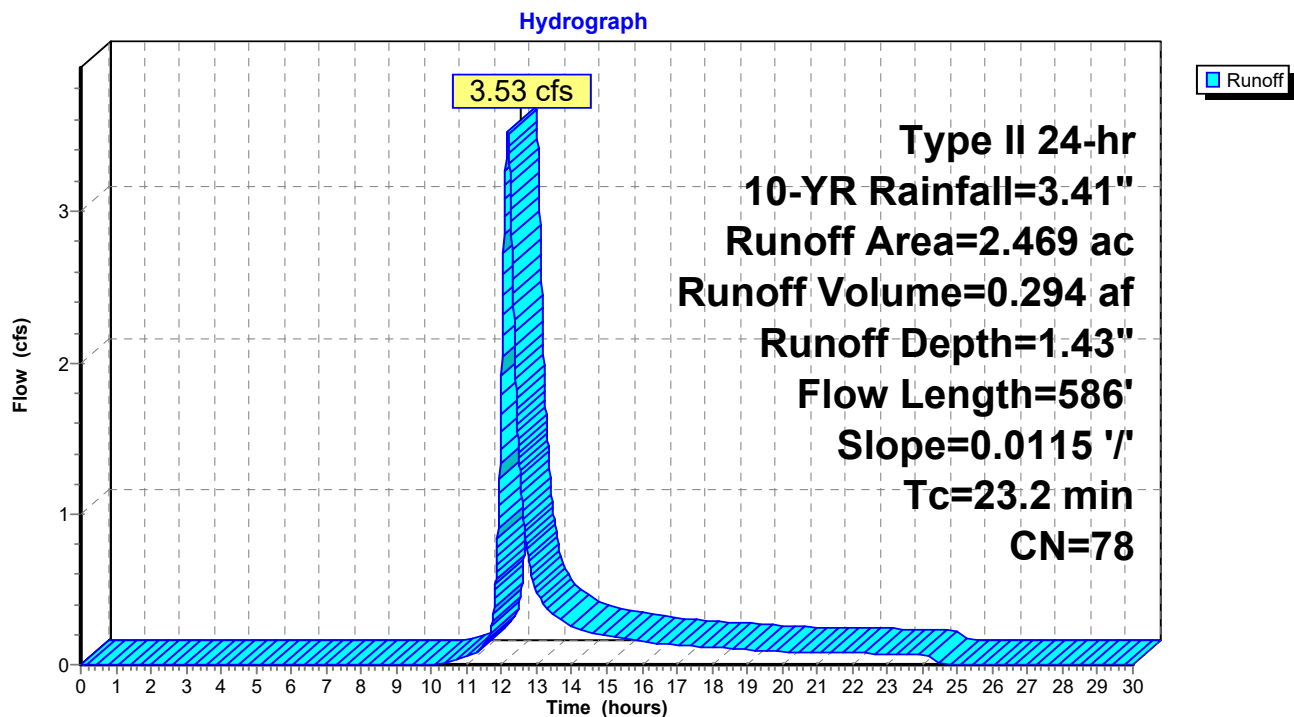
Runoff = 3.53 cfs @ 12.17 hrs, Volume= 0.294 af, Depth= 1.43"
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.152	79	Woods/grass comb., Good, HSG D
2.317	78	Meadow, non-grazed, HSG D
2.469	78	Weighted Average
2.469		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0115	0.13		Sheet Flow, Range n= 0.130 P2= 2.29"
10.0	452	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	34	0.0115	2.18		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.2	586	Total			

Subcatchment 1bS: North Drainage Area - Pervious Area



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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 2aS: South Drainage Area - Parking Area

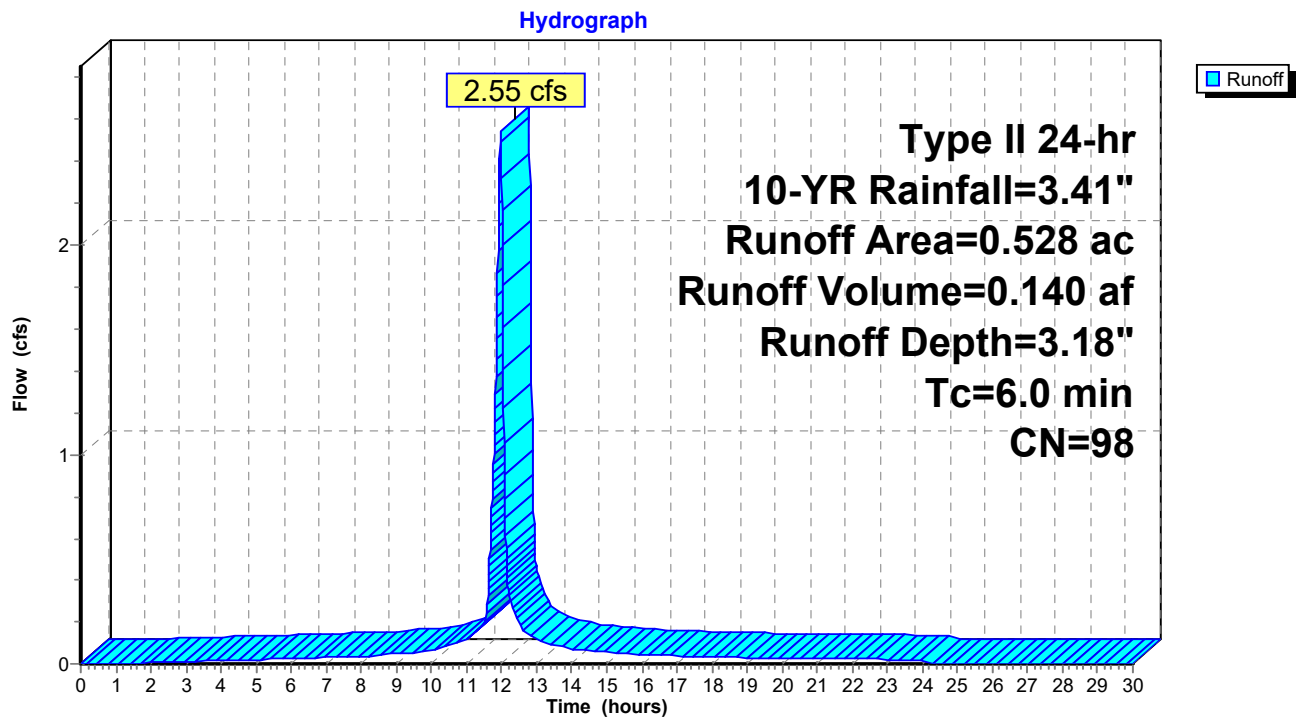
Runoff = 2.55 cfs @ 11.97 hrs, Volume= 0.140 af, Depth= 3.18"
Routed to Pond 2aP : Bioretention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
0.528		100.00% Impervious Area

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

Subcatchment 2aS: South Drainage Area - Parking Area



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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 2bS: South Drainage Area - Pervious Area

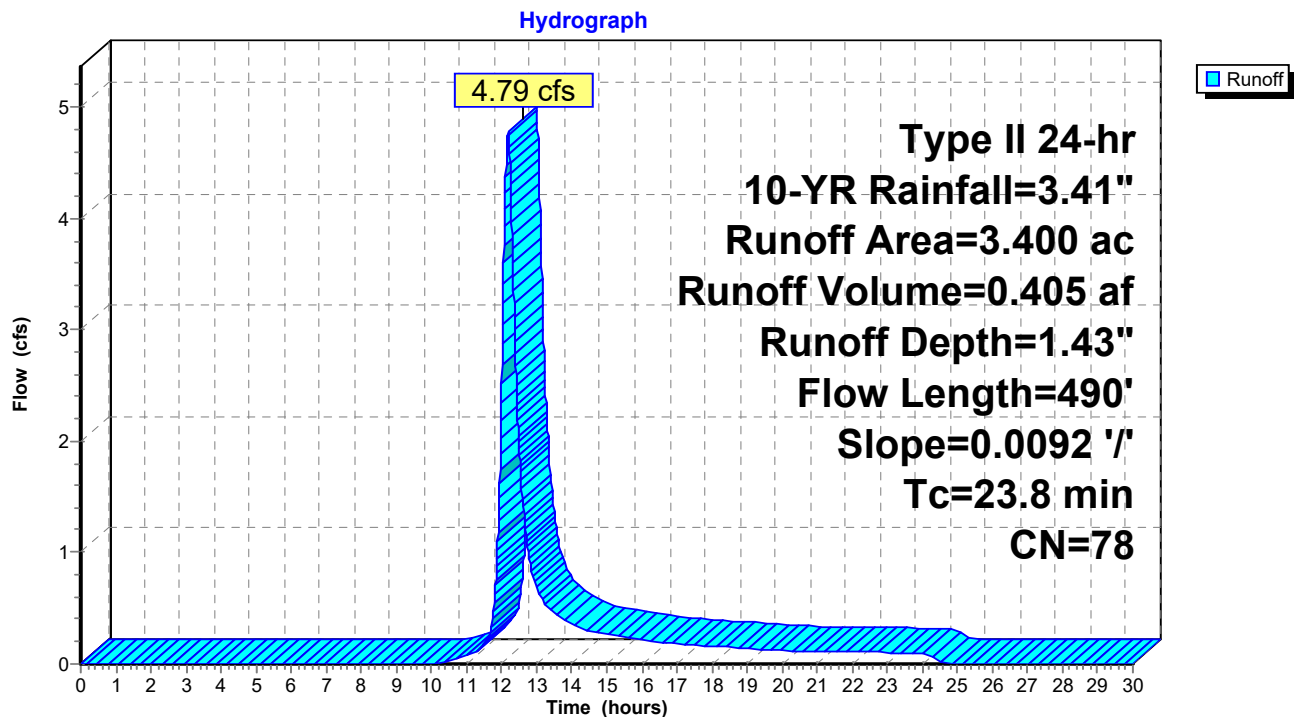
Runoff = 4.79 cfs @ 12.19 hrs, Volume= 0.405 af, Depth= 1.43"
Routed to Pond 2aP : Bioretention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
3.400	78	Meadow, non-grazed, HSG D
3.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0092	0.12		Sheet Flow, Range n= 0.130 P2= 2.29"
9.7	390	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.8	490	Total			

Subcatchment 2bS: South Drainage Area - Pervious Area



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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 2cS: South Drainage Area - Playground Area

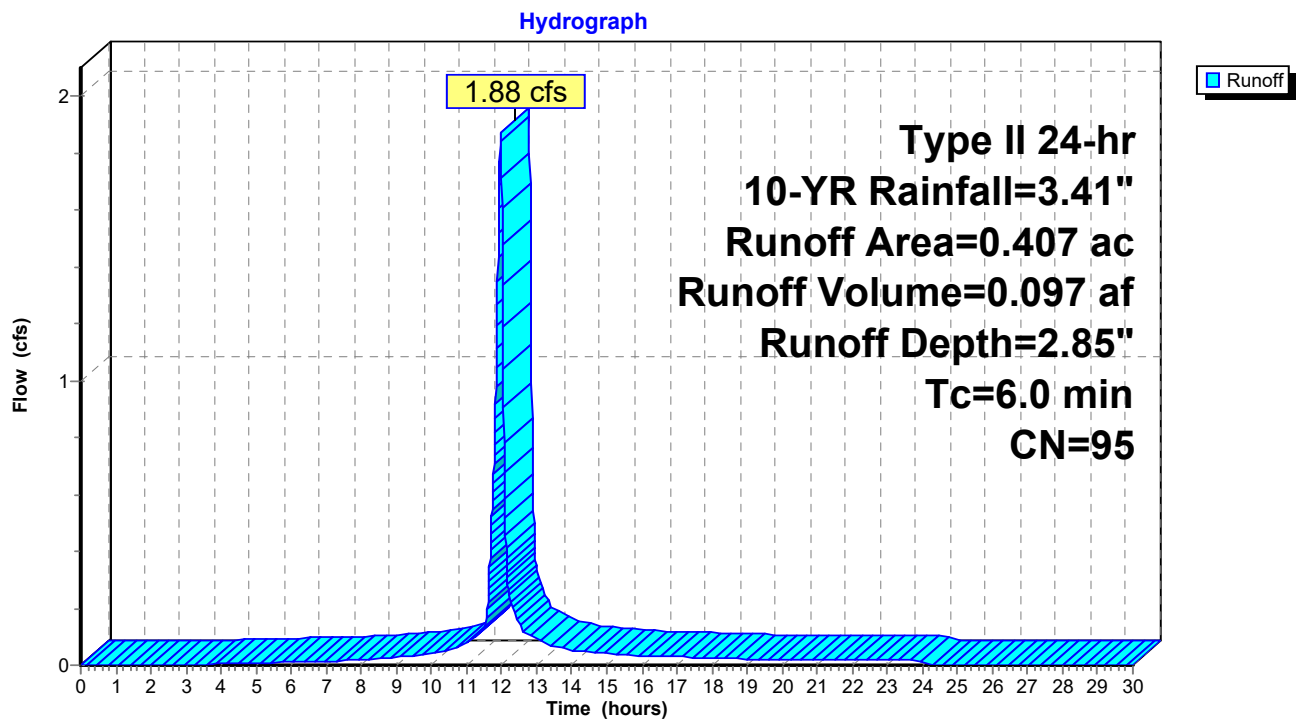
Runoff = 1.88 cfs @ 11.97 hrs, Volume= 0.097 af, Depth= 2.85"
Routed to Pond 2bP : Dry Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.337	98	Roofs, HSG D
0.070	80	>75% Grass cover, Good, HSG D
0.407	95	Weighted Average
0.070		17.20% Pervious Area
0.337		82.80% Impervious Area

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

Subcatchment 2cS: South Drainage Area - Playground Area



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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Subcatchment 2dS: New Bldg

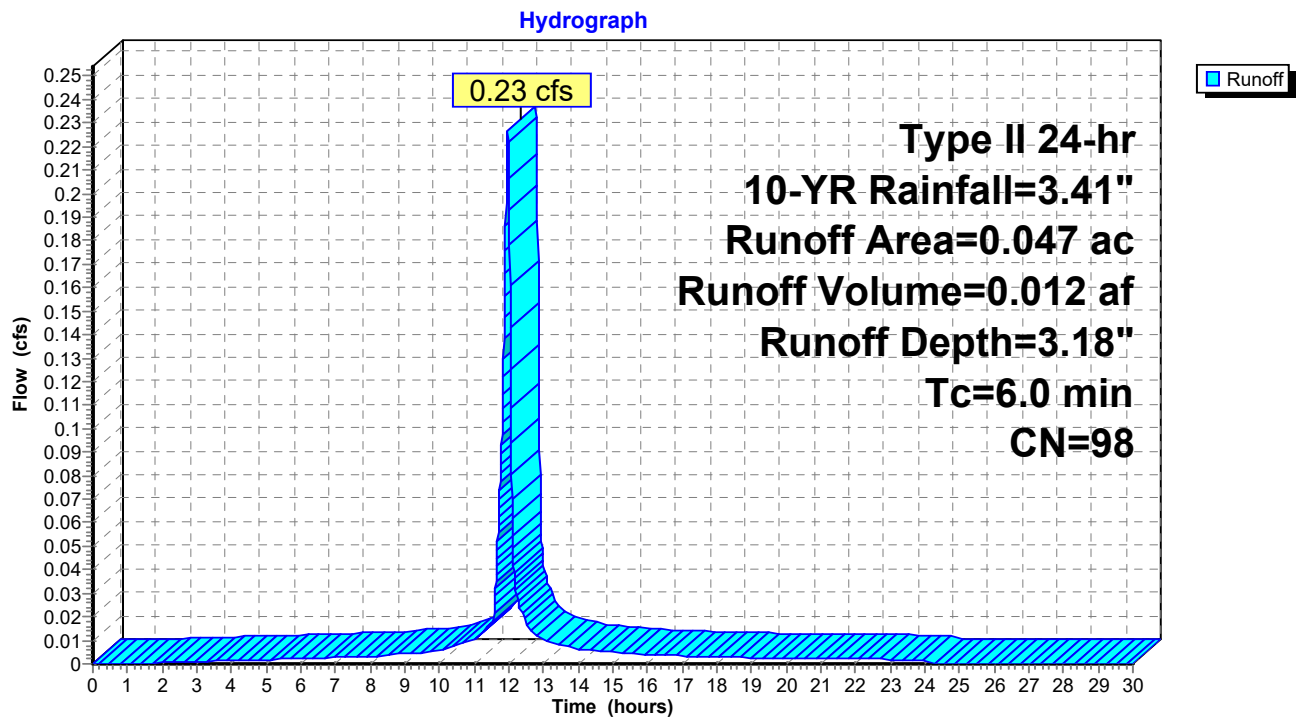
Runoff = 0.23 cfs @ 11.97 hrs, Volume= 0.012 af, Depth= 3.18"
Routed to Pond 2bP : Dry Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-YR Rainfall=3.41"

Area (ac)	CN	Description
0.047	98	Roofs, HSG D
0.047		100.00% Impervious Area

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

Subcatchment 2dS: New Bldg



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Type II 24-hr 10-YR Rainfall=3.41"

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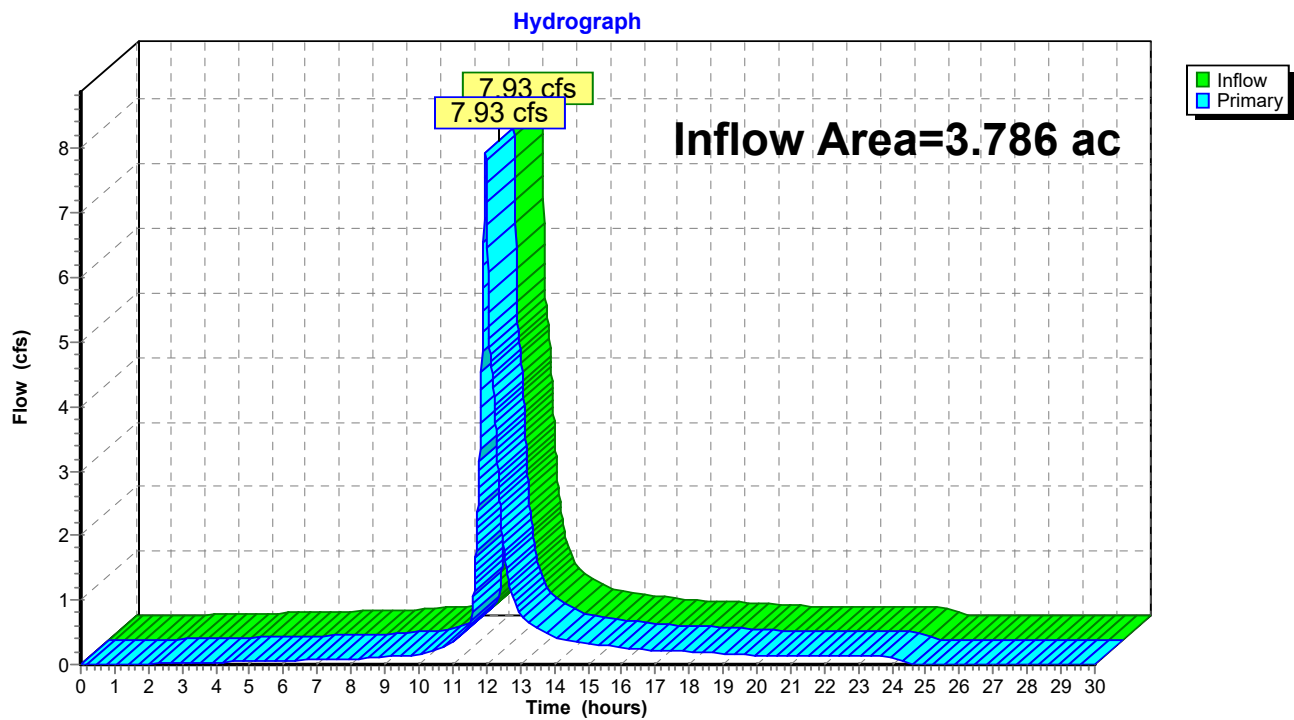
Summary for Pond 1P: Discharge from North Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.786 ac, 34.79% Impervious, Inflow Depth = 2.04" for 10-YR event
Inflow = 7.93 cfs @ 11.98 hrs, Volume= 0.643 af
Primary = 7.93 cfs @ 11.98 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Discharge from North Drainage Area



Proposed Drainage Analysis

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Type II 24-hr 10-YR Rainfall=3.41"

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Summary for Pond 2aP: Bioretention Basin

Inflow Area = 3.928 ac, 13.44% Impervious, Inflow Depth = 1.66" for 10-YR event
Inflow = 5.17 cfs @ 12.17 hrs, Volume= 0.545 af
Outflow = 5.06 cfs @ 12.21 hrs, Volume= 0.545 af, Atten= 2%, Lag= 2.3 min
Primary = 5.06 cfs @ 12.21 hrs, Volume= 0.545 af
Routed to Pond 2bP : Dry Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 603.33' @ 12.21 hrs Surf.Area= 4,400 sf Storage= 2,249 cf

Plug-Flow detention time= 41.1 min calculated for 0.545 af (100% of inflow)
Center-of-Mass det. time= 41.1 min (872.4 - 831.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	602.50'	6,205 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
602.50	1,050	230.0	0	0	1,050
603.00	3,200	432.0	1,014	1,014	11,693
604.00	7,480	724.0	5,191	6,205	38,560
Device	Routing	Invert	Outlet Devices		
#1	Primary	600.00'	18.0" Round Culvert L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 600.00' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf		
#2	Device 1	600.00'	8.0" Round Underdrain Pipe L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 600.00' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf		
#3	Device 2	602.50'	1.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 500.00'		
#4	Device 1	603.00'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads		

Primary OutFlow Max=5.06 cfs @ 12.21 hrs HW=603.33' (Free Discharge)

- 1=Culvert (Passes 5.06 cfs of 10.78 cfs potential flow)
- 2=Underdrain Pipe (Passes 0.18 cfs of 1.69 cfs potential flow)
- 3=Exfiltration (Controls 0.18 cfs)
- 4=Orifice/Grate (Weir Controls 4.88 cfs @ 1.87 fps)

Proposed Drainage Analysis

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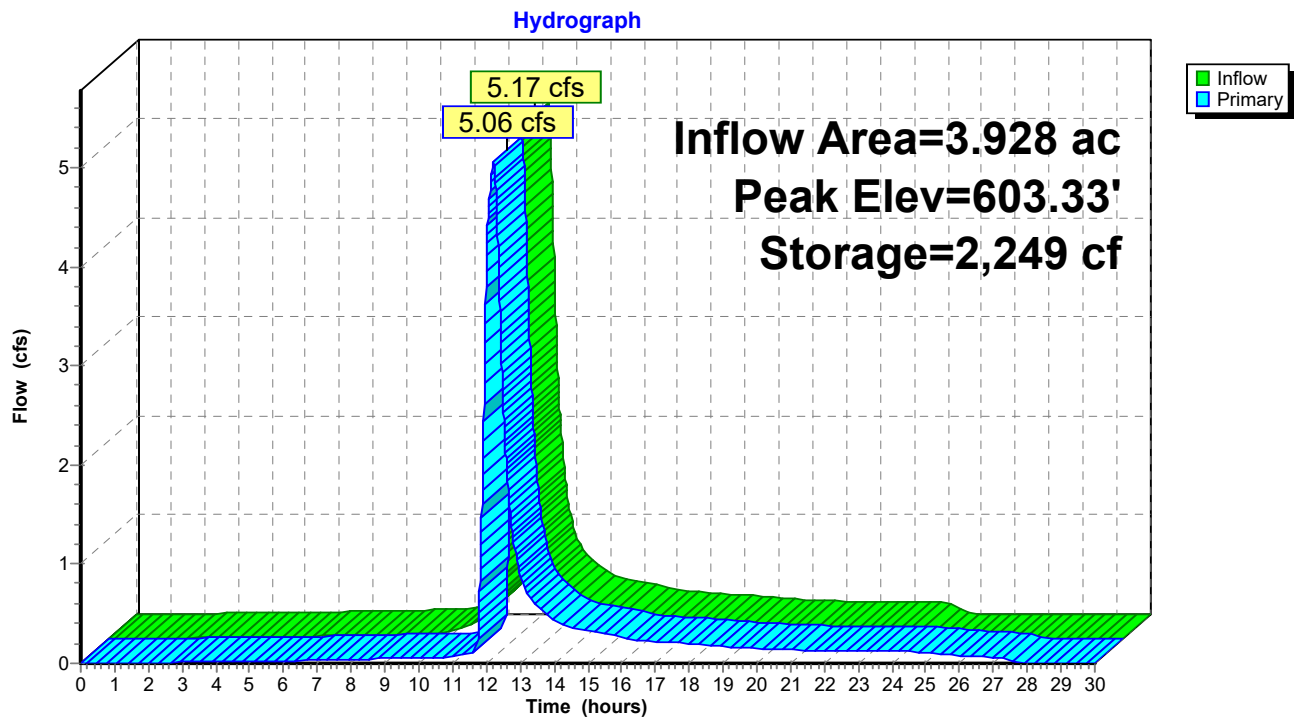
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Pond 2aP: Bioretention Basin



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Summary for Pond 2bP: Dry Detention Basin

[79] Warning: Submerged Pond 2aP Primary device # 1 by 2.21'

Inflow Area = 4.382 ac, 20.81% Impervious, Inflow Depth = 1.79" for 10-YR event
Inflow = 5.91 cfs @ 12.01 hrs, Volume= 0.654 af
Outflow = 1.99 cfs @ 12.62 hrs, Volume= 0.652 af, Atten= 66%, Lag= 36.6 min
Primary = 1.99 cfs @ 12.62 hrs, Volume= 0.652 af
Routed to Pond 2P : Discharge from South Drainage Area

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 602.21' @ 12.62 hrs Surf.Area= 6,858 sf Storage= 9,369 cf

Plug-Flow detention time= 124.9 min calculated for 0.652 af (100% of inflow)
Center-of-Mass det. time= 122.6 min (978.4 - 855.8)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	1,568 cf	5.00'W x 302.00'L x 4.00'H Stone Encasement 6,040 cf Overall - 2,121 cf Embedded = 3,919 cf x 40.0% Voids
#2	600.00'	2,121 cf	36.0" Round 36" Pipe Inside #1 L= 300.0'
#3	600.00'	26,477 cf	Dry Detention Basin (Irregular) Listed below (Recalc)
		30,165 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
600.00	0	0.0	0	0	0
601.00	4,041	349.0	1,347	1,347	9,694
602.00	5,117	368.0	4,568	5,915	10,836
603.00	6,249	387.0	5,674	11,589	12,038
604.00	7,438	405.0	6,835	18,424	13,240
605.00	8,684	424.0	8,053	26,477	14,560

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	10.0" Round Culvert L= 133.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 599.88' S= 0.0009 ' S= 0.0009 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	600.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	601.30'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.99 cfs @ 12.62 hrs HW=602.21' (Free Discharge)

- 1=Culvert (Barrel Controls 1.99 cfs @ 3.66 fps)
- 2=Orifice/Grate (Passes < 0.34 cfs potential flow)
- 3=Orifice/Grate (Passes < 2.51 cfs potential flow)

Proposed Drainage Analysis

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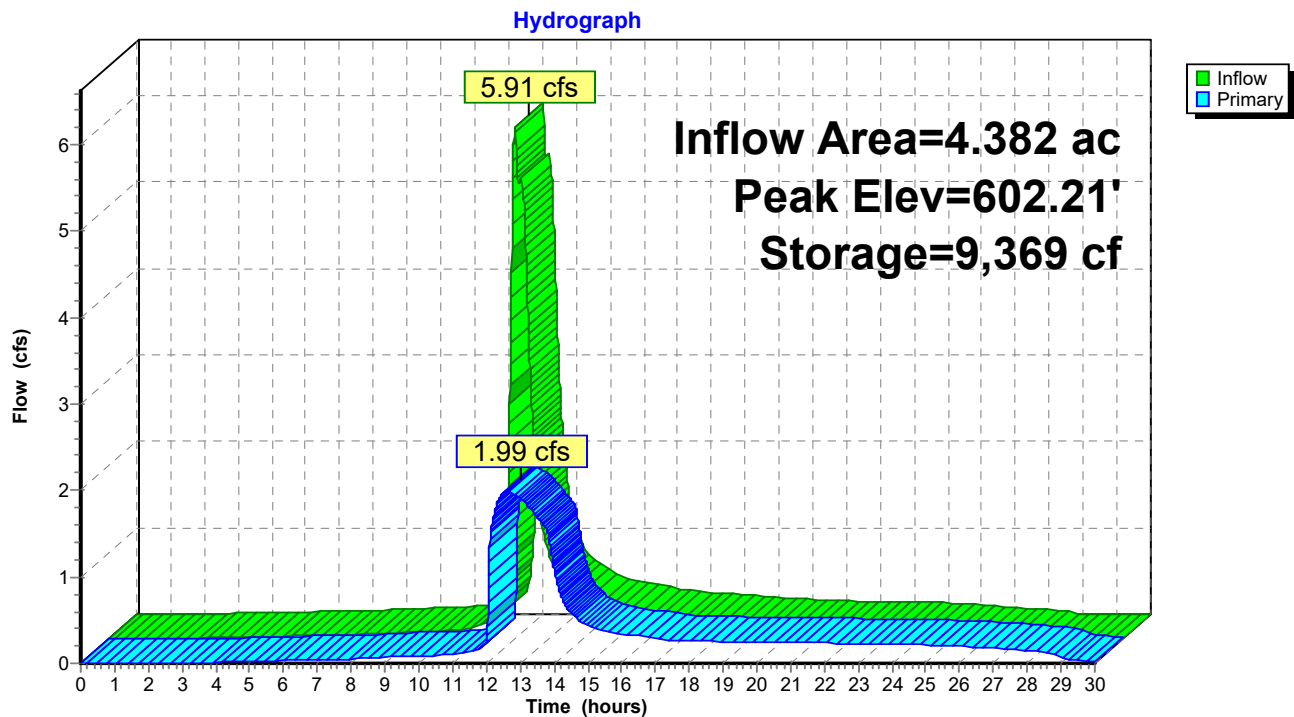
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Pond 2bP: Dry Detention Basin



