C&J Consulting Engineers, D.P.C.
Civil Engineering and Land Planning Consultant

Storm Water Pollution Prevention Plan
(SWPPP)

Prepared for

Wayne Avenue Low Rise Townhouses

156-160 Wayne Avenue,
Suffern, New York, 10901
Section 48.69, Block 1, Lot 1, 1.1 & 1.2

Prepared by:

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Storm Water Pollution Prevention Plan (SWPPP) Summary:

This is the Storm Water Pollution Prevention Plan (SWPPP) prepared for the Wayne Avenue Low Rise townhouse site. The project proposes to construct twenty-three (23) townhouses and their associated appurtenances. The project site is located within the Village of Suffern, Town of Ramapo, Rockland County, New York. The objective of the Storm Water Pollution Prevention Plan (SWPPP) is to minimize any potential impacts to the watershed from the proposed development. A storm water analysis has been performed in accordance with the New York State SPDES Permit GP-0-25-001 criteria. Erosion and sediment control, stormwater quantity management, run-off reduction measures and stormwater quality control will be implemented in accordance with the New York State Stormwater Design Manual, (January 2022 edition.), the New York State Standards for Soil Erosion and Sediment Control, (November 2015 edition). A pre-development and post-developed hydrologic analysis have been completed (using HydroCAD software) and is included in this report. This Storm Water Pollution Prevention Plan (SWPPP) report along with the drainage system and erosion control design plans, constitute those items necessary for coverage under the State Pollutant Discharge Elimination System (SPDES) Permit. Proper implementation, maintenance and inspection of the best management practices chosen for the project, all SPDES Permit criteria will be met and potential impacts to downstream and off-site properties will be mitigated to the greatest extent practical.

Property and Contact Information:

Site Address:
156-160 Wayne Avenue,
Suffern, New York 10901

Tax Lot Information
Section 48.69 Block 1 Lots 1, 1.1 & 1.2

Coordinates:
Latitude: 41.12510: Longitude: -74.14379

Municipal Information:
Suffern Village Hall
61 Washington Ave.
Suffern, NY 10901

Village Engineer:

Owners:
Contact: Scohen Brooklyn LLC
95 Smith Hill Rd
Armonk, New York 10952
joseph@elkaypartners.com

Developer:

Engineer:
Contact: Michael J. Calise, P.E.
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35 Goshen TPK,
Bloomingburg, New York 12721
(845) 458-1585
mc@caliseengineering.com

NYS DEC Region:
Region 3
21 South Putt Corners Road

New Paltz, New York 12561
(845) 256-3000

NYS DEC Spill Hotline:
800-457-7362 or 631-444-0320 (Region 3 spill office)

Underground Utility Location:
Dig Safely New York
5063 Brittonfield Parkway
East Syracuse, New York 13057
811 or 800-962-7962

Wayne Avenue Low Rise Townhouses

Village of Suffern
Rockland County, New York

Contractor's Certification Statement

To be signed by all Contractor's and Sub-contractors performing site work that involves land disturbance.

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. 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's Name:

_____

Contractor's Address:

_____

Responsible Agent's Name (Print):

_____

Responsible Agent's Title:

_____ _____

Responsible Agent's Signature : Date:

_____

List SWPPP Components Contractor is responsible for:

Provide additional Contractor Certifications Sheets, if there is more than one contractor responsible for land disturbance and grading activities.

1 Introduction and Document Requirements:

This is the Storm Water Pollution Prevention Plan (SWPPP) prepared for Wayne Avenue Low Rise Townhouses. The site is a residential development which proposes the construction of twenty-three (23) Townhouses containing 810± SF with accessory units distributed in (5) buildings of which four (4) of them contain four (4) townhouses and one (1) of them contain three (3) townhouses, all of which contain typical utilities. The total project site contains 8.24± acres of land on which 1.90± acres are being disturbed.

The site is situated on the northwest side of Wayne Avenue approximately six hundred fifty-seven (657'±) feet north of Memorial Drive, within the Village of Suffern. The property is bounded northeast and northwest by single-family residential homes, southeast by Stewart Circle and to the southeast by Wayne Avenue. The site is identified as tax parcel Section 48.69, Block 1, Lot 1, 1.1 & 1,2 on the Village of Suffern tax maps and is within the MR-15 - Multiple Dwelling (Low Rise) -Townhouses.

This Storm Water Pollution Prevention Plan (SWPPP) is being prepared to help minimize any potential impacts to the watershed from the proposed development. Potential impacts include soil erosion and the introduction of pollutants such as garbage, trash, debris, fertilizers, chemicals, and sediments both during and after construction. The stormwater management plan also addresses potential downstream impacts created by the conversion of natural, vegetated areas to impervious surfaces such as flooding and channel erosion.

Stormwater quantity management, run-off reduction, stormwater quality control and erosion control will be done in conformance with the NYS Stormwater Design Manual, (July 2024 edition), the New York State Standards for Erosion and Sediment Control, (November 2016 edition.), and State Pollution Discharge Elimination System (SPDES) permit GP-0-25-001 criteria, a copy of the State Pollution Discharge Elimination System (SPDES) Permit can be found in Appendix F. The proposed stormwater runoff will be managed using drainage swales, roof leaders, and underground pipes and chambers. Detention will be provided utilizing underground chambers systems and infiltration to limit peak post-development flow rates to pre-development levels.

A TR-20 Hydrologic Analysis has been performed for the 1-year, 10-year and 100-year storm events and attenuation of the peak discharge rates for the storms will satisfy System State Pollution Discharge Elimination (SPDES) permit requirements for Channel Protection (Cpv), Overbank Flood Control (Qp) and Extreme Flood Control (Qf).

All stormwater conveyance infrastructure has been sized to safely pass flow rates for the 25-year storm. A more detailed description of stormwater quantity control, including a pre-development and post-developed hydrologic analysis, can be found in Section 5 of this report. The supporting pre-development and post-developed (HydroCAD) model can be found in Appendix N with Drainage Basin Maps depicting the pre and post developed hydrologic conditions located in Appendix Q.

Erosion and sedimentation control will be accomplished via means of temporary and permanent erosion control measures. Erosion control features will be implemented prior to the start of construction activities. The design and placement of the erosion control practices with associated details can be found on the Erosion Control Plan and Erosion Control Details sheets of the project drawings. During periods of construction activity erosion control measures will be inspected daily by a "Trained Contractor" to be employed by the excavation company. A thorough review and report by a "Qualified Inspector" will be performed at least once every seven days. Defects noted will be corrected immediately. Weekly inspection logs will be kept at the project site and made available for review by the regulatory agency having authority. A more detailed discussion of erosion and sediment control can be found in Section #6 of this report with Erosion Control Checklists and a sample Construction Site Logbook located in Appendix L and P. Maintenance of erosion control measures will be the responsibility of the property owner.

In accordance with the eligibility requirements of the NYSDEC General Permit, a review was conducted to evaluate the potential for impacts to historic properties and endangered or threatened species. Based on the available information, the proposed project is not expected to result in adverse impacts to historic or cultural resources or to any listed endangered or threatened species. An OPRHP Cultural Resource Sensitivity Map was reviewed and is included in Appendix S. The map indicates no areas of concern within the project limits; therefore, the project meets the environmental eligibility requirements of the General Permit

The Village of Suffern is an MS4 community. The project plans and this Storm Water Pollution Prevention Plan (SWPPP) report have been reviewed by the Village's stormwater authority and an MS4 Acceptance Form has been completed

and signed by the Village's MS4 officer. A copy of the endorsed MS4 Acceptance is attached in Appendix B.

A Notice of Intent Form has also been completed and will be filed with the New York State Department of Environmental Conservation to obtain State Pollution Discharge Elimination System (SPDES) Permit coverage prior to starting construction. See Appendix A for a copy of the eNOI.

Upon completion of the project, and final stabilization of the site, a Notice of Termination Form will be submitted to close the State Pollution Discharge Elimination System (SPDES) Permit. A copy of this form can be found in Appendix E. All contractors and subcontractors involved in activities resulting in site disturbance, or effecting stormwater runoff, must familiarize themselves with both this written Storm Water Pollution Prevention Plan (SWPPP) documents and the water quality, quantity and erosion control measures shown on the approved project plans. All responsible parties will attest to their familiarity with the stormwater documents by signing the Contractor's Certification Statement found at the beginning of this report. Additional copies of the Statement can be made if there are multiple contractors involved in ground disturbing activities.

A copy of the approved project drawings, this written Storm Water Pollution Prevention Plan report, signed Contractor Certification Statement, completed Notice of Intent, completed MS4 Acceptance Form and Department of Environmental Conservation acknowledgment letter will be kept at the construction site. All maintenance inspection checklists and a Construction Site Logbook, samples of which can be found in Appendix O will also be kept on-site and available for review by local municipal authorities and any regulatory agencies.

By implementing the above best management practices the storm water quality objectives will meet or exceed those required by the State Pollution Discharge Elimination System (SPDES) Permit for construction activities.

2 Project Description

The site is situated on the northeast side of Wayne Avenue, approximately six hundred fifty-seven (657'±) feet north of Memorial Drive, within the Village of Suffern. The property currently has a single-family residence and typical appurtenances on-site. The site topography slopes from the highest area of the property located at the northeast corner of the lot to the southwest along Wayne Ave, which has an approximate elevation of 306± feet then rises to the northwest with the highest elevation found at the rear of the site (wooded area) at an

approximate elevation of 433± feet. The site soils consist of Holyoke-Rock outcrop complex, very steep (HoF), with Holyoke soils being silt loam overlying unweathered bedrock and having high slopes of soil hydrologic group D, Riverhead-Urban land complex, 0 to 8 percent slopes (RuB), consisting of fine sandy loam and stratified very gravelly sand of soil hydrologic group A, and Udorthents, smoothed (Us), consisting of channery loam and very gravelly loam of soil hydrologic group A, as depicted on the NRCS Web Soil Survey map located in Appendix G. Vegetation consists of typical residential parcel and forest on the remainder of the parcel. There are no state or federal wetland areas on the parcel nor is the parcel located in a flood hazard area. Wetland inventory maps (Appendix I) and the Firmette flood hazard map are also located in Appendix H.

The existing drainage near the front of the property consists of an inlet located to the northeast within the property boundary and another to the southwest outside the property boundary crossing Wayne Avenue. Drainage runs downhill through a 24" pipe from northeast of Wayne Avenue to the southwest. These existing catch basins will not be modified, and the proposed drainage is being designed so that the proposed flow does not exceed the existing flow. Part of the property (mostly undisturbed property) will drain to the inlet on the southwest side and the other part (disturbed area) will connect to the inlet on the northeast side of Wayne Avenue.

The Planned improvements to the site include the construction of three (23) townhouses. Other improvements include roadway construction, utilities, stormwater conveyance system, stormwater management practices, and landscaping. The total amount of new impervious surface was estimated to be approximately 0.88± acres. From the entire 8.24± acre watershed only 1.90± acres will be disturbed during construction.

3 Site Hydrology

The 156-160 Wayne Avenue Subdivision parcel lies entirely within the Hackensack-Passaic drainage basin, the Ramapo River subbasin and subwatershed. It flows southeast through Harriman and then south through the Village of Suffern before entering northern New Jersey.

The existing topography of the site diverts most of the upstream runoff to the southwest of the property. Runoff from the subject parcel and adjacent land located within the catch basin discharges southwest toward Memorial drive and ultimately to the south side of NY State Highway 287. From there, stormwater eventually discharges under New York State Highway 287 and flows into the Ramapo River.

The site is located southwest of the Ramapo River and is therefore not within an AAS watershed. A review of the appendices of the State Pollutant Discharge Elimination System (SPDES) permit reveals that the project is not tributary to a Total Maximum Daily Load (TMDL) watershed or a 303d impaired water body. For the hydrologic analysis, the pre-developed forested areas were considered to be in good vegetative condition. The soils consist of silt loam, fine sandy loam, stratified very gravelly sand, channery loam, and very gravelly loam between hydrologic soil groups A and D.

4 Run-off Reduction and Storm Water Quality

The water quality objective for the 156-160 Wayne Avenue Subdivision is based on the 90% rule as set forth in Chapter 4 - Unified Sizing Criteria in the NYS Stormwater Design Manual. The specific goal is to capture and treat run-off from 90% of the 24-hour rainfall events occurring at a site. The volume of water to be treated is directly proportional to the area that is tributary to the treatment practice and the amount of impervious cover within the respective area.

The 90th Percentile – 24-hour Rainfall value for the Wayne Avenue low rise townhouses project, as interpolated from Figure 4.1 of the Design Manual, is taken to be 1.4 inches. The resultant water quality volume, or WQv, computed using the Unified Sizing Criteria is 4,412 cubic feet.

Runoff Reduction is a component of the water quality objective. The goal is to reduce the post-developed volume of run-off to near pre-developed levels.

To accomplish this, the increased runoff from new impervious areas is, ideally, infiltrated into the soil. In areas where native soils have poor infiltrative capacity the objective may not be met. However, some run-off reduction can still be provided via certain stormwater management practices. The Runoff Reduction goal is to reduce 100% of the computed water quality volume (WQv). In areas of highly infiltrative soils this goal is typically accomplished.

Sites constrained by seasonal high groundwater, shallow depth to bedrock or soils with low permeability which preclude the use of infiltration practices and thereby impede the ability to reduce of 100% of the water quality volume (WQv) must meet a minimum Runoff Reduction volume (RRv) as set forth in Chapter 4 of the Design Manual. Multiple methods of accomplishing the RRv value can be utilized.

The soils encountered at the project site consist of Holyoke, Riverhead, and Udorthents soil series, which fall within Hydrologic Soil Groups A and D. To

determine an appropriate design infiltration rate for the proposed stormwater management practices, field percolation testing was performed on December 30–31, 2025 at three locations (Holes 1A, 3A, and 5A). The measured long-term stabilized percolation rates were 1.5 in/hr at Hole 1A, 9.0 in/hr at Hole 3A, and 11.0 in/hr at Hole 5A. Although the field results show a range of infiltration capacities across the site, the design infiltration rate used in the HydroCAD modeling (1.5 in/hr) was selected by adopting the most conservative measured rate to provide a protective, site-specific value that represents the lowest observed stabilized infiltration performance. This approach ensures compliance with GP-0-25-001 by using field-verified data while incorporating a conservative margin of safety in the stormwater system design.

The computed minimum Runoff Reduction Volume (RRv) for the site is 2,526 cubic feet. One grass swales, with basal areas of 472 square feet, will be constructed to redirect water flow from the forested area directly to the to the proposed pipeline at Hamerhead and on the southeast side of the property, as indicated on the proposed drainage plan (Appendix N) and finally to public discharge, meaning this volume does not pass through the WQv and RRv studies, and 4,412 cubic feet of water quality volume capacity, of which 2,734 cubic foot for the first system and 1678 cubic foot for the second system with a total of 4,412 is credited to the runoff reduction volume. The practice of infiltration through 2 underground infiltration systems will accomplish a total reduction of the calculated water quality volume. Therefore, the runoff reduction objective is met.

Computations associated with water quality volume, minimum run-off reduction volume and infiltration capacity utilizing the New York State Department of Environmental Conservation (NYSDEC) Runoff Reduction Worksheets can be found in Appendix M. Construction details of the proposed and underground infiltration can be found on the project plans. Additional specifications and checklists associated with infiltration devices were taken from the Design Manual.

The net result is that improvements will exceed the minimum water quality volume objectives set forth by the Unified Sizing Criteria.

5 Detention and Storm Water Quantity

An integral part of the stormwater pollution prevention plan calls for the attenuation of peak runoff flow rates to predeveloped levels. This mitigates against the adverse impacts caused by the conversion of natural areas to impervious surfaces and the increased rate of runoff from these newly created impervious areas. Attenuation of peak flow rates is accomplished by detaining stormwater run-off in either an above

ground or below ground reservoir to be released slowly over an extended period.

To analyze the impacts of the development, an analysis of pre-developed versus post-developed run off rates was performed utilizing HydroCAD stormwater modeling software. HydroCAD methodology is based on the National Resources Conservation Service (NRCS) TR-20 and TR-55 watershed analysis models.

In performing the analysis, the amount of rainfall for a given storm event, together with the distribution of that rainfall over a given time interval, must be determined. The New York State Design Manual and NRCS Urban Hydrology for Small Watersheds, *TR-55 Manual (June 1986)* provide figures that depict rainfall values based on geographic location. Figure B-2 of the TR-55 Manual shows the subject parcel lies in an area identified with Type III rainfall distributions specifically used calculations for the Rockland zone.

The 24-hour rainfall values as obtained from the Northeast Regional Climate Center: Extreme Precipitation in New York and New England for the site location are as follows:

Table 1 24-Hour Rainfall Values

Storm Frequency	Rainfall (inches)
1 year	2.96
10 year	5.76
100 year	9.10

Utilizing the pre-developed drainage catchment data depicted on the Pre-developed Drainage Basin Map, which can be found in Appendix Q, a pre-developed hydrologic model was prepared. The site and surrounding areas were found to consist of one catchment approximately 8.24 acres in size which was delineated based on topographic features and the bounds of Wayne Avenue.

For analysis purposes the predeveloped area as well as the proposed area were divided into multiple designated areas to visualize the correct runoff calculations to accomplish the desired results as explained.

Discharge from the catchment is into an existing drainage ditch located to the northeast of the project site. Computed pre-developed peak flow rates for the 1-, 10-, and 100-year storm events for the catchment are summarized as follows:

Table 2
Pre-Developed Runoff Calculations:

Sub Name	Area (Ac.)	CN	TC (min.)	Q peak 1 Yr. (cfs)	Q peak 10 Yr. (cfs)	Q peak 100 Yr. (cfs)
EA#1	4.393	70	19.5	1.99	8.68	18.10
EA#2	0.575	79	20.5	0.48	1.47	2.72
EA#3	3.272	77	17.2	2.67	8.69	16.48
Total	8.24			5.11	18.70	37.02

With the above data, the post developed site condition was modeled. The proposed stormwater management system consists of designated stormwater management areas designed for infiltration and detention, along with a network of catch basins, and swales. Runoff from the entire property including internal roads, sidewalks, landscaped areas, and buildings will be collected through inlets and directed via the proposed piping system to these stormwater management facilities. This design ensures that post-development discharge remains safe and compliant with applicable regulations, without exceeding the existing flow rate. The chambers were modeled with an outlet control device that will slowly release stored rainwater from within the system.

The computed minimum Runoff Reduction Volume RRv for the site is 2526 cubic feet 0.058 af. The required Water Quality Volume WQv is 4,412 cubic feet. Stormwater runoff from impervious areas will be collected by catch basins and conveyed to the underground stormwater infiltration systems for treatment and detention. Additionally, a grass swale will be constructed that redirects water flow from the forested area directly to the public discharge, i.e., does not pass through the WQv and RRv studies.

The build out of the project, and the corresponding installation of drainage improvements, results in catchment areas that are defined by the areas tributary to the respective drainage improvements. A summary of the post developed sub

catchment areas and corresponding peak runoff rates for the 1, 10, and 100-year storm events follows:

Table 3a
Post-Developed Runoff Calculations for PA#1.1 (Development section)

Sub Name	Area (Ac.)	Q peak 1 Year. (cfs)	Q peak 10 Year. (cfs)	Q peak 100 Year. (cfs)
PA#1.1	3.084	1.93	6.75	13.14

Table 3b
Post-Developed Runoff Calculations for PA#1.2, 1.3, 1.4 (Development section)

Sub Name	Area (Ac.)	Q peak 1 Year. (cfs)	Q peak 10 Year. (cfs)	Q peak 100 Year. (cfs)
PA#1.2	0.511	0.00	0.97	2.74
PA#1.3	0.366			
PA#1.4	0.432	0.00	0.55	3.24
Final Q peak (Link 7L)	1.309	0.00	1.07	3.24

Table 3c
Pre-Developed Runoff Calculations for total watershed

Sub Name	Area (Ac.)	Q peak 1 Year. (cfs)	Q peak 10 Year. (cfs)	Q peak 100 Year. (cfs)
EA#2 (Same as Existing, undisturbed)	0.575	0.48	1.47	2.72

Table 3d

Post-Developed Runoff Calculations for PA#1.1 (Development section)

Sub Name	Area (Ac.)	Q peak 1 Year. (cfs)	Q peak 10 Year. (cfs)	Q peak 100 Year. (cfs)
PA#3	3.271	2.41	8.09	15.54

To accurately analyze the impacts of the development, a comparison of the pre and post developed peak flow rates at the analysis points must be made.

A table summarizing of the pre-and post-developed peak flow rates at the Analysis Point follows:

Table 4
Summary for Pre- and Post-Development:

Storm Event	1 Year (cfs)	10 Year (cfs)	100 Year (cfs)
Pre-Developed	5.11	18.70	37.02
Post-Developed	4.75	16.81	34.30
Delta	-0.36	-1.89	-2.72

As can be seen in the above table, post-developed peak flow rates are at or below pre- developed levels for all storm events. Attenuation of the peak discharge rates for the storms will satisfy SPDES permit requirements for Channel Protection (Cpv), Over bank Flood Control (Qp) and Extreme Flood Control (Qf).

6 Erosion and Sediment Control

Proposed erosion control measures will be in accordance with a publication entitled *New York State Standards and Specifications for Erosion and Sediment Control (November 2016 edition)*. Erosion control will be accomplished by means of temporary and permanent measures with the timing of the installation of said measures to be in accordance with the construction sequence found on the Erosion Control Plan sheet of the approved drawings.

Temporary erosion control measures will include a stabilized construction entrance, silt fence, a temporary sediment trap, diversion swales, check dams, inlet protection, mulching, land grading, temporary topsoil stockpiling, seeding, and haying. Areas to be disturbed will have the area of disturbance delineated. Areas to remain un-disturbed will be protected with a perimeter construction fence, or snow fence. Upon completion of clearing and grubbing activities, topsoil will be stripped, and temporary topsoil stockpiles created in locations out of the way of construction and any runoff water course.

Stockpiles will be surrounded with silt fence and immediately stabilized with seed and hay per the temporary seeding schedule depicted on the plans. Temporary seeding will be placed in all disturbed areas that are expected to remain idle for a period of 14 days. Dust control by means of spraying water will be incorporated, as necessary.

The locations of the specific erosion control practices to be implemented, with associated construction details, are depicted on the Erosion Control Plan. Permanent erosion control measures include permanent seeding and landscaping, land grading, mulching, and slope stabilization. Slope stabilization will be accomplished utilizing rolled erosion control matting in all areas of slopes of two horizontal to one vertical or steeper.

Erosion control measures will be routinely inspected daily by a "*Trained Contractor"* to be employed by the excavation company. The State Pollution Discharge Elimination System (SPDES) Permit requires that a thorough review and report by a "*Qualified Inspector"* be performed at least once every seven days: The definition of a Trained Contractor and Qualified Inspector can be found in the State Pollution Discharge Elimination System (SPDES) Permit text located in Appendix A. Inspection logs identifying site conditions and any defects in need of attention, together with photographs, will be prepared by the Qualified Inspector. Defects identified will be reported to the project owner within 24 hours and corrections made immediately. Weekly inspection logs will be kept at the project site in

mailbox clearly labeled with the letters “SWPPP”. Any reports and the Storm Water Pollution Prevention Plan (SWPPP) will be made available for review by the Regulatory Agency having authority. Maintenance of erosion control measures will be the responsibility of the project sponsor. Included in the erosion control plan is a general sequence of construction.

In compliance with Part III.A.2 of the General Permit, this Stormwater Pollution Prevention Plan (SWPPP) considers future physical risks due to climate change by evaluating the potential for more frequent and intense storm events, temperature increases, and associated impacts such as increased runoff, erosion, and flooding; the selection and design of stormwater controls reflect these risks to ensure continued effectiveness and compliance under changing climatic conditions, and provisions are included for ongoing monitoring and adaptive management as needed.

If deficiencies are identified during inspections performed by the Trained Contractor or the Qualified Inspector, the contractor must take corrective actions in accordance with the requirements of the SPDES General Permit GP-0-25-001.
For corrective actions that do not require engineering design, the contractor shall begin implementing the corrective actions within one (1) business day of the deficiency being identified, and shall complete the corrective actions within five (5) business days.

For corrective actions that require engineering design, the contractor shall begin the engineering design process within five (5) business days of the deficiency being identified and shall complete the corrective action within a reasonable timeframe, but no later than sixty (60) calendar days.

All corrective actions, including documentation and verification of completion, shall be recorded in the inspection reports maintained onsite with the SWPPP.

7. General Construction Sequence

	BMP / ESC Practice	Approximate Timing of Initial Installation
1.	Obtain all approvals and permits.	Month 0
2.	Hold pre-construction meetings with applicable agencies and contractors.	Month 0
3.	Submittal of Notice of Intent.	Month 0
4.	Contractor(s) to review Storm Water Pollution Prevention Plan (SWPPP) and sign "Contractor's Certification Statement."	Month 0
5.	Install a site mailbox for State Pollution Discharge Elimination System (SPDES) related documents. Mailbox to be labeled "SWPPP."	Week 1
6.	Delineation of limits of clearing and disturbance.	Week 1
7.	Trees to be saved will be protected with perimeter fence.	Week 1
8.	Install stabilized construction entrance to work areas.	Week 1
9.	Install silt fence down-gradient of work area.	Weeks 1
10.	Perform clearing and grubbing activities required for construction. Site disturbance must not exceed the disturbance limit depicted on the approved project plans.	Weeks 1–3
11.	Areas disturbed for a period of more than fourteen (14) days will be stabilized in accordance with the approved erosion control plan seeding requirements.	Continuous starting Week 2
12.	Strip and stockpile topsoil, stabilize stockpile with grass seeding and silt fence.	Weeks 2–4
13.	Perform mass excavation.	Month 1
14.	Complete rough grading of the site.	Months 1–2
15.	Fine grade and stabilize all embankments upon completion of rough grading.	Month 2
16.	Perform foundations excavation, stockpile, and protect spoils from excavation.	Months 2–3
17.	Upon completion of the rough-grading site in accordance with project plans, begin building foundations.	Month 3
18.	Areas to remain disturbed for a period of more than 14	Continuous

	days will be seeded with a temporary mixture of rye grass in accordance with the temporary seeding schedule shown on the erosion control plans.	
19.	Prepare concrete wash-out area.	Month 3
20.	Install underground stormwater management system and associated appurtenances. Complete proposed storm water conveyance systems.	Months 3–4
21.	Stabilize catch basin inlets with appropriate protection measures.	Months 3–4
22.	Continue to maintain temporary seed and hay on areas that will remain disturbed for 14 days or more.	Continuous
23.	Begin installation of drainage infrastructure. Install utilities within roadway. Areas to remain disturbed for a period of more than 14 days will be seeded with a temporary mixture of rye grass in accordance with the temporary seeding schedule shown on the erosion control plans.	Months 4–5
24.	Complete proposed storm water conveyance systems, drainage infrastructure and drainage components. Install rip-rap lined outlet protection. Stabilize catch basins with appropriate protection measures.	Months 5–6
25.	Install roadway widening and driveway sub-base. Pave roadway widening with base asphalt.	Months 6–7
26.	Finish building construction and install utility connections.	Months 6–12
27.	Complete fine grading of disturbed areas and embankments, amend soils as required.	Months 11–12
28.	Seed and stabilize with mulch, jute netting or hydroseed.	Months 11–12
29.	Review final stormwater infrastructure improvement checklists. Construct stormwater management appurtenances to permanent size and geometry. Remove any trapped sediment and fines and discard off-site.	Month 12
30.	Complete final surfacing of roadway widening and driveways.	Month 12
31.	Upon final grading and establishment of permanent vegetation, remove erosion control measures beginning at the most upstream points and then working downstream.	Month 13

32.	Perform any fine-grading and seeding as required. Maintain and repair vegetative cover as required. Maintain and repair washouts as required and after each storm event until all erosion control and water quality treatment measures are fully established.	Month 13
33.	Complete final inspection and Submit Notice of Termination (NOT) Form.	Month 14

8. Operation and Maintenance

The Stormwater management infrastructure will be the responsibility of the Homeowners Association to be incorporated for the subdivision, maintaining the proposed chamber systems installed on the property and for the swales and conveyance systems to be constructed on the property. Maintenance will include cleaning sediment and debris from inlets, catch basins pipes, and swales. The chamber systems will be inspected and cleaned of accumulated sediment, debris and floating materials. Maintenance of the stormwater management system will be performed as detailed below.

8.1 Stormwater Sign Requirements:

- Each stormwater management practice (except open channels and bioslopes on highways) must have a visible sign near the facility.
- Minimum dimensions: 18” x 24”, white letters on a green background.
- The sign must include:
  - The name of the practice (e.g., Wet Pond).
  - The SPDES permit number.
  - A statement indicating that the practice must be maintained according to the Operation and Maintenance (O&M) plan.
  - The text: “This sign may not be removed or altered.”
- A single comprehensive sign in a visible area listing all site practices is allowed, accompanied by simplified signs at each individual practice.

8.2 Drainage Easement Requirements

The Hillside Townhouses project will be converted to a new homeowner’s association to be the party responsible for taking care of the drainage requirements thereby replacing the need for a proposed easement. Long-term operation and maintenance of all stormwater management practices will be the responsibility of the Homeowners Association (HOA) established for this development. The HOA shall:

- Perform all required inspections and maintenance activities for stormwater

storage and management systems within the property limits.

- Ensure continuous protection and functionality of these systems, prevent neglect, unauthorized alterations, or removal.
- Prohibit any modifications to the stormwater system unless approved through a formal **Stormwater Pollution Prevention Plan (SWPPP) amendment** in compliance with **New York State DEC**.

8.3 Maintenance for Chamber System, Catch Basins and Swales

To ensure the correct functionality and longevity of this project's stormwater management practices (BMPs), a maintenance plan has been established in accordance with the guidelines in the Stormwater Management Plan Maintenance Guidance Manual (SMP Maintenance Guidance). The inspection and preventive maintenance requirements for infiltration structures, including chamber systems, catch basins and swales are detailed below:

1) Subsurface infiltration systems (such as Underground Pipe) require regular inspection and maintenance to ensure they retain their storage and infiltration capacity (Per sections 2.11 and 3.11 of the Bluebook manual). The recommended maintenance practices include:

    - Inspect at least twice a year, especially after heavy storms.
    - Confirm inlets and outlets are not obstructed.
    - Remove sediment, leaves, and debris from inlets and pretreatment areas regularly.
    - Clean chambers with vacuum equipment if excessive buildup is noticed.
    - Keep pretreatment structures (catch basins, filters, separators) functional and clean.
    - Ensure no standing water remains inside chambers for over 72 hours after storms.
    - Check manholes and covers for structural damage.
    - Verify no surface settlement above installation areas.
    - Maintain detailed records of all inspections, cleanings, and repairs.

2) Catch Basins (storm drain inlets) – sediment removal, keeping grates clear, floatables/oils handling:

    - Keep inlet grates clear of sediment, debris, and obstructions.
    - Remove accumulated sediment to maintain proper drainage capacity.
    - Inspect after storm events and perform prompt corrective action.
    - Apply site pollution prevention practices (waste handling, spill response, disposal of oils/floatables).
    - Document all maintenance and corrective actions taken.

3) Swales (vegetated conveyances) – vegetation care, erosion repair, sediment removal, drainage performance

- Regularly inspect for and repair any erosion or bare areas.
- Maintain dense, healthy vegetation; reseed areas as needed.
- Remove sediment buildup to preserve drainage performance.
- Check for settlement, blockages, and ensure stable outlets.
- Use mulch, stabilization matting, or erosion control products as required.
- Apply fertilizers only when indicated by soil tests, restricting phosphorus and observing application timing/setbacks.
- Perform maintenance after storms and keep clear records.

8.4. BMP-Specific Inspection and Maintenance Requirements

The following inspection and maintenance requirements apply to all erosion and sediment control practices utilized on this project. Each practice shall be maintained in accordance with these requirements, as mandated in the New York State Standards and Specifications for Erosion and Sediment Control (2016), which require site-specific maintenance protocols for all ESC practices. Inspections shall occur weekly and within 24 hours after any storm event producing 0.5 inches of rainfall or greater. Corrective actions must be implemented immediately upon discovery of deficiencies.

1) Silt Fence
   - Inspect weekly and after qualifying rain events.
   - Remove accumulated sediment when it reaches 50% of the fence height.
   - Repair or replace torn fabric, broken posts, undermined sections, or areas of overtopping.
   - Ensure fence is properly keyed into the ground and maintains continuous contact with soil.
   - Replace any section that is no longer functional.

2) Storm Drain Inlet Protection: (Including excavated inlet protection, fabric inlet protection, curb inlet protection, and inlet inserts.)
   - Inspect weekly and within 24 hours following rainfall ≥ 0.5".
   - Remove sediment when depths reach 6 inches or when flow is obstructed.
   - Ensure device fits securely and prevents bypassing.
   - Remove debris and trash from grates and protection devices.
   - Replace filter fabric or inserts when clogged or damaged.
   - Maintain the contributing drainage area to prevent excessive sediment loading.

3) Stabilized Construction Entrance
   - Inspect daily during periods of active construction.

- Add stone as needed to maintain a functioning tracking surface.
- Restore rutted or depressed areas immediately.
- Ensure geotextile remains intact and covered with stone.
- Sweep adjacent paved roads daily or as needed to remove tracked sediment.
- Replace the stone pad when contaminated with fine material.

4) Concrete Washout Basin
   - Inspect weekly for structural integrity and adequate freeboard.
   - Remove and properly dispose of hardened concrete when storage is 75% full.
   - Repair tears or displacement of the liner immediately.
   - Ensure washout signage remains visible and in place.
   - Prevent overflow or breach of containment berms.

5) Soil Stockpile Protection
   - Ensure stockpiles are surrounded by silt fence or compost filter sock.
   - Maintain cover (tarps or temporary seeding) when inactive for more than 7 days.
   - Repair or replace protective fencing or stabilization if damaged or displaced.
   - Remove accumulated sediment around perimeter controls as needed.

References:

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- United States Department of Agriculture [USDA]. (1986, June). *Urban Hydrology for Small Watersheds, TR-55.* Retrieved from: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf.
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Appendix A

(Notice of Intent)

Appendix B

(MS4 Acceptance Form)

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information
1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

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

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

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

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

Appendix D

(SWPPP Preparer Certification Form1022010)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

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

Project Site Information

Project/Site Name

Owner/Operator Information

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

Certification Statement – SWPPP Preparer

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

First name | MI | Last Name

Signature | Date

Appendix E

(Notice of Termination Form)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Appendix F

(SPDES 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.

C*onstruction 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

Table of Contents

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 *discharges* 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

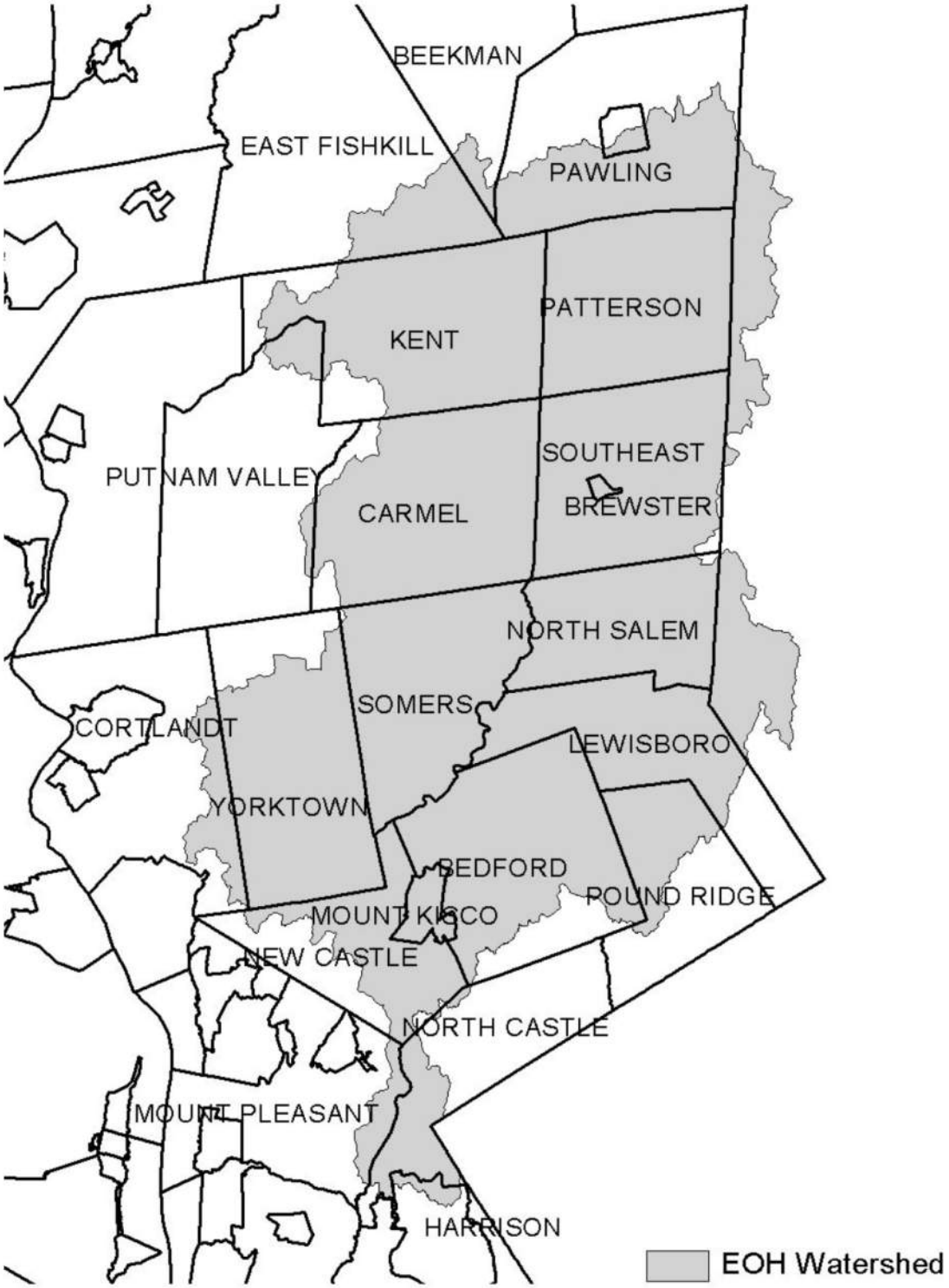


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

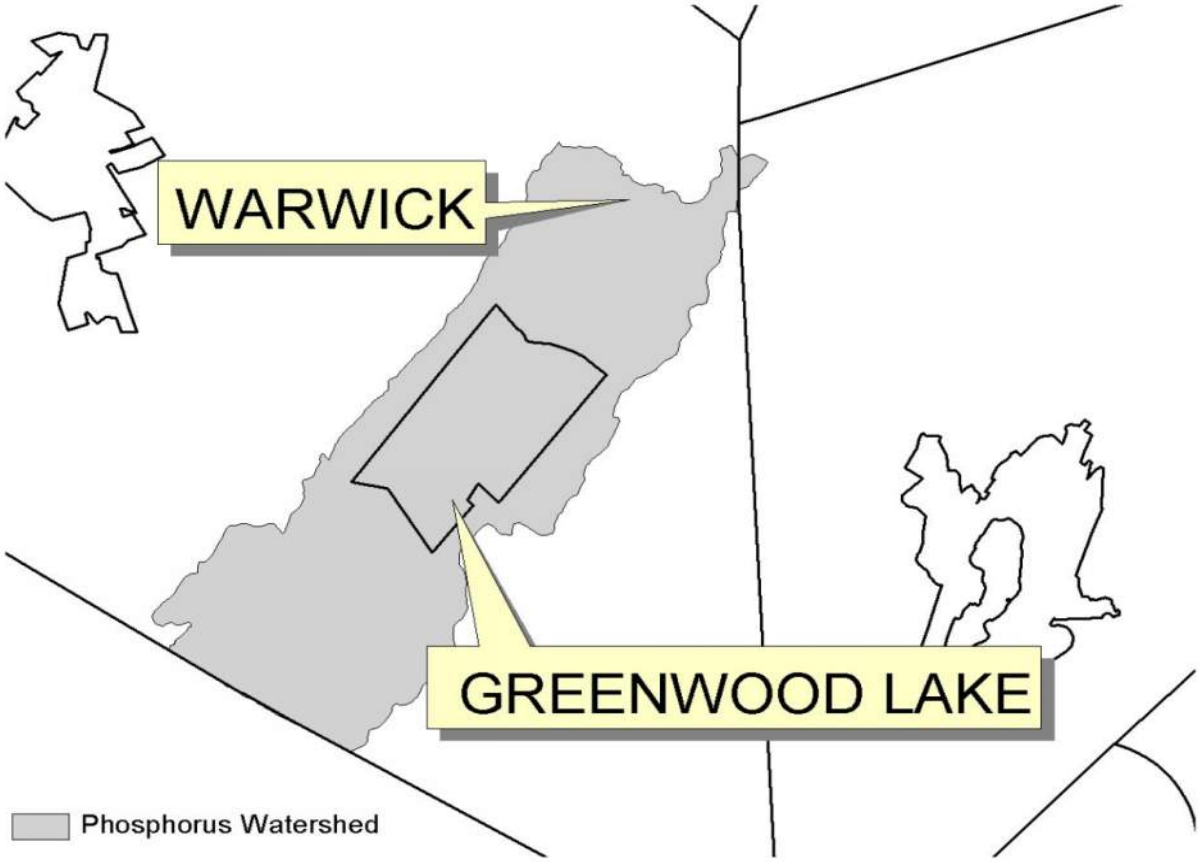


Figure 4 - Oscawana Lake Watershed

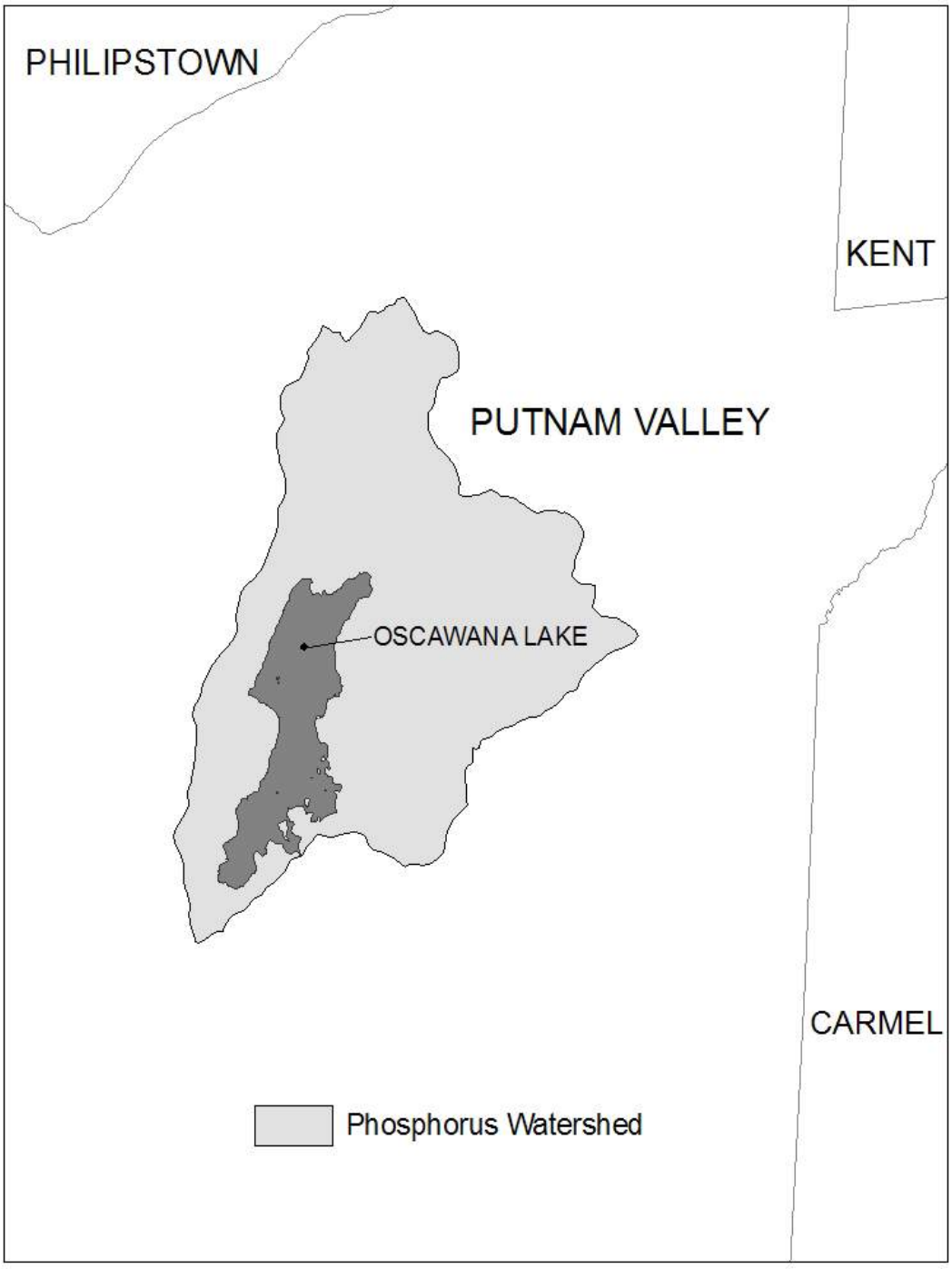
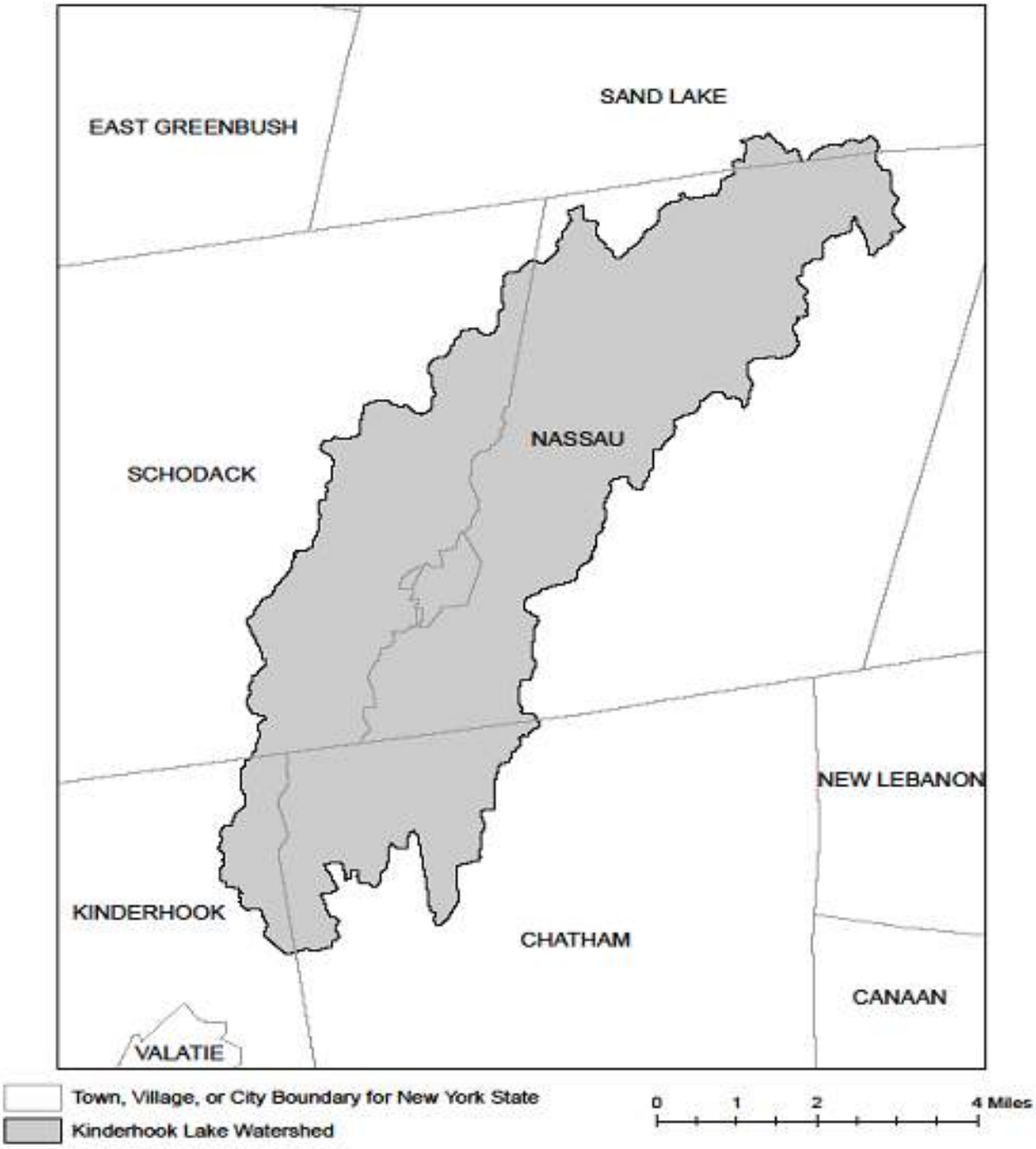


Figure 5 - Kinderhook Lake Watershed



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.

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.

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.

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.

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.

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 G

(USDA Soils Information)

Custom Soil Resource Report
Soil Map (Wayne Ave - Soil Map)

Map Scale: 1:2,870 if printed on A portrait (8.5" x 11") sheet.

N

0 40 80 160 240 Meters

0 100 200 400 600 Feet

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: Rockland County, New York
Survey Area Data: Version 23, Aug 28, 2025

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

Date(s) aerial images were photographed: May 31, 2022—Oct 27, 2022

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

Map Unit Legend (Wayne Ave - Soil Map)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HoF	Holyoke-Rock outcrop complex, very steep	10.0	81.7%
RuB	Riverhead-Urban land complex, 0 to 8 percent slopes	1.1	8.8%
Us	Udorthents, smoothed	1.2	9.5%
Totals for Area of Interest		**12.2**	**100.0%**

Map Unit Descriptions (Wayne Ave - Soil Map)

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

Appendix H

(FEMA Map)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was New York State Plane East Zone (FIPS 3101). The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on the FIRMs was provided in digital format by NYSDEC. The information was derived from New York State Office of Cyber Security & Critical Infrastructure Coordination from 30-centimeter photography dated 2007.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to confirm to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Information eXchange** at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

CTP Cooperating Technical Partners

This digital FIRM was produced through a unique cooperative partnership between the New York State Department of Environmental Conservation (NYSDEC) and FEMA. As part of the effort, NYSDEC has joined in a Cooperative Technical Partnership agreement to produce and maintain FEMA's digital FIRM.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Limit of Moderate Wave Action
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 2°76'000mN — 1000-meter Universal Transverse Mercator grid values, zone 18N
- 600000 FT — 5000-foot grid values: New York State Plane coordinate system, East zone (FIPSZONE 3101), Transverse Mercator projection
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 3, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0132G

FIRM

FLOOD INSURANCE RATE MAP

for ROCKLAND COUNTY, NEW YORK
(ALL JURISDICTIONS)

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER
AIRMONT, VILLAGE OF	360140
HILLBURN, VILLAGE OF	360683
MONTEBELLO, VILLAGE OF	361617
RAMAPO, TOWN OF	365340
SUFFERN, VILLAGE OF	360694

PANEL 132 OF 207
MAP SUFFIX: G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36087C0132G

EFFECTIVE DATE
MARCH 3, 2014

Federal Emergency Management Agency

Appendix I

(National Wetland Inventory Map)

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wayn Ave

December 3, 2025

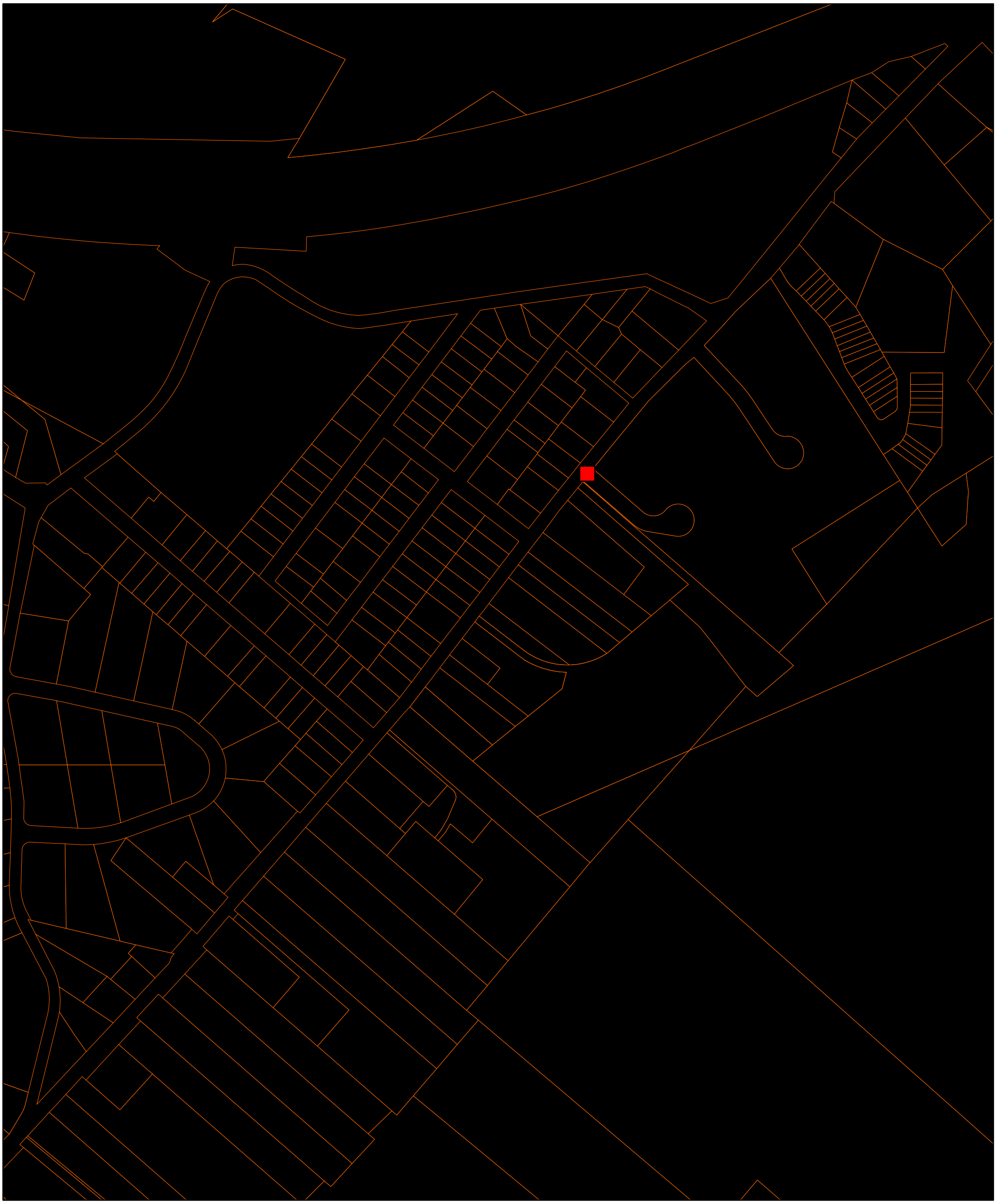
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Appendix J

(NYSDEC Environmental Resource Map)

'HFHPEHU



HYS HOUD:

Environmental Resource Mapper

Visible Layers [Legend]

Map Layers

- Unique Geological Features
- Waterbody Classifications for Rivers/Streams
- Waterbody Classifications for Lakes

Waterbody Inventory/Priority Waterbodies List

- Lakes and Reservoirs
- Estuaries
- Rivers and Streams
- Shorelines

Imperiled Mussels

- Mussel Screening Ponded Waters
- Mussel Screening Streams
- Significant Natural Communities
- Natural Communities Near This Location
- Rare Plants or Animals
- Ten Year Travel Time
- Special Groundwater Protection Areas
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Limit to Moderate Wave Action
- Limit to Moderate Wave Action
- Limit to Moderate Wave Action

Wetland Layers

- Previously Mapped Freshwater Wetlands
- Informational Freshwater Wetland Mapping

National Wetlands Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland

- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

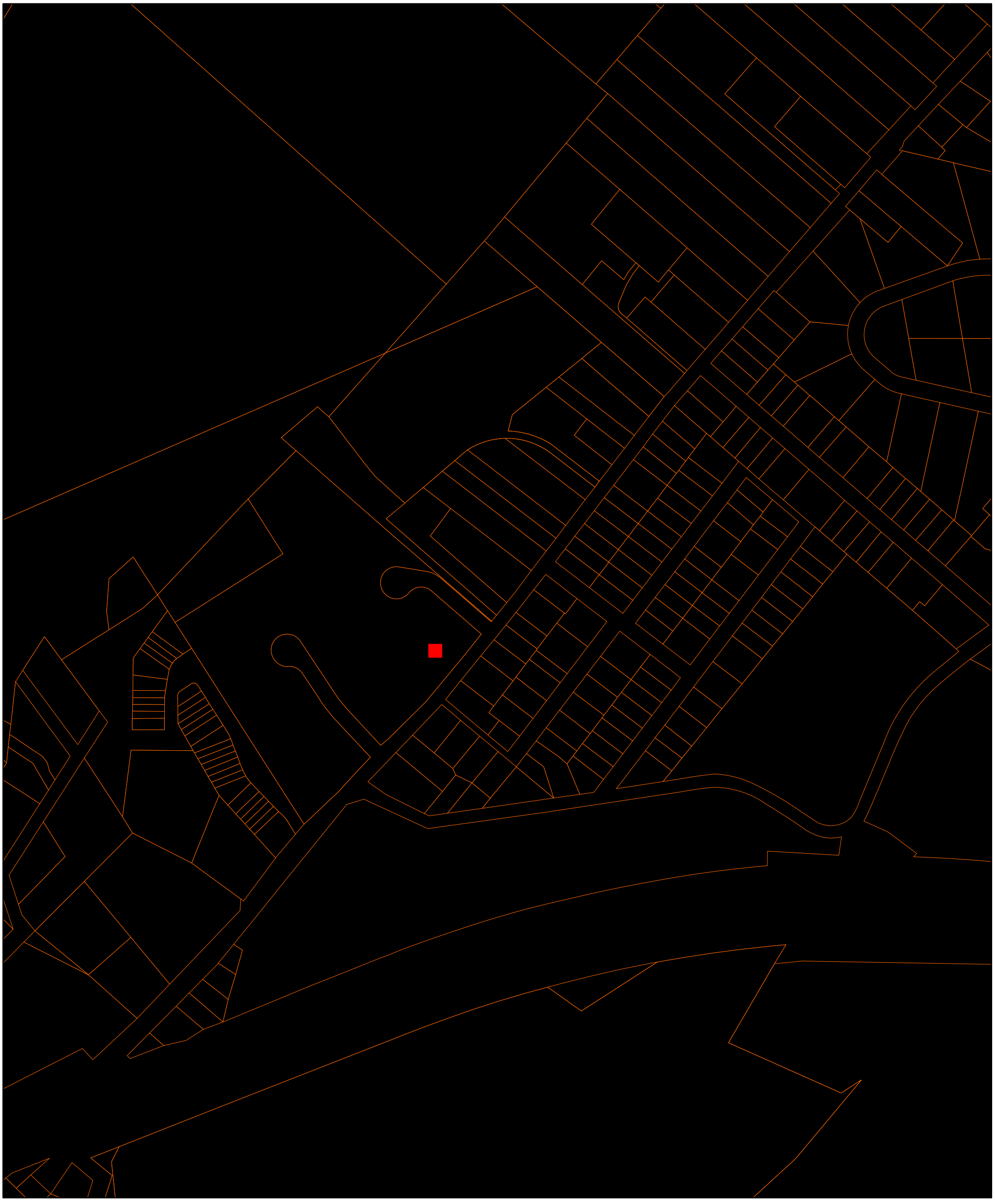
Reference Layers

- NYS Counties
- Cities
- Towns
- Villages
- USGS Quadrangle
- DEC Region
- DEC Lands
- Adirondack Park Boundary
- NYS Parks
- Tax Parcels

Appendix K

(NYSDEC Interactive Stormwater Map)

:D\QH $YH



'HFHPEHU

GP-0-20-001 Impaired Waters for the Construction GP
- Stream
- Estuary
- Lake

Enhanced Phosphorus Removal Watershed

Class AA AAS Watersheds

Multi-Sector General Permits (MSGP)

Impaired Waterbodies for MSGP
- Rivers and Streams
- Estuaries
- Lakes

Impaired Waterbodies for MS4 GP
- Rivers and Streams
- Estuaries
- Lakes

TMDL Watersheds for MS4 GP

Regulated MS4s
- Municipal Separate Storm Sewer System (MS4) Automatically Designated
- MS4 Additionally Designated Area (Criterion 3)

Classified Waters
- Rivers and Streams
- Lakes

Waterbody Inventory/Priority Waterbodies List
- Lakes and Reservoirs
- Estuaries
- Rivers and Streams
- Shorelines

NYS Counties

Cities

Towns

Villages

USGS Quadrangle

DEC Administrative Boundary

DEC Lands

Adirondack Park Boundary

NYS Parks

Tax Parcels

PL

NP

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1RW D OHJDO GRF

Appendix L

(Erosion Control Checklists)

APPENDIX E
EROSION AND SEDIMENT CONTROL
PLAN REVIEW CHECKLIST

Project Name _____ Site Location _____

Applicant's Name & Address _____
_____

General

A narrative statement shall be provided that describes the proposed project nature and purpose; the existing site conditions including topography, vegetation and drainage; adjacent and off-site areas affected by the project; description of the soils on the site and key properties; notations of critical areas such as steep slopes, channels or wetlands; the overall phasing, sequencing and stabilization plan; total disturbed area and, areas not to be disturbed, and soil restoration plan.

I. Construction Drawings

Are the following items shown on the construction drawings:	Yes	No
1. Vicinity Map with scale and north arrow	____	____
2. Legend, scales, N arrow on plan view	____	____
3. Existing and proposed topography shown with contours labeled with spots elevations in critical areas	____	____
4. Scope of the plan noted in the Title Block	____	____
5. Limits of clearing and grading shown , and methods of spoil disposal	____	____
6. Existing vegetation delineated	____	____
7. Soil boundaries shown on the existing and proposed plan views	____	____
8. Existing drainage patterns, 100 year floodplain and sub-areas shown, runoff outfall locations identified	____	____
9. Existing and proposed development facilities/ improvements shown	____	____
10. Location of Erosion and Sediment control practices as phased with construction, with dimensions and material specifications	____	____
11. Phasing plan with 5 acre threshold limits shown	____	____
12. Stockpile locations, staging areas, access points, and concrete trunk washout locations clearly defined	____	____
13. Street profiles, utility locations, property boundaries and, easement delineations shown	____	____
14. Soil Restoration Plan detailed on the site plan	____	____

II. Construction Notes & Details	Yes	No
1. Specific sequence of operation given for each phase	____	____
2. Inspection and maintenance schedule shown for the specific practices	____	____
3. Design details show all dimensions and installation details necessary for construction	____	____
4. Implementation schedule for E&S practices is provided with removal criteria stated	____	____
5. Site pollution and construction waste management plan incorporated in the notes	____	____
6. Site Inspections during construction are noted on the drawings and are in accordance with the General Permit for Stormwater Discharges from Construction Activities	____	____

III. Erosion & Sediment Control Practices

A. General	Yes	No
1. Practice meets purpose and design criteria	____	____
2. Standard details and construction notes are provided	____	____
3. Special timing of practice noted if applicable	____	____
4. Provisions for traffic crossings shown on the drawings where necessary	____	____

B. Practices Controlling Runoff	Yes	No
1. Positive drainage is maintained with contributing drainage area shown	____	____
2. Flow grades properly stabilized	____	____
3. Adequate outlet or discharge condition stabilized	____	____
4. Necessary dimensions, gradations, calculations, and materials shown	____	____

C. Practices Stabilizing Soil	Yes	No
1. Seeding rates and areas properly shown on the drawings	____	____
2. Mulch materials and rates specified on the drawings	____	____
3. Sequencing and timing provisions limit soil exposure to 7 to14 days as appropriate	____	____

C. Practices Stabilizing Soil (cont'd)	Yes	No
4. Rolled Erosion Control Products (RECP's) used are specified to location and appropriate weight/tie down	____	____
5. All soil seed bed preparation and amendments are specified on the drawings or in the specifications	____	____
6. The seeding dates are specified to cover the entire year for both temporary and permanent seedings	____	____
7. Maximum created slopes are no steeper than 2 foot horizontal to 1 foot vertical with Cut and Fill slopes shown	____	____

D. Practices Controlling Sediment	Yes	No
1. Sediment traps/basins are sized in accordance with criteria	____	____
2. The contributing drainage area is shown on the grading plan	____	____
3. All scaled dimensions and volumes are shown on the plan	____	____
4. Maintenance requirements and clean out elevations established for all sediment control practices (50% capacity)	____	____
5. All access points of the project are shown to be stabilized	____	____
6. Storm drain inlets adequately protected	____	____
7. Buffer filter strips are appropriately sited and installed	____	____
7. Silt fences are shown on the contour lines with no more than one quarter acre per 100 foot drainage to it	____	____
8. Temporary sediment traps are not being used at locations of future stormwater infiltration facilities	____	____
9. Dewatering devices for traps and basins are adequately designed with details shown on the plans	____	____
10. Geotextile filter bags are properly sited, sized, and have their maintenance requirements detailed on the drawings	____	____
11. Turbidity curtains are properly located with installation, anchoring, and maintenance details shown on the plans	____	____

Additional Comments and Notes

Plan Reviewed By: _____ Date: _____

Appendix M

(Water quality and Runoff reduction calculation spreadsheets)

NOI QUESTIONS

#	NOI Question	Reported Value		
		cf	af	
28	Total Water Quality Volume (WQv) Required	4412	0.101	
30	Total RRV Provided	4412	0.101	
31	Is RRv Provided ≥WQv Required?	Yes		
32	Minimum RRv	2526	0.058	
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes		
33a	Total WQv Treated	0	0.000	
34	Sum of Volume Reduced & Treated	4412	0.101	100.00%
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.	Yes	EXAMPLES - Approximately XX+/- Acres of land will remain undisturbed, in its natural state, which accounts for XX% of the total project parcel. **OR** The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Delineate and protect naturally vegetated buffers along perennial streams, rivers, shorelines, and wetlands.	Yes	EXAMPLES - There is a stream/river/shorline/wetland located on the project site. For the area adjacent to this water body, a XX-ft naturally vegetated buffer will be applied. No disturbance will occur within this buffer. **OR** The only disturbance that will occur within this buffer will include XX. This disturbance is necessary because XX. **OR** There are no water bodies located on or adjacent to the project site.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	Yes	EXAMPLES - Clearing and grading will be limited to the area of disturbance and will be minimized to the greatest extent practical. The limits of all proposed clearing will be demarcated in the field with orange construction fencing, prior to construction, to prevent unnecessary removal of trees.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Yes	EXAMPLES - The site has been designed to avoid sensitive resource areas to the greatest extent practical. Include project specific information for the various sensitive resources. **OR** There are no floodplains, steep slopes, erodible soils, wetlands, mature forests or critical habitats located on the project site.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	Yes	EXAMPLES - The site layout has been designed to maximize open space. Impervious surfaces have been minimized to the greatest extent practical and approximately XX+/- Acres will be maintained as vegetated open space.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Yes	EXAMPLES - All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual. **OR** Compacted areas were considered as impervious cover when calculating the WQv Required and the compacted areas were assigned a post-construction HSG designation that is one level less permeable than existing conditions for the hydrology analysis.

