STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

FOR

Winn Construction Services
Warehouse Building

00 Route 5S
Florida, New York

January 2026
~~October 2025~~

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SWPPP Certification Requirements

Definitions: For additional definitions of terms and phrases used in this document refer to Pages 55-63 of GP-0-25-001 SPDES General Permit for Stormwater Discharges from Construction Activity. GP-0-25-001 is included as Appendix D of this document.

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.

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.

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.

Excerpt from GP-0-25-001 Part III A.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:

SWPPP Certification

"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"

Contractor Information

Contractor: _____

Address: _____

Phone: _____

Fax: _____

Elements of SWPPP: _____

_____

Trained Contractor

Name: _____

Title: _____

Company Officer

Name: _____

Title: _____

Signature: _____ Date: _____

Site Information

Address: _____

_____

1.0 PROJECT BACKGROUND

1.1 Introduction

The purpose of this report is to describe the methods that will be utilized to provide Stormwater Management for the proposed Winn Construction Warehouse at 00 Route 5S, Town of Florida, New York. This project proposes to disturb more than one (1) acre of land, as such the project is within the jurisdiction of the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 and the NYSDEC Stormwater Design Manual (SWDM). The analysis and design that follows complies with the requirements of this permit.

1.2 Site Characteristics

The project site is located at 00 Route 5S, Town of Florida, New York, approximately 1,600 feet east of Fort Hunter Road and approximately 12,000 feet west of Broadway Extended. The parcel, tax map number 54.-2-2.31, has an existing area of ±555,752 sq. ft. (±12.75 acres) and is currently agricultural fields. The site is located within the Town's Industrial Business Park (IBP) Zoning District. Developed industrial properties exist on the east of the site, residential homes to the east and west, woodlands to the north, and Route 5S and residential homes to the south.

1.2.1 Topography and Drainage Patterns

The site generally slopes northwest to an off-site drainage way.

1.2.2 Wetlands, Waterbodies, Ecology, and Archaeology

A small, 3,601 square-foot wetland was identified on-site by a trained wetland biologist. In a letter dated September 4, 2025 from NYSDEC this wetland was deemed to not be jurisdictional to NYSDEC. It is assumed the wetland would fall under ACOE jurisdiction.

No other waterbodies have been observed or identified on the project site.

1.2.3 Soils

The United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) National Cooperative Soil Survey identifies the following soil type within the analyzed drainage area(s):

Darien Silt Loam, 8 to 15% Slopes (DaB)

Hydrologic Soil Group (HSG):	C/D
Depth to restrictive feature:	More than 80 inches
Drainage class:	Somewhat poorly drained
Depth to water table:	6 to 12 inches
Typical profile: 0 to 7 inches:	Silt loam

	7 to 10 inches:	Silt loam
	10 to 31 inches:	Channery Sily clay loam
	31 to 60 inches:	Channery Sily clay loam

Lansing Silt Loam, 8 to 15% slopes (LaC)

Hydrologic Soil Group (HSG):		B
Depth to restrictive feature:		More than 80 inches
Drainage class:		Well drained
Depth to water table:		More than 80 inches
Typical profile:	0 to 8 inches:	Silt loam (Ap)
	8 to 13 inches:	Gravelly silt loam (E)
	13 to 21 inches:	Gravelly Silt Loam (Bt/E)
	21 to 28 inches:	Gravelly Silt Loam (Bt1)
	28 to 39 inches:	Gravelly Silt Loam (Bt2)
	39 to 79 inches:	Gravelly Silt Loam(C)

The above referenced soils are present within the subject drainage area(s) in the following quantities:

Soil Name and Symbol	HSG	% of Site Soils
Darien Silt Loam, 8 to 15% slopes (DaB)	C/D	89.43%
Lansing Silt Loam, 8 to 15% slopes (WnA)	B	10.57%

1.2.4 Existing Utilities

Municipal water and sewer are available at the right-of-way. Electric and telecom are also available.

1.3 Proposed Project

The project proposes to construct two single-story steel-framed buildings. The warehouse will be a 14,300 square foot building with associated parking and loading areas. The office building will be a 4,000 square foot building with associated parking. Additional improvements include associated stormwater management facilities and incidental utilities.

2.0 EROSION AND SEDIMENT CONTROL

The proposed project described above shall comply with the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activities, Permit No. GP-0-25-001. The following section of this report outlines and details the structures and techniques utilized to minimize the transportation of sediments from the project site and to maintain the quality of nearby water resources.

2.1 Construction Phasing and Sequence of Operations

The foremost method to reduce sediment transport is limiting the area of disturb soils on a construction site. Whenever possible construction should proceed in narrowly defined phases at the end of which areas are stabilized

before proceeding to subsequent phases. Per SPDES permit requirements at no time shall site disturbances exceed five (5) acres at any one time without prior authorization of the NYSDEC or the authority having jurisdiction.

For a project specific phasing plan please refer to Appendix O, Erosion and Sediment Control Plans.

2.2 Erosion and Sediment Control Practices

2.2.1 Stabilized Construction Entrance

At a minimum one construction entrance shall be provided at the location shown on the Erosion and Sediment Control Plans. All construction related vehicles accessing the site shall enter and exit the site at this defined area. The entrance shall consist of a filter fabric laid on existing grade and covered with 1” – 4” stone.

2.2.2 Concrete Washout

A concrete washout area shall be installed and properly signed prior to the first scheduled pour. The concrete washout shall be cleaned when it reaches 50% of its capacity. All waste shall be removed and properly disposed. The liner shall be inspected after removing spoils for punctures or tears. Any maintenance require shall be performed before placing the washout back into service.

2.2.3 Inlet Protection (Insert Type)

Inlet protection shall be installed in all areas shown on the erosion and sediment control plans. To ensure proper operation of inlet protection is important that each device be inspected regularly. Collected sediment shall be removed and disposed of properly. Damaged devices shall be replaced as required.

2.2.4 Dust Control

If exposed soils begin to generated dust these areas shall be sprayed with water to suppress dust. Additionally, sodium chloride or similar products may be used with approval from the qualified professional and authorities having jurisdiction.

2.2.5 Topsoil, Seed, and Mulch

All disturbed, non-surfaced areas shall be stabilized by the application of topsoil, seed, and straw mulch or by utilizing an all-in-one product such as hydroseed that incorporates tackifier. Any area where final grade has been achieved or where construction activities have ceased for the next fourteen (14) calendar days shall be stabilized. Areas which have received topsoil and seed shall be inspected after rainfall events for rills or other signs of erosion and repaired or replaced as

required.

2.2.6 Silt Fence

Silt fence shall be installed in all areas shown on the erosion and sediment control plans. To ensure proper operation of silt fence it is important that all fabric is embedded a minimum of six (6) inches into the ground. Silt fence should not be installed on a slope or across defined drainageways. Silt fence shall be inspected regularly, collected sediment shall be removed and disposed of properly, and weak or downed areas reset as required.

2.2.7 Temporary Sediment Trap

Temporary sediment traps shall be used to detain water and aid in sediment removal and collection. Collected sediment shall be removed from the practice once it has reached 50% of the capacity of the sediment storage zone (refer to details). The contractor shall dewater the basin and remove and properly dispose of collected sediment prior to decommissioning the temporary sediment trap. Refer to Appendix H for sizing of temporary sediment trap and refer to Sheet C-503 of the site plans for details.

2.2.8 Perimeter Dikes and Swales

Perimeter dikes and swales shall be installed as required by the contractor to direct sediment-laden runoff to temporary sediment traps. These swales may be configured and reconfigured as required by current construction activities. Swales and dikes shall be installed so as to provide positive drainage toward an appropriate sediment trapping practice. At no time shall such swales discharge runoff off site prior to treatment.

2.3 Maintenance Inspection Schedule

Maintenance of erosion and sediment control practices is crucial to their effectiveness at minimizing sediment transport and preserving water quality. At a minimum all practices employed at any time shall be inspected by a *trained contractor* and *qualified professional* once every week. In addition, it is recommended that the *trained contractor* inspect all practices after any runoff producing rainfall event. Any deficiencies noted shall be remedied as soon as practical but not more than a week from the date identified.

If the *trained contractor* or *qualified professional* encounter repeated maintenance issues with any erosion control practice, additional or different erosion and sediment controls may be installed. Any practices employed must be installed in accordance with the requirements and recommendations in the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 or current version.

2.4 Construction Chemicals, Litter, and Debris

The contractor shall maintain at all times facilities for the proper storage and disposal of wastes, litter, and debris generated on-site. All waste materials shall be stored and disposed in compliance with all federal, state, and local laws. Daily inspections shall be conducted by the *trained contractor* to ensure that construction debris is appropriately managed and is not adversely affecting neighboring properties.

2.4.1 Materials

The materials or substances listed below are expected to be present onsite during construction activities. They represent potential pollutants, other than sediment, to storm water runoff:

Material Name	Chemical/Physical Description (1)	Storm Water Pollutants (1)
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or granular	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic
Fertilizer	Liquid or solid granules	Nitrogen, phosphorous
Asphalts	Black solid	Oil, petroleum distillates
Concrete	White solid	Limestone, sand
Curing compounds	Creamy white liquid	Polyethylene
Paints	Various colored liquid	Metal oxides, Stoddard solvent, talc, calcium carbonate, arsenic
Glue, adhesive	White or yellow	Polymers, epoxies
Wastewater from construction equipment washing	Water	Soil, oil & grease, solids
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil
Gasoline	Colorless, pale brown or pink liquid petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylenes, MTBE
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes
Antifreeze/coolants	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)
House construction debris	Wood, insulations, shingles, vinyl, cardboard, paper	Debris, garbage
Erosion	Solid particulates	Soil, sedimentation

(1) Data obtained from MSDS when available

2.4.2 Storage

All chemicals or petroleum products on site shall be stored in a manner compliant with all applicable federal, state, and local laws. Any spillage of chemicals or petroleum products on site shall be reported to the authorities having jurisdiction in accordance with their requirements. A spill cleanup kit shall be kept on site at all times and an individual familiar with its operation shall be present on-site.

The following measures will be implemented to prevent the discharge of solid materials to waters of the United States:

- Manufacturer's recommendations for proper use and disposal will be followed.
- The contractor will perform inspections based on the frequency outlined in the General Permit to ensure the proper storage, use, and disposal of materials.
- The contractor will arrange for all sanitary waste to be collected from portable toilet units by a licensed sanitary waste management operator or as required by local regulation.
- Pickups must be done on a regular basis. No burial or discharge of the sanitary waste may be conducted on-site.
- The contractor will be responsible for the removal and off-site disposal of all construction related debris in accordance with State and federal law. No on-site waste disposal will occur. Where the use of dumpsters is proposed, the Contractor must determine and apply specific measures to keep waste within the dumpsters from being intermixed with storm water, including closing the dumpsters and installing drain plugs.

Construction materials expected to be stored on-site are listed above. Procedures for the storage of these materials to minimize exposure of the materials to storm water are as follows:

- All materials stored on-site must be stored in a neat and orderly manner; in their appropriate containers. Materials that are hazardous or toxic such as paints, solvents, pesticides, fuels and oils should be stored under a roof or other enclosure if possible. Where cover is not available, all hazardous or toxic materials should be stored in a location with secondary containment.

- Materials will be kept in their original containers with the original manufacturer's label.
- Asphalt substances used on-site will be applied according to manufacturer's recommendations.
- Petroleum products will be stored in tightly sealed containers that are clearly labeled. The Contractor will inspect the staging areas based on the frequency outlined in the General Permit.

2.4.3 Equipment

The types of equipment typically used for this project will consist of track and rubber-tired diesel-powered vehicles (e.g., tracked hoes, front-end loaders, backhoes, graders, scrapers, bulldozers, and cranes), trucks, pumps, compressors, generators, and light vehicles. The following measures will be implemented:

- All equipment will be parked or operated within the approved and designated construction right-of-way or in staging areas.
- The contractor will monitor daily for leaking equipment. Equipment parked overnight will be inspected by the contractor and absorbent pads will be placed to catch all leaks, as necessary. If leaks are detected by the Environmental Inspector, the contractor will be notified and contaminated soil will be cleaned up immediately.
- Major equipment cleaning and maintenance will be conducted in the contractor's offsite construction yard(s), at commercial cleaning facilities, or at commercial repair shops.
- Refueling or servicing of vehicles and equipment, including minor maintenance such as oil changes or minor repairs for large equipment that cannot be easily moved, will be permitted on the construction site or right-of-way only as necessary. Any such work must be conducted at least 200 feet away from any drainage channel, wetland resource area and also outside of the 100-foot buffer zone.
- The maintenance location will be under cover and include secondary containment.
- Drip pans, drip cloths, or absorbent pads will be used when replacing spent fluids.
- Do NOT clean surfaces by hosing the areas down.
- Vehicle or equipment fueling, service, and maintenance will be conducted only by authorized trained personnel using approved pumps, hoses, and nozzles.
- Hoses, nozzles, connectors, and pumps used for fueling will be inspected regularly by trained personnel. Catch-pans or absorbent pads will be placed under vehicles or equipment to catch potential spills during refueling, servicing, or maintenance.
- Service trucks will be equipped with spill-containment equipment, and all spills will be cleaned up immediately.

2.5 Industrial Discharges

This project does not currently propose any individual industrial discharges.

2.6 Non-Conforming Elements

This project does not currently propose any deviations from the current technical standards provided by the NYSDEC.

3.0 STORMWATER MANAGEMENT PRACTICES

This project is required to provide post-construction stormwater management practices per Appendix B, Table 2 of the NYSDEC SPDES GP-0-25-001 permit. The following section presents the existing drainage conditions, proposed drainage conditions, and the methods and structures utilized to comply with federal, state, and local regulations. All structures proposed comply with the NYSDEC Stormwater Design Manual 2024, unless specifically stated otherwise.

3.1 Methodology

For purposes of identifying drainage patterns and estimating runoff rates and volumes, existing and proposed conditions were analyzed using HydroCAD 10.20-7a developed by HydroCAD Software Solutions, LLC. This computer software uses the TR-20 method developed by the Natural Resources Conservation Service (NRCS), a division of the United States Department of Agriculture (USDA).

Local rainfall data was obtained from the Northeast Regional Climate Center (NRCC) for all storm events analyzed.

3.2 Pre-Development Drainage Conditions

The pre-development watershed conditions are depicted in Appendix G, "Existing Drainage Conditions." As shown, the site is one (1) drainage area.

Drainage Area #1 (DA-1) consists of agricultural fields, wooded areas, a wetland, a residential property and a portion of NYS-5S. This area drains northwest towards a low point, DP-1. DA-1 has a total area of ±426,768 sq. ft., a composite curve number (CN) of 77, and a time of concentration (T_C) of 12.1 minutes.

Table 1
Pre-Development Runoff Rates

Discharge Point	1-year (2.18")		10-year (3.49")		25-year (4.23")		100-year (5.66")	
	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)
1	4.17	0.382	13.78	1.046	19.89	1.481	32.94	2.398

3.3 Post-Development Drainage Conditions

The post-development watershed conditions are depicted in Appendix G, "Proposed Drainage Conditions." As shown, the site is divided into one (1) drainage area comprised of several sub-catchments with a single Discharge Point (DP-1).

Sub-catchment SC-101 consists of lawn areas, wooded areas, a residential home, a wetland and a portion of NYS-5S. This area drains northwest towards, DP-1. SC-101 has a total area of ±222,850 sq. ft., a CN of 77, and a T_C of 13.6 minutes.

Sub-catchment SC-102 consists of Bioretention Area #1 (BR-1). SC-102 has a total area of ±7,495 sq. ft., a CN of 80, and a T_C of 6 minutes.

Sub-catchment SC-103 consists of a portion of the laydown area, adjacent lawn areas and the Retention Pond. This area drains northwest towards the Retention Pond, ultimately towards DP-1. SC-103 has a total area of ±44,336 sq. ft., a CN of 91, and a T_C of 6.0 minutes.

Sub-catchment SC-104 consists of the laydown and lawn areas. This area drains northwest via swale towards the Detention Pond. SC-104 has a total area of ±43,894 sq. ft., a CN of 91, and a T_C of 6.0 minutes.

Sub-catchment SC-105 consists of the laydown and lawn areas. This area drains north towards catch basin #1 which flows towards the Detention Pond. SC-105 has a total area of ±29,402 sq. ft., a CN of 93, and a T_C of 6.0 minutes.

Sub-catchment SC-106 consists of lawn areas, a portion of the driveway and laydown area. This area drains northwest towards catch basin #2 which flows to the Detention Pond. SC-106 has a total area of ±17,850 sq. ft., a CN of 90, and a T_C of 6.0 minutes.

Sub-catchment SC-107 consists of the building roof area. This area is directed to the Detention Pond via roof downspouts, roof leaders, catch basins and swales. SC-107 has a total area of ±4,000 sq. ft., a CN of 98, and a T_C of 6.0 minutes.

Sub-catchment SC-108 consists of the building roof area. This area is directed to the Detention Pond via roof downspouts, roof leaders and catch basins. SC-104 has a total area of ±7,150 sq. ft., a CN of 98, and a T_C of 6.0 minutes.

Sub-catchment SC-109 consists of the building roof area. This area is directed to the Detention Pond via roof downspouts, roof leaders and catch basins. SC-109 has a total area of ±3,575 sq. ft., a CN of 98, and a T_C of 6.0 minutes.

Sub-catchment SC-110 consists of the building roof area. This area is directed to the Detention Pond via roof downspouts, roof leaders and catch basins. SC-110 has a total area of ±3,575 sq. ft., a CN of 98, and a T_C of 6.0 minutes.

Sub-catchment SC-111 consists of lawn areas, parking lot and a portion of the driveway. This area drains west towards Bioretention Area #2, ultimately towards DP-1. SC-111 has a total area of ±12,251 sq. ft., a CN of 90, and a T_C of 6.0 minutes.

Sub-catchment SC-112 consists of lawn areas and Bioretention Area #2 (BR-2). SC-112 has a total area of ±1,160 sq. ft., a CN of 80, and a T_C of 6 minutes.

Sub-catchment SC-113 consists of lawn areas, a residential home and a portion of NYS-5S. This area drains west via swale to a pipe which lets out to DP-1. SC-113 has a total area of ±29,226 sq. ft., a CN of 90, and a T_C of 15.0

minutes.

Refer to Appendix J for development of the curve number, time of concentration, and calculations utilized in the post-development drainage analysis. Table 2 below presents the post-development peak runoff rate and volumes for Discharge Point 1 based on the 1, 10, 25, and 100-year storm events.

Table 2
Post-Development Runoff Rates

Discharge Point	1-year (2.18")		10-year (3.49")		25-year (4.23")		100-year (5.66")	
	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)
1	2.86	0.759	9.87	1.603	18.56	2.121	32.84	3.168

3.4 Pre-Post Development Comparison

Table 3 below compares the post-development peak runoff rates and runoff volumes to those of post-development discharge points. Figures are based on the 1, 10, 25, and 100-year storm events.

Table 3
Pre-Post Development Comparison

Discharge Point	1-year (2.18")		10-year (3.49")		25-year (4.23")		100-year (5.66")	
	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)	Q (cfs)	V (ac-ft)
1	-1.31 (-31.4%)	+0.377 (+98.7%)	-3.91 (-28.4%)	+0.557 (+53.3%)	-1.33 (-6.7%)	+0.640 (+43.2%)	-0.10 (-0.3%)	+0.770 (+32.1%)

Post-Development Reduction

Unaltered Hydrology (<5% increase, per GP-0-25-001, App. A, pg. 56)

Post-Development Increase

Table 3 illustrates that the proposed stormwater management system will not alter hydrology from pre- to post-development conditions; defined as an increase of more than 5% from pre-developed conditions.

3.5 Stormwater Management Planning

As required by the NYSDEC Stormwater Management Design Manual (SWMDM), 2024, projects which are subject to the NYSDEC SPDES GP-0-25-001 permit must complete the following five-step planning process:

3.5.1 Site Planning

Table 3.1 of the NYSDEC SWMDM identifies several practices which may be utilized during the site planning process to preserve natural resources and reduce impervious areas. Below are a list of the practices and a brief explanation of whether or not they were incorporated into the current plan and how.

Preservation of Natural Resources

Preservation of Undisturbed Areas – This practice was considered but not applied.

Preservation of Buffers – Due to the nature of proposed earthwork this practice was not applied.

Reduction of Clearing and Grading – Limits of clearing and grading have been reduced to the greatest extent practicable.

Locating Development in Less Sensitive Areas – The proposed development avoids sensitive areas to the greatest extent practicable.

Open Space Design – While this practice is not applicable to the current proposal, the proposed buildings and parking areas are adjacent to one another allowing for more contiguous green space.

Soil Restoration – This project proposes to use soil restoration techniques in all applicable areas.

Reduction of Impervious Cover

Roadway Reduction – No roadways are proposed as part of this project.

Sidewalk Reduction – The area of sidewalks proposed is as limited as practical.

Driveway Reduction – The area of driveways proposed is as limited as practical.

Cul-de-sac Reduction – There are no cul-de-sacs proposed as part of this project.

Building Footprint Reduction – Building footprints have been reduced to the minimum required for the operations proposed.

Parking Reduction – The parking provided is the minimum required by the proposed use.

3.5.2 Determine Water Quality Treatment Volume (WQ_V)

The NYSDEC provides a Microsoft Excel based Green Infrastructure Worksheet. This worksheet provides calculations for both Water Quality and Runoff Reduction for sub-catchments within the project area. Refer to Appendix H for documentation.

The calculated WQ_V for SC-102:SC-110 is **9,914 cu. ft. (0.228 ac.-ft.)**

The calculated WQ_V for SC-111:SC-112 is **675 cu. ft. (0.015 ac.-ft.)**

SC-101 and SC-113 are areas of existing development outside of the project area which do not contribute to proposed stormwater management facilities; therefore, these areas are not included in WQ_V calculations.

3.5.3 Runoff Reduction (RR_V) Techniques

Based upon available site soil data it was determined that infiltration practices would not be feasible to provide RR_V. Instead, a filtration bioretention area - equipped with an underdrain – is proposed to treat RR_V. Refer to section 3.5.5 for Bioretention Area sizing.

3.5.4 Minimum RR_V Required

Per the NYSDEC SWDM Green Infrastructure Techniques are required for Runoff Reduction. Filtration Bioretention Areas (F-5) were selected as the standard practice with runoff reduction capacity to meet this requirement. Refer to Appendix H for design and sizing criteria.

The minimum RR_V for SC-102:SC-110 is 2,309 cu. ft. or ±0.053 ac.-ft. The RR_V provided for SC-102:SC-110 is 4,006 cu. ft. or ±0.096 ac.-ft.

The minimum RR_V for SC-111:SC-112 is 131 cu. ft. or ±0.003 ac.-ft. The RR_V provided for SC-111:SC-112 is 460 cu. ft. or ±0.010 ac.-ft.

These values exceed the minimums and are equal to approximately 40% of the required WQ_V.

3.5.5 Standard Stormwater Management Practices

The NYSDEC provides a Microsoft Excel based Green Infrastructure Worksheet. This worksheet provides calculations for both water quality and runoff reduction for sub-catchments within the project area. Refer to Appendix H for documentation.

Refer to Table 4 for a summary of each storm event and Appendix J for sizing.

Table 4 Summary of Stormwater Management Practices						
Practice	Storm Event	Statistics				
		Q_{IN} (cfs)	Q_{OUT} Primary (cfs)	Q_{OUT} Secondary (cfs)	Peak Storage (cu-ft)	Peak Elev. (ft)
Bioretention #1 (434.0-435.0)	1-yr	1.69	0.61	-	5,014	435.08
	10-yr	2.31	2.26	-	5,616	435.19
	25-yr	2.66	2.51	-	5,690	435.21
	100-yr	3.35	3.11	-	5,863	435.24
Retention #1 (434.1-438.0)	1-yr	5.59	0.00	1.63	7,811	435.19
	10-yr	11.52	0.42	2.19	14,820	436.30
	25-yr	14.63	4.26	2.38	16,315	436.51
	100-yr	20.60	7.38	2.71	19,507	436.94
Bioretention #2 (442.5-443.5)	1-yr	0.44	0.02	-	763	443.50
	10-yr	0.95	0.75	-	865	443.59
	25-yr	1.22	1.18	-	903	443.63
	100-yr	1.75	1.69	-	942	443.66

Please see below for a description of each Water Quality practice:

Filtration Bioretention Area #1 (BR-1)

SC-102:SC-110 are directed through a closed drainage system and open swale to the Retention Basin. A portion of the Retention Basin serves as a forebay providing required pre-treatment (25% of the required WQ_V). **The required pretreatment for this area is 2,479 ft³, 2,823 ft³ is provided between elevations 432.00-434.10, the low-flow orifice, see Table 5 below for stage-storage calculations:**

Table 5 Pretreatment for BR-1 Forebay		
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
432.00	619	0
432.25	759	172
432.50	913	381
432.75	1,081	630
433.00	1,264	923
433.25	1,461	1,263
433.50	1,672	1,654
433.75	1,898	2,100
434.00	2,137	2,604
434.10	2,237	2,823

Additional attenuation is provided upstream of BR-1 by a retention basin. This basin has a volume of approximately 28,870 ft^3 including the forebay. It is equipped with a 10" PVC water-quality outlet which entirely directs storms equal to or smaller than the 1-year event to Bioretention Area #1. This area is also equipped with an outlet control structure (OCS-2) with a rim elevation of 436.25 which directs larger events directly to DP-1.

This retention area is designed to drain entirely between storm events with the exception of the area which serves as the forebay. The retention area is designed to attenuate runoff only and is not designed as an SMP for WQ_V purposes.

Due to a lack of infiltration in native soils, BR-1 is equipped with underdrains - perforated 6" PVC pipes - which connect to Outlet Control Structure #1 (OCS-1). BR-1 is set at an elevation of 434.00 feet and is contained by a 3-foot-wide berm at elevation 435.50 feet. OCS-1 has a rim elevation of 435.00 feet to provide the required six inches of ponding. A riprap spillway is located along the western bank of BR-1 at an elevation of 435.25 feet. BR-1 has a total filter area of 4,173 sq. ft. which provides 4,006 cu. ft. (0.092 ac.-ft.) of RR_V. OCS-1 outlets to DP-1.

Filtration Bioretention Area #2 (BR-2)

SC-111:SC-112 are directed to a plunge pool at the corner of BR-2 which serves as a forebay providing required pre-treatment (25% of the required WQ_V). **The required pretreatment for this area is 169 ft^3, 289 ft^3 is provided.**

Table 6
Pretreatment for BR-2
Plunge Pool

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
440.00	27	0
440.25	46	9
440.50	69	23
440.75	98	44
441.00	132	73
441.25	170	110
441.50	213	158
441.75	262	217
442.00	315	289

Due to a lack of infiltration in native soils, BR-2 is equipped with

underdrains - perforated 6” HDPE pipes - which connect to Outlet Control Structure #3 (OCS-3). BR-2 is at an elevation of 442.50 feet and is contained by a 3-foot-wide berm at elevation 444.40 feet. OCS-3 has a rim elevation of 443.50 feet to provide the required six inches of ponding. A riprap spillway is located along the western bank of BR-2 at an elevation of 443.70 feet. BR-2 has a total filter area of 479 sq. ft. which provides 460 cu. ft. (0.010 ac.-ft.) of RR_V. OCS-3 outlets flow to DP-1.

3.6 Non-Conforming Elements

This project does not currently propose any deviations from the current technical standards provided by the NYSDEC.

3.7 Community Risk and Resiliency Act (CRRA)

The Stormwater Pollution Prevention Plan (SWPPP) for this project incorporates an evaluation of future physical risks due to climate change, in accordance with the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance. The plan considers projected changes in climate, including increasing temperature, increasing precipitation, and greater variability in precipitation patterns that may lead to drought conditions. Additionally, the SWPPP accounts for the potential for more frequent and severe flooding, rising sea levels, increasing storm surge, and shifting ecological conditions that could impact site hydrology and stormwater management effectiveness.

In response to these risks, overall site planning has been conducted with resilience in mind, ensuring that stormwater control measures, conveyance systems, and detention systems are designed to accommodate future climate conditions. The location, elevation, and sizing of these features consider increased precipitation volumes and intensities to prevent system overloading and minimize erosion. Conveyance systems are designed to manage both high-flow storm events and potential drought conditions, while detention basins are sized to accommodate increased runoff and attenuate peak discharge rates. Additionally, floodplain considerations and sea level rise projections have informed site grading and infrastructure placement, reducing long-term vulnerabilities to climate-induced impacts. By integrating these considerations, the SWPPP ensures compliance with CRRA while enhancing the project's resilience to future climate-related challenges.

3.8 Operations and Maintenance

Regular inspections and maintenance of the post-construction stormwater management system is the responsibility of the property owner or other designated party. Currently the entity responsible for maintenance of this facility is:

Dustin Winn
74 Hudson River Road
Waterford, New York 12188

For the first year of operation, commencing upon filing of a Notice of Termination (NOT) with the NYSDEC, an inspection of the facility shall be conducted every six (6) months by a New York State licensed professional engineer. For subsequent years inspections may be conducted annually.

Inspection and maintenance checklists are included in Appendix L. Records of inspections should be maintained on-site and any recommendations for repairs or replacement of stormwater management facilities shall be made in a timely manner.

In addition to these annual inspections, the property owner or property manager should familiarize themselves with the purpose and operation of any permanent stormwater management facilities. After heavy rainfalls it should be noted if any facilities appear to have damaged or have ceased normal operations. Within forty-eight (48) hours after a heavy rainfall event, standing water should not be visible in infiltration or flow-through practices such as Bioretention Areas. If any of these anomalies are witnessed the inspecting engineer should be notified and a plan to remedy these deficiencies should be prepared.

3.9 Summary

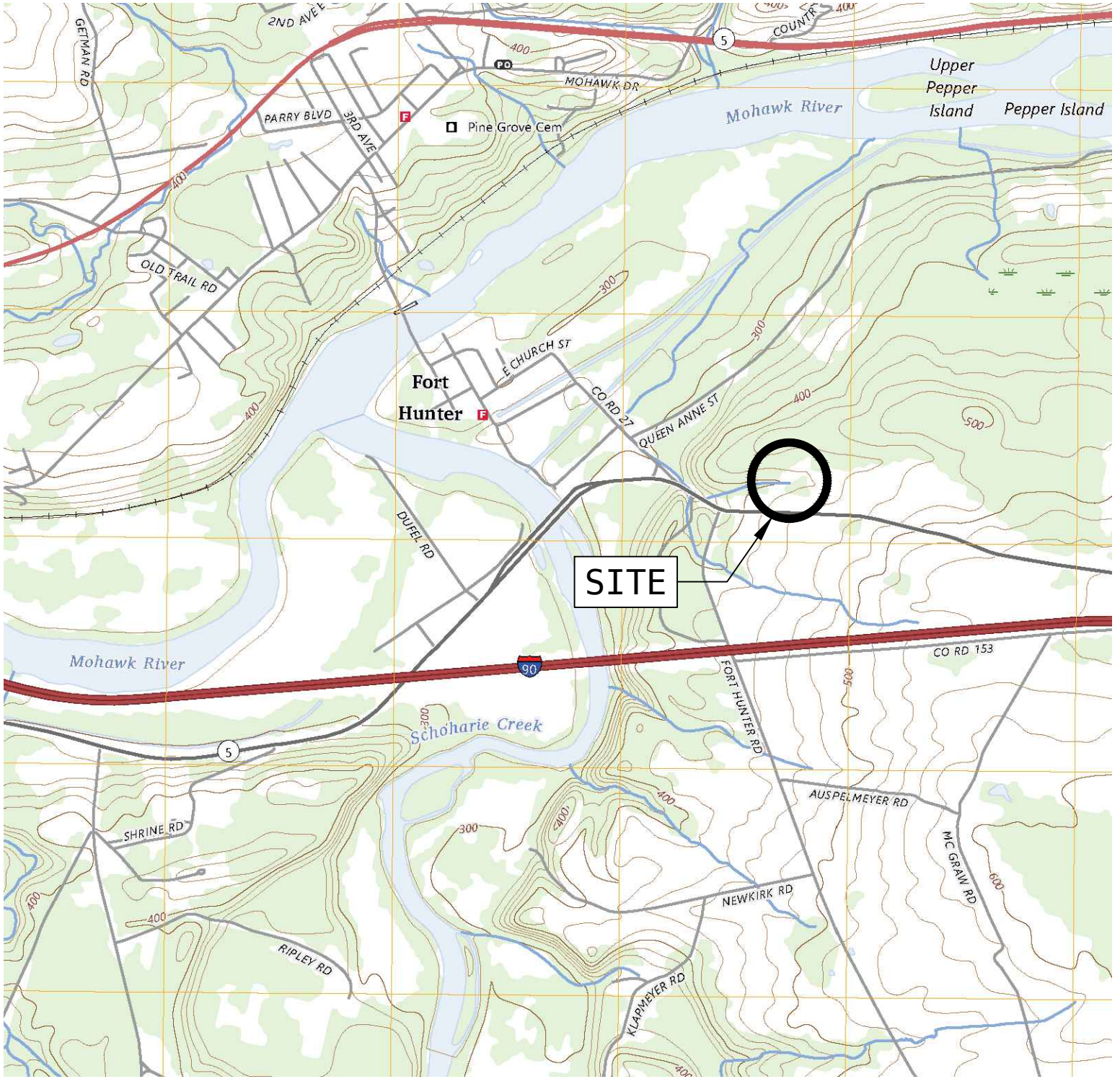
This Stormwater Pollution Prevention Plan presents the analysis and design of the Stormwater Management System and components for the 00 Route 5S Winn Construction Service - Warehouse Building. The post-development stormwater runoff system utilizes on-site infiltration that complies with the requirements of the NYSDEC. The project plans show the locations, sizes, and shapes of stormwater management practices, including all stormwater management facilities.

This stormwater management system, when constructed as designed, will function adequately and will not adversely affect downstream watercourses, structures or properties.

Respectfully submitted:

Aaron J. Vera, P.E.
Principal Engineer
Verity Engineering, D.P.C.

Appendix A
Location Map



Verity Engineering, D.P.C.
P.O. Box 474
Troy, New York 12181
(518) 389-7200 | verityeng.com

Winn Construction Services, Inc.
Waterford, New York 12188
(518) 238.2210
Contact: Dustin Winn, P.E.

WINN CONSTRUCTION SERVICES
WAREHOUSE BUILDING

00 ROUTE 55 | TOWN OF FLORIDA | MONTGOMERY COUNTY | NEW YORK STATE

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE DOCUMENT THEIR SEAL, THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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DESIGNED BY:	EAS
DRAWN BY:	EAS
CHECKED BY:	BTS
APPROVED BY:	AJV
SCALE:	AS NOTED
DATE:	01/30/2026

LOCATION MAP

LOCUS

Appendix B

Notice of Intent/Acknowledgement of Coverage

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

version 1.16

(Submission #: HQF-WB7J-FXBBV, version 1)

Details

Originally Started By	Aaron James Vera
Alternate Identifier	Winn Construction Warehouse Building—Region 4
Submission ID	HQF-WB7J-FXBBV
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 Na 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 determinec 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 sensiti map, and that the construction activity is not immediately adjacent to a property listed or determined t 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 Preserva Commission of a Certified Local Government, or a qualified preservation professional has determinec 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
Winn Construction Services, Inc.

9. Owner/Operator Contact Person Information

First and Last Name	Phone	E-mail
Dustin Winn	6073162973	d.winn@winn-construction.com

10. Owner/Operator Mailing Address
74 HUDSON RIVER RD
WATERFORD, NY 12188-1900
USA

11. Is the billing contact different from the Owner/Operator Contact?
No

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

12.b. Is the owner/operator registered with the Department of State to do business in New York State?
Yes

12.b.i. Department of State ID #
4380547

The Department of State ID can be found using the following link:
Department of State | Division of Corporations

Site Information

13. Project/Site Name
Winn Construction Warehouse Building

14. Site Address

00 Route 5S
Florida, NY 12010
Montgomery

DEC Region
4

15. Site Latitude & Longitude
42.93809655225816,-74.26577739430388

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 proposes to construct two single-story steel-framed buildings. The warehouse will be a 14,300 square foot building with associated parking and loading areas. The office building will be a 4,000 square foot building with associated parking. Additional improvements include associated stormwater management facilities and incidental utilities.

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)
12.7

20. Total Area to be Disturbed (acres)
4.8

21. Existing Impervious Area to be Disturbed (acres)
0.0

22. Future Impervious Area Within Disturbed Area (acres)
2.6

Nature of the project:
New Construction

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 (%)
10

C (%)
0

D (%)
90

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

Start Date
04/01/2026

End Date
04/01/2027

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

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?
No

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?
Yes

33. Is this property owned by a state authority, state agency, federal government or local government?
No

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 CRRA, 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
Aaron Vera

41. SWPPP Preparer Organization Name
Verity Engineering, D.P.C.

42. SWPPP Preparer Contact Information

First and Last Name	Phone	E-mail
Aaron Vera	5183897200	aaron@verityeng.com

43. SWPPP Preparer Address

252 Hill St.
TROY, New York 12181

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
25-001 appf_swppcertform.pdf - 01/27/2026 11:19 AM
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.
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas
Sidewalk Reduction
Driveway Reduction
Building Footprint Reduction
Parking Reduction

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
0.243	0.103	0.056	0.141	0.244

49.a. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required.
The site lacks soils conducive to infiltration.

Water Quantity Criteria

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

51.a. The need to provide channel protection has been waived because:
Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems.

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)
13.78

52.b.ii. Post-Development (CFS)
9.87

Total Extreme Flood Control Criteria (Qf)

52.b.iii. Pre-Development (CFS)
32.94

52.b.iv. Post-Development (CFS)
32.84

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.
Winn Construction

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)	2.630	

55. Alternative SMPs

Type of Alternative SMP	Manufacturer of the Alternative SMP	Name of the Alternative SMP	Contributing Impervious Area (acres)
NONE PROVIDED	*NONE PROVIDED*	*NONE PROVIDED*	*NONE PROVIDED*

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)?
No

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
1/27/2026 11:19 AM	25-001 appf_swppcertform.pdf	Attachment	Aaron Vera

Appendix C
MS4 Acceptance Form

Verity Engineering, D.P.C.
P.O. Box 474
Troy, New York 12181
518.389.7200 | verityeng.com

This project is not located in a regulated MS4 district.
An MS4 Acceptance Form is not required.

Appendix D
SPDES General Permit GP-0-25-001

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

Scott E. Sheeley JAN. 29, 2025

Authorized Signature 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.

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:

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 *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any *discharge* to either cause or contribute to a violation of 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 discharge*s 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 discharge*s 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 *discharge*s will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharge*s from the *construction site*.

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

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part 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 discharge*s; and

      ii. Control *stormwater discharge*s, 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 *discharge*s 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 discharge*s, 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**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

   d. **Pollution Prevention Measures**. 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.

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:

    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 source*s. 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 source*s, 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 planned[1]
- 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

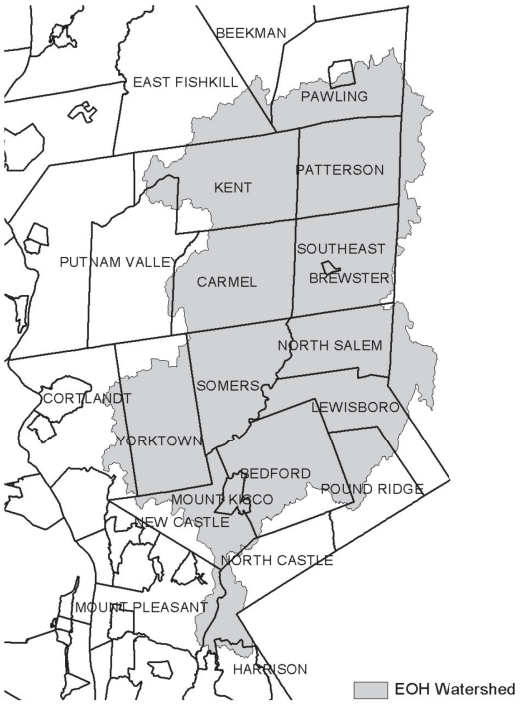


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

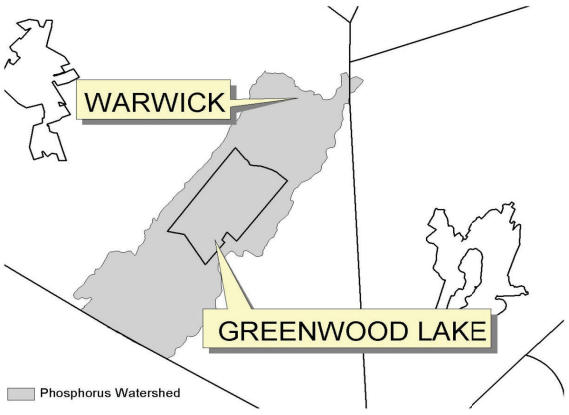


Figure 4 - Oscawana Lake Watershed

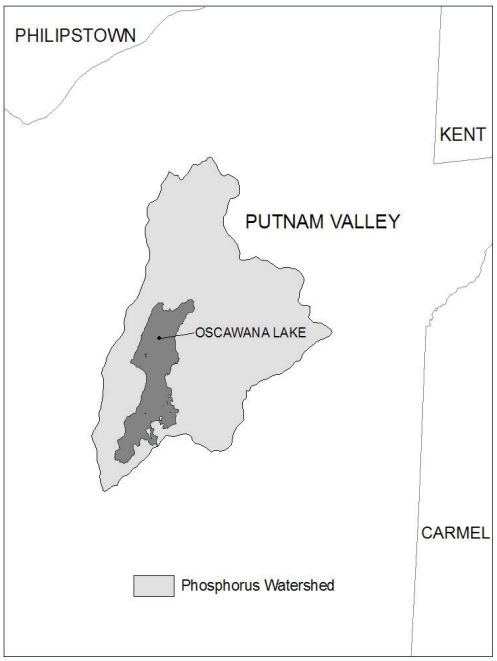
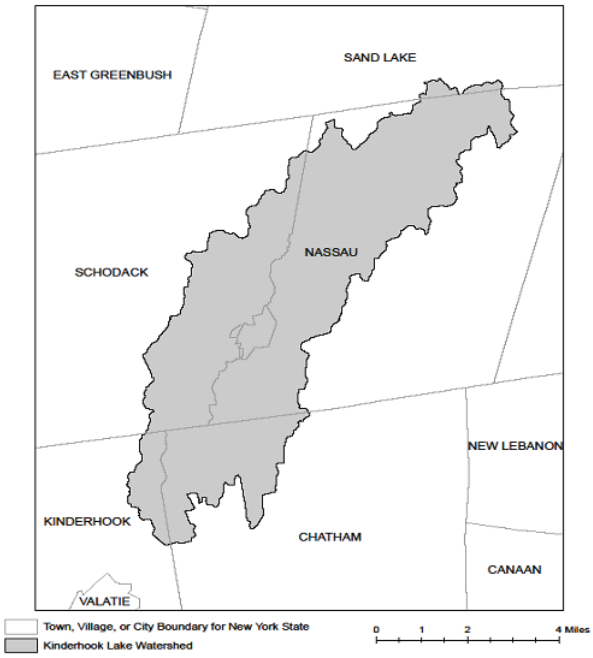


Figure 5 - Kinderhook Lake Watershed



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
Genessee	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 (NH3, NO2)
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	Glenvwood 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, Mongomery 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/Sedimnt
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

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	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 F – SWPPP Preparer Certification Form

The SWPPP Preparer Certification Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

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:

eNOI Submission ID:

Owner/Operator Name:

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.

SWPPP Preparer First Name | MI | SWPPP Preparer Last Name

Signature | Date

Revised: January 2025

APPENDIX G – MS4 SWPPP Acceptance Form

The MS4 SWPPP Acceptance Form required by this permit begins on the following page.

NEW YORK STATE | 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:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4 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 Name[1]:

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.

APPENDIX H – NYCDEP SWPPP Acceptance/Approval Form

The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval form required by this permit begins on the following page.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

SWPPP Acceptance/Approval

Application Number:

I. Project Owner/Operator Information

1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:
6. Street Address:
7. City/State/Zip:

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

8. SWPPP Reviewed by:
9. Title/Position: /
10. Date Final SWPPP Reviewed and Accepted:
11. Acceptance/Approval Expiration Date:

IV. Regulated MS4 Information for projects that require coverage under the NY State Pollution Discharge Elimination System General Permit for Stormwater Discharges from Construction Activity

12. Name of MS4: *CITY OF NEW YORK*
13. MS4 SPDES Permit Identification Number: *NY-0287890*
14. Contact Person:
15. Street Address: *59-17 Junction Blvd. 9th Floor*
16. City/State/Zip: *Flushing, NY 11373*
17. Telephone Number:

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

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

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Conditions of Acceptance/Approval and Additional Information

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

APPENDIX I – MS4 No Jurisdiction Form

The MS4 No Jurisdiction Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

MS4 No Jurisdiction 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

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. eNOI Submission 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

In accordance with CGP Part I.D.2.b.ii.3., I hereby certify that the Traditional Land Use Control MS4 Operator identified in section III. of this form does not have review authority over the construction project identified in section II. of this form, which is owned/operated by the entity identified in section I. of this form. 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:

APPENDIX J – Owner/Operator Certification Form

The Owner/Operator Certification Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

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: _____

eNOI Submission ID: _____

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

Revised: January 2025

Appendix E
NYS OPRHP Documentation

August 26, 2025

Brian Sipperly
Verity Engineering, D.P.C.
P.O. Box 474
Troy, NY 12181

Re: DEC
Winn Construction New Facility
State Highway 5S (Tax Map ID#: 54.-2-2.31), Town of Florida, Montgomery County , NY
25PR04139

Dear Brian Sipperly:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project.

OPRHP has reviewed the Phase I Archaeological Investigation Report prepared for this project by Hartgen Archeological Associates (HAA) (August 19, 2025; 25SR00410). No archaeological sites were identified through this survey (see attached coverage map); therefore, no further archaeological investigations are warranted. It is thus the opinion of the OPRHP that no properties, including archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places, will be impacted by this project.

It should be noted that further consultation with the OPRHP will be necessary if there are any changes to the project/undertaking. PLEASE ALSO NOTE that an updated consultation letter may be required if more than 5 years have lapsed since the above date of issue.

If you have any questions, I can be reached at Josalyn.Ferguson@parks.ny.gov.

Sincerely,

Josalyn Ferguson, Ph.D.
Scientist – Archaeology

via email only

c.c. Dustin Winn, Winn Construction Services



50 0 50 100 Feet
15 0 15 30 Meters

Legend
- Shovel Test (ST)
- Positive ST (historic)
- Photo Angle
- Area of Potential Effects (APE)
- Standing Water

Project Map

New York State Office of Information Technology Services, Orthoimagery, 2022

HARTGEN archeological associates inc

Map 2

C:\HAA\projects\x2894\x2894 appx. 8\14/2025 11:05 AM

Appendix F
Geotechnical and Environmental Documentation

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Montgomery County, New York



January 27, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,510 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Montgomery County, New York
Survey Area Data: Version 22, Aug 26, 2024

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

Date(s) aerial images were photographed: Sep 4, 2020—Nov 7, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DaB	Darien silt loam, 3 to 8 percent slopes	48.9	83.5%
DaC	Darien silt loam, 8 to 15 percent slopes	0.1	0.2%
LaB	Lansing silt loam, 3 to 8 percent slopes	3.2	5.4%
LaC	Lansing silt loam, 8 to 15 percent slopes	6.4	10.9%
Totals for Area of Interest		**58.5**	**100.0%**

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Montgomery County, New York

DaB—Darien silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9tph
Elevation: 300 to 1,250 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Darien and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Darien

Setting

Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived predominantly from calcareous gray shale

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 10 inches: silt loam
H3 - 10 to 31 inches: channery silty clay loam
H4 - 31 to 60 inches: channery silty clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Rhinebeck

Percent of map unit: 5 percent

Hydric soil rating: No

Ilion

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Burdett

Percent of map unit: 5 percent
Hydric soil rating: No

Churchville

Percent of map unit: 5 percent
Hydric soil rating: No

Madalin

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

DaC—Darien silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9tpj
Elevation: 380 to 1,280 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Darien and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Darien

Setting

Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived predominantly from calcareous gray shale

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 10 inches: silt loam
H3 - 10 to 31 inches: channery silty clay loam
H4 - 31 to 60 inches: channery silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Nunda

Percent of map unit: 5 percent
Hydric soil rating: No

Burdett

Percent of map unit: 5 percent
Hydric soil rating: No

Churchville

Percent of map unit: 5 percent
Hydric soil rating: No

Ilion

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lansing

Percent of map unit: 5 percent
Hydric soil rating: No

LaB—Lansing silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3mg
Elevation: 330 to 1,970 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Lansing

Setting

Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: silt loam
E - 8 to 13 inches: gravelly silt loam
Bt/E - 13 to 21 inches: gravelly silt loam
Bt1 - 21 to 28 inches: gravelly silt loam
Bt2 - 28 to 39 inches: gravelly silt loam
C - 39 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Conesus

Percent of map unit: 8 percent
Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Kendaia

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

Appleton

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

Palatine

Percent of map unit: 1 percent
Landform: Benches, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Danley

Percent of map unit: 1 percent
Landform: Hills, till plains, drumlinoid ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

LaC—Lansing silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w3mh
Elevation: 330 to 2,130 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Lansing

Setting

Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: silt loam
E - 8 to 13 inches: gravelly silt loam
Bt/E - 13 to 21 inches: gravelly silt loam
Bt1 - 21 to 28 inches: gravelly silt loam
Bt2 - 28 to 39 inches: gravelly silt loam
C - 39 to 79 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Conesus

Percent of map unit: 8 percent
Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landform: Drumlins, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave

Across-slope shape: Linear
Hydric soil rating: No

Appleton

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

Danley

Percent of map unit: 1 percent
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Wassaic

Percent of map unit: 1 percent
Landform: Benches, ridges, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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:

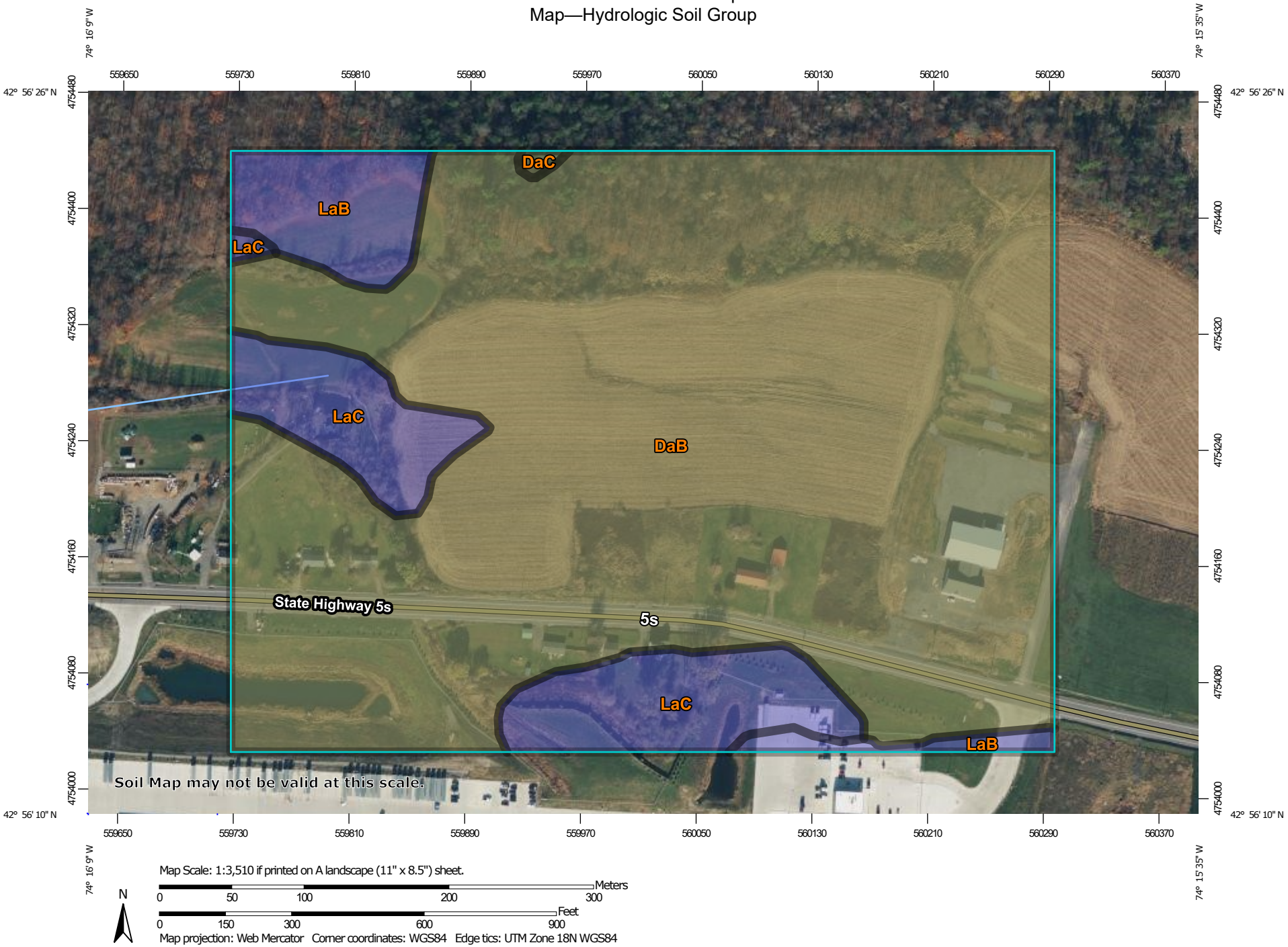
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

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.



Map Scale: 1:3,510 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Montgomery County, New York
Survey Area Data: Version 22, Aug 26, 2024

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

Date(s) aerial images were photographed: Sep 4, 2020—Nov 7, 2020

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DaB	Darien silt loam, 3 to 8 percent slopes	C/D	48.9	83.5%
DaC	Darien silt loam, 8 to 15 percent slopes	C/D	0.1	0.2%
LaB	Lansing silt loam, 3 to 8 percent slopes	B	3.2	5.4%
LaC	Lansing silt loam, 8 to 15 percent slopes	B	6.4	10.9%
Totals for Area of Interest			**58.5**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Montgomery County, New York



Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699
fw5es_nyfo@fws.gov

3817 Luker Road
Cortland, NY 13045-9385

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

NOT FOR CONSULTATION

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

NOT FOR CONSULTATION

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

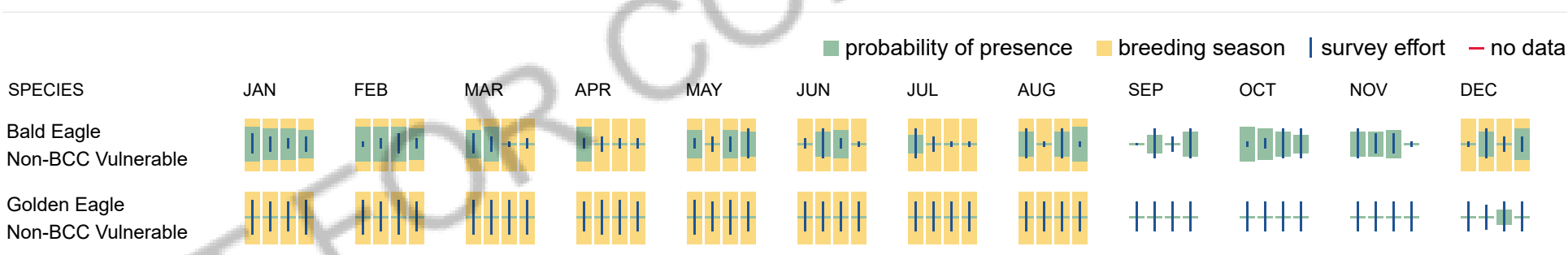
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

NOT FOR CONSULTATION

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

NOT FOR CONSULTATION

Belted Kingfisher Megaceryle alcyon This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 15 to Jul 25
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Blue-winged Warbler Vermivora cyanoptera This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Bobolink Dolichonyx oryzivorus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler Setophaga cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 20 to Jul 20
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Meadowlark Sturnella magna This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 31
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper Calidris melanotos This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Prairie Warbler Setophaga discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Rose-breasted Grosbeak Pheucticus ludovicianus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 15 to Jul 31
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

NOT FOR CONSULTATION

Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Upland Sandpiper Bartramia longicauda This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

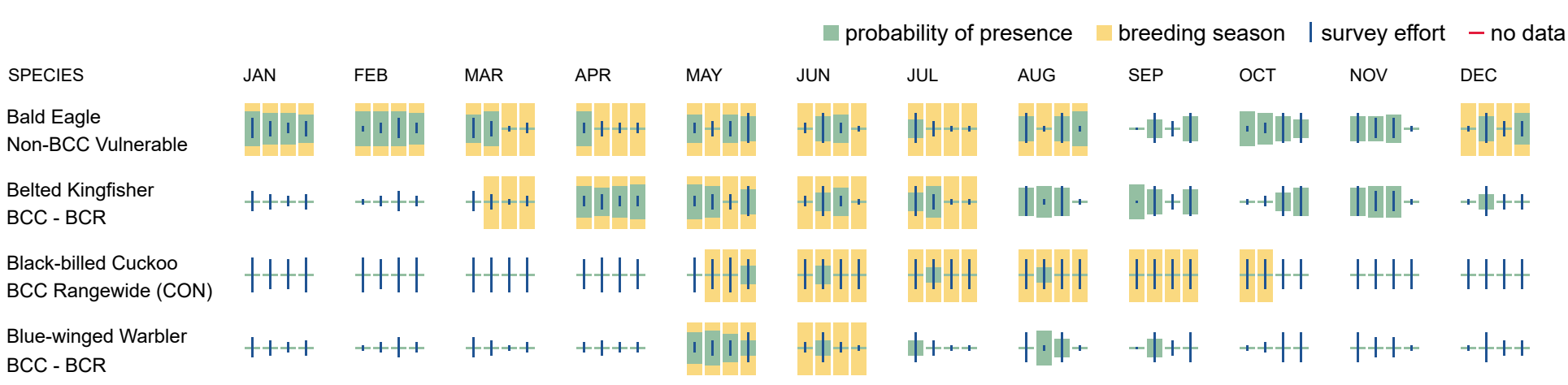
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

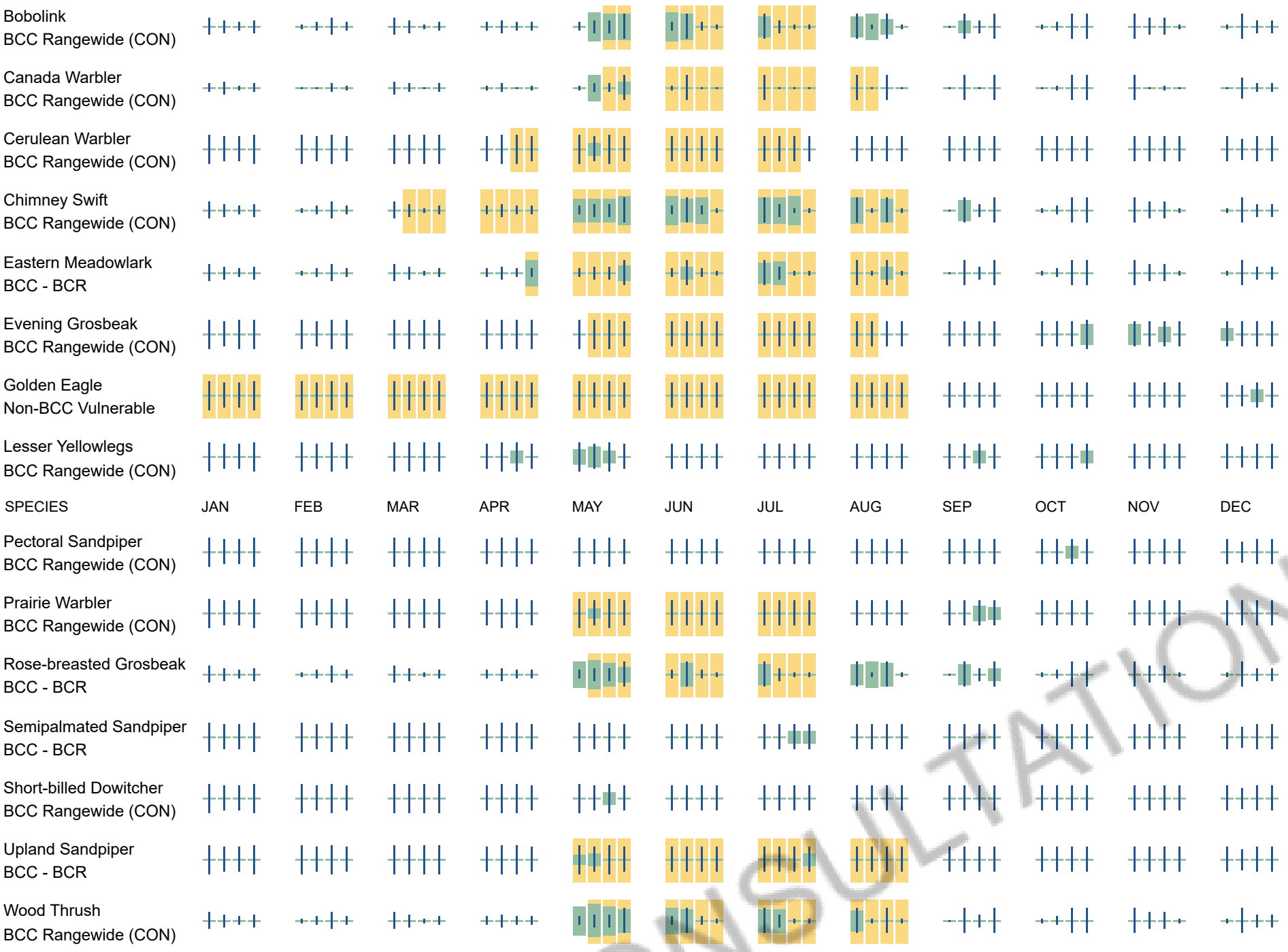
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

NOT FOR CONSULTATION

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Appendix G
Drainage Maps

N87°53'40"E
1109.24'
N
150' BUFFER
SHALLOW CON.
53 LF @ 5.30%
SHALLOW CON.
57 LF @ 1.56%
DP-1
427.80
429.81
430.70
495.79'
DA-1
AREA: 426,768 SF.
CN: 77
T_c: 12.1 MIN.
SHALLOW CON.
588 LF @ 2.90%
SHEET FLOW
100 LF @ 3.22%
447.70
451.00
LaC
Lansing Silt Loam,
8 to 15% Slopes
HSG: B
DaB
Darien Silt Loam,
8 to 15% Slopes
HSG: C/D
N84°20'54"W
450.00'
N75°55'54"W
200.00'
S02°06'06"W
300.00'
DRAINAGE WAY
362.20'
N86°49'33"W
N.Y.S. ROUTE 5S
24" METAL PIPE
INVERT=441.75'
SMH
RIM=447.74'
INVERT
THROUGH=437.7'
RIM=447.12'
INVERT OUT=437.7'
LaC
Lansing Silt Loam,
8 to 15% Slopes
HSG: B

LEGEND

PERVIOUS GROUND COVER (WOODLANDS, BRUSH, LAWN)

IMPERVIOUS COVER

FARM LAND

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

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Verity Engineering

Verity Engineering, D.P.C.
P.O. Box 474
Troy, New York 12181
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winn CONSTRUCTION

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Waterford, New York 12188
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WINN CONSTRUCTION SERVICES
WAREHOUSE BUILDING

00 ROUTE 5S | TOWN OF FLORIDA | MONTGOMERY COUNTY | NEW YORK STATE

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DESIGNED BY:	EAS
DRAWN BY:	EAS
CHECKED BY:	BTS
APPROVED BY:	AJV
SCALE:	1"=40'
DATE:	01/30/2026

REV.	DATE	DESCRIPTION	BY
B	01/30/26	SUBMISSION	AJV
A	10/24/25	INITIAL SUBMISSION TO TOWN	AJV

EXISTING DRAINAGE CONDITIONS

DR-EX



P:\25-001\CAD\SHEETS\25-001 DR-PR.DWG | 02/04/2026 01:13:25 PM

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SCALE:	1"=40'
DATE:	01/30/2026

REV.	DATE	DESCRIPTION	BY
B	01/30/26	SUBMISSION	AJV
A	10/24/25	INITIAL SUBMISSION TO TOWN	AJV

PROPOSED DRAINAGE CONDITIONS

DR-PR

Appendix H

NYSDEC Green Infrastructure Worksheets and Additional Calculations

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	10,589	0.243
30	Total RRV Provided	4,466	0.103
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	2,439	0.056
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	6,123	0.141
34	Sum of Volume Reduced & Treated	10,589	0.243
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

Step 1 - Site Planning

Practice		Description	Applicable	Project Specific Evaluation
Preservation of Natural Features and Conservation Design	**Preservation of Undisturbed Areas**	Delineate and protect undisturbed forests, native vegetated areas, riparian corridors, water bodies, wetlands, and natural terrain.	No	The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Delineate and protect naturally vegetated buffers along perennial streams, rivers, shorelines, and wetlands.	No	Vegetative buffers to on-site wetlands are maintained to the greatest extent practicable, but deed restrictions are not proposed at this time.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	Yes	Clearing and grading will be limited to the area of disturbance and will be minimized to the greatest extent practical. The limits of all proposed clearing will be demarcated in the field with orange construction fencing, prior to construction, to prevent unnecessary removal of trees.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Yes	The site has been designed to avoid sensitive resource areas to the greatest extent practical.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	N/A	This project is no a subdivision. No lots are being created.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Yes	All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual.