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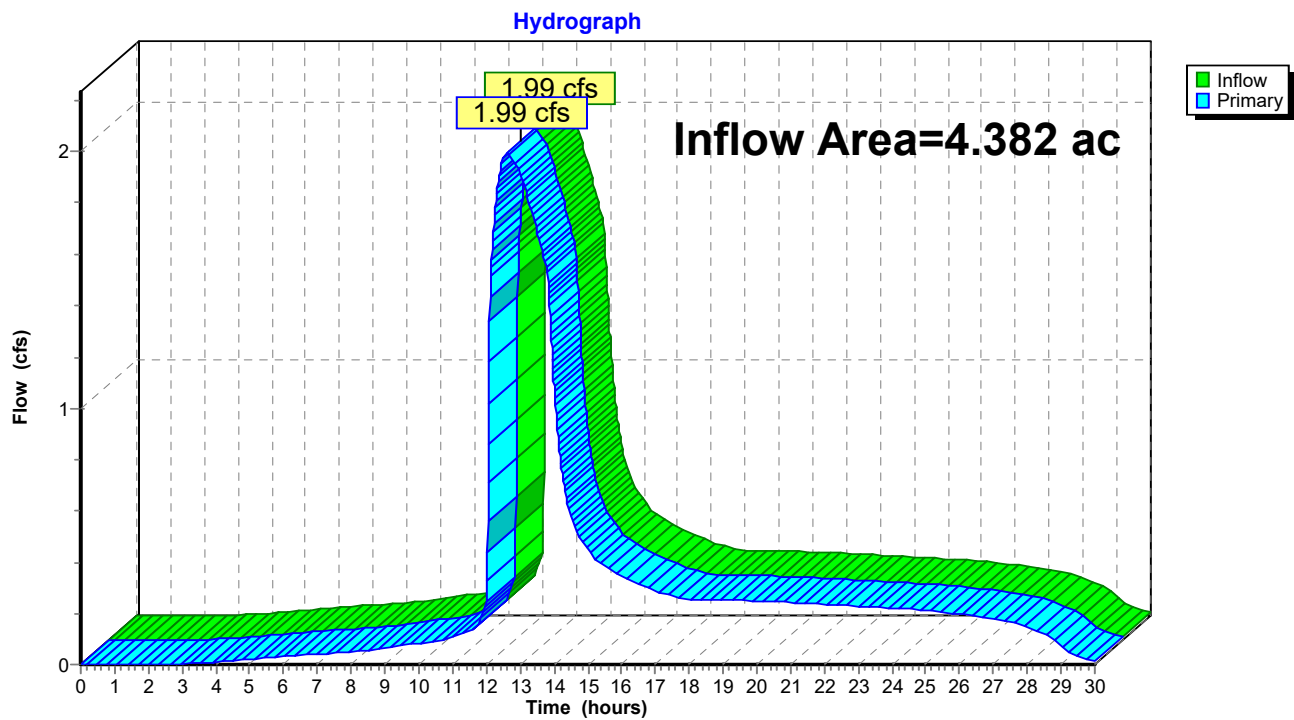
Summary for Pond 2P: Discharge from South Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.382 ac, 20.81% Impervious, Inflow Depth > 1.79" for 10-YR event
Inflow = 1.99 cfs @ 12.62 hrs, Volume= 0.652 af
Primary = 1.99 cfs @ 12.62 hrs, Volume= 0.652 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Discharge from South Drainage Area



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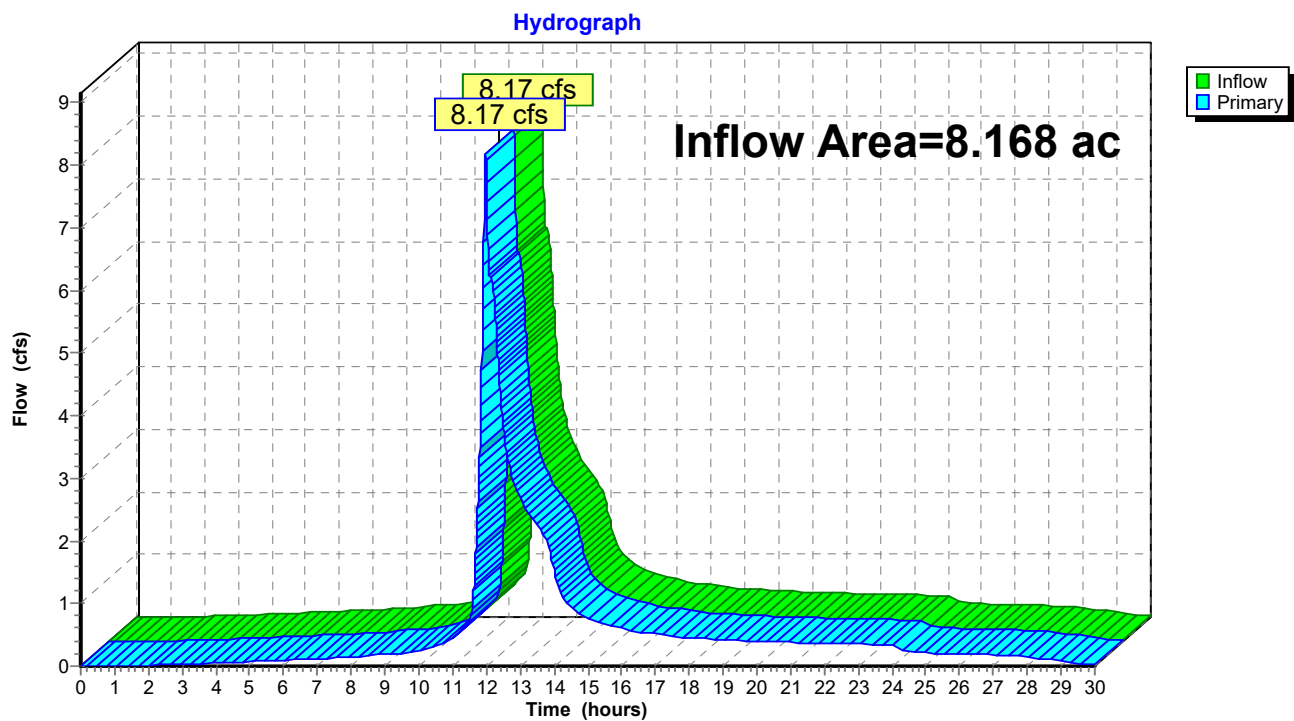
Summary for Pond 3P: Total Site Discharge

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.168 ac, 27.29% Impervious, Inflow Depth > 1.90" for 10-YR event
Inflow = 8.17 cfs @ 11.98 hrs, Volume= 1.295 af
Primary = 8.17 cfs @ 11.98 hrs, Volume= 1.295 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 3P: Total Site Discharge



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Type II 24-hr 100-YR Rainfall=5.17"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1aS: North Drainage Area - Runoff Area=1.317 ac 100.00% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=98 Runoff=9.69 cfs 0.541 af

Subcatchment1bS: North Drainage Area - Runoff Area=2.469 ac 0.00% Impervious Runoff Depth=2.86"
Flow Length=586' Slope=0.0115 '/' Tc=23.2 min CN=78 Runoff=7.18 cfs 0.588 af

Subcatchment2aS: South Drainage Area - Runoff Area=0.528 ac 100.00% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=98 Runoff=3.89 cfs 0.217 af

Subcatchment2bS: South Drainage Area - Runoff Area=3.400 ac 0.00% Impervious Runoff Depth=2.86"
Flow Length=490' Slope=0.0092 '/' Tc=23.8 min CN=78 Runoff=9.74 cfs 0.809 af

Subcatchment2cS: South Drainage Area - Runoff Area=0.407 ac 82.80% Impervious Runoff Depth=4.59"
Tc=6.0 min CN=95 Runoff=2.93 cfs 0.156 af

Subcatchment2dS: New Bldg Runoff Area=0.047 ac 100.00% Impervious Runoff Depth=4.93"
Tc=6.0 min CN=98 Runoff=0.35 cfs 0.019 af

Pond 1P: Discharge from North Drainage Area Inflow=13.30 cfs 1.129 af
Primary=13.30 cfs 1.129 af

Pond 2aP: Bioretention Basin Peak Elev=603.52' Storage=3,197 cf Inflow=10.35 cfs 1.026 af
Outflow=10.13 cfs 1.026 af

Pond 2bP: Dry Detention Basin Peak Elev=603.81' Storage=20,635 cf Inflow=10.74 cfs 1.201 af
Outflow=2.87 cfs 1.190 af

Pond 2P: Discharge from South Drainage Area Inflow=2.87 cfs 1.190 af
Primary=2.87 cfs 1.190 af

Pond 3P: Total Site Discharge Inflow=15.08 cfs 2.319 af
Primary=15.08 cfs 2.319 af

Total Runoff Area = 8.168 ac Runoff Volume = 2.330 af Average Runoff Depth = 3.42"
72.71% Pervious = 5.939 ac 27.29% Impervious = 2.229 ac

Proposed Drainage Analysis

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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 1aS: North Drainage Area - Impervious Area

Runoff = 9.69 cfs @ 11.97 hrs, Volume= 0.541 af, Depth= 4.93"

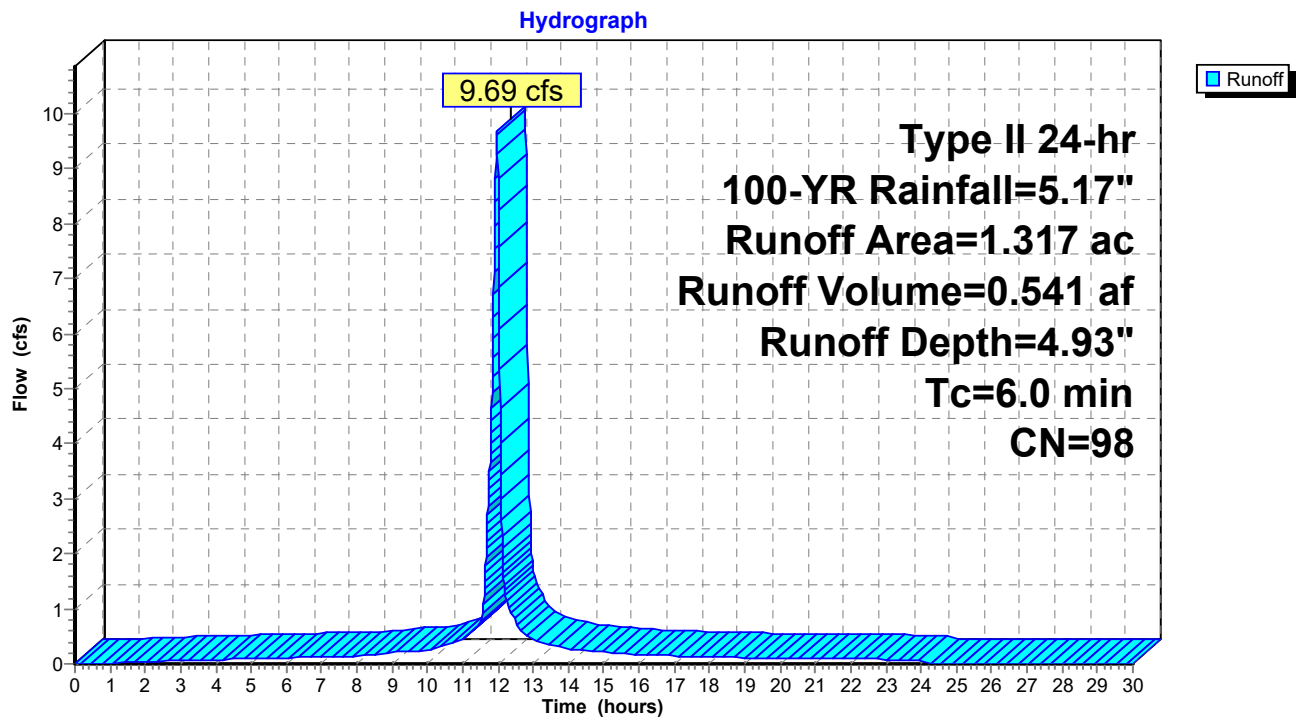
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
1.317	98	Paved parking, HSG D
1.317		100.00% Impervious Area

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

Subcatchment 1aS: North Drainage Area - Impervious Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 1bS: North Drainage Area - Pervious Area

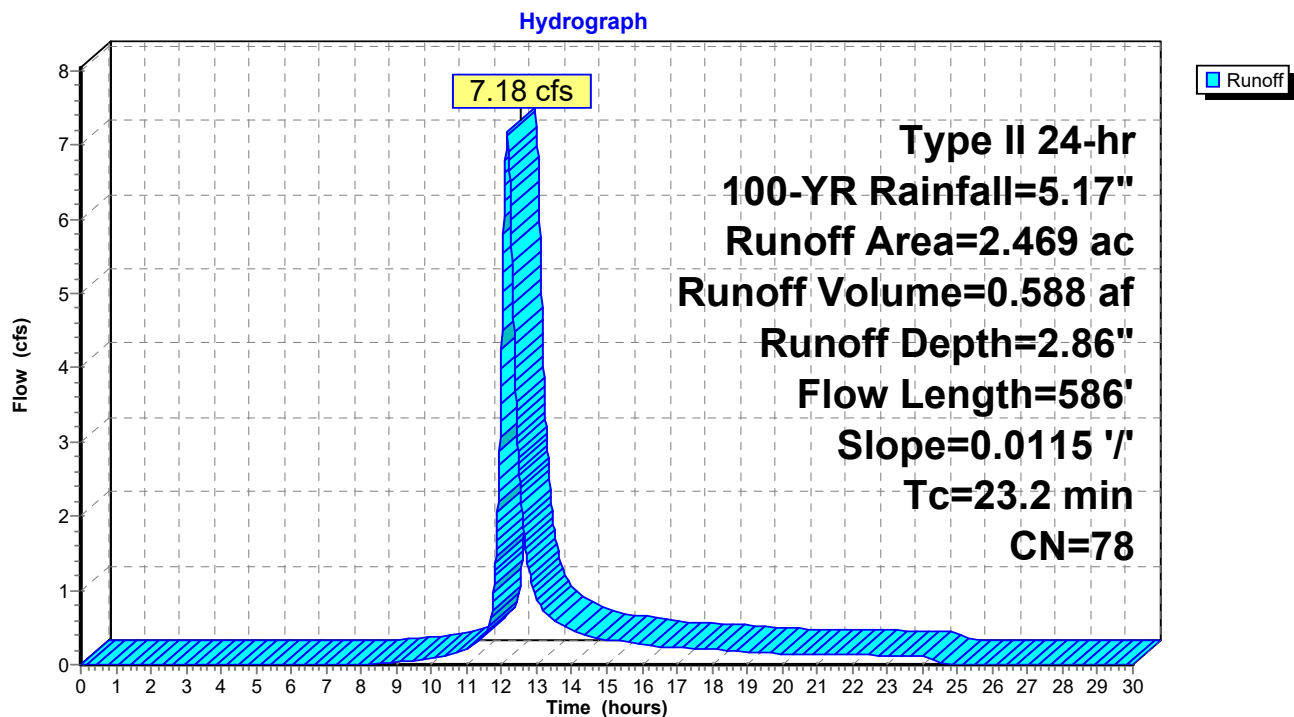
Runoff = 7.18 cfs @ 12.16 hrs, Volume= 0.588 af, Depth= 2.86"
Routed to Pond 1P : Discharge from North Drainage Area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.152	79	Woods/grass comb., Good, HSG D
2.317	78	Meadow, non-grazed, HSG D
2.469	78	Weighted Average
2.469		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0115	0.13		Sheet Flow, Range n= 0.130 P2= 2.29"
10.0	452	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	34	0.0115	2.18		Shallow Concentrated Flow, Paved Kv= 20.3 fps
23.2	586	Total			

Subcatchment 1bS: North Drainage Area - Pervious Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 2aS: South Drainage Area - Parking Area

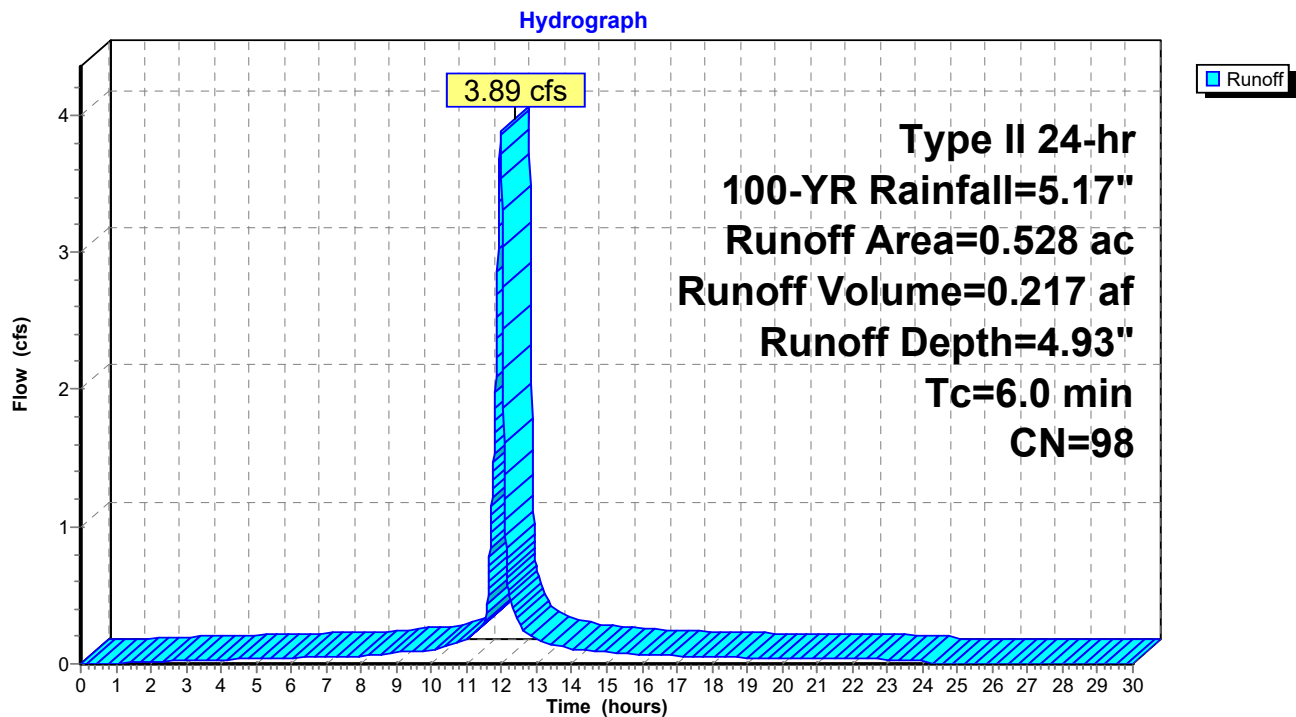
Runoff = 3.89 cfs @ 11.97 hrs, Volume= 0.217 af, Depth= 4.93"
Routed to Pond 2aP : Bioretention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.528	98	Paved parking, HSG D
0.528		100.00% Impervious Area

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

Subcatchment 2aS: South Drainage Area - Parking Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 2bS: South Drainage Area - Pervious Area

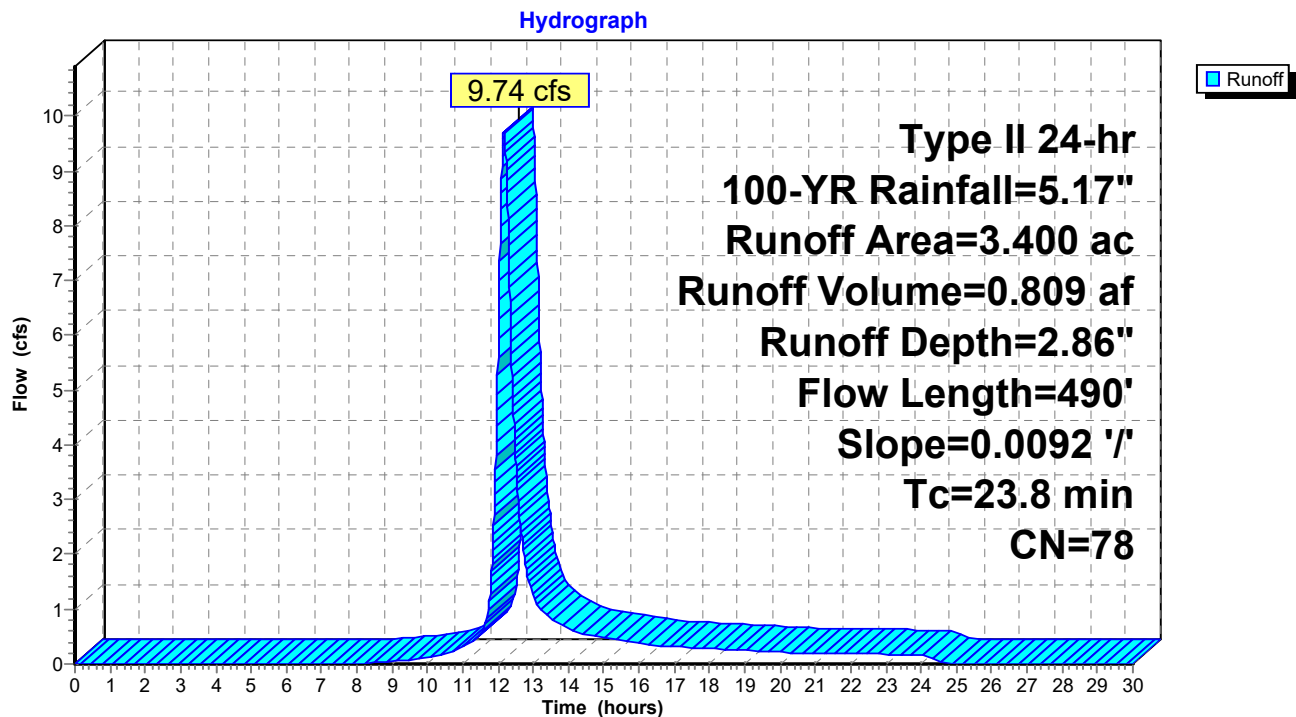
Runoff = 9.74 cfs @ 12.17 hrs, Volume= 0.809 af, Depth= 2.86"
Routed to Pond 2aP : Bioretention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
3.400	78	Meadow, non-grazed, HSG D
3.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0092	0.12		Sheet Flow, Range n= 0.130 P2= 2.29"
9.7	390	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.8	490	Total			

Subcatchment 2bS: South Drainage Area - Pervious Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 2cS: South Drainage Area - Playground Area

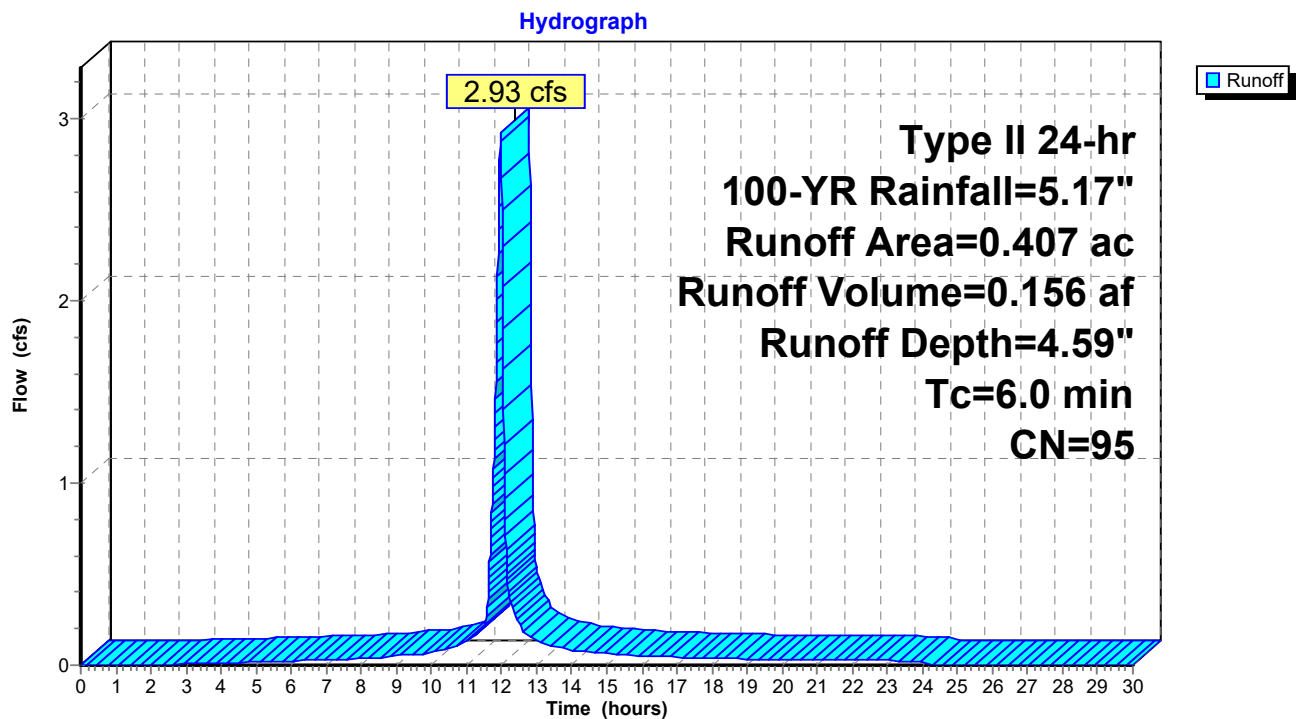
Runoff = 2.93 cfs @ 11.97 hrs, Volume= 0.156 af, Depth= 4.59"
Routed to Pond 2bP : Dry Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.337	98	Roofs, HSG D
0.070	80	>75% Grass cover, Good, HSG D
0.407	95	Weighted Average
0.070		17.20% Pervious Area
0.337		82.80% Impervious Area

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

Subcatchment 2cS: South Drainage Area - Playground Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Subcatchment 2dS: New Bldg

Runoff = 0.35 cfs @ 11.97 hrs, Volume= 0.019 af, Depth= 4.93"
Routed to Pond 2bP : Dry Detention Basin

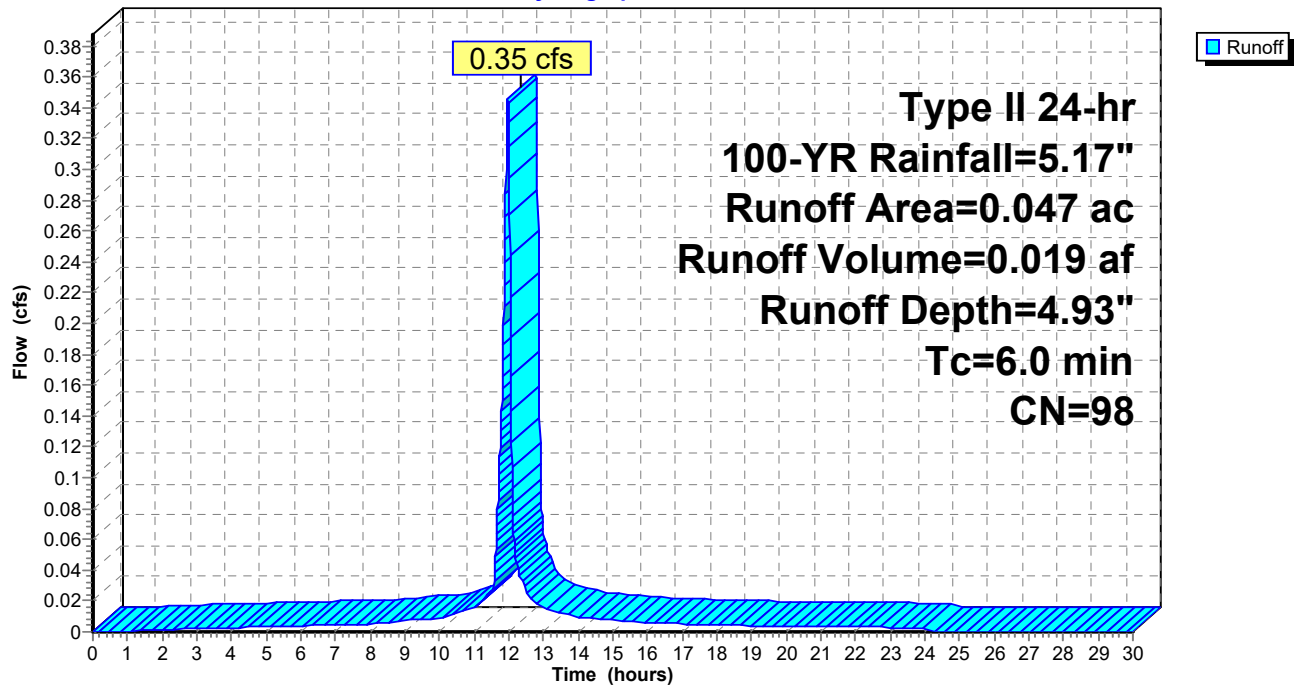
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=5.17"

Area (ac)	CN	Description
0.047	98	Roofs, HSG D
0.047		100.00% Impervious Area

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

Subcatchment 2dS: New Bldg

Hydrograph



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Type II 24-hr 100-YR Rainfall=5.17"