Step 1 - Site Planning

Reduction of Impervious Cover	**Roadway Reduction**	Minimize roadway widths and lengths, below local requirements, to reduce site impervious area	No	EXAMPLES - Proposed roadways will be constructed with a porous XX surface, in order to minimize the overall impervious surface. **OR** The project proposes to reduce the roadway width to XX-ft, from the required XX-ft. **OR** Reducing the roadway width is not feasible for the project's intended use. **OR** No new roadways are proposed as part of this project.
	Sidewalk Reduction	Minimize sidewalk lengths and widths, below local requirements, to reduce site impervious area	No	EXAMPLES - All pedestrian walkways will be constructed with a porous XX surface. **OR** Sidewalk widths have been minimized to X-ft and quantity of sidewalk has been reduced to that required to ensure safe pedestrian access throughout the site. **OR** Reducing the sidewalk width/length is not feasible for the project's intended use. **OR** No new sidewalks are proposed as part of this project.
	Driveway Reduction	Minimize driveway lengths and widths, below local requirements, to reduce site impervious area	No	EXAMPLES - All driveways on-site will be constructed with a permeable XX surface, where feasible, in order to minimize the overall impervious surface. **OR** The project proposes to reduce the driveway width to XX-ft, instead of the required XX-ft. **OR** Reducing the driveway width is not feasible for the intended use. **OR** No new driveways are proposed as part of this project.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	No	EXAMPLES - Proposed cul-de-sacs will utilize a landscaped island to reduce impervious cover. **OR** No cul-de-sacs are proposed as part of this project.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	No	EXAMPLES - All new building area has been allocated to efficiently implement the intended use. **OR** No new buildings are proposed as part of this project. **OR** The current proposal involves the renovation and reuse of XX existing buildings on-site.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, reducing stall dimensions below local requirements, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	No	EXAMPLES - All parking lots will be constructed of a porous XX surface, to reduce overall impervious surfaces. **OR** The project proposes to reduce the parking stall dimensions to X-ft wide by XX-ft long, instead of the required XX-ft by XX-ft stall. **OR** The project proposes to reduce the number of parking stalls proposed to XX, instead of the required XX, resulting in an approximate XX% reduction in impervious. **OR** Reducing the parking stall dimensions or number of stalls is not feasible for the intended use. **OR** No new parking stalls are proposed as part of this project.

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:	2		
P=	1.40	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	0.86	0.55	64	0.63	2,734	Underground Infiltration System
2	0.43	0.34	80	0.77	1,678	Underground Infiltration System
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	1.29	0.89	69	0.67	**4412**	**Required WQv**	**0.10**	**af**

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	1.29	0.89	4,412	0
	Infiltration Bioretention	F-4	0.00	0.00	0	0
	Filtration Bioretention	F-5	0.00	0.00	0	0
	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	→	1.29	0.89	4,412	0
	Totals by Standard SMP	→	0.00	0.00		0
	Totals by Alternative SMP	→	0.00	0.00		0
	Totals (RR Techniques + all SMPs)	→	1.29	0.89	4,412	0

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.	Yes	EXAMPLES - The project site does not contain any significant natural resources. **OR** As a Redevelopment Project, the proposed site layout has been designed to limit land disturbance to the greatest extent practical. **OR** Approximately XX+/- Acres will be placed into permanent conservation, which accounts for XX% of the total property. **OR** The project does not propose permanent conservation of these areas at this time.
	Sheet Flow to Riparian Buffer/Filter Strip (RR-2)	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	No	EXAMPLES - The project site does not contain any riparian buffers. **OR** Sheet flow to riparian buffers or grass filter strips is not proposed at this time. The project proposes treatment by RR techniques, Standard SMPs with RRv capacity, or Standard SMPs without RRv capacity. **OR** The project proposes sheet flow to riparian buffers to reduce runoff from XX. Calculations have been provided in the SWPPP. **OR** The project proposes sheet flow to grass filter strips to reduce runoff from XX. Calculations have been provided in the SWPPP.
	Tree Planting/Tree Pit/Tree Trench (RR-3)	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.	No	EXAMPLES - The project proposes the preservation of existing mature trees, as well as the planting of numerous trees throughout the site, in order to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. **OR** The project proposes new tree plantings/tree pits/tree trenches, adjacent to impervious surfaces, Calculations have been provided in the SWPPP. **OR** Tree plantings/tree pits/tree trenches are proposed on site. However, credit for these trees will not be taken toward area reduction/volume reduction in the RRv calculations.
	Disconnection of Rooftop Runoff (RR-4)	Direct runoff from rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	No	EXAMPLES - The building roof(s) will be directed to downspouts with splash blocks and discharge over a grassed filter. Calculations have been provided in the SWPPP. **OR** The building roof(s) will be directed to downspouts with splash blocks and vegetated areas, which will promote sheet flow and filtering. However, credit for rooftop disconnect will not be taken toward an impervious area reduction in the RRv calculations. **OR** Due to the size/use/layout of the proposed building(s), rooftop disconnect is not proposed at this time.

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

RR Techniques	**Vegetated Swale (RR-5)**	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	No	EXAMPLES - Due to flat topography/steep topography/etc., vegetated swales are not feasible for use on the project site. **OR** Vegetated swale(s) will be used to treat XX. Calculations have been provided in the SWPPP.
	Rain Garden (RR-6)	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	No	EXAMPLES - Due to the size of contributing area/tributary driveway/tributary roadway, a bioretention facility will be implemented instead of rain gardens. **OR** Due to XXX,rain gardens are not feasible for use on the project site. **OR** Rain gardens will be used to treat roof runoff at the source for the building(s). Calculations have been provided in the SWPPP.
	Stormwater Planter (RR-7)	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	No	EXAMPLES - Due to XXX, a bioretention facility will be implemented instead of stormwater planter(s). **OR** Due to XXX,stormwater planters are not feasible for use on the project site. **OR** Stormwater planters will be used to treat roof runoff at the source for the building(s). Calculations have been provided in the SWPPP.
	Rainwater Harvesting System (RR-8)	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	No	EXAMPLES - Rainwater harvesting is not proposed on-site due to XXX. **OR** A below-grade cistern will be implemented for reuse as XXX. The system has been sized to provide adequate storage capacity for the entire WQv & RRv calculated for the tributary area. Calculations have been provided in the SWPPP. An above-grade rain barrel/cistern will be implemented for reuse as XXX. The system has been sized to provide adequate storage capacity for the entire WQv & RRv calculated for the tributary area. Calculations have been provided in the SWPPP.
	Porous Pavement (RR-9)	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	No	EXAMPLES - Due to XXX, porous pavement is not feasible for use on the project site. **OR** Porous asphalt will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP. **OR** Porous concrete will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP. **OR** Porous pavers will be used, in place of XX, for the proposed XX. Calculations have been provided in the SWPPP.

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	EXAMPLES - Due to XX, a green roof is not feasible for use on the project site. **OR** An extensive/intensive green roof is proposed on-site. Calculations have been provided in the SWPPP.
	Stream Daylighting (RR-11)	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	No	EXAMPLES - No stream daylighting opportunities are present on the site. **OR** Although stream daylighting opportunities are present, due to XX, stream daylighting is not proposed on this site. **OR** The project proposes stream daylighting for an XX-ft length of stream.
Standard SMPs with RRv Capacity	**Infiltration Trench (I-1)**	An infiltration practice that stores the water quality volume in the void spaces of a gravel trench before it is infiltrated into the ground.	No	EXAMPLES - Due to XX, infiltration trenches are not feasible for use on the project site. **OR** Infiltration trench(es) are proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Infiltration Basin (I-2)	An infiltration practice that stores the water quality volume in a shallow depression, before it is infiltrated it into the ground.	No	EXAMPLES - Due to XX, infiltration basins are not feasible for use on the project site. **OR** An infiltration basin(s) is proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Dry Well (I-3)	An infiltration practice similar in design to the infiltration trench, and best suited for treatment of rooftop runoff.	No	EXAMPLES - Due to XX, dry wells are not feasible for use on the project site. **OR** Dry well(s) are proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Underground Infiltration System (I-4)	An infiltration practice below grade that stores the water quality volume in pre-manufactured pipes, vaults or other modular structures, before it is infiltrated into the ground.	Yes	EXAMPLES - Due to XX, underground infiltration systems are not feasible for use on the project site. **OR** An underground infiltration system(s) is proposed on-site to treat XX. Calculations have been provided in the SWPPP.
	Infiltration Bioretention (F-4)	A shallow depression that treats stormwater as it flows through a soil matrix, before it is infiltrated into the ground.	No	EXAMPLES - Due to XXX, a filtration bioretention will be implemented, instead of an infiltration bioretention. **OR** Due to XXX, bioretention is not feasible for use on the project site. **OR** Infiltration bioretention will be used to treat XX. Calculations have been provided in the SWPPP.
	Filtration Bioretention (F-5)	A shallow depression that treats stormwater as it flows through a soil matrix and is returned to the storm drain system.	No	EXAMPLES - Due to XXX, an infiltration bioretention will be implemented, instead of a filtration bioretention. **OR** Due to XXX, bioretention is not feasible for use on the project site. **OR** Filtration bioretention will be used to treat XX. Calculations have been provided in the SWPPP.

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

	Bioslope (F-6)	Permeable engineered soil media that is installed along embankments or other slopes, designed to capture and treat stormwater runoff from adjacent paved areas.	No	EXAMPLES - Due to XXX, bioslopes are not feasible for use on the project site. **OR** Bioslope(s) will be used to treat XX. Calculations have been provided in the SWPPP.
	Dry Swale (O-1)	An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.	No	EXAMPLES - Due to XXX, dry swales are not feasible for use on the project site. **OR** A dry swale(s) will be used to treat XX. Calculations have been provided in the SWPPP.

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A	0.75	55%
B		40%
C		30%
D	0.54	20%
Total Area	1.29	

Calculate the Minimum RRv		
S =	**0.40**	
Impervious =	1.29	*acres*
Precipitation	1.40	*inches*
Rv	0.95	
Minimum RRv	**0.058**	***af***
	2526	cf

Underground Infiltration (I-4)

Design Point:	2

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	0.86	0.55	64	0.63	2,734	1.40	Underground Infiltration System

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	1.5	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Is the contributing area greater than 10 acres?	No	
Enter depth to seasonal high water table (ft)	11	
Enter depth to bedrock (ft)	11	
Enter pretreatment volume provided (cf)	683.5	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	2734	cf	
Depth of Bottom Stone	db	7.8	ft	
Required Surface Area	Ab	353	sf	
Enter Surface Area Provided	Ab	1729	sf	
Enter Volume of Stone	Vs	3506	cf	Volume of stone shall account for 40%
Enter Volume of System	Vsys	4630	cf	Volume of system shall exclude stone
Water Quality Volume Provided	WQv	8136	cf	

Determine Runoff Reduction		
RRv Provided	**2,734**	***cf***

Underground Infiltration (I-4)

Design Point:	2

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	0.43	0.34	80		1,678	0.00	Underground Infiltration System

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	1.5	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Is the contributing area greater than 10 acres?	No	
Enter depth to seasonal high water table (ft)	11	
Enter depth to bedrock (ft)	11	
Enter pretreatment volume provided (cf)	419.5	

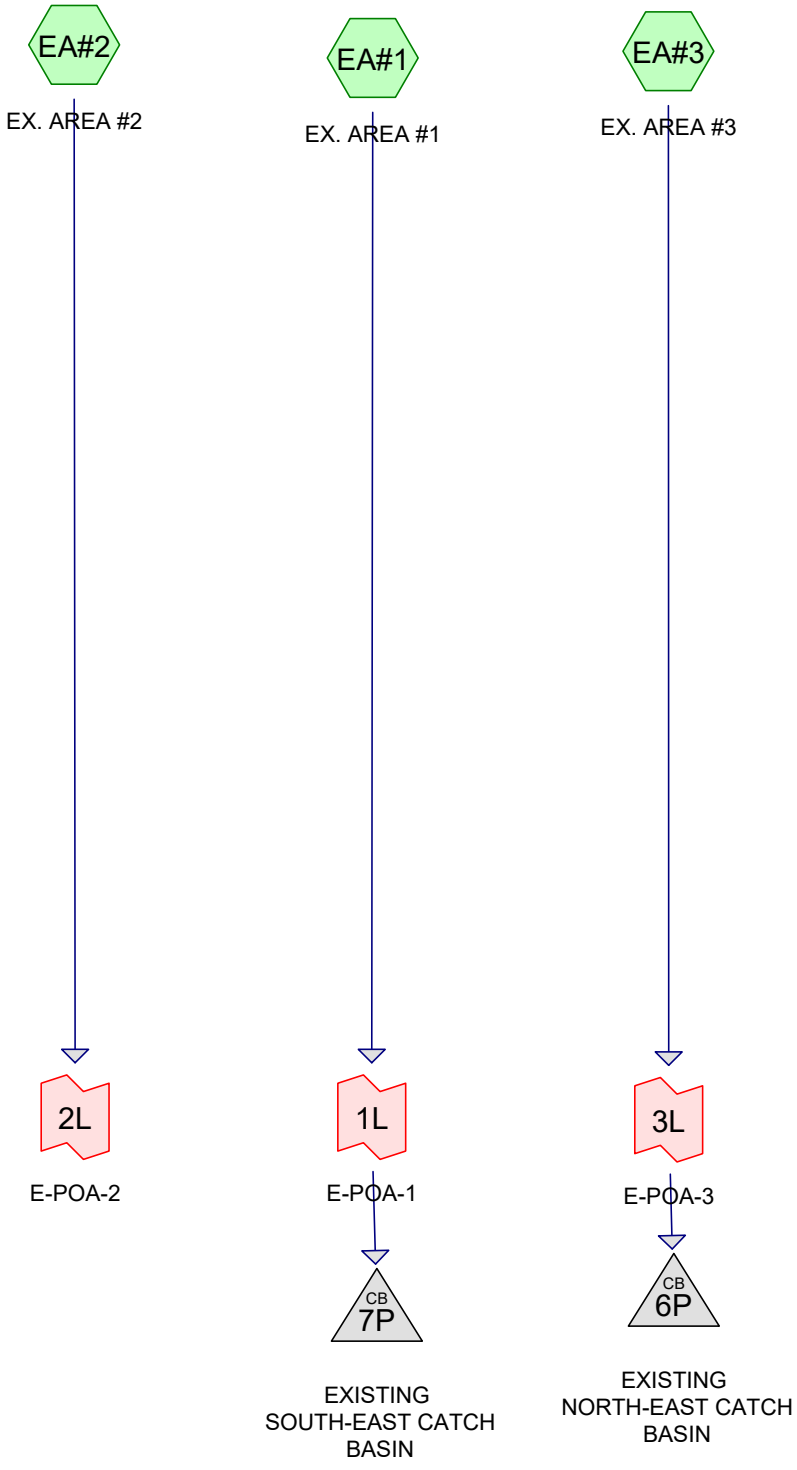
Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	1678	cf	
Depth of Bottom Stone	db	6.8	ft	
Required Surface Area	Ab	249	sf	
Enter Surface Area Provided	Ab	1349	sf	
Enter Volume of Stone	Vs	2341	cf	Volume of stone shall account for 40%
Enter Volume of System	Vsys	3567	cf	Volume of system shall exclude stone
Water Quality Volume Provided	WQv	5908	cf	

Determine Runoff Reduction		
RRv Provided	**1,678**	***cf***

Appendix N

(HydroCAD Model)

Existing Conditions



Subcat Reach Pond Link

Routing Diagram for Pre Conditions
Prepared by YMY, Printed 4/1/2026

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA10 24-hr	D	Default	24.00	1	2.96	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	5.76	2
3	100-Year	NOAA10 24-hr	D	Default	24.00	1	9.10	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.257	49	50-75% Grass cover, Fair, HSG A (EA#1, EA#3)
0.364	84	50-75% Grass cover, Fair, HSG D (EA#1, EA#3)
0.025	98	Paved parking, HSG A (EA#1)
0.938	36	Woods, Fair, HSG A (EA#1, EA#3)
6.656	79	Woods, Fair, HSG D (EA#1, EA#2, EA#3)
8.240	**73**	**TOTAL AREA**

Summary for Subcatchment EA#1: EX. AREA #1

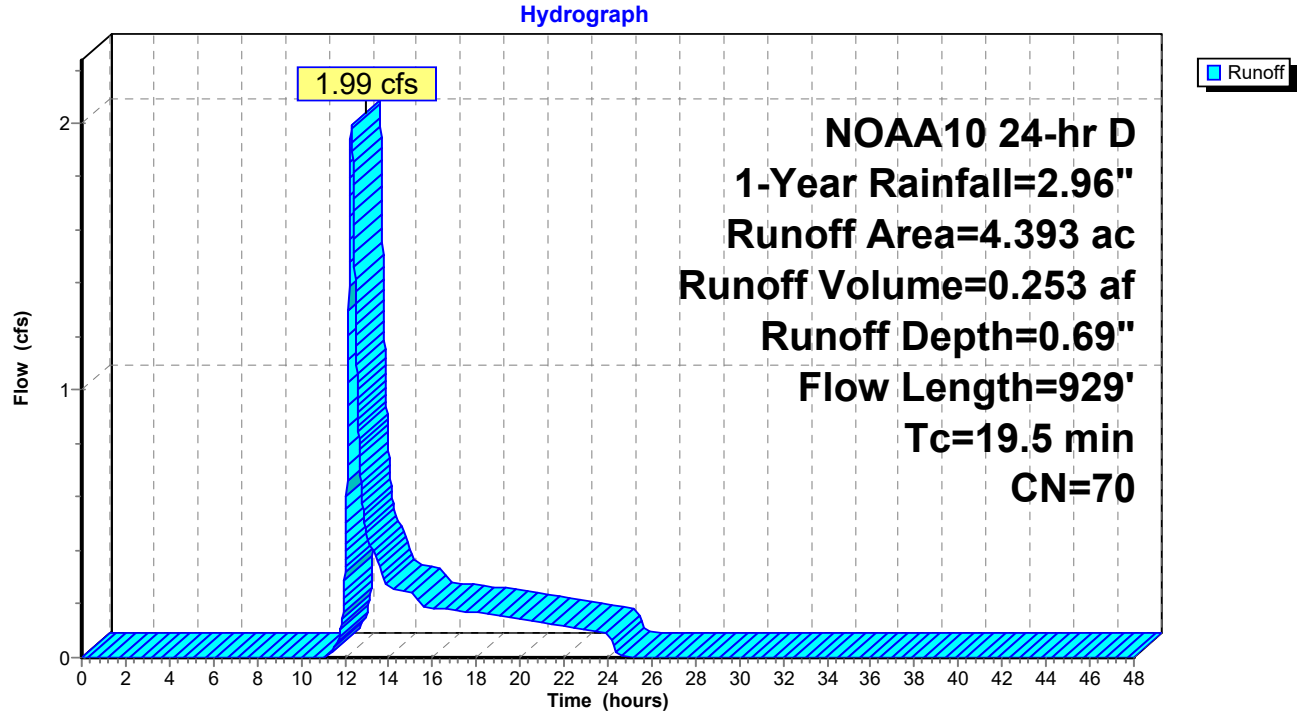
Runoff = 1.99 cfs @ 12.31 hrs, Volume= 0.253 af, Depth= 0.69"
Routed to Link 1L : E-POA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.823	36	Woods, Fair, HSG A
3.157	79	Woods, Fair, HSG D
0.198	84	50-75% Grass cover, Fair, HSG D
0.190	49	50-75% Grass cover, Fair, HSG A
0.025	98	Paved parking, HSG A
4.393	70	Weighted Average
4.368		99.43% Pervious Area
0.025		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.8	829	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.5	929	Total			

Subcatchment EA#1: EX. AREA #1



Summary for Subcatchment EA#2: EX. AREA #2

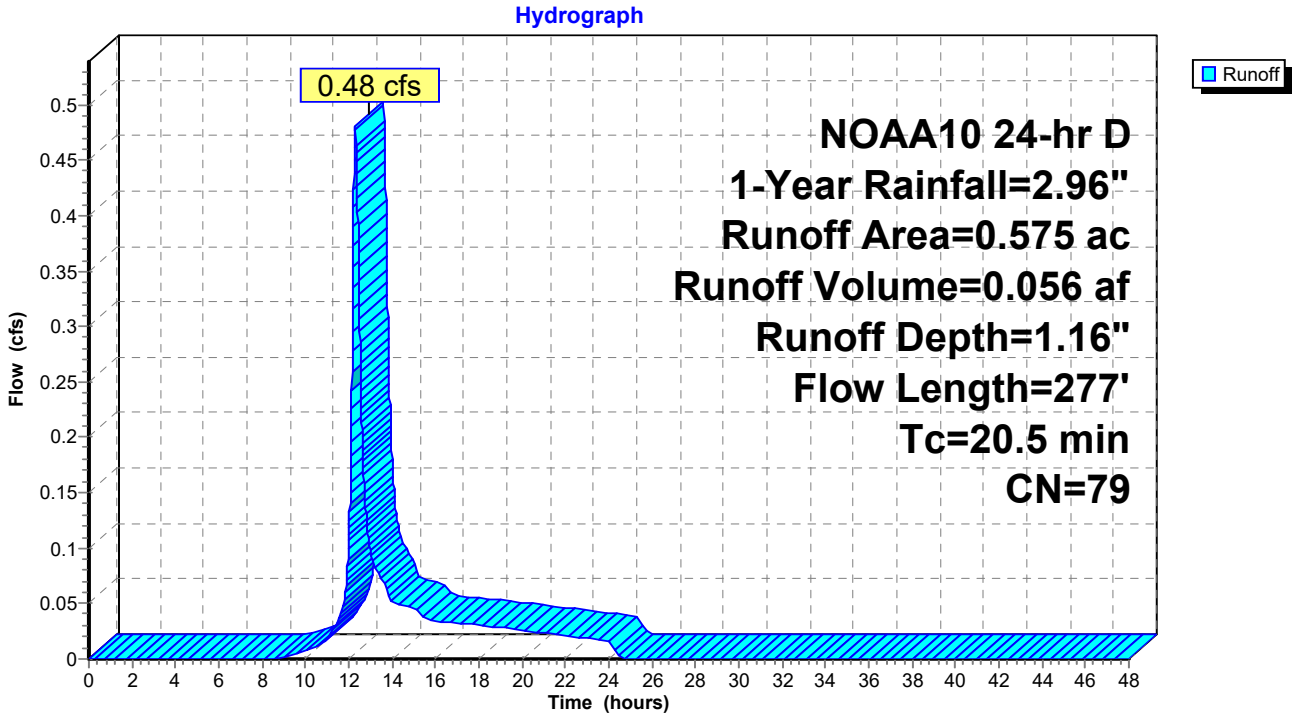
Runoff = 0.48 cfs @ 12.30 hrs, Volume= 0.056 af, Depth= 1.16"
Routed to Link 2L : E-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2: EX. AREA #2



Summary for Subcatchment EA#3: EX. AREA #3

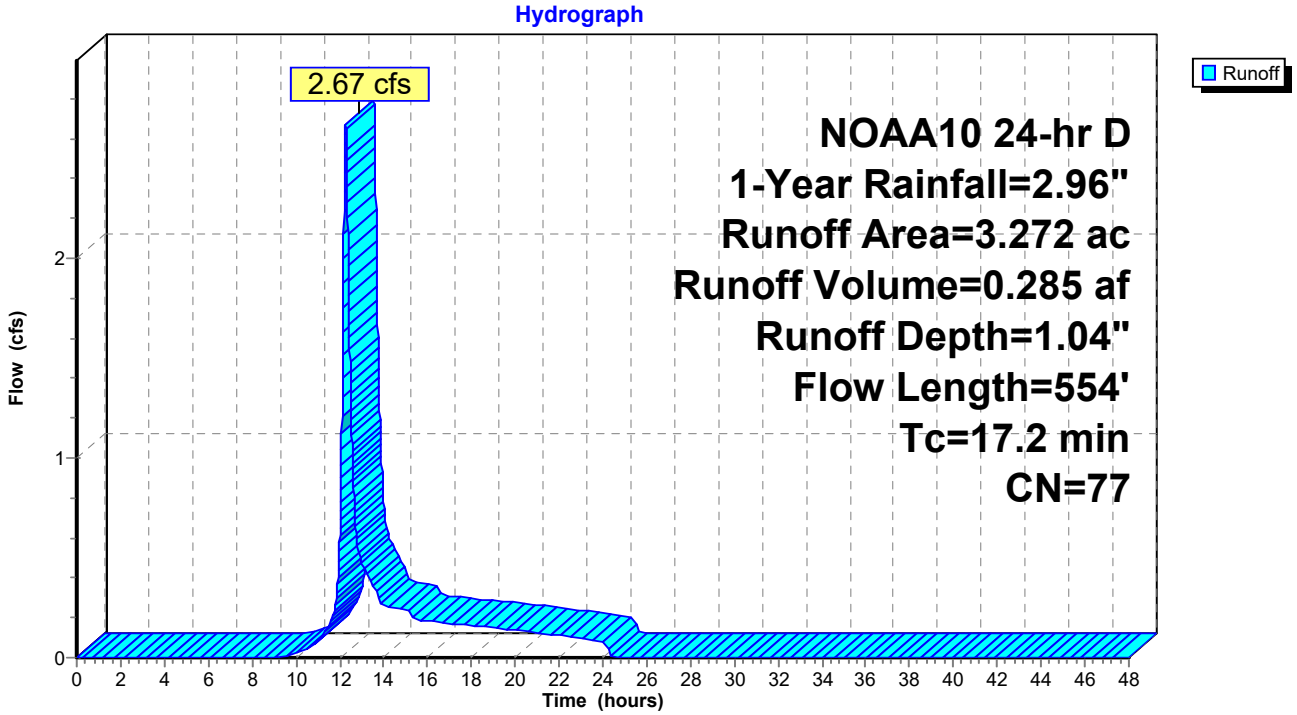
Runoff = 2.67 cfs @ 12.27 hrs, Volume= 0.285 af, Depth= 1.04"
Routed to Link 3L : E-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.115	36	Woods, Fair, HSG A
2.924	79	Woods, Fair, HSG D
0.166	84	50-75% Grass cover, Fair, HSG D
0.067	49	50-75% Grass cover, Fair, HSG A
3.272	77	Weighted Average
3.272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.3600	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
4.8	454	0.1000	1.58		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.2	554	Total			

Subcatchment EA#3: EX. AREA #3



Summary for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

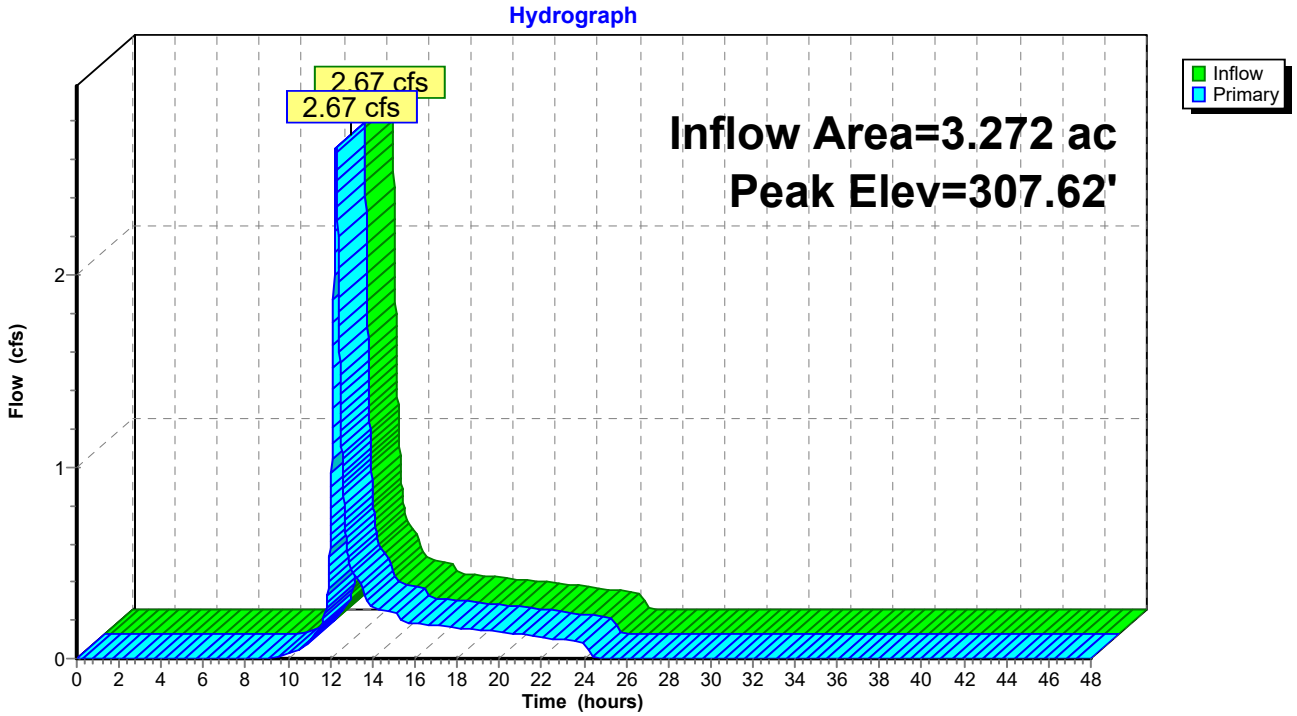
Inflow Area = 3.272 ac, 0.00% Impervious, Inflow Depth = 1.04" for 1-Year event
Inflow = 2.67 cfs @ 12.27 hrs, Volume= 0.285 af
Outflow = 2.67 cfs @ 12.27 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min
Primary = 2.67 cfs @ 12.27 hrs, Volume= 0.285 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 307.62' @ 12.27 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.67 cfs @ 12.27 hrs HW=307.62' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 2.67 cfs @ 3.40 fps)

Pond 6P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	307.66	2.78	308.70	4.75	309.74	6.12
306.64	0.00	307.68	2.83	308.72	4.78	309.76	6.14
306.66	0.01	307.70	2.88	308.74	4.81	309.78	6.17
306.68	0.02	307.72	2.93	308.76	4.84	309.80	6.19
306.70	0.03	307.74	2.98	308.78	4.87	309.82	**6.21**
306.72	0.04	307.76	3.03	308.80	4.90		
306.74	0.06	307.78	3.07	308.82	4.93		
306.76	0.09	307.80	3.12	308.84	4.96		
306.78	0.11	307.82	3.16	308.86	4.99		
306.80	0.14	307.84	3.21	308.88	5.02		
306.82	0.17	307.86	3.25	308.90	5.05		
306.84	0.20	307.88	3.30	308.92	5.07		
306.86	0.24	307.90	3.34	308.94	5.10		
306.88	0.28	307.92	3.38	308.96	5.13		
306.90	0.32	307.94	3.42	308.98	5.16		
306.92	0.37	307.96	3.47	309.00	5.19		
306.94	0.42	307.98	3.51	309.02	5.21		
306.96	0.47	308.00	3.55	309.04	5.24		
306.98	0.52	308.02	3.59	309.06	5.27		
307.00	0.57	308.04	3.63	309.08	5.29		
307.02	0.63	308.06	3.67	309.10	5.32		
307.04	0.69	308.08	3.71	309.12	5.35		
307.06	0.75	308.10	3.74	309.14	5.37		
307.08	0.81	308.12	3.78	309.16	5.40		
307.10	0.88	308.14	3.82	309.18	5.43		
307.12	0.95	308.16	3.86	309.20	5.45		
307.14	1.01	308.18	3.89	309.22	5.48		
307.16	1.08	308.20	3.93	309.24	5.51		
307.18	1.15	308.22	3.97	309.26	5.53		
307.20	1.22	308.24	4.00	309.28	5.56		
307.22	1.30	308.26	4.04	309.30	5.58		
307.24	1.37	308.28	4.07	309.32	5.61		
307.26	1.45	308.30	4.11	309.34	5.63		
307.28	1.52	308.32	4.14	309.36	5.66		
307.30	1.60	308.34	4.18	309.38	5.69		
307.32	1.67	308.36	4.21	309.40	5.71		
307.34	1.75	308.38	4.24	309.42	5.74		
307.36	1.83	308.40	4.28	309.44	5.76		
307.38	1.90	308.42	4.31	309.46	5.78		
307.40	1.98	308.44	4.34	309.48	5.81		
307.42	2.05	308.46	4.38	309.50	5.83		
307.44	2.13	308.48	4.41	309.52	5.86		
307.46	2.20	308.50	4.44	309.54	5.88		
307.48	2.27	308.52	4.47	309.56	5.91		
307.50	2.34	308.54	4.51	309.58	5.93		
307.52	2.40	308.56	4.54	309.60	5.96		
307.54	2.47	308.58	4.57	309.62	5.98		
307.56	2.53	308.60	4.60	309.64	6.00		
307.58	2.58	308.62	4.63	309.66	6.03		
307.60	2.63	308.64	4.66	309.68	6.05		
307.62	2.67	308.66	4.69	309.70	6.07		
307.64	2.73	308.68	4.72	309.72	6.10		

Stage-Area-Storage for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)
306.62	**0.000**
306.67	0.000
306.72	0.000
306.77	0.000
306.82	0.000
306.87	0.000
306.92	0.000
306.97	0.000
307.02	0.000
307.07	0.000
307.12	0.000
307.17	0.000
307.22	0.000
307.27	0.000
307.32	0.000
307.37	0.000
307.42	0.000
307.47	0.000
307.52	0.000
307.57	0.000
307.62	0.000
307.67	0.000
307.72	0.000
307.77	0.000
307.82	0.000
307.87	0.000
307.92	0.000
307.97	0.000
308.02	0.000
308.07	0.000
308.12	0.000
308.17	0.000
308.22	0.000
308.27	0.000
308.32	0.000
308.37	0.000
308.42	0.000
308.47	0.000
308.52	0.000
308.57	0.000
308.62	0.000
308.67	0.000
308.72	0.000
308.77	0.000
308.82	0.000
308.87	0.000
308.92	0.000
308.97	0.000
309.02	0.000
309.07	0.000
309.12	0.000
309.17	0.000
309.22	0.000
309.27	0.000
309.32	0.000
309.37	0.000
309.42	0.000
309.47	0.000
309.52	0.000
309.57	0.000
309.62	0.000
309.67	0.000
309.72	0.000
309.77	0.000
309.82	0.000

Summary for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

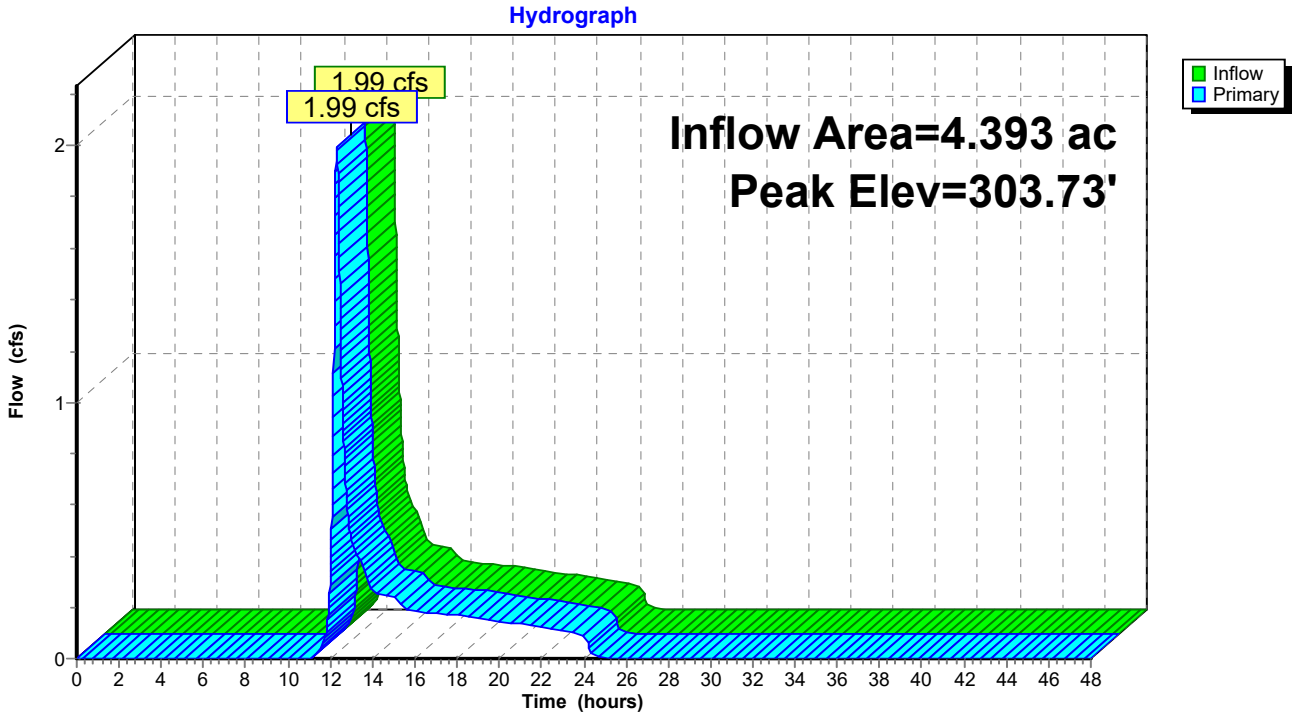
Inflow Area = 4.393 ac, 0.57% Impervious, Inflow Depth = 0.69" for 1-Year event
Inflow = 1.99 cfs @ 12.31 hrs, Volume= 0.253 af
Outflow = 1.99 cfs @ 12.31 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min
Primary = 1.99 cfs @ 12.31 hrs, Volume= 0.253 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 303.73' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.99 cfs @ 12.31 hrs HW=303.73' TW=302.77' (Fixed TW Elev= 302.77')
1=Orifice/Grate (Orifice Controls 1.99 cfs @ 2.84 fps)

Pond 7P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	303.55	1.19	304.07	3.79
303.04	0.00	303.56	1.23	304.08	3.84
303.05	0.00	303.57	1.27	304.09	3.89
303.06	0.00	303.58	1.31	304.10	3.94
303.07	0.01	303.59	1.36	304.11	3.99
303.08	0.01	303.60	1.40	304.12	4.04
303.09	0.02	303.61	1.45	304.13	4.08
303.10	0.02	303.62	1.49	304.14	4.13
303.11	0.03	303.63	1.54	304.15	4.18
303.12	0.04	303.64	1.58	304.16	4.22
303.13	0.05	303.65	1.63	304.17	4.27
303.14	0.06	303.66	1.68	304.18	4.31
303.15	0.07	303.67	1.72	304.19	4.36
303.16	0.08	303.68	1.77	304.20	4.40
303.17	0.10	303.69	1.82	304.21	4.44
303.18	0.11	303.70	1.87	304.22	4.48
303.19	0.12	303.71	1.92	304.23	4.52
303.20	0.14	303.72	1.96	304.24	4.55
303.21	0.16	303.73	2.01	304.25	4.59
303.22	0.17	303.74	2.06	304.26	4.62
303.23	0.19	303.75	2.11	304.27	4.65
303.24	0.21	303.76	2.16	304.28	**4.67**
303.25	0.23	303.77	2.22		
303.26	0.25	303.78	2.27		
303.27	0.27	303.79	2.32		
303.28	0.30	303.80	2.37		
303.29	0.32	303.81	2.42		
303.30	0.35	303.82	2.47		
303.31	0.37	303.83	2.53		
303.32	0.40	303.84	2.58		
303.33	0.42	303.85	2.63		
303.34	0.45	303.86	2.68		
303.35	0.48	303.87	2.74		
303.36	0.51	303.88	2.79		
303.37	0.54	303.89	2.84		
303.38	0.57	303.90	2.90		
303.39	0.60	303.91	2.95		
303.40	0.63	303.92	3.00		
303.41	0.66	303.93	3.06		
303.42	0.70	303.94	3.11		
303.43	0.73	303.95	3.16		
303.44	0.76	303.96	3.21		
303.45	0.80	303.97	3.27		
303.46	0.83	303.98	3.32		
303.47	0.87	303.99	3.37		
303.48	0.91	304.00	3.43		
303.49	0.95	304.01	3.48		
303.50	0.98	304.02	3.53		
303.51	1.02	304.03	3.58		
303.52	1.06	304.04	3.64		
303.53	1.10	304.05	3.69		
303.54	1.14	304.06	3.74		

Stage-Area-Storage for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

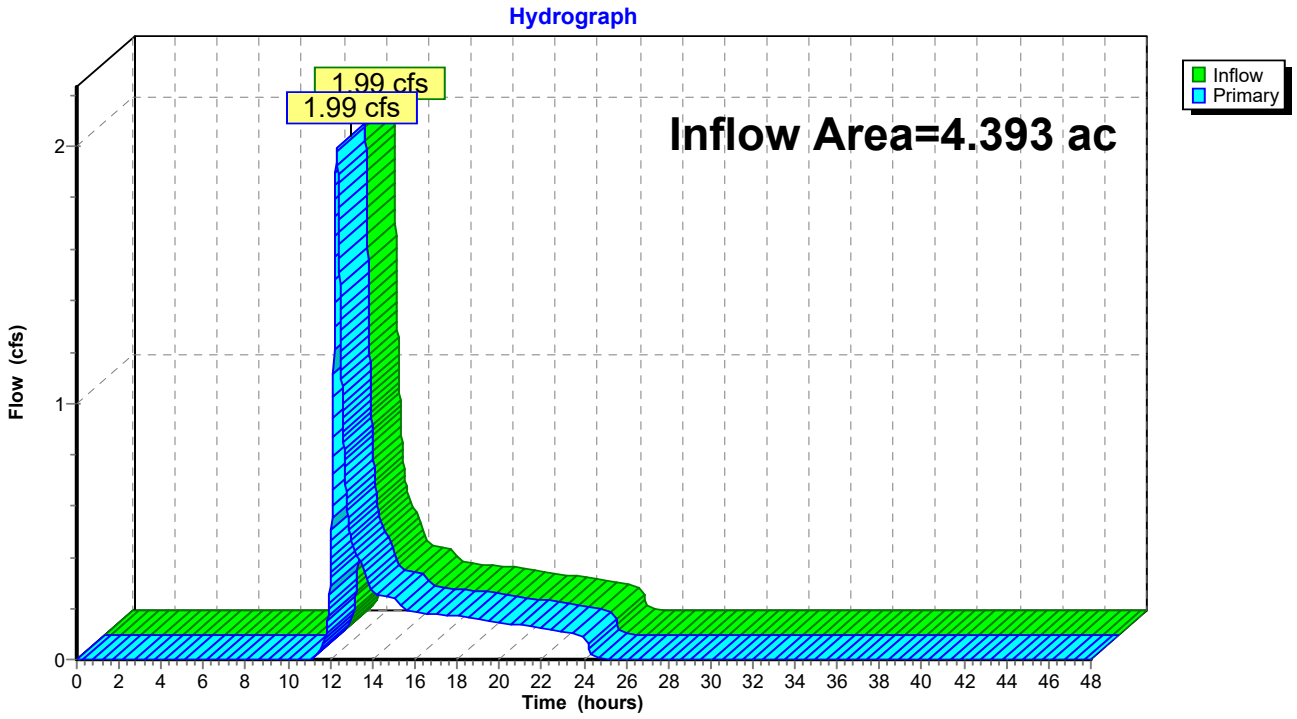
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	303.55	0.000	304.07	0.000
303.04	0.000	303.56	0.000	304.08	0.000
303.05	0.000	303.57	0.000	304.09	0.000
303.06	0.000	303.58	0.000	304.10	0.000
303.07	0.000	303.59	0.000	304.11	0.000
303.08	0.000	303.60	0.000	304.12	0.000
303.09	0.000	303.61	0.000	304.13	0.000
303.10	0.000	303.62	0.000	304.14	0.000
303.11	0.000	303.63	0.000	304.15	0.000
303.12	0.000	303.64	0.000	304.16	0.000
303.13	0.000	303.65	0.000	304.17	0.000
303.14	0.000	303.66	0.000	304.18	0.000
303.15	0.000	303.67	0.000	304.19	0.000
303.16	0.000	303.68	0.000	304.20	0.000
303.17	0.000	303.69	0.000	304.21	0.000
303.18	0.000	303.70	0.000	304.22	0.000
303.19	0.000	303.71	0.000	304.23	0.000
303.20	0.000	303.72	0.000	304.24	0.000
303.21	0.000	303.73	0.000	304.25	0.000
303.22	0.000	303.74	0.000	304.26	0.000
303.23	0.000	303.75	0.000	304.27	0.000
303.24	0.000	303.76	0.000	304.28	0.000
303.25	0.000	303.77	0.000		
303.26	0.000	303.78	0.000		
303.27	0.000	303.79	0.000		
303.28	0.000	303.80	0.000		
303.29	0.000	303.81	0.000		
303.30	0.000	303.82	0.000		
303.31	0.000	303.83	0.000		
303.32	0.000	303.84	0.000		
303.33	0.000	303.85	0.000		
303.34	0.000	303.86	0.000		
303.35	0.000	303.87	0.000		
303.36	0.000	303.88	0.000		
303.37	0.000	303.89	0.000		
303.38	0.000	303.90	0.000		
303.39	0.000	303.91	0.000		
303.40	0.000	303.92	0.000		
303.41	0.000	303.93	0.000		
303.42	0.000	303.94	0.000		
303.43	0.000	303.95	0.000		
303.44	0.000	303.96	0.000		
303.45	0.000	303.97	0.000		
303.46	0.000	303.98	0.000		
303.47	0.000	303.99	0.000		
303.48	0.000	304.00	0.000		
303.49	0.000	304.01	0.000		
303.50	0.000	304.02	0.000		
303.51	0.000	304.03	0.000		
303.52	0.000	304.04	0.000		
303.53	0.000	304.05	0.000		
303.54	0.000	304.06	0.000		

Summary for Link 1L: E-POA-1

Inflow Area = 4.393 ac, 0.57% Impervious, Inflow Depth = 0.69" for 1-Year event
Inflow = 1.99 cfs @ 12.31 hrs, Volume= 0.253 af
Primary = 1.99 cfs @ 12.31 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 7P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: E-POA-1

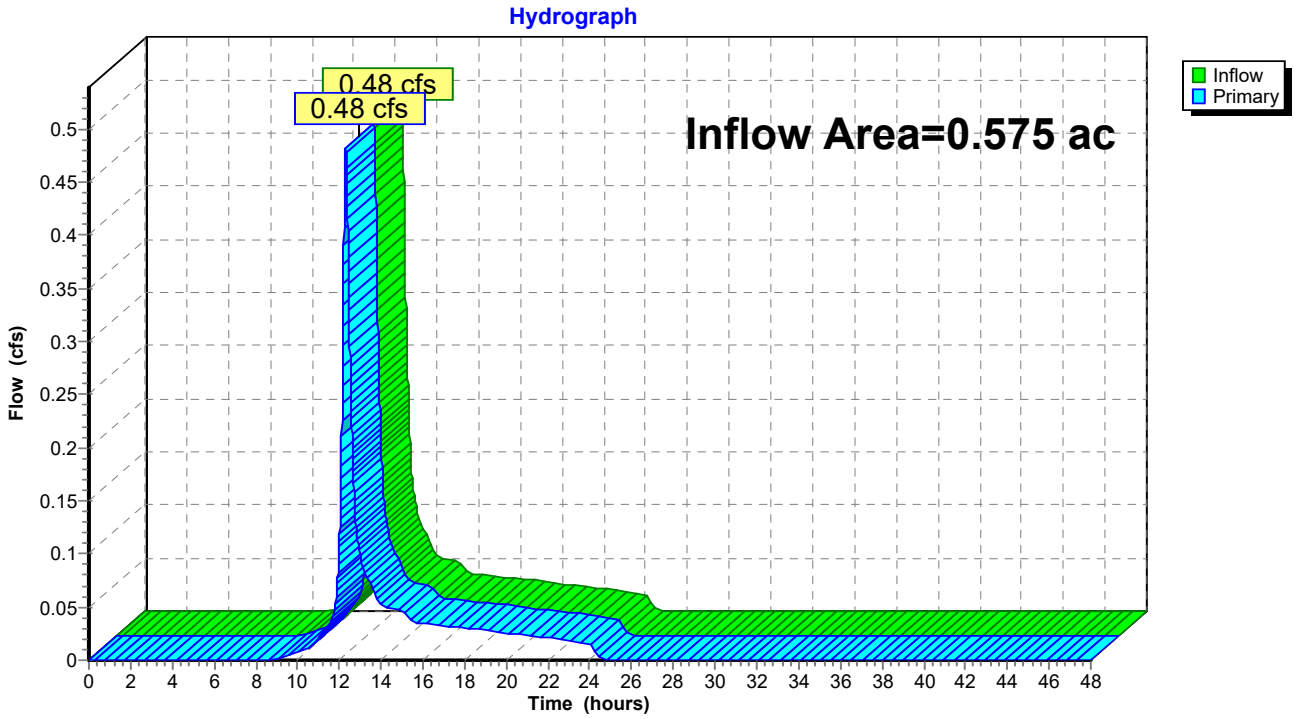


Summary for Link 2L: E-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 1.16" for 1-Year event
Inflow = 0.48 cfs @ 12.30 hrs, Volume= 0.056 af
Primary = 0.48 cfs @ 12.30 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2L: E-POA-2

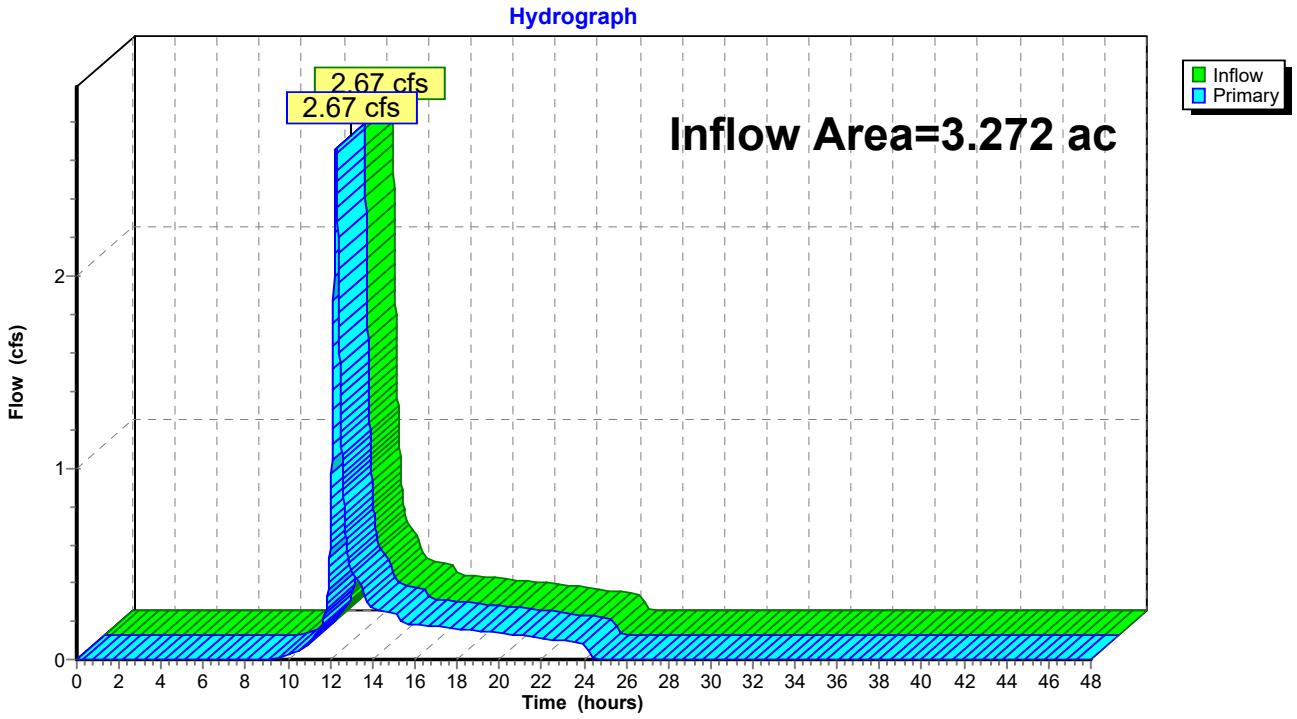


Summary for Link 3L: E-POA-3

Inflow Area = 3.272 ac, 0.00% Impervious, Inflow Depth = 1.04" for 1-Year event
Inflow = 2.67 cfs @ 12.27 hrs, Volume= 0.285 af
Primary = 2.67 cfs @ 12.27 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 6P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3L: E-POA-3



Summary for Subcatchment EA#1: EX. AREA #1

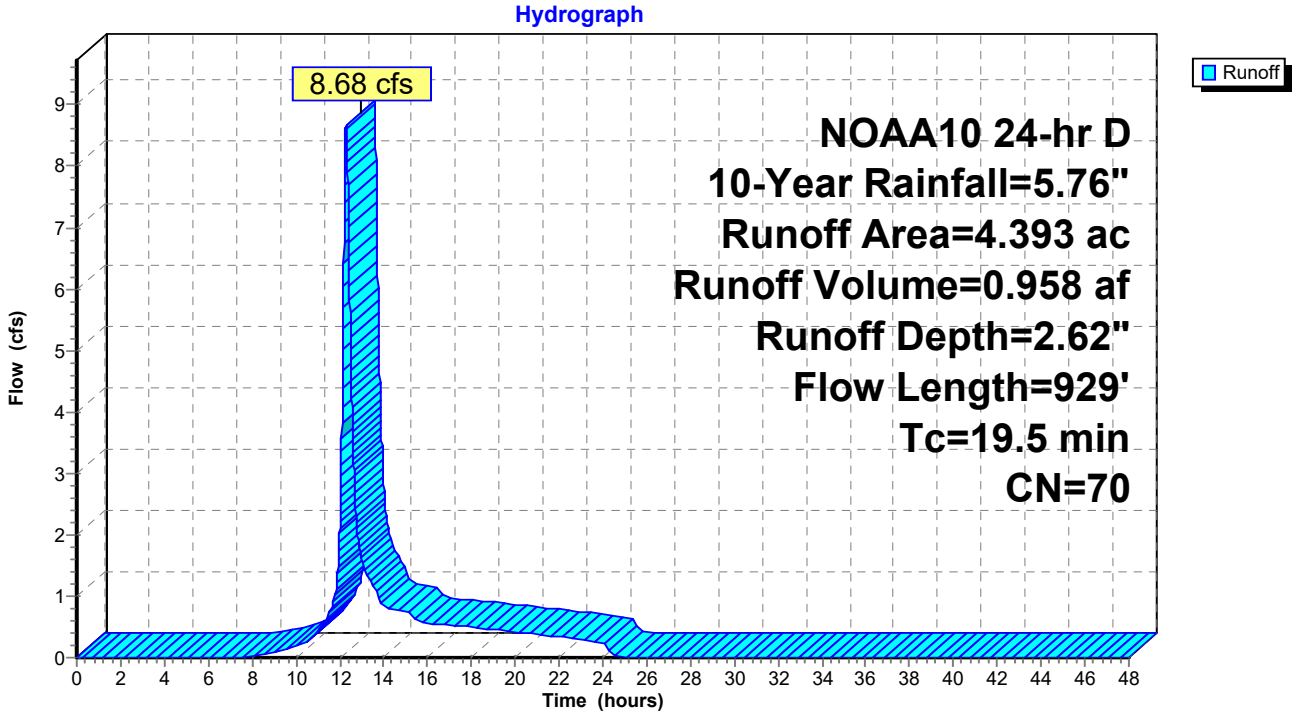
Runoff = 8.68 cfs @ 12.29 hrs, Volume= 0.958 af, Depth= 2.62"
Routed to Link 1L : E-POA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.823	36	Woods, Fair, HSG A
3.157	79	Woods, Fair, HSG D
0.198	84	50-75% Grass cover, Fair, HSG D
0.190	49	50-75% Grass cover, Fair, HSG A
0.025	98	Paved parking, HSG A
4.393	70	Weighted Average
4.368		99.43% Pervious Area
0.025		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.8	829	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.5	929	Total			

Subcatchment EA#1: EX. AREA #1



Summary for Subcatchment EA#2: EX. AREA #2

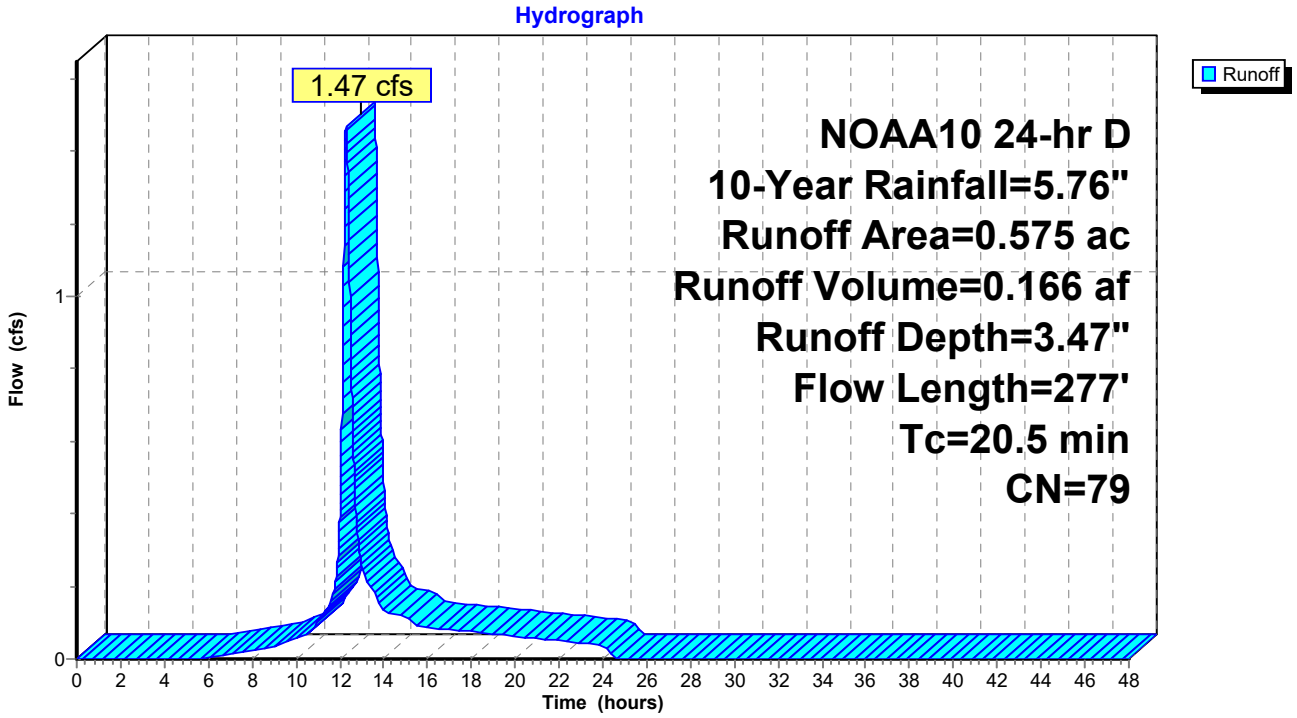
Runoff = 1.47 cfs @ 12.30 hrs, Volume= 0.166 af, Depth= 3.47"
Routed to Link 2L : E-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2: EX. AREA #2



Summary for Subcatchment EA#3: EX. AREA #3

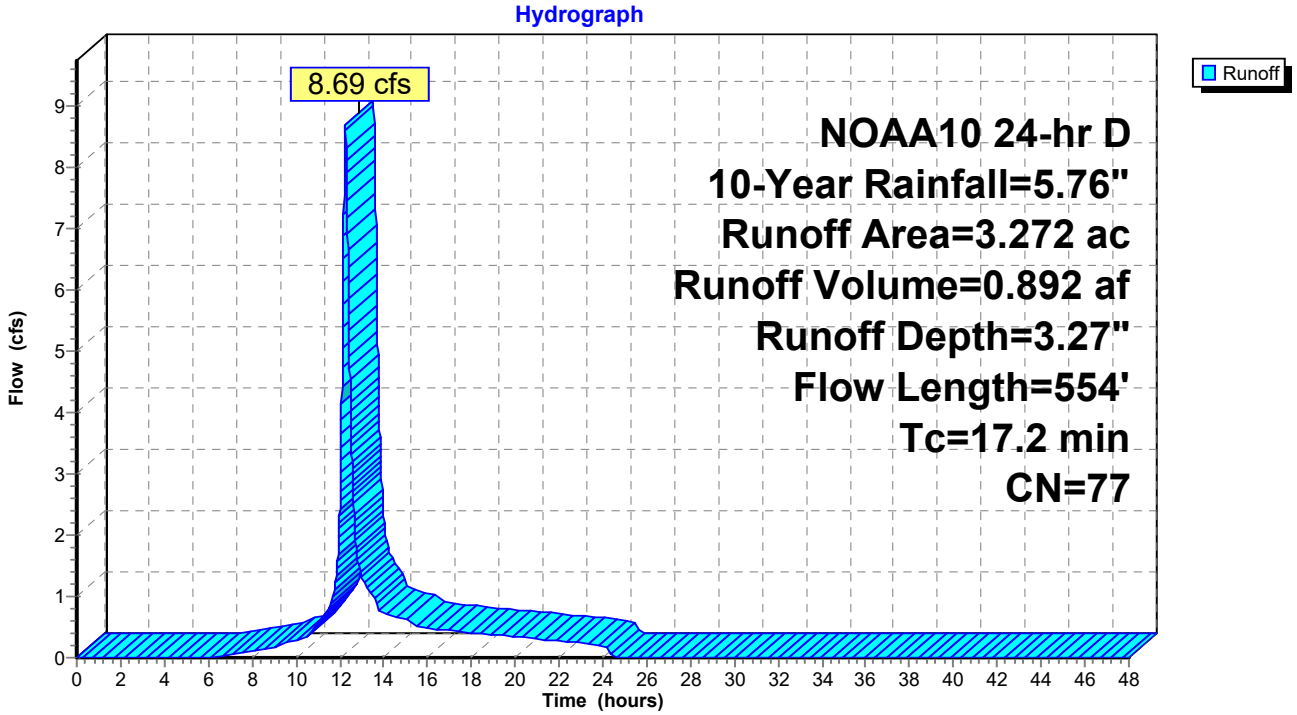
Runoff = 8.69 cfs @ 12.25 hrs, Volume= 0.892 af, Depth= 3.27"
Routed to Link 3L : E-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.115	36	Woods, Fair, HSG A
2.924	79	Woods, Fair, HSG D
0.166	84	50-75% Grass cover, Fair, HSG D
0.067	49	50-75% Grass cover, Fair, HSG A
3.272	77	Weighted Average
3.272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.3600	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
4.8	454	0.1000	1.58		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.2	554	Total			

Subcatchment EA#3: EX. AREA #3



Summary for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

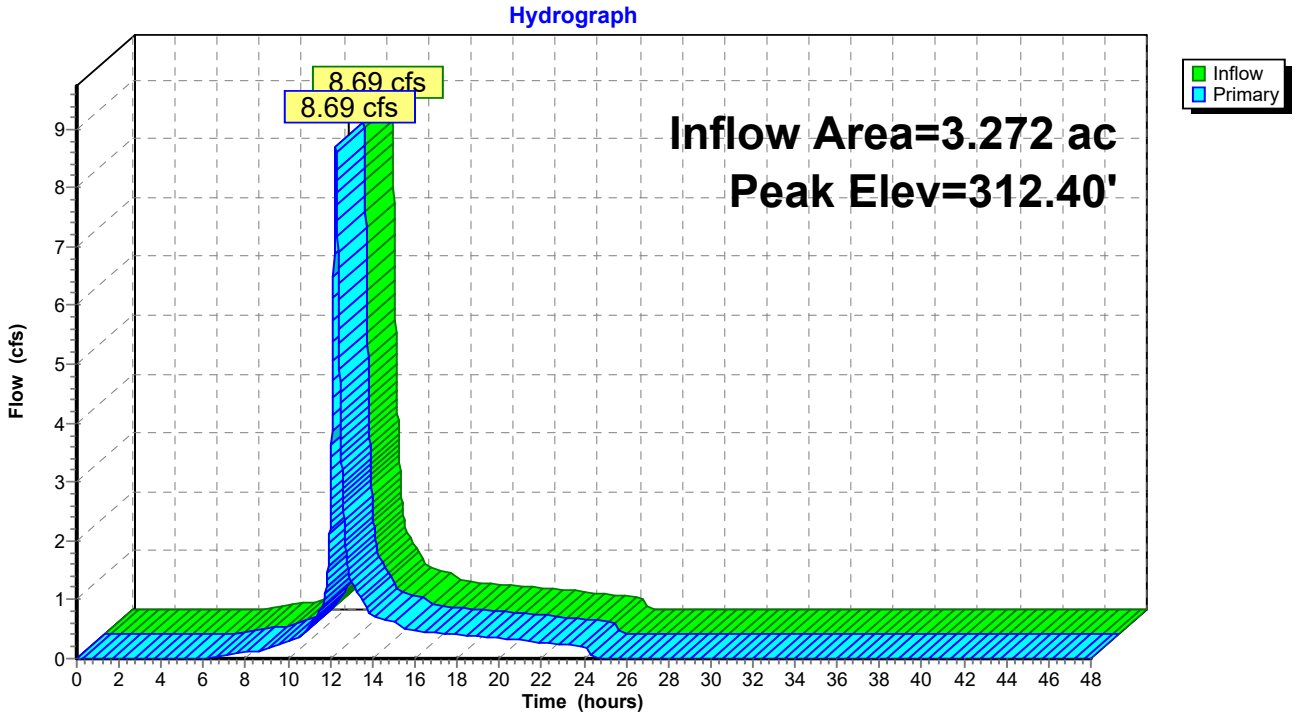
Inflow Area = 3.272 ac, 0.00% Impervious, Inflow Depth = 3.27" for 10-Year event
Inflow = 8.69 cfs @ 12.25 hrs, Volume= 0.892 af
Outflow = 8.69 cfs @ 12.25 hrs, Volume= 0.892 af, Atten= 0%, Lag= 0.0 min
Primary = 8.69 cfs @ 12.25 hrs, Volume= 0.892 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 312.40' @ 12.25 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.68 cfs @ 12.25 hrs HW=312.39' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 8.68 cfs @ 11.05 fps)

Pond 6P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	309.22	5.48	311.82	8.20
306.67	0.01	309.27	5.55	311.87	8.24
306.72	0.04	309.32	5.61	311.92	8.29
306.77	0.10	309.37	5.67	311.97	8.33
306.82	0.17	309.42	5.74	312.02	8.37
306.87	0.26	309.47	5.80	312.07	8.41
306.92	0.37	309.52	5.86	312.12	8.46
306.97	0.49	309.57	5.92	312.17	8.50
307.02	0.63	309.62	5.98	312.22	8.54
307.07	0.78	309.67	6.04	312.27	8.58
307.12	0.95	309.72	6.10	312.32	8.62
307.17	1.12	309.77	6.16	312.37	**8.66**
307.22	1.30	309.82	6.21		
307.27	1.48	309.87	6.27		
307.32	1.67	309.92	6.33		
307.37	1.86	309.97	6.38		
307.42	2.05	310.02	6.44		
307.47	2.23	310.07	6.50		
307.52	2.40	310.12	6.55		
307.57	2.56	310.17	6.60		
307.62	2.67	310.22	6.66		
307.67	2.80	310.27	6.71		
307.72	2.93	310.32	6.76		
307.77	3.05	310.37	6.82		
307.82	3.16	310.42	6.87		
307.87	3.28	310.47	6.92		
307.92	3.38	310.52	6.97		
307.97	3.49	310.57	7.02		
308.02	3.59	310.62	7.07		
308.07	3.69	310.67	7.13		
308.12	3.78	310.72	7.18		
308.17	3.88	310.77	7.22		
308.22	3.97	310.82	7.27		
308.27	4.06	310.87	7.32		
308.32	4.14	310.92	7.37		
308.37	4.23	310.97	7.42		
308.42	4.31	311.02	7.47		
308.47	4.39	311.07	7.52		
308.52	4.47	311.12	7.56		
308.57	4.55	311.17	7.61		
308.62	4.63	311.22	7.66		
308.67	4.71	311.27	7.70		
308.72	4.78	311.32	7.75		
308.77	4.86	311.37	7.80		
308.82	4.93	311.42	7.84		
308.87	5.00	311.47	7.89		
308.92	5.07	311.52	7.93		
308.97	5.14	311.57	7.98		
309.02	5.21	311.62	8.02		
309.07	5.28	311.67	8.07		
309.12	5.35	311.72	8.11		
309.17	5.41	311.77	8.15		