Step 1 - Site Planning

Reduction of Impervious Cover	**Roadway Reduction**	Minimize roadway widths and lengths, below local requirements, to reduce site impervious area	N/A	No new roadways are proposed as part of this project.
	Sidewalk Reduction	Minimize sidewalk lengths and widths, below local requirements, to reduce site impervious area	Yes	Sidewalk widths have been minimized to 5-ft and quantity of sidewalk has been reduced to that required to ensure safe pedestrian access throughout the site.
	Driveway Reduction	Minimize driveway lengths and widths, below local requirements, to reduce site impervious area	Yes	Driveway width and length have been reduced to the greatest extent practicable.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	N/A	No cul-de-sacs are proposed as part of this project.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	Yes	All buildings proposed are the minimum size for the intended use.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, reducing stall dimensions below local requirements, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	Yes	The project proposes the minimum number of spaces allowed by municpal code.

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No	
What is the nature of this construction project?	New Construction	
Design Point:	1	
P=	1.15	inches

Enter 90% Rainfall Event as P

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	3.70	2.43	66	0.64	9,914	Filtration Bioretention
2	0.31	0.16	53	0.52	675	Filtration Bioretention
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	4.01	2.60	65	0.63	**10,589**	**Required WQv**	**0.243**	**af**

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Practice	Description	Applicable	Project Specific Evaluation
RR Techniques	**Conservation of Natural Areas (RR-1)**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas by permanently conserving these areas on a site. Undisturbed natural areas include: forest retention areas; reforestation areas; stream and river corridors; shorelines; wetlands, vernal pools, and associated vegetated buffers; and undisturbed open space.	No	The project does not propose permanent conservation of these areas at this time.
	Sheet Flow to Riparian Buffer/Filter Strip (RR-2)	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	No	Sheet flow to riparian buffers or grass filter strips is not proposed at this time. The project proposes treatment by RR techniques, Standard SMPs with RRv capacity, or Standard SMPs without RRv capacity.
	Tree Planting/Tree Pit/Tree Trench (RR-3)	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	No	Tree plantings are proposed on site. However, credit for these trees will not be taken toward area reduction/volume reduction in the RRv calculations.
	Disconnection of Rooftop Runoff (RR-4)	Direct runoff from rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	No	Due to the size of the proposed building(s), rooftop disconnect is not proposed at this time.
	Vegetated Swale (RR-5)	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	No	Due to required earthwork, vegetated swales are not feasible for use on the project site.
	Rain Garden (RR-6)	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	No	Due to the size and scope of the project, rain gardens are not feasible for use on the project site.
RR Techniques	**Stormwater Planter (RR-7)**	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	No	Due to the size and scale of the project,stormwater planters are not feasible for use on the project site.
	Rainwater Harvesting System (RR-8)	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	No	Rainwater harvesting is not proposed on-site due to employing other methods of Runoff Reduction.
	Porous Pavement (RR-9)	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	No	Due to high groundwater and limited infiltration , porous pavement is not feasible for use on the project site.

Step 3 - Evaluation of RR Techniques and Standard SMPs with RRv Capacity

	Green Roof (RR-10)	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	No	Due to cost and structural considerations , a green roof is not feasible for use on the project site.
	Stream Daylighting (RR-11)	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	N/A	No stream daylighting opportunities are present on the site.
Standard SMPs with RRv Capacity	**Infiltration Trench (I-1)**	An infiltration practice that stores the water quality volume in the void spaces of a gravel trench before it is infiltrated into the ground.	No	Due to high groundwater and limited infiltration , infiltration trenches are not feasible for use on the project site.
	Infiltration Basin (I-2)	An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.	No	Due to high groundwater and limited infiltration, Infiltration Basins are not feasible for use on the project site.
	Dry Well (I-3)	An infiltration practice similar in design to the infiltration trench, and best suited for treatment of rooftop runoff.	No	Due to high groundwater and limited infiltration, dry wells are not feasible for use on the project site.
	Underground Infiltration System (I-4)	An infiltration practice below grade that stores the water quality volume in pre-manufactured pipes, vaults or other modular structures, before it is infiltrated into the ground.	No	Due to high groundwater and limited infiltration, underground infiltration systems are not feasible for use on the project site.
	Infiltration Bioretention (F-4)	A shallow depression that treats stormwater as it flows through a soil matrix, before it is infiltrated into the ground.	No	Due to high groundwater and limited infiltration , a filtration bioretention will be implemented, instead of an infiltration bioretention.
	Filtration Bioretention (F-5)	A shallow depression that treats stormwater as it flows through a soil matrix and is returned to the storm drain system.	Yes	Filtration Bioretention is proposed on-site to treat all. Calculations have been provided in the SWPPP.
	Bioslope (F-6)	Permeable engineered soil media that is installed along embankments or other slopes, designed to capture and treat stormwater runoff from adjacent paved areas.	No	Due to employing other methods of Runoff Reduction, bioslopes are not feasible for use on the project site.
	Dry Swale (O-1)	An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.	No	Due to employing other methods of Runoff Reduction, dry swales are not feasible for use on the project site.

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A		55%
B	0.43	40%
C		30%
D	2.20	20%
Total Area	2.625459137	

Calculate the Minimum RRv		
S =	**0.23**	
Impervious =	2.63	*acres*
Precipitation	1.15	*inches*
Rv	0.95	
Minimum RRv	**0.056**	***af***
	2439	cf

Steps 3 and 5 - Apply RR Techniques and Standard SMPs

Runoff Reduction Volume and Treated Volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**(cf)**	**(cf)**
RR Techniques	Conservation of Natural Areas	RR-1	0.00		0	
	Sheet Flow to Riparian Buffer/Filter Strip	RR-2	0.00	0.00	0	
	Tree Planting/Tree Pit/Tree Trench	RR-3	0.00	0.00	0	
	Disconnection of Rooftop Runoff	RR-4		0.00	0	
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rainwater Harvesting Systems	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Extensive & Intensive)	RR-10	0.00	0.00	0	
	Stream Daylighting	RR-11				
Standard SMPs w/ RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Infiltration Bioretention	F-4	0.00	0.00	0	0
	Filtration Bioretention	F-5	4.01	2.60	4,466	6,123
	Bioslope	F-6	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention	P-1	0.00	0.00		0
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention	P-3	0.00	0.00		0
	Multiple Pond System	P-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Gravel Wetland	W-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Wet Swale	O-2	0.00	0.00		0
Alt. SMPs	Flow Based Alternative Practice	-	0.00	0.00		0
	Volume Based Alternative Practice	-				
Totals by RR Technique →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			4.01	2.60	4,466	6,123
Totals by Standard SMP →			0.00	0.00		0
	Totals by Alternative SMP →		0.00	0.00		0
Totals (RR Techniques + all SMPs) →			4.01	2.60	4,466	6,123

Proj. #: 25-001
Proj. Desc.: Winn Construction Services

Prepared By: AJV
Date: 2025-09-16

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	Precipitation (in)	Description
1	3.70	2.43	66	0.64	9,914	1.15	Filtration Bioretention

Design Criteria

Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	1	Impermeable liner and underdrains required
Enter depth to bedrock (ft)	12	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	15	

Sizing Criteria

		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	4131	sf	
Enter Provided Filter Area	Af	4173	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	10015.2	cf	

Calculate Runoff Reduction

RRv Provided	**4,006**	***cf***	
WQv Treated	5908	cf	This is the portion of the WQv that is not reduced in the practice.

Proj. #: 25-001
Proj. Desc.: Winn Construction Services

Prepared By: AJV
Date: 2025-09-16

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
2	0.31	0.16	53	0.52	675	1.15	Filtration Bioretention

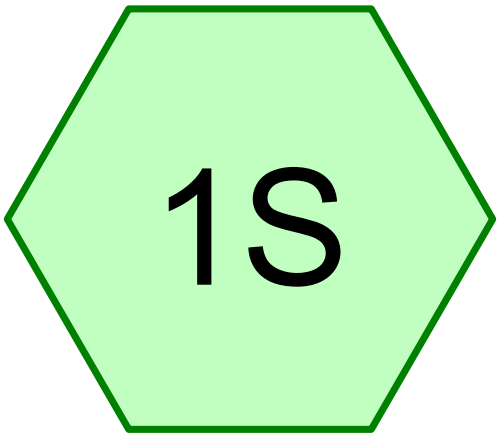
Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	1	Impermeable liner and underdrains required
Enter depth to bedrock (ft)	12	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	24	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	281	sf	
Enter Provided Filter Area	Af	479	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	1149.6	cf	

Calculate Runoff Reduction			
RRv Provided	**460**	***cf***	
WQv Treated	215	cf	This is the portion of the WQv that is not reduced in the practice.

Appendix I

Pre-Development Drainage Calculations



DA-1

Subcat Reach Pond Link

Routing Diagram for 25-001 DR-EX
Prepared by Verity Engineering, DPC, Printed 1/26/2026
HydroCAD® 10.20-7a s/n 09886 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Florida (Winn) 24-hr S1	1-yr	Default	24.00	1	2.18	2
2	10-yr	NY-Florida (Winn) 24-hr S1	10-yr	Default	24.00	1	3.49	2
3	25-yr	NY-Florida (Winn) 24-hr S1	25-yr	Default	24.00	1	4.23	2
4	100-yr	NY-Florida (Winn) 24-hr S1	100-yr	Default	24.00	1	5.66	2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-1 Runoff Area=426,768 sf 6.16% Impervious Runoff Depth>0.47"
Flow Length=798' Tc=12.1 min CN=77 Runoff=4.17 cfs 0.382 af

Total Runoff Area = 9.797 ac Runoff Volume = 0.382 af Average Runoff Depth = 0.47"
93.84% Pervious = 9.194 ac 6.16% Impervious = 0.603 ac

Summary for Subcatchment 1S: DA-1

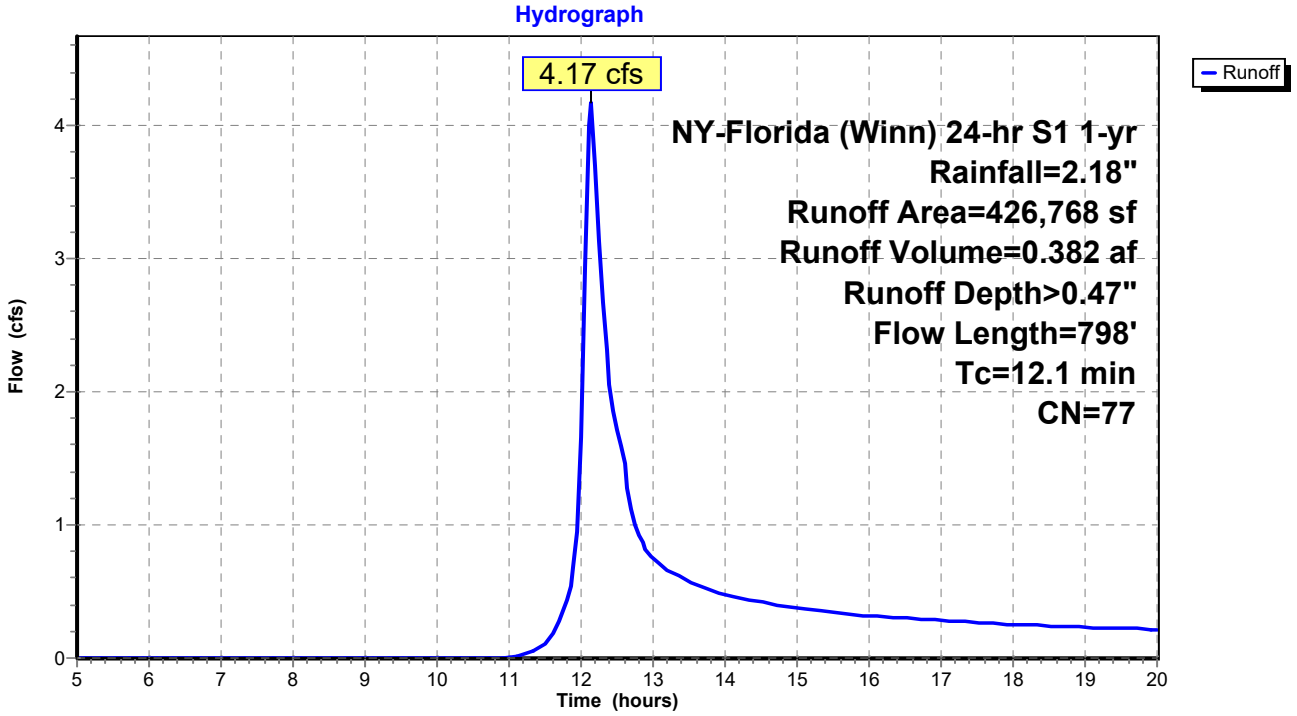
Runoff = 4.17 cfs @ 12.14 hrs, Volume= 0.382 af, Depth> 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
9,150	55	Woods, Good, HSG B
5,251	77	Woods, Good, HSG D
31,491	58	Meadow, non-grazed, HSG B
258,722	78	Meadow, non-grazed, HSG D
4,476	48	Brush, Good, HSG B
52,228	73	Brush, Good, HSG D
39,180	80	>75% Grass cover, Good, HSG D
23,260	98	Paved parking, HSG D
3,010	98	Roofs, HSG D
426,768	77	Weighted Average
400,498		93.84% Pervious Area
26,270		6.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	100	0.0322	0.44		**Sheet Flow,** Fallow n= 0.050 P2= 2.50"
6.4	588	0.0290	1.53		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.1	57	0.0156	0.87		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	53	0.0530	1.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	798	Total			

Subcatchment 1S: DA-1



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=426,768 sf 6.16% Impervious Runoff Depth>1.28"
Flow Length=798' Tc=12.1 min CN=77 Runoff=13.78 cfs 1.046 af

Total Runoff Area = 9.797 ac Runoff Volume = 1.046 af Average Runoff Depth = 1.28"
93.84% Pervious = 9.194 ac 6.16% Impervious = 0.603 ac

Summary for Subcatchment 1S: DA-1

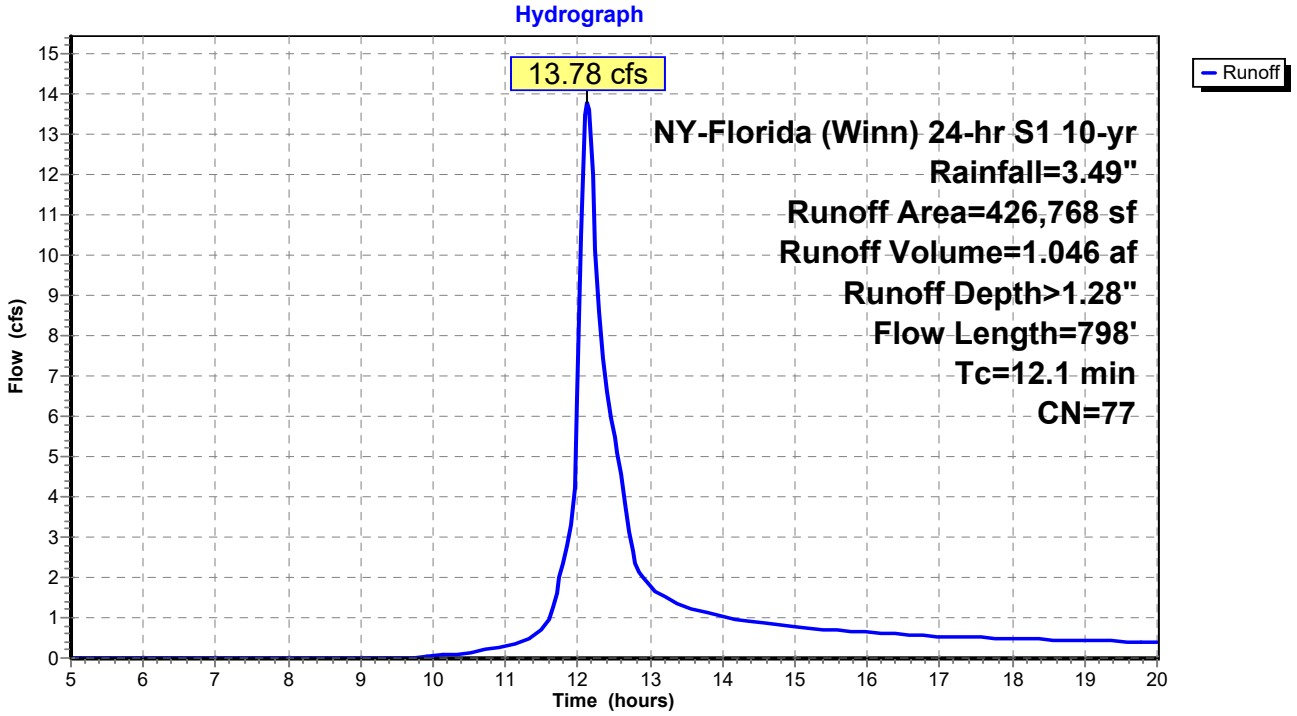
Runoff = 13.78 cfs @ 12.13 hrs, Volume= 1.046 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
9,150	55	Woods, Good, HSG B
5,251	77	Woods, Good, HSG D
31,491	58	Meadow, non-grazed, HSG B
258,722	78	Meadow, non-grazed, HSG D
4,476	48	Brush, Good, HSG B
52,228	73	Brush, Good, HSG D
39,180	80	>75% Grass cover, Good, HSG D
23,260	98	Paved parking, HSG D
3,010	98	Roofs, HSG D
426,768	77	Weighted Average
400,498		93.84% Pervious Area
26,270		6.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	100	0.0322	0.44		**Sheet Flow,** Fallow n= 0.050 P2= 2.50"
6.4	588	0.0290	1.53		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.1	57	0.0156	0.87		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	53	0.0530	1.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	798	Total			

Subcatchment 1S: DA-1



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-1 Runoff Area=426,768 sf 6.16% Impervious Runoff Depth>1.81"
Flow Length=798' Tc=12.1 min CN=77 Runoff=19.89 cfs 1.481 af

Total Runoff Area = 9.797 ac Runoff Volume = 1.481 af Average Runoff Depth = 1.81"
93.84% Pervious = 9.194 ac 6.16% Impervious = 0.603 ac

Summary for Subcatchment 1S: DA-1

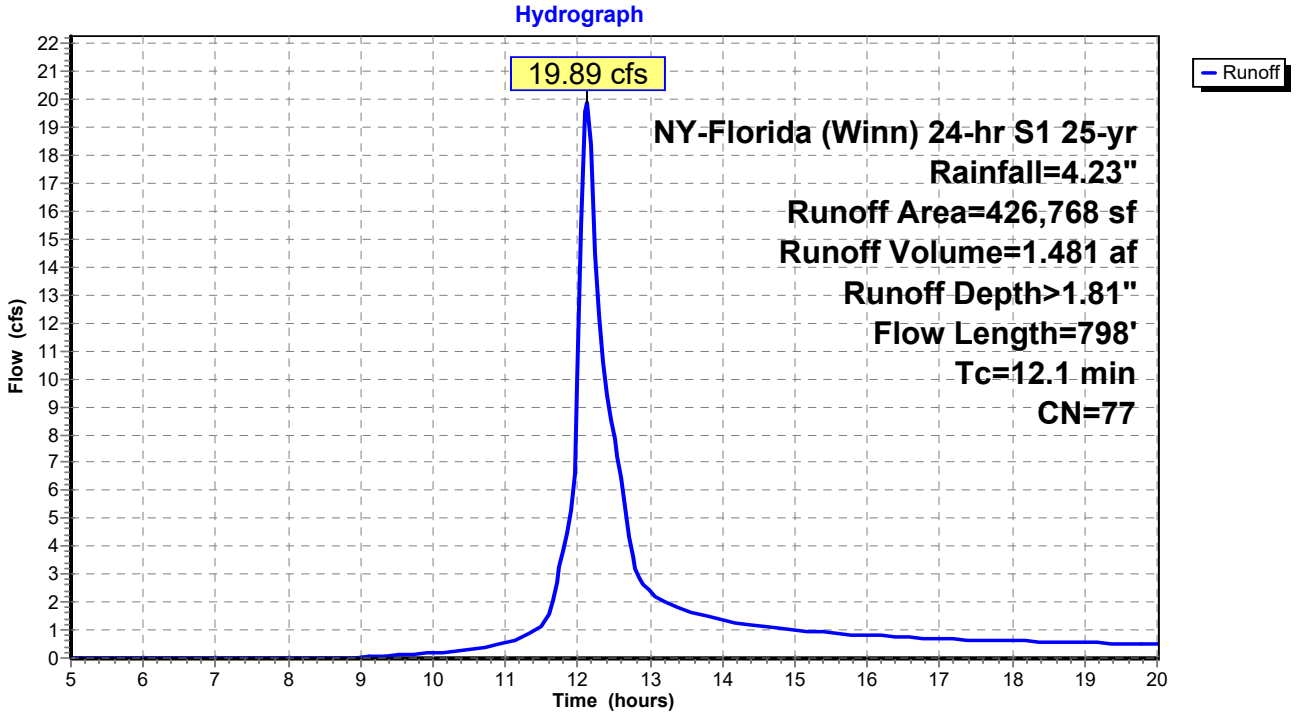
Runoff = 19.89 cfs @ 12.13 hrs, Volume= 1.481 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
9,150	55	Woods, Good, HSG B
5,251	77	Woods, Good, HSG D
31,491	58	Meadow, non-grazed, HSG B
258,722	78	Meadow, non-grazed, HSG D
4,476	48	Brush, Good, HSG B
52,228	73	Brush, Good, HSG D
39,180	80	>75% Grass cover, Good, HSG D
23,260	98	Paved parking, HSG D
3,010	98	Roofs, HSG D
426,768	77	Weighted Average
400,498		93.84% Pervious Area
26,270		6.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	100	0.0322	0.44		**Sheet Flow,** Fallow n= 0.050 P2= 2.50"
6.4	588	0.0290	1.53		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.1	57	0.0156	0.87		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	53	0.0530	1.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	798	Total			

Subcatchment 1S: DA-1



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=426,768 sf 6.16% Impervious Runoff Depth>2.94"
Flow Length=798' Tc=12.1 min CN=77 Runoff=32.94 cfs 2.398 af

Total Runoff Area = 9.797 ac Runoff Volume = 2.398 af Average Runoff Depth = 2.94"
93.84% Pervious = 9.194 ac 6.16% Impervious = 0.603 ac

Summary for Subcatchment 1S: DA-1

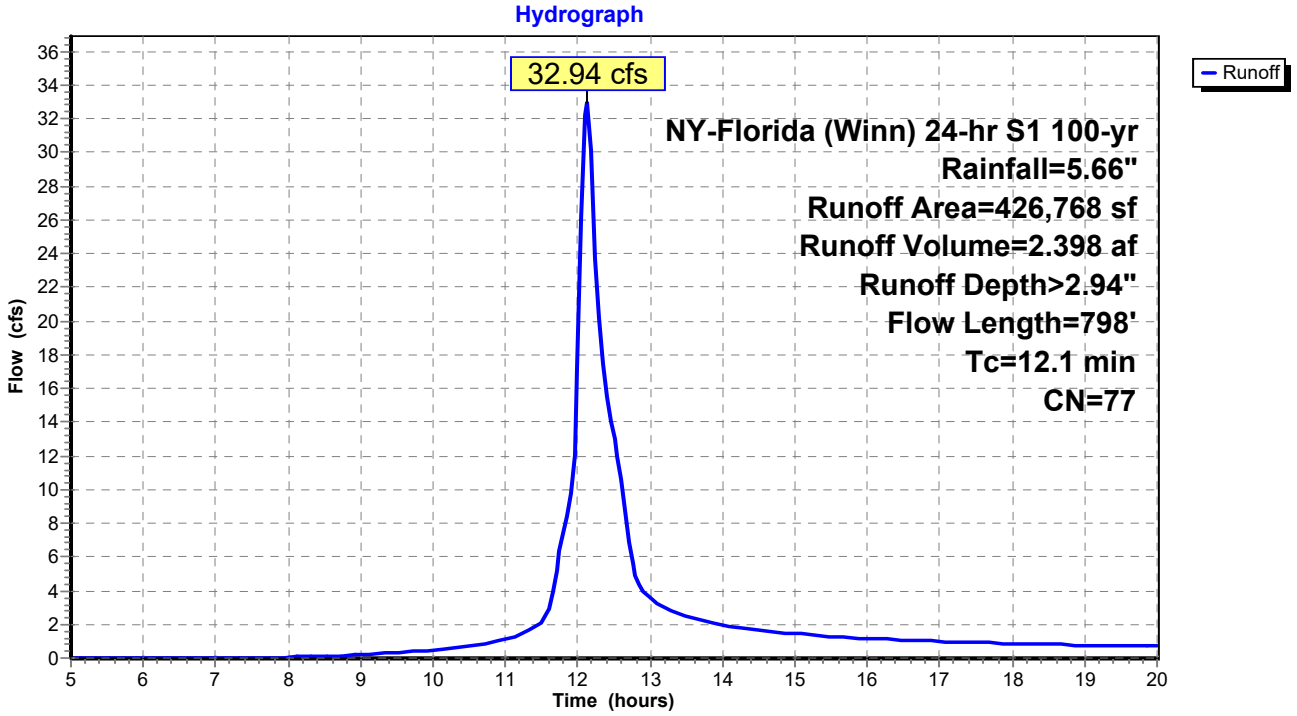
Runoff = 32.94 cfs @ 12.12 hrs, Volume= 2.398 af, Depth> 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
9,150	55	Woods, Good, HSG B
5,251	77	Woods, Good, HSG D
31,491	58	Meadow, non-grazed, HSG B
258,722	78	Meadow, non-grazed, HSG D
4,476	48	Brush, Good, HSG B
52,228	73	Brush, Good, HSG D
39,180	80	>75% Grass cover, Good, HSG D
23,260	98	Paved parking, HSG D
3,010	98	Roofs, HSG D
426,768	77	Weighted Average
400,498		93.84% Pervious Area
26,270		6.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	100	0.0322	0.44		**Sheet Flow,** Fallow n= 0.050 P2= 2.50"
6.4	588	0.0290	1.53		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.1	57	0.0156	0.87		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	53	0.0530	1.15		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	798	Total			

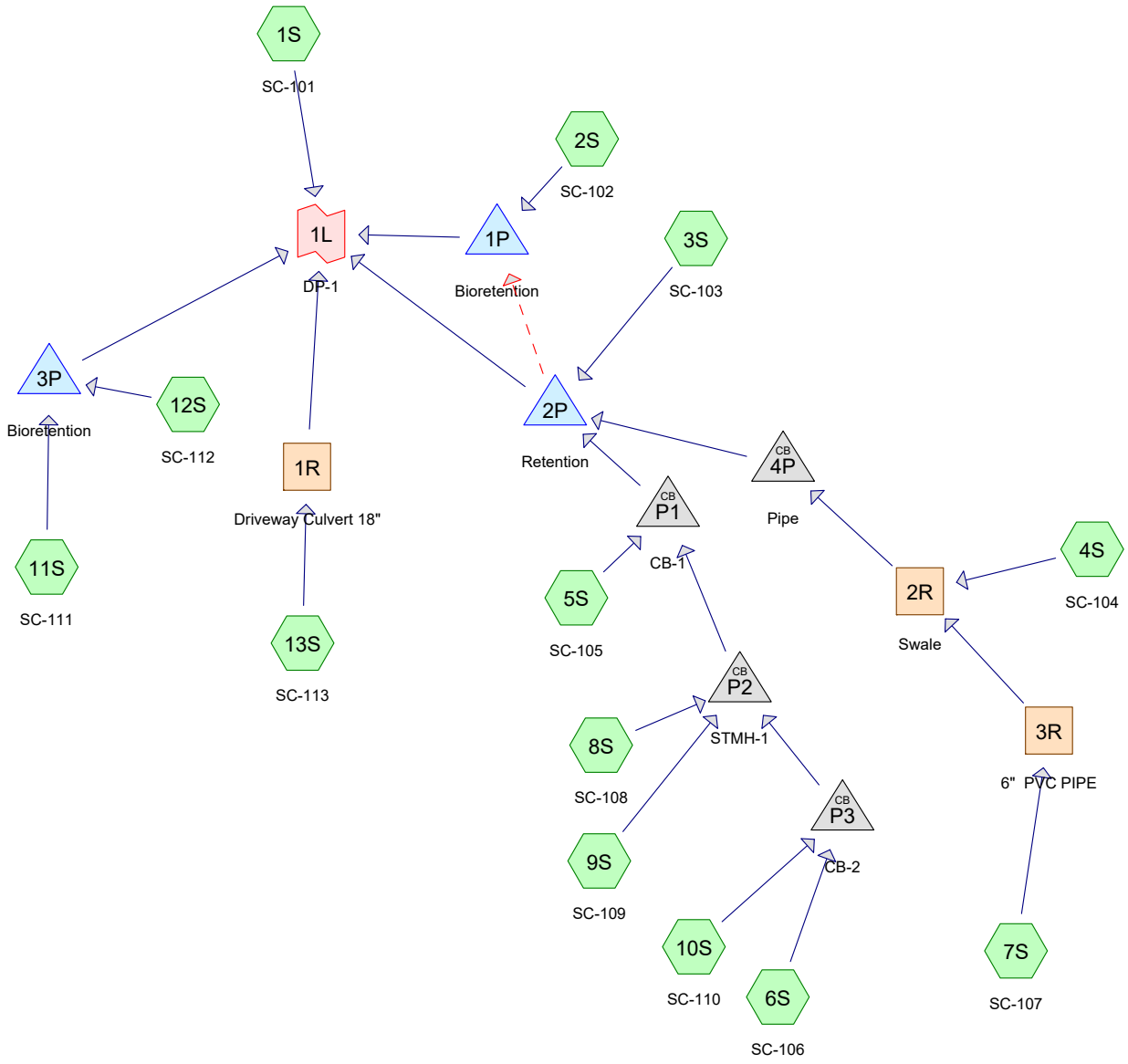
Subcatchment 1S: DA-1



Events for Subcatchment 1S: DA-1

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	4.17	0.382	0.47
10-yr	3.49	13.78	1.046	1.28
25-yr	4.23	19.89	1.481	1.81
100-yr	**5.66**	**32.94**	**2.398**	**2.94**

Appendix J
Post-Development Drainage Calculations



Subcat Reach Pond Link

Routing Diagram for 25-001 DR-PR
Prepared by Verity Engineering, DPC, Printed 2/4/2026
HydroCAD® 10.20-7a s/n 09886 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Florida (Winn) 24-hr S1	1-yr	Default	24.00	1	2.18	2
2	10-yr	NY-Florida (Winn) 24-hr S1	10-yr	Default	24.00	1	3.49	2
3	25-yr	NY-Florida (Winn) 24-hr S1	25-yr	Default	24.00	1	4.23	2
4	100-yr	NY-Florida (Winn) 24-hr S1	100-yr	Default	24.00	1	5.66	2

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SC-101 Runoff Area=222,850 sf 4.48% Impervious Runoff Depth=0.55"
Flow Length=844' Tc=13.6 min CN=77 Runoff=2.09 cfs 0.234 af

Subcatchment 2S: SC-102 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=0.68"
Tc=6.0 min CN=80 Runoff=0.13 cfs 0.010 af

Subcatchment 3S: SC-103 Runoff Area=44,336 sf 67.11% Impervious Runoff Depth=1.32"
Tc=6.0 min CN=91 Runoff=1.60 cfs 0.112 af

Subcatchment 4S: SC-104 Runoff Area=43,894 sf 59.17% Impervious Runoff Depth=1.32"
Tc=6.0 min CN=91 Runoff=1.58 cfs 0.111 af

Subcatchment 5S: SC-105 Runoff Area=29,402 sf 80.98% Impervious Runoff Depth=1.48"
Tc=6.0 min CN=93 Runoff=1.18 cfs 0.083 af

Subcatchment 6S: SC-106 Runoff Area=17,850 sf 53.11% Impervious Runoff Depth=1.25"
Tc=6.0 min CN=90 Runoff=0.61 cfs 0.043 af

Subcatchment 7S: SC-107 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=98 Runoff=0.20 cfs 0.015 af

Subcatchment 8S: SC-108 Runoff Area=7,150 sf 100.00% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=98 Runoff=0.35 cfs 0.027 af

Subcatchment 9S: SC-109 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.013 af

Subcatchment 10S: SC-110 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.013 af

Subcatchment 11S: SC-111 Runoff Area=12,251 sf 57.76% Impervious Runoff Depth=1.25"
Tc=6.0 min CN=90 Runoff=0.42 cfs 0.029 af

Subcatchment 12S: SC-112 Runoff Area=1,160 sf 0.00% Impervious Runoff Depth=0.68"
Tc=6.0 min CN=80 Runoff=0.02 cfs 0.001 af

Subcatchment 13S: SC-113 Runoff Area=29,226 sf 57.11% Impervious Runoff Depth=1.25"
Flow Length=984' Tc=15.0 min CN=90 Runoff=0.70 cfs 0.070 af

Reach 1R: Driveway Culvert 18" Avg. Flow Depth=0.20' Max Vel=5.05 fps Inflow=0.70 cfs 0.070 af
18.0" Round Pipe n=0.012 L=71.0' S=0.0268 '/' Capacity=18.62 cfs Outflow=0.70 cfs 0.070 af

Reach 2R: Swale Avg. Flow Depth=0.34' Max Vel=2.26 fps Inflow=1.78 cfs 0.126 af
n=0.030 L=376.6' S=0.0159 '/' Capacity=16.71 cfs Outflow=1.57 cfs 0.126 af

Reach 3R: 6" PVC PIPE Avg. Flow Depth=0.14' Max Vel=4.45 fps Inflow=0.20 cfs 0.015 af
6.0" Round Pipe n=0.012 L=133.8' S=0.0374 '/' Capacity=1.18 cfs Outflow=0.20 cfs 0.015 af

Pond 1P: Bioretention Peak Elev=435.08' Storage=5,014 cf Inflow=1.69 cfs 0.425 af
Outflow=0.61 cfs 0.425 af

Pond 2P: Retention Peak Elev=435.19' Storage=7,811 cf Inflow=5.59 cfs 0.417 af
Primary=0.00 cfs 0.000 af Secondary=1.63 cfs 0.415 af Outflow=1.63 cfs 0.415 af

Pond 3P: Bioretention Peak Elev=443.50' Storage=763 cf Inflow=0.44 cfs 0.031 af
Outflow=0.02 cfs 0.031 af

Pond 4P: Pipe Peak Elev=436.14' Inflow=1.57 cfs 0.126 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0056 '/' Outflow=1.57 cfs 0.126 af

Pond P1: CB-1 Peak Elev=436.59' Inflow=2.49 cfs 0.179 af
18.0" Round Culvert n=0.012 L=122.6' S=0.0061 '/' Outflow=2.49 cfs 0.179 af

Pond P2: STMH-1 Peak Elev=439.70' Inflow=1.31 cfs 0.096 af
12.0" Round Culvert n=0.012 L=98.0' S=0.0332 '/' Outflow=1.31 cfs 0.096 af

Pond P3: CB-2 Peak Elev=440.71' Inflow=0.78 cfs 0.056 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0240 '/' Outflow=0.78 cfs 0.056 af

Link 1L: DP-1 Inflow=2.86 cfs 0.759 af
Primary=2.86 cfs 0.759 af

Total Runoff Area = 9.797 ac Runoff Volume = 0.761 af Average Runoff Depth = 0.93"
66.94% Pervious = 6.559 ac 33.06% Impervious = 3.239 ac

Summary for Subcatchment 1S: SC-101

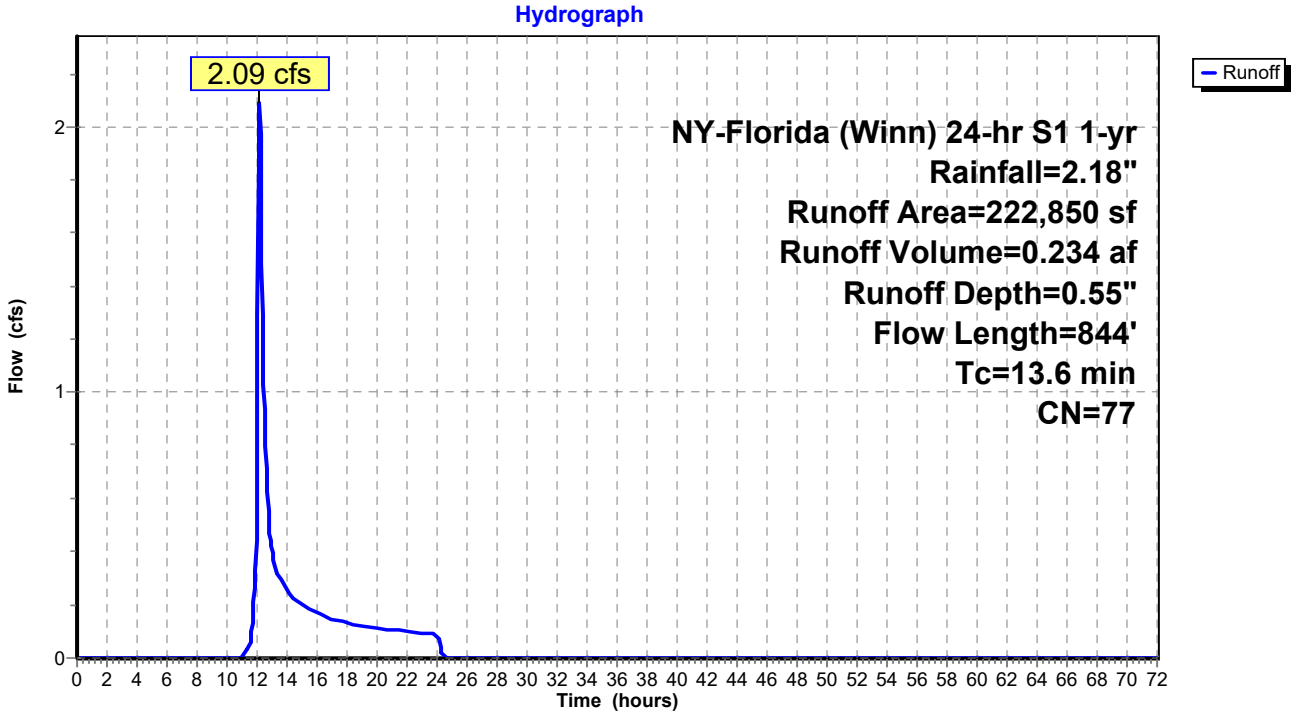
Runoff = 2.09 cfs @ 12.16 hrs, Volume= 0.234 af, Depth= 0.55"
Routed to Link 1L : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
9,237	61	>75% Grass cover, Good, HSG B
134,253	80	>75% Grass cover, Good, HSG D
8,429	55	Woods, Good, HSG B
4,294	77	Woods, Good, HSG D
4,419	67	Brush, Poor, HSG B
52,228	73	Brush, Good, HSG D
1,881	98	Roofs, HSG D
8,109	98	Paved parking, HSG D
222,850	77	Weighted Average
212,860		95.52% Pervious Area
9,990		4.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0322	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
2.0	140	0.0276	1.16		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	275	0.0205	7.09	14.18	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
0.1	45	0.0190	8.88	15.69	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.6	203	0.0129	5.63	11.25	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
1.1	81	0.0617	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	844	Total			

Subcatchment 1S: SC-101



Summary for Subcatchment 2S: SC-102

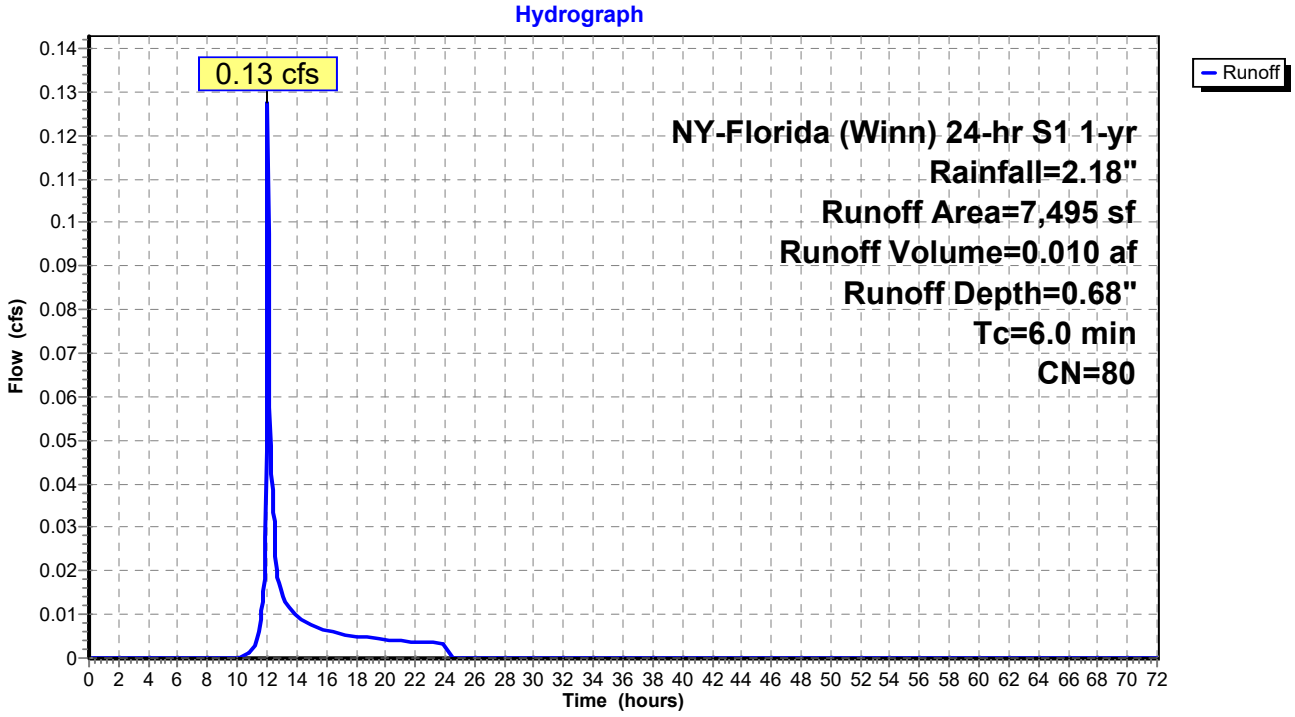
Runoff = 0.13 cfs @ 12.05 hrs, Volume= 0.010 af, Depth= 0.68"
Routed to Pond 1P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
7,495	80	>75% Grass cover, Good, HSG D
7,495		100.00% Pervious Area

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

Subcatchment 2S: SC-102



Summary for Subcatchment 3S: SC-103

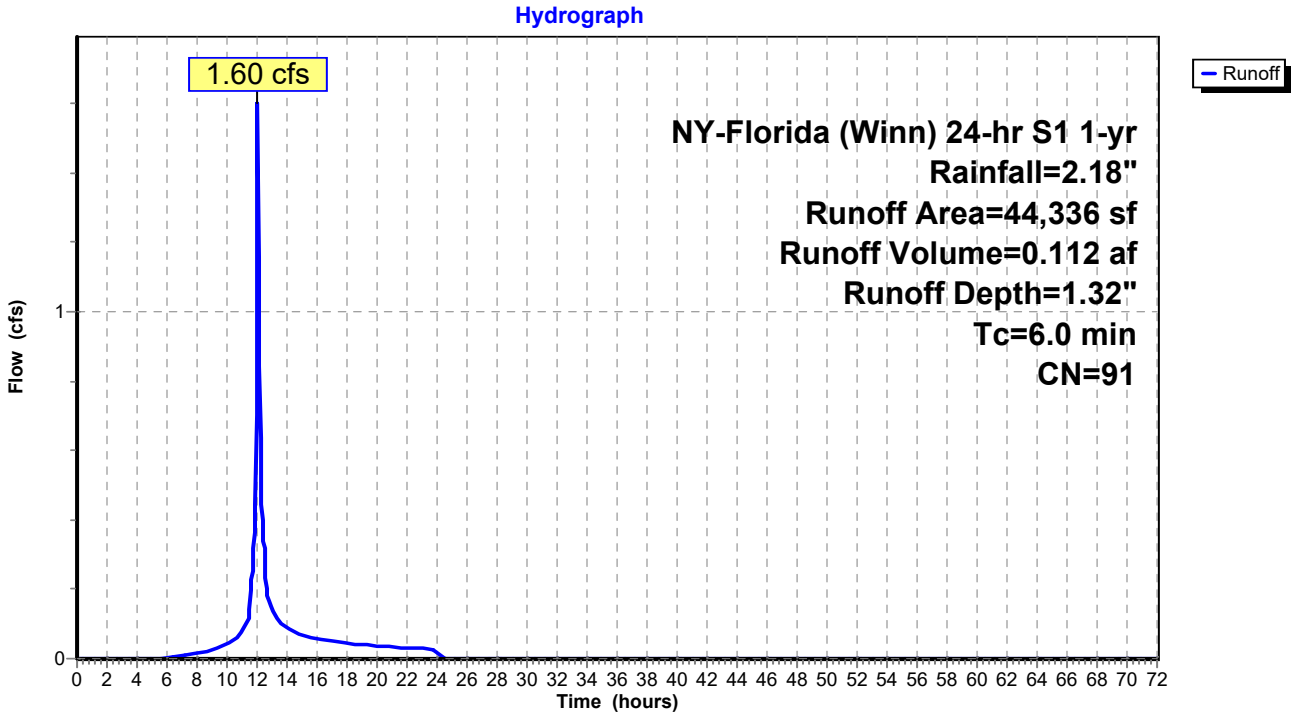
Runoff = 1.60 cfs @ 12.04 hrs, Volume= 0.112 af, Depth= 1.32"
Routed to Pond 2P : Retention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
2,422	61	>75% Grass cover, Good, HSG B
12,162	80	>75% Grass cover, Good, HSG D
16,564	98	Paved parking, HSG B
13,188	98	Paved parking, HSG D
44,336	91	Weighted Average
14,584		32.89% Pervious Area
29,752		67.11% Impervious Area

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

Subcatchment 3S: SC-103



Summary for Subcatchment 4S: SC-104

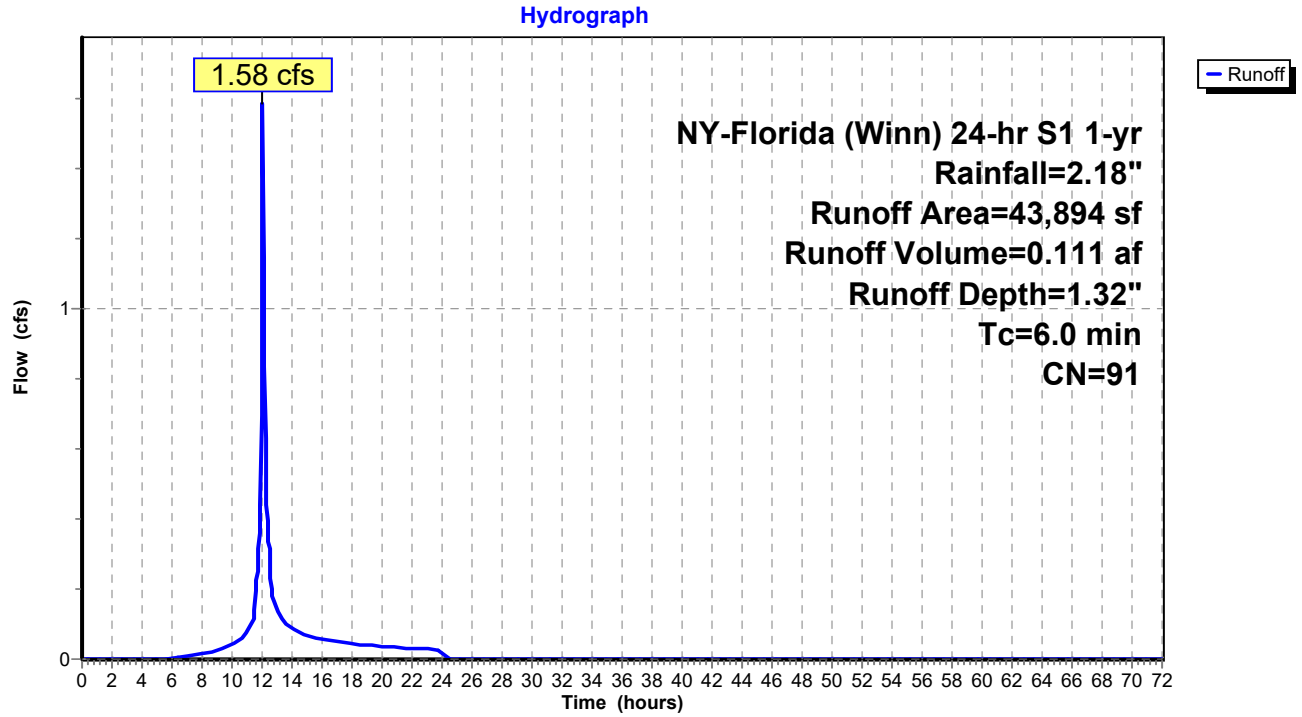
Runoff = 1.58 cfs @ 12.04 hrs, Volume= 0.111 af, Depth= 1.32"
Routed to Reach 2R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
17,922	80	>75% Grass cover, Good, HSG D
20,999	98	Paved parking, HSG D
4,973	98	Paved parking, HSG D
43,894	91	Weighted Average
17,922		40.83% Pervious Area
25,972		59.17% Impervious Area

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

Subcatchment 4S: SC-104



Summary for Subcatchment 5S: SC-105

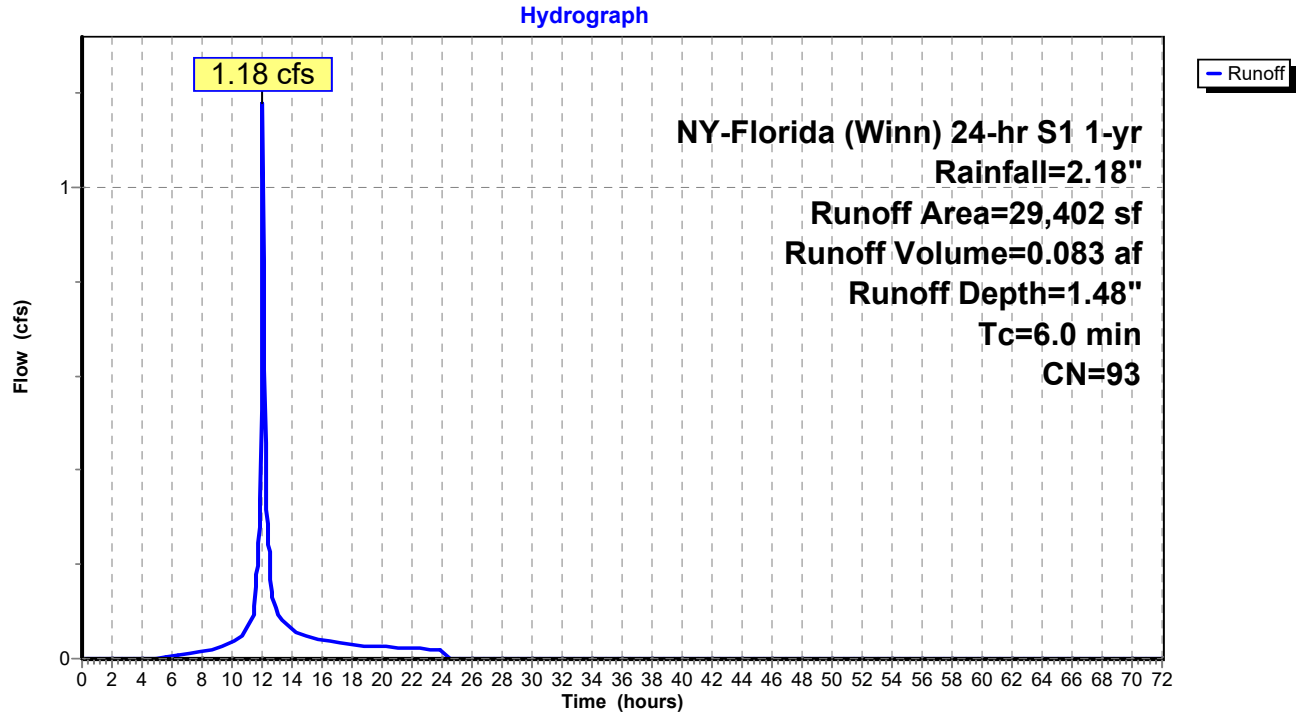
Runoff = 1.18 cfs @ 12.04 hrs, Volume= 0.083 af, Depth= 1.48"
Routed to Pond P1 : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
1,975	61	>75% Grass cover, Good, HSG B
3,618	80	>75% Grass cover, Good, HSG D
2,068	98	Paved parking, HSG B
21,741	98	Paved parking, HSG D
29,402	93	Weighted Average
5,593		19.02% Pervious Area
23,809		80.98% Impervious Area

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

Subcatchment 5S: SC-105



Summary for Subcatchment 6S: SC-106

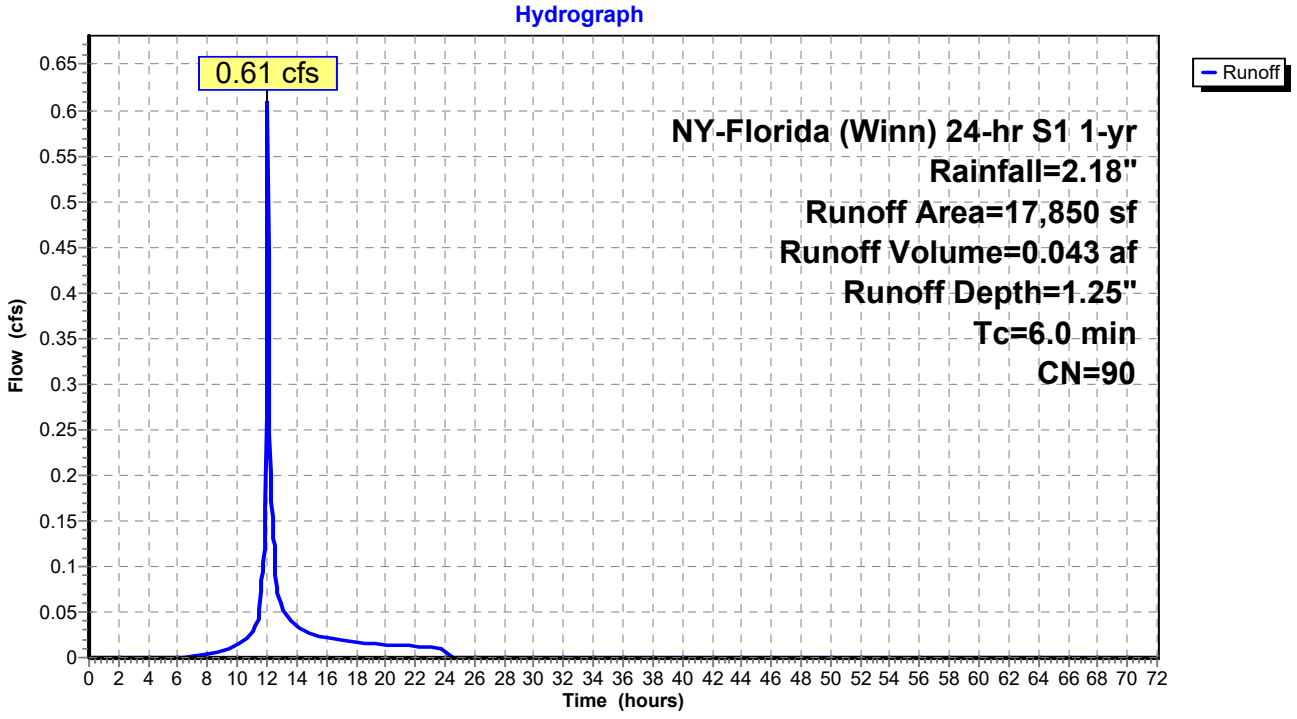
Runoff = 0.61 cfs @ 12.04 hrs, Volume= 0.043 af, Depth= 1.25"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
8,369	80	>75% Grass cover, Good, HSG D
9,481	98	Paved parking, HSG D
17,850	90	Weighted Average
8,369		46.89% Pervious Area
9,481		53.11% Impervious Area

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

Subcatchment 6S: SC-106



Summary for Subcatchment 7S: SC-107

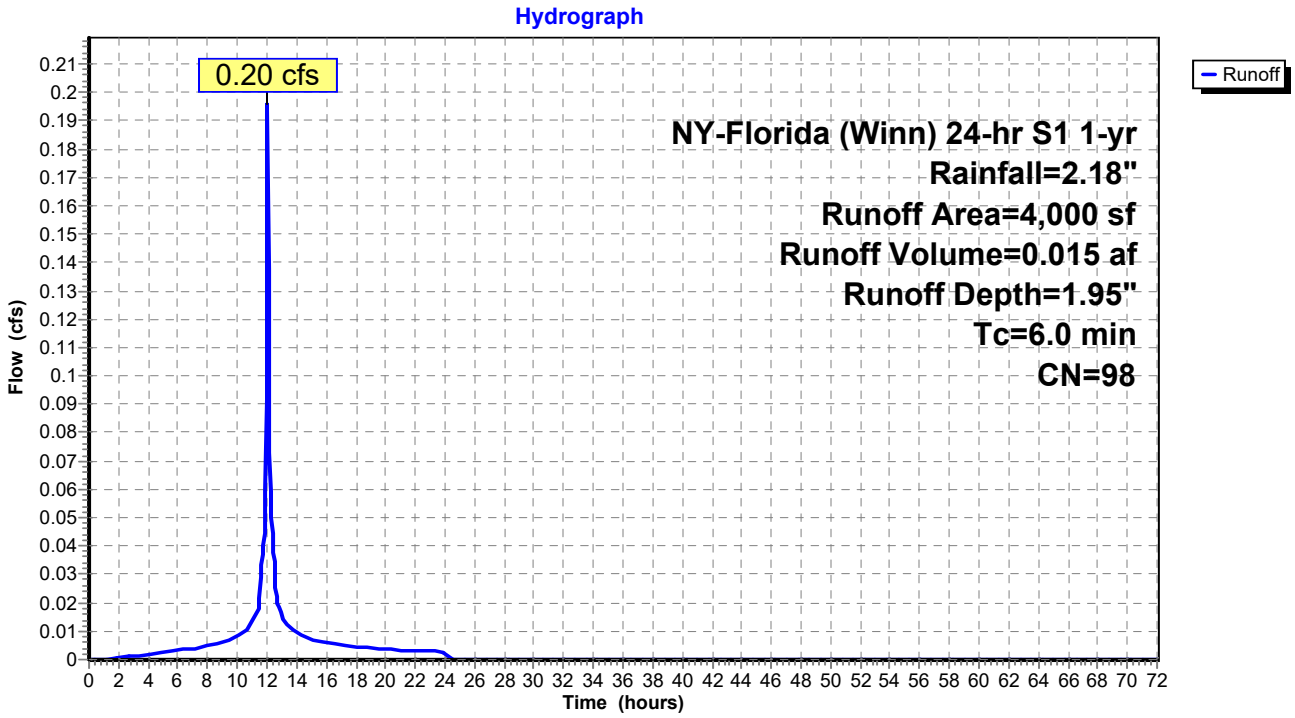
Runoff = 0.20 cfs @ 12.04 hrs, Volume= 0.015 af, Depth= 1.95"
Routed to Reach 3R : 6" PVC PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
4,000	98	Unconnected roofs, HSG D
4,000		100.00% Impervious Area
4,000		100.00% Unconnected

