

NEW CENTURY FILM

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

517 NEVERSINK DRIVE
PORT JERVIS, NY 12771



TAX LOT SECTION 50, BLOCK 1, LOT 28.23, 40 ACRES+/-
TOWN OF DEER PARK, ORANGE COUNTY, NEW YORK

PREPARED BY:

FELLENZER ENGINEERING
22 MULBERRY STREET SUITE 2A
MIDDLETOWN, NEW YORK 10940
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PROJECT 21-488

REPRESENTING:

NEW CENTURY FILM
517 NEVERSINK DRIVE
PORT JERVIS, NY 12771
PETER WEI, COO

MARCH 8, 2023

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NARRATIVE

The applicant, New Century Film, is proposing improvements on the existing site located at 517 Neversink Drive in the Town of Deerpark, NY. Lot 50-1-38.23 is approximately 40 acres, within the HMU District (Hamlet Mixed-Use).

The property was originally used for equestrian events and shows in the 1990s prior to New Century Film (“NCF”) occupying the site in the late 2010s. NCF currently uses the property as a film studio and offices, hosting events such as conferences, parties, and weddings, as well as organizing and hosting large community festivals, such as the Moon Festival. The goal of NCF is to create positive growth in the area while bridging both Eastern and Western culture. The NCF mission statement is *“Return to tradition and give to the community.”*

Total project disturbance will be greater than five (5) acres; therefore, the New York State Department of Environmental Conservation requires that a Stormwater Pollution Prevention Plan (SWPPP) be completed.

To maintain runoff at or below the pre-development levels, water quality control measures and water quantity control measures will be implemented as well as provisions for soil erosion and sediment control during construction

EXISTING SITE –

Existing site features include a large horse show arena, barns and stables, two (2) residential dwellings, an underground rifle and pistol range, and asphalt parking. The site is bordered by the Neversink River to the South and NYS Route 209 to the North. The property is currently approved for the following uses:

- A - Residential (original to site)

- B2 - Multi-purpose building for film studio related activities (approved in 2017)
- B2 - Offices (approved in 2017)
- E - Flea market/vendor area with temporary parking (approved in 2018)
- B1 - Twenty-two (22) room hotel, retail store and restaurant (approved in 2021)
- B3 – Barn (original to site)

PROPOSED SITE –

- A - Residential (original to site)
- B1 - Eight (8) room hotel, retail store and restaurant (approved in 2021)
- B2 - Multi-purpose building (to now include a film screening hall)
- B3 – Eighty-five room (85) hotel and costume workshop (with use of existing subterranean shooting range)
- B4 – Restaurants (New construction)
- C – Film Studios (New construction, 10,000 sq.ft. each)
- D- Wastewater Treatment Plant (New construction)
- E - Flea market/vendor area with temporary parking (approved in 2018)
- Four to 5-story parking garage structure

The total proposed impervious coverage within the tax parcel is 659,525 sq. ft., or 38.5%. Building coverage is 9.8%.

The total area of disturbance is approximately 15.1 acres, including grading. Soil remediation will be utilized in these areas per NYSDEC. Stormwater HDPE piping, pre-cast catch basins and pre-cast manholes will be used for conveyance to two (2) stormwater detention ponds for storage of storm run-off. The conveyance/storage system will maintain post development storm event peak flows equal to or below those of pre-development storm events. The development of the project will also reduce total volume of run-off compared to the pre-developed site, thus fulfilling the Rrv requirement.

SOILS

The provided USDA Web Soil Survey Map (appendix B) shows that the underlying soils of the project area are:

- Barbour Fine Sandy Loam (Ba)
- Basher Fine Sandy Loam (Be)
- Otisville Gravelly Sandy Loam (OtB)
- Otisville Gravelly Sandy Loam (OtC)
- Water (W)

Areas of cut and fill to be restored per the NYSDEC “Deep Ripping and De-compaction” Requirements, January, 2015.

SPDES

As a result of the proposed improvements an area of greater than 5 acres of disturbance will be created. As the SPDES General Permit for Stormwater Discharges during Construction GP-0-20-001 cover disturbances of up to 5 acres, construction will be phased to limit disturbance to 5-acre increments.

The following sections will identify a methodology for mitigating post construction site conditions, erosion and sediment control and construction practices, existing and post construction hydrologic data, and Erosion & Sediment Control objectives to address during construction activity. These implemented practices should limit erosion & sediment runoff and discharge impacts within the project site and the area surrounding the project site to the maximum extent practicable.

RUNOFF REDUCTION

$$RRv \text{ (in acre-feet of storage)} = [(P)(Rv^*)(Ai)] /12$$

$$P = 1.35$$

$$Rv^* = 0.05+0.009(I) \text{ where } I \text{ is } 100\% \text{ impervious} = 0.95$$

$$Aic = 15.2 \text{ acres}$$

$$S = \text{Hydrologic Soil Group (HSG) Specific Reduction Factor (S)} = 0.4 \text{ for B}$$

Required RRv

$$RRv \text{ (in acre-feet of storage)} = [(P)(Rv^*)(Ai)] /12 = 0.65 \text{ ac ft} = 28,314 \text{ cu ft}$$

Per the NYS Stormwater Management Design Manual, Chapter 4, Section 4.3, page 4-5, we will calculate Runoff Reduction Volume based on the Reduction of Runoff Volume by Storage Capacity of the practice.

Provided RRv

$$\text{Total pond storage} = 90,877 \text{ cu ft to permanent pool elevation}$$

Therefore, at a minimum the complete project will accommodate storage of the required 28, 314 cu ft.

Furthermore, the following Green Infrastructure Techniques per Chapter 5 of the New York State Stormwater Management Design Manual will be applied for additional mitigation:

Table 5.7 Green Infrastructure Techniques for Runoff Reduction

Practice	Description	Project Application
Conservation of Natural Areas	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland	The project site is adjacent to the Neversink River and its designated floodway, an area to be preserved as a buffer without any proposed disturbance or change in its pre-development hydrologic

	buffers by restoring and/or permanently conserving these areas on a site	characteristics. Additionally, excess disturbance to the site has been avoided in order to maintain the natural open and grassed fields on the site.
Sheetflow to Riparian Buffers or Filter Strips	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	Similar to “Conservation of Natural Areas” the Neversink River and its designated floodway acts as an undisturbed natural buffer and vegetated filter strip to further enhance the treatment of stormwater within the detention ponds before being discharged to the river.
Tree Planting / Tree Pit	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	Landscaping in the form of numerous plants, trees, and shrubs of varying species are proposed to help with visual buffering of the site as well as increasing the nutrient uptake of the site and increased runoff infiltration.

Table 5.4 Planning Practices for Reduction of Impervious Cover

Practice	Description	Project Application
Parking Reduction	Reduces imperviousness on parking lots by eliminating	In lieu of a large, impervious parking area originally

	<p>unnneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate</p>	<p>proposed in the east corner of the site, a multi-storied parking structure will be utilized to minimize disturbance and stormwater runoff while accommodating passenger vehicles in a smaller footprint. The space previously allocated for traditional parking area will instead remain open grass field.</p>
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SOIL RESTORATION

1. Soil Restoration as defined by "Deep Ripping and Compaction" (January 2015 NYSDEC) shall be performed in all areas to be re-graded (areas of cut/fill).
2. Soil restoration is not required in areas of minimal soil disturbance, such as clearing and grubbing, as per Table 5.3, NYSDEC Stormwater Design Manual, January 2015.
3. Regrading of site shall result in a balanced site, with equal cut/fill volumes.

EROSION AND SEDIMENT CONTROL

The erosion and sediment control practices and the design of erosion and sediment control plans were prepared in accordance with "New York State Standards and Specifications for Erosion and Sediment Control, 11/16 ed."

1. Planned Erosion and Sedimentation Control Practices

a. Overall Objectives:

- (1) The overall objective of any erosion and sediment control plan is to control erosion to the maximum extent practicable at the source.
- (2) Existing vegetative cover shall be maintained to the maximum extent practicable and site disturbance shall be controlled to prevent soil disturbance beyond the “limits of disturbance” indicated on the site grading plans.
- (3) Where necessary, appropriate sediment control measures shall be installed at all existing project area drainage ways or stormwater management structures prior to the installation of erosion control measures within the project site.
- (4) All temporary erosion and sediment control measures shall be installed prior to any disturbance in any portion of the project site.
- (5) All permanent erosion and sediment control measures shall be installed as early as possible or as directed by the site engineer. The only permanent measure proposed is permanent seeding.
- (6) Unless specified elsewhere below, during construction activities at the project site, all erosion and sediment control measures shall be inspected and, if necessary, maintenance performed, on a weekly basis.

b. Existing Stormwater Management Facilities:

(1) All existing stormwater management facilities, if present, shall be protected at all times. Maintenance of existing facilities is the responsibility of the owner of record.

c. Limits of Disturbance and Tree Preservation and Protection:

(1) Site disturbance shall be limited to the maximum extent practicable to "Limits of Disturbance" identified on the plans.

(2) Site conditions encountered during construction activities that point toward a need to disturb areas beyond the "Limits of Disturbance" shall be brought to the attention of the site engineer before undertaken. Engineer shall verify that the appropriate erosion & sediment control measures and BMPs are in place prior to start of work.

d. Filter Fabric Silt Fence or Silt Socks:

(1) Silt fences with woven wire backing for added support to prevent collapse are to be installed prior to the disturbance of any upslope areas, and around the entire perimeter of soil stockpiles at the end of the work day to prevent sediment from entering the drainage courses.

(2) A silt fence may be used subject to the following conditions:

a) Maximum allowable slope lengths contributing runoff to a silt fence placed on a slope are:

Slope Maximum	Steepness Length (ft.)
2:1	25

3:1	50
4:1	75
5:1 or flatter	100

- b) Maximum drainage area for overland flow to a silt fence shall not exceed $\frac{1}{4}$ acre per 100 feet of fence, with maximum ponding depth of 1.5 feet behind the fence;
 - c) Erosion would occur in the form of sheet erosion;
 - d) There is no concentration of water flowing to the barrier.
- (3) Inspection and maintenance shall be performed on a weekly basis and sediment material removed when “bulges” develop.
- (4) Silt fences shall be removed when they are no longer needed or as directed by the site engineer.
- e. Dust Control:
- (1) At site access and other disturbed areas surface dust movement and dust blowing shall be controlled to the maximum extent practicable, and especially where off-site damage may occur or create a nuisance condition if dust is not controlled.
 - (2) Construction operations should be scheduled to minimize the amount of area disturbed at one time.
 - (3) Buffer areas of vegetation should be left where practical.
 - (4) Temporary or permanent stabilization measures shall be installed.

- (5) Should excessive dust be generated, it should be controlled by sprinkling.
 - (6) Dust control measures shall be continue through dry weather periods and/or until all disturbed areas are stabilized.
- f. Stabilized Construction Entrance:
- (1) A stabilized construction entrance(s) is/are to be completed prior to the start of construction activities.
 - (2) Installation Criteria:
 - a) Aggregate Size: Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.
 - b) Thickness: Not less than six (6) inches.
 - c) Width: 24-foot minimum
 - d) Length: Not less than 50 feet or as directed by the site engineer
 - e) Geotextile: To be placed over the entire area to be covered with aggregate. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.
 - (3) The entrance shall be maintained in a condition which will prevent the tracking or flowing of sediment onto public rights-of-way or streets. This may require periodic top dressing with addition aggregate.
 - (4) All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.

- (5) When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way.
 - (6) When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device.
 - (7) All sediment shall be prevented from entering storm drains, ditches, or watercourses.
 - (8) Inspection shall be performed weekly and needed maintenance shall be made promptly.
 - (9) The stabilized construction entrance shall be removed when it is no longer needed or as directed by the site engineer.
- g. Diversion Swales, none are proposed at this time, but if required by the construction period engineer:
- (1) Temporary swales are to be constructed to:
 - a) To divert flows from entering a disturbed area.
 - b) Intermittently across disturbed areas to shorten overland flow distances.
 - c) To direct sediment laden water along the base of slopes to a trapping device.
 - d) To transport offsite flows across disturbed areas such as rights-of-way.
 - (2) Swales collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

(3) Where necessary, diversion swales are to be installed prior to the disturbance of areas.

(4) Stabilization of the swale shall be completed within 7 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year.

(5) The flow channel shall be stabilized as per the following criteria:

Channel Grade	Type of Treatment
0.5 - 5.0%	Seed and straw mulch
5.0 – 8.0%	Seed and cover with RECP, sod, or line with plastic or 2 in. stone
8.1 to 20%	Line with 4-8 in. stone or or geotextile

(6) Inspection and maintenance shall be performed on a weekly basis and repairs made promptly.

(7) Swales shall be filled in or graded when they are no longer needed or as directed by the site engineer.

h. Check Dams

i. Soil Stockpile Areas:

(1) Soil stockpile areas shall be established as soon as erodible material is excavated or collected.

- (2) Soil stockpile areas shall be located where shown on the plans or as directed by the site engineer.
 - (3) Silt filter fencing shall be in place around the entire perimeter of the stockpile at the end of each workday.
 - (4) Depending on time of year stockpiles shall be stabilized by seeding or mulch as directed by the site engineer.
- j. Stabilization of Disturbed Areas:
- (1) Temporary stabilization of disturbed areas: depending on time of year shall include seeding and/or mulching applied to disturbed areas as soon as practicable or as directed by the site engineer.
 - (2) Temporary stabilization of disturbed areas: type of seed and the application rates for seeding and mulching shall be as specified on the plans.
 - (3) Temporary stabilization of disturbed areas: must be used on areas not under construction that will be exposed for more than 14 days.
 - (4) Permanent stabilization of disturbed areas: shall include seeding and munching, and may include soil augmentation and the application of fertilizer as directed by the site engineer.
 - (5) Permanent stabilization of disturbed areas: type of seed and the application rates for seeding and mulching shall be as specified on the plans, and soil augmentation and the application rate of fertilizer shall be as directed by the site engineer.

- (6) Permanent stabilization of disturbed areas: shall be completed as soon as possible after construction activities in an area are completed.

 - (7) Permanent stabilization of disturbed areas with seed and mulch should be undertaken from March to May and September to October 15, and temporary stabilization can be utilized through November.
- k. Permanent Erosion and Sediment Control Measures:
- (1) Permanent erosion and sediment control measure to stabilize the project site (stabilization seeding) as indicated on the site development plans should be performed as soon as possible after completion of grading.

 - (2) All permanent erosion and sediment control measures designed and implemented must be properly maintained in order to remain functional.

1. Construction Schedule

- a. Obtain plan approval and other applicable permits.
- b. Hold pre-construction conference at least one week prior to starting construction, which is to be attended by the owner and the owner's contractor and site engineer.
- c. A mailbox or other means to store the SWPPP, drawings and Inspection Reports, shall be installed on site.
- d. At least 7 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the New York One Call System Incorporated at 1-800-962-7962 for buried utilities locations.
- e. Construct stabilized construction entrance(s), as required.
- f. Sediment control measures shall be installed at all existing project area drainage ways or stormwater management structures prior to the installation of erosion control measure within the project site.
- g. Flag the limits of disturbance and vegetation to be preserved and protected.
- h. Install filter fabric silt fencing or silt soxx.
- i. Tree clearing and grubbing.
- j. Rough grade site, stockpile topsoil
- k. Soil remediation per NYSDEC

- l. Finish grading as soon as rough grading is complete. Leave the surface slightly roughened and vegetate and mulch immediately.
- m. Construction of proposed building.
- n. Inspections per schedule.
- o. Construction of utility services and lighting.
- p. Pave access drives and parking areas..
- q. Complete final grading
- r. Complete final grading of grounds, topsoil critical areas, and permanently vegetate, landscape, and mulch.
- s. After the site is stabilized, remove all temporary measures
- t. Estimated time before final stabilization—3-4 months.

NOTES:

1. The operator shall assure that the approved stormwater management plan is properly and completely implemented.
2. Construction vehicles and equipment may neither enter directly nor exit directly from the site without a construction entrance. Measures must be taken to prevent soil and sediment from a vehicle's tires from being deposited onto the public road.
3. Before initiating any revisions to the approved stormwater management plan or revisions to other plans that may affect the effectiveness of the approved

plan, the operator must receive approval of the revisions from the design engineer

5. The operator shall assure that the stormwater management plan has been prepared, approved by the design engineer, and is being implemented and maintained for all soil and/or rock spoil and borrow areas, regardless of their locations.
6. The stormwater management plan mapping must display a NY ONE CALL SYSTEM INCORPORATED symbol including the site identification number. (This is a numbered symbol not a note.)
7. Immediately after earth disturbance activities cease, within 14 days, the operator shall stabilize any areas disturbed by the activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be redistributed within 1 year must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are at finished grade or which will not be redistributed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
8. The operator shall remove from the site, recycle, or dispose of all building materials and wastes in accordance with all applicable state and local codes. The contractor shall not illegally bury, dump, or discharge any building material or wastes at the site.

STORMWATER MANAGEMENT PLAN

OVERALL OBJECTIVES

The Erosion & Sediment control practices of the SWPPP / Erosion & Sediment Control Plan were prepared in accordance with requirements of the “New York State Standards & Specifications for Erosion & Sediment Control, November 2016”, also known as the “Blue Book”.

The only permanent erosion and sediment control measures that are to be converted into a permanent measure is the permanent stabilization / seed mixture.

RUNOFF SUMMARY

PRE-DEVELOPMENT CONDITION	1-yr	10-yr	25-yr	100-yr
Precipitation (in) (type II rainfall)	2.6	4.7	5.9	8.7
Design Point	Q1-yr (cfs)	Q10-yr (cfs)	Q25-yr (cfs)	Q100-yr (cfs)
Subbasin 1	0.11	8.58	19.37	50.30
Subbasin 2	1.60	20.43	36.50	77.20

POST-DEVELOPMENT CONDITION	1-yr	10-yr	25-yr	100-yr
Precipitation (in) (type II rainfall)	2.6	4.7	5.9	8.7
Design Point	Q1-yr (cfs)	Q10-yr (cfs)	Q25-yr (cfs)	Q100-yr (cfs)
Pond #1 (Southwest)	0.0	0.31	3.12	25.31
Pond #2 (Northeast)	0.0	0.15	1.14	9.19

PRE VS. POST REDUCTION IN CFS SHOWN IN PARENTHESES	1-yr	10-yr	25-yr	100-yr
Precipitation (in) (type II rainfall)	2.6	4.7	5.9	8.7
Design Point	Q1-yr (cfs)	Q10-yr (cfs)	Q25-yr (cfs)	Q100-yr (cfs)
Pond #1 (Southwest)	(0.11)	(8.27)	(16.25)	(24.99)
Pond #2 (Northeast)	(1.60)	(20.28)	(35.36)	(52.21)

NO ADVERSE IMPACT

The proposed stormwater peak flow will successfully convey the 1,10, & 100 year storm events at a rate which is less than or equal to, the pre-development rates at the design point where it leaves our property. Thus, it can be reasonably concluded that there is no adverse impact to the site.

HYDROLOGICAL MODELING

HydroCAD 10.0, employing the SCS TR-20 runoff calculation method was used to model this project.

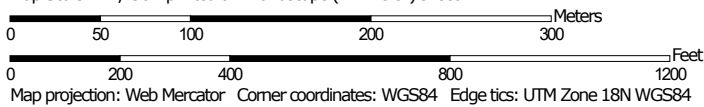
APPENDIX A

WEB SOIL SURVEY

Soil Map—Orange County, New York




Map Scale: 1:4,190 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils



 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, New York
 Survey Area Data: Version 23, Sep 10, 2022

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

Date(s) aerial images were photographed: Data not available.

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ba	Barbour fine sandy loam	5.3	13.6%
Be	Basher fine sandy loam	7.9	20.1%
OtB	Otisville gravelly sandy loam, 0 to 8 percent slopes	19.1	48.9%
OtC	Otisville gravelly sandy loam, 8 to 15 percent slopes	6.8	17.4%
W	Water	0.0	0.0%
Totals for Area of Interest		39.1	100.0%

APPENDIX B

CONSTRUCTION SITE LOG BOOK

**STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR
CONSTRUCTION ACTIVITIES**

CONSTRUCTION SITE LOG BOOK

Table of Contents

- I. Pre-Construction Meeting Documents
 - a. Preamble to Site Assessment and Inspections
 - b. Operator's Certification
 - c. Qualified Professional's Credentials & Certification
 - d. Pre-Construction Site Assessment Checklist
- II. Construction Duration Inspections
 - a. Directions
 - b. Modification to the SWPPP
- III. Monthly Summary Reports
- IV. Monitoring, Reporting, and Three-Month Status Reports
 - a. Operator's Compliance Response Form

Properly completing forms such as those contained in this Appendix the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

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 professional¹ conduct an assessment of the site prior to the commencement of construction² 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.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). 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. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization³ 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 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

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. Operators 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 gathered and evaluated 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. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Name (please print):

Title _____ **Date:** _____

Address:

Phone: _____ **Email:** _____

Signature:

c. Qualified Professional's Credentials & Certification

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print):

Title _____ **Date:** _____

Address:

Phone: _____ **Email:** _____

Signature:

d. 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 Entrance

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. Perimeter 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? _____

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.

New York Standards and Specifications Page H.6 August 2005
For Erosion and Sediment Control

CONSTRUCTION DURATION INSPECTIONS Page 1 of _____

SITE PLAN/SKETCH

Inspector (print name)

Date of Inspection

Qualified Professional (print name)

Qualified Professional Signature

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

CONSTRUCTION DURATION INSPECTIONS Page 2 of _____

Maintaining Water Quality

Yes No NA

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- 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 and debris 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.

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.

2. Level 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
- New York Standards and Specifications Page H.8 August 2005 For Erosion and Sediment Control

CONSTRUCTION DURATION INSPECTIONS Page 3 of _____

Runoff Control Practices (continued)

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. Stabilized Construction Entrance

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?

2. Silt Fence

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.

CONSTRUCTION DURATION INSPECTIONS Page 4 of _____
Sediment Control Practices (continued)

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated 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 1 acre 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.
- Sediment accumulation ___% of design capacity.

4. 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 accumulation is ___% of design capacity.

5. 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 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.