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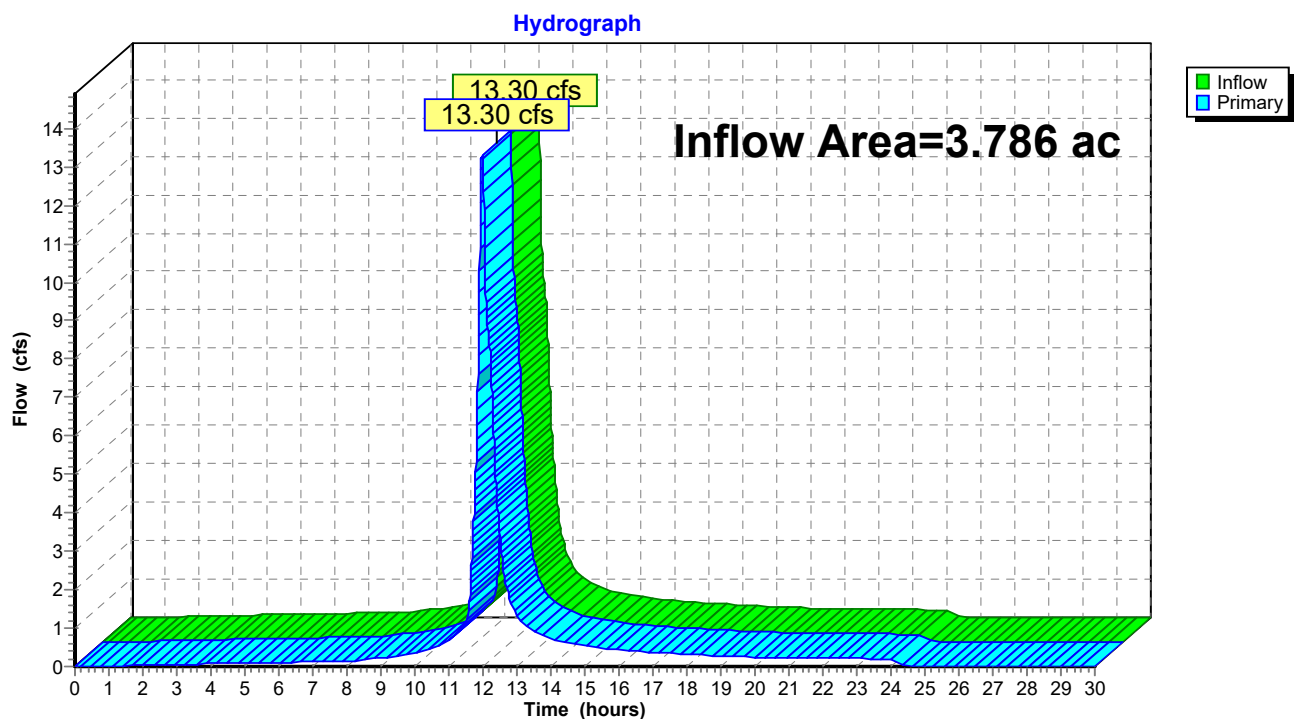
Summary for Pond 1P: Discharge from North Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.786 ac, 34.79% Impervious, Inflow Depth = 3.58" for 100-YR event
Inflow = 13.30 cfs @ 11.98 hrs, Volume= 1.129 af
Primary = 13.30 cfs @ 11.98 hrs, Volume= 1.129 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 1P: Discharge from North Drainage Area



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Pond 2aP: Bioretention Basin

Inflow Area = 3.928 ac, 13.44% Impervious, Inflow Depth = 3.14" for 100-YR event
Inflow = 10.35 cfs @ 12.16 hrs, Volume= 1.026 af
Outflow = 10.13 cfs @ 12.20 hrs, Volume= 1.026 af, Atten= 2%, Lag= 2.4 min
Primary = 10.13 cfs @ 12.20 hrs, Volume= 1.026 af
Routed to Pond 2bP : Dry Detention Basin

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 603.52' @ 12.20 hrs Surf.Area= 5,218 sf Storage= 3,197 cf

Plug-Flow detention time= 26.6 min calculated for 1.026 af (100% of inflow)
Center-of-Mass det. time= 26.5 min (845.3 - 818.8)

Volume	Invert	Avail.Storage	Storage Description
#1	602.50'	6,205 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
602.50	1,050	230.0	0	0	1,050
603.00	3,200	432.0	1,014	1,014	11,693
604.00	7,480	724.0	5,191	6,205	38,560

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	18.0" Round Culvert L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 600.00' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	600.00'	8.0" Round Underdrain Pipe L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 600.00' S= 0.0000 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#3	Device 2	602.50'	1.750 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 500.00'
#4	Device 1	603.00'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.13 cfs @ 12.20 hrs HW=603.52' (Free Discharge)

1=Culvert (Passes 10.13 cfs of 11.19 cfs potential flow)
2=Underdrain Pipe (Passes 0.21 cfs of 1.75 cfs potential flow)
3=Exfiltration (Controls 0.21 cfs)
4=Orifice/Grate (Weir Controls 9.91 cfs @ 2.37 fps)

Proposed Drainage Analysis

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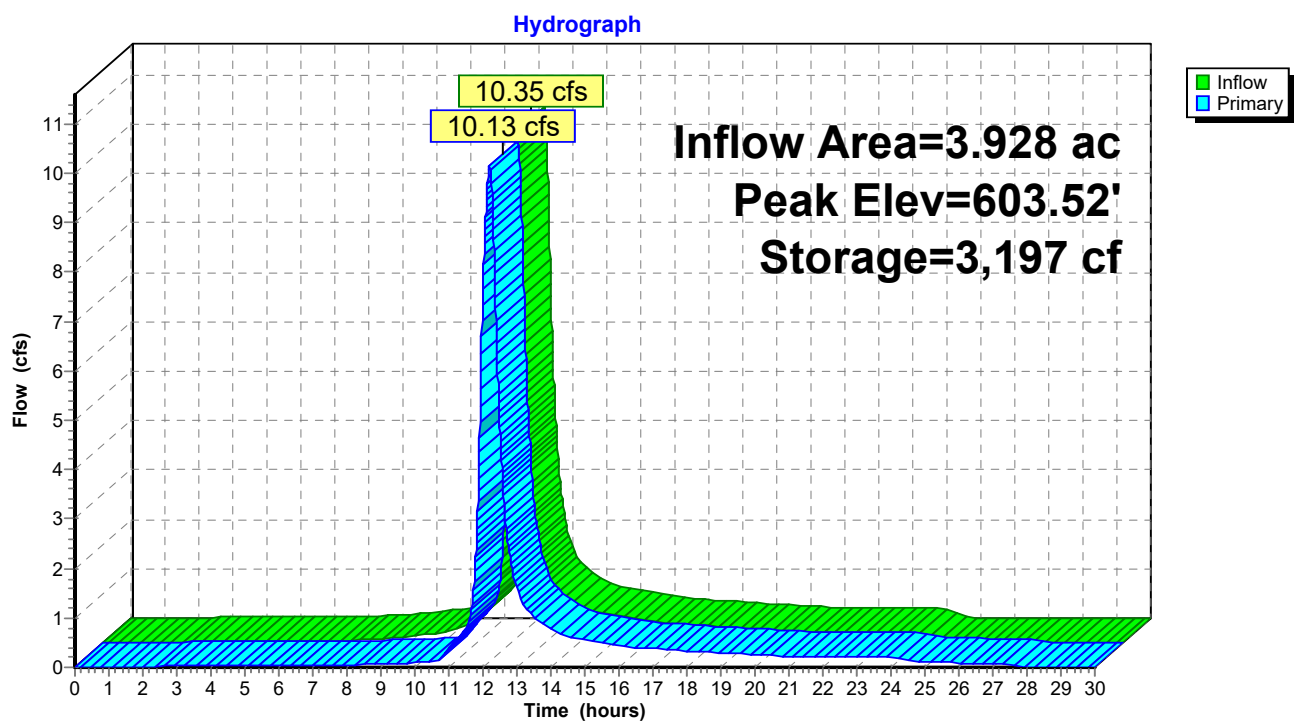
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Type II 24-hr 100-YR Rainfall=5.17"

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Pond 2aP: Bioretention Basin



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Type II 24-hr 100-YR Rainfall=5.17"

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Summary for Pond 2bP: Dry Detention Basin

[81] Warning: Exceeded Pond 2aP by 0.62' @ 12.82 hrs

Inflow Area = 4.382 ac, 20.81% Impervious, Inflow Depth = 3.29" for 100-YR event
Inflow = 10.74 cfs @ 12.02 hrs, Volume= 1.201 af
Outflow = 2.87 cfs @ 12.72 hrs, Volume= 1.190 af, Atten= 73%, Lag= 41.8 min
Primary = 2.87 cfs @ 12.72 hrs, Volume= 1.190 af
Routed to Pond 2P : Discharge from South Drainage Area

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 603.81' @ 12.72 hrs Surf.Area= 8,719 sf Storage= 20,635 cf

Plug-Flow detention time= 119.8 min calculated for 1.190 af (99% of inflow)
Center-of-Mass det. time= 112.5 min (945.6 - 833.1)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	1,568 cf	5.00'W x 302.00'L x 4.00'H Stone Encasement 6,040 cf Overall - 2,121 cf Embedded = 3,919 cf x 40.0% Voids
#2	600.00'	2,121 cf	36.0" Round 36" Pipe Inside #1 L= 300.0'
#3	600.00'	26,477 cf	Dry Detention Basin (Irregular) Listed below (Recalc)
		30,165 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
600.00	0	0.0	0	0	0
601.00	4,041	349.0	1,347	1,347	9,694
602.00	5,117	368.0	4,568	5,915	10,836
603.00	6,249	387.0	5,674	11,589	12,038
604.00	7,438	405.0	6,835	18,424	13,240
605.00	8,684	424.0	8,053	26,477	14,560

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	10.0" Round Culvert L= 133.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 600.00' / 599.88' S= 0.0009 ' S= 0.0009 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Device 1	600.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	601.30'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.87 cfs @ 12.72 hrs HW=603.81' (Free Discharge)

- 1=Culvert (Barrel Controls 2.87 cfs @ 5.26 fps)
- 2=Orifice/Grate (Passes < 0.45 cfs potential flow)
- 3=Orifice/Grate (Passes < 4.16 cfs potential flow)

Proposed Drainage Analysis

Prepared by C&S Companies

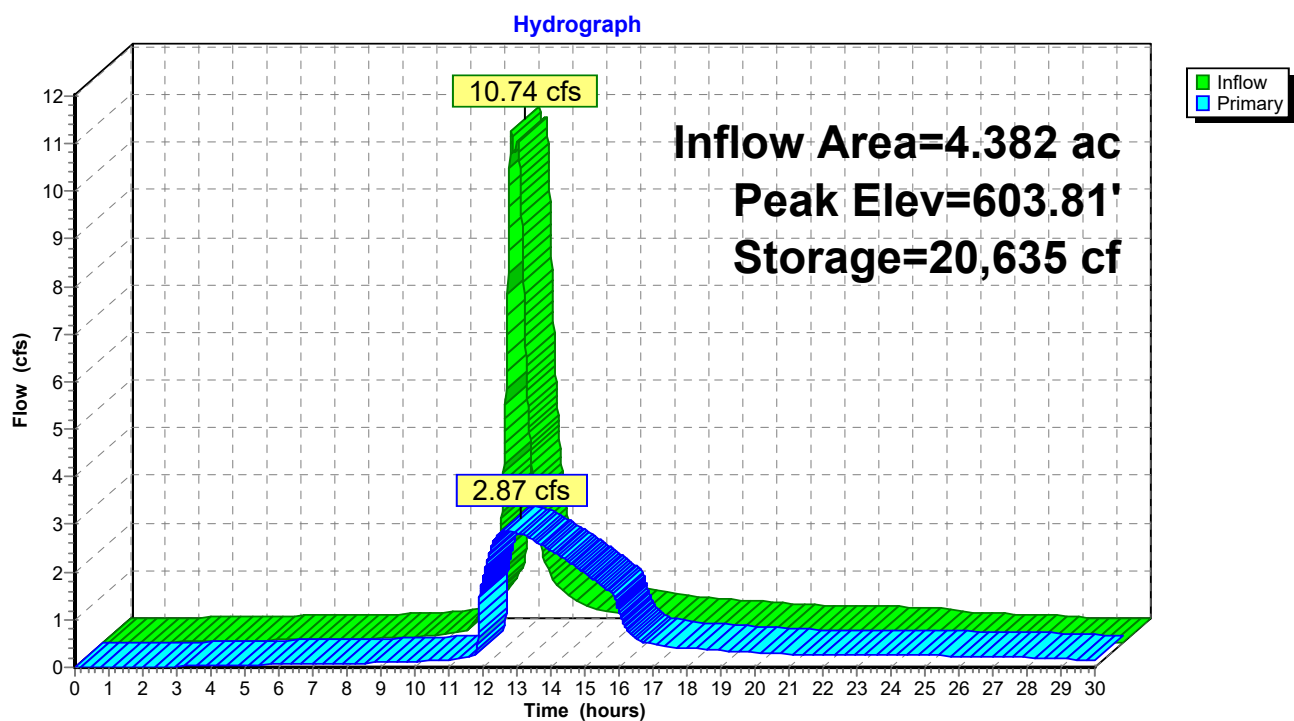
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Type II 24-hr 100-YR Rainfall=5.17"

Printed 7/15/2026

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Pond 2bP: Dry Detention Basin



Proposed Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 100-YR Rainfall=5.17"

Printed 7/15/2026

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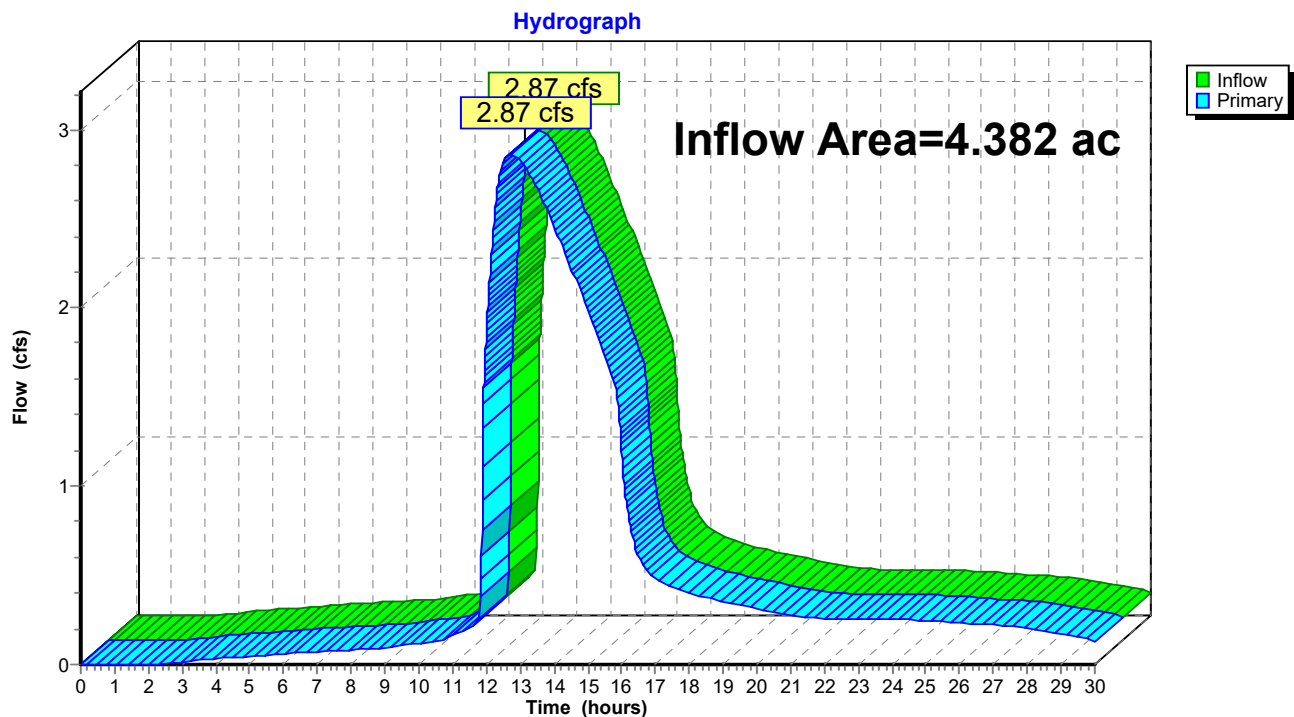
Summary for Pond 2P: Discharge from South Drainage Area

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.382 ac, 20.81% Impervious, Inflow Depth > 3.26" for 100-YR event
Inflow = 2.87 cfs @ 12.72 hrs, Volume= 1.190 af
Primary = 2.87 cfs @ 12.72 hrs, Volume= 1.190 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 3P : Total Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 2P: Discharge from South Drainage Area



Proposed Drainage Analysis

Prepared by C&S Companies

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Type II 24-hr 100-YR Rainfall=5.17"

Printed 7/15/2026

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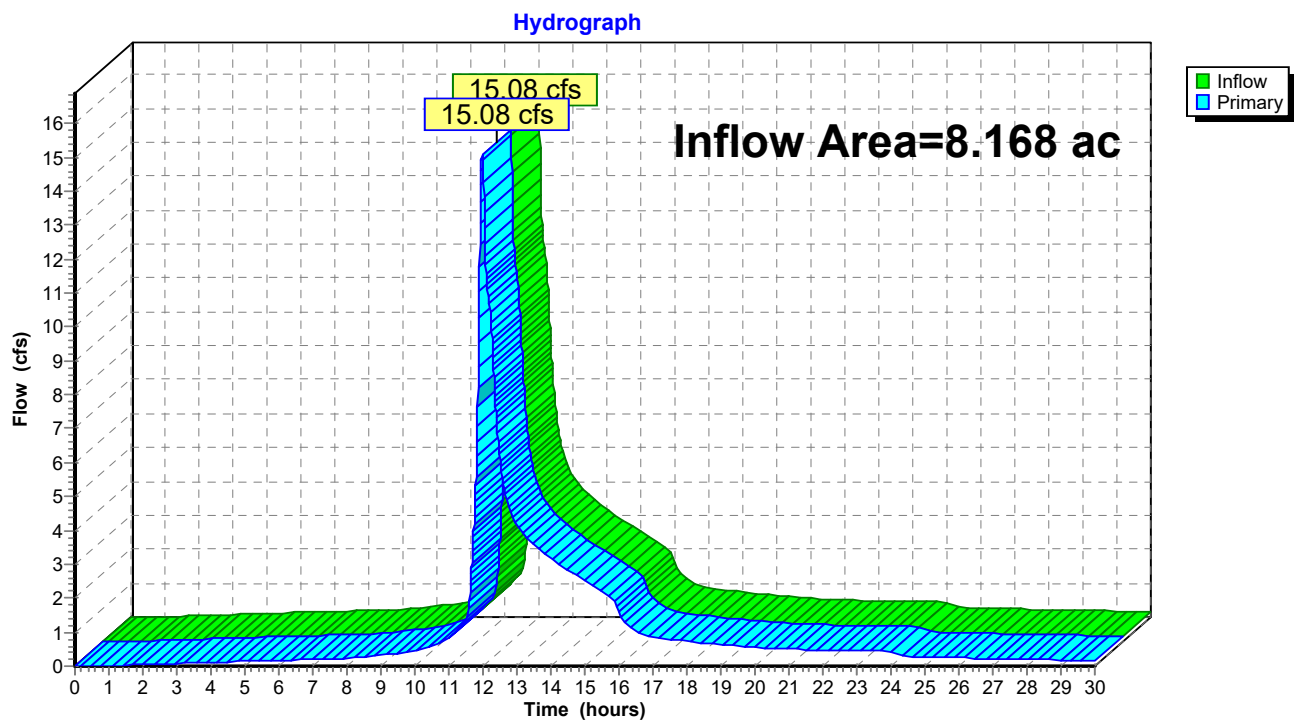
Summary for Pond 3P: Total Site Discharge

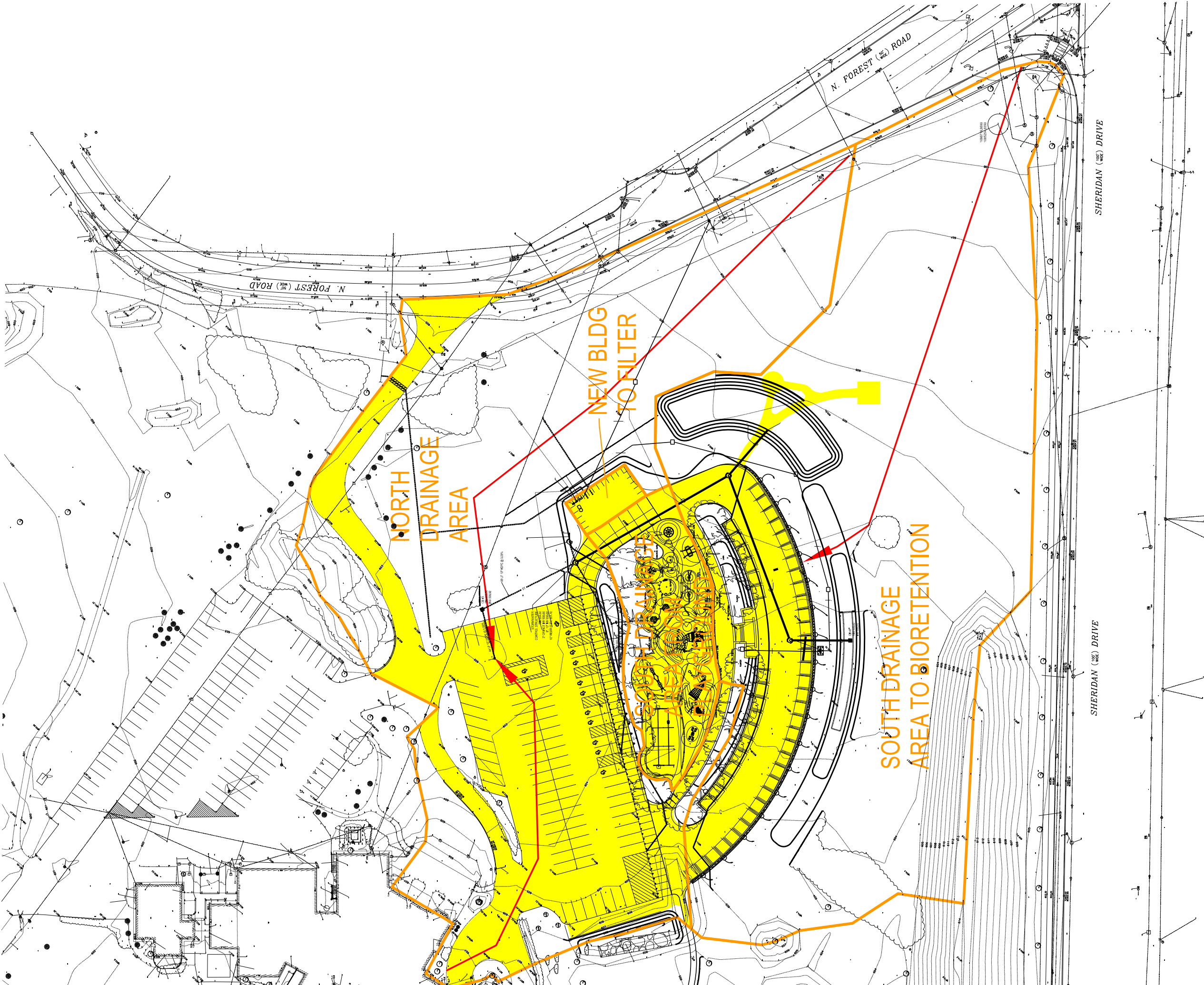
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.168 ac, 27.29% Impervious, Inflow Depth > 3.41" for 100-YR event
Inflow = 15.08 cfs @ 11.98 hrs, Volume= 2.319 af
Primary = 15.08 cfs @ 11.98 hrs, Volume= 2.319 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 3P: Total Site Discharge

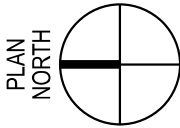




PROPOSED DRAINAGE ANALYSIS MAP

LEGEND

-  DRAINAGE AREA
-  IMPERVIOUS AREA
-  Tc PATH



DATE: July 9, 2026

PROJECT NAME: Amherst Central Park

Stormwater Quality Calculations

Impervious Areas (refer to Existing & Proposed Drainage Analysis Maps)

$$I_{Existing} := 0.29$$

I Existing = Existing Impervious Area (acres) within South Drainage Area

$$I_{Proposed} := 0.84$$

I Proposed = Proposed Impervious Area (acres) within South Drainage Area

$$I_{New} := I_{Proposed} - I_{Existing}$$

$$I_{New} = 0.55$$

I New = New Impervious Area (acres) per Disturbance Area Map

$$I_{Redeveloped} := I_{Existing}$$

$$I_{Redeveloped} = 0.29$$

I Redeveloped = Redeveloped Impervious Area (acres) per Disturbance Area Map

$$A_{Disturbance} := 2.1$$

A Disturbance = Site Disturbance Area (acres)

Minimum Runoff Reduction Volume (RRv Min)

The minimum RRv is calculated by applying a reduction factor (S) (based on the HSG on site) to the area of new impervious coverage.

$$P := 1.0$$

90% Rainfall Event (inches)

$$Rv := 0.95$$

0.05 + 0.009(I) where I is 100% impervious

$$Aic := I_{New}$$

Total Area of New Impervious Area (acres)

$$Aic = 0.55$$

$$S := 0.20$$

Hydrologic Soil Group (HSG) Specific Reduction Factor (S). Web Soil Survey indicates the site is 100% HSG D. Therefore, S = 0.20.

$$RR_{vmin} := \left(\frac{P \cdot Rv \cdot Aic \cdot S}{12} \right) = 0.009$$

Runoff Reduction Volume Minimum (acre-feet)

$$RR_{vmin} \cdot 43560 = 379$$

Runoff Reduction Volume Minimum (cubic-feet)

Water Quality Volume Required from New Impervious Area (to be treated with a standard practice)

$$P = 1.0$$

90% Rainfall Event (inches)

$$A_{Disturbance} = 2.1$$

Area to be developed (acres)

$$I_1 := \frac{I_{New}}{A_{Disturbance}} \cdot 100$$

Percent impervious cover (100%)

$$I_1 = 26.190$$

$$R_{v1} := 0.05 + 0.009 \cdot I_1$$

0.05 + 0.009(I) where I is 100% impervious

$$R_{v1} = 0.286$$

$$WQ_{vRequiredNew} := \frac{P \cdot R_{v1} \cdot A_{Disturbance}}{12}$$

$$WQ_{vRequiredNew} = 0.050$$

Water Quality Volume Required from New Impervious Area (acre-feet)

$$WQ_{vRequiredNew} \cdot 43560 = 2178$$

Water Quality Volume Required from New Impervious Area(cubic feet)

Water Quality Volume Required from Redeveloped Impervious Area (to be treated with a standard practice)

$$P = 1.0$$

90% Rainfall Event (inches)

$$A_{Disturbance} = 2.1$$

Area to be developed (acres)

$$I_2 := \frac{I_{Redeveloped}}{A_{Disturbance}} \cdot 100$$

Percent impervious cover (100%)

$$I_2 = 13.810$$

$$R_{v2} := 0.05 + 0.009 \cdot I_2$$

0.05 + 0.009(I) where I is 100% impervious

$$R_{v2} = 0.174$$

$$WQ_{vRequiredRedev} := \frac{P \cdot R_{v2} \cdot A_{Disturbance}}{12}$$

$$WQ_{vRequiredRedev} = 0.031$$

Water Quality Volume Required from Redeveloped Impervious Area (acre-feet)

$$WQ_{vRequiredRedev} \cdot 43560 = 1329$$

Water Quality Volume Required from Redeveloped Impervious Area(cubic feet)

Total Water Quality Volume Required to be treated with a standard practice

$$WQ_{vRequired} := WQ_{vRequiredNew} + 0.25 \cdot WQ_{vRequiredRedev}$$

$$WQ_{vRequired} = 0.058$$

Total Water Quality Volume Required with a Standard Practice (acre-feet)

$$WQ_{vRequired} \cdot 43560 = 2510$$

Total Water Quality Volume Required with a Standard Practice (cubic feet)

Water Quality Volume Provided (WQv Provided) in a Standard Practice

Bioretention Basin

$$P = 1.0$$

90% Rainfall Event (inches)

$$A_1 = 3.848$$

Area Draining to BMP = 3.848 acres

$$Impervious_1 = 0.528$$

Impervious Area = 0.528 acres

$$I_3 := \frac{Impervious_1}{A_1} \cdot 100$$

Percent impervious cover

$$I_3 = 13.721$$

$$R_{v3} := 0.05 + 0.009 \cdot I_3$$

0.05 + 0.009(I) where I is percent impervious

$$R_{v3} = 0.173$$

$$WQ_{vProvidedTotal1} := \frac{P \cdot R_{v3} \cdot A_1}{12}$$

$$WQ_{vProvidedTotal1} = 0.056$$

Water Quality Volume Provided in BMP (acre-feet)

$$WQ_{vProvidedTotal1} \cdot 43560 = 2423$$

Water Quality Volume Provided in BMP (cubic feet)

In accordance with the NYSDEC SMDM, for a filtration bioretention basin, 40% of the water quality volume can count towards the Runoff Reduction Volume.

$$RR_{v1} := 0.40 \cdot WQ_{vProvidedTotal1}$$

$$RR_{v1} = 0.022$$

Runoff Reduction Volume Provided in BMP (acre-feet)

$$RR_{v1} \cdot 43560 = 969$$

Runoff Reduction Volume Provided in BMP (cubic-feet)

$$WQ_{vProvided1} := WQ_{vProvidedTotal1} - RR_{v1}$$

$$WQ_{vProvided1} = 0.033$$

Water Quality Volume Provided in BMP (acre-feet)

$$WQ_{vProvided1} \cdot 43560 = 1454$$

Water Quality Volume Provided in BMP (cubic-feet)

Size Filter Area of Bioretention Basin

$$WQ_{v\text{ProvidedTotal1}} \cdot 43560 = 2423$$

Water Quality Volume Provided in BMP (cubic feet)

$$d_{f1} := 2.5$$

Filter Bed Depth = 2.5 feet

$$k := 1.0$$

**Coefficient of permeability of filter media = 1.0 ft/day
(for bioretention soil)**

$$h_f := 0.50$$

Average height of water above filter bed (feet)

$$t_f := 2$$

Design filter bed drain time = 2 day for bioretention

$$A_{f2} := \frac{WQ_{v\text{ProvidedTotal1}} \cdot 43560 \cdot d_{f1}}{k \cdot (h_f + d_{f1}) \cdot t_f}$$

$$A_{f2} = 1010$$

Required Surface Area of filter bed (square feet)

Af provided is 10' x 105' = 1,050 square feet

Filter #1

$$P = 1.0$$

90% Rainfall Event (inches)

$$A_2 := 0.047$$

**Area Draining to BMP = New Restroom Bldg = 0.047
acres**

$$\text{Impervious}_2 := 0.047$$

Impervious Area = 0.047 acres

$$I_4 := \frac{\text{Impervious}_2}{A_2} \cdot 100$$

Percent impervious cover

$$I_4 = 100.000$$

$$R_{v4} := 0.05 + 0.009 \cdot I_4$$

0.05 + 0.009(I) where I is percent impervious

$$R_{v4} = 0.950$$

$$WQ_{v\text{ProvidedTotal2}} := \frac{P \cdot R_{v4} \cdot A_2}{12}$$

$$WQ_{v\text{ProvidedTotal2}} = 0.004$$

Water Quality Volume Provided in BMP (acre-feet)

$$WQ_{v\text{ProvidedTotal2}} \cdot 43560 = 162$$

Water Quality Volume Provided in BMP (cubic feet)

WQv & RRv Summary

$$WQ_{vRequired} = 0.058$$

Total Water Quality Volume Required with a Standard Practice (acre-feet)

$$WQ_{vRequired} \cdot 43560 = 2510$$

Total Water Quality Volume Required with a Standard Practice (cubic feet)

$$RR_{vmin} := \left(\frac{(P \cdot Rv \cdot Aic \cdot S)}{12} \right) = 0.009$$

Runoff Reduction Volume Minimum (acre-feet)

$$RR_{vmin} \cdot 43560 = 379$$

Runoff Reduction Volume Minimum (cubic-feet)

$$WQ_{vProvidedTotal} := WQ_{vProvidedTotal1} + WQ_{vProvidedTotal2}$$

Total Water Quality Volume Provided with a Standard Practice (acre-feet)

$$WQ_{vProvidedTotal} = 0.059$$

$$WQ_{vProvidedTotal} \cdot 43560 = 2585$$

Total Water Quality Volume Provided with a Standard Practice (cubic feet)

$$RR_{vProvided} := RR_{vI}$$

$$RR_{vProvided} = 0.022$$

$$RR_{vProvided} \cdot 43560 = 969$$

Total Runoff Reduction Volume Provided (cubic feet)

Channel Protection Volume (CPv)

Size Orifice for Outlet Structure:

$$1\text{-yr Runoff Volume} = 0.255 \text{ ac-ft} = 11,108 \text{ cf}$$

Estimate Orifice size for Extended Detention of Channel Protection Volume (CPv).

$$CP_v := 11108 \text{ ft}^3$$

$$g = 32.174 \frac{\text{ft}}{\text{s}^2}$$

$$h := 1 \cdot \text{ft}$$

$$Q := \frac{CP_v}{24 \cdot \text{hr}}$$

$$Q = 0.129 \frac{\text{ft}^3}{\text{sec}}$$

$$A_{\text{orifice}} := \frac{Q}{.6 \cdot \sqrt{2 \cdot g \cdot h}}$$

$$A_{orifice} = 0.027 \text{ ft}^2$$

$$d := \sqrt{4 \cdot \frac{A_{orifice}}{\pi}}$$

$$d = 0.2 \text{ ft}$$

In accordance with Section 4.6 of the NYSDEC Stormwater Management Design Manual, the minimum CPV control orifice shall be 3-inches.