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

Subcatchment 7S: SC-107



Summary for Subcatchment 8S: SC-108

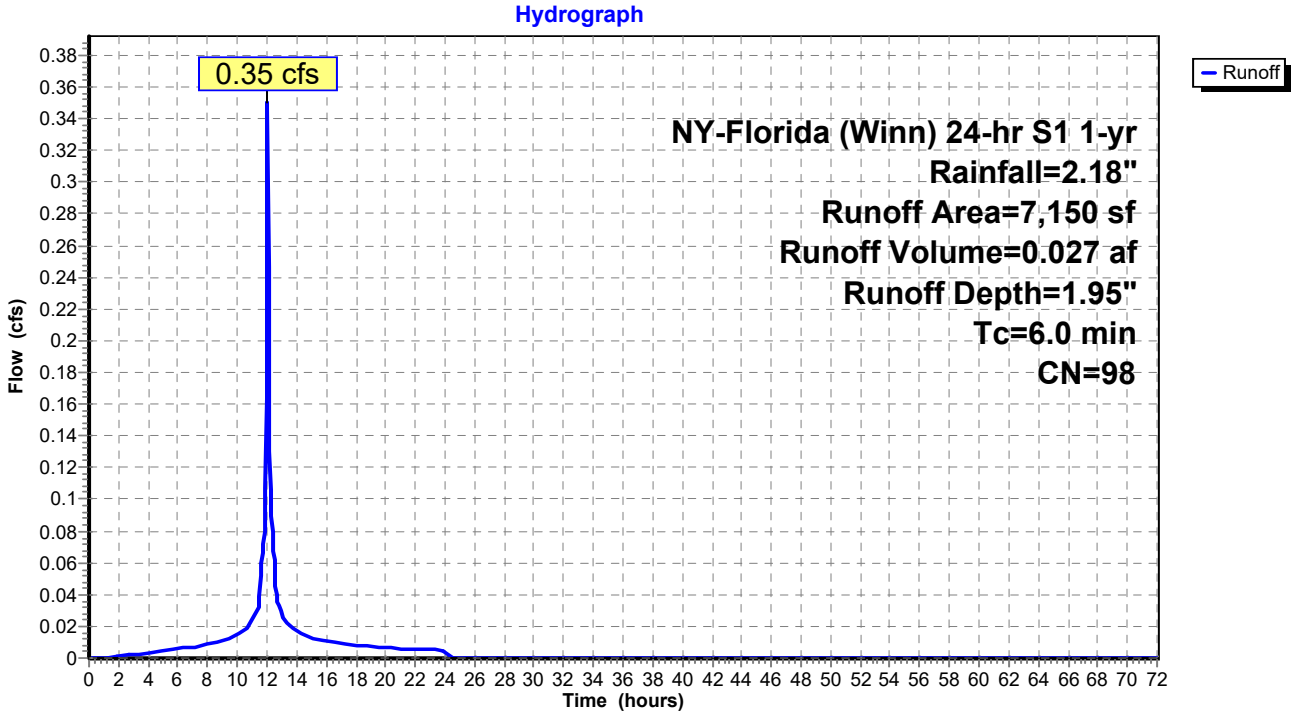
Runoff = 0.35 cfs @ 12.04 hrs, Volume= 0.027 af, Depth= 1.95"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
7,150	98	Roofs, HSG D
7,150		100.00% Impervious Area

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

Subcatchment 8S: SC-108



Summary for Subcatchment 9S: SC-109

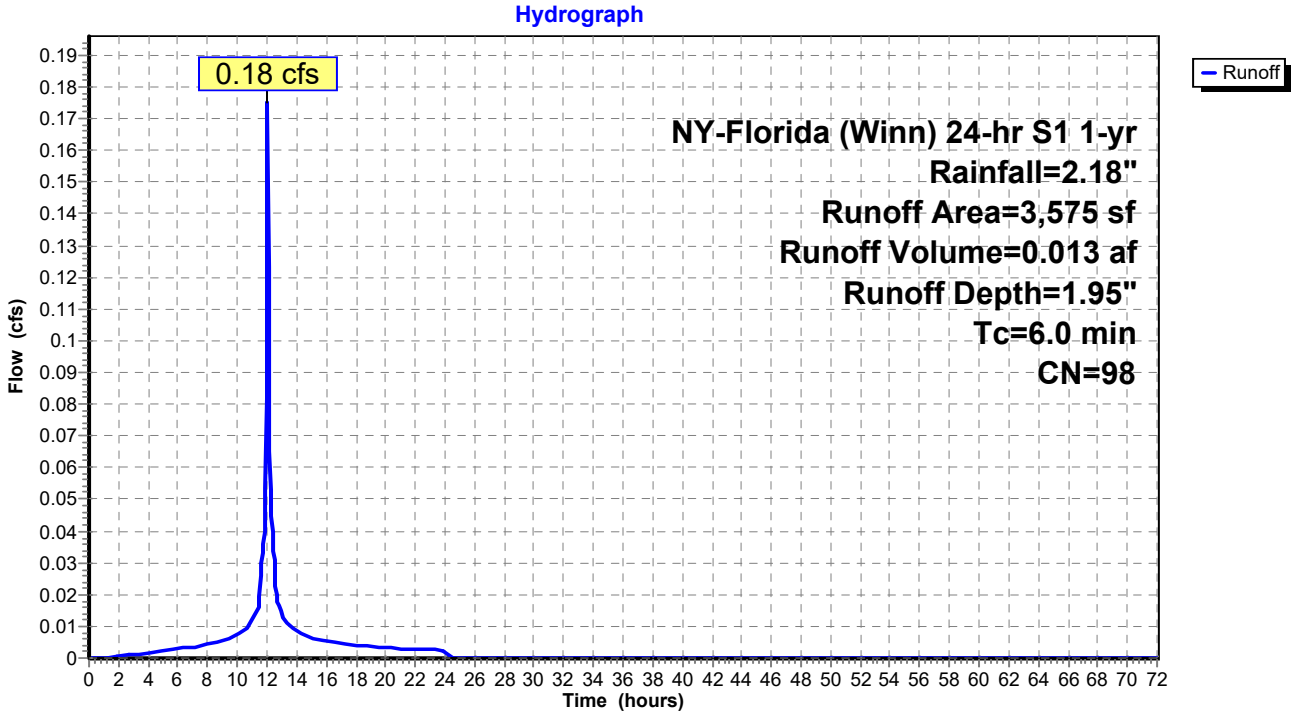
Runoff = 0.18 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 1.95"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 9S: SC-109



Summary for Subcatchment 10S: SC-110

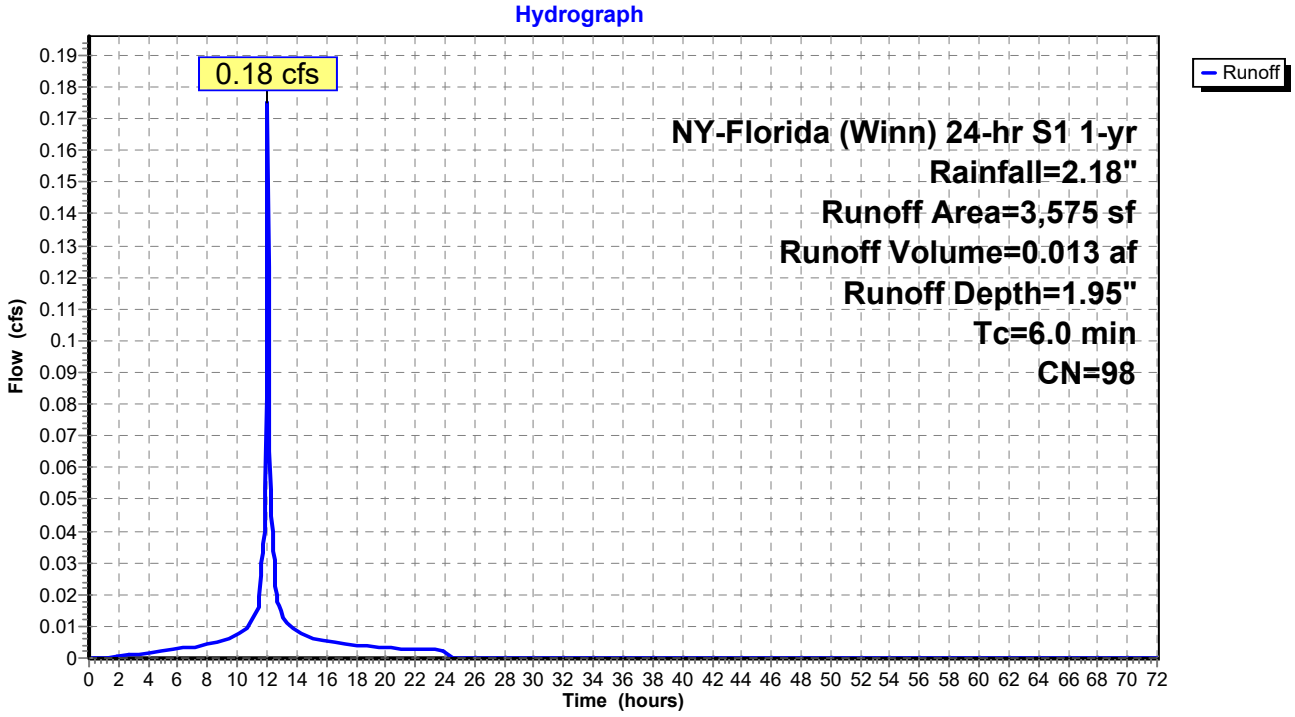
Runoff = 0.18 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 1.95"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 10S: SC-110



Summary for Subcatchment 11S: SC-111

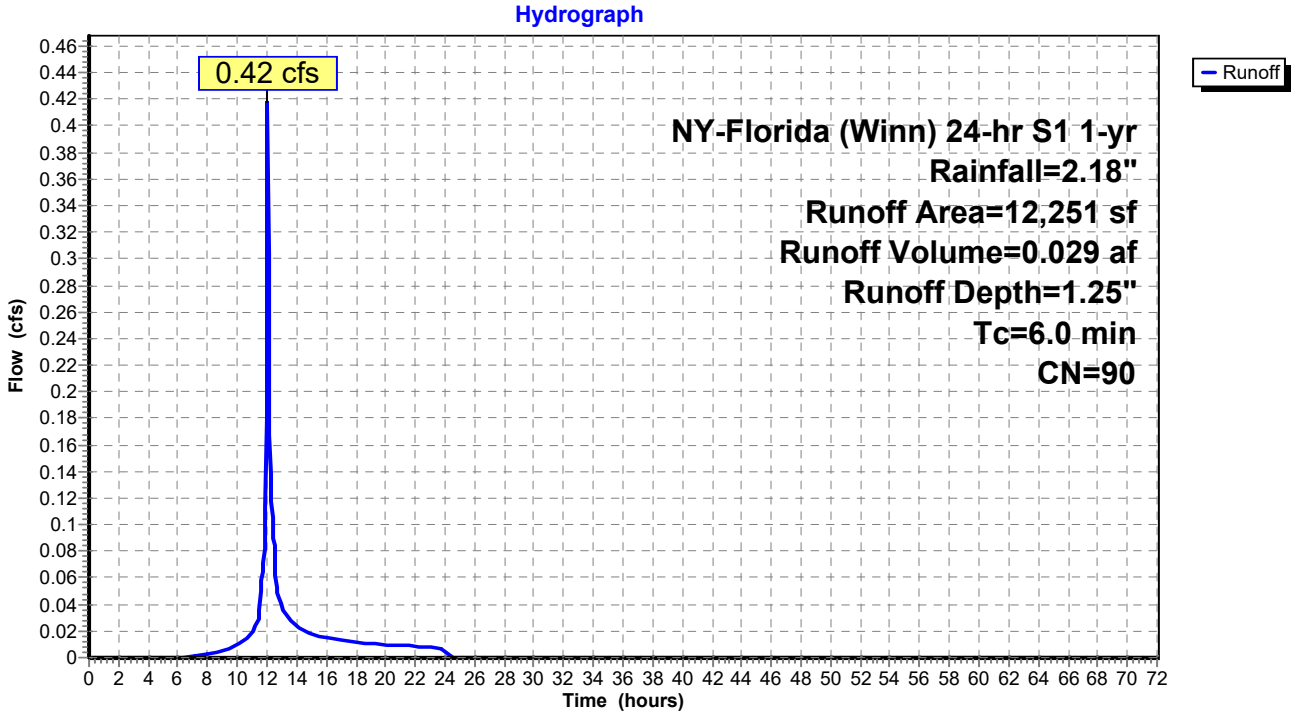
Runoff = 0.42 cfs @ 12.04 hrs, Volume= 0.029 af, Depth= 1.25"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
5,175	80	>75% Grass cover, Good, HSG D
7,076	98	Paved parking, HSG D
12,251	90	Weighted Average
5,175		42.24% Pervious Area
7,076		57.76% Impervious Area

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

Subcatchment 11S: SC-111



Summary for Subcatchment 12S: SC-112

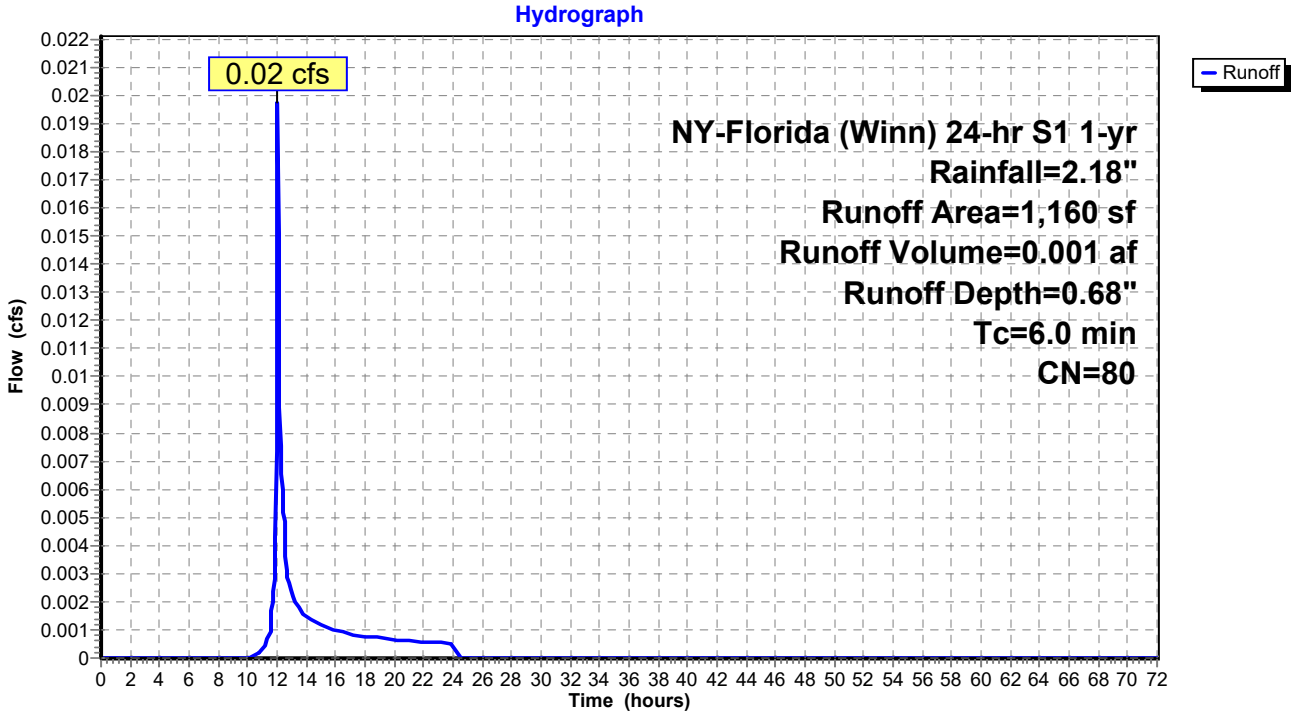
Runoff = 0.02 cfs @ 12.05 hrs, Volume= 0.001 af, Depth= 0.68"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
1,160	80	>75% Grass cover, Good, HSG D
1,160		100.00% Pervious Area

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

Subcatchment 12S: SC-112



Summary for Subcatchment 13S: SC-113

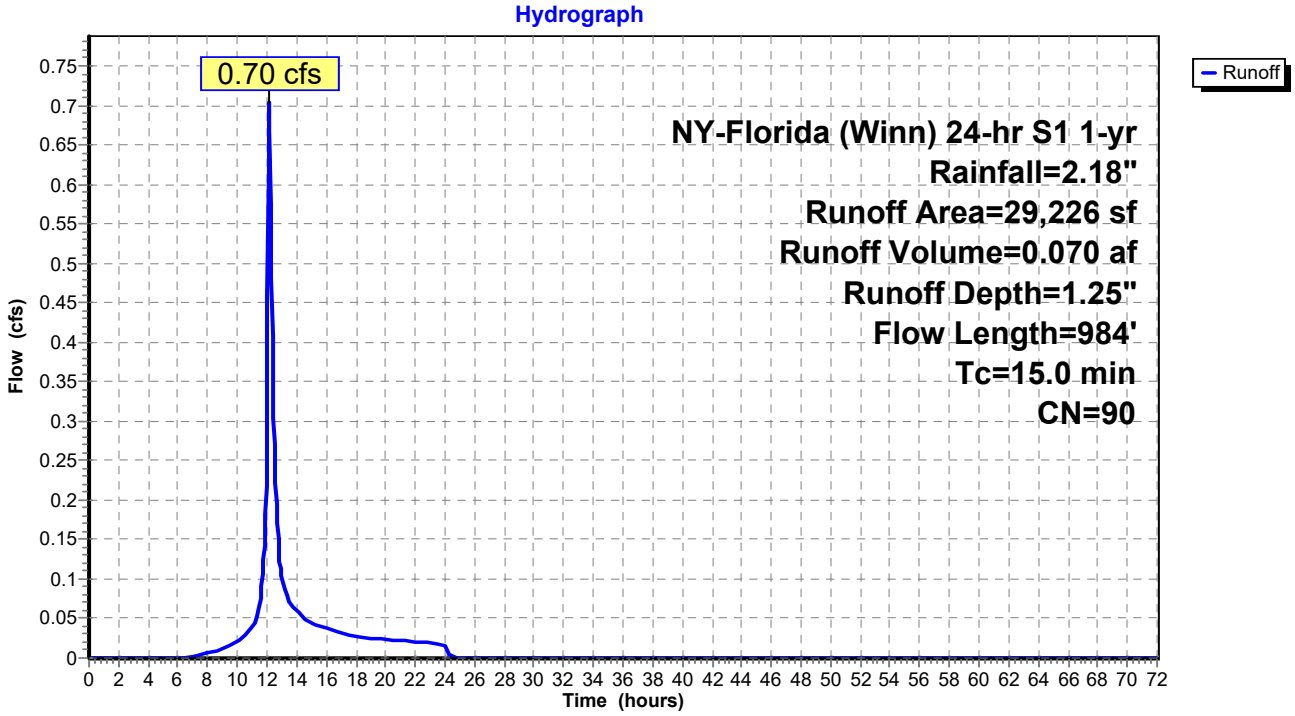
Runoff = 0.70 cfs @ 12.16 hrs, Volume= 0.070 af, Depth= 1.25"
Routed to Reach 1R : Driveway Culvert 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 1-yr Rainfall=2.18"

Area (sf)	CN	Description
12,534	80	>75% Grass cover, Good, HSG D
1,129	98	Roofs, HSG D
15,563	98	Paved parking, HSG D
29,226	90	Weighted Average
12,534		42.89% Pervious Area
16,692		57.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0147	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
0.2	20	0.0785	1.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	109	0.0210	4.52	4.52	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.0	32	0.0996	20.32	35.91	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.3	116	0.0467	6.74	6.74	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	42	0.0242	10.02	17.70	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	53	0.0283	10.83	19.14	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
15.0	984	Total			

Subcatchment 13S: SC-113



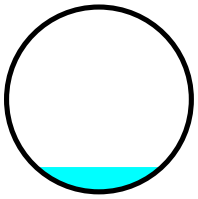
Summary for Reach 1R: Driveway Culvert 18"

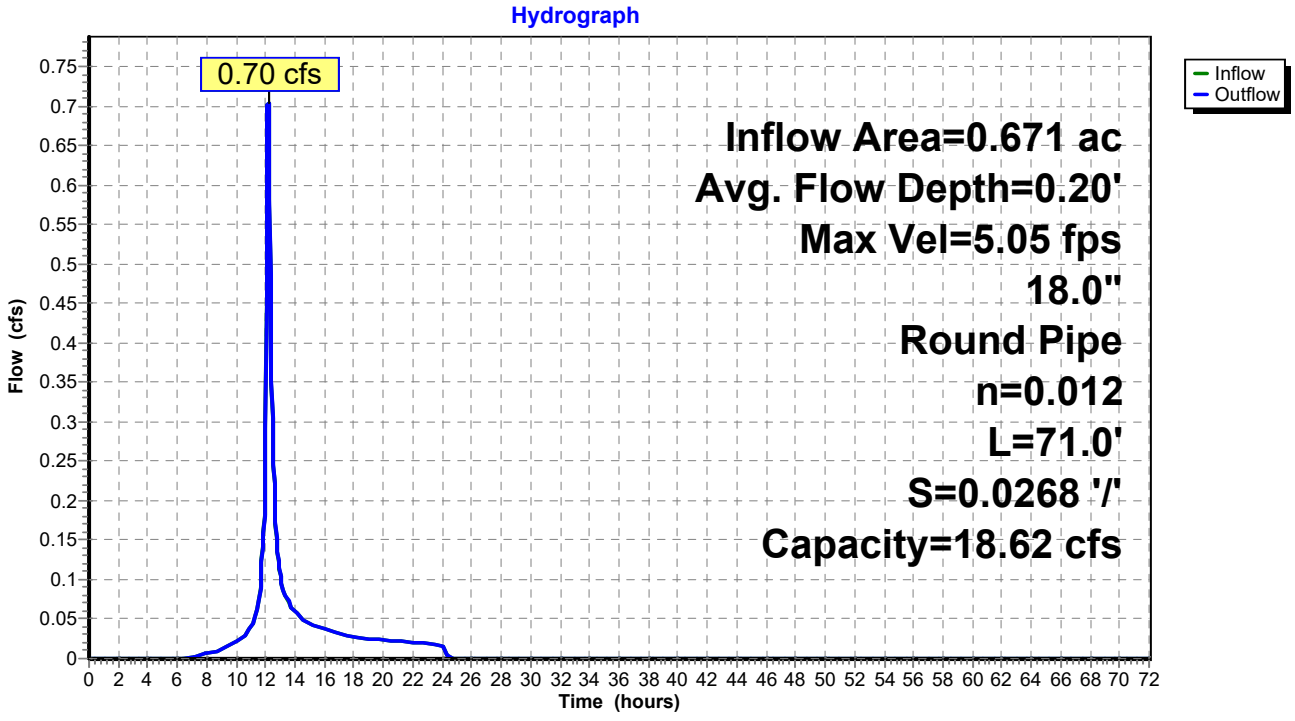
Inflow Area = 0.671 ac, 57.11% Impervious, Inflow Depth = 1.25" for 1-yr event
Inflow = 0.70 cfs @ 12.16 hrs, Volume= 0.070 af
Outflow = 0.70 cfs @ 12.16 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.2 min
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.05 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.94 fps, Avg. Travel Time= 0.6 min

Peak Storage= 10 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.20' , Surface Width= 1.02'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.62 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 71.0' Slope= 0.0268 '/'
Inlet Invert= 449.50', Outlet Invert= 447.60'





Summary for Reach 2R: Swale

Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 1.38" for 1-yr event
Inflow = 1.78 cfs @ 12.04 hrs, Volume= 0.126 af
Outflow = 1.57 cfs @ 12.08 hrs, Volume= 0.126 af, Atten= 12%, Lag= 2.0 min
Routed to Pond 4P : Pipe

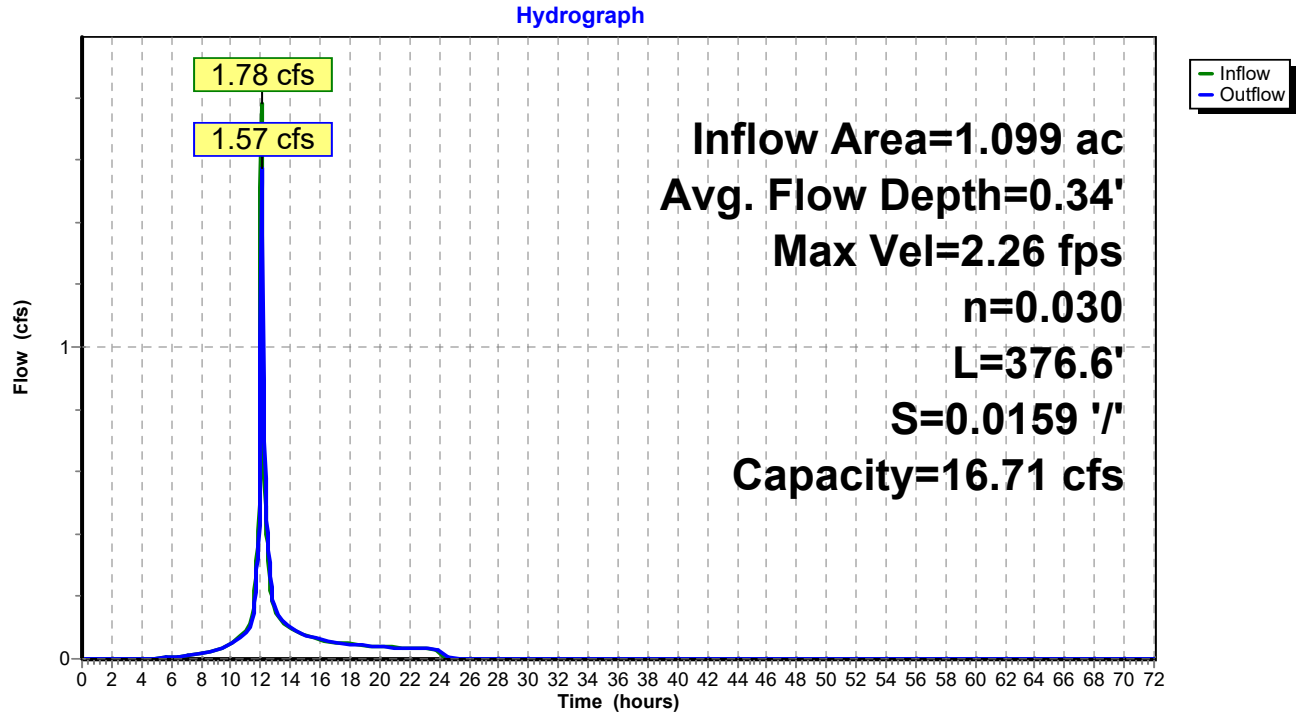
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.26 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 9.1 min

Peak Storage= 261 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 3.05'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 16.71 cfs

1.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 376.6' Slope= 0.0159 '/'
Inlet Invert= 441.50', Outlet Invert= 435.50'



Reach 2R: Swale



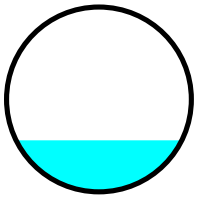
Summary for Reach 3R: 6" PVC PIPE

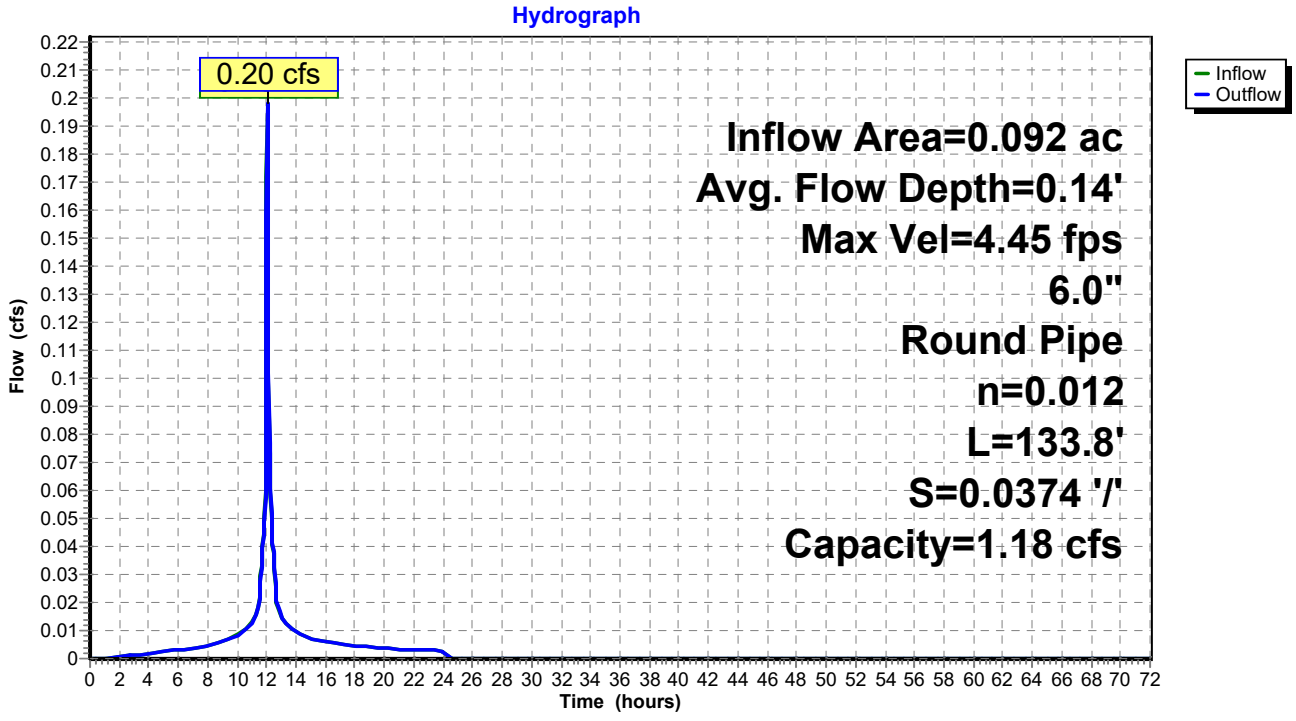
Inflow Area = 0.092 ac,100.00% Impervious, Inflow Depth = 1.95" for 1-yr event
Inflow = 0.20 cfs @ 12.04 hrs, Volume= 0.015 af
Outflow = 0.20 cfs @ 12.05 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.5 min
Routed to Reach 2R : Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.45 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.50 fps, Avg. Travel Time= 1.5 min

Peak Storage= 6 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 0.45'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.18 cfs

6.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 133.8' Slope= 0.0374 '/'
Inlet Invert= 449.00', Outlet Invert= 444.00'





Summary for Pond 1P: Bioretention

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth > 29.63" for 1-yr event
Inflow = 1.69 cfs @ 12.18 hrs, Volume= 0.425 af
Outflow = 0.61 cfs @ 13.01 hrs, Volume= 0.425 af, Atten= 64%, Lag= 49.5 min
Primary = 0.61 cfs @ 13.01 hrs, Volume= 0.425 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 435.08' @ 13.01 hrs Surf.Area= 5,158 sf Storage= 5,014 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 532.6 min (1,764.8 - 1,232.2)

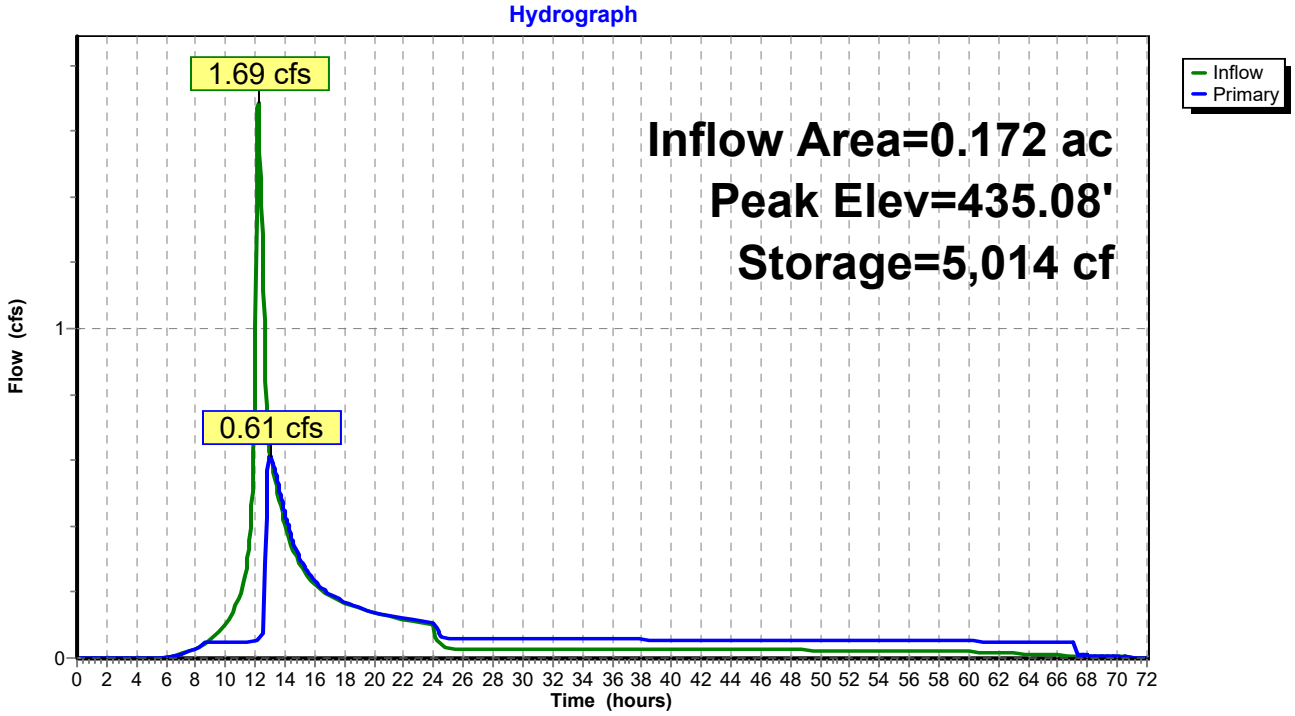
Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	7,284 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.00	4,173	293.0	0	0	4,173
435.00	5,086	314.1	4,622	4,622	5,237
435.50	5,564	323.6	2,662	7,284	5,744

Device	Routing	Invert	Outlet Devices
#1	Primary	430.25'	**12.0" Round 12" Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 430.25' / 430.00' S= 0.0033 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	434.00'	**0.500 in/hr Exfiltration over Horizontal area**
#3	Device 1	435.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.61 cfs @ 13.01 hrs HW=435.08' TW=0.00' (Dynamic Tailwater)
↑ **1=12" Culvert** (Passes 0.61 cfs of 6.21 cfs potential flow)
↑ **2=Exfiltration** (Exfiltration Controls 0.06 cfs)
3=Orifice/Grate (Weir Controls 0.55 cfs @ 0.90 fps)

Pond 1P: Bioretention



Summary for Pond 2P: Retention

Inflow Area = 3.530 ac, 69.78% Impervious, Inflow Depth = 1.42" for 1-yr event
Inflow = 5.59 cfs @ 12.05 hrs, Volume= 0.417 af
Outflow = 1.63 cfs @ 12.19 hrs, Volume= 0.415 af, Atten= 71%, Lag= 8.5 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : DP-1
Secondary = 1.63 cfs @ 12.19 hrs, Volume= 0.415 af
Routed to Pond 1P : Bioretention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 434.10' Surf.Area= 2,236 sf Storage= 2,903 cf
Peak Elev= 435.19' @ 12.45 hrs Surf.Area= 5,460 sf Storage= 7,811 cf (4,908 cf above start)
Flood Elev= 438.00' Surf.Area= 9,856 sf Storage= 28,870 cf (25,967 cf above start)

Plug-Flow detention time= 604.0 min calculated for 0.348 af (83% of inflow)
Center-of-Mass det. time= 415.0 min (1,240.0 - 825.1)

Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	28,870 cf	**Custom Stage Data (Irregular)**Listed below

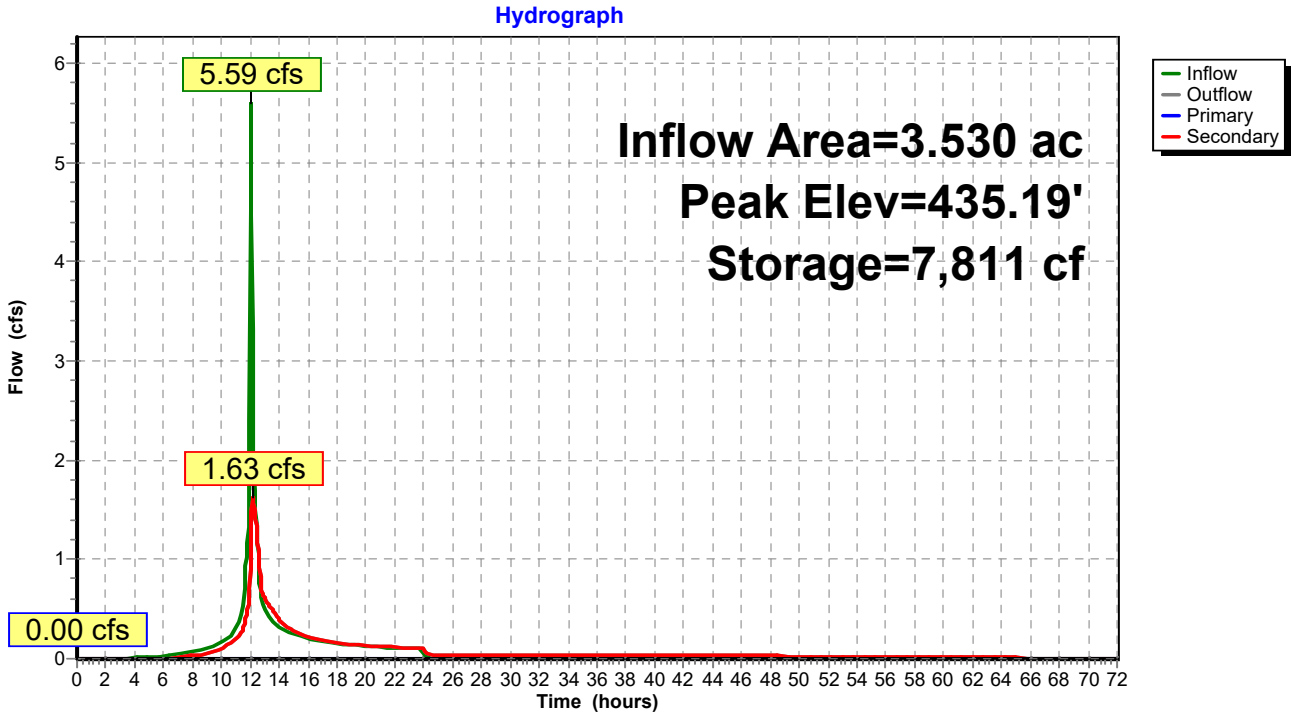
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
432.00	620	241.1	0	0	620
433.00	1,344	303.9	959	959	3,357
434.00	2,138	324.6	1,726	2,685	4,439
434.10	2,236	326.9	219	2,903	4,563
434.50	4,632	369.2	1,345	4,248	6,910
435.00	5,195	380.5	2,455	6,704	7,610
436.00	6,603	409.1	5,885	12,589	9,450
437.00	8,079	433.2	7,329	19,917	11,119
438.00	9,856	524.8	8,953	28,870	18,119

Device	Routing	Invert	Outlet Devices
#1	Primary	431.55'	**18.0" Round 24" Culvert** L= 53.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 431.55' / 431.00' S= 0.0103 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Secondary	434.10'	**10.0" Round WQ Outlet** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 434.10' / 434.00' S= 0.0036 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#3	Device 1	436.25'	**1.0" x 6.0" Horiz. 30" x 30" Grate X 14.00 columns** X 4 rows C= 0.600 in 30.0" x 30.0" Grate (37% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=434.10' TW=0.00' (Dynamic Tailwater)
└─**1=24" Culvert** (Passes 0.00 cfs of 9.01 cfs potential flow)
└─**3=30" x 30" Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=1.55 cfs @ 12.19 hrs HW=435.15' TW=434.59' (Dynamic Tailwater)
└─**2=WQ Outlet** (Inlet Controls 1.55 cfs @ 2.83 fps)

Pond 2P: Retention



Summary for Pond 3P: Bioretention

Inflow Area = 0.308 ac, 52.76% Impervious, Inflow Depth = 1.20" for 1-yr event
Inflow = 0.44 cfs @ 12.04 hrs, Volume= 0.031 af
Outflow = 0.02 cfs @ 15.94 hrs, Volume= 0.031 af, Atten= 96%, Lag= 233.7 min
Primary = 0.02 cfs @ 15.94 hrs, Volume= 0.031 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 443.50' @ 15.94 hrs Surf.Area= 1,083 sf Storage= 763 cf

Plug-Flow detention time= 707.6 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 708.3 min (1,553.6 - 845.4)

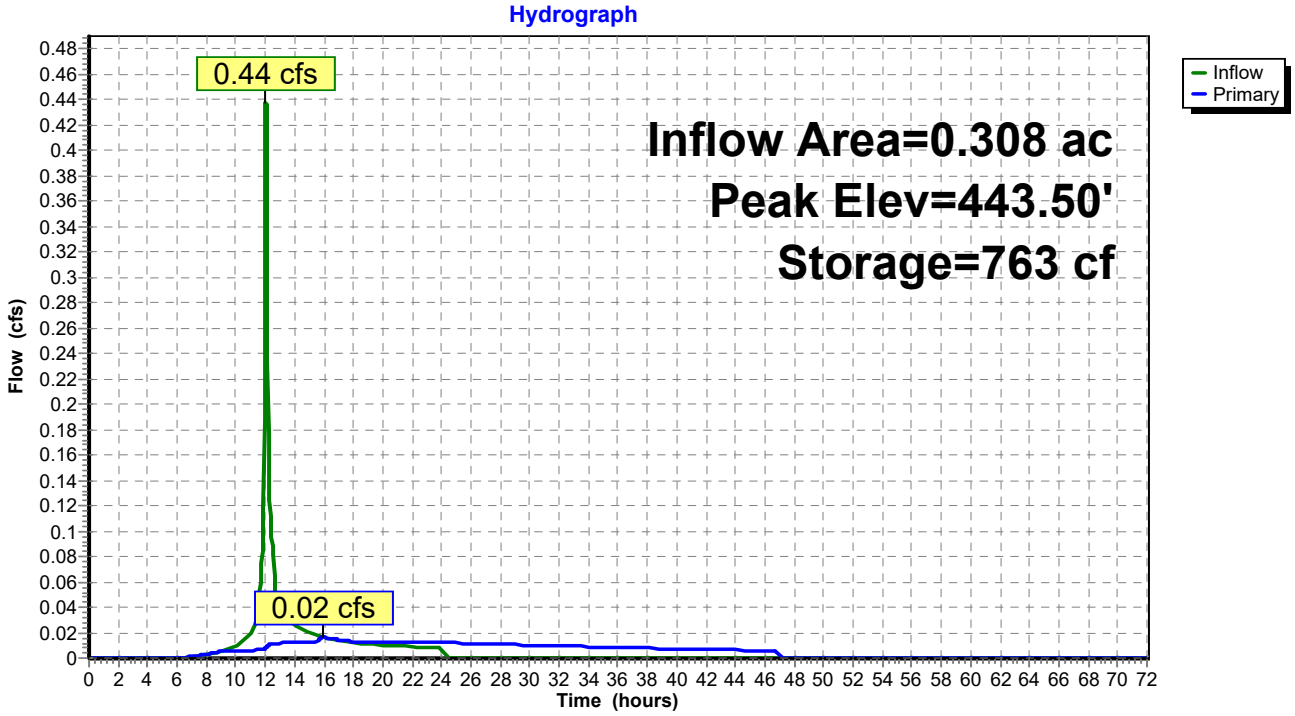
Volume	Invert	Avail.Storage	Storage Description
#1	442.50'	1,396 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
442.50	479	92.7	0	0	479
444.00	1,473	166.8	1,396	1,396	2,022

Device	Routing	Invert	Outlet Devices
#1	Device 3	442.50'	**0.500 in/hr Exfiltration over Horizontal area**
#2	Device 3	443.50'	**24.0" x 24.0" Horiz. 24" x 24" Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	438.90'	**12.0" Round 12" Culvert** L= 57.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 438.90' / 438.50' S= 0.0070 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 15.94 hrs HW=443.50' TW=0.00' (Dynamic Tailwater)
└**3=12" Culvert** (Passes 0.02 cfs of 6.05 cfs potential flow)
  ├**1=Exfiltration** (Exfiltration Controls 0.01 cfs)
  └**2=24" x 24" Orifice/Grate** (Weir Controls 0.00 cfs @ 0.17 fps)

Pond 3P: Bioretention



Summary for Pond 4P: Pipe

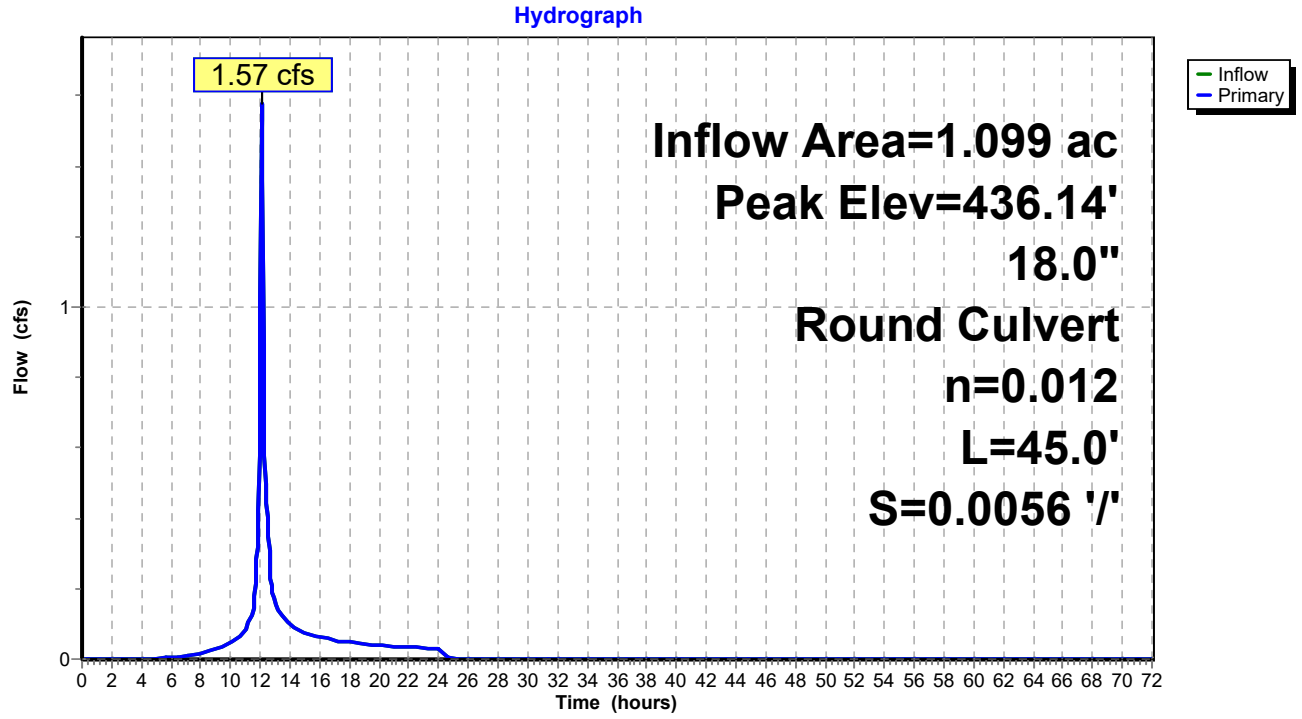
Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 1.38" for 1-yr event
Inflow = 1.57 cfs @ 12.08 hrs, Volume= 0.126 af
Outflow = 1.57 cfs @ 12.08 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Primary = 1.57 cfs @ 12.08 hrs, Volume= 0.126 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 436.14' @ 12.08 hrs
Flood Elev= 438.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.50'	**18.0" Round Culvert** L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 435.50' / 435.25' S= 0.0056 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.53 cfs @ 12.08 hrs HW=436.13' TW=434.98' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.53 cfs @ 3.18 fps)

Pond 4P: Pipe



Summary for Pond P1: CB-1

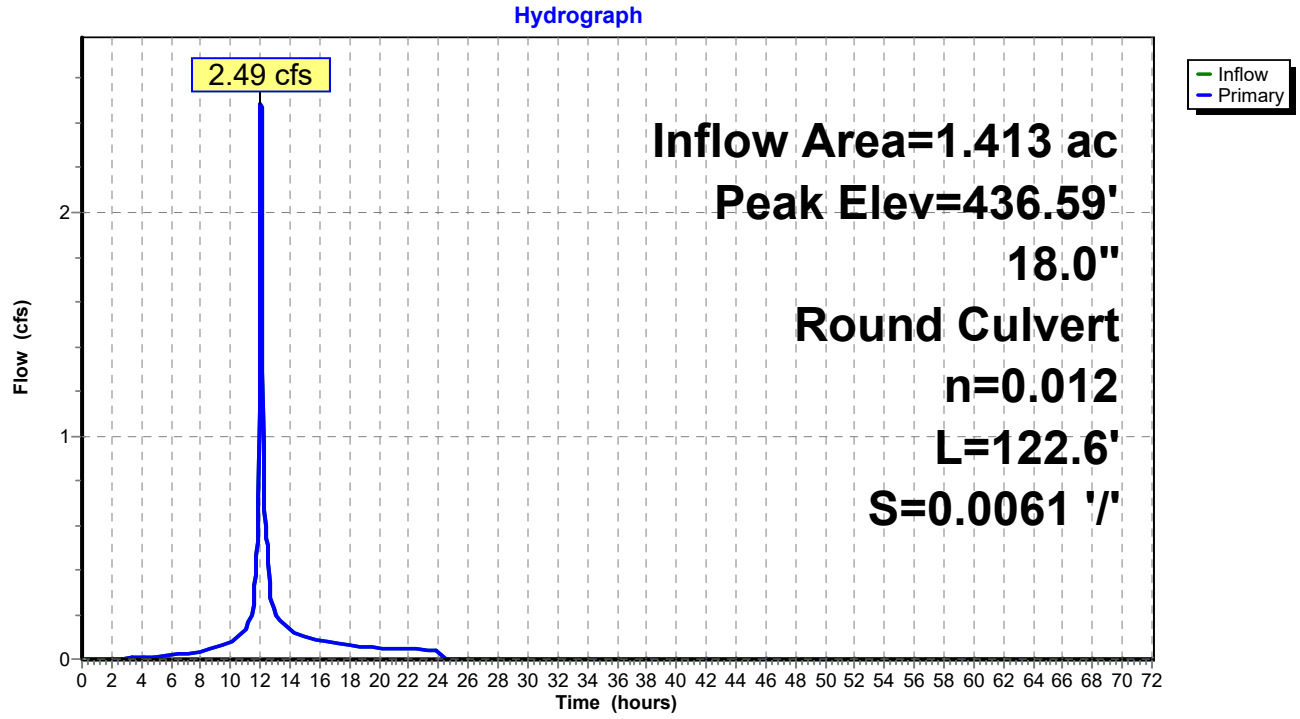
Inflow Area = 1.413 ac, 77.32% Impervious, Inflow Depth = 1.52" for 1-yr event
Inflow = 2.49 cfs @ 12.04 hrs, Volume= 0.179 af
Outflow = 2.49 cfs @ 12.04 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.04 hrs, Volume= 0.179 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 436.59' @ 12.04 hrs
Flood Elev= 439.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.75'	**18.0" Round Culvert** L= 122.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 435.75' / 435.00' S= 0.0061 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.41 cfs @ 12.04 hrs HW=436.57' TW=434.89' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.41 cfs @ 2.44 fps)

Pond P1: CB-1



Summary for Pond P2: STMH-1

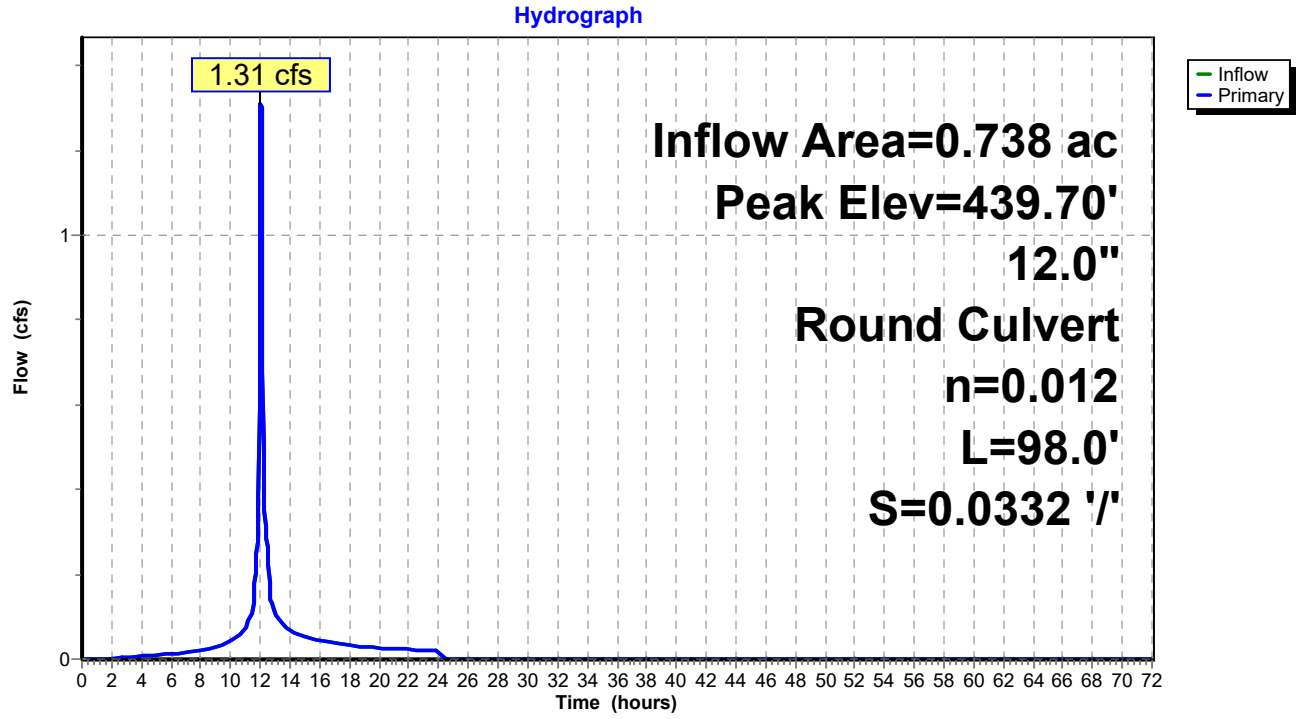
Inflow Area = 0.738 ac, 73.97% Impervious, Inflow Depth = 1.56" for 1-yr event
Inflow = 1.31 cfs @ 12.04 hrs, Volume= 0.096 af
Outflow = 1.31 cfs @ 12.04 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 12.04 hrs, Volume= 0.096 af
Routed to Pond P1 : CB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 439.70' @ 12.04 hrs
Flood Elev= 444.06'

Device	Routing	Invert	Outlet Devices
#1	Primary	439.00'	**12.0" Round Culvert** L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.00' / 435.75' S= 0.0332 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.27 cfs @ 12.04 hrs HW=439.68' TW=436.57' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.27 cfs @ 2.22 fps)

Pond P2: STMH-1



Summary for Pond P3: CB-2

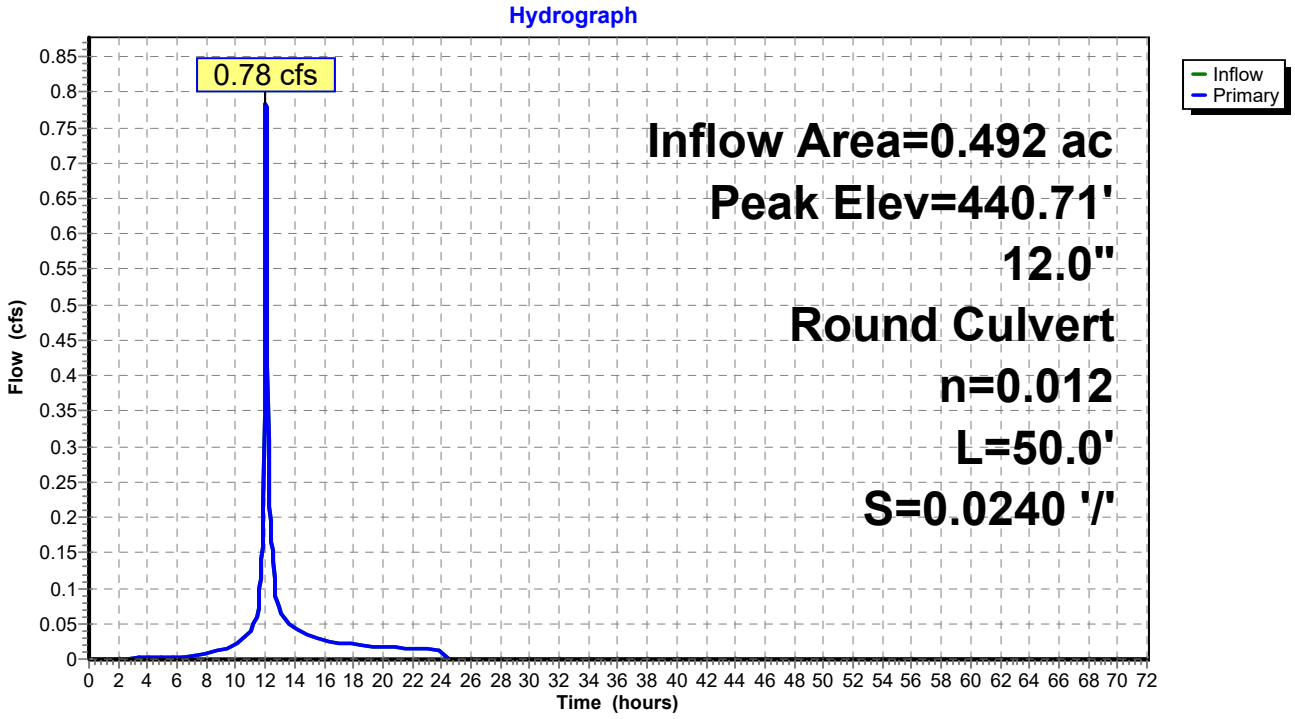
Inflow Area = 0.492 ac, 60.94% Impervious, Inflow Depth = 1.37" for 1-yr event
Inflow = 0.78 cfs @ 12.04 hrs, Volume= 0.056 af
Outflow = 0.78 cfs @ 12.04 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min
Primary = 0.78 cfs @ 12.04 hrs, Volume= 0.056 af
Routed to Pond P2 : STMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 440.71' @ 12.04 hrs
Flood Elev= 443.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	440.20'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 440.20' / 439.00' S= 0.0240 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.76 cfs @ 12.04 hrs HW=440.71' TW=439.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.76 cfs @ 1.91 fps)

Pond P3: CB-2

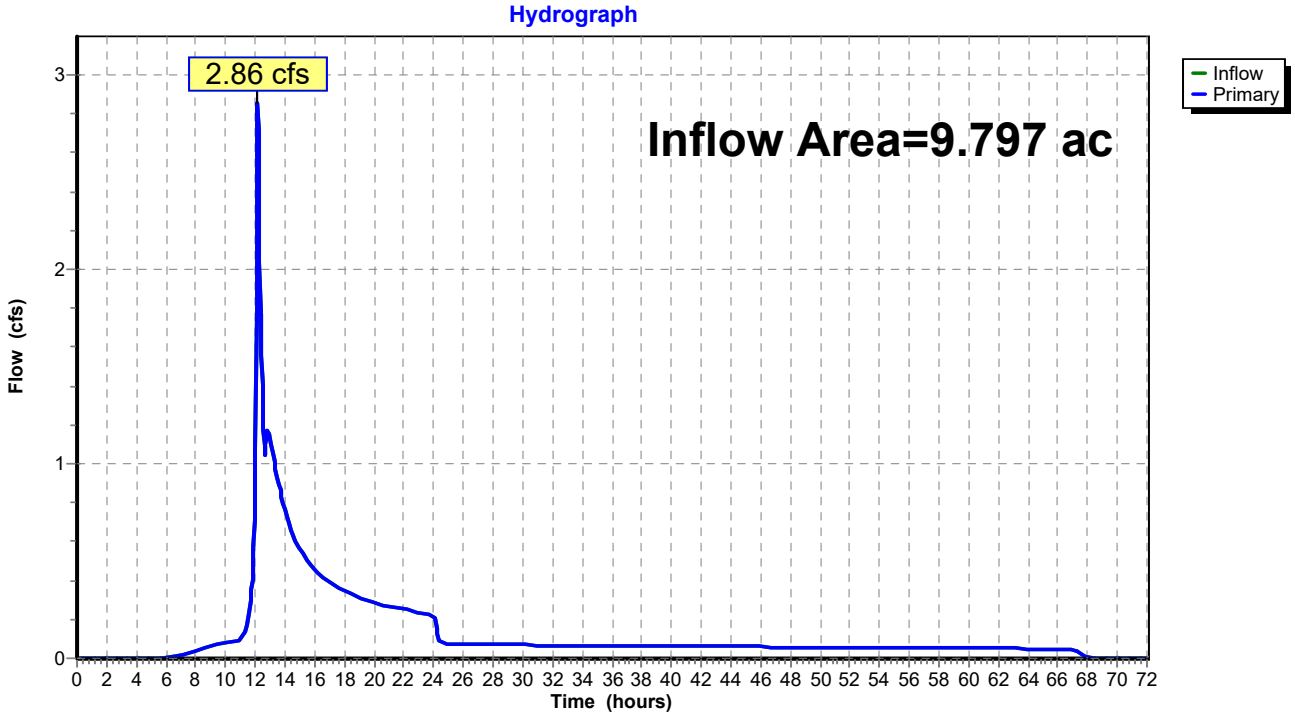


Summary for Link 1L: DP-1

Inflow Area = 9.797 ac, 33.06% Impervious, Inflow Depth > 0.93" for 1-yr event
Inflow = 2.86 cfs @ 12.16 hrs, Volume= 0.759 af
Primary = 2.86 cfs @ 12.16 hrs, Volume= 0.759 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: DP-1



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SC-101 Runoff Area=222,850 sf 4.48% Impervious Runoff Depth=1.42"
Flow Length=844' Tc=13.6 min CN=77 Runoff=6.92 cfs 0.607 af

Subcatchment 2S: SC-102 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=1.63"
Tc=6.0 min CN=80 Runoff=0.36 cfs 0.023 af

Subcatchment 3S: SC-103 Runoff Area=44,336 sf 67.11% Impervious Runoff Depth=2.53"
Tc=6.0 min CN=91 Runoff=3.34 cfs 0.215 af

Subcatchment 4S: SC-104 Runoff Area=43,894 sf 59.17% Impervious Runoff Depth=2.53"
Tc=6.0 min CN=91 Runoff=3.30 cfs 0.213 af

Subcatchment 5S: SC-105 Runoff Area=29,402 sf 80.98% Impervious Runoff Depth=2.73"
Tc=6.0 min CN=93 Runoff=2.35 cfs 0.153 af

Subcatchment 6S: SC-106 Runoff Area=17,850 sf 53.11% Impervious Runoff Depth=2.44"
Tc=6.0 min CN=90 Runoff=1.30 cfs 0.083 af

Subcatchment 7S: SC-107 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=98 Runoff=0.35 cfs 0.025 af

Subcatchment 8S: SC-108 Runoff Area=7,150 sf 100.00% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=98 Runoff=0.63 cfs 0.045 af

Subcatchment 9S: SC-109 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.022 af

Subcatchment 10S: SC-110 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.022 af