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

New York Standards and Specifications Page H.10 August 2005
For Erosion and Sediment Control

CONSTRUCTION DURATION INSPECTIONS Page 5 of ____

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:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:		Permit Identification #:
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator 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 gathered and evaluated 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 false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

 Signature of Permittee or Duly Authorized Representative Name of Permittee or Duly Authorized Representative
 Date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

APPENDIX C

STORMWATER POND CHECKLIST

STORMWATER POND MAINTENANCE, MANAGEMENT, INSPECTION
 CHECKLIST

Project: _____

Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		

Maintenance Item	Satisfactory/Unsatisfactory	Comments
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____		
1. Low flow orifice obstructed		
2. Low flow trash rack.		
a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance		
a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels		
a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve		
a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve		
a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)	Page 39	

Maintenance Item	Satisfactory/Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1. Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls/Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/Unsatisfactory	Comments
2. Complaints from residents		
3. Aesthetics		
a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

APPENDIX D

HYDROCAD PRE AND POST DEVELOPMENT RUNOFF

21-488 PRE Development

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Page 1

Project Notes

Defined 9 rainfall events from NY-Newburgh IDF

Summary for Reach 6R: Neversink River

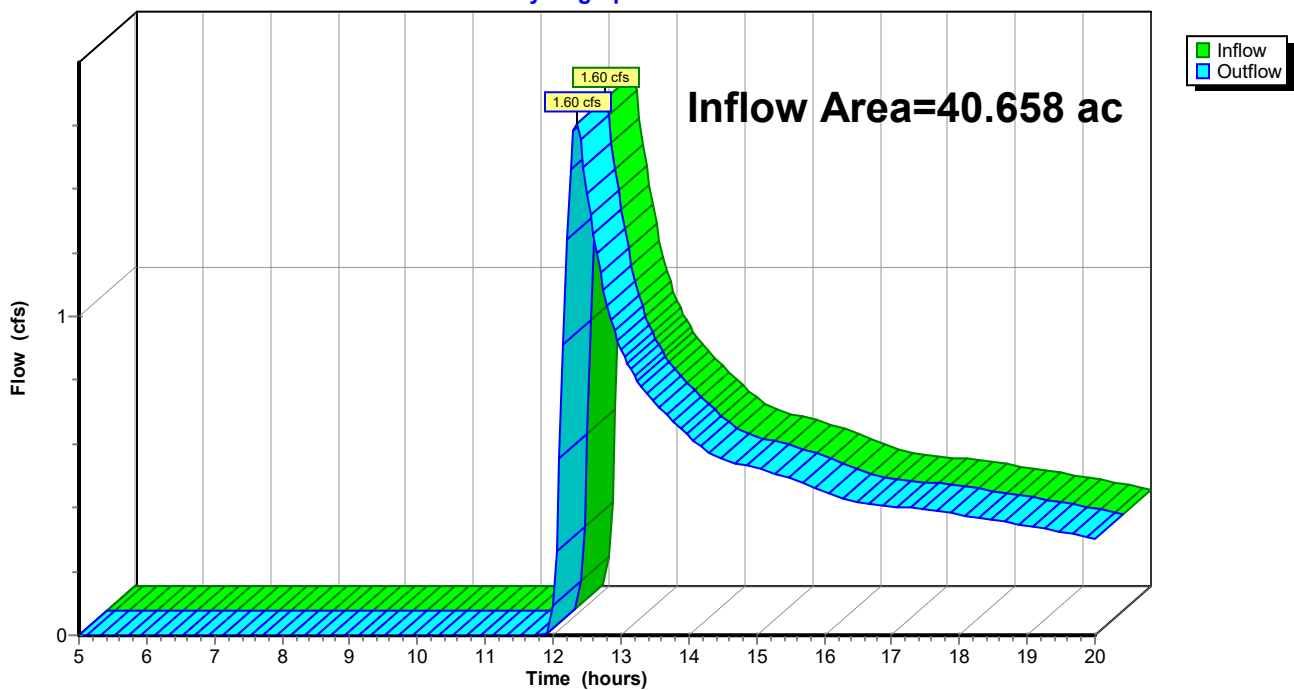
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 40.658 ac, 16.69% Impervious, Inflow Depth > 0.11" for 1-yr event
Inflow = 1.60 cfs @ 12.34 hrs, Volume= 0.365 af
Outflow = 1.60 cfs @ 12.34 hrs, Volume= 0.365 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 PRE Development

Type II 24-hr 1-yr Rainfall=2.60"

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Page 3

Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	0.38		0.38
5.25	0.00		0.00	18.25	0.37		0.37
5.50	0.00		0.00	18.50	0.36		0.36
5.75	0.00		0.00	18.75	0.35		0.35
6.00	0.00		0.00	19.00	0.34		0.34
6.25	0.00		0.00	19.25	0.33		0.33
6.50	0.00		0.00	19.50	0.32		0.32
6.75	0.00		0.00	19.75	0.31		0.31
7.00	0.00		0.00	20.00	0.30		0.30
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.00		0.00				
11.50	0.00		0.00				
11.75	0.00		0.00				
12.00	0.09		0.09				
12.25	1.46		1.46				
12.50	1.38		1.38				
12.75	1.08		1.08				
13.00	0.90		0.90				
13.25	0.80		0.80				
13.50	0.73		0.73				
13.75	0.67		0.67				
14.00	0.63		0.63				
14.25	0.58		0.58				
14.50	0.55		0.55				
14.75	0.54		0.54				
15.00	0.52		0.52				
15.25	0.51		0.51				
15.50	0.49		0.49				
15.75	0.47		0.47				
16.00	0.45		0.45				
16.25	0.43		0.43				
16.50	0.42		0.42				
16.75	0.41		0.41				
17.00	0.40		0.40				
17.25	0.40		0.40				
17.50	0.39		0.39				
17.75	0.39		0.39				

Summary for Reach 6R: Neversink River

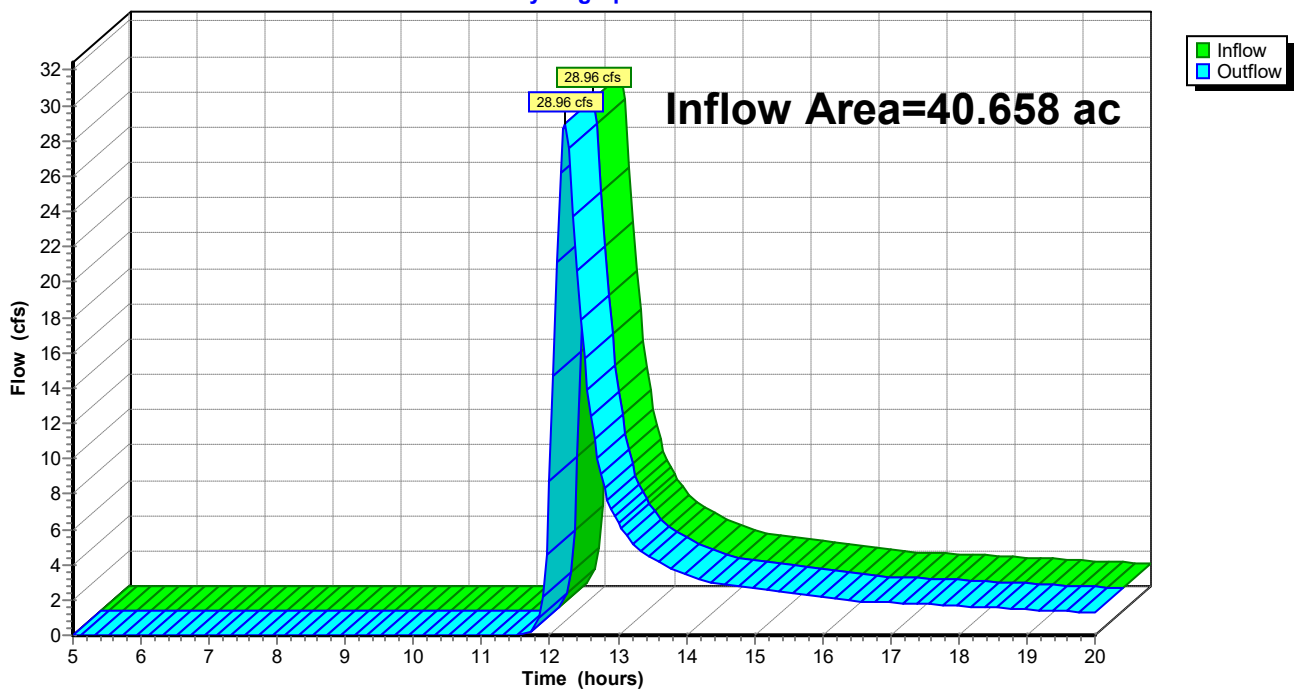
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 40.658 ac, 16.69% Impervious, Inflow Depth > 0.81" for 10-yr event
Inflow = 28.96 cfs @ 12.22 hrs, Volume= 2.732 af
Outflow = 28.96 cfs @ 12.22 hrs, Volume= 2.732 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 PRE Development

Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	1.67		1.67
5.25	0.00		0.00	18.25	1.62		1.62
5.50	0.00		0.00	18.50	1.57		1.57
5.75	0.00		0.00	18.75	1.52		1.52
6.00	0.00		0.00	19.00	1.47		1.47
6.25	0.00		0.00	19.25	1.42		1.42
6.50	0.00		0.00	19.50	1.37		1.37
6.75	0.00		0.00	19.75	1.32		1.32
7.00	0.00		0.00	20.00	1.27		1.27
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.00		0.00				
11.50	0.00		0.00				
11.75	0.16		0.16				
12.00	8.74		8.74				
12.25	28.60		28.60				
12.50	15.64		15.64				
12.75	9.11		9.11				
13.00	6.34		6.34				
13.25	5.07		5.07				
13.50	4.34		4.34				
13.75	3.85		3.85				
14.00	3.45		3.45				
14.25	3.11		3.11				
14.50	2.89		2.89				
14.75	2.76		2.76				
15.00	2.64		2.64				
15.25	2.52		2.52				
15.50	2.40		2.40				
15.75	2.28		2.28				
16.00	2.15		2.15				
16.25	2.02		2.02				
16.50	1.94		1.94				
16.75	1.89		1.89				
17.00	1.84		1.84				
17.25	1.80		1.80				
17.50	1.76		1.76				
17.75	1.71		1.71				

Summary for Reach 6R: Neversink River

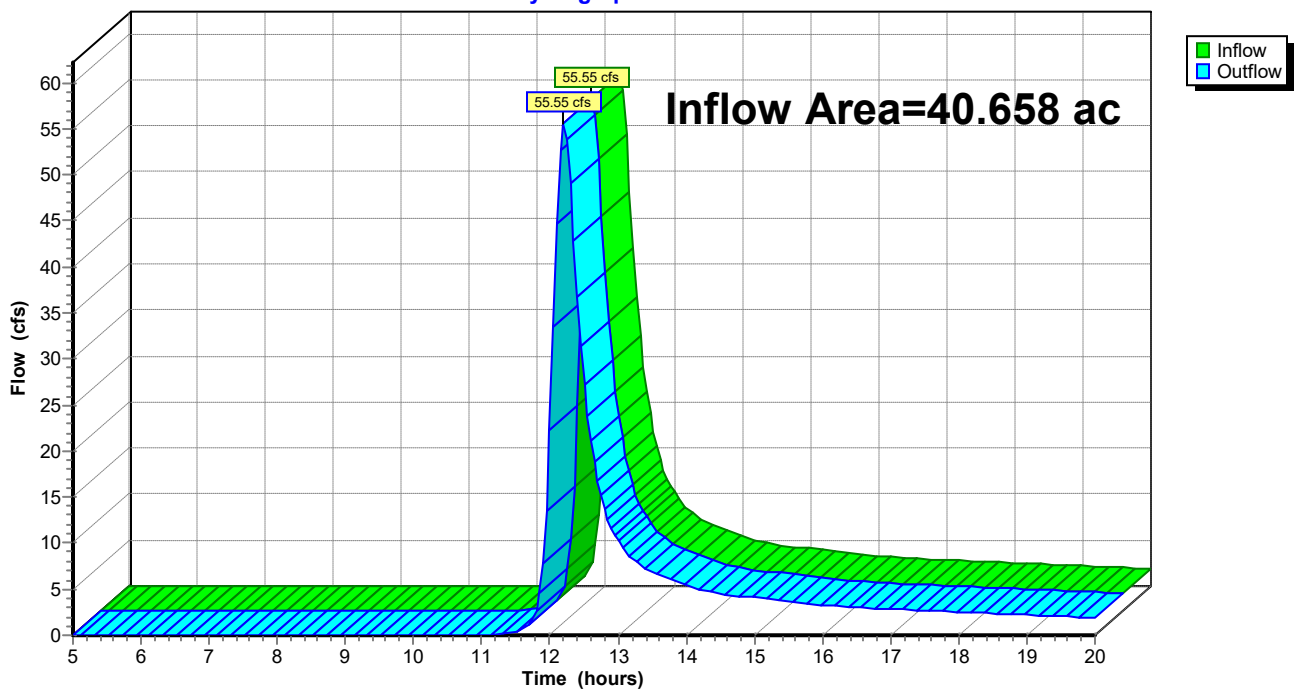
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 40.658 ac, 16.69% Impervious, Inflow Depth > 1.40" for 25-yr event
Inflow = 55.55 cfs @ 12.21 hrs, Volume= 4.743 af
Outflow = 55.55 cfs @ 12.21 hrs, Volume= 4.743 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 PRE Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	2.54		2.54
5.25	0.00		0.00	18.25	2.46		2.46
5.50	0.00		0.00	18.50	2.39		2.39
5.75	0.00		0.00	18.75	2.31		2.31
6.00	0.00		0.00	19.00	2.23		2.23
6.25	0.00		0.00	19.25	2.15		2.15
6.50	0.00		0.00	19.50	2.08		2.08
6.75	0.00		0.00	19.75	2.00		2.00
7.00	0.00		0.00	20.00	1.92		1.92
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.07		0.07				
11.50	0.40		0.40				
11.75	1.62		1.62				
12.00	22.34		22.34				
12.25	53.81		53.81				
12.50	27.20		27.20				
12.75	15.15		15.15				
13.00	10.28		10.28				
13.25	8.10		8.10				
13.50	6.89		6.89				
13.75	6.08		6.08				
14.00	5.42		5.42				
14.25	4.87		4.87				
14.50	4.52		4.52				
14.75	4.29		4.29				
15.00	4.10		4.10				
15.25	3.91		3.91				
15.50	3.71		3.71				
15.75	3.51		3.51				
16.00	3.31		3.31				
16.25	3.11		3.11				
16.50	2.98		2.98				
16.75	2.90		2.90				
17.00	2.82		2.82				
17.25	2.75		2.75				
17.50	2.68		2.68				
17.75	2.61		2.61				

Summary for Reach 6R: Neversink River

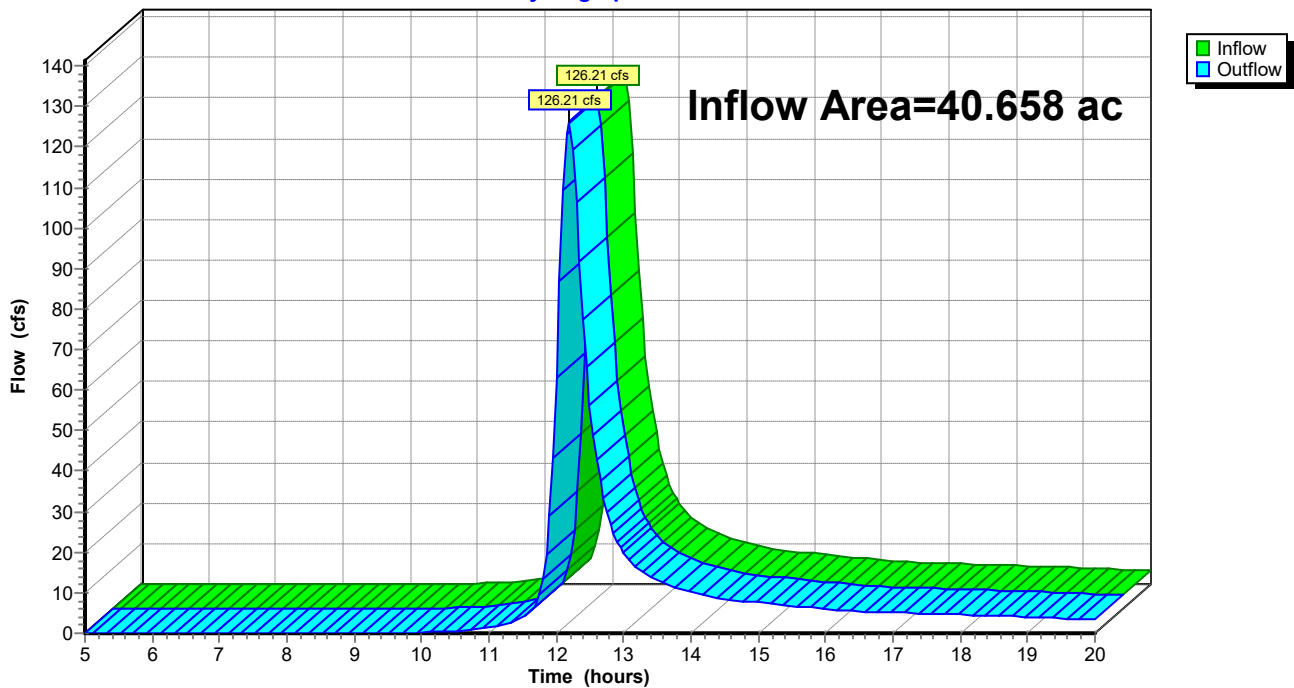
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 40.658 ac, 16.69% Impervious, Inflow Depth > 2.98" for 100-yr event
Inflow = 126.21 cfs @ 12.19 hrs, Volume= 10.098 af
Outflow = 126.21 cfs @ 12.19 hrs, Volume= 10.098 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 PRE Development

Type II 24-hr 100-yr Rainfall=8.50"

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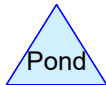
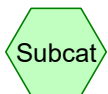
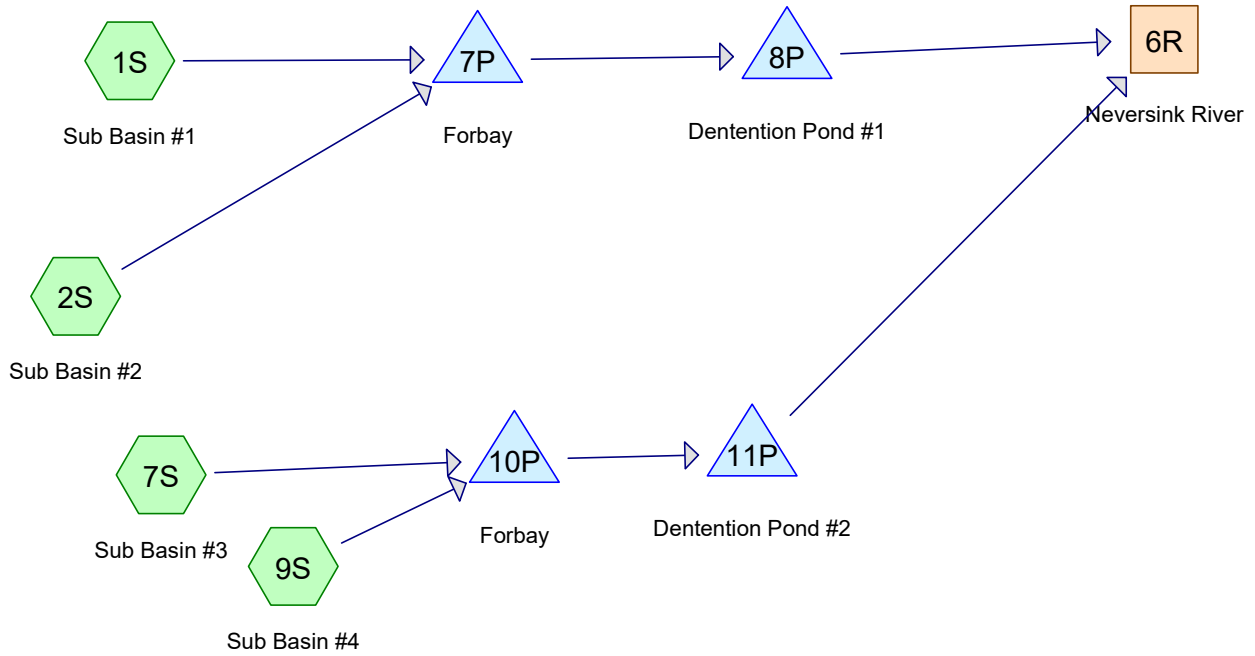
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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	4.56		4.56
5.25	0.00		0.00	18.25	4.42		4.42
5.50	0.00		0.00	18.50	4.28		4.28
5.75	0.00		0.00	18.75	4.14		4.14
6.00	0.00		0.00	19.00	4.00		4.00
6.25	0.00		0.00	19.25	3.85		3.85
6.50	0.00		0.00	19.50	3.71		3.71
6.75	0.00		0.00	19.75	3.56		3.56
7.00	0.00		0.00	20.00	3.42		3.42
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.05		0.05				
10.00	0.17		0.17				
10.25	0.34		0.34				
10.50	0.57		0.57				
10.75	0.90		0.90				
11.00	1.38		1.38				
11.25	2.28		2.28				
11.50	3.92		3.92				
11.75	9.39		9.39				
12.00	63.32		63.32				
12.25	119.25		119.25				
12.50	56.18		56.18				
12.75	29.93		29.93				
13.00	19.77		19.77				
13.25	15.35		15.35				
13.50	12.95		12.95				
13.75	11.37		11.37				
14.00	10.10		10.10				
14.25	9.04		9.04				
14.50	8.35		8.35				
14.75	7.92		7.92				
15.00	7.54		7.54				
15.25	7.17		7.17				
15.50	6.79		6.79				
15.75	6.42		6.42				
16.00	6.03		6.03				
16.25	5.66		5.66				
16.50	5.41		5.41				
16.75	5.25		5.25				
17.00	5.11		5.11				
17.25	4.97		4.97				
17.50	4.84		4.84				
17.75	4.70		4.70				



Routing Diagram for 21-488 POST Development
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Project Notes

Defined 9 rainfall events from NY-Newburgh IDF

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
15.530	39	>75% Grass cover, Good, HSG A (1S, 2S, 7S)
5.172	61	>75% Grass cover, Good, HSG B (1S, 2S)
11.691	98	Paved parking, HSG A (1S, 2S, 7S, 9S)
2.850	98	Roofs, HSG A (1S, 2S)
2.916	55	Woods, Good, HSG B (2S)
3.197	58	Woods/grass comb., Good, HSG B (9S)
41.356	65	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
30.071	HSG A	1S, 2S, 7S, 9S
11.284	HSG B	1S, 2S, 9S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
41.356		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
15.530	5.172	0.000	0.000	0.000	20.702	>75% Grass cover, Good	1S, 2S, 7S
11.691	0.000	0.000	0.000	0.000	11.691	Paved parking	1S, 2S, 7S, 9S
2.850	0.000	0.000	0.000	0.000	2.850	Roofs	1S, 2S
0.000	2.916	0.000	0.000	0.000	2.916	Woods, Good	2S
0.000	3.197	0.000	0.000	0.000	3.197	Woods/grass comb., Good	9S
30.071	11.284	0.000	0.000	0.000	41.356	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	100.0	0.0100	0.013	15.0	0.0	12.0
2	2S	0.00	0.00	750.0	0.0100	0.013	15.0	0.0	12.0
3	7S	0.00	0.00	1,750.0	0.0100	0.013	15.0	0.0	14.0
4	9S	0.00	0.00	600.0	0.0100	0.013	15.0	0.0	14.0
5	8P	435.00	434.00	30.0	0.0333	0.013	12.0	0.0	0.0
6	11P	433.50	433.00	40.0	0.0125	0.013	12.0	0.0	0.0

21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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

Subcatchment 1S: Sub Basin #1 Runoff Area=471,733 sf 19.09% Impervious Runoff Depth>0.08"
Flow Length=550' Tc=18.1 min CN=55 Runoff=0.18 cfs 0.069 af

Subcatchment 2S: Sub Basin #2 Runoff Area=804,012 sf 36.81% Impervious Runoff Depth>0.34"
Flow Length=1,300' Tc=23.2 min CN=67 Runoff=5.19 cfs 0.525 af

Subcatchment 7S: Sub Basin #3 Runoff Area=306,446 sf 54.61% Impervious Runoff Depth>0.47"
Flow Length=1,880' Tc=44.3 min CN=71 Runoff=1.99 cfs 0.274 af

Subcatchment 9S: Sub Basin #4 Runoff Area=219,262 sf 36.49% Impervious Runoff Depth>0.55"
Flow Length=950' Tc=14.6 min CN=73 Runoff=3.65 cfs 0.231 af

Reach 6R: Neversink River Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 7P: Forbay Peak Elev=441.00' Storage=7,924 cf Inflow=5.28 cfs 0.594 af
Outflow=2.27 cfs 0.409 af

Pond 8P: Dentention Pond #1 Peak Elev=435.68' Storage=17,764 cf Inflow=2.27 cfs 0.409 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 10P: Forbay Peak Elev=438.00' Storage=20,234 cf Inflow=4.13 cfs 0.505 af
Outflow=0.29 cfs 0.040 af

Pond 11P: Dentention Pond #2 Peak Elev=433.10' Storage=1,719 cf Inflow=0.29 cfs 0.040 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 41.356 ac Runoff Volume = 1.099 af Average Runoff Depth = 0.32"
64.84% Pervious = 26.815 ac 35.16% Impervious = 14.541 ac

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Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Subcatchment 1S: Sub Basin #1

Runoff = 0.18 cfs @ 12.57 hrs, Volume= 0.069 af, Depth> 0.08"