Accordingly, use a 3-inch orifice.

Project: Amherst Central Park
Location: North Forest Road & Sheridan Drive, Amherst, NY
Prepared By: C & S Engineers Inc

Purpose: To calculate the first flush runoff flow rate (WQF) over a given site area. In this situation the WQV to be analyzed is the runoff produced by the first 1.00" of rainfall.

Reference: United States Department of Agriculture Natural Resources Conservation Service TR-55 Manual

Given:

Structure Name	A (acres)	A (miles ²)	Runoff Coefficient	Percent Imp. (%) [*]	t _c (min)	t _c (hr)
WQS	0.05	0.00007	0.90	100.00	6.0	0.100

* Assumes runoff coefficient of 0.3 for pervious areas and 0.9 for impervious areas.

Procedure: The Water Quality Flow (WQF) is calculated using the Water Quality Volume (WQV). This WQV, converted to watershed inches, is substituted for the runoff depth (Q) in the Natural Resources Conservation Service (formerly Soil Conservation Service), TR-55 Graphical Peak Discharge Method.

1. Compute WQV in watershed inches using the following equation:

$$WQV = P * R$$

where: WQV = water quality volume (watershed inches)

P = design precipitation (inches) = (1.0" for water quality storm)

R = volumetric runoff coefficient = 0.05 + 0.009(I)

I = percent impervious cover

Structure Name	Percent Imp. (%)	R	P (in)	WQV (in)
WQS	100.00	0.950	1.0	0.950

2. Compute the NRCS Runoff Curve Number (CN) using the following equation, or graphically using Figure 2-1 from TR-55 (USDA, 1986):

$$CN = 1000 / [10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{1/2}]$$

where: CN = Runoff Curve Number

P = design precipitation (inches) = (1.0" for water quality storm)

Q = runoff depth (watershed inches)

Structure Name	Q (in)	CN
WQS	0.950	99.57

3. Using computed CN, read initial abstraction (I_a) from Table 4-1 in Chapter 4 of TR-55; compute I_a/P, interpolating when appropriate.

Structure Name	I _a (in)	I _a /P
WQS	0.041	0.041

4. Compute the time of concentration (t_c) in hours and the drainage area in square miles. A minimum t_c of 0.167 hours (10 minutes) should be used.

Structure Name	t_c (hr)	A (miles ²)
WQS	0.167	0.00007

5. Read the unit peak discharge (q_u) from Exhibit 4-II in Chapter 4 of TR-55 for appropriate t_c for type II rainfall distribution.

Structure Name	t_c (hr)	I_a/P	q_u (csm/in)
WQS	0.167	0.041	950

6. Substituting WQV (watershed inches) for runoff depth (Q), compute the water quality flow (WQF) from the following equation:

$$WQF = (q_u) * (A) * (Q)$$

where: WQF = water quality flow (cfs)
 q_u = unit peak discharge (cfs/mi²/inch)
 A = drainage area (mi²)
 Q = runoff depth (watershed inches)

Structure Name	q_u (csm/in)	A (miles ²)	Q (in)	WQF (cfs)
WQS	950	0.00007	0.950	0.07

Hydrologic Soil Group—Erie County, New York (Amherst Central Park, Sheridan Drive & North Forest Road, Amherst, NY)



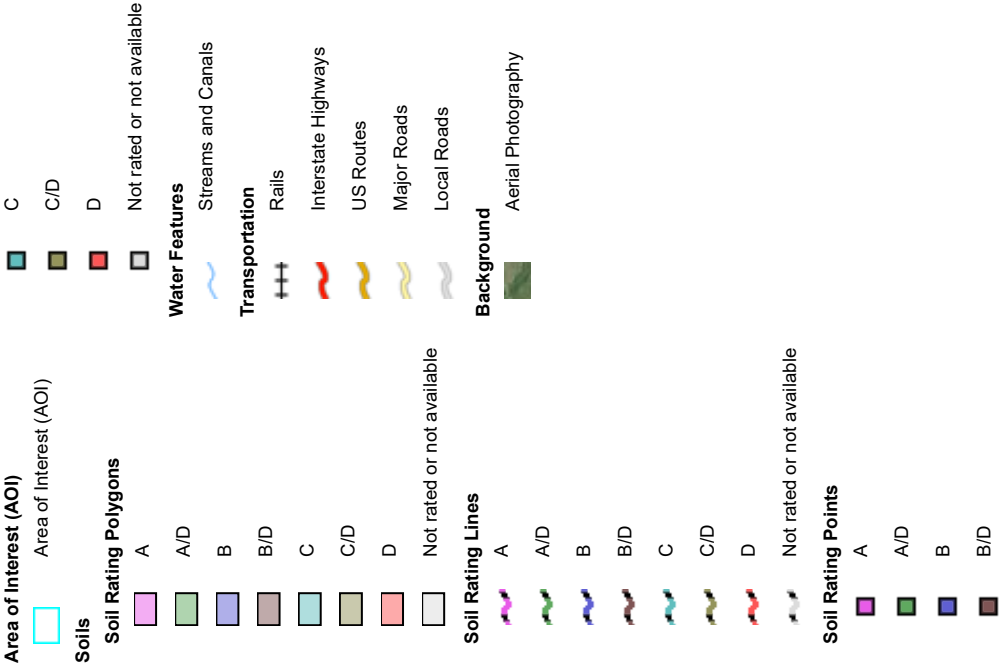
Soil Map may not be valid at this scale.

Map Scale: 1:1,550 if printed on A landscape (11" x 8.5") sheet.



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

MAP LEGEND



MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Erie County, New York
Survey Area Data: Version 25, Sep 4, 2025

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

Date(s) aerial images were photographed: May 13, 2023—May 27, 2023

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CrA	Claverack loamy fine sand, 0 to 3 percent slopes	C/D	8.4	100.0%
Totals for Area of Interest			8.4	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



NOAA Atlas 14, Volume 10, Version 3
Location name: Buffalo, New York, USA*
Latitude: 42.9792°, Longitude: -78.77°
Elevation: 604 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

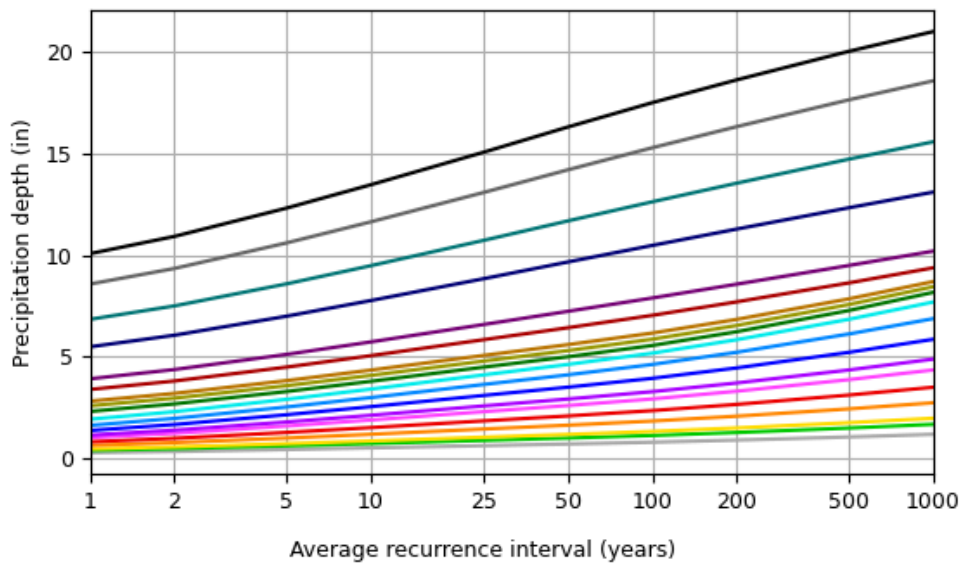
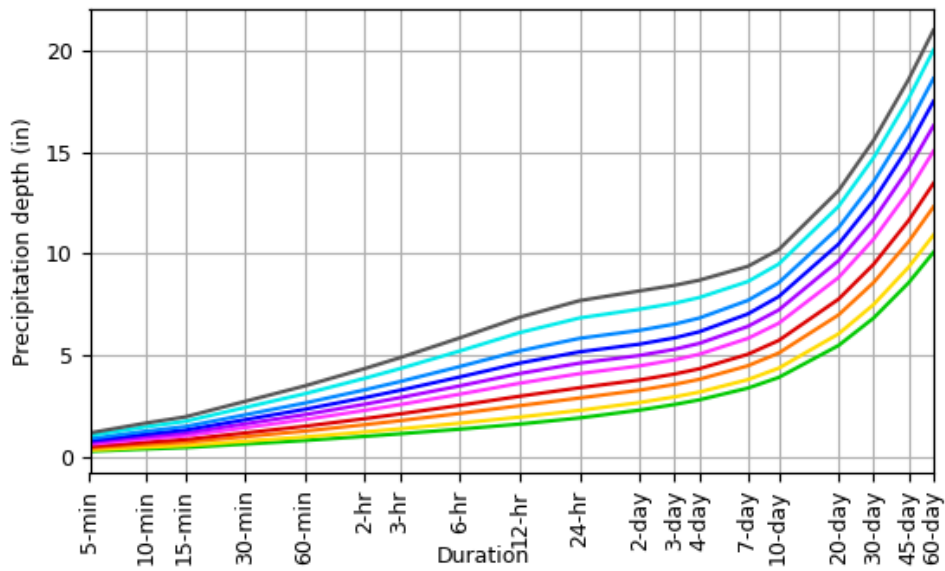
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.277 (0.220-0.349)	0.336 (0.267-0.424)	0.433 (0.342-0.547)	0.513 (0.403-0.652)	0.623 (0.473-0.827)	0.705 (0.525-0.955)	0.793 (0.573-1.11)	0.897 (0.607-1.27)	1.05 (0.682-1.54)	1.18 (0.748-1.76)
10-min	0.392 (0.312-0.495)	0.476 (0.378-0.601)	0.613 (0.484-0.776)	0.727 (0.572-0.925)	0.883 (0.670-1.17)	0.999 (0.744-1.35)	1.12 (0.811-1.58)	1.27 (0.860-1.80)	1.49 (0.967-2.18)	1.67 (1.06-2.49)
15-min	0.461 (0.367-0.582)	0.560 (0.444-0.707)	0.721 (0.570-0.913)	0.854 (0.671-1.09)	1.04 (0.789-1.38)	1.18 (0.874-1.59)	1.32 (0.954-1.86)	1.50 (1.01-2.12)	1.75 (1.14-2.56)	1.97 (1.25-2.93)
30-min	0.636 (0.505-0.802)	0.773 (0.614-0.976)	0.997 (0.788-1.26)	1.18 (0.930-1.50)	1.44 (1.09-1.91)	1.63 (1.21-2.21)	1.83 (1.32-2.57)	2.07 (1.40-2.94)	2.43 (1.58-3.56)	2.73 (1.73-4.07)
60-min	0.811 (0.644-1.02)	0.986 (0.783-1.24)	1.27 (1.01-1.61)	1.51 (1.19-1.92)	1.84 (1.40-2.44)	2.08 (1.55-2.82)	2.35 (1.69-3.29)	2.65 (1.80-3.77)	3.11 (2.02-4.55)	3.50 (2.21-5.21)
2-hr	1.01 (0.810-1.27)	1.23 (0.983-1.54)	1.59 (1.26-2.00)	1.88 (1.49-2.38)	2.29 (1.75-3.02)	2.60 (1.94-3.49)	2.92 (2.12-4.07)	3.30 (2.24-4.65)	3.87 (2.52-5.62)	4.35 (2.76-6.43)
3-hr	1.14 (0.914-1.42)	1.38 (1.11-1.73)	1.79 (1.42-2.24)	2.12 (1.68-2.67)	2.58 (1.97-3.38)	2.92 (2.18-3.90)	3.28 (2.38-4.55)	3.71 (2.52-5.20)	4.35 (2.84-6.29)	4.88 (3.10-7.18)
6-hr	1.37 (1.10-1.70)	1.66 (1.34-2.06)	2.14 (1.72-2.67)	2.54 (2.02-3.18)	3.09 (2.38-4.03)	3.50 (2.63-4.65)	3.94 (2.87-5.42)	4.45 (3.04-6.20)	5.21 (3.41-7.48)	5.86 (3.74-8.55)
12-hr	1.62 (1.31-1.99)	1.96 (1.59-2.42)	2.52 (2.04-3.12)	2.99 (2.39-3.71)	3.63 (2.81-4.70)	4.11 (3.10-5.42)	4.62 (3.38-6.32)	5.22 (3.58-7.22)	6.12 (4.02-8.72)	6.87 (4.40-9.96)
24-hr	1.92 (1.56-2.35)	2.29 (1.87-2.81)	2.90 (2.35-3.56)	3.41 (2.74-4.20)	4.10 (3.19-5.27)	4.62 (3.51-6.06)	5.17 (3.81-7.03)	5.84 (4.02-8.01)	6.84 (4.51-9.67)	7.69 (4.94-11.1)
2-day	2.31 (1.89-2.80)	2.68 (2.19-3.26)	3.28 (2.68-4.00)	3.79 (3.07-4.64)	4.48 (3.51-5.72)	4.99 (3.82-6.51)	5.55 (4.12-7.50)	6.23 (4.31-8.49)	7.27 (4.81-10.2)	8.17 (5.26-11.7)
3-day	2.58 (2.12-3.12)	2.96 (2.43-3.58)	3.57 (2.92-4.34)	4.08 (3.32-4.98)	4.78 (3.75-6.06)	5.30 (4.06-6.86)	5.86 (4.35-7.86)	6.54 (4.53-8.86)	7.57 (5.02-10.6)	8.45 (5.45-12.0)
4-day	2.81 (2.32-3.39)	3.20 (2.63-3.86)	3.82 (3.13-4.63)	4.34 (3.54-5.28)	5.06 (3.97-6.39)	5.59 (4.29-7.20)	6.16 (4.57-8.21)	6.84 (4.75-9.24)	7.85 (5.21-10.9)	8.70 (5.62-12.3)
7-day	3.39 (2.80-4.06)	3.80 (3.15-4.57)	4.49 (3.70-5.40)	5.05 (4.13-6.11)	5.83 (4.59-7.29)	6.42 (4.93-8.17)	7.03 (5.19-9.22)	7.70 (5.37-10.3)	8.63 (5.75-11.9)	9.38 (6.07-13.2)
10-day	3.91 (3.25-4.68)	4.37 (3.62-5.22)	5.11 (4.22-6.13)	5.73 (4.70-6.91)	6.58 (5.18-8.18)	7.23 (5.55-9.14)	7.89 (5.81-10.2)	8.57 (6.00-11.4)	9.49 (6.34-13.1)	10.2 (6.61-14.3)
20-day	5.48 (4.58-6.51)	6.06 (5.05-7.20)	6.99 (5.81-8.33)	7.76 (6.41-9.29)	8.83 (6.99-10.9)	9.66 (7.44-12.1)	10.5 (7.73-13.4)	11.3 (7.93-14.9)	12.3 (8.27-16.8)	13.1 (8.52-18.2)
30-day	6.84 (5.73-8.08)	7.50 (6.28-8.87)	8.58 (7.15-10.2)	9.48 (7.85-11.3)	10.7 (8.51-13.1)	11.7 (9.02-14.5)	12.6 (9.33-16.1)	13.5 (9.54-17.8)	14.7 (9.90-20.0)	15.6 (10.2-21.6)
45-day	8.57 (7.21-10.1)	9.34 (7.84-11.0)	10.6 (8.86-12.5)	11.6 (9.66-13.8)	13.1 (10.4-15.9)	14.2 (11.0-17.6)	15.3 (11.3-19.4)	16.3 (11.5-21.4)	17.6 (11.9-23.8)	18.6 (12.1-25.6)
60-day	10.1 (8.49-11.8)	10.9 (9.19-12.8)	12.3 (10.3-14.5)	13.5 (11.2-15.9)	15.0 (12.0-18.3)	16.3 (12.6-20.1)	17.5 (13.0-22.1)	18.6 (13.2-24.3)	20.0 (13.5-27.0)	21.0 (13.7-28.8)
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.										

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PF graphical

PDS-based depth-duration-frequency (DDF) curves

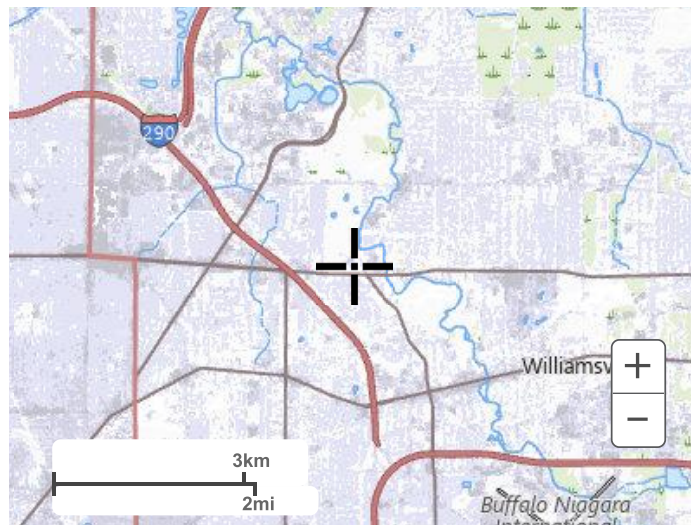
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Maps & aerials

Small scale terrain



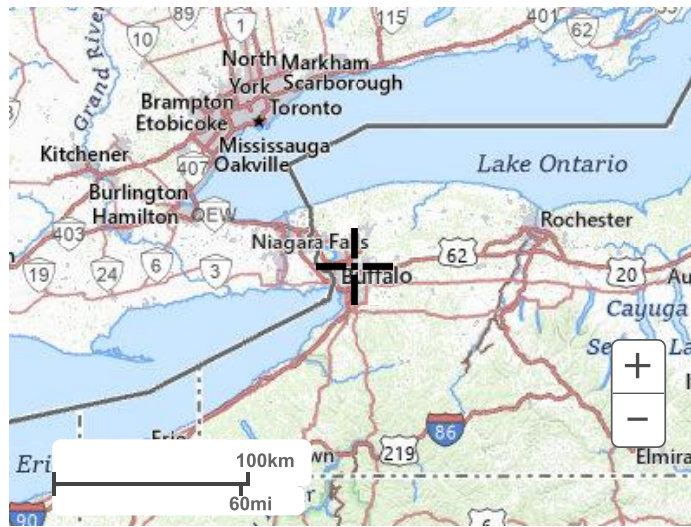
Large scale terrain



Large scale map



Large scale aerial



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[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Appendix D

Weekly Soil Erosion and Sediment Control Inspection Checklist

EROSION AND SEDIMENT CONTROL
INSPECTION CHECKLIST

Project Name:	Date & Time of Inspection:
Project Title:	Current Conditions (Temp., etc.):
Project No.:	Reason for Inspection:
Inspector's Name:	Contractor:

Project E&SC Inspection Report No. ____

(Date of Last Inspection - _____)

The State Pollutant Discharge Elimination System General Permit for Construction Activity (Permit) requires site inspections to be conducted at least every 7 calendar days.

Prior to conducting site inspection, review the previous site inspection report to identify reported deficiencies and the proposed corrective actions to address these deficiencies. During the site inspection, evaluate whether the implemented corrective actions proposed in the previous site inspection adequately addressed reported deficiencies.

Are the SWPPP, NOI, Acknowledgment of NOI, MS4 Acceptance Form and Contractor Certifications on site and available to review?	Yes ☐ No ☐ N/A ☐
Are the weekly SWPPP inspection reports on site and available to review (either in a SWPPP mailbox or job trailer)?	Yes ☐ No ☐ N/A ☐
Did you review the previous site inspection report?	Yes ☐ No ☐ N/A ☐
Did the previous site inspection require an update to the Storm Water Pollution Prevention Plan (SWPPP)?	Yes ☐ No ☐ N/A ☐
If so was the SWPPP updated?	Yes ☐ No ☐ N/A ☐

Project Site Activities

Provide a description of the construction activities that have occurred on site since the last inspection, what activities are currently occurring, and what activities are planned over the course of the next week. The description should consist of general activities, with specific activities identified where appropriate, and as they relate to the implementation and maintenance of Erosion and Sediment Control Measures.

Prior Activities:
Current Activities:
Planned Activities:

Site Map

The project site map shall be utilized as part of the site inspection process. The site map shall be used to visually depict various construction stages of the site, as well as to identify specific areas requiring attention. The various stages are to be depicted by the use of different color highlighters. The following outlines the color to be used for the selected construction activity:

Blue will indicate all disturbed site areas and drainage pathways that have undergone active site work within last 14 days.

Green will indicate site areas which have been temporarily or permanently stabilized.

Yellow will indicate site areas which have not undergone construction activity within the last 14 days but will within the next seven days.

Pink will indicate site areas which have not undergone construction within the last 14 days and will not undergo construction within the next 7 days. Notify contractor that this site area needs to be temporarily or permanently stabilized.

Approximately how many acres are within the Blue area? _____ Acres
Approximately how many acres are within the Yellow area? _____ Acres
Approximately how many acres are within the Pink area? _____ Acres
Add all of the acreage from the three areas _____ Acres

If the total area is greater than five (5) acres, then the portion of the site in excess of five acres shall be temporarily or permanently stabilized, unless written permission has been obtained from the NYSDEC in advance for any land disturbance of five acres or greater.

INSPECTION ITEM	YES	NO	PHOTO #	COMMENTS
a. Is there any evidence of sediment deposition or the discharge of sediment laden water to adjacent properties or drainage facilities?				
b. Is there any evidence of sediment deposition in a sediment trapping device? Record percentage _____ % (SPDES permit requires sediment to be removed once it exceeds 50% of the sediment storage volume.)				
Is the sediment trapping device in need of maintenance?				
c. Are protected areas such as wetlands, property boundaries, and vegetation preservation areas, properly delineated?				
d. Is there evidence of erosion at the outlet of pipes, swales or ditches?				
e. Is the construction entrance stabilized and operating correctly?				
f. If Diversion Berms and/or Earth Dikes are required, have they been installed?				
If so, are they in need of maintenance?				
g. If Check Dams are required, have they been installed?				
If so, are they in need of maintenance?				
h. Do catch basins and drainage inlets have proper protection - i.e., filter fabric, stone and block, etc. - inlet protection?				
If so, are they in need of maintenance?				
i. Is there any loss of stabilizing vegetation, or seeding and mulching?				
j. Is there evidence of rill or gully erosion occurring on slopes?				

Appendix E

Contractor's Certification Form

Contractor / Subcontractor SWPPP Certification Form

Project Address/Location: _____

Project Name: _____

Contractor's/Subcontractor's Official Name: _____

Address: _____

Telephone Number: _____

Contractor's Responsibilities: _____

Mandatory Certification: The SPDES General Permit for Stormwater Discharges from Construction Activities requires the Prime Contractor and subcontractors to certify they understand the Stormwater Pollution Prevention Plan (SWPPP), the General Permit conditions, and their responsibilities for compliance. The certification must be signed prior to performing any contract work. The certification shall be signed by an Owner, Principal, President, Secretary or Treasurer of the firm in accordance with the signature requirements of 102-05 *Proposal Submission* of the Standard Specifications.

"I hereby certify under penalty of law that I understand and agree to comply with requirements 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 requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) 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."