Stage-Area-Storage for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
306.62	**0.000**	309.22	0.000	311.82	0.000
306.67	0.000	309.27	0.000	311.87	0.000
306.72	0.000	309.32	0.000	311.92	0.000
306.77	0.000	309.37	0.000	311.97	0.000
306.82	0.000	309.42	0.000	312.02	0.000
306.87	0.000	309.47	0.000	312.07	0.000
306.92	0.000	309.52	0.000	312.12	0.000
306.97	0.000	309.57	0.000	312.17	0.000
307.02	0.000	309.62	0.000	312.22	0.000
307.07	0.000	309.67	0.000	312.27	0.000
307.12	0.000	309.72	0.000	312.32	0.000
307.17	0.000	309.77	0.000	312.37	0.000
307.22	0.000	309.82	0.000		
307.27	0.000	309.87	0.000		
307.32	0.000	309.92	0.000		
307.37	0.000	309.97	0.000		
307.42	0.000	310.02	0.000		
307.47	0.000	310.07	0.000		
307.52	0.000	310.12	0.000		
307.57	0.000	310.17	0.000		
307.62	0.000	310.22	0.000		
307.67	0.000	310.27	0.000		
307.72	0.000	310.32	0.000		
307.77	0.000	310.37	0.000		
307.82	0.000	310.42	0.000		
307.87	0.000	310.47	0.000		
307.92	0.000	310.52	0.000		
307.97	0.000	310.57	0.000		
308.02	0.000	310.62	0.000		
308.07	0.000	310.67	0.000		
308.12	0.000	310.72	0.000		
308.17	0.000	310.77	0.000		
308.22	0.000	310.82	0.000		
308.27	0.000	310.87	0.000		
308.32	0.000	310.92	0.000		
308.37	0.000	310.97	0.000		
308.42	0.000	311.02	0.000		
308.47	0.000	311.07	0.000		
308.52	0.000	311.12	0.000		
308.57	0.000	311.17	0.000		
308.62	0.000	311.22	0.000		
308.67	0.000	311.27	0.000		
308.72	0.000	311.32	0.000		
308.77	0.000	311.37	0.000		
308.82	0.000	311.42	0.000		
308.87	0.000	311.47	0.000		
308.92	0.000	311.52	0.000		
308.97	0.000	311.57	0.000		
309.02	0.000	311.62	0.000		
309.07	0.000	311.67	0.000		
309.12	0.000	311.72	0.000		
309.17	0.000	311.77	0.000		

Summary for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

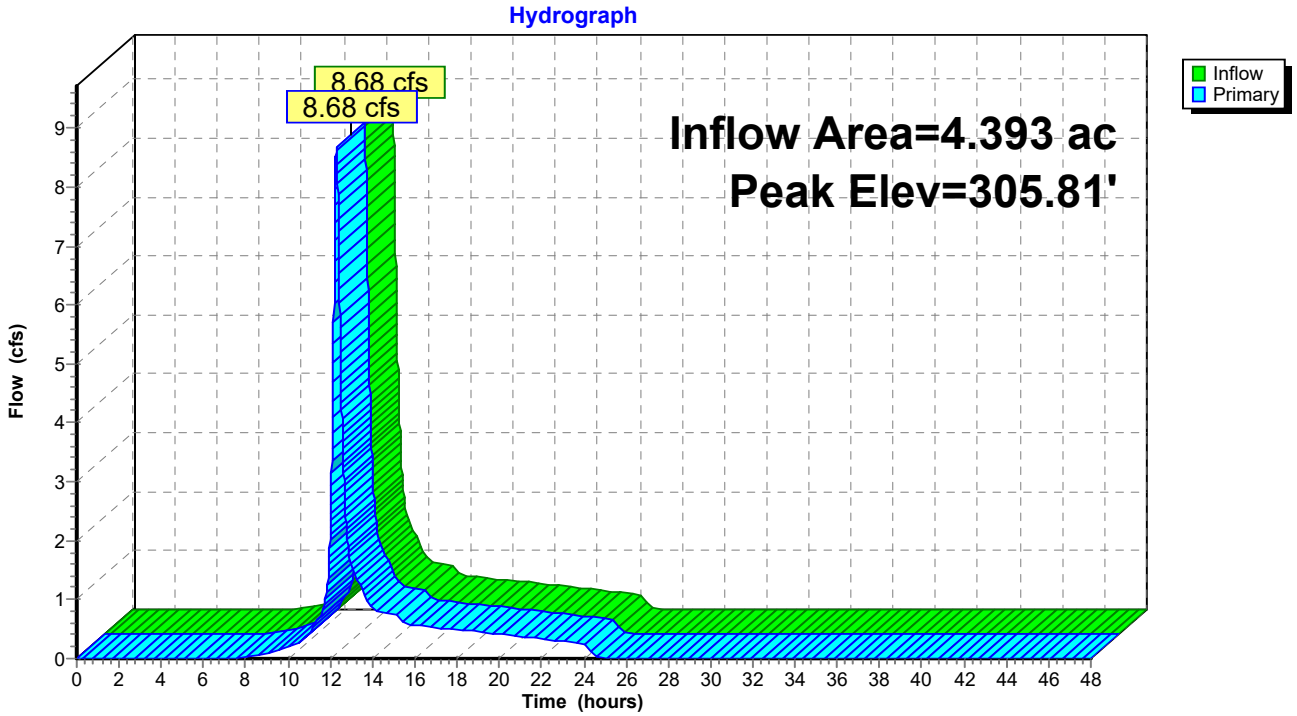
Inflow Area = 4.393 ac, 0.57% Impervious, Inflow Depth = 2.62" for 10-Year event
Inflow = 8.68 cfs @ 12.29 hrs, Volume= 0.958 af
Outflow = 8.68 cfs @ 12.29 hrs, Volume= 0.958 af, Atten= 0%, Lag= 0.0 min
Primary = 8.68 cfs @ 12.29 hrs, Volume= 0.958 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 305.81' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.68 cfs @ 12.29 hrs HW=305.81' TW=302.77' (Fixed TW Elev= 302.77')
└**1=Orifice/Grate** (Orifice Controls 8.68 cfs @ 7.07 fps)

Pond 7P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	304.07	3.79	305.11	7.13
303.05	0.00	304.09	3.89	305.13	7.18
303.07	0.01	304.11	3.99	305.15	7.22
303.09	0.02	304.13	4.08	305.17	7.27
303.11	0.03	304.15	4.18	305.19	7.32
303.13	0.05	304.17	4.27	305.21	7.37
303.15	0.07	304.19	4.36	305.23	7.42
303.17	0.10	304.21	4.44	305.25	7.46
303.19	0.12	304.23	4.52	305.27	7.51
303.21	0.16	304.25	4.59	305.29	7.56
303.23	0.19	304.27	4.65	305.31	7.60
303.25	0.23	304.29	4.71	305.33	7.65
303.27	0.27	304.31	4.78	305.35	7.69
303.29	0.32	304.33	4.85	305.37	7.74
303.31	0.37	304.35	4.93	305.39	7.78
303.33	0.42	304.37	5.00	305.41	7.83
303.35	0.48	304.39	5.07	305.43	7.87
303.37	0.54	304.41	5.13	305.45	7.92
303.39	0.60	304.43	5.20	305.47	7.96
303.41	0.66	304.45	5.27	305.49	8.00
303.43	0.73	304.47	5.33	305.51	8.05
303.45	0.80	304.49	5.40	305.53	8.09
303.47	0.87	304.51	5.46	305.55	8.13
303.49	0.95	304.53	5.53	305.57	8.18
303.51	1.02	304.55	5.59	305.59	8.22
303.53	1.10	304.57	5.65	305.61	8.26
303.55	1.19	304.59	5.71	305.63	8.30
303.57	1.27	304.61	5.77	305.65	8.35
303.59	1.36	304.63	5.83	305.67	8.39
303.61	1.45	304.65	5.89	305.69	8.43
303.63	1.54	304.67	5.95	305.71	8.47
303.65	1.63	304.69	6.01	305.73	8.51
303.67	1.72	304.71	6.07	305.75	8.55
303.69	1.82	304.73	6.13	305.77	8.59
303.71	1.92	304.75	6.18	305.79	8.63
303.73	2.01	304.77	6.24	305.81	8.67
303.75	2.11	304.79	6.30	305.83	**8.71**
303.77	2.22	304.81	6.35		
303.79	2.32	304.83	6.41		
303.81	2.42	304.85	6.46		
303.83	2.53	304.87	6.51		
303.85	2.63	304.89	6.57		
303.87	2.74	304.91	6.62		
303.89	2.84	304.93	6.67		
303.91	2.95	304.95	6.72		
303.93	3.06	304.97	6.78		
303.95	3.16	304.99	6.83		
303.97	3.27	305.01	6.88		
303.99	3.37	305.03	6.93		
304.01	3.48	305.05	6.98		
304.03	3.58	305.07	7.03		
304.05	3.69	305.09	7.08		

Stage-Area-Storage for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

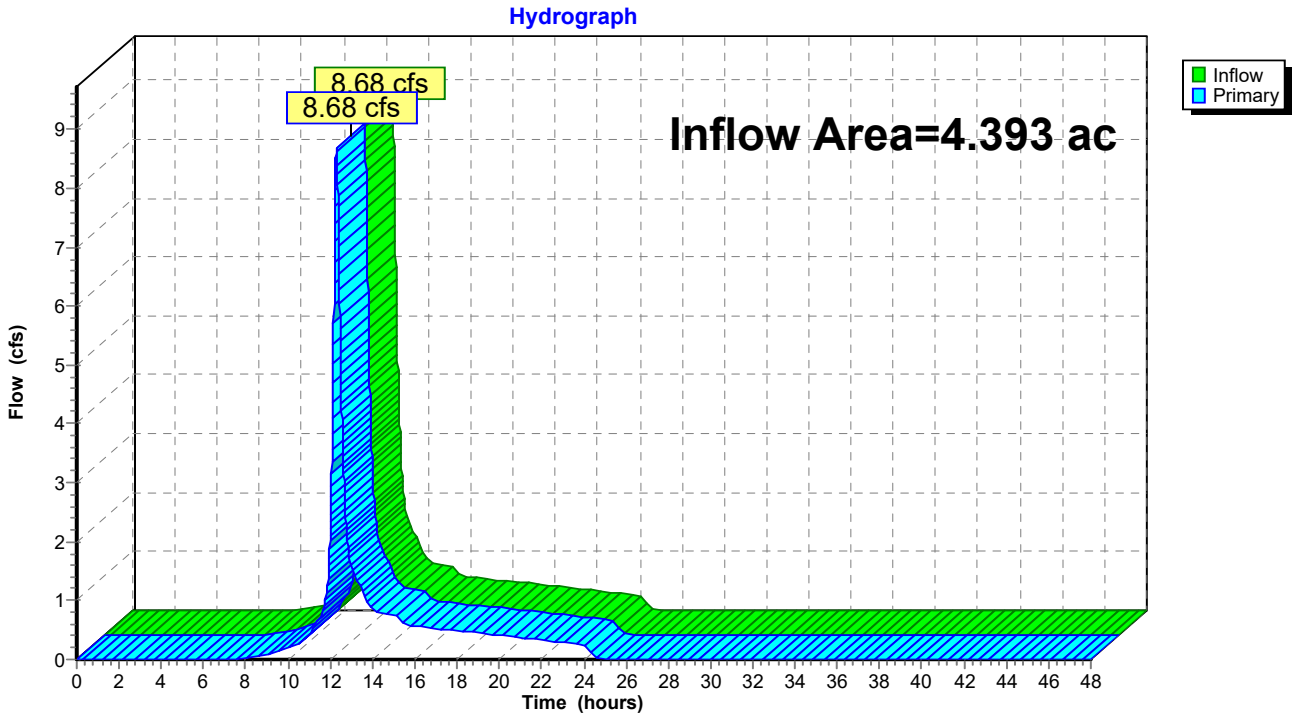
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	304.07	0.000	305.11	0.000
303.05	0.000	304.09	0.000	305.13	0.000
303.07	0.000	304.11	0.000	305.15	0.000
303.09	0.000	304.13	0.000	305.17	0.000
303.11	0.000	304.15	0.000	305.19	0.000
303.13	0.000	304.17	0.000	305.21	0.000
303.15	0.000	304.19	0.000	305.23	0.000
303.17	0.000	304.21	0.000	305.25	0.000
303.19	0.000	304.23	0.000	305.27	0.000
303.21	0.000	304.25	0.000	305.29	0.000
303.23	0.000	304.27	0.000	305.31	0.000
303.25	0.000	304.29	0.000	305.33	0.000
303.27	0.000	304.31	0.000	305.35	0.000
303.29	0.000	304.33	0.000	305.37	0.000
303.31	0.000	304.35	0.000	305.39	0.000
303.33	0.000	304.37	0.000	305.41	0.000
303.35	0.000	304.39	0.000	305.43	0.000
303.37	0.000	304.41	0.000	305.45	0.000
303.39	0.000	304.43	0.000	305.47	0.000
303.41	0.000	304.45	0.000	305.49	0.000
303.43	0.000	304.47	0.000	305.51	0.000
303.45	0.000	304.49	0.000	305.53	0.000
303.47	0.000	304.51	0.000	305.55	0.000
303.49	0.000	304.53	0.000	305.57	0.000
303.51	0.000	304.55	0.000	305.59	0.000
303.53	0.000	304.57	0.000	305.61	0.000
303.55	0.000	304.59	0.000	305.63	0.000
303.57	0.000	304.61	0.000	305.65	0.000
303.59	0.000	304.63	0.000	305.67	0.000
303.61	0.000	304.65	0.000	305.69	0.000
303.63	0.000	304.67	0.000	305.71	0.000
303.65	0.000	304.69	0.000	305.73	0.000
303.67	0.000	304.71	0.000	305.75	0.000
303.69	0.000	304.73	0.000	305.77	0.000
303.71	0.000	304.75	0.000	305.79	0.000
303.73	0.000	304.77	0.000	305.81	0.000
303.75	0.000	304.79	0.000	305.83	0.000
303.77	0.000	304.81	0.000		
303.79	0.000	304.83	0.000		
303.81	0.000	304.85	0.000		
303.83	0.000	304.87	0.000		
303.85	0.000	304.89	0.000		
303.87	0.000	304.91	0.000		
303.89	0.000	304.93	0.000		
303.91	0.000	304.95	0.000		
303.93	0.000	304.97	0.000		
303.95	0.000	304.99	0.000		
303.97	0.000	305.01	0.000		
303.99	0.000	305.03	0.000		
304.01	0.000	305.05	0.000		
304.03	0.000	305.07	0.000		
304.05	0.000	305.09	0.000		

Summary for Link 1L: E-POA-1

Inflow Area = 4.393 ac, 0.57% Impervious, Inflow Depth = 2.62" for 10-Year event
Inflow = 8.68 cfs @ 12.29 hrs, Volume= 0.958 af
Primary = 8.68 cfs @ 12.29 hrs, Volume= 0.958 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 7P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: E-POA-1

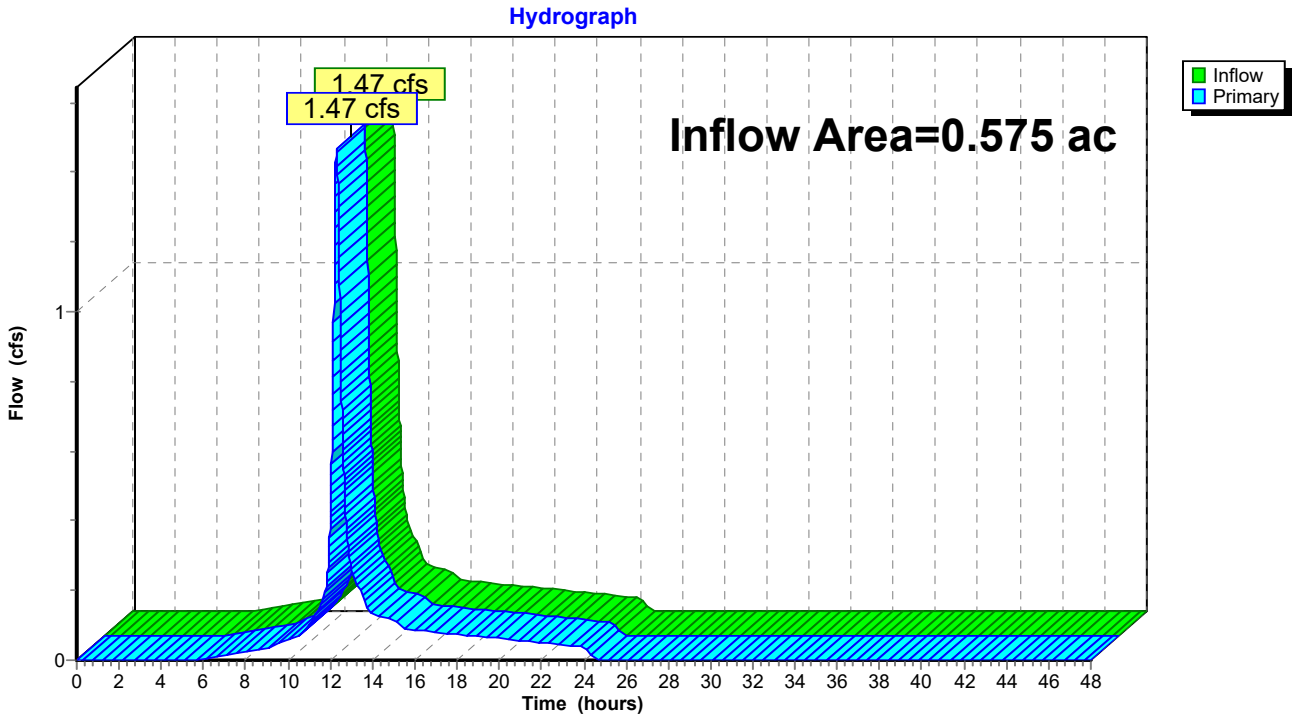


Summary for Link 2L: E-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 3.47" for 10-Year event
Inflow = 1.47 cfs @ 12.30 hrs, Volume= 0.166 af
Primary = 1.47 cfs @ 12.30 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2L: E-POA-2

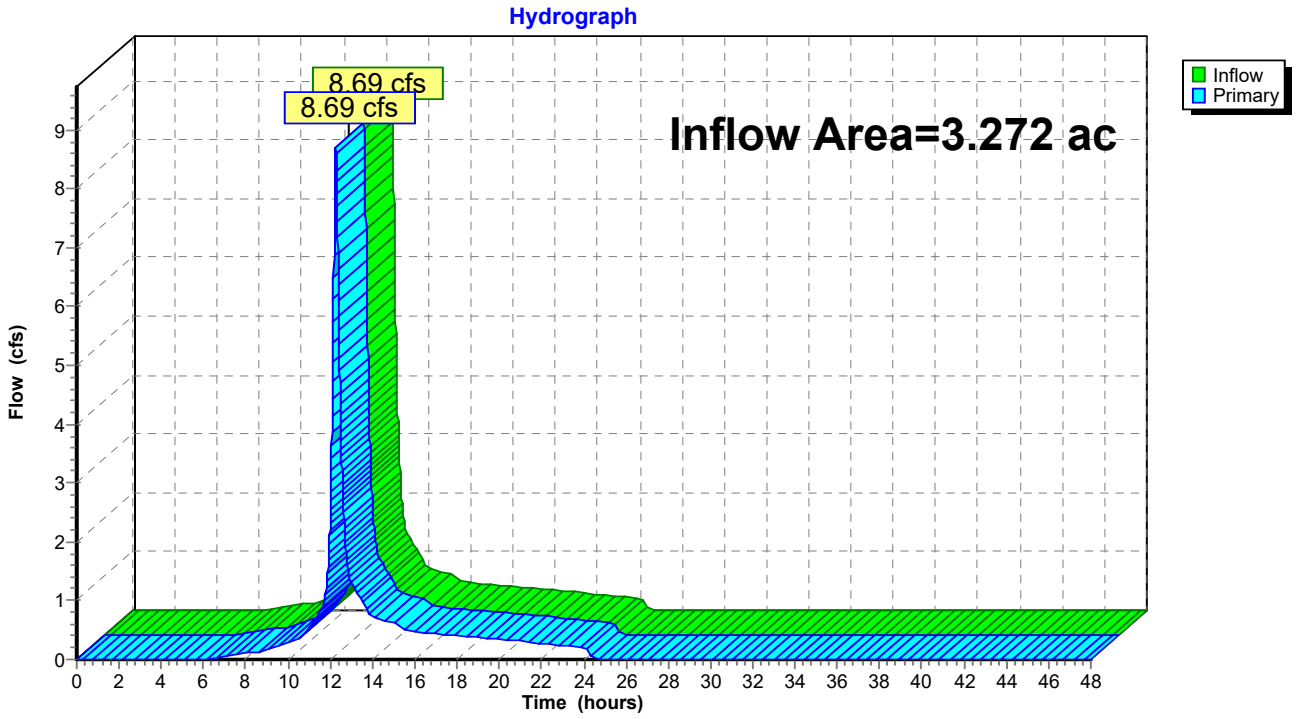


Summary for Link 3L: E-POA-3

Inflow Area = 3.272 ac, 0.00% Impervious, Inflow Depth = 3.27" for 10-Year event
Inflow = 8.69 cfs @ 12.25 hrs, Volume= 0.892 af
Primary = 8.69 cfs @ 12.25 hrs, Volume= 0.892 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 6P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3L: E-POA-3



Summary for Subcatchment EA#1: EX. AREA #1

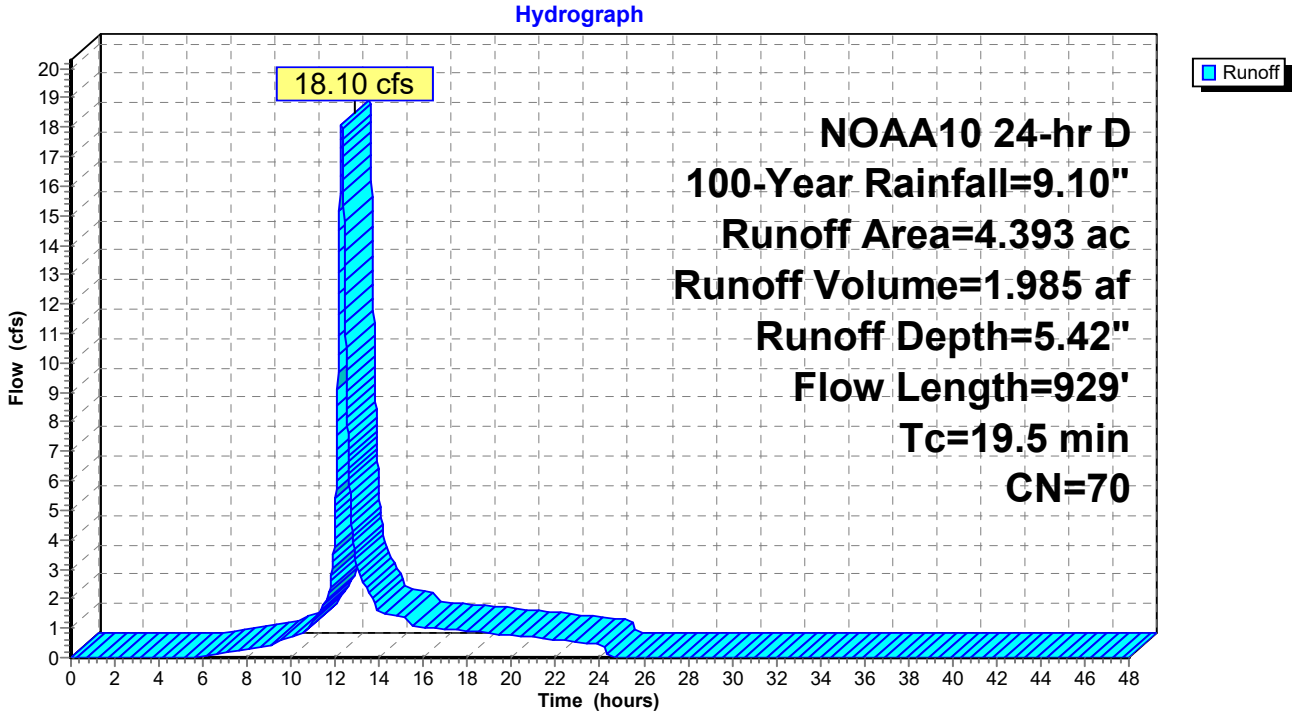
Runoff = 18.10 cfs @ 12.28 hrs, Volume= 1.985 af, Depth= 5.42"
Routed to Link 1L : E-POA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.823	36	Woods, Fair, HSG A
3.157	79	Woods, Fair, HSG D
0.198	84	50-75% Grass cover, Fair, HSG D
0.190	49	50-75% Grass cover, Fair, HSG A
0.025	98	Paved parking, HSG A
4.393	70	Weighted Average
4.368		99.43% Pervious Area
0.025		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.8	829	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.5	929	Total			

Subcatchment EA#1: EX. AREA #1



Summary for Subcatchment EA#2: EX. AREA #2

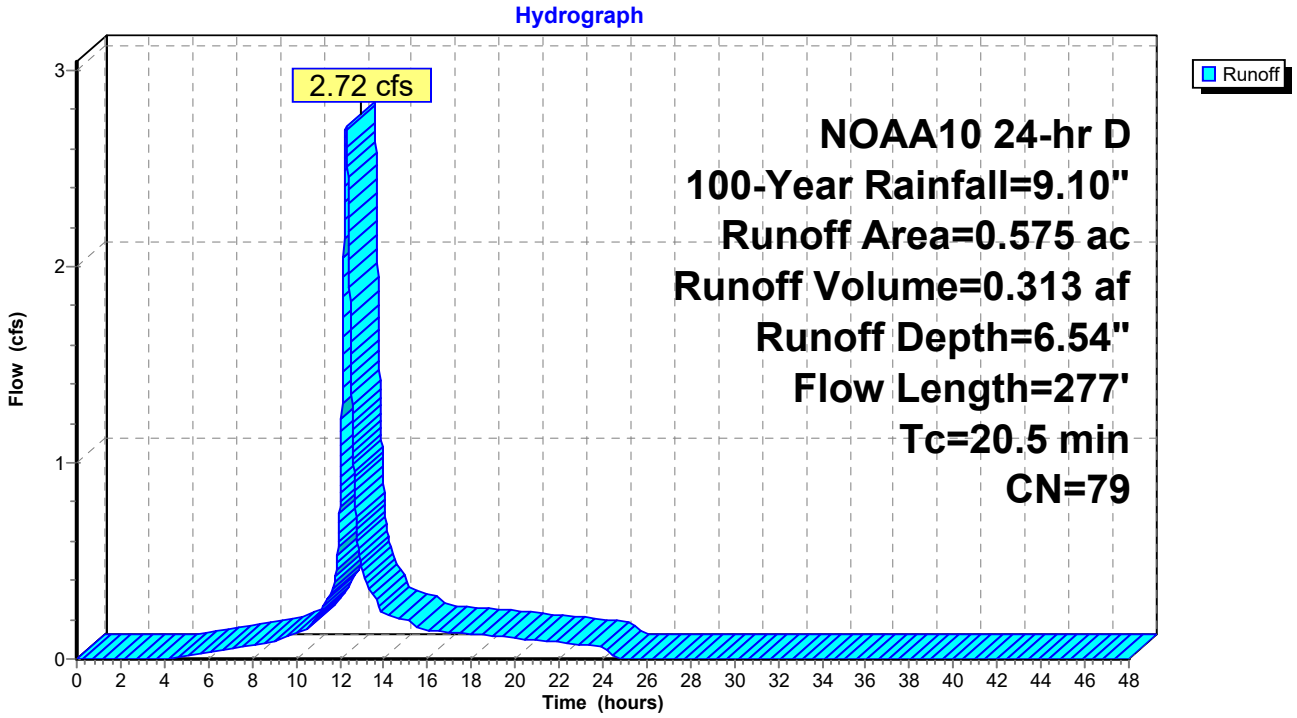
Runoff = 2.72 cfs @ 12.29 hrs, Volume= 0.313 af, Depth= 6.54"
Routed to Link 2L : E-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2: EX. AREA #2



Summary for Subcatchment EA#3: EX. AREA #3

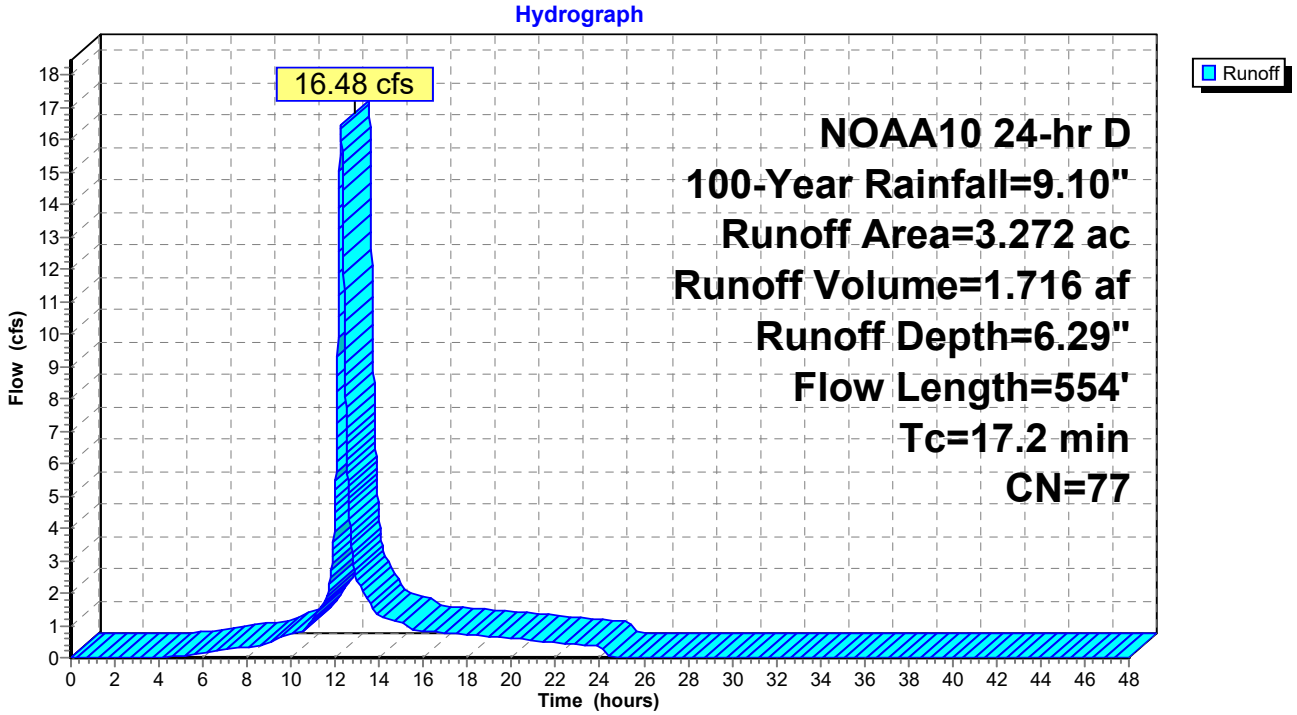
Runoff = 16.48 cfs @ 12.25 hrs, Volume= 1.716 af, Depth= 6.29"
Routed to Link 3L : E-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.115	36	Woods, Fair, HSG A
2.924	79	Woods, Fair, HSG D
0.166	84	50-75% Grass cover, Fair, HSG D
0.067	49	50-75% Grass cover, Fair, HSG A
3.272	77	Weighted Average
3.272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.3600	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
4.8	454	0.1000	1.58		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
17.2	554	Total			

Subcatchment EA#3: EX. AREA #3



Summary for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

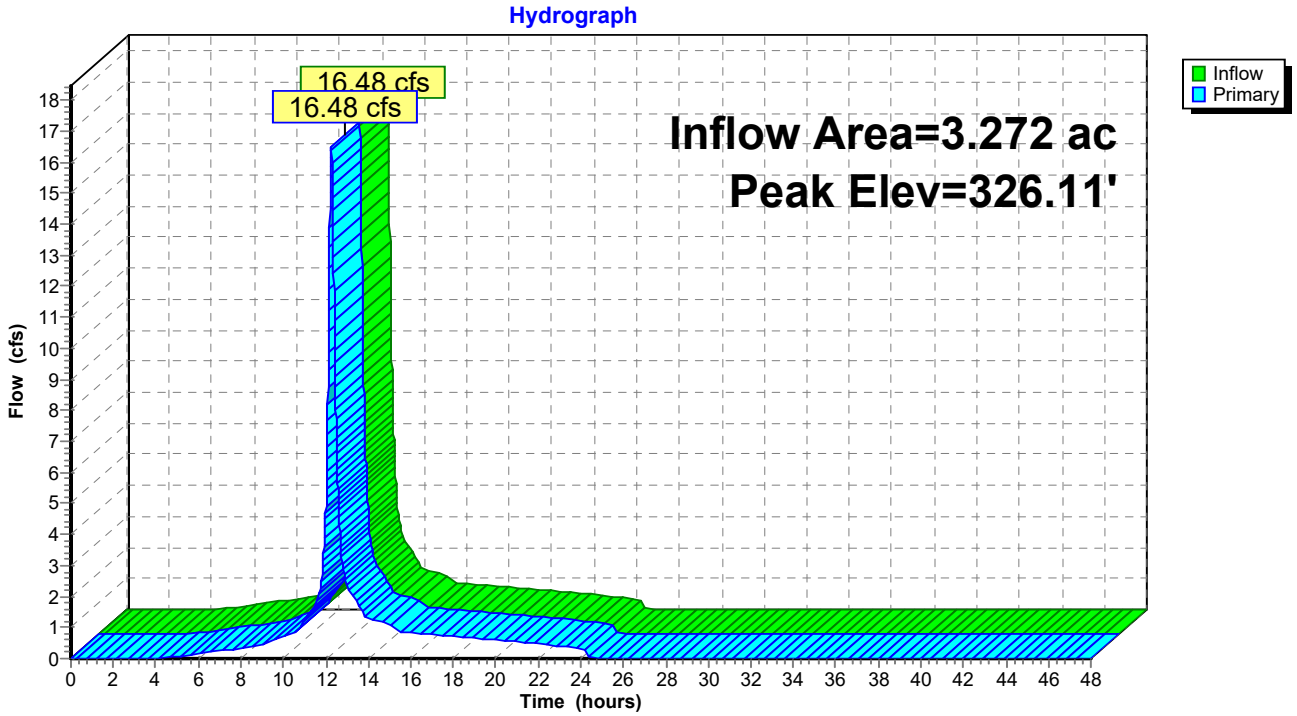
Inflow Area = 3.272 ac, 0.00% Impervious, Inflow Depth = 6.29" for 100-Year event
Inflow = 16.48 cfs @ 12.25 hrs, Volume= 1.716 af
Outflow = 16.48 cfs @ 12.25 hrs, Volume= 1.716 af, Atten= 0%, Lag= 0.0 min
Primary = 16.48 cfs @ 12.25 hrs, Volume= 1.716 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 326.11' @ 12.25 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.46 cfs @ 12.25 hrs HW=326.07' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 16.46 cfs @ 20.96 fps)

Pond 6P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	311.82	8.20	317.02	11.90	322.22	14.70
306.72	0.04	311.92	8.29	317.12	11.96	322.32	14.74
306.82	0.17	312.02	8.37	317.22	12.02	322.42	14.79
306.92	0.37	312.12	8.46	317.32	12.08	322.52	14.84
307.02	0.63	312.22	8.54	317.42	12.14	322.62	14.89
307.12	0.95	312.32	8.62	317.52	12.20	322.72	14.94
307.22	1.30	312.42	8.71	317.62	12.25	322.82	14.98
307.32	1.67	312.52	8.79	317.72	12.31	322.92	15.03
307.42	2.05	312.62	8.87	317.82	12.37	323.02	15.08
307.52	2.40	312.72	8.95	317.92	12.43	323.12	15.13
307.62	2.67	312.82	9.03	318.02	12.49	323.22	15.17
307.72	2.93	312.92	9.11	318.12	12.54	323.32	15.22
307.82	3.16	313.02	9.19	318.22	12.60	323.42	15.27
307.92	3.38	313.12	9.26	318.32	12.66	323.52	15.31
308.02	3.59	313.22	9.34	318.42	12.71	323.62	15.36
308.12	3.78	313.32	9.42	318.52	12.77	323.72	15.41
308.22	3.97	313.42	9.49	318.62	12.82	323.82	15.45
308.32	4.14	313.52	9.57	318.72	12.88	323.92	15.50
308.42	4.31	313.62	9.64	318.82	12.94	324.02	15.55
308.52	4.47	313.72	9.72	318.92	12.99	324.12	15.59
308.62	4.63	313.82	9.79	319.02	13.05	324.22	15.64
308.72	4.78	313.92	9.86	319.12	13.10	324.32	15.68
308.82	4.93	314.02	9.93	319.22	13.15	324.42	15.73
308.92	5.07	314.12	10.01	319.32	13.21	324.52	15.77
309.02	5.21	314.22	10.08	319.42	13.26	324.62	15.82
309.12	5.35	314.32	10.15	319.52	13.32	324.72	15.87
309.22	5.48	314.42	10.22	319.62	13.37	324.82	15.91
309.32	5.61	314.52	10.29	319.72	13.42	324.92	15.95
309.42	5.74	314.62	10.36	319.82	13.48	325.02	16.00
309.52	5.86	314.72	10.43	319.92	13.53	325.12	16.04
309.62	5.98	314.82	10.49	320.02	13.58	325.22	16.09
309.72	6.10	314.92	10.56	320.12	13.64	325.32	16.13
309.82	6.21	315.02	10.63	320.22	13.69	325.42	16.18
309.92	6.33	315.12	10.70	320.32	13.74	325.52	16.22
310.02	6.44	315.22	10.76	320.42	13.79	325.62	16.27
310.12	6.55	315.32	10.83	320.52	13.84	325.72	16.31
310.22	6.66	315.42	10.89	320.62	13.89	325.82	16.35
310.32	6.76	315.52	10.96	320.72	13.95	325.92	16.40
310.42	6.87	315.62	11.03	320.82	14.00	326.02	16.44
310.52	6.97	315.72	11.09	320.92	14.05	326.12	**16.48**
310.62	7.07	315.82	11.15	321.02	14.10		
310.72	7.18	315.92	11.22	321.12	14.15		
310.82	7.27	316.02	11.28	321.22	14.20		
310.92	7.37	316.12	11.35	321.32	14.25		
311.02	7.47	316.22	11.41	321.42	14.30		
311.12	7.56	316.32	11.47	321.52	14.35		
311.22	7.66	316.42	11.53	321.62	14.40		
311.32	7.75	316.52	11.59	321.72	14.45		
311.42	7.84	316.62	11.66	321.82	14.50		
311.52	7.93	316.72	11.72	321.92	14.55		
311.62	8.02	316.82	11.78	322.02	14.60		
311.72	8.11	316.92	11.84	322.12	14.65		

Stage-Area-Storage for Pond 6P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)
306.62	**0.000**
306.82	0.000
307.02	0.000
307.22	0.000
307.42	0.000
307.62	0.000
307.82	0.000
308.02	0.000
308.22	0.000
308.42	0.000
308.62	0.000
308.82	0.000
309.02	0.000
309.22	0.000
309.42	0.000
309.62	0.000
309.82	0.000
310.02	0.000
310.22	0.000
310.42	0.000
310.62	0.000
310.82	0.000
311.02	0.000
311.22	0.000
311.42	0.000
311.62	0.000
311.82	0.000
312.02	0.000
312.22	0.000
312.42	0.000
312.62	0.000
312.82	0.000
313.02	0.000
313.22	0.000
313.42	0.000
313.62	0.000
313.82	0.000
314.02	0.000
314.22	0.000
314.42	0.000
314.62	0.000
314.82	0.000
315.02	0.000
315.22	0.000
315.42	0.000
315.62	0.000
315.82	0.000
316.02	0.000
316.22	0.000
316.42	0.000
316.62	0.000
316.82	0.000
317.02	0.000
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323.62	0.000
323.82	0.000
324.02	0.000
324.22	0.000
324.42	0.000
324.62	0.000
324.82	0.000
325.02	0.000
325.22	0.000
325.42	0.000
325.62	0.000
325.82	0.000
326.02	0.000

Summary for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

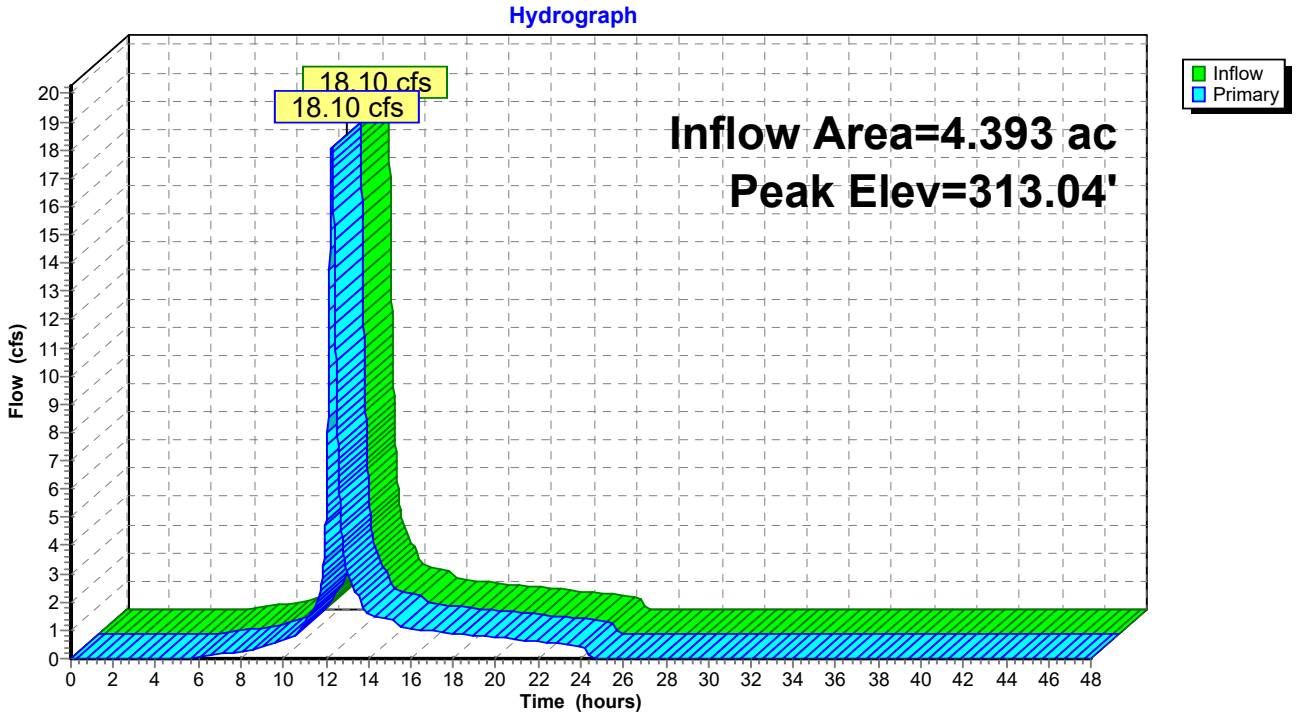
Inflow Area = 4.393 ac, 0.57% Impervious, Inflow Depth = 5.42" for 100-Year event
Inflow = 18.10 cfs @ 12.28 hrs, Volume= 1.985 af
Outflow = 18.10 cfs @ 12.28 hrs, Volume= 1.985 af, Atten= 0%, Lag= 0.0 min
Primary = 18.10 cfs @ 12.28 hrs, Volume= 1.985 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 313.04' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=18.09 cfs @ 12.28 hrs HW=313.03' TW=302.77' (Fixed TW Elev= 302.77')
└**1=Orifice/Grate** (Orifice Controls 18.09 cfs @ 14.74 fps)

Pond 7P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	305.63	8.30	308.23	12.64	310.83	15.83
303.08	0.01	305.68	8.41	308.28	12.71	310.88	15.88
303.13	0.05	305.73	8.51	308.33	12.78	310.93	15.94
303.18	0.11	305.78	8.61	308.38	12.84	310.98	15.99
303.23	0.19	305.83	8.71	308.43	12.91	311.03	16.05
303.28	0.30	305.88	8.81	308.48	12.98	311.08	16.10
303.33	0.42	305.93	8.91	308.53	13.05	311.13	16.16
303.38	0.57	305.98	9.01	308.58	13.11	311.18	16.21
303.43	0.73	306.03	9.11	308.63	13.18	311.23	16.26
303.48	0.91	306.08	9.20	308.68	13.25	311.28	16.32
303.53	1.10	306.13	9.30	308.73	13.31	311.33	16.37
303.58	1.31	306.18	9.39	308.78	13.38	311.38	16.42
303.63	1.54	306.23	9.48	308.83	13.44	311.43	16.48
303.68	1.77	306.28	9.57	308.88	13.51	311.48	16.53
303.73	2.01	306.33	9.66	308.93	13.57	311.53	16.58
303.78	2.27	306.38	9.75	308.98	13.64	311.58	16.63
303.83	2.53	306.43	9.84	309.03	13.70	311.63	16.69
303.88	2.79	306.48	9.93	309.08	13.76	311.68	16.74
303.93	3.06	306.53	10.02	309.13	13.83	311.73	16.79
303.98	3.32	306.58	10.11	309.18	13.89	311.78	16.84
304.03	3.58	306.63	10.19	309.23	13.95	311.83	16.89
304.08	3.84	306.68	10.28	309.28	14.01	311.88	16.95
304.13	4.08	306.73	10.36	309.33	14.08	311.93	17.00
304.18	4.31	306.78	10.45	309.38	14.14	311.98	17.05
304.23	4.52	306.83	10.53	309.43	14.20	312.03	17.10
304.28	4.67	306.88	10.61	309.48	14.26	312.08	17.15
304.33	4.85	306.93	10.69	309.53	14.32	312.13	17.20
304.38	5.03	306.98	10.77	309.58	14.38	312.18	17.25
304.43	5.20	307.03	10.86	309.63	14.44	312.23	17.30
304.48	5.37	307.08	10.94	309.68	14.50	312.28	17.35
304.53	5.53	307.13	11.01	309.73	14.56	312.33	17.40
304.58	5.68	307.18	11.09	309.78	14.62	312.38	17.45
304.63	5.83	307.23	11.17	309.83	14.68	312.43	17.50
304.68	5.98	307.28	11.25	309.88	14.74	312.48	17.55
304.73	6.13	307.33	11.33	309.93	14.80	312.53	17.60
304.78	6.27	307.38	11.40	309.98	14.86	312.58	17.65
304.83	6.41	307.43	11.48	310.03	14.92	312.63	17.70
304.88	6.54	307.48	11.56	310.08	14.98	312.68	17.75
304.93	6.67	307.53	11.63	310.13	15.04	312.73	17.80
304.98	6.80	307.58	11.71	310.18	15.09	312.78	17.85
305.03	6.93	307.63	11.78	310.23	15.15	312.83	17.90
305.08	7.05	307.68	11.85	310.28	15.21	312.88	17.95
305.13	7.18	307.73	11.93	310.33	15.27	312.93	18.00
305.18	7.30	307.78	12.00	310.38	15.32	312.98	18.04
305.23	7.42	307.83	12.07	310.43	15.38	313.03	18.09
305.28	7.53	307.88	12.15	310.48	15.44	313.08	18.14
305.33	7.65	307.93	12.22	310.53	15.49	313.13	**18.19**
305.38	7.76	307.98	12.29	310.58	15.55		
305.43	7.87	308.03	12.36	310.63	15.61		
305.48	7.98	308.08	12.43	310.68	15.66		
305.53	8.09	308.13	12.50	310.73	15.72		
305.58	8.20	308.18	12.57	310.78	15.77		

Stage-Area-Storage for Pond 7P: EXISTING SOUTH-EAST CATCH BASIN

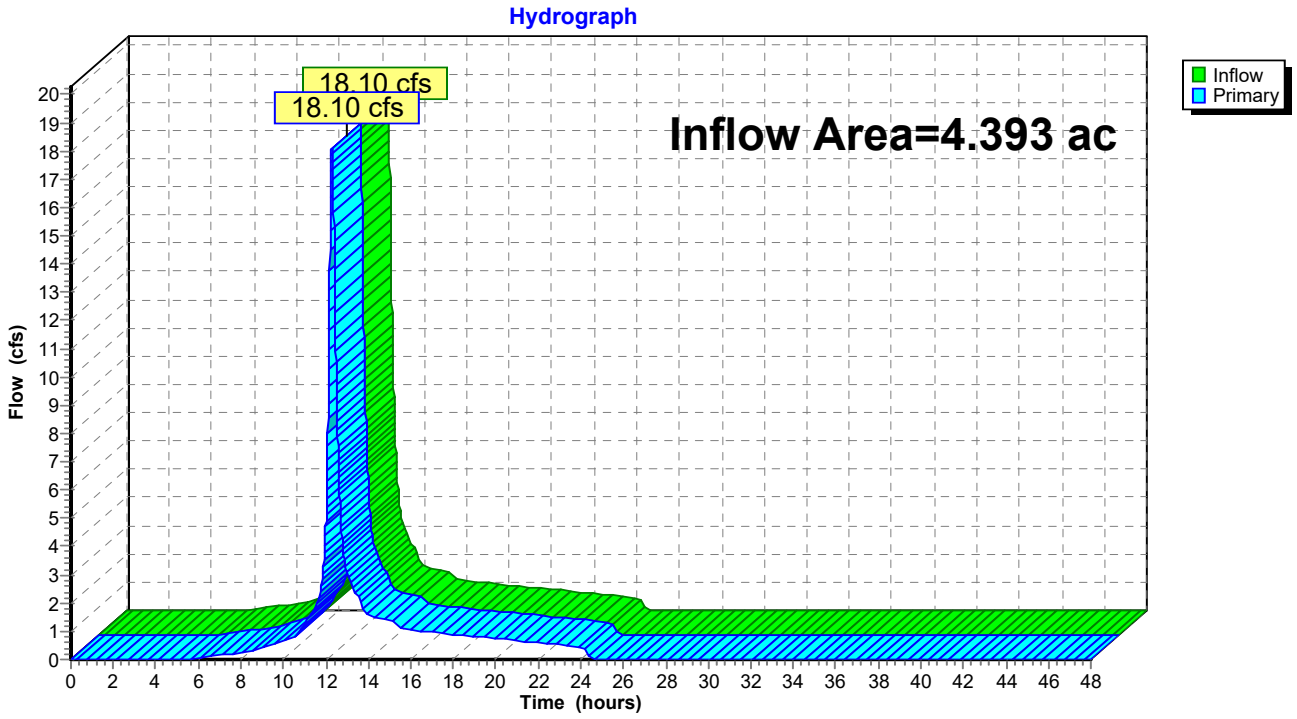
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	308.23	0.000
303.13	0.000	308.33	0.000
303.23	0.000	308.43	0.000
303.33	0.000	308.53	0.000
303.43	0.000	308.63	0.000
303.53	0.000	308.73	0.000
303.63	0.000	308.83	0.000
303.73	0.000	308.93	0.000
303.83	0.000	309.03	0.000
303.93	0.000	309.13	0.000
304.03	0.000	309.23	0.000
304.13	0.000	309.33	0.000
304.23	0.000	309.43	0.000
304.33	0.000	309.53	0.000
304.43	0.000	309.63	0.000
304.53	0.000	309.73	0.000
304.63	0.000	309.83	0.000
304.73	0.000	309.93	0.000
304.83	0.000	310.03	0.000
304.93	0.000	310.13	0.000
305.03	0.000	310.23	0.000
305.13	0.000	310.33	0.000
305.23	0.000	310.43	0.000
305.33	0.000	310.53	0.000
305.43	0.000	310.63	0.000
305.53	0.000	310.73	0.000
305.63	0.000	310.83	0.000
305.73	0.000	310.93	0.000
305.83	0.000	311.03	0.000
305.93	0.000	311.13	0.000
306.03	0.000	311.23	0.000
306.13	0.000	311.33	0.000
306.23	0.000	311.43	0.000
306.33	0.000	311.53	0.000
306.43	0.000	311.63	0.000
306.53	0.000	311.73	0.000
306.63	0.000	311.83	0.000
306.73	0.000	311.93	0.000
306.83	0.000	312.03	0.000
306.93	0.000	312.13	0.000
307.03	0.000	312.23	0.000
307.13	0.000	312.33	0.000
307.23	0.000	312.43	0.000
307.33	0.000	312.53	0.000
307.43	0.000	312.63	0.000
307.53	0.000	312.73	0.000
307.63	0.000	312.83	0.000
307.73	0.000	312.93	0.000
307.83	0.000	313.03	0.000
307.93	0.000	313.13	0.000
308.03	0.000		
308.13	0.000		

Summary for Link 1L: E-POA-1

Inflow Area = 4.393 ac, 0.57% Impervious, Inflow Depth = 5.42" for 100-Year event
Inflow = 18.10 cfs @ 12.28 hrs, Volume= 1.985 af
Primary = 18.10 cfs @ 12.28 hrs, Volume= 1.985 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 7P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: E-POA-1

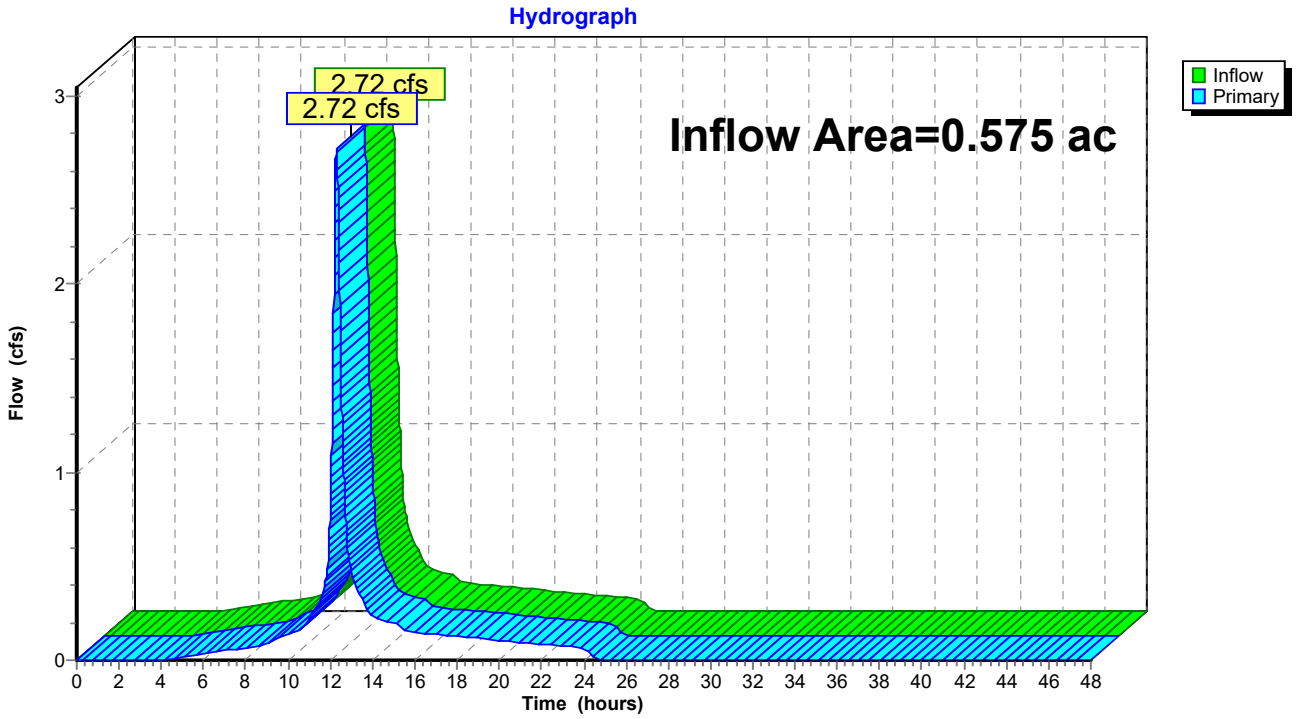


Summary for Link 2L: E-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 6.54" for 100-Year event
Inflow = 2.72 cfs @ 12.29 hrs, Volume= 0.313 af
Primary = 2.72 cfs @ 12.29 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2L: E-POA-2

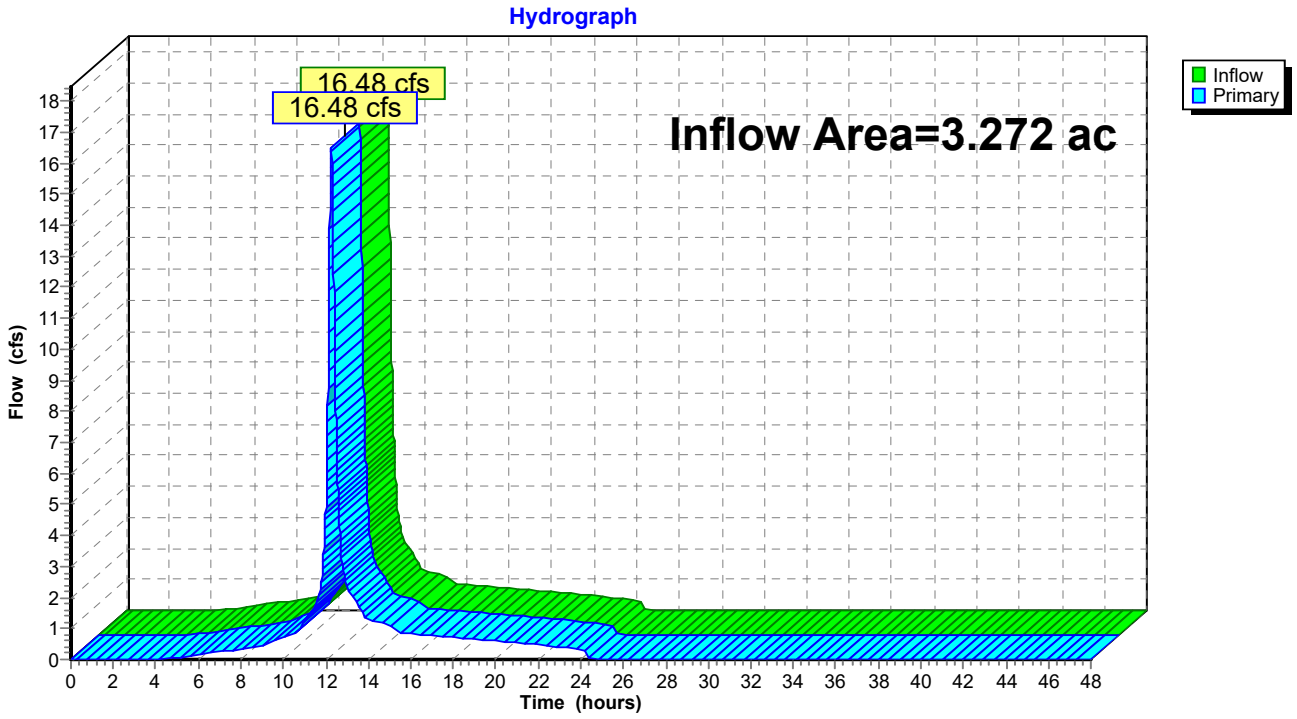


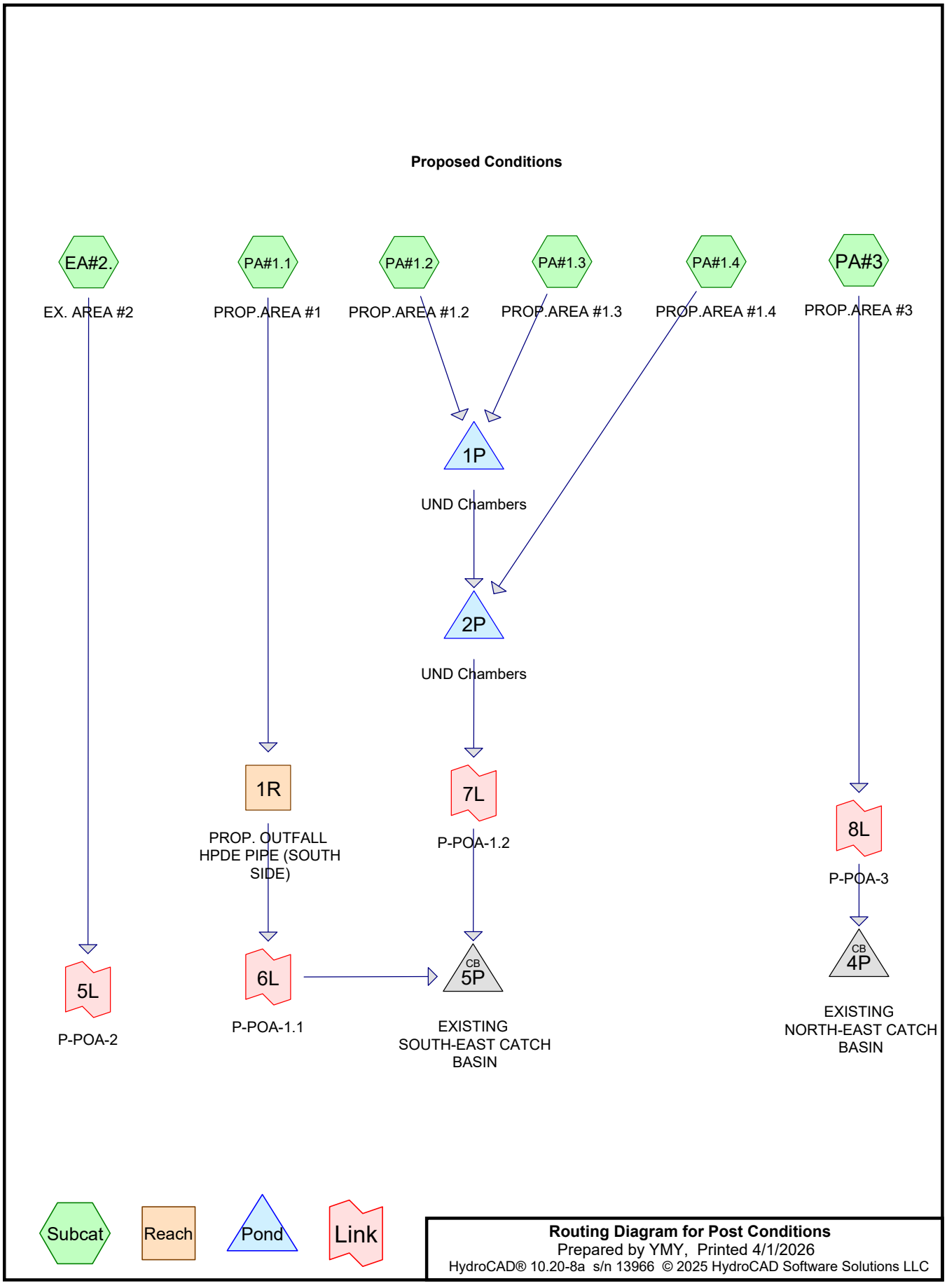
Summary for Link 3L: E-POA-3

Inflow Area = 3.272 ac, 0.00% Impervious, Inflow Depth = 6.29" for 100-Year event
Inflow = 16.48 cfs @ 12.25 hrs, Volume= 1.716 af
Primary = 16.48 cfs @ 12.25 hrs, Volume= 1.716 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 6P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3L: E-POA-3




Proposed Conditions
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EX. AREA #2
PA#1.1
PROP.AREA #1
PA#1.2
PROP.AREA #1.2
PA#1.3
PROP.AREA #1.3
PA#1.4
PROP.AREA #1.4
PA#3
PROP.AREA #3
1P
UND Chambers
2P
UND Chambers
1R
PROP. OUTFALL HPDE PIPE (SOUTH SIDE)
7L
P-POA-1.2
8L
P-POA-3
5L
P-POA-2
6L
P-POA-1.1
CB
5P
EXISTING SOUTH-EAST CATCH BASIN
CB
4P
EXISTING NORTH-EAST CATCH BASIN
Subcat
Reach
Pond
Link
Routing Diagram for Post Conditions
Prepared by YMY, Printed 4/1/2026
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA10 24-hr	D	Default	24.00	1	2.96	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	5.76	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	6.92	2
4	100-Year	NOAA10 24-hr	D	Default	24.00	1	9.10	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.083	84	50-75% Grass cover, Fair, HSG D (PA#1.2)
0.417	39	>75% Grass cover, Good, HSG A (PA#1.1, PA#1.2, PA#1.3, PA#1.4, PA#3)
0.297	80	>75% Grass cover, Good, HSG D (PA#1.1, PA#1.2, PA#1.3, PA#1.4, PA#3)
0.492	98	Paved parking, HSG A (PA#1.2, PA#1.3, PA#1.4)
0.431	98	Roofs, HSG A (PA#1.2, PA#1.3, PA#1.4)
0.073	36	Woods, Fair, HSG A (PA#1.1)
6.309	79	Woods, Fair, HSG D (EA#2., PA#1.1, PA#1.2, PA#3)
0.137	30	Woods, Good, HSG A (PA#3)
8.239	**78**	**TOTAL AREA**

Summary for Subcatchment EA#2.: EX. AREA #2

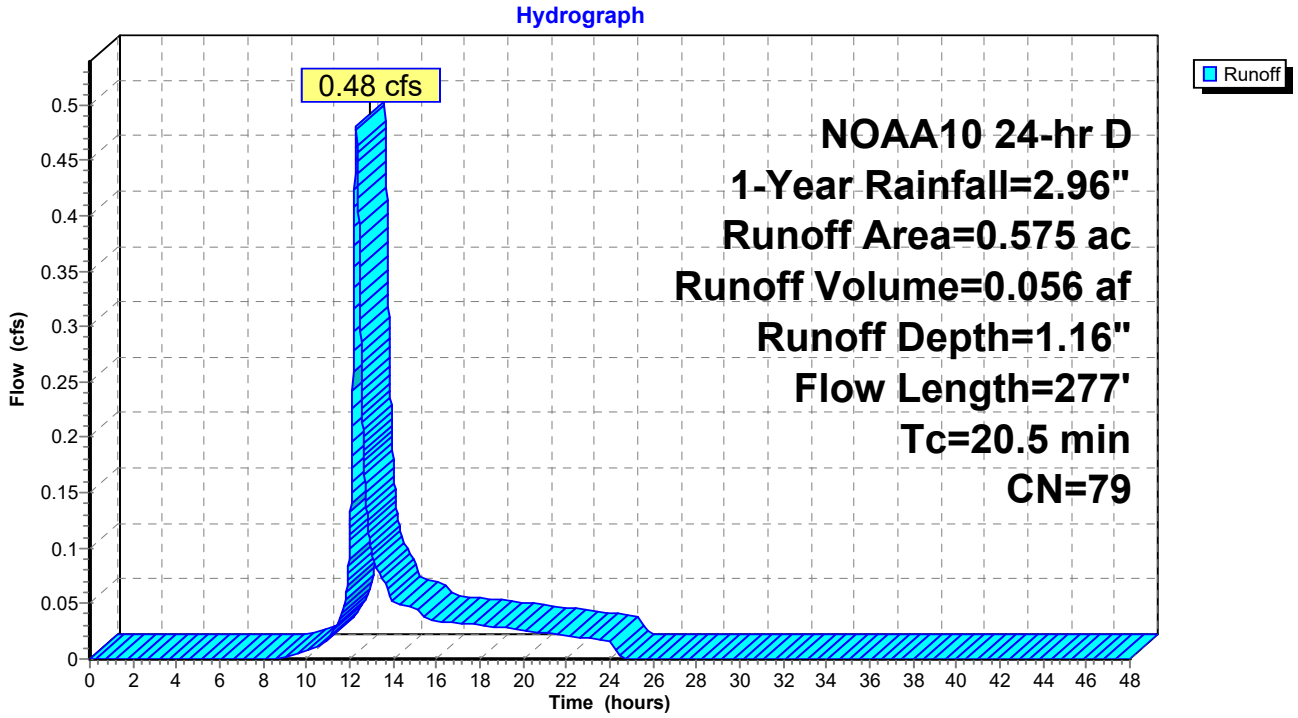
Runoff = 0.48 cfs @ 12.30 hrs, Volume= 0.056 af, Depth= 1.16"
Routed to Link 5L : P-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2.: EX. AREA #2