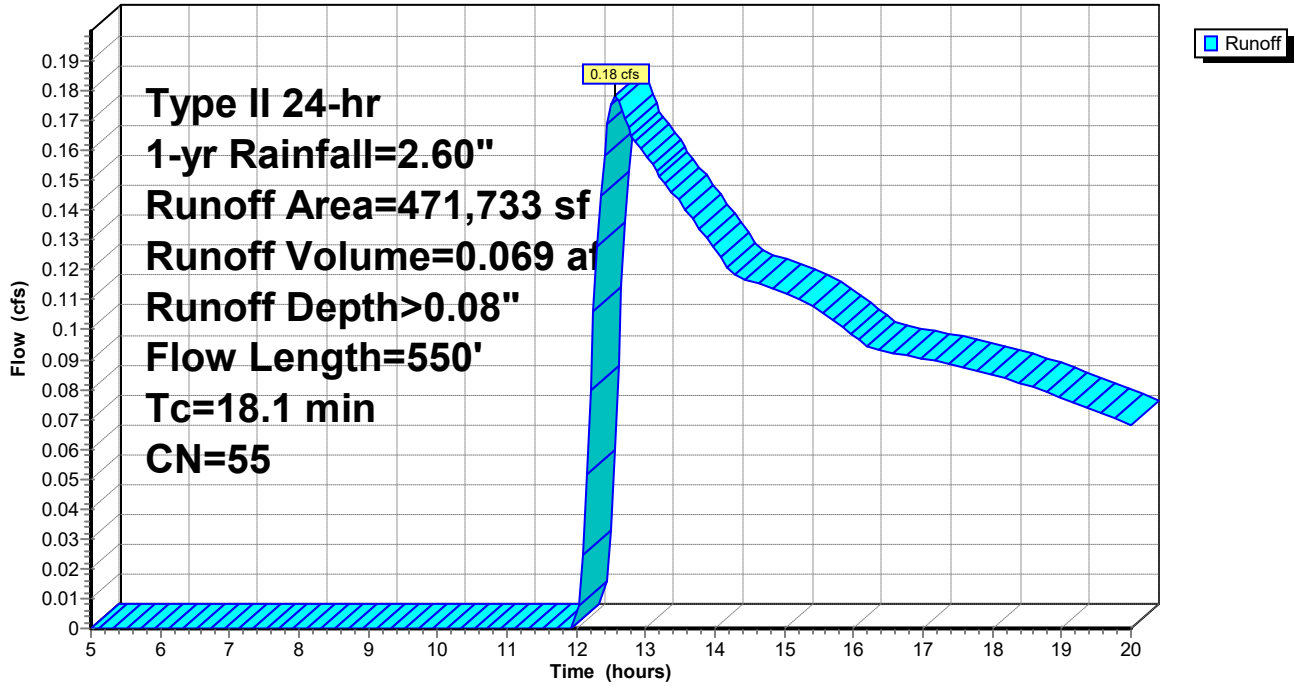
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

Area (sf)	CN	Description
21,600	98	Roofs, HSG A
68,472	98	Paved parking, HSG A
283,377	39	>75% Grass cover, Good, HSG A
98,284	61	>75% Grass cover, Good, HSG B
471,733	55	Weighted Average
381,661		80.91% Pervious Area
90,072		19.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Sub Basin #1 Grass: Short n= 0.150 P2= 3.11"
2.8	225	0.0360	1.33		Shallow Concentrated Flow, Shallow Conc. to CB Short Grass Pasture Kv= 7.0 fps
0.2	25	0.0100	2.03		Shallow Concentrated Flow, Across Road Paved Kv= 20.3 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, Grass to Film Studio Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0100	2.14	0.37	Pipe Channel, SB 1 Piping from Parking Lot to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
18.1	550	Total			

Subcatchment 1S: Sub Basin #1

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Subcatchment 1S: Sub Basin #1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.16	0.00	0.00	18.00	2.39	0.06	0.08
5.25	0.17	0.00	0.00	18.25	2.41	0.07	0.08
5.50	0.19	0.00	0.00	18.50	2.42	0.07	0.08
5.75	0.20	0.00	0.00	18.75	2.43	0.07	0.08
6.00	0.21	0.00	0.00	19.00	2.44	0.07	0.08
6.25	0.22	0.00	0.00	19.25	2.45	0.07	0.08
6.50	0.23	0.00	0.00	19.50	2.46	0.07	0.07
6.75	0.24	0.00	0.00	19.75	2.47	0.08	0.07
7.00	0.26	0.00	0.00	20.00	2.48	0.08	0.07
7.25	0.27	0.00	0.00				
7.50	0.28	0.00	0.00				
7.75	0.30	0.00	0.00				
8.00	0.31	0.00	0.00				
8.25	0.33	0.00	0.00				
8.50	0.34	0.00	0.00				
8.75	0.36	0.00	0.00				
9.00	0.38	0.00	0.00				
9.25	0.40	0.00	0.00				
9.50	0.42	0.00	0.00				
9.75	0.45	0.00	0.00				
10.00	0.47	0.00	0.00				
10.25	0.50	0.00	0.00				
10.50	0.53	0.00	0.00				
10.75	0.57	0.00	0.00				
11.00	0.61	0.00	0.00				
11.25	0.67	0.00	0.00				
11.50	0.74	0.00	0.00				
11.75	1.01	0.00	0.00				
12.00	1.72	0.00	0.00				
12.25	1.84	0.00	0.11				
12.50	1.91	0.01	0.18				
12.75	1.96	0.01	0.17				
13.00	2.01	0.02	0.16				
13.25	2.04	0.02	0.15				
13.50	2.08	0.02	0.14				
13.75	2.11	0.03	0.13				
14.00	2.13	0.03	0.13				
14.25	2.16	0.03	0.12				
14.50	2.18	0.03	0.12				
14.75	2.20	0.04	0.11				
15.00	2.22	0.04	0.11				
15.25	2.24	0.04	0.11				
15.50	2.26	0.04	0.11				
15.75	2.27	0.05	0.10				
16.00	2.29	0.05	0.10				
16.25	2.30	0.05	0.09				
16.50	2.32	0.05	0.09				
16.75	2.33	0.05	0.09				
17.00	2.34	0.06	0.09				
17.25	2.36	0.06	0.09				
17.50	2.37	0.06	0.09				
17.75	2.38	0.06	0.09				

21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Subcatchment 2S: Sub Basin #2

Runoff = 5.19 cfs @ 12.22 hrs, Volume= 0.525 af, Depth> 0.34"

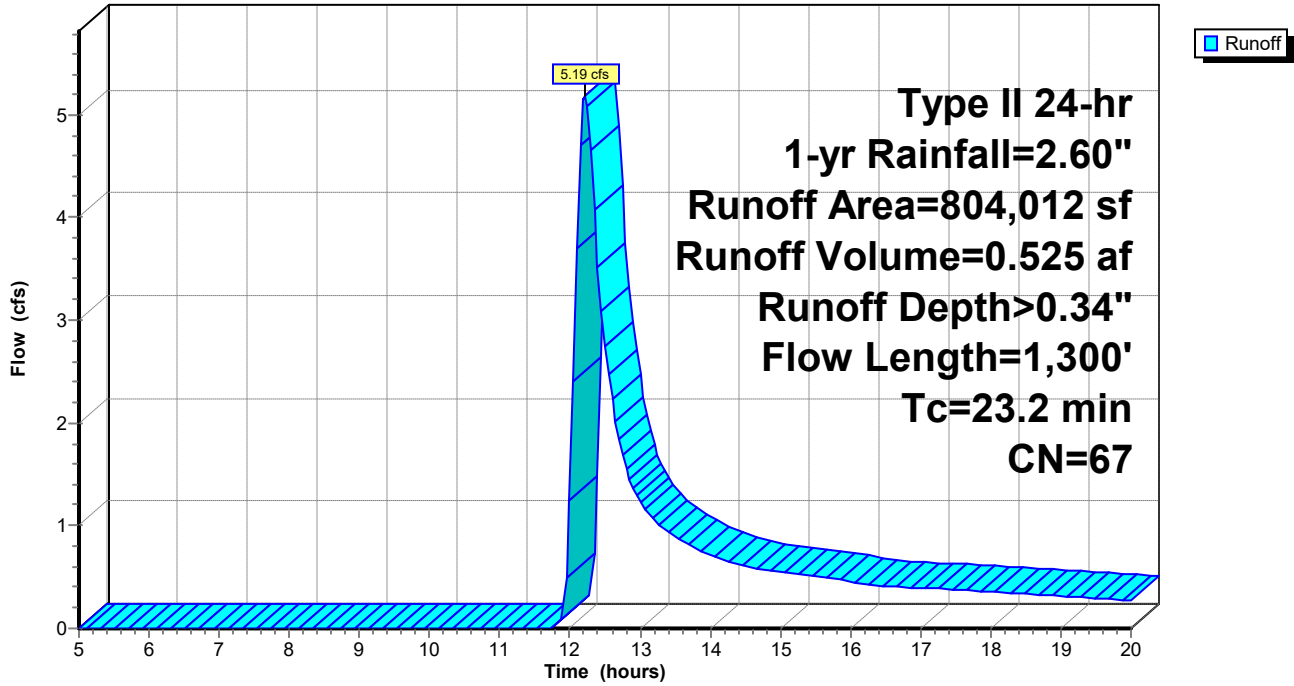
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 1-yr Rainfall=2.60"

Area (sf)	CN	Description
102,546	98	Roofs, HSG A
193,419	98	Paved parking, HSG A
254,023	39	>75% Grass cover, Good, HSG A
127,012	61	>75% Grass cover, Good, HSG B
127,012	55	Woods, Good, HSG B
804,012	67	Weighted Average
508,047		63.19% Pervious Area
295,965		36.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Initiated from Sub Basin #2 Grass: Short n= 0.150 P2= 3.11"
3.0	200	0.0250	1.11		Shallow Concentrated Flow, To Road Short Grass Pasture Kv= 7.0 fps
1.3	250	0.0240	3.14		Shallow Concentrated Flow, Road to CB Paved Kv= 20.3 fps
5.8	750	0.0100	2.14	0.37	Pipe Channel, CB to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
23.2	1,300	Total			

Subcatchment 2S: Sub Basin #2

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Subcatchment 2S: Sub Basin #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.16	0.00	0.00	18.00	2.39	0.31	0.36
5.25	0.17	0.00	0.00	18.25	2.41	0.32	0.35
5.50	0.19	0.00	0.00	18.50	2.42	0.32	0.34
5.75	0.20	0.00	0.00	18.75	2.43	0.33	0.33
6.00	0.21	0.00	0.00	19.00	2.44	0.33	0.32
6.25	0.22	0.00	0.00	19.25	2.45	0.34	0.31
6.50	0.23	0.00	0.00	19.50	2.46	0.34	0.30
6.75	0.24	0.00	0.00	19.75	2.47	0.34	0.29
7.00	0.26	0.00	0.00	20.00	2.48	0.35	0.27
7.25	0.27	0.00	0.00				
7.50	0.28	0.00	0.00				
7.75	0.30	0.00	0.00				
8.00	0.31	0.00	0.00				
8.25	0.33	0.00	0.00				
8.50	0.34	0.00	0.00				
8.75	0.36	0.00	0.00				
9.00	0.38	0.00	0.00				
9.25	0.40	0.00	0.00				
9.50	0.42	0.00	0.00				
9.75	0.45	0.00	0.00				
10.00	0.47	0.00	0.00				
10.25	0.50	0.00	0.00				
10.50	0.53	0.00	0.00				
10.75	0.57	0.00	0.00				
11.00	0.61	0.00	0.00				
11.25	0.67	0.00	0.00				
11.50	0.74	0.00	0.00				
11.75	1.01	0.00	0.00				
12.00	1.72	0.10	1.25				
12.25	1.84	0.13	5.08				
12.50	1.91	0.15	2.74				
12.75	1.96	0.16	1.68				
13.00	2.01	0.18	1.23				
13.25	2.04	0.19	1.01				
13.50	2.08	0.20	0.89				
13.75	2.11	0.21	0.79				
14.00	2.13	0.22	0.72				
14.25	2.16	0.22	0.65				
14.50	2.18	0.23	0.61				
14.75	2.20	0.24	0.58				
15.00	2.22	0.25	0.56				
15.25	2.24	0.25	0.53				
15.50	2.26	0.26	0.51				
15.75	2.27	0.27	0.48				
16.00	2.29	0.27	0.46				
16.25	2.30	0.28	0.43				
16.50	2.32	0.28	0.41				
16.75	2.33	0.29	0.40				
17.00	2.34	0.29	0.40				
17.25	2.36	0.30	0.39				
17.50	2.37	0.30	0.38				
17.75	2.38	0.31	0.37				

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Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Subcatchment 7S: Sub Basin #3

Runoff = 1.99 cfs @ 12.50 hrs, Volume= 0.274 af, Depth> 0.47"

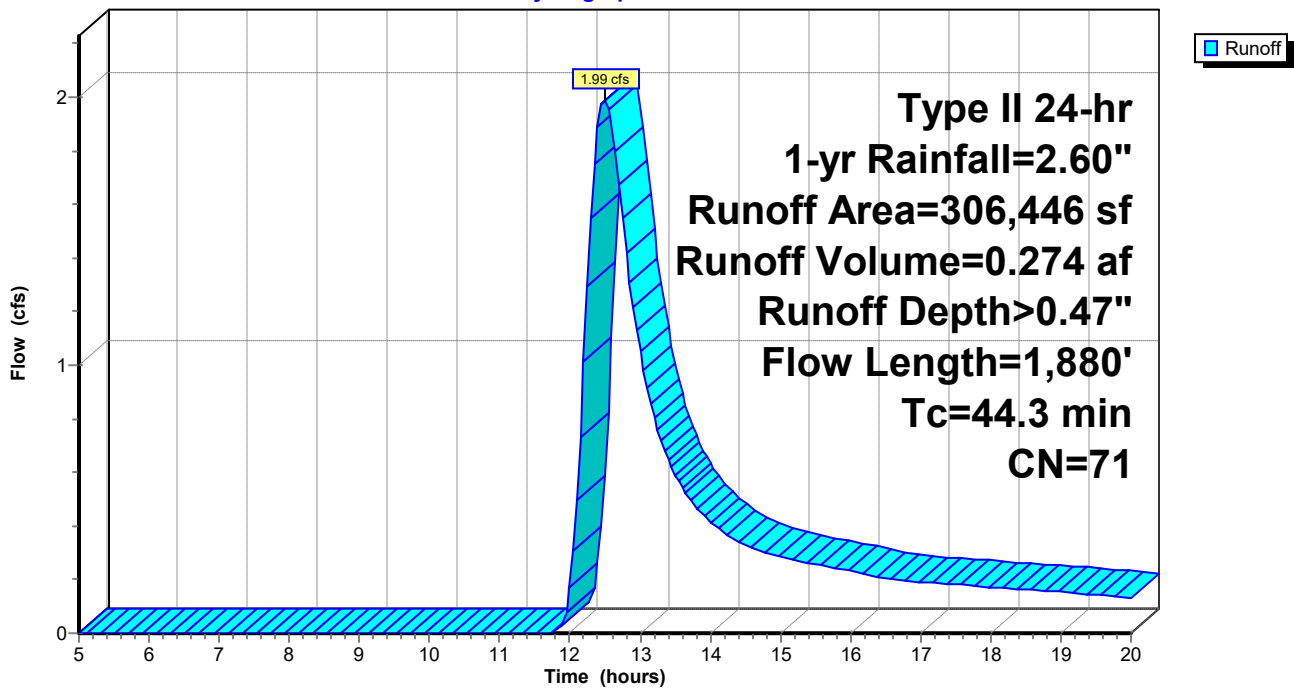
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

Area (sf)	CN	Description
167,358	98	Paved parking, HSG A
139,088	39	>75% Grass cover, Good, HSG A
306,446	71	Weighted Average
139,088		45.39% Pervious Area
167,358		54.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	50	0.0050	0.06		Sheet Flow, Grass to Parking Lot Grass: Dense n= 0.240 P2= 3.11"
1.8	80	0.0050	0.74		Sheet Flow, Pavement to CB Smooth surfaces n= 0.011 P2= 3.11"
28.0	1,750	0.0100	1.04	0.04	Pipe Channel, Piping to River 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
44.3	1,880	Total			

Subcatchment 7S: Sub Basin #3

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Subcatchment 7S: Sub Basin #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.16	0.00	0.00	18.00	2.39	0.44	0.17
5.25	0.17	0.00	0.00	18.25	2.41	0.45	0.17
5.50	0.19	0.00	0.00	18.50	2.42	0.45	0.16
5.75	0.20	0.00	0.00	18.75	2.43	0.46	0.16
6.00	0.21	0.00	0.00	19.00	2.44	0.46	0.15
6.25	0.22	0.00	0.00	19.25	2.45	0.47	0.15
6.50	0.23	0.00	0.00	19.50	2.46	0.47	0.14
6.75	0.24	0.00	0.00	19.75	2.47	0.47	0.14
7.00	0.26	0.00	0.00	20.00	2.48	0.48	0.13
7.25	0.27	0.00	0.00				
7.50	0.28	0.00	0.00				
7.75	0.30	0.00	0.00				
8.00	0.31	0.00	0.00				
8.25	0.33	0.00	0.00				
8.50	0.34	0.00	0.00				
8.75	0.36	0.00	0.00				
9.00	0.38	0.00	0.00				
9.25	0.40	0.00	0.00				
9.50	0.42	0.00	0.00				
9.75	0.45	0.00	0.00				
10.00	0.47	0.00	0.00				
10.25	0.50	0.00	0.00				
10.50	0.53	0.00	0.00				
10.75	0.57	0.00	0.00				
11.00	0.61	0.00	0.00				
11.25	0.67	0.00	0.00				
11.50	0.74	0.00	0.00				
11.75	1.01	0.01	0.00				
12.00	1.72	0.16	0.17				
12.25	1.84	0.20	1.29				
12.50	1.91	0.23	1.99				
12.75	1.96	0.25	1.55				
13.00	2.01	0.27	1.05				
13.25	2.04	0.28	0.76				
13.50	2.08	0.30	0.59				
13.75	2.11	0.31	0.49				
14.00	2.13	0.32	0.42				
14.25	2.16	0.33	0.37				
14.50	2.18	0.34	0.33				
14.75	2.20	0.35	0.30				
15.00	2.22	0.36	0.28				
15.25	2.24	0.37	0.27				
15.50	2.26	0.37	0.26				
15.75	2.27	0.38	0.24				
16.00	2.29	0.39	0.23				
16.25	2.30	0.40	0.22				
16.50	2.32	0.40	0.21				
16.75	2.33	0.41	0.20				
17.00	2.34	0.42	0.19				
17.25	2.36	0.42	0.19				
17.50	2.37	0.43	0.18				
17.75	2.38	0.43	0.18				

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Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Subcatchment 9S: Sub Basin #4

Runoff = 3.65 cfs @ 12.09 hrs, Volume= 0.231 af, Depth> 0.55"

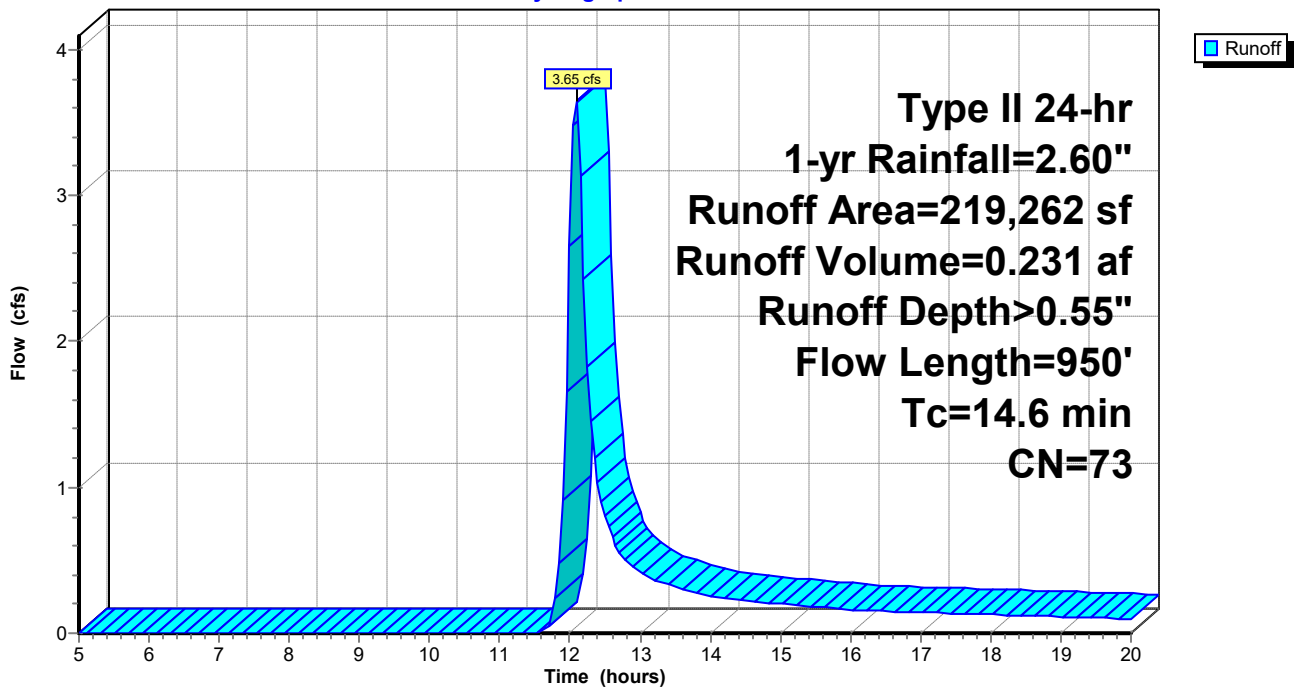
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.60"

Area (sf)	CN	Description
80,018	98	Paved parking, HSG A
139,244	58	Woods/grass comb., Good, HSG B
219,262	73	Weighted Average
139,244		63.51% Pervious Area
80,018		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0050	0.78		Sheet Flow, Pavement to Drain Smooth surfaces n= 0.011 P2= 3.11"
2.9	250	0.0050	1.44		Shallow Concentrated Flow, To Drain Paved Kv= 20.3 fps
9.6	600	0.0100	1.04	0.04	Pipe Channel, Pipe to Forbay 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
14.6	950	Total			

Subcatchment 9S: Sub Basin #4

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Subcatchment 9S: Sub Basin #4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.16	0.00	0.00	18.00	2.39	0.51	0.13
5.25	0.17	0.00	0.00	18.25	2.41	0.52	0.12
5.50	0.19	0.00	0.00	18.50	2.42	0.52	0.12
5.75	0.20	0.00	0.00	18.75	2.43	0.53	0.12
6.00	0.21	0.00	0.00	19.00	2.44	0.53	0.11
6.25	0.22	0.00	0.00	19.25	2.45	0.54	0.11
6.50	0.23	0.00	0.00	19.50	2.46	0.54	0.10
6.75	0.24	0.00	0.00	19.75	2.47	0.55	0.10
7.00	0.26	0.00	0.00	20.00	2.48	0.55	0.10
7.25	0.27	0.00	0.00				
7.50	0.28	0.00	0.00				
7.75	0.30	0.00	0.00				
8.00	0.31	0.00	0.00				
8.25	0.33	0.00	0.00				
8.50	0.34	0.00	0.00				
8.75	0.36	0.00	0.00				
9.00	0.38	0.00	0.00				
9.25	0.40	0.00	0.00				
9.50	0.42	0.00	0.00				
9.75	0.45	0.00	0.00				
10.00	0.47	0.00	0.00				
10.25	0.50	0.00	0.00				
10.50	0.53	0.00	0.00				
10.75	0.57	0.00	0.00				
11.00	0.61	0.00	0.00				
11.25	0.67	0.00	0.00				
11.50	0.74	0.00	0.00				
11.75	1.01	0.02	0.10				
12.00	1.72	0.21	2.65				
12.25	1.84	0.25	1.83				
12.50	1.91	0.28	0.81				
12.75	1.96	0.30	0.51				
13.00	2.01	0.32	0.42				
13.25	2.04	0.34	0.36				
13.50	2.08	0.36	0.32				
13.75	2.11	0.37	0.28				
14.00	2.13	0.38	0.26				
14.25	2.16	0.39	0.23				
14.50	2.18	0.40	0.22				
14.75	2.20	0.41	0.21				
15.00	2.22	0.42	0.20				
15.25	2.24	0.43	0.19				
15.50	2.26	0.44	0.18				
15.75	2.27	0.45	0.17				
16.00	2.29	0.46	0.16				
16.25	2.30	0.46	0.15				
16.50	2.32	0.47	0.15				
16.75	2.33	0.48	0.15				
17.00	2.34	0.49	0.14				
17.25	2.36	0.49	0.14				
17.50	2.37	0.50	0.13				
17.75	2.38	0.51	0.13				