Signature: _____ Date: _____

Name: _____ Title: _____

Required Training: Effective April 30, 2010, the SPDES General Permit also requires the Prime Contractor and all subcontractors **performing earthwork or soil-disturbing activities** to identify at least one trained individual **from each company** who will be responsible for implementing the SWPPP and who shall be on-site on a daily basis when the company is performing soil disturbance activities. These activities include clearing, grubbing, grading, filling, excavation, stockpiling, demolition, landscaping, and installation and maintenance of Erosion & Sediment Control practices. Training must consist of 4 hours of NYSDEC-endorsed Erosion & Sediment Control Training every 3 years. (Training is not required if the individual is a licensed Professional Engineer, registered licensed Landscape Architect, or CPESC.) Provide the information below for trained individuals who will be on-site and responsible for SWPPP implementation on this Contract (attach a separate sheet if needed for additional Trained Individuals):

Trained Individual Name/Title: _____

Name of Training Course: _____

Trainee Number: _____ Date of Training: _____

Trained Individual Name/Title: _____

Name of Training Course: _____

Trainee Number: _____ Date of Training: _____

Appendix F

Notice of Termination –

eNOT - Qualified Inspector Certification – Final Stabilization

eNOT - Qualified Inspector Certification – SMPs

eNOT – MS4 Acceptance

eNOT – Owner or Operator Certification



Department of
Environmental
Conservation

eNOT Qualified Inspector Certification – Final Stabilization

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

- a. Owner/Operator Name:
- b. Contact Person:
- c. Street Address:
- d. City/State/Zip:

II. Project Site Information

- a. Project/Site Name:
- b. Street Address:
- c. City/State/Zip:
- d. CGP SPDES Permit ID:

III. Certification Statement

I hereby certify that all the requirements in CGP Part V.A.1.a.i., ii., and iii. or CGP Part V.A.1.b.i., ii., and iii. have been achieved. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

- a. Printed name of the Qualified Inspector:
- b. Title/Position:
- c. Signature:
- d. Date:



Department of
Environmental
Conservation

eNOT Qualified Inspector Certification – SMPs

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

- a. Owner/Operator Name:
- b. Contact Person:
- c. Street Address:
- d. City/State/Zip:

II. Project Site Information

- a. Project/Site Name:
- b. Street Address:
- c. City/State/Zip:
- d. CGP SPDES Permit ID:

III. Certification Statement

I hereby certify that all the requirements in CGP Part V.A.1.a.iv. or CGP Part V.A.1.b.iv. have been achieved. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

- a. Printed name of the Qualified Inspector:
- b. Title/Position:
- c. Signature:
- d. Date:



Department of
Environmental
Conservation

eNOT MS4 Acceptance

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

- a. Owner/Operator Name:
- b. Contact Person:
- c. Street Address:
- d. City/State/Zip:

II. Project Site Information

- a. Project/Site Name:
- b. Street Address:
- c. City/State/Zip:
- d. CGP SPDES Permit ID:

III. Traditional Land Use Control MS4 Operator Information

- a. Name of MS4 Operator:
- b. MS4 SPDES Permit ID Number: NYR20A
- c. Street Address:
- d. City/State/Zip:
- e. Telephone Number:

IV. Certification Statement

I have determined that it is acceptable for the owner or operator of the construction project identified above to submit the electronic Notice of Termination in accordance with CGP Part V. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

- a. Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.:
- b. Title/Position:
- c. Signature:
- d. Date:



Department of
Environmental
Conservation

eNOT Owner or Operator Certification

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

- a. Owner/Operator Name:
- b. Contact Person:
- c. Street Address:
- d. City/State/Zip:

II. Project Site Information

- a. Project/Site Name:
- b. Street Address:
- c. City/State/Zip:
- d. CGP SPDES Permit ID:

III. Certification Statement

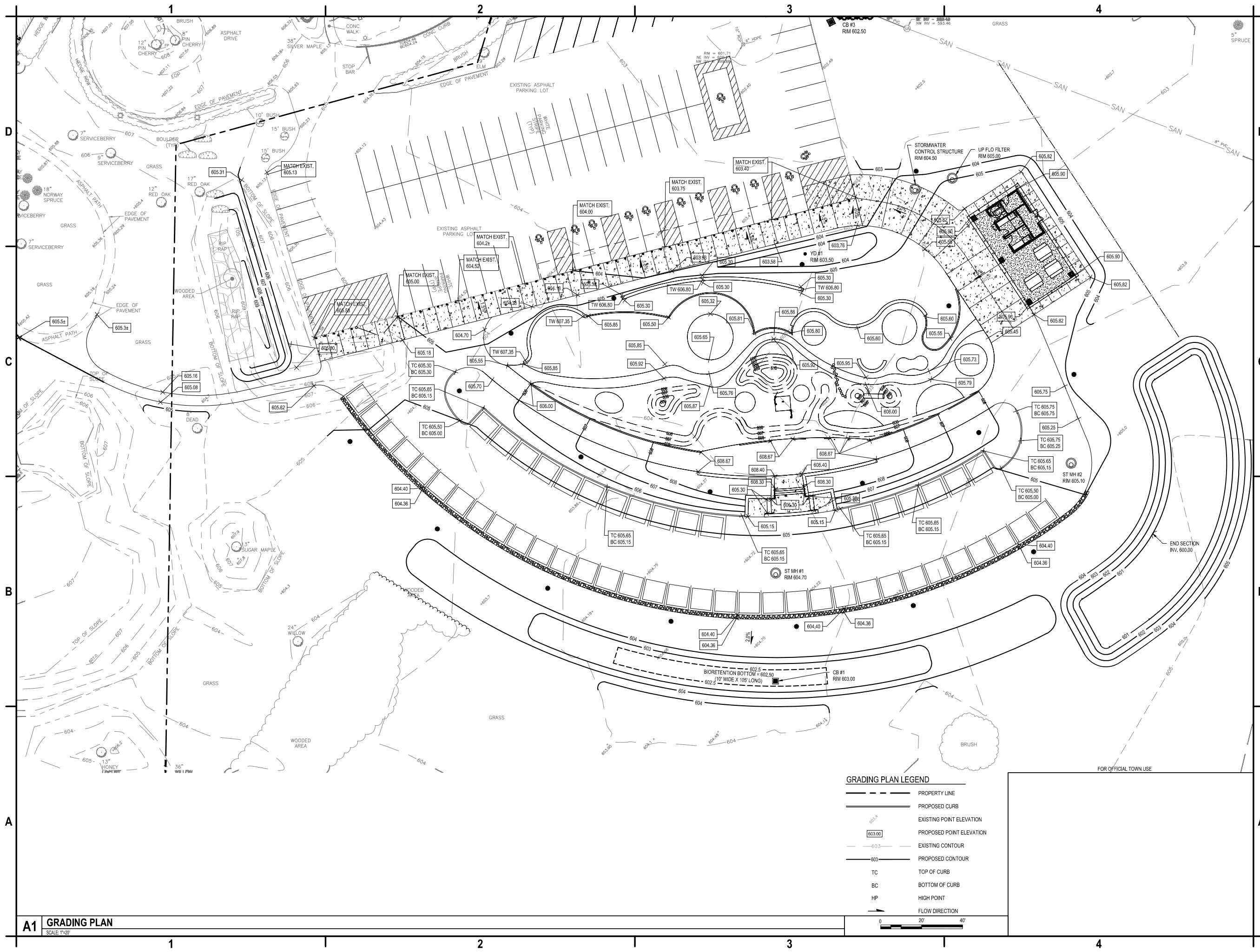
I certify that I have met the requirements of CGP Part V.A.1., 2., 3., and 4. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

- a. Printed name of the Owner or Operator:
- b. Title/Position:
- c. Signature:
- d. Date:

Appendix G

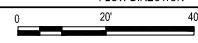
SWPPP Plans & Details

Jul 23, 2026 - 12:40pm
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A1 GRADING PLAN
SCALE: 1"=20'

- GRADING PLAN LEGEND**
- PROPERTY LINE
 - PROPOSED CURB
 - EXISTING POINT ELEVATION
 - PROPOSED POINT ELEVATION
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - TOP OF CURB
 - BOTTOM OF CURB
 - HIGH POINT
 - FLOW DIRECTION



C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

CERTIFICATE OF AUTHORIZATION # 0021365



NOT FOR CONSTRUCTION

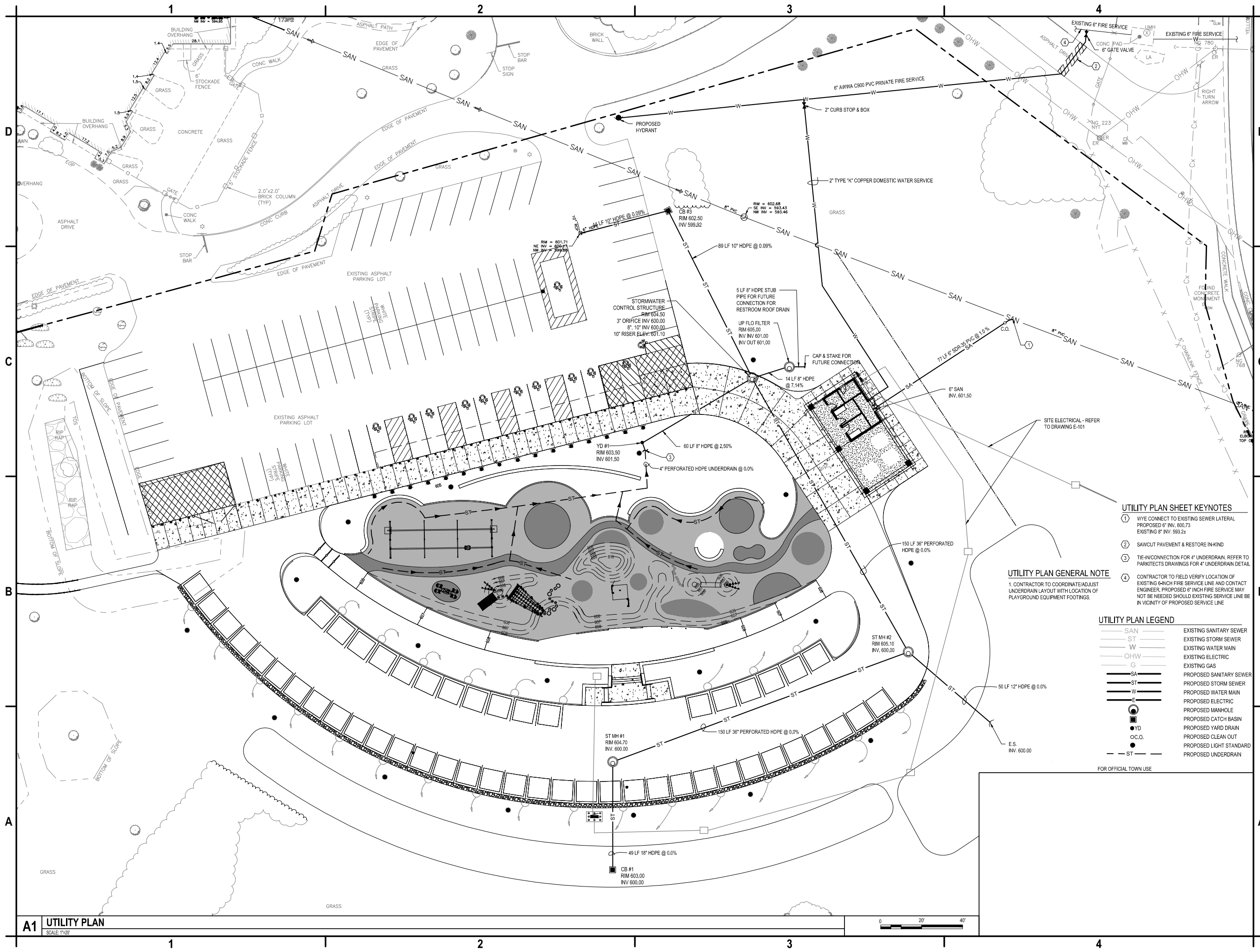
**IMPROVEMENTS TO
AMHERST CENTRAL PARK
750 N. FOREST RD.
AMHERST, NY**

MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO: H22.011.002		
DATE: JULY 20, 2026		
DRAWN BY: S. Schiener		
DESIGNED BY: J. Utzig		
CHECKED BY: J. Utzig		
NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW		

GRADING PLAN

C-103

Jul 23, 2026 - 12:40pm
F:\projects\122 - Town of Amherst\122-011 - Amherst Park\122-011-002 - Amherst Central Park Civil\Design\CAD\Sheet Files\122-011-002_C-104.dwg



C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

CERTIFICATE OF AUTHORIZATION # 0021365



NOT FOR CONSTRUCTION

IMPROVEMENTS TO AMHERST CENTRAL PARK 750 N. FOREST RD. AMHERST, NY

UTILITY PLAN SHEET KEYNOTES

- WYE CONNECT TO EXISTING SEWER LATERAL PROPOSED 6" INV. 600.73 EXISTING 8" INV. 593.24
- SAWCUT PAVEMENT & RESTORE IN-KIND
- TIE-IN CONNECTION FOR 4" UNDERDRAIN. REFER TO PARKITECTS DRAWINGS FOR 4" UNDERDRAIN DETAIL
- CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING 6-INCH FIRE SERVICE LINE AND CONTACT ENGINEER. PROPOSED 6" INCH FIRE SERVICE MAY NOT BE NEEDED SHOULD EXISTING SERVICE LINE BE IN VICINITY OF PROPOSED SERVICE LINE

UTILITY PLAN GENERAL NOTE

1. CONTRACTOR TO COORDINATE/ADJUST UNDERDRAIN LAYOUT WITH LOCATION OF PLAYGROUND EQUIPMENT FOOTINGS.

UTILITY PLAN LEGEND

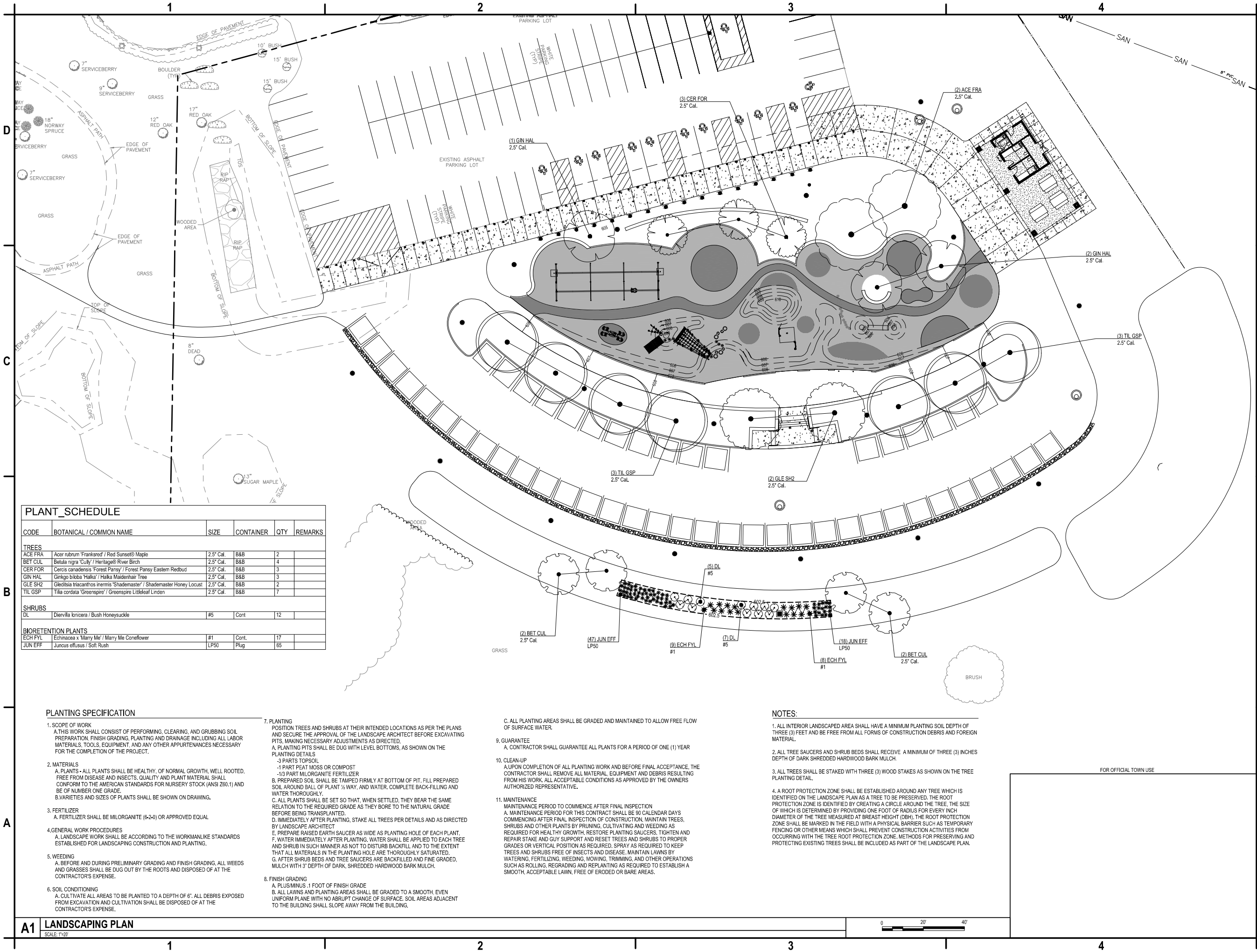
SAN	EXISTING SANITARY SEWER
ST	EXISTING STORM SEWER
W	EXISTING WATER MAIN
OHW	EXISTING ELECTRIC
G	EXISTING GAS
SA	PROPOSED SANITARY SEWER
ST	PROPOSED STORM SEWER
W	PROPOSED WATER MAIN
E	PROPOSED ELECTRIC
●	PROPOSED MANHOLE
■	PROPOSED CATCH BASIN
○	PROPOSED CLEAN OUT
●	PROPOSED LIGHT STANDARD
---	PROPOSED UNDERDRAIN

FOR OFFICIAL TOWN USE

UTILITY PLAN

C-104

Jul 23, 2026 - 12:45pm
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PLANT_SCHEDULE

CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	QTY	REMARKS
TREES					
ACE FRA	Acer rubrum 'Frankford' / Red Sunset® Maple	2.5" Cal.	B&B	2	
BET CUL	Betula nigra 'Cully' / Heritage® River Birch	2.5" Cal.	B&B	4	
CER FOR	Cercis canadensis 'Forest Pansy' / Forest Pansy Eastern Redbud	2.5" Cal.	B&B	3	
GIN HAL	Ginkgo biloba 'Halka' / Halka Maidenhair Tree	2.5" Cal.	B&B	3	
GLE SH2	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Honey Locust	2.5" Cal.	B&B	2	
TIL GSP	Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden	2.5" Cal.	B&B	7	
SHRUBS					
DL	Diervilla lonicera / Bush Honeysuckle	#5	Cont	12	
BIORETENTION PLANTS					
ECH FYL	Echinacea x 'Marry Me' / Marry Me Coneflower	#1	Cont.	17	
JUN EFF	Juncus effusus / Soft Rush	LP50	Plug	65	

PLANTING SPECIFICATION

1. SCOPE OF WORK

A. THIS WORK SHALL CONSIST OF PERFORMING, CLEARING, AND GRUBBING SOIL PREPARATION, FINISH GRADING, PLANTING AND DRAINAGE INCLUDING ALL LABOR MATERIALS, TOOLS, EQUIPMENT, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THE PROJECT.

2. MATERIALS

A. PLANTS - ALL PLANTS SHALL BE HEALTHY, OF NORMAL GROWTH, WELL ROOTED, FREE FROM DISEASE AND INSECTS. QUALITY AND PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1) AND BE OF NUMBER ONE GRADE.
B. VARIETIES AND SIZES OF PLANTS SHALL BE SHOWN ON DRAWING.

3. FERTILIZER

A. FERTILIZER SHALL BE MILORGANITE (6-2-0) OR APPROVED EQUAL

4. GENERAL WORK PROCEDURES

A. LANDSCAPE WORK SHALL BE ACCORDING TO THE WORKMANLIKE STANDARDS ESTABLISHED FOR LANDSCAPING CONSTRUCTION AND PLANTING.

5. WEEDING

A. BEFORE AND DURING PRELIMINARY GRADING AND FINISH GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

6. SOIL CONDITIONING

A. CULTIVATE ALL AREAS TO BE PLANTED TO A DEPTH OF 6". ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

7. PLANTING

POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
A. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, AS SHOWN ON THE PLANTING DETAILS
- 3 PARTS TOPSOIL
- 1 PART PEAT MOSS OR COMPOST
- 1/2 PART MILORGANITE FERTILIZER
B. PREPARED SOIL SHALL BE TAMPED FIRMLY AT BOTTOM OF PIT. FILL PREPARED SOIL AROUND BALL OF PLANT 1/2 WAY, AND WATER. COMPLETE BACK-FILLING AND WATER THOROUGHLY.
C. ALL PLANTS SHALL BE SET SO THAT, WHEN SETTLED, THEY BEAR THE SAME RELATION TO THE REQUIRED GRADE AS THEY BORE TO THE NATURAL GRADE BEFORE BEING TRANSPLANTED.
D. IMMEDIATELY AFTER PLANTING, STAKE ALL TREES PER DETAILS AND AS DIRECTED BY LANDSCAPE ARCHITECT
E. PREPARE RAISED EARTH SAUCER AS WIDE AS PLANTING HOLE OF EACH PLANT.
F. WATER IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED.
G. AFTER SHRUB BEDS AND TREE SAUCERS ARE BACKFILLED AND FINE GRADED, MULCH WITH 3" DEPTH OF DARK, SHREDDED HARDWOOD BARK MULCH.

8. FINISH GRADING

A. PLUS/MINUS .1 FOOT OF FINISH GRADE
B. ALL LAWNS AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN UNIFORM PLANE WITH NO ABRUPT CHANGES OF SURFACE. SOIL AREAS ADJACENT TO THE BUILDING SHALL SLOPE AWAY FROM THE BUILDING.

C. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER.

9. GUARANTEE

A. CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE (1) YEAR

10. CLEAN-UP

A. UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT AND DEBRIS RESULTING FROM HIS WORK. ALL ACCEPTABLE CONDITIONS AS APPROVED BY THE OWNERS AUTHORIZED REPRESENTATIVE.

11. MAINTENANCE

A. MAINTENANCE PERIOD FOR THIS CONTRACT SHALL BE 90 CALENDAR DAYS COMMENCING AFTER FINAL INSPECTION OF CONSTRUCTION. MAINTAIN TREES, SHRUBS AND OTHER PLANTS BY PRUNING, CULTIVATING AND WEEDING AS REQUIRED FOR HEALTHY GROWTH. RESTORE PLANTING SAUCERS, TIGHTEN AND REPAIR STAKE AND GUY SUPPORT AND RESET TREES AND SHRUBS TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE. MAINTAIN LAWNS BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, AND OTHER OPERATIONS SUCH AS ROLLING, REGRADING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

NOTES:

1. ALL INTERIOR LANDSCAPED AREA SHALL HAVE A MINIMUM PLANTING SOIL DEPTH OF THREE (3) FEET AND BE FREE FROM ALL FORMS OF CONSTRUCTION DEBRIS AND FOREIGN MATERIAL.

2. ALL TREE SAUCERS AND SHRUB BEDS SHALL RECEIVE A MINIMUM OF THREE (3) INCHES DEPTH OF DARK SHREDDED HARDWOOD BARK MULCH.

3. ALL TREES SHALL BE STAKED WITH THREE (3) WOOD STAKES AS SHOWN ON THE TREE PLANTING DETAIL.

4. A ROOT PROTECTION ZONE SHALL BE ESTABLISHED AROUND ANY TREE WHICH IS IDENTIFIED ON THE LANDSCAPE PLAN AS A TREE TO BE PRESERVED. THE ROOT PROTECTION ZONE IS IDENTIFIED BY CREATING A CIRCLE AROUND THE TREE. THE SIZE OF WHICH IS DETERMINED BY PROVIDING ONE FOOT OF RADIUS FOR EVERY INCH DIAMETER OF THE TREE MEASURED AT BREAST HEIGHT (DBH). THE ROOT PROTECTION ZONE SHALL BE MARKED IN THE FIELD WITH A PHYSICAL BARRIER SUCH AS TEMPORARY FENCING OR OTHER MEANS WHICH SHALL PREVENT CONSTRUCTION ACTIVITIES FROM OCCURRING WITHIN THE TREE ROOT PROTECTION ZONE. METHODS FOR PRESERVING AND PROTECTING EXISTING TREES SHALL BE INCLUDED AS PART OF THE LANDSCAPE PLAN.

FOR OFFICIAL TOWN USE



C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

CERTIFICATE OF AUTHORIZATION #: 0021365



REGISTRATION EXPIRES:

NOT FOR CONSTRUCTION

IMPROVEMENTS TO
AMHERST CENTRAL PARK
750 N. FOREST RD.
AMHERST, NY

MARK DATE DESCRIPTION

REVISIONS

PROJECT NO: H22.011.002

DATE: JULY 20, 2026

DRAWN BY: S. Schiener

DESIGNED BY: J. Utzig

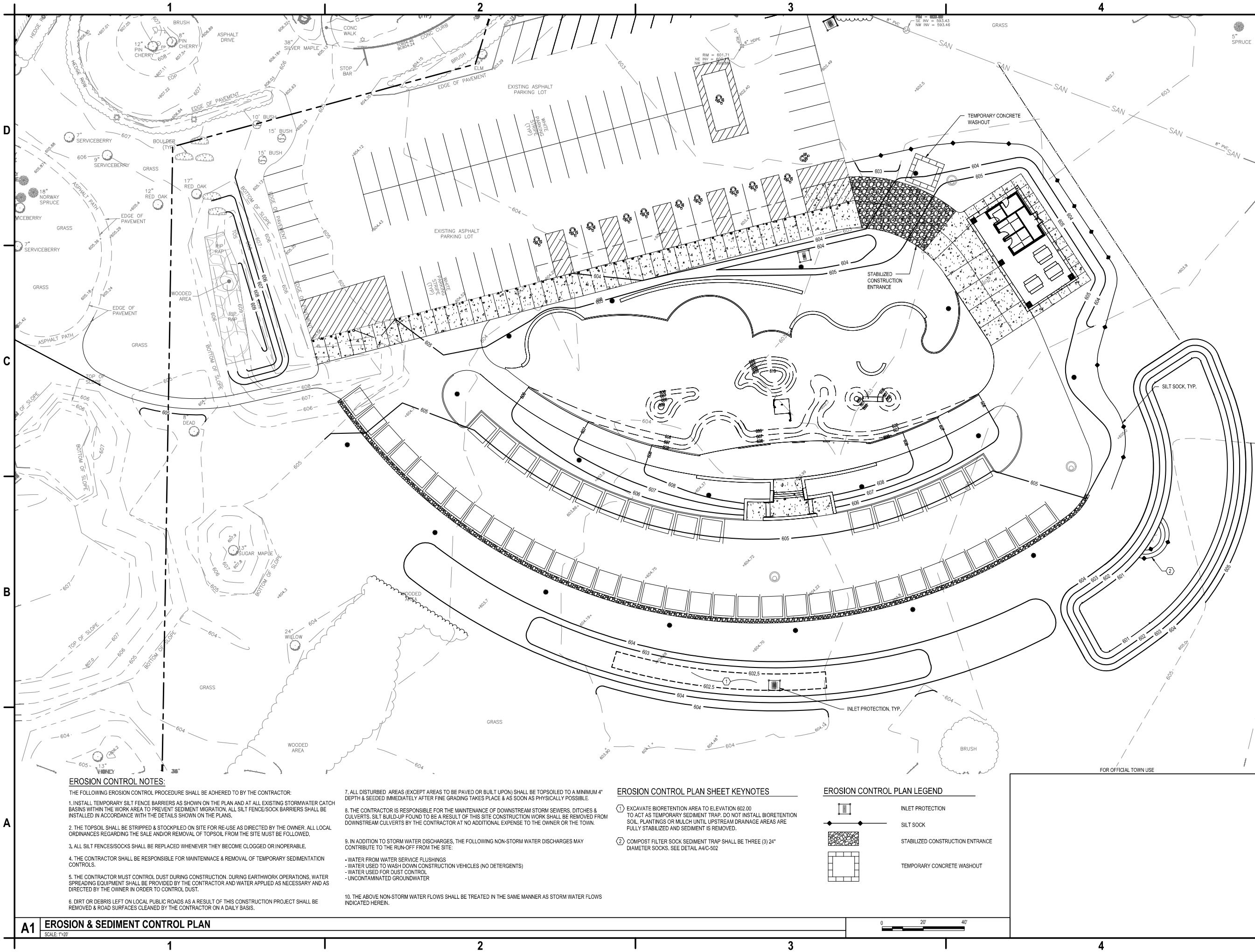
CHECKED BY: J. Utzig

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LANDSCAPING PLAN

C-105

Jul 23, 2026 - 12:45pm
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EROSION CONTROL NOTES:

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

1. INSTALL TEMPORARY SILT FENCE BARRIERS AS SHOWN ON THE PLAN AND AT ALL EXISTING STORMWATER CATCH BASINS WITHIN THE WORK AREA TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE/SOCK BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.

2. THE TOPSOIL SHALL BE STRIPPED & STOCKPILED ON SITE FOR RE-USE AS DIRECTED BY THE OWNER. ALL LOCAL ORDINANCES REGARDING THE SALE AND/OR REMOVAL OF TOPSOIL FROM THE SITE MUST BE FOLLOWED.

3. ALL SILT FENCES/SOCKS SHALL BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE & REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.

5. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR AND WATER APPLIED AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.

6. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED & ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS.

7. ALL DISTURBED AREAS (EXCEPT AREAS TO BE PAVED OR BUILT UPON) SHALL BE TOPSOILED TO A MINIMUM 4" DEPTH & SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE & AS SOON AS PHYSICALLY POSSIBLE.

8. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES & CULVERTS. SILT BUILD-UP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE TOWN.

9. IN ADDITION TO STORM WATER DISCHARGES, THE FOLLOWING NON-STORM WATER DISCHARGES MAY CONTRIBUTE TO THE RUN-OFF FROM THE SITE:

- WATER FROM WATER SERVICE FLUSHINGS
- WATER USED TO WASH DOWN CONSTRUCTION VEHICLES (NO DETERGENTS)
- WATER USED FOR DUST CONTROL
- UNCONTAMINATED GROUNDWATER

10. THE ABOVE NON-STORM WATER FLOWS SHALL BE TREATED IN THE SAME MANNER AS STORM WATER FLOWS INDICATED HEREIN.

EROSION CONTROL PLAN SHEET KEYNOTES

① EXCAVATE BIORETENTION AREA TO ELEVATION 602.00 TO ACT AS TEMPORARY SEDIMENT TRAP. DO NOT INSTALL BIORETENTION SOIL, PLANTINGS OR MULCH UNTIL UPSTREAM DRAINAGE AREAS ARE FULLY STABILIZED AND SEDIMENT IS REMOVED.