Subcatchment 11S: SC-111 Runoff Area=12,251 sf 57.76% Impervious Runoff Depth=2.44"
Tc=6.0 min CN=90 Runoff=0.89 cfs 0.057 af

Subcatchment 12S: SC-112 Runoff Area=1,160 sf 0.00% Impervious Runoff Depth=1.63"
Tc=6.0 min CN=80 Runoff=0.06 cfs 0.004 af

Subcatchment 13S: SC-113 Runoff Area=29,226 sf 57.11% Impervious Runoff Depth=2.44"
Flow Length=984' Tc=15.0 min CN=90 Runoff=1.54 cfs 0.136 af

Reach 1R: Driveway Culvert 18" Avg. Flow Depth=0.29' Max Vel=6.37 fps Inflow=1.54 cfs 0.136 af
18.0" Round Pipe n=0.012 L=71.0' S=0.0268 '/' Capacity=18.62 cfs Outflow=1.54 cfs 0.136 af

Reach 2R: Swale Avg. Flow Depth=0.49' Max Vel=2.76 fps Inflow=3.66 cfs 0.238 af
n=0.030 L=376.6' S=0.0159 '/' Capacity=16.71 cfs Outflow=3.40 cfs 0.238 af

Reach 3R: 6" PVC PIPE Avg. Flow Depth=0.19' Max Vel=5.25 fps Inflow=0.35 cfs 0.025 af
6.0" Round Pipe n=0.012 L=133.8' S=0.0374 '/' Capacity=1.18 cfs Outflow=0.36 cfs 0.025 af

Pond 1P: Bioretention Peak Elev=435.19' Storage=5,616 cf Inflow=2.31 cfs 0.791 af
Outflow=2.26 cfs 0.791 af

Pond 2P: Retention Peak Elev=436.30' Storage=14,820 cf Inflow=11.52 cfs 0.778 af
Primary=0.42 cfs 0.008 af Secondary=2.19 cfs 0.767 af Outflow=2.60 cfs 0.776 af

Pond 3P: Bioretention Peak Elev=443.59' Storage=865 cf Inflow=0.95 cfs 0.061 af
Outflow=0.75 cfs 0.061 af

Pond 4P: Pipe Peak Elev=436.50' Inflow=3.40 cfs 0.238 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0056 '/' Outflow=3.40 cfs 0.238 af

Pond P1: CB-1 Peak Elev=437.03' Inflow=4.91 cfs 0.326 af
18.0" Round Culvert n=0.012 L=122.6' S=0.0061 '/' Outflow=4.91 cfs 0.326 af

Pond P2: STMH-1 Peak Elev=440.24' Inflow=2.57 cfs 0.172 af
12.0" Round Culvert n=0.012 L=98.0' S=0.0332 '/' Outflow=2.57 cfs 0.172 af

Pond P3: CB-2 Peak Elev=441.00' Inflow=1.62 cfs 0.106 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0240 '/' Outflow=1.62 cfs 0.106 af

Link 1L: DP-1 Inflow=9.87 cfs 1.603 af
Primary=9.87 cfs 1.603 af

Total Runoff Area = 9.797 ac Runoff Volume = 1.605 af Average Runoff Depth = 1.97"
66.94% Pervious = 6.559 ac 33.06% Impervious = 3.239 ac

Summary for Subcatchment 1S: SC-101

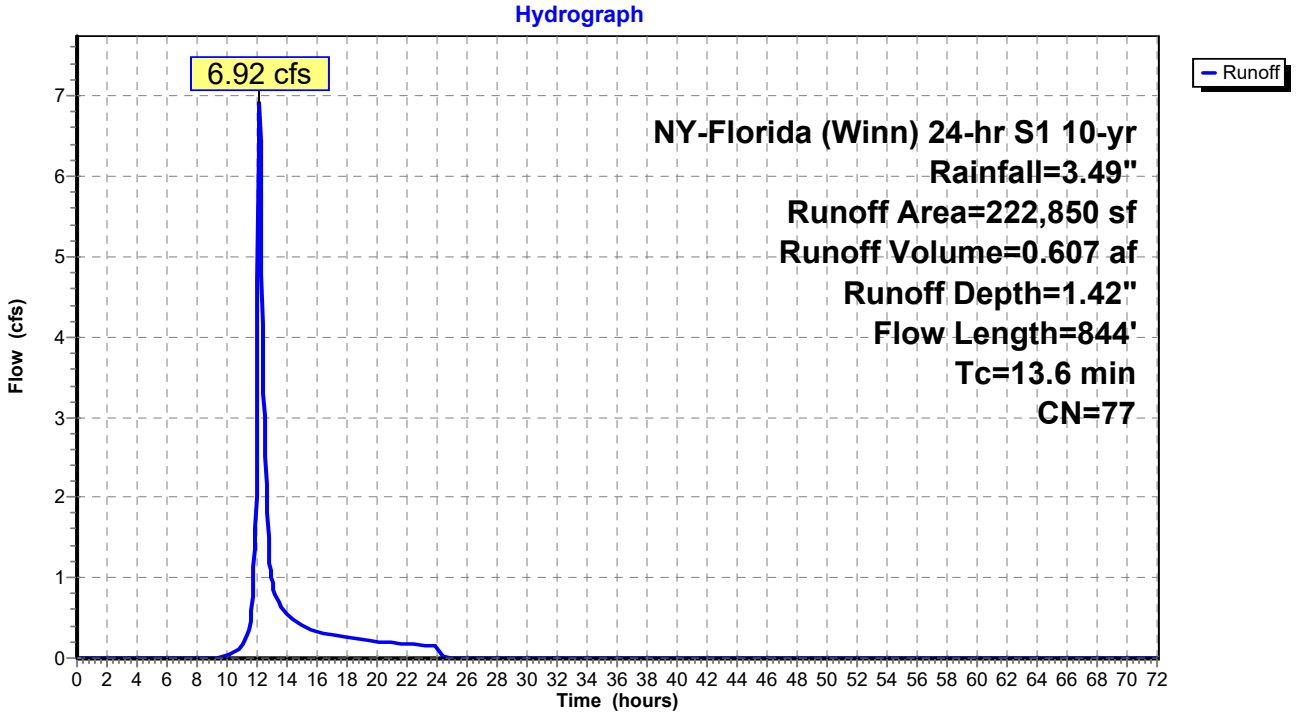
Runoff = 6.92 cfs @ 12.15 hrs, Volume= 0.607 af, Depth= 1.42"
Routed to Link 1L : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
9,237	61	>75% Grass cover, Good, HSG B
134,253	80	>75% Grass cover, Good, HSG D
8,429	55	Woods, Good, HSG B
4,294	77	Woods, Good, HSG D
4,419	67	Brush, Poor, HSG B
52,228	73	Brush, Good, HSG D
1,881	98	Roofs, HSG D
8,109	98	Paved parking, HSG D
222,850	77	Weighted Average
212,860		95.52% Pervious Area
9,990		4.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0322	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
2.0	140	0.0276	1.16		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	275	0.0205	7.09	14.18	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
0.1	45	0.0190	8.88	15.69	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.6	203	0.0129	5.63	11.25	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
1.1	81	0.0617	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	844	Total			

Subcatchment 1S: SC-101



Summary for Subcatchment 2S: SC-102

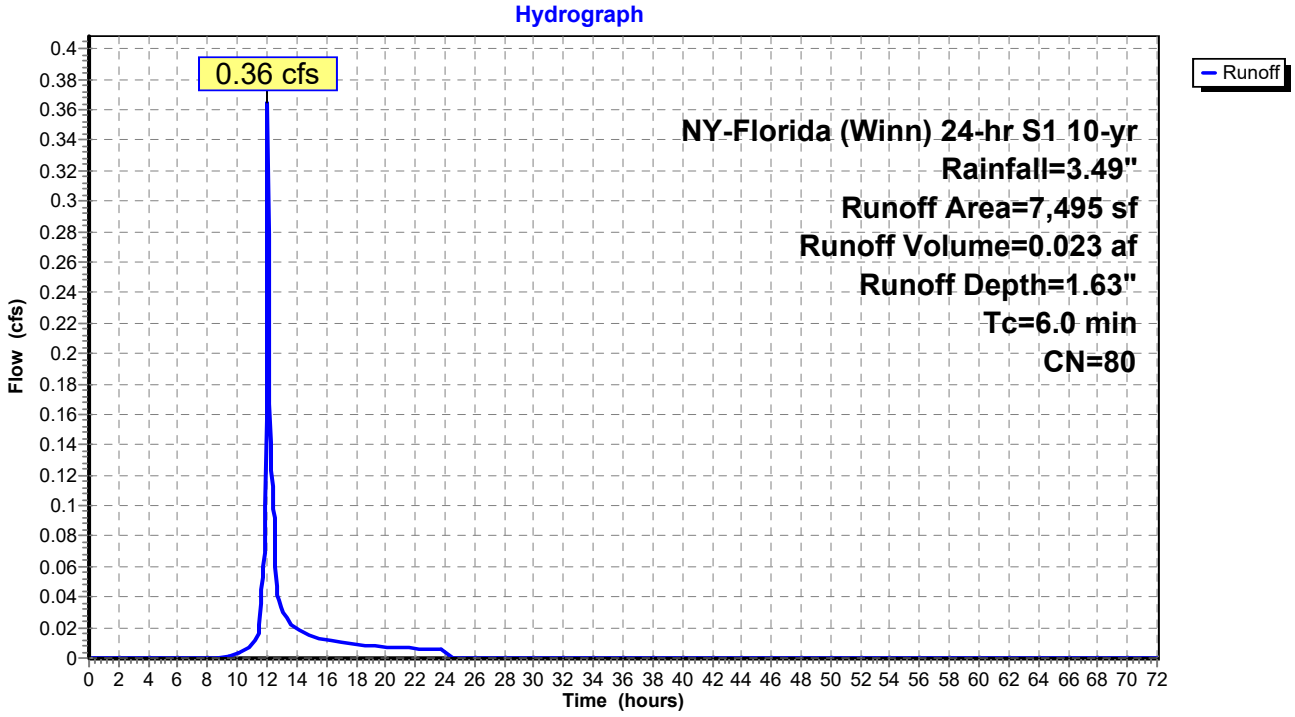
Runoff = 0.36 cfs @ 12.05 hrs, Volume= 0.023 af, Depth= 1.63"
Routed to Pond 1P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
7,495	80	>75% Grass cover, Good, HSG D
7,495		100.00% Pervious Area

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

Subcatchment 2S: SC-102



Summary for Subcatchment 3S: SC-103

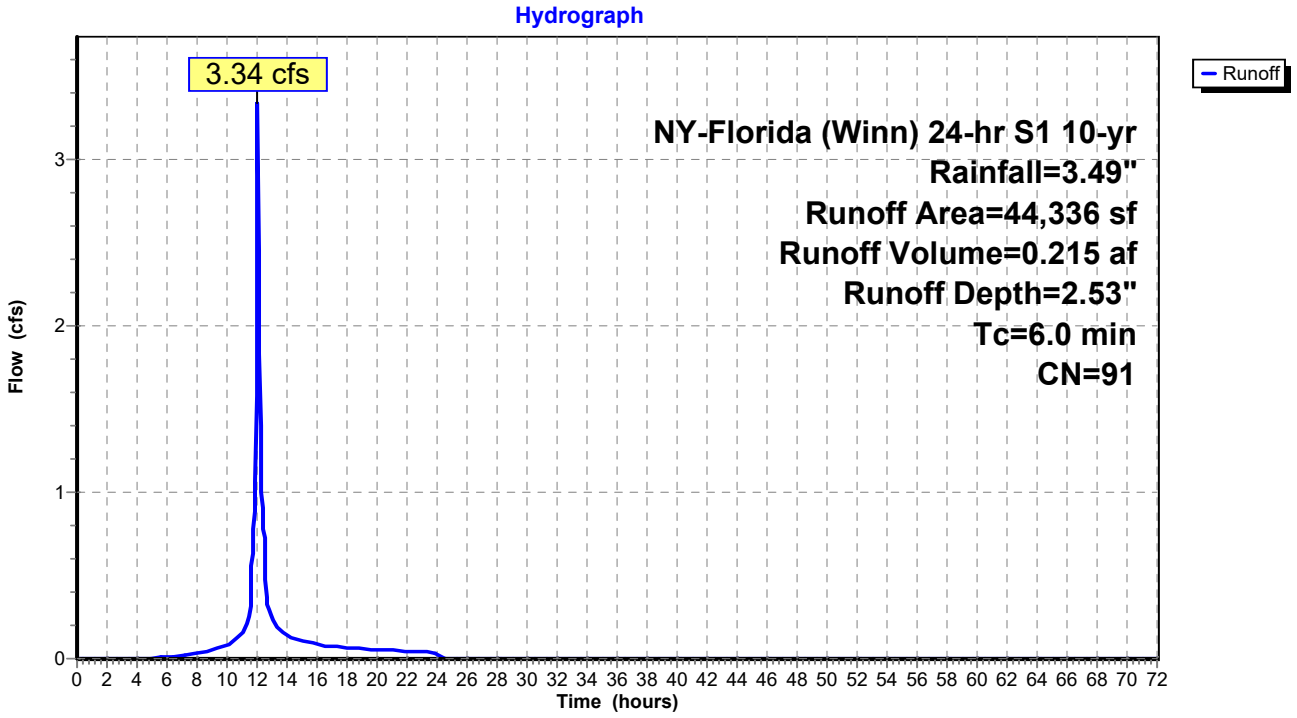
Runoff = 3.34 cfs @ 12.04 hrs, Volume= 0.215 af, Depth= 2.53"
Routed to Pond 2P : Retention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
2,422	61	>75% Grass cover, Good, HSG B
12,162	80	>75% Grass cover, Good, HSG D
16,564	98	Paved parking, HSG B
13,188	98	Paved parking, HSG D
44,336	91	Weighted Average
14,584		32.89% Pervious Area
29,752		67.11% Impervious Area

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

Subcatchment 3S: SC-103



Summary for Subcatchment 4S: SC-104

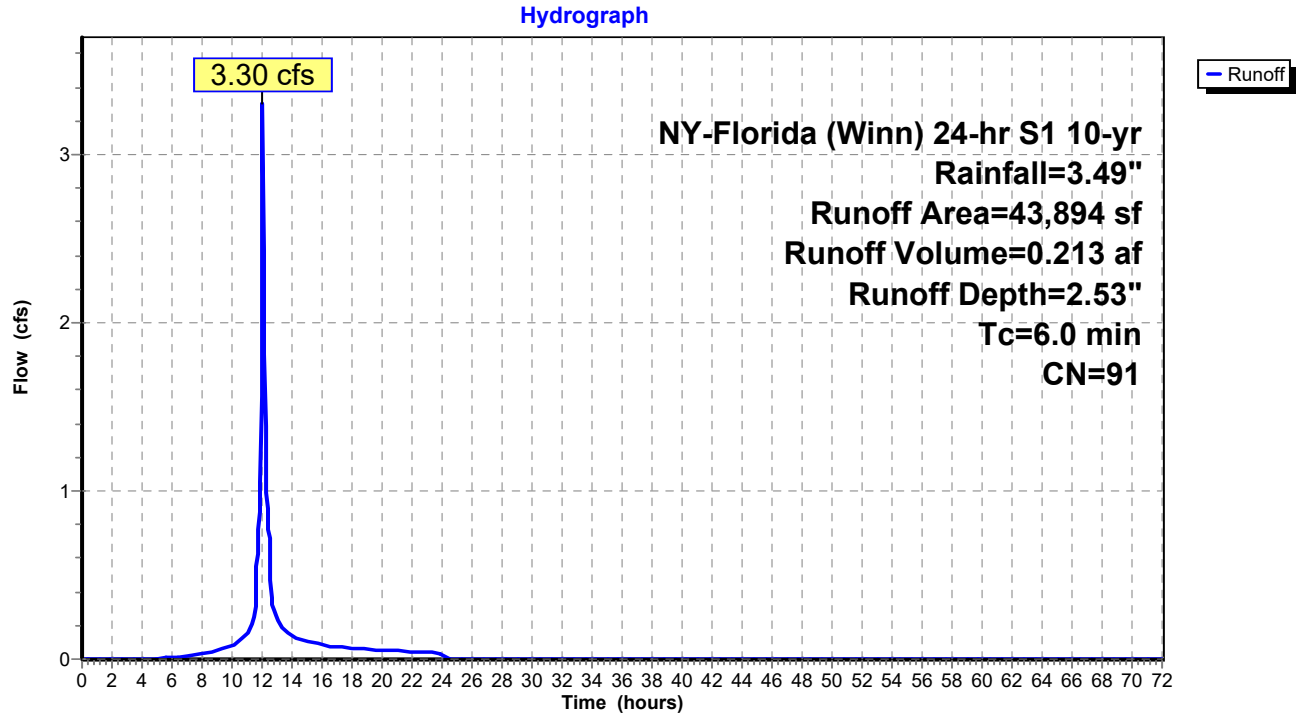
Runoff = 3.30 cfs @ 12.04 hrs, Volume= 0.213 af, Depth= 2.53"
Routed to Reach 2R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
17,922	80	>75% Grass cover, Good, HSG D
20,999	98	Paved parking, HSG D
4,973	98	Paved parking, HSG D
43,894	91	Weighted Average
17,922		40.83% Pervious Area
25,972		59.17% Impervious Area

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

Subcatchment 4S: SC-104



Summary for Subcatchment 5S: SC-105

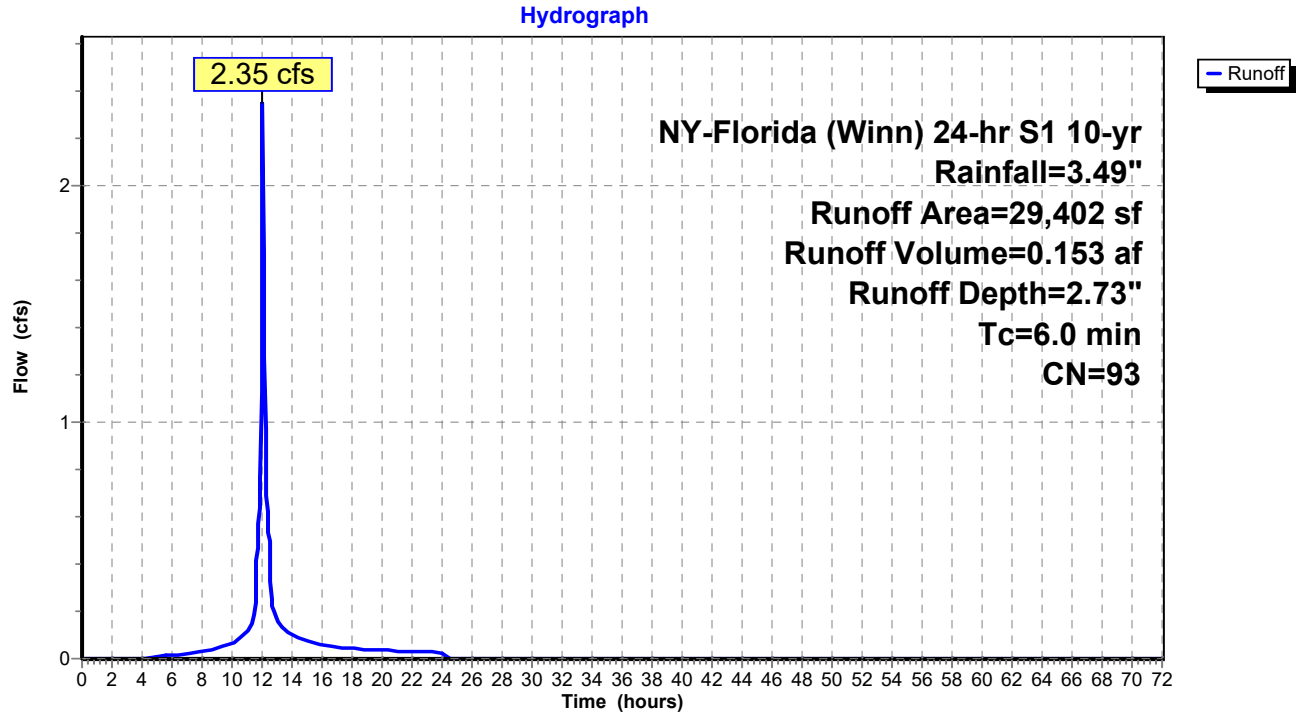
Runoff = 2.35 cfs @ 12.04 hrs, Volume= 0.153 af, Depth= 2.73"
Routed to Pond P1 : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
1,975	61	>75% Grass cover, Good, HSG B
3,618	80	>75% Grass cover, Good, HSG D
2,068	98	Paved parking, HSG B
21,741	98	Paved parking, HSG D
29,402	93	Weighted Average
5,593		19.02% Pervious Area
23,809		80.98% Impervious Area

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

Subcatchment 5S: SC-105



Summary for Subcatchment 6S: SC-106

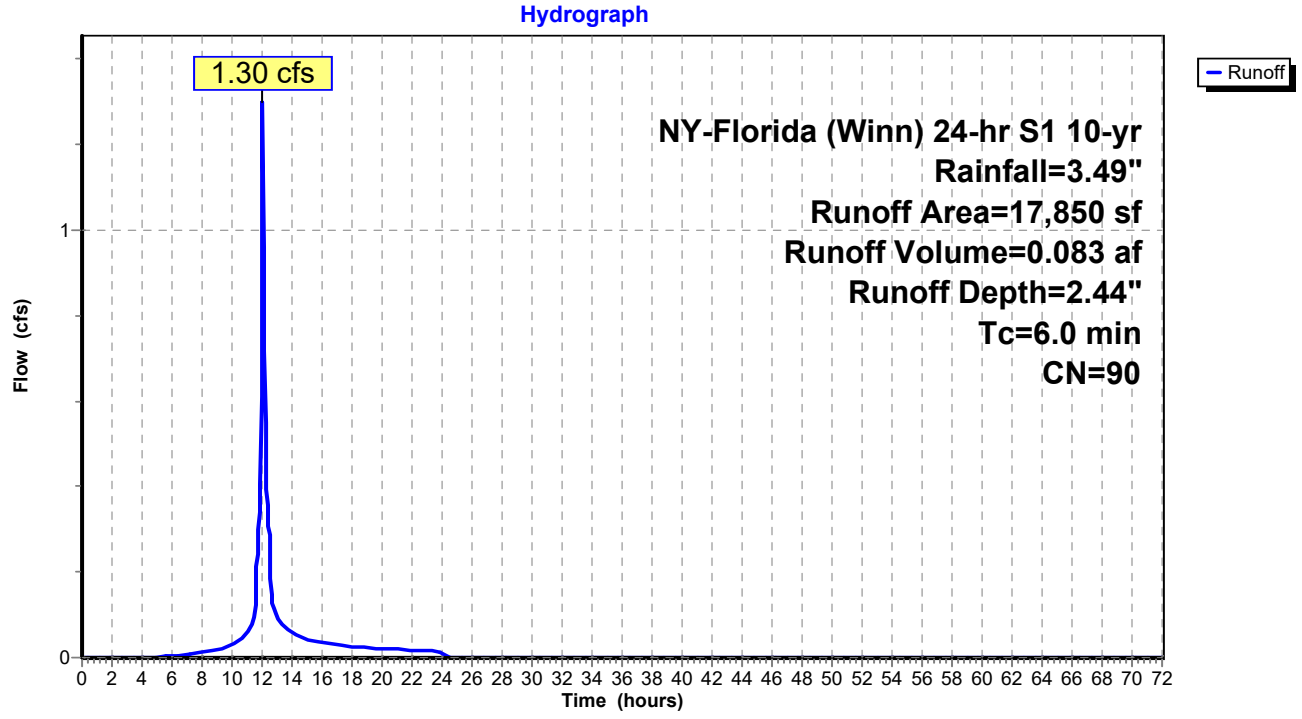
Runoff = 1.30 cfs @ 12.04 hrs, Volume= 0.083 af, Depth= 2.44"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
8,369	80	>75% Grass cover, Good, HSG D
9,481	98	Paved parking, HSG D
17,850	90	Weighted Average
8,369		46.89% Pervious Area
9,481		53.11% Impervious Area

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

Subcatchment 6S: SC-106



Summary for Subcatchment 7S: SC-107

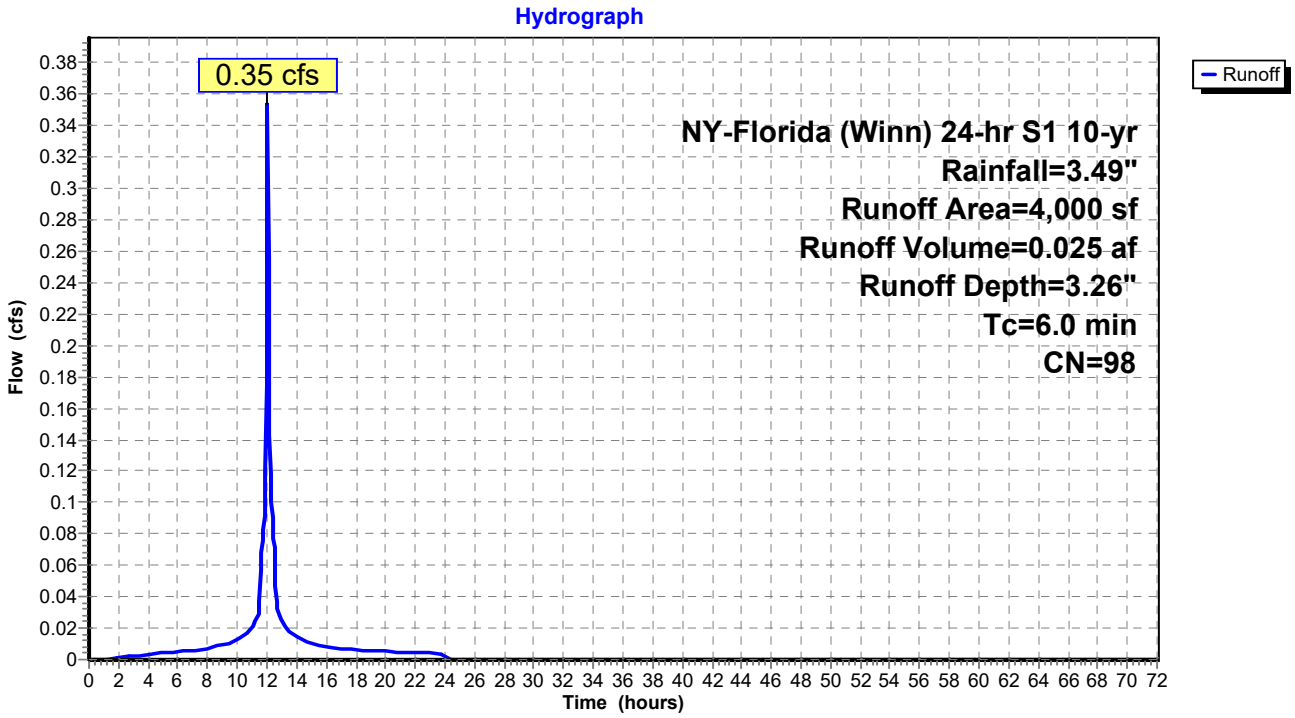
Runoff = 0.35 cfs @ 12.04 hrs, Volume= 0.025 af, Depth= 3.26"
Routed to Reach 3R : 6" PVC PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
4,000	98	Unconnected roofs, HSG D
4,000		100.00% Impervious Area
4,000		100.00% Unconnected

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

Subcatchment 7S: SC-107



Summary for Subcatchment 8S: SC-108

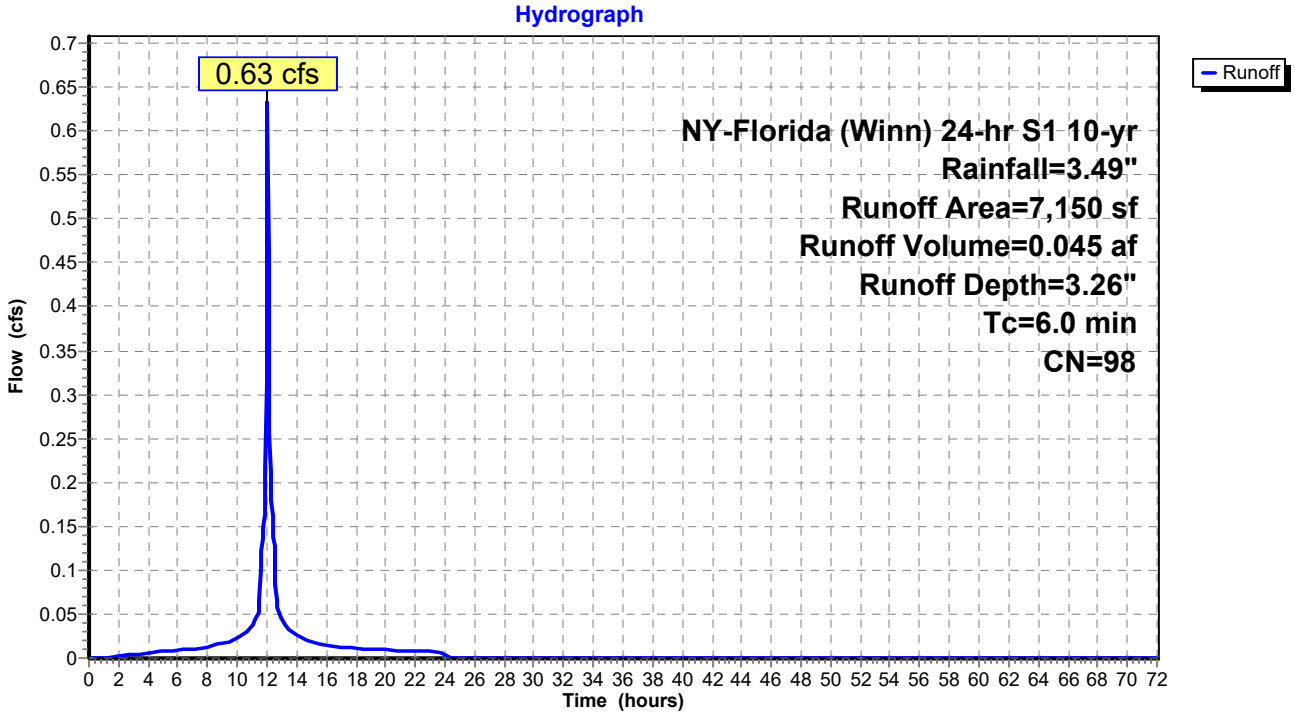
Runoff = 0.63 cfs @ 12.04 hrs, Volume= 0.045 af, Depth= 3.26"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
7,150	98	Roofs, HSG D
7,150		100.00% Impervious Area

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

Subcatchment 8S: SC-108



Summary for Subcatchment 9S: SC-109

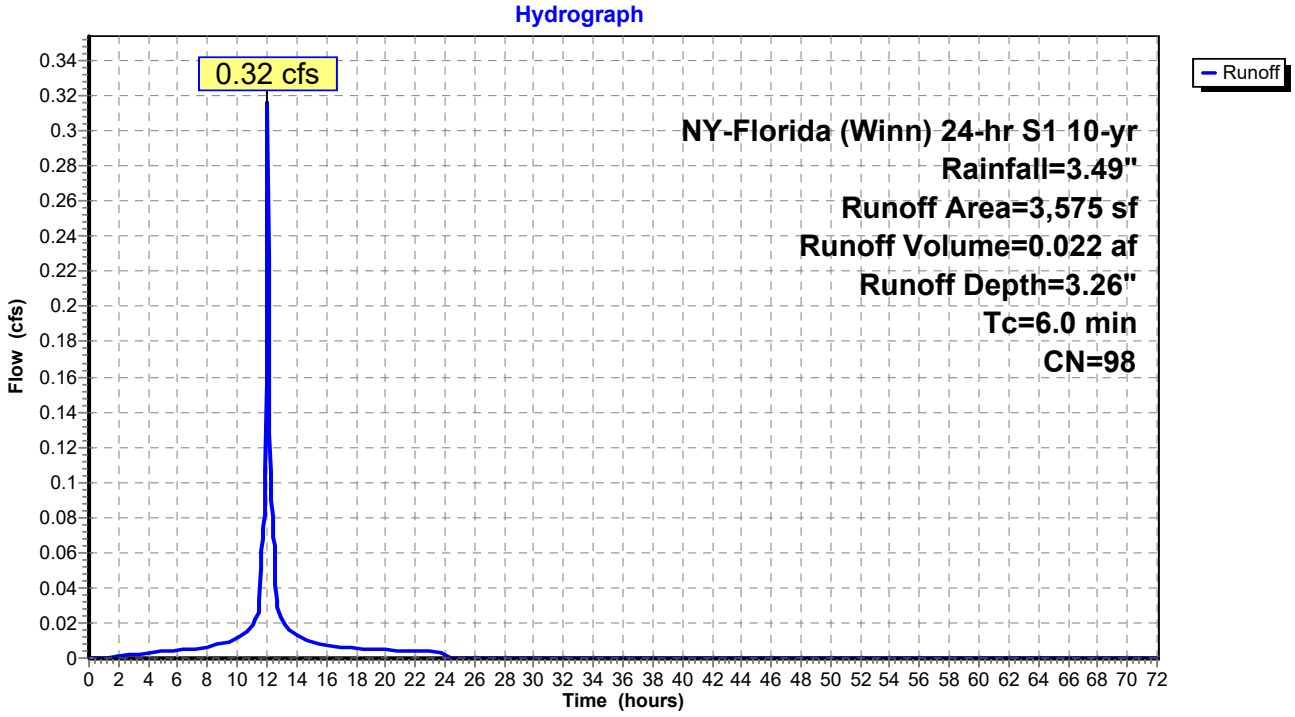
Runoff = 0.32 cfs @ 12.04 hrs, Volume= 0.022 af, Depth= 3.26"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 9S: SC-109



Summary for Subcatchment 10S: SC-110

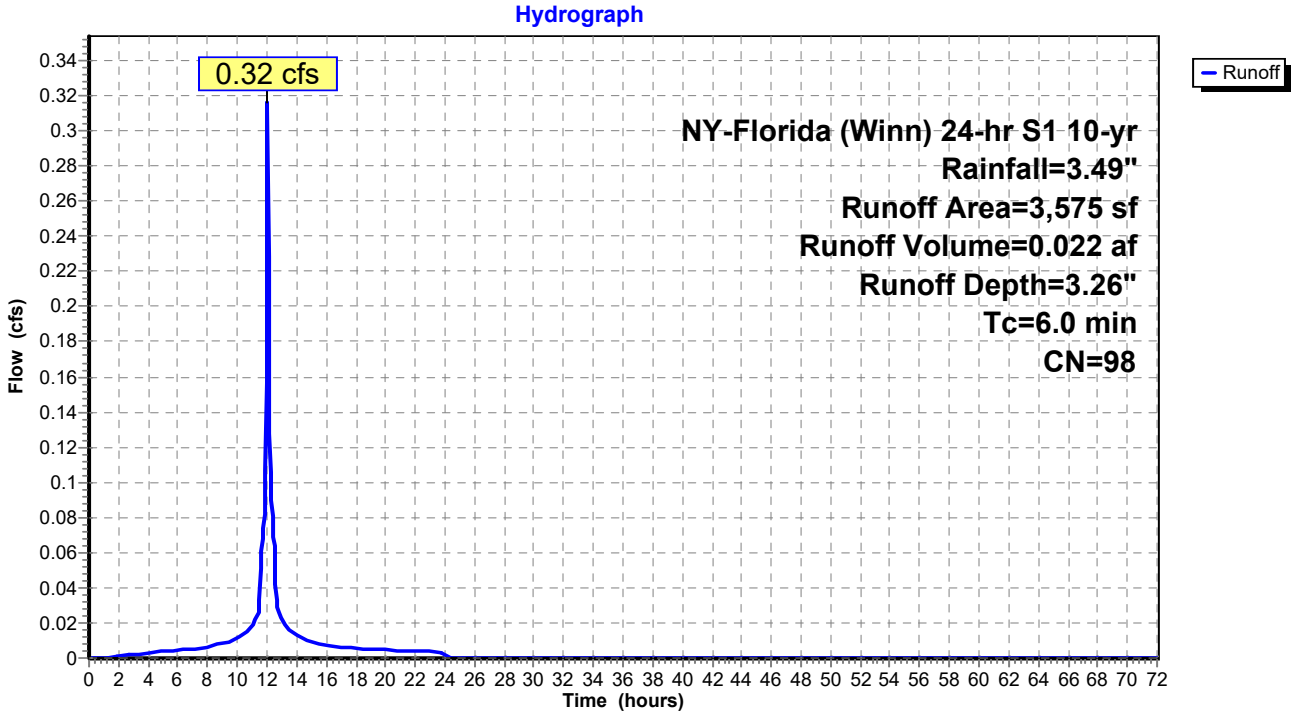
Runoff = 0.32 cfs @ 12.04 hrs, Volume= 0.022 af, Depth= 3.26"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 10S: SC-110



Summary for Subcatchment 11S: SC-111

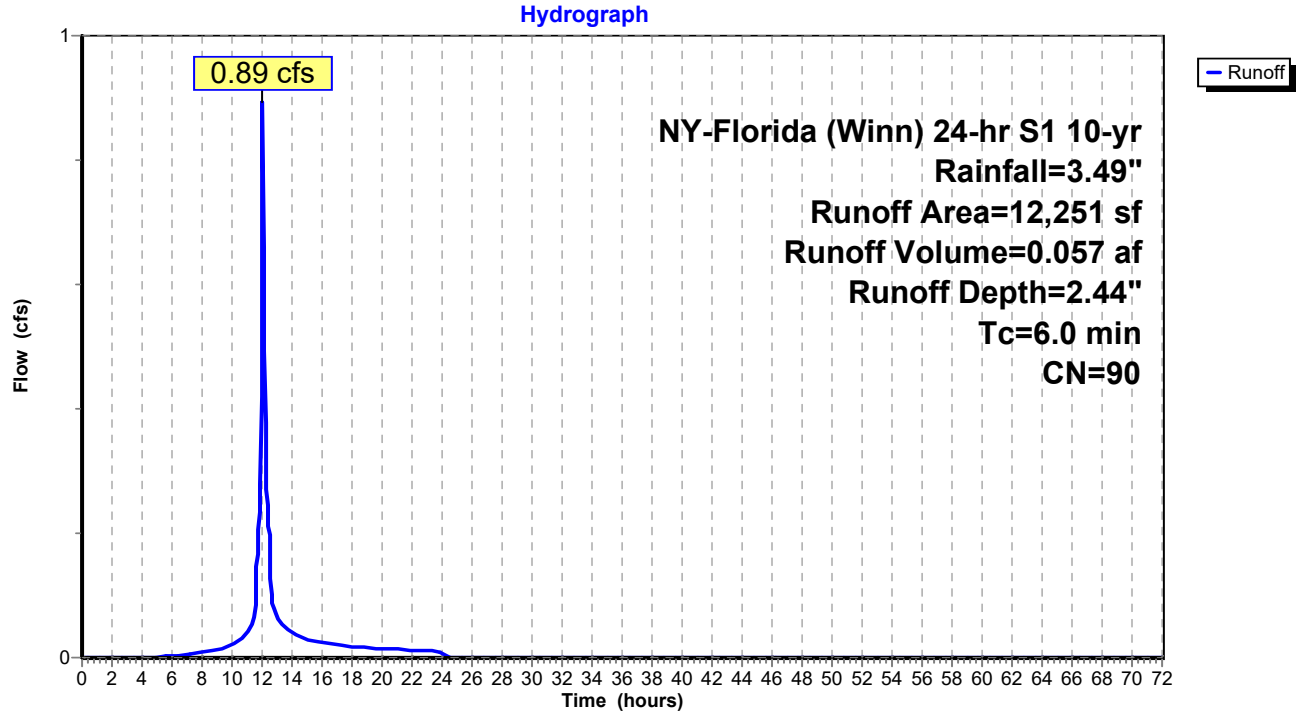
Runoff = 0.89 cfs @ 12.04 hrs, Volume= 0.057 af, Depth= 2.44"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
5,175	80	>75% Grass cover, Good, HSG D
7,076	98	Paved parking, HSG D
12,251	90	Weighted Average
5,175		42.24% Pervious Area
7,076		57.76% Impervious Area

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

Subcatchment 11S: SC-111



Summary for Subcatchment 12S: SC-112

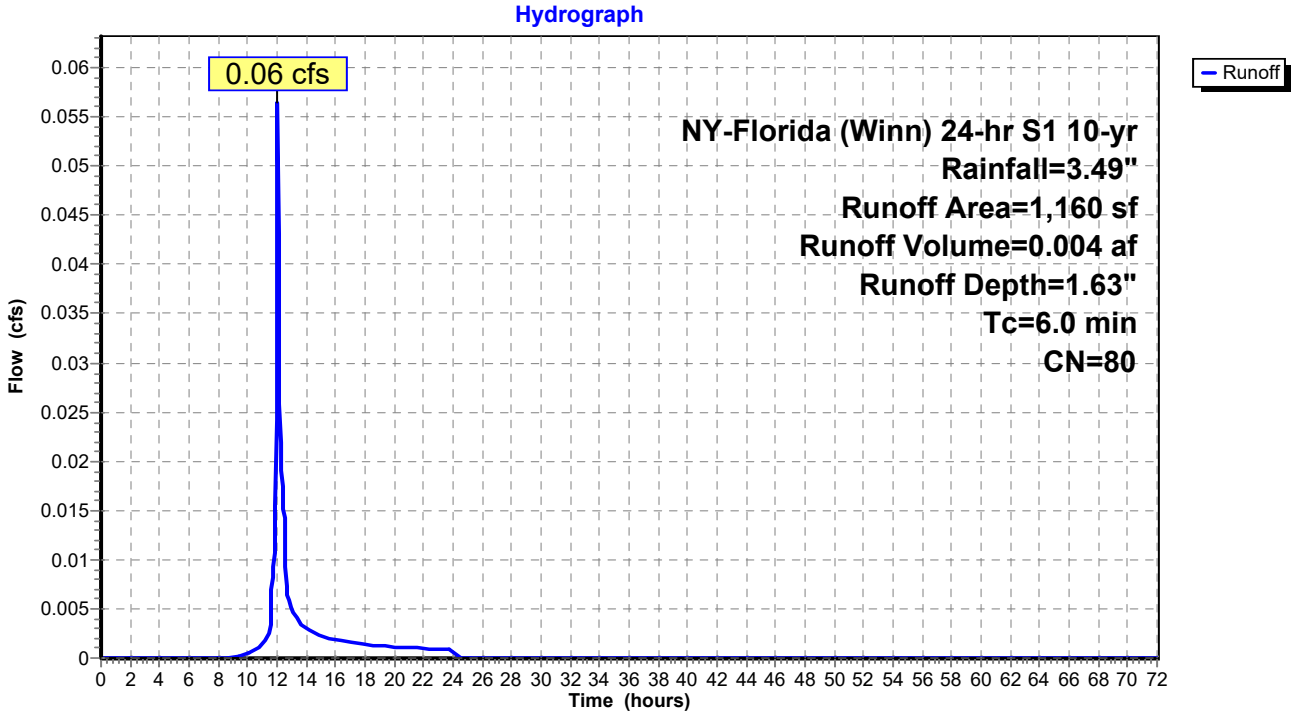
Runoff = 0.06 cfs @ 12.05 hrs, Volume= 0.004 af, Depth= 1.63"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
1,160	80	>75% Grass cover, Good, HSG D
1,160		100.00% Pervious Area

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

Subcatchment 12S: SC-112



Summary for Subcatchment 13S: SC-113

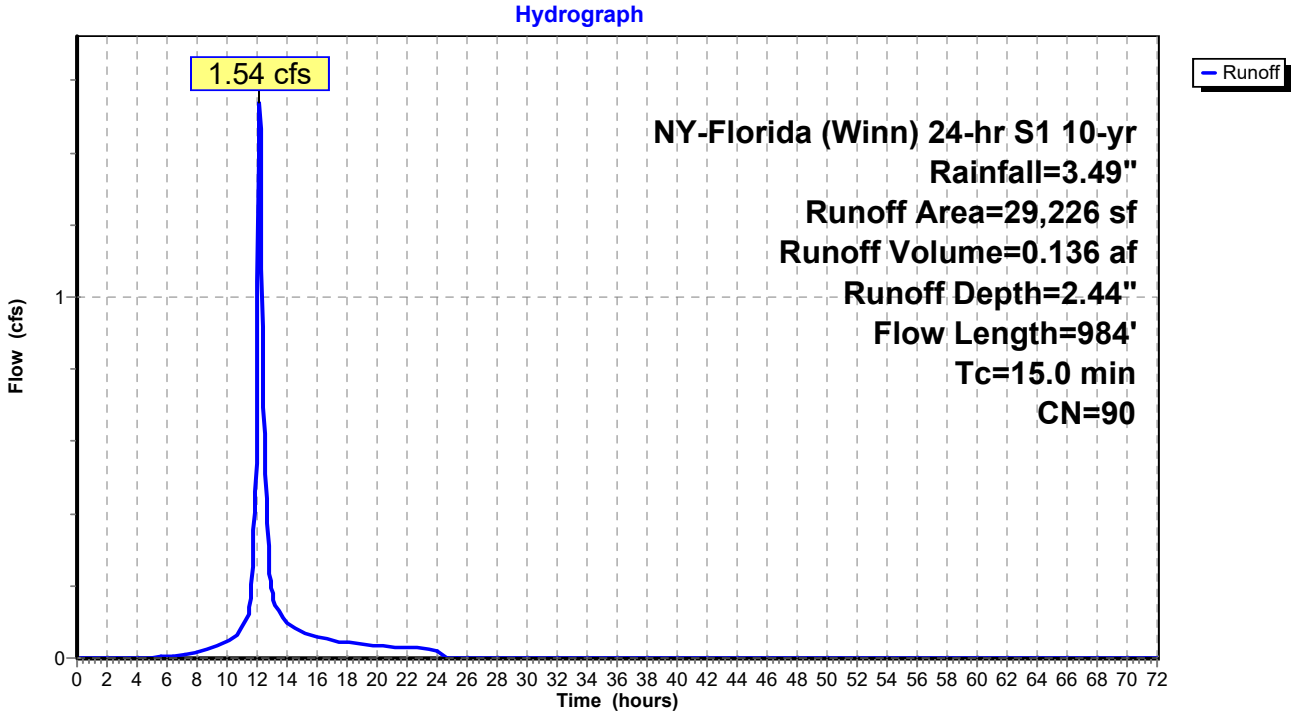
Runoff = 1.54 cfs @ 12.16 hrs, Volume= 0.136 af, Depth= 2.44"
Routed to Reach 1R : Driveway Culvert 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 10-yr Rainfall=3.49"

Area (sf)	CN	Description
12,534	80	>75% Grass cover, Good, HSG D
1,129	98	Roofs, HSG D
15,563	98	Paved parking, HSG D
29,226	90	Weighted Average
12,534		42.89% Pervious Area
16,692		57.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0147	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
0.2	20	0.0785	1.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	109	0.0210	4.52	4.52	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.0	32	0.0996	20.32	35.91	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.3	116	0.0467	6.74	6.74	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	42	0.0242	10.02	17.70	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	53	0.0283	10.83	19.14	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
15.0	984	Total			

Subcatchment 13S: SC-113



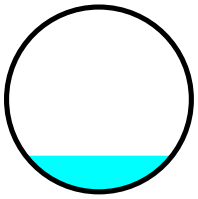
Summary for Reach 1R: Driveway Culvert 18"

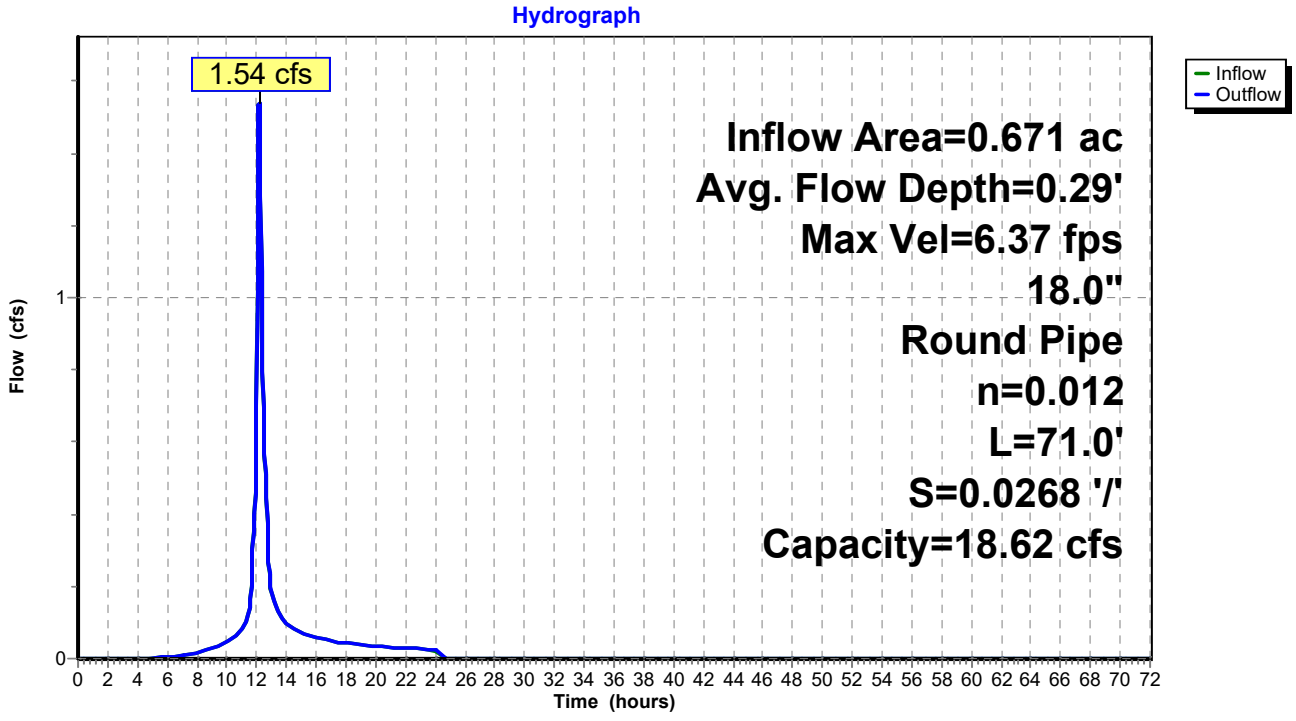
Inflow Area = 0.671 ac, 57.11% Impervious, Inflow Depth = 2.44" for 10-yr event
Inflow = 1.54 cfs @ 12.16 hrs, Volume= 0.136 af
Outflow = 1.54 cfs @ 12.16 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.1 min
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.37 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.22 fps, Avg. Travel Time= 0.5 min

Peak Storage= 17 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.29' , Surface Width= 1.19'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.62 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 71.0' Slope= 0.0268 '/'
Inlet Invert= 449.50', Outlet Invert= 447.60'





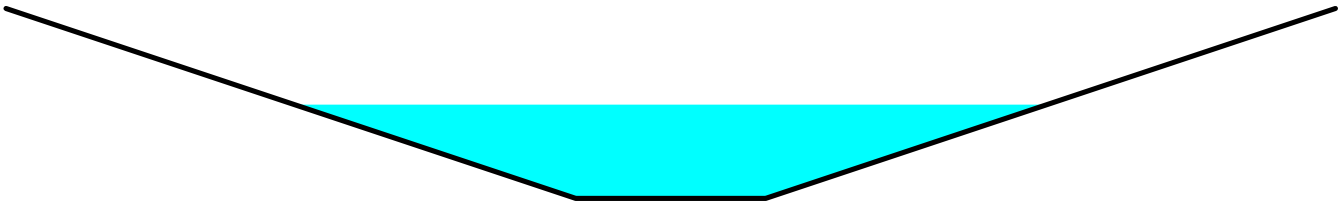
Summary for Reach 2R: Swale

Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 2.59" for 10-yr event
Inflow = 3.66 cfs @ 12.04 hrs, Volume= 0.238 af
Outflow = 3.40 cfs @ 12.07 hrs, Volume= 0.238 af, Atten= 7%, Lag= 1.6 min
Routed to Pond 4P : Pipe

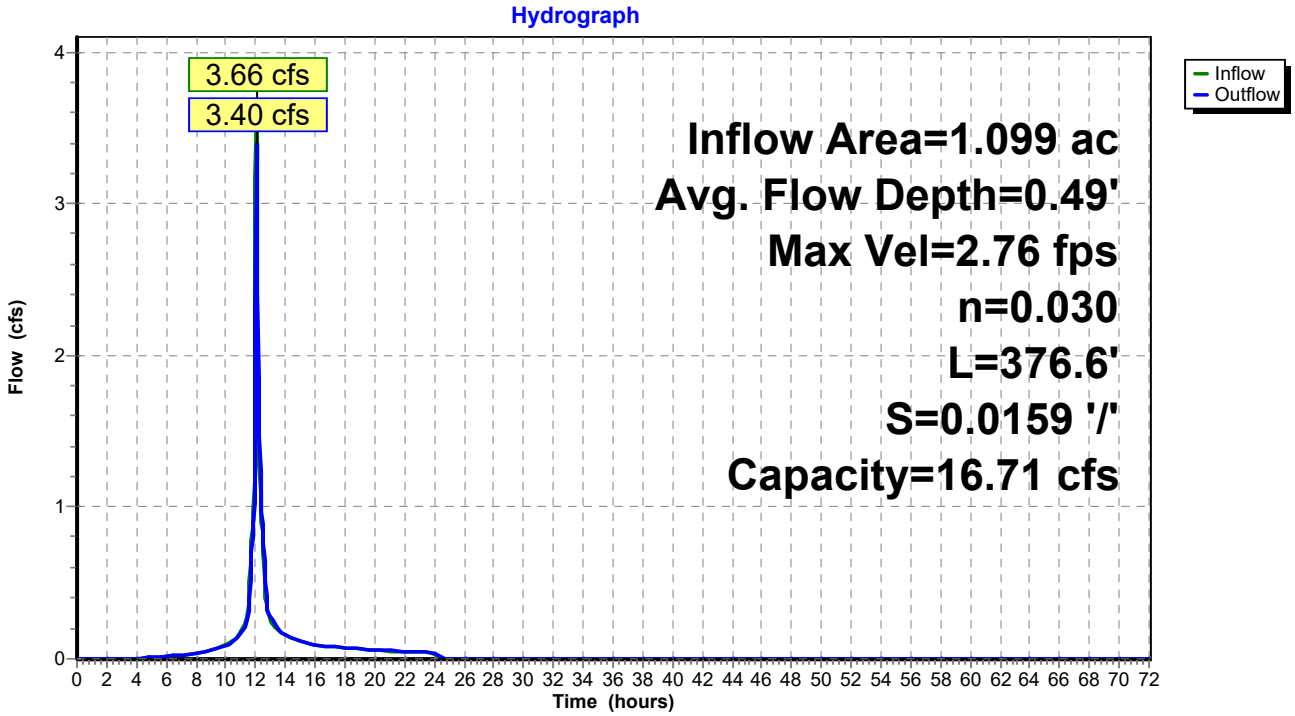
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.76 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 7.8 min

Peak Storage= 461 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 3.96'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 16.71 cfs

1.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 376.6' Slope= 0.0159 '/'
Inlet Invert= 441.50', Outlet Invert= 435.50'



Reach 2R: Swale



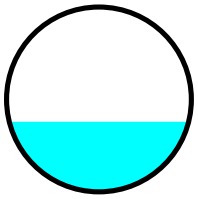
Summary for Reach 3R: 6" PVC PIPE

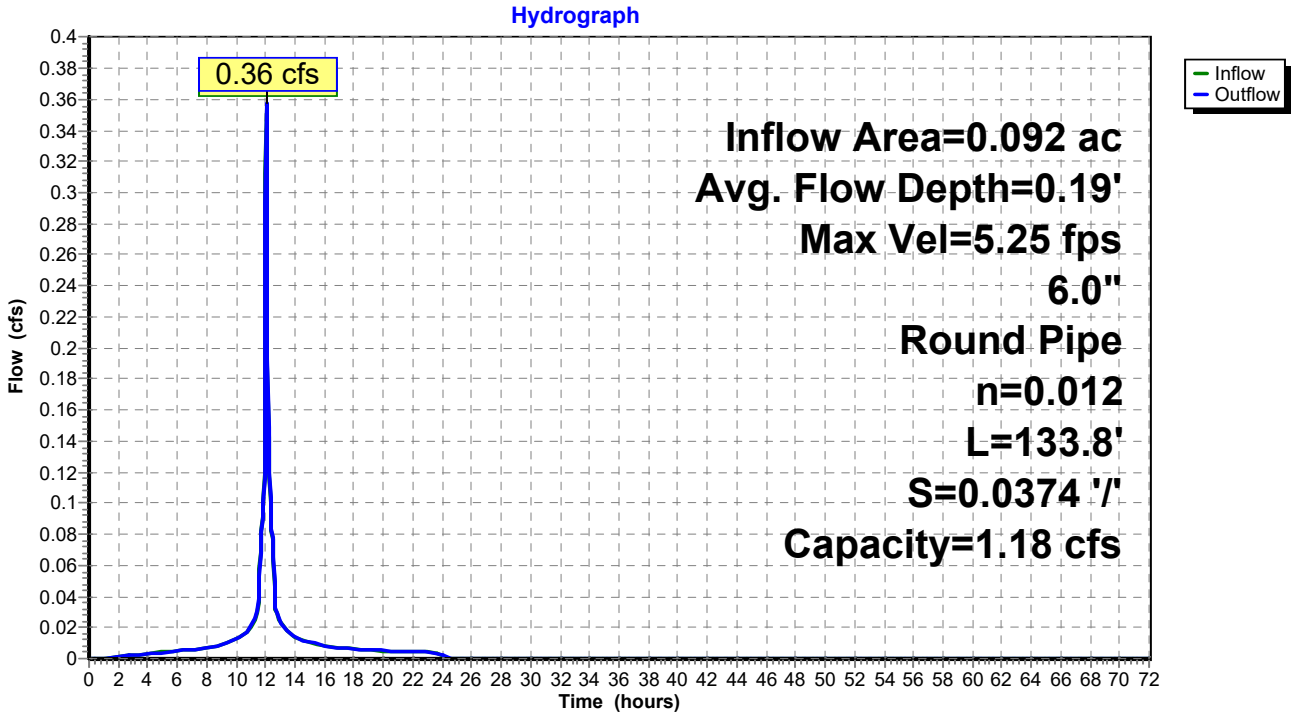
Inflow Area = 0.092 ac,100.00% Impervious, Inflow Depth = 3.26" for 10-yr event
Inflow = 0.35 cfs @ 12.04 hrs, Volume= 0.025 af
Outflow = 0.36 cfs @ 12.05 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.4 min
Routed to Reach 2R : Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.25 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.69 fps, Avg. Travel Time= 1.3 min

Peak Storage= 9 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.19' , Surface Width= 0.48'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.18 cfs

6.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 133.8' Slope= 0.0374 '/'
Inlet Invert= 449.00', Outlet Invert= 444.00'





Summary for Pond 1P: Bioretention

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth > 55.15" for 10-yr event
Inflow = 2.31 cfs @ 12.16 hrs, Volume= 0.791 af
Outflow = 2.26 cfs @ 12.55 hrs, Volume= 0.791 af, Atten= 2%, Lag= 23.6 min
Primary = 2.26 cfs @ 12.55 hrs, Volume= 0.791 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 435.19' @ 12.55 hrs Surf.Area= 5,267 sf Storage= 5,616 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 299.0 min (1,344.7 - 1,045.7)

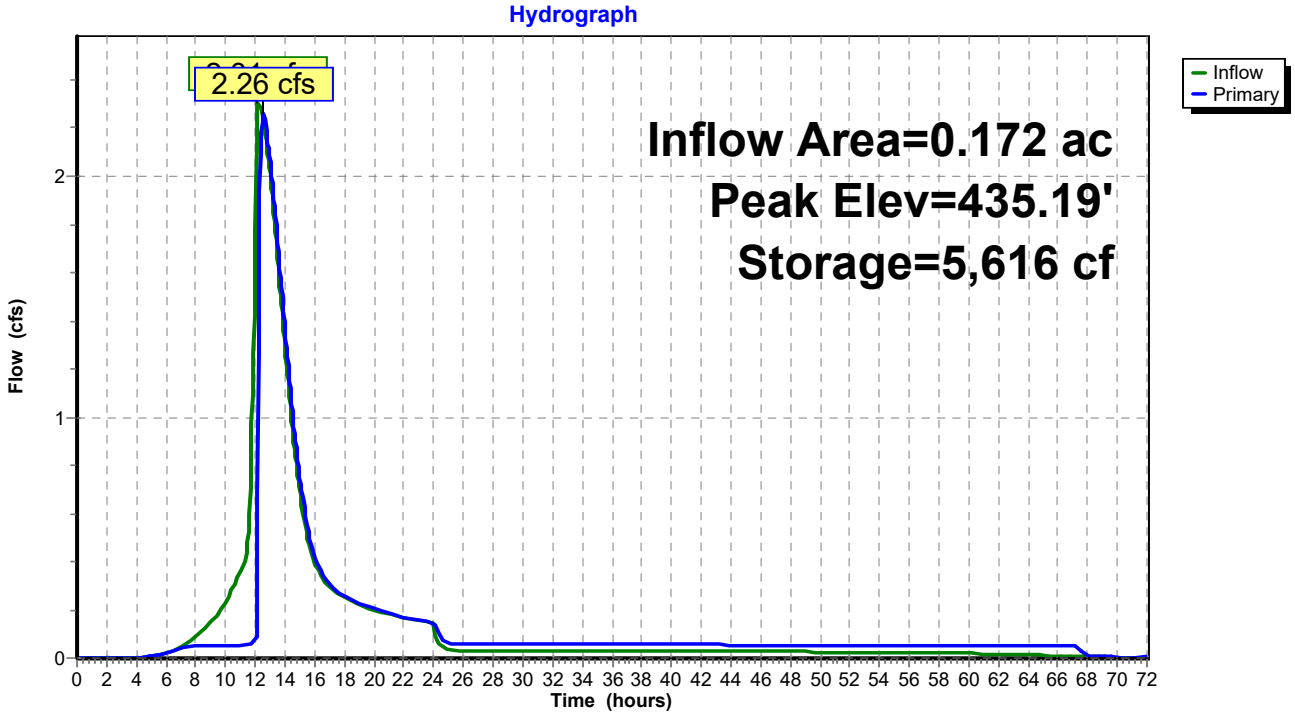
Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	7,284 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.00	4,173	293.0	0	0	4,173
435.00	5,086	314.1	4,622	4,622	5,237
435.50	5,564	323.6	2,662	7,284	5,744

Device	Routing	Invert	Outlet Devices
#1	Primary	430.25'	**12.0" Round 12" Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 430.25' / 430.00' S= 0.0033 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	434.00'	**0.500 in/hr Exfiltration over Horizontal area**
#3	Device 1	435.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.26 cfs @ 12.55 hrs HW=435.19' TW=0.00' (Dynamic Tailwater)
↑**1=12" Culvert** (Passes 2.26 cfs of 6.29 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.06 cfs)
3=Orifice/Grate (Weir Controls 2.20 cfs @ 1.43 fps)