Summary for Reach 6R: Neversink River

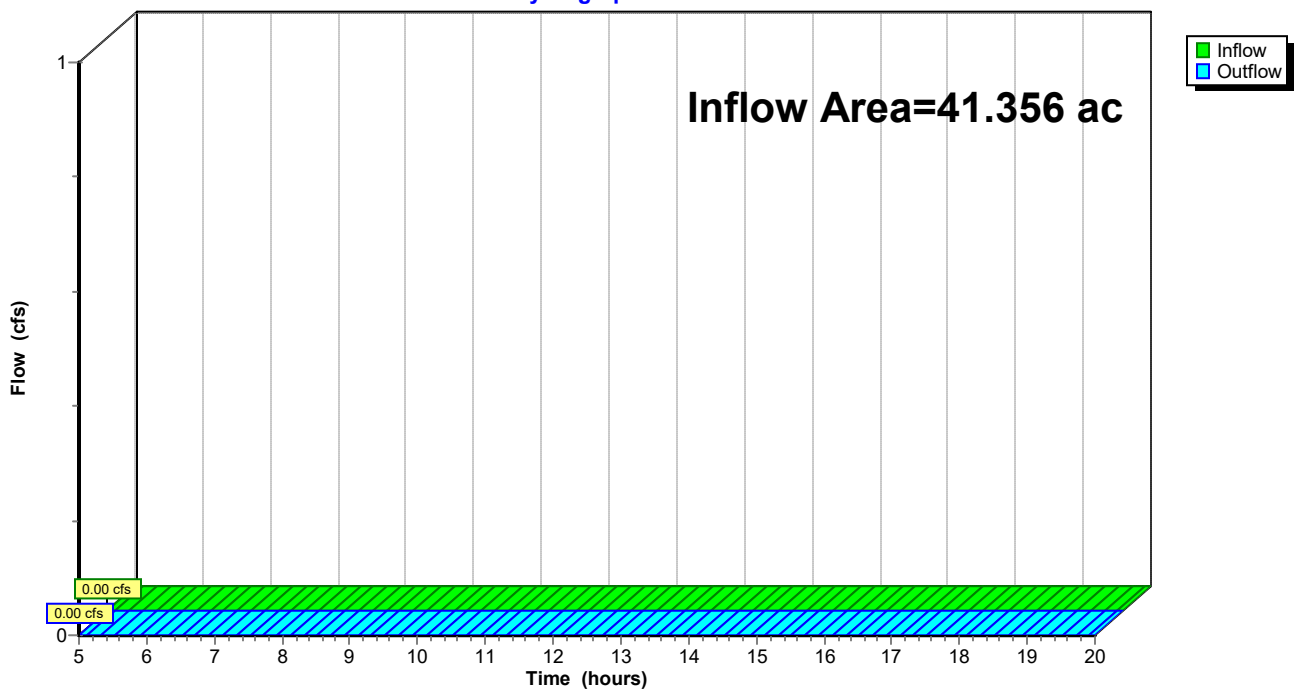
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 41.356 ac, 35.16% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	0.00		0.00
5.25	0.00		0.00	18.25	0.00		0.00
5.50	0.00		0.00	18.50	0.00		0.00
5.75	0.00		0.00	18.75	0.00		0.00
6.00	0.00		0.00	19.00	0.00		0.00
6.25	0.00		0.00	19.25	0.00		0.00
6.50	0.00		0.00	19.50	0.00		0.00
6.75	0.00		0.00	19.75	0.00		0.00
7.00	0.00		0.00	20.00	0.00		0.00
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.00		0.00				
11.50	0.00		0.00				
11.75	0.00		0.00				
12.00	0.00		0.00				
12.25	0.00		0.00				
12.50	0.00		0.00				
12.75	0.00		0.00				
13.00	0.00		0.00				
13.25	0.00		0.00				
13.50	0.00		0.00				
13.75	0.00		0.00				
14.00	0.00		0.00				
14.25	0.00		0.00				
14.50	0.00		0.00				
14.75	0.00		0.00				
15.00	0.00		0.00				
15.25	0.00		0.00				
15.50	0.00		0.00				
15.75	0.00		0.00				
16.00	0.00		0.00				
16.25	0.00		0.00				
16.50	0.00		0.00				
16.75	0.00		0.00				
17.00	0.00		0.00				
17.25	0.00		0.00				
17.50	0.00		0.00				
17.75	0.00		0.00				

21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Pond 7P: Forbay

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 0.24" for 1-yr event
 Inflow = 5.28 cfs @ 12.22 hrs, Volume= 0.594 af
 Outflow = 2.27 cfs @ 12.65 hrs, Volume= 0.409 af, Atten= 57%, Lag= 25.5 min
 Primary = 2.27 cfs @ 12.65 hrs, Volume= 0.409 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 441.00' @ 12.65 hrs Surf.Area= 4,399 sf Storage= 7,924 cf

Plug-Flow detention time= 138.9 min calculated for 0.407 af (69% of inflow)
 Center-of-Mass det. time= 57.4 min (920.4 - 862.9)

Volume	Invert	Avail.Storage	Storage Description
#1	437.00'	18,651 cf	Custom Stage Data (Irregular) Listed below (Recalc)

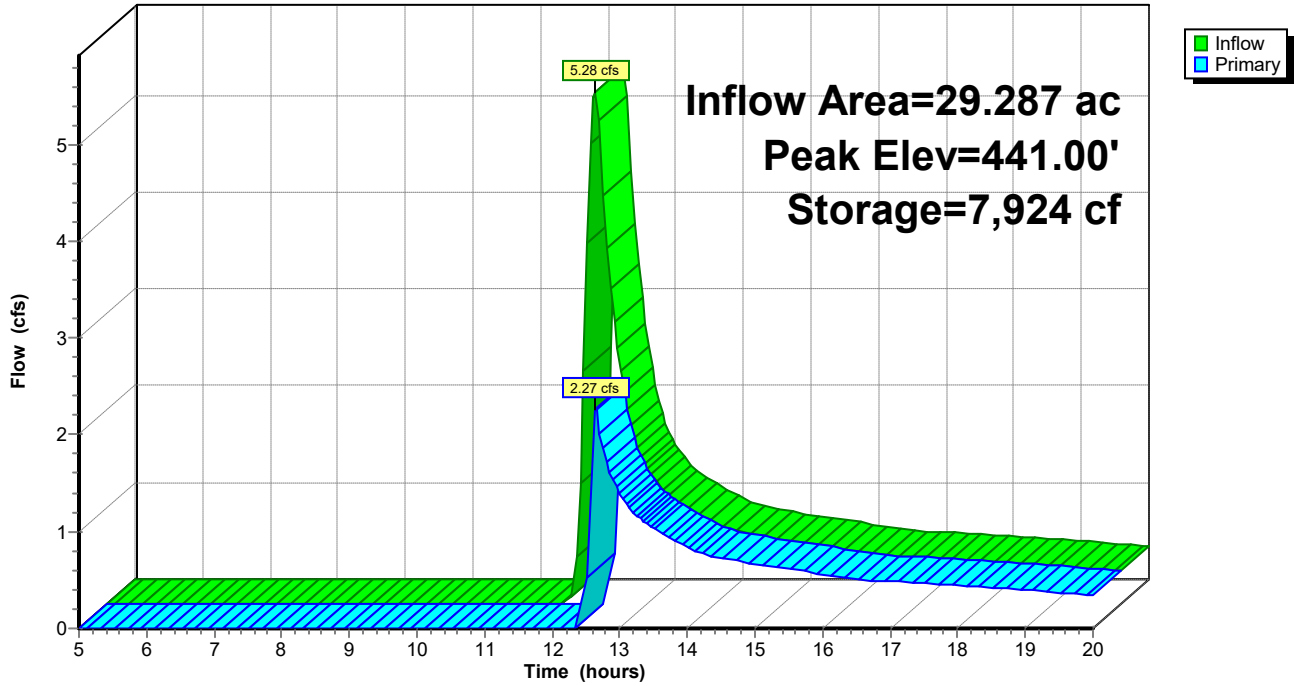
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
437.00	51	51.0	0	0	51
438.00	299	99.0	158	158	629
439.00	2,282	267.0	1,136	1,294	5,525
440.00	3,302	301.0	2,776	4,070	7,088
441.00	4,394	323.0	3,835	7,905	8,224
442.00	5,562	345.0	4,967	12,871	9,440
443.00	6,000	380.0	5,780	18,651	11,492

Device	Routing	Invert	Outlet Devices
#1	Primary	440.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.76 cfs @ 12.65 hrs HW=441.00' TW=441.00' (Fixed TW Elev= 441.00')
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 5.76 cfs @ 0.38 fps)

Pond 7P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Pond 7P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	437.00	0.00
5.50	0.00	0	437.00	0.00
6.00	0.00	0	437.00	0.00
6.50	0.00	0	437.00	0.00
7.00	0.00	0	437.00	0.00
7.50	0.00	0	437.00	0.00
8.00	0.00	0	437.00	0.00
8.50	0.00	0	437.00	0.00
9.00	0.00	0	437.00	0.00
9.50	0.00	0	437.00	0.00
10.00	0.00	0	437.00	0.00
10.50	0.00	0	437.00	0.00
11.00	0.00	0	437.00	0.00
11.50	0.00	0	437.00	0.00
12.00	1.25	230	438.18	0.00
12.50	2.92	7,306	440.86	0.00
13.00	1.39	7,916	441.00	1.40
13.50	1.03	7,913	441.00	1.03
14.00	0.84	7,912	441.00	0.84
14.50	0.72	7,911	441.00	0.72
15.00	0.67	7,910	441.00	0.67
15.50	0.62	7,910	441.00	0.62
16.00	0.55	7,909	441.00	0.56
16.50	0.51	7,909	441.00	0.51
17.00	0.49	7,909	441.00	0.49
17.50	0.47	7,909	441.00	0.47
18.00	0.44	7,909	441.00	0.44
18.50	0.42	7,908	441.00	0.42
19.00	0.40	7,908	441.00	0.40
19.50	0.37	7,908	441.00	0.37
20.00	0.34	7,908	441.00	0.34

21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Pond 8P: Dentention Pond #1

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 0.17" for 1-yr event
 Inflow = 2.27 cfs @ 12.65 hrs, Volume= 0.409 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 435.68' @ 20.00 hrs Surf.Area= 26,861 sf Storage= 17,764 cf

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

Volume	Invert	Avail.Storage	Storage Description		
#1	435.00'	223,034 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
435.00	25,630	1,080.0	0	0	25,630
436.00	27,459	1,106.0	26,539	26,539	30,283
437.00	33,379	1,131.0	30,371	56,910	34,872
438.00	37,378	1,153.0	35,360	92,270	39,030
439.00	41,472	1,178.0	39,407	131,677	43,812
440.00	45,633	1,200.0	43,536	175,213	48,142
441.00	50,042	1,223.0	47,821	223,034	52,739

Device	Routing	Invert	Outlet Devices	
#1	Primary	435.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf	
#2	Device 1	437.00'	2.0" Vert. Orifice/Grate C= 0.600	
#3	Device 1	437.75'	3.0" Vert. Orifice/Grate C= 0.600	
#4	Device 1	439.00'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height	
#5	Secondary	440.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64	

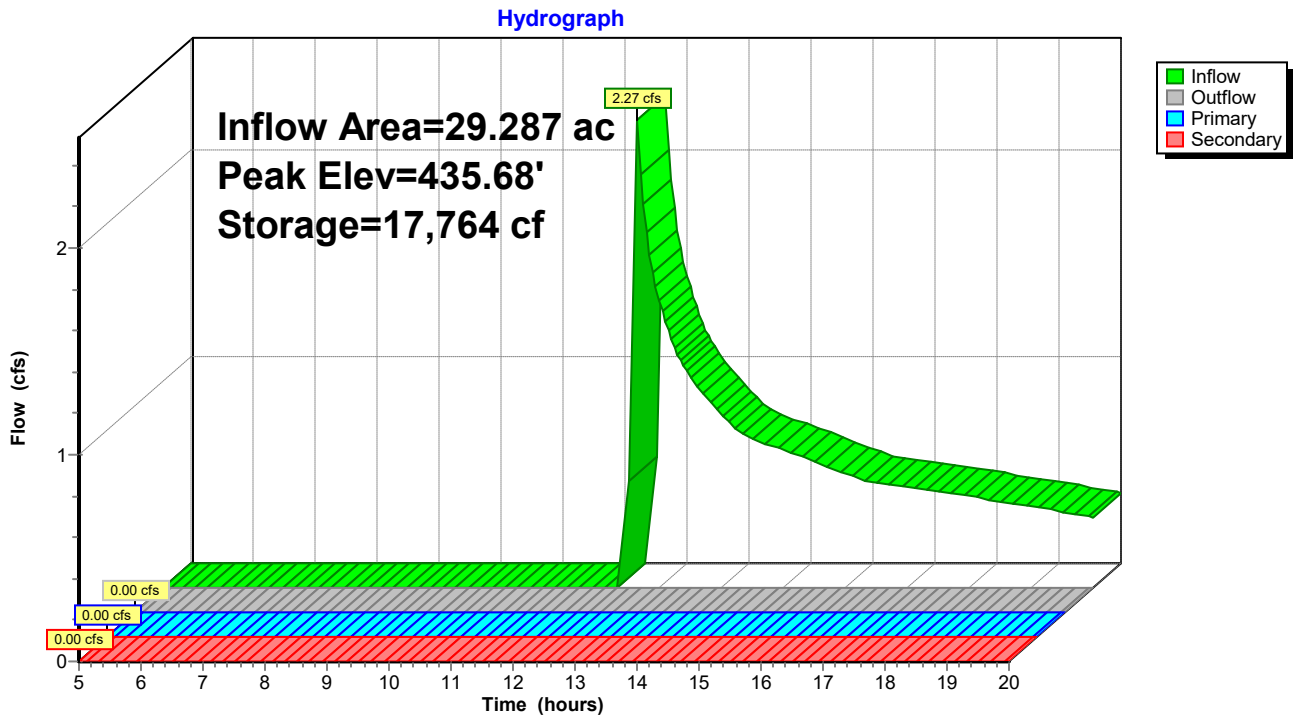
Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=435.00' (Free Discharge)

- ↑ 1=Culvert (Controls 0.00 cfs)
- ↑ 2=Orifice/Grate (Controls 0.00 cfs)
- ↑ 3=Orifice/Grate (Controls 0.00 cfs)
- ↑ 4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=435.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 8P: Detention Pond #1



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Pond 8P: Detention Pond #1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	435.00	0.00	0.00	0.00
5.50	0.00	0	435.00	0.00	0.00	0.00
6.00	0.00	0	435.00	0.00	0.00	0.00
6.50	0.00	0	435.00	0.00	0.00	0.00
7.00	0.00	0	435.00	0.00	0.00	0.00
7.50	0.00	0	435.00	0.00	0.00	0.00
8.00	0.00	0	435.00	0.00	0.00	0.00
8.50	0.00	0	435.00	0.00	0.00	0.00
9.00	0.00	0	435.00	0.00	0.00	0.00
9.50	0.00	0	435.00	0.00	0.00	0.00
10.00	0.00	0	435.00	0.00	0.00	0.00
10.50	0.00	0	435.00	0.00	0.00	0.00
11.00	0.00	0	435.00	0.00	0.00	0.00
11.50	0.00	0	435.00	0.00	0.00	0.00
12.00	0.00	0	435.00	0.00	0.00	0.00
12.50	0.00	0	435.00	0.00	0.00	0.00
13.00	1.40	2,740	435.11	0.00	0.00	0.00
13.50	1.03	4,870	435.19	0.00	0.00	0.00
14.00	0.84	6,548	435.25	0.00	0.00	0.00
14.50	0.72	7,940	435.31	0.00	0.00	0.00
15.00	0.67	9,192	435.35	0.00	0.00	0.00
15.50	0.62	10,351	435.40	0.00	0.00	0.00
16.00	0.56	11,405	435.44	0.00	0.00	0.00
16.50	0.51	12,354	435.47	0.00	0.00	0.00
17.00	0.49	13,247	435.51	0.00	0.00	0.00
17.50	0.47	14,103	435.54	0.00	0.00	0.00
18.00	0.44	14,922	435.57	0.00	0.00	0.00
18.50	0.42	15,699	435.60	0.00	0.00	0.00
19.00	0.40	16,434	435.63	0.00	0.00	0.00
19.50	0.37	17,123	435.65	0.00	0.00	0.00
20.00	0.34	17,764	435.68	0.00	0.00	0.00

21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Pond 10P: Forbay

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 0.50" for 1-yr event
 Inflow = 4.13 cfs @ 12.10 hrs, Volume= 0.505 af
 Outflow = 0.29 cfs @ 18.25 hrs, Volume= 0.040 af, Atten= 93%, Lag= 368.8 min
 Primary = 0.29 cfs @ 18.25 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 438.00' @ 18.25 hrs Surf.Area= 6,585 sf Storage= 20,234 cf

Plug-Flow detention time= 424.2 min calculated for 0.040 af (8% of inflow)
 Center-of-Mass det. time= 301.1 min (1,143.7 - 842.7)

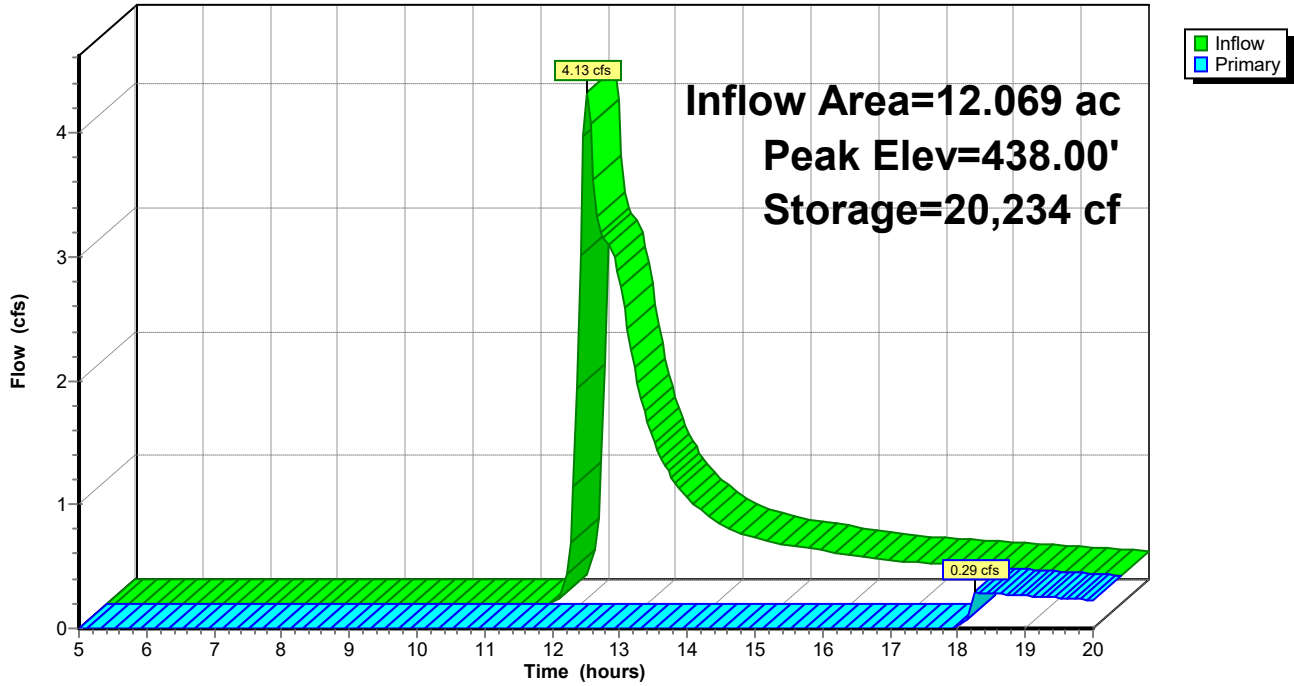
Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	27,396 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	1,890	223.0	0	0	1,890	
434.00	2,638	250.0	2,254	2,254	2,933	
435.00	3,491	280.0	3,055	5,308	4,226	
436.00	4,436	311.0	3,954	9,262	5,714	
437.00	5,474	342.0	4,946	14,208	7,357	
438.00	6,584	369.0	6,020	20,229	8,926	
439.00	7,767	396.0	7,167	27,396	10,613	

Device	Routing	Invert	Outlet Devices									
#1	Primary	437.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=3.05 cfs @ 18.25 hrs HW=438.00' TW=438.00' (Fixed TW Elev= 438.00')
 ↗1=Broad-Crested Rectangular Weir (Weir Controls 3.05 cfs @ 0.20 fps)

Pond 10P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Pond 10P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	433.00	0.00
5.50	0.00	0	433.00	0.00
6.00	0.00	0	433.00	0.00
6.50	0.00	0	433.00	0.00
7.00	0.00	0	433.00	0.00
7.50	0.00	0	433.00	0.00
8.00	0.00	0	433.00	0.00
8.50	0.00	0	433.00	0.00
9.00	0.00	0	433.00	0.00
9.50	0.00	0	433.00	0.00
10.00	0.00	0	433.00	0.00
10.50	0.00	0	433.00	0.00
11.00	0.00	0	433.00	0.00
11.50	0.00	0	433.00	0.00
12.00	2.82	894	433.44	0.00
12.50	2.80	6,812	435.41	0.00
13.00	1.47	10,584	436.29	0.00
13.50	0.91	12,642	436.71	0.00
14.00	0.67	14,044	436.97	0.00
14.50	0.55	15,128	437.17	0.00
15.00	0.49	16,051	437.33	0.00
15.50	0.44	16,883	437.47	0.00
16.00	0.39	17,632	437.59	0.00
16.50	0.36	18,302	437.70	0.00
17.00	0.33	18,920	437.80	0.00
17.50	0.32	19,504	437.89	0.00
18.00	0.30	20,059	437.97	0.00
18.50	0.28	20,234	438.00	0.28
19.00	0.27	20,234	438.00	0.27
19.50	0.25	20,233	438.00	0.25
20.00	0.23	20,233	438.00	0.23

21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Summary for Pond 11P: Dentention Pond #2

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 0.04" for 1-yr event
 Inflow = 0.29 cfs @ 18.25 hrs, Volume= 0.040 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 433.10' @ 20.00 hrs Surf.Area= 18,034 sf Storage= 1,719 cf

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

Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	116,426 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	17,836	696.0	0	0	17,836	
434.00	19,952	714.0	18,884	18,884	19,975	
435.00	22,124	733.0	21,029	39,913	22,280	
436.00	24,352	752.0	23,229	63,142	24,644	
437.00	26,636	771.0	25,485	88,627	27,070	
438.00	28,978	790.0	27,799	116,426	29,556	

Device	Routing	Invert	Outlet Devices			
#1	Primary	433.50'	12.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 433.50' / 433.00' S= 0.0125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf			
#2	Device 1	435.00'	2.0" Vert. Orifice/Grate C= 0.600			
#3	Device 1	435.50'	3.0" Vert. Orifice/Grate C= 0.600			
#4	Device 1	436.50'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height			
#5	Secondary	437.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64			

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=433.00' (Free Discharge)

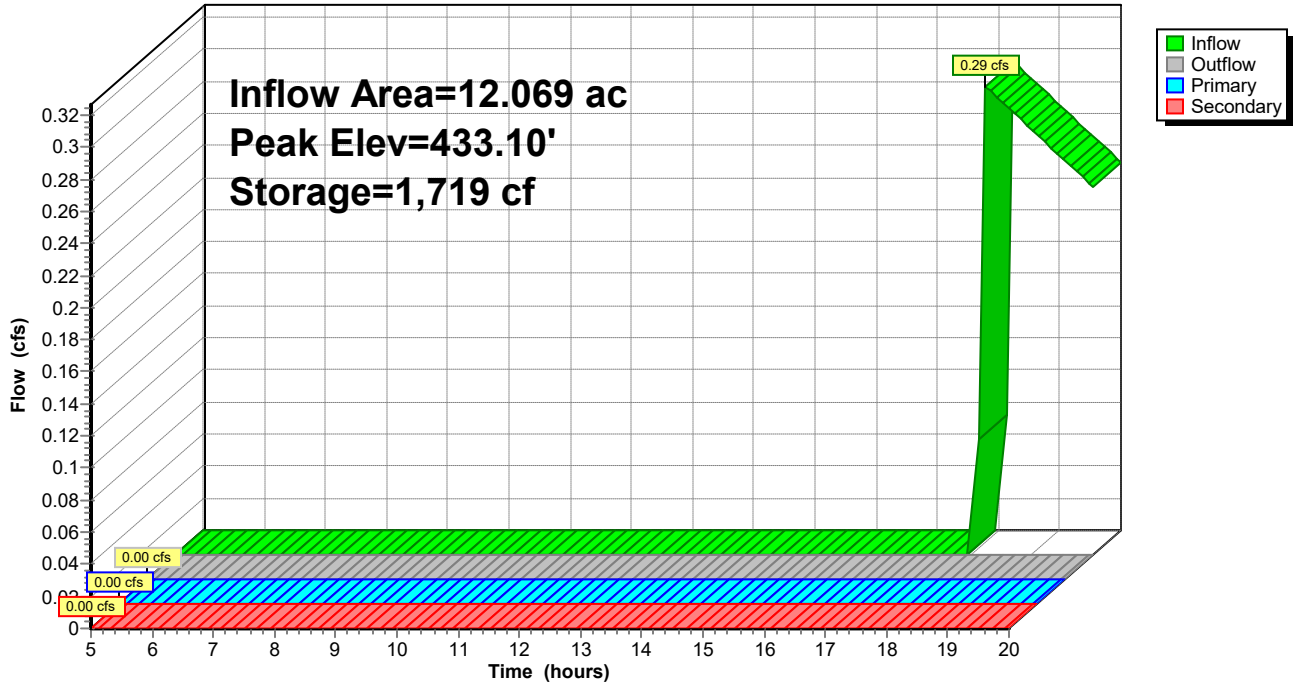
- ↑ 1=Culvert (Controls 0.00 cfs)
- ↑ 2=Orifice/Grate (Controls 0.00 cfs)
- ↑ 3=Orifice/Grate (Controls 0.00 cfs)
- ↑ 4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=433.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 11P: Dentention Pond #2