② COMPOST FILTER SOCK SEDIMENT TRAP SHALL BE THREE (3) 24" DIAMETER SOCKS. SEE DETAIL A4/C-502

EROSION CONTROL PLAN LEGEND

- | | |
|--|----------------------------------|
| | INLET PROTECTION |
| | SILT SOCK |
| | STABILIZED CONSTRUCTION ENTRANCE |
| | TEMPORARY CONCRETE WASHOUT |



C&S Engineers, Inc.
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CERTIFICATE OF AUTHORIZATION #: 0021365



REGISTRATION EXPIRES:

NOT FOR CONSTRUCTION

IMPROVEMENTS TO AMHERST CENTRAL PARK 750 N. FOREST RD. AMHERST, NY

MARK	DATE	DESCRIPTION
------	------	-------------

REVISIONS

PROJECT NO:	H22.011.002
DATE:	JULY 20, 2026
DRAWN BY:	S. Schiener
DESIGNED BY:	J. Utzig
CHECKED BY:	J. Utzig

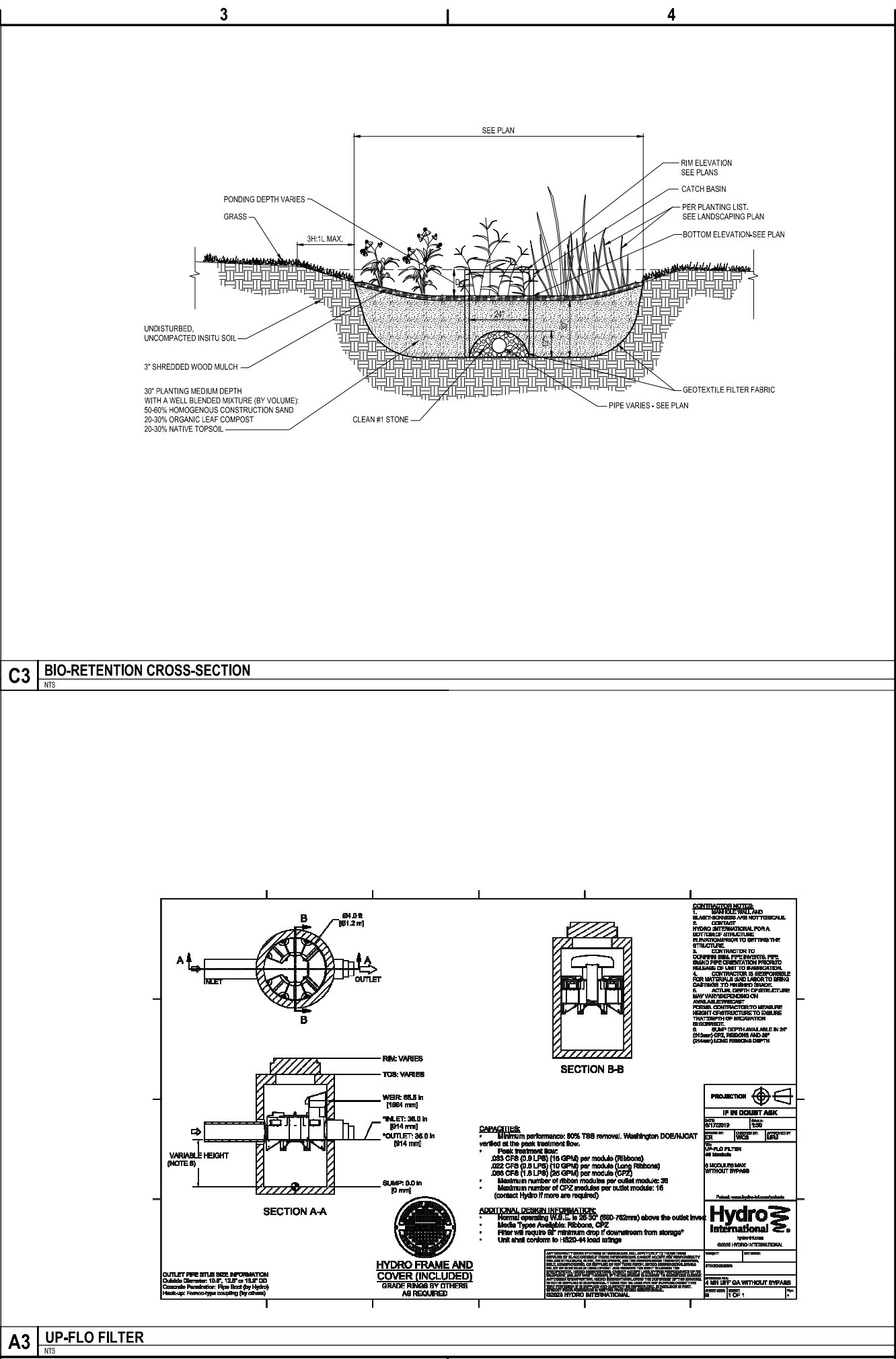
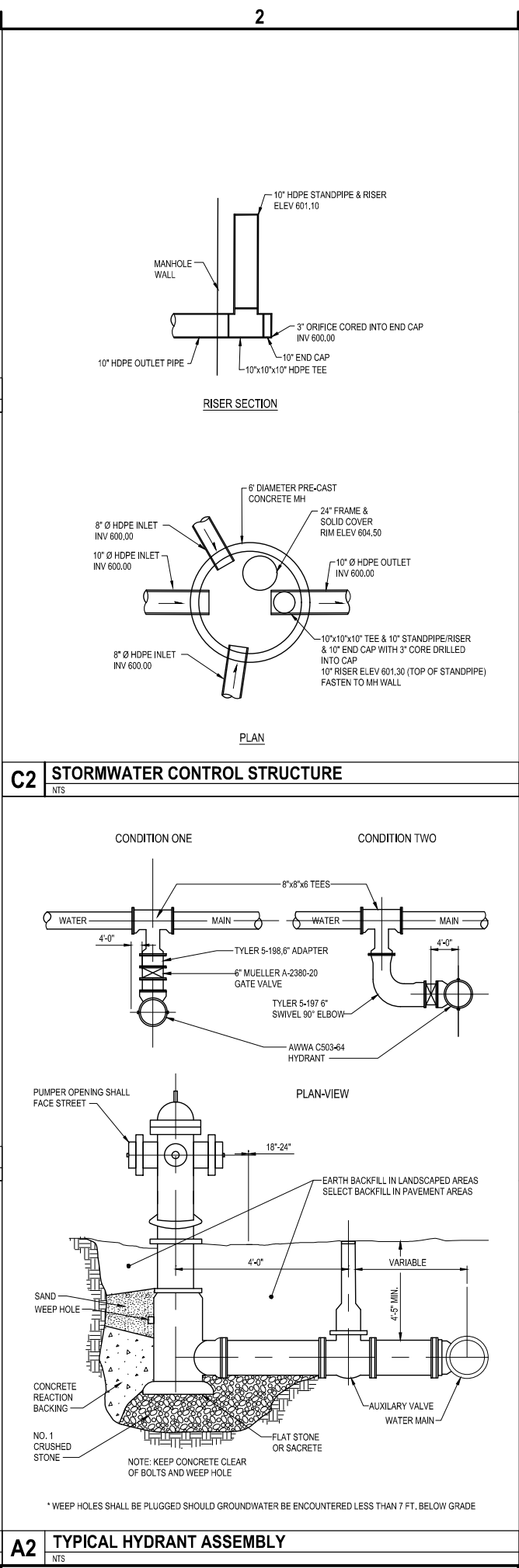
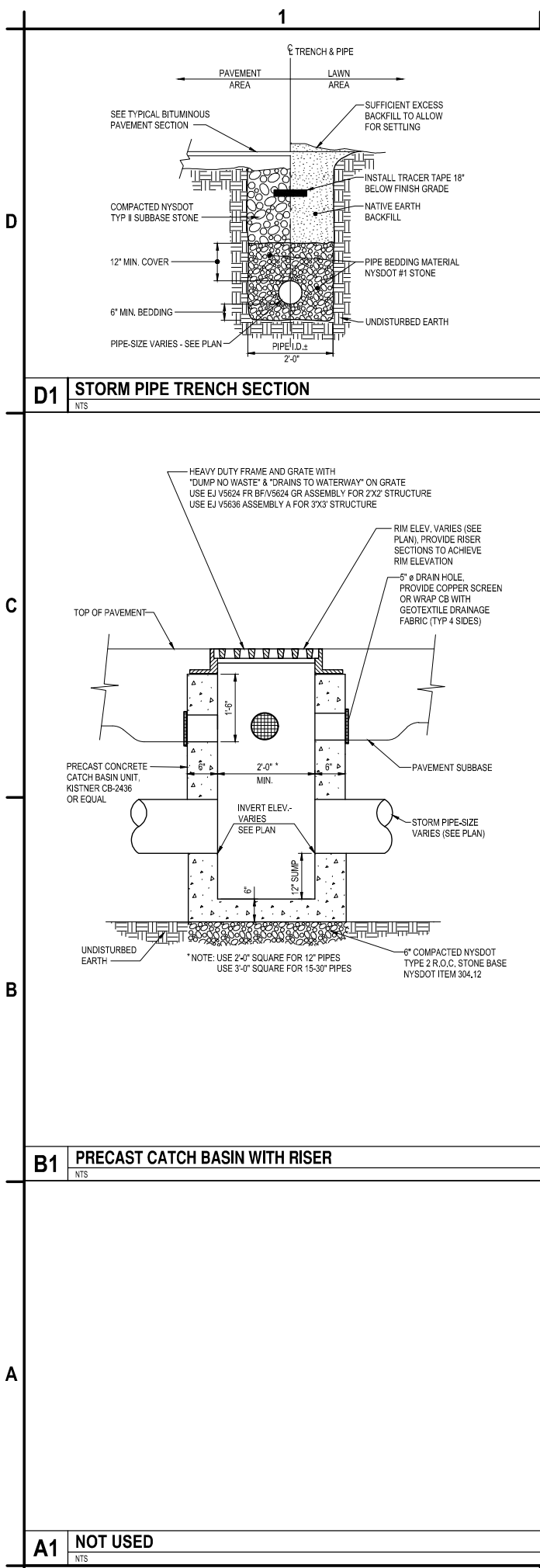
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EDUCATION LAW

EROSION & SEDIMENT CONTROL PLAN

C-106



Jul 23, 2026 - 12:40pm
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NOT FOR CONSTRUCTION

IMPROVEMENTS TO
AMHERST CENTRAL PARK
750 N. FOREST RD.
AMHERST, NY

MARK	DATE	DESCRIPTION
REVISIONS		
PROJECT NO: H22.011.002		
DATE: JULY 20, 2026		
DRAWN BY: S. Schiener		
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CHECKED BY: CHECKED BY		
NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW		

UTILITY DETAILS

C-503

Appendix H

Post Construction Maintenance Schedule

Bioretention Stormwater Management Practices Level 1 Inspection Checklist

SMP ID #		SMP Owner		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		Longitude	
Party Responsible for Maintenance	System Type		Type of Site	
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State	
Inspection Date			Inspection Time	
Inspector				
Date of Last Inspection				

BR Drainage Area

Look for areas that are uphill from the Bioretention cell.

Problem (Check if Present)	Follow-Up Actions
 ☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Seed and mulch areas of bare soil to establish vegetation. ☐ Fill in erosion areas with soil, compact, and seed and straw to establish vegetation. ☐ 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. ☐ Other:

BR Drainage Area

Look for areas that are uphill from the Bioretention cell.

Problem (Check if Present)

Follow-Up Actions



- ☐ Kick-Out to Level 2 Inspection: Large areas of soil have been eroded, or larger channels are forming. May require rerouting of flow paths.



- ☐ Piles of grass clippings, mulch, dirt, salt, or other materials

- ☐ Remove or cover piles of grass clippings, mulch, dirt, etc.
- ☐ Other:



- ☐ Open containers of oil, grease, paint, or other substances

- ☐ Cover or properly dispose of materials; consult your local solid waste authority for guidance on materials that may be toxic or hazardous.
- ☐ Other:

BR Inlets

Stand in the Bioretention cell itself and look for all the places where water flows in. Often there will be multiple points of inflow to the practice.

Problem (Check if Present)	Follow-Up Actions
 ☐ Inlets collect grit and debris or grass/weeds. Some water may not be getting into the Bioretention cell. The objective is to have a clear pathway for water to flow into the cell.	☐ 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. ☐ Pull out clumps of growing grass or weeds and scoop out the soil or grit that the plants are growing in. ☐ Remove any grass clippings, leaves, sticks, and other debris that is collecting at inlets. ☐ For pipes and ditches, remove sediment and debris that is partially blocking the pipe or ditch opening where it enters the Bioretention cell. ☐ Dispose of all material properly where it will not re-enter the Bioretention cell. ☐ Other:
	☐ Kick-Out to Level 2 Inspection: Inlets are blocked to the extent that most of the water does not seem to be entering the Bioretention cell.
 ☐ 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 Bioretention cell.	☐ 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. ☐ 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. ☐ Other:
	☐ 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.

BR Ponding Area

Examine the entire Bioretention surface and side slopes

Problem (Check if Present)	Follow-Up Actions
 ☐ Mulch (if used) needs to be replaced or replenished. The mulch layer had decomposed or is less than 1-inch thick.	☐ Add new mulch to a total depth (including any existing mulch that is left) of 2 to 3 inches. The mulch should be shredded hardwood mulch that is less likely to float away during rainstorms. ☐ Avoid adding too much mulch so that inlets are obstructed or certain areas become higher than the rest of the Bioretention surface. ☐ Other:
 ☐ Minor areas of sediment, grit, trash, or other debris are accumulating on the bottom.	☐ 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 Bioretention cell . ☐ If removing the material creates a hole or low area, fill with soil mix that matches original mix and cover with mulch so that the Bioretention surface area is as flat as possible. ☐ Remove trash, vegetative debris, and other undesirable materials. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Sediment has accumulated more than 2-inches deep and covers 25% or more of the Bioretention surface. ☐ Kick-Out to Level 2 Inspection: The Bioretention cell is too densely vegetated to assess sediment accumulation or ponding; see BR-4, Vegetation.

BR Ponding Area

Examine the entire Bioretention surface and side slopes

Problem (Check if Present)	Follow-Up Actions
 ☐ There is erosion in the bottom or on the side slopes. Water seems to be carving out rills as it flows across the Bioretention surface or on the slopes, or sinkholes are forming in certain areas. ☐ Source: Stormwater Maintenance, LLC.	☐ Try filling the eroded areas with clean topsoil or sand, and cover with mulch. ☐ If the problem recurs, you may have to use stone (e.g., river cobble) to fill in problem areas. ☐ If the erosion is on a side slope, fill with clay that can be compacted and seed and mulch the area. ☐ Other: ☐ 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 Bioretention cell. ☐ 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.
 ☐ The bottom of the Bioretention cell is not flat, and the water pools at one end, along an edge, or in certain pockets. The whole bottom is not uniformly covered with water. See design plan to verify that bioretention surface is intended to be flat. Check during or immediately after a rainstorm.	☐ If the problem is minor (just small, isolated areas are not covered with water), try raking the surface OR adding mulch to low spots to create a more level surface. You may need to remove and replace plantings in order to properly even off the surface. ☐ Check the surface with a string and bubble level to get the surface as flat as possible. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Ponding water is isolated to less than half of the Bioretention surface area, and there seem to be elevation differences of more than a couple of inches across the surface.

BR Ponding Area

Examine the entire Bioretention surface and side slopes

Problem (Check if Present)	Follow-Up Actions
 ☐ Water stands on the surface more than 72 hours after a rainstorm and /or wetland-type vegetation is present. The Bioretention cell does not appear to be draining properly.	☐ Kick-Out to Level 2 Inspection: This is generally a serious problem, and it will be necessary to activate a Level 2 Inspection.

BR Vegetation

Examine all Bioretention cell vegetation.

Problem (Check if Present)	Follow-Up Actions
 ☐ Vegetation requires regular maintenance—pulling weeds, removing dead and diseased plants, replacing mulch around plants, adding plants to fill in areas that are not well vegetated, etc.	☐ If you can identify which plants are weeds or not intended to be part of the planting plan, eliminate these, preferably by hand pulling. ☐ If weeds are widespread, check with the local stormwater authority and/or Extension Office about proper use of herbicides for areas connected with the flow of water. ☐ Even vegetation that is intended to be present can become large, overgrown, and/or crowd out surrounding plants. Prune and thin accordingly. ☐ If weeds or invasive plants have overtaken the whole Bioretention cell, bush-hog the entire area before seedheads form in the spring. It will be necessary to remove the root mat manually or with appropriate herbicides, as noted above. ☐ Re-plant with species that are aesthetically pleasing and seem to be doing well in the Bioretention cell. ☐ Other: ☐ Kick-Out to Level 2 Inspection: You are unsure of the original planting design, or the vegetation maintenance task is beyond your capabilities of time, expertise, or resources. If you are unsure of the health of the vegetation (e.g. salt damage, invasives, which plants are undesirable) or the appropriate season to conduct vegetation management, consult a landscape professional before undertaking any cutting, pruning, mowing, or brush hogging.

BR Vegetation

Examine all Bioretention cell vegetation.

Problem (Check if Present)	Follow-Up Actions
 ☐ Vegetation is too thin, is not healthy, and there are many spots that are not well vegetated.	☐ The original plants are likely not suited for the actual conditions within the Bioretention cell . If you are knowledgeable about plants, select and plant more appropriate vegetation (preferably native plants) so that almost the entire surface area will be covered by the end of the second growing season. ☐ Other: ☐ Kick-Out to Level 2 Inspection: For all but small practices (e.g., rain gardens), this task will likely require a landscape design professional or horticulturalist.

BR Outlets

Examine outlets that release water out of the Bioretention cell.

Problem (Check if Present)	Follow-Up Actions
☐ Erosion at outlet	☐ Add stone to reduce the impact from the water flowing out of the outlet pipe or weir during storms. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Rills have formed and erosion problem becomes more severe.
 ☐ Outlet obstructed with mulch, sediment, debris, trash, etc.	☐ Remove the debris and dispose of it where it cannot re-enter the Bioretention cell . ☐ Other: ☐ Kick-Out to Level 2 Inspection: Outlet is completely clogged or obstructed; there is too much material to remove by hand or with simple hand tools.

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: _____

Pond and Wetland Stormwater Management Practices Level 1 Inspection Checklist

SMP ID #		SMP Owner		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		Longitude	
Party Responsible for Maintenance	System Type			Type of Site
☐ Same as SMP Owner ☐ Other 	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State	
Inspection Date		Inspection Time		
Inspector				
Date of Last Inspection				

PW Drainage Area

Look for areas that are uphill from the pond.

Problem (Check if Present)	Follow-Up Actions
☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Seed and straw areas of bare soil to establish vegetation. ☐ Fill in eroded areas with soil, compact, seed and mulch with straw to establish vegetation. ☐ Other:

☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Kick-Out to Level 2 Inspection: 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. ☐ If large areas of soil have been eroded or larger channels are forming, this may require rerouting of flow paths or use of an erosion-control seed mat or blanket to reestablish acceptable ground cover or anchor sod where it is practical.
 ☐ Piles of grass clippings, mulch, dirt, salt, or other materials	☐ Remove or cover piles of grass clippings, mulch, dirt, etc. ☐ Remove excessive vegetation or woody debris that can block drainage systems. ☐ Other:
 ☐ Open containers of oil, grease, paint, or other substances exposed to rain in the drainage area	☐ Cover or properly dispose of materials; consult your local solid waste authority for guidance on materials that may be toxic or hazardous. ☐ Other:

Pond Inlets

Look for all areas where water flows into the pond during storms. Note that there may be multiple points of inflow and types of structures (e.g., pipes, open ditches, etc.).

Problem (Check if Present)	Follow-Up Actions
 ☐ Inlets are buried, covered or filled with silt, debris, or trash, or blocked by excessive vegetation.	☐ If the problem can be remedied with hand tools and done in a safe manner, remove vegetation, trash, woody debris, etc. from blocking inlet structures. ☐ Other: ☐ Kick-Out to Level 2 or 3 Inspection: If the amount of material is too large to handle OR there are ANY safety concerns about working in standing water, soft sediment, etc., the work will likely have to be performed by a qualified contractor.

Pond Inlets

Look for all areas where water flows into the pond during storms. Note that there may be multiple points of inflow and types of structures (e.g., pipes, open ditches, etc.).

Problem (Check if Present)	Follow-Up Actions
 ☐ Inlets are buried, covered or filled with silt, debris, or trash, or blocked by excessive vegetation.	☐ Kick-Out to Level 2 or 3 Inspection: If the amount of material is too large to handle OR there are ANY safety concerns about working in standing water, soft sediment, etc., the work will likely have to be performed by a qualified contractor.
 ☐ Inlets are broken, and, with pieces of pipe or concrete falling into the pond, there is erosion around the inlet, there is open space under the pipe, or there is erosion where the inlet meets the pond	☐ Kick-Out to Level 2 Inspection: These types of structural or erosion problems are more serious and will require a qualified contractor to repair.

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)	Follow-Up Actions
 ☐ The pretreatment area(s) or forebay(s) are filled with sediment, trash, vegetation, or other debris.	☐ If the problem can be remedied with hand tools and done in a safe manner, use a flat shovel or other equipment to remove small amounts of sediment. ☐ Remove trash and excessive vegetation from forebays if this can be done in a safe manner. ☐ Other:

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)		Follow-Up Actions
	☐ The pretreatment area(s) or forebay(s) are filled with sediment, trash, vegetation, or other debris.	☐ Kick-Out to Level 2 Inspection: Large amounts of sediment or debris will have to be removed by a qualified contractor. ANY condition that poses a safety concern for working in standing water or soft sediments should be referred to a Level 2 Inspection or qualified contractor.
	☐ The pond area itself has accumulated sediment, trash, debris, or excessive vegetation that is choking the flow of the water, OR the pond area is covered with algae or aquatic plants.	☐ Level 1 includes handling only small amounts of material that can be removed by hand, or with rakes or other hand tools. Do not attempt any repair that poses a safety issue. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Most cases will call for a Level 2 Inspection and/or a qualified contractor. ☐ You are not sure what type and amount of vegetation is supposed to be in the pond. ☐ The algae or aquatic plants should be identified so that proper control techniques can be applied.
	☐ The side slopes of the pond are unstable, eroding, and have areas of bare dirt.	☐ If there are only minor areas, try filling in small rills or gullies with topsoil, compacting, and seeding and mulching all bare dirt areas with an appropriate seed. Alternatively, try using herbaceous plugs to get vegetation established in tricky areas, such as steep slopes. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Erosion and many bare dirt areas on steep side slopes will require a Level 2 Inspection and repair by a qualified contractor.

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)		Follow-Up Actions
	☐ The riser structure is clogged with trash, debris, sediment, vegetation, etc., OR is open, unlocked, or has a steep drop and poses a safety concern. The pond level may have dropped below its "normal" level.	☐ If you can safely access the riser on foot or with a small boat, clear minor amounts of debris and remove it from the pond area for safe disposal. ☐ Other: ☐ Kick-Out to Level 2 Inspection: The riser cannot be accessed safely, the amount of debris is substantial, or the riser seems to be completely clogged and the water level has risen too high. ☐ There are safety issues with the riser and concern about access to pipes, drops, or any other life safety concern. ☐ The riser is leaning, broken, settling or slumping, corroded, eroded or any other structural problem.
	☐ The dam/embankment is slumping, sinking, settling, eroding, or has medium or large trees growing on it.	☐ If there are small isolated areas, try to fix them by adding clean material (clay and topsoil) and seeding and mulching. ☐ Periodically mow embankments to enable inspection of the banks and to minimize establishment of woody vegetation. ☐ Remove any woody vegetation that has already established on embankments. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Most of these situations will require a Level 2 Inspection or evaluation and repair by a qualified contractor. Seepage through the dam or problems with the pipe through the dam can be a serious issue that should be addressed to avoid possible dam failure.

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)	Follow-Up Actions
 ☐ The emergency spillway or outfall (if it exists) has ☐ Erosion, settlement, or loss of material. Rock-lined spillways have excessive debris or vegetation.	☐ Clear light debris and vegetation. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Displacement of rock lining, excessive vegetation and erosion/settlement may warrant review and decision by Level 2 Inspector to check against original plan. ☐ Any uncertainty about the integrity of the emergency spillway should be referred to a Level 2 Inspector. ☐ Erosion or settlement such that design has been compromised should be reviewed by an engineer.

PW Pond Outlet

Examine the outlet of the pipe on the downstream side of the dam/embankment where it empties into a stream, channel, or drainage system.

Problem (Check if Present)	Follow-Up Actions
 ☐ The pond outlet is clogged with sediment, trash, debris, vegetation, or is eroding, caving in, slumping, or falling apart.	☐ If there is a minor blockage, remove the debris or vegetation to allow free flow of water. ☐ Remove any accumulated trash at the outlet. ☐ Outlet: ☐ Kick-Out to Level 2 Inspection: ☐ If the area at the outlet cannot be easily accessed or if the blockage is substantial, a Level 2 Inspection is warranted. ☐ Erosion at and downstream of the outfall should be evaluated by a qualified professional. ☐ Any structural problems, such as broken pipes, structures falling into the stream, or holes or tunnels around the outfall pipe, should be evaluated by a Level 2 Inspector and will require repair by a qualified contractor. ☐ The pool of water at the outlet pipe is discolored, has an odor, or has excessive algae or vegetative growth.

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: _____



Operation and Maintenance Manual

Stormwater Solutions

Up-Flo® Filter

Filtration System for Stormwater Treatment

94 Hutchins Drive
Portland, ME 04102

Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

www.hydro-int.com

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13	Up-Flo® Filter Installation Log
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16	Up-Flo® Filter Maintenance Log

IMPORTANT - ORDER REPLACEMENT PARTS FOR MAINTENANCE - IMPORTANT

Annual maintenance requires replacement of the Media Packs and the Drain Down Filter. Contact Hydro International to order replacements. Allow 2-4 weeks for delivery.

Office hours Monday thru Friday 8:00 A.M. to 5:00 P.M. EST

Toll free: 1-888-382-7808

Phone: 207-756-6200

Fax: 207-756-6212

Email: services@hydro-int.com

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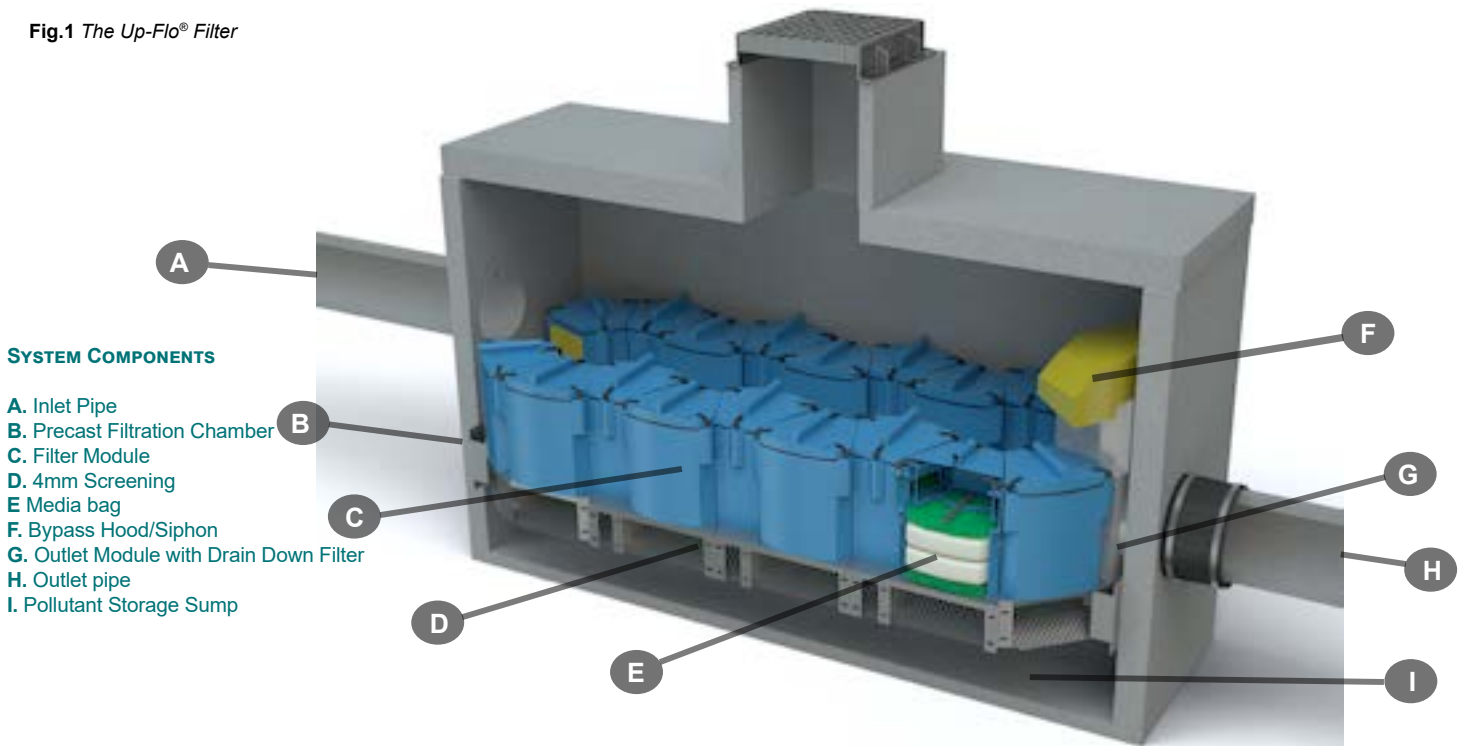
DISCLAIMER: Information and data contained in this manual is exclusively for the purpose of assisting in the operation and maintenance of Hydro International plc's Up-Flo® Filter. No warranty is given nor can liability be accepted for use of this information for any other purpose. Hydro International plc have a policy of continuous product development and reserve the right to amend specifications without notice.

OVERVIEW & PRODUCT DESCRIPTION

The Up-Flo® Filter is a modular high-rate stormwater filtration device designed to capture trash, oil, sediment and remove fine pollutants such as dissolved and particulate metals and nutrients from stormwater runoff. Designed with efficiency, longevity and upkeep in mind, this high performance, low maintenance filter option that offers higher loading rates and longer media life for higher quality stormwater for longer periods between servicings.

In general, a minimum of two inspections are required per year to monitor sediment and gross pollutant accumulations. In order to achieve an annual TSS removal rate of 80% for the Up-Flo® Filter, the minimum maintenance frequency specified in the maintenance section for replacement of the Media Pack and removal of accumulated sediment from the sump is mandatory.

Fig.1 The Up-Flo® Filter



PRODUCT CONFIGURATIONS



Fig.2 The Up-Flo® Filter is installed in a) 4-ft (1.2m) round manholes or b) in rectangular precast vaults. Both configurations have a wide central opening in the Up-Flo® Filter.

OPERATION

INTRODUCTION

The Up-Flo® Filter operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirements and is fabricated with durable non-corrosive components. Personnel are not required to operate the unit and maintenance is limited to periodic inspections, sediment and floatables removal, Media Pack replacement and Drain Down Filter replacement.