Summary for Subcatchment PA#1.1: PROP.AREA #1

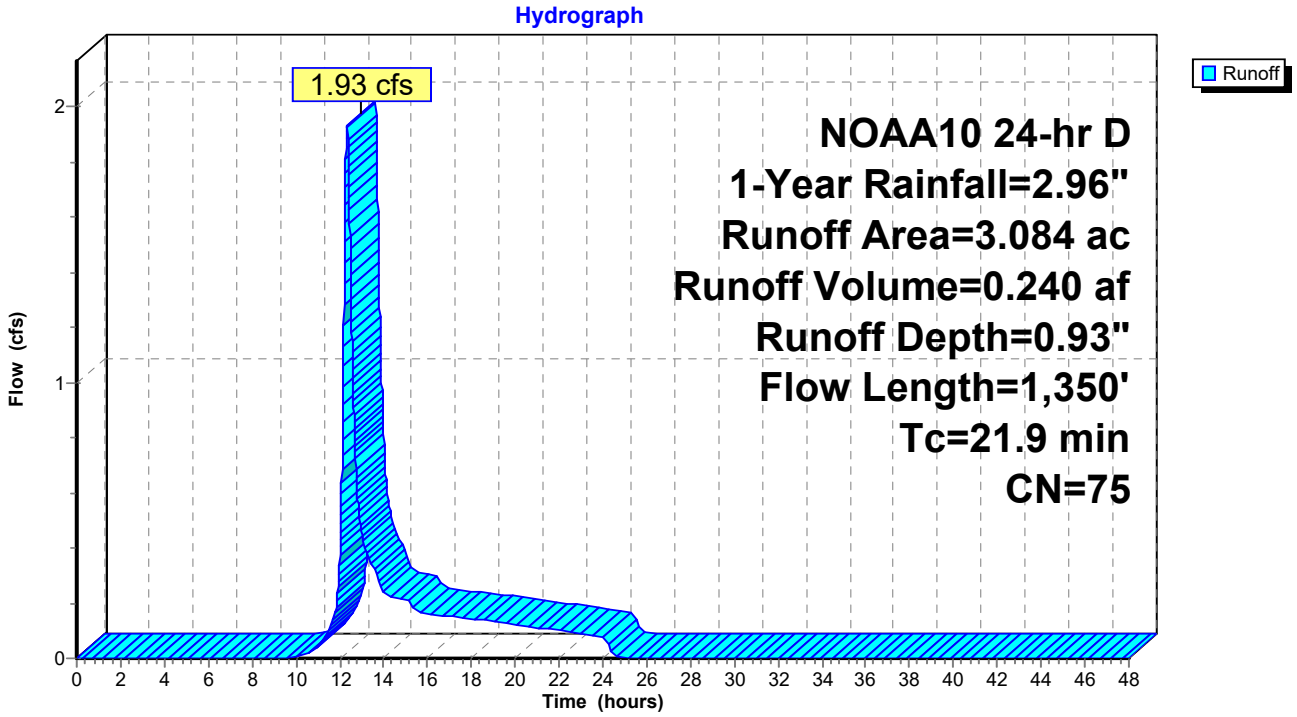
Runoff = 1.93 cfs @ 12.33 hrs, Volume= 0.240 af, Depth= 0.93"
Routed to Reach 1R : PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.073	36	Woods, Fair, HSG A
2.780	79	Woods, Fair, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.215	39	>75% Grass cover, Good, HSG A
3.084	75	Weighted Average
3.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
7.5	874	0.1492	1.93		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.2	95	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	119	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	125	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.1	37	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
21.9	1,350	Total			

Subcatchment PA#1.1: PROP.AREA #1



Summary for Subcatchment PA#1.2: PROP.AREA #1.2

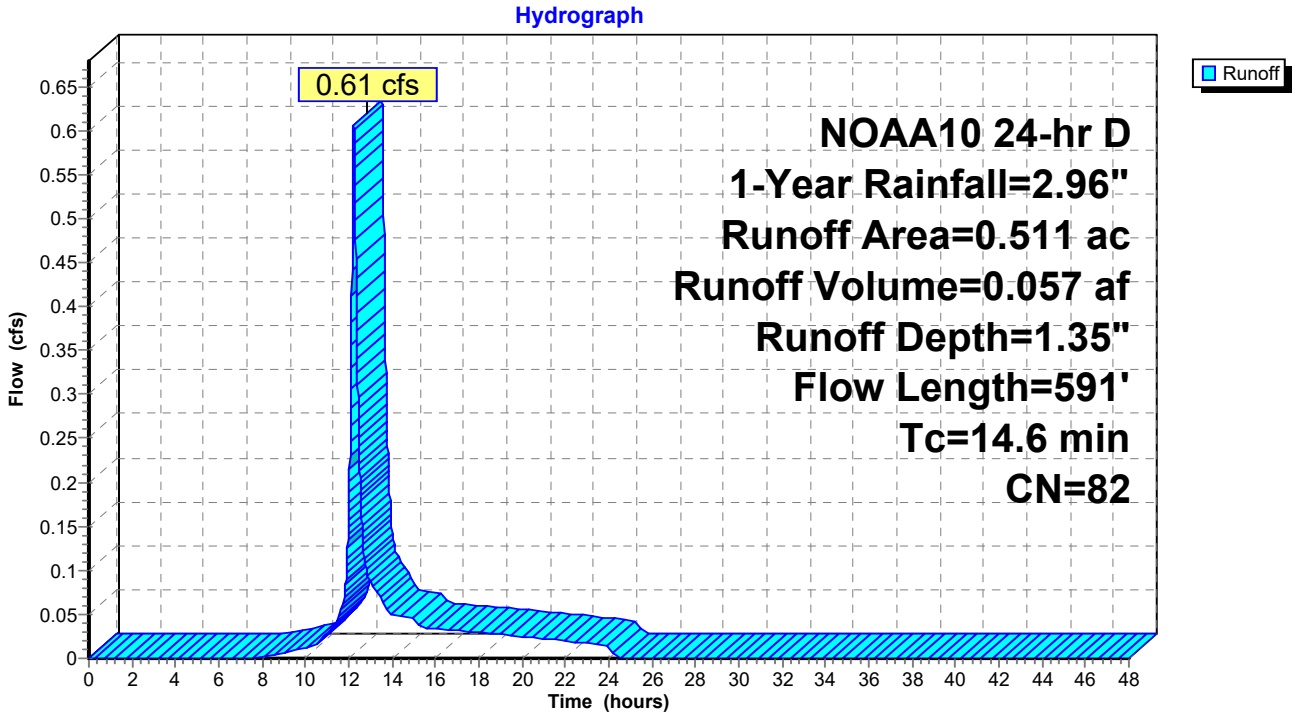
Runoff = 0.61 cfs @ 12.23 hrs, Volume= 0.057 af, Depth= 1.35"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.131	98	Roofs, HSG A
0.133	98	Paved parking, HSG A
0.097	39	>75% Grass cover, Good, HSG A
0.025	80	>75% Grass cover, Good, HSG D
0.083	84	50-75% Grass cover, Fair, HSG D
0.042	79	Woods, Fair, HSG D
0.511	82	Weighted Average
0.247		48.34% Pervious Area
0.264		51.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.3300	0.13		**Sheet Flow, Sheet flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
0.5	75	0.2300	2.40		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.3	55	0.1600	2.80		**Shallow Concentrated Flow, Shallow** Short Grass Pasture Kv= 7.0 fps
0.4	99	0.0500	4.54		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.6	262	0.0100	6.77	8.13	**Channel Flow, Channel flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
14.6	591	Total			

Subcatchment PA#1.2: PROP.AREA #1.2



Summary for Subcatchment PA#1.3: PROP.AREA #1.3

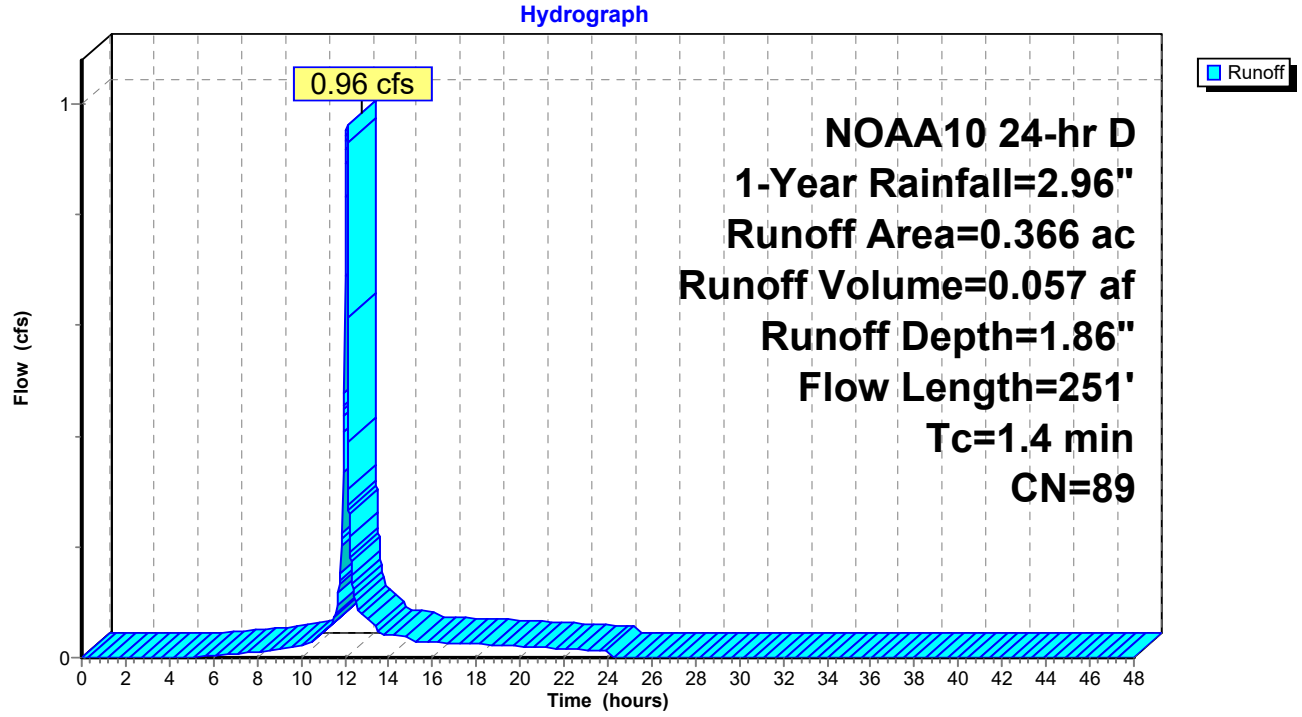
Runoff = 0.96 cfs @ 12.10 hrs, Volume= 0.057 af, Depth= 1.86"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

	Area (ac)	CN	Description
	0.150	98	Roofs, HSG A
	0.145	98	Paved parking, HSG A
*	0.025	80	>75% Grass cover, Good, HSG D
	0.046	39	>75% Grass cover, Good, HSG A
	0.366	89	Weighted Average
	0.071		19.40% Pervious Area
	0.295		80.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0400	1.72		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.4	151	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.4	251	Total			

Subcatchment PA#1.3: PROP.AREA #1.3



Summary for Subcatchment PA#1.4: PROP.AREA #1.4

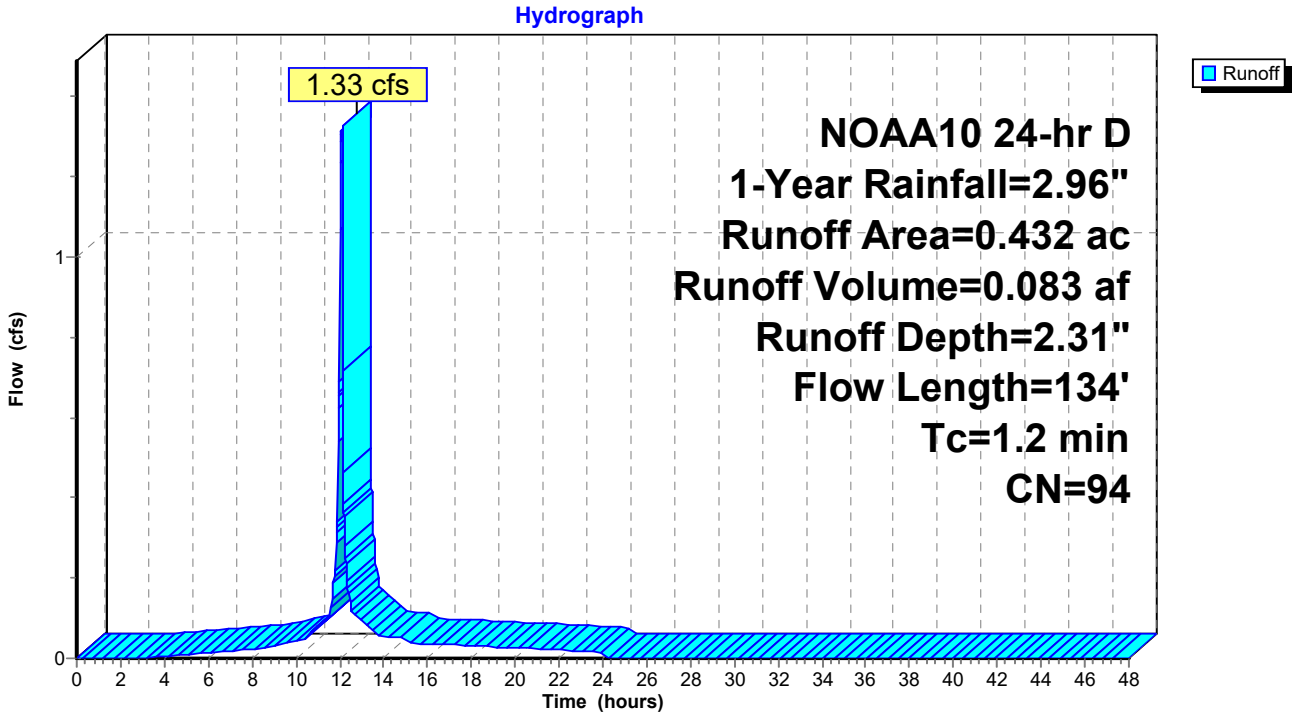
Runoff = 1.33 cfs @ 12.10 hrs, Volume= 0.083 af, Depth= 2.31"
Routed to Pond 2P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.150	98	Roofs, HSG A
0.214	98	Paved parking, HSG A
0.013	39	>75% Grass cover, Good, HSG A
0.055	80	>75% Grass cover, Good, HSG D
0.432	94	Weighted Average
0.068		15.74% Pervious Area
0.364		84.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0300	1.53		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.0	9	0.0298	3.50		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.1	25	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.2	134	Total			

Subcatchment PA#1.4: PROP.AREA #1.4



Summary for Subcatchment PA#3: PROP.AREA #3

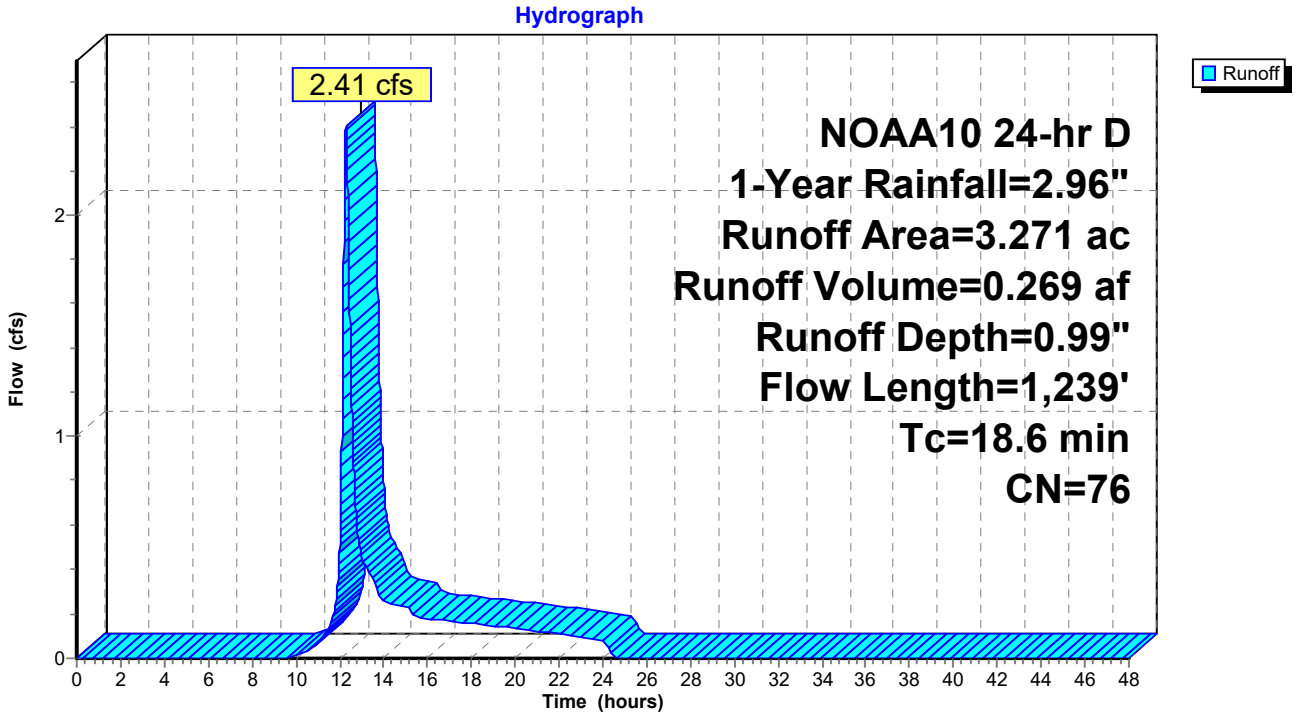
Runoff = 2.41 cfs @ 12.28 hrs, Volume= 0.269 af, Depth= 0.99"
Routed to Link 8L : P-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 1-Year Rainfall=2.96"

Area (ac)	CN	Description
0.137	30	Woods, Good, HSG A
2.912	79	Woods, Fair, HSG D
0.176	80	>75% Grass cover, Good, HSG D
0.046	39	>75% Grass cover, Good, HSG A
3.271	76	Weighted Average
3.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.3400	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.4	820	0.2600	2.55		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.0	34	0.0400	11.41	14.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.4	240	0.0100	10.22	72.26	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
0.1	45	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
18.6	1,239	Total			

Subcatchment PA#3: PROP.AREA #3



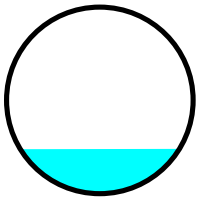
Summary for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 0.93" for 1-Year event
Inflow = 1.93 cfs @ 12.33 hrs, Volume= 0.240 af
Outflow = 1.93 cfs @ 12.34 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.7 min
Routed to Link 6L : P-POA-1.1

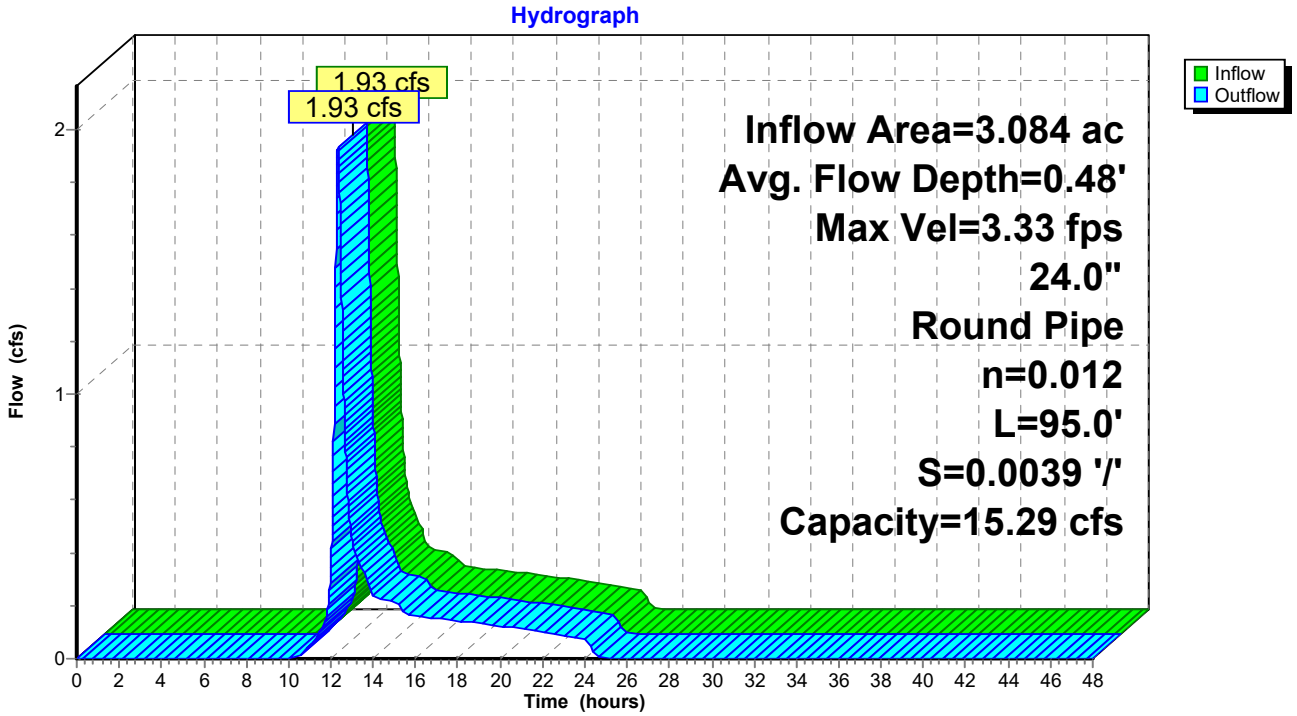
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.33 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.49 fps, Avg. Travel Time= 1.1 min

Peak Storage= 55 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 1.71'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 15.29 cfs

24.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 95.0' Slope= 0.0039 '/'
Inlet Invert= 304.15', Outlet Invert= 303.78'



Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)



Stage-Discharge for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
304.15	0.00	0.00
304.17	0.43	0.00
304.19	0.69	0.01
304.21	0.90	0.02
304.23	1.08	0.05
304.25	1.25	0.07
304.27	1.41	0.11
304.29	1.56	0.15
304.31	1.69	0.20
304.33	1.83	0.26
304.35	1.95	0.32
304.37	2.07	0.39
304.39	2.19	0.47
304.41	2.30	0.55
304.43	2.41	0.64
304.45	2.52	0.74
304.47	2.62	0.85
304.49	2.72	0.96
304.51	2.81	1.08
304.53	2.90	1.21
304.55	2.99	1.34
304.57	3.08	1.48
304.59	3.17	1.62
304.61	3.25	1.77
304.63	3.33	1.93
304.65	3.41	2.10
304.67	3.49	2.26
304.69	3.56	2.44
304.71	3.64	2.62
304.73	3.71	2.80
304.75	3.78	3.00
304.77	3.85	3.19
304.79	3.91	3.39
304.81	3.98	3.60
304.83	4.04	3.81
304.85	4.10	4.02
304.87	4.16	4.24
304.89	4.22	4.46
304.91	4.28	4.69
304.93	4.34	4.92
304.95	4.39	5.15
304.97	4.45	5.39
304.99	4.50	5.63
305.01	4.55	5.88
305.03	4.60	6.12
305.05	4.65	6.37
305.07	4.69	6.62
305.09	4.74	6.88
305.11	4.78	7.13
305.13	4.83	7.39
305.15	4.87	7.65
305.17	4.91	7.91
305.19	4.95	8.17
305.21	4.99	8.43
305.23	5.02	8.69
305.25	5.06	8.96
305.27	5.09	9.22
305.29	5.13	9.49
305.31	5.16	9.75
305.33	5.19	10.01
305.35	5.22	10.28
305.37	5.25	10.54
305.39	5.28	10.80
305.41	5.30	11.06
305.43	5.33	11.31
305.45	5.35	11.57
305.47	5.37	11.82
305.49	5.40	12.07
305.51	5.42	12.32
305.53	5.43	12.56
305.55	5.45	12.81
305.57	5.47	13.04
305.59	5.48	13.28
305.61	5.50	13.50
305.63	5.51	13.73
305.65	5.52	13.95
305.67	5.53	14.16
305.69	5.54	14.37
305.71	5.54	14.57
305.73	5.55	14.76
305.75	5.55	14.95
305.77	**5.55**	15.13
305.79	5.55	15.30
305.81	5.55	15.46
305.83	5.54	15.62
305.85	5.54	15.76
305.87	5.53	15.89
305.89	5.52	16.01
305.91	5.51	16.12
305.93	5.49	16.22
305.95	5.47	16.30
305.97	5.45	16.37
305.99	5.43	16.42
306.01	5.40	16.44
306.03	5.37	**16.45**
306.05	5.33	16.43
306.07	5.29	16.39
306.09	5.23	16.30
306.11	5.17	16.16
306.13	5.08	15.94
306.15	4.87	15.29

Stage-Area-Storage for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
304.15	0.0	0
304.17	0.0	1
304.19	0.0	1
304.21	0.0	3
304.23	0.0	4
304.25	0.1	6
304.27	0.1	7
304.29	0.1	9
304.31	0.1	11
304.33	0.1	13
304.35	0.2	16
304.37	0.2	18
304.39	0.2	20
304.41	0.2	23
304.43	0.3	25
304.45	0.3	28
304.47	0.3	31
304.49	0.4	34
304.51	0.4	37
304.53	0.4	39
304.55	0.4	42
304.57	0.5	46
304.59	0.5	49
304.61	0.5	52
304.63	0.6	55
304.65	0.6	58
304.67	0.6	62
304.69	0.7	65
304.71	0.7	68
304.73	0.8	72
304.75	0.8	75
304.77	0.8	79
304.79	0.9	82
304.81	0.9	86
304.83	0.9	89
304.85	1.0	93
304.87	1.0	97
304.89	1.1	100
304.91	1.1	104
304.93	1.1	108
304.95	1.2	111
304.97	1.2	115
304.99	1.3	119
305.01	1.3	123
305.03	1.3	126
305.05	1.4	130
305.07	1.4	134
305.09	1.5	138
305.11	1.5	142
305.13	1.5	145
305.15	1.6	149
305.17	1.6	153
305.19	1.7	157
305.21	1.7	161
305.23	1.7	164
305.25	1.8	168
305.27	1.8	172
305.29	1.8	176
305.31	1.9	179
305.33	1.9	183
305.35	2.0	187
305.37	2.0	191
305.39	2.0	194
305.41	2.1	198
305.43	2.1	202
305.45	2.2	205
305.47	2.2	209
305.49	2.2	213
305.51	2.3	216
305.53	2.3	220
305.55	2.3	223
305.57	2.4	227
305.59	2.4	230
305.61	2.5	233
305.63	2.5	237
305.65	2.5	240
305.67	2.6	243
305.69	2.6	247
305.71	2.6	250
305.73	2.7	253
305.75	2.7	256
305.77	2.7	259
305.79	2.8	262
305.81	2.8	265
305.83	2.8	268
305.85	2.8	270
305.87	2.9	273
305.89	2.9	276
305.91	2.9	278
305.93	3.0	281
305.95	3.0	283
305.97	3.0	285
305.99	3.0	287
306.01	3.0	289
306.03	3.1	291
306.05	3.1	293
306.07	3.1	294
306.09	3.1	296
306.11	3.1	297
306.13	3.1	298
306.15	**3.1**	**298**

Summary for Pond 1P: UND Chambers

Inflow Area = 0.877 ac, 63.74% Impervious, Inflow Depth = 1.56" for 1-Year event
Inflow = 1.29 cfs @ 12.10 hrs, Volume= 0.114 af
Outflow = 0.06 cfs @ 11.01 hrs, Volume= 0.114 af, Atten= 95%, Lag= 0.0 min
Discarded = 0.06 cfs @ 11.01 hrs, Volume= 0.114 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2P : UND Chambers

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 309.27' @ 15.88 hrs Surf.Area= 0.041 ac Storage= 0.051 af

Plug-Flow detention time= 378.5 min calculated for 0.114 af (100% of inflow)
Center-of-Mass det. time= 378.6 min (1,236.0 - 857.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	307.00'	0.080 af	**19.42'W x 91.99'L x 7.50'H Field A** 0.308 af Overall - 0.106 af Embedded = 0.201 af x 40.0% Voids
#2A	308.50'	0.106 af	**ADS_StormTech MC-4500 b +Cap**x 42 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 42 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.187 af	Total Available Storage

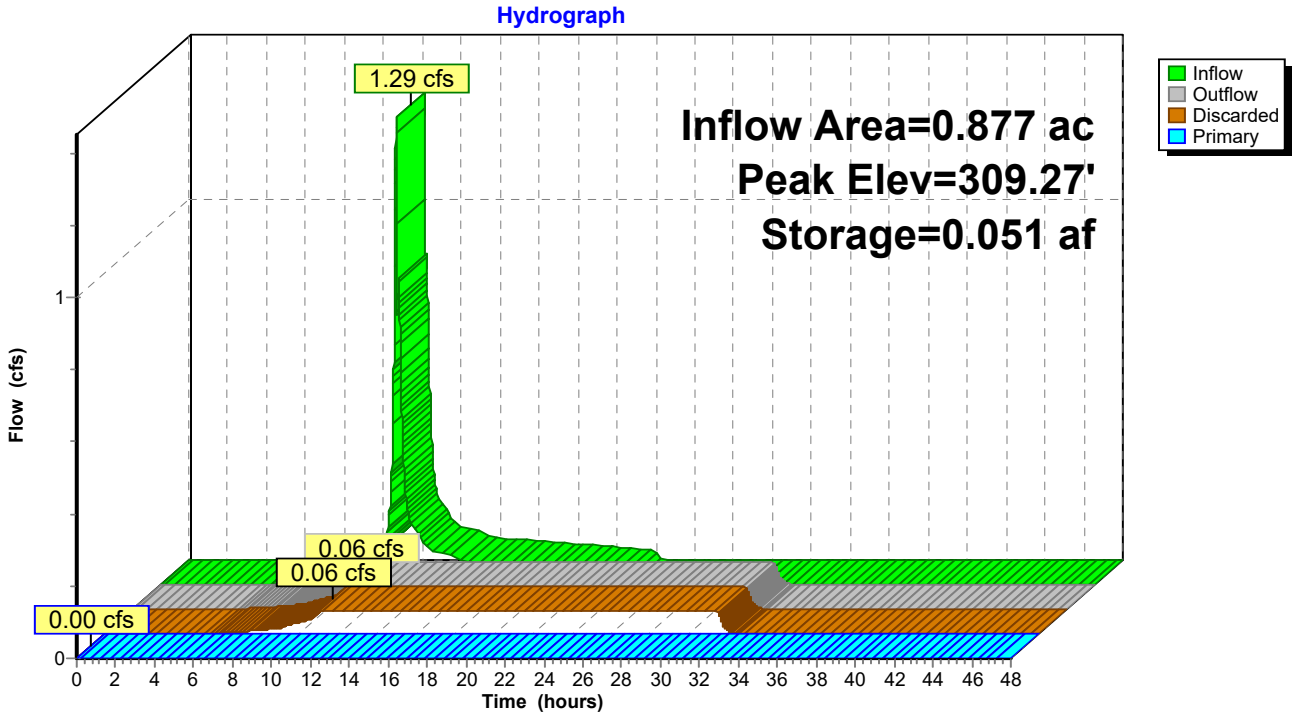
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	310.56'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 11.01 hrs HW=307.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=307.00' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: UND Chambers



Stage-Discharge for Pond 1P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
307.00	0.00	**0.00**	0.00
307.10	0.06	**0.06**	0.00
307.20	0.06	0.06	0.00
307.30	0.06	0.06	0.00
307.40	0.06	0.06	0.00
307.50	0.06	0.06	0.00
307.60	0.06	0.06	0.00
307.70	0.06	0.06	0.00
307.80	0.06	0.06	0.00
307.90	0.06	0.06	0.00
308.00	0.06	0.06	0.00
308.10	0.06	0.06	0.00
308.20	0.06	0.06	0.00
308.30	0.06	0.06	0.00
308.40	0.06	0.06	0.00
308.50	0.06	0.06	0.00
308.60	0.06	0.06	0.00
308.70	0.06	0.06	0.00
308.80	0.06	0.06	0.00
308.90	0.06	0.06	0.00
309.00	0.06	0.06	0.00
309.10	0.06	0.06	0.00
309.20	0.06	0.06	0.00
309.30	0.06	0.06	0.00
309.40	0.06	0.06	0.00
309.50	0.06	0.06	0.00
309.60	0.06	0.06	0.00
309.70	0.06	0.06	0.00
309.80	0.06	0.06	0.00
309.90	0.06	0.06	0.00
310.00	0.06	0.06	0.00
310.10	0.06	0.06	0.00
310.20	0.06	0.06	0.00
310.30	0.06	0.06	0.00
310.40	0.06	0.06	0.00
310.50	0.06	0.06	0.00
310.60	0.07	0.06	0.01
310.70	0.18	0.06	0.11
310.80	0.37	0.06	0.31
310.90	0.63	0.06	0.56
311.00	0.89	0.06	0.83
311.10	1.08	0.06	1.02
311.20	1.24	0.06	1.18
311.30	1.39	0.06	1.32
311.40	1.51	0.06	1.45
311.50	1.63	0.06	1.57
311.60	1.74	0.06	1.68
311.70	1.85	0.06	1.78
311.80	1.94	0.06	1.88
311.90	2.04	0.06	1.97
312.00	2.12	0.06	2.06
312.10	2.21	0.06	2.15
312.20	2.29	0.06	2.23
312.30	2.37	0.06	2.31
312.40	2.45	0.06	2.38
312.50	2.52	0.06	2.46
312.60	2.59	0.06	2.53
312.70	2.66	0.06	2.60
312.80	2.73	0.06	2.67
312.90	2.80	0.06	2.73
313.00	2.86	0.06	2.80
313.10	2.92	0.06	2.86
313.20	2.99	0.06	2.92
313.30	3.05	0.06	2.98
313.40	3.11	0.06	3.04
313.50	3.16	0.06	3.10
313.60	3.22	0.06	3.16
313.70	3.28	0.06	3.21
313.80	3.33	0.06	3.27
313.90	3.39	0.06	3.32
314.00	3.44	0.06	3.38
314.10	3.49	0.06	3.43
314.20	3.54	0.06	3.48
314.30	3.59	0.06	3.53
314.40	3.64	0.06	3.58
314.50	**3.69**	0.06	**3.63**

Stage-Area-Storage for Pond 1P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
307.00	**0.041**	0.000
307.10	0.041	0.002
307.20	0.041	0.003
307.30	0.041	0.005
307.40	0.041	0.007
307.50	0.041	0.008
307.60	0.041	0.010
307.70	0.041	0.011
307.80	0.041	0.013
307.90	0.041	0.015
308.00	0.041	0.016
308.10	0.041	0.018
308.20	0.041	0.020
308.30	0.041	0.021
308.40	0.041	0.023
308.50	0.041	0.025
308.60	0.041	0.028
308.70	0.041	0.032
308.80	0.041	0.035
308.90	0.041	0.038
309.00	0.041	0.042
309.10	0.041	0.045
309.20	0.041	0.049
309.30	0.041	0.052
309.40	0.041	0.055
309.50	0.041	0.059
309.60	0.041	0.062
309.70	0.041	0.065
309.80	0.041	0.069
309.90	0.041	0.072
310.00	0.041	0.075
310.10	0.041	0.079
310.20	0.041	0.082
310.30	0.041	0.085
310.40	0.041	0.088
310.50	0.041	0.092
310.60	0.041	0.095
310.70	0.041	0.098
310.80	0.041	0.101
310.90	0.041	0.104
311.00	0.041	0.107
311.10	0.041	0.110
311.20	0.041	0.113
311.30	0.041	0.116
311.40	0.041	0.119
311.50	0.041	0.122
311.60	0.041	0.125
311.70	0.041	0.128
311.80	0.041	0.131
311.90	0.041	0.134
312.00	0.041	0.137
312.10	0.041	0.139
312.20	0.041	0.142
312.30	0.041	0.145
312.40	0.041	0.147
312.50	0.041	0.150
312.60	0.041	0.152
312.70	0.041	0.155
312.80	0.041	0.157
312.90	0.041	0.159
313.00	0.041	0.161
313.10	0.041	0.163
313.20	0.041	0.165
313.30	0.041	0.167
313.40	0.041	0.169
313.50	0.041	0.170
313.60	0.041	0.172
313.70	0.041	0.174
313.80	0.041	0.175
313.90	0.041	0.177
314.00	0.041	0.179
314.10	0.041	0.180
314.20	0.041	0.182
314.30	0.041	0.184
314.40	0.041	0.185
314.50	0.041	**0.187**

Summary for Pond 2P: UND Chambers

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 0.76" for 1-Year event
Inflow = 1.33 cfs @ 12.10 hrs, Volume= 0.083 af
Outflow = 0.05 cfs @ 10.61 hrs, Volume= 0.083 af, Atten= 96%, Lag= 0.0 min
Discarded = 0.05 cfs @ 10.61 hrs, Volume= 0.083 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 7L : P-POA-1.2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 305.92' @ 15.01 hrs Surf.Area= 0.032 ac Storage= 0.034 af

Plug-Flow detention time= 283.2 min calculated for 0.083 af (100% of inflow)
Center-of-Mass det. time= 283.2 min (1,082.6 - 799.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	304.25'	0.054 af	**19.42'W x 71.87'L x 6.75'H Field A** 0.216 af Overall - 0.082 af Embedded = 0.134 af x 40.0% Voids
#2A	305.00'	0.082 af	**ADS_StormTech MC-4500 b +Cap**x 32 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 32 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.136 af	Total Available Storage

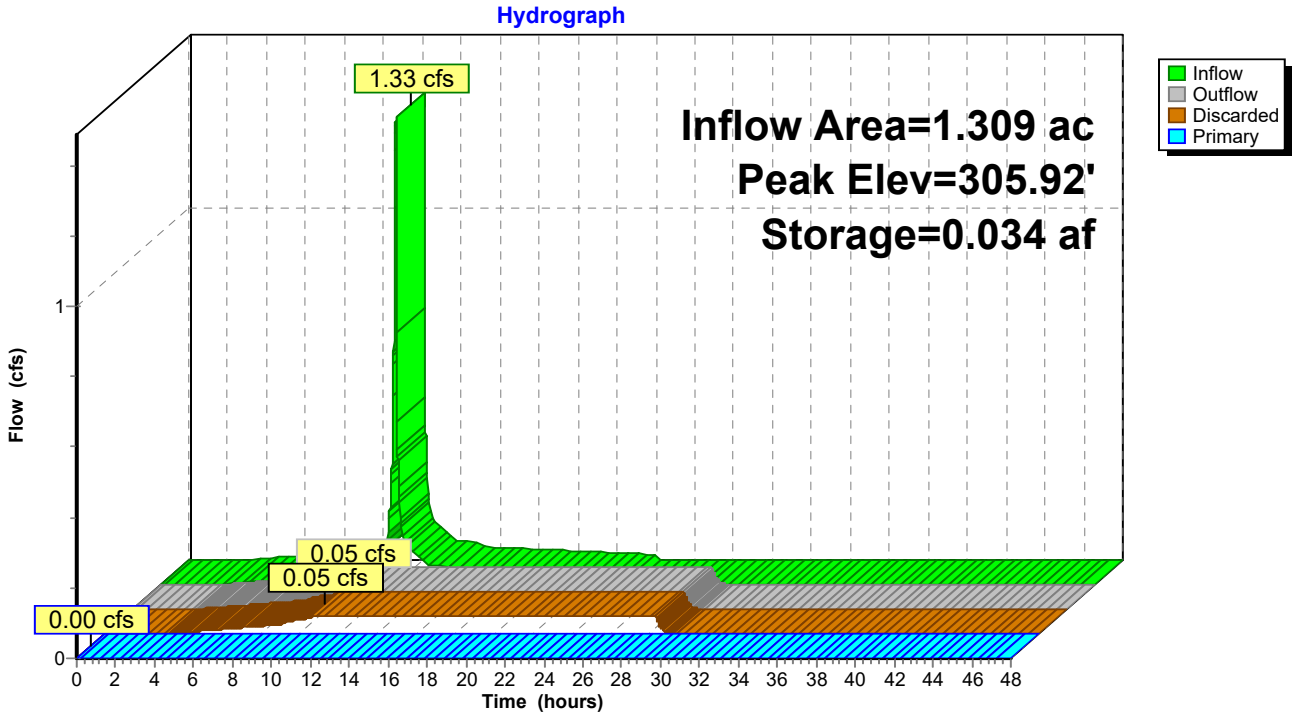
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.25'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	306.90'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.05 cfs @ 10.61 hrs HW=304.32' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=304.25' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: UND Chambers



Stage-Discharge for Pond 2P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
304.25	0.00	**0.00**	0.00
304.35	0.05	**0.05**	0.00
304.45	0.05	0.05	0.00
304.55	0.05	0.05	0.00
304.65	0.05	0.05	0.00
304.75	0.05	0.05	0.00
304.85	0.05	0.05	0.00
304.95	0.05	0.05	0.00
305.05	0.05	0.05	0.00
305.15	0.05	0.05	0.00
305.25	0.05	0.05	0.00
305.35	0.05	0.05	0.00
305.45	0.05	0.05	0.00
305.55	0.05	0.05	0.00
305.65	0.05	0.05	0.00
305.75	0.05	0.05	0.00
305.85	0.05	0.05	0.00
305.95	0.05	0.05	0.00
306.05	0.05	0.05	0.00
306.15	0.05	0.05	0.00
306.25	0.05	0.05	0.00
306.35	0.05	0.05	0.00
306.45	0.05	0.05	0.00
306.55	0.05	0.05	0.00
306.65	0.05	0.05	0.00
306.75	0.05	0.05	0.00
306.85	0.05	0.05	0.00
306.95	0.06	0.05	0.02
307.05	0.18	0.05	0.13
307.15	0.38	0.05	0.33
307.25	0.64	0.05	0.59
307.35	0.90	0.05	0.85
307.45	1.08	0.05	1.04
307.55	1.24	0.05	1.20
307.65	1.39	0.05	1.34
307.75	1.51	0.05	1.46
307.85	1.63	0.05	1.58
307.95	1.74	0.05	1.69
308.05	1.84	0.05	1.79
308.15	1.94	0.05	1.89
308.25	2.03	0.05	1.98
308.35	2.12	0.05	2.07
308.45	2.20	0.05	2.16
308.55	2.29	0.05	2.24
308.65	2.36	0.05	2.32
308.75	2.44	0.05	2.39
308.85	2.51	0.05	2.47
308.95	2.59	0.05	2.54
309.05	2.65	0.05	2.61
309.15	2.72	0.05	2.67
309.25	2.79	0.05	2.74
309.35	2.85	0.05	2.80
309.45	2.92	0.05	2.87
309.55	2.98	0.05	2.93
309.65	3.04	0.05	2.99
309.75	3.10	0.05	3.05
309.85	3.16	0.05	3.11
309.95	3.21	0.05	3.16
310.05	3.27	0.05	3.22
310.15	3.32	0.05	3.28
310.25	3.38	0.05	3.33
310.35	3.43	0.05	3.38
310.45	3.48	0.05	3.43
310.55	3.53	0.05	3.49
310.65	3.59	0.05	3.54
310.75	3.64	0.05	3.59
310.85	3.69	0.05	3.64
310.95	**3.73**	0.05	**3.69**

Stage-Area-Storage for Pond 2P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
304.25	**0.032**	0.000
304.35	0.032	0.001
304.45	0.032	0.003
304.55	0.032	0.004
304.65	0.032	0.005
304.75	0.032	0.006
304.85	0.032	0.008
304.95	0.032	0.009
305.05	0.032	0.011
305.15	0.032	0.014
305.25	0.032	0.016
305.35	0.032	0.019
305.45	0.032	0.022
305.55	0.032	0.024
305.65	0.032	0.027
305.75	0.032	0.030
305.85	0.032	0.032
305.95	0.032	0.035
306.05	0.032	0.037
306.15	0.032	0.040
306.25	0.032	0.043
306.35	0.032	0.045
306.45	0.032	0.048
306.55	0.032	0.050
306.65	0.032	0.053
306.75	0.032	0.055
306.85	0.032	0.058
306.95	0.032	0.060
307.05	0.032	0.063
307.15	0.032	0.065
307.25	0.032	0.068
307.35	0.032	0.070
307.45	0.032	0.073
307.55	0.032	0.075
307.65	0.032	0.077
307.75	0.032	0.080
307.85	0.032	0.082
307.95	0.032	0.084
308.05	0.032	0.087
308.15	0.032	0.089
308.25	0.032	0.091
308.35	0.032	0.093
308.45	0.032	0.095
308.55	0.032	0.098
308.65	0.032	0.100
308.75	0.032	0.102
308.85	0.032	0.104
308.95	0.032	0.106
309.05	0.032	0.108
309.15	0.032	0.110
309.25	0.032	0.112
309.35	0.032	0.113
309.45	0.032	0.115
309.55	0.032	0.117
309.65	0.032	0.118
309.75	0.032	0.119
309.85	0.032	0.121
309.95	0.032	0.122
310.05	0.032	0.123
310.15	0.032	0.125
310.25	0.032	0.126
310.35	0.032	0.127
310.45	0.032	0.129
310.55	0.032	0.130
310.65	0.032	0.131
310.75	0.032	0.132
310.85	0.032	0.134
310.95	0.032	**0.135**

Summary for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

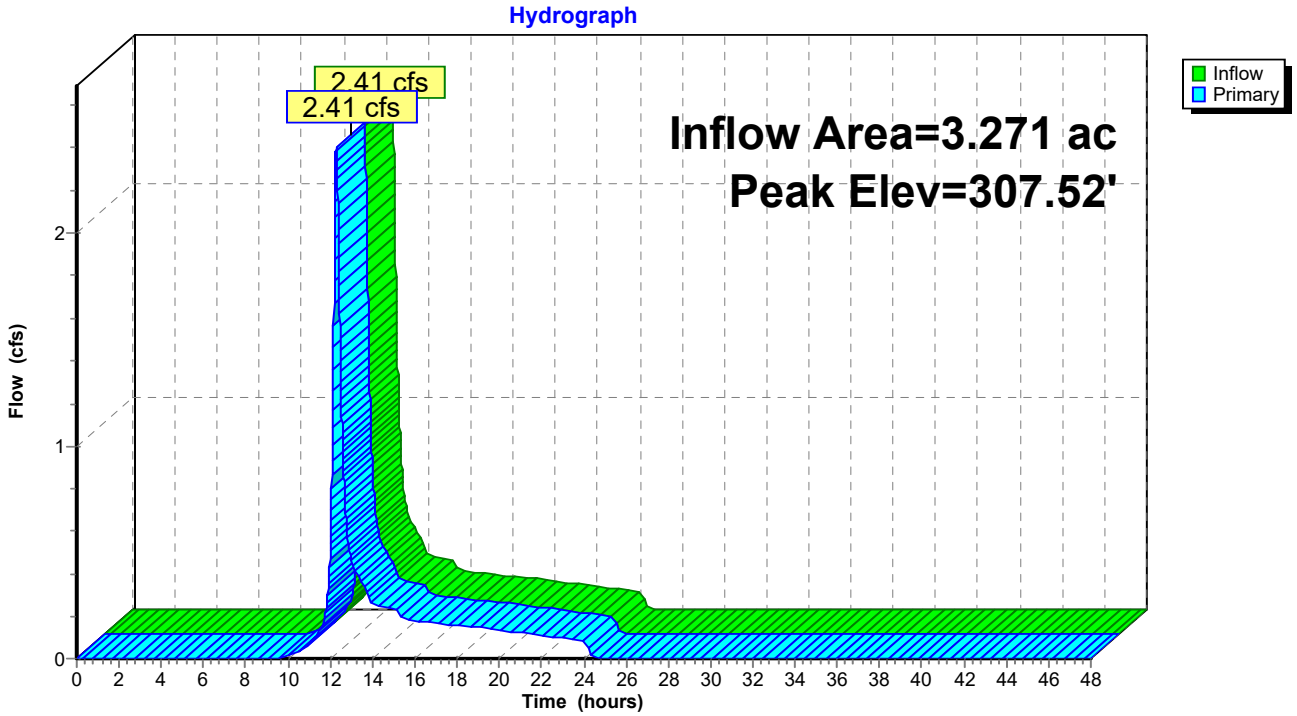
Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 0.99" for 1-Year event
Inflow = 2.41 cfs @ 12.28 hrs, Volume= 0.269 af
Outflow = 2.41 cfs @ 12.28 hrs, Volume= 0.269 af, Atten= 0%, Lag= 0.0 min
Primary = 2.41 cfs @ 12.28 hrs, Volume= 0.269 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 307.52' @ 12.28 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.40 cfs @ 12.28 hrs HW=307.52' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 2.40 cfs @ 3.23 fps)

Pond 4P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	307.66	2.78	308.70	4.75	309.74	6.12
306.64	0.00	307.68	2.83	308.72	4.78	309.76	6.14
306.66	0.01	307.70	2.88	308.74	4.81	309.78	6.17
306.68	0.02	307.72	2.93	308.76	4.84	309.80	6.19
306.70	0.03	307.74	2.98	308.78	4.87	309.82	**6.21**
306.72	0.04	307.76	3.03	308.80	4.90		
306.74	0.06	307.78	3.07	308.82	4.93		
306.76	0.09	307.80	3.12	308.84	4.96		
306.78	0.11	307.82	3.16	308.86	4.99		
306.80	0.14	307.84	3.21	308.88	5.02		
306.82	0.17	307.86	3.25	308.90	5.05		
306.84	0.20	307.88	3.30	308.92	5.07		
306.86	0.24	307.90	3.34	308.94	5.10		
306.88	0.28	307.92	3.38	308.96	5.13		
306.90	0.32	307.94	3.42	308.98	5.16		
306.92	0.37	307.96	3.47	309.00	5.19		
306.94	0.42	307.98	3.51	309.02	5.21		
306.96	0.47	308.00	3.55	309.04	5.24		
306.98	0.52	308.02	3.59	309.06	5.27		
307.00	0.57	308.04	3.63	309.08	5.29		
307.02	0.63	308.06	3.67	309.10	5.32		
307.04	0.69	308.08	3.71	309.12	5.35		
307.06	0.75	308.10	3.74	309.14	5.37		
307.08	0.81	308.12	3.78	309.16	5.40		
307.10	0.88	308.14	3.82	309.18	5.43		
307.12	0.95	308.16	3.86	309.20	5.45		
307.14	1.01	308.18	3.89	309.22	5.48		
307.16	1.08	308.20	3.93	309.24	5.51		
307.18	1.15	308.22	3.97	309.26	5.53		
307.20	1.22	308.24	4.00	309.28	5.56		
307.22	1.30	308.26	4.04	309.30	5.58		
307.24	1.37	308.28	4.07	309.32	5.61		
307.26	1.45	308.30	4.11	309.34	5.63		
307.28	1.52	308.32	4.14	309.36	5.66		
307.30	1.60	308.34	4.18	309.38	5.69		
307.32	1.67	308.36	4.21	309.40	5.71		
307.34	1.75	308.38	4.24	309.42	5.74		
307.36	1.83	308.40	4.28	309.44	5.76		
307.38	1.90	308.42	4.31	309.46	5.78		
307.40	1.98	308.44	4.34	309.48	5.81		
307.42	2.05	308.46	4.38	309.50	5.83		
307.44	2.13	308.48	4.41	309.52	5.86		
307.46	2.20	308.50	4.44	309.54	5.88		
307.48	2.27	308.52	4.47	309.56	5.91		
307.50	2.34	308.54	4.51	309.58	5.93		
307.52	2.40	308.56	4.54	309.60	5.96		
307.54	2.47	308.58	4.57	309.62	5.98		
307.56	2.53	308.60	4.60	309.64	6.00		
307.58	2.58	308.62	4.63	309.66	6.03		
307.60	2.63	308.64	4.66	309.68	6.05		
307.62	2.67	308.66	4.69	309.70	6.07		
307.64	2.73	308.68	4.72	309.72	6.10		

Stage-Area-Storage for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)
306.62	**0.000**
306.67	0.000
306.72	0.000
306.77	0.000
306.82	0.000
306.87	0.000
306.92	0.000
306.97	0.000
307.02	0.000
307.07	0.000
307.12	0.000
307.17	0.000
307.22	0.000
307.27	0.000
307.32	0.000
307.37	0.000
307.42	0.000
307.47	0.000
307.52	0.000
307.57	0.000
307.62	0.000
307.67	0.000
307.72	0.000
307.77	0.000
307.82	0.000
307.87	0.000
307.92	0.000
307.97	0.000
308.02	0.000
308.07	0.000
308.12	0.000
308.17	0.000
308.22	0.000
308.27	0.000
308.32	0.000
308.37	0.000
308.42	0.000
308.47	0.000
308.52	0.000
308.57	0.000
308.62	0.000
308.67	0.000
308.72	0.000
308.77	0.000
308.82	0.000
308.87	0.000
308.92	0.000
308.97	0.000
309.02	0.000
309.07	0.000
309.12	0.000
309.17	0.000
309.22	0.000
309.27	0.000
309.32	0.000
309.37	0.000
309.42	0.000
309.47	0.000
309.52	0.000
309.57	0.000
309.62	0.000
309.67	0.000
309.72	0.000
309.77	0.000
309.82	0.000

Summary for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

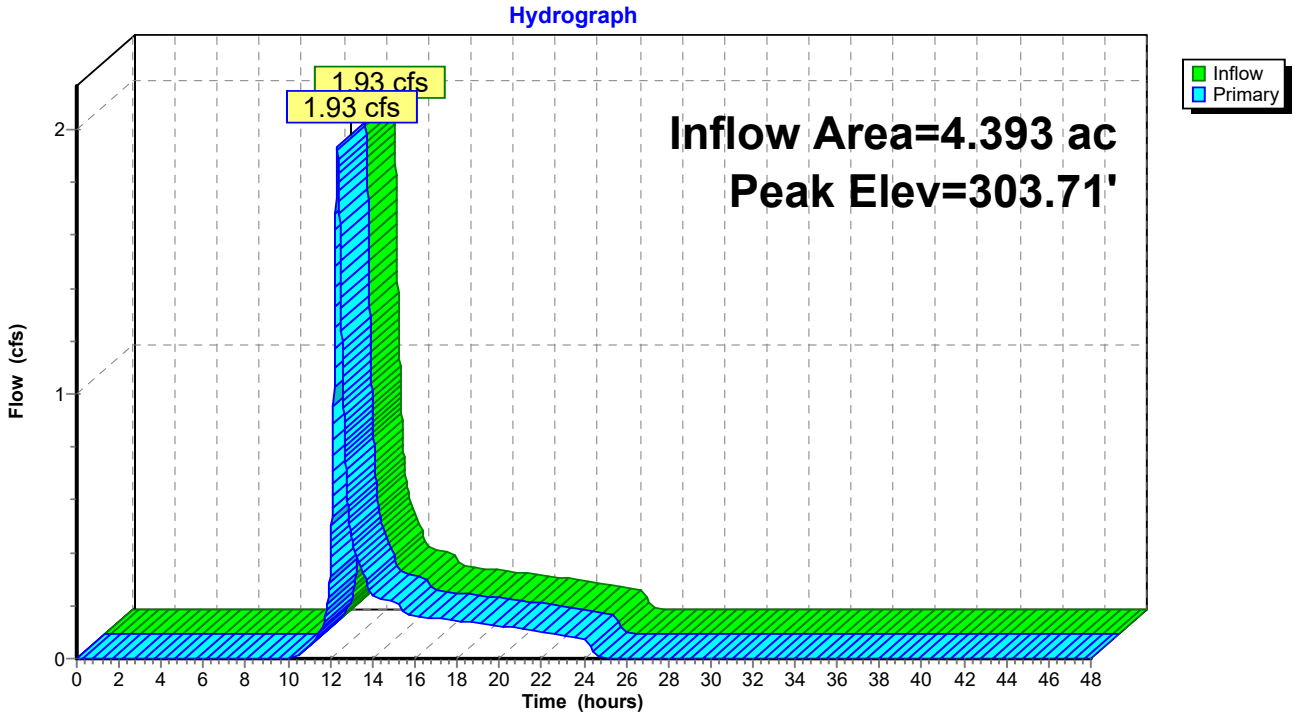
Inflow Area = 4.393 ac, 21.01% Impervious, Inflow Depth = 0.66" for 1-Year event
Inflow = 1.93 cfs @ 12.34 hrs, Volume= 0.240 af
Outflow = 1.93 cfs @ 12.34 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min
Primary = 1.93 cfs @ 12.34 hrs, Volume= 0.240 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 303.71' @ 12.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.93 cfs @ 12.34 hrs HW=303.71' TW=302.77' (Fixed TW Elev= 302.77')
└**1=Orifice/Grate** (Orifice Controls 1.93 cfs @ 2.81 fps)

Pond 5P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	303.55	1.19	304.07	3.79
303.04	0.00	303.56	1.23	304.08	3.84
303.05	0.00	303.57	1.27	304.09	3.89
303.06	0.00	303.58	1.31	304.10	3.94
303.07	0.01	303.59	1.36	304.11	3.99
303.08	0.01	303.60	1.40	304.12	4.04
303.09	0.02	303.61	1.45	304.13	4.08
303.10	0.02	303.62	1.49	304.14	4.13
303.11	0.03	303.63	1.54	304.15	4.18
303.12	0.04	303.64	1.58	304.16	4.22
303.13	0.05	303.65	1.63	304.17	4.27
303.14	0.06	303.66	1.68	304.18	4.31
303.15	0.07	303.67	1.72	304.19	4.36
303.16	0.08	303.68	1.77	304.20	4.40
303.17	0.10	303.69	1.82	304.21	4.44
303.18	0.11	303.70	1.87	304.22	4.48
303.19	0.12	303.71	1.92	304.23	4.52
303.20	0.14	303.72	1.96	304.24	4.55
303.21	0.16	303.73	2.01	304.25	4.59
303.22	0.17	303.74	2.06	304.26	4.62
303.23	0.19	303.75	2.11	304.27	4.65
303.24	0.21	303.76	2.16	304.28	**4.67**
303.25	0.23	303.77	2.22		
303.26	0.25	303.78	2.27		
303.27	0.27	303.79	2.32		
303.28	0.30	303.80	2.37		
303.29	0.32	303.81	2.42		
303.30	0.35	303.82	2.47		
303.31	0.37	303.83	2.53		
303.32	0.40	303.84	2.58		
303.33	0.42	303.85	2.63		
303.34	0.45	303.86	2.68		
303.35	0.48	303.87	2.74		
303.36	0.51	303.88	2.79		
303.37	0.54	303.89	2.84		
303.38	0.57	303.90	2.90		
303.39	0.60	303.91	2.95		
303.40	0.63	303.92	3.00		
303.41	0.66	303.93	3.06		
303.42	0.70	303.94	3.11		
303.43	0.73	303.95	3.16		
303.44	0.76	303.96	3.21		
303.45	0.80	303.97	3.27		
303.46	0.83	303.98	3.32		
303.47	0.87	303.99	3.37		
303.48	0.91	304.00	3.43		
303.49	0.95	304.01	3.48		
303.50	0.98	304.02	3.53		
303.51	1.02	304.03	3.58		
303.52	1.06	304.04	3.64		
303.53	1.10	304.05	3.69		
303.54	1.14	304.06	3.74		

Stage-Area-Storage for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

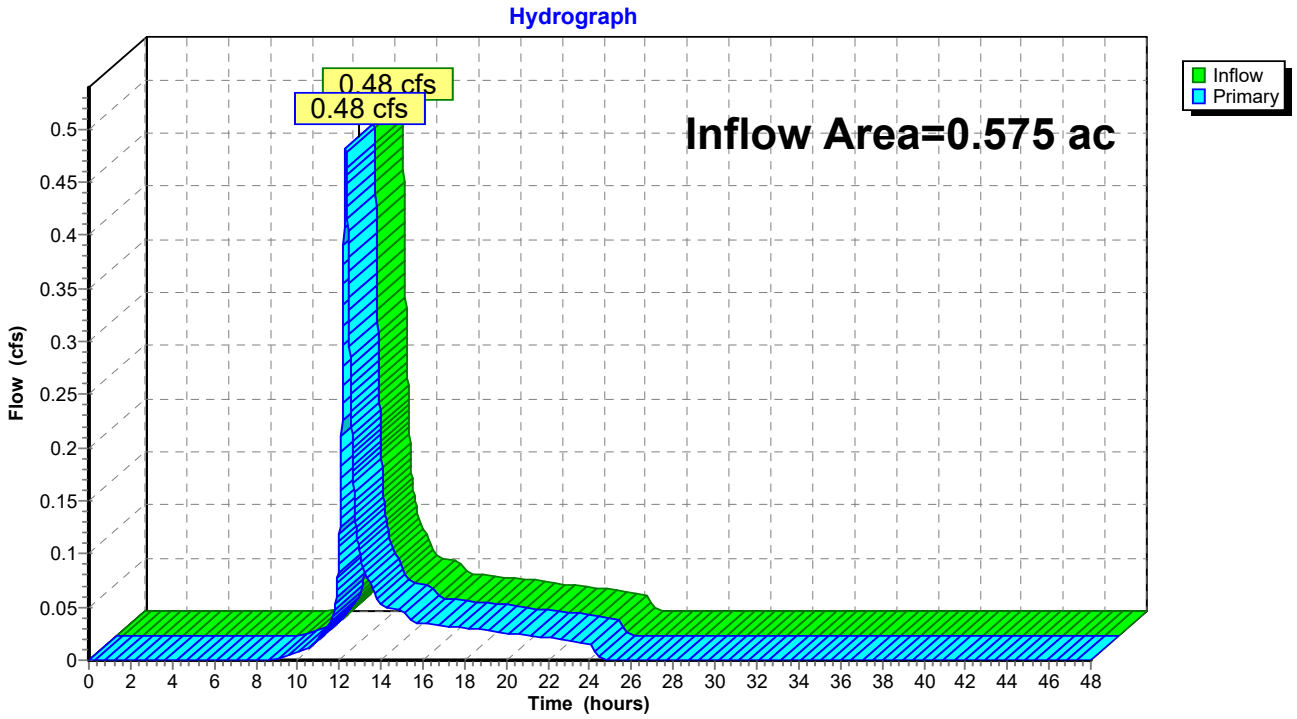
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	303.55	0.000	304.07	0.000
303.04	0.000	303.56	0.000	304.08	0.000
303.05	0.000	303.57	0.000	304.09	0.000
303.06	0.000	303.58	0.000	304.10	0.000
303.07	0.000	303.59	0.000	304.11	0.000
303.08	0.000	303.60	0.000	304.12	0.000
303.09	0.000	303.61	0.000	304.13	0.000
303.10	0.000	303.62	0.000	304.14	0.000
303.11	0.000	303.63	0.000	304.15	0.000
303.12	0.000	303.64	0.000	304.16	0.000
303.13	0.000	303.65	0.000	304.17	0.000
303.14	0.000	303.66	0.000	304.18	0.000
303.15	0.000	303.67	0.000	304.19	0.000
303.16	0.000	303.68	0.000	304.20	0.000
303.17	0.000	303.69	0.000	304.21	0.000
303.18	0.000	303.70	0.000	304.22	0.000
303.19	0.000	303.71	0.000	304.23	0.000
303.20	0.000	303.72	0.000	304.24	0.000
303.21	0.000	303.73	0.000	304.25	0.000
303.22	0.000	303.74	0.000	304.26	0.000
303.23	0.000	303.75	0.000	304.27	0.000
303.24	0.000	303.76	0.000	304.28	0.000
303.25	0.000	303.77	0.000		
303.26	0.000	303.78	0.000		
303.27	0.000	303.79	0.000		
303.28	0.000	303.80	0.000		
303.29	0.000	303.81	0.000		
303.30	0.000	303.82	0.000		
303.31	0.000	303.83	0.000		
303.32	0.000	303.84	0.000		
303.33	0.000	303.85	0.000		
303.34	0.000	303.86	0.000		
303.35	0.000	303.87	0.000		
303.36	0.000	303.88	0.000		
303.37	0.000	303.89	0.000		
303.38	0.000	303.90	0.000		
303.39	0.000	303.91	0.000		
303.40	0.000	303.92	0.000		
303.41	0.000	303.93	0.000		
303.42	0.000	303.94	0.000		
303.43	0.000	303.95	0.000		
303.44	0.000	303.96	0.000		
303.45	0.000	303.97	0.000		
303.46	0.000	303.98	0.000		
303.47	0.000	303.99	0.000		
303.48	0.000	304.00	0.000		
303.49	0.000	304.01	0.000		
303.50	0.000	304.02	0.000		
303.51	0.000	304.03	0.000		
303.52	0.000	304.04	0.000		
303.53	0.000	304.05	0.000		
303.54	0.000	304.06	0.000		

Summary for Link 5L: P-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 1.16" for 1-Year event
Inflow = 0.48 cfs @ 12.30 hrs, Volume= 0.056 af
Primary = 0.48 cfs @ 12.30 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 5L: P-POA-2

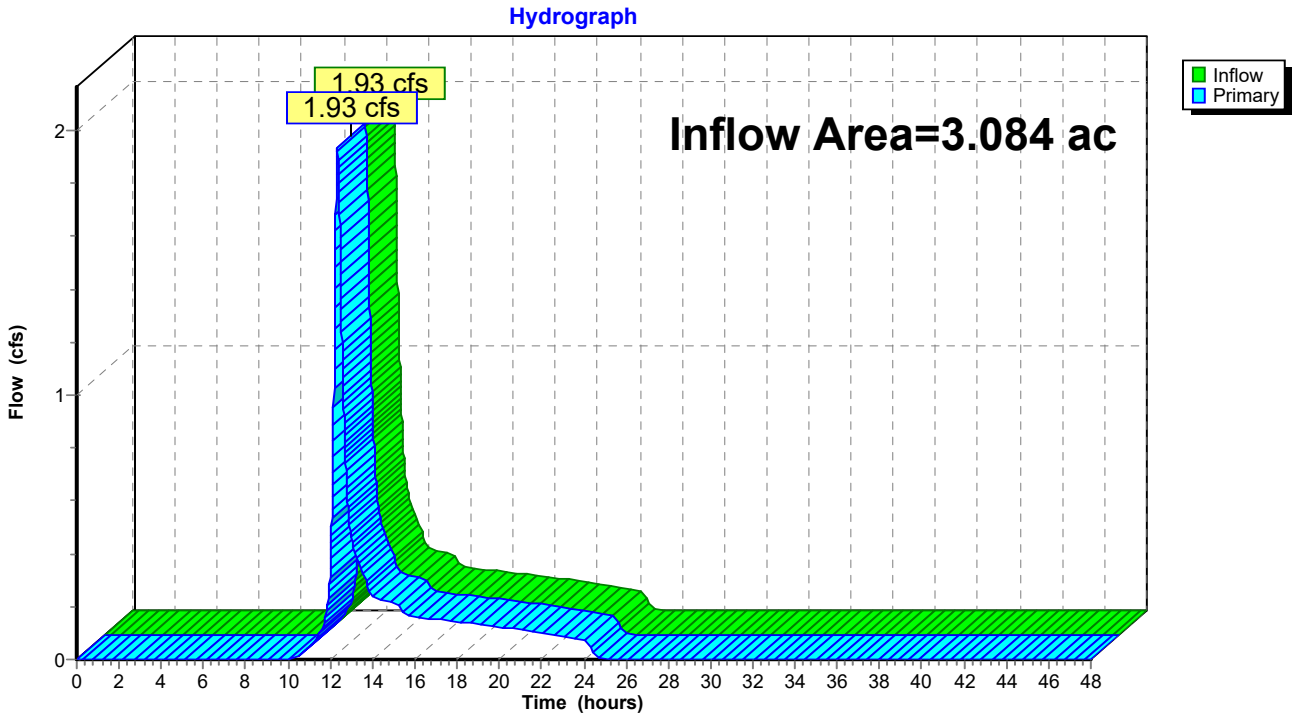


Summary for Link 6L: P-POA-1.1

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 0.93" for 1-Year event
Inflow = 1.93 cfs @ 12.34 hrs, Volume= 0.240 af
Primary = 1.93 cfs @ 12.34 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 6L: P-POA-1.1