Hydrograph



21-488 POST Development

Type II 24-hr 1-yr Rainfall=2.60"

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Hydrograph for Pond 11P: Detention Pond #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	433.00	0.00	0.00	0.00
5.50	0.00	0	433.00	0.00	0.00	0.00
6.00	0.00	0	433.00	0.00	0.00	0.00
6.50	0.00	0	433.00	0.00	0.00	0.00
7.00	0.00	0	433.00	0.00	0.00	0.00
7.50	0.00	0	433.00	0.00	0.00	0.00
8.00	0.00	0	433.00	0.00	0.00	0.00
8.50	0.00	0	433.00	0.00	0.00	0.00
9.00	0.00	0	433.00	0.00	0.00	0.00
9.50	0.00	0	433.00	0.00	0.00	0.00
10.00	0.00	0	433.00	0.00	0.00	0.00
10.50	0.00	0	433.00	0.00	0.00	0.00
11.00	0.00	0	433.00	0.00	0.00	0.00
11.50	0.00	0	433.00	0.00	0.00	0.00
12.00	0.00	0	433.00	0.00	0.00	0.00
12.50	0.00	0	433.00	0.00	0.00	0.00
13.00	0.00	0	433.00	0.00	0.00	0.00
13.50	0.00	0	433.00	0.00	0.00	0.00
14.00	0.00	0	433.00	0.00	0.00	0.00
14.50	0.00	0	433.00	0.00	0.00	0.00
15.00	0.00	0	433.00	0.00	0.00	0.00
15.50	0.00	0	433.00	0.00	0.00	0.00
16.00	0.00	0	433.00	0.00	0.00	0.00
16.50	0.00	0	433.00	0.00	0.00	0.00
17.00	0.00	0	433.00	0.00	0.00	0.00
17.50	0.00	0	433.00	0.00	0.00	0.00
18.00	0.00	0	433.00	0.00	0.00	0.00
18.50	0.28	336	433.02	0.00	0.00	0.00
19.00	0.27	829	433.05	0.00	0.00	0.00
19.50	0.25	1,291	433.07	0.00	0.00	0.00
20.00	0.23	1,720	433.10	0.00	0.00	0.00

21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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

Subcatchment 1S: Sub Basin #1 Runoff Area=471,733 sf 19.09% Impervious Runoff Depth>0.72"
Flow Length=550' Tc=18.1 min CN=55 Runoff=8.21 cfs 0.653 af

Subcatchment 2S: Sub Basin #2 Runoff Area=804,012 sf 36.81% Impervious Runoff Depth>1.43"
Flow Length=1,300' Tc=23.2 min CN=67 Runoff=28.40 cfs 2.204 af

Subcatchment 7S: Sub Basin #3 Runoff Area=306,446 sf 54.61% Impervious Runoff Depth>1.70"
Flow Length=1,880' Tc=44.3 min CN=71 Runoff=8.52 cfs 0.995 af

Subcatchment 9S: Sub Basin #4 Runoff Area=219,262 sf 36.49% Impervious Runoff Depth>1.87"
Flow Length=950' Tc=14.6 min CN=73 Runoff=13.33 cfs 0.783 af

Reach 6R: Neversink River Inflow=0.46 cfs 0.144 af
Outflow=0.46 cfs 0.144 af

Pond 7P: Forbay Peak Elev=441.27' Storage=9,110 cf Inflow=36.47 cfs 2.857 af
Outflow=35.92 cfs 2.653 af

Pond 8P: Dentention Pond #1 Peak Elev=438.48' Storage=110,605 cf Inflow=35.92 cfs 2.653 af
Primary=0.31 cfs 0.112 af Secondary=0.00 cfs 0.000 af Outflow=0.31 cfs 0.112 af

Pond 10P: Forbay Peak Elev=438.04' Storage=20,494 cf Inflow=16.46 cfs 1.778 af
Outflow=15.34 cfs 1.326 af

Pond 11P: Dentention Pond #2 Peak Elev=435.72' Storage=56,319 cf Inflow=15.34 cfs 1.326 af
Primary=0.15 cfs 0.032 af Secondary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.032 af

Total Runoff Area = 41.356 ac Runoff Volume = 4.635 af Average Runoff Depth = 1.34"
64.84% Pervious = 26.815 ac 35.16% Impervious = 14.541 ac

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Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 1S: Sub Basin #1

Runoff = 8.21 cfs @ 12.14 hrs, Volume= 0.653 af, Depth> 0.72"

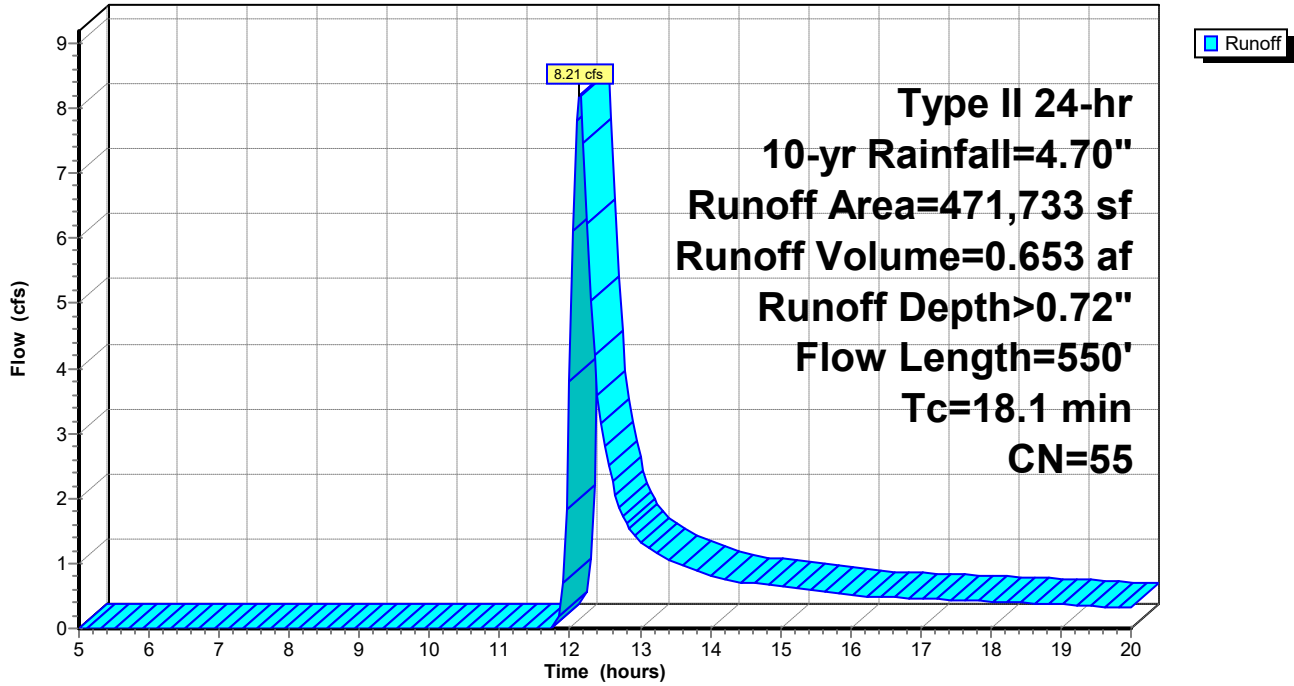
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
21,600	98	Roofs, HSG A
68,472	98	Paved parking, HSG A
283,377	39	>75% Grass cover, Good, HSG A
98,284	61	>75% Grass cover, Good, HSG B
471,733	55	Weighted Average
381,661		80.91% Pervious Area
90,072		19.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Sub Basin #1 Grass: Short n= 0.150 P2= 3.11"
2.8	225	0.0360	1.33		Shallow Concentrated Flow, Shallow Conc. to CB Short Grass Pasture Kv= 7.0 fps
0.2	25	0.0100	2.03		Shallow Concentrated Flow, Across Road Paved Kv= 20.3 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, Grass to Film Studio Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0100	2.14	0.37	Pipe Channel, SB 1 Piping from Parking Lot to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
18.1	550	Total			

Subcatchment 1S: Sub Basin #1

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Subcatchment 1S: Sub Basin #1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.30	0.00	0.00	18.00	4.33	0.67	0.41
5.25	0.32	0.00	0.00	18.25	4.35	0.68	0.40
5.50	0.33	0.00	0.00	18.50	4.37	0.68	0.39
5.75	0.36	0.00	0.00	18.75	4.39	0.69	0.38
6.00	0.38	0.00	0.00	19.00	4.41	0.70	0.37
6.25	0.40	0.00	0.00	19.25	4.43	0.71	0.35
6.50	0.42	0.00	0.00	19.50	4.44	0.72	0.34
6.75	0.44	0.00	0.00	19.75	4.46	0.72	0.33
7.00	0.47	0.00	0.00	20.00	4.47	0.73	0.31
7.25	0.49	0.00	0.00				
7.50	0.51	0.00	0.00				
7.75	0.54	0.00	0.00				
8.00	0.56	0.00	0.00				
8.25	0.59	0.00	0.00				
8.50	0.62	0.00	0.00				
8.75	0.65	0.00	0.00				
9.00	0.69	0.00	0.00				
9.25	0.73	0.00	0.00				
9.50	0.77	0.00	0.00				
9.75	0.81	0.00	0.00				
10.00	0.85	0.00	0.00				
10.25	0.90	0.00	0.00				
10.50	0.96	0.00	0.00				
10.75	1.03	0.00	0.00				
11.00	1.10	0.00	0.00				
11.25	1.20	0.00	0.00				
11.50	1.33	0.00	0.00				
11.75	1.82	0.00	0.00				
12.00	3.12	0.23	3.79				
12.25	3.32	0.29	6.22				
12.50	3.45	0.33	2.79				
12.75	3.55	0.36	1.73				
13.00	3.63	0.39	1.34				
13.25	3.70	0.41	1.14				
13.50	3.76	0.44	1.02				
13.75	3.81	0.46	0.91				
14.00	3.85	0.47	0.82				
14.25	3.90	0.49	0.74				
14.50	3.94	0.50	0.70				
14.75	3.98	0.52	0.68				
15.00	4.01	0.53	0.65				
15.25	4.05	0.55	0.62				
15.50	4.08	0.56	0.59				
15.75	4.11	0.57	0.56				
16.00	4.14	0.58	0.52				
16.25	4.16	0.60	0.50				
16.50	4.19	0.61	0.48				
16.75	4.21	0.62	0.47				
17.00	4.24	0.63	0.46				
17.25	4.26	0.64	0.45				
17.50	4.28	0.65	0.44				
17.75	4.31	0.66	0.43				

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Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 2S: Sub Basin #2

Runoff = 28.40 cfs @ 12.18 hrs, Volume= 2.204 af, Depth> 1.43"

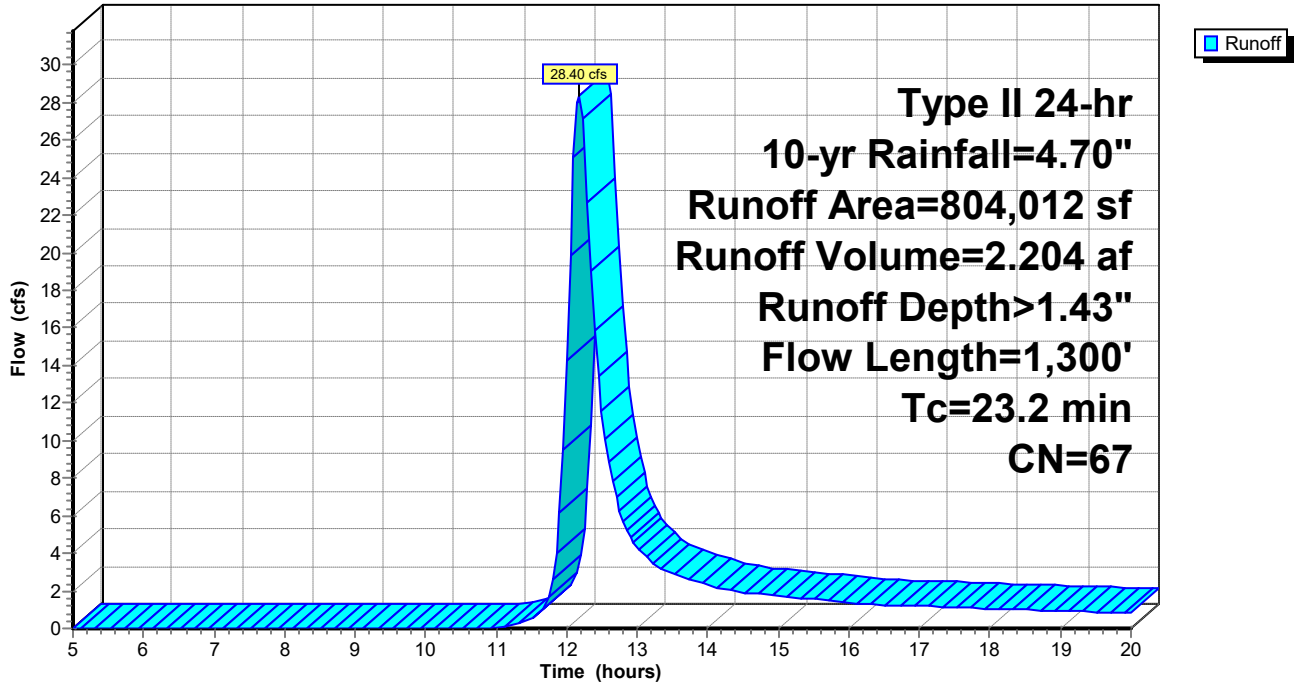
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
102,546	98	Roofs, HSG A
193,419	98	Paved parking, HSG A
254,023	39	>75% Grass cover, Good, HSG A
127,012	61	>75% Grass cover, Good, HSG B
127,012	55	Woods, Good, HSG B
804,012	67	Weighted Average
508,047		63.19% Pervious Area
295,965		36.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Initiated from Sub Basin #2 Grass: Short n= 0.150 P2= 3.11"
3.0	200	0.0250	1.11		Shallow Concentrated Flow, To Road Short Grass Pasture Kv= 7.0 fps
1.3	250	0.0240	3.14		Shallow Concentrated Flow, Road to CB Paved Kv= 20.3 fps
5.8	750	0.0100	2.14	0.37	Pipe Channel, CB to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
23.2	1,300	Total			

Subcatchment 2S: Sub Basin #2

Hydrograph



21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Subcatchment 2S: Sub Basin #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.30	0.00	0.00	18.00	4.33	1.35	1.06
5.25	0.32	0.00	0.00	18.25	4.35	1.37	1.03
5.50	0.33	0.00	0.00	18.50	4.37	1.38	1.00
5.75	0.36	0.00	0.00	18.75	4.39	1.39	0.96
6.00	0.38	0.00	0.00	19.00	4.41	1.40	0.93
6.25	0.40	0.00	0.00	19.25	4.43	1.41	0.90
6.50	0.42	0.00	0.00	19.50	4.44	1.43	0.86
6.75	0.44	0.00	0.00	19.75	4.46	1.44	0.83
7.00	0.47	0.00	0.00	20.00	4.47	1.45	0.80
7.25	0.49	0.00	0.00				
7.50	0.51	0.00	0.00				
7.75	0.54	0.00	0.00				
8.00	0.56	0.00	0.00				
8.25	0.59	0.00	0.00				
8.50	0.62	0.00	0.00				
8.75	0.65	0.00	0.00				
9.00	0.69	0.00	0.00				
9.25	0.73	0.00	0.00				
9.50	0.77	0.00	0.00				
9.75	0.81	0.00	0.00				
10.00	0.85	0.00	0.00				
10.25	0.90	0.00	0.00				
10.50	0.96	0.00	0.00				
10.75	1.03	0.00	0.00				
11.00	1.10	0.00	0.06				
11.25	1.20	0.01	0.22				
11.50	1.33	0.02	0.55				
11.75	1.82	0.12	1.71				
12.00	3.12	0.64	14.25				
12.25	3.32	0.75	26.09				
12.50	3.45	0.82	11.57				
12.75	3.55	0.88	6.27				
13.00	3.63	0.92	4.29				
13.25	3.70	0.96	3.40				
13.50	3.76	1.00	2.93				
13.75	3.81	1.03	2.58				
14.00	3.85	1.06	2.30				
14.25	3.90	1.08	2.06				
14.50	3.94	1.11	1.92				
14.75	3.98	1.13	1.82				
15.00	4.01	1.15	1.74				
15.25	4.05	1.17	1.65				
15.50	4.08	1.19	1.57				
15.75	4.11	1.21	1.48				
16.00	4.14	1.23	1.39				
16.25	4.16	1.25	1.31				
16.50	4.19	1.26	1.25				
16.75	4.21	1.28	1.22				
17.00	4.24	1.29	1.19				
17.25	4.26	1.31	1.16				
17.50	4.28	1.32	1.13				
17.75	4.31	1.34	1.09				

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Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 7S: Sub Basin #3

Runoff = 8.52 cfs @ 12.44 hrs, Volume= 0.995 af, Depth> 1.70"

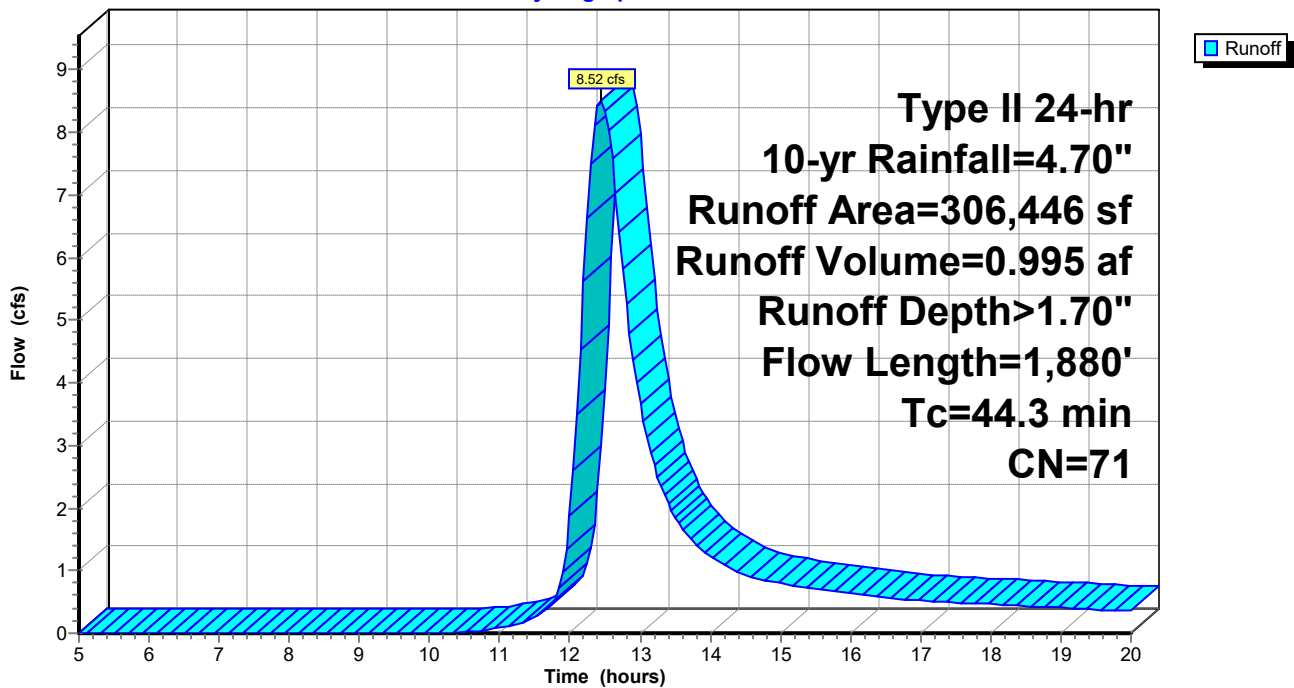
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
167,358	98	Paved parking, HSG A
139,088	39	>75% Grass cover, Good, HSG A
306,446	71	Weighted Average
139,088		45.39% Pervious Area
167,358		54.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	50	0.0050	0.06		Sheet Flow, Grass to Parking Lot Grass: Dense n= 0.240 P2= 3.11"
1.8	80	0.0050	0.74		Sheet Flow, Pavement to CB Smooth surfaces n= 0.011 P2= 3.11"
28.0	1,750	0.0100	1.04	0.04	Pipe Channel, Piping to River 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
44.3	1,880	Total			

Subcatchment 7S: Sub Basin #3

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Subcatchment 7S: Sub Basin #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.30	0.00	0.00	18.00	4.33	1.62	0.46
5.25	0.32	0.00	0.00	18.25	4.35	1.64	0.45
5.50	0.33	0.00	0.00	18.50	4.37	1.65	0.44
5.75	0.36	0.00	0.00	18.75	4.39	1.67	0.42
6.00	0.38	0.00	0.00	19.00	4.41	1.68	0.41
6.25	0.40	0.00	0.00	19.25	4.43	1.69	0.40
6.50	0.42	0.00	0.00	19.50	4.44	1.70	0.38
6.75	0.44	0.00	0.00	19.75	4.46	1.72	0.37
7.00	0.47	0.00	0.00	20.00	4.47	1.73	0.35
7.25	0.49	0.00	0.00				
7.50	0.51	0.00	0.00				
7.75	0.54	0.00	0.00				
8.00	0.56	0.00	0.00				
8.25	0.59	0.00	0.00				
8.50	0.62	0.00	0.00				
8.75	0.65	0.00	0.00				
9.00	0.69	0.00	0.00				
9.25	0.73	0.00	0.00				
9.50	0.77	0.00	0.00				
9.75	0.81	0.00	0.00				
10.00	0.85	0.00	0.00				
10.25	0.90	0.00	0.00				
10.50	0.96	0.00	0.02				
10.75	1.03	0.01	0.04				
11.00	1.10	0.02	0.09				
11.25	1.20	0.03	0.15				
11.50	1.33	0.06	0.26				
11.75	1.82	0.20	0.47				
12.00	3.12	0.83	1.89				
12.25	3.32	0.95	6.65				
12.50	3.45	1.03	8.35				
12.75	3.55	1.10	5.82				
13.00	3.63	1.15	3.68				
13.25	3.70	1.19	2.50				
13.50	3.76	1.23	1.85				
13.75	3.81	1.26	1.47				
14.00	3.85	1.30	1.23				
14.25	3.90	1.32	1.06				
14.50	3.94	1.35	0.93				
14.75	3.98	1.38	0.85				
15.00	4.01	1.40	0.80				
15.25	4.05	1.43	0.75				
15.50	4.08	1.45	0.71				
15.75	4.11	1.47	0.68				
16.00	4.14	1.49	0.64				
16.25	4.16	1.51	0.60				
16.50	4.19	1.52	0.57				
16.75	4.21	1.54	0.54				
17.00	4.24	1.56	0.52				
17.25	4.26	1.58	0.51				
17.50	4.28	1.59	0.49				
17.75	4.31	1.61	0.48				

21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 9S: Sub Basin #4

Runoff = 13.33 cfs @ 12.07 hrs, Volume= 0.783 af, Depth> 1.87"