Pond 1P: Bioretention



Summary for Pond 2P: Retention

Inflow Area = 3.530 ac, 69.78% Impervious, Inflow Depth = 2.64" for 10-yr event
Inflow = 11.52 cfs @ 12.05 hrs, Volume= 0.778 af
Outflow = 2.60 cfs @ 12.50 hrs, Volume= 0.776 af, Atten= 77%, Lag= 26.9 min
Primary = 0.42 cfs @ 12.50 hrs, Volume= 0.008 af
Routed to Link 1L : DP-1
Secondary = 2.19 cfs @ 12.47 hrs, Volume= 0.767 af
Routed to Pond 1P : Bioretention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 434.10' Surf.Area= 2,236 sf Storage= 2,903 cf
Peak Elev= 436.30' @ 12.50 hrs Surf.Area= 7,052 sf Storage= 14,820 cf (11,916 cf above start)
Flood Elev= 438.00' Surf.Area= 9,856 sf Storage= 28,870 cf (25,967 cf above start)

Plug-Flow detention time= 343.4 min calculated for 0.709 af (91% of inflow)
Center-of-Mass det. time= 251.3 min (1,048.5 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	28,870 cf	**Custom Stage Data (Irregular)** Listed below

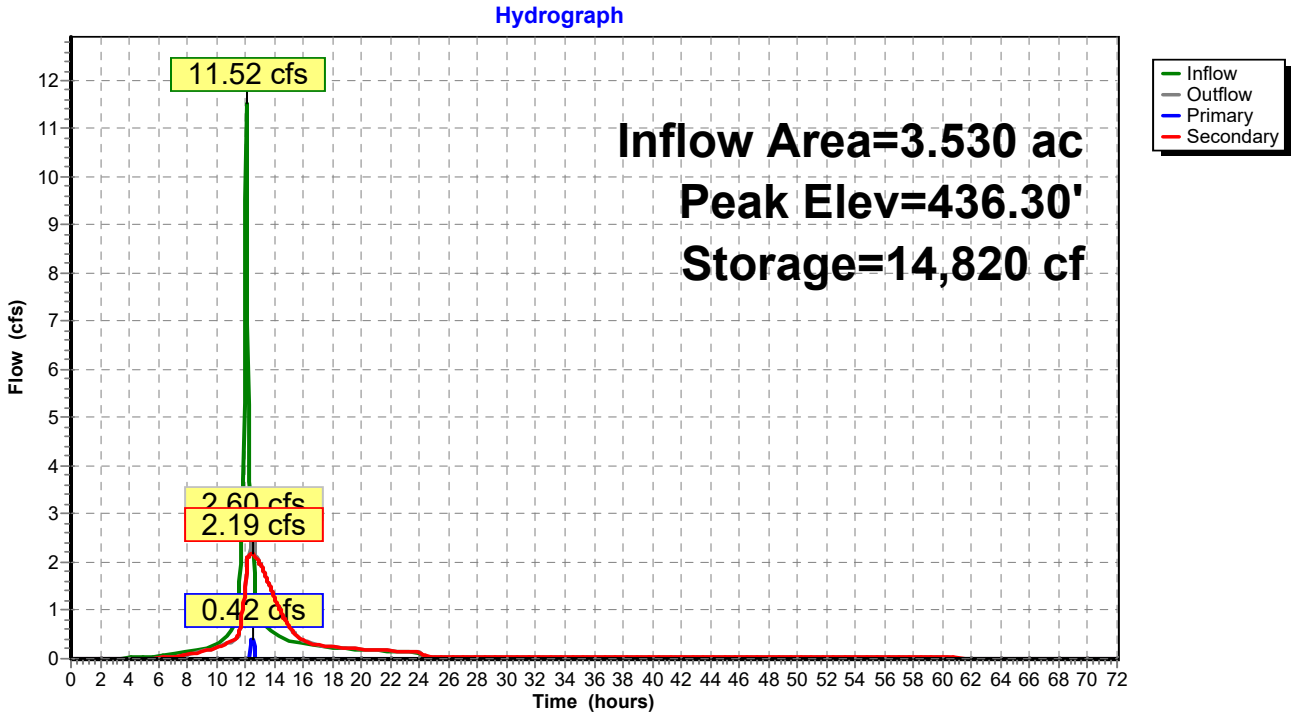
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
432.00	620	241.1	0	0	620
433.00	1,344	303.9	959	959	3,357
434.00	2,138	324.6	1,726	2,685	4,439
434.10	2,236	326.9	219	2,903	4,563
434.50	4,632	369.2	1,345	4,248	6,910
435.00	5,195	380.5	2,455	6,704	7,610
436.00	6,603	409.1	5,885	12,589	9,450
437.00	8,079	433.2	7,329	19,917	11,119
438.00	9,856	524.8	8,953	28,870	18,119

Device	Routing	Invert	Outlet Devices
#1	Primary	431.55'	**18.0" Round 24" Culvert** L= 53.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 431.55' / 431.00' S= 0.0103 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Secondary	434.10'	**10.0" Round WQ Outlet** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 434.10' / 434.00' S= 0.0036 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#3	Device 1	436.25'	**1.0" x 6.0" Horiz. 30" x 30" Grate X 14.00 columns** X 4 rows C= 0.600 in 30.0" x 30.0" Grate (37% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.41 cfs @ 12.50 hrs HW=436.30' TW=0.00' (Dynamic Tailwater)
└─**1=24" Culvert** (Passes 0.41 cfs of 13.44 cfs potential flow)
└─**3=30" x 30" Grate** (Weir Controls 0.41 cfs @ 0.76 fps)

Secondary OutFlow Max=2.19 cfs @ 12.47 hrs HW=436.30' TW=435.19' (Dynamic Tailwater)
└─**2=WQ Outlet** (Inlet Controls 2.19 cfs @ 4.01 fps)

Pond 2P: Retention



Summary for Pond 3P: Bioretention

Inflow Area = 0.308 ac, 52.76% Impervious, Inflow Depth = 2.37" for 10-yr event
Inflow = 0.95 cfs @ 12.04 hrs, Volume= 0.061 af
Outflow = 0.75 cfs @ 12.12 hrs, Volume= 0.061 af, Atten= 21%, Lag= 4.7 min
Primary = 0.75 cfs @ 12.12 hrs, Volume= 0.061 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 443.59' @ 12.12 hrs Surf.Area= 1,151 sf Storage= 865 cf

Plug-Flow detention time= 397.3 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 398.1 min (1,209.8 - 811.7)

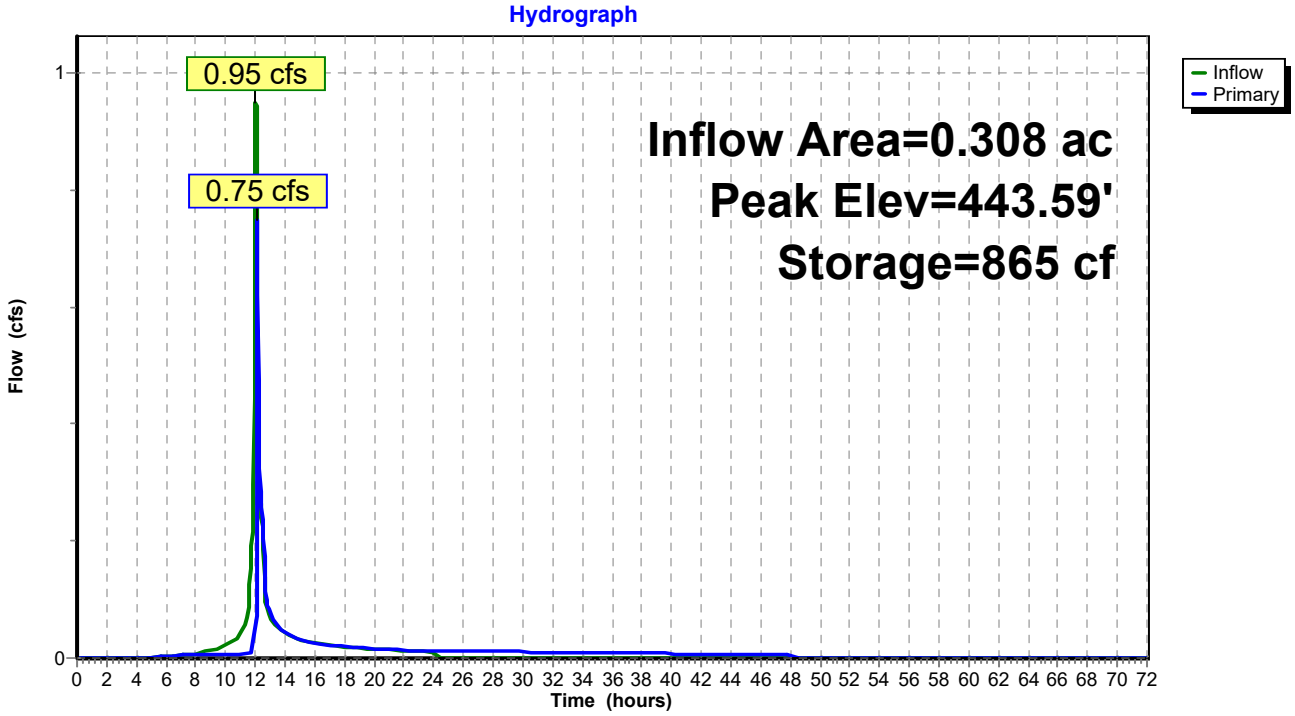
Volume	Invert	Avail.Storage	Storage Description
#1	442.50'	1,396 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
442.50	479	92.7	0	0	479
444.00	1,473	166.8	1,396	1,396	2,022

Device	Routing	Invert	Outlet Devices
#1	Device 3	442.50'	**0.500 in/hr Exfiltration over Horizontal area**
#2	Device 3	443.50'	**24.0" x 24.0" Horiz. 24" x 24" Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	438.90'	**12.0" Round 12" Culvert** L= 57.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 438.90' / 438.50' S= 0.0070 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.12 hrs HW=443.59' TW=0.00' (Dynamic Tailwater)
└**3=12" Culvert** (Passes 0.67 cfs of 6.11 cfs potential flow)
  ├**1=Exfiltration** (Exfiltration Controls 0.01 cfs)
  └**2=24" x 24" Orifice/Grate** (Weir Controls 0.65 cfs @ 0.96 fps)

Pond 3P: Bioretention



Summary for Pond 4P: Pipe

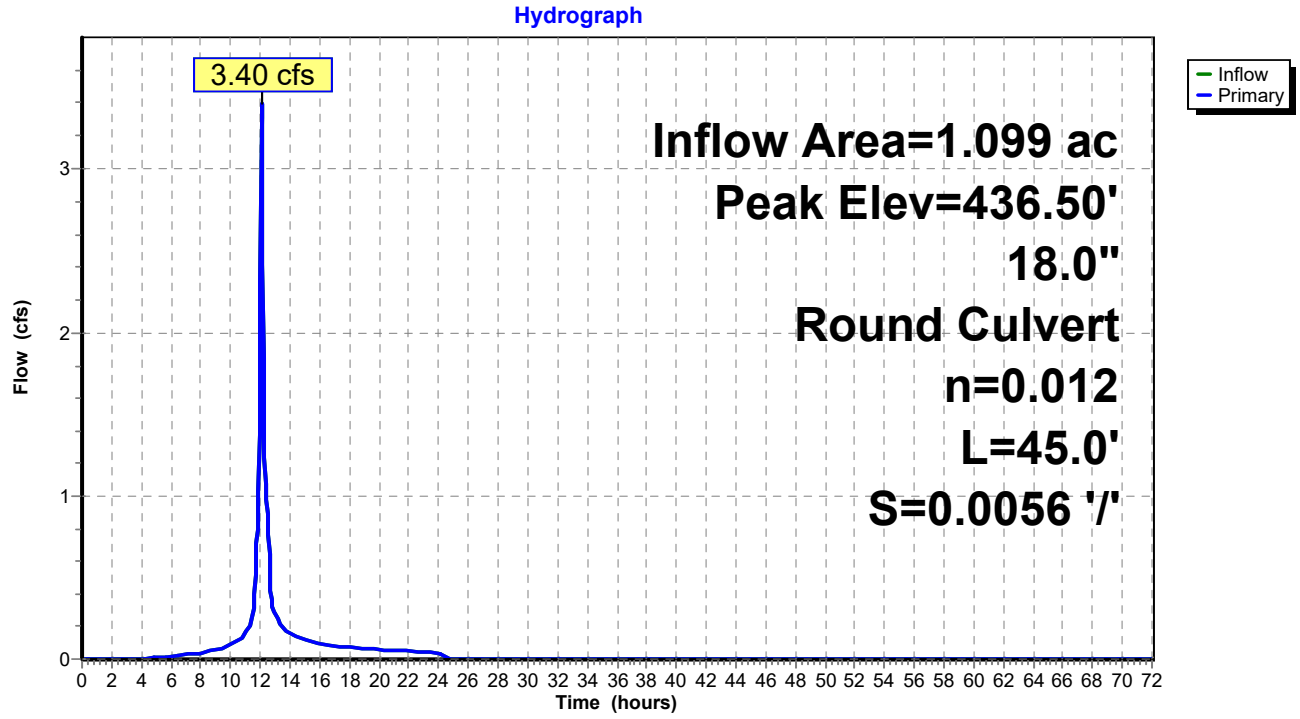
Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 2.59" for 10-yr event
Inflow = 3.40 cfs @ 12.07 hrs, Volume= 0.238 af
Outflow = 3.40 cfs @ 12.07 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min
Primary = 3.40 cfs @ 12.07 hrs, Volume= 0.238 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 436.50' @ 12.07 hrs
Flood Elev= 438.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.50'	**18.0" Round Culvert** L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 435.50' / 435.25' S= 0.0056 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.26 cfs @ 12.07 hrs HW=436.48' TW=435.70' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.26 cfs @ 3.79 fps)

Pond 4P: Pipe



Summary for Pond P1: CB-1

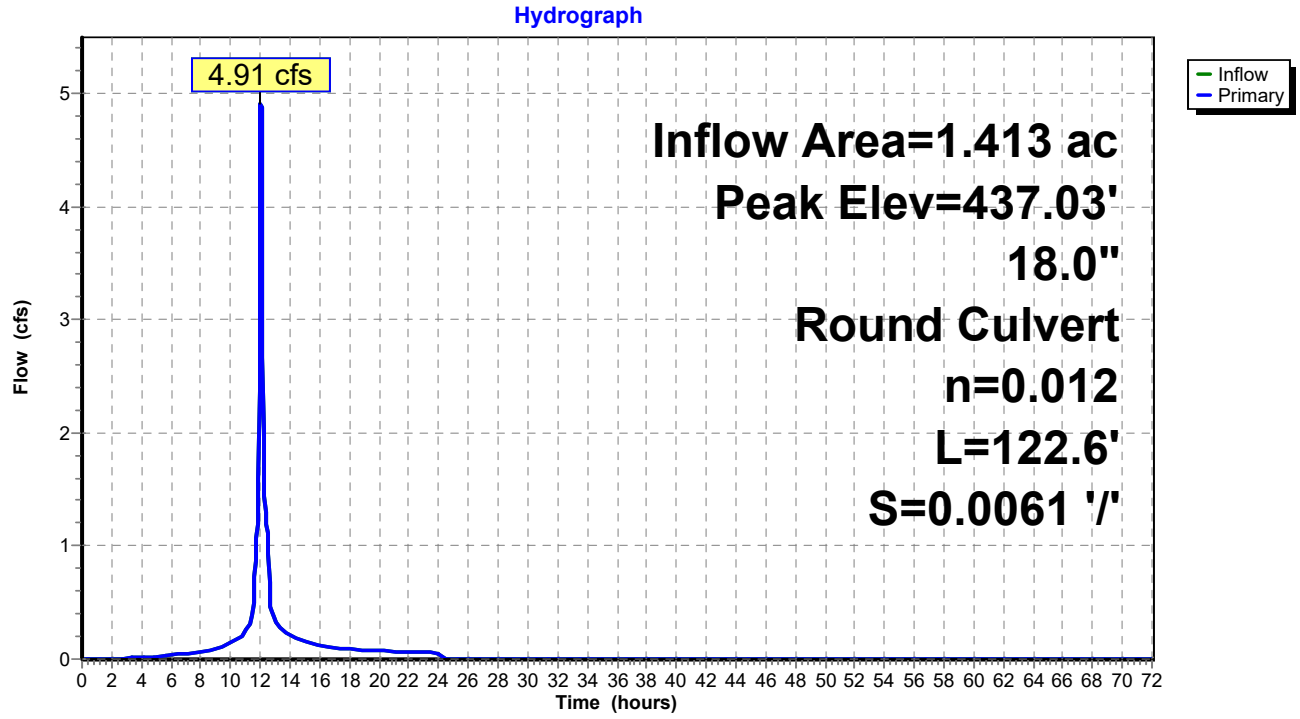
Inflow Area = 1.413 ac, 77.32% Impervious, Inflow Depth = 2.77" for 10-yr event
Inflow = 4.91 cfs @ 12.04 hrs, Volume= 0.326 af
Outflow = 4.91 cfs @ 12.04 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 4.91 cfs @ 12.04 hrs, Volume= 0.326 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 437.03' @ 12.04 hrs
Flood Elev= 439.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.75'	**18.0" Round Culvert** L= 122.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 435.75' / 435.00' S= 0.0061 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.77 cfs @ 12.04 hrs HW=437.01' TW=435.55' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.77 cfs @ 3.02 fps)

Pond P1: CB-1



Summary for Pond P2: STMH-1

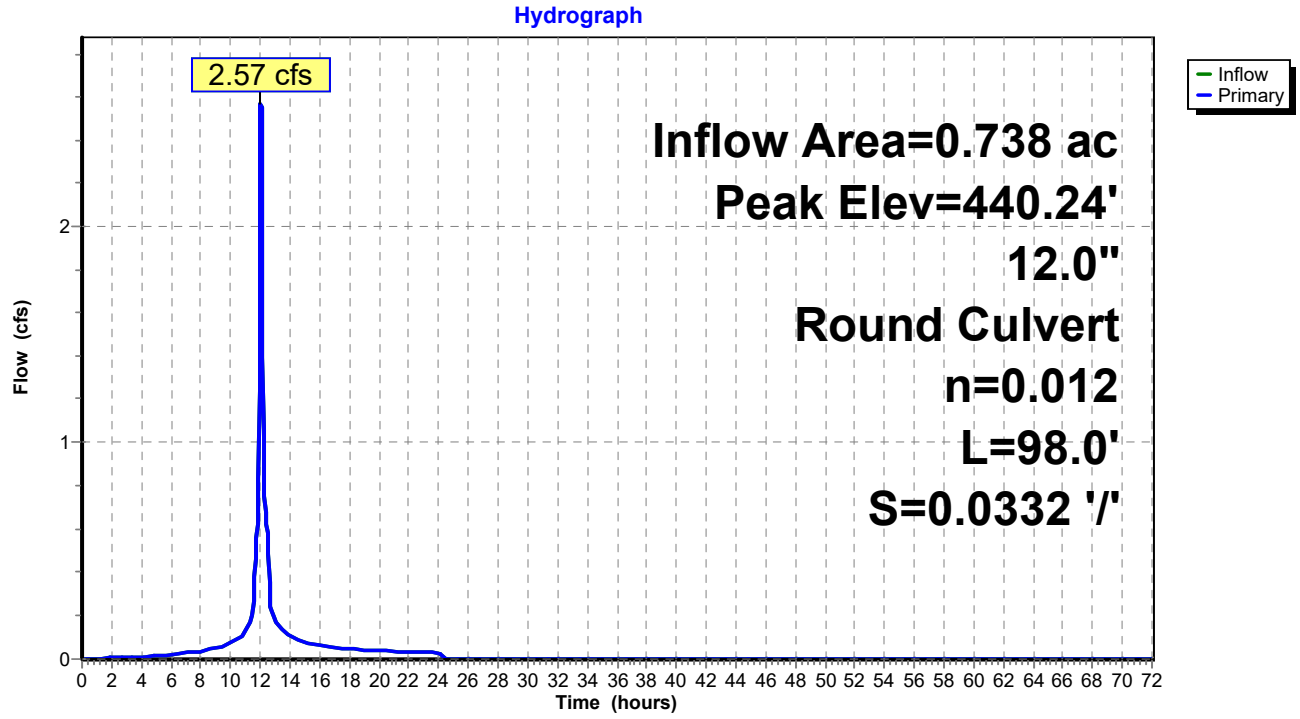
Inflow Area = 0.738 ac, 73.97% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 2.57 cfs @ 12.04 hrs, Volume= 0.172 af
Outflow = 2.57 cfs @ 12.04 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.04 hrs, Volume= 0.172 af
Routed to Pond P1 : CB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 440.24' @ 12.04 hrs
Flood Elev= 444.06'

Device	Routing	Invert	Outlet Devices
#1	Primary	439.00'	**12.0" Round Culvert** L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.00' / 435.75' S= 0.0332 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.49 cfs @ 12.04 hrs HW=440.20' TW=437.01' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.49 cfs @ 3.17 fps)

Pond P2: STMH-1



Summary for Pond P3: CB-2

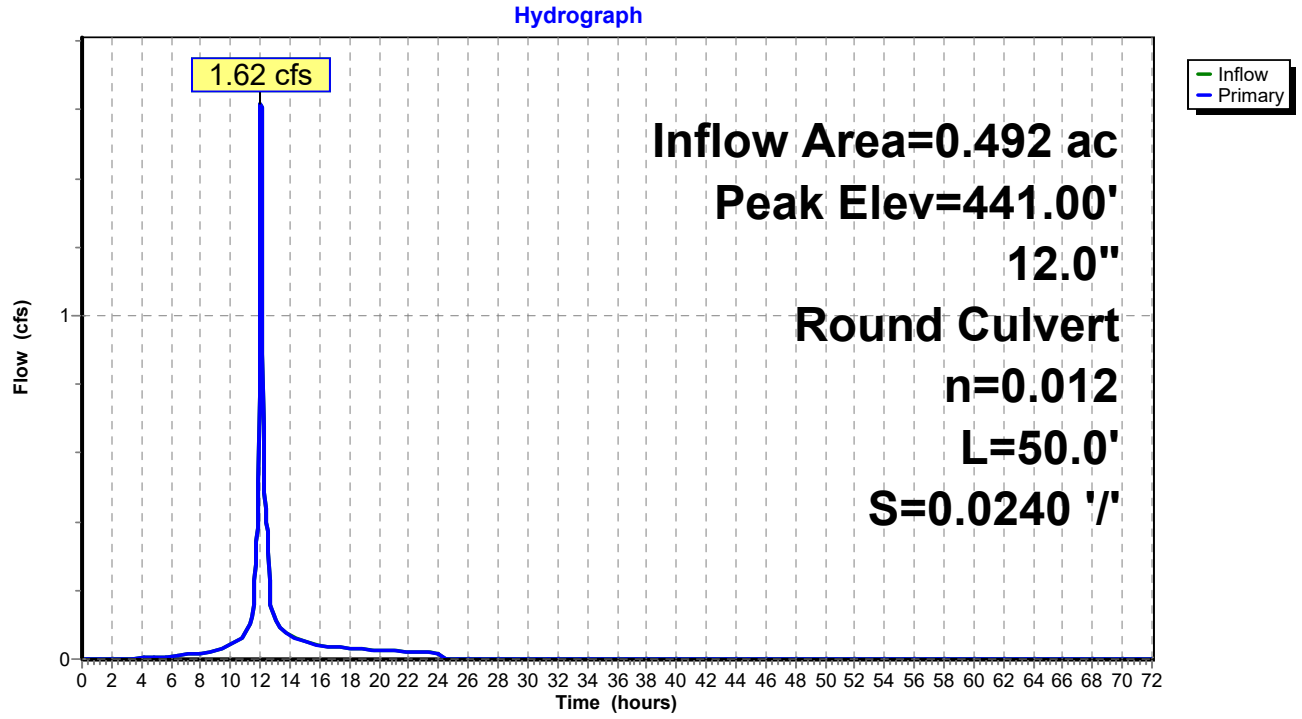
Inflow Area = 0.492 ac, 60.94% Impervious, Inflow Depth = 2.58" for 10-yr event
Inflow = 1.62 cfs @ 12.04 hrs, Volume= 0.106 af
Outflow = 1.62 cfs @ 12.04 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.62 cfs @ 12.04 hrs, Volume= 0.106 af
Routed to Pond P2 : STMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 441.00' @ 12.04 hrs
Flood Elev= 443.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	440.20'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 440.20' / 439.00' S= 0.0240 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.57 cfs @ 12.04 hrs HW=440.98' TW=440.20' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.57 cfs @ 2.38 fps)

Pond P3: CB-2

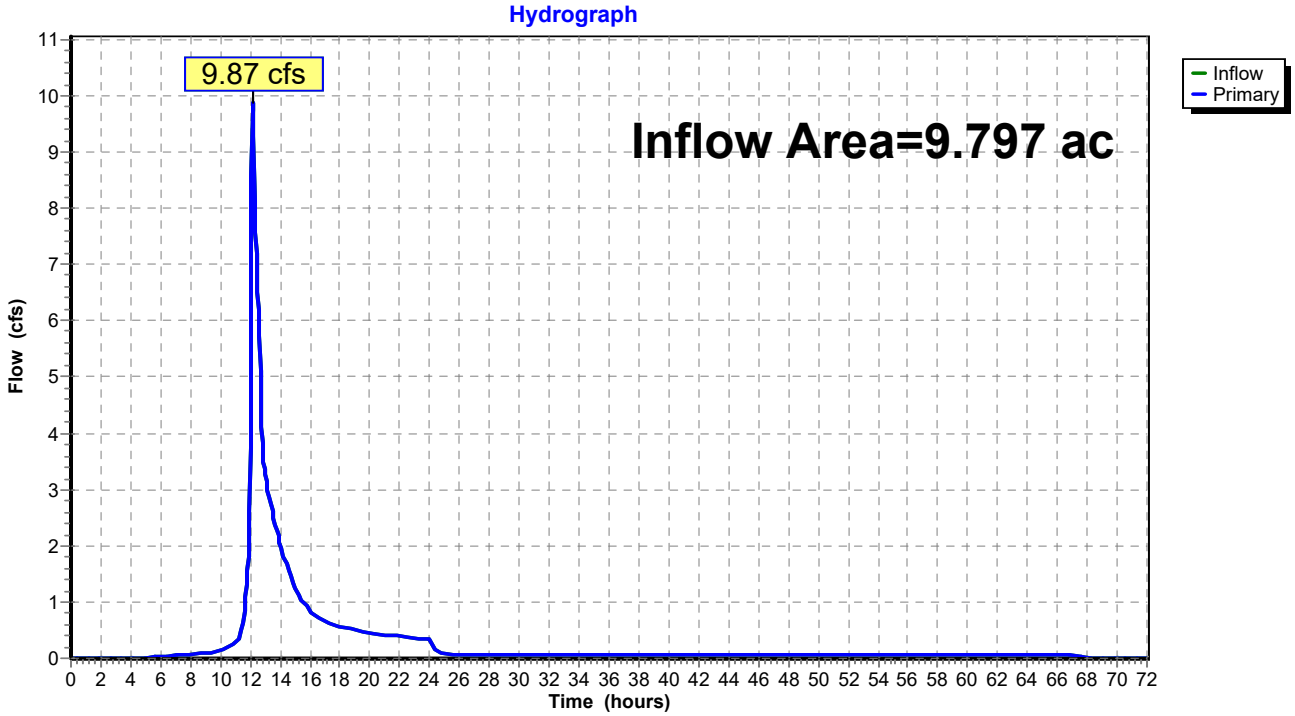


Summary for Link 1L: DP-1

Inflow Area = 9.797 ac, 33.06% Impervious, Inflow Depth > 1.96" for 10-yr event
Inflow = 9.87 cfs @ 12.17 hrs, Volume= 1.603 af
Primary = 9.87 cfs @ 12.17 hrs, Volume= 1.603 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: DP-1



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SC-101 Runoff Area=222,850 sf 4.48% Impervious Runoff Depth=1.99"
Flow Length=844' Tc=13.6 min CN=77 Runoff=9.99 cfs 0.850 af

Subcatchment 2S: SC-102 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=2.23"
Tc=6.0 min CN=80 Runoff=0.51 cfs 0.032 af

Subcatchment 3S: SC-103 Runoff Area=44,336 sf 67.11% Impervious Runoff Depth=3.24"
Tc=6.0 min CN=91 Runoff=4.25 cfs 0.275 af

Subcatchment 4S: SC-104 Runoff Area=43,894 sf 59.17% Impervious Runoff Depth=3.24"
Tc=6.0 min CN=91 Runoff=4.21 cfs 0.272 af

Subcatchment 5S: SC-105 Runoff Area=29,402 sf 80.98% Impervious Runoff Depth=3.44"
Tc=6.0 min CN=93 Runoff=2.95 cfs 0.194 af

Subcatchment 6S: SC-106 Runoff Area=17,850 sf 53.11% Impervious Runoff Depth=3.14"
Tc=6.0 min CN=90 Runoff=1.67 cfs 0.107 af

Subcatchment 7S: SC-107 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=3.99"
Tc=6.0 min CN=98 Runoff=0.43 cfs 0.031 af

Subcatchment 8S: SC-108 Runoff Area=7,150 sf 100.00% Impervious Runoff Depth=3.99"
Tc=6.0 min CN=98 Runoff=0.77 cfs 0.055 af

Subcatchment 9S: SC-109 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=3.99"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.027 af

Subcatchment 10S: SC-110 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=3.99"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.027 af

Subcatchment 11S: SC-111 Runoff Area=12,251 sf 57.76% Impervious Runoff Depth=3.14"
Tc=6.0 min CN=90 Runoff=1.15 cfs 0.074 af

Subcatchment 12S: SC-112 Runoff Area=1,160 sf 0.00% Impervious Runoff Depth=2.23"
Tc=6.0 min CN=80 Runoff=0.08 cfs 0.005 af

Subcatchment 13S: SC-113 Runoff Area=29,226 sf 57.11% Impervious Runoff Depth=3.14"
Flow Length=984' Tc=15.0 min CN=90 Runoff=1.99 cfs 0.175 af

Reach 1R: Driveway Culvert 18" Avg. Flow Depth=0.33' Max Vel=6.86 fps Inflow=1.99 cfs 0.175 af
18.0" Round Pipe n=0.012 L=71.0' S=0.0268 '/' Capacity=18.62 cfs Outflow=1.99 cfs 0.175 af

Reach 2R: Swale Avg. Flow Depth=0.55' Max Vel=2.95 fps Inflow=4.65 cfs 0.302 af
n=0.030 L=376.6' S=0.0159 '/' Capacity=16.71 cfs Outflow=4.36 cfs 0.302 af

Reach 3R: 6" PVC PIPE Avg. Flow Depth=0.21' Max Vel=5.54 fps Inflow=0.43 cfs 0.031 af
6.0" Round Pipe n=0.012 L=133.8' S=0.0374 '/' Capacity=1.18 cfs Outflow=0.44 cfs 0.031 af

Pond 1P: Bioretention Peak Elev=435.21' Storage=5,690 cf Inflow=2.66 cfs 0.899 af
Outflow=2.51 cfs 0.899 af

Pond 2P: Retention Peak Elev=436.51' Storage=16,315 cf Inflow=14.63 cfs 0.987 af
Primary=4.29 cfs 0.118 af Secondary=2.38 cfs 0.867 af Outflow=6.67 cfs 0.985 af

Pond 3P: Bioretention Peak Elev=443.63' Storage=903 cf Inflow=1.22 cfs 0.078 af
Outflow=1.18 cfs 0.078 af

Pond 4P: Pipe Peak Elev=436.67' Inflow=4.36 cfs 0.302 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0056 '/' Outflow=4.36 cfs 0.302 af

Pond P1: CB-1 Peak Elev=437.34' Inflow=6.17 cfs 0.410 af
18.0" Round Culvert n=0.012 L=122.6' S=0.0061 '/' Outflow=6.17 cfs 0.410 af

Pond P2: STMH-1 Peak Elev=440.66' Inflow=3.22 cfs 0.216 af
12.0" Round Culvert n=0.012 L=98.0' S=0.0332 '/' Outflow=3.22 cfs 0.216 af

Pond P3: CB-2 Peak Elev=441.16' Inflow=2.06 cfs 0.134 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0240 '/' Outflow=2.06 cfs 0.134 af

Link 1L: DP-1 Inflow=18.56 cfs 2.121 af
Primary=18.56 cfs 2.121 af

Total Runoff Area = 9.797 ac Runoff Volume = 2.123 af Average Runoff Depth = 2.60"
66.94% Pervious = 6.559 ac 33.06% Impervious = 3.239 ac

Summary for Subcatchment 1S: SC-101

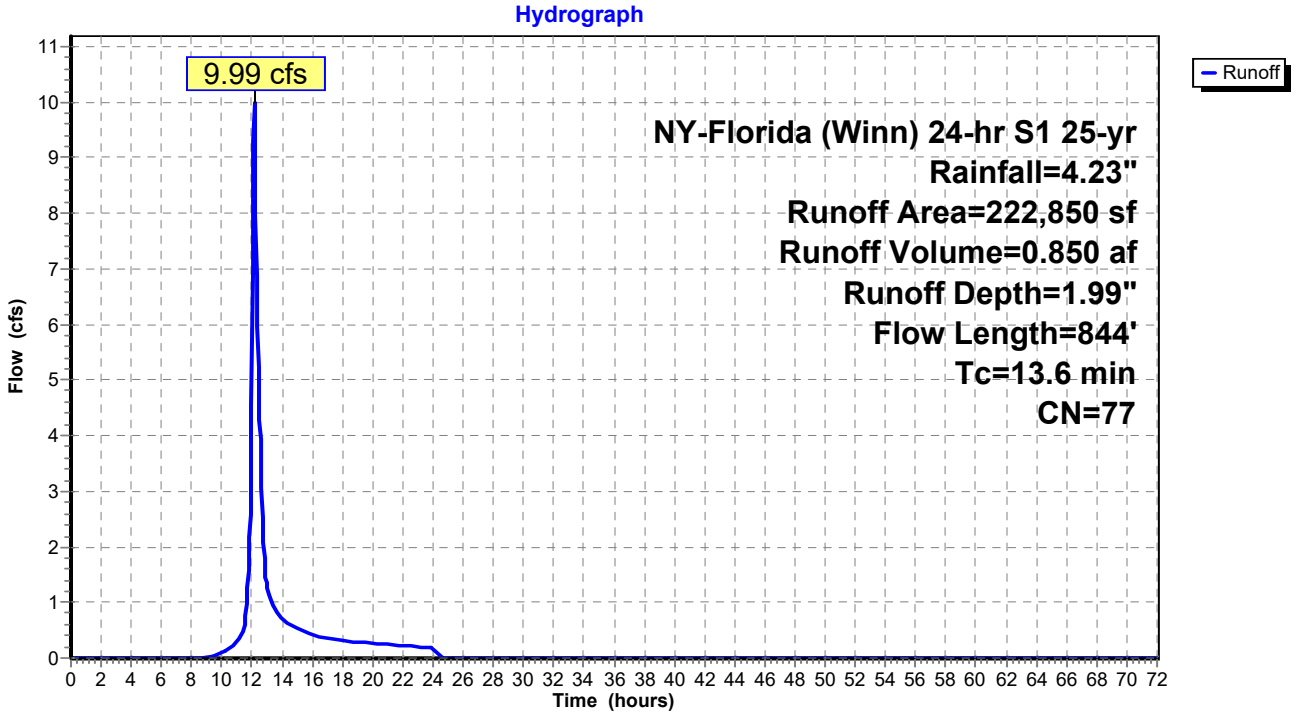
Runoff = 9.99 cfs @ 12.15 hrs, Volume= 0.850 af, Depth= 1.99"
Routed to Link 1L : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
9,237	61	>75% Grass cover, Good, HSG B
134,253	80	>75% Grass cover, Good, HSG D
8,429	55	Woods, Good, HSG B
4,294	77	Woods, Good, HSG D
4,419	67	Brush, Poor, HSG B
52,228	73	Brush, Good, HSG D
1,881	98	Roofs, HSG D
8,109	98	Paved parking, HSG D
222,850	77	Weighted Average
212,860		95.52% Pervious Area
9,990		4.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0322	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
2.0	140	0.0276	1.16		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	275	0.0205	7.09	14.18	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
0.1	45	0.0190	8.88	15.69	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.6	203	0.0129	5.63	11.25	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
1.1	81	0.0617	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	844	Total			

Subcatchment 1S: SC-101



Summary for Subcatchment 2S: SC-102

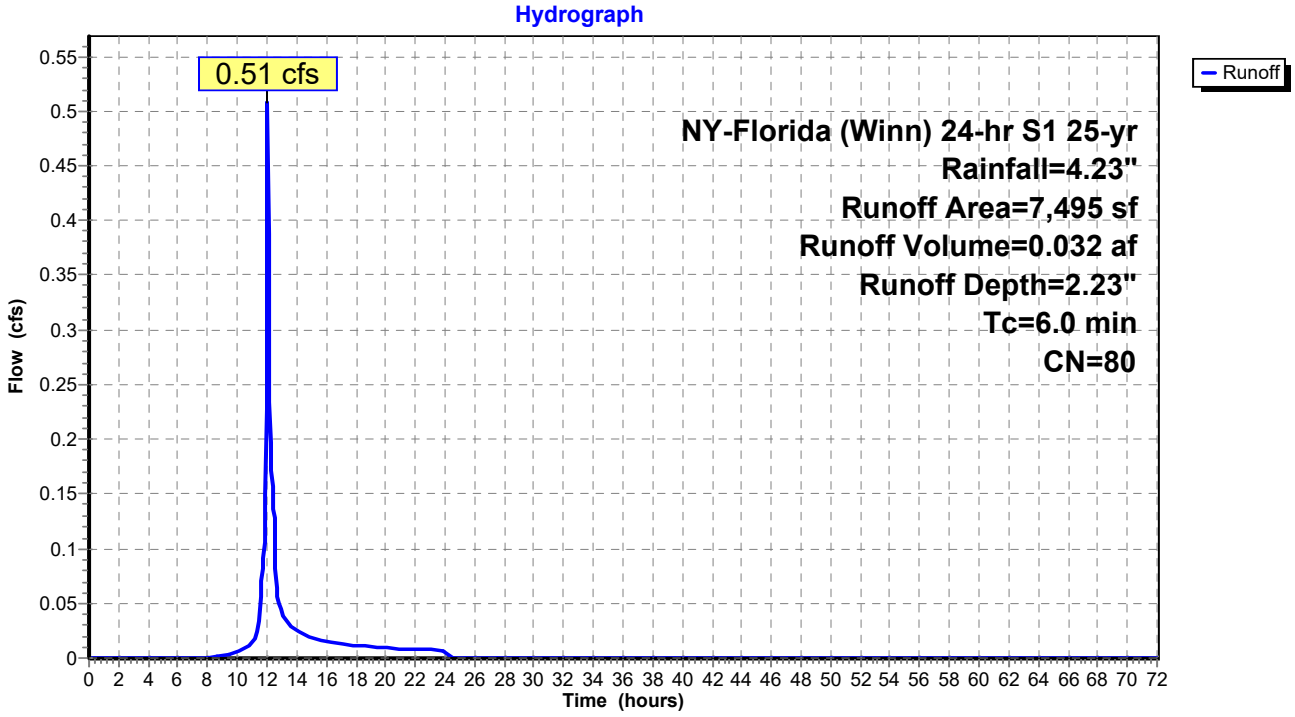
Runoff = 0.51 cfs @ 12.04 hrs, Volume= 0.032 af, Depth= 2.23"
Routed to Pond 1P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
7,495	80	>75% Grass cover, Good, HSG D
7,495		100.00% Pervious Area

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

Subcatchment 2S: SC-102



Summary for Subcatchment 3S: SC-103

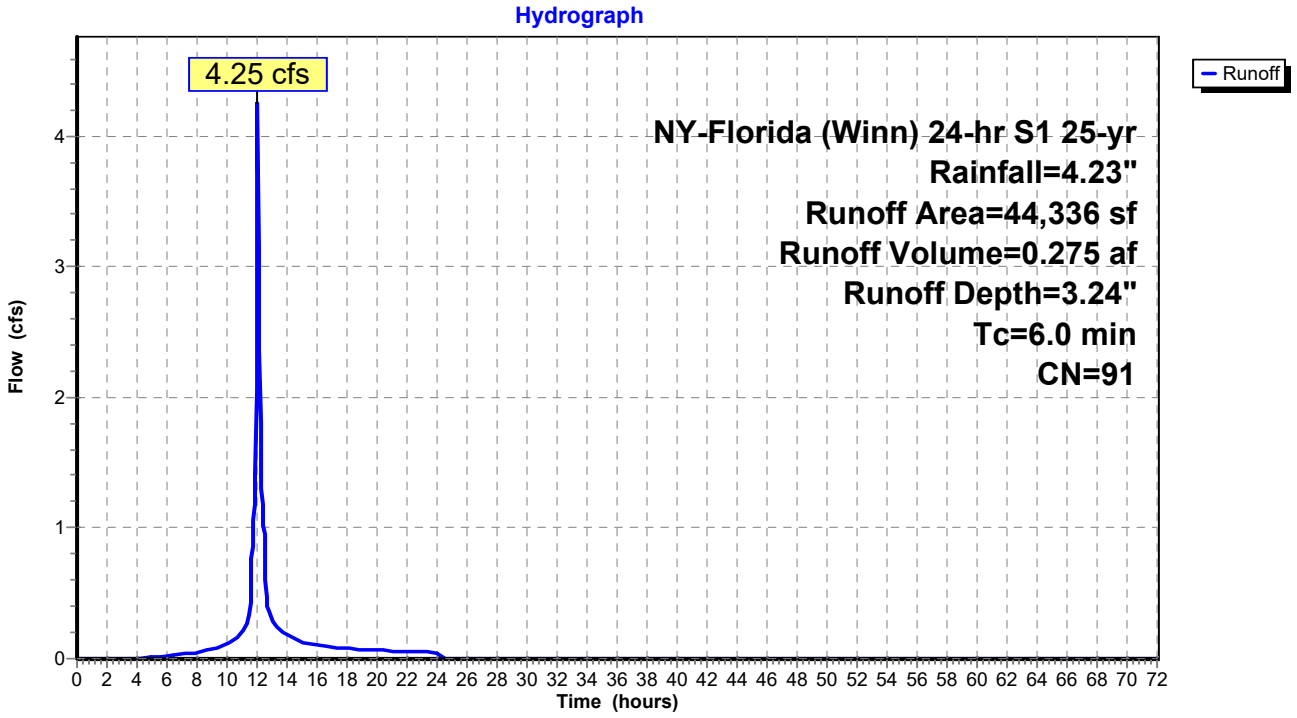
Runoff = 4.25 cfs @ 12.04 hrs, Volume= 0.275 af, Depth= 3.24"
Routed to Pond 2P : Retention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
2,422	61	>75% Grass cover, Good, HSG B
12,162	80	>75% Grass cover, Good, HSG D
16,564	98	Paved parking, HSG B
13,188	98	Paved parking, HSG D
44,336	91	Weighted Average
14,584		32.89% Pervious Area
29,752		67.11% Impervious Area

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

Subcatchment 3S: SC-103



Summary for Subcatchment 4S: SC-104

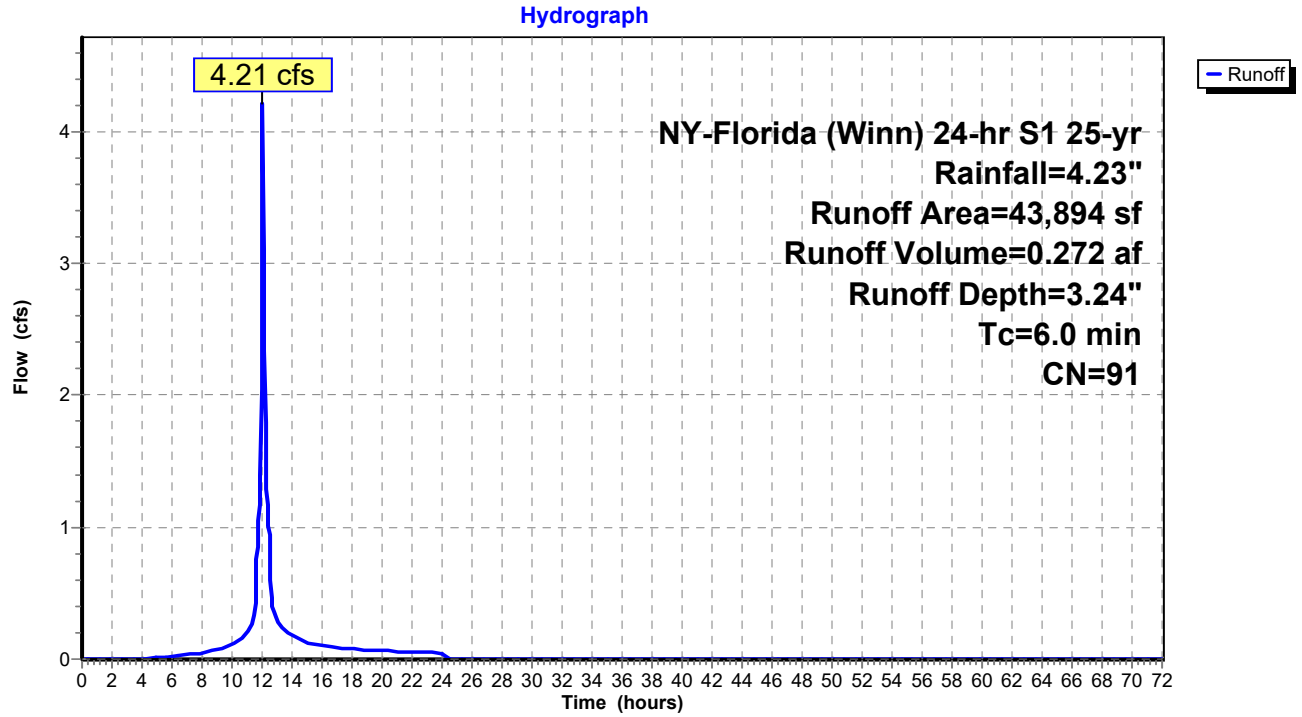
Runoff = 4.21 cfs @ 12.04 hrs, Volume= 0.272 af, Depth= 3.24"
Routed to Reach 2R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
17,922	80	>75% Grass cover, Good, HSG D
20,999	98	Paved parking, HSG D
4,973	98	Paved parking, HSG D
43,894	91	Weighted Average
17,922		40.83% Pervious Area
25,972		59.17% Impervious Area

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

Subcatchment 4S: SC-104



Summary for Subcatchment 5S: SC-105

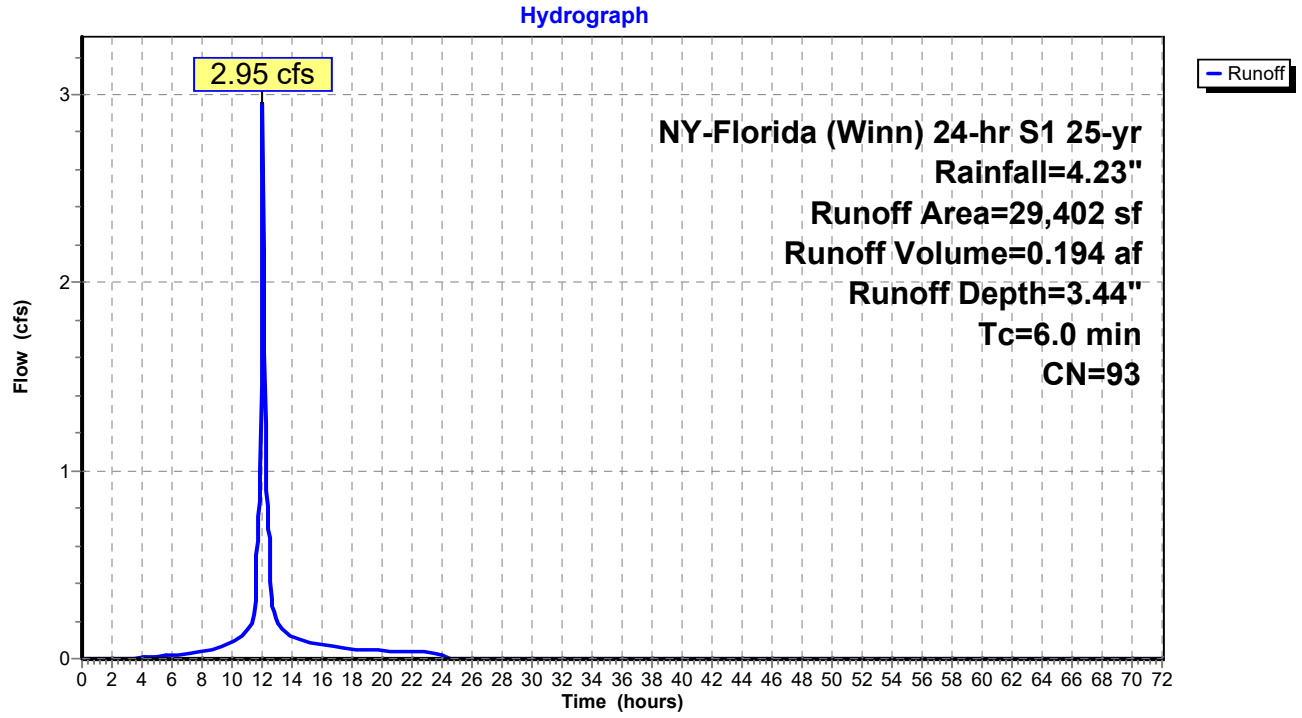
Runoff = 2.95 cfs @ 12.04 hrs, Volume= 0.194 af, Depth= 3.44"
Routed to Pond P1 : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
1,975	61	>75% Grass cover, Good, HSG B
3,618	80	>75% Grass cover, Good, HSG D
2,068	98	Paved parking, HSG B
21,741	98	Paved parking, HSG D
29,402	93	Weighted Average
5,593		19.02% Pervious Area
23,809		80.98% Impervious Area

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

Subcatchment 5S: SC-105



Summary for Subcatchment 6S: SC-106

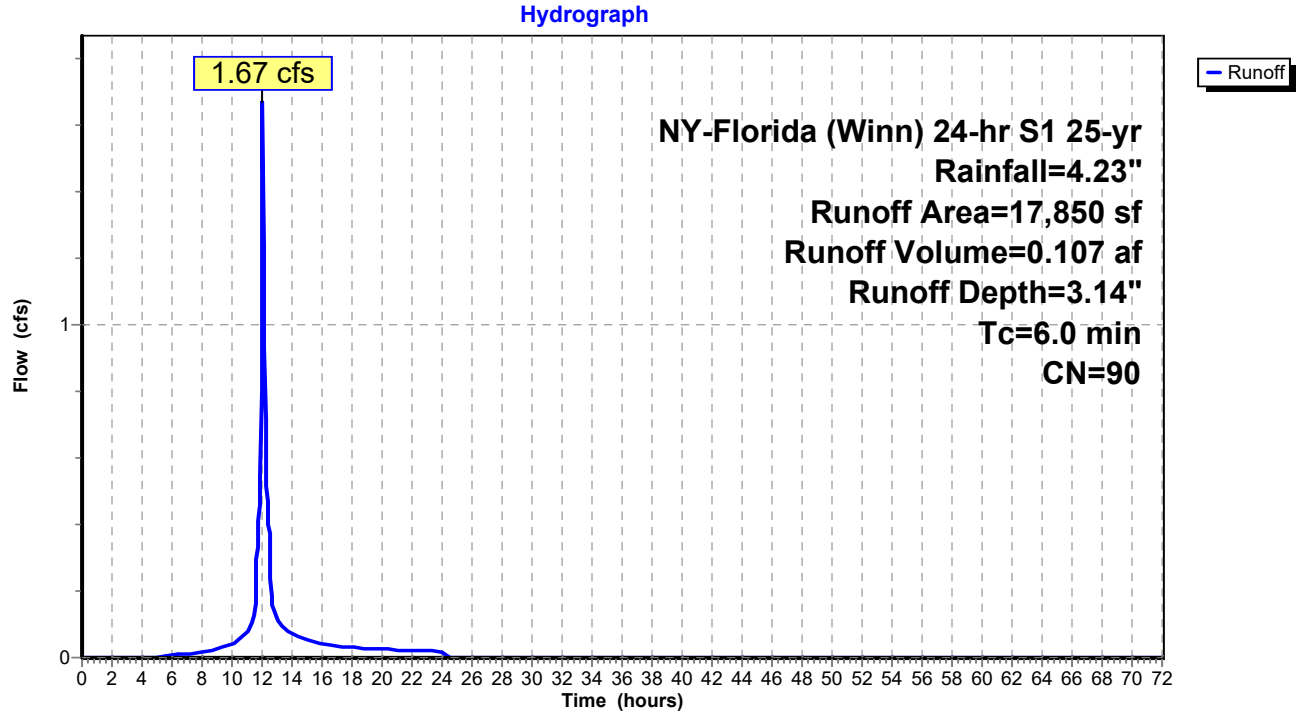
Runoff = 1.67 cfs @ 12.04 hrs, Volume= 0.107 af, Depth= 3.14"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
8,369	80	>75% Grass cover, Good, HSG D
9,481	98	Paved parking, HSG D
17,850	90	Weighted Average
8,369		46.89% Pervious Area
9,481		53.11% Impervious Area

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

Subcatchment 6S: SC-106



Summary for Subcatchment 7S: SC-107

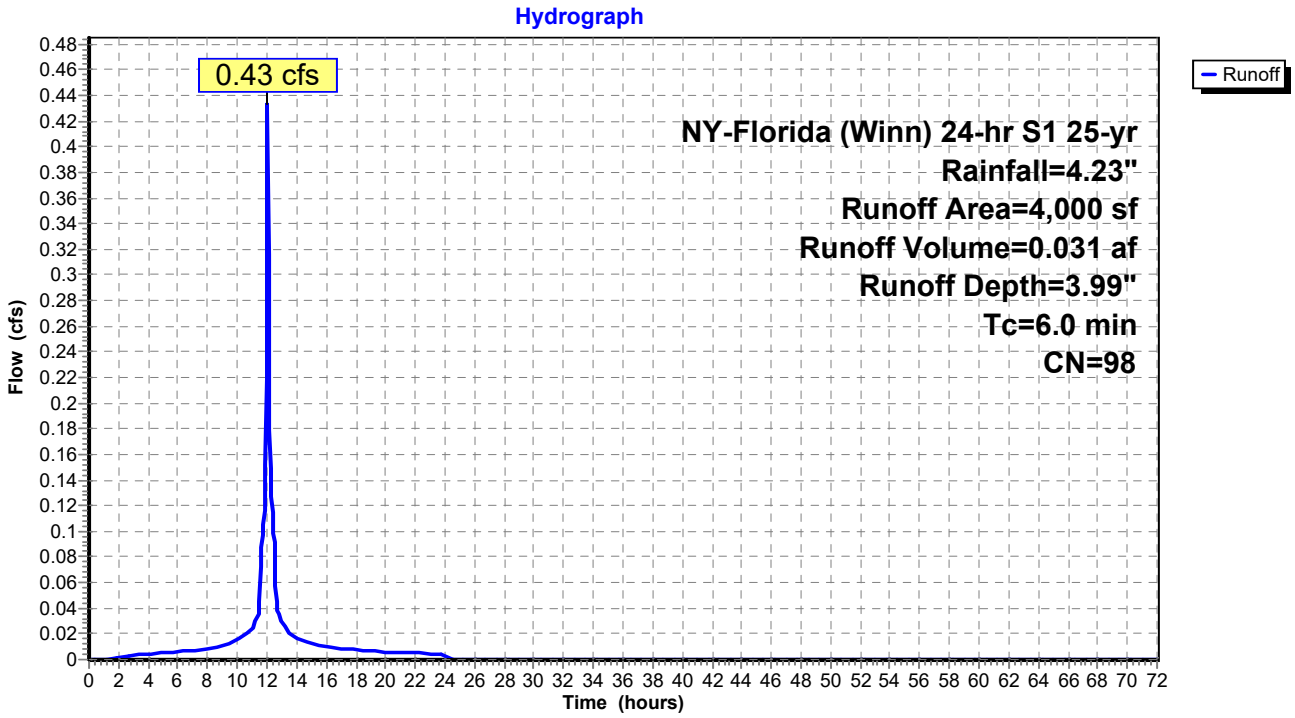
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 0.031 af, Depth= 3.99"
Routed to Reach 3R : 6" PVC PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
4,000	98	Unconnected roofs, HSG D
4,000		100.00% Impervious Area
4,000		100.00% Unconnected

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

Subcatchment 7S: SC-107



Summary for Subcatchment 8S: SC-108

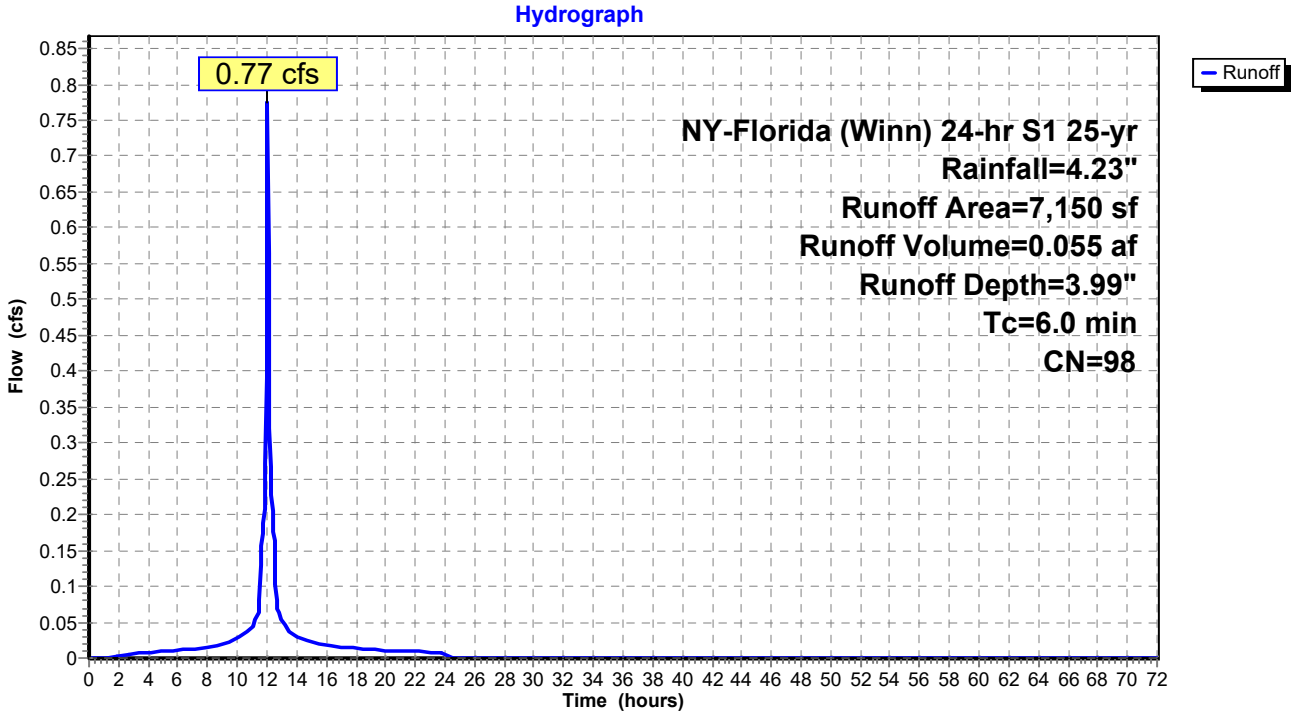
Runoff = 0.77 cfs @ 12.04 hrs, Volume= 0.055 af, Depth= 3.99"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
7,150	98	Roofs, HSG D
7,150		100.00% Impervious Area

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

Subcatchment 8S: SC-108



Summary for Subcatchment 9S: SC-109

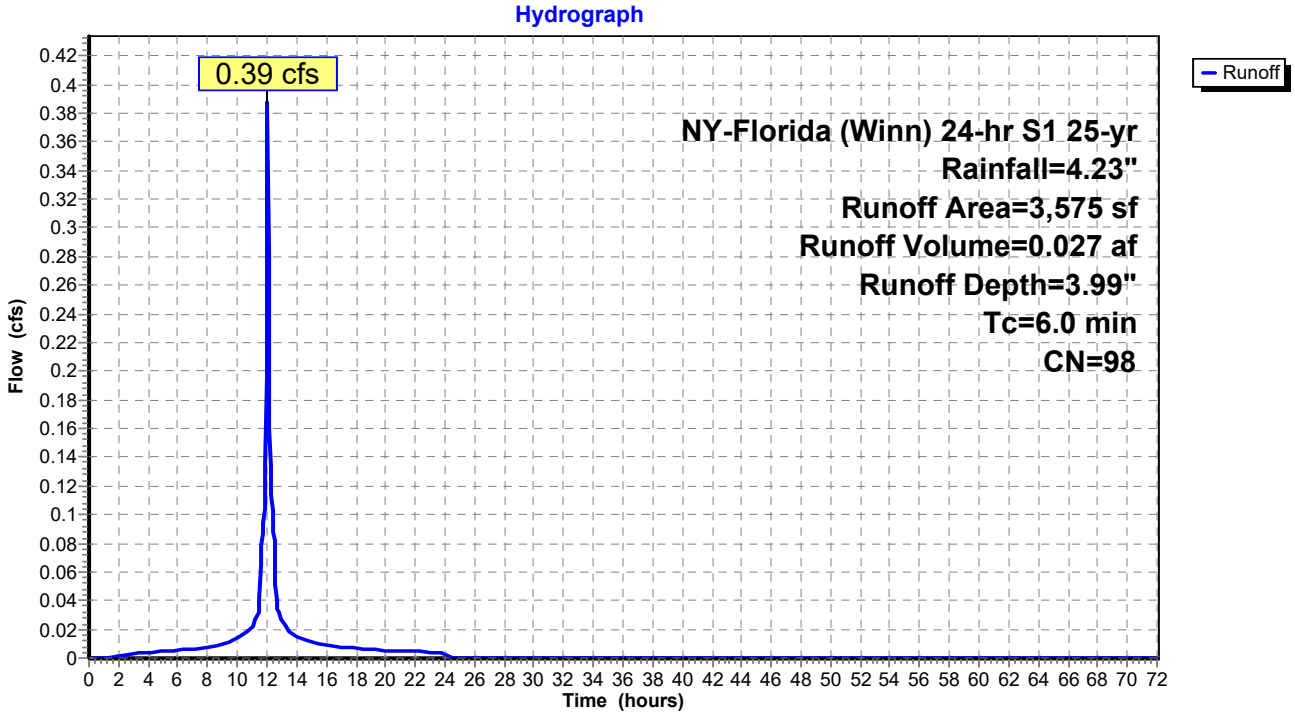
Runoff = 0.39 cfs @ 12.04 hrs, Volume= 0.027 af, Depth= 3.99"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 9S: SC-109