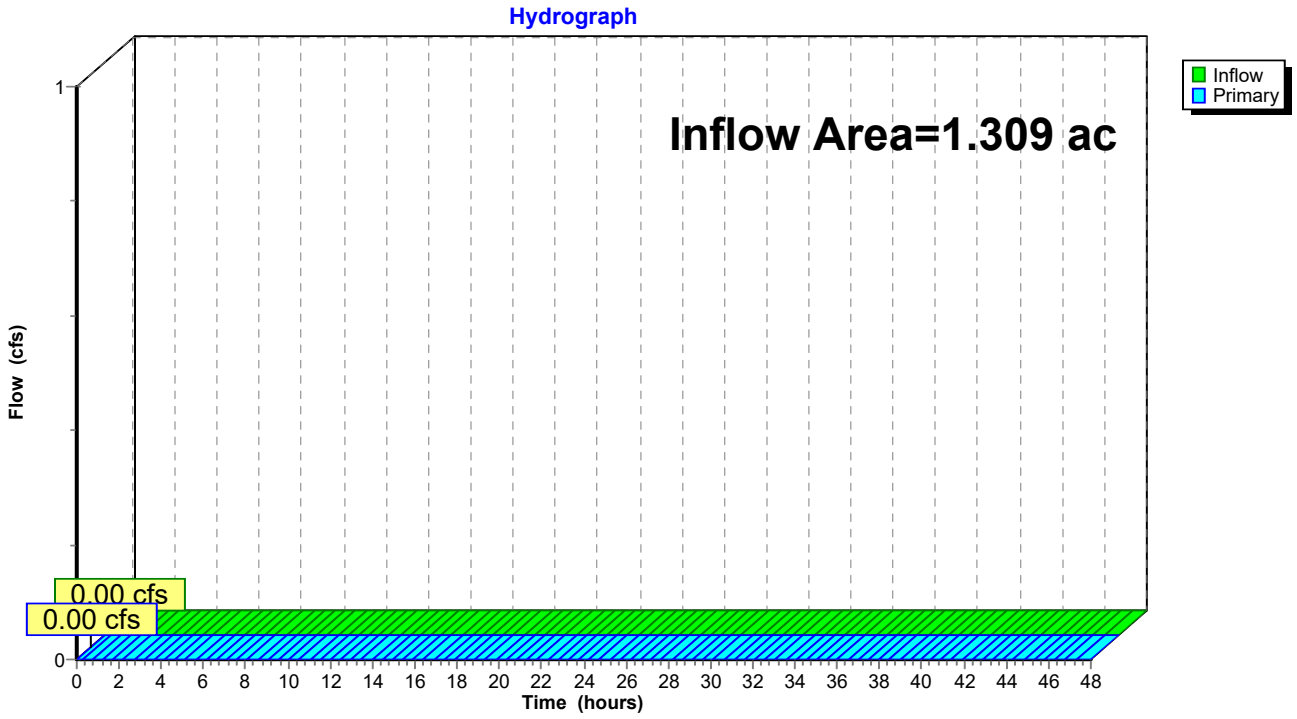


Summary for Link 7L: P-POA-1.2

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 7L: P-POA-1.2

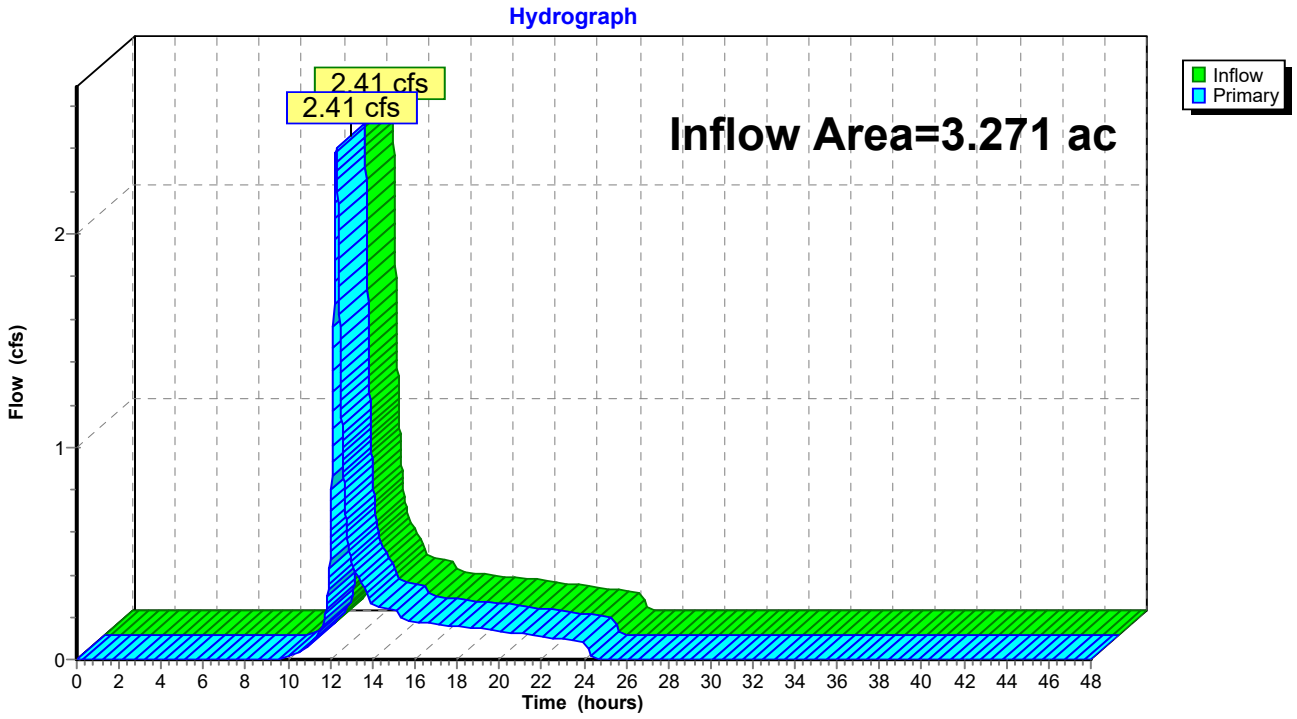


Summary for Link 8L: P-POA-3

Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 0.99" for 1-Year event
Inflow = 2.41 cfs @ 12.28 hrs, Volume= 0.269 af
Primary = 2.41 cfs @ 12.28 hrs, Volume= 0.269 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 4P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 8L: P-POA-3



Summary for Subcatchment EA#2.: EX. AREA #2

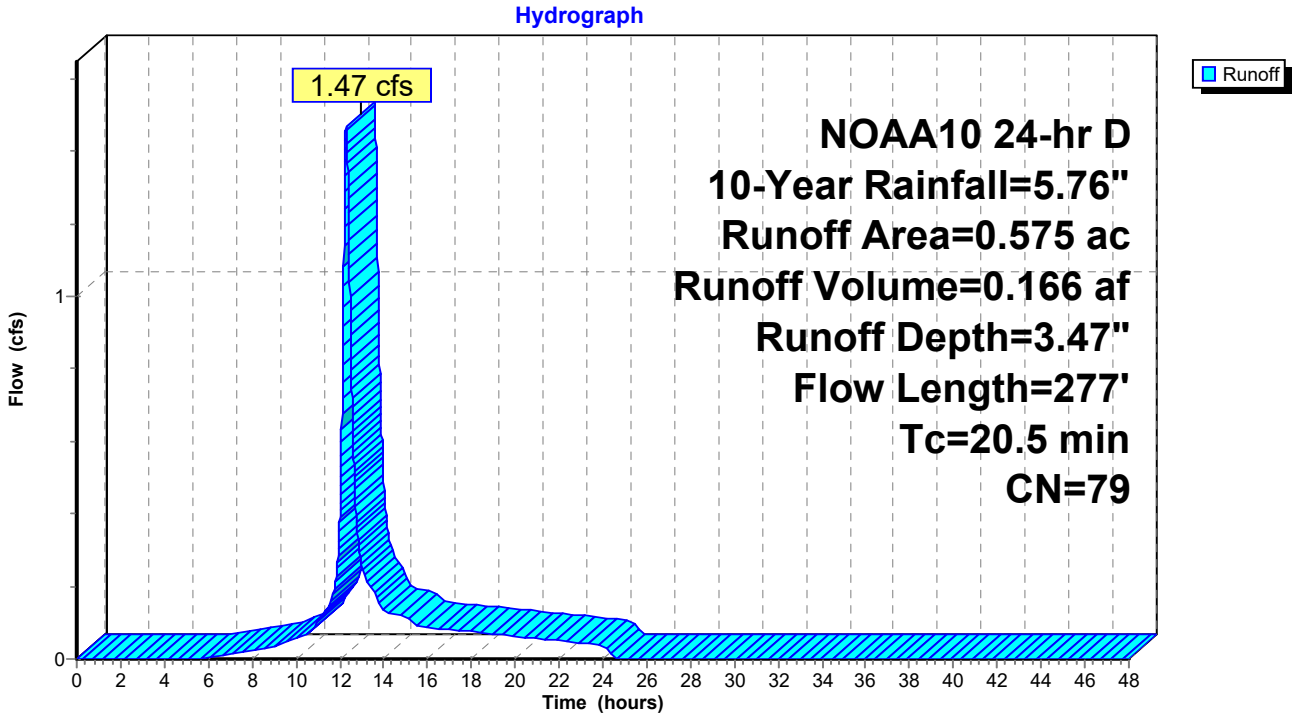
Runoff = 1.47 cfs @ 12.30 hrs, Volume= 0.166 af, Depth= 3.47"
Routed to Link 5L : P-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2.: EX. AREA #2



Summary for Subcatchment PA#1.1: PROP.AREA #1

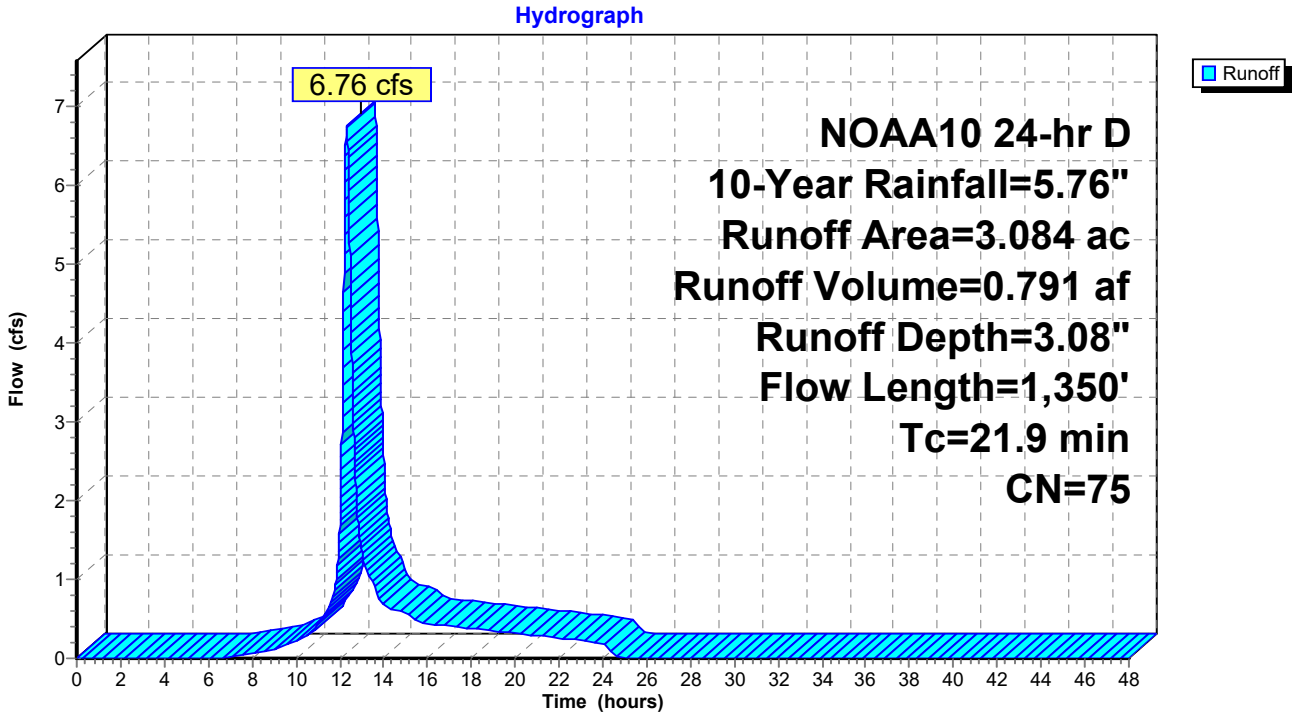
Runoff = 6.76 cfs @ 12.31 hrs, Volume= 0.791 af, Depth= 3.08"
Routed to Reach 1R : PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.073	36	Woods, Fair, HSG A
2.780	79	Woods, Fair, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.215	39	>75% Grass cover, Good, HSG A
3.084	75	Weighted Average
3.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
7.5	874	0.1492	1.93		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.2	95	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	119	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	125	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.1	37	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
21.9	1,350	Total			

Subcatchment PA#1.1: PROP.AREA #1



Summary for Subcatchment PA#1.2: PROP.AREA #1.2

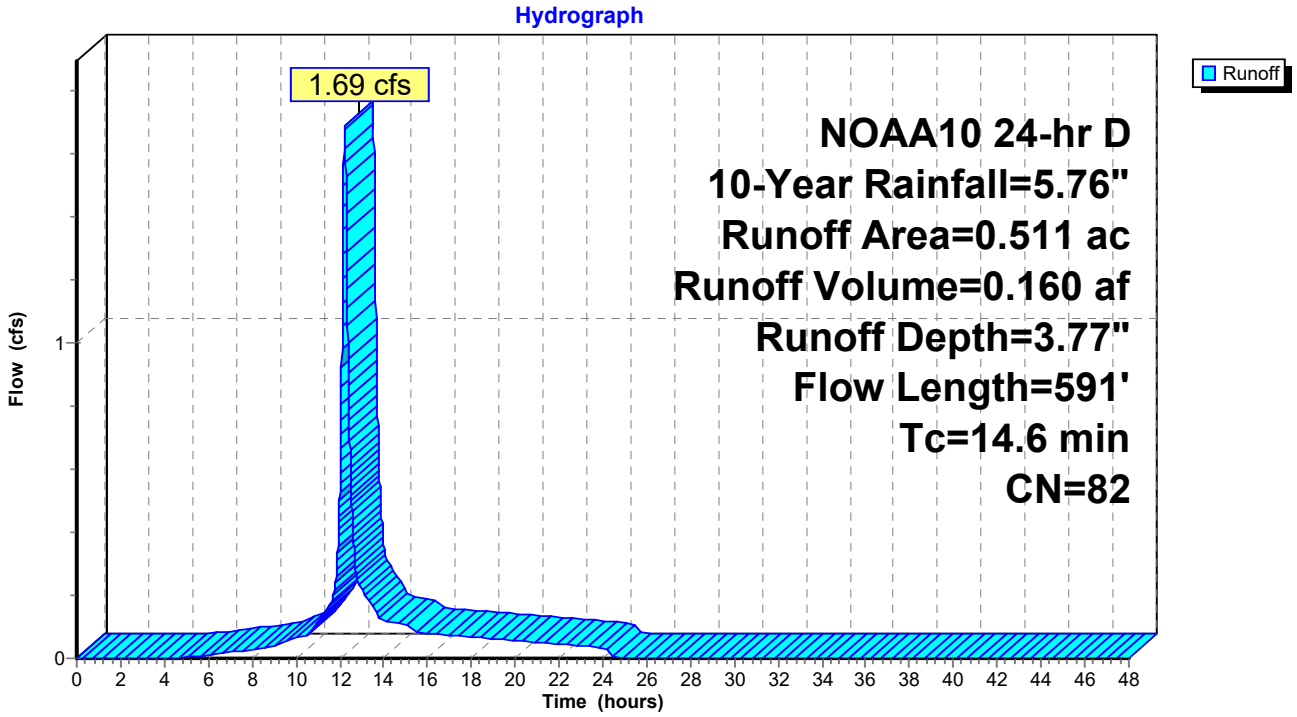
Runoff = 1.69 cfs @ 12.22 hrs, Volume= 0.160 af, Depth= 3.77"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.131	98	Roofs, HSG A
0.133	98	Paved parking, HSG A
0.097	39	>75% Grass cover, Good, HSG A
0.025	80	>75% Grass cover, Good, HSG D
0.083	84	50-75% Grass cover, Fair, HSG D
0.042	79	Woods, Fair, HSG D
0.511	82	Weighted Average
0.247		48.34% Pervious Area
0.264		51.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.3300	0.13		**Sheet Flow, Sheet flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
0.5	75	0.2300	2.40		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.3	55	0.1600	2.80		**Shallow Concentrated Flow, Shallow** Short Grass Pasture Kv= 7.0 fps
0.4	99	0.0500	4.54		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.6	262	0.0100	6.77	8.13	**Channel Flow, Channel flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
14.6	591	Total			

Subcatchment PA#1.2: PROP.AREA #1.2



Summary for Subcatchment PA#1.3: PROP.AREA #1.3

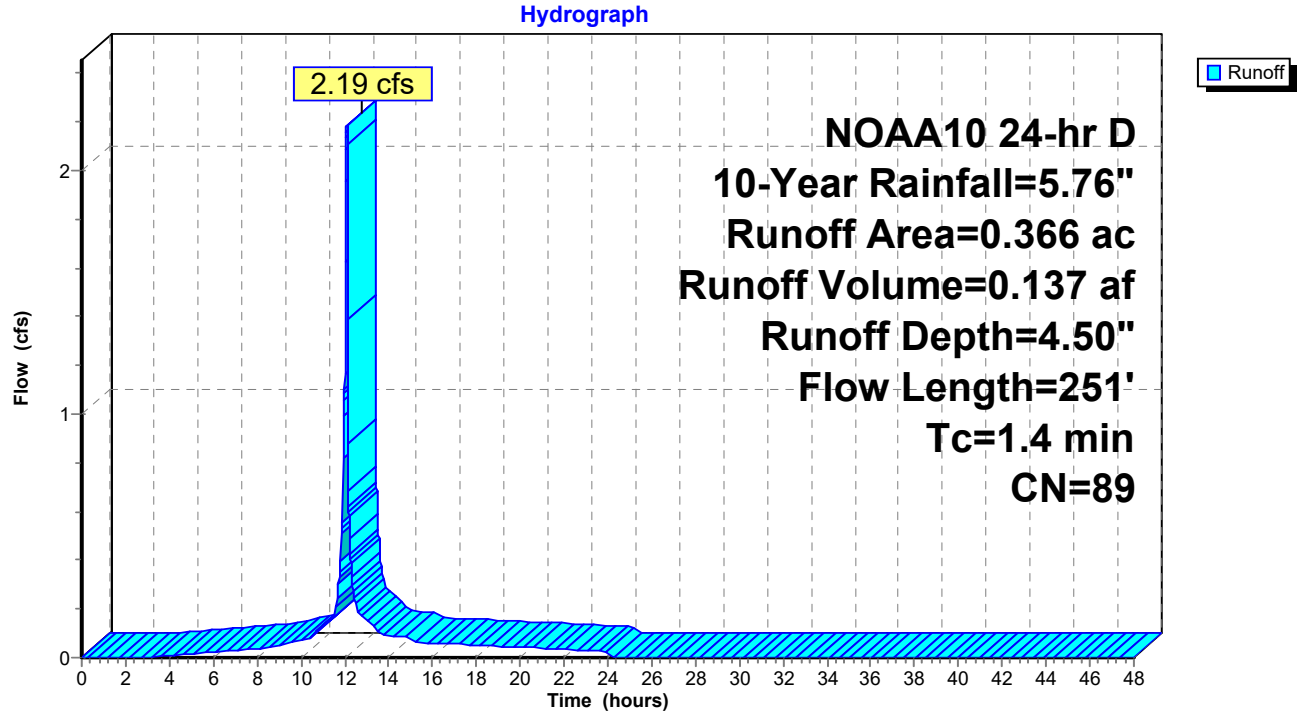
Runoff = 2.19 cfs @ 12.10 hrs, Volume= 0.137 af, Depth= 4.50"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

	Area (ac)	CN	Description
	0.150	98	Roofs, HSG A
	0.145	98	Paved parking, HSG A
*	0.025	80	>75% Grass cover, Good, HSG D
	0.046	39	>75% Grass cover, Good, HSG A
	0.366	89	Weighted Average
	0.071		19.40% Pervious Area
	0.295		80.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0400	1.72		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.4	151	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.4	251	Total			

Subcatchment PA#1.3: PROP.AREA #1.3



Summary for Subcatchment PA#1.4: PROP.AREA #1.4

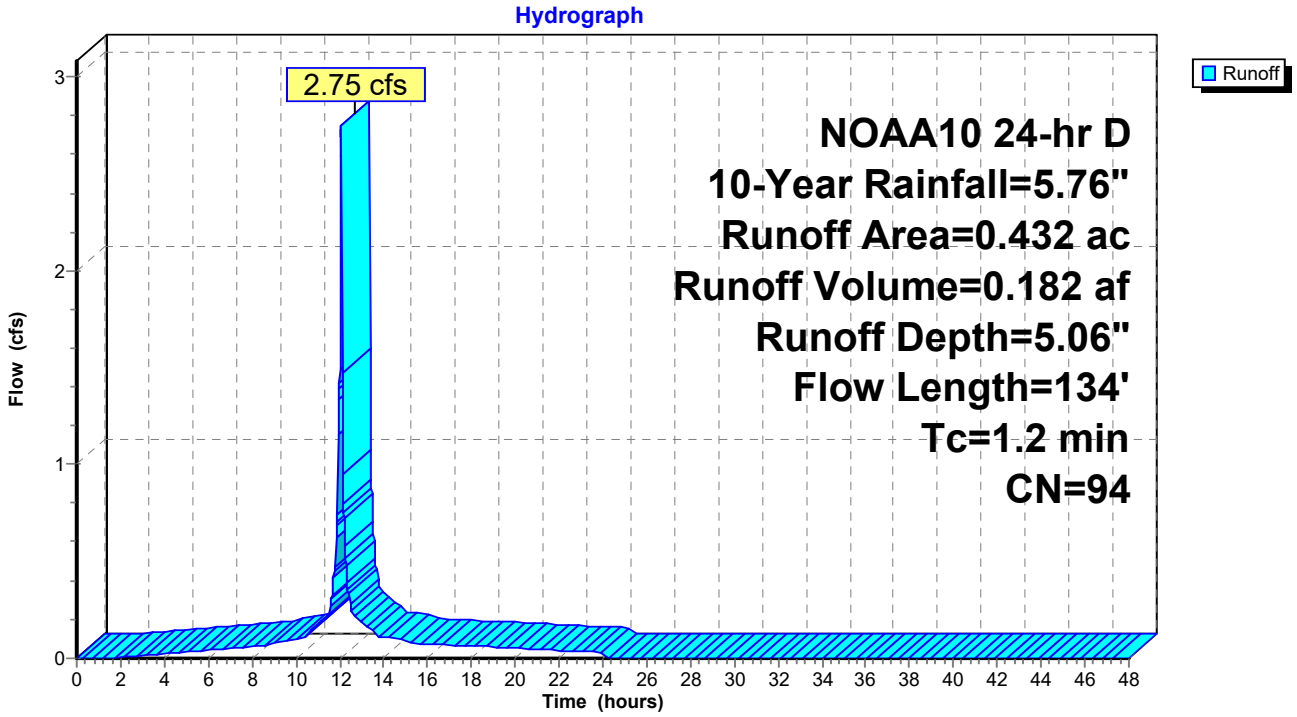
Runoff = 2.75 cfs @ 12.09 hrs, Volume= 0.182 af, Depth= 5.06"
Routed to Pond 2P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.150	98	Roofs, HSG A
0.214	98	Paved parking, HSG A
0.013	39	>75% Grass cover, Good, HSG A
0.055	80	>75% Grass cover, Good, HSG D
0.432	94	Weighted Average
0.068		15.74% Pervious Area
0.364		84.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0300	1.53		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.0	9	0.0298	3.50		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.1	25	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.2	134	Total			

Subcatchment PA#1.4: PROP.AREA #1.4



Summary for Subcatchment PA#3: PROP.AREA #3

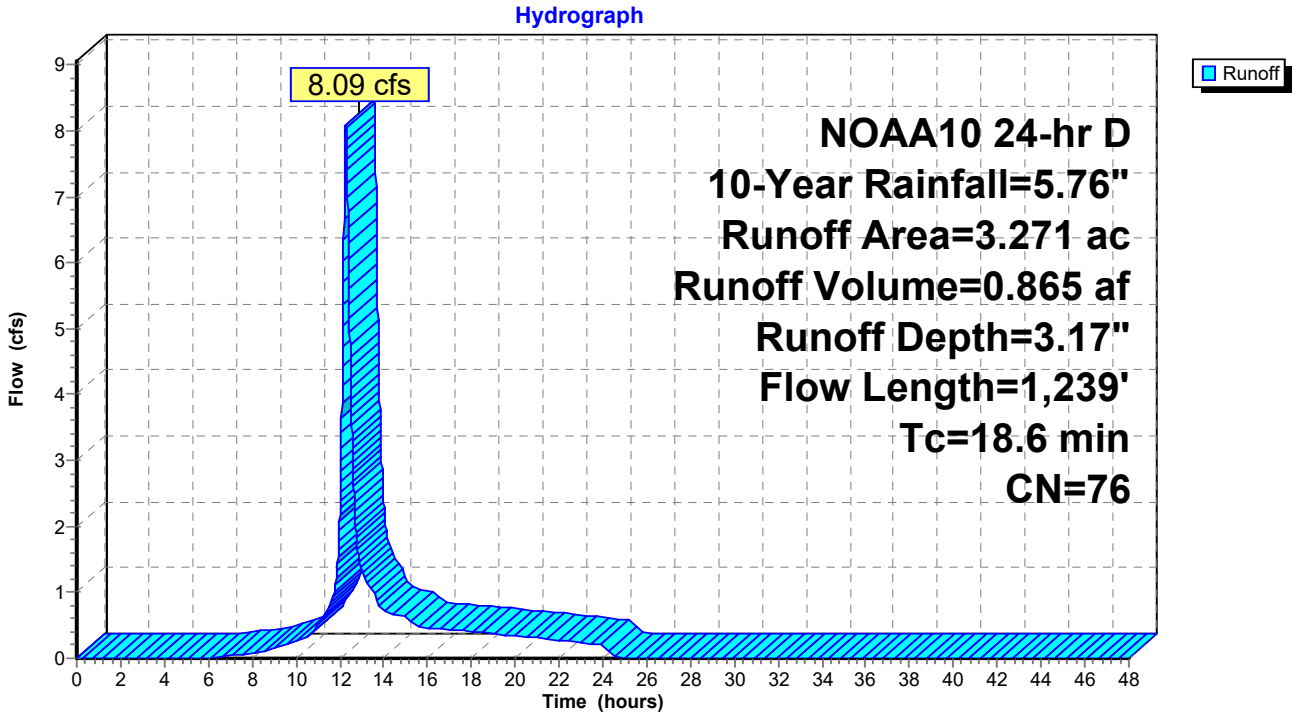
Runoff = 8.09 cfs @ 12.27 hrs, Volume= 0.865 af, Depth= 3.17"
Routed to Link 8L : P-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.76"

Area (ac)	CN	Description
0.137	30	Woods, Good, HSG A
2.912	79	Woods, Fair, HSG D
0.176	80	>75% Grass cover, Good, HSG D
0.046	39	>75% Grass cover, Good, HSG A
3.271	76	Weighted Average
3.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.3400	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.4	820	0.2600	2.55		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.0	34	0.0400	11.41	14.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.4	240	0.0100	10.22	72.26	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
0.1	45	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
18.6	1,239	Total			

Subcatchment PA#3: PROP.AREA #3



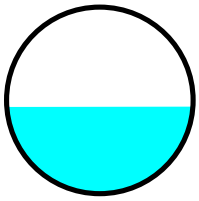
Summary for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 3.08" for 10-Year event
Inflow = 6.76 cfs @ 12.31 hrs, Volume= 0.791 af
Outflow = 6.75 cfs @ 12.33 hrs, Volume= 0.791 af, Atten= 0%, Lag= 0.7 min
Routed to Link 6L : P-POA-1.1

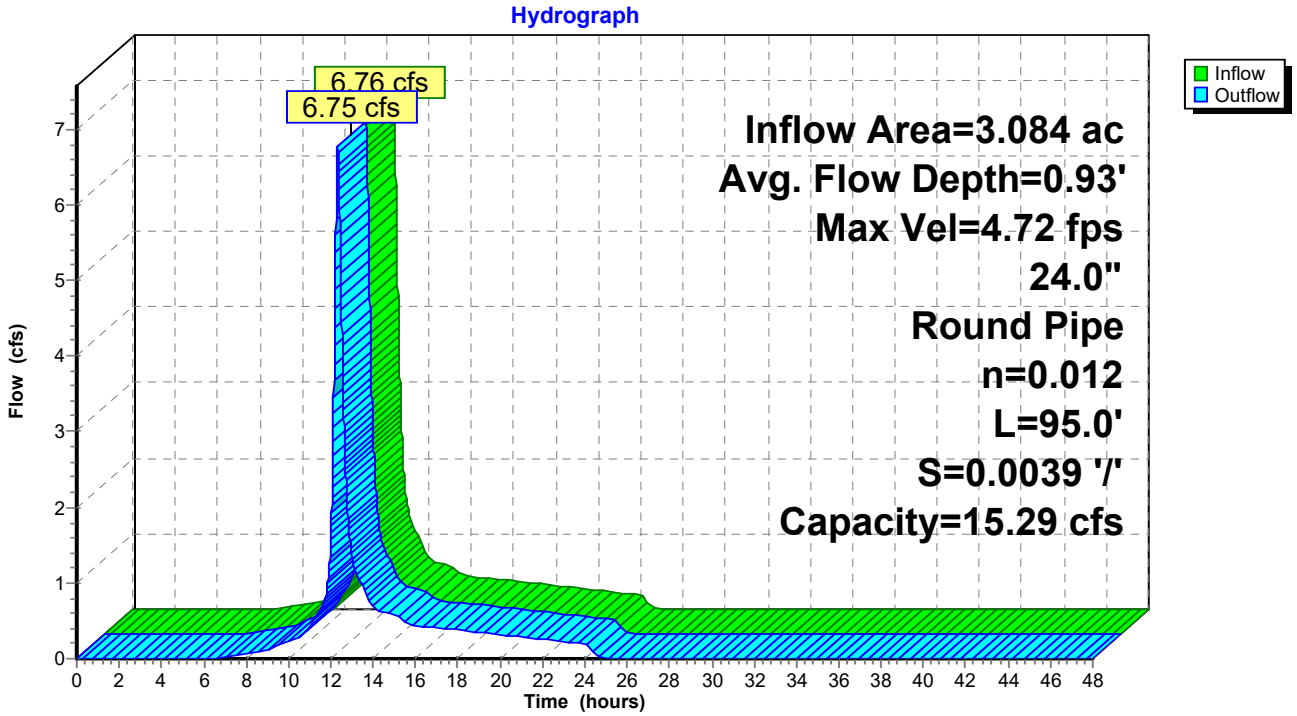
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.72 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.93 fps, Avg. Travel Time= 0.8 min

Peak Storage= 136 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.93' , Surface Width= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 15.29 cfs

24.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 95.0' Slope= 0.0039 '/'
Inlet Invert= 304.15', Outlet Invert= 303.78'



Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)



Stage-Discharge for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
304.15	0.00	0.00
304.17	0.43	0.00
304.19	0.69	0.01
304.21	0.90	0.02
304.23	1.08	0.05
304.25	1.25	0.07
304.27	1.41	0.11
304.29	1.56	0.15
304.31	1.69	0.20
304.33	1.83	0.26
304.35	1.95	0.32
304.37	2.07	0.39
304.39	2.19	0.47
304.41	2.30	0.55
304.43	2.41	0.64
304.45	2.52	0.74
304.47	2.62	0.85
304.49	2.72	0.96
304.51	2.81	1.08
304.53	2.90	1.21
304.55	2.99	1.34
304.57	3.08	1.48
304.59	3.17	1.62
304.61	3.25	1.77
304.63	3.33	1.93
304.65	3.41	2.10
304.67	3.49	2.26
304.69	3.56	2.44
304.71	3.64	2.62
304.73	3.71	2.80
304.75	3.78	3.00
304.77	3.85	3.19
304.79	3.91	3.39
304.81	3.98	3.60
304.83	4.04	3.81
304.85	4.10	4.02
304.87	4.16	4.24
304.89	4.22	4.46
304.91	4.28	4.69
304.93	4.34	4.92
304.95	4.39	5.15
304.97	4.45	5.39
304.99	4.50	5.63
305.01	4.55	5.88
305.03	4.60	6.12
305.05	4.65	6.37
305.07	4.69	6.62
305.09	4.74	6.88
305.11	4.78	7.13
305.13	4.83	7.39
305.15	4.87	7.65
305.17	4.91	7.91
305.19	4.95	8.17
305.21	4.99	8.43
305.23	5.02	8.69
305.25	5.06	8.96
305.27	5.09	9.22
305.29	5.13	9.49
305.31	5.16	9.75
305.33	5.19	10.01
305.35	5.22	10.28
305.37	5.25	10.54
305.39	5.28	10.80
305.41	5.30	11.06
305.43	5.33	11.31
305.45	5.35	11.57
305.47	5.37	11.82
305.49	5.40	12.07
305.51	5.42	12.32
305.53	5.43	12.56
305.55	5.45	12.81
305.57	5.47	13.04
305.59	5.48	13.28
305.61	5.50	13.50
305.63	5.51	13.73
305.65	5.52	13.95
305.67	5.53	14.16
305.69	5.54	14.37
305.71	5.54	14.57
305.73	5.55	14.76
305.75	5.55	14.95
305.77	**5.55**	15.13
305.79	5.55	15.30
305.81	5.55	15.46
305.83	5.54	15.62
305.85	5.54	15.76
305.87	5.53	15.89
305.89	5.52	16.01
305.91	5.51	16.12
305.93	5.49	16.22
305.95	5.47	16.30
305.97	5.45	16.37
305.99	5.43	16.42
306.01	5.40	16.44
306.03	5.37	**16.45**
306.05	5.33	16.43
306.07	5.29	16.39
306.09	5.23	16.30
306.11	5.17	16.16
306.13	5.08	15.94
306.15	4.87	15.29

Stage-Area-Storage for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
304.15	0.0	0
304.17	0.0	1
304.19	0.0	1
304.21	0.0	3
304.23	0.0	4
304.25	0.1	6
304.27	0.1	7
304.29	0.1	9
304.31	0.1	11
304.33	0.1	13
304.35	0.2	16
304.37	0.2	18
304.39	0.2	20
304.41	0.2	23
304.43	0.3	25
304.45	0.3	28
304.47	0.3	31
304.49	0.4	34
304.51	0.4	37
304.53	0.4	39
304.55	0.4	42
304.57	0.5	46
304.59	0.5	49
304.61	0.5	52
304.63	0.6	55
304.65	0.6	58
304.67	0.6	62
304.69	0.7	65
304.71	0.7	68
304.73	0.8	72
304.75	0.8	75
304.77	0.8	79
304.79	0.9	82
304.81	0.9	86
304.83	0.9	89
304.85	1.0	93
304.87	1.0	97
304.89	1.1	100
304.91	1.1	104
304.93	1.1	108
304.95	1.2	111
304.97	1.2	115
304.99	1.3	119
305.01	1.3	123
305.03	1.3	126
305.05	1.4	130
305.07	1.4	134
305.09	1.5	138
305.11	1.5	142
305.13	1.5	145
305.15	1.6	149
305.17	1.6	153
305.19	1.7	157
305.21	1.7	161
305.23	1.7	164
305.25	1.8	168
305.27	1.8	172
305.29	1.8	176
305.31	1.9	179
305.33	1.9	183
305.35	2.0	187
305.37	2.0	191
305.39	2.0	194
305.41	2.1	198
305.43	2.1	202
305.45	2.2	205
305.47	2.2	209
305.49	2.2	213
305.51	2.3	216
305.53	2.3	220
305.55	2.3	223
305.57	2.4	227
305.59	2.4	230
305.61	2.5	233
305.63	2.5	237
305.65	2.5	240
305.67	2.6	243
305.69	2.6	247
305.71	2.6	250
305.73	2.7	253
305.75	2.7	256
305.77	2.7	259
305.79	2.8	262
305.81	2.8	265
305.83	2.8	268
305.85	2.8	270
305.87	2.9	273
305.89	2.9	276
305.91	2.9	278
305.93	3.0	281
305.95	3.0	283
305.97	3.0	285
305.99	3.0	287
306.01	3.0	289
306.03	3.1	291
306.05	3.1	293
306.07	3.1	294
306.09	3.1	296
306.11	3.1	297
306.13	3.1	298
306.15	**3.1**	**298**

Summary for Pond 1P: UND Chambers

Inflow Area = 0.877 ac, 63.74% Impervious, Inflow Depth = 4.07" for 10-Year event
Inflow = 3.18 cfs @ 12.10 hrs, Volume= 0.298 af
Outflow = 1.03 cfs @ 12.42 hrs, Volume= 0.298 af, Atten= 68%, Lag= 19.4 min
Discarded = 0.06 cfs @ 8.03 hrs, Volume= 0.187 af
Primary = 0.97 cfs @ 12.42 hrs, Volume= 0.110 af
Routed to Pond 2P : UND Chambers

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 311.07' @ 12.42 hrs Surf.Area= 0.041 ac Storage= 0.110 af

Plug-Flow detention time= 420.8 min calculated for 0.298 af (100% of inflow)
Center-of-Mass det. time= 420.8 min (1,242.3 - 821.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	307.00'	0.080 af	**19.42'W x 91.99'L x 7.50'H Field A** 0.308 af Overall - 0.106 af Embedded = 0.201 af x 40.0% Voids
#2A	308.50'	0.106 af	**ADS_StormTech MC-4500 b +Cap**x 42 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 42 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.187 af	Total Available Storage

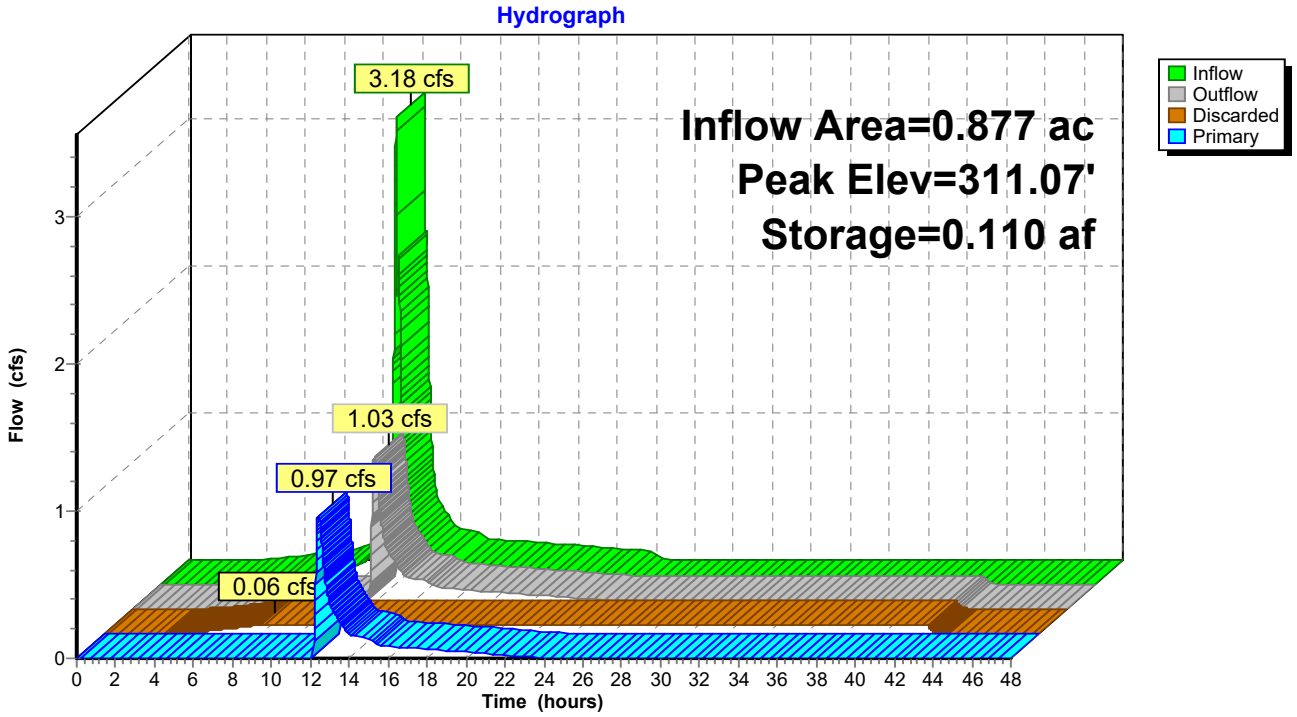
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	310.56'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 8.03 hrs HW=307.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.97 cfs @ 12.42 hrs HW=311.07' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 0.97 cfs @ 2.46 fps)

Pond 1P: UND Chambers



Stage-Discharge for Pond 1P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
307.00	0.00	**0.00**	0.00
307.10	0.06	**0.06**	0.00
307.20	0.06	0.06	0.00
307.30	0.06	0.06	0.00
307.40	0.06	0.06	0.00
307.50	0.06	0.06	0.00
307.60	0.06	0.06	0.00
307.70	0.06	0.06	0.00
307.80	0.06	0.06	0.00
307.90	0.06	0.06	0.00
308.00	0.06	0.06	0.00
308.10	0.06	0.06	0.00
308.20	0.06	0.06	0.00
308.30	0.06	0.06	0.00
308.40	0.06	0.06	0.00
308.50	0.06	0.06	0.00
308.60	0.06	0.06	0.00
308.70	0.06	0.06	0.00
308.80	0.06	0.06	0.00
308.90	0.06	0.06	0.00
309.00	0.06	0.06	0.00
309.10	0.06	0.06	0.00
309.20	0.06	0.06	0.00
309.30	0.06	0.06	0.00
309.40	0.06	0.06	0.00
309.50	0.06	0.06	0.00
309.60	0.06	0.06	0.00
309.70	0.06	0.06	0.00
309.80	0.06	0.06	0.00
309.90	0.06	0.06	0.00
310.00	0.06	0.06	0.00
310.10	0.06	0.06	0.00
310.20	0.06	0.06	0.00
310.30	0.06	0.06	0.00
310.40	0.06	0.06	0.00
310.50	0.06	0.06	0.00
310.60	0.07	0.06	0.01
310.70	0.18	0.06	0.11
310.80	0.37	0.06	0.31
310.90	0.63	0.06	0.56
311.00	0.89	0.06	0.83
311.10	1.08	0.06	1.02
311.20	1.24	0.06	1.18
311.30	1.39	0.06	1.32
311.40	1.51	0.06	1.45
311.50	1.63	0.06	1.57
311.60	1.74	0.06	1.68
311.70	1.85	0.06	1.78
311.80	1.94	0.06	1.88
311.90	2.04	0.06	1.97
312.00	2.12	0.06	2.06
312.10	2.21	0.06	2.15
312.20	2.29	0.06	2.23
312.30	2.37	0.06	2.31
312.40	2.45	0.06	2.38
312.50	2.52	0.06	2.46
312.60	2.59	0.06	2.53
312.70	2.66	0.06	2.60
312.80	2.73	0.06	2.67
312.90	2.80	0.06	2.73
313.00	2.86	0.06	2.80
313.10	2.92	0.06	2.86
313.20	2.99	0.06	2.92
313.30	3.05	0.06	2.98
313.40	3.11	0.06	3.04
313.50	3.16	0.06	3.10
313.60	3.22	0.06	3.16
313.70	3.28	0.06	3.21
313.80	3.33	0.06	3.27
313.90	3.39	0.06	3.32
314.00	3.44	0.06	3.38
314.10	3.49	0.06	3.43
314.20	3.54	0.06	3.48
314.30	3.59	0.06	3.53
314.40	3.64	0.06	3.58
314.50	**3.69**	0.06	**3.63**

Stage-Area-Storage for Pond 1P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
307.00	**0.041**	0.000
307.10	0.041	0.002
307.20	0.041	0.003
307.30	0.041	0.005
307.40	0.041	0.007
307.50	0.041	0.008
307.60	0.041	0.010
307.70	0.041	0.011
307.80	0.041	0.013
307.90	0.041	0.015
308.00	0.041	0.016
308.10	0.041	0.018
308.20	0.041	0.020
308.30	0.041	0.021
308.40	0.041	0.023
308.50	0.041	0.025
308.60	0.041	0.028
308.70	0.041	0.032
308.80	0.041	0.035
308.90	0.041	0.038
309.00	0.041	0.042
309.10	0.041	0.045
309.20	0.041	0.049
309.30	0.041	0.052
309.40	0.041	0.055
309.50	0.041	0.059
309.60	0.041	0.062
309.70	0.041	0.065
309.80	0.041	0.069
309.90	0.041	0.072
310.00	0.041	0.075
310.10	0.041	0.079
310.20	0.041	0.082
310.30	0.041	0.085
310.40	0.041	0.088
310.50	0.041	0.092
310.60	0.041	0.095
310.70	0.041	0.098
310.80	0.041	0.101
310.90	0.041	0.104
311.00	0.041	0.107
311.10	0.041	0.110
311.20	0.041	0.113
311.30	0.041	0.116
311.40	0.041	0.119
311.50	0.041	0.122
311.60	0.041	0.125
311.70	0.041	0.128
311.80	0.041	0.131
311.90	0.041	0.134
312.00	0.041	0.137
312.10	0.041	0.139
312.20	0.041	0.142
312.30	0.041	0.145
312.40	0.041	0.147
312.50	0.041	0.150
312.60	0.041	0.152
312.70	0.041	0.155
312.80	0.041	0.157
312.90	0.041	0.159
313.00	0.041	0.161
313.10	0.041	0.163
313.20	0.041	0.165
313.30	0.041	0.167
313.40	0.041	0.169
313.50	0.041	0.170
313.60	0.041	0.172
313.70	0.041	0.174
313.80	0.041	0.175
313.90	0.041	0.177
314.00	0.041	0.179
314.10	0.041	0.180
314.20	0.041	0.182
314.30	0.041	0.184
314.40	0.041	0.185
314.50	0.041	**0.187**

Summary for Pond 2P: UND Chambers

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 2.68" for 10-Year event
Inflow = 2.75 cfs @ 12.09 hrs, Volume= 0.293 af
Outflow = 1.12 cfs @ 12.53 hrs, Volume= 0.293 af, Atten= 59%, Lag= 26.5 min
Discarded = 0.05 cfs @ 6.79 hrs, Volume= 0.138 af
Primary = 1.07 cfs @ 12.53 hrs, Volume= 0.154 af
Routed to Link 7L : P-POA-1.2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 307.47' @ 12.53 hrs Surf.Area= 0.032 ac Storage= 0.073 af

Plug-Flow detention time= 251.6 min calculated for 0.293 af (100% of inflow)
Center-of-Mass det. time= 251.6 min (1,065.9 - 814.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	304.25'	0.054 af	**19.42'W x 71.87'L x 6.75'H Field A** 0.216 af Overall - 0.082 af Embedded = 0.134 af x 40.0% Voids
#2A	305.00'	0.082 af	**ADS_StormTech MC-4500 b +Cap**x 32 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 32 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.136 af	Total Available Storage

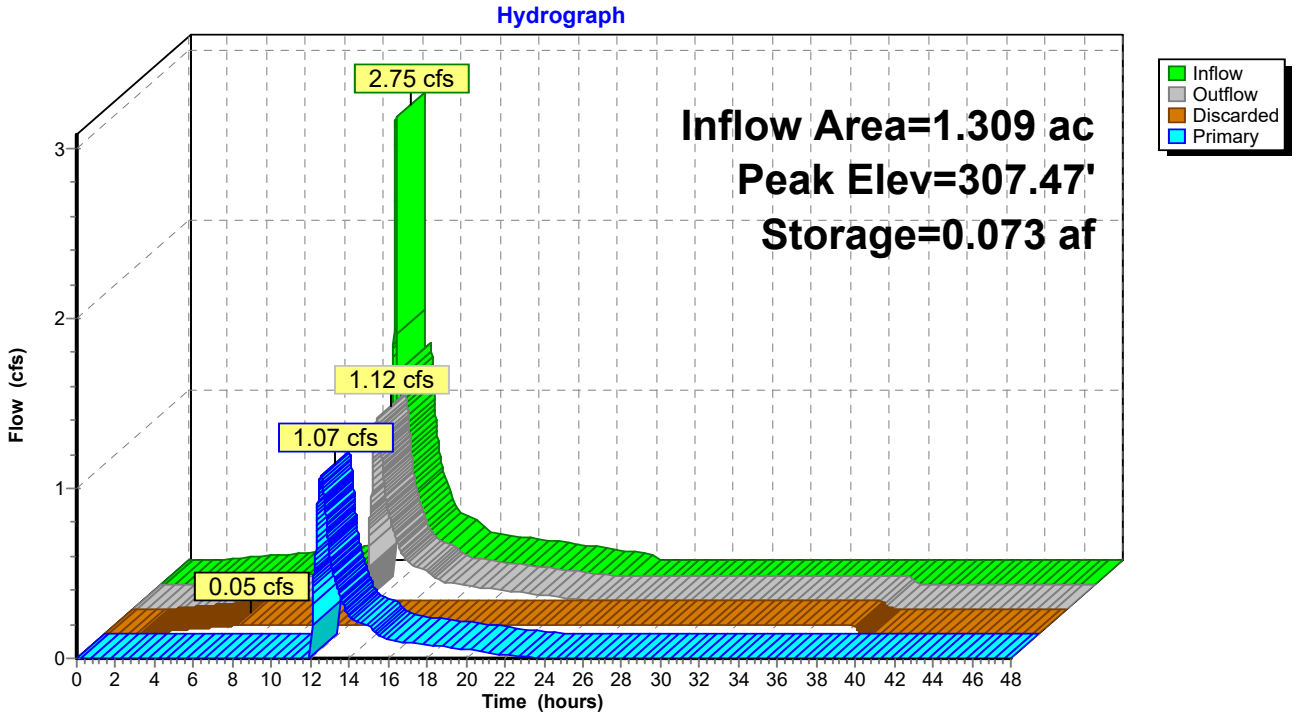
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.25'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	306.90'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.05 cfs @ 6.79 hrs HW=304.32' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=1.07 cfs @ 12.53 hrs HW=307.47' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 1.07 cfs @ 2.73 fps)

Pond 2P: UND Chambers



Stage-Discharge for Pond 2P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
304.25	0.00	**0.00**	0.00
304.35	0.05	**0.05**	0.00
304.45	0.05	0.05	0.00
304.55	0.05	0.05	0.00
304.65	0.05	0.05	0.00
304.75	0.05	0.05	0.00
304.85	0.05	0.05	0.00
304.95	0.05	0.05	0.00
305.05	0.05	0.05	0.00
305.15	0.05	0.05	0.00
305.25	0.05	0.05	0.00
305.35	0.05	0.05	0.00
305.45	0.05	0.05	0.00
305.55	0.05	0.05	0.00
305.65	0.05	0.05	0.00
305.75	0.05	0.05	0.00
305.85	0.05	0.05	0.00
305.95	0.05	0.05	0.00
306.05	0.05	0.05	0.00
306.15	0.05	0.05	0.00
306.25	0.05	0.05	0.00
306.35	0.05	0.05	0.00
306.45	0.05	0.05	0.00
306.55	0.05	0.05	0.00
306.65	0.05	0.05	0.00
306.75	0.05	0.05	0.00
306.85	0.05	0.05	0.00
306.95	0.06	0.05	0.02
307.05	0.18	0.05	0.13
307.15	0.38	0.05	0.33
307.25	0.64	0.05	0.59
307.35	0.90	0.05	0.85
307.45	1.08	0.05	1.04
307.55	1.24	0.05	1.20
307.65	1.39	0.05	1.34
307.75	1.51	0.05	1.46
307.85	1.63	0.05	1.58
307.95	1.74	0.05	1.69
308.05	1.84	0.05	1.79
308.15	1.94	0.05	1.89
308.25	2.03	0.05	1.98
308.35	2.12	0.05	2.07
308.45	2.20	0.05	2.16
308.55	2.29	0.05	2.24
308.65	2.36	0.05	2.32
308.75	2.44	0.05	2.39
308.85	2.51	0.05	2.47
308.95	2.59	0.05	2.54
309.05	2.65	0.05	2.61
309.15	2.72	0.05	2.67
309.25	2.79	0.05	2.74
309.35	2.85	0.05	2.80
309.45	2.92	0.05	2.87
309.55	2.98	0.05	2.93
309.65	3.04	0.05	2.99
309.75	3.10	0.05	3.05
309.85	3.16	0.05	3.11
309.95	3.21	0.05	3.16
310.05	3.27	0.05	3.22
310.15	3.32	0.05	3.28
310.25	3.38	0.05	3.33
310.35	3.43	0.05	3.38
310.45	3.48	0.05	3.43
310.55	3.53	0.05	3.49
310.65	3.59	0.05	3.54
310.75	3.64	0.05	3.59
310.85	3.69	0.05	3.64
310.95	**3.73**	0.05	**3.69**

Stage-Area-Storage for Pond 2P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
304.25	**0.032**	0.000
304.35	0.032	0.001
304.45	0.032	0.003
304.55	0.032	0.004
304.65	0.032	0.005
304.75	0.032	0.006
304.85	0.032	0.008
304.95	0.032	0.009
305.05	0.032	0.011
305.15	0.032	0.014
305.25	0.032	0.016
305.35	0.032	0.019
305.45	0.032	0.022
305.55	0.032	0.024
305.65	0.032	0.027
305.75	0.032	0.030
305.85	0.032	0.032
305.95	0.032	0.035
306.05	0.032	0.037
306.15	0.032	0.040
306.25	0.032	0.043
306.35	0.032	0.045
306.45	0.032	0.048
306.55	0.032	0.050
306.65	0.032	0.053
306.75	0.032	0.055
306.85	0.032	0.058
306.95	0.032	0.060
307.05	0.032	0.063
307.15	0.032	0.065
307.25	0.032	0.068
307.35	0.032	0.070
307.45	0.032	0.073
307.55	0.032	0.075
307.65	0.032	0.077
307.75	0.032	0.080
307.85	0.032	0.082
307.95	0.032	0.084
308.05	0.032	0.087
308.15	0.032	0.089
308.25	0.032	0.091
308.35	0.032	0.093
308.45	0.032	0.095
308.55	0.032	0.098
308.65	0.032	0.100
308.75	0.032	0.102
308.85	0.032	0.104
308.95	0.032	0.106
309.05	0.032	0.108
309.15	0.032	0.110
309.25	0.032	0.112
309.35	0.032	0.113
309.45	0.032	0.115
309.55	0.032	0.117
309.65	0.032	0.118
309.75	0.032	0.119
309.85	0.032	0.121
309.95	0.032	0.122
310.05	0.032	0.123
310.15	0.032	0.125
310.25	0.032	0.126
310.35	0.032	0.127
310.45	0.032	0.129
310.55	0.032	0.130
310.65	0.032	0.131
310.75	0.032	0.132
310.85	0.032	0.134
310.95	0.032	**0.135**

Summary for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

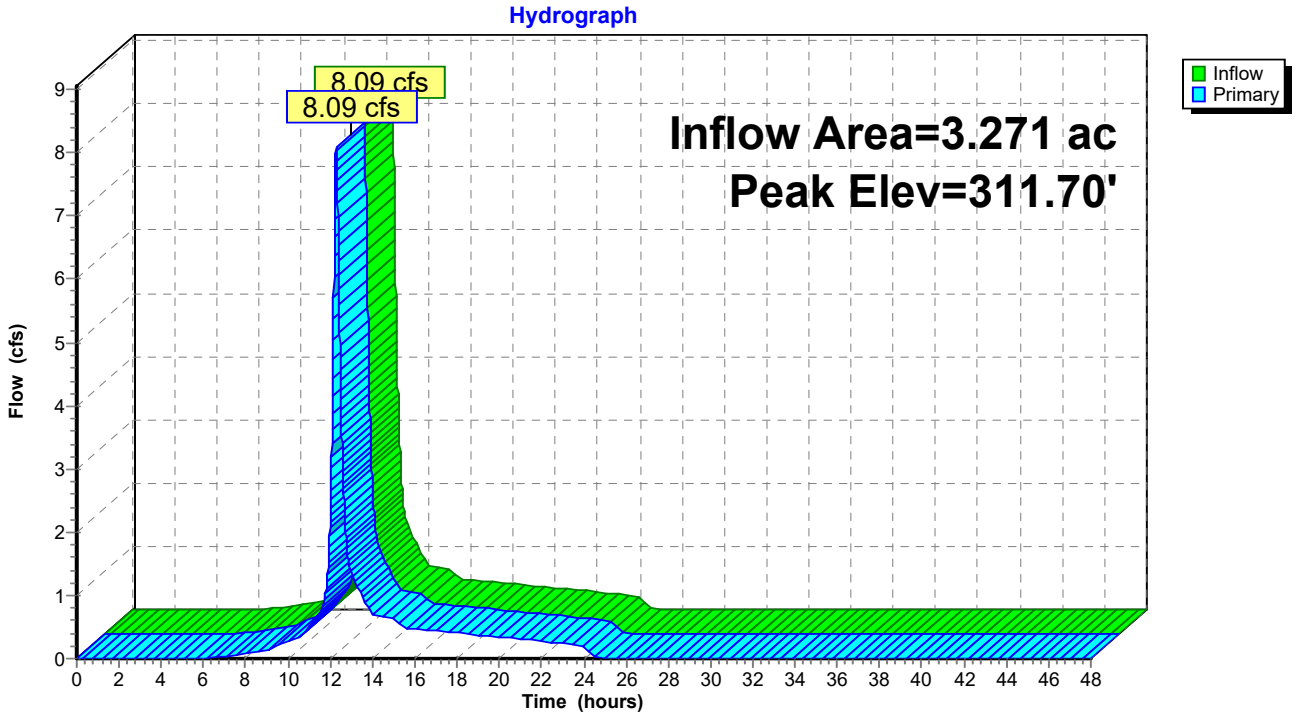
Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 3.17" for 10-Year event
Inflow = 8.09 cfs @ 12.27 hrs, Volume= 0.865 af
Outflow = 8.09 cfs @ 12.27 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min
Primary = 8.09 cfs @ 12.27 hrs, Volume= 0.865 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 311.70' @ 12.27 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.09 cfs @ 12.27 hrs HW=311.69' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 8.09 cfs @ 10.30 fps)

Pond 4P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	309.22	5.48
306.67	0.01	309.27	5.55
306.72	0.04	309.32	5.61
306.77	0.10	309.37	5.67
306.82	0.17	309.42	5.74
306.87	0.26	309.47	5.80
306.92	0.37	309.52	5.86
306.97	0.49	309.57	5.92
307.02	0.63	309.62	5.98
307.07	0.78	309.67	6.04
307.12	0.95	309.72	6.10
307.17	1.12	309.77	6.16
307.22	1.30	309.82	6.21
307.27	1.48	309.87	6.27
307.32	1.67	309.92	6.33
307.37	1.86	309.97	6.38
307.42	2.05	310.02	6.44
307.47	2.23	310.07	6.50
307.52	2.40	310.12	6.55
307.57	2.56	310.17	6.60
307.62	2.67	310.22	6.66
307.67	2.80	310.27	6.71
307.72	2.93	310.32	6.76
307.77	3.05	310.37	6.82
307.82	3.16	310.42	6.87
307.87	3.28	310.47	6.92
307.92	3.38	310.52	6.97
307.97	3.49	310.57	7.02
308.02	3.59	310.62	7.07
308.07	3.69	310.67	7.13
308.12	3.78	310.72	7.18
308.17	3.88	310.77	7.22
308.22	3.97	310.82	7.27
308.27	4.06	310.87	7.32
308.32	4.14	310.92	7.37
308.37	4.23	310.97	7.42
308.42	4.31	311.02	7.47
308.47	4.39	311.07	7.52
308.52	4.47	311.12	7.56
308.57	4.55	311.17	7.61
308.62	4.63	311.22	7.66
308.67	4.71	311.27	7.70
308.72	4.78	311.32	7.75
308.77	4.86	311.37	7.80
308.82	4.93	311.42	7.84
308.87	5.00	311.47	7.89
308.92	5.07	311.52	7.93
308.97	5.14	311.57	7.98
309.02	5.21	311.62	8.02
309.07	5.28	311.67	**8.07**
309.12	5.35		
309.17	5.41		

Stage-Area-Storage for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
306.62	**0.000**	309.22	0.000
306.67	0.000	309.27	0.000
306.72	0.000	309.32	0.000
306.77	0.000	309.37	0.000
306.82	0.000	309.42	0.000
306.87	0.000	309.47	0.000
306.92	0.000	309.52	0.000
306.97	0.000	309.57	0.000
307.02	0.000	309.62	0.000
307.07	0.000	309.67	0.000
307.12	0.000	309.72	0.000
307.17	0.000	309.77	0.000
307.22	0.000	309.82	0.000
307.27	0.000	309.87	0.000
307.32	0.000	309.92	0.000
307.37	0.000	309.97	0.000
307.42	0.000	310.02	0.000
307.47	0.000	310.07	0.000
307.52	0.000	310.12	0.000
307.57	0.000	310.17	0.000
307.62	0.000	310.22	0.000
307.67	0.000	310.27	0.000
307.72	0.000	310.32	0.000
307.77	0.000	310.37	0.000
307.82	0.000	310.42	0.000
307.87	0.000	310.47	0.000
307.92	0.000	310.52	0.000
307.97	0.000	310.57	0.000
308.02	0.000	310.62	0.000
308.07	0.000	310.67	0.000
308.12	0.000	310.72	0.000
308.17	0.000	310.77	0.000
308.22	0.000	310.82	0.000
308.27	0.000	310.87	0.000
308.32	0.000	310.92	0.000
308.37	0.000	310.97	0.000
308.42	0.000	311.02	0.000
308.47	0.000	311.07	0.000
308.52	0.000	311.12	0.000
308.57	0.000	311.17	0.000
308.62	0.000	311.22	0.000
308.67	0.000	311.27	0.000
308.72	0.000	311.32	0.000
308.77	0.000	311.37	0.000
308.82	0.000	311.42	0.000
308.87	0.000	311.47	0.000
308.92	0.000	311.52	0.000
308.97	0.000	311.57	0.000
309.02	0.000	311.62	0.000
309.07	0.000	311.67	0.000
309.12	0.000		
309.17	0.000		

Summary for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

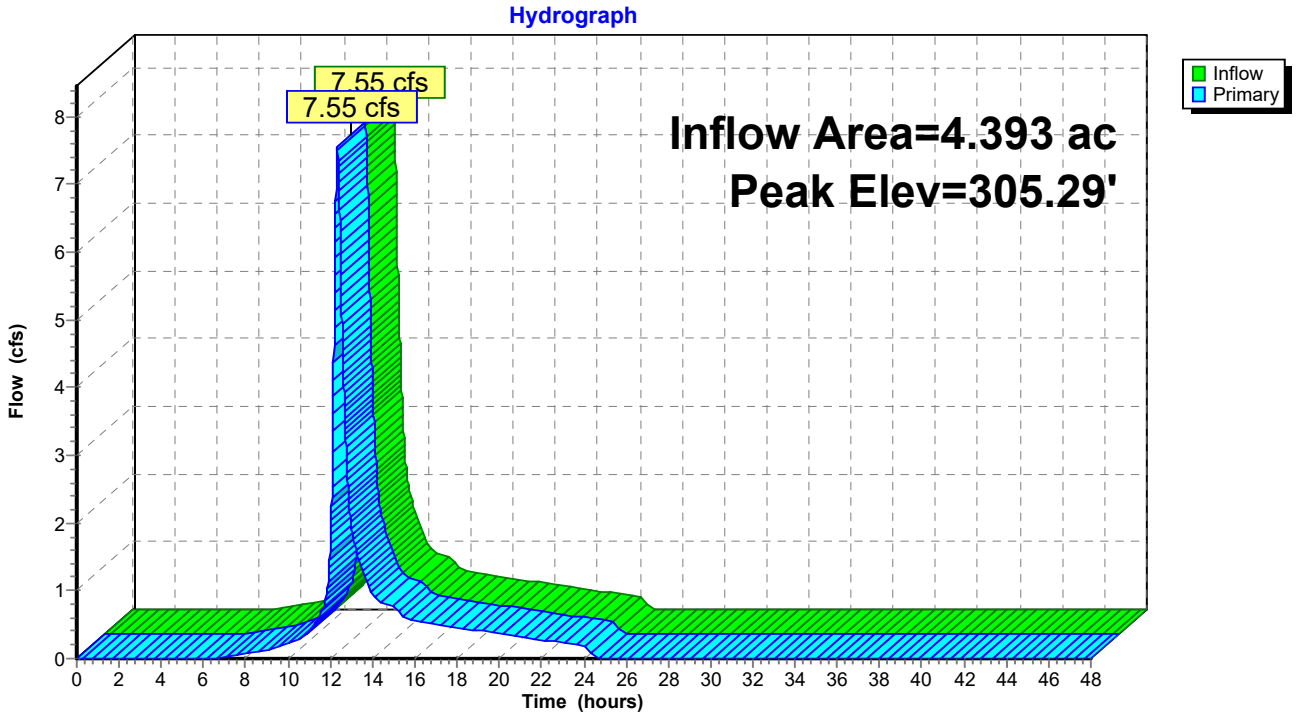
Inflow Area = 4.393 ac, 21.01% Impervious, Inflow Depth = 2.58" for 10-Year event
Inflow = 7.55 cfs @ 12.34 hrs, Volume= 0.945 af
Outflow = 7.55 cfs @ 12.34 hrs, Volume= 0.945 af, Atten= 0%, Lag= 0.0 min
Primary = 7.55 cfs @ 12.34 hrs, Volume= 0.945 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 305.29' @ 12.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.55 cfs @ 12.34 hrs HW=305.29' TW=302.77' (Fixed TW Elev= 302.77')
└**1=Orifice/Grate** (Orifice Controls 7.55 cfs @ 6.15 fps)