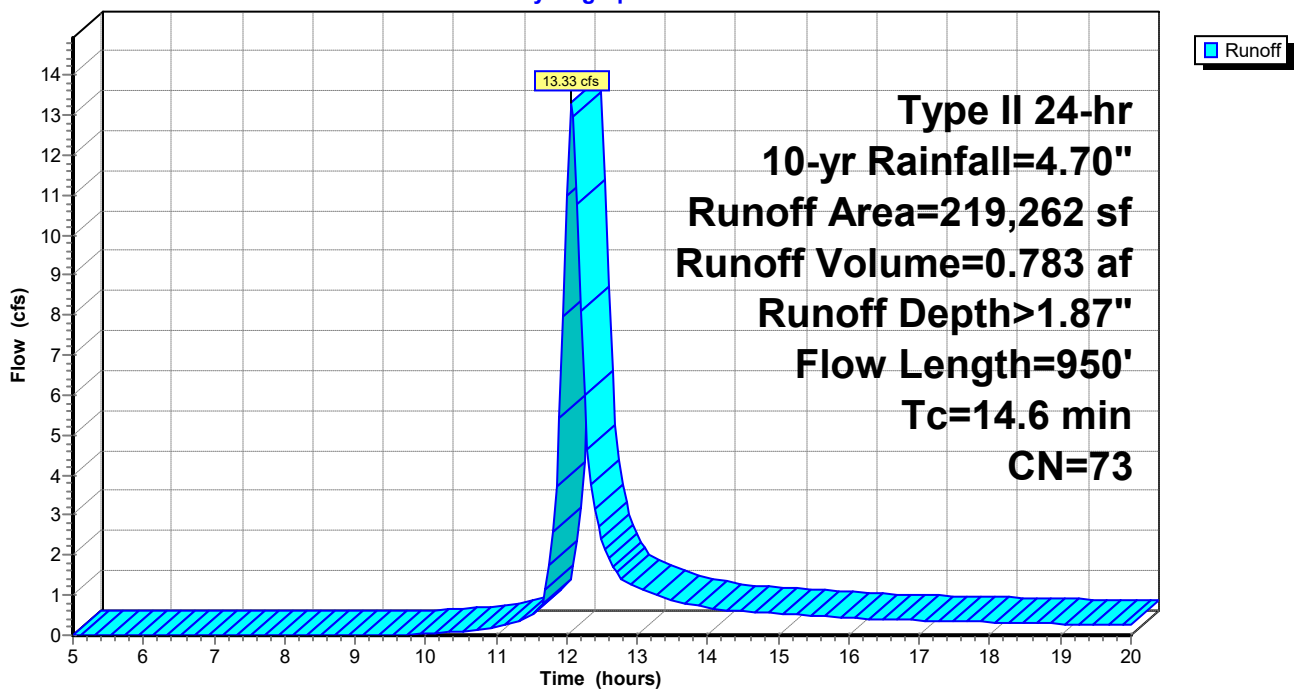
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
80,018	98	Paved parking, HSG A
139,244	58	Woods/grass comb., Good, HSG B
219,262	73	Weighted Average
139,244		63.51% Pervious Area
80,018		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0050	0.78		Sheet Flow, Pavement to Drain Smooth surfaces n= 0.011 P2= 3.11"
2.9	250	0.0050	1.44		Shallow Concentrated Flow, To Drain Paved Kv= 20.3 fps
9.6	600	0.0100	1.04	0.04	Pipe Channel, Pipe to Forbay 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
14.6	950	Total			

Subcatchment 9S: Sub Basin #4

Hydrograph



21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Subcatchment 9S: Sub Basin #4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.30	0.00	0.00	18.00	4.33	1.77	0.33
5.25	0.32	0.00	0.00	18.25	4.35	1.78	0.32
5.50	0.33	0.00	0.00	18.50	4.37	1.80	0.31
5.75	0.36	0.00	0.00	18.75	4.39	1.81	0.30
6.00	0.38	0.00	0.00	19.00	4.41	1.83	0.29
6.25	0.40	0.00	0.00	19.25	4.43	1.84	0.28
6.50	0.42	0.00	0.00	19.50	4.44	1.85	0.26
6.75	0.44	0.00	0.00	19.75	4.46	1.86	0.25
7.00	0.47	0.00	0.00	20.00	4.47	1.88	0.24
7.25	0.49	0.00	0.00				
7.50	0.51	0.00	0.00				
7.75	0.54	0.00	0.00				
8.00	0.56	0.00	0.00				
8.25	0.59	0.00	0.00				
8.50	0.62	0.00	0.00				
8.75	0.65	0.00	0.00				
9.00	0.69	0.00	0.00				
9.25	0.73	0.00	0.00				
9.50	0.77	0.00	0.00				
9.75	0.81	0.00	0.01				
10.00	0.85	0.00	0.03				
10.25	0.90	0.01	0.06				
10.50	0.96	0.01	0.09				
10.75	1.03	0.02	0.14				
11.00	1.10	0.03	0.21				
11.25	1.20	0.05	0.32				
11.50	1.33	0.08	0.51				
11.75	1.82	0.24	1.74				
12.00	3.12	0.93	11.00				
12.25	3.32	1.06	5.99				
12.50	3.45	1.15	2.40				
12.75	3.55	1.21	1.46				
13.00	3.63	1.27	1.18				
13.25	3.70	1.31	1.00				
13.50	3.76	1.35	0.88				
13.75	3.81	1.39	0.78				
14.00	3.85	1.42	0.69				
14.25	3.90	1.45	0.63				
14.50	3.94	1.48	0.59				
14.75	3.98	1.51	0.57				
15.00	4.01	1.54	0.54				
15.25	4.05	1.56	0.51				
15.50	4.08	1.58	0.48				
15.75	4.11	1.61	0.45				
16.00	4.14	1.63	0.43				
16.25	4.16	1.65	0.40				
16.50	4.19	1.66	0.39				
16.75	4.21	1.68	0.38				
17.00	4.24	1.70	0.37				
17.25	4.26	1.72	0.36				
17.50	4.28	1.74	0.35				
17.75	4.31	1.75	0.34				

Summary for Reach 6R: Neversink River

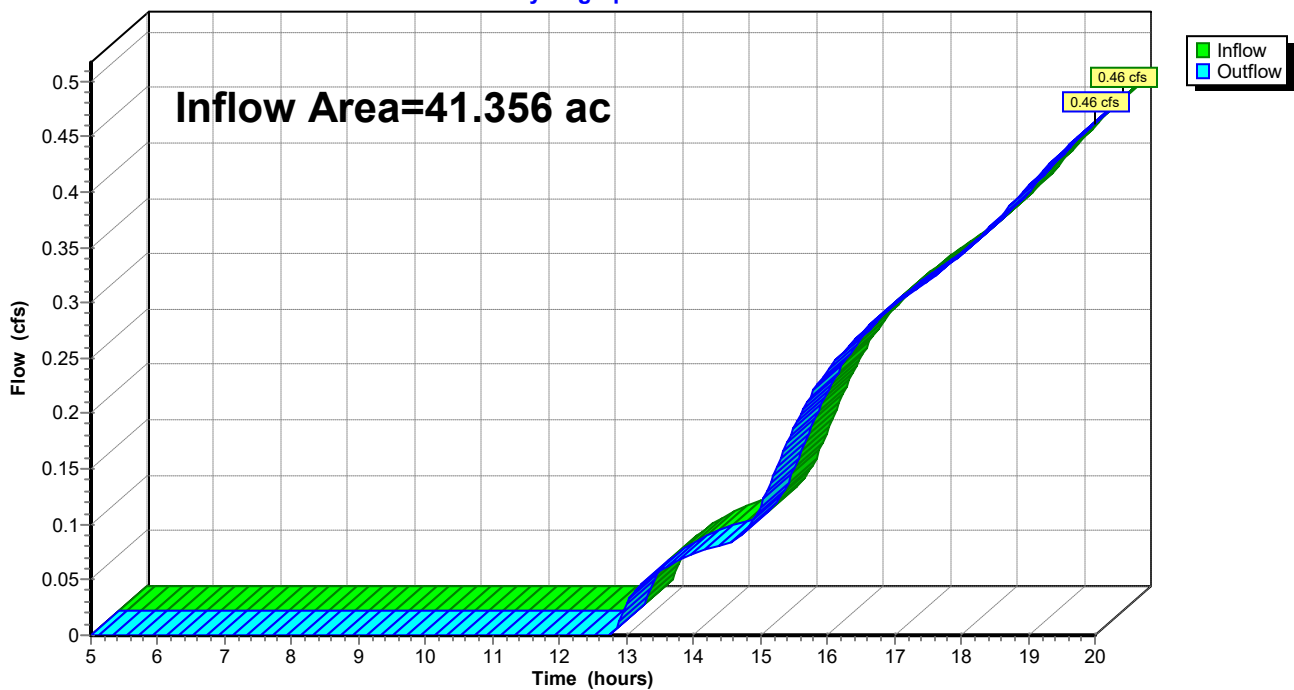
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 41.356 ac, 35.16% Impervious, Inflow Depth > 0.04" for 10-yr event
Inflow = 0.46 cfs @ 20.00 hrs, Volume= 0.144 af
Outflow = 0.46 cfs @ 20.00 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	0.34		0.34
5.25	0.00		0.00	18.25	0.36		0.36
5.50	0.00		0.00	18.50	0.37		0.37
5.75	0.00		0.00	18.75	0.39		0.39
6.00	0.00		0.00	19.00	0.40		0.40
6.25	0.00		0.00	19.25	0.42		0.42
6.50	0.00		0.00	19.50	0.44		0.44
6.75	0.00		0.00	19.75	0.45		0.45
7.00	0.00		0.00	20.00	0.46		0.46
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.00		0.00				
11.50	0.00		0.00				
11.75	0.00		0.00				
12.00	0.00		0.00				
12.25	0.00		0.00				
12.50	0.00		0.00				
12.75	0.00		0.00				
13.00	0.03		0.03				
13.25	0.05		0.05				
13.50	0.06		0.06				
13.75	0.07		0.07				
14.00	0.07		0.07				
14.25	0.08		0.08				
14.50	0.08		0.08				
14.75	0.09		0.09				
15.00	0.12		0.12				
15.25	0.15		0.15				
15.50	0.19		0.19				
15.75	0.22		0.22				
16.00	0.24		0.24				
16.25	0.26		0.26				
16.50	0.27		0.27				
16.75	0.29		0.29				
17.00	0.30		0.30				
17.25	0.31		0.31				
17.50	0.32		0.32				
17.75	0.33		0.33				

21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 7P: Forbay

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 1.17" for 10-yr event
 Inflow = 36.47 cfs @ 12.17 hrs, Volume= 2.857 af
 Outflow = 35.92 cfs @ 12.19 hrs, Volume= 2.653 af, Atten= 2%, Lag= 1.1 min
 Primary = 35.92 cfs @ 12.19 hrs, Volume= 2.653 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 441.27' @ 12.19 hrs Surf.Area= 4,691 sf Storage= 9,110 cf

Plug-Flow detention time= 32.9 min calculated for 2.644 af (93% of inflow)
 Center-of-Mass det. time= 8.9 min (833.9 - 825.0)

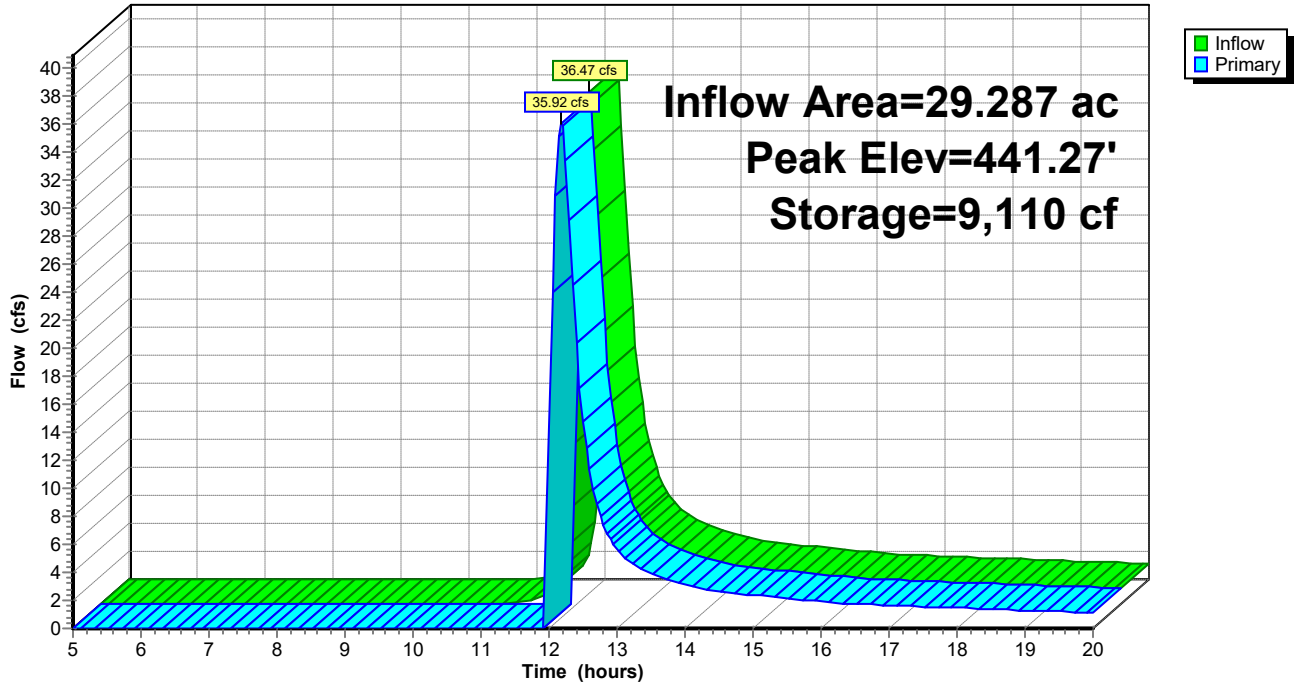
Volume	Invert	Avail.Storage	Storage Description			
#1	437.00'	18,651 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
437.00	51	51.0	0	0	51	
438.00	299	99.0	158	158	629	
439.00	2,282	267.0	1,136	1,294	5,525	
440.00	3,302	301.0	2,776	4,070	7,088	
441.00	4,394	323.0	3,835	7,905	8,224	
442.00	5,562	345.0	4,967	12,871	9,440	
443.00	6,000	380.0	5,780	18,651	11,492	

Device	Routing	Invert	Outlet Devices									
#1	Primary	440.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=35.61 cfs @ 12.19 hrs HW=441.26' TW=441.00' (Fixed TW Elev= 441.00')
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 35.61 cfs @ 1.88 fps)

Pond 7P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Pond 7P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	437.00	0.00
5.50	0.00	0	437.00	0.00
6.00	0.00	0	437.00	0.00
6.50	0.00	0	437.00	0.00
7.00	0.00	0	437.00	0.00
7.50	0.00	0	437.00	0.00
8.00	0.00	0	437.00	0.00
8.50	0.00	0	437.00	0.00
9.00	0.00	0	437.00	0.00
9.50	0.00	0	437.00	0.00
10.00	0.00	0	437.00	0.00
10.50	0.00	0	437.00	0.00
11.00	0.06	18	437.25	0.00
11.50	0.55	466	438.49	0.00
12.00	18.04	7,564	440.92	0.00
12.50	14.36	8,120	441.05	14.74
13.00	5.64	7,952	441.01	5.65
13.50	3.95	7,938	441.01	3.95
14.00	3.12	7,931	441.01	3.13
14.50	2.62	7,927	441.00	2.62
15.00	2.39	7,925	441.00	2.39
15.50	2.16	7,923	441.00	2.16
16.00	1.92	7,921	441.00	1.92
16.50	1.73	7,919	441.00	1.73
17.00	1.65	7,918	441.00	1.65
17.50	1.56	7,918	441.00	1.56
18.00	1.48	7,917	441.00	1.48
18.50	1.39	7,916	441.00	1.39
19.00	1.30	7,916	441.00	1.30
19.50	1.21	7,915	441.00	1.21
20.00	1.11	7,914	441.00	1.11

21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 8P: Dentention Pond #1

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 1.09" for 10-yr event
 Inflow = 35.92 cfs @ 12.19 hrs, Volume= 2.653 af
 Outflow = 0.31 cfs @ 20.00 hrs, Volume= 0.112 af, Atten= 99%, Lag= 468.9 min
 Primary = 0.31 cfs @ 20.00 hrs, Volume= 0.112 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 438.48' @ 20.00 hrs Surf.Area= 39,309 sf Storage= 110,605 cf

Plug-Flow detention time= 322.8 min calculated for 0.112 af (4% of inflow)
 Center-of-Mass det. time= 212.2 min (1,046.1 - 833.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	435.00'	223,034 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
435.00	25,630	1,080.0	0	0	25,630
436.00	27,459	1,106.0	26,539	26,539	30,283
437.00	33,379	1,131.0	30,371	56,910	34,872
438.00	37,378	1,153.0	35,360	92,270	39,030
439.00	41,472	1,178.0	39,407	131,677	43,812
440.00	45,633	1,200.0	43,536	175,213	48,142
441.00	50,042	1,223.0	47,821	223,034	52,739

Device	Routing	Invert	Outlet Devices
#1	Primary	435.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	437.00'	2.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	437.75'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	439.00'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height
#5	Secondary	440.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.31 cfs @ 20.00 hrs HW=438.48' (Free Discharge)

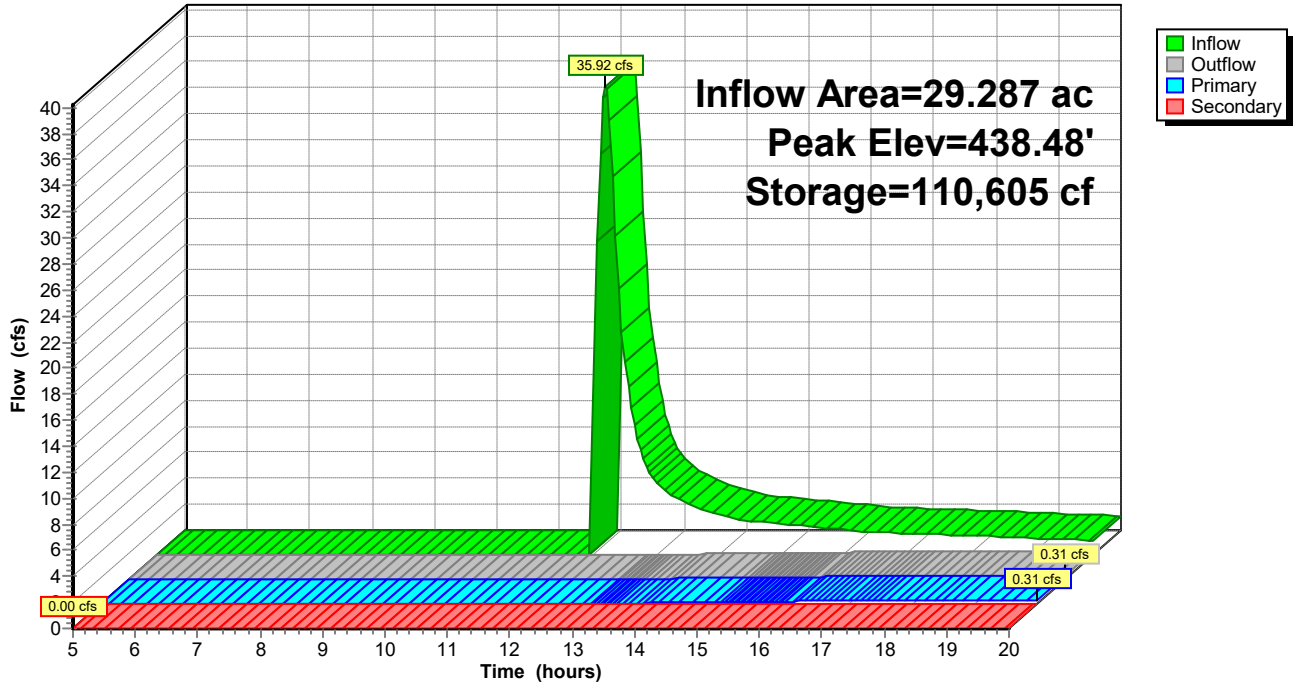
- ↑ 1=Culvert (Passes 0.31 cfs of 6.53 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.12 cfs @ 5.69 fps)
- ↑ 3=Orifice/Grate (Orifice Controls 0.18 cfs @ 3.74 fps)
- ↑ 4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=435.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 8P: Dentention Pond #1

Hydrograph



21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Pond 8P: Detention Pond #1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	435.00	0.00	0.00	0.00
5.50	0.00	0	435.00	0.00	0.00	0.00
6.00	0.00	0	435.00	0.00	0.00	0.00
6.50	0.00	0	435.00	0.00	0.00	0.00
7.00	0.00	0	435.00	0.00	0.00	0.00
7.50	0.00	0	435.00	0.00	0.00	0.00
8.00	0.00	0	435.00	0.00	0.00	0.00
8.50	0.00	0	435.00	0.00	0.00	0.00
9.00	0.00	0	435.00	0.00	0.00	0.00
9.50	0.00	0	435.00	0.00	0.00	0.00
10.00	0.00	0	435.00	0.00	0.00	0.00
10.50	0.00	0	435.00	0.00	0.00	0.00
11.00	0.00	0	435.00	0.00	0.00	0.00
11.50	0.00	0	435.00	0.00	0.00	0.00
12.00	0.00	0	435.00	0.00	0.00	0.00
12.50	14.74	46,366	436.67	0.00	0.00	0.00
13.00	5.65	62,143	437.16	0.03	0.03	0.00
13.50	3.95	70,413	437.40	0.06	0.06	0.00
14.00	3.13	76,614	437.57	0.07	0.07	0.00
14.50	2.62	81,572	437.71	0.08	0.08	0.00
15.00	2.39	85,910	437.83	0.10	0.10	0.00
15.50	2.16	89,771	437.93	0.15	0.15	0.00
16.00	1.92	93,128	438.02	0.19	0.19	0.00
16.50	1.73	96,019	438.10	0.22	0.22	0.00
17.00	1.65	98,647	438.17	0.24	0.24	0.00
17.50	1.56	101,092	438.23	0.25	0.25	0.00
18.00	1.48	103,357	438.29	0.27	0.27	0.00
18.50	1.39	105,441	438.35	0.28	0.28	0.00
19.00	1.30	107,345	438.39	0.29	0.29	0.00
19.50	1.21	109,067	438.44	0.30	0.30	0.00
20.00	1.11	110,605	438.48	0.31	0.31	0.00

21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 10P: Forbay

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 1.77" for 10-yr event
 Inflow = 16.46 cfs @ 12.09 hrs, Volume= 1.778 af
 Outflow = 15.34 cfs @ 12.27 hrs, Volume= 1.326 af, Atten= 7%, Lag= 10.5 min
 Primary = 15.34 cfs @ 12.27 hrs, Volume= 1.326 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 438.04' @ 12.25 hrs Surf.Area= 6,630 sf Storage= 20,494 cf

Plug-Flow detention time= 97.0 min calculated for 1.326 af (75% of inflow)
 Center-of-Mass det. time= 34.1 min (850.4 - 816.3)

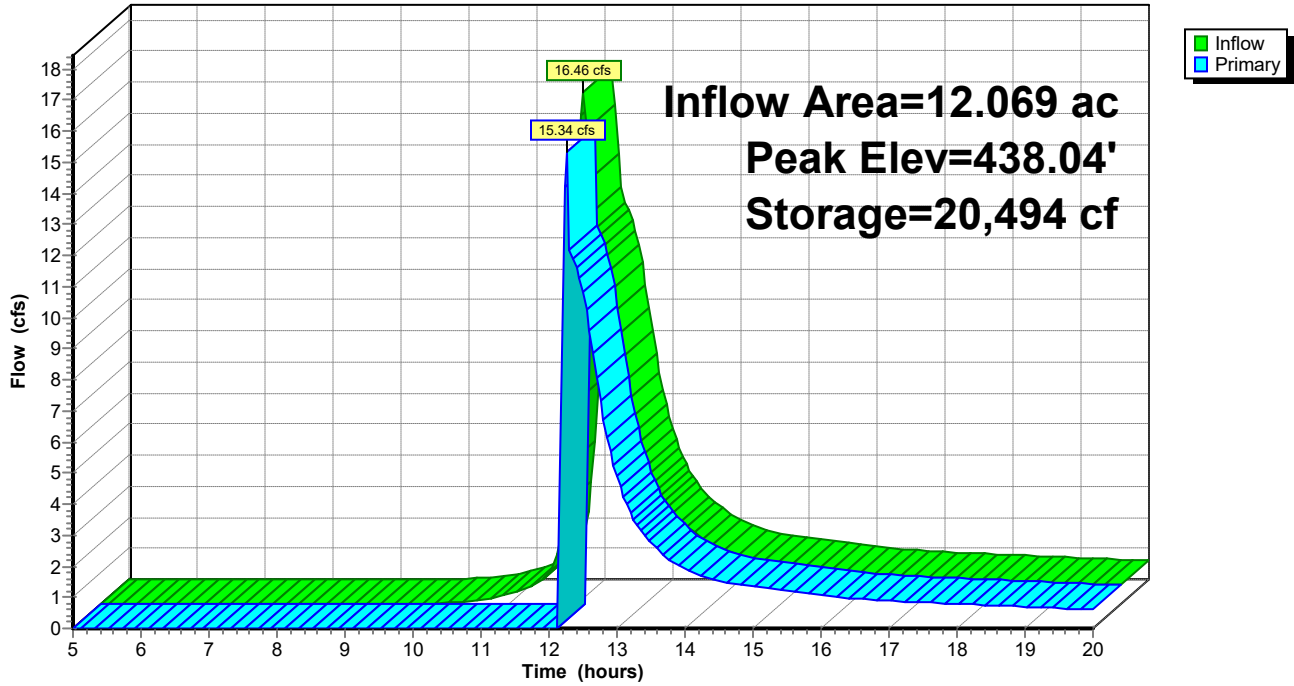
Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	27,396 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	1,890	223.0	0	0	1,890	
434.00	2,638	250.0	2,254	2,254	2,933	
435.00	3,491	280.0	3,055	5,308	4,226	
436.00	4,436	311.0	3,954	9,262	5,714	
437.00	5,474	342.0	4,946	14,208	7,357	
438.00	6,584	369.0	6,020	20,229	8,926	
439.00	7,767	396.0	7,167	27,396	10,613	