POLLUTANT CAPTURE

The Up-Flo® Filter is designed to operate as a “treatment train” by incorporating multiple treatment technologies into a single device. Trash and gross debris are removed by sedimentation and screening before they are introduced to the filtration media, preventing surface blinding of the filter media. The Up-Flo® Filter is a wet-sump device. Between storm events, oil and floatables are stored on the water surface separate from the sediment storage volume in the sump (see **Fig.1**). The high-capacity bypass siphon acts as a floatables baffle to prevent washout of captured floatable pollutants during high intensity events.

REDUCED CLOGGING

The Up-Flo® Filter has been designed to minimize the occurrence of clogging and blinding and employs a unique Drain Down Filter that allows the water level in the chamber to drop below the filter media between events. The Drain Down Filter mechanism creates a reverse flow that flushes captured pollutants off the surface of the Media Bag, helping to prevent blinding. By allowing the water to drain out, the Drain Down Filter also reduces the weight of the Media Bags. This makes the bags easier and safer to remove during maintenance operations.

OVERFLOW PROTECTION

The Angled Screens are designed to prevent ragging and blinding and are situated below the Filter Modules, sheltering them from the direct path of the influent. Coarse debris settles in the sump before the runoff flows up through the screens, protecting them from blinding. In the unlikely event of a blockage, the high capacity siphonic Bypass Hood is designed to convey high enough flow to minimize the risk of large storm creating upstream flooding.

BEST PRACTICES

Good housekeeping upstream of the Up-Flo® Filter can significantly extend Media Bag life. For example, sweeping paved surfaces, collecting leaves and grass trimmings, and protecting bare ground from erosion will reduce loading to the system. Media Packs should not be installed in the Filter Modules until construction activities are complete and site stabilization is effective.

DAMAGE DUE TO LACK OF MAINTENANCE

Delayed maintenance would result in clogged Media Bags and/or blinded Angled Screens. In that situation, the Up-Flo® Filter would go into bypass and there would be no treatment of the incoming stormwater. Because the Bypass Weir can easily convey all of the flow to the Outlet Module, there would be no lasting damage to the system. Replacement of the Media Bags and removal of sediment from the sump would restore the Up-Flo® Filter to its original treatment efficiency. Establishing and adhering to a regular maintenance schedule ensures optimal performance of the system.



Fig.3 a) The water level in a properly functioning Up-Flo® Filter will drain down to the base of the Filter Modules. b) When the Drain Down Filter becomes clogged, the base of the Filter Modules will be submerged in standing water. Note, above right, that the Drain Down Filter is submerged in standing water.

INSPECTION & MAINTENANCE

OVERVIEW

The Up-Flo® Filter protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the proper functioning of the Up-Flo® Filter.

Maintenance activities can be categorized as those that may be performed from outside the Up-Flo® vessel and those that are performed inside the vessel. Maintenance performed from outside the modules includes removal of floatables and oils that have accumulated on the water surface and removal of sediment from the sump. Maintenance performed inside the vessel includes removal and replacement of Media Bags, Flow Distribution Media and the Drain Down Filter. A vactor truck is required for removal of oils, water, sediment, and to completely pump out the vessel to allow for maintenance inside. If you are not using Hydro International or a trained service provider you must follow OSHA Confined Space Entry procedures when entering the Up-Flo® vessel.

The Up-Flo® Filter design has a wide central opening between the Filter Modules for easy access to all of the components (see **Fig.3**). In the case of inspection and floatables removal, a vactor truck is not required. Otherwise, a vactor truck is normally required for oil removal, removal of sediment from the sump, and replacement of the Media Packs and Drain Down Filter. In most cases, entry into the Up-Flo® Filter vessel is required for replacement of the Media Packs and Drain Down Filter.

The minimum required frequency for replacement of the Media Pack is annually, whereas the minimum required frequency for removal of accumulated sediment from the sump is dependent on the Up-Flo® Filter configuration. Configurations with a larger sediment storage volume per module will require less frequent removal of accumulated sediment. Regardless, whenever sediment depth in the sump is found to be greater than 16 inches, sediment removal is required.



AT A MINIMUM, MEDIA BAGS MUST BE REPLACED AT LEAST ONCE A YEAR.

Fig.4 a) A new Media Bag of Hydro Filter Sand. b) A spent media bag of Hydro Filter Sand.

MAKE SURE YOUR SYSTEM WAS INSTALLED CORRECTLY

First Year Inspection and Maintenance

The frequency of inspection and maintenance can be determined in the field after installation. The frequency of ongoing maintenance needs is based on site characteristics such as contributing area, types of surfaces (e.g., paved and/or landscaped), site activities (e.g., short-term or long-term parking), and other site maintenance (e.g., sanding and sweeping). At a minimum, inspection and maintenance should be conducted at intervals of no more than six months during the first year of operation. Maintenance personnel should observe and record pollutant accumulations during the first year of service in order to benchmark the maintenance intervals that will later be established for the site. Pollutant accumulations should be measured or monitored using the following procedures:

- **Measurement of sediment depth in the sump:** A minimum of 8 inches (20 cm) should separate the Drain Down Filter inlet from stored sediment in the sump in order to minimize sediment migration into the Drain Down Filter. A simple probe, such as the Sludge-Judge®, can be used to determine the depth of the solids in the sump. In a typical 4-ft (1.2m) diameter manhole installation, the sediment depth should be no more than 16 inches (41 cm).
- **Maintenance personnel should then enter the structure, remove the Media Pack from one of the Filter Modules, and weigh the Media Bags.** Media Bags with a wet weight of approximately 40 lbs (18 kg) or more are an indication that the filter media has become full and that the Media Packs in all of the Filter Modules will require replacement (Fig.4). Minimum filtration rate is generally reached when the Media Bags have accumulated approximately 20 lbs (9 kg) of sediment. Determining the amount of accumulated sediment will be accomplished by removing both of the Media Bags from one of the Media Packs and weighing the bags separately. Since a new Media Bag weighs approximately 30 lbs (14 kg) wet, the difference in weight will approximately equal the weight of solids that have accumulated in the bag. A spent Media Bag weighs approximately 50 lbs (23 kg) wet.
- **Measurement of oil layer on water surface:** Since water in the Up-Flo® vessel drains down to an elevation below the bottom of the Filter Modules when the system is idle, the amount of accumulated oil must be minimized so that oil is not entrained in the Media Pack when stormwater begins to fill the vessel at the start of a storm event. Oil accumulation should be limited to 1.5 inches (4 cm) or less. Probes can be used to measure oil thickness.
- **Monitoring for Drain Down Filter clogging:** The water level in the Up-Flo® Filter should be monitored to ensure that the Drain Down Filter is operating properly. The Drain Down Filter is designed to lower the water level in the Up-Flo® vessel to an elevation below the bottom of the Filter Modules between storm events. Periodically conduct an inspection one to two days after a storm event during the first year of operation. Approximately 36 hours after a 1-in (2.5-cm) rainfall, the water level inside the vessel should have dropped to a point where it is equal with the base of the Filter Modules. If the water level has not reached that point, then the Drain Down Filter has either become clogged or blinded by trash or debris (Fig.5 a and b). If there is no evidence of trash or debris around the Drain Down Filter inlet, then it has likely become clogged with particles.
- **Monitoring for slime and debris covering the Flow Distribution Media or Angled Screens:** After removal of the Media Bags, the bottom Flow Distribution Media should be removed and inspected to determine if it is coated with slime or debris. Similarly, the Angled Screen should be inspected for blockages and ragging.

FIND OUT HOW FREQUENTLY YOUR SYSTEM NEEDS MAINTENANCE

Monitoring for floatables on the water surface: Similar to oil, the amount of accumulated floatables must be minimized to prevent trash and loose debris from becoming trapped on the Angled Screens when stormwater begins to fill the Up-Flo® vessel at the start of a storm event. Visual inspection is adequate to determine the amount of floatables. Floatables should be removed before they form a mat on the surface of the water.

The solids loading rate in the sump will be calculated by measuring the sediment depth in the sump and dividing the depth by the correlating interval of time since the sump was last cleaned. Similarly, starting with fresh Media Bags, the solids loading rate in the Media Packs will be calculated by weighing the Media Bags and dividing the weights by the correlating interval of time since they were installed. The wet weight of the heaviest bag will be used to determine the loading rate. As previously mentioned, a spent Media Bag weighs approximately 50 lbs (23 kg) wet. The spent Media Bag weight estimate was based on calculations of sediment loading in an Up-Flo® Filter that was run to exhaustion during laboratory testing.

The rate of oil accumulation will be calculated by measuring the thickness of the oil layer and dividing the thickness by the correlating interval of time since the sump was last cleaned. Ordinarily, oil thickness will not be measurable unless a spill has occurred. Consequently, any oil will typically be removed along with water when cleaning the sump.

Monitoring the Drain Down Filter for clogging, monitoring the Flow Distribution Media and Angled Screens for slime and debris, and monitoring the accumulation of floatables will provide an estimate of how long the Up-Flo® Filter can operate before its performance can become impaired by one of these factors.

Routine Inspection and Maintenance

After completion of the first year of operation, determining and then following the established inspection and maintenance intervals will keep pollutant loadings within their respective limits. Removal of oils and floatables, replacement of the Drain Down Filter, replacement of Flow Distribution Media (see Fig.9, pg 11), and cleaning of Angled Screens will occur at the same frequency as cleaning of the sump and replacement of Media Bags unless the first year of operation indicates otherwise. Keeping to the established maintenance intervals will keep treatment flow rates at, or above, the design flow rate. Typically, annual maintenance is adequate.

In addition to scheduled maintenance, occasional checks for Up-Flo® Filter clogging can be performed by removing the manhole cover during a storm, monitoring the water level in the manhole or vault, and determining whether the filter is in bypass. A properly-sized filter (on-line or off-line) that is in bypass during a storm that is producing runoff at, or below, the filter's design filtration rate needs maintenance.

DON'T WANT TO GO IT ALONE? CALL HYDRO AND WE'LL TAKE CARE OF INSPECTION, REPLACEMENT MEDIA AND CLEANOUT.

CALL 1 (888) 382-7808 FOR A QUOTE

INSPECTION & MAINTENANCE

ROUTINE INSPECTION

Inspection is a simple process that requires monitoring pollutant accumulations. Maintenance crews should be familiar with the Up-Flo® Filter and its components prior to inspection.

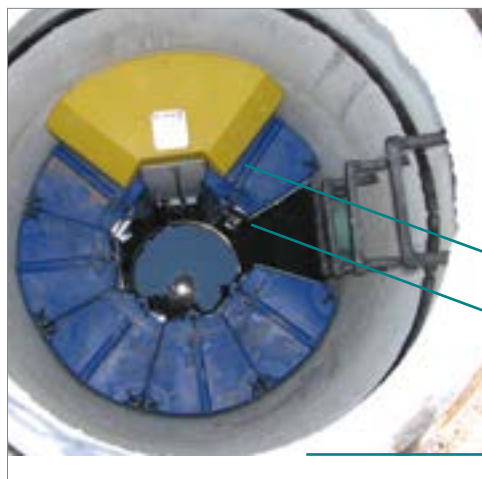
THE FOLLOWING INSTRUCTIONS ARE INTENDED FOR NON-HYDRO MAINTENANCE SERVICE PROVIDERS AND/OR THOSE INTENDING TO MAINTAIN THEIR OWN UP-FLO® FILTER:

SCHEDULING

- Inspection may be conducted during any season of the year but should occur shortly after a predicted rainfall to ensure components are operating properly.

NECESSARY EQUIPMENT

- Safety Equipment and Personal Protective Equipment (traffic cones, work gloves, etc.)
- Scale to measure the weight of the Media Bags
- Crow bar to remove grate or lid
- Pole with skimmer or net
- Sediment probe (such as a Sludge-Judge®)
- Hydro International Up-Flo® Filter Maintenance Log
- Trash bags for removed floatables



Bypass siphon sits evenly on Outlet Module.

Standing water level is no higher than the base of the Filter Module. The Drain Down Filter will be visible if the water level is correct.

Filter Module Lids are closed.

ROUTINE INSPECTION PROCEDURES

1. Set up any necessary safety equipment (such as traffic cones) to provide access to the Up-Flo® Filter. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the grate or lid to the manhole or vault.
3. Without entering the vessel, look down into the chamber to inspect the inside and to determine whether the high-water level indicator has been activated. Make note of any irregularities. See Fig.6 for a typical Inspection View.
4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the chamber.
5. Using a sediment probe such as a Sludge-Judge®, measure the depth of sediment that has collected in the sump of the vessel. Maximum sediment depth is 16 inches (41 cm).
6. If the high-water level indicator has been activated after two consecutive storms, remove the Filter Module lid by turning the cam latch and remove the Filter Media Pack (*refer to page 11 Replacement Procedures*). Weigh the Media Bags from one or two modules. Media Bags should be replaced if the wet weight exceeds 40 lbs (18 kg).
7. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or a high standing water level (see Fig.6 for the standard standing water level).
8. Securely replace the grate or lid.
9. Remove safety equipment.
10. Contact Hydro International at (800) 848-2706 to discuss any irregularities noted during inspection.

Fig.6 Inspection view of the Up-Flo® Filter.

ROUTINE MAINTENANCE

Maintenance activities are grouped into two categories:

- **Activities *Not Requiring Man Entry Into the Up-Flo® Filter***
These activities include floatables removal, oil removal and removal of sediment from the sump.
- **Activities *Requiring Man Entry Into the Up-Flo® Filter***
Media Pack replacement and Drain Down Filter replacement.

Maintenance intervals are determined from monitoring the Up-Flo® Filter during its first year of operation. Depending on the site, some maintenance activities may have to be performed on a more frequent basis than others. In the case of floatables removal, a vactor truck is not required. Floatables and loose debris can be netted with a skimmer and pole.

A vactor truck is normally required for oil removal, removal of sediment from the sump, and to dewater the vessel for replacement of the Media Packs and Drain Down Filter (Fig.7). All inspection and maintenance activities would be recorded in an Inspection and Maintenance Log.

Completion of all the maintenance activities for a typical 4-ft (1.2m) diameter manhole installation takes less than one hour. Approximately 360 gallons of water and up to 0.6 yd³ (0.5 m³) of sediment may be removed in the process. In an installation equipped with six Filter Modules, 12 Media Bags (2 bags per module) would be removed and replaced. Assuming a spent Media Bag weight of 50 lbs (23 kg), up to 600 lbs (272 kg) of spent Media Bags would be removed. All consumables, including Media Bags, Flow Distribution Media, and replacement Drain Down Filters are supplied by Hydro International.

The access port located at the top of the manhole provides unobstructed access for a vactor hose and/or skimmer pole to be lowered to the base of the sump.

MAINTENANCE ACTIVITIES NOT REQUIRING MAN ENTRY

These activities include floatables removal, oil removal and removal of sediment from the sump.

SCHEDULING

- Floatables and sump cleanout may typically be done during any season of the year - before and after rainy season
- Floatables and sump cleanout should occur as soon as possible following a contaminated spill in the contributing drainage area

RECOMMENDED EQUIPMENT

- Safety Equipment (traffic cones, etc)
- Crow bar to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge-Judge®)
- Vactor truck (flexible hose preferred)
- Pressure nozzle attachment or other screen-cleaning device

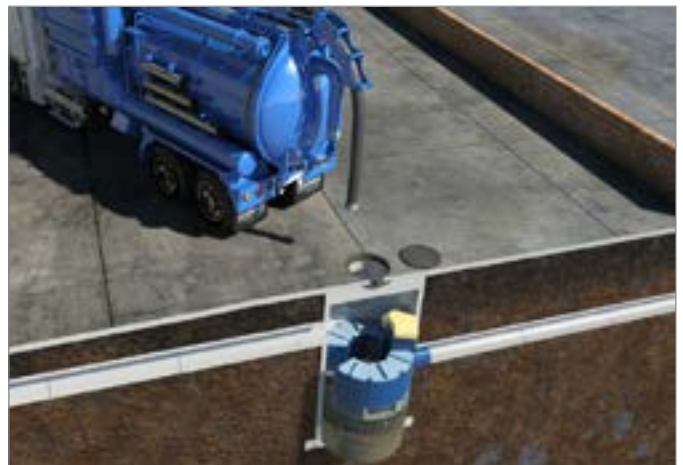


Fig.7 Sediment is removed from the sump with a vactor hose. Man entry is not required for this step.

NO MAN ENTRY REQUIRED: FLOATABLES, OIL AND SEDIMENT:

1. Set up any necessary safety equipment (such as traffic cones) around the access of the Up-Flo® Filter. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the grate or lid to the manhole or vault.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
4. If the standing water level in the sump is above the base of the Filter Modules (see Fig.8), tug the Pull Chain(s) to release the Drain Down Filter plug(s). Allow the excess water to drain out of the chamber.
5. Use the skimmer pole to fit the Drain Down Filter plug back into the open port.
6. Once all floatables and oil have been removed, drop the vactor hose to the base of the sump. Vactor out the sediment and gross debris from the sump floor. Up to 0.3 yd³ (0.2 m³) of sediment and 360 gallons (1,363 L) of water will be removed from a typical manhole Up-Flo® Filter during this process.
7. Retract the vactor hose from the vessel.
8. Inspect the Angled Screens for blockages and ragging. If present, remove the obstruction or ragging materials from the surface using a hose or other screen-cleaning device.
9. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables, oils, and gross debris removed, and the depth of sediment measured. Note any apparent irregularities such as damaged components or blockages.
10. Securely replace the grate or lid. Remove safety equipment.
11. Dispose of sediment and gross debris following local regulations.
12. Dispose of oil and sump water at a licensed water treatment facility or following local regulations.
13. Contact Hydro International at (800) 848-2706 to discuss any irregularities noted during cleanup.

These activities include replacement of the Media Packs and Drain Down Filter.

Unless the Up-Flo® Filter has been installed as a very shallow unit, it is necessary to have an OSHA-confined space entry trained person enter the vessel to replace Media Packs.

The access port located at the top of the manhole or vault provides access to the Up-Flo® vessel for maintenance personnel to enter the vessel and remove and replace Media Packs. The same access would be used for maintenance personnel working from the surface to net or skim debris and floatables or to vactor out sediment, oil, and water. Unless the Up-Flo® Filter has been installed in a very shallow configuration, it is necessary to have personnel with OSHA Confined Space Entry training performing the maintenance that occurs inside the vessel.

SCHEDULING

- Call Hydro International to order replacement Media Packs and Drain Down Filter prior to scheduling maintenance.
- Because Media Pack replacement requires entry into the Up-Flo® chamber, maintenance events should be scheduled during dry weather.
- Media Pack replacement should occur immediately after a contaminated spill in the contributing drainage area.

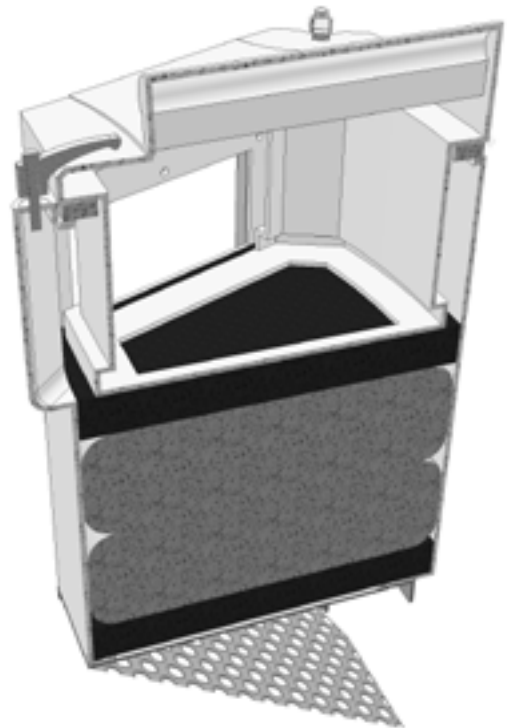


Fig.8 Cutaway view of the Filter Module

MAINTENANCE ACTIVITIES REQUIRING MAN ENTRY

Recommended Equipment

- Safety Equipment (traffic cones, etc.)
- Crow bar to remove grate or lid
- Pole with skimmer or net (if floatables removal is not to be done with vactor hose)
- Sediment probe (such as a Sludge-Judge®)
- Vactor truck (flexible hose preferred)
- OSHA Confined Space Entry Equipment
- Up-Flo® Filter Replacement Media Packs (available from Hydro International)
- Hydro International Up-Flo® Filter Maintenance Log
- Screwdriver (flat head)
- Replacement Drain Down Filter components supplied by Hydro International

Man Entry Required: Media Pack and Drain Down Filter

1. Follow Floatables and Sump Cleanout Procedures, 1 – 13.
2. Following OSHA Confined Space Entry procedures, enter the

Up-Flo® Filter Chamber.

3. Open the Filter Module by turning the three cam latches on the front and sides of the module. Remove the lid **1** to gain access to the Media Pack (Fig.9).
4. Remove and discard the spent Media Pack. The Media Pack contents include:
 - A top layer of **A** Flow Distributing Sheets
 - Two (2) Media Bags **B** equipped with nylon handles.
 - A bottom layer of **A** Flow Distributing Media.
5. Insert a new Media Pack, supplied by Hydro International.
 - First, insert a bottom layer of green Flow Distributing Media. Be sure that the media sits snugly and level at the bottom of the Filter Module.
 - Next, insert the first of two (2) replacement Media Bags. Smooth the bag out with your hands to make sure that the bag extends snugly to the walls and corners of the Filter Module.
 - Insert the second Media Bag, following the same procedure.
 - Insert the top layer of green Flow Distributing Media.

1. Filter Module Cover and Media Restraint

2. Replaceable Media Pack:

- a) Flow distribution sheets
- b) Filter Media Bags

3. Cam Latch

4. Conveyance Channel

5. Filter Module

6. Support Bracket / Angled Screen

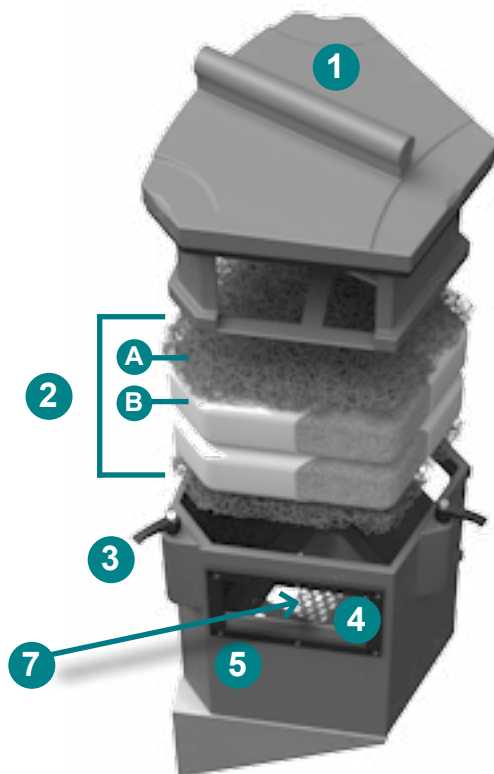


Fig.9 The Filter Module houses the Media Restraint and the Media Pack.

Be sure that the piece fits snugly against the walls and corners of the Filter Module.

- Put the lid on and secure the three latches. Check to make sure that the latches are closed properly.

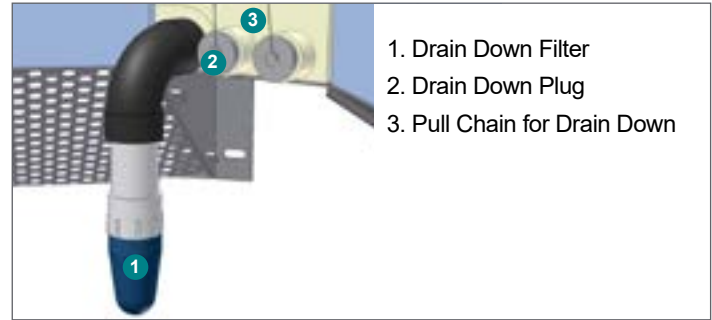
6. Use a screwdriver to unscrew the Drain Down Filter from the face of the Outlet Module (see Fig.10). **DO NOT DISCARD THIS PIECE.**

7. Install new Drain Down Filter supplied by Hydro International.

8. Exit the Up-Flo® Filter chamber and securely replace the grate ___ or lid.

9. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables, oil and gross debris removed, and the depth of sediment measured. Note the number of Media Packs replaced. Note any irregularities such as damaged components or blockages.

Fig.10 The Drain Down Filter.



10. Remove safety equipment.

11. Dispose of spent media packs at your local landfill, following local regulations.

12. Return the spent Drain Down Filter to Hydro International.

13. Contact Hydro International to discuss any irregularities noted during annual maintenance.

Solids Disposal

Sediment, floatables, gross debris, and spent Media Bags can generally be disposed of at the local landfill in accordance with local regulations. The toxicity of the residues captured will depend on the activities in the contributing drainage area, and testing of the residues may be required if they are considered potentially hazardous.

Sump water can generally be disposed of at a licensed water treatment facility but the local sewer authority should be contacted for permission prior to discharging the liquid. Significant accumulations of oil removed separately from sump water should be transported to a licensed hazardous waste treatment facility for treatment or disposal. **In all cases, local regulators should be contacted about disposal requirements.**

MAINTENANCE AT A GLANCE

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Floatables/Oils Removal	- Twice per year or as needed - Following a contaminated spill in the drainage area
Sediment Removal	- Every six to 12 months, depending on the Up-Flo® Filter Configuration - The maximum allowable sediment depth in any Up-Flo Filter configuration is 16 inches (41 cm) - Following a contaminated spill in the drainage area
Media Pack Replacement	- Once per year - Replacement is required anytime inspection reveals that the high-water level indicator has been activated after two consecutive storms and the subsequent weighing of the Media Bags shows a wet weight greater than 40 lbs - Following a contaminated spill in the drainage area
Drain Down Filter Replacement	- Once per year with Media Pack replacement - Replacement is required anytime inspection reveals that the water level inside the vessel has not reached a level equal with the base of the Filter Modules approximately 36 hours after a 1-inch (2.5 cm) rainfall - As needed, in the event of continuous base flow conditions

UP-FLO® FILTER INSTALLATION LOG



SITE REFERENCE NAME OR NUMBER FOR THIS UP-FLO® FILTER LOCATION:	
SITE NAME:	
SITE LOCATION:	
OWNER:	SITE CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

CONFIGURATION (CIRCLE ONE): MANHOLE VAULT SYSTEM

TOTAL NUMBER OF UP-FLO® FILTER MODULES: _____



UP-FLO® FILTER INSPECTION LOG

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions*: _____
 *(Stable, Under Construction, Needing Maintenance, etc.)

Inspection Frequency Key: A=annual; M=monthly; S=after major storms

Inspection Items	Inspection Frequency	Inspected? (Yes/No)	Maintenance Needed? (Yes/No)	Comments/Description
Debris Removal				
Adjacent area free of debris?	M			
Inlets and Outlets free of debris?	M			
Facility (internally) free of debris?	M			
Vegetation				
Surrounding area fully stabilized? (no evidence of eroding material into Up-Flo® Filter)	A			
Grass mowed?	M			
Water retention where required				
Water holding chamber(s) at normal pool?	A			
Evidence of erosion?	A			
Sediment Deposition				
Filtration Chamber free of sediments?	A			
Sedimentation sump not more than 50% full?	A			
Structural Components				
Any evidence of structural deterioration?	A			
Grates in good condition?	A			
Spalling or cracking of structural parts?	A			
Outlet/Overflow Spillway	A			
Other				
Noticeable odors?	A			
Any evidence of filter(s) clogging?	M			
Evidence of flow bypassing facility?	A			



Inspector Comments: _____

Overall Condition of Up-Flo® Filter**: ☐ Acceptable ☐ Unacceptable

***"Acceptable" would mean properly functioning; "unacceptable" would mean damaged or required further maintenance.*

If any of the above Inspection Items are checked "Yes" for "Maintenance Needed", list Maintenance actions and their completion dates below or on the Maintenance Log provided on page 15 of the Up-Flo® Filter Operation & Maintenance Manual:

Maintenance Action Needed	Due Date

The next routine inspection is schedule for approximately: (date) _____

Inspected by: (signature) _____

Inspected by: (printed) _____



UP-FLO® FILTER MAINTENANCE LOG

Site Name: _____ Owner Change since last inspection? Y N

Location: _____

Owner Name: _____

Address: _____ Phone Number: _____

Site Status: _____

Date: _____ Time: _____ Site conditions: _____
**(Stable, Under Construction, Needing Maintenance, etc.)*

Estimated volume of oil/floatable trash removed: _____

Sediment depth measured in sump prior to removal: _____

Number of Filter Modules fitted with new media packs: _____

Inspector Comments: _____

Overall Condition of Up-Flo® Filter: ☐ Acceptable ☐ Unacceptable

***"Acceptable" would mean properly functioning; "unacceptable" would mean damaged or required further maintenance.*

Maintained by: (signature) _____

Maintained by: (printed) _____

Stormwater Solutions

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Portland, ME 04102

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Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

www.hydro-int.com

Turning Water Around...®

UFF_OM_CPZ_E_2204

Appendix I

NYSDEC Standards and Specifications for Erosion and Sediment

STANDARD AND SPECIFICATIONS FOR COMPOST FILTER SOCK



to control areas less than 0.25 acres.

3. The flat dimension of the sock shall be at least 1.5 times the nominal diameter.
4. The **Maximum Slope Length** (in feet) above a compost filter sock shall not exceed the following limits:

Dia. (in.)	Slope %						
	2	5	10	20	25	33	50
8	225*	200	100	50	20	—	—
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50

* Length in feet

Definition & Scope

A **temporary** sediment control practice composed of a degradable geotextile mesh tube filled with compost filter media to filter sediment and other pollutants associated with construction activity to prevent their migration offsite.