Pond 5P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	304.07	3.79	305.11	7.13
303.05	0.00	304.09	3.89	305.13	7.18
303.07	0.01	304.11	3.99	305.15	7.22
303.09	0.02	304.13	4.08	305.17	7.27
303.11	0.03	304.15	4.18	305.19	7.32
303.13	0.05	304.17	4.27	305.21	7.37
303.15	0.07	304.19	4.36	305.23	7.42
303.17	0.10	304.21	4.44	305.25	7.46
303.19	0.12	304.23	4.52	305.27	7.51
303.21	0.16	304.25	4.59	305.29	**7.56**
303.23	0.19	304.27	4.65		
303.25	0.23	304.29	4.71		
303.27	0.27	304.31	4.78		
303.29	0.32	304.33	4.85		
303.31	0.37	304.35	4.93		
303.33	0.42	304.37	5.00		
303.35	0.48	304.39	5.07		
303.37	0.54	304.41	5.13		
303.39	0.60	304.43	5.20		
303.41	0.66	304.45	5.27		
303.43	0.73	304.47	5.33		
303.45	0.80	304.49	5.40		
303.47	0.87	304.51	5.46		
303.49	0.95	304.53	5.53		
303.51	1.02	304.55	5.59		
303.53	1.10	304.57	5.65		
303.55	1.19	304.59	5.71		
303.57	1.27	304.61	5.77		
303.59	1.36	304.63	5.83		
303.61	1.45	304.65	5.89		
303.63	1.54	304.67	5.95		
303.65	1.63	304.69	6.01		
303.67	1.72	304.71	6.07		
303.69	1.82	304.73	6.13		
303.71	1.92	304.75	6.18		
303.73	2.01	304.77	6.24		
303.75	2.11	304.79	6.30		
303.77	2.22	304.81	6.35		
303.79	2.32	304.83	6.41		
303.81	2.42	304.85	6.46		
303.83	2.53	304.87	6.51		
303.85	2.63	304.89	6.57		
303.87	2.74	304.91	6.62		
303.89	2.84	304.93	6.67		
303.91	2.95	304.95	6.72		
303.93	3.06	304.97	6.78		
303.95	3.16	304.99	6.83		
303.97	3.27	305.01	6.88		
303.99	3.37	305.03	6.93		
304.01	3.48	305.05	6.98		
304.03	3.58	305.07	7.03		
304.05	3.69	305.09	7.08		

Stage-Area-Storage for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

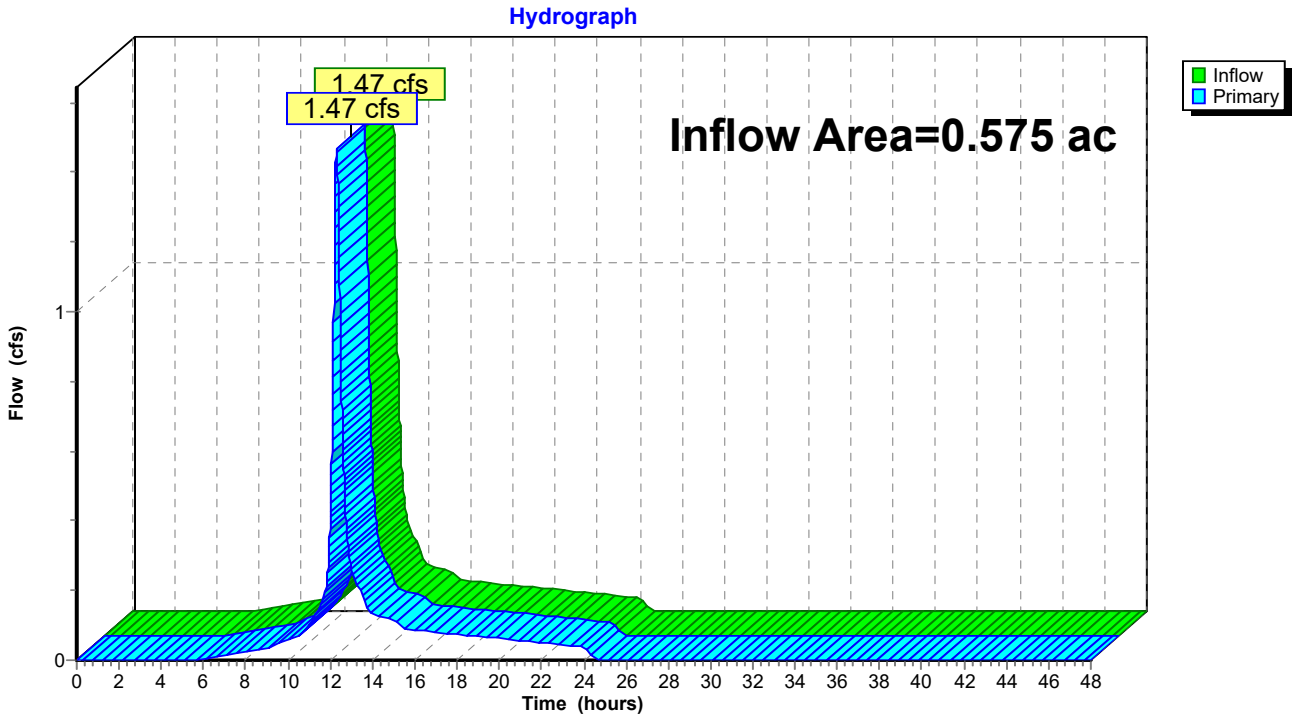
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	304.07	0.000	305.11	0.000
303.05	0.000	304.09	0.000	305.13	0.000
303.07	0.000	304.11	0.000	305.15	0.000
303.09	0.000	304.13	0.000	305.17	0.000
303.11	0.000	304.15	0.000	305.19	0.000
303.13	0.000	304.17	0.000	305.21	0.000
303.15	0.000	304.19	0.000	305.23	0.000
303.17	0.000	304.21	0.000	305.25	0.000
303.19	0.000	304.23	0.000	305.27	0.000
303.21	0.000	304.25	0.000	305.29	0.000
303.23	0.000	304.27	0.000		
303.25	0.000	304.29	0.000		
303.27	0.000	304.31	0.000		
303.29	0.000	304.33	0.000		
303.31	0.000	304.35	0.000		
303.33	0.000	304.37	0.000		
303.35	0.000	304.39	0.000		
303.37	0.000	304.41	0.000		
303.39	0.000	304.43	0.000		
303.41	0.000	304.45	0.000		
303.43	0.000	304.47	0.000		
303.45	0.000	304.49	0.000		
303.47	0.000	304.51	0.000		
303.49	0.000	304.53	0.000		
303.51	0.000	304.55	0.000		
303.53	0.000	304.57	0.000		
303.55	0.000	304.59	0.000		
303.57	0.000	304.61	0.000		
303.59	0.000	304.63	0.000		
303.61	0.000	304.65	0.000		
303.63	0.000	304.67	0.000		
303.65	0.000	304.69	0.000		
303.67	0.000	304.71	0.000		
303.69	0.000	304.73	0.000		
303.71	0.000	304.75	0.000		
303.73	0.000	304.77	0.000		
303.75	0.000	304.79	0.000		
303.77	0.000	304.81	0.000		
303.79	0.000	304.83	0.000		
303.81	0.000	304.85	0.000		
303.83	0.000	304.87	0.000		
303.85	0.000	304.89	0.000		
303.87	0.000	304.91	0.000		
303.89	0.000	304.93	0.000		
303.91	0.000	304.95	0.000		
303.93	0.000	304.97	0.000		
303.95	0.000	304.99	0.000		
303.97	0.000	305.01	0.000		
303.99	0.000	305.03	0.000		
304.01	0.000	305.05	0.000		
304.03	0.000	305.07	0.000		
304.05	0.000	305.09	0.000		

Summary for Link 5L: P-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 3.47" for 10-Year event
Inflow = 1.47 cfs @ 12.30 hrs, Volume= 0.166 af
Primary = 1.47 cfs @ 12.30 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 5L: P-POA-2

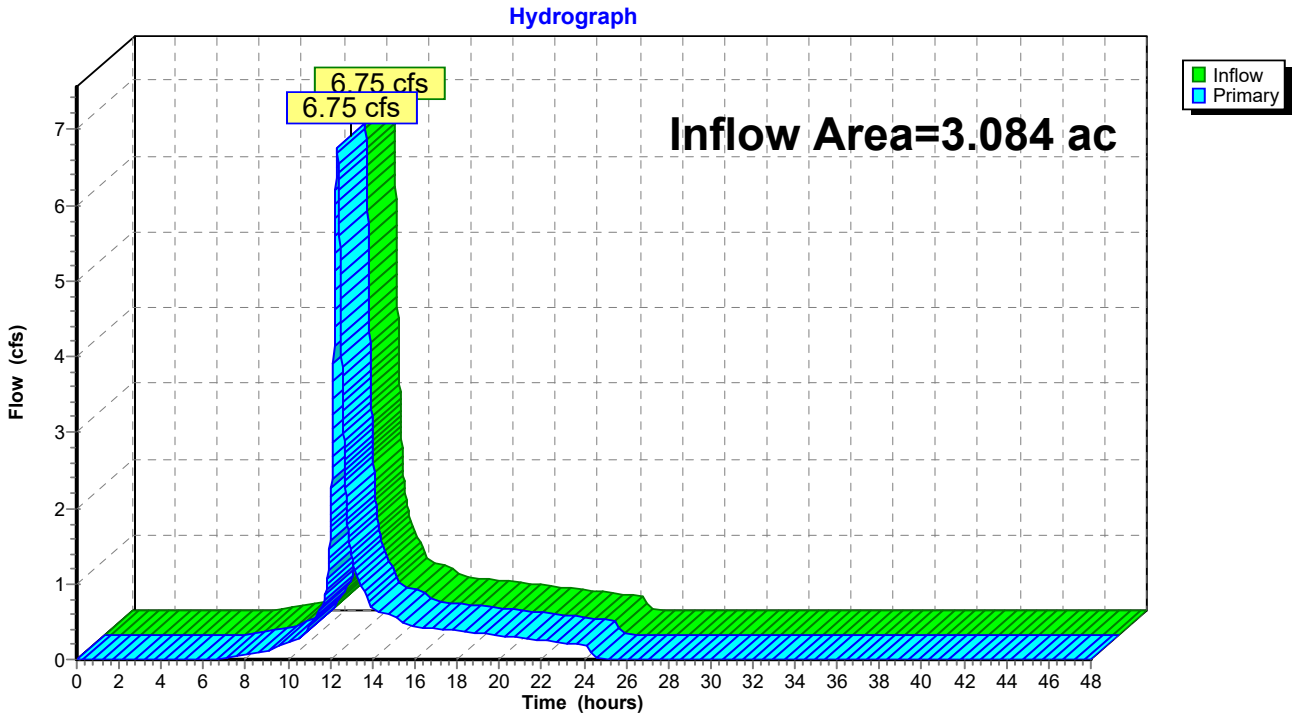


Summary for Link 6L: P-POA-1.1

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 3.08" for 10-Year event
Inflow = 6.75 cfs @ 12.33 hrs, Volume= 0.791 af
Primary = 6.75 cfs @ 12.33 hrs, Volume= 0.791 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 6L: P-POA-1.1

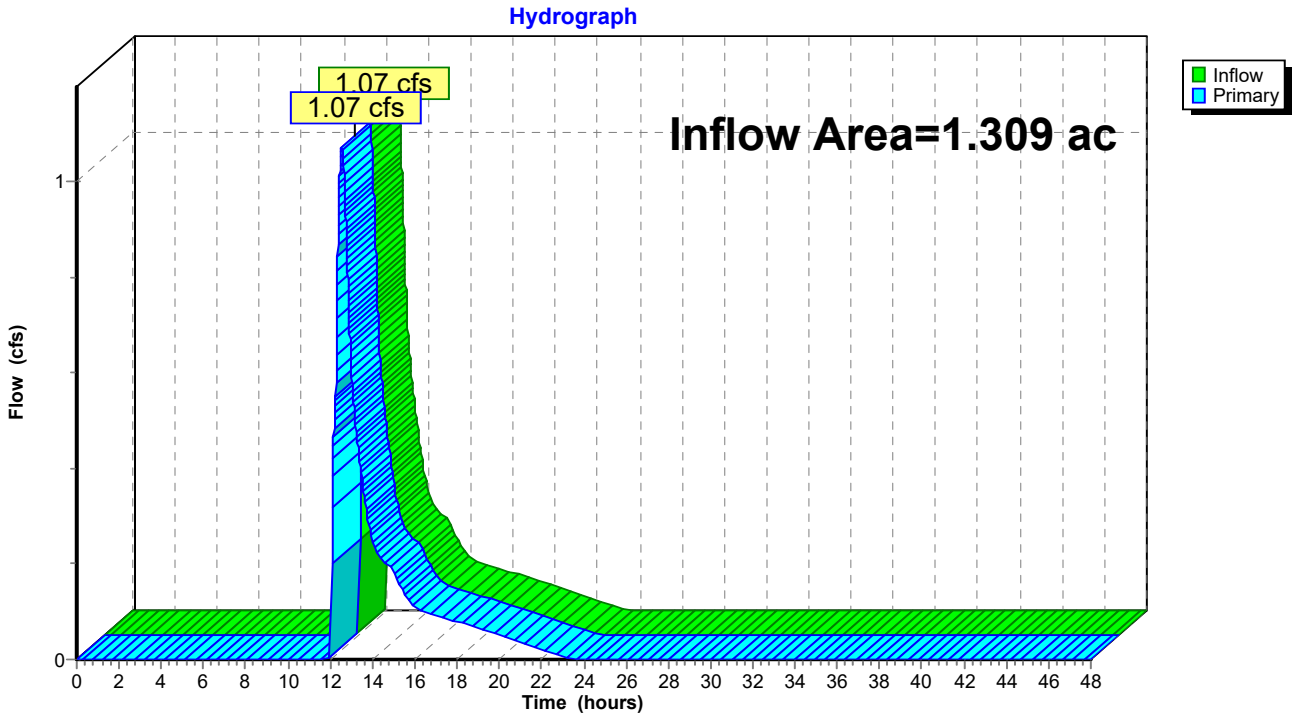


Summary for Link 7L: P-POA-1.2

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 1.41" for 10-Year event
Inflow = 1.07 cfs @ 12.53 hrs, Volume= 0.154 af
Primary = 1.07 cfs @ 12.53 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 7L: P-POA-1.2

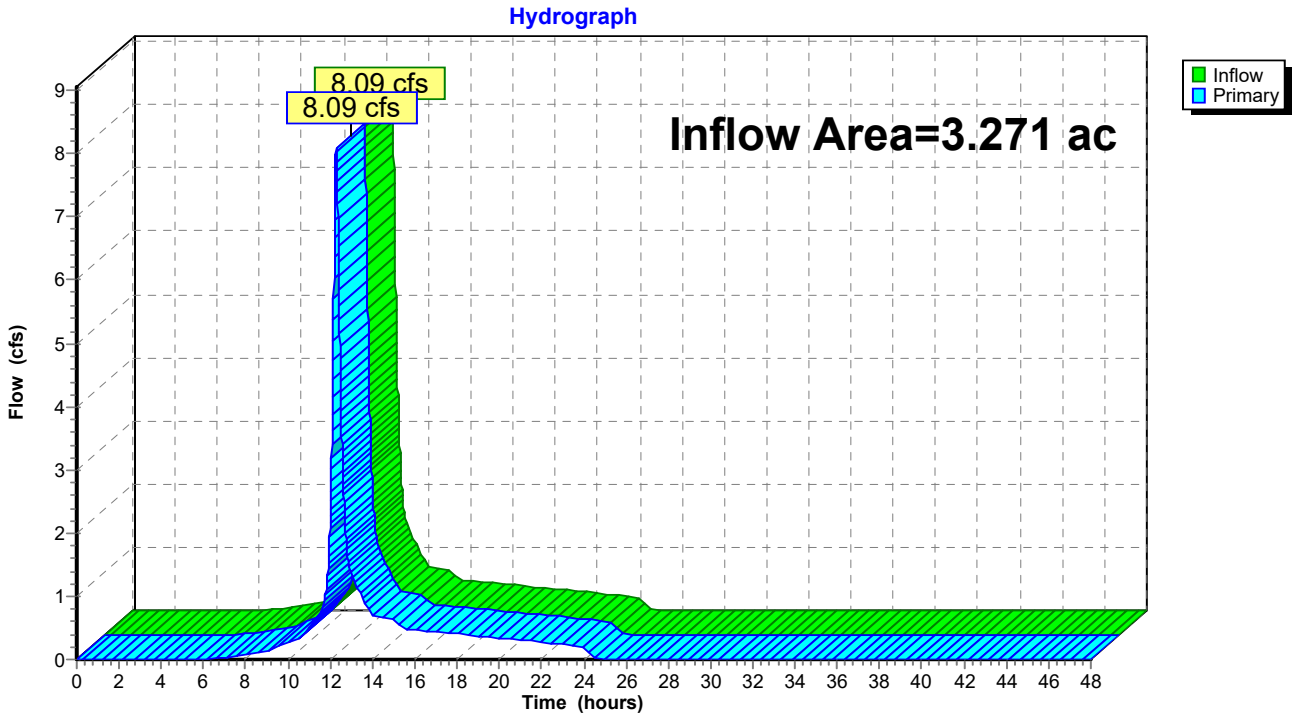


Summary for Link 8L: P-POA-3

Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 3.17" for 10-Year event
Inflow = 8.09 cfs @ 12.27 hrs, Volume= 0.865 af
Primary = 8.09 cfs @ 12.27 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 4P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 8L: P-POA-3



Summary for Subcatchment EA#2.: EX. AREA #2

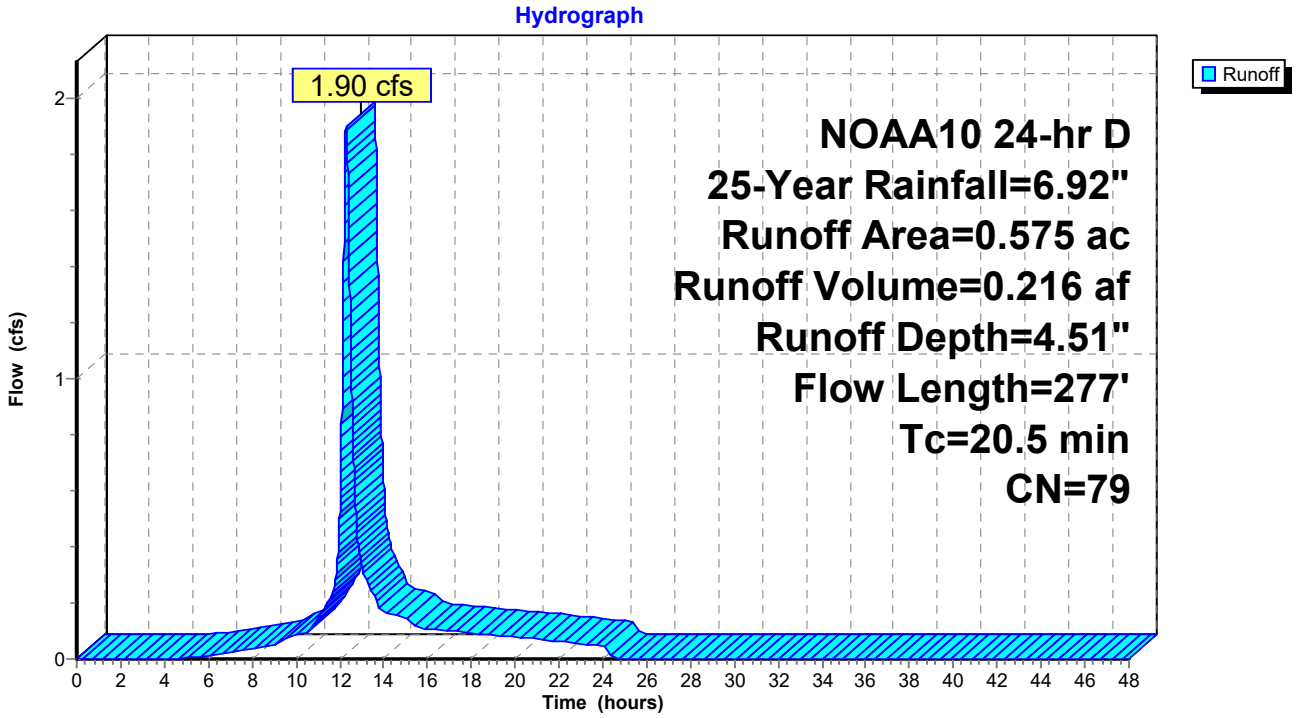
Runoff = 1.90 cfs @ 12.29 hrs, Volume= 0.216 af, Depth= 4.51"
Routed to Link 5L : P-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.92"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2.: EX. AREA #2



Summary for Subcatchment PA#1.1: PROP.AREA #1

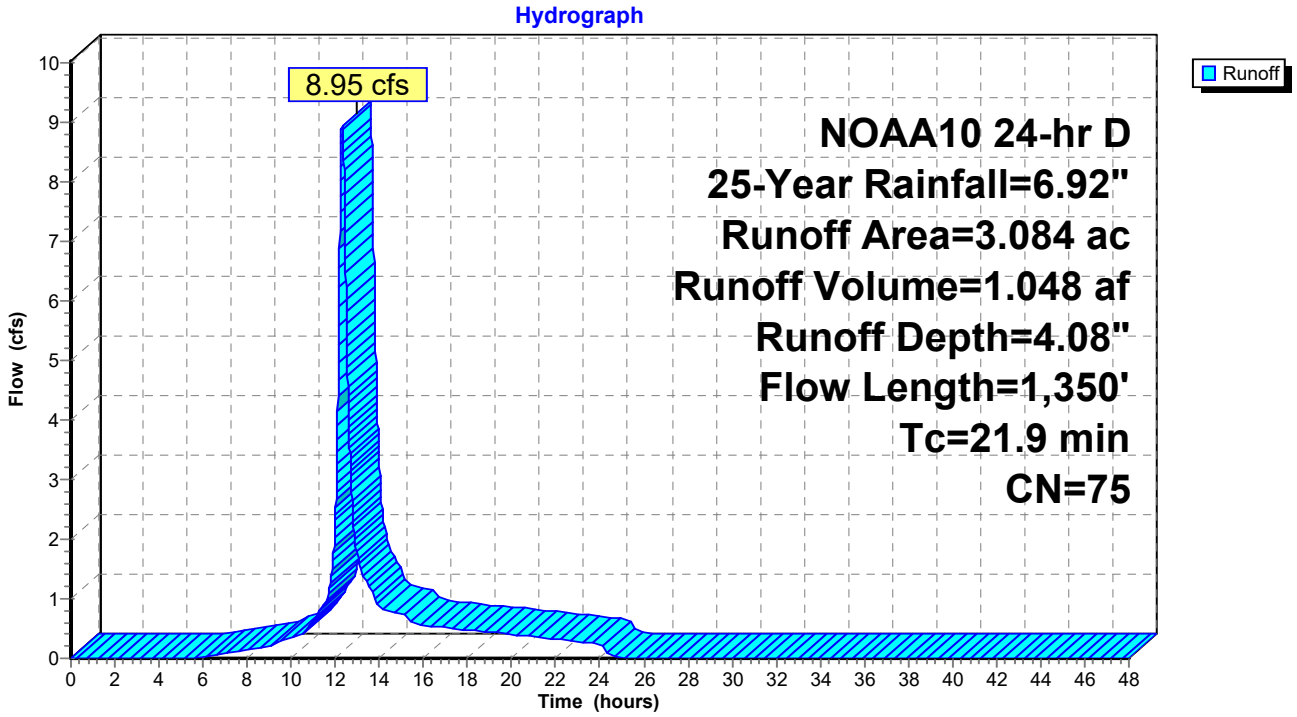
Runoff = 8.95 cfs @ 12.31 hrs, Volume= 1.048 af, Depth= 4.08"
Routed to Reach 1R : PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.92"

Area (ac)	CN	Description
0.073	36	Woods, Fair, HSG A
2.780	79	Woods, Fair, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.215	39	>75% Grass cover, Good, HSG A
3.084	75	Weighted Average
3.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
7.5	874	0.1492	1.93		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.2	95	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	119	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	125	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.1	37	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
21.9	1,350	Total			

Subcatchment PA#1.1: PROP.AREA #1



Summary for Subcatchment PA#1.2: PROP.AREA #1.2

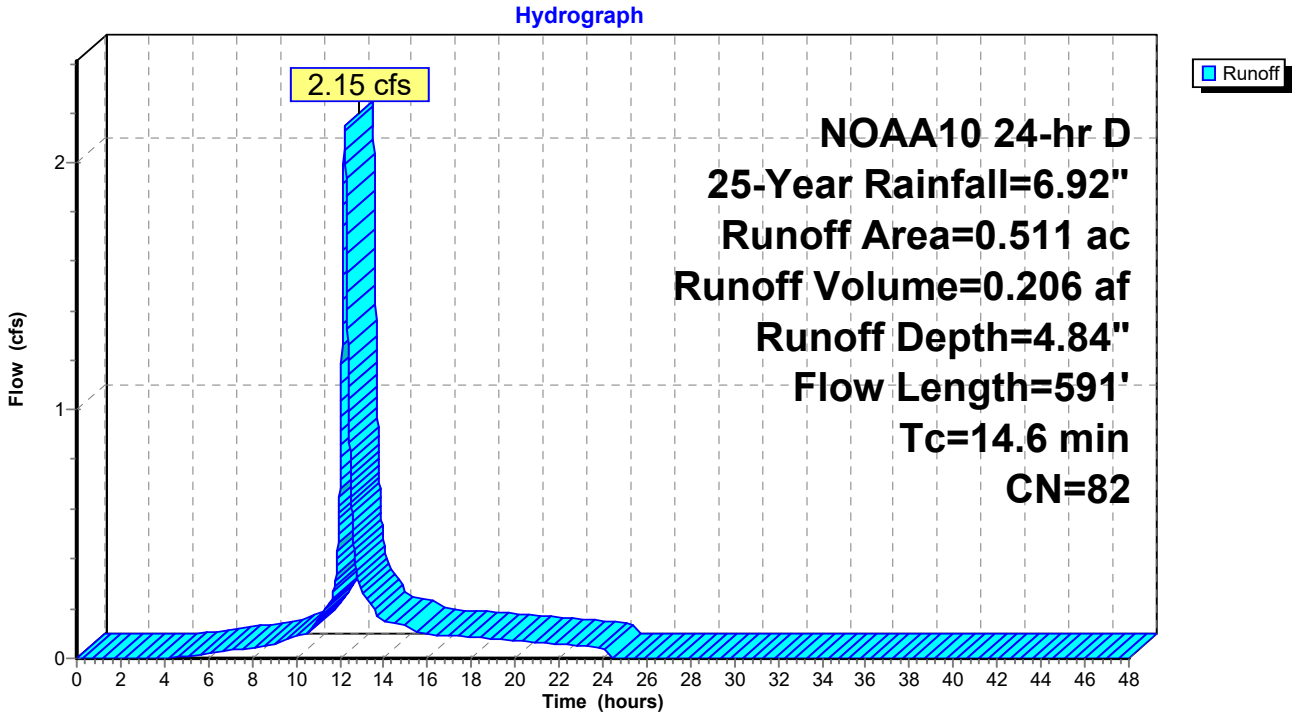
Runoff = 2.15 cfs @ 12.22 hrs, Volume= 0.206 af, Depth= 4.84"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.92"

Area (ac)	CN	Description
0.131	98	Roofs, HSG A
0.133	98	Paved parking, HSG A
0.097	39	>75% Grass cover, Good, HSG A
0.025	80	>75% Grass cover, Good, HSG D
0.083	84	50-75% Grass cover, Fair, HSG D
0.042	79	Woods, Fair, HSG D
0.511	82	Weighted Average
0.247		48.34% Pervious Area
0.264		51.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.3300	0.13		**Sheet Flow, Sheet flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
0.5	75	0.2300	2.40		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.3	55	0.1600	2.80		**Shallow Concentrated Flow, Shallow** Short Grass Pasture Kv= 7.0 fps
0.4	99	0.0500	4.54		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.6	262	0.0100	6.77	8.13	**Channel Flow, Channel flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
14.6	591	Total			

Subcatchment PA#1.2: PROP.AREA #1.2



Summary for Subcatchment PA#1.3: PROP.AREA #1.3

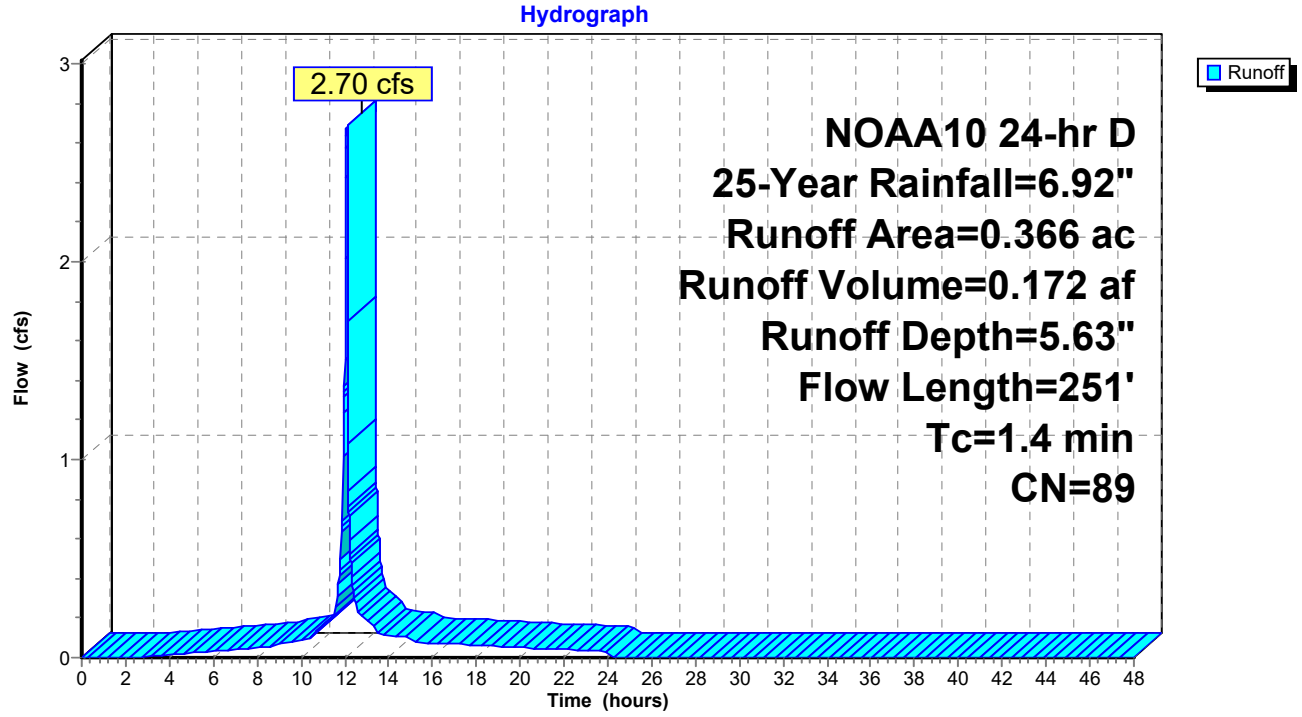
Runoff = 2.70 cfs @ 12.10 hrs, Volume= 0.172 af, Depth= 5.63"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.92"

	Area (ac)	CN	Description
	0.150	98	Roofs, HSG A
	0.145	98	Paved parking, HSG A
*	0.025	80	>75% Grass cover, Good, HSG D
	0.046	39	>75% Grass cover, Good, HSG A
	0.366	89	Weighted Average
	0.071		19.40% Pervious Area
	0.295		80.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0400	1.72		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.4	151	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.4	251	Total			

Subcatchment PA#1.3: PROP.AREA #1.3



Summary for Subcatchment PA#1.4: PROP.AREA #1.4

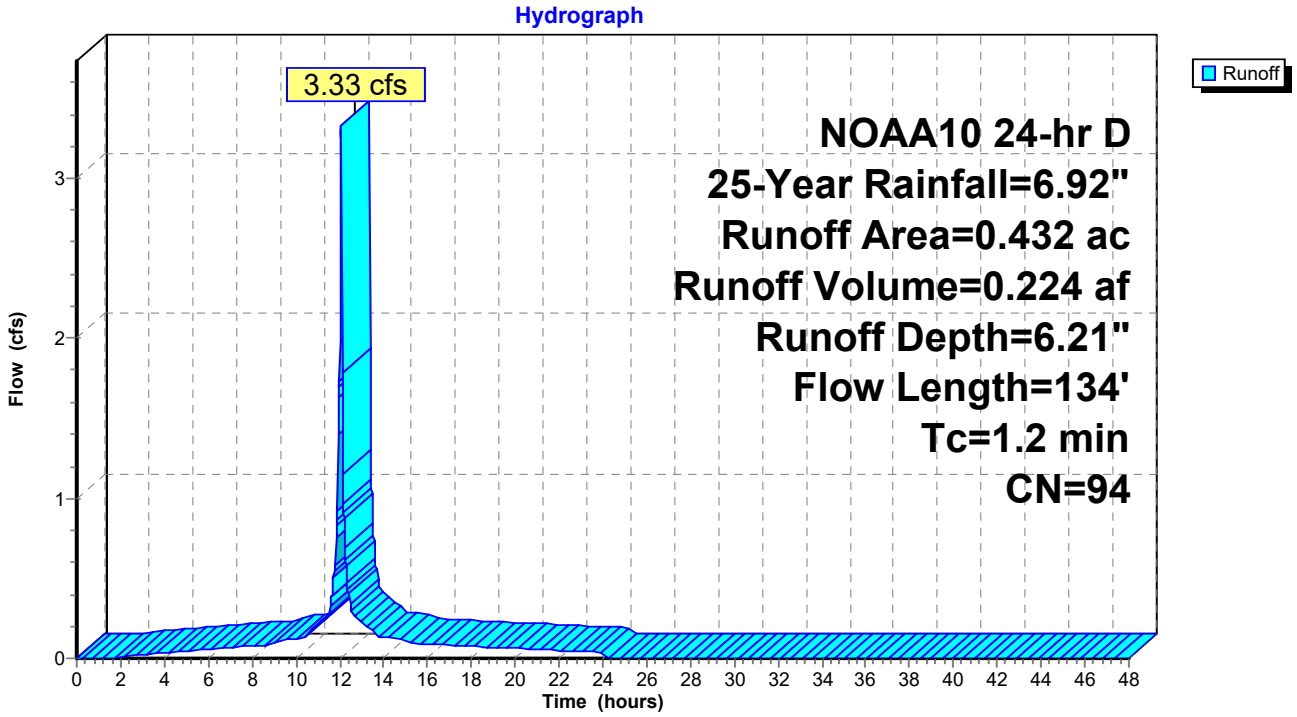
Runoff = 3.33 cfs @ 12.09 hrs, Volume= 0.224 af, Depth= 6.21"
Routed to Pond 2P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.92"

Area (ac)	CN	Description
0.150	98	Roofs, HSG A
0.214	98	Paved parking, HSG A
0.013	39	>75% Grass cover, Good, HSG A
0.055	80	>75% Grass cover, Good, HSG D
0.432	94	Weighted Average
0.068		15.74% Pervious Area
0.364		84.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0300	1.53		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.0	9	0.0298	3.50		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.1	25	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.2	134	Total			

Subcatchment PA#1.4: PROP.AREA #1.4



Summary for Subcatchment PA#3: PROP.AREA #3

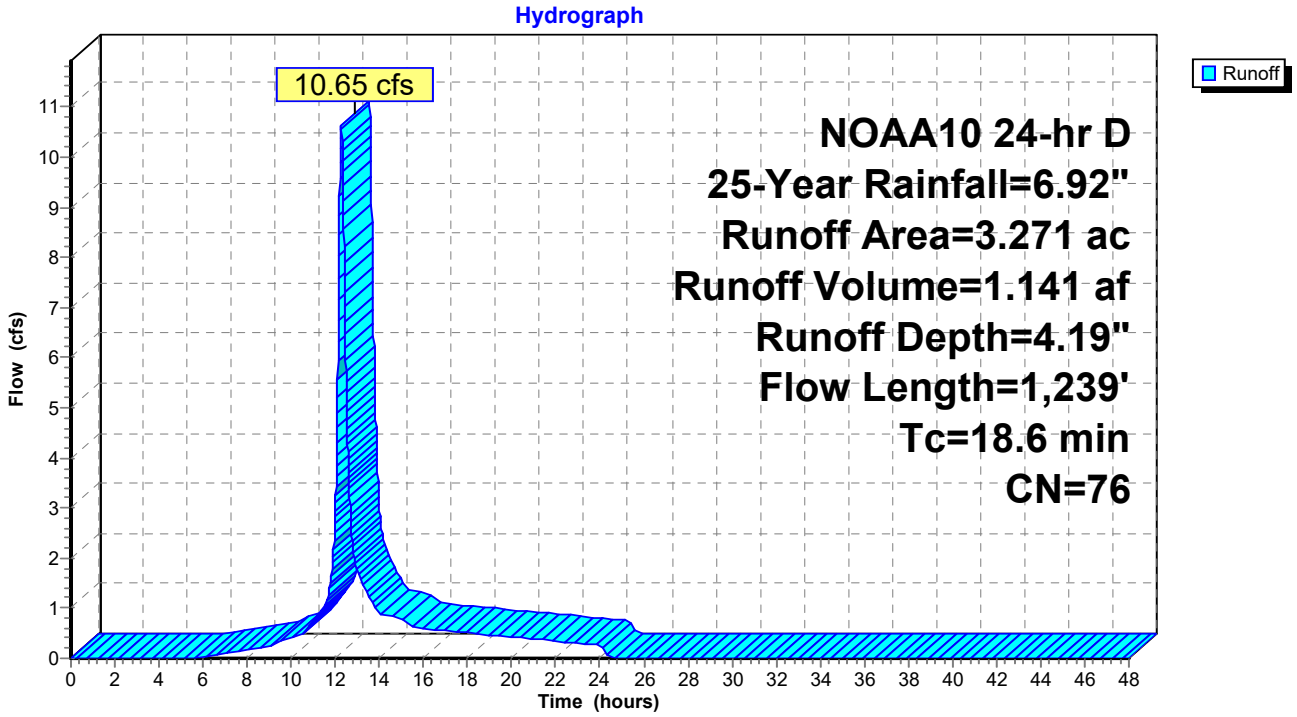
Runoff = 10.65 cfs @ 12.27 hrs, Volume= 1.141 af, Depth= 4.19"
Routed to Link 8L : P-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.92"

Area (ac)	CN	Description
0.137	30	Woods, Good, HSG A
2.912	79	Woods, Fair, HSG D
0.176	80	>75% Grass cover, Good, HSG D
0.046	39	>75% Grass cover, Good, HSG A
3.271	76	Weighted Average
3.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.3400	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.4	820	0.2600	2.55		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.0	34	0.0400	11.41	14.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.4	240	0.0100	10.22	72.26	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
0.1	45	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
18.6	1,239	Total			

Subcatchment PA#3: PROP.AREA #3



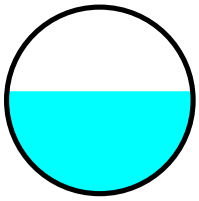
Summary for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 4.08" for 25-Year event
Inflow = 8.95 cfs @ 12.31 hrs, Volume= 1.048 af
Outflow = 8.94 cfs @ 12.32 hrs, Volume= 1.048 af, Atten= 0%, Lag= 0.6 min
Routed to Link 6L : P-POA-1.1

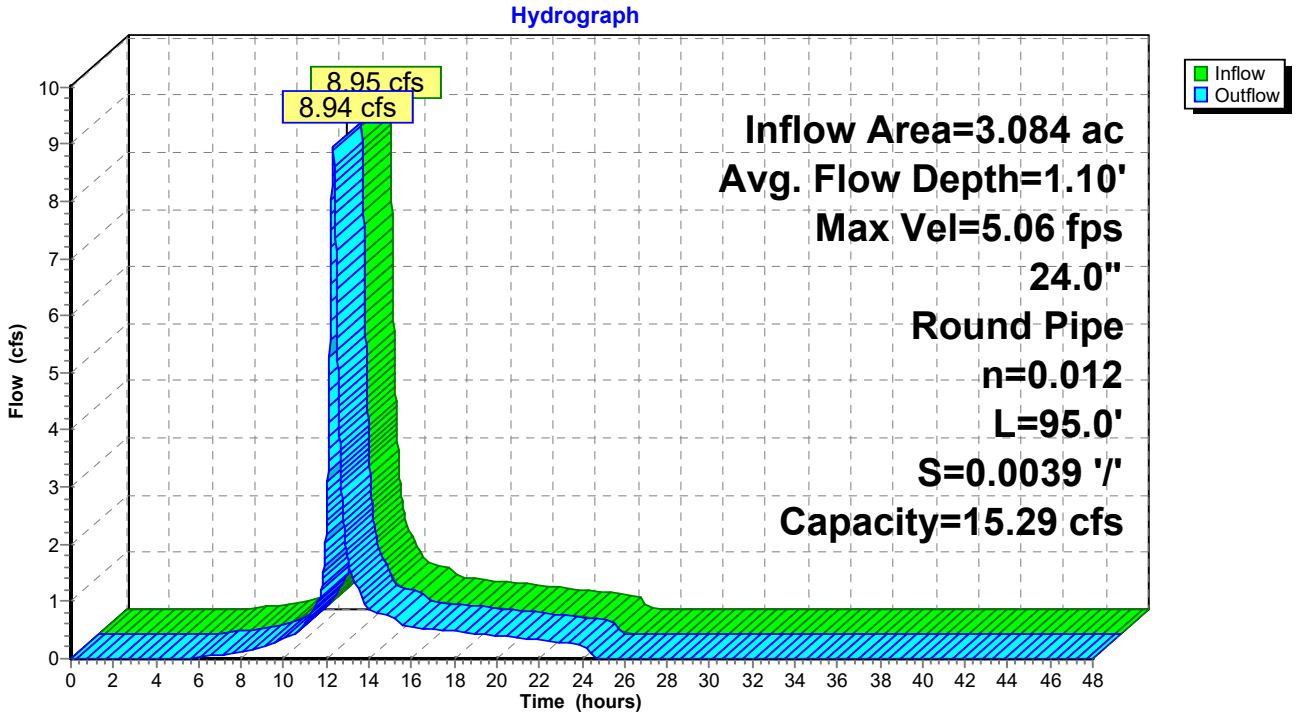
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.06 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.07 fps, Avg. Travel Time= 0.8 min

Peak Storage= 168 cf @ 12.32 hrs
Average Depth at Peak Storage= 1.10' , Surface Width= 1.99'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 15.29 cfs

24.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 95.0' Slope= 0.0039 '/'
Inlet Invert= 304.15', Outlet Invert= 303.78'



Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)



Stage-Discharge for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
304.15	0.00	0.00
304.17	0.43	0.00
304.19	0.69	0.01
304.21	0.90	0.02
304.23	1.08	0.05
304.25	1.25	0.07
304.27	1.41	0.11
304.29	1.56	0.15
304.31	1.69	0.20
304.33	1.83	0.26
304.35	1.95	0.32
304.37	2.07	0.39
304.39	2.19	0.47
304.41	2.30	0.55
304.43	2.41	0.64
304.45	2.52	0.74
304.47	2.62	0.85
304.49	2.72	0.96
304.51	2.81	1.08
304.53	2.90	1.21
304.55	2.99	1.34
304.57	3.08	1.48
304.59	3.17	1.62
304.61	3.25	1.77
304.63	3.33	1.93
304.65	3.41	2.10
304.67	3.49	2.26
304.69	3.56	2.44
304.71	3.64	2.62
304.73	3.71	2.80
304.75	3.78	3.00
304.77	3.85	3.19
304.79	3.91	3.39
304.81	3.98	3.60
304.83	4.04	3.81
304.85	4.10	4.02
304.87	4.16	4.24
304.89	4.22	4.46
304.91	4.28	4.69
304.93	4.34	4.92
304.95	4.39	5.15
304.97	4.45	5.39
304.99	4.50	5.63
305.01	4.55	5.88
305.03	4.60	6.12
305.05	4.65	6.37
305.07	4.69	6.62
305.09	4.74	6.88
305.11	4.78	7.13
305.13	4.83	7.39
305.15	4.87	7.65
305.17	4.91	7.91
305.19	4.95	8.17
305.21	4.99	8.43
305.23	5.02	8.69
305.25	5.06	8.96
305.27	5.09	9.22
305.29	5.13	9.49
305.31	5.16	9.75
305.33	5.19	10.01
305.35	5.22	10.28
305.37	5.25	10.54
305.39	5.28	10.80
305.41	5.30	11.06
305.43	5.33	11.31
305.45	5.35	11.57
305.47	5.37	11.82
305.49	5.40	12.07
305.51	5.42	12.32
305.53	5.43	12.56
305.55	5.45	12.81
305.57	5.47	13.04
305.59	5.48	13.28
305.61	5.50	13.50
305.63	5.51	13.73
305.65	5.52	13.95
305.67	5.53	14.16
305.69	5.54	14.37
305.71	5.54	14.57
305.73	5.55	14.76
305.75	5.55	14.95
305.77	**5.55**	15.13
305.79	5.55	15.30
305.81	5.55	15.46
305.83	5.54	15.62
305.85	5.54	15.76
305.87	5.53	15.89
305.89	5.52	16.01
305.91	5.51	16.12
305.93	5.49	16.22
305.95	5.47	16.30
305.97	5.45	16.37
305.99	5.43	16.42
306.01	5.40	16.44
306.03	5.37	**16.45**
306.05	5.33	16.43
306.07	5.29	16.39
306.09	5.23	16.30
306.11	5.17	16.16
306.13	5.08	15.94
306.15	4.87	15.29

Stage-Area-Storage for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
304.15	0.0	0
304.17	0.0	1
304.19	0.0	1
304.21	0.0	3
304.23	0.0	4
304.25	0.1	6
304.27	0.1	7
304.29	0.1	9
304.31	0.1	11
304.33	0.1	13
304.35	0.2	16
304.37	0.2	18
304.39	0.2	20
304.41	0.2	23
304.43	0.3	25
304.45	0.3	28
304.47	0.3	31
304.49	0.4	34
304.51	0.4	37
304.53	0.4	39
304.55	0.4	42
304.57	0.5	46
304.59	0.5	49
304.61	0.5	52
304.63	0.6	55
304.65	0.6	58
304.67	0.6	62
304.69	0.7	65
304.71	0.7	68
304.73	0.8	72
304.75	0.8	75
304.77	0.8	79
304.79	0.9	82
304.81	0.9	86
304.83	0.9	89
304.85	1.0	93
304.87	1.0	97
304.89	1.1	100
304.91	1.1	104
304.93	1.1	108
304.95	1.2	111
304.97	1.2	115
304.99	1.3	119
305.01	1.3	123
305.03	1.3	126
305.05	1.4	130
305.07	1.4	134
305.09	1.5	138
305.11	1.5	142
305.13	1.5	145
305.15	1.6	149
305.17	1.6	153
305.19	1.7	157
305.21	1.7	161
305.23	1.7	164
305.25	1.8	168
305.27	1.8	172
305.29	1.8	176
305.31	1.9	179
305.33	1.9	183
305.35	2.0	187
305.37	2.0	191
305.39	2.0	194
305.41	2.1	198
305.43	2.1	202
305.45	2.2	205
305.47	2.2	209
305.49	2.2	213
305.51	2.3	216
305.53	2.3	220
305.55	2.3	223
305.57	2.4	227
305.59	2.4	230
305.61	2.5	233
305.63	2.5	237
305.65	2.5	240
305.67	2.6	243
305.69	2.6	247
305.71	2.6	250
305.73	2.7	253
305.75	2.7	256
305.77	2.7	259
305.79	2.8	262
305.81	2.8	265
305.83	2.8	268
305.85	2.8	270
305.87	2.9	273
305.89	2.9	276
305.91	2.9	278
305.93	3.0	281
305.95	3.0	283
305.97	3.0	285
305.99	3.0	287
306.01	3.0	289
306.03	3.1	291
306.05	3.1	293
306.07	3.1	294
306.09	3.1	296
306.11	3.1	297
306.13	3.1	298
306.15	**3.1**	**298**

Summary for Pond 1P: UND Chambers

Inflow Area = 0.877 ac, 63.74% Impervious, Inflow Depth = 5.17" for 25-Year event
Inflow = 3.96 cfs @ 12.10 hrs, Volume= 0.378 af
Outflow = 1.76 cfs @ 12.35 hrs, Volume= 0.378 af, Atten= 56%, Lag= 14.9 min
Discarded = 0.06 cfs @ 6.74 hrs, Volume= 0.193 af
Primary = 1.70 cfs @ 12.35 hrs, Volume= 0.185 af
Routed to Pond 2P : UND Chambers

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 311.62' @ 12.35 hrs Surf.Area= 0.041 ac Storage= 0.126 af

Plug-Flow detention time= 342.8 min calculated for 0.378 af (100% of inflow)
Center-of-Mass det. time= 342.8 min (1,155.6 - 812.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	307.00'	0.080 af	**19.42'W x 91.99'L x 7.50'H Field A** 0.308 af Overall - 0.106 af Embedded = 0.201 af x 40.0% Voids
#2A	308.50'	0.106 af	**ADS_StormTech MC-4500 b +Cap**x 42 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 42 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.187 af	Total Available Storage

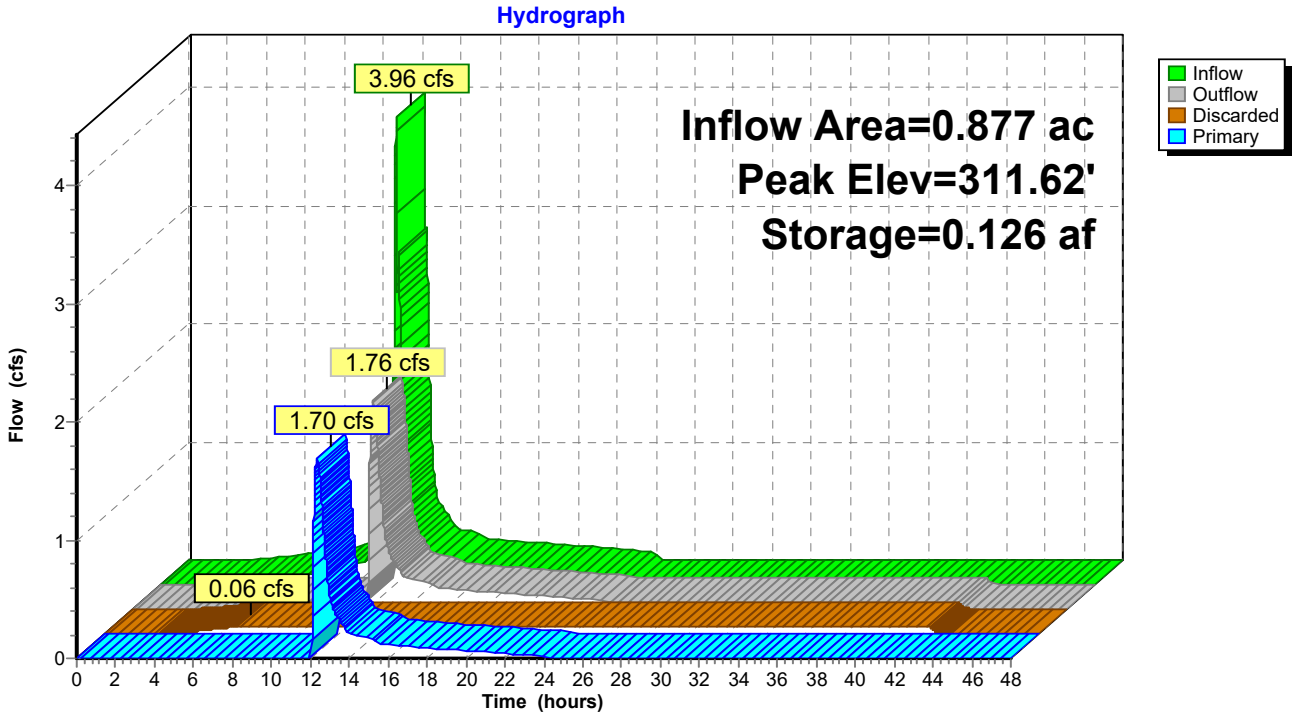
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	310.56'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 6.74 hrs HW=307.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=1.70 cfs @ 12.35 hrs HW=311.62' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 1.70 cfs @ 4.32 fps)

Pond 1P: UND Chambers



Stage-Discharge for Pond 1P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
307.00	0.00	**0.00**	0.00
307.10	0.06	**0.06**	0.00
307.20	0.06	0.06	0.00
307.30	0.06	0.06	0.00
307.40	0.06	0.06	0.00
307.50	0.06	0.06	0.00
307.60	0.06	0.06	0.00
307.70	0.06	0.06	0.00
307.80	0.06	0.06	0.00
307.90	0.06	0.06	0.00
308.00	0.06	0.06	0.00
308.10	0.06	0.06	0.00
308.20	0.06	0.06	0.00
308.30	0.06	0.06	0.00
308.40	0.06	0.06	0.00
308.50	0.06	0.06	0.00
308.60	0.06	0.06	0.00
308.70	0.06	0.06	0.00
308.80	0.06	0.06	0.00
308.90	0.06	0.06	0.00
309.00	0.06	0.06	0.00
309.10	0.06	0.06	0.00
309.20	0.06	0.06	0.00
309.30	0.06	0.06	0.00
309.40	0.06	0.06	0.00
309.50	0.06	0.06	0.00
309.60	0.06	0.06	0.00
309.70	0.06	0.06	0.00
309.80	0.06	0.06	0.00
309.90	0.06	0.06	0.00
310.00	0.06	0.06	0.00
310.10	0.06	0.06	0.00
310.20	0.06	0.06	0.00
310.30	0.06	0.06	0.00
310.40	0.06	0.06	0.00
310.50	0.06	0.06	0.00
310.60	0.07	0.06	0.01
310.70	0.18	0.06	0.11
310.80	0.37	0.06	0.31
310.90	0.63	0.06	0.56
311.00	0.89	0.06	0.83
311.10	1.08	0.06	1.02
311.20	1.24	0.06	1.18
311.30	1.39	0.06	1.32
311.40	1.51	0.06	1.45
311.50	1.63	0.06	1.57
311.60	1.74	0.06	1.68
311.70	1.85	0.06	1.78
311.80	1.94	0.06	1.88
311.90	2.04	0.06	1.97
312.00	2.12	0.06	2.06
312.10	2.21	0.06	2.15
312.20	2.29	0.06	2.23
312.30	2.37	0.06	2.31
312.40	2.45	0.06	2.38
312.50	2.52	0.06	2.46
312.60	2.59	0.06	2.53
312.70	2.66	0.06	2.60
312.80	2.73	0.06	2.67
312.90	2.80	0.06	2.73
313.00	2.86	0.06	2.80
313.10	2.92	0.06	2.86
313.20	2.99	0.06	2.92
313.30	3.05	0.06	2.98
313.40	3.11	0.06	3.04
313.50	3.16	0.06	3.10
313.60	3.22	0.06	3.16
313.70	3.28	0.06	3.21
313.80	3.33	0.06	3.27
313.90	3.39	0.06	3.32
314.00	3.44	0.06	3.38
314.10	3.49	0.06	3.43
314.20	3.54	0.06	3.48
314.30	3.59	0.06	3.53
314.40	3.64	0.06	3.58
314.50	**3.69**	0.06	**3.63**

Stage-Area-Storage for Pond 1P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
307.00	**0.041**	0.000
307.10	0.041	0.002
307.20	0.041	0.003
307.30	0.041	0.005
307.40	0.041	0.007
307.50	0.041	0.008
307.60	0.041	0.010
307.70	0.041	0.011
307.80	0.041	0.013
307.90	0.041	0.015
308.00	0.041	0.016
308.10	0.041	0.018
308.20	0.041	0.020
308.30	0.041	0.021
308.40	0.041	0.023
308.50	0.041	0.025
308.60	0.041	0.028
308.70	0.041	0.032
308.80	0.041	0.035
308.90	0.041	0.038
309.00	0.041	0.042
309.10	0.041	0.045
309.20	0.041	0.049
309.30	0.041	0.052
309.40	0.041	0.055
309.50	0.041	0.059
309.60	0.041	0.062
309.70	0.041	0.065
309.80	0.041	0.069
309.90	0.041	0.072
310.00	0.041	0.075
310.10	0.041	0.079
310.20	0.041	0.082
310.30	0.041	0.085
310.40	0.041	0.088
310.50	0.041	0.092
310.60	0.041	0.095
310.70	0.041	0.098
310.80	0.041	0.101
310.90	0.041	0.104
311.00	0.041	0.107
311.10	0.041	0.110
311.20	0.041	0.113
311.30	0.041	0.116
311.40	0.041	0.119
311.50	0.041	0.122
311.60	0.041	0.125
311.70	0.041	0.128
311.80	0.041	0.131
311.90	0.041	0.134
312.00	0.041	0.137
312.10	0.041	0.139
312.20	0.041	0.142
312.30	0.041	0.145
312.40	0.041	0.147
312.50	0.041	0.150
312.60	0.041	0.152
312.70	0.041	0.155
312.80	0.041	0.157
312.90	0.041	0.159
313.00	0.041	0.161
313.10	0.041	0.163
313.20	0.041	0.165
313.30	0.041	0.167
313.40	0.041	0.169
313.50	0.041	0.170
313.60	0.041	0.172
313.70	0.041	0.174
313.80	0.041	0.175
313.90	0.041	0.177
314.00	0.041	0.179
314.10	0.041	0.180
314.20	0.041	0.182
314.30	0.041	0.184
314.40	0.041	0.185
314.50	0.041	**0.187**

Summary for Pond 2P: UND Chambers

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 3.75" for 25-Year event
Inflow = 3.68 cfs @ 12.10 hrs, Volume= 0.409 af
Outflow = 1.94 cfs @ 12.46 hrs, Volume= 0.409 af, Atten= 47%, Lag= 21.4 min
Discarded = 0.05 cfs @ 5.42 hrs, Volume= 0.143 af
Primary = 1.89 cfs @ 12.46 hrs, Volume= 0.266 af
Routed to Link 7L : P-POA-1.2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 308.15' @ 12.46 hrs Surf.Area= 0.032 ac Storage= 0.089 af

Plug-Flow detention time= 190.1 min calculated for 0.409 af (100% of inflow)
Center-of-Mass det. time= 190.3 min (1,003.5 - 813.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	304.25'	0.054 af	**19.42'W x 71.87'L x 6.75'H Field A** 0.216 af Overall - 0.082 af Embedded = 0.134 af x 40.0% Voids
#2A	305.00'	0.082 af	**ADS_StormTech MC-4500 b +Cap**x 32 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 32 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.136 af	Total Available Storage

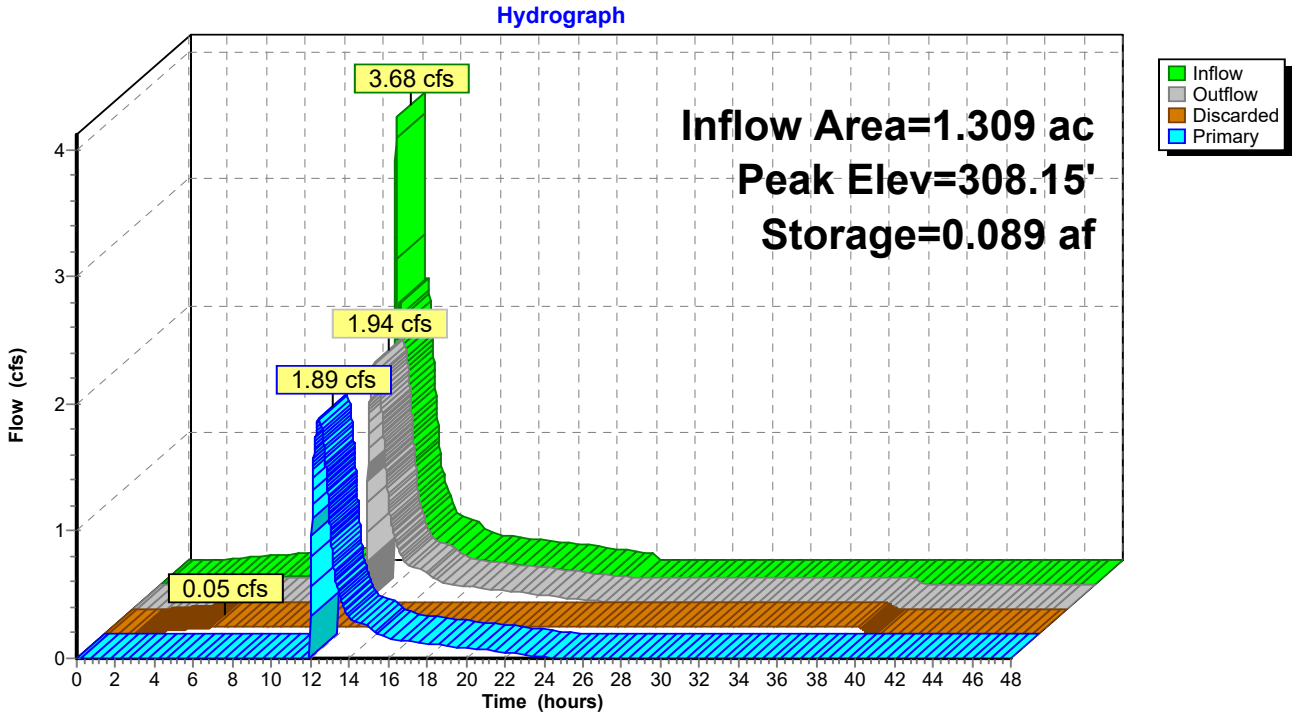
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.25'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	306.90'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.05 cfs @ 5.42 hrs HW=304.32' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=1.89 cfs @ 12.46 hrs HW=308.15' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 1.89 cfs @ 4.81 fps)

Pond 2P: UND Chambers



Stage-Discharge for Pond 2P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
304.25	0.00	**0.00**	0.00
304.35	0.05	**0.05**	0.00
304.45	0.05	0.05	0.00
304.55	0.05	0.05	0.00
304.65	0.05	0.05	0.00
304.75	0.05	0.05	0.00
304.85	0.05	0.05	0.00
304.95	0.05	0.05	0.00
305.05	0.05	0.05	0.00
305.15	0.05	0.05	0.00
305.25	0.05	0.05	0.00
305.35	0.05	0.05	0.00
305.45	0.05	0.05	0.00
305.55	0.05	0.05	0.00
305.65	0.05	0.05	0.00
305.75	0.05	0.05	0.00
305.85	0.05	0.05	0.00
305.95	0.05	0.05	0.00
306.05	0.05	0.05	0.00
306.15	0.05	0.05	0.00
306.25	0.05	0.05	0.00
306.35	0.05	0.05	0.00
306.45	0.05	0.05	0.00
306.55	0.05	0.05	0.00
306.65	0.05	0.05	0.00
306.75	0.05	0.05	0.00
306.85	0.05	0.05	0.00
306.95	0.06	0.05	0.02
307.05	0.18	0.05	0.13
307.15	0.38	0.05	0.33
307.25	0.64	0.05	0.59
307.35	0.90	0.05	0.85
307.45	1.08	0.05	1.04
307.55	1.24	0.05	1.20
307.65	1.39	0.05	1.34
307.75	1.51	0.05	1.46
307.85	1.63	0.05	1.58
307.95	1.74	0.05	1.69
308.05	1.84	0.05	1.79
308.15	1.94	0.05	1.89
308.25	2.03	0.05	1.98
308.35	2.12	0.05	2.07
308.45	2.20	0.05	2.16
308.55	2.29	0.05	2.24
308.65	2.36	0.05	2.32
308.75	2.44	0.05	2.39
308.85	2.51	0.05	2.47
308.95	2.59	0.05	2.54
309.05	2.65	0.05	2.61
309.15	2.72	0.05	2.67
309.25	2.79	0.05	2.74
309.35	2.85	0.05	2.80
309.45	2.92	0.05	2.87
309.55	2.98	0.05	2.93
309.65	3.04	0.05	2.99
309.75	3.10	0.05	3.05
309.85	3.16	0.05	3.11
309.95	3.21	0.05	3.16
310.05	3.27	0.05	3.22
310.15	3.32	0.05	3.28
310.25	3.38	0.05	3.33
310.35	3.43	0.05	3.38
310.45	3.48	0.05	3.43
310.55	3.53	0.05	3.49
310.65	3.59	0.05	3.54
310.75	3.64	0.05	3.59
310.85	3.69	0.05	3.64
310.95	**3.73**	0.05	**3.69**

Stage-Area-Storage for Pond 2P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
304.25	**0.032**	0.000
304.35	0.032	0.001
304.45	0.032	0.003
304.55	0.032	0.004
304.65	0.032	0.005
304.75	0.032	0.006
304.85	0.032	0.008
304.95	0.032	0.009
305.05	0.032	0.011
305.15	0.032	0.014
305.25	0.032	0.016
305.35	0.032	0.019
305.45	0.032	0.022
305.55	0.032	0.024
305.65	0.032	0.027
305.75	0.032	0.030
305.85	0.032	0.032
305.95	0.032	0.035
306.05	0.032	0.037
306.15	0.032	0.040
306.25	0.032	0.043
306.35	0.032	0.045
306.45	0.032	0.048
306.55	0.032	0.050
306.65	0.032	0.053
306.75	0.032	0.055
306.85	0.032	0.058
306.95	0.032	0.060
307.05	0.032	0.063
307.15	0.032	0.065
307.25	0.032	0.068
307.35	0.032	0.070
307.45	0.032	0.073
307.55	0.032	0.075
307.65	0.032	0.077
307.75	0.032	0.080
307.85	0.032	0.082
307.95	0.032	0.084
308.05	0.032	0.087
308.15	0.032	0.089
308.25	0.032	0.091
308.35	0.032	0.093
308.45	0.032	0.095
308.55	0.032	0.098
308.65	0.032	0.100
308.75	0.032	0.102
308.85	0.032	0.104
308.95	0.032	0.106
309.05	0.032	0.108
309.15	0.032	0.110
309.25	0.032	0.112
309.35	0.032	0.113
309.45	0.032	0.115
309.55	0.032	0.117
309.65	0.032	0.118
309.75	0.032	0.119
309.85	0.032	0.121
309.95	0.032	0.122
310.05	0.032	0.123
310.15	0.032	0.125
310.25	0.032	0.126
310.35	0.032	0.127
310.45	0.032	0.129
310.55	0.032	0.130
310.65	0.032	0.131
310.75	0.032	0.132
310.85	0.032	0.134
310.95	0.032	**0.135**