Device	Routing	Invert	Outlet Devices									
#1	Primary	437.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=13.87 cfs @ 12.27 hrs HW=438.04' TW=438.00' (Fixed TW Elev= 438.00')
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 13.87 cfs @ 0.89 fps)

Pond 10P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Pond 10P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	433.00	0.00
5.50	0.00	0	433.00	0.00
6.00	0.00	0	433.00	0.00
6.50	0.00	0	433.00	0.00
7.00	0.00	0	433.00	0.00
7.50	0.00	0	433.00	0.00
8.00	0.00	0	433.00	0.00
8.50	0.00	0	433.00	0.00
9.00	0.00	0	433.00	0.00
9.50	0.00	0	433.00	0.00
10.00	0.03	26	433.01	0.00
10.50	0.11	143	433.07	0.00
11.00	0.30	493	433.25	0.00
11.50	0.77	1,387	433.65	0.00
12.00	12.89	8,017	435.71	0.00
12.50	10.75	20,430	438.03	10.80
13.00	4.86	20,320	438.01	4.89
13.50	2.73	20,280	438.01	2.74
14.00	1.93	20,265	438.01	1.93
14.50	1.52	20,257	438.00	1.53
15.00	1.34	20,254	438.00	1.34
15.50	1.20	20,251	438.00	1.20
16.00	1.06	20,249	438.00	1.07
16.50	0.96	20,246	438.00	0.96
17.00	0.89	20,245	438.00	0.89
17.50	0.84	20,244	438.00	0.84
18.00	0.79	20,243	438.00	0.79
18.50	0.74	20,243	438.00	0.74
19.00	0.69	20,242	438.00	0.70
19.50	0.65	20,241	438.00	0.65
20.00	0.60	20,240	438.00	0.60

Summary for Pond 11P: Dentention Pond #2

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 1.32" for 10-yr event
 Inflow = 15.34 cfs @ 12.27 hrs, Volume= 1.326 af
 Outflow = 0.15 cfs @ 20.00 hrs, Volume= 0.032 af, Atten= 99%, Lag= 463.9 min
 Primary = 0.15 cfs @ 20.00 hrs, Volume= 0.032 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 435.72' @ 20.00 hrs Surf.Area= 23,709 sf Storage= 56,319 cf

Plug-Flow detention time= 355.6 min calculated for 0.032 af (2% of inflow)
 Center-of-Mass det. time= 240.2 min (1,090.6 - 850.4)

Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	116,426 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	17,836	696.0	0	0	17,836	
434.00	19,952	714.0	18,884	18,884	19,975	
435.00	22,124	733.0	21,029	39,913	22,280	
436.00	24,352	752.0	23,229	63,142	24,644	
437.00	26,636	771.0	25,485	88,627	27,070	
438.00	28,978	790.0	27,799	116,426	29,556	

Device	Routing	Invert	Outlet Devices						
#1	Primary	433.50'	12.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 433.50' / 433.00' S= 0.0125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf						
#2	Device 1	435.00'	2.0" Vert. Orifice/Grate C= 0.600						
#3	Device 1	435.50'	3.0" Vert. Orifice/Grate C= 0.600						
#4	Device 1	436.50'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height						
#5	Secondary	437.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64						

Primary OutFlow Max=0.15 cfs @ 20.00 hrs HW=435.72' (Free Discharge)

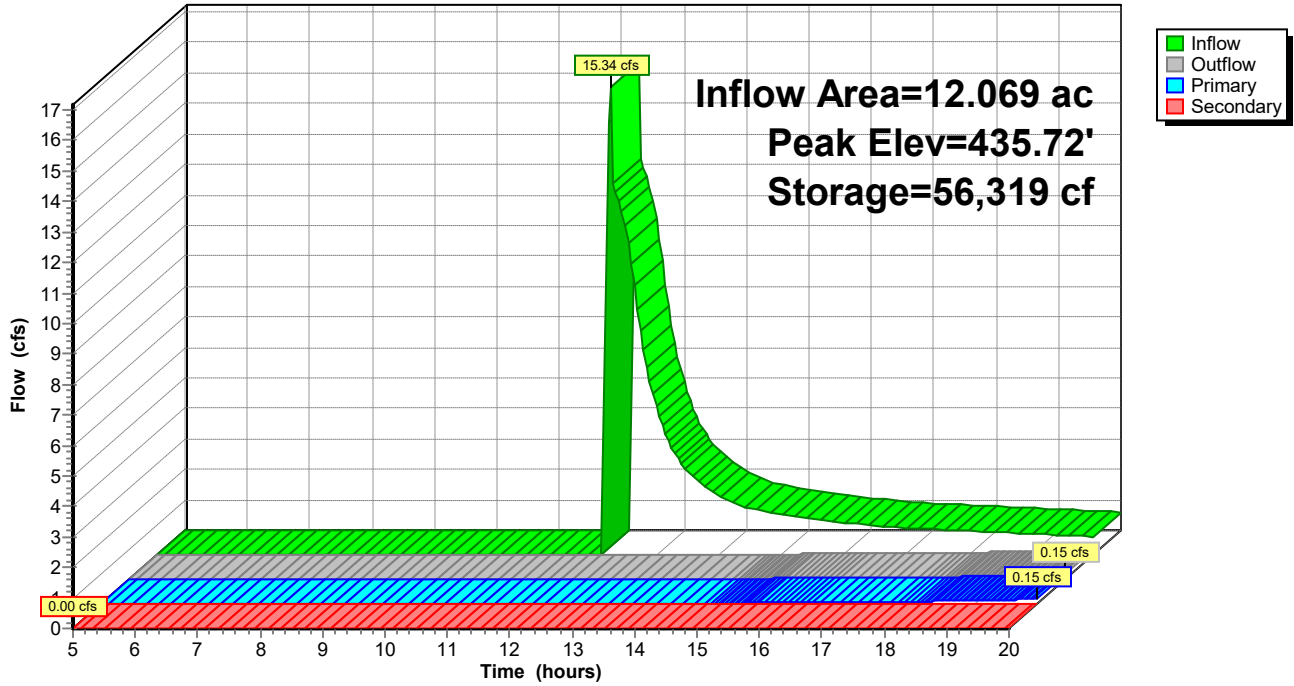
- ↑ 1=Culvert (Passes 0.15 cfs of 4.95 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.08 cfs @ 3.83 fps)
- ↑ 3=Orifice/Grate (Orifice Controls 0.07 cfs @ 1.58 fps)
- ↑ 4=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=433.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 11P: Detention Pond #2

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.70"

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Hydrograph for Pond 11P: Detention Pond #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	433.00	0.00	0.00	0.00
5.50	0.00	0	433.00	0.00	0.00	0.00
6.00	0.00	0	433.00	0.00	0.00	0.00
6.50	0.00	0	433.00	0.00	0.00	0.00
7.00	0.00	0	433.00	0.00	0.00	0.00
7.50	0.00	0	433.00	0.00	0.00	0.00
8.00	0.00	0	433.00	0.00	0.00	0.00
8.50	0.00	0	433.00	0.00	0.00	0.00
9.00	0.00	0	433.00	0.00	0.00	0.00
9.50	0.00	0	433.00	0.00	0.00	0.00
10.00	0.00	0	433.00	0.00	0.00	0.00
10.50	0.00	0	433.00	0.00	0.00	0.00
11.00	0.00	0	433.00	0.00	0.00	0.00
11.50	0.00	0	433.00	0.00	0.00	0.00
12.00	0.00	0	433.00	0.00	0.00	0.00
12.50	10.80	11,980	433.65	0.00	0.00	0.00
13.00	4.89	25,611	434.33	0.00	0.00	0.00
13.50	2.74	32,134	434.64	0.00	0.00	0.00
14.00	1.93	36,250	434.83	0.00	0.00	0.00
14.50	1.53	39,316	434.97	0.00	0.00	0.00
15.00	1.34	41,871	435.09	0.01	0.01	0.00
15.50	1.20	44,108	435.19	0.03	0.03	0.00
16.00	1.07	46,073	435.27	0.05	0.05	0.00
16.50	0.96	47,792	435.35	0.05	0.05	0.00
17.00	0.89	49,347	435.42	0.06	0.06	0.00
17.50	0.84	50,790	435.48	0.07	0.07	0.00
18.00	0.79	52,134	435.54	0.07	0.07	0.00
18.50	0.74	53,369	435.59	0.09	0.09	0.00
19.00	0.70	54,480	435.64	0.11	0.11	0.00
19.50	0.65	55,463	435.68	0.14	0.14	0.00
20.00	0.60	56,319	435.72	0.15	0.15	0.00

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Type II 24-hr 25-yr Rainfall=5.90"

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

Subcatchment 1S: Sub Basin #1 Runoff Area=471,733 sf 19.09% Impervious Runoff Depth>1.29"
Flow Length=550' Tc=18.1 min CN=55 Runoff=16.43 cfs 1.166 af

Subcatchment 2S: Sub Basin #2 Runoff Area=804,012 sf 36.81% Impervious Runoff Depth>2.23"
Flow Length=1,300' Tc=23.2 min CN=67 Runoff=45.16 cfs 3.423 af

Subcatchment 7S: Sub Basin #3 Runoff Area=306,446 sf 54.61% Impervious Runoff Depth>2.55"
Flow Length=1,880' Tc=44.3 min CN=71 Runoff=12.99 cfs 1.495 af

Subcatchment 9S: Sub Basin #4 Runoff Area=219,262 sf 36.49% Impervious Runoff Depth>2.76"
Flow Length=950' Tc=14.6 min CN=73 Runoff=19.69 cfs 1.158 af

Reach 6R: Neversink River Inflow=3.71 cfs 1.641 af
Outflow=3.71 cfs 1.641 af

Pond 7P: Forbay Peak Elev=441.58' Storage=10,634 cf Inflow=61.04 cfs 4.588 af
Outflow=60.01 cfs 4.397 af

Pond 8P: Dentention Pond #1 Peak Elev=439.22' Storage=140,917 cf Inflow=60.01 cfs 4.397 af
Primary=3.12 cfs 1.238 af Secondary=0.00 cfs 0.000 af Outflow=3.12 cfs 1.238 af

Pond 10P: Forbay Peak Elev=438.12' Storage=21,057 cf Inflow=24.78 cfs 2.653 af
Outflow=26.61 cfs 2.184 af

Pond 11P: Dentention Pond #2 Peak Elev=436.60' Storage=78,112 cf Inflow=26.61 cfs 2.184 af
Primary=1.14 cfs 0.404 af Secondary=0.00 cfs 0.000 af Outflow=1.14 cfs 0.404 af

Total Runoff Area = 41.356 ac Runoff Volume = 7.241 af Average Runoff Depth = 2.10"
64.84% Pervious = 26.815 ac 35.16% Impervious = 14.541 ac

21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Subcatchment 1S: Sub Basin #1

Runoff = 16.43 cfs @ 12.13 hrs, Volume= 1.166 af, Depth> 1.29"

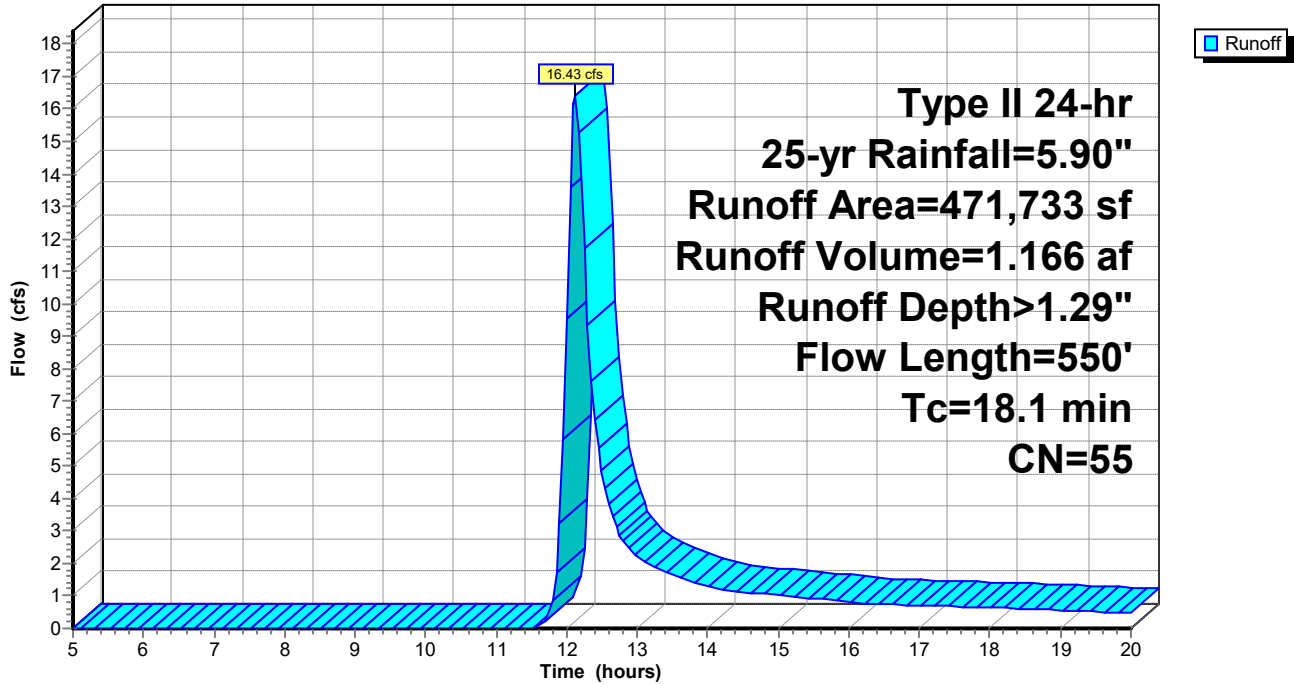
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25-yr Rainfall=5.90"

Area (sf)	CN	Description
21,600	98	Roofs, HSG A
68,472	98	Paved parking, HSG A
283,377	39	>75% Grass cover, Good, HSG A
98,284	61	>75% Grass cover, Good, HSG B
471,733	55	Weighted Average
381,661		80.91% Pervious Area
90,072		19.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Sub Basin #1 Grass: Short n= 0.150 P2= 3.11"
2.8	225	0.0360	1.33		Shallow Concentrated Flow, Shallow Conc. to CB Short Grass Pasture Kv= 7.0 fps
0.2	25	0.0100	2.03		Shallow Concentrated Flow, Across Road Paved Kv= 20.3 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, Grass to Film Studio Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0100	2.14	0.37	Pipe Channel, SB 1 Piping from Parking Lot to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
18.1	550	Total			

Subcatchment 1S: Sub Basin #1

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Subcatchment 1S: Sub Basin #1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.37	0.00	0.00	18.00	5.43	1.20	0.64
5.25	0.40	0.00	0.00	18.25	5.46	1.22	0.62
5.50	0.42	0.00	0.00	18.50	5.49	1.23	0.60
5.75	0.45	0.00	0.00	18.75	5.51	1.24	0.58
6.00	0.47	0.00	0.00	19.00	5.53	1.26	0.56
6.25	0.50	0.00	0.00	19.25	5.56	1.27	0.54
6.50	0.53	0.00	0.00	19.50	5.58	1.28	0.52
6.75	0.55	0.00	0.00	19.75	5.60	1.29	0.50
7.00	0.58	0.00	0.00	20.00	5.62	1.30	0.48
7.25	0.61	0.00	0.00				
7.50	0.64	0.00	0.00				
7.75	0.68	0.00	0.00				
8.00	0.71	0.00	0.00				
8.25	0.74	0.00	0.00				
8.50	0.78	0.00	0.00				
8.75	0.82	0.00	0.00				
9.00	0.87	0.00	0.00				
9.25	0.91	0.00	0.00				
9.50	0.96	0.00	0.00				
9.75	1.01	0.00	0.00				
10.00	1.07	0.00	0.00				
10.25	1.13	0.00	0.00				
10.50	1.20	0.00	0.00				
10.75	1.29	0.00	0.00				
11.00	1.39	0.00	0.00				
11.25	1.51	0.00	0.00				
11.50	1.67	0.00	0.00				
11.75	2.28	0.05	0.38				
12.00	3.91	0.50	9.57				
12.25	4.17	0.60	11.71				
12.50	4.34	0.67	4.85				
12.75	4.46	0.72	2.88				
13.00	4.55	0.77	2.20				
13.25	4.64	0.81	1.86				
13.50	4.71	0.84	1.64				
13.75	4.78	0.87	1.46				
14.00	4.84	0.90	1.31				
14.25	4.89	0.93	1.18				
14.50	4.94	0.95	1.12				
14.75	4.99	0.98	1.07				
15.00	5.04	1.00	1.02				
15.25	5.08	1.02	0.97				
15.50	5.12	1.04	0.92				
15.75	5.16	1.06	0.87				
16.00	5.19	1.08	0.82				
16.25	5.23	1.09	0.77				
16.50	5.26	1.11	0.75				
16.75	5.29	1.13	0.73				
17.00	5.32	1.14	0.71				
17.25	5.35	1.16	0.69				
17.50	5.38	1.17	0.68				
17.75	5.41	1.19	0.66				

21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Subcatchment 2S: Sub Basin #2

Runoff = 45.16 cfs @ 12.17 hrs, Volume= 3.423 af, Depth> 2.23"

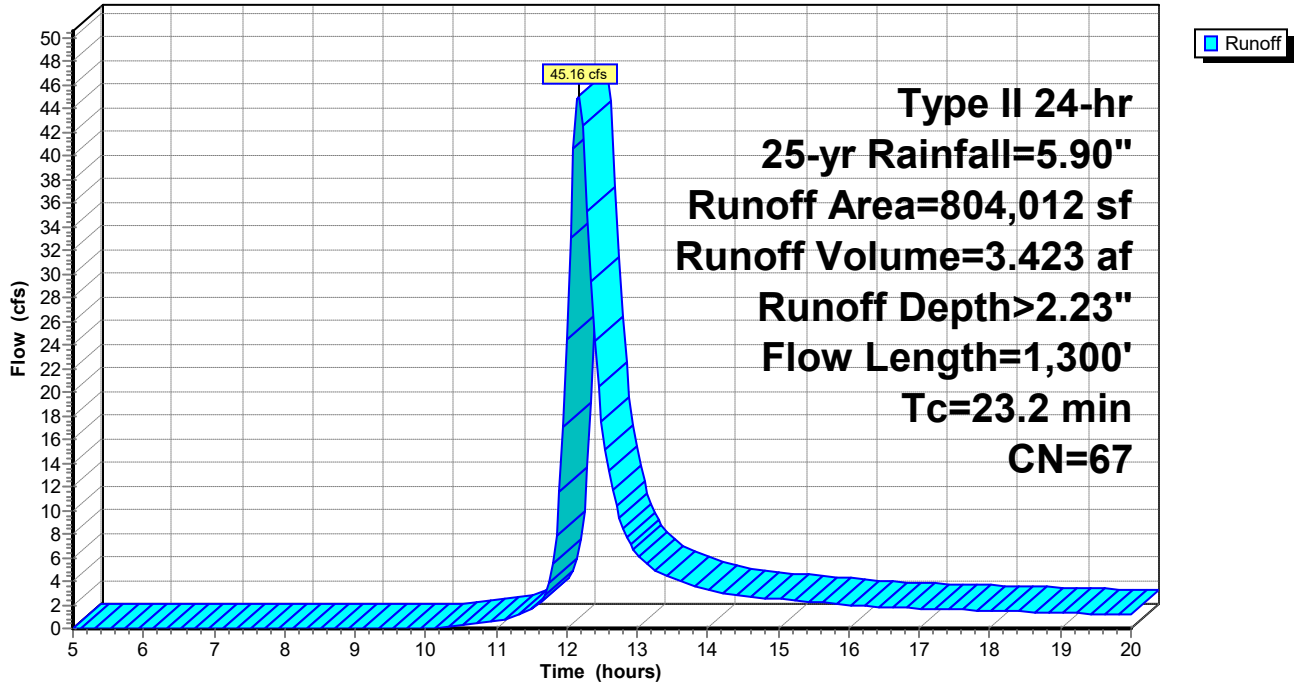
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.90"

Area (sf)	CN	Description
102,546	98	Roofs, HSG A
193,419	98	Paved parking, HSG A
254,023	39	>75% Grass cover, Good, HSG A
127,012	61	>75% Grass cover, Good, HSG B
127,012	55	Woods, Good, HSG B
804,012	67	Weighted Average
508,047		63.19% Pervious Area
295,965		36.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Initiated from Sub Basin #2 Grass: Short n= 0.150 P2= 3.11"
3.0	200	0.0250	1.11		Shallow Concentrated Flow, To Road Short Grass Pasture Kv= 7.0 fps
1.3	250	0.0240	3.14		Shallow Concentrated Flow, Road to CB Paved Kv= 20.3 fps
5.8	750	0.0100	2.14	0.37	Pipe Channel, CB to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
23.2	1,300	Total			

Subcatchment 2S: Sub Basin #2

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Subcatchment 2S: Sub Basin #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.37	0.00	0.00	18.00	5.43	2.11	1.50
5.25	0.40	0.00	0.00	18.25	5.46	2.13	1.45
5.50	0.42	0.00	0.00	18.50	5.49	2.15	1.40
5.75	0.45	0.00	0.00	18.75	5.51	2.17	1.36
6.00	0.47	0.00	0.00	19.00	5.53	2.18	1.31
6.25	0.50	0.00	0.00	19.25	5.56	2.20	1.26
6.50	0.53	0.00	0.00	19.50	5.58	2.22	1.21
6.75	0.55	0.00	0.00	19.75	5.60	2.23	1.17
7.00	0.58	0.00	0.00	20.00	5.62	2.24	1.12
7.25	0.61	0.00	0.00				
7.50	0.64	0.00	0.00				
7.75	0.68	0.00	0.00				
8.00	0.71	0.00	0.00				
8.25	0.74	0.00	0.00				
8.50	0.78	0.00	0.00				
8.75	0.82	0.00	0.00				
9.00	0.87	0.00	0.00				
9.25	0.91	0.00	0.00				
9.50	0.96	0.00	0.00				
9.75	1.01	0.00	0.00				
10.00	1.07	0.00	0.03				
10.25	1.13	0.00	0.11				
10.50	1.20	0.01	0.23				
10.75	1.29	0.02	0.40				
11.00	1.39	0.03	0.65				
11.25	1.51	0.05	1.01				
11.50	1.67	0.08	1.64				
11.75	2.28	0.27	3.85				
12.00	3.91	1.09	24.51				
12.25	4.17	1.25	40.77				
12.50	4.34	1.36	17.53				
12.75	4.46	1.43	9.28				
13.00	4.55	1.50	6.27				
13.25	4.64	1.56	4.92				
13.50	4.71	1.61	4.23				
13.75	4.78	1.65	3.72				
14.00	4.84	1.69	3.31				
14.25	4.89	1.73	2.96				
14.50	4.94	1.76	2.74				
14.75	4.99	1.80	2.60				
15.00	5.04	1.83	2.48				
15.25	5.08	1.86	2.36				
15.50	5.12	1.89	2.23				
15.75	5.16	1.91	2.10				
16.00	5.19	1.94	1.98				
16.25	5.23	1.96	1.85				
16.50	5.26	1.98	1.78				
16.75	5.29	2.01	1.72				
17.00	5.32	2.03	1.68				
17.25	5.35	2.05	1.63				
17.50	5.38	2.07	1.59				
17.75	5.41	2.09	1.54				