Condition Where Practice Applies

Compost filter socks can be used in many construction site applications where erosion will occur in the form of sheet erosion and there is no concentration of water flowing to the sock. In areas with steep slopes and/or rocky terrain, soil conditions must be such that good continuous contact between the sock and the soil is maintained throughout its length. For use on impervious surfaces such as road pavement or parking areas, proper anchorage must be provided to prevent shifting of the sock or separation of the contact between the sock and the pavement. Compost filter socks are utilized both at the site perimeter as well as within the construction areas. These socks may be filled after placement by blowing compost into the tube pneumatically, or filled at a staging location and moved into its designed location.

Design Criteria

1. Compost filter socks will be placed on the contour with both terminal ends of the sock extended 8 feet upslope at a 45 degree angle to prevent bypass flow.
2. Diameters designed for use shall be 12" – 32" except that 8" diameter socks may be used for residential lots



5. The compost infill shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content. When using compost filter socks adjacent to surface water, the compost should have a low nutrient value.**
6. The compost filter sock fabric material shall meet the minimum requirements provided in Table 5.1 - Compost Sock Fabric Minimum Specifications Table.

7. Compost filter socks shall be anchored in earth with 2" x 2" wooden stakes driven 12" into the soil on 10 foot centers on the centerline of the sock. On uneven terrain, effective ground contact can be enhanced by the placement of a fillet of filter media on the disturbed area side of the compost sock.
8. All specific construction details and material specifications shall appear on the erosion and sediment control constructions drawings when compost filter socks are included in the plan.
3. Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired in the manner required by the manufacturer or replaced within 24 hours of inspection notification.
4. Biodegradable filter socks shall be replaced after 6 months; photodegradable filter socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.
5. Upon stabilization of the area contributory to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed in accordance with the stabilization plan. For removal the mesh can be cut and the compost spread as an additional mulch to act as a soil supplement.

Maintenance

1. Traffic shall not be permitted to cross filter socks.
2. Accumulated sediment shall be removed when it reaches half the above ground height of the sock and disposed of in accordance with the plan.

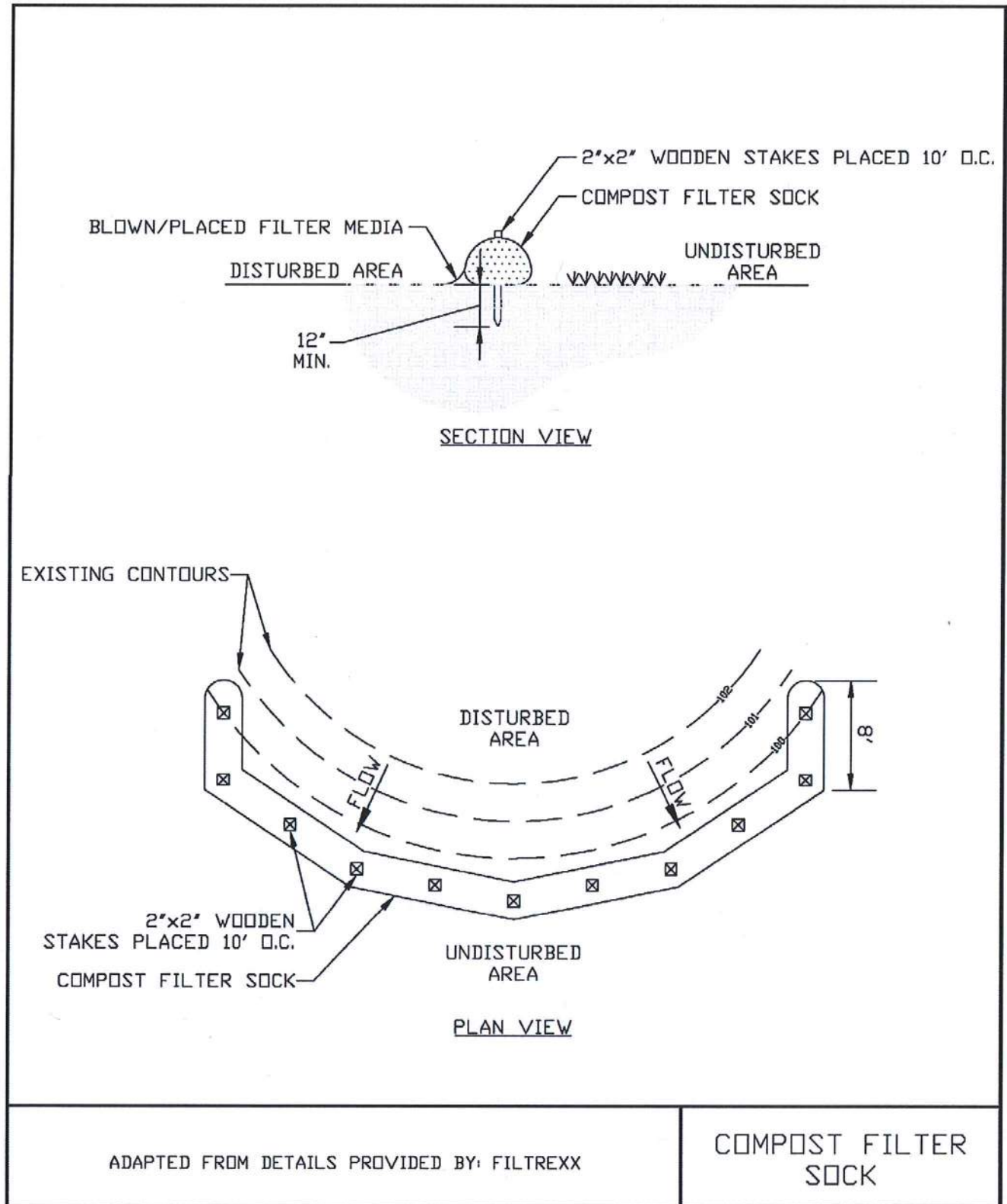
Table 5.1 - Compost Sock Fabric Minimum Specifications Table

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photodegradable	Photodegradable	Biodegradable	Photodegradable	Photodegradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

Table 5.2 - Compost Standards Table

Organic matter content	25% - 100% (dry weight)
Organic portion	Fibrous and elongated
pH	6.0 - 8.0
Moisture content	30% - 60%
Particle size	100% passing a 2" screen and 10 - 50% passing a 3/8" screen
Soluble salt concentration	5.0 dS/m (mmhos/cm) maximum

Figure 5.2
Compost Filter Sock



STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ACCESS



Definition & Scope

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area. The purpose of stabilized construction access is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

Conditions Where Practice Applies

A stabilized construction access shall be used at all points of construction ingress and egress.

Design Criteria

See Figure 2.1 on page 2.31 for details.

Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.

Thickness: Not less than six (6) inches.

Width: 12-foot minimum but not less than the full width of points where ingress or egress occurs. 24-foot minimum if there is only one access to the site.

Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

Geotextile: To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single-family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

Criteria for Geotextile: The geotextile shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be

inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties ³	Light Duty ¹ Roads Grade Sub-grade	Heavy Duty ² Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Burst Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 Modified
Equivalent	40-80	40-80	US Std Sieve
Opening Size			CW-02215
Aggregate Depth	6	10	-

¹Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.

²Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.

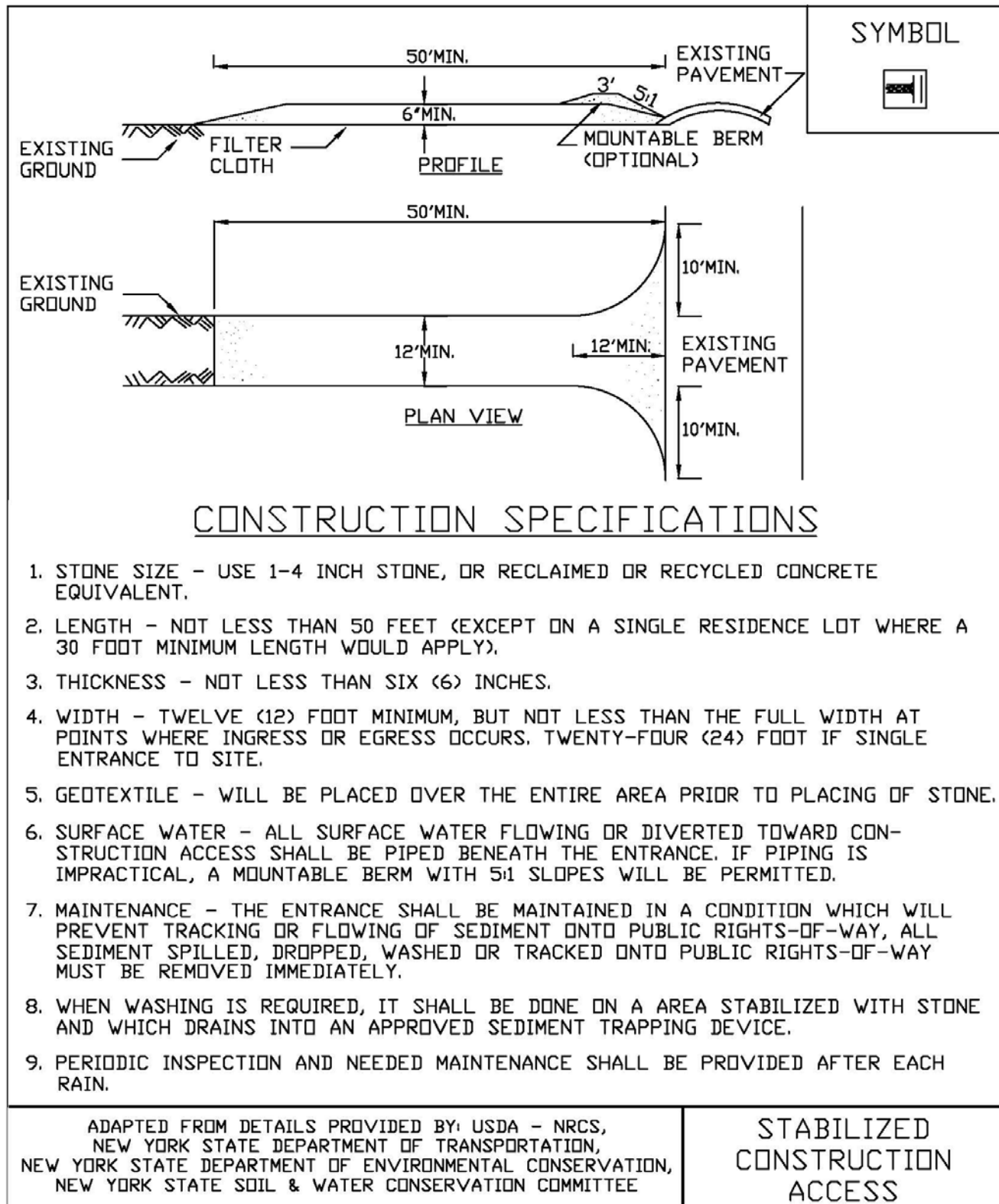
³Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

Maintenance

The access shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.

Figure 2.1
Stabilized Construction Access



STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION



Definition & Scope

A **temporary** barrier with low permeability, installed around inlets in the form of a fence, berm or excavation around an opening, detaining water and thereby reducing the sediment content of sediment laden water by settling thus preventing heavily sediment laden water from entering a storm drain system.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a trapping device, and watertight blocking of inlets is not advisable. **It is not to be used in place of sediment trapping devices.** This practice shall be used with an upstream buffer strip if placed at a storm drain inlet on a paved surface. It may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with low slope angle.

Types of Storm Drain Inlet Practices

There are five (5) specific types of storm drain inlet protection practices that vary according to their function, location, drainage area, and availability of materials:

- I. Excavated Drop Inlet Protection
- II. Fabric Drop Inlet Protection
- III. Stone & Block Drop Inlet Protection
- IV. Paved Surface Inlet Protection
- V. Manufactured Insert Inlet Protection

Design Criteria

Drainage Area – The drainage area for storm drain inlets shall not exceed one acre. Erosion control/temporary stabilization measures must be implemented on the disturbed

drainage area tributary to the inlet. The crest elevations of these practices shall provide storage and minimize bypass flow.

Type I – Excavated Drop Inlet Protection

This practice is generally used during initial overlot grading after the storm drain trunk line is installed.

Limit the drainage area to the inlet device to 1 acre. Excavated side slopes shall be no steeper than 2:1. The minimum depth shall be 1 foot and the maximum depth 2 feet as measured from the crest of the inlet structure. Shape the excavated basin to fit conditions with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency. The capacity of the excavated basin should be established to contain 900 cubic feet per acre of disturbed area. Weep holes, protected by fabric and stone, should be provided for draining the temporary pool.

Inspect and clean the excavated basin after every storm. Sediment should be removed when 50 percent of the storage volume is achieved. This material should be incorporated into the site in a stabilized manner.

Type II – Fabric Drop Inlet Protection



This practice is generally used during final elevation grading phases after the storm drain system is completed.

Limit the drainage area to 1 acre per inlet device. Land area slope immediately surrounding this device should not exceed 1 percent. The maximum height of the fabric above the inlet crest shall not exceed 1.5 feet unless reinforced.

The top of the barrier should be maintained to allow overflow to drop into the drop inlet and not bypass the inlet to

unprotected lower areas. Support stakes for fabric shall be a minimum of 3 feet long, spaced a maximum 3 feet apart. They should be driven close to the inlet so any overflow drops into the inlet and not on the unprotected soil. Improved performance and sediment storage volume can be obtained by excavating the area.

Inspect the fabric barrier after each rain event and make repairs as needed. Remove sediment from the pool area as necessary with care not to undercut or damage the filter fabric. Upon stabilization of the drainage area, remove all materials and unstable sediment and dispose of properly. Bring the adjacent area of the drop inlet to grade, smooth and compact and stabilize in the appropriate manner to the site.

Type III – Stone and Block Drop Inlet Protection

This practice is generally used during the initial and intermediate overlot grading of a construction site.

Limit the drainage area to 1 acre at the drop inlet. The stone barrier should have a minimum height of 1 foot and a maximum height of 2 feet. Do not use mortar. The height should be limited to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Subsequent courses can be supported laterally if needed by placing a 2x4 inch wood stud through the block openings perpendicular to the course. The bottom row should have a few blocks oriented so flow can drain through the block to dewater the basin area.

The stone should be placed just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth of wire mesh with ½ inch openings over all block openings to hold stone in place.

As an optional design, the concrete blocks may be omitted and the entire structure constructed of stone, ringing the outlet (“doughnut”). The stone should be kept at a 3:1 slope toward the inlet to keep it from being washed into the inlet. A level area 1 foot wide and four inches below the crest will further prevent wash. Stone on the slope toward the inlet should be at least 3 inches in size for stability and 1 inch or smaller away from the inlet to control flow rate. The elevation of the top of the stone crest must be maintained 6 inches lower than the ground elevation down slope from the inlet to ensure that all storm flows pass over the stone into the storm drain and not past the structure. Temporary diking should be used as necessary to prevent bypass flow.

The barrier should be inspected after each rain event and repairs made where needed. Remove sediment as necessary to provide for accurate storage volume for subsequent rains. Upon stabilization of contributing drainage area, remove all

materials and any unstable soil and dispose of properly.

Bring the disturbed area to proper grade, smooth, compact and stabilize in a manner appropriate to the site.

Type IV – Paved Surface Inlet Protection



This practice is generally used after pavement construction has been done while final grading and soil stabilization is occurring. These practices should be used with upstream buffer strips in linear construction applications, and with temporary surface stabilization for overlot areas, to reduce the sediment load at the practice. This practice includes sand bags, compost filter socks, geo-tubes filled with ballast, and manufactured surface barriers. Pea gravel can also be used in conjunction with these practices to improve performance. When the inlet is not at a low point, and is offset from the pavement or gutter line, protection should be selected and installed so that flows are not diverted around the inlet.



The drainage area should be limited to 1 acre at the drain inlet. All practices will be placed at the inlet perimeter or beyond to maximize the flow capacity of the inlet. Practices shall be weighted, braced, tied, or otherwise anchored to prevent movement or shifting of location on paved surfaces. Traffic safety shall be integrated with the use of this practice. All practices should be marked with traffic safety cones as appropriate. Structure height shall not cause flooding or by-pass flow that would cause additional erosion.

The structure should be inspected after every storm event. Any sediment should be removed and disposed of on the site. Any broken or damaged components should be replaced. Check all materials for proper anchorage and secure as necessary.

Type V - Manufactured Insert Inlet Protection



The drainage area shall be limited to 1 acre at the drain inlet. All inserts will be installed and anchored in accordance with the manufacturers recommendations and design details. The fabric portion of the structure will equal or exceed the performance standard for the silt fence fabric. The inserts will be installed to preserve a minimum of 50 percent of the open, unobstructed design flow area of the storm drain inlet opening to maintain capacity for storm events.

Figure 5.31
Excavated Drop Inlet Protection

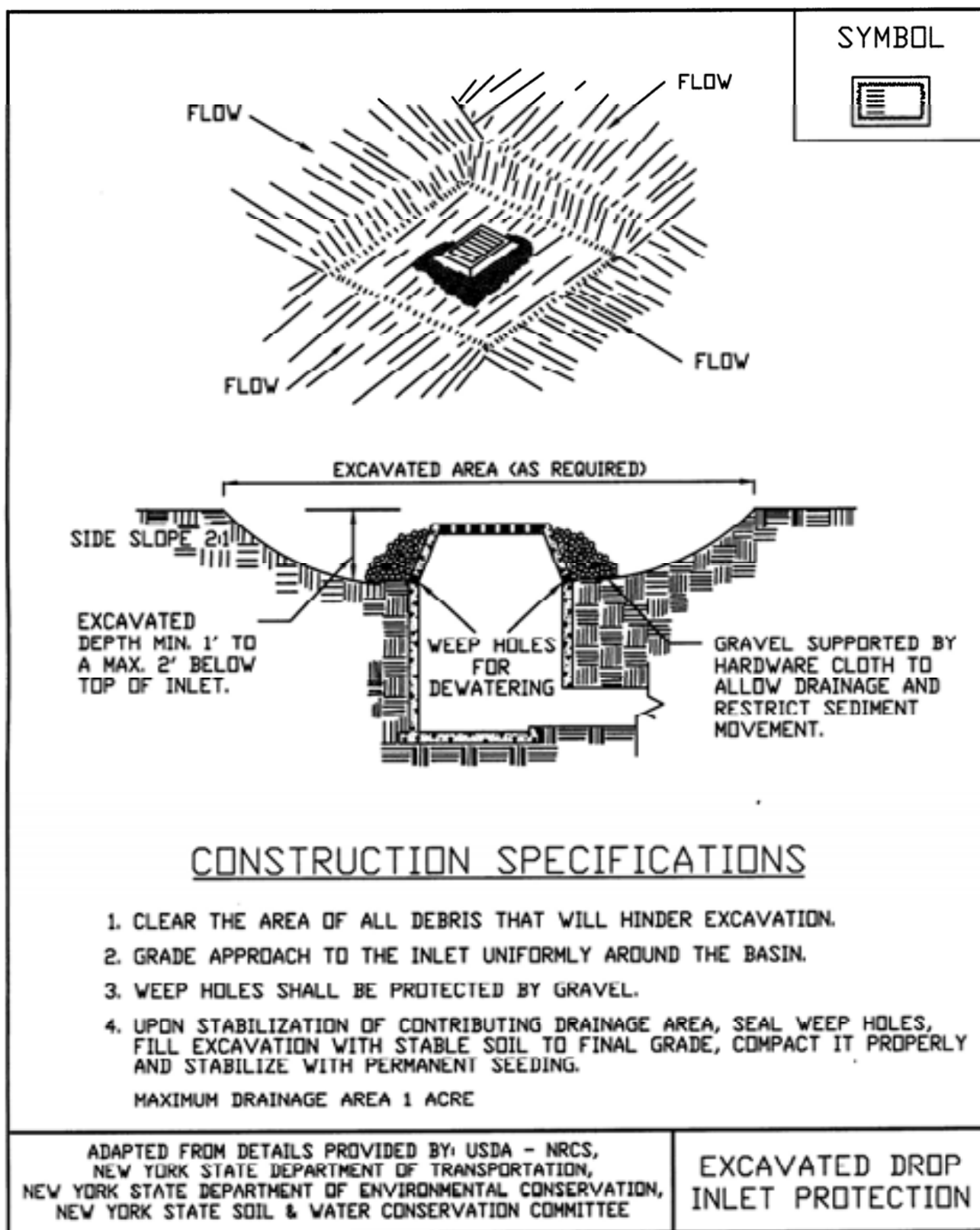


Figure 5.32
Fabric Drop Inlet Protection

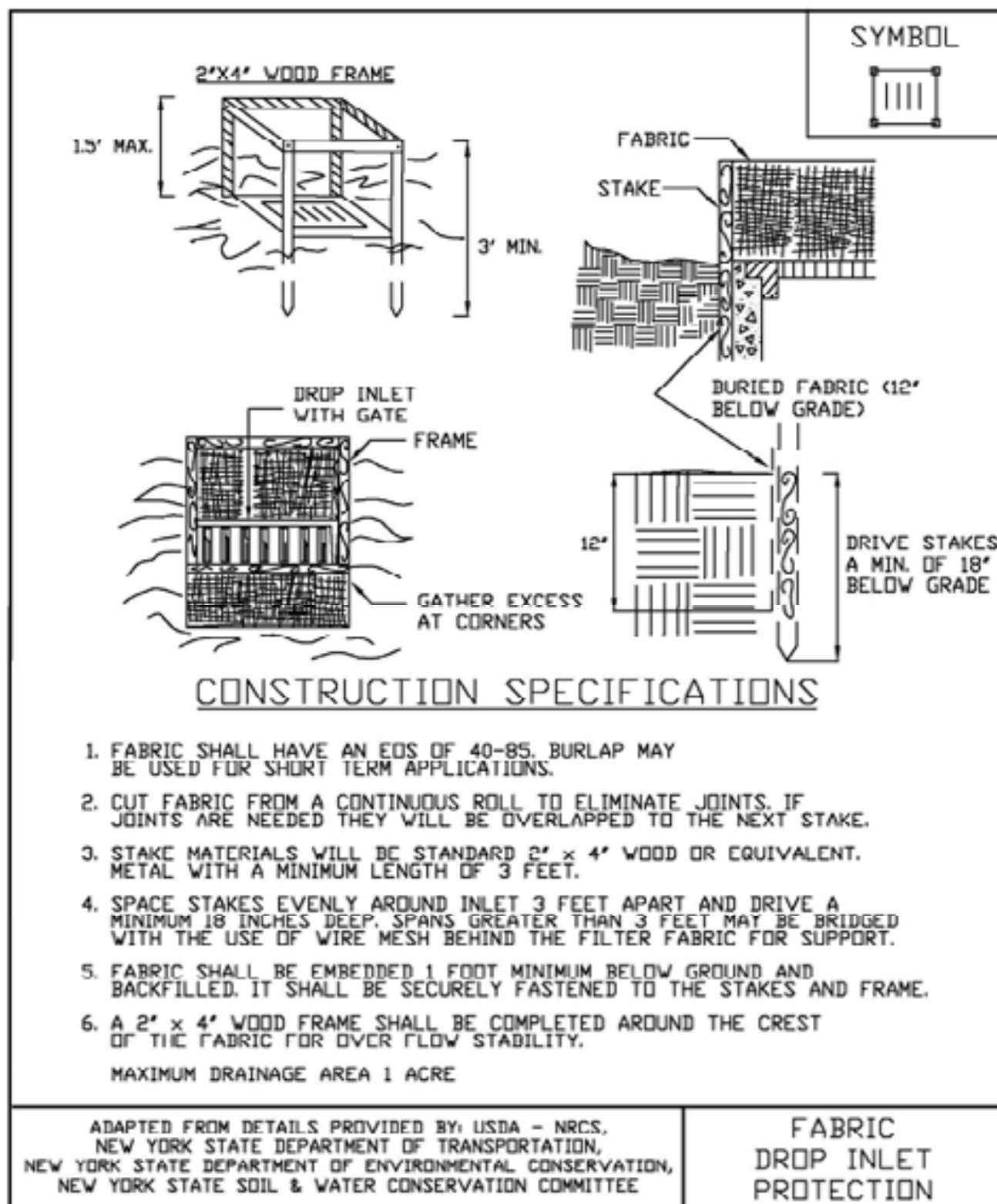
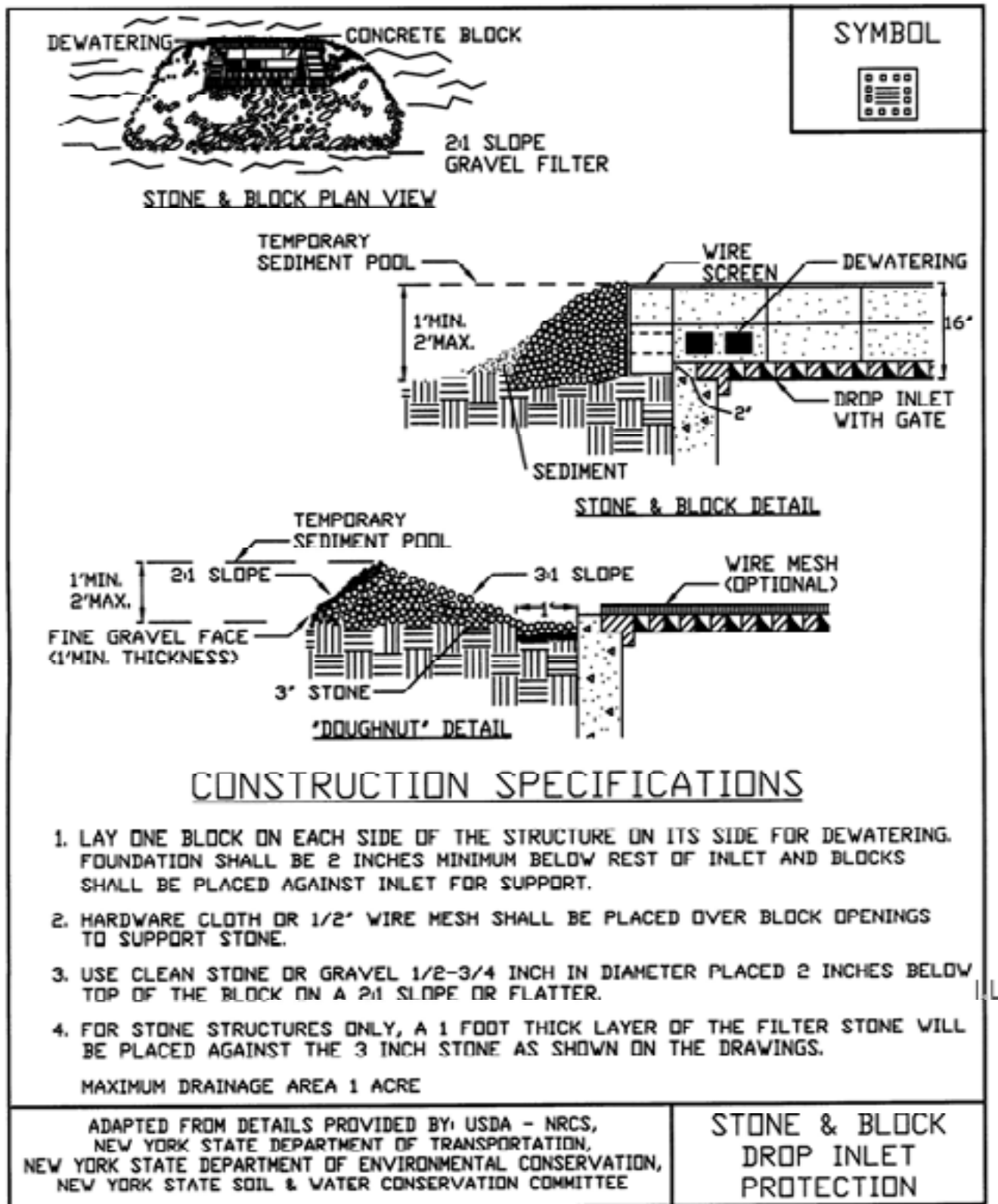


Figure 5.33
Stone & Block Drop Inlet Protection



STANDARD AND SPECIFICATIONS FOR CONCRETE TRUCK WASHOUT



Definition & Scope

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soil.

Conditions Where Practice Applies

Washout facilities shall be provided for every project where concrete will be poured or otherwise formed on the site. This facility will receive highly alkaline wash water from the cleaning of chutes, mixers, hoppers, vibrators, placing equipment, trowels, and screeds. Under no circumstances will wash water from these operations be allowed to infiltrate into the soil or enter surface waters.

Design Criteria

Capacity: The washout facility should be sized to contain solids, wash water, and rainfall and sized to allow for the evaporation of the wash water and rainfall. Wash water shall be estimated at 7 gallons per chute and 50 gallons per hopper of the concrete pump truck and/or discharging drum. The minimum size shall be 8 feet by 8 feet at the bottom and 2 feet deep. If excavated, the side slopes shall be 2 horizontal to 1 vertical.

Location: 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 structure except for the access road. Provide appropriate access with a gravel access road sloped down to the structure. Signs shall be placed to direct drivers to the facility after their load is discharged.

Liner: All washout facilities will be lined to prevent

leaching of liquids into the ground. The liner shall be plastic sheeting with a minimum thickness of 10 mils with no holes or tears, and anchored beyond the top of the pit with an earthen berm, sand bags, stone, or other structural appurtenance except at the access point.

If pre-fabricated washouts are used they must ensure the capture and containment of the concrete wash and be sized based on the expected frequency of concrete pours. They shall be sited as noted in the location criteria.

Maintenance

- All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Excess rainwater that has accumulated over hardened concrete should be pumped to a stabilized area, such as a grass filter strip.
- Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess wash water shall be pumped into a containment vessel and properly disposed of off site.
- Dispose of the hardened material off-site in a construction/demolition landfill. On-site disposal may be allowed if this has been approved and accepted as part of the projects SWPPP. In that case, the material should be recycled as specified, or buried and covered with a minimum of 2 feet of clean compacted earthfill that is permanently stabilized to prevent erosion.
- The plastic liner shall be replaced with each cleaning of the washout facility.
- Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.



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