Summary for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

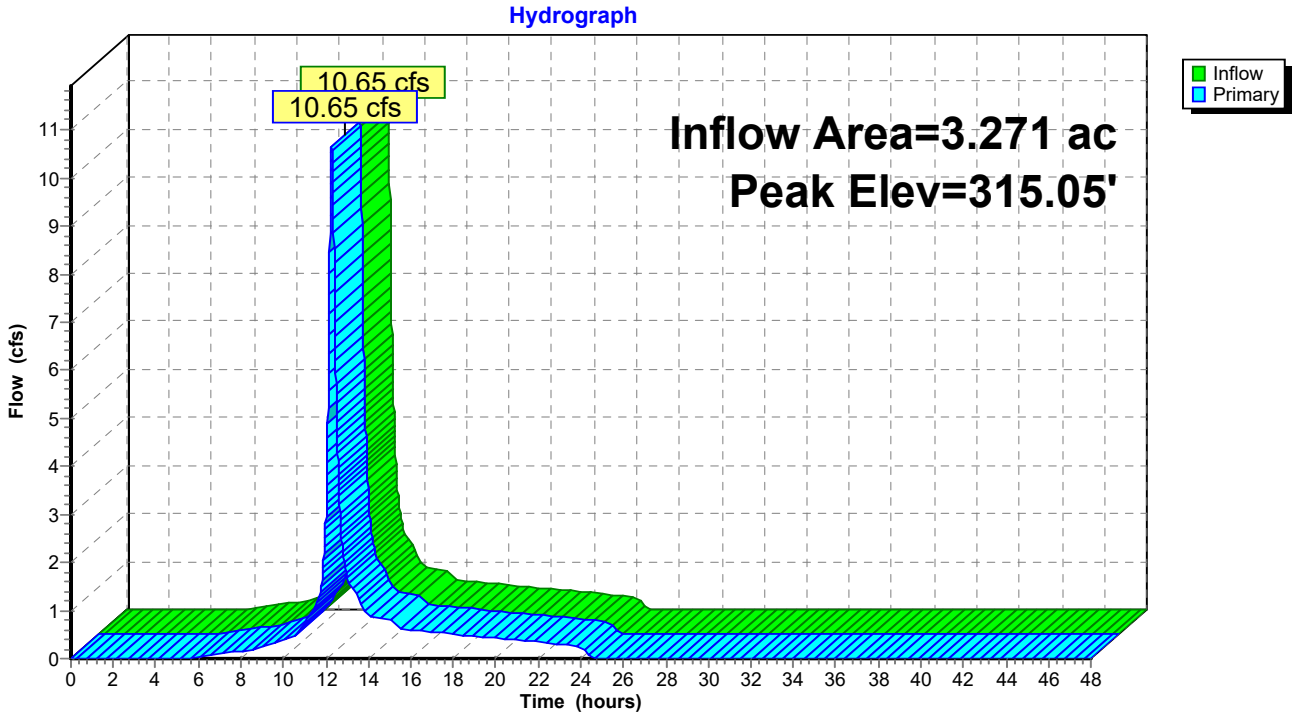
Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 4.19" for 25-Year event
Inflow = 10.65 cfs @ 12.27 hrs, Volume= 1.141 af
Outflow = 10.65 cfs @ 12.27 hrs, Volume= 1.141 af, Atten= 0%, Lag= 0.0 min
Primary = 10.65 cfs @ 12.27 hrs, Volume= 1.141 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 315.05' @ 12.27 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.65 cfs @ 12.27 hrs HW=315.05' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 10.65 cfs @ 13.56 fps)

Pond 4P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	309.22	5.48	311.82	8.20	314.42	10.22
306.67	0.01	309.27	5.55	311.87	8.24	314.47	10.25
306.72	0.04	309.32	5.61	311.92	8.29	314.52	10.29
306.77	0.10	309.37	5.67	311.97	8.33	314.57	10.32
306.82	0.17	309.42	5.74	312.02	8.37	314.62	10.36
306.87	0.26	309.47	5.80	312.07	8.41	314.67	10.39
306.92	0.37	309.52	5.86	312.12	8.46	314.72	10.43
306.97	0.49	309.57	5.92	312.17	8.50	314.77	10.46
307.02	0.63	309.62	5.98	312.22	8.54	314.82	10.49
307.07	0.78	309.67	6.04	312.27	8.58	314.87	10.53
307.12	0.95	309.72	6.10	312.32	8.62	314.92	10.56
307.17	1.12	309.77	6.16	312.37	8.66	314.97	10.60
307.22	1.30	309.82	6.21	312.42	8.71	315.02	10.63
307.27	1.48	309.87	6.27	312.47	8.75	315.07	**10.66**
307.32	1.67	309.92	6.33	312.52	8.79		
307.37	1.86	309.97	6.38	312.57	8.83		
307.42	2.05	310.02	6.44	312.62	8.87		
307.47	2.23	310.07	6.50	312.67	8.91		
307.52	2.40	310.12	6.55	312.72	8.95		
307.57	2.56	310.17	6.60	312.77	8.99		
307.62	2.67	310.22	6.66	312.82	9.03		
307.67	2.80	310.27	6.71	312.87	9.07		
307.72	2.93	310.32	6.76	312.92	9.11		
307.77	3.05	310.37	6.82	312.97	9.15		
307.82	3.16	310.42	6.87	313.02	9.19		
307.87	3.28	310.47	6.92	313.07	9.22		
307.92	3.38	310.52	6.97	313.12	9.26		
307.97	3.49	310.57	7.02	313.17	9.30		
308.02	3.59	310.62	7.07	313.22	9.34		
308.07	3.69	310.67	7.13	313.27	9.38		
308.12	3.78	310.72	7.18	313.32	9.42		
308.17	3.88	310.77	7.22	313.37	9.45		
308.22	3.97	310.82	7.27	313.42	9.49		
308.27	4.06	310.87	7.32	313.47	9.53		
308.32	4.14	310.92	7.37	313.52	9.57		
308.37	4.23	310.97	7.42	313.57	9.60		
308.42	4.31	311.02	7.47	313.62	9.64		
308.47	4.39	311.07	7.52	313.67	9.68		
308.52	4.47	311.12	7.56	313.72	9.72		
308.57	4.55	311.17	7.61	313.77	9.75		
308.62	4.63	311.22	7.66	313.82	9.79		
308.67	4.71	311.27	7.70	313.87	9.83		
308.72	4.78	311.32	7.75	313.92	9.86		
308.77	4.86	311.37	7.80	313.97	9.90		
308.82	4.93	311.42	7.84	314.02	9.93		
308.87	5.00	311.47	7.89	314.07	9.97		
308.92	5.07	311.52	7.93	314.12	10.01		
308.97	5.14	311.57	7.98	314.17	10.04		
309.02	5.21	311.62	8.02	314.22	10.08		
309.07	5.28	311.67	8.07	314.27	10.11		
309.12	5.35	311.72	8.11	314.32	10.15		
309.17	5.41	311.77	8.15	314.37	10.18		

Stage-Area-Storage for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)
306.62	**0.000**
306.72	0.000
306.82	0.000
306.92	0.000
307.02	0.000
307.12	0.000
307.22	0.000
307.32	0.000
307.42	0.000
307.52	0.000
307.62	0.000
307.72	0.000
307.82	0.000
307.92	0.000
308.02	0.000
308.12	0.000
308.22	0.000
308.32	0.000
308.42	0.000
308.52	0.000
308.62	0.000
308.72	0.000
308.82	0.000
308.92	0.000
309.02	0.000
309.12	0.000
309.22	0.000
309.32	0.000
309.42	0.000
309.52	0.000
309.62	0.000
309.72	0.000
309.82	0.000
309.92	0.000
310.02	0.000
310.12	0.000
310.22	0.000
310.32	0.000
310.42	0.000
310.52	0.000
310.62	0.000
310.72	0.000
310.82	0.000
310.92	0.000
311.02	0.000
311.12	0.000
311.22	0.000
311.32	0.000
311.42	0.000
311.52	0.000
311.62	0.000
311.72	0.000
311.82	0.000
311.92	0.000
312.02	0.000
312.12	0.000
312.22	0.000
312.32	0.000
312.42	0.000
312.52	0.000
312.62	0.000
312.72	0.000
312.82	0.000
312.92	0.000
313.02	0.000
313.12	0.000
313.22	0.000
313.32	0.000
313.42	0.000
313.52	0.000
313.62	0.000
313.72	0.000
313.82	0.000
313.92	0.000
314.02	0.000
314.12	0.000
314.22	0.000
314.32	0.000
314.42	0.000
314.52	0.000
314.62	0.000
314.72	0.000
314.82	0.000
314.92	0.000
315.02	0.000

Summary for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

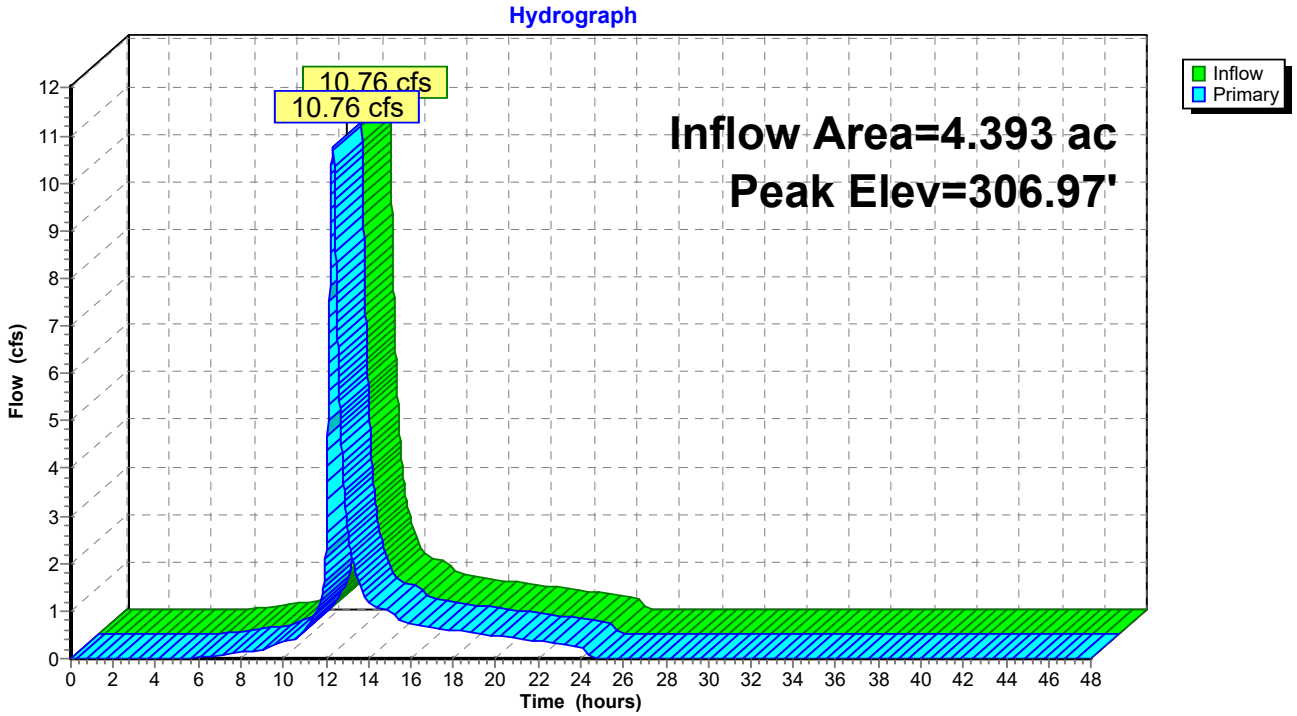
Inflow Area = 4.393 ac, 21.01% Impervious, Inflow Depth = 3.59" for 25-Year event
Inflow = 10.76 cfs @ 12.33 hrs, Volume= 1.314 af
Outflow = 10.76 cfs @ 12.33 hrs, Volume= 1.314 af, Atten= 0%, Lag= 0.0 min
Primary = 10.76 cfs @ 12.33 hrs, Volume= 1.314 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 306.97' @ 12.33 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.76 cfs @ 12.33 hrs HW=306.97' TW=302.77' (Fixed TW Elev= 302.77')
└**1=Orifice/Grate** (Orifice Controls 10.76 cfs @ 8.77 fps)

Pond 5P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	304.07	3.79	305.11	7.13	306.15	9.33
303.05	0.00	304.09	3.89	305.13	7.18	306.17	9.37
303.07	0.01	304.11	3.99	305.15	7.22	306.19	9.41
303.09	0.02	304.13	4.08	305.17	7.27	306.21	9.44
303.11	0.03	304.15	4.18	305.19	7.32	306.23	9.48
303.13	0.05	304.17	4.27	305.21	7.37	306.25	9.52
303.15	0.07	304.19	4.36	305.23	7.42	306.27	9.56
303.17	0.10	304.21	4.44	305.25	7.46	306.29	9.59
303.19	0.12	304.23	4.52	305.27	7.51	306.31	9.63
303.21	0.16	304.25	4.59	305.29	7.56	306.33	9.66
303.23	0.19	304.27	4.65	305.31	7.60	306.35	9.70
303.25	0.23	304.29	4.71	305.33	7.65	306.37	9.74
303.27	0.27	304.31	4.78	305.35	7.69	306.39	9.77
303.29	0.32	304.33	4.85	305.37	7.74	306.41	9.81
303.31	0.37	304.35	4.93	305.39	7.78	306.43	9.84
303.33	0.42	304.37	5.00	305.41	7.83	306.45	9.88
303.35	0.48	304.39	5.07	305.43	7.87	306.47	9.91
303.37	0.54	304.41	5.13	305.45	7.92	306.49	9.95
303.39	0.60	304.43	5.20	305.47	7.96	306.51	9.98
303.41	0.66	304.45	5.27	305.49	8.00	306.53	10.02
303.43	0.73	304.47	5.33	305.51	8.05	306.55	10.05
303.45	0.80	304.49	5.40	305.53	8.09	306.57	10.09
303.47	0.87	304.51	5.46	305.55	8.13	306.59	10.12
303.49	0.95	304.53	5.53	305.57	8.18	306.61	10.16
303.51	1.02	304.55	5.59	305.59	8.22	306.63	10.19
303.53	1.10	304.57	5.65	305.61	8.26	306.65	10.23
303.55	1.19	304.59	5.71	305.63	8.30	306.67	10.26
303.57	1.27	304.61	5.77	305.65	8.35	306.69	10.29
303.59	1.36	304.63	5.83	305.67	8.39	306.71	10.33
303.61	1.45	304.65	5.89	305.69	8.43	306.73	10.36
303.63	1.54	304.67	5.95	305.71	8.47	306.75	10.40
303.65	1.63	304.69	6.01	305.73	8.51	306.77	10.43
303.67	1.72	304.71	6.07	305.75	8.55	306.79	10.46
303.69	1.82	304.73	6.13	305.77	8.59	306.81	10.50
303.71	1.92	304.75	6.18	305.79	8.63	306.83	10.53
303.73	2.01	304.77	6.24	305.81	8.67	306.85	10.56
303.75	2.11	304.79	6.30	305.83	8.71	306.87	10.59
303.77	2.22	304.81	6.35	305.85	8.75	306.89	10.63
303.79	2.32	304.83	6.41	305.87	8.79	306.91	10.66
303.81	2.42	304.85	6.46	305.89	8.83	306.93	10.69
303.83	2.53	304.87	6.51	305.91	8.87	306.95	10.73
303.85	2.63	304.89	6.57	305.93	8.91	306.97	**10.76**
303.87	2.74	304.91	6.62	305.95	8.95		
303.89	2.84	304.93	6.67	305.97	8.99		
303.91	2.95	304.95	6.72	305.99	9.03		
303.93	3.06	304.97	6.78	306.01	9.07		
303.95	3.16	304.99	6.83	306.03	9.11		
303.97	3.27	305.01	6.88	306.05	9.14		
303.99	3.37	305.03	6.93	306.07	9.18		
304.01	3.48	305.05	6.98	306.09	9.22		
304.03	3.58	305.07	7.03	306.11	9.26		
304.05	3.69	305.09	7.08	306.13	9.30		

Stage-Area-Storage for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

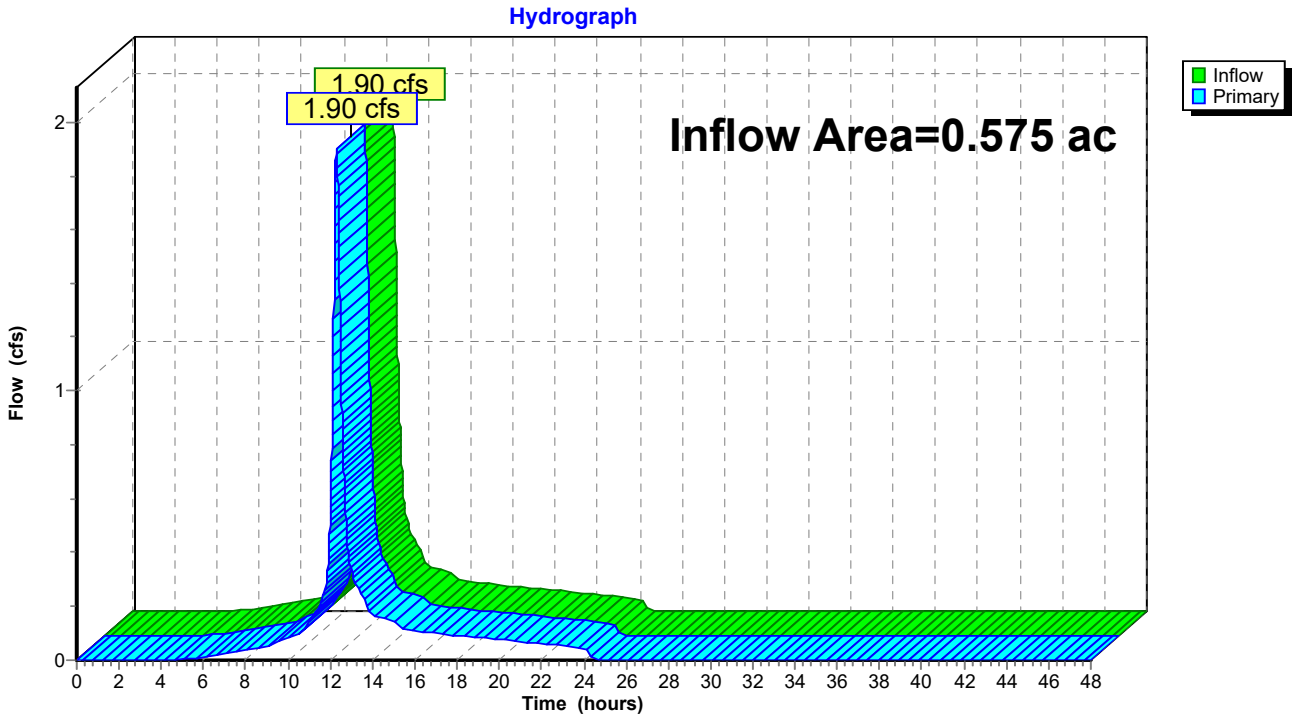
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	305.63	0.000
303.08	0.000	305.68	0.000
303.13	0.000	305.73	0.000
303.18	0.000	305.78	0.000
303.23	0.000	305.83	0.000
303.28	0.000	305.88	0.000
303.33	0.000	305.93	0.000
303.38	0.000	305.98	0.000
303.43	0.000	306.03	0.000
303.48	0.000	306.08	0.000
303.53	0.000	306.13	0.000
303.58	0.000	306.18	0.000
303.63	0.000	306.23	0.000
303.68	0.000	306.28	0.000
303.73	0.000	306.33	0.000
303.78	0.000	306.38	0.000
303.83	0.000	306.43	0.000
303.88	0.000	306.48	0.000
303.93	0.000	306.53	0.000
303.98	0.000	306.58	0.000
304.03	0.000	306.63	0.000
304.08	0.000	306.68	0.000
304.13	0.000	306.73	0.000
304.18	0.000	306.78	0.000
304.23	0.000	306.83	0.000
304.28	0.000	306.88	0.000
304.33	0.000	306.93	0.000
304.38	0.000	306.98	0.000
304.43	0.000		
304.48	0.000		
304.53	0.000		
304.58	0.000		
304.63	0.000		
304.68	0.000		
304.73	0.000		
304.78	0.000		
304.83	0.000		
304.88	0.000		
304.93	0.000		
304.98	0.000		
305.03	0.000		
305.08	0.000		
305.13	0.000		
305.18	0.000		
305.23	0.000		
305.28	0.000		
305.33	0.000		
305.38	0.000		
305.43	0.000		
305.48	0.000		
305.53	0.000		
305.58	0.000		

Summary for Link 5L: P-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 4.51" for 25-Year event
Inflow = 1.90 cfs @ 12.29 hrs, Volume= 0.216 af
Primary = 1.90 cfs @ 12.29 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 5L: P-POA-2

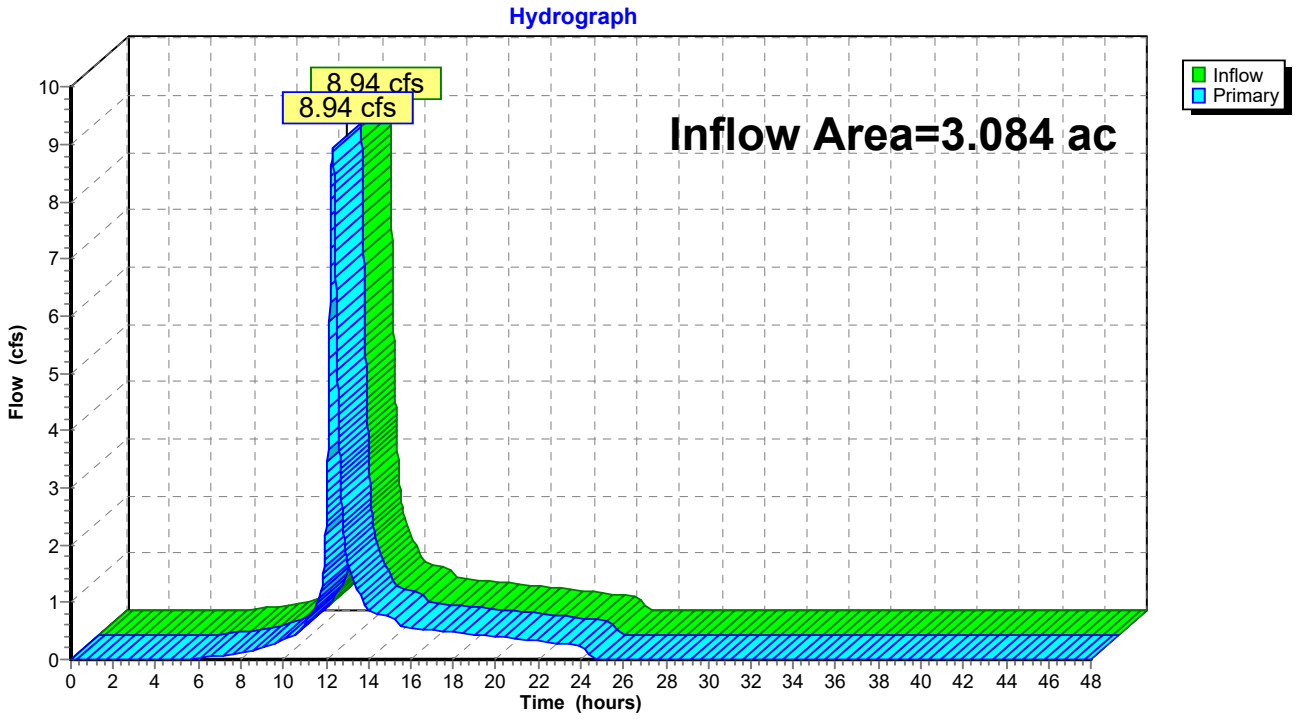


Summary for Link 6L: P-POA-1.1

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 4.08" for 25-Year event
Inflow = 8.94 cfs @ 12.32 hrs, Volume= 1.048 af
Primary = 8.94 cfs @ 12.32 hrs, Volume= 1.048 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 6L: P-POA-1.1

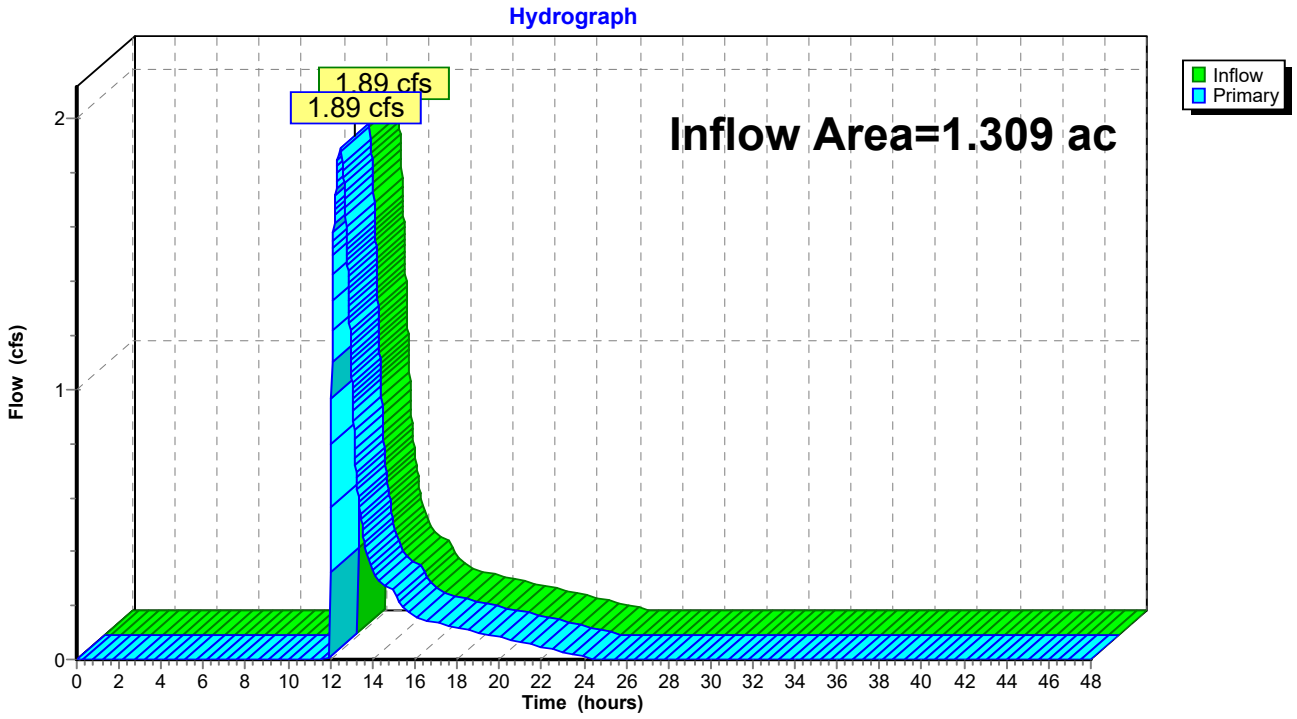


Summary for Link 7L: P-POA-1.2

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 2.44" for 25-Year event
Inflow = 1.89 cfs @ 12.46 hrs, Volume= 0.266 af
Primary = 1.89 cfs @ 12.46 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 7L: P-POA-1.2

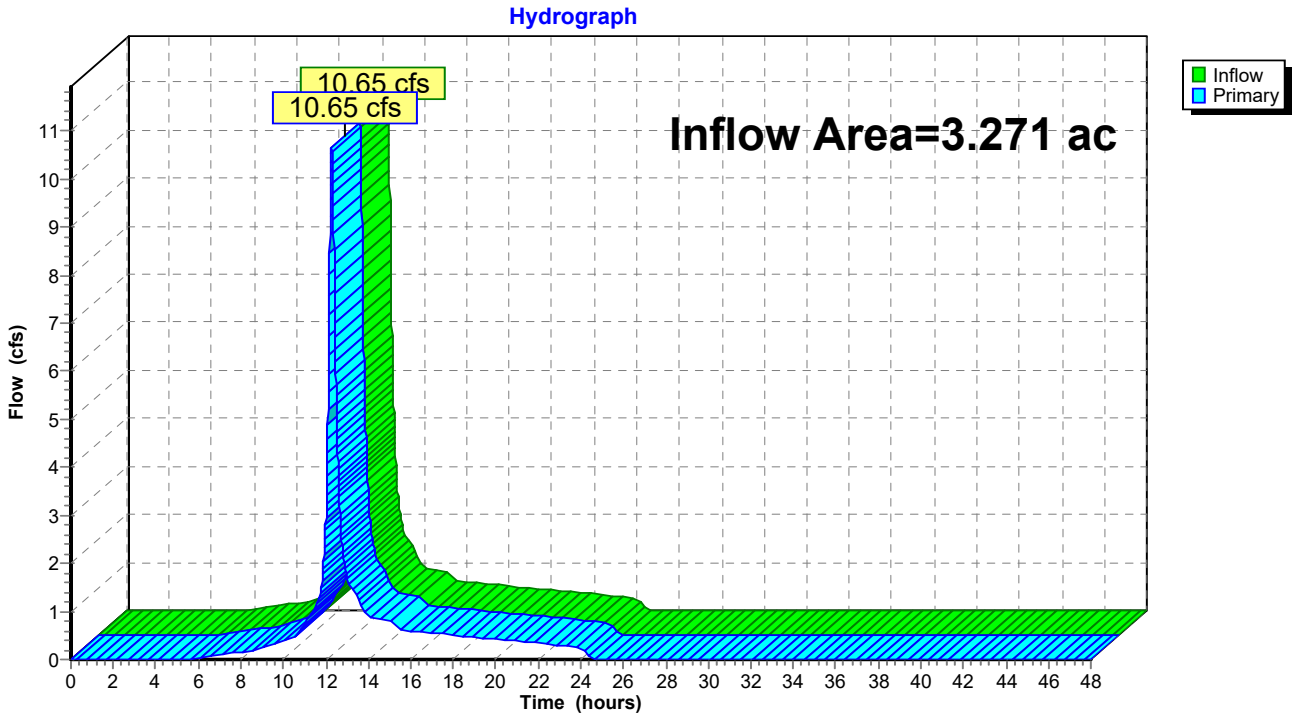


Summary for Link 8L: P-POA-3

Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 4.19" for 25-Year event
Inflow = 10.65 cfs @ 12.27 hrs, Volume= 1.141 af
Primary = 10.65 cfs @ 12.27 hrs, Volume= 1.141 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 4P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 8L: P-POA-3



Summary for Subcatchment EA#2.: EX. AREA #2

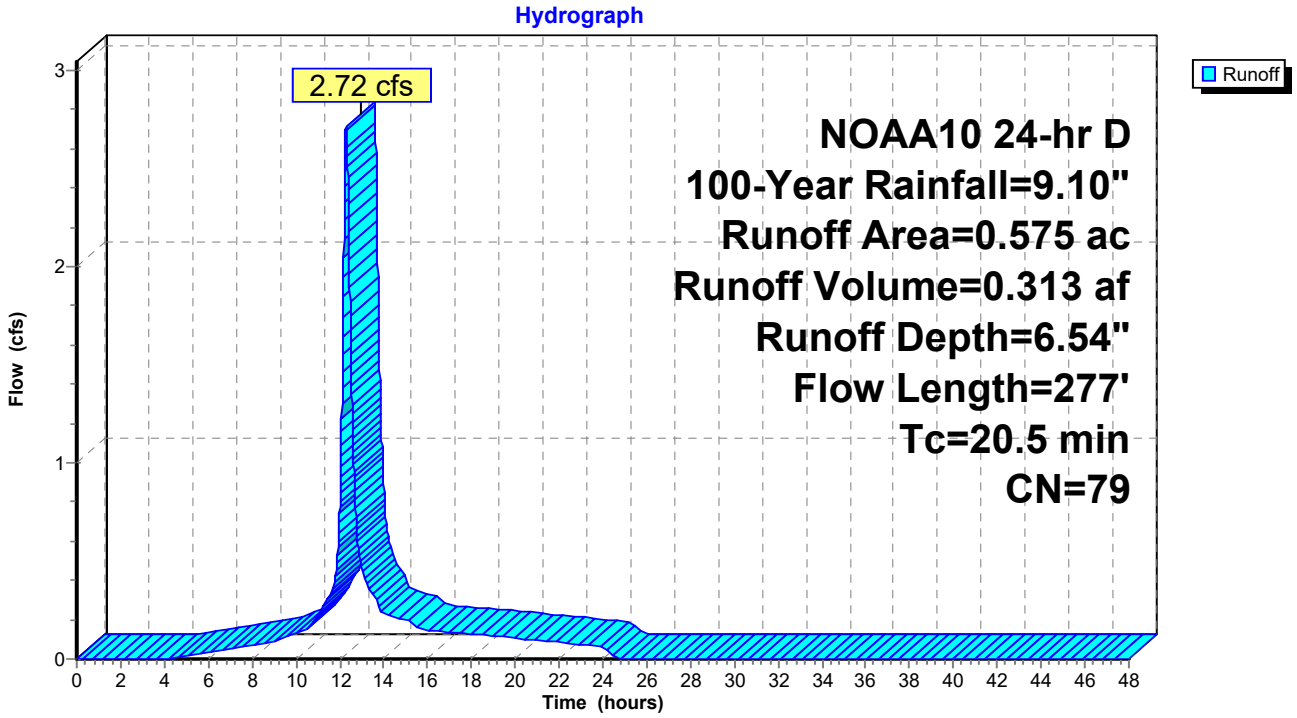
Runoff = 2.72 cfs @ 12.29 hrs, Volume= 0.313 af, Depth= 6.54"
Routed to Link 5L : P-POA-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.575	79	Woods, Fair, HSG D
0.575		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.1300	0.09		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
1.9	177	0.1000	1.58		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
20.5	277	Total			

Subcatchment EA#2.: EX. AREA #2



Summary for Subcatchment PA#1.1: PROP.AREA #1

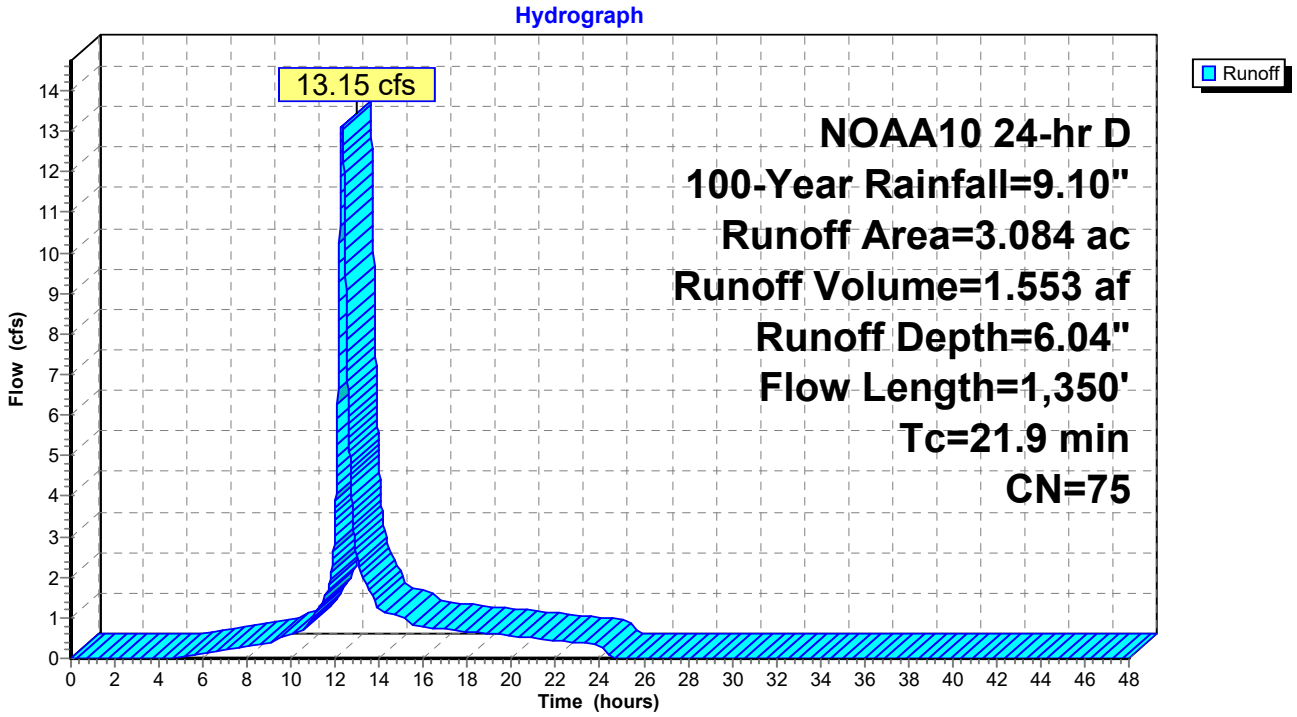
Runoff = 13.15 cfs @ 12.31 hrs, Volume= 1.553 af, Depth= 6.04"
Routed to Reach 1R : PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.073	36	Woods, Fair, HSG A
2.780	79	Woods, Fair, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.215	39	>75% Grass cover, Good, HSG A
3.084	75	Weighted Average
3.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.2800	0.12		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
7.5	874	0.1492	1.93		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.2	95	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	119	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.2	125	0.0250	9.02	11.06	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.1	37	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
21.9	1,350	Total			

Subcatchment PA#1.1: PROP.AREA #1



Summary for Subcatchment PA#1.2: PROP.AREA #1.2

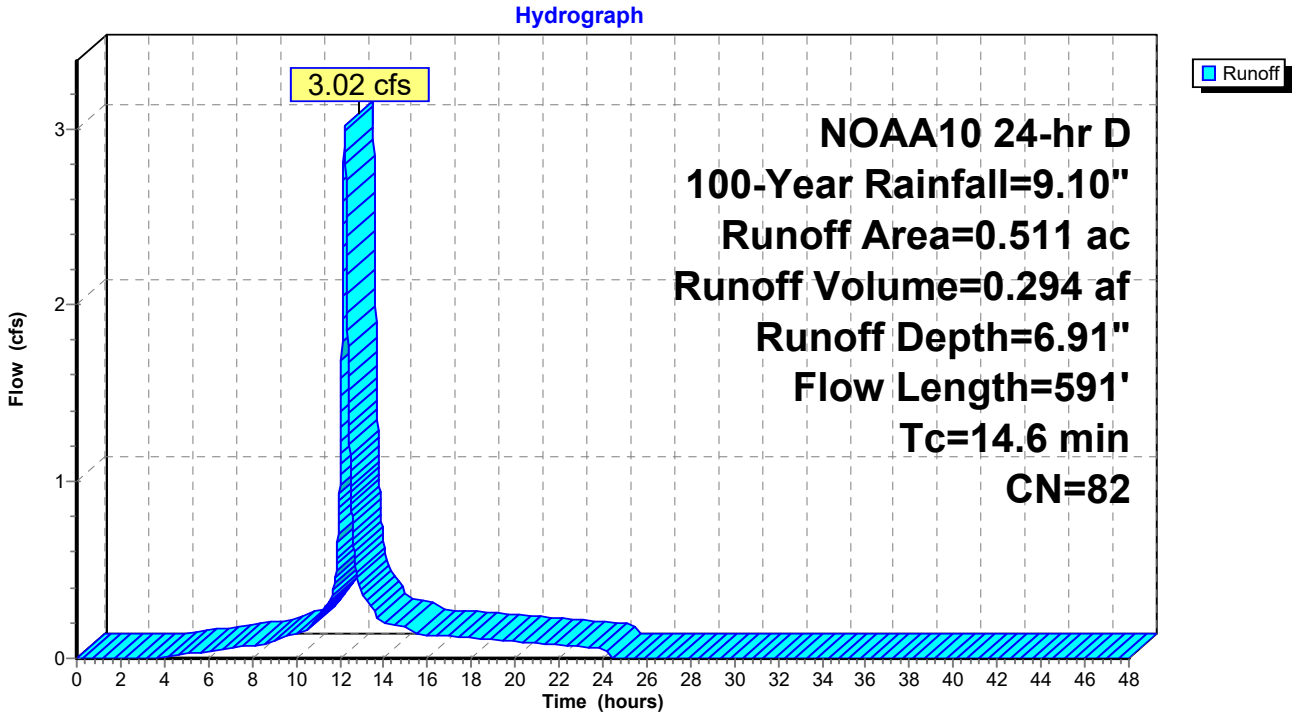
Runoff = 3.02 cfs @ 12.22 hrs, Volume= 0.294 af, Depth= 6.91"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.131	98	Roofs, HSG A
0.133	98	Paved parking, HSG A
0.097	39	>75% Grass cover, Good, HSG A
0.025	80	>75% Grass cover, Good, HSG D
0.083	84	50-75% Grass cover, Fair, HSG D
0.042	79	Woods, Fair, HSG D
0.511	82	Weighted Average
0.247		48.34% Pervious Area
0.264		51.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.3300	0.13		**Sheet Flow, Sheet flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
0.5	75	0.2300	2.40		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.3	55	0.1600	2.80		**Shallow Concentrated Flow, Shallow** Short Grass Pasture Kv= 7.0 fps
0.4	99	0.0500	4.54		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.6	262	0.0100	6.77	8.13	**Channel Flow, Channel flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
14.6	591	Total			

Subcatchment PA#1.2: PROP.AREA #1.2



Summary for Subcatchment PA#1.3: PROP.AREA #1.3

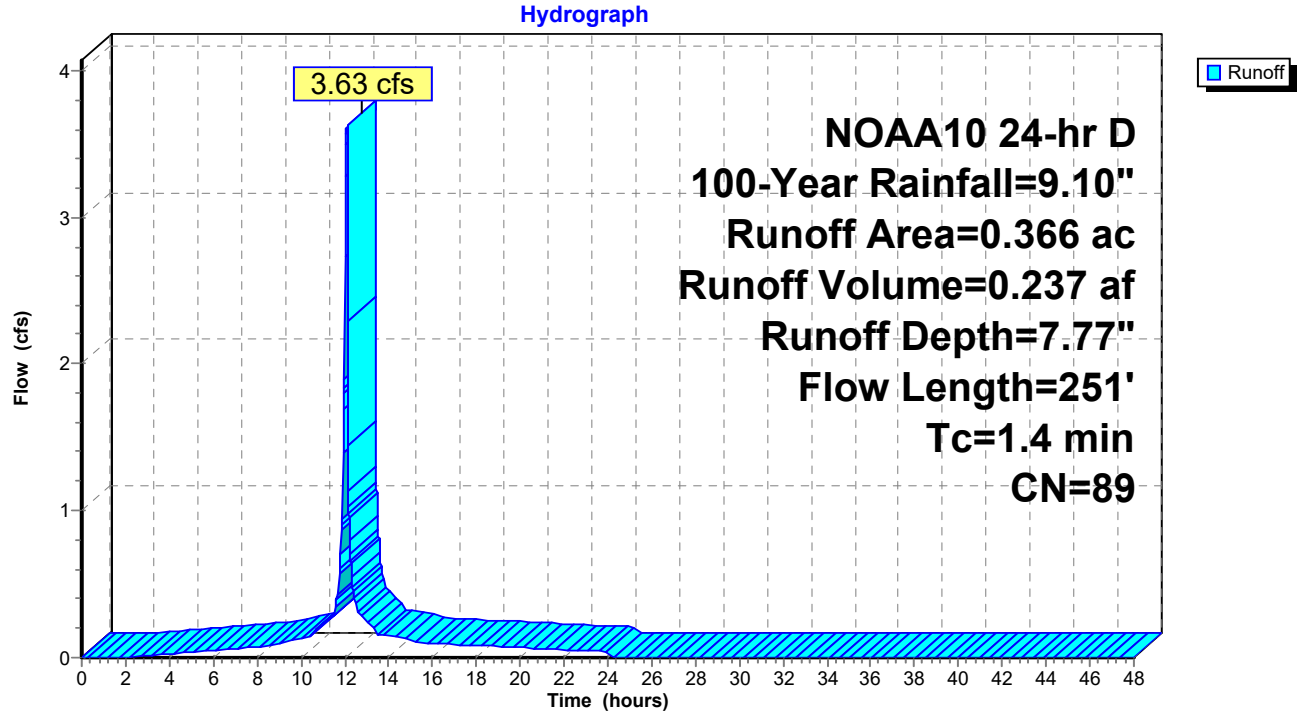
Runoff = 3.63 cfs @ 12.10 hrs, Volume= 0.237 af, Depth= 7.77"
Routed to Pond 1P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

	Area (ac)	CN	Description
	0.150	98	Roofs, HSG A
	0.145	98	Paved parking, HSG A
*	0.025	80	>75% Grass cover, Good, HSG D
	0.046	39	>75% Grass cover, Good, HSG A
	0.366	89	Weighted Average
	0.071		19.40% Pervious Area
	0.295		80.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0400	1.72		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.4	151	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.4	251	Total			

Subcatchment PA#1.3: PROP.AREA #1.3



Summary for Subcatchment PA#1.4: PROP.AREA #1.4

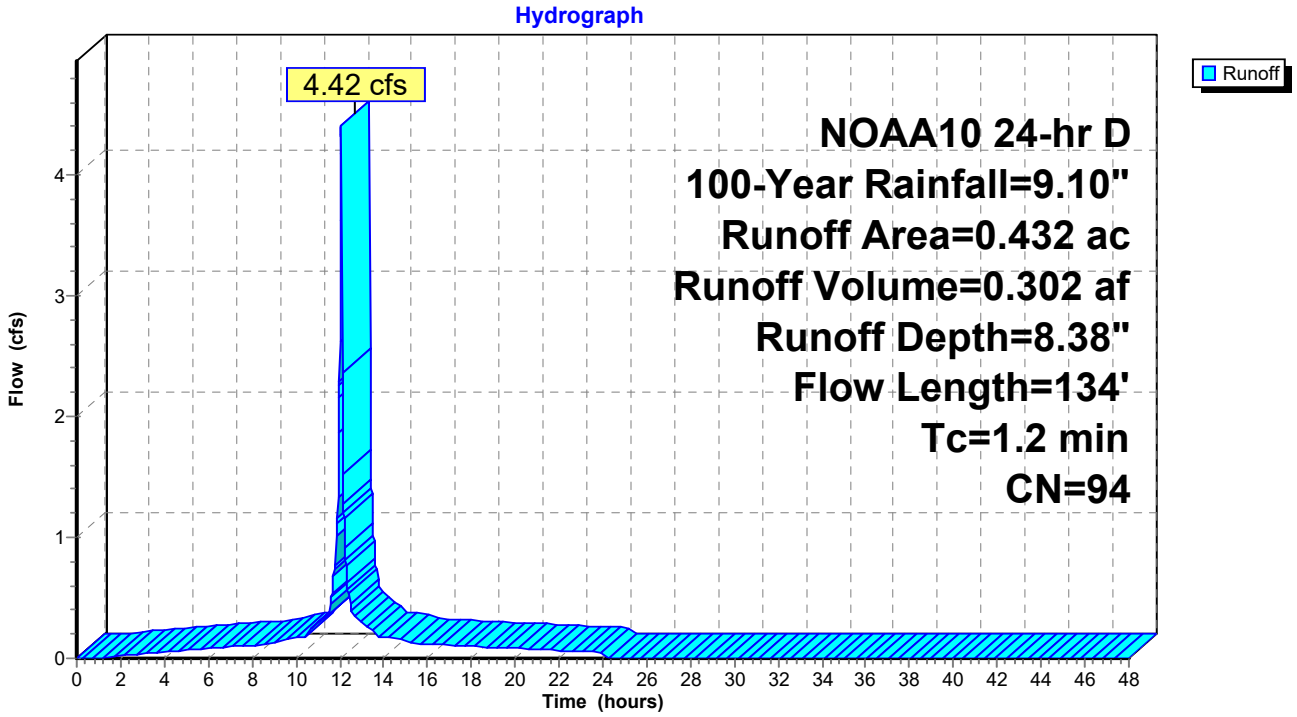
Runoff = 4.42 cfs @ 12.09 hrs, Volume= 0.302 af, Depth= 8.38"
Routed to Pond 2P : UND Chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.150	98	Roofs, HSG A
0.214	98	Paved parking, HSG A
0.013	39	>75% Grass cover, Good, HSG A
0.055	80	>75% Grass cover, Good, HSG D
0.432	94	Weighted Average
0.068		15.74% Pervious Area
0.364		84.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0300	1.53		**Sheet Flow, Sheet Flow** Smooth surfaces n= 0.011 P2= 2.88"
0.0	9	0.0298	3.50		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.1	25	0.0100	6.77	8.13	**Channel Flow, Channel Flow** Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010 PVC, smooth interior
1.2	134	Total			

Subcatchment PA#1.4: PROP.AREA #1.4



Summary for Subcatchment PA#3: PROP.AREA #3

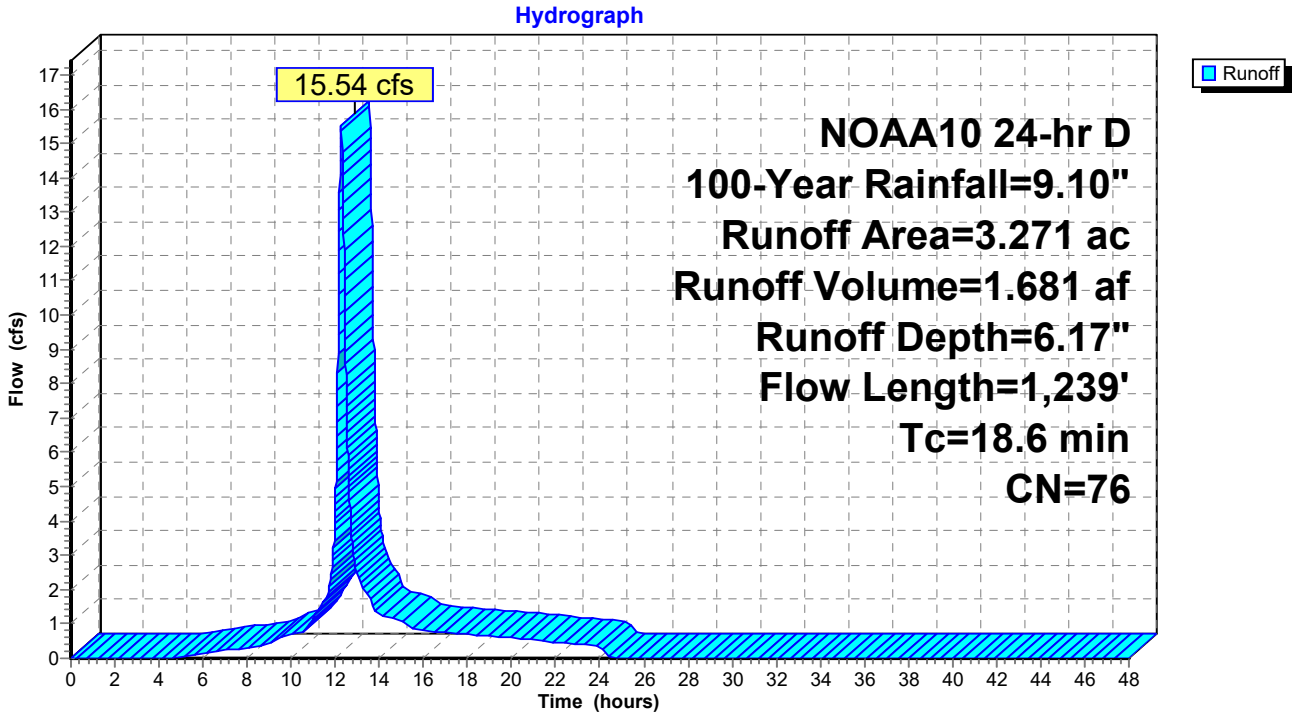
Runoff = 15.54 cfs @ 12.27 hrs, Volume= 1.681 af, Depth= 6.17"
Routed to Link 8L : P-POA-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=9.10"

Area (ac)	CN	Description
0.137	30	Woods, Good, HSG A
2.912	79	Woods, Fair, HSG D
0.176	80	>75% Grass cover, Good, HSG D
0.046	39	>75% Grass cover, Good, HSG A
3.271	76	Weighted Average
3.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.3400	0.13		**Sheet Flow, Sheet Flow** Woods: Dense underbrush n= 0.800 P2= 2.88"
5.4	820	0.2600	2.55		**Shallow Concentrated Flow, Shallow** Woodland Kv= 5.0 fps
0.0	34	0.0400	11.41	14.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
0.4	240	0.0100	10.22	72.26	**Pipe Channel,** 36.0" Round Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012 Corrugated PP, smooth interior
0.1	45	0.0100	5.70	7.00	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Corrugated PP, smooth interior
18.6	1,239	Total			

Subcatchment PA#3: PROP.AREA #3



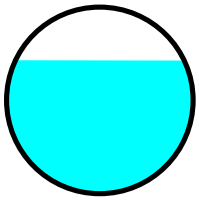
Summary for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 6.04" for 100-Year event
Inflow = 13.15 cfs @ 12.31 hrs, Volume= 1.553 af
Outflow = 13.14 cfs @ 12.32 hrs, Volume= 1.553 af, Atten= 0%, Lag= 0.5 min
Routed to Link 6L : P-POA-1.1

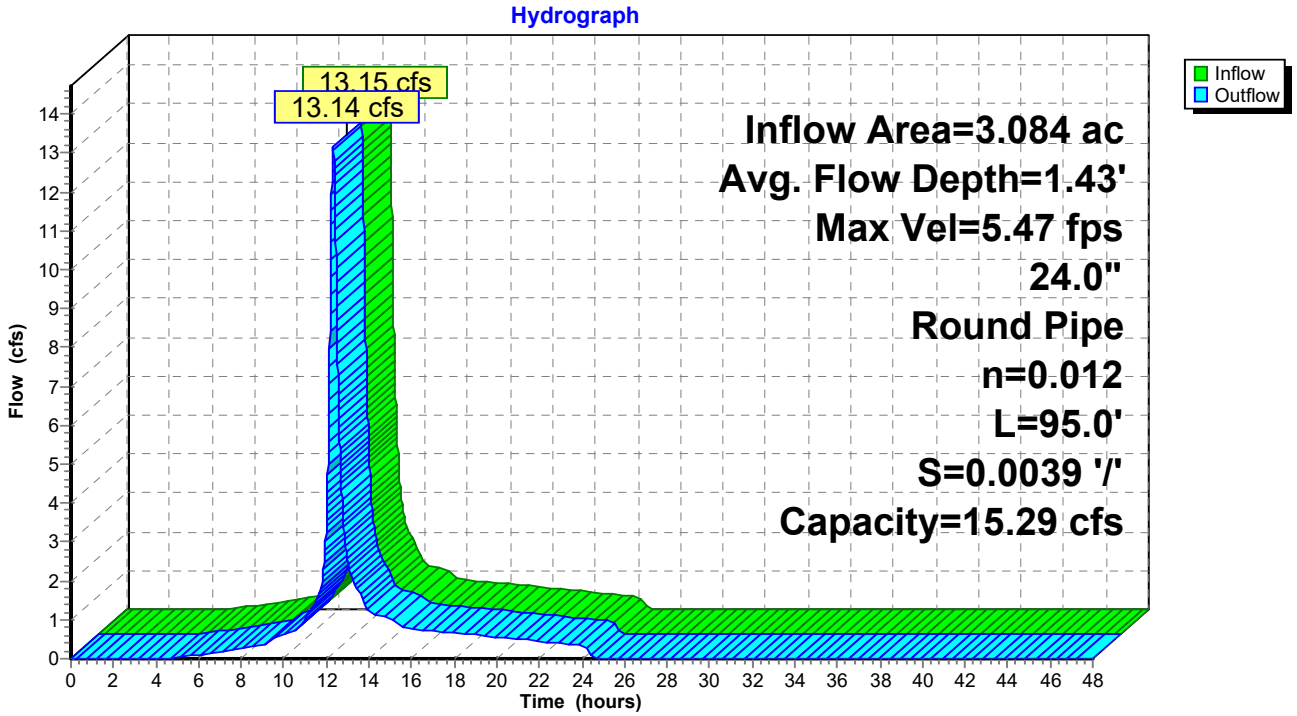
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.47 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.28 fps, Avg. Travel Time= 0.7 min

Peak Storage= 228 cf @ 12.32 hrs
Average Depth at Peak Storage= 1.43' , Surface Width= 1.81'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 15.29 cfs

24.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 95.0' Slope= 0.0039 '/'
Inlet Invert= 304.15', Outlet Invert= 303.78'



Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)



Stage-Discharge for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
304.15	0.00	0.00
304.17	0.43	0.00
304.19	0.69	0.01
304.21	0.90	0.02
304.23	1.08	0.05
304.25	1.25	0.07
304.27	1.41	0.11
304.29	1.56	0.15
304.31	1.69	0.20
304.33	1.83	0.26
304.35	1.95	0.32
304.37	2.07	0.39
304.39	2.19	0.47
304.41	2.30	0.55
304.43	2.41	0.64
304.45	2.52	0.74
304.47	2.62	0.85
304.49	2.72	0.96
304.51	2.81	1.08
304.53	2.90	1.21
304.55	2.99	1.34
304.57	3.08	1.48
304.59	3.17	1.62
304.61	3.25	1.77
304.63	3.33	1.93
304.65	3.41	2.10
304.67	3.49	2.26
304.69	3.56	2.44
304.71	3.64	2.62
304.73	3.71	2.80
304.75	3.78	3.00
304.77	3.85	3.19
304.79	3.91	3.39
304.81	3.98	3.60
304.83	4.04	3.81
304.85	4.10	4.02
304.87	4.16	4.24
304.89	4.22	4.46
304.91	4.28	4.69
304.93	4.34	4.92
304.95	4.39	5.15
304.97	4.45	5.39
304.99	4.50	5.63
305.01	4.55	5.88
305.03	4.60	6.12
305.05	4.65	6.37
305.07	4.69	6.62
305.09	4.74	6.88
305.11	4.78	7.13
305.13	4.83	7.39
305.15	4.87	7.65
305.17	4.91	7.91
305.19	4.95	8.17
305.21	4.99	8.43
305.23	5.02	8.69
305.25	5.06	8.96
305.27	5.09	9.22
305.29	5.13	9.49
305.31	5.16	9.75
305.33	5.19	10.01
305.35	5.22	10.28
305.37	5.25	10.54
305.39	5.28	10.80
305.41	5.30	11.06
305.43	5.33	11.31
305.45	5.35	11.57
305.47	5.37	11.82
305.49	5.40	12.07
305.51	5.42	12.32
305.53	5.43	12.56
305.55	5.45	12.81
305.57	5.47	13.04
305.59	5.48	13.28
305.61	5.50	13.50
305.63	5.51	13.73
305.65	5.52	13.95
305.67	5.53	14.16
305.69	5.54	14.37
305.71	5.54	14.57
305.73	5.55	14.76
305.75	5.55	14.95
305.77	**5.55**	15.13
305.79	5.55	15.30
305.81	5.55	15.46
305.83	5.54	15.62
305.85	5.54	15.76
305.87	5.53	15.89
305.89	5.52	16.01
305.91	5.51	16.12
305.93	5.49	16.22
305.95	5.47	16.30
305.97	5.45	16.37
305.99	5.43	16.42
306.01	5.40	16.44
306.03	5.37	**16.45**
306.05	5.33	16.43
306.07	5.29	16.39
306.09	5.23	16.30
306.11	5.17	16.16
306.13	5.08	15.94
306.15	4.87	15.29

Stage-Area-Storage for Reach 1R: PROP. OUTFALL HPDE PIPE (SOUTH SIDE)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
304.15	0.0	0
304.17	0.0	1
304.19	0.0	1
304.21	0.0	3
304.23	0.0	4
304.25	0.1	6
304.27	0.1	7
304.29	0.1	9
304.31	0.1	11
304.33	0.1	13
304.35	0.2	16
304.37	0.2	18
304.39	0.2	20
304.41	0.2	23
304.43	0.3	25
304.45	0.3	28
304.47	0.3	31
304.49	0.4	34
304.51	0.4	37
304.53	0.4	39
304.55	0.4	42
304.57	0.5	46
304.59	0.5	49
304.61	0.5	52
304.63	0.6	55
304.65	0.6	58
304.67	0.6	62
304.69	0.7	65
304.71	0.7	68
304.73	0.8	72
304.75	0.8	75
304.77	0.8	79
304.79	0.9	82
304.81	0.9	86
304.83	0.9	89
304.85	1.0	93
304.87	1.0	97
304.89	1.1	100
304.91	1.1	104
304.93	1.1	108
304.95	1.2	111
304.97	1.2	115
304.99	1.3	119
305.01	1.3	123
305.03	1.3	126
305.05	1.4	130
305.07	1.4	134
305.09	1.5	138
305.11	1.5	142
305.13	1.5	145
305.15	1.6	149
305.17	1.6	153
305.19	1.7	157
305.21	1.7	161
305.23	1.7	164
305.25	1.8	168
305.27	1.8	172
305.29	1.8	176
305.31	1.9	179
305.33	1.9	183
305.35	2.0	187
305.37	2.0	191
305.39	2.0	194
305.41	2.1	198
305.43	2.1	202
305.45	2.2	205
305.47	2.2	209
305.49	2.2	213
305.51	2.3	216
305.53	2.3	220
305.55	2.3	223
305.57	2.4	227
305.59	2.4	230
305.61	2.5	233
305.63	2.5	237
305.65	2.5	240
305.67	2.6	243
305.69	2.6	247
305.71	2.6	250
305.73	2.7	253
305.75	2.7	256
305.77	2.7	259
305.79	2.8	262
305.81	2.8	265
305.83	2.8	268
305.85	2.8	270
305.87	2.9	273
305.89	2.9	276
305.91	2.9	278
305.93	3.0	281
305.95	3.0	283
305.97	3.0	285
305.99	3.0	287
306.01	3.0	289
306.03	3.1	291
306.05	3.1	293
306.07	3.1	294
306.09	3.1	296
306.11	3.1	297
306.13	3.1	298
306.15	**3.1**	**298**

Summary for Pond 1P: UND Chambers

Inflow Area = 0.877 ac, 63.74% Impervious, Inflow Depth = 7.27" for 100-Year event
Inflow = 5.43 cfs @ 12.10 hrs, Volume= 0.531 af
Outflow = 2.80 cfs @ 12.32 hrs, Volume= 0.531 af, Atten= 48%, Lag= 13.3 min
Discarded = 0.06 cfs @ 5.16 hrs, Volume= 0.199 af
Primary = 2.74 cfs @ 12.32 hrs, Volume= 0.332 af
Routed to Pond 2P : UND Chambers

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 312.91' @ 12.32 hrs Surf.Area= 0.041 ac Storage= 0.160 af

Plug-Flow detention time= 260.8 min calculated for 0.531 af (100% of inflow)
Center-of-Mass det. time= 261.0 min (1,061.8 - 800.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	307.00'	0.080 af	**19.42'W x 91.99'L x 7.50'H Field A** 0.308 af Overall - 0.106 af Embedded = 0.201 af x 40.0% Voids
#2A	308.50'	0.106 af	**ADS_StormTech MC-4500 b +Cap**x 42 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 42 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.187 af	Total Available Storage

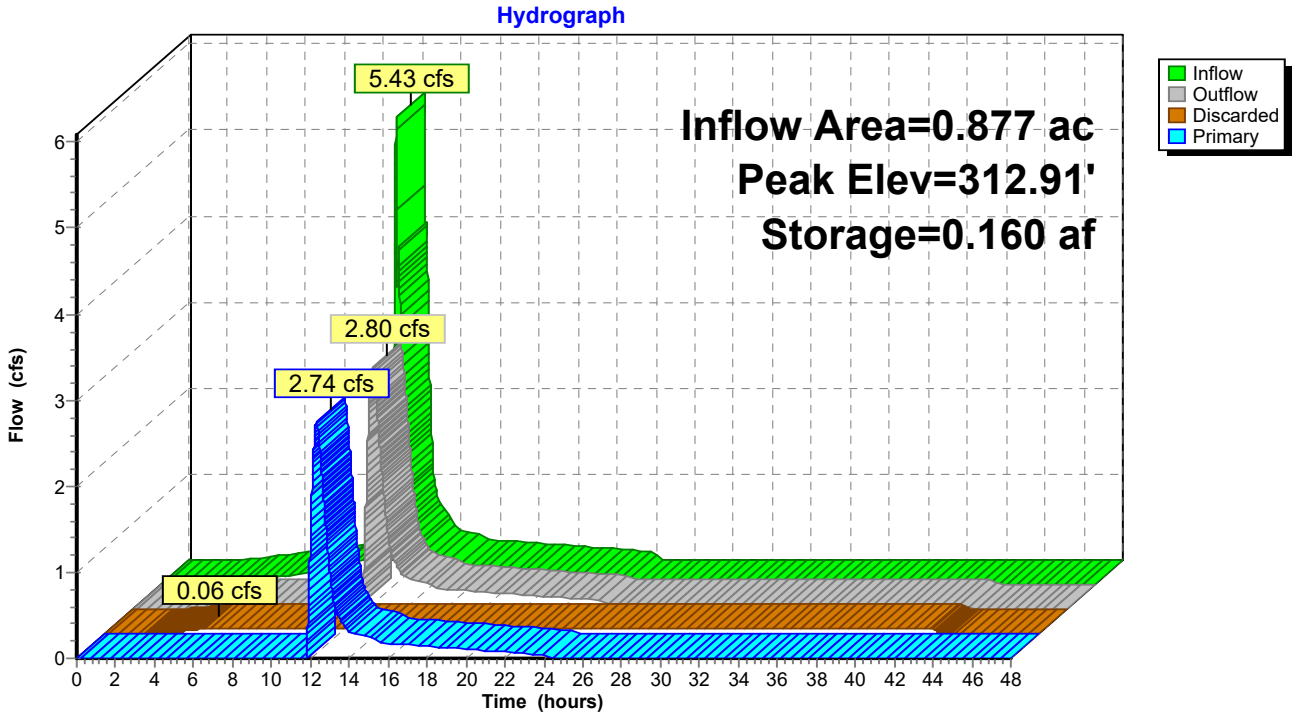
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	310.56'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 5.16 hrs HW=307.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=2.74 cfs @ 12.32 hrs HW=312.91' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 2.74 cfs @ 6.98 fps)

Pond 1P: UND Chambers



Stage-Discharge for Pond 1P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
307.00	0.00	**0.00**	0.00
307.10	0.06	**0.06**	0.00
307.20	0.06	0.06	0.00
307.30	0.06	0.06	0.00
307.40	0.06	0.06	0.00
307.50	0.06	0.06	0.00
307.60	0.06	0.06	0.00
307.70	0.06	0.06	0.00
307.80	0.06	0.06	0.00
307.90	0.06	0.06	0.00
308.00	0.06	0.06	0.00
308.10	0.06	0.06	0.00
308.20	0.06	0.06	0.00
308.30	0.06	0.06	0.00
308.40	0.06	0.06	0.00
308.50	0.06	0.06	0.00
308.60	0.06	0.06	0.00
308.70	0.06	0.06	0.00
308.80	0.06	0.06	0.00
308.90	0.06	0.06	0.00
309.00	0.06	0.06	0.00
309.10	0.06	0.06	0.00
309.20	0.06	0.06	0.00
309.30	0.06	0.06	0.00
309.40	0.06	0.06	0.00
309.50	0.06	0.06	0.00
309.60	0.06	0.06	0.00
309.70	0.06	0.06	0.00
309.80	0.06	0.06	0.00
309.90	0.06	0.06	0.00
310.00	0.06	0.06	0.00
310.10	0.06	0.06	0.00
310.20	0.06	0.06	0.00
310.30	0.06	0.06	0.00
310.40	0.06	0.06	0.00
310.50	0.06	0.06	0.00
310.60	0.07	0.06	0.01
310.70	0.18	0.06	0.11
310.80	0.37	0.06	0.31
310.90	0.63	0.06	0.56
311.00	0.89	0.06	0.83
311.10	1.08	0.06	1.02
311.20	1.24	0.06	1.18
311.30	1.39	0.06	1.32
311.40	1.51	0.06	1.45
311.50	1.63	0.06	1.57
311.60	1.74	0.06	1.68
311.70	1.85	0.06	1.78
311.80	1.94	0.06	1.88
311.90	2.04	0.06	1.97
312.00	2.12	0.06	2.06
312.10	2.21	0.06	2.15
312.20	2.29	0.06	2.23
312.30	2.37	0.06	2.31
312.40	2.45	0.06	2.38
312.50	2.52	0.06	2.46
312.60	2.59	0.06	2.53
312.70	2.66	0.06	2.60
312.80	2.73	0.06	2.67
312.90	2.80	0.06	2.73
313.00	2.86	0.06	2.80
313.10	2.92	0.06	2.86
313.20	2.99	0.06	2.92
313.30	3.05	0.06	2.98
313.40	3.11	0.06	3.04
313.50	3.16	0.06	3.10
313.60	3.22	0.06	3.16
313.70	3.28	0.06	3.21
313.80	3.33	0.06	3.27
313.90	3.39	0.06	3.32
314.00	3.44	0.06	3.38
314.10	3.49	0.06	3.43
314.20	3.54	0.06	3.48
314.30	3.59	0.06	3.53
314.40	3.64	0.06	3.58
314.50	**3.69**	0.06	**3.63**

Stage-Area-Storage for Pond 1P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
307.00	**0.041**	0.000
307.10	0.041	0.002
307.20	0.041	0.003
307.30	0.041	0.005
307.40	0.041	0.007
307.50	0.041	0.008
307.60	0.041	0.010
307.70	0.041	0.011
307.80	0.041	0.013
307.90	0.041	0.015
308.00	0.041	0.016
308.10	0.041	0.018
308.20	0.041	0.020
308.30	0.041	0.021
308.40	0.041	0.023
308.50	0.041	0.025
308.60	0.041	0.028
308.70	0.041	0.032
308.80	0.041	0.035
308.90	0.041	0.038
309.00	0.041	0.042
309.10	0.041	0.045
309.20	0.041	0.049
309.30	0.041	0.052
309.40	0.041	0.055
309.50	0.041	0.059
309.60	0.041	0.062
309.70	0.041	0.065
309.80	0.041	0.069
309.90	0.041	0.072
310.00	0.041	0.075
310.10	0.041	0.079
310.20	0.041	0.082
310.30	0.041	0.085
310.40	0.041	0.088
310.50	0.041	0.092
310.60	0.041	0.095
310.70	0.041	0.098
310.80	0.041	0.101
310.90	0.041	0.104
311.00	0.041	0.107
311.10	0.041	0.110
311.20	0.041	0.113
311.30	0.041	0.116
311.40	0.041	0.119
311.50	0.041	0.122
311.60	0.041	0.125
311.70	0.041	0.128
311.80	0.041	0.131
311.90	0.041	0.134
312.00	0.041	0.137
312.10	0.041	0.139
312.20	0.041	0.142
312.30	0.041	0.145
312.40	0.041	0.147
312.50	0.041	0.150
312.60	0.041	0.152
312.70	0.041	0.155
312.80	0.041	0.157
312.90	0.041	0.159
313.00	0.041	0.161
313.10	0.041	0.163
313.20	0.041	0.165
313.30	0.041	0.167
313.40	0.041	0.169
313.50	0.041	0.170
313.60	0.041	0.172
313.70	0.041	0.174
313.80	0.041	0.175
313.90	0.041	0.177
314.00	0.041	0.179
314.10	0.041	0.180
314.20	0.041	0.182
314.30	0.041	0.184
314.40	0.041	0.185
314.50	0.041	**0.187**

Summary for Pond 2P: UND Chambers

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 5.81" for 100-Year event
Inflow = 6.58 cfs @ 12.10 hrs, Volume= 0.633 af
Outflow = 3.29 cfs @ 12.34 hrs, Volume= 0.633 af, Atten= 50%, Lag= 14.4 min
Discarded = 0.05 cfs @ 3.82 hrs, Volume= 0.148 af
Primary = 3.24 cfs @ 12.34 hrs, Volume= 0.486 af
Routed to Link 7L : P-POA-1.2

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 310.09' @ 12.34 hrs Surf.Area= 0.032 ac Storage= 0.124 af

Plug-Flow detention time= 135.5 min calculated for 0.633 af (100% of inflow)
Center-of-Mass det. time= 135.7 min (946.6 - 810.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	304.25'	0.054 af	**19.42'W x 71.87'L x 6.75'H Field A** 0.216 af Overall - 0.082 af Embedded = 0.134 af x 40.0% Voids
#2A	305.00'	0.082 af	**ADS_StormTech MC-4500 b +Cap**x 32 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 32 Chambers in 2 Rows Cap Storage= 39.5 cf x 2 x 2 rows = 158.0 cf
		0.136 af	Total Available Storage

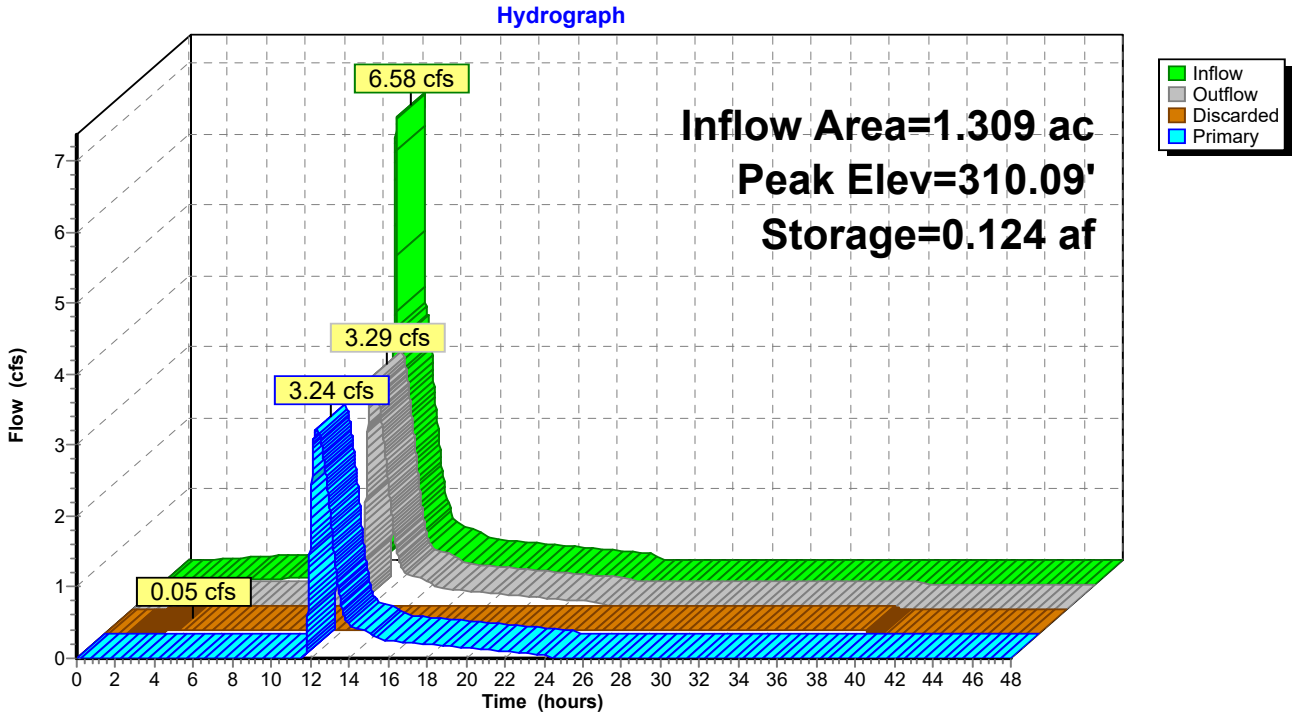
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	304.25'	**1.500 in/hr Exfiltration over Surface area**
#2	Primary	306.90'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.05 cfs @ 3.82 hrs HW=304.32' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=3.24 cfs @ 12.34 hrs HW=310.09' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 3.24 cfs @ 8.26 fps)

Pond 2P: UND Chambers



Stage-Discharge for Pond 2P: UND Chambers

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
304.25	0.00	**0.00**	0.00
304.35	0.05	**0.05**	0.00
304.45	0.05	0.05	0.00
304.55	0.05	0.05	0.00
304.65	0.05	0.05	0.00
304.75	0.05	0.05	0.00
304.85	0.05	0.05	0.00
304.95	0.05	0.05	0.00
305.05	0.05	0.05	0.00
305.15	0.05	0.05	0.00
305.25	0.05	0.05	0.00
305.35	0.05	0.05	0.00
305.45	0.05	0.05	0.00
305.55	0.05	0.05	0.00
305.65	0.05	0.05	0.00
305.75	0.05	0.05	0.00
305.85	0.05	0.05	0.00
305.95	0.05	0.05	0.00
306.05	0.05	0.05	0.00
306.15	0.05	0.05	0.00
306.25	0.05	0.05	0.00
306.35	0.05	0.05	0.00
306.45	0.05	0.05	0.00
306.55	0.05	0.05	0.00
306.65	0.05	0.05	0.00
306.75	0.05	0.05	0.00
306.85	0.05	0.05	0.00
306.95	0.06	0.05	0.02
307.05	0.18	0.05	0.13
307.15	0.38	0.05	0.33
307.25	0.64	0.05	0.59
307.35	0.90	0.05	0.85
307.45	1.08	0.05	1.04
307.55	1.24	0.05	1.20
307.65	1.39	0.05	1.34
307.75	1.51	0.05	1.46
307.85	1.63	0.05	1.58
307.95	1.74	0.05	1.69
308.05	1.84	0.05	1.79
308.15	1.94	0.05	1.89
308.25	2.03	0.05	1.98
308.35	2.12	0.05	2.07
308.45	2.20	0.05	2.16
308.55	2.29	0.05	2.24
308.65	2.36	0.05	2.32
308.75	2.44	0.05	2.39
308.85	2.51	0.05	2.47
308.95	2.59	0.05	2.54
309.05	2.65	0.05	2.61
309.15	2.72	0.05	2.67
309.25	2.79	0.05	2.74
309.35	2.85	0.05	2.80
309.45	2.92	0.05	2.87
309.55	2.98	0.05	2.93
309.65	3.04	0.05	2.99
309.75	3.10	0.05	3.05
309.85	3.16	0.05	3.11
309.95	3.21	0.05	3.16
310.05	3.27	0.05	3.22
310.15	3.32	0.05	3.28
310.25	3.38	0.05	3.33
310.35	3.43	0.05	3.38
310.45	3.48	0.05	3.43
310.55	3.53	0.05	3.49
310.65	3.59	0.05	3.54
310.75	3.64	0.05	3.59
310.85	3.69	0.05	3.64
310.95	**3.73**	0.05	**3.69**

Stage-Area-Storage for Pond 2P: UND Chambers

Elevation (feet)	Surface (acres)	Storage (acre-feet)
304.25	**0.032**	0.000
304.35	0.032	0.001
304.45	0.032	0.003
304.55	0.032	0.004
304.65	0.032	0.005
304.75	0.032	0.006
304.85	0.032	0.008
304.95	0.032	0.009
305.05	0.032	0.011
305.15	0.032	0.014
305.25	0.032	0.016
305.35	0.032	0.019
305.45	0.032	0.022
305.55	0.032	0.024
305.65	0.032	0.027
305.75	0.032	0.030
305.85	0.032	0.032
305.95	0.032	0.035
306.05	0.032	0.037
306.15	0.032	0.040
306.25	0.032	0.043
306.35	0.032	0.045
306.45	0.032	0.048
306.55	0.032	0.050
306.65	0.032	0.053
306.75	0.032	0.055
306.85	0.032	0.058
306.95	0.032	0.060
307.05	0.032	0.063
307.15	0.032	0.065
307.25	0.032	0.068
307.35	0.032	0.070
307.45	0.032	0.073
307.55	0.032	0.075
307.65	0.032	0.077
307.75	0.032	0.080
307.85	0.032	0.082
307.95	0.032	0.084
308.05	0.032	0.087
308.15	0.032	0.089
308.25	0.032	0.091
308.35	0.032	0.093
308.45	0.032	0.095
308.55	0.032	0.098
308.65	0.032	0.100
308.75	0.032	0.102
308.85	0.032	0.104
308.95	0.032	0.106
309.05	0.032	0.108
309.15	0.032	0.110
309.25	0.032	0.112
309.35	0.032	0.113
309.45	0.032	0.115
309.55	0.032	0.117
309.65	0.032	0.118
309.75	0.032	0.119
309.85	0.032	0.121
309.95	0.032	0.122
310.05	0.032	0.123
310.15	0.032	0.125
310.25	0.032	0.126
310.35	0.032	0.127
310.45	0.032	0.129
310.55	0.032	0.130
310.65	0.032	0.131
310.75	0.032	0.132
310.85	0.032	0.134
310.95	0.032	**0.135**

Summary for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

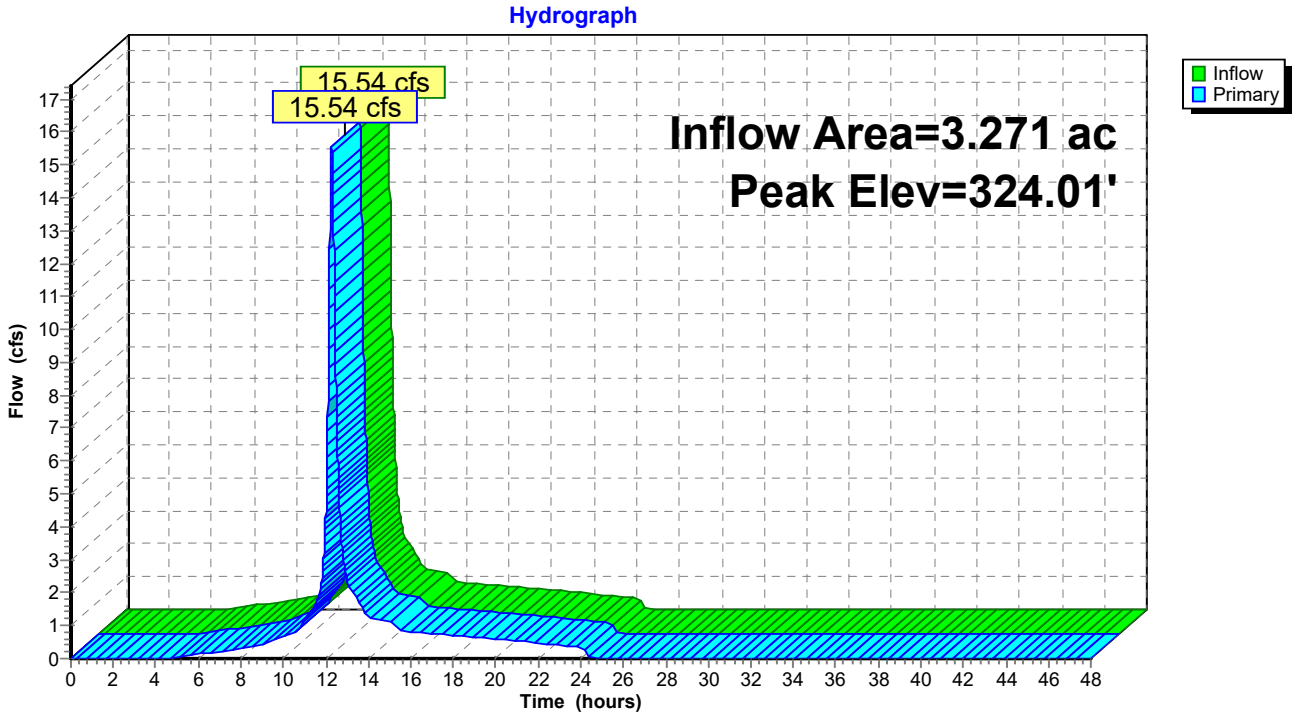
Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 6.17" for 100-Year event
Inflow = 15.54 cfs @ 12.27 hrs, Volume= 1.681 af
Outflow = 15.54 cfs @ 12.27 hrs, Volume= 1.681 af, Atten= 0%, Lag= 0.0 min
Primary = 15.54 cfs @ 12.27 hrs, Volume= 1.681 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 324.01' @ 12.27 hrs
Flood Elev= 309.82'

Device	Routing	Invert	Outlet Devices
#1	Primary	306.62'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=15.54 cfs @ 12.27 hrs HW=324.00' TW=306.62' (Fixed TW Elev= 306.62')
└**1=Orifice/Grate** (Orifice Controls 15.54 cfs @ 19.78 fps)

Pond 4P: EXISTING NORTH-EAST CATCH BASIN



Stage-Discharge for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
306.62	0.00	311.82	8.20	317.02	11.90	322.22	14.70
306.72	0.04	311.92	8.29	317.12	11.96	322.32	14.74
306.82	0.17	312.02	8.37	317.22	12.02	322.42	14.79
306.92	0.37	312.12	8.46	317.32	12.08	322.52	14.84
307.02	0.63	312.22	8.54	317.42	12.14	322.62	14.89
307.12	0.95	312.32	8.62	317.52	12.20	322.72	14.94
307.22	1.30	312.42	8.71	317.62	12.25	322.82	14.98
307.32	1.67	312.52	8.79	317.72	12.31	322.92	15.03
307.42	2.05	312.62	8.87	317.82	12.37	323.02	15.08
307.52	2.40	312.72	8.95	317.92	12.43	323.12	15.13
307.62	2.67	312.82	9.03	318.02	12.49	323.22	15.17
307.72	2.93	312.92	9.11	318.12	12.54	323.32	15.22
307.82	3.16	313.02	9.19	318.22	12.60	323.42	15.27
307.92	3.38	313.12	9.26	318.32	12.66	323.52	15.31
308.02	3.59	313.22	9.34	318.42	12.71	323.62	15.36
308.12	3.78	313.32	9.42	318.52	12.77	323.72	15.41
308.22	3.97	313.42	9.49	318.62	12.82	323.82	15.45
308.32	4.14	313.52	9.57	318.72	12.88	323.92	15.50
308.42	4.31	313.62	9.64	318.82	12.94	324.02	**15.55**
308.52	4.47	313.72	9.72	318.92	12.99		
308.62	4.63	313.82	9.79	319.02	13.05		
308.72	4.78	313.92	9.86	319.12	13.10		
308.82	4.93	314.02	9.93	319.22	13.15		
308.92	5.07	314.12	10.01	319.32	13.21		
309.02	5.21	314.22	10.08	319.42	13.26		
309.12	5.35	314.32	10.15	319.52	13.32		
309.22	5.48	314.42	10.22	319.62	13.37		
309.32	5.61	314.52	10.29	319.72	13.42		
309.42	5.74	314.62	10.36	319.82	13.48		
309.52	5.86	314.72	10.43	319.92	13.53		
309.62	5.98	314.82	10.49	320.02	13.58		
309.72	6.10	314.92	10.56	320.12	13.64		
309.82	6.21	315.02	10.63	320.22	13.69		
309.92	6.33	315.12	10.70	320.32	13.74		
310.02	6.44	315.22	10.76	320.42	13.79		
310.12	6.55	315.32	10.83	320.52	13.84		
310.22	6.66	315.42	10.89	320.62	13.89		
310.32	6.76	315.52	10.96	320.72	13.95		
310.42	6.87	315.62	11.03	320.82	14.00		
310.52	6.97	315.72	11.09	320.92	14.05		
310.62	7.07	315.82	11.15	321.02	14.10		
310.72	7.18	315.92	11.22	321.12	14.15		
310.82	7.27	316.02	11.28	321.22	14.20		
310.92	7.37	316.12	11.35	321.32	14.25		
311.02	7.47	316.22	11.41	321.42	14.30		
311.12	7.56	316.32	11.47	321.52	14.35		
311.22	7.66	316.42	11.53	321.62	14.40		
311.32	7.75	316.52	11.59	321.72	14.45		
311.42	7.84	316.62	11.66	321.82	14.50		
311.52	7.93	316.72	11.72	321.92	14.55		
311.62	8.02	316.82	11.78	322.02	14.60		
311.72	8.11	316.92	11.84	322.12	14.65		

Stage-Area-Storage for Pond 4P: EXISTING NORTH-EAST CATCH BASIN

Elevation (feet)	Storage (acre-feet)
306.62	**0.000**
306.82	0.000
307.02	0.000
307.22	0.000
307.42	0.000
307.62	0.000
307.82	0.000
308.02	0.000
308.22	0.000
308.42	0.000
308.62	0.000
308.82	0.000
309.02	0.000
309.22	0.000
309.42	0.000
309.62	0.000
309.82	0.000
310.02	0.000
310.22	0.000
310.42	0.000
310.62	0.000
310.82	0.000
311.02	0.000
311.22	0.000
311.42	0.000
311.62	0.000
311.82	0.000
312.02	0.000
312.22	0.000
312.42	0.000
312.62	0.000
312.82	0.000
313.02	0.000
313.22	0.000
313.42	0.000
313.62	0.000
313.82	0.000
314.02	0.000
314.22	0.000
314.42	0.000
314.62	0.000
314.82	0.000
315.02	0.000
315.22	0.000
315.42	0.000
315.62	0.000
315.82	0.000
316.02	0.000
316.22	0.000
316.42	0.000
316.62	0.000
316.82	0.000
317.02	0.000
317.22	0.000
317.42	0.000
317.62	0.000
317.82	0.000
318.02	0.000
318.22	0.000
318.42	0.000
318.62	0.000
318.82	0.000
319.02	0.000
319.22	0.000
319.42	0.000
319.62	0.000
319.82	0.000
320.02	0.000
320.22	0.000
320.42	0.000
320.62	0.000
320.82	0.000
321.02	0.000
321.22	0.000
321.42	0.000
321.62	0.000
321.82	0.000
322.02	0.000
322.22	0.000
322.42	0.000
322.62	0.000
322.82	0.000
323.02	0.000
323.22	0.000
323.42	0.000
323.62	0.000
323.82	0.000
324.02	0.000

Summary for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

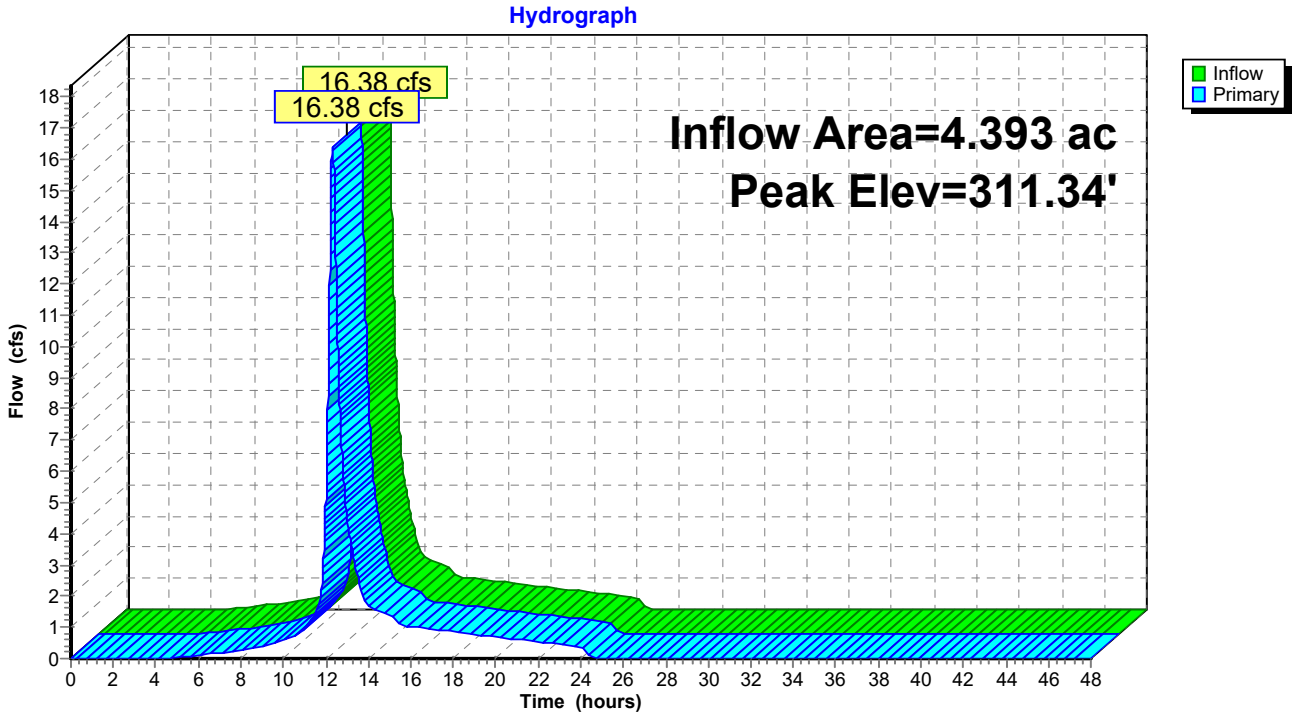
Inflow Area = 4.393 ac, 21.01% Impervious, Inflow Depth = 5.57" for 100-Year event
Inflow = 16.38 cfs @ 12.32 hrs, Volume= 2.039 af
Outflow = 16.38 cfs @ 12.32 hrs, Volume= 2.039 af, Atten= 0%, Lag= 0.0 min
Primary = 16.38 cfs @ 12.32 hrs, Volume= 2.039 af
Routed to nonexistent node 3P

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 311.34' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	303.03'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.38 cfs @ 12.32 hrs HW=311.34' TW=302.77' (Fixed TW Elev= 302.77')
└**1=Orifice/Grate** (Orifice Controls 16.38 cfs @ 13.35 fps)

Pond 5P: EXISTING SOUTH-EAST CATCH BASIN



Stage-Discharge for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
303.03	0.00	305.63	8.30	308.23	12.64	310.83	15.83
303.08	0.01	305.68	8.41	308.28	12.71	310.88	15.88
303.13	0.05	305.73	8.51	308.33	12.78	310.93	15.94
303.18	0.11	305.78	8.61	308.38	12.84	310.98	15.99
303.23	0.19	305.83	8.71	308.43	12.91	311.03	16.05
303.28	0.30	305.88	8.81	308.48	12.98	311.08	16.10
303.33	0.42	305.93	8.91	308.53	13.05	311.13	16.16
303.38	0.57	305.98	9.01	308.58	13.11	311.18	16.21
303.43	0.73	306.03	9.11	308.63	13.18	311.23	16.26
303.48	0.91	306.08	9.20	308.68	13.25	311.28	16.32
303.53	1.10	306.13	9.30	308.73	13.31	311.33	16.37
303.58	1.31	306.18	9.39	308.78	13.38	311.38	**16.42**
303.63	1.54	306.23	9.48	308.83	13.44		
303.68	1.77	306.28	9.57	308.88	13.51		
303.73	2.01	306.33	9.66	308.93	13.57		
303.78	2.27	306.38	9.75	308.98	13.64		
303.83	2.53	306.43	9.84	309.03	13.70		
303.88	2.79	306.48	9.93	309.08	13.76		
303.93	3.06	306.53	10.02	309.13	13.83		
303.98	3.32	306.58	10.11	309.18	13.89		
304.03	3.58	306.63	10.19	309.23	13.95		
304.08	3.84	306.68	10.28	309.28	14.01		
304.13	4.08	306.73	10.36	309.33	14.08		
304.18	4.31	306.78	10.45	309.38	14.14		
304.23	4.52	306.83	10.53	309.43	14.20		
304.28	4.67	306.88	10.61	309.48	14.26		
304.33	4.85	306.93	10.69	309.53	14.32		
304.38	5.03	306.98	10.77	309.58	14.38		
304.43	5.20	307.03	10.86	309.63	14.44		
304.48	5.37	307.08	10.94	309.68	14.50		
304.53	5.53	307.13	11.01	309.73	14.56		
304.58	5.68	307.18	11.09	309.78	14.62		
304.63	5.83	307.23	11.17	309.83	14.68		
304.68	5.98	307.28	11.25	309.88	14.74		
304.73	6.13	307.33	11.33	309.93	14.80		
304.78	6.27	307.38	11.40	309.98	14.86		
304.83	6.41	307.43	11.48	310.03	14.92		
304.88	6.54	307.48	11.56	310.08	14.98		
304.93	6.67	307.53	11.63	310.13	15.04		
304.98	6.80	307.58	11.71	310.18	15.09		
305.03	6.93	307.63	11.78	310.23	15.15		
305.08	7.05	307.68	11.85	310.28	15.21		
305.13	7.18	307.73	11.93	310.33	15.27		
305.18	7.30	307.78	12.00	310.38	15.32		
305.23	7.42	307.83	12.07	310.43	15.38		
305.28	7.53	307.88	12.15	310.48	15.44		
305.33	7.65	307.93	12.22	310.53	15.49		
305.38	7.76	307.98	12.29	310.58	15.55		
305.43	7.87	308.03	12.36	310.63	15.61		
305.48	7.98	308.08	12.43	310.68	15.66		
305.53	8.09	308.13	12.50	310.73	15.72		
305.58	8.20	308.18	12.57	310.78	15.77		

Stage-Area-Storage for Pond 5P: EXISTING SOUTH-EAST CATCH BASIN

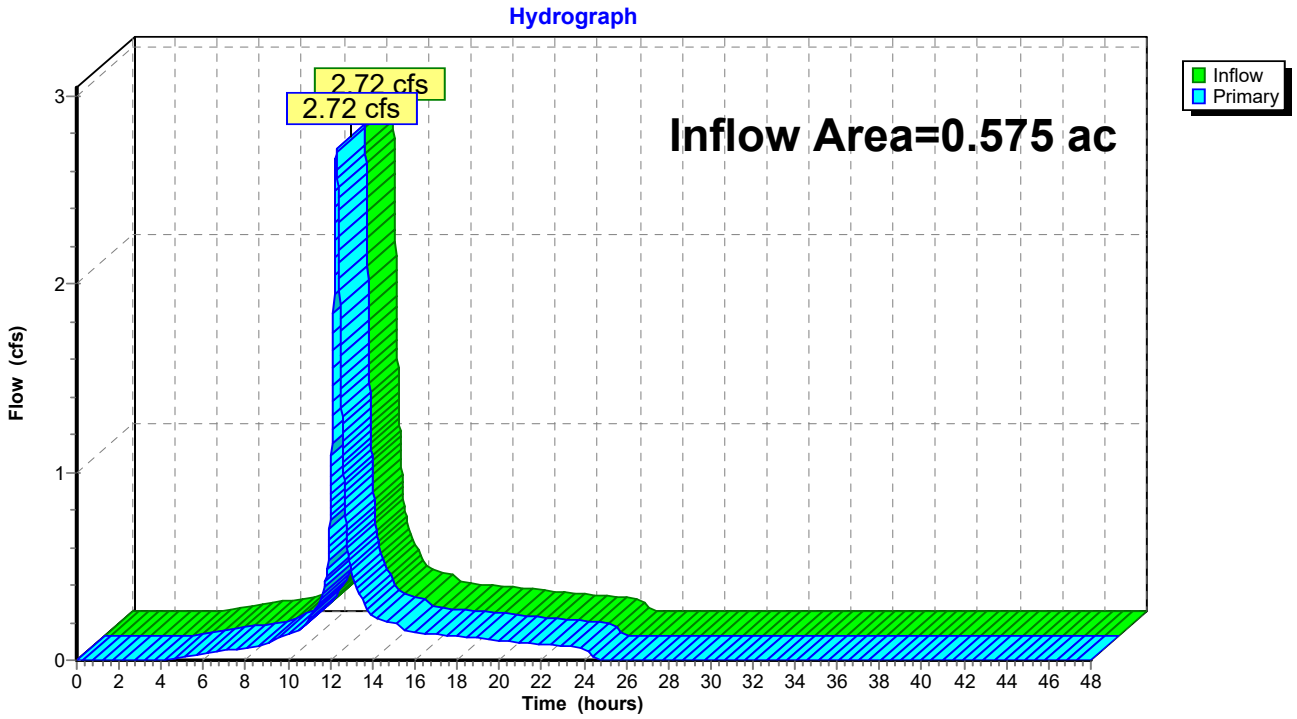
Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
303.03	**0.000**	308.23	0.000
303.13	0.000	308.33	0.000
303.23	0.000	308.43	0.000
303.33	0.000	308.53	0.000
303.43	0.000	308.63	0.000
303.53	0.000	308.73	0.000
303.63	0.000	308.83	0.000
303.73	0.000	308.93	0.000
303.83	0.000	309.03	0.000
303.93	0.000	309.13	0.000
304.03	0.000	309.23	0.000
304.13	0.000	309.33	0.000
304.23	0.000	309.43	0.000
304.33	0.000	309.53	0.000
304.43	0.000	309.63	0.000
304.53	0.000	309.73	0.000
304.63	0.000	309.83	0.000
304.73	0.000	309.93	0.000
304.83	0.000	310.03	0.000
304.93	0.000	310.13	0.000
305.03	0.000	310.23	0.000
305.13	0.000	310.33	0.000
305.23	0.000	310.43	0.000
305.33	0.000	310.53	0.000
305.43	0.000	310.63	0.000
305.53	0.000	310.73	0.000
305.63	0.000	310.83	0.000
305.73	0.000	310.93	0.000
305.83	0.000	311.03	0.000
305.93	0.000	311.13	0.000
306.03	0.000	311.23	0.000
306.13	0.000	311.33	0.000
306.23	0.000		
306.33	0.000		
306.43	0.000		
306.53	0.000		
306.63	0.000		
306.73	0.000		
306.83	0.000		
306.93	0.000		
307.03	0.000		
307.13	0.000		
307.23	0.000		
307.33	0.000		
307.43	0.000		
307.53	0.000		
307.63	0.000		
307.73	0.000		
307.83	0.000		
307.93	0.000		
308.03	0.000		
308.13	0.000		

Summary for Link 5L: P-POA-2

Inflow Area = 0.575 ac, 0.00% Impervious, Inflow Depth = 6.54" for 100-Year event
Inflow = 2.72 cfs @ 12.29 hrs, Volume= 0.313 af
Primary = 2.72 cfs @ 12.29 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 5L: P-POA-2

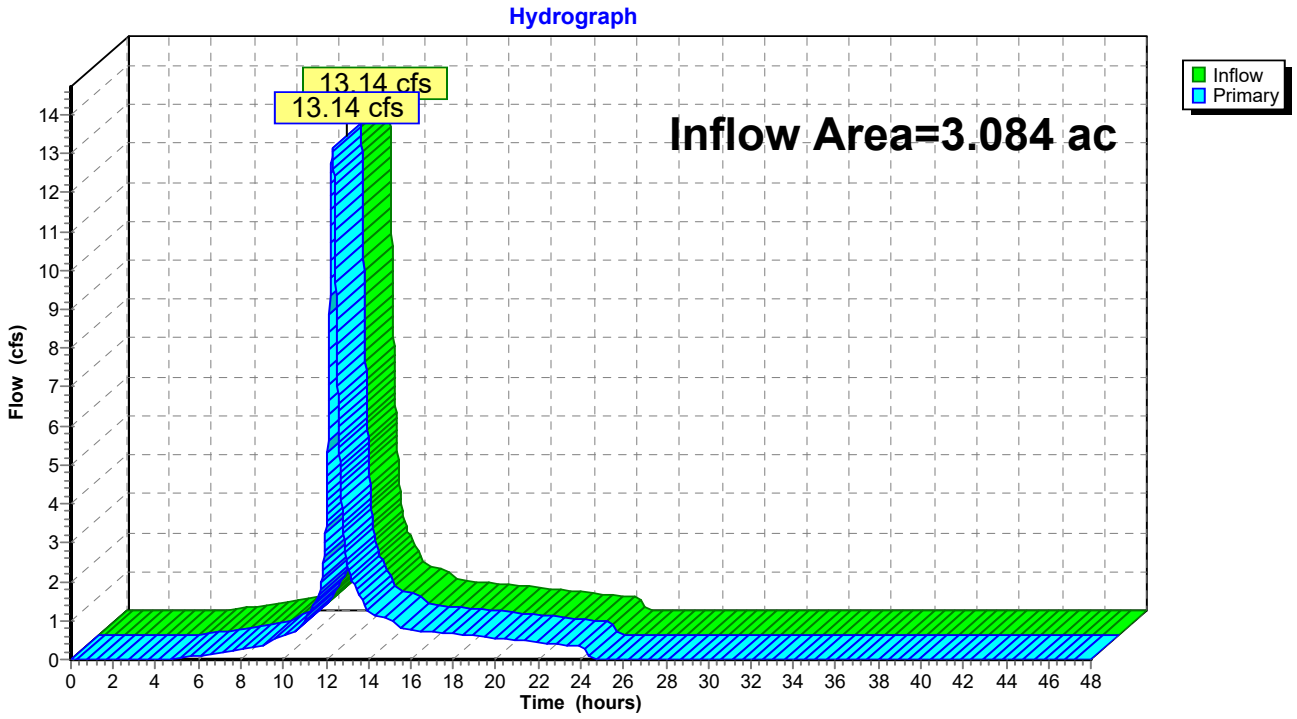


Summary for Link 6L: P-POA-1.1

Inflow Area = 3.084 ac, 0.00% Impervious, Inflow Depth = 6.04" for 100-Year event
Inflow = 13.14 cfs @ 12.32 hrs, Volume= 1.553 af
Primary = 13.14 cfs @ 12.32 hrs, Volume= 1.553 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 6L: P-POA-1.1

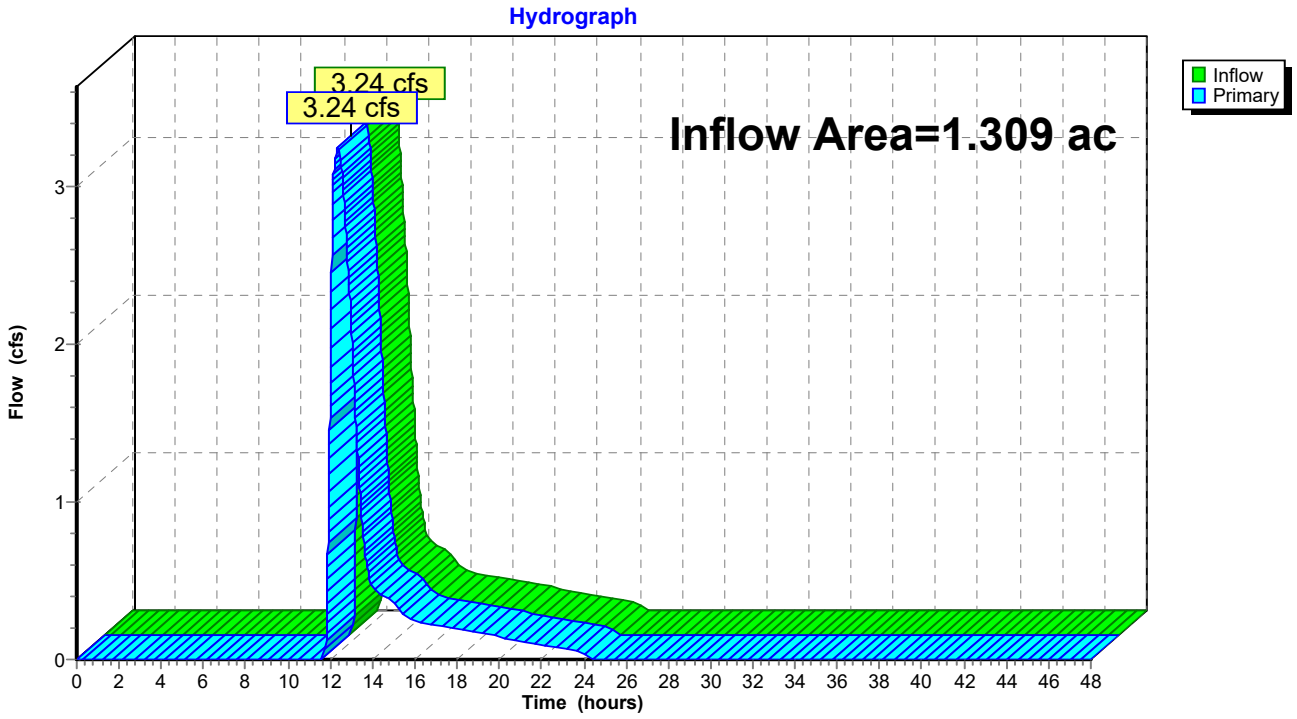


Summary for Link 7L: P-POA-1.2

Inflow Area = 1.309 ac, 70.51% Impervious, Inflow Depth = 4.45" for 100-Year event
Inflow = 3.24 cfs @ 12.34 hrs, Volume= 0.486 af
Primary = 3.24 cfs @ 12.34 hrs, Volume= 0.486 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : EXISTING SOUTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 7L: P-POA-1.2

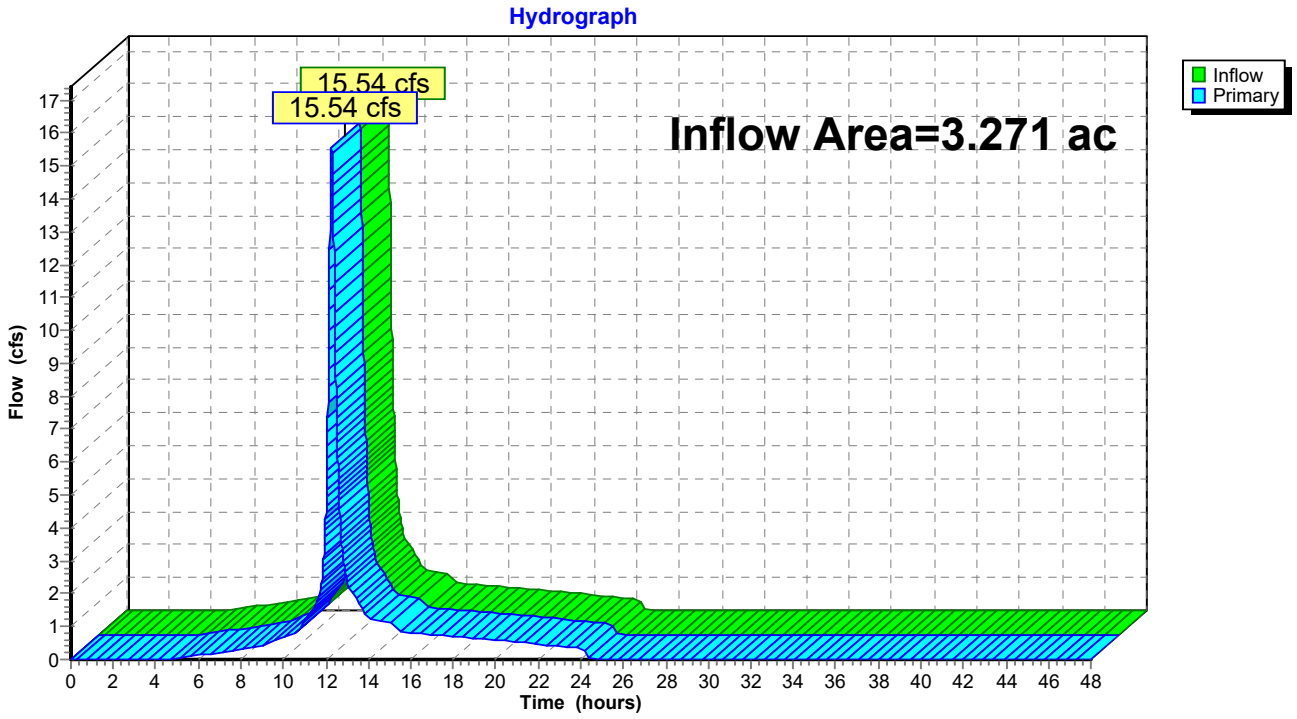


Summary for Link 8L: P-POA-3

Inflow Area = 3.271 ac, 0.00% Impervious, Inflow Depth = 6.17" for 100-Year event
Inflow = 15.54 cfs @ 12.27 hrs, Volume= 1.681 af
Primary = 15.54 cfs @ 12.27 hrs, Volume= 1.681 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 4P : EXISTING NORTH-EAST CATCH BASIN

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 8L: P-POA-3



Appendix O

(Construction and Maintenance Inspection Checklists Sample)

APPENDIX F
CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Inspector (print name)	**Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA
[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

Appendix P

(Percolation and Infiltration Testing Results)

Client:	C & J Consulting Engineers, D.P.C
Project:	156-160 Wayne Avenue, Suffern NY
County:	Rockland
Inspection:	Percolation Testing
Dates:	December 30 & 31, 2025

CATGO Materials Testing
209 Main St Highland Falls 10928
329-222-2234

On December 30th and 31st, representatives from this firm visited the project site to conduct percolation testing. Three test locations were conducted on this property. See attached map for approximate test locations.

On December 30th, a presoak of the test areas was conducted. Two (2) test locations were excavated to a depth of 4-feet (Holes #1 and #2). One (1) test location was excavated to a depth of 2-feet (Hole #3). At each of these locations, a CATGO representative dug a hole approximately 6-inches in diameter and 24-inches deep. There was no groundwater encountered at the bottom of the test holes. A PVC casing 30-inches in length was installed. Soil was filled in around the casing. The PVC casings were then filled with water to a height of 24-inches and allowed to drain overnight.

On December 30th at adjacent locations to the test holes, the site contractor excavated additional deep test holes for visual inspection. The holes were excavated to check for groundwater and bedrock. No bedrock was encountered. At Test Holes #1 and #2, groundwater was encountered in deep test holes at 7-feet below grade. At Test Hole #3, groundwater was encountered in deep test hole at 5-feet below grade.

On December 31st, the test areas were again checked for groundwater. Groundwater was present upon arrival in all deep test holes. The PVC casings were filled to 24-inches and timing for a 60-minute interval was started. At Test Hole #1, #2 and #3, the PVC casings were filled to 24-inches and timing for a 60-minute interval was started. The drop in water elevation was measured and recorded at the end of each 60-minute interval. The casings were refilled to the reference mark, and the process was repeated for additional runs. See attached report for test results.

Gabriel J. O'Connell P.E.
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Client: C & J Consulting Engineers, D.P.C
Project: 156-160 Wayne Avenue, Suffern NY
County: Rockland
Inspection: Percolation Testing
Dates: December 30 & 31, 2025

CATGO Materials Testing
209 Main St Highland Falls 10928
329-222-2234

Test Location		**Date:**	12/31/25	
Hole #1	156-160 Wayne Ave	**Percolation Test Depth:**	4' below grade	
Run	**Water Level Start (in.)**	**Water Level Finish (in.)**	**Drop (in.)**	**Time Interval**
1	24.0	21.5	2.5	60 min
2	24.0	22.0	2.0	60 min
3	24.0	22.5	1.5	60 min
4	24.0	22.5	1.5	60 min

Final percolation rate: 1.5 Inches per hour

Test Location		**Date:**	12/31/25	
Hole #2	156-160 Wayne Ave	**Percolation Test Depth:**	4' below grade	
Run	**Water Level Start (in.)**	**Water Level Finish (in.)**	**Drop (in.)**	**Time Interval**
1	24.0	13.5	10.5	60 min
2	24.0	14.0	10.0	60 min
3	24.0	15.0	9.0	60 min
4	24.0	15.0	9.0	60 min

Final percolation rate: 9.0 inches per hour

Test Location		**Date:**	12/31/25	
Hole #3	156-160 Wayne Ave	**Percolation Test Depth:**	2' below grade	
Run	**Water Level Start (in.)**	**Water Level Finish (in.)**	**Drop (in.)**	**Time Interval**
1	24.0	11.0	13.0	60 min
2	24.0	12.0	12.0	60 min
3	24.0	13.0	11.0	60 min
4	24.0	13.0	11.0	60 min

Final percolation rate: 11.0 inches per hour

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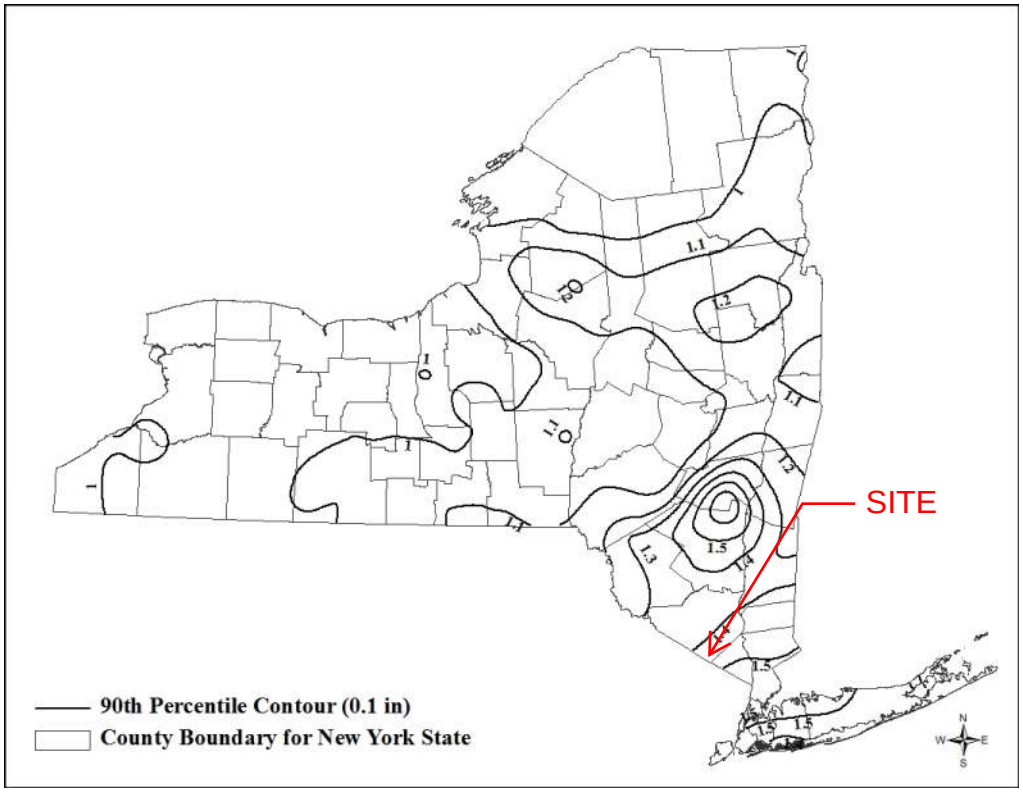
Appendix Q

(90th Percentile Rainfall and Rainfall Distributions)

Figure 4.1: 90th Percentile Rainfall in New York State (NYSDEC, 2013)

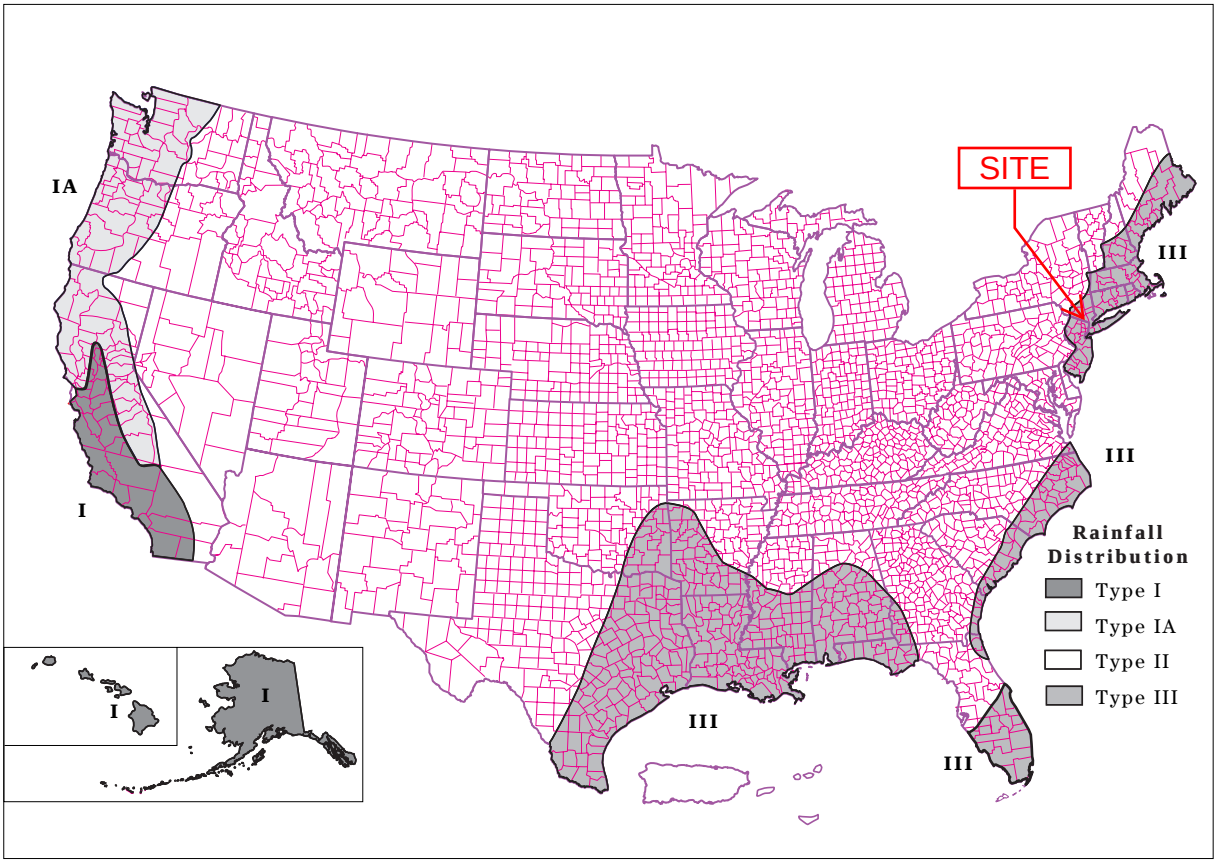


Basis of Design for Water Quality

As a basis for design, the following assumptions may be made:

Measuring Impervious Cover: the measured area of a site plan that does not have permanent vegetative or permeable cover shall be considered total impervious cover. Impervious cover is defined as all impermeable surfaces and includes: paved and gravel road surfaces, paved and gravel parking lots, paved driveways, building structures, paved sidewalks, and miscellaneous impermeable structures such as patios, pools, and sheds. Where site size makes direct measurement of impervious cover impractical, the land use/impervious cover relationships presented in Table 4.2 can be used to initially estimate impervious cover. In site specific planning impervious cover must be calculated based the specific proposed impervious cover.

Figure B-2 Approximate geographic boundaries for NRCS (SCS) rainfall distributions



Rainfall data sources

This section lists the most current 24-hour rainfall data published by the National Weather Service (NWS) for various parts of the country. Because NWS Technical Paper 40 (TP-40) is out of print, the 24-hour rainfall maps for areas east of the 105th meridian are included here as figures B-3 through B-8. For the area generally west of the 105th meridian, TP-40 has been superseded by NOAA Atlas 2, the Precipitation-Frequency Atlas of the Western United States, published by the National Ocean and Atmospheric Administration.

East of 105th meridian

Hershfield, D.M. 1961. Rainfall frequency atlas of the United States for durations from 30 minutes to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 40. Washington, DC. 155 p.

West of 105th meridian

Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-frequency atlas of the Western United States. Vol. I Montana; Vol. II, Wyoming; Vol III, Colorado; Vol. IV, New Mexico; Vol V, Idaho; Vol. VI, Utah; Vol. VII, Nevada; Vol. VIII, Arizona; Vol. IX, Washington; Vol. X, Oregon; Vol. XI, California. U.S. Dept. of Commerce, National Weather Service, NOAA Atlas 2. Silver Spring, MD.

Alaska

Miller, John F. 1963. Probable maximum precipitation and rainfall-frequency data for Alaska for areas to 400 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. of Commerce, Weather Bur. Tech. Pap. No. 47. Washington, DC. 69 p.

Hawaii

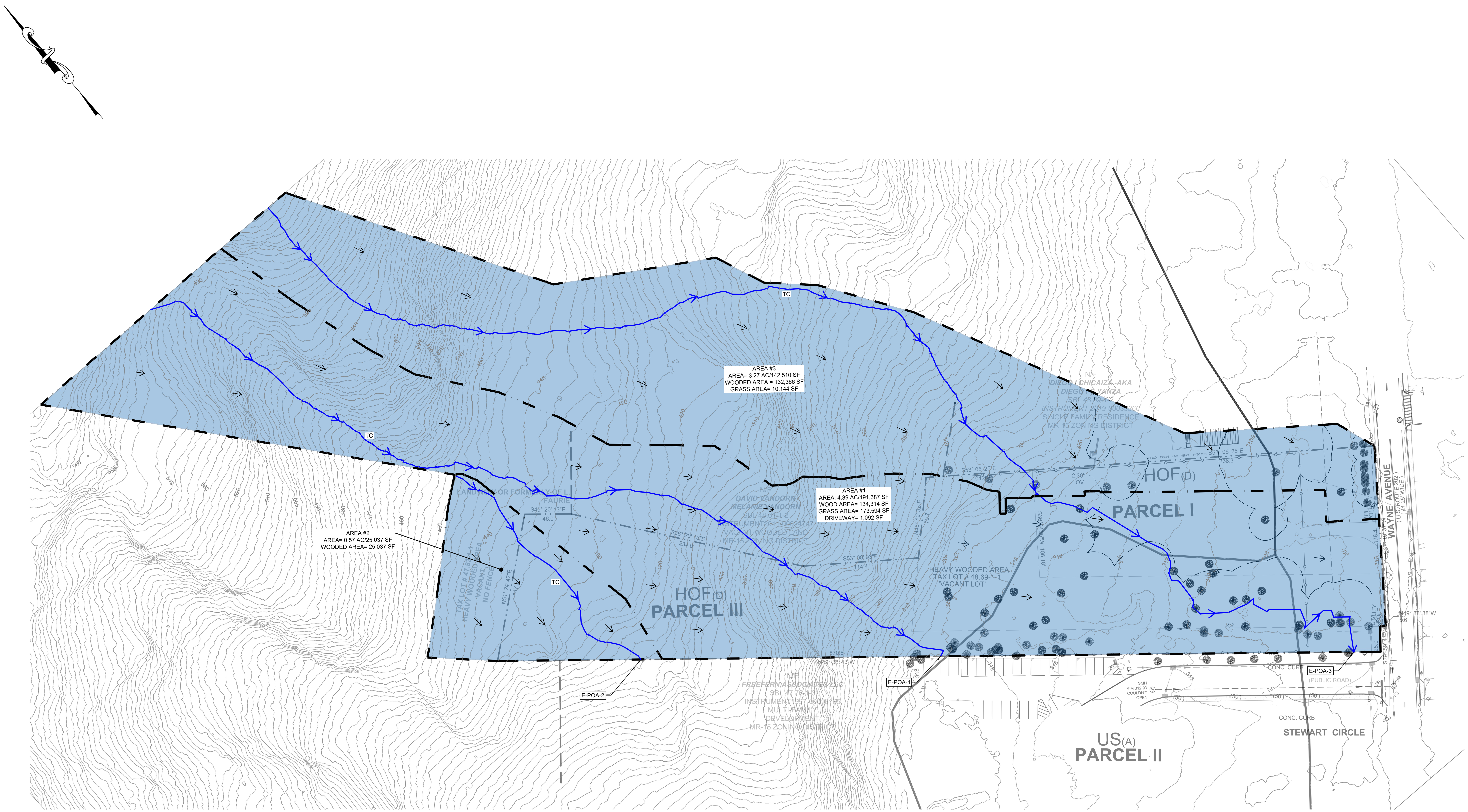
Weather Bureau. 1962. Rainfall-frequency atlas of the Hawaiian Islands for areas to 200 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 43. Washington, DC. 60 p.

Puerto Rico and Virgin Islands

Weather Bureau. 1961. Generalized estimates of probable maximum precipitation and rainfall-frequency data for Puerto Rico and Virgin Islands for areas to 400 square miles, durations to 24 hours, and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 42. Washington, DC. 94 P.

Appendix R

(Pre & Post Drainage Basin Plans)



EXISTING CONDITION PLAN

SCALE - 1" = 50'

LEGEND:

- PROPERTY LINE
- SANITARY SEWER MANHOLE
- INLET
- SIGN
- LIGHT POLE
- UTILITY POLE
- GUY WIRE
- MAIL BOX
- GAS VALVE
- WATER VALVE
- ADA PAD
- CONCRETE PAVING
- DEPRESSED CURB
- SANITARY SEWER LINE
- STORM MARKOUT
- OVERHEAD WIRE
- EDGE OF BITUMINOUS CONCRETE PAVING
- GAS LINE MARKOUT
- WALL
- GRASS LIMITS
- FENCE
- DRAINAGE LIMITS
- FLOW PATH (TIME OF CONCENTRATION)

50 0 50 100 150
GRAPHIC SCALE IN FEET
SCALE: 1"=50'

#	DATE	ISSUED

#	DATE	REVISION
3	03/31/2026	REVISED PER PB
2	01/07/2026	REVISED PER PB
1	10/31/2025	REVISED PER PB

PROGRESS PRINT 03/31/2026 FOR BOARD REVIEW ONLY

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Michael J. Calise, P.E., Principal

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CLIENT-APPLICANT:
SCOHEN BROOKLYN LLC
95 SMITH HILL RD
AIRMONT, NY 10952

OWNER:
SCOHEN BROOKLYN LLC
95 SMITH HILL RD
AIRMONT, NY 10952

SHEET TITLE:
EXISTING CONDITION PLAN

PROJECT TITLE:
WAYNE AVENUE LOW RISE TOWNHOUSES

LANDS OF:
SCOHEN BROOKLYN LLC

LOCATION:
156-160 WAYNE AVENUE, SUFFERN, NY 10901

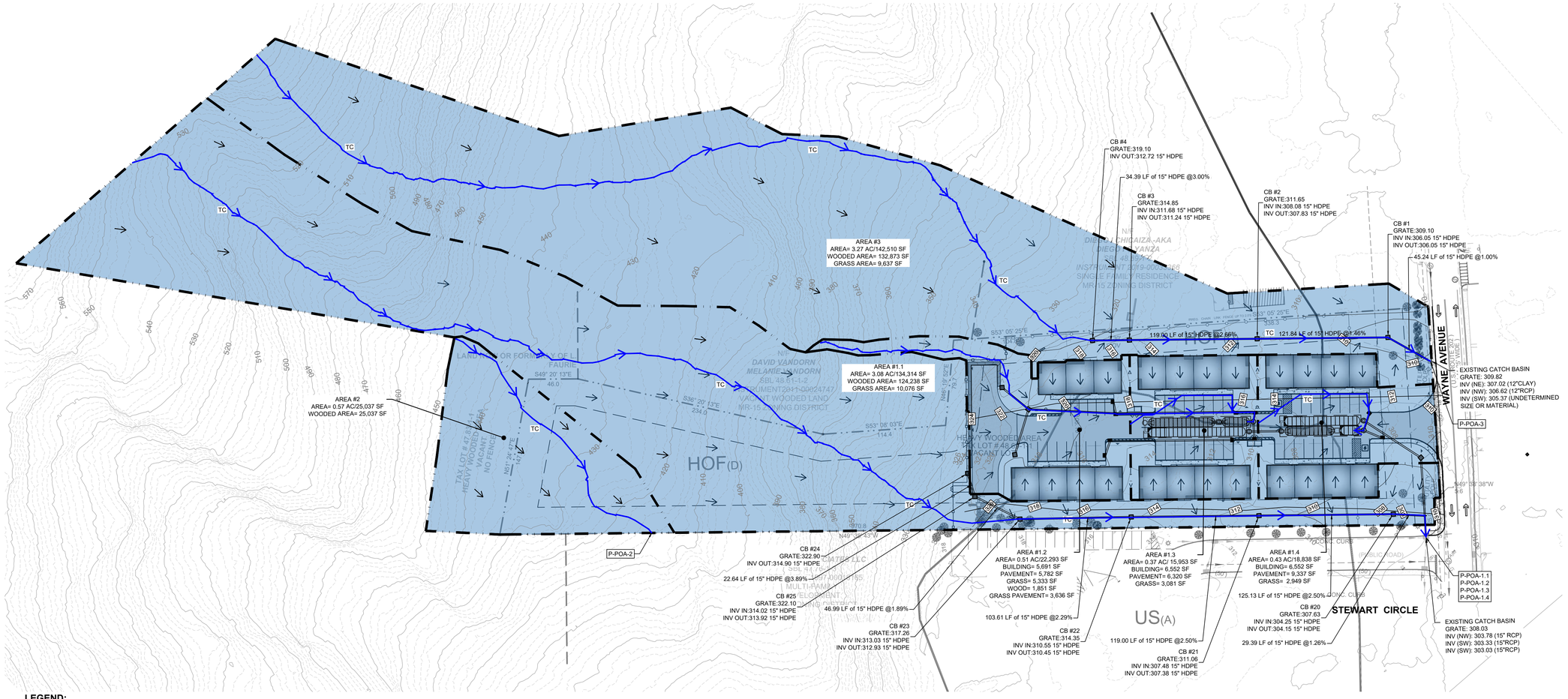
JURISDICTION:
VILLAGE OF SUFFERN
TOWN OF RAMAPO
COUNTY OF ROCKLAND
STATE OF NEW YORK

TAX LOT:
SECTION 48.69 BLOCK 1 LOTS 1, 1.1 & 1.2

LOT AREA:
3.0343±ACRES 132,177.54 SQ.FT

DRAWN BY:	SCALE:	PROJECT NO.:
MYL	1":50'	25-079
CHECKED BY: JJ	ORIGINAL DATE: 07/15/2025	SHEET: **C12**
APPROVED BY: MJC	LAST REVISED: 03/31/2026	PAGE 12 OF 15

LEGEND:



LEGEND:

- PROPERTY LINE
- EX. SANITARY SEWER MANHOLE
- EX. INLET
- EX. SIGN
- EX. LIGHT POLE
- EX. UTILITY POLE
- EX. GUY WIRE
- EX. MAIL BOX
- EX. GAS VALVE
- EX. WATER VALVE
- EX. ADA PAD
- EX. CONCRETE PAVING
- EX. DEPRESSED CURB
- EX. SANITARY SEWER LINE
- EX. STORM MARKOUT
- EX. OVERHEAD WIRE
- EX. EDGE OF BITUMINOUS CONCRETE PAVING
- EX. GAS LINE MARKOUT
- EX. WALL
- EX. FENCE
- DRAINAGE LIMITS
- FLOW PATH (TIME OF CONCENTRATION)
- PR. CURB
- PR. SIDEWALK
- PR. CONCRETE PAVEMENT
- PR. GRASS PAVEMENT
- PR. WALL
- PR. BUILDING
- PR. DECk
- PR. CBCP-CATCH BASIN CURB
- PR. CLEAN OUT
- PR. CURB VALVE
- PR. SETBACKS
- PR. CLEAR YARD
- PR. EV STATION
- PR. WATER PIPE
- PR. SEWER PIPE
- PR. STORM DRAIN PIPE
- PR. GUIDE RAIL
- PR. SEWER MANHOLE
- PR. FIRE HYDRANT
- PR. HYDRANT VALVE
- PR. SIGN
- SOIL LIMITS
- POA — POINT OF ANALISYS

PROPOSED CONDITION PLAN

SCALE - 1" = 50'

50 0 50 100 150

GRAPHIC SCALE IN FEET
SCALE: 1"=50'

#	DATE	ISSUED

#	DATE	REVISION
3	03/31/2026	REVISED PER PB
2	01/07/2026	REVISED PER PB
1	10/31/2025	REVISED PER PB

PROGRESS PRINT 03/31/2026 FOR BOARD REVIEW ONLY

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SHEET TITLE:
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PROJECT TITLE:
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SECTION 48.69 BLOCK 1 LOTS 1, 1.1 & 1.2

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3.0343±ACRES 132,177.54 SQ.FT

DRAWN BY:	SCALE:	PROJECT NO.:
MYL	1":50'	25-079
CHECKED BY:	ORIGINAL DATE:	SHEET:
JJ	07/15/2025	**C13**
APPROVED BY:	LAST REVISED:	
MJC	03/31/2026	PAGE13 OF **15**

Appendix S

(OPRHP Cultural Resource Sensitivity Map)

OPRHP Cultural Resource Sensitivity Map
Wayne Ave

NYS Building Footprints

USN Building Points (View)

- Eligible
- Listed
- Not Eligible
- Not Eligible - Demolished
- Undetermined

LPC Landmarks

National Register Building Sites (View)

USN Building Districts (View)

- Eligible
- others

Survey Archaeology Areas (View)

Cemeteries

DOT BINs

- Eligible
- Not Eligible
- Not Evaluated

Survey Building Areas (View)

Consultation Projects (View)

LPC Historic Districts

Archaeological Buffer Areas

Certified Local Governments

State Commercial Tax Credit Program: Qualifying Census Tracts

- Qualifies for state commercial program
- Does not qualify for state commercial program

Homeowner Tax Credit Program: Qualifying Census Tracts and Cities

- Qualifies for homeowner program
- Does not qualify for homeowner program

Adirondack Forest Preserve NHL Boundary

Adirondack Forest Preserve NHL Boundary

State Park Land

Bedrock Geology

Minor Civil Divisions

NY Congressional Districts