21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Subcatchment 7S: Sub Basin #3

Runoff = 12.99 cfs @ 12.43 hrs, Volume= 1.495 af, Depth> 2.55"

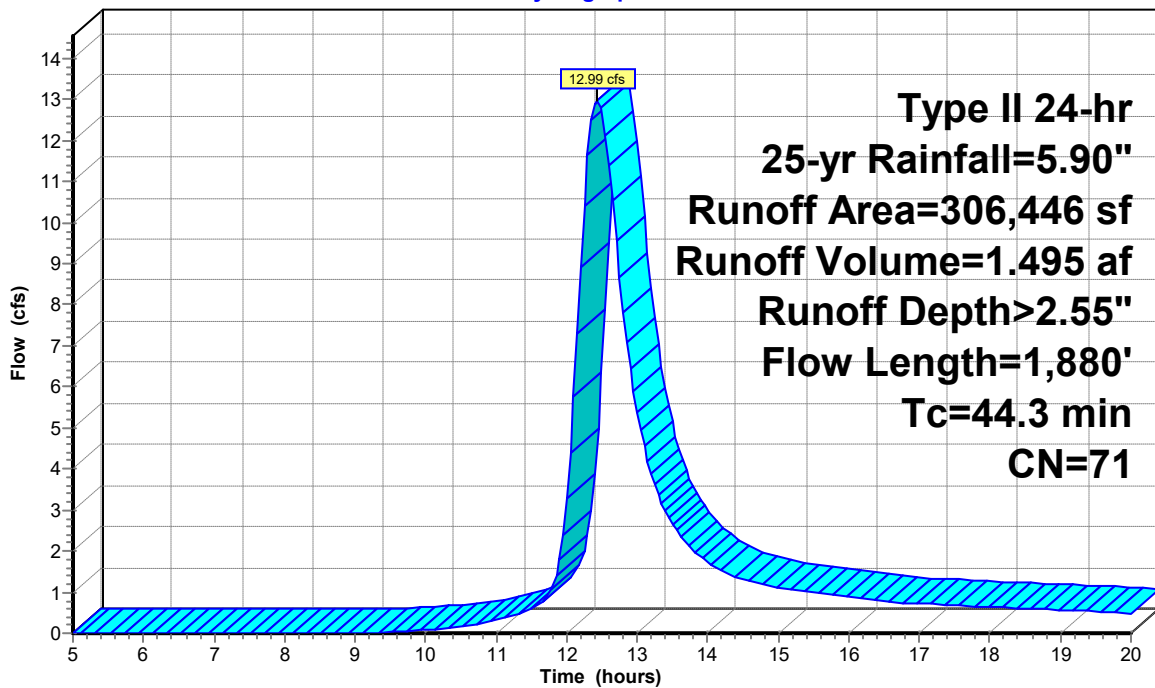
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.90"

Area (sf)	CN	Description
167,358	98	Paved parking, HSG A
139,088	39	>75% Grass cover, Good, HSG A
306,446	71	Weighted Average
139,088		45.39% Pervious Area
167,358		54.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	50	0.0050	0.06		Sheet Flow, Grass to Parking Lot Grass: Dense n= 0.240 P2= 3.11"
1.8	80	0.0050	0.74		Sheet Flow, Pavement to CB Smooth surfaces n= 0.011 P2= 3.11"
28.0	1,750	0.0100	1.04	0.04	Pipe Channel, Piping to River 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
44.3	1,880	Total			

Subcatchment 7S: Sub Basin #3

Hydrograph



Runoff

**Type II 24-hr
25-yr Rainfall=5.90"
Runoff Area=306,446 sf
Runoff Volume=1.495 af
Runoff Depth>2.55"
Flow Length=1,880'
Tc=44.3 min
CN=71**

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Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Subcatchment 7S: Sub Basin #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.37	0.00	0.00	18.00	5.43	2.45	0.64
5.25	0.40	0.00	0.00	18.25	5.46	2.47	0.62
5.50	0.42	0.00	0.00	18.50	5.49	2.49	0.60
5.75	0.45	0.00	0.00	18.75	5.51	2.51	0.58
6.00	0.47	0.00	0.00	19.00	5.53	2.53	0.56
6.25	0.50	0.00	0.00	19.25	5.56	2.54	0.54
6.50	0.53	0.00	0.00	19.50	5.58	2.56	0.52
6.75	0.55	0.00	0.00	19.75	5.60	2.58	0.50
7.00	0.58	0.00	0.00	20.00	5.62	2.59	0.48
7.25	0.61	0.00	0.00				
7.50	0.64	0.00	0.00				
7.75	0.68	0.00	0.00				
8.00	0.71	0.00	0.00				
8.25	0.74	0.00	0.00				
8.50	0.78	0.00	0.00				
8.75	0.82	0.00	0.00				
9.00	0.87	0.00	0.00				
9.25	0.91	0.00	0.01				
9.50	0.96	0.00	0.02				
9.75	1.01	0.01	0.04				
10.00	1.07	0.01	0.07				
10.25	1.13	0.02	0.11				
10.50	1.20	0.03	0.16				
10.75	1.29	0.05	0.22				
11.00	1.39	0.07	0.31				
11.25	1.51	0.10	0.43				
11.50	1.67	0.15	0.61				
11.75	2.28	0.39	0.98				
12.00	3.91	1.33	3.27				
12.25	4.17	1.51	10.42				
12.50	4.34	1.63	12.65				
12.75	4.46	1.71	8.65				
13.00	4.55	1.79	5.38				
13.25	4.64	1.85	3.62				
13.50	4.71	1.90	2.65				
13.75	4.78	1.95	2.09				
14.00	4.84	1.99	1.74				
14.25	4.89	2.03	1.48				
14.50	4.94	2.07	1.30				
14.75	4.99	2.11	1.19				
15.00	5.04	2.14	1.11				
15.25	5.08	2.18	1.05				
15.50	5.12	2.21	0.99				
15.75	5.16	2.24	0.94				
16.00	5.19	2.26	0.89				
16.25	5.23	2.29	0.83				
16.50	5.26	2.31	0.78				
16.75	5.29	2.34	0.75				
17.00	5.32	2.36	0.72				
17.25	5.35	2.38	0.70				
17.50	5.38	2.41	0.68				
17.75	5.41	2.43	0.66				

21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Subcatchment 9S: Sub Basin #4

Runoff = 19.69 cfs @ 12.07 hrs, Volume= 1.158 af, Depth> 2.76"

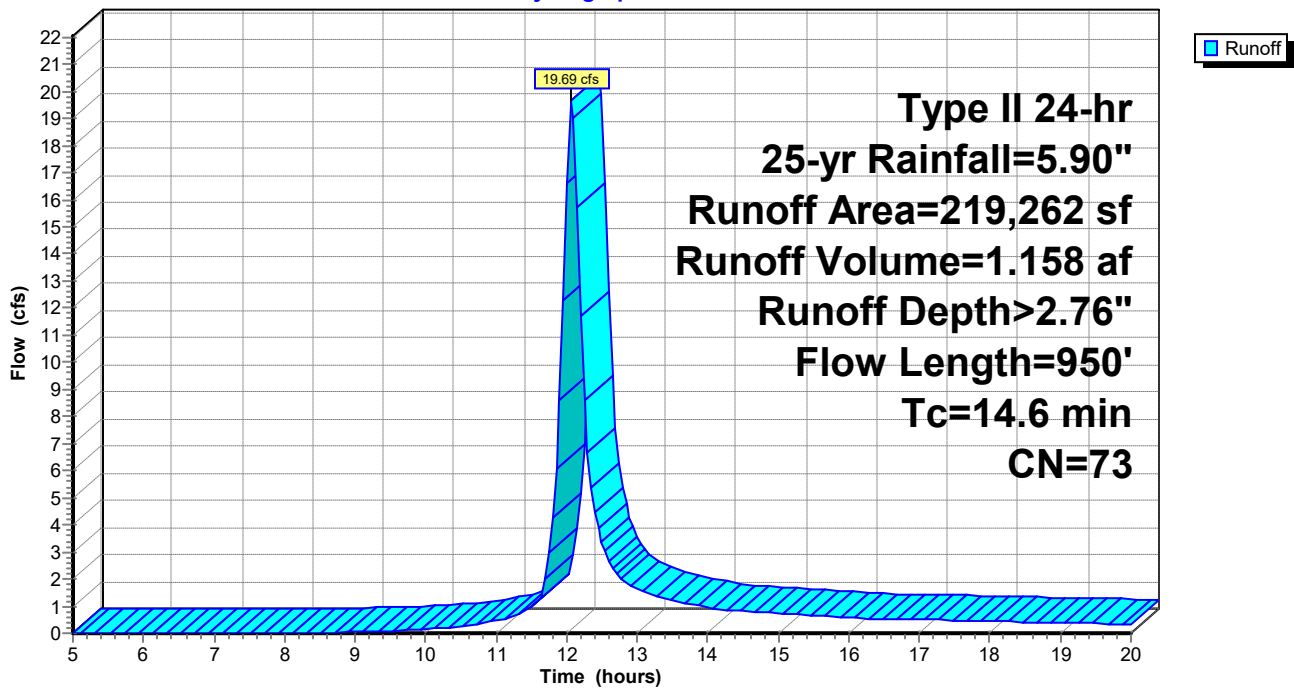
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=5.90"

Area (sf)	CN	Description
80,018	98	Paved parking, HSG A
139,244	58	Woods/grass comb., Good, HSG B
219,262	73	Weighted Average
139,244		63.51% Pervious Area
80,018		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0050	0.78		Sheet Flow, Pavement to Drain Smooth surfaces n= 0.011 P2= 3.11"
2.9	250	0.0050	1.44		Shallow Concentrated Flow, To Drain Paved Kv= 20.3 fps
9.6	600	0.0100	1.04	0.04	Pipe Channel, Pipe to Forbay 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
14.6	950	Total			

Subcatchment 9S: Sub Basin #4

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Subcatchment 9S: Sub Basin #4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.37	0.00	0.00	18.00	5.43	2.63	0.45
5.25	0.40	0.00	0.00	18.25	5.46	2.65	0.43
5.50	0.42	0.00	0.00	18.50	5.49	2.67	0.42
5.75	0.45	0.00	0.00	18.75	5.51	2.69	0.40
6.00	0.47	0.00	0.00	19.00	5.53	2.71	0.39
6.25	0.50	0.00	0.00	19.25	5.56	2.72	0.37
6.50	0.53	0.00	0.00	19.50	5.58	2.74	0.36
6.75	0.55	0.00	0.00	19.75	5.60	2.76	0.35
7.00	0.58	0.00	0.00	20.00	5.62	2.77	0.33
7.25	0.61	0.00	0.00				
7.50	0.64	0.00	0.00				
7.75	0.68	0.00	0.00				
8.00	0.71	0.00	0.00				
8.25	0.74	0.00	0.00				
8.50	0.78	0.00	0.00				
8.75	0.82	0.00	0.02				
9.00	0.87	0.00	0.04				
9.25	0.91	0.01	0.06				
9.50	0.96	0.01	0.09				
9.75	1.01	0.02	0.11				
10.00	1.07	0.03	0.15				
10.25	1.13	0.04	0.20				
10.50	1.20	0.05	0.26				
10.75	1.29	0.07	0.34				
11.00	1.39	0.10	0.46				
11.25	1.51	0.13	0.64				
11.50	1.67	0.19	0.95				
11.75	2.28	0.45	2.97				
12.00	3.91	1.46	16.59				
12.25	4.17	1.65	8.63				
12.50	4.34	1.77	3.39				
12.75	4.46	1.86	2.04				
13.00	4.55	1.94	1.64				
13.25	4.64	2.00	1.39				
13.50	4.71	2.06	1.22				
13.75	4.78	2.11	1.08				
14.00	4.84	2.15	0.96				
14.25	4.89	2.20	0.86				
14.50	4.94	2.24	0.82				
14.75	4.99	2.27	0.78				
15.00	5.04	2.31	0.74				
15.25	5.08	2.34	0.70				
15.50	5.12	2.37	0.66				
15.75	5.16	2.40	0.62				
16.00	5.19	2.43	0.58				
16.25	5.23	2.46	0.55				
16.50	5.26	2.48	0.53				
16.75	5.29	2.51	0.52				
17.00	5.32	2.53	0.50				
17.25	5.35	2.56	0.49				
17.50	5.38	2.58	0.48				
17.75	5.41	2.60	0.46				

Summary for Reach 6R: Neversink River

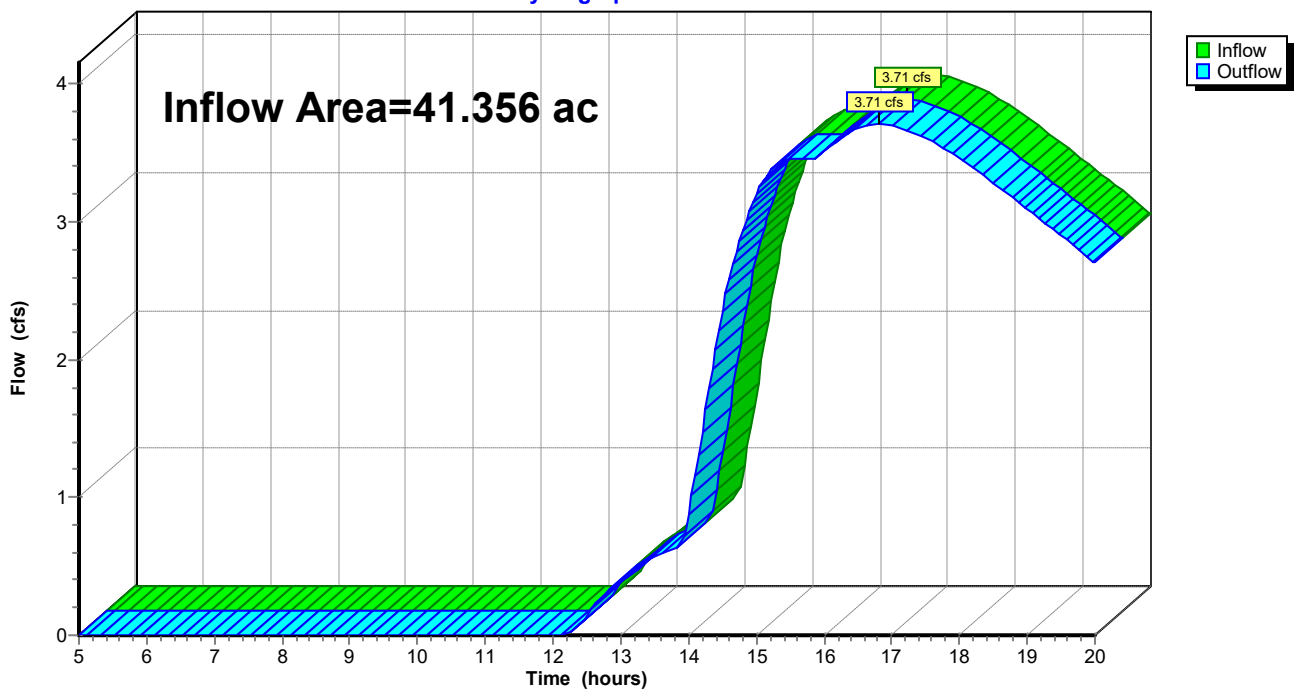
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 41.356 ac, 35.16% Impervious, Inflow Depth > 0.48" for 25-yr event
Inflow = 3.71 cfs @ 16.81 hrs, Volume= 1.641 af
Outflow = 3.71 cfs @ 16.81 hrs, Volume= 1.641 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 POST Development*Type II 24-hr 25-yr Rainfall=5.90"*

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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	3.46		3.46
5.25	0.00		0.00	18.25	3.37		3.37
5.50	0.00		0.00	18.50	3.28		3.28
5.75	0.00		0.00	18.75	3.19		3.19
6.00	0.00		0.00	19.00	3.10		3.10
6.25	0.00		0.00	19.25	3.00		3.00
6.50	0.00		0.00	19.50	2.90		2.90
6.75	0.00		0.00	19.75	2.80		2.80
7.00	0.00		0.00	20.00	2.70		2.70
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.00		0.00				
11.50	0.00		0.00				
11.75	0.00		0.00				
12.00	0.00		0.00				
12.25	0.00		0.00				
12.50	0.14		0.14				
12.75	0.29		0.29				
13.00	0.38		0.38				
13.25	0.49		0.49				
13.50	0.57		0.57				
13.75	0.62		0.62				
14.00	0.87		0.87				
14.25	1.64		1.64				
14.50	2.35		2.35				
14.75	2.87		2.87				
15.00	3.20		3.20				
15.25	3.39		3.39				
15.50	3.46		3.46				
15.75	3.44		3.44				
16.00	3.52		3.52				
16.25	3.60		3.60				
16.50	3.69		3.69				
16.75	3.71		3.71				
17.00	3.70		3.70				
17.25	3.66		3.66				
17.50	3.61		3.61				
17.75	3.54		3.54				

21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Pond 7P: Forbay

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 1.88" for 25-yr event
 Inflow = 61.04 cfs @ 12.16 hrs, Volume= 4.588 af
 Outflow = 60.01 cfs @ 12.18 hrs, Volume= 4.397 af, Atten= 2%, Lag= 1.1 min
 Primary = 60.01 cfs @ 12.18 hrs, Volume= 4.397 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 441.58' @ 12.18 hrs Surf.Area= 5,053 sf Storage= 10,634 cf

Plug-Flow detention time= 20.6 min calculated for 4.397 af (96% of inflow)
 Center-of-Mass det. time= 5.7 min (820.9 - 815.2)

Volume	Invert	Avail.Storage	Storage Description
#1	437.00'	18,651 cf	Custom Stage Data (Irregular) Listed below (Recalc)

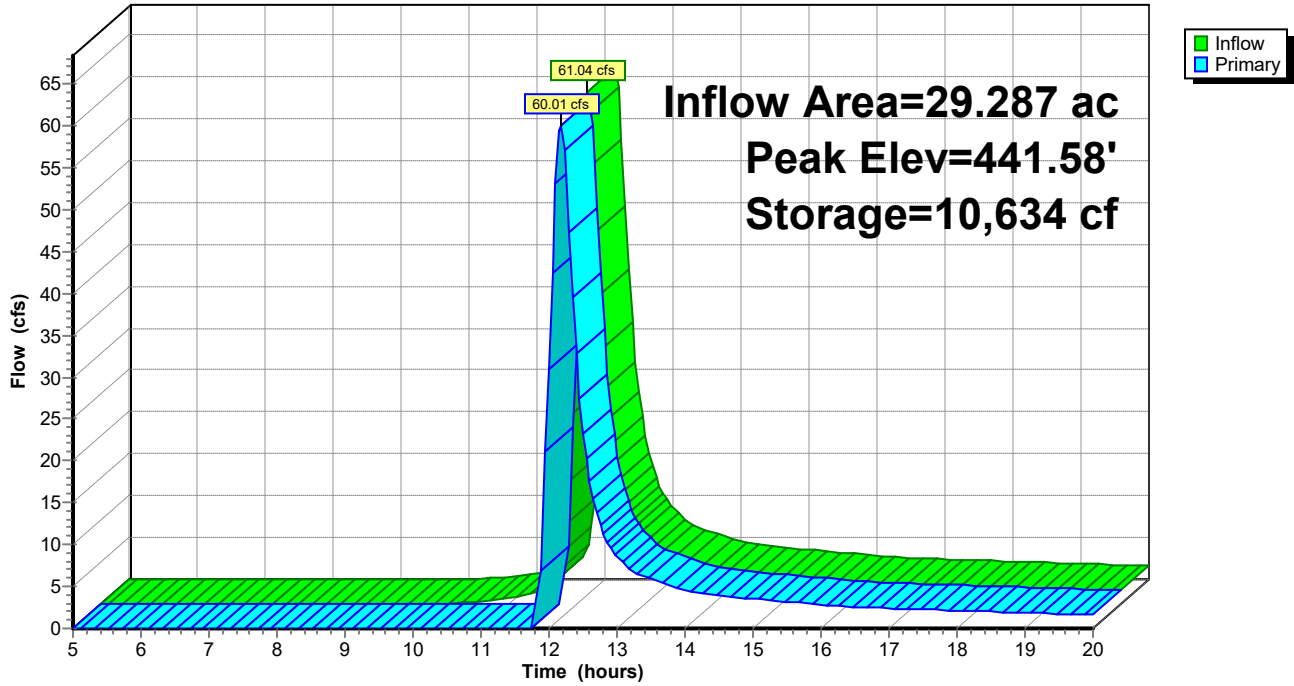
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
437.00	51	51.0	0	0	51
438.00	299	99.0	158	158	629
439.00	2,282	267.0	1,136	1,294	5,525
440.00	3,302	301.0	2,776	4,070	7,088
441.00	4,394	323.0	3,835	7,905	8,224
442.00	5,562	345.0	4,967	12,871	9,440
443.00	6,000	380.0	5,780	18,651	11,492

Device	Routing	Invert	Outlet Devices
#1	Primary	440.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=59.39 cfs @ 12.18 hrs HW=441.57' TW=441.00' (Fixed TW Elev= 441.00')
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 59.39 cfs @ 2.52 fps)

Pond 7P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Pond 7P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	437.00	0.00
5.50	0.00	0	437.00	0.00
6.00	0.00	0	437.00	0.00
6.50	0.00	0	437.00	0.00
7.00	0.00	0	437.00	0.00
7.50	0.00	0	437.00	0.00
8.00	0.00	0	437.00	0.00
8.50	0.00	0	437.00	0.00
9.00	0.00	0	437.00	0.00
9.50	0.00	0	437.00	0.00
10.00	0.03	8	437.13	0.00
10.50	0.23	213	438.14	0.00
11.00	0.65	960	438.84	0.00
11.50	1.64	2,863	439.61	0.00
12.00	34.08	8,824	441.20	30.91
12.50	22.38	8,443	441.12	23.30
13.00	8.47	7,975	441.02	8.49
13.50	5.87	7,954	441.01	5.88
14.00	4.62	7,943	441.01	4.62
14.50	3.86	7,937	441.01	3.86
15.00	3.50	7,934	441.01	3.50
15.50	3.16	7,931	441.01	3.16
16.00	2.80	7,928	441.01	2.80
16.50	2.52	7,926	441.00	2.52
17.00	2.39	7,925	441.00	2.39
17.50	2.27	7,924	441.00	2.27
18.00	2.14	7,923	441.00	2.14
18.50	2.01	7,921	441.00	2.01
19.00	1.87	7,920	441.00	1.87
19.50	1.74	7,919	441.00	1.74
20.00	1.60	7,918	441.00	1.60

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Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Pond 8P: Dentention Pond #1

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 1.80" for 25-yr event
 Inflow = 60.01 cfs @ 12.18 hrs, Volume= 4.397 af
 Outflow = 3.12 cfs @ 15.55 hrs, Volume= 1.238 af, Atten= 95%, Lag= 202.4 min
 Primary = 3.12 cfs @ 15.55 hrs, Volume= 1.238 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 439.22' @ 15.55 hrs Surf.Area= 42,372 sf Storage= 140,917 cf

Plug-Flow detention time= 280.5 min calculated for 1.234 af (28% of inflow)
 Center-of-Mass det. time= 186.4 min (1,007.3 - 820.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	435.00'	223,034 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
435.00	25,630	1,080.0	0	0	25,630
436.00	27,459	1,106.0	26,539	26,539	30,283
437.00	33,379	1,131.0	30,371	56,910	34,872
438.00	37,378	1,153.0	35,360	92,270	39,030
439.00	41,472	1,178.0	39,407	131,677	43,812
440.00	45,633	1,200.0	43,536	175,213	48,142
441.00	50,042	1,223.0	47,821	223,034	52,739

Device	Routing	Invert	Outlet Devices			
#1	Primary	435.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf			
#2	Device 1	437.00'	2.0" Vert. Orifice/Grate C= 0.600			
#3	Device 1	437.75'	3.0" Vert. Orifice/Grate C= 0.600			
#4	Device 1	439.00'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height			
#5	Secondary	440.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64			

Primary OutFlow Max=3.10 cfs @ 15.55 hrs HW=439.22' (Free Discharge)