Summary for Subcatchment 10S: SC-110

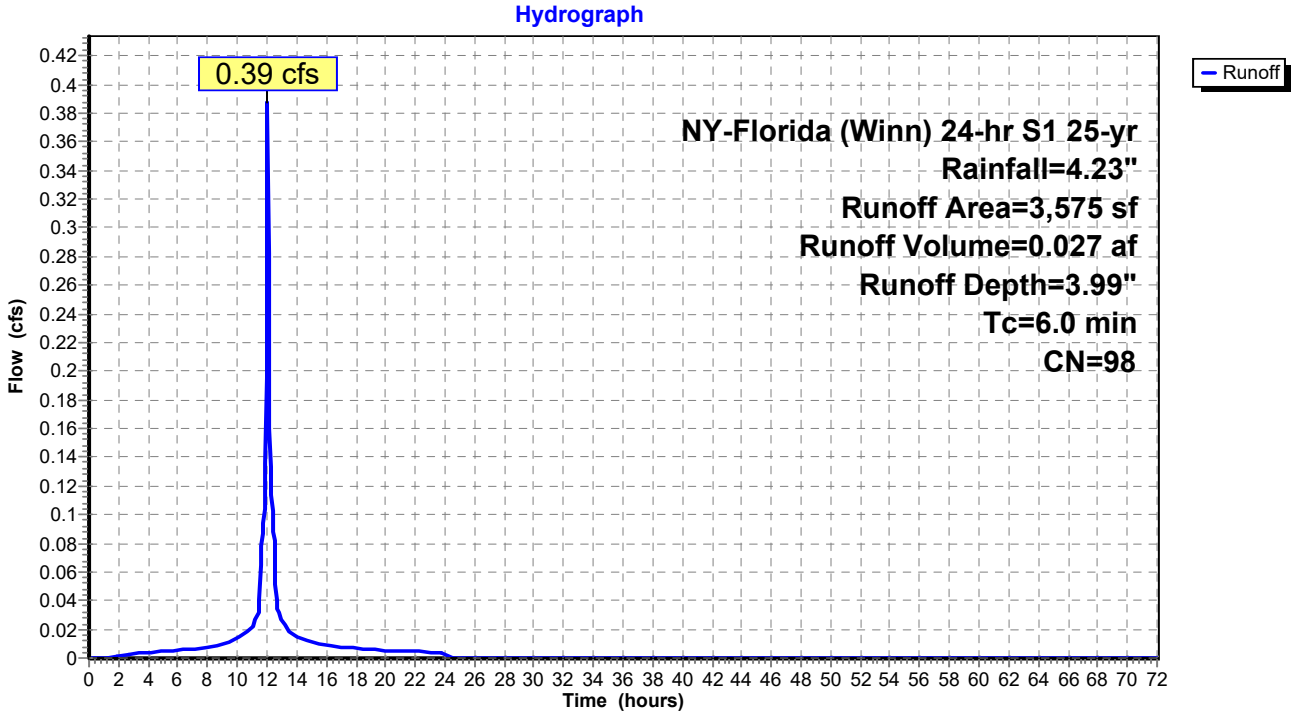
Runoff = 0.39 cfs @ 12.04 hrs, Volume= 0.027 af, Depth= 3.99"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 10S: SC-110



Summary for Subcatchment 11S: SC-111

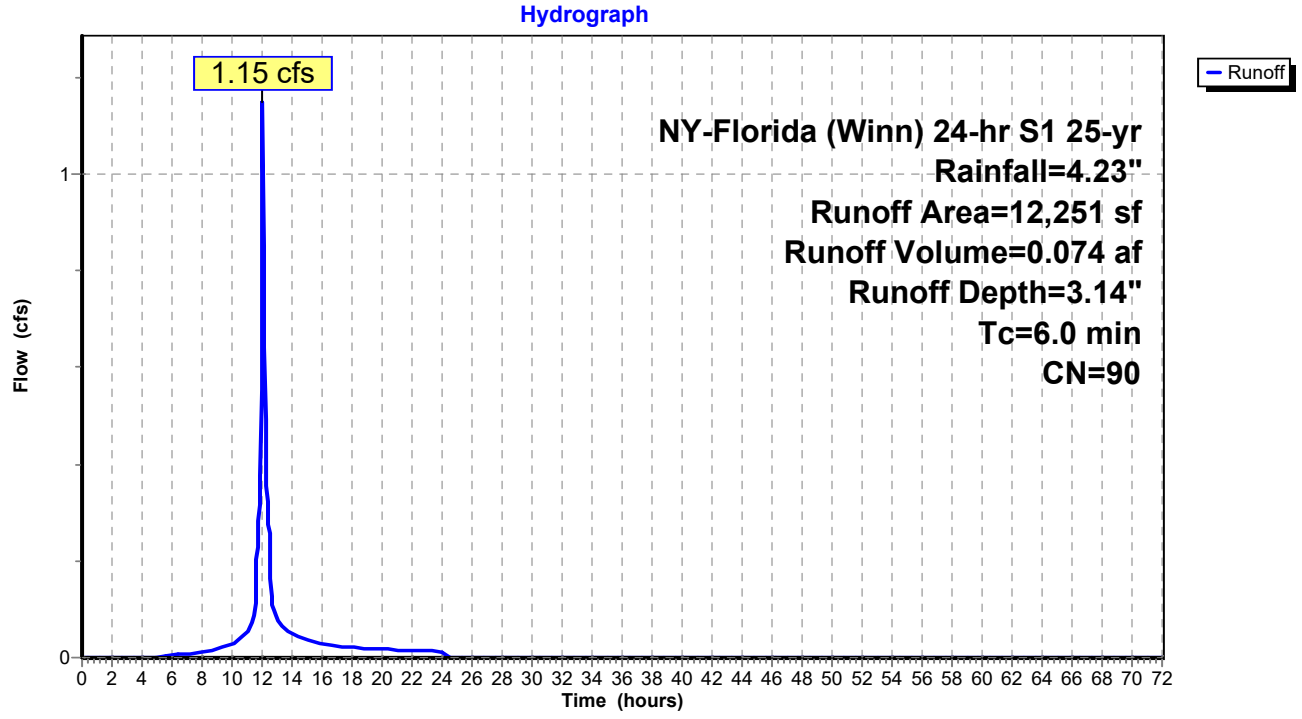
Runoff = 1.15 cfs @ 12.04 hrs, Volume= 0.074 af, Depth= 3.14"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
5,175	80	>75% Grass cover, Good, HSG D
7,076	98	Paved parking, HSG D
12,251	90	Weighted Average
5,175		42.24% Pervious Area
7,076		57.76% Impervious Area

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

Subcatchment 11S: SC-111



Summary for Subcatchment 12S: SC-112

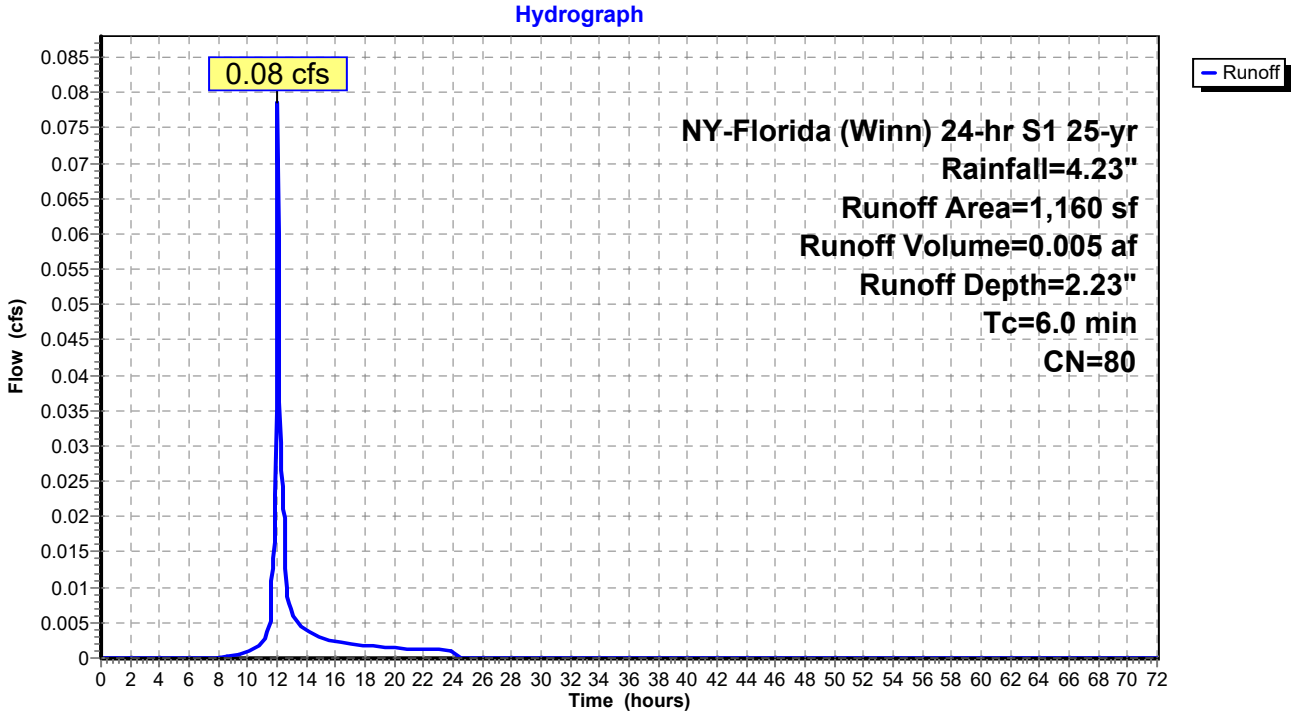
Runoff = 0.08 cfs @ 12.04 hrs, Volume= 0.005 af, Depth= 2.23"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
1,160	80	>75% Grass cover, Good, HSG D
1,160		100.00% Pervious Area

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

Subcatchment 12S: SC-112



Summary for Subcatchment 13S: SC-113

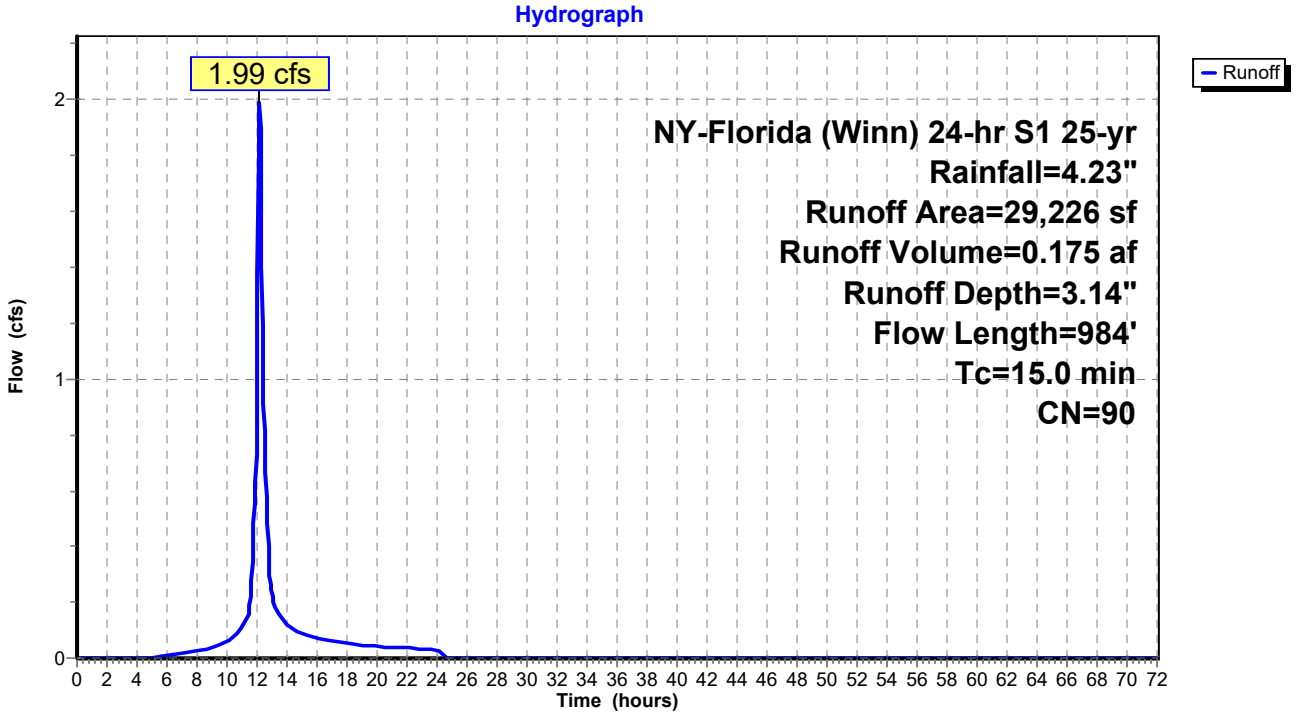
Runoff = 1.99 cfs @ 12.16 hrs, Volume= 0.175 af, Depth= 3.14"
Routed to Reach 1R : Driveway Culvert 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 25-yr Rainfall=4.23"

Area (sf)	CN	Description
12,534	80	>75% Grass cover, Good, HSG D
1,129	98	Roofs, HSG D
15,563	98	Paved parking, HSG D
29,226	90	Weighted Average
12,534		42.89% Pervious Area
16,692		57.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0147	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
0.2	20	0.0785	1.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	109	0.0210	4.52	4.52	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.0	32	0.0996	20.32	35.91	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.3	116	0.0467	6.74	6.74	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	42	0.0242	10.02	17.70	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	53	0.0283	10.83	19.14	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
15.0	984	Total			

Subcatchment 13S: SC-113



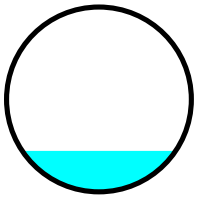
Summary for Reach 1R: Driveway Culvert 18"

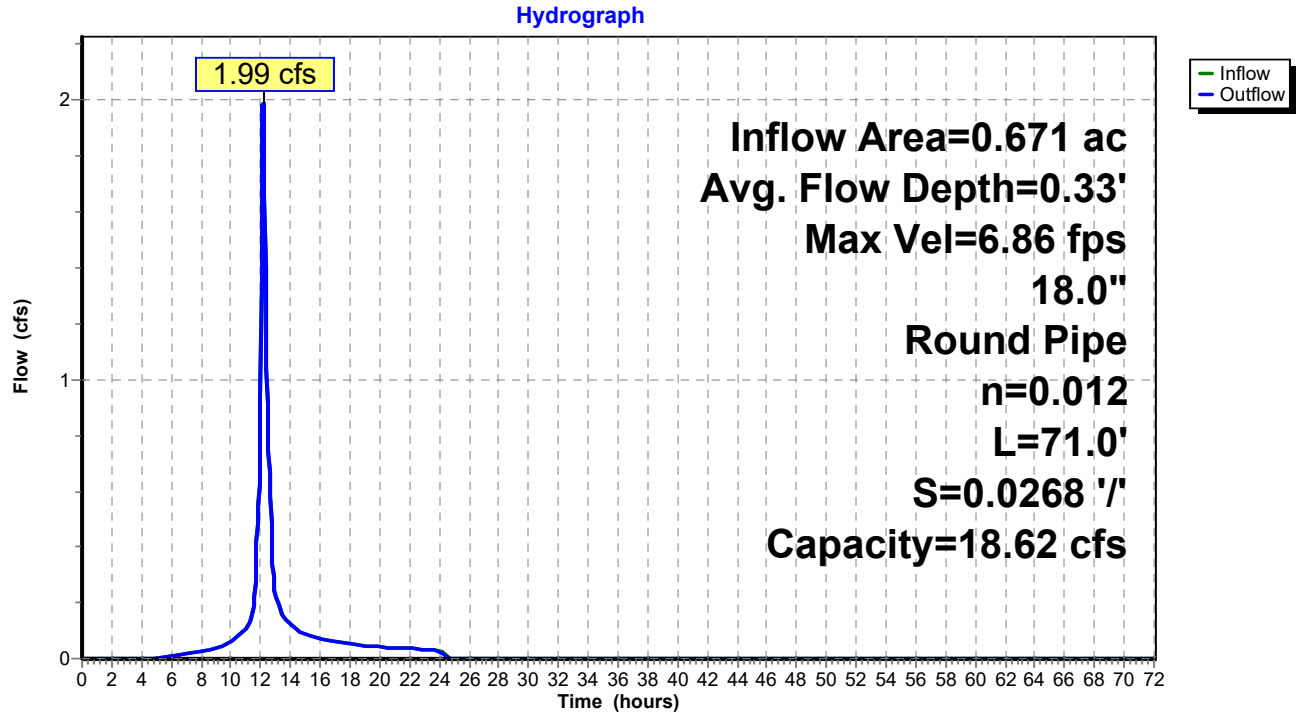
Inflow Area = 0.671 ac, 57.11% Impervious, Inflow Depth = 3.14" for 25-yr event
Inflow = 1.99 cfs @ 12.16 hrs, Volume= 0.175 af
Outflow = 1.99 cfs @ 12.16 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.1 min
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.86 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.35 fps, Avg. Travel Time= 0.5 min

Peak Storage= 21 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 1.24'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.62 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 71.0' Slope= 0.0268 '/'
Inlet Invert= 449.50', Outlet Invert= 447.60'





Summary for Reach 2R: Swale

Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 3.30" for 25-yr event
Inflow = 4.65 cfs @ 12.04 hrs, Volume= 0.302 af
Outflow = 4.36 cfs @ 12.07 hrs, Volume= 0.302 af, Atten= 6%, Lag= 1.5 min
Routed to Pond 4P : Pipe

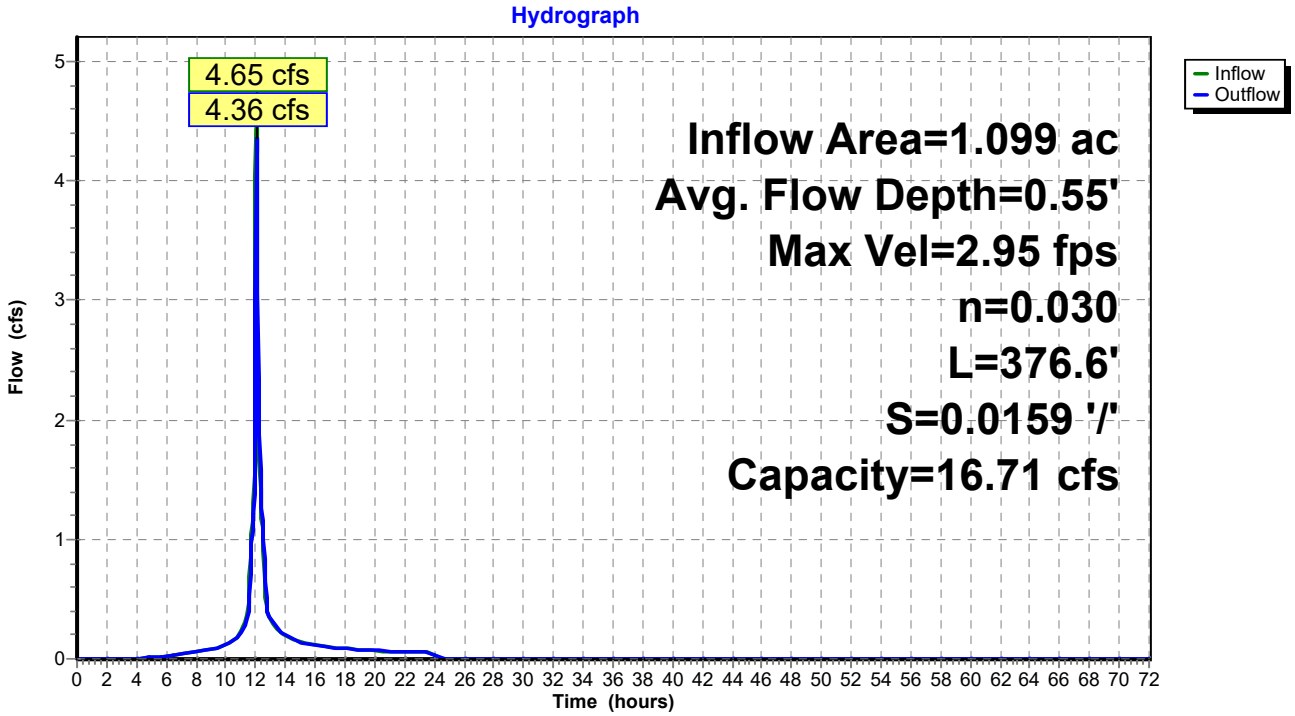
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.95 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 7.2 min

Peak Storage= 554 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 4.32'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 16.71 cfs

1.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 376.6' Slope= 0.0159 '/'
Inlet Invert= 441.50', Outlet Invert= 435.50'



Reach 2R: Swale



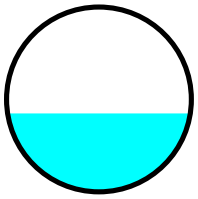
Summary for Reach 3R: 6" PVC PIPE

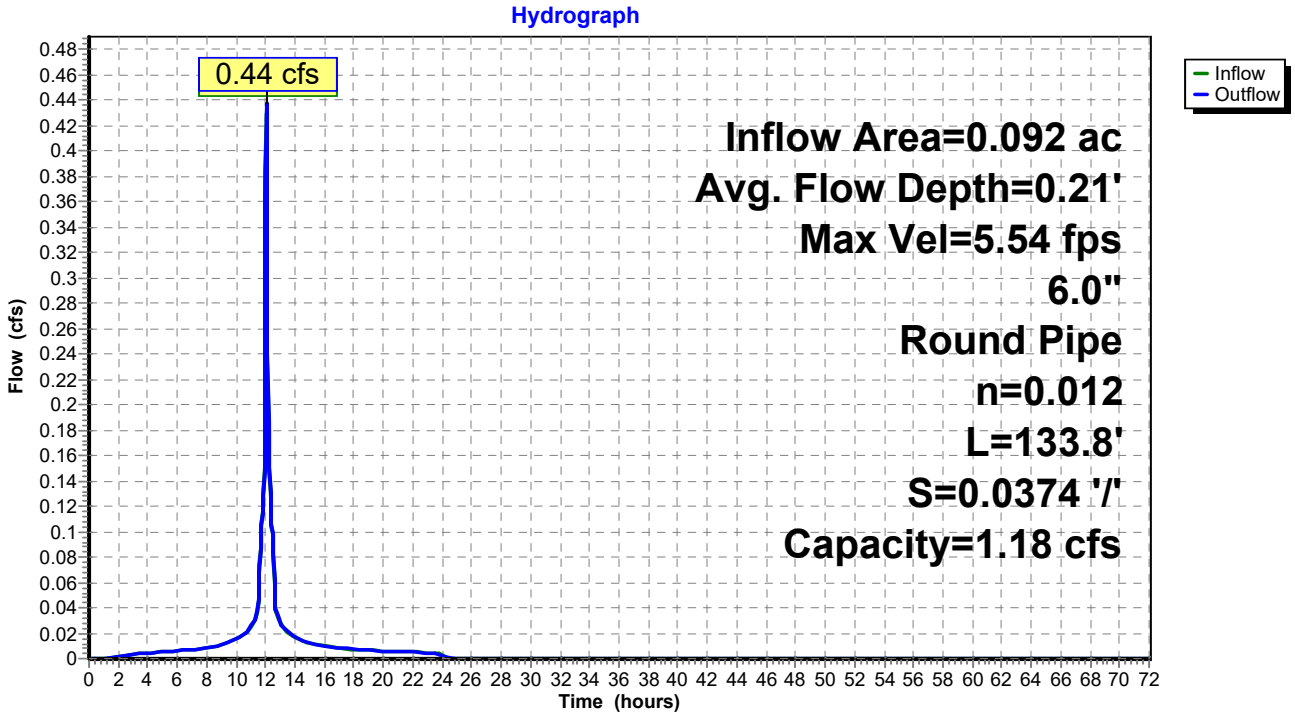
Inflow Area = 0.092 ac,100.00% Impervious, Inflow Depth = 3.99" for 25-yr event
Inflow = 0.43 cfs @ 12.04 hrs, Volume= 0.031 af
Outflow = 0.44 cfs @ 12.05 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.4 min
Routed to Reach 2R : Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.54 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.79 fps, Avg. Travel Time= 1.2 min

Peak Storage= 11 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.21' , Surface Width= 0.49'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.18 cfs

6.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 133.8' Slope= 0.0374 '/'
Inlet Invert= 449.00', Outlet Invert= 444.00'





Summary for Pond 1P: Bioretention

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth > 62.72" for 25-yr event
Inflow = 2.66 cfs @ 12.14 hrs, Volume= 0.899 af
Outflow = 2.51 cfs @ 12.31 hrs, Volume= 0.899 af, Atten= 6%, Lag= 10.2 min
Primary = 2.51 cfs @ 12.31 hrs, Volume= 0.899 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 435.21' @ 12.31 hrs Surf.Area= 5,280 sf Storage= 5,690 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 268.5 min (1,291.2 - 1,022.7)

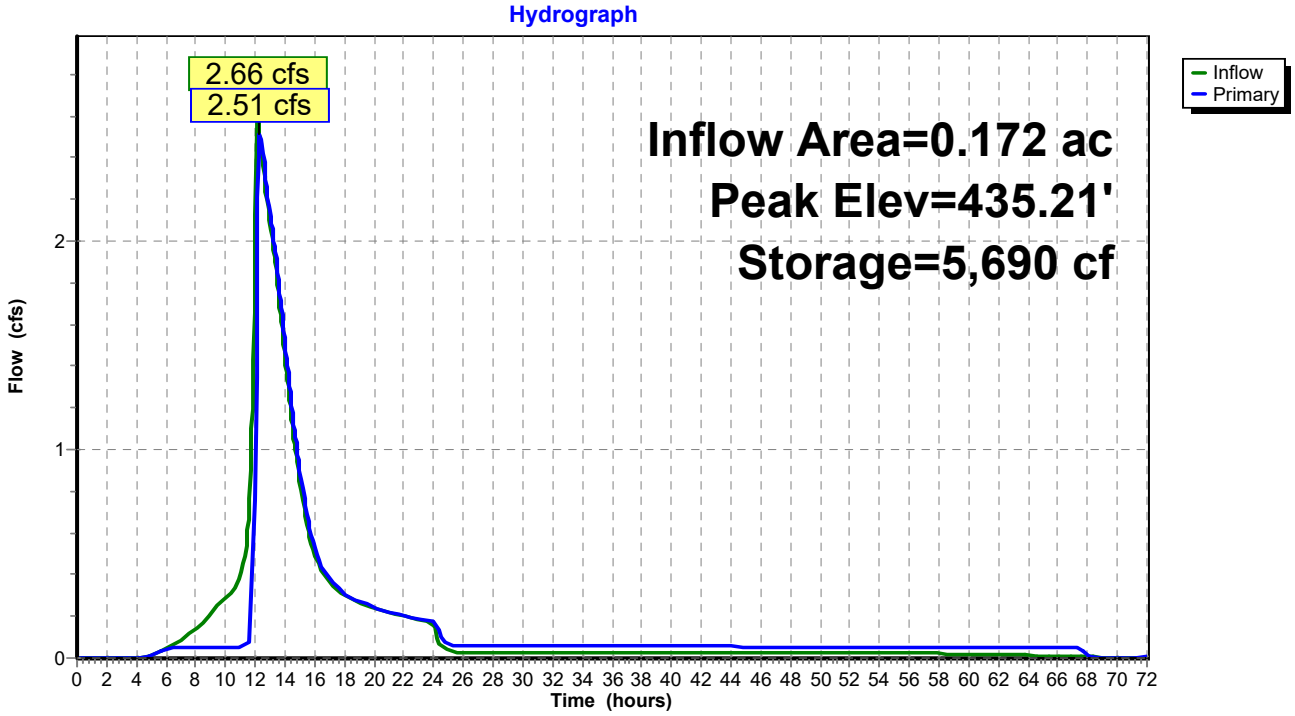
Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	7,284 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.00	4,173	293.0	0	0	4,173
435.00	5,086	314.1	4,622	4,622	5,237
435.50	5,564	323.6	2,662	7,284	5,744

Device	Routing	Invert	Outlet Devices
#1	Primary	430.25'	**12.0" Round 12" Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 430.25' / 430.00' S= 0.0033 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	434.00'	**0.500 in/hr Exfiltration over Horizontal area**
#3	Device 1	435.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.51 cfs @ 12.31 hrs HW=435.21' TW=0.00' (Dynamic Tailwater)
↑ **1=12" Culvert** (Passes 2.51 cfs of 6.30 cfs potential flow)
↑ **2=Exfiltration** (Exfiltration Controls 0.06 cfs)
3=Orifice/Grate (Weir Controls 2.45 cfs @ 1.48 fps)

Pond 1P: Bioretention



Summary for Pond 2P: Retention

Inflow Area = 3.530 ac, 69.78% Impervious, Inflow Depth = 3.36" for 25-yr event
Inflow = 14.63 cfs @ 12.05 hrs, Volume= 0.987 af
Outflow = 6.67 cfs @ 12.22 hrs, Volume= 0.985 af, Atten= 54%, Lag= 10.1 min
Primary = 4.29 cfs @ 12.22 hrs, Volume= 0.118 af
Routed to Link 1L : DP-1
Secondary = 2.38 cfs @ 12.20 hrs, Volume= 0.867 af
Routed to Pond 1P : Bioretention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 434.10' Surf.Area= 2,236 sf Storage= 2,903 cf
Peak Elev= 436.51' @ 12.22 hrs Surf.Area= 7,353 sf Storage= 16,315 cf (13,411 cf above start)
Flood Elev= 438.00' Surf.Area= 9,856 sf Storage= 28,870 cf (25,967 cf above start)

Plug-Flow detention time= 278.6 min calculated for 0.918 af (93% of inflow)
Center-of-Mass det. time= 205.7 min (995.0 - 789.4)

Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	28,870 cf	**Custom Stage Data (Irregular)** Listed below

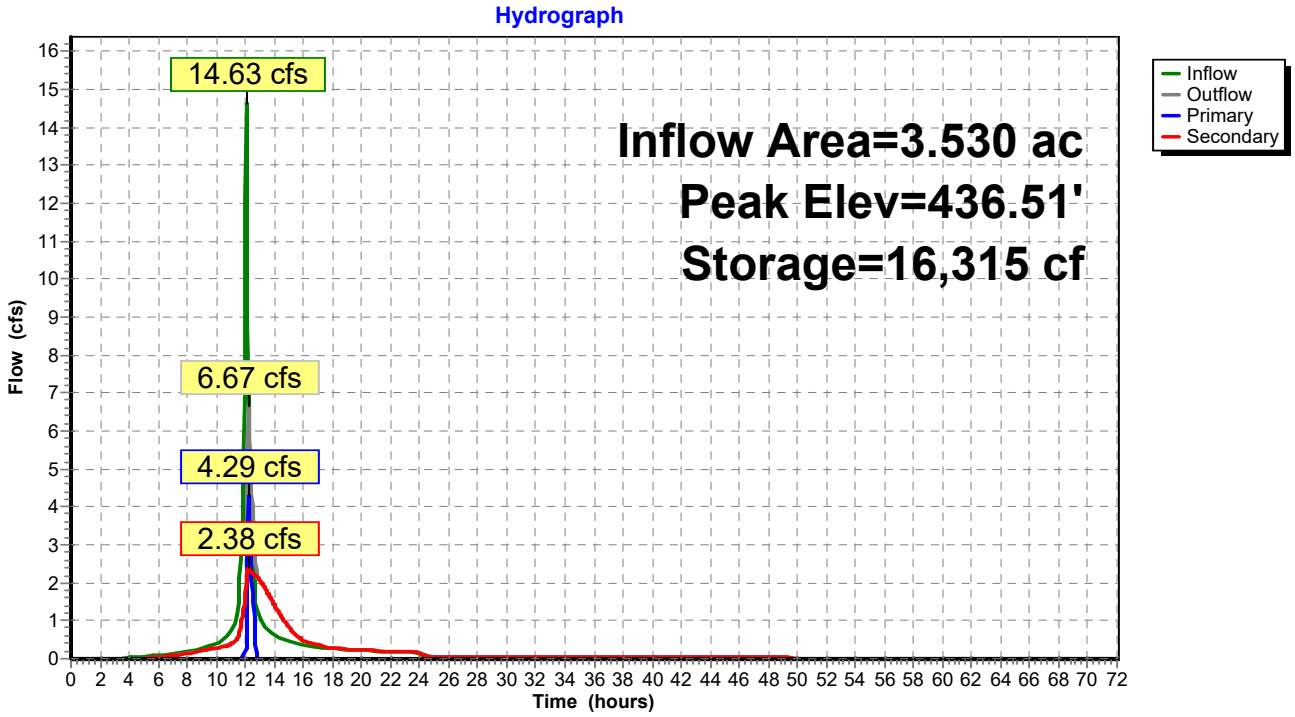
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
432.00	620	241.1	0	0	620
433.00	1,344	303.9	959	959	3,357
434.00	2,138	324.6	1,726	2,685	4,439
434.10	2,236	326.9	219	2,903	4,563
434.50	4,632	369.2	1,345	4,248	6,910
435.00	5,195	380.5	2,455	6,704	7,610
436.00	6,603	409.1	5,885	12,589	9,450
437.00	8,079	433.2	7,329	19,917	11,119
438.00	9,856	524.8	8,953	28,870	18,119

Device	Routing	Invert	Outlet Devices
#1	Primary	431.55'	**18.0" Round 24" Culvert** L= 53.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 431.55' / 431.00' S= 0.0103 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Secondary	434.10'	**10.0" Round WQ Outlet** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 434.10' / 434.00' S= 0.0036 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#3	Device 1	436.25'	**1.0" x 6.0" Horiz. 30" x 30" Grate X 14.00 columns** X 4 rows C= 0.600 in 30.0" x 30.0" Grate (37% open area) Limited to weir flow at low heads

Primary OutFlow Max=4.16 cfs @ 12.22 hrs HW=436.50' TW=0.00' (Dynamic Tailwater)
└**1=24" Culvert** (Passes 4.16 cfs of 13.77 cfs potential flow)
└**3=30" x 30" Grate** (Weir Controls 4.16 cfs @ 1.64 fps)

Secondary OutFlow Max=2.37 cfs @ 12.20 hrs HW=436.51' TW=435.20' (Dynamic Tailwater)
└**2=WQ Outlet** (Inlet Controls 2.37 cfs @ 4.34 fps)

Pond 2P: Retention



Summary for Pond 3P: Bioretention

Inflow Area = 0.308 ac, 52.76% Impervious, Inflow Depth = 3.06" for 25-yr event
Inflow = 1.22 cfs @ 12.04 hrs, Volume= 0.078 af
Outflow = 1.18 cfs @ 12.07 hrs, Volume= 0.078 af, Atten= 4%, Lag= 1.7 min
Primary = 1.18 cfs @ 12.07 hrs, Volume= 0.078 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 443.63' @ 12.07 hrs Surf.Area= 1,175 sf Storage= 903 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 314.5 min (1,116.8 - 802.4)

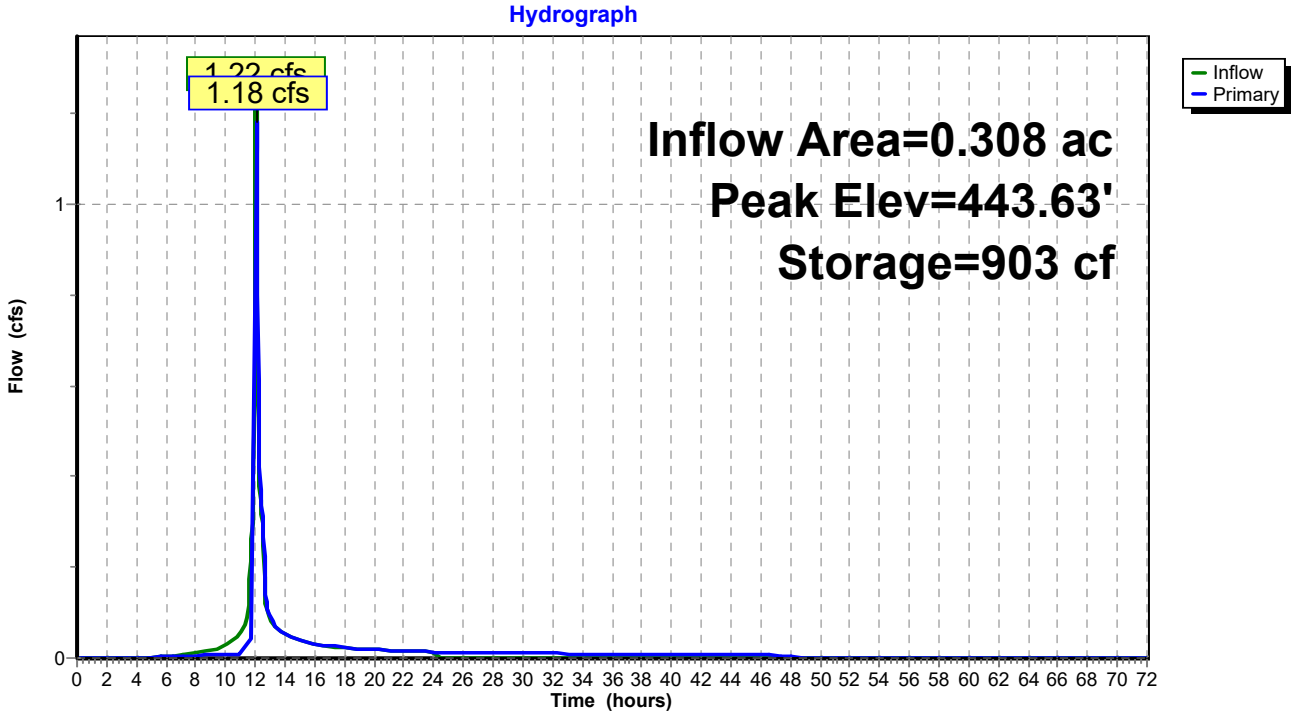
Volume	Invert	Avail.Storage	Storage Description
#1	442.50'	1,396 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
442.50	479	92.7	0	0	479
444.00	1,473	166.8	1,396	1,396	2,022

Device	Routing	Invert	Outlet Devices
#1	Device 3	442.50'	**0.500 in/hr Exfiltration over Horizontal area**
#2	Device 3	443.50'	**24.0" x 24.0" Horiz. 24" x 24" Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	438.90'	**12.0" Round 12" Culvert** L= 57.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 438.90' / 438.50' S= 0.0070 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.10 cfs @ 12.07 hrs HW=443.62' TW=0.00' (Dynamic Tailwater)
↑└─**3=12" Culvert** (Passes 1.10 cfs of 6.13 cfs potential flow)
↑ ├─**1=Exfiltration** (Exfiltration Controls 0.01 cfs)
↑ └─**2=24" x 24" Orifice/Grate** (Weir Controls 1.09 cfs @ 1.13 fps)

Pond 3P: Bioretention



Summary for Pond 4P: Pipe

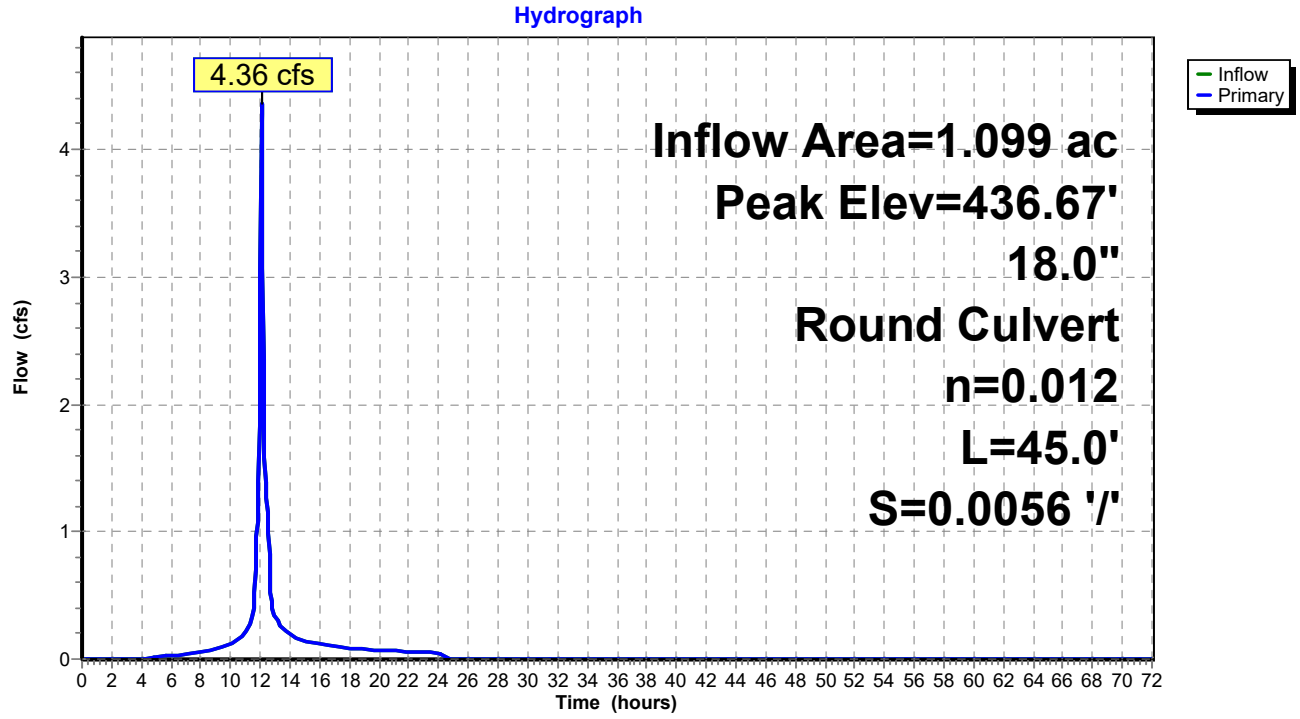
Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 3.30" for 25-yr event
Inflow = 4.36 cfs @ 12.07 hrs, Volume= 0.302 af
Outflow = 4.36 cfs @ 12.07 hrs, Volume= 0.302 af, Atten= 0%, Lag= 0.0 min
Primary = 4.36 cfs @ 12.07 hrs, Volume= 0.302 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 436.67' @ 12.07 hrs
Flood Elev= 438.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.50'	**18.0" Round Culvert** L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 435.50' / 435.25' S= 0.0056 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.05 cfs @ 12.07 hrs HW=436.64' TW=436.14' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.05 cfs @ 3.89 fps)

Pond 4P: Pipe



Summary for Pond P1: CB-1

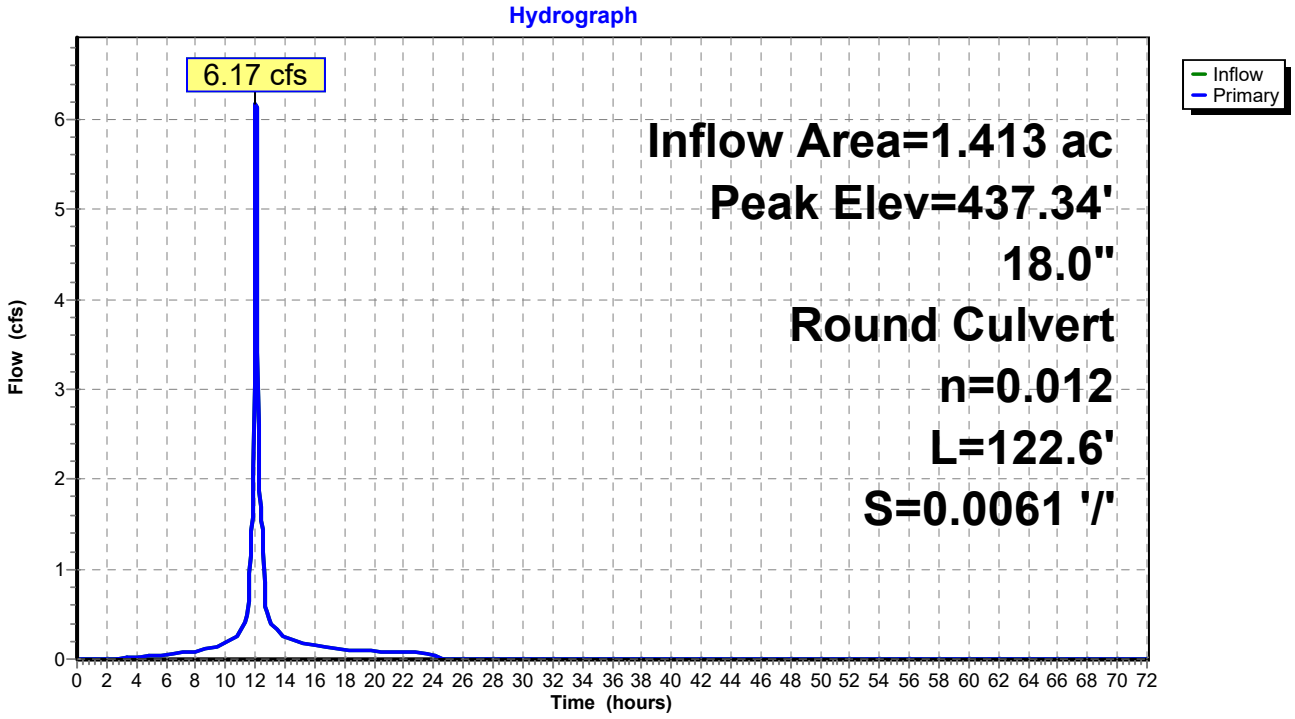
Inflow Area = 1.413 ac, 77.32% Impervious, Inflow Depth = 3.48" for 25-yr event
Inflow = 6.17 cfs @ 12.04 hrs, Volume= 0.410 af
Outflow = 6.17 cfs @ 12.04 hrs, Volume= 0.410 af, Atten= 0%, Lag= 0.0 min
Primary = 6.17 cfs @ 12.04 hrs, Volume= 0.410 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 437.34' @ 12.04 hrs
Flood Elev= 439.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.75'	**18.0" Round Culvert** L= 122.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 435.75' / 435.00' S= 0.0061 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.99 cfs @ 12.04 hrs HW=437.30' TW=435.98' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.99 cfs @ 3.39 fps)

Pond P1: CB-1



Summary for Pond P2: STMH-1

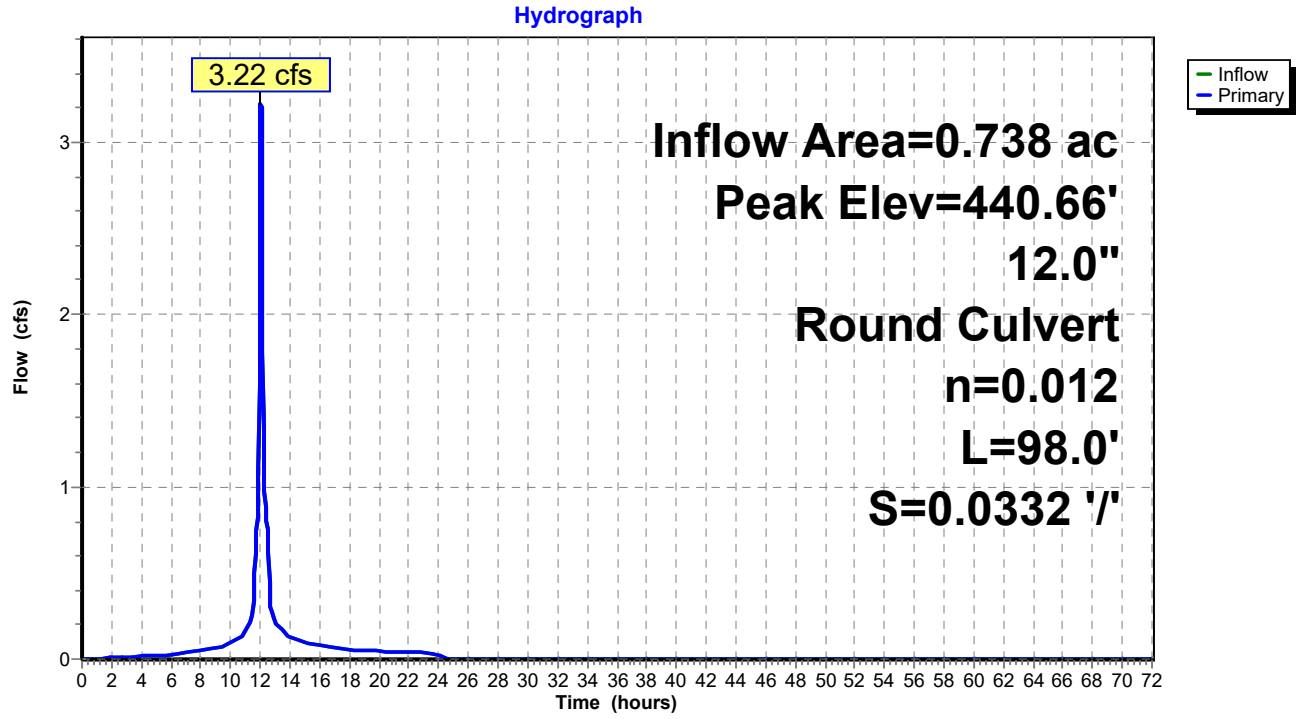
Inflow Area = 0.738 ac, 73.97% Impervious, Inflow Depth = 3.52" for 25-yr event
Inflow = 3.22 cfs @ 12.04 hrs, Volume= 0.216 af
Outflow = 3.22 cfs @ 12.04 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 3.22 cfs @ 12.04 hrs, Volume= 0.216 af
Routed to Pond P1 : CB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 440.66' @ 12.04 hrs
Flood Elev= 444.06'

Device	Routing	Invert	Outlet Devices
#1	Primary	439.00'	**12.0" Round Culvert** L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.00' / 435.75' S= 0.0332 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.13 cfs @ 12.04 hrs HW=440.60' TW=437.30' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.13 cfs @ 3.98 fps)

Pond P2: STMH-1



Summary for Pond P3: CB-2

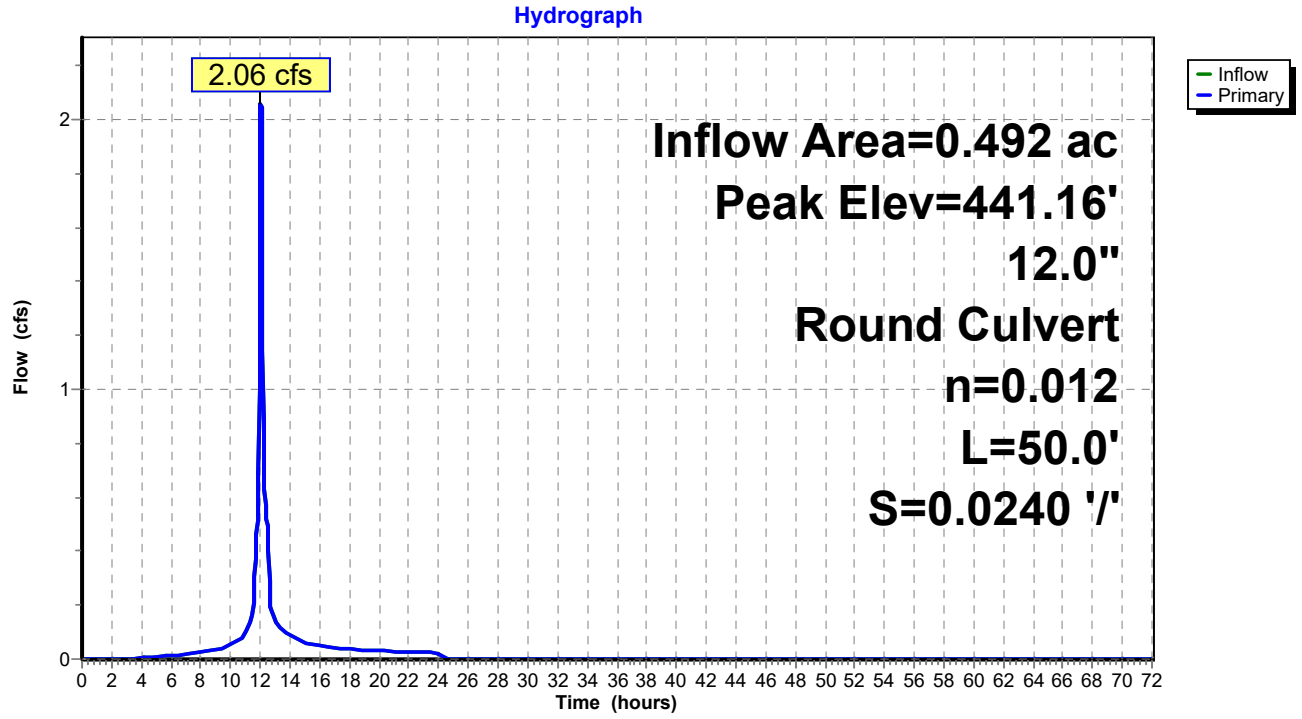
Inflow Area = 0.492 ac, 60.94% Impervious, Inflow Depth = 3.28" for 25-yr event
Inflow = 2.06 cfs @ 12.04 hrs, Volume= 0.134 af
Outflow = 2.06 cfs @ 12.04 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 2.06 cfs @ 12.04 hrs, Volume= 0.134 af
Routed to Pond P2 : STMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 441.16' @ 12.05 hrs
Flood Elev= 443.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	440.20'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 440.20' / 439.00' S= 0.0240 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.01 cfs @ 12.04 hrs HW=441.14' TW=440.60' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.01 cfs @ 2.61 fps)

Pond P3: CB-2

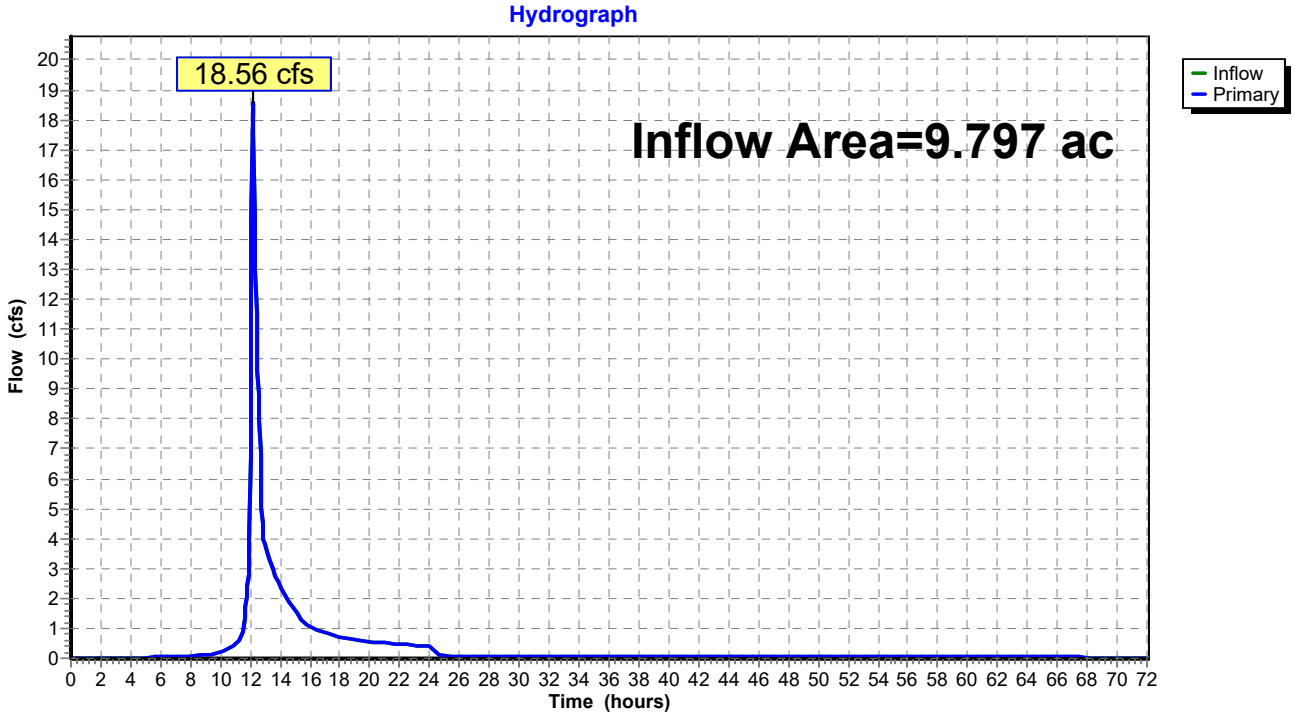


Summary for Link 1L: DP-1

Inflow Area = 9.797 ac, 33.06% Impervious, Inflow Depth > 2.60" for 25-yr event
Inflow = 18.56 cfs @ 12.18 hrs, Volume= 2.121 af
Primary = 18.56 cfs @ 12.18 hrs, Volume= 2.121 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: DP-1



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SC-101 Runoff Area=222,850 sf 4.48% Impervious Runoff Depth=3.18"
Flow Length=844' Tc=13.6 min CN=77 Runoff=16.40 cfs 1.357 af

Subcatchment 2S: SC-102 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=3.48"
Tc=6.0 min CN=80 Runoff=0.80 cfs 0.050 af

Subcatchment 3S: SC-103 Runoff Area=44,336 sf 67.11% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=6.00 cfs 0.392 af

Subcatchment 4S: SC-104 Runoff Area=43,894 sf 59.17% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=5.94 cfs 0.388 af

Subcatchment 5S: SC-105 Runoff Area=29,402 sf 80.98% Impervious Runoff Depth=4.85"
Tc=6.0 min CN=93 Runoff=4.10 cfs 0.273 af

Subcatchment 6S: SC-106 Runoff Area=17,850 sf 53.11% Impervious Runoff Depth=4.52"
Tc=6.0 min CN=90 Runoff=2.38 cfs 0.154 af

Subcatchment 7S: SC-107 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=98 Runoff=0.59 cfs 0.041 af

Subcatchment 8S: SC-108 Runoff Area=7,150 sf 100.00% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=98 Runoff=1.05 cfs 0.074 af

Subcatchment 9S: SC-109 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=98 Runoff=0.52 cfs 0.037 af

Subcatchment 10S: SC-110 Runoff Area=3,575 sf 100.00% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=98 Runoff=0.52 cfs 0.037 af

Subcatchment 11S: SC-111 Runoff Area=12,251 sf 57.76% Impervious Runoff Depth=4.52"
Tc=6.0 min CN=90 Runoff=1.63 cfs 0.106 af

Subcatchment 12S: SC-112 Runoff Area=1,160 sf 0.00% Impervious Runoff Depth=3.48"
Tc=6.0 min CN=80 Runoff=0.12 cfs 0.008 af

Subcatchment 13S: SC-113 Runoff Area=29,226 sf 57.11% Impervious Runoff Depth=4.52"
Flow Length=984' Tc=15.0 min CN=90 Runoff=2.87 cfs 0.252 af

Reach 1R: Driveway Culvert 18" Avg. Flow Depth=0.40' Max Vel=7.63 fps Inflow=2.87 cfs 0.252 af
18.0" Round Pipe n=0.012 L=71.0' S=0.0268 '/' Capacity=18.62 cfs Outflow=2.87 cfs 0.252 af

Reach 2R: Swale Avg. Flow Depth=0.65' Max Vel=3.24 fps Inflow=6.53 cfs 0.430 af
n=0.030 L=376.6' S=0.0159 '/' Capacity=16.71 cfs Outflow=6.21 cfs 0.430 af

Reach 3R: 6" PVC PIPE Avg. Flow Depth=0.25' Max Vel=5.99 fps Inflow=0.59 cfs 0.041 af
6.0" Round Pipe n=0.012 L=133.8' S=0.0374 '/' Capacity=1.18 cfs Outflow=0.59 cfs 0.041 af

Pond 1P: Bioretention Peak Elev=435.24' Storage=5,863 cf Inflow=3.35 cfs 1.089 af
Outflow=3.11 cfs 1.089 af

Pond 2P: Retention Peak Elev=436.94' Storage=19,507 cf Inflow=20.60 cfs 1.397 af
Primary=9.36 cfs 0.356 af Secondary=2.71 cfs 1.039 af Outflow=12.07 cfs 1.395 af

Pond 3P: Bioretention Peak Elev=443.66' Storage=942 cf Inflow=1.75 cfs 0.114 af
Outflow=1.69 cfs 0.114 af

Pond 4P: Pipe Peak Elev=437.13' Inflow=6.21 cfs 0.430 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0056 '/' Outflow=6.21 cfs 0.430 af

Pond P1: CB-1 Peak Elev=438.11' Inflow=8.57 cfs 0.575 af
18.0" Round Culvert n=0.012 L=122.6' S=0.0061 '/' Outflow=8.57 cfs 0.575 af

Pond P2: STMH-1 Peak Elev=441.73' Inflow=4.47 cfs 0.303 af
12.0" Round Culvert n=0.012 L=98.0' S=0.0332 '/' Outflow=4.47 cfs 0.303 af

Pond P3: CB-2 Peak Elev=442.36' Inflow=2.90 cfs 0.191 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0240 '/' Outflow=2.90 cfs 0.191 af

Link 1L: DP-1 Inflow=32.84 cfs 3.168 af
Primary=32.84 cfs 3.168 af

Total Runoff Area = 9.797 ac Runoff Volume = 3.171 af Average Runoff Depth = 3.88"
66.94% Pervious = 6.559 ac 33.06% Impervious = 3.239 ac

Summary for Subcatchment 1S: SC-101

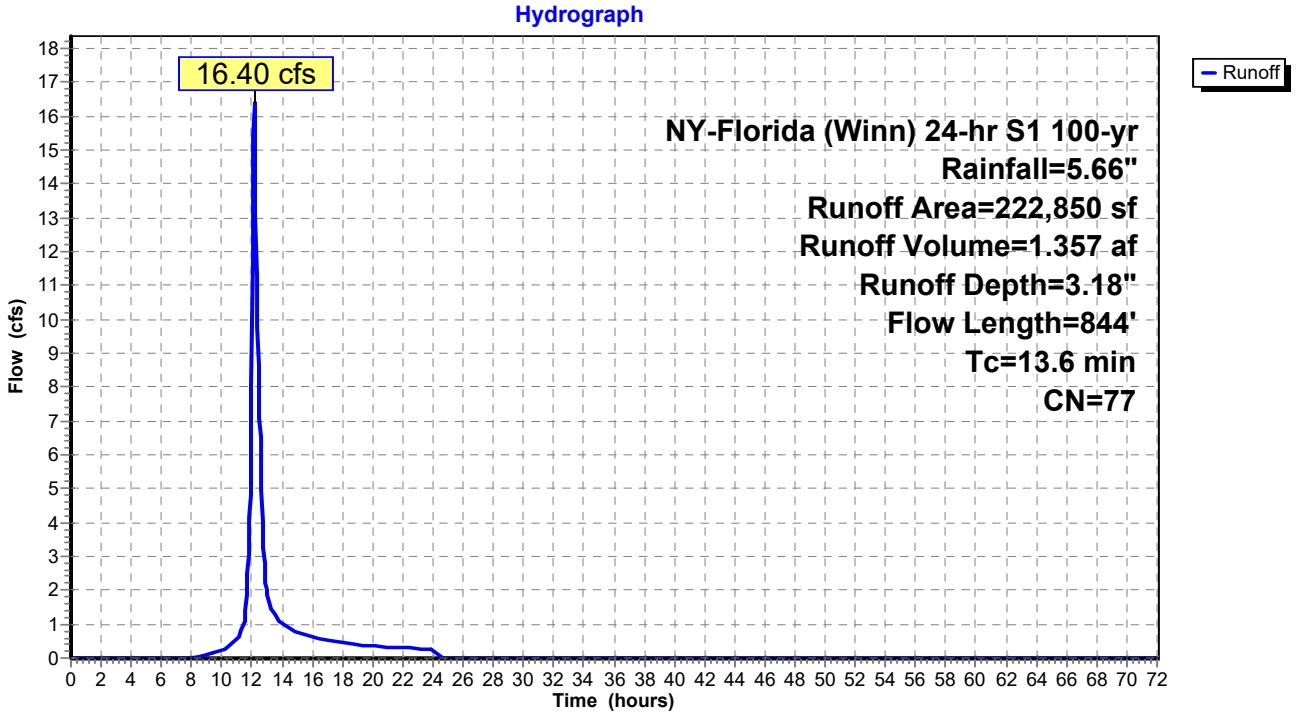
Runoff = 16.40 cfs @ 12.15 hrs, Volume= 1.357 af, Depth= 3.18"
Routed to Link 1L : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
9,237	61	>75% Grass cover, Good, HSG B
134,253	80	>75% Grass cover, Good, HSG D
8,429	55	Woods, Good, HSG B
4,294	77	Woods, Good, HSG D
4,419	67	Brush, Poor, HSG B
52,228	73	Brush, Good, HSG D
1,881	98	Roofs, HSG D
8,109	98	Paved parking, HSG D
222,850	77	Weighted Average
212,860		95.52% Pervious Area
9,990		4.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0322	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
2.0	140	0.0276	1.16		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	275	0.0205	7.09	14.18	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
0.1	45	0.0190	8.88	15.69	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.6	203	0.0129	5.63	11.25	**Channel Flow,** Area= 2.0 sf Perim= 2.0' r= 1.00' n= 0.030 Earth, grassed & winding
1.1	81	0.0617	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	844	Total			

Subcatchment 1S: SC-101



Summary for Subcatchment 2S: SC-102

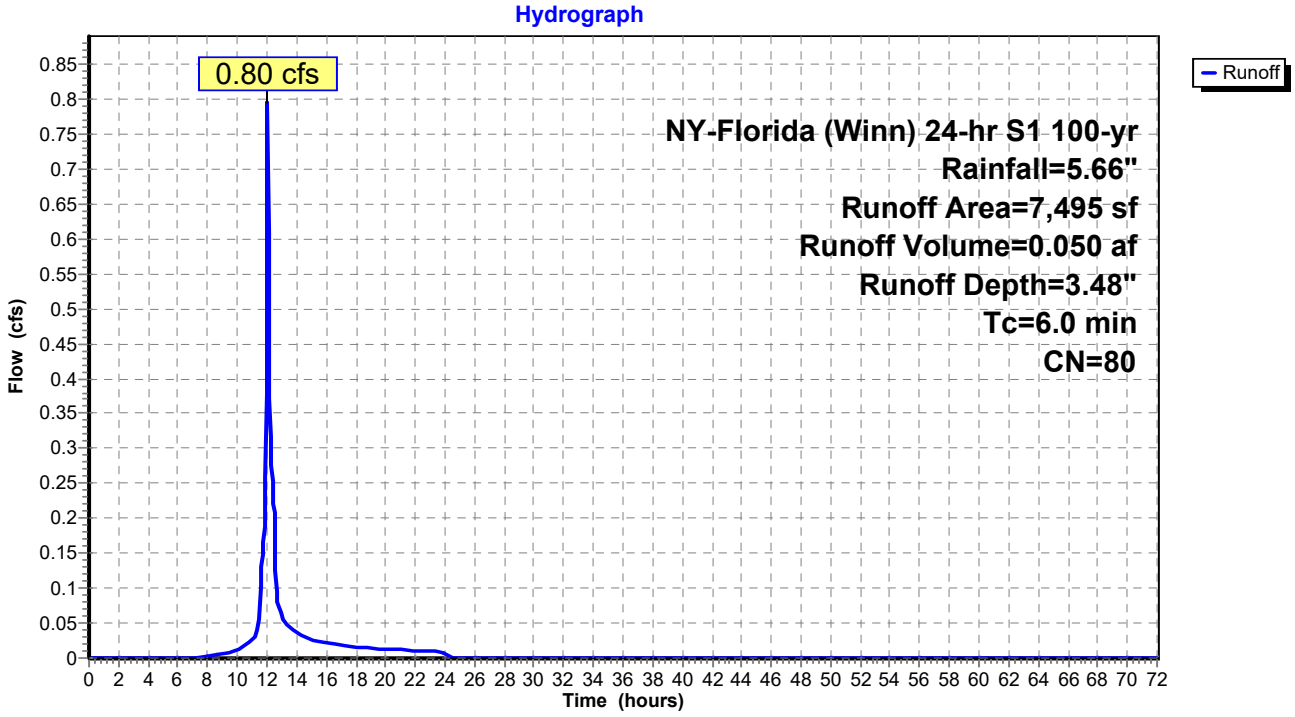
Runoff = 0.80 cfs @ 12.04 hrs, Volume= 0.050 af, Depth= 3.48"
Routed to Pond 1P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
7,495	80	>75% Grass cover, Good, HSG D
7,495		100.00% Pervious Area

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

Subcatchment 2S: SC-102



Summary for Subcatchment 3S: SC-103

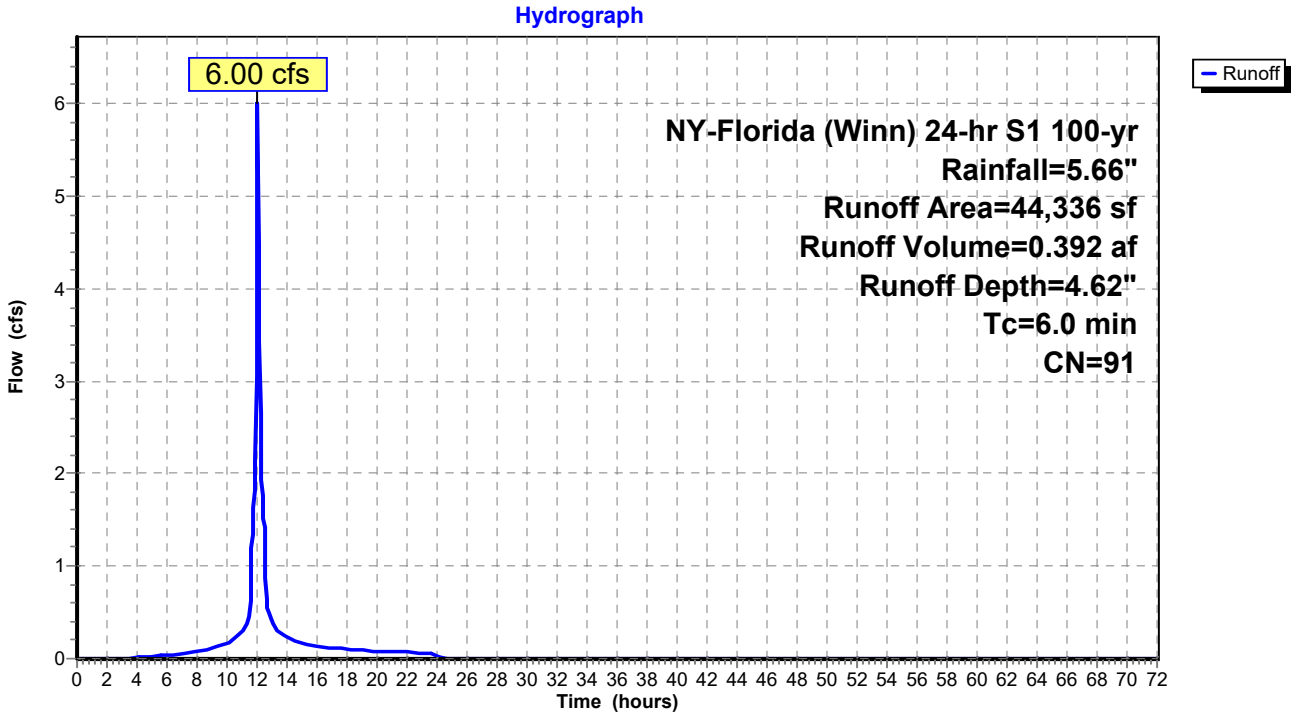
Runoff = 6.00 cfs @ 12.04 hrs, Volume= 0.392 af, Depth= 4.62"
Routed to Pond 2P : Retention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
2,422	61	>75% Grass cover, Good, HSG B
12,162	80	>75% Grass cover, Good, HSG D
16,564	98	Paved parking, HSG B
13,188	98	Paved parking, HSG D
44,336	91	Weighted Average
14,584		32.89% Pervious Area
29,752		67.11% Impervious Area

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

Subcatchment 3S: SC-103



Summary for Subcatchment 4S: SC-104

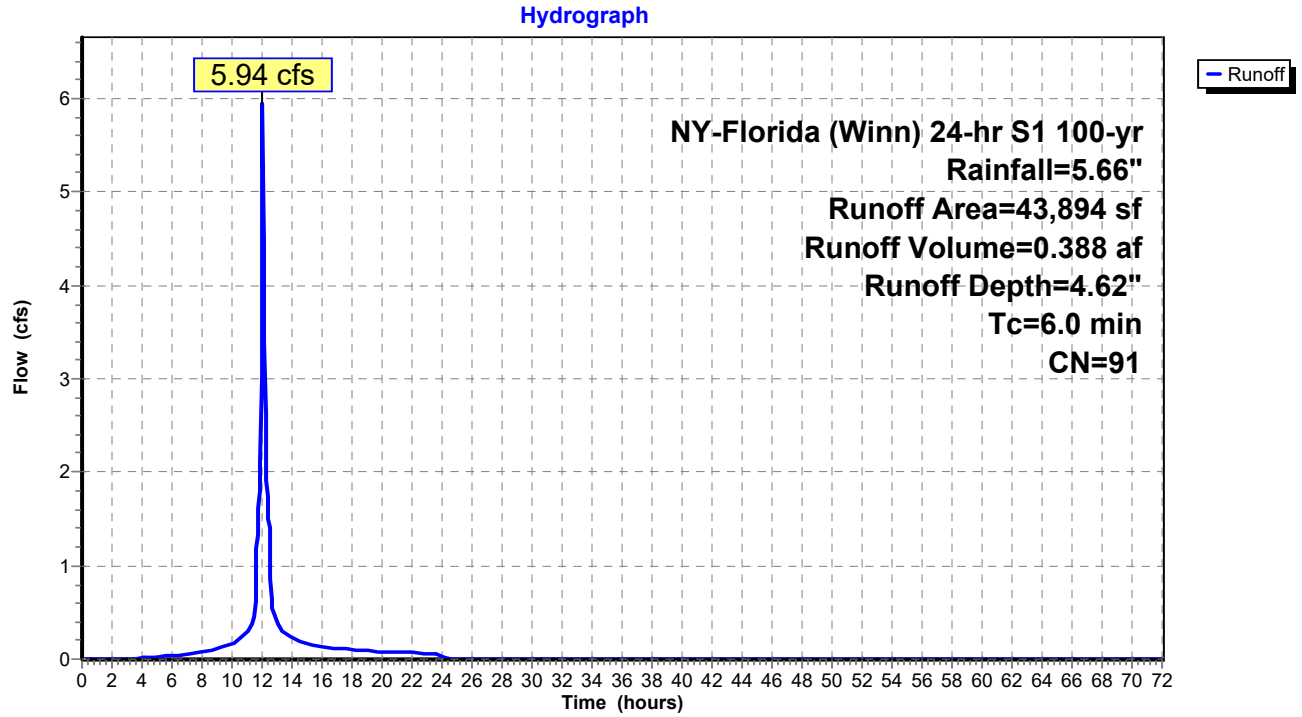
Runoff = 5.94 cfs @ 12.04 hrs, Volume= 0.388 af, Depth= 4.62"
Routed to Reach 2R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
17,922	80	>75% Grass cover, Good, HSG D
20,999	98	Paved parking, HSG D
4,973	98	Paved parking, HSG D
43,894	91	Weighted Average
17,922		40.83% Pervious Area
25,972		59.17% Impervious Area

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

Subcatchment 4S: SC-104



Summary for Subcatchment 5S: SC-105

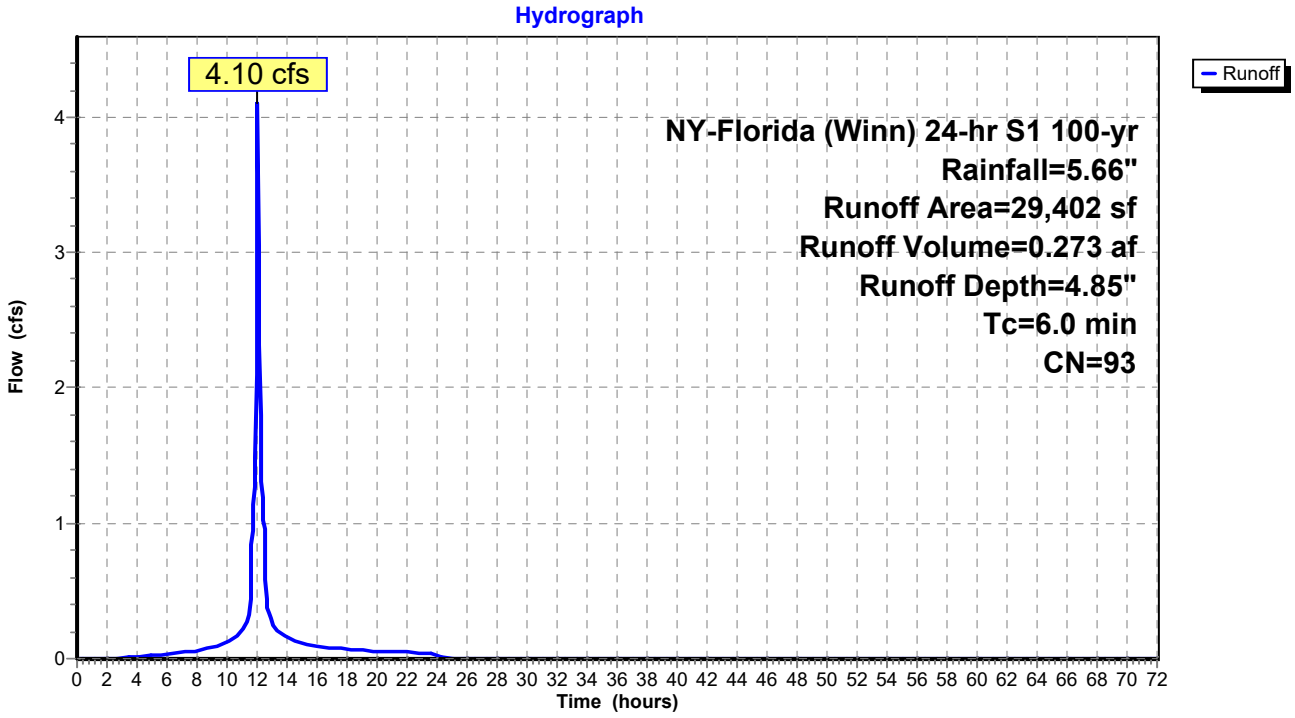
Runoff = 4.10 cfs @ 12.04 hrs, Volume= 0.273 af, Depth= 4.85"
Routed to Pond P1 : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
1,975	61	>75% Grass cover, Good, HSG B
3,618	80	>75% Grass cover, Good, HSG D
2,068	98	Paved parking, HSG B
21,741	98	Paved parking, HSG D
29,402	93	Weighted Average
5,593		19.02% Pervious Area
23,809		80.98% Impervious Area

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

Subcatchment 5S: SC-105



Summary for Subcatchment 6S: SC-106

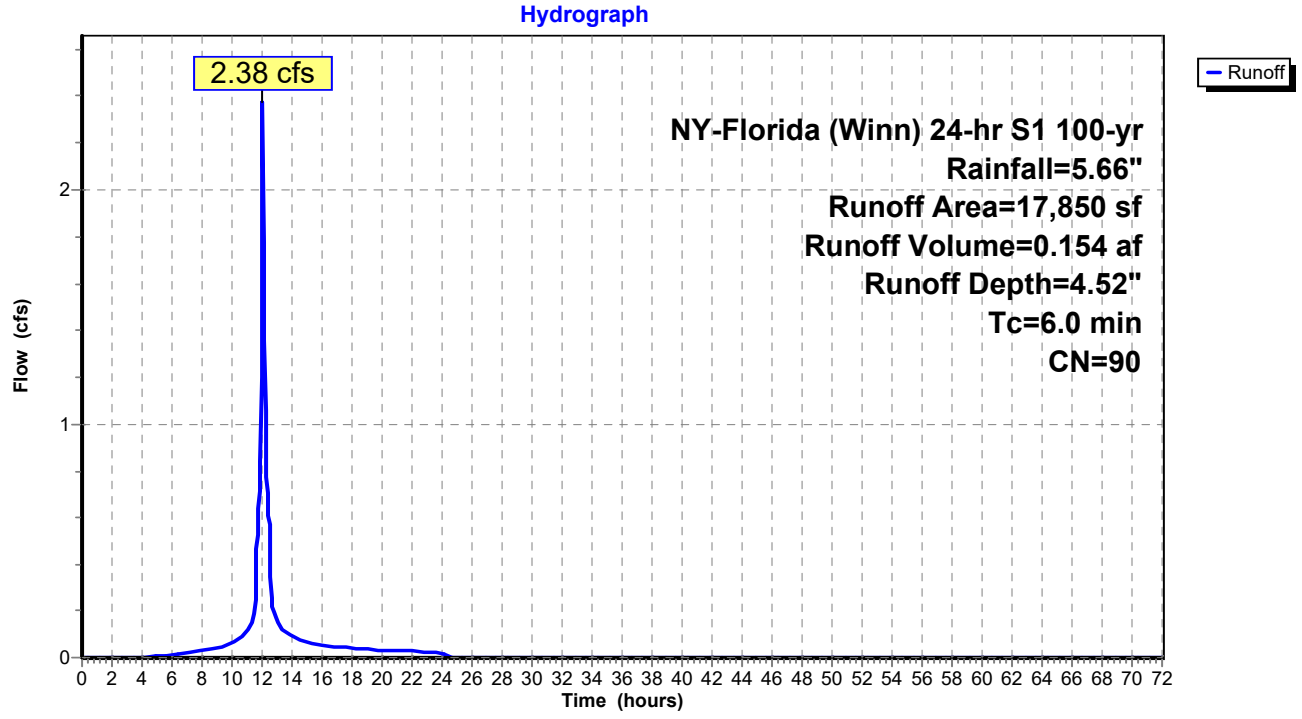
Runoff = 2.38 cfs @ 12.04 hrs, Volume= 0.154 af, Depth= 4.52"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
8,369	80	>75% Grass cover, Good, HSG D
9,481	98	Paved parking, HSG D
17,850	90	Weighted Average
8,369		46.89% Pervious Area
9,481		53.11% Impervious Area

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

Subcatchment 6S: SC-106



Summary for Subcatchment 7S: SC-107

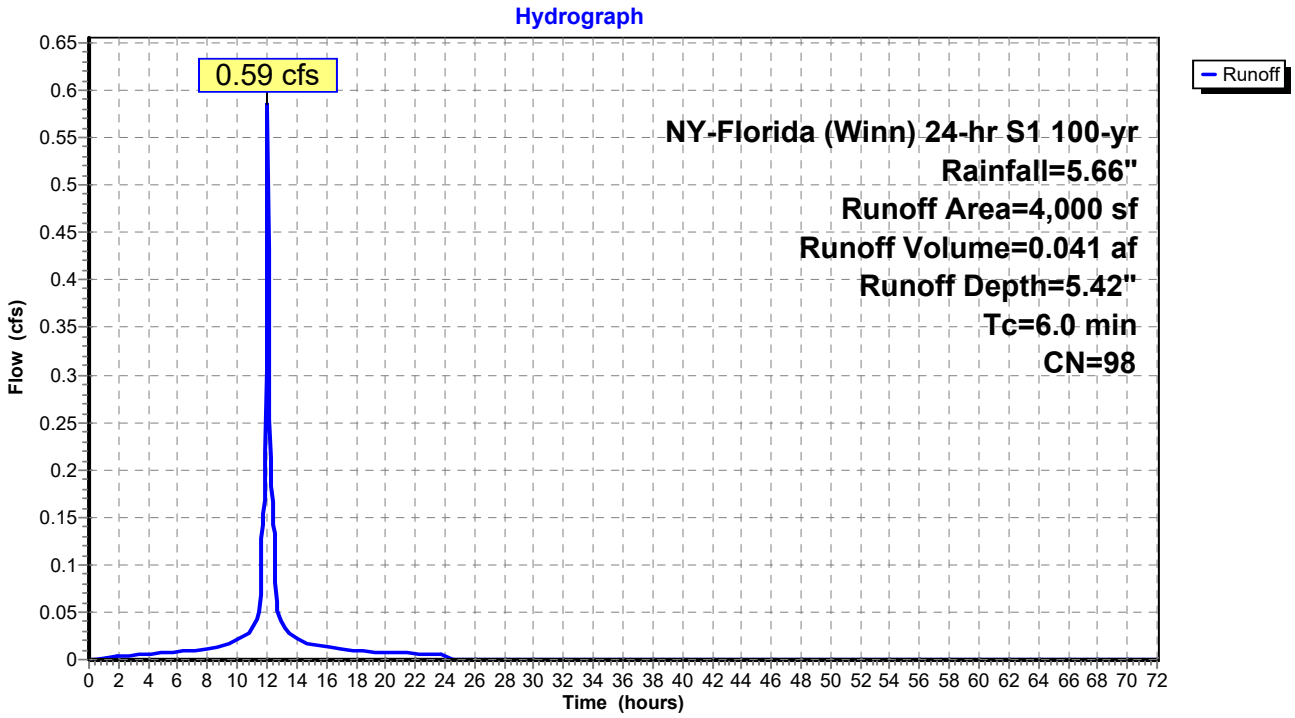
Runoff = 0.59 cfs @ 12.04 hrs, Volume= 0.041 af, Depth= 5.42"
Routed to Reach 3R : 6" PVC PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
4,000	98	Unconnected roofs, HSG D
4,000		100.00% Impervious Area
4,000		100.00% Unconnected

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

Subcatchment 7S: SC-107



Summary for Subcatchment 8S: SC-108

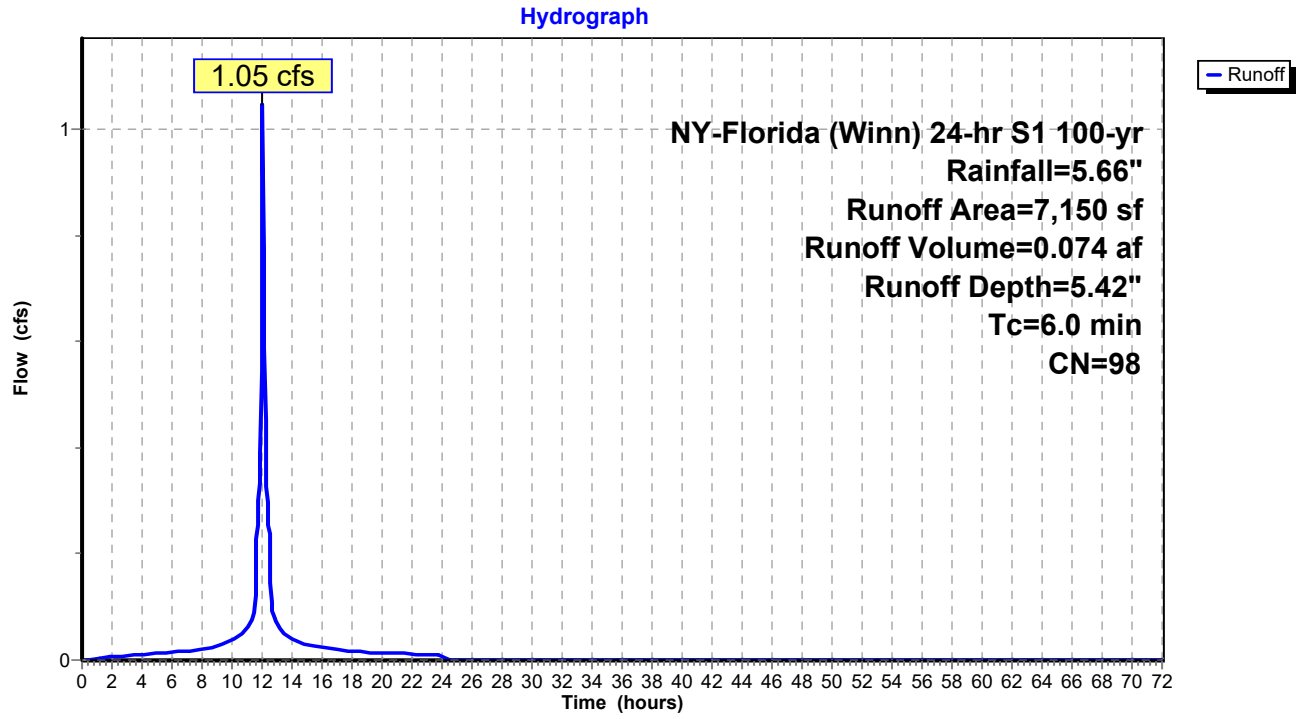
Runoff = 1.05 cfs @ 12.04 hrs, Volume= 0.074 af, Depth= 5.42"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
7,150	98	Roofs, HSG D
7,150		100.00% Impervious Area

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

Subcatchment 8S: SC-108



Summary for Subcatchment 9S: SC-109

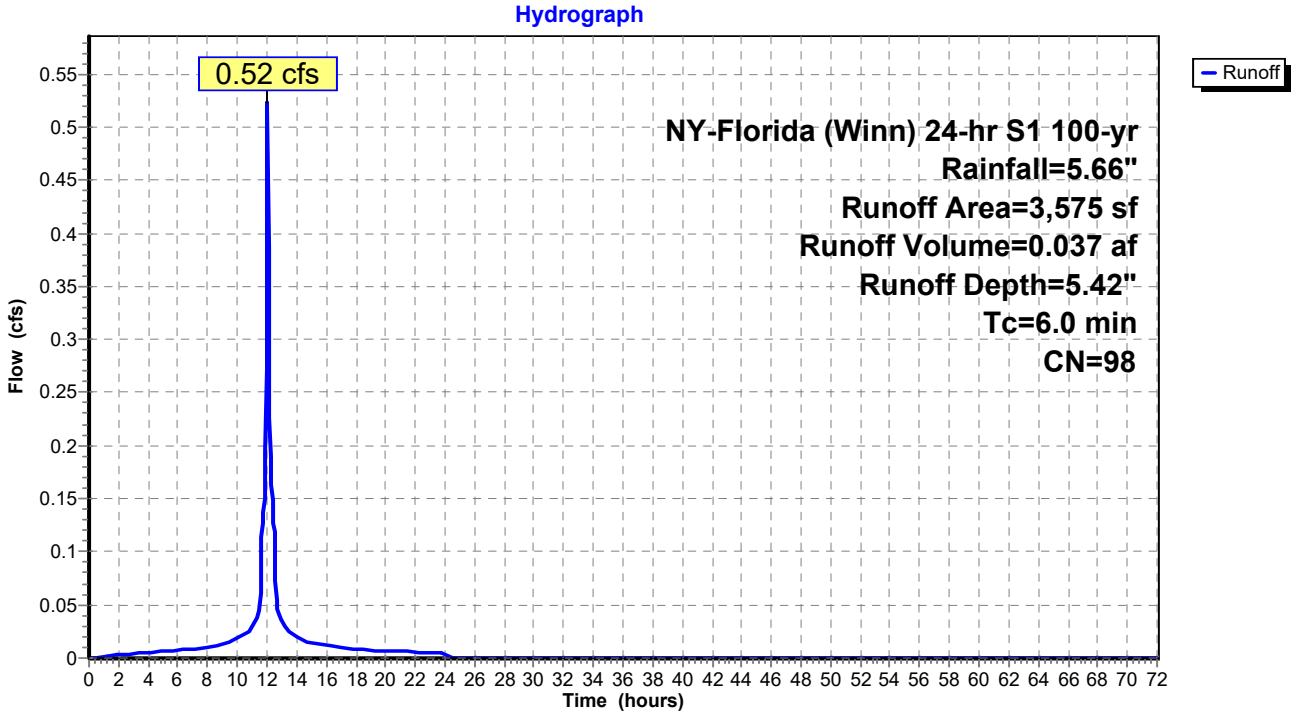
Runoff = 0.52 cfs @ 12.04 hrs, Volume= 0.037 af, Depth= 5.42"
Routed to Pond P2 : STMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 9S: SC-109



Summary for Subcatchment 10S: SC-110

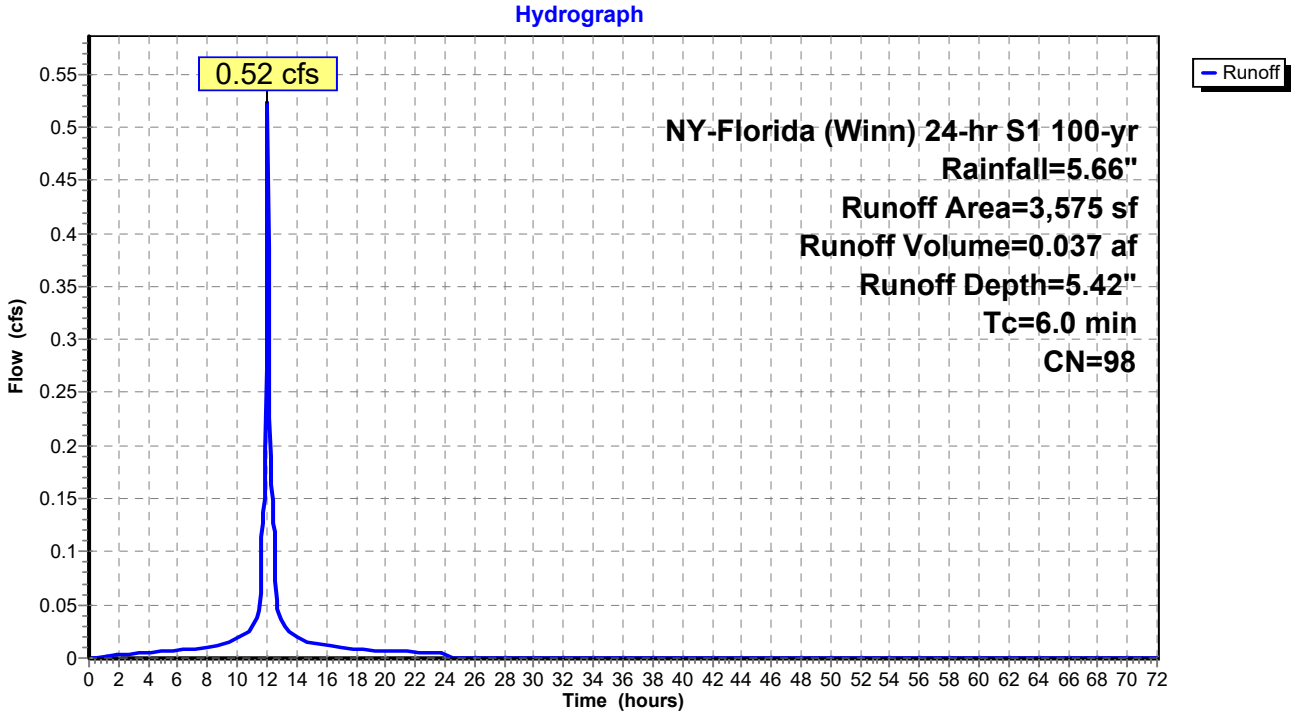
Runoff = 0.52 cfs @ 12.04 hrs, Volume= 0.037 af, Depth= 5.42"
Routed to Pond P3 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
3,575	98	Roofs, HSG D
3,575		100.00% Impervious Area

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

Subcatchment 10S: SC-110



Summary for Subcatchment 11S: SC-111

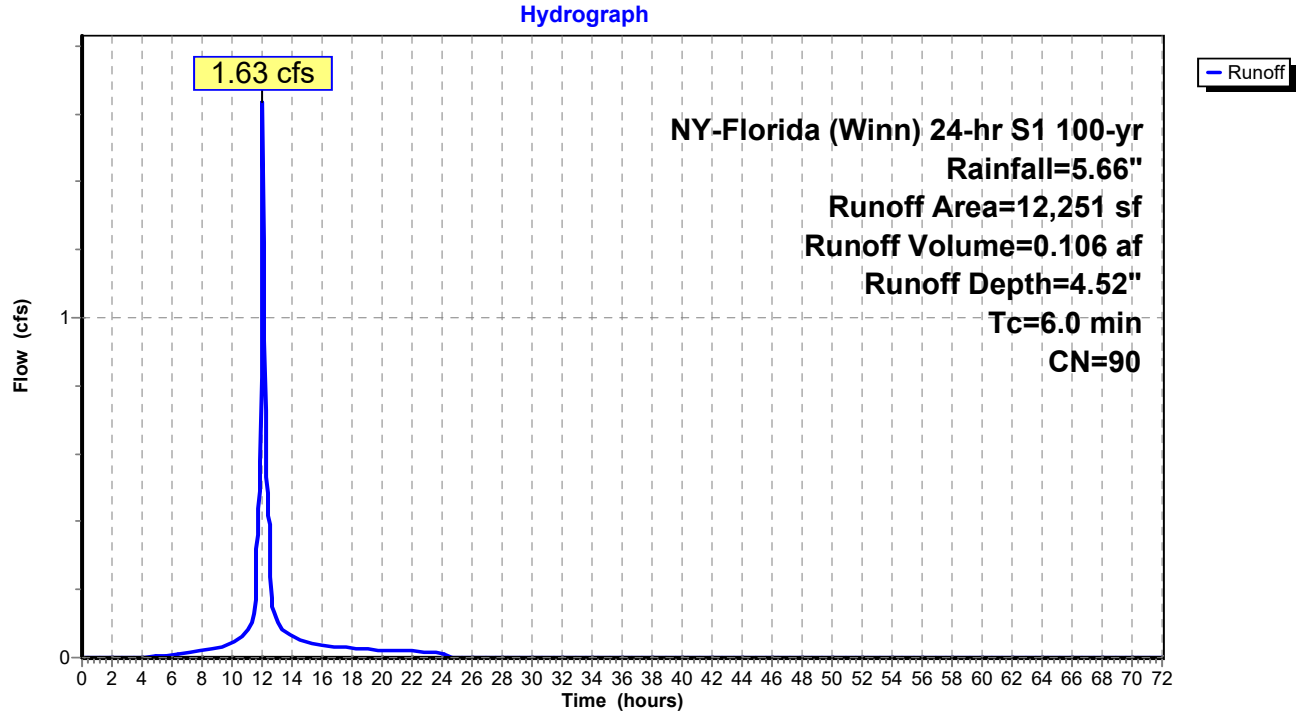
Runoff = 1.63 cfs @ 12.04 hrs, Volume= 0.106 af, Depth= 4.52"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
5,175	80	>75% Grass cover, Good, HSG D
7,076	98	Paved parking, HSG D
12,251	90	Weighted Average
5,175		42.24% Pervious Area
7,076		57.76% Impervious Area

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

Subcatchment 11S: SC-111



Summary for Subcatchment 12S: SC-112

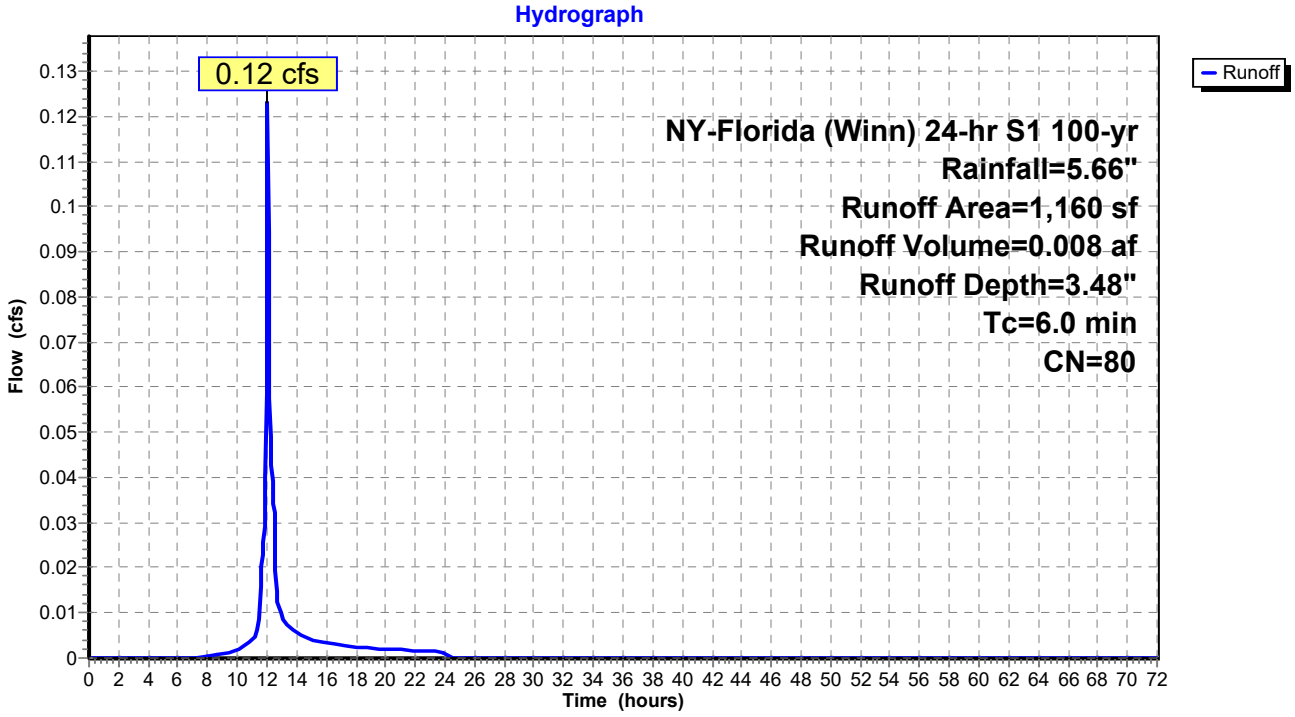
Runoff = 0.12 cfs @ 12.04 hrs, Volume= 0.008 af, Depth= 3.48"
Routed to Pond 3P : Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
1,160	80	>75% Grass cover, Good, HSG D
1,160		100.00% Pervious Area

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

Subcatchment 12S: SC-112



Summary for Subcatchment 13S: SC-113

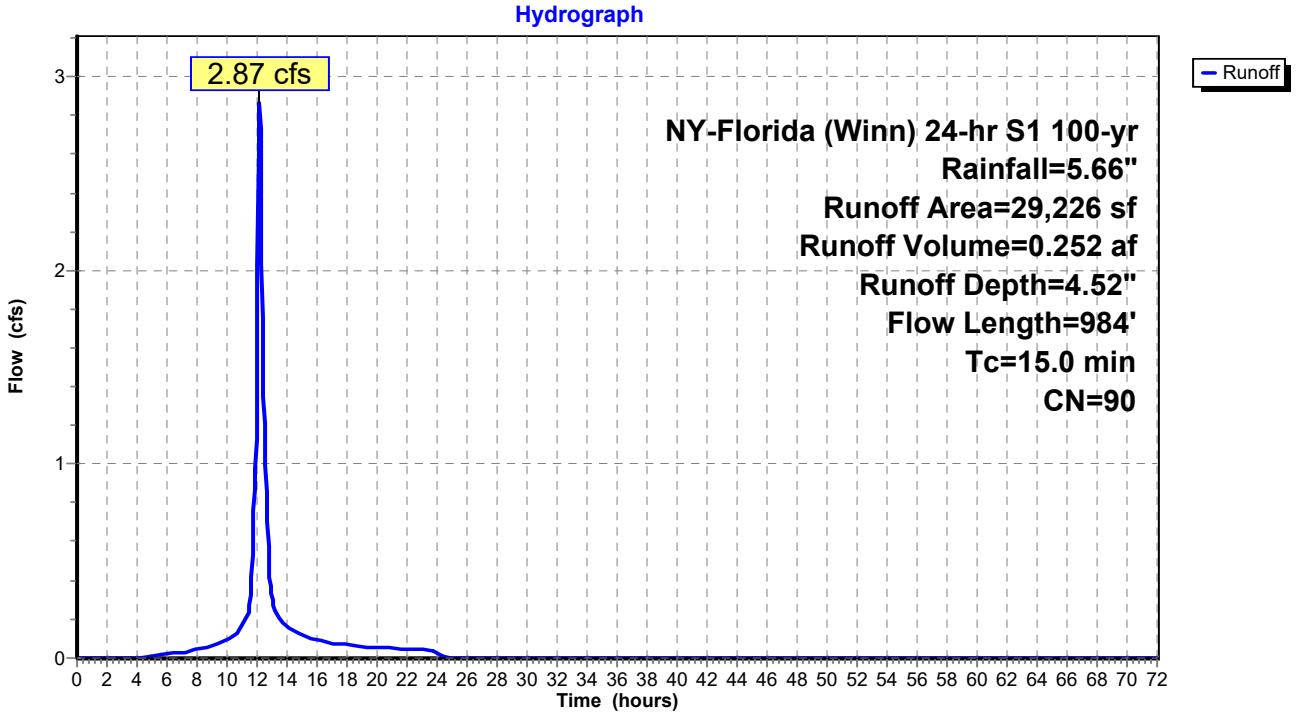
Runoff = 2.87 cfs @ 12.16 hrs, Volume= 0.252 af, Depth= 4.52"
Routed to Reach 1R : Driveway Culvert 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Florida (Winn) 24-hr S1 100-yr Rainfall=5.66"

Area (sf)	CN	Description
12,534	80	>75% Grass cover, Good, HSG D
1,129	98	Roofs, HSG D
15,563	98	Paved parking, HSG D
29,226	90	Weighted Average
12,534		42.89% Pervious Area
16,692		57.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0147	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.50"
0.2	20	0.0785	1.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	109	0.0210	4.52	4.52	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.0	32	0.0996	20.32	35.91	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.3	116	0.0467	6.74	6.74	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	42	0.0242	10.02	17.70	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
0.1	53	0.0283	10.83	19.14	**Pipe Channel, CMP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Corrugated PP, smooth interior
0.7	256	0.0372	6.02	6.02	**Channel Flow,** Area= 1.0 sf Perim= 2.0' r= 0.50' n= 0.030 Earth, grassed & winding
15.0	984	Total			

Subcatchment 13S: SC-113



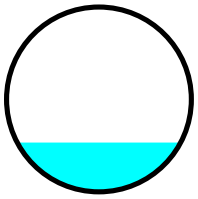
Summary for Reach 1R: Driveway Culvert 18"

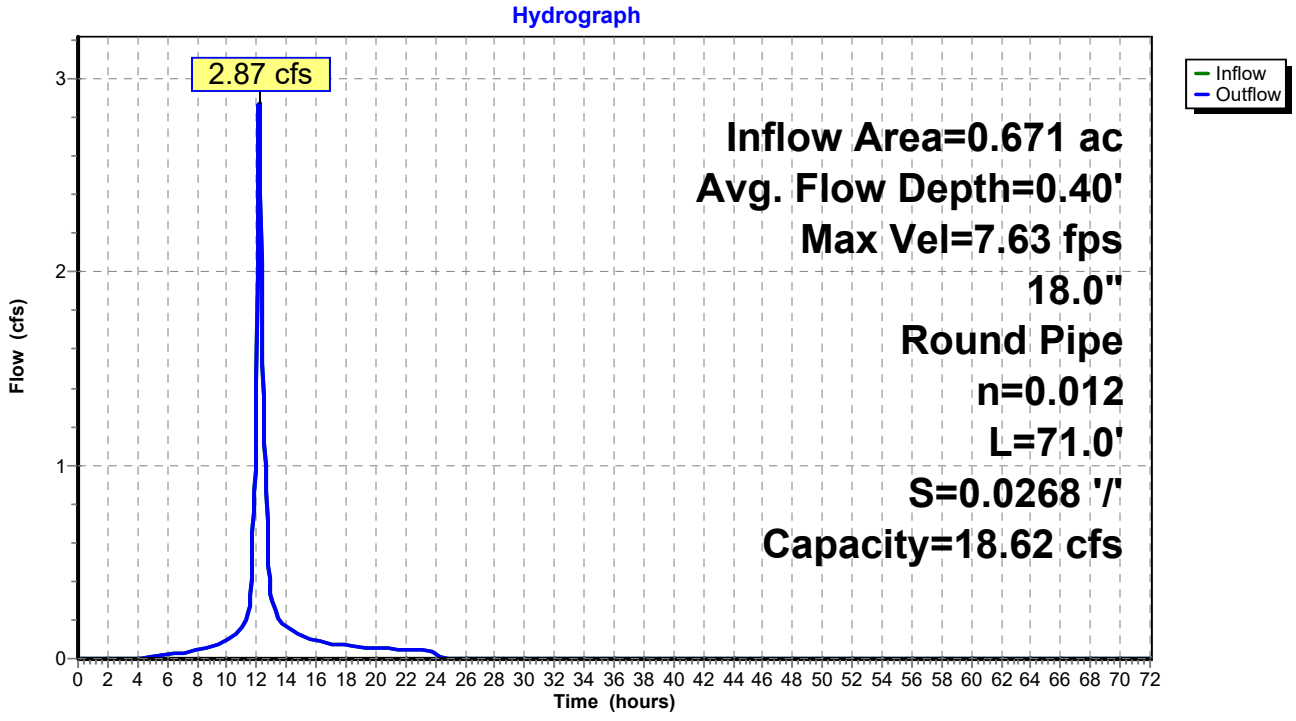
Inflow Area = 0.671 ac, 57.11% Impervious, Inflow Depth = 4.52" for 100-yr event
Inflow = 2.87 cfs @ 12.16 hrs, Volume= 0.252 af
Outflow = 2.87 cfs @ 12.16 hrs, Volume= 0.252 af, Atten= 0%, Lag= 0.1 min
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.63 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.57 fps, Avg. Travel Time= 0.5 min

Peak Storage= 27 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.40' , Surface Width= 1.32'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 18.62 cfs

18.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 71.0' Slope= 0.0268 '/'
Inlet Invert= 449.50', Outlet Invert= 447.60'





Summary for Reach 2R: Swale

Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 4.69" for 100-yr event
Inflow = 6.53 cfs @ 12.04 hrs, Volume= 0.430 af
Outflow = 6.21 cfs @ 12.06 hrs, Volume= 0.430 af, Atten= 5%, Lag= 1.4 min
Routed to Pond 4P : Pipe

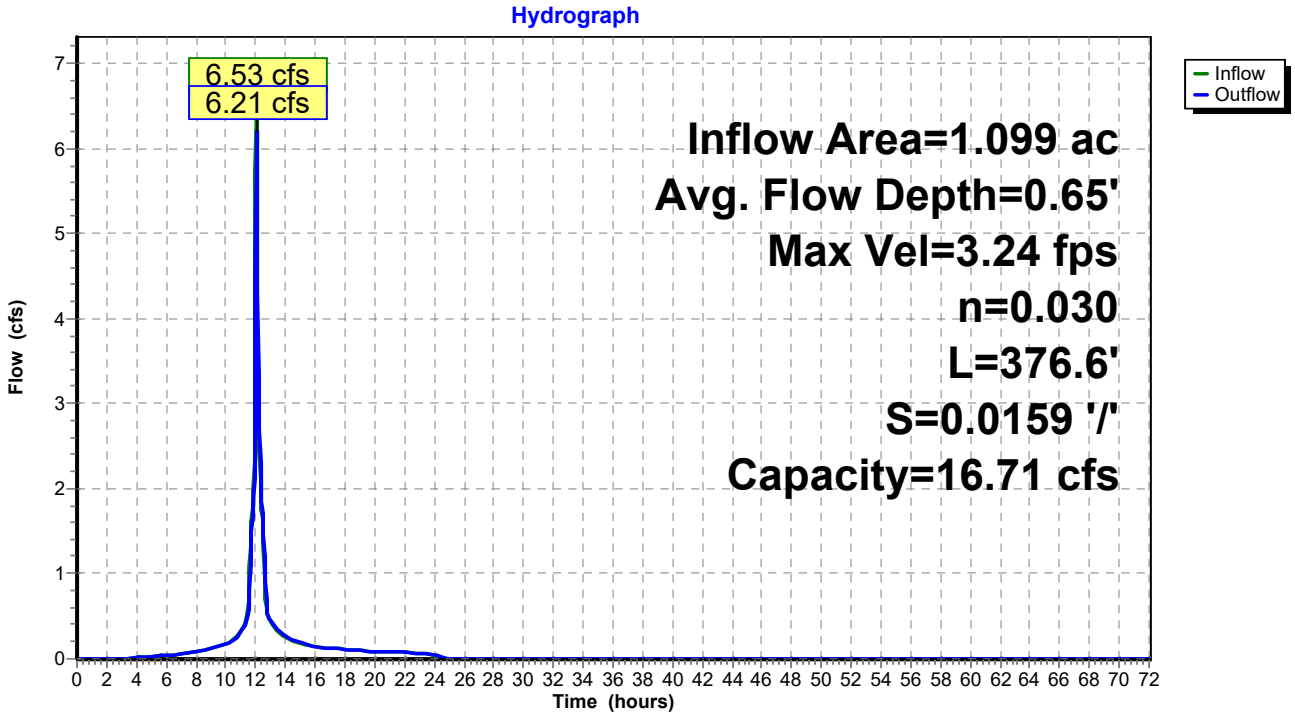
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.24 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 6.5 min

Peak Storage= 720 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.65' , Surface Width= 4.90'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 16.71 cfs

1.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 376.6' Slope= 0.0159 '/'
Inlet Invert= 441.50', Outlet Invert= 435.50'



Reach 2R: Swale



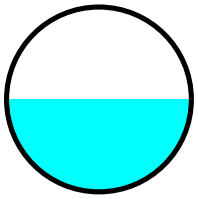
Summary for Reach 3R: 6" PVC PIPE

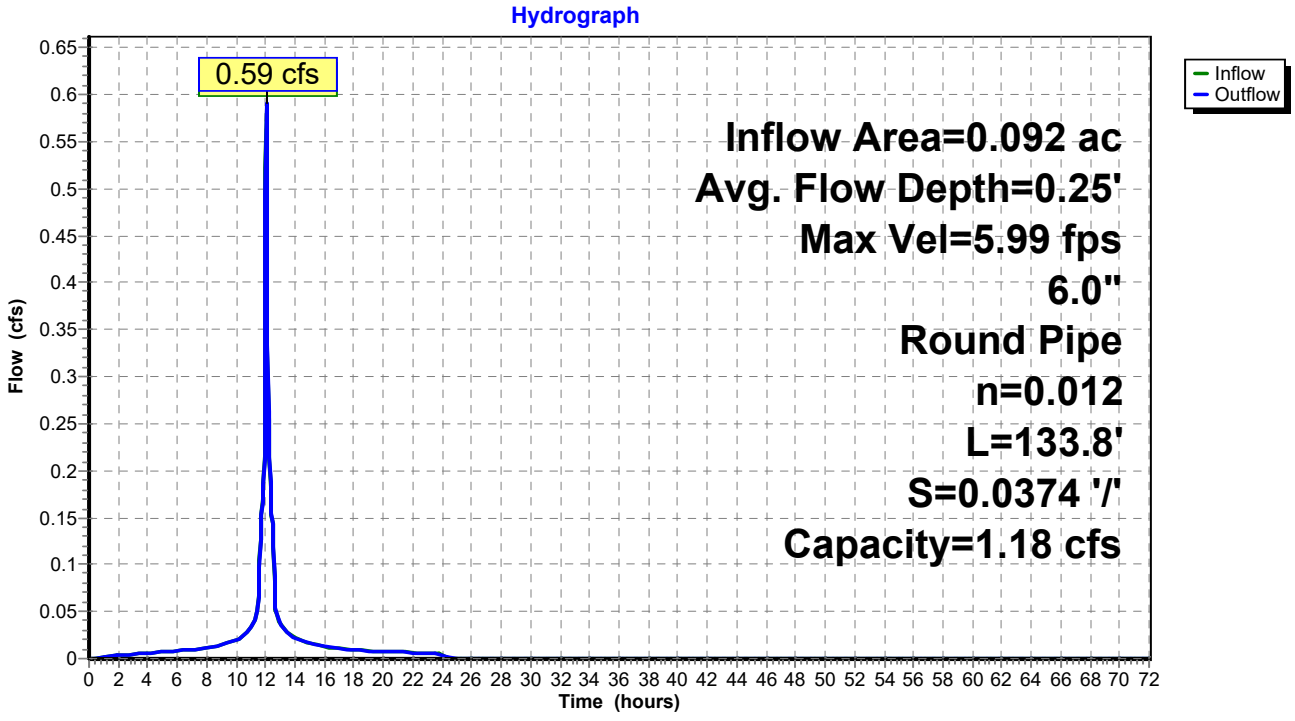
Inflow Area = 0.092 ac,100.00% Impervious, Inflow Depth = 5.42" for 100-yr event
Inflow = 0.59 cfs @ 12.04 hrs, Volume= 0.041 af
Outflow = 0.59 cfs @ 12.05 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.4 min
Routed to Reach 2R : Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.99 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.94 fps, Avg. Travel Time= 1.2 min

Peak Storage= 13 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 0.50'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.18 cfs

6.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 133.8' Slope= 0.0374 '/'
Inlet Invert= 449.00', Outlet Invert= 444.00'





Summary for Pond 1P: Bioretention

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth > 75.94" for 100-yr event
Inflow = 3.35 cfs @ 12.07 hrs, Volume= 1.089 af
Outflow = 3.11 cfs @ 12.18 hrs, Volume= 1.089 af, Atten= 7%, Lag= 6.9 min
Primary = 3.11 cfs @ 12.18 hrs, Volume= 1.089 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 435.24' @ 12.18 hrs Surf.Area= 5,312 sf Storage= 5,863 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 229.9 min (1,222.6 - 992.8)

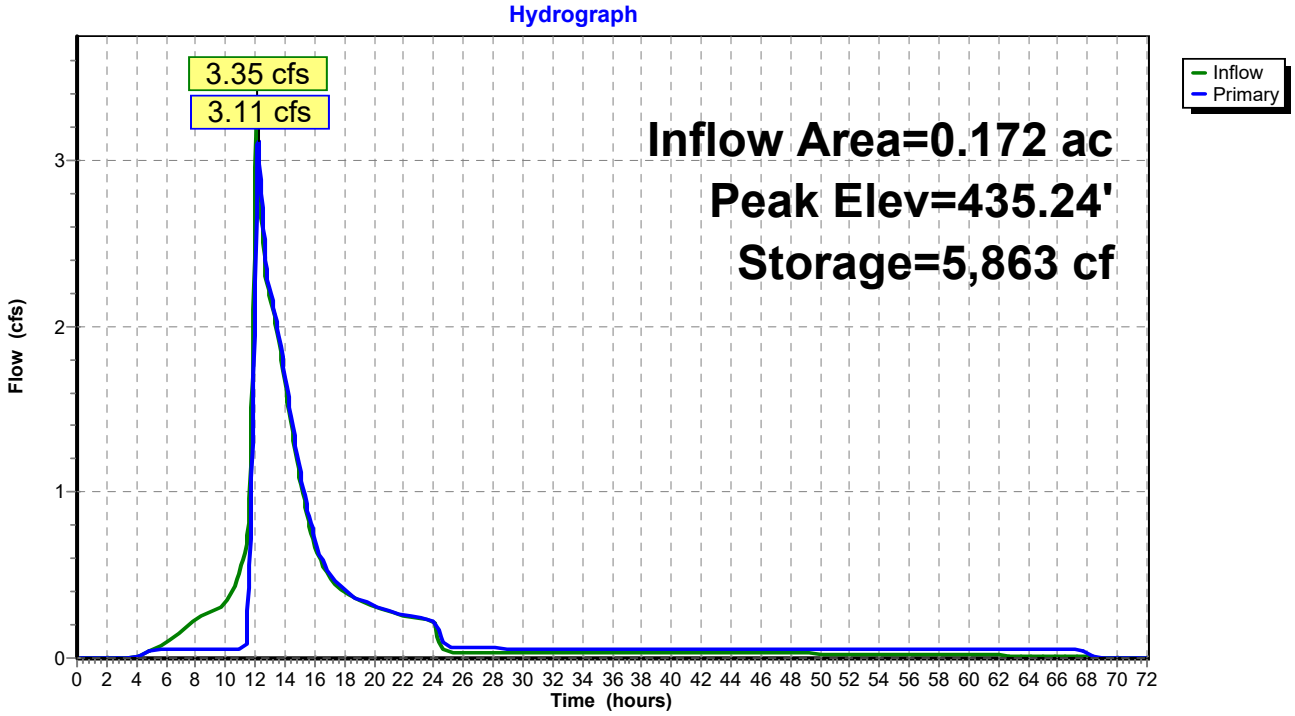
Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	7,284 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
434.00	4,173	293.0	0	0	4,173
435.00	5,086	314.1	4,622	4,622	5,237
435.50	5,564	323.6	2,662	7,284	5,744

Device	Routing	Invert	Outlet Devices
#1	Primary	430.25'	**12.0" Round 12" Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 430.25' / 430.00' S= 0.0033 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Device 1	434.00'	**0.500 in/hr Exfiltration over Horizontal area**
#3	Device 1	435.00'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.11 cfs @ 12.18 hrs HW=435.24' TW=0.00' (Dynamic Tailwater)
1=12" Culvert (Passes 3.11 cfs of 6.33 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.06 cfs)
3=Orifice/Grate (Weir Controls 3.05 cfs @ 1.60 fps)

Pond 1P: Bioretention



Summary for Pond 2P: Retention

Inflow Area = 3.530 ac, 69.78% Impervious, Inflow Depth = 4.75" for 100-yr event
Inflow = 20.60 cfs @ 12.05 hrs, Volume= 1.397 af
Outflow = 12.07 cfs @ 12.16 hrs, Volume= 1.395 af, Atten= 41%, Lag= 7.0 min
Primary = 9.36 cfs @ 12.16 hrs, Volume= 0.356 af
Routed to Link 1L : DP-1
Secondary = 2.71 cfs @ 12.16 hrs, Volume= 1.039 af
Routed to Pond 1P : Bioretention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 434.10' Surf.Area= 2,236 sf Storage= 2,903 cf
Peak Elev= 436.94' @ 12.16 hrs Surf.Area= 7,996 sf Storage= 19,507 cf (16,604 cf above start)
Flood Elev= 438.00' Surf.Area= 9,856 sf Storage= 28,870 cf (25,967 cf above start)

Plug-Flow detention time= 206.2 min calculated for 1.327 af (95% of inflow)
Center-of-Mass det. time= 155.3 min (933.8 - 778.6)

Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	28,870 cf	**Custom Stage Data (Irregular)** Listed below

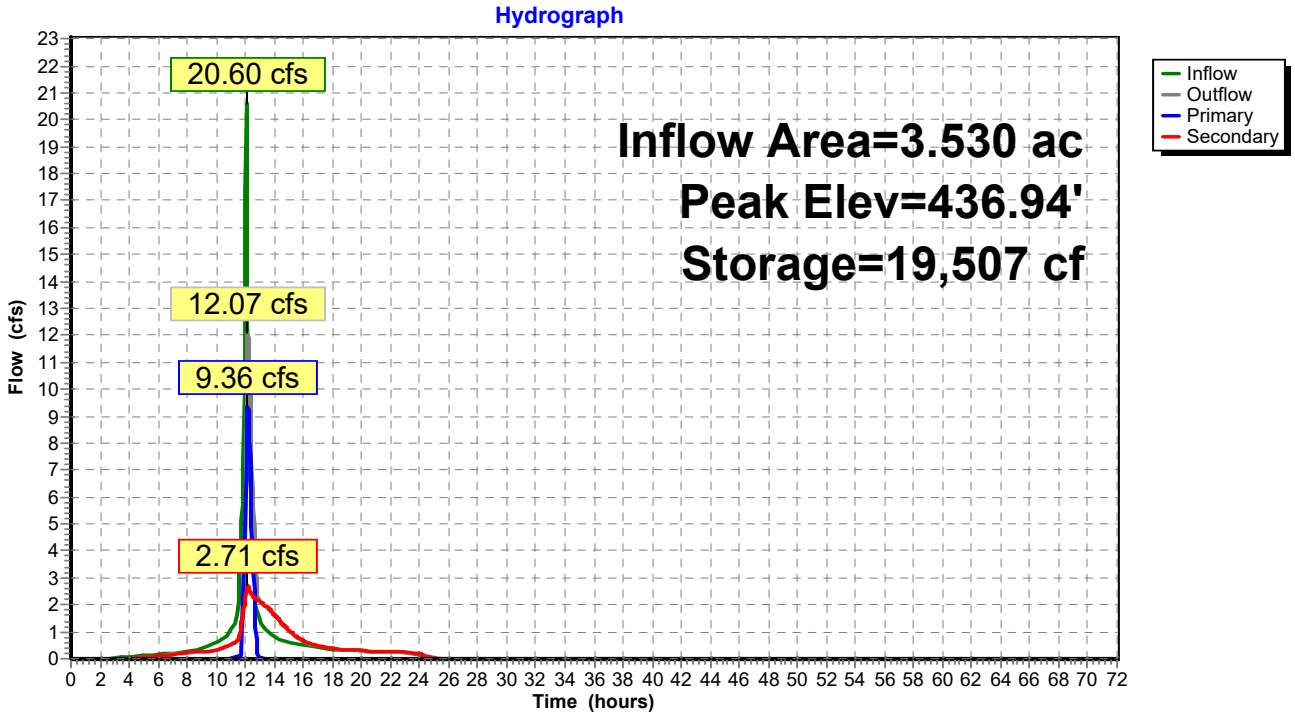
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
432.00	620	241.1	0	0	620
433.00	1,344	303.9	959	959	3,357
434.00	2,138	324.6	1,726	2,685	4,439
434.10	2,236	326.9	219	2,903	4,563
434.50	4,632	369.2	1,345	4,248	6,910
435.00	5,195	380.5	2,455	6,704	7,610
436.00	6,603	409.1	5,885	12,589	9,450
437.00	8,079	433.2	7,329	19,917	11,119
438.00	9,856	524.8	8,953	28,870	18,119

Device	Routing	Invert	Outlet Devices
#1	Primary	431.55'	**18.0" Round 24" Culvert** L= 53.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 431.55' / 431.00' S= 0.0103 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf
#2	Secondary	434.10'	**10.0" Round WQ Outlet** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 434.10' / 434.00' S= 0.0036 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.55 sf
#3	Device 1	436.25'	**1.0" x 6.0" Horiz. 30" x 30" Grate X 14.00 columns** X 4 rows C= 0.600 in 30.0" x 30.0" Grate (37% open area) Limited to weir flow at low heads

Primary OutFlow Max=9.30 cfs @ 12.16 hrs HW=436.94' TW=0.00' (Dynamic Tailwater)
└─**1=24" Culvert** (Passes 9.30 cfs of 14.46 cfs potential flow)
└─**3=30" x 30" Grate** (Orifice Controls 9.30 cfs @ 3.99 fps)

Secondary OutFlow Max=2.70 cfs @ 12.16 hrs HW=436.94' TW=435.24' (Dynamic Tailwater)
└─**2=WQ Outlet** (Inlet Controls 2.70 cfs @ 4.96 fps)

Pond 2P: Retention



Summary for Pond 3P: Bioretention

Inflow Area = 0.308 ac, 52.76% Impervious, Inflow Depth = 4.43" for 100-yr event
Inflow = 1.75 cfs @ 12.04 hrs, Volume= 0.114 af
Outflow = 1.69 cfs @ 12.06 hrs, Volume= 0.114 af, Atten= 4%, Lag= 1.3 min
Primary = 1.69 cfs @ 12.06 hrs, Volume= 0.114 af
Routed to Link 1L : DP-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 443.66' @ 12.06 hrs Surf.Area= 1,200 sf Storage= 942 cf

Plug-Flow detention time= 224.4 min calculated for 0.113 af (100% of inflow)
Center-of-Mass det. time= 225.3 min (1,015.0 - 789.7)

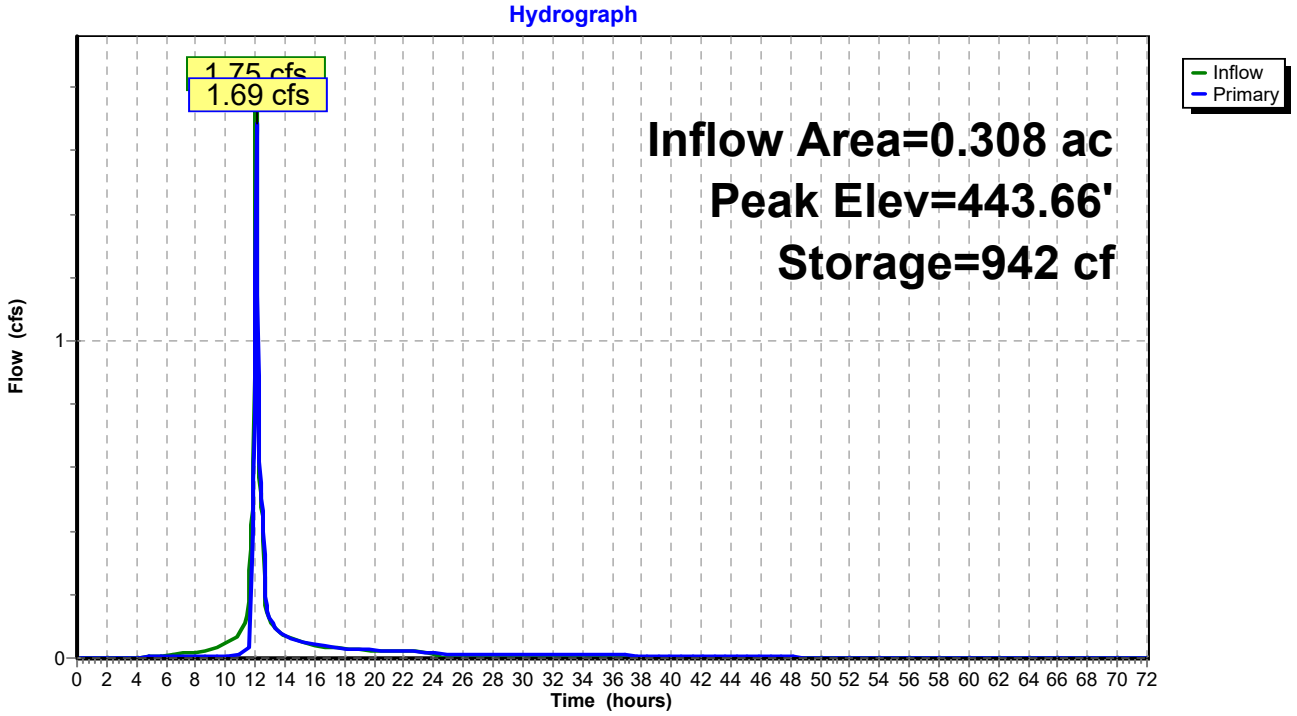
Volume	Invert	Avail.Storage	Storage Description
#1	442.50'	1,396 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
442.50	479	92.7	0	0	479
444.00	1,473	166.8	1,396	1,396	2,022

Device	Routing	Invert	Outlet Devices
#1	Device 3	442.50'	**0.500 in/hr Exfiltration over Horizontal area**
#2	Device 3	443.50'	**24.0" x 24.0" Horiz. 24" x 24" Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	438.90'	**12.0" Round 12" Culvert** L= 57.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 438.90' / 438.50' S= 0.0070 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.63 cfs @ 12.06 hrs HW=443.66' TW=0.00' (Dynamic Tailwater)
↑**3=12" Culvert** (Passes 1.63 cfs of 6.16 cfs potential flow)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)
2=24" x 24" Orifice/Grate (Weir Controls 1.62 cfs @ 1.29 fps)

Pond 3P: Bioretention



Summary for Pond 4P: Pipe

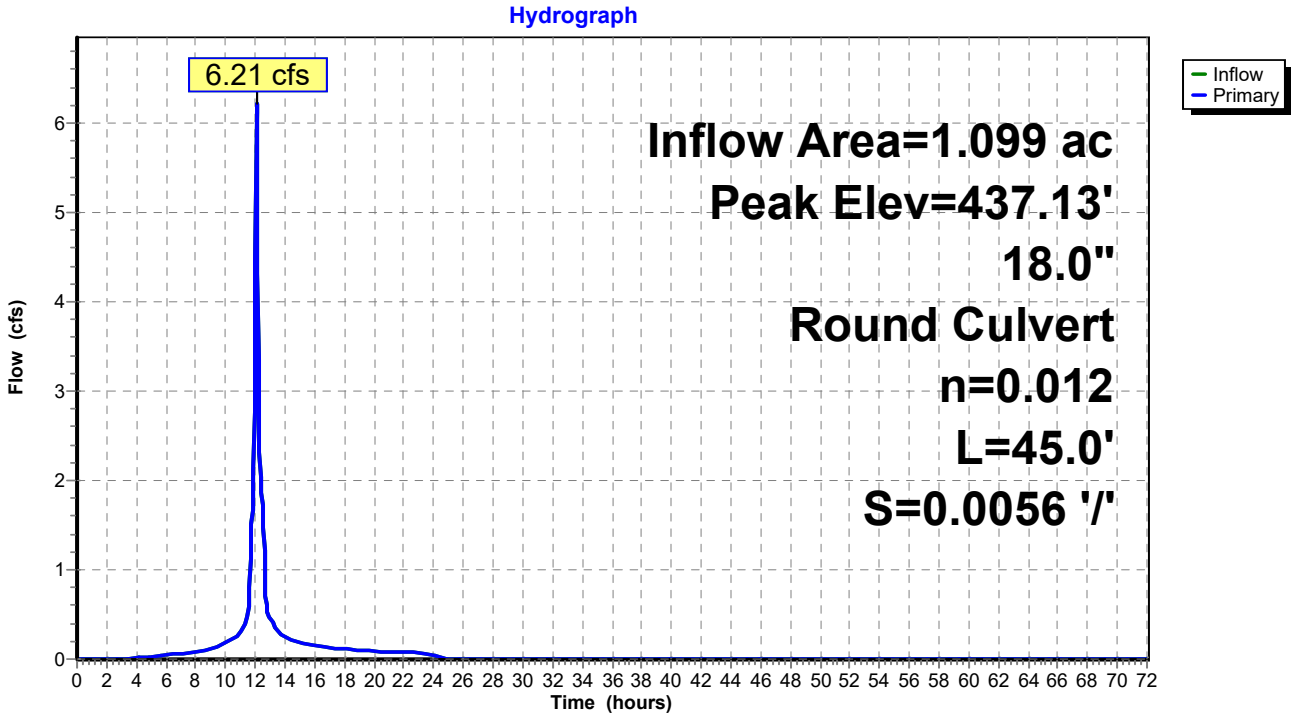
Inflow Area = 1.099 ac, 62.58% Impervious, Inflow Depth = 4.69" for 100-yr event
Inflow = 6.21 cfs @ 12.06 hrs, Volume= 0.430 af
Outflow = 6.21 cfs @ 12.06 hrs, Volume= 0.430 af, Atten= 0%, Lag= 0.0 min
Primary = 6.21 cfs @ 12.06 hrs, Volume= 0.430 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 437.13' @ 12.13 hrs
Flood Elev= 438.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.50'	**18.0" Round Culvert** L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 435.50' / 435.25' S= 0.0056 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.37 cfs @ 12.06 hrs HW=437.03' TW=436.74' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.37 cfs @ 3.02 fps)

Pond 4P: Pipe



Summary for Pond P1: CB-1

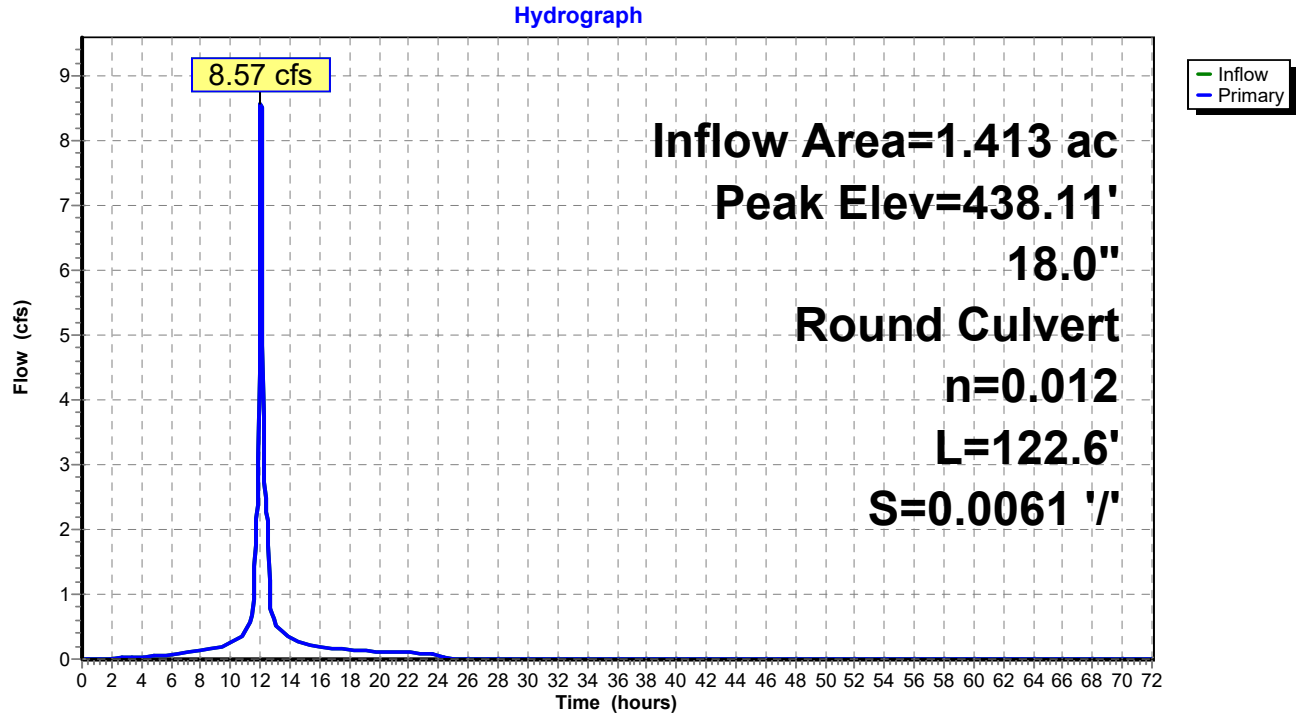
Inflow Area = 1.413 ac, 77.32% Impervious, Inflow Depth = 4.88" for 100-yr event
Inflow = 8.57 cfs @ 12.04 hrs, Volume= 0.575 af
Outflow = 8.57 cfs @ 12.04 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min
Primary = 8.57 cfs @ 12.04 hrs, Volume= 0.575 af
Routed to Pond 2P : Retention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 438.11' @ 12.04 hrs
Flood Elev= 439.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	435.75'	**18.0" Round Culvert** L= 122.6' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 435.75' / 435.00' S= 0.0061 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.00 cfs @ 12.04 hrs HW=438.04' TW=436.62' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.00 cfs @ 4.53 fps)

Pond P1: CB-1



Summary for Pond P2: STMH-1

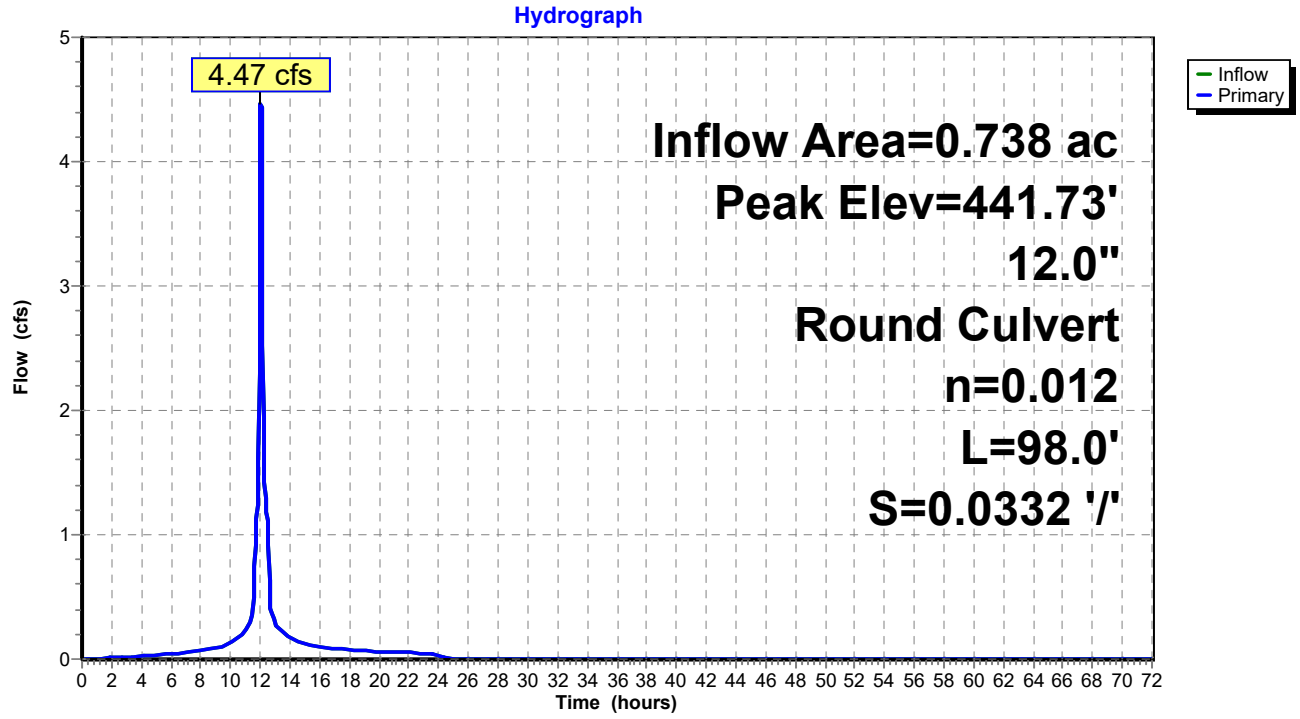
Inflow Area = 0.738 ac, 73.97% Impervious, Inflow Depth = 4.92" for 100-yr event
Inflow = 4.47 cfs @ 12.04 hrs, Volume= 0.303 af
Outflow = 4.47 cfs @ 12.04 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min
Primary = 4.47 cfs @ 12.04 hrs, Volume= 0.303 af
Routed to Pond P1 : CB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 441.73' @ 12.04 hrs
Flood Elev= 444.06'

Device	Routing	Invert	Outlet Devices
#1	Primary	439.00'	**12.0" Round Culvert** L= 98.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 439.00' / 435.75' S= 0.0332 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.35 cfs @ 12.04 hrs HW=441.62' TW=438.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.35 cfs @ 5.53 fps)

Pond P2: STMH-1



Summary for Pond P3: CB-2

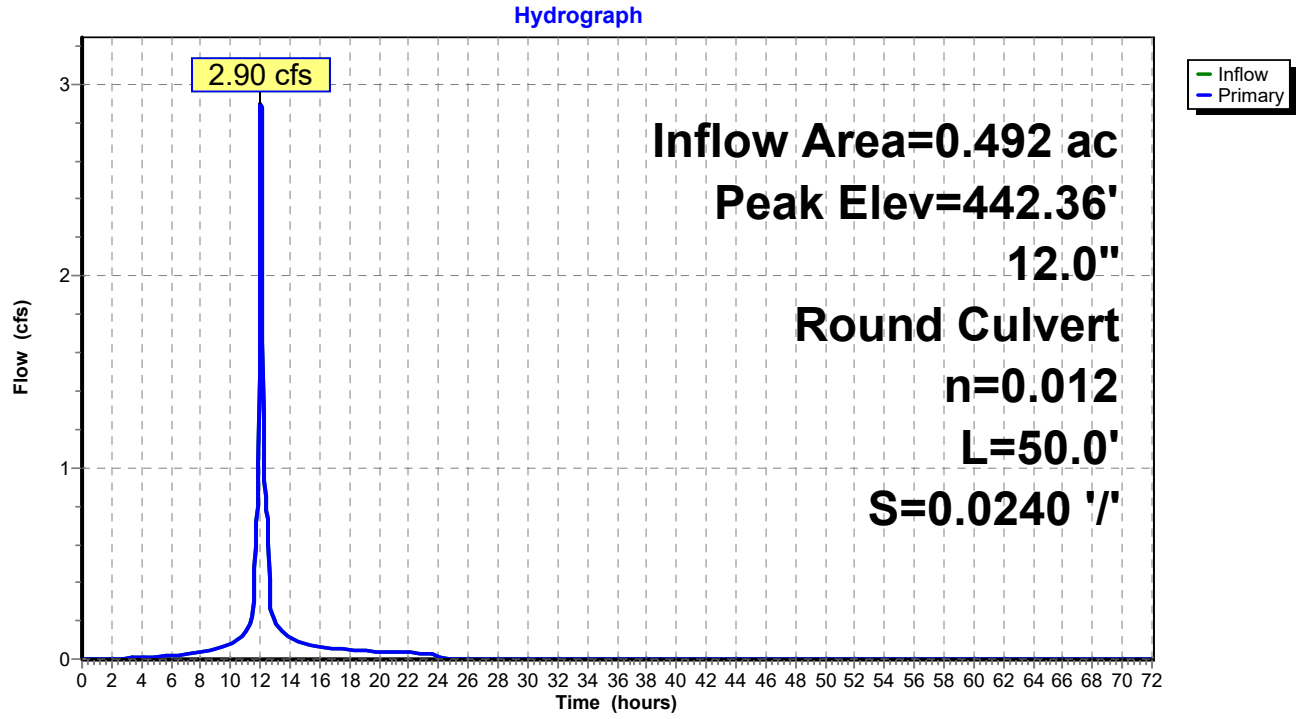
Inflow Area = 0.492 ac, 60.94% Impervious, Inflow Depth = 4.67" for 100-yr event
Inflow = 2.90 cfs @ 12.04 hrs, Volume= 0.191 af
Outflow = 2.90 cfs @ 12.04 hrs, Volume= 0.191 af, Atten= 0%, Lag= 0.0 min
Primary = 2.90 cfs @ 12.04 hrs, Volume= 0.191 af
Routed to Pond P2 : STMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 442.36' @ 12.08 hrs
Flood Elev= 443.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	440.20'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 440.20' / 439.00' S= 0.0240 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.94 cfs @ 12.04 hrs HW=442.04' TW=441.62' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.94 cfs @ 2.47 fps)

Pond P3: CB-2

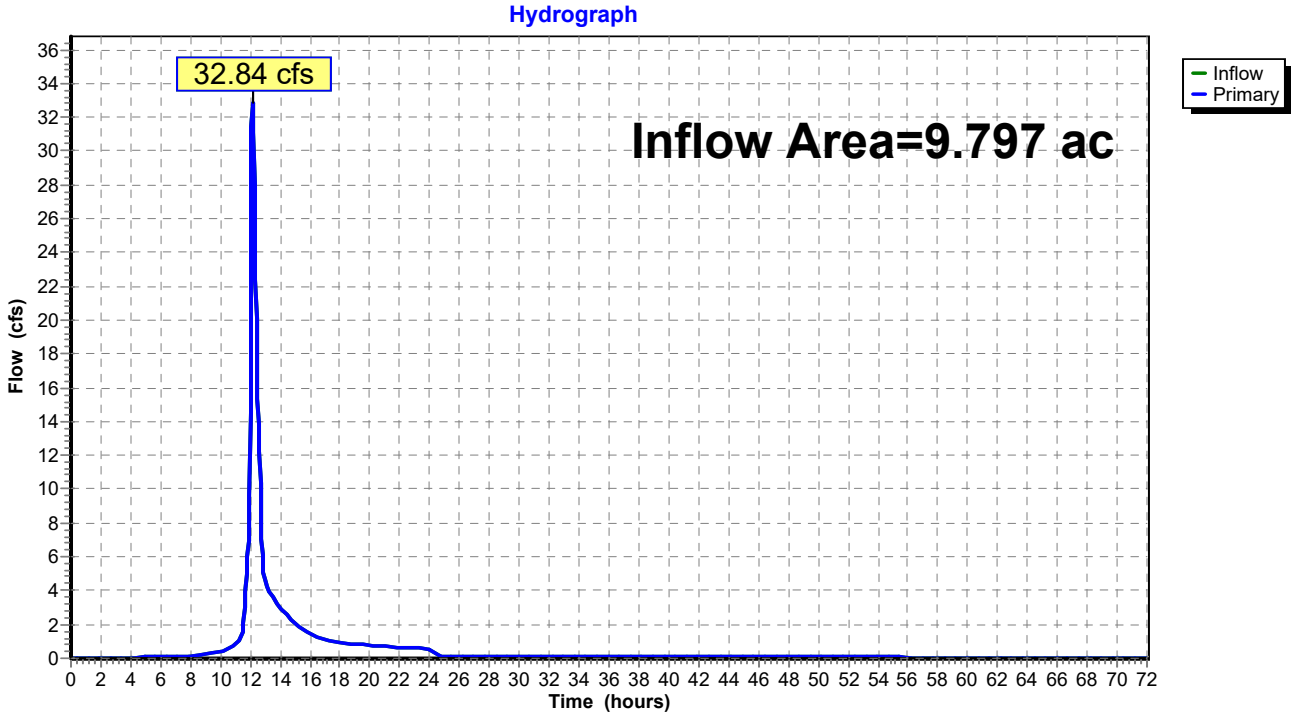


Summary for Link 1L: DP-1

Inflow Area = 9.797 ac, 33.06% Impervious, Inflow Depth > 3.88" for 100-yr event
Inflow = 32.84 cfs @ 12.15 hrs, Volume= 3.168 af
Primary = 32.84 cfs @ 12.15 hrs, Volume= 3.168 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: DP-1



Events for Subcatchment 1S: SC-101

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	2.09	0.234	0.55
10-yr	3.49	6.92	0.607	1.42
25-yr	4.23	9.99	0.850	1.99
100-yr	**5.66**	**16.40**	**1.357**	**3.18**

Events for Subcatchment 2S: SC-102

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.13	0.010	0.68
10-yr	3.49	0.36	0.023	1.63
25-yr	4.23	0.51	0.032	2.23
100-yr	**5.66**	**0.80**	**0.050**	**3.48**

Events for Subcatchment 3S: SC-103

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	1.60	0.112	1.32
10-yr	3.49	3.34	0.215	2.53
25-yr	4.23	4.25	0.275	3.24
100-yr	**5.66**	**6.00**	**0.392**	**4.62**

Events for Subcatchment 4S: SC-104

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	1.58	0.111	1.32
10-yr	3.49	3.30	0.213	2.53
25-yr	4.23	4.21	0.272	3.24
100-yr	**5.66**	**5.94**	**0.388**	**4.62**

Events for Subcatchment 5S: SC-105

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	1.18	0.083	1.48
10-yr	3.49	2.35	0.153	2.73
25-yr	4.23	2.95	0.194	3.44
100-yr	**5.66**	**4.10**	**0.273**	**4.85**

Events for Subcatchment 6S: SC-106

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.61	0.043	1.25
10-yr	3.49	1.30	0.083	2.44
25-yr	4.23	1.67	0.107	3.14
100-yr	**5.66**	**2.38**	**0.154**	**4.52**

Events for Subcatchment 7S: SC-107

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.20	0.015	1.95
10-yr	3.49	0.35	0.025	3.26
25-yr	4.23	0.43	0.031	3.99
100-yr	**5.66**	**0.59**	**0.041**	**5.42**

Events for Subcatchment 8S: SC-108

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.35	0.027	1.95
10-yr	3.49	0.63	0.045	3.26
25-yr	4.23	0.77	0.055	3.99
100-yr	**5.66**	**1.05**	**0.074**	**5.42**

Events for Subcatchment 9S: SC-109

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.18	0.013	1.95
10-yr	3.49	0.32	0.022	3.26
25-yr	4.23	0.39	0.027	3.99
100-yr	**5.66**	**0.52**	**0.037**	**5.42**

Events for Subcatchment 10S: SC-110

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.18	0.013	1.95
10-yr	3.49	0.32	0.022	3.26
25-yr	4.23	0.39	0.027	3.99
100-yr	**5.66**	**0.52**	**0.037**	**5.42**

Events for Subcatchment 11S: SC-111

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.42	0.029	1.25
10-yr	3.49	0.89	0.057	2.44
25-yr	4.23	1.15	0.074	3.14
100-yr	**5.66**	**1.63**	**0.106**	**4.52**

Events for Subcatchment 12S: SC-112

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.02	0.001	0.68
10-yr	3.49	0.06	0.004	1.63
25-yr	4.23	0.08	0.005	2.23
100-yr	**5.66**	**0.12**	**0.008**	**3.48**

Events for Subcatchment 13S: SC-113

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-yr	2.18	0.70	0.070	1.25
10-yr	3.49	1.54	0.136	2.44
25-yr	4.23	1.99	0.175	3.14
100-yr	**5.66**	**2.87**	**0.252**	**4.52**

Events for Reach 1R: Driveway Culvert 18"

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	0.70	0.70	449.70	10
10-yr	1.54	1.54	449.79	17
25-yr	1.99	1.99	449.83	21
100-yr	**2.87**	**2.87**	**449.90**	**27**

Events for Reach 2R: Swale

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	1.78	1.57	441.84	261
10-yr	3.66	3.40	441.99	461
25-yr	4.65	4.36	442.05	554
100-yr	**6.53**	**6.21**	**442.15**	**720**

Events for Reach 3R: 6" PVC PIPE

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	0.20	0.20	449.14	6
10-yr	0.35	0.36	449.19	9
25-yr	0.43	0.44	449.21	11
100-yr	**0.59**	**0.59**	**449.25**	**13**

Events for Pond 1P: Bioretention

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	1.69	0.61	435.08	5,014
10-yr	2.31	2.26	435.19	5,616
25-yr	2.66	2.51	435.21	5,690
100-yr	**3.35**	**3.11**	**435.24**	**5,863**

Events for Pond 2P: Retention

Event	Inflow (cfs)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	5.59	1.63	0.00	1.63	435.19	7,811
10-yr	11.52	2.60	0.42	2.19	436.30	14,820
25-yr	14.63	6.67	4.29	2.38	436.51	16,315
100-yr	**20.60**	**12.07**	**9.36**	**2.71**	**436.94**	**19,507**

Events for Pond 3P: Bioretention

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
1-yr	0.44	0.02	443.50	763
10-yr	0.95	0.75	443.59	865
25-yr	1.22	1.18	443.63	903
100-yr	**1.75**	**1.69**	**443.66**	**942**

Events for Pond 4P: Pipe

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-yr	1.57	1.57	436.14	**0.000**
10-yr	3.40	3.40	436.50	0.000
25-yr	4.36	4.36	436.67	0.000
100-yr	**6.21**	**6.21**	**437.13**	0.000

Events for Pond P1: CB-1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-yr	2.49	2.49	436.59	**0.000**
10-yr	4.91	4.91	437.03	0.000
25-yr	6.17	6.17	437.34	0.000
100-yr	**8.57**	**8.57**	**438.11**	0.000

Events for Pond P2: STMH-1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-yr	1.31	1.31	439.70	**0.000**
10-yr	2.57	2.57	440.24	0.000
25-yr	3.22	3.22	440.66	0.000
100-yr	**4.47**	**4.47**	**441.73**	0.000

Events for Pond P3: CB-2

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-yr	0.78	0.78	440.71	**0.000**
10-yr	1.62	1.62	441.00	0.000
25-yr	2.06	2.06	441.16	0.000
100-yr	**2.90**	**2.90**	**442.36**	0.000

Events for Link 1L: DP-1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1-yr	2.86	2.86	**0.00**
10-yr	9.87	9.87	0.00
25-yr	18.56	18.56	0.00
100-yr	**32.84**	**32.84**	0.00

Appendix K
Weekly Inspection Form

Verity Engineering, D.P.C.
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SWPPP INSPECTION REPORT

SITE INFORMATION Report Submitted: _____

DATE & TIME:	**PROJECT:**
LOCATION:	
CONTRACTOR:	**JOB NO.:**
OWNER:	**WEATHER:** Cloudy **SOIL:** Wet
CONSTRUCTION OBSERVATIONS:	

DISTRIBUTION:

☐ **Owner** **Date:**_____

☐ **Contractor** **Date:**_____

☐ **Municipality** **Date:**_____

☐ **Site Supt.** **Date:**_____

Site Inspector/
Qualified Professional: _____
sign

_____
print

Site Inspector: _____
sign

_____
print

SITE MAP:



SITE OBSERVATION REPORT

Date: _____
Initials: _____
Project: _____

Y/N	Maintaining Water Quality
n/a	Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
n/a	Is there residue from oil and floating substances, visible oil film, or globules or grease?
n/a	All disturbances are within the limits of the approved plans.
n/a	Have receiving lake/bay, stream, and/or wetland been impacted by silt from the project?

Y/N	General Site Conditions
n/a	Is construction site litter and debris appropriately managed?
n/a	Are facilities and equipment necessary for implementation of erosion and sediment control in working order?
n/a	Is construction impacting the adjacent property?
n/a	Is dust adequately controlled?

Y/N	Temporary Stream Crossing
n/a	Maximum diameter pipes necessary to span creek without dredging are installed?
n/a	Installed non-woven geotextile fabric beneath approaches.
n/a	Is fill composed of aggregate (no earth or soil)?
n/a	Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Y/N	Excavation Dewatering
n/a	Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
n/a	Clean water from upstream pool is being pumped to the downstream pool.
n/a	Sediment laden water from work area is being discharged to a silt-trapping device.
n/a	Constructed upstream berm with one-foot minimum freeboard.

Y/N	Level Spreader
n/a	Installed per plan.
n/a	Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
n/a	Flow sheets out of level spreader without erosion on downstream edge.

Y/N	Interceptor Dikes and Swales
n/a	Installed per plan with minimum side slopes 2H:1V or flatter.
n/a	Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
n/a	Sediment-laden runoff directed to sediment trapping structure.

Y/N	Stone Check Dam
n/a	Is channel stable? (flow is not eroding soil underneath or around the structure)
n/a	Are check dams installed?
n/a	Check is in good condition (rocks in place and no permanent pools behind the structure).
n/a	Has accumulated sediment been removed?

Y/N	Rock Outlet Protection
n/a	Installed per plan.
n/a	Installed concurrently with pipe installation.

SITE OBSERVATION REPORT

Date: _____
Initials: _____
Project: _____

Y/N	Topsoil and Spoil Stockpiles
n/a	Stockpiles are stabilized with vegetation and/or mulch.
n/a	Sediment control is installed at the toe of slope.

Y/N	Re-vegetation
n/a	Temporary seeding and mulch have been applied to idle areas.
n/a	4-inches minimum of topsoil has been applied under permanent seeding.

Y/N	Stabilized Construction Entrance
n/a	Is there a construction entrance?
n/a	Installed per standards and specifications?
n/a	Stone is clean enough to effectively remove mud from vehicles.
n/a	Does all traffic use the stabilized entrance to enter and leave the site?
n/a	Is adequate drainage provided to prevent ponding at entrance?

Y/N	Silt Fence
n/a	Installed on contour, 10 feet from toe of slope (not across conveyance channels).
n/a	Joints constructed by wrapping the two ends together for continuous support.
n/a	Fabric is buried 6-inches minimum.
n/a	Posts are stable, fabric is tight and without rips or frayed areas.
n/a	Is silt fence installed in all areas required?

Estimated Sediment accumulation is ___% of design capacity.

Y/N	Storm Drain Inlet Protection
n/a	Is storm drain inlet protection provided where applicable?
	Installed per specifications and details? (see below)
n/a	Excavated – (1' – 2' depth, weep holes, gravel filter, min. size: 900ft³/acre)
n/a	Fabric – (Posts are stable, fabric is tight, 1' embedment)
n/a	Stone and Block – (1' – 2' height, blocks oriented for dewatering, stone)
n/a	Curb – (wire mesh, fabric, and stone)

Estimated Sediment accumulation is ___% of design capacity.

Y/N	Temporary Sediment Trap
n/a	Outlet structure is constructed per the approved plan or drawing.
n/a	Geotextile fabric has been placed beneath rock fill.

Estimated Sediment accumulation is ___% of design capacity.

Y/N	Temporary Sediment Basin
n/a	Basin and outlet structure constructed per the approved plan.
n/a	Basin side slopes are stabilized with seed/mulch.
n/a	Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Estimated Sediment accumulation is ___% of design capacity.

SITE OBSERVATION REPORT

Date: _____
Initials: _____
Project: _____

Discharge Point Summary:

Surface Water Body Condition:

Post-Construction SMPs:

Current Corrective Actions:

Previous Corrective Actions:

General Comments:

PHOTO LOG

Date: _____
Initials: _____
Project: _____

PHOTO #1:



PHOTO #2



PHOTO LOG

Date: _____
Initials: _____
Project: _____

PHOTO #3:



PHOTO #4:



Appendix L

Post-Construction Operation and Maintenance Checklist

Stormwater Maintenance Inspection Checklist

Bioretention (F-5)

Project: _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	**Satisfactory/ Unsatisfactory**	**Comments**
Bioretention Area # _____		
1) Containment (Biannual, After Major Storms):		
i) Cracking, bulging, or sliding of walls		
ii) Seeps/leaks on downstream face		
iii) Slope protection or riprap failure		
iv) Spillway clear of obstructions and debris		
v) Other (specify)		
2) Planting Area (Monthly, After Major Storms):		
i) Accumulated debris		
ii) Erosion, rills, etc.		
iii) Condition of plantings		
3) Outlet Control Structure (Biannual):		
i) Inlet protection device		
ii) Excessive sediment accumulation		
iii) Concrete/masonry condition of structure		
(a) Cracks or displacement		
(b) Minor spalling (<1”)		
(c) Major spalling (rebars exposed)		
(d) Joint failures		
(e) Water tightness		
iv) Outlet pipe condition		
v) Underdrain functioning		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments

4) Other (As Required):

i) Complaints from residents _____

ii) Aesthetics _____

iii) Lawn restoration required _____

iv) Odor _____

v) Any public hazards (specify) _____

vi) Other (specify) _____

Comments:

_____

_____

_____

_____

Actions to Take:

_____

_____

_____

Stormwater Maintenance Inspection Checklist

Retention Basin

Project: _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments

Retention Basin Area # _____

5) Containment (Biannual, After Major Storms):
   - i) Cracking, bulging, or sliding of walls _____
   - ii) Seeps/leaks on downstream face _____
   - iii) Slope protection or riprap failure _____
   - iv) Spillway clear of obstructions and debris _____
   - v) Other (specify) _____

6) Planting Area (Monthly, After Major Storms):
   - i) Accumulated debris _____
   - ii) Erosion, rills, etc. _____
   - iii) Condition of plantings _____

7) Outlet Control Structure (Biannual):
   - i) Inlet protection device _____
   - ii) Excessive sediment accumulation _____
   - iii) Concrete/masonry condition of structure _____
     - (a) Cracks or displacement _____
     - (b) Minor spalling (<1”) _____
     - (c) Major spalling (rebars exposed) _____
     - (d) Joint failures _____
     - (e) Water tightness _____
   - iv) Outlet pipe condition _____
   - v) Underdrain functioning _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments

8) Other (As Required):

i) Complaints from residents _____

ii) Aesthetics _____

iii) Lawn restoration required _____

iv) Odor _____

v) Any public hazards (specify) _____

vi) Other (specify) _____

Comments:

_____

_____

_____

_____

Actions to Take:

_____

_____

_____

Stormwater Maintenance Inspection Checklist

Closed Drainage System

Project: _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	**Satisfactory/ Unsatisfactory**	**Comments**
Drainage Structures # _____		
Inlet & Outlet Pipes		
Material Type: HDPE		
PVC		
CMP		
1. Drainage Structures Condition (Annual)		
a) Ground surface conditions around structure		
b) Frame & Grate condition		
c) Grade rings/bricks condition		
d) Spalling mortar/infiltration		
e) Steps condition		
f) Cracks or displacement		
g) Minor spalling (<1”)		
h) Major spalling (reinforcement exposed)		
i) Joint failures		
j) Water tightness		
k) Other		
2. Sediment Accumulation (Spring & Fall)		
3. Pipes obstructed (Annual, As Required)		
a) Debris removal necessary		
b) Other		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
4. Outlet/inlet pipe conditions (Annual)		
5. Other (As Required)		
a) Complaints from residents		
b) Aesthetics		
c) Lawn restoration required		
d) Odor		
e) Any public hazards (specify)		
f) Other (specify)		

Comments:

Actions to Take:

Stormwater Maintenance Inspection Checklist

Soil Restoration

(Every 6-months or after 1/2" of rainfall for First Year)

Project: _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Areas Requiring Reseeding (Bare or eroding areas)		
2. Irrigation (Dry or browning plant material)		
3. Fertilization (Inspect/Identify plant health)		
4. Plant Material (Species health or substitution)		
5. Vehicular and Foot Traffic (Plants degrading from repeated traffic)		

Comments:

_____
_____
_____
_____

Actions to Take:

_____
_____
_____
_____

Appendix M
Environmental Assessment Form

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Winn Construction Warehouse Building		
Project Location (describe, and attach a general location map): 00 Route 5S, Amsterdam (Florida), NY 12010		
Brief Description of Proposed Action (include purpose or need): The proposed project involves the construction of two (2) structures, a ±14,300 square foot (sq. ft.) commercial warehouse, a ±4,000 sq. ft office building together with parking, lay-down area and other site appurtenances. Also included are utility connections such as a water, sewer, electric, gas and telecom service connections, lighting, landscaping and stormwater management. Site access is proposed via one (1) two-way minor commercial driveway proposed at the center of the parcels' frontage with NY-5S. The development plan will disturb greater than one (1) acre and will be subject to NYSDEC SPDES coverage under GP25-0-001. The project will require site plan and minor subdivision approval for a 2-lot subdivision from the Town of Florida Planning Board for the proposed development.		
Name of Applicant/Sponsor: Winn Construction Services, Inc. c/o Dustin Winn, P.E.	Telephone: (607) 316-2973 E-Mail: d.winn@winn-construction.com	
Address: 74 Hudson River Road		
City/PO: Waterford	State: NY	Zip Code: 12188
Project Contact (if not same as sponsor; give name and title/role): Same as applicant	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Montgomery County IDA	Telephone: (518)853-8334 E-Mail:	
Address: 113 Park Drive		
City/PO: Fultonville	State: NY	Zip Code: 12072

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town of Florida: Site Plan Approval + 2-Lot Minor Subdivision	April 2025
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	Montgomery County IDA - Land Acquisition Montgomery County Planning Board - Referral	October 2024 June 2025
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC: SPDES, NYSDOT: Perm 32/33, NYS Ag & Markets: NOI Acknowledgement	NYSDEC: February 2026, NYSDOT: August 2025, NYS Ag.: June 2025
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

NYS Heritage Areas:Mohawk Valley Heritage Corridor

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☑Yes ☐No

If Yes, identify the plan(s):

Montgomery County Agricultural and Farmland Protection Plan

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Industrial Business Park (IBP)

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Fonda Fultonville School District

b. What police or other public protection forces serve the project site?
Montgomery County Sheriff's Office

c. Which fire protection and emergency medical services serve the project site?
Fort Hunter Engine & Hose Company

d. What parks serve the project site?
N/A

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Commercial/Industrial/Manufacturing

b. a. Total acreage of the site of the proposed action? ±12.8 acres
b. Total acreage to be physically disturbed? ±4.9 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? ±12.8 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
Industrial
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? 2
iv. Minimum and maximum proposed lot sizes? Minimum ±12.8 Ac Maximum ±19.8 Ac

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 9 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 2

ii. Dimensions (in feet) of largest proposed structure: 28 height; 110 width; and 130 length

iii. Approximate extent of building space to be heated or cooled: ±18,300 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑ Yes ☐ No

If Yes,

i. Purpose of the impoundment: Stormwater management

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑ Other specify: Surface runoff (stormwater)

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: 0.277 million gallons; surface area: 0.384 acres

v. Dimensions of the proposed dam or impounding structure: n/a height; n/a length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

No "dam" is proposed. Stormwater management areas will be contained with earth fill.

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐ Yes ☑ No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging?

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards):
- Over what duration of time?

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No
If yes, describe.

v. What is the total area to be dredged or excavated? acres

vi. What is the maximum area to be worked at any one time? acres

vii. What would be the maximum depth of excavation or dredging? feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No

If Yes:

i. Total anticipated water usage/demand per day: 300 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No

If Yes:

- Name of district or service area: Florida (T) Water District #1
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No

If Yes:

i. Total anticipated liquid waste generation per day: 300 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

Sanitary wastewater

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☐ No

If Yes:

- Name of wastewater treatment plant to be used: Florida V STP
- Name of district: Montgomery County Sanitary District No 1
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

- Do existing sewer lines serve the project site? ☐Yes ☑No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☑No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or ±2.63 acres (impervious surface)

_____ Square feet or ±12.8 acres (parcel size)

ii. Describe types of new point sources. Stormwater conveyance systems; sheet flow, closed and open drainage systems.

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

On-site stormwater management practices, two (2) bioretention basins, ultimately discharging to an existing on-site drainage-way which flows off the property.

- If to surface waters, identify receiving water bodies or wetlands: Wetland - 3,601 SF.
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Standard construction equipment to move supplies and product (front-end loaders, excavators, buldozers, fork lifts, etc.)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Temporary generators

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Increased vehicle traffic, building heating systems

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☑ Morning ☐ Evening ☐Weekend

☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

5

_____

iii. Parking spaces: Existing 0 Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☑No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☑No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☑No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

±202 MWHrs/Year

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

Local utility company (National Grid)

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 6-7
- Saturday: 6-7
- Sunday: 6-7
- Holidays: _____

ii. During Operations:

- Monday - Friday: 24-hours
- Saturday: 24-hours
- Sunday: 24-hours
- Holidays: _____

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Normal construction operations - Hours limited as required by Code.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: Approximately 0.02 acres of vegetation (trees and brush) will be removed.

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Standard parking lot and building lighting for security and visibility, heights less and twenty (20) feet.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: Clearing of existing farm vegetation for development. Exterior lighting will be compliant with Code.

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

Turf-grass heribicides and pesticides may be used to treat and maintain lawned areas. Applications will be provided by licensed private contactors at the time of service.

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☑ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 5 tons per Month (unit of time)
- Operation : 2 tons per Month (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Scrap materials, metals, cardboard, large plastic packaging to be recycled.
- Operation: Material mis-fabs to be recycled, consumer waste recyclables to be disposed of in zero sort recycling.

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: C&D dumpsters to be transported by certified waste haulers.
- Operation: Waste and recyclables to be transported by certified waste haulers.

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

The site is generally adjoined by residential properties with a distribution center (commercial) located to the south, vacant rural land to the north, and agricultural land on-site.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.0	±2.65	+2.65
• Forested	±0.32	±0.30	-0.02
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0.0	0.0	0.0
• Agricultural (includes active orchards, field, greenhouse etc.)	±12.36	±9.73	-2.63
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.0	0.0	0.0
• Wetlands (freshwater or tidal)	±0.08	±0.08	0.0
• Non-vegetated (bare rock, earth or fill)	0.0	0.0	0.0
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >8 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

DaB	92 %
LaC	8 %
	%

d. What is the average depth to the water table on the project site? Average: 1 feet

e. Drainage status of project site soils:

☑	Well Drained:	8 % of site
☐	Moderately Well Drained:	% of site
☑	Poorly Drained	92 % of site

f. Approximate proportion of proposed action site with slopes:

☑	0-10%:	97.7 % of site
☑	10-15%:	0.8 % of site
☑	15% or greater:	1.5 % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name Riverine Classification R4SBC
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) Wetland Size 3,601 SF.

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
Small game Deer

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:
i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑ Yes ☐ No
If Yes, provide county plus district name/number: MONT003

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No
i. If Yes: acreage(s) on project site? 100% of project site
ii. Source(s) of soil rating(s): USDA Soil Survey

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

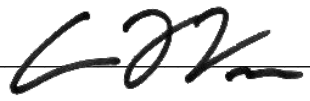
Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

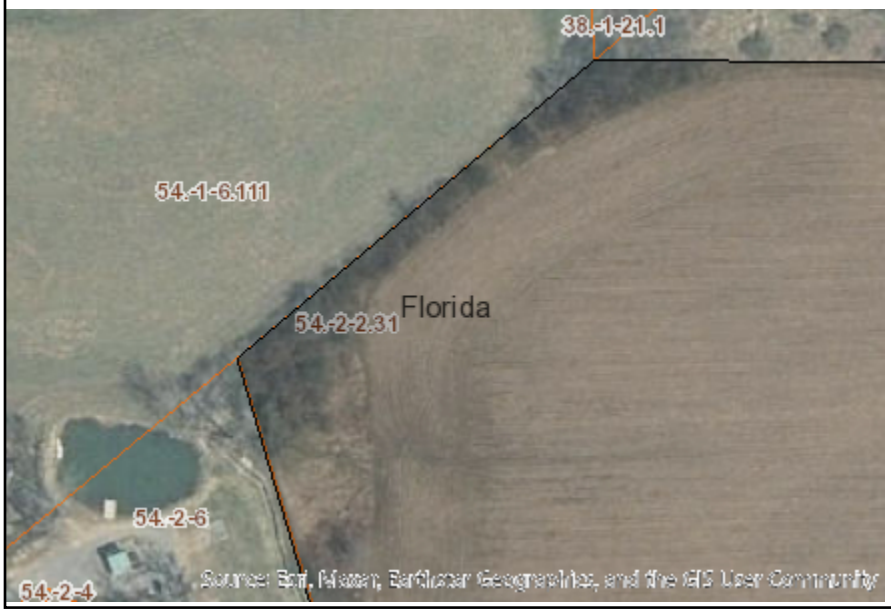
Applicant/Sponsor Name Aaron J. Vera, P.E. (Agent for Applicant) Date 01/14/2026

Signature  Title Principal Engineer

PRINT FORM

EAF Mapper Summary Report

Monday, August 18, 2025 4:39 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources to confirm data provided by the Mapper or to obtain data not provided by the Mapper.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Heritage Areas:Mohawk Valley Heritage Corridor
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.h.ii [Surface Water Features]	Yes - Digital mapping information on local, New York State, and federal wetlands and waterbodies is known to be incomplete. Refer to the EAF Workbook.
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local, New York State, and federal wetlands and waterbodies is known to be incomplete. Refer to the EAF Workbook.
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	Yes

E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	MONT003
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Appendix N
Notice of Termination

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:

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:

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:

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.

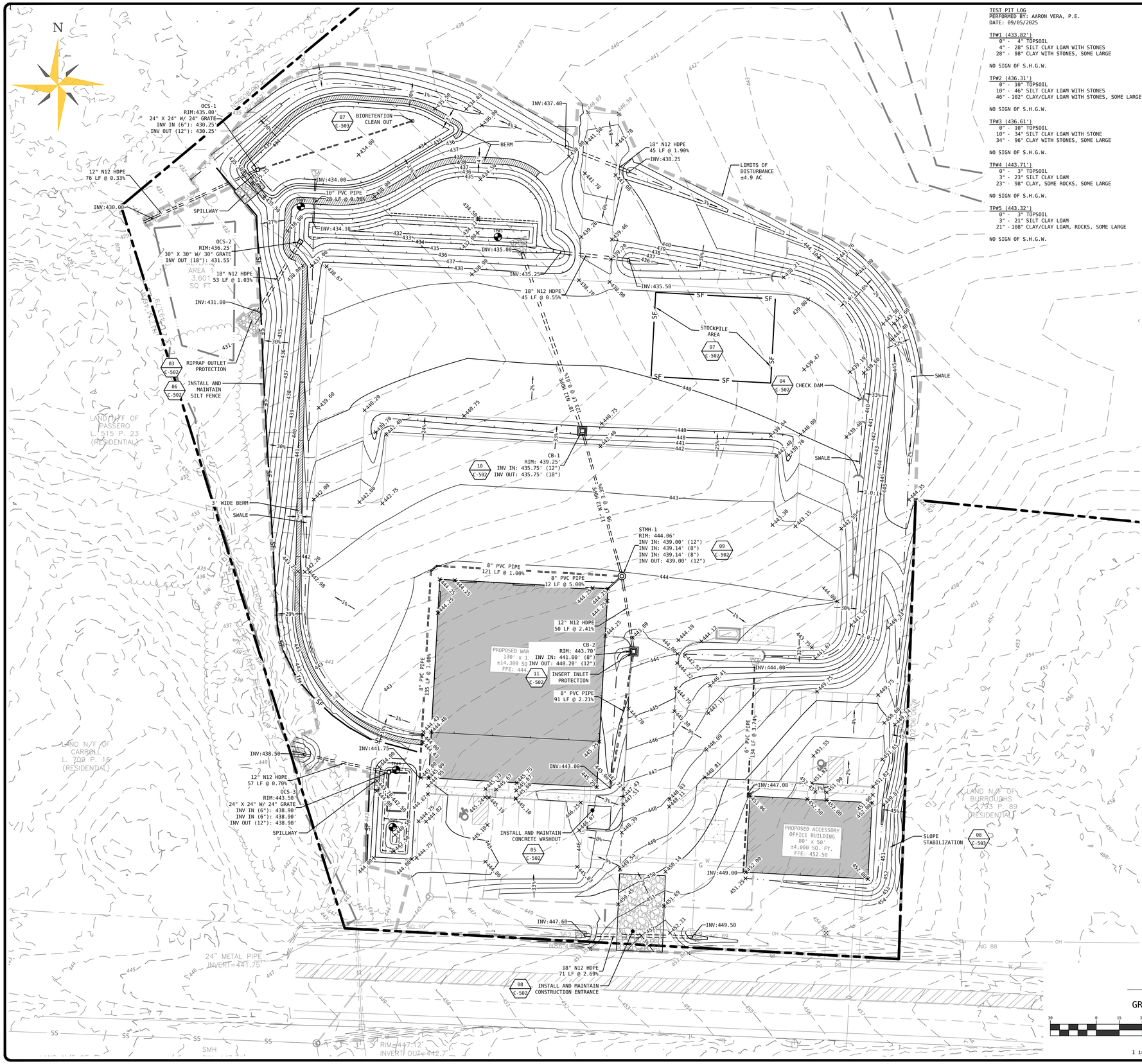
a. Printed name of the Owner or Operator:

b. Title/Position:

c. Signature:

d. Date:

Appendix O
Erosion and Sediment Control Plans



TEST PIT LOG
PERFORMED BY: AARON VERA, P.E.
DATE: 09/05/2025

TP#1 (433.82')
0" - 4" TOPSOIL
4" - 28" SILT CLAY LOAM WITH STONES
28" - 98" CLAY WITH STONES, SOME LARGE

NO SIGN OF S.H.G.W.

TP#2 (436.31')
0" - 10" TOPSOIL
10" - 46" SILT CLAY LOAM WITH STONES
46" - 102" CLAY/CLAY LOAM WITH STONES, SOME LARGE

NO SIGN OF S.H.G.W.

TP#3 (436.61')
0" - 10" TOPSOIL
10" - 34" SILT CLAY LOAM WITH STONE
34" - 96" CLAY WITH STONES, SOME LARGE

NO SIGN OF S.H.G.W.

TP#4 (443.71')
0" - 3" TOPSOIL
3" - 23" SILT CLAY LOAM
23" - 98" CLAY, SOME ROCKS, SOME LARGE

NO SIGN OF S.H.G.W.

TP#5 (443.32')
0" - 3" TOPSOIL
3" - 21" SILT CLAY LOAM
21" - 108" CLAY/CLAY LOAM, ROCKS, SOME LARGE

NO SIGN OF S.H.G.W.

GENERAL CONSTRUCTION SEQUENCE
TOTAL DISTURBANCE = ±4.9 ACRES

PRE-CONSTRUCTION

1. OBTAIN PLAN APPROVAL, GRADING PERMIT, ANY EASEMENTS, AND ALL OTHER LEGAL CONTRACTS/PERMITS REQUIRED FOR CONSTRUCTION.

2. FLAG THE WORK LIMITS AND MARK TREES AND AREAS FOR PROTECTION AS REQUIRED.

3. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE TOWN OF FLORIDA BUILDING DEPARTMENT, DESIGN ENGINEER, INSPECTING ENGINEER, AND THE SWPPP MONITORING PROFESSIONAL.

4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT, INLET PROTECTION, AND CONCRETE WASHOUT.

5. STAKE OUT CLEARING LIMITS. AREAS OF DISTURBANCE SHALL NOT EXCEED FIVE (5) ACRES AT ANY TIME. OBTAIN APPROVAL FROM THE TOWN DEPARTMENT TO PROCEED WITH GRADING PERMIT.

CONSTRUCTION

6. COMPLETE REMOVAL OF EXISTING STRUCTURES, CLEARING AND GRUBBING.

8. STRIP AND STOCKPILE TOPSOIL, REMOVE LOOSE SOILS THAT ARE NOT SUITABLE FOR THE PROPOSED IMPROVEMENTS. STOCKPILE WITHIN APPROVED AREA WITH ADEQUATE PROTECTION. PROCEED WITH ROUGH GRADE TO CREATE LEVEL AREA FOR FUTURE VEHICLE PARKING AND BUILDING SLAB.

9. PROCEED WITH ROUGH GRADING AND IMPORTING/EXPORTING OF FILL AS REQUIRED. CONSTRUCT SEDIMENT TRAP AT LOCATION OF FOREBAY AND CREATE SWALES TO DETENTIONS/FOREBAY.

10. PREPARE AND CONSTRUCT THE STRUCTURAL BUILDING FOUNDATION AND PAD

11. TRENCH FOR UTILITIES

12. INSTALL STORMWATER PRACTICES.

13. FINE GRADING SLOPES AND STABILIZE IMMEDIATELY.

14. INSTALL STORM MANHOLES, ROADWAY SUBBASE AND CURBING.

14. INSTALL PAVEMENTS AND CONCRETE SURFACES.

15. INSTALL LANDSCAPING.

POST-CONSTRUCTION

12. ONCE CONSTRUCTION IS COMPLETED, CONTRACTOR TO PERMANENTLY STABILIZE ALL EXPOSED AREA, INCLUDING AREAS THAT HAVE BECOME BARE DUE TO TRAFFIC.

13. ENSURE POSITIVE DRAINAGE FLOW AWAY FROM BUILDINGS AND ADJACENT PROPERTIES SO THAT FLOWS HAVE A POSITIVE DIRECTION TOWARDS STORMWATER COLLECTION DEVICES.

14. REMOVE ANY ACCUMULATED SEDIMENT AND ENSURE ALL STORMWATER MANAGEMENT PRACTICES ARE FUNCTIONING CORRECTLY, AND DISCHARGING CLEAN RUNOFF.

15. PERFORM FINAL CLEANUP OF DEBRIS, AND REPAIR ANY AREAS THAT WERE AFFECTED FROM CONSTRUCTION.

16. REMOVAL OF OVERALL EROSION CONTROL MEASURES MAY ONLY OCCUR WHEN THE PROJECT IS SUFFICIENTLY STABILIZED AND REQUIRES THE APPROVAL OF THE TOWN OF FLORIDA BUILDING DEPARTMENT AND THE SWPPP INSPECTOR. THE TOWNS ENGINEERS OFFICE MAY WISH TO INSPECT STORMWATER BASIN.

EROSION & SEDIMENT CONTROL PLAN NOTES:

1. ALL PROPOSED EROSION CONTROLS SHALL BE INSTALLED PRIOR TO BEGINNING OF CONSTRUCTION. FINAL LOCATION AND CONSTRUCTION SHALL BE REVIEWED BY A QUALIFIED PROFESSIONAL.

2. REMOVE EROSION CONTROLS ONLY UNDER THE AUTHORIZATION OF A QUALIFIED PROFESSIONAL.

3. CONTRACTOR MUST PROTECT ALL SURFACE WATERS FROM SILTATION DURING CONSTRUCTION WITH APPROPRIATE MEASURES INCLUDING, BUT NOT LIMITED TO, PLACING STRAW BALES AND SILT FENCING AROUND WORK.

4. EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIRED. ADDITIONAL MEASURES MAY BE REQUIRED, BASED ON FIELD CONDITIONS, DURING CONSTRUCTION AS DIRECTED BY A QUALIFIED PROFESSIONAL.

5. EROSION AND SEDIMENT CONTROL METHODS SHALL COMPLY WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, LATEST EDITION.

6. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAINFALL EVENT. THE CONTRACTOR SHALL REPAIR THE EROSION AND SEDIMENT CONTROL DEVICES AS NECESSARY AND AS DIRECTED BY A QUALIFIED PROFESSIONAL.

7. ALL TEMPORARY EXPOSED FACES OF EARTH CUTS AND FILLS SHALL BE VEGETATED OR PROTECTED FROM EROSION IMMEDIATELY UPON COMPLETION OF EARTHWORK OR IF WORK IN THESE AREAS IS TO BE SUSPENDED FOR FOURTEEN (14) DAYS. PROVISIONS SHALL BE MADE IN ORDER TO MINIMIZE THE AREA TO BE DISTURBED AND TO PREVENT THE CONCENTRATION OF STORM WATER RUNOFF AND EROSION OF DISTURBED EARTH SLOPES.

8. UPON COMPLETION OF GRADING OPERATIONS THE DISTURBED AREAS SHALL BE STABILIZED BY THE FOLLOWING METHODS, DEPENDING UPON THE CLASSIFICATION OF THE AREA AS EITHER TO RECEIVE PERMANENT OR TEMPORARY SEEDING:

SEED BED PREPARATION
IF AREAS ARE DEEMED AS REQUIRING TOPSOIL THEN APPLY TOPSOIL TO A UNIFORM MINIMUM DEPTH OF FOUR INCHES (4"). TOPSOIL SHALL BE FRIABLE AND LOAMY, FREE OF DEBRIS, OBJECTIONABLE WEEDS, AND STONES, AND CONTAIN NO TOXIC MATERIALS. IF TOPSOIL IS DEEMED UNNECESSARY THEN PREPARE SEED BED BY SCARIFYING COMPACTED AREAS AND REMOVING DEBRIS, ROCKS, AND STUMPS. SEEDBED SHALL RECEIVE THE FOLLOWING SOIL AMENDMENTS:

8.1. LIME TO A Ph OF 6.0
8.2. FERTILIZE WITH 600 LBS OF 5-10-10 OR EQUIVALENT PER ACRE (14 LBS./1000 SQ. FT) THE SOIL AMENDMENTS SHALL BE WORKED INTO THE SEED BED WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT.

TEMPORARY SEEDINGS
ANNUAL RYEGRASS SEED SHALL BE APPLIED AT A RATE OF 0.9 LBS PER 1000 SQUARE FEET. USE WINTER RYE IF SEEDING DURING OCTOBER/NOVEMBER.

PERMANENT SEEDINGS
SEEDING SHALL CONSIST OF 1 LB PER 1000 SQUARE FEET OF SEED CONTAINING AT LEAST 50% FAST SPROUTING PERENNIAL RYE GRASS AND 10% PINK CLOVER OR ALFALFA. THE SEED MIX SHALL BE SPREAD BY UTILIZING A CYCLONE SEEDER, DRILL, OR CULTIPACK SEEDER. SEED DEPTH SHALL BE FROM 1/4 TO 1/2 INCH DEEP. SEED MAY ALSO BE APPLIED BY APPROPRIATE HYDROSEEDING METHODS. ALL SEEDED AREAS SHALL BE MULCHED WITH STRAW MULCH APPLIED AT RATE OF 2 TON/ACRE (90 LBS PER 1000 SQUARE FEET) AND ANCHORED WITH "TERRA-TACK" OR EQUIVALENT.

ROCK
WHEN ENCOUNTERED, SHALL BE UNDERCUT A MINIMUM OF 12 INCHES BELOW FINISHED GRADE; BACKFILL OVER THE ROCK SHALL CONSIST OF 8 INCHES OF GRANULAR FILL AND 4 INCHES OF TOPSOIL.

9. IF STABILIZATION BY SEEDING CANNOT OCCUR DURING THE RECOMMENDED SEEDING PERIODS, TOPSOIL, FILL, AND EXCAVATED MATERIALS AREAS SHALL BE TEMPORARILY STABILIZED WITH ANCHORED MULCH UNTIL SUCH TIME AS EFFECTIVE SEEDING CAN OCCUR.

10. STOCKPILE MATERIALS SHALL NOT BE LOCATED WITHIN TWENTY-FIVE FEET (25') OF ANY DITCH, STREAM, OR OTHER SURFACE WATER BODY.

11. IF CONSTRUCTION IS SUSPENDED, OR SECTIONS COMPLETED, AREAS SHALL BE SEEDED AND/OR MULCHED IMMEDIATELY.

12. COMPLY WITH THE APPLICABLE STIPULATIONS SET FORTH IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT.

TOWN OF FLORIDA

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DESIGNED BY:	EAS
DRAWN BY:	EAS
CHECKED BY:	BTS
APPROVED BY:	AJV
SCALE:	1"=30'
DATE:	01/30/2026

REV.	DATE	DESCRIPTION	BY
B	01/30/26	RESPOND TO COMMENTS	AJV
A	10/24/25	INITIAL SUBMISSION TO TOWN	AJV

GRADING AND EROSION CONTROL PLAN

C-121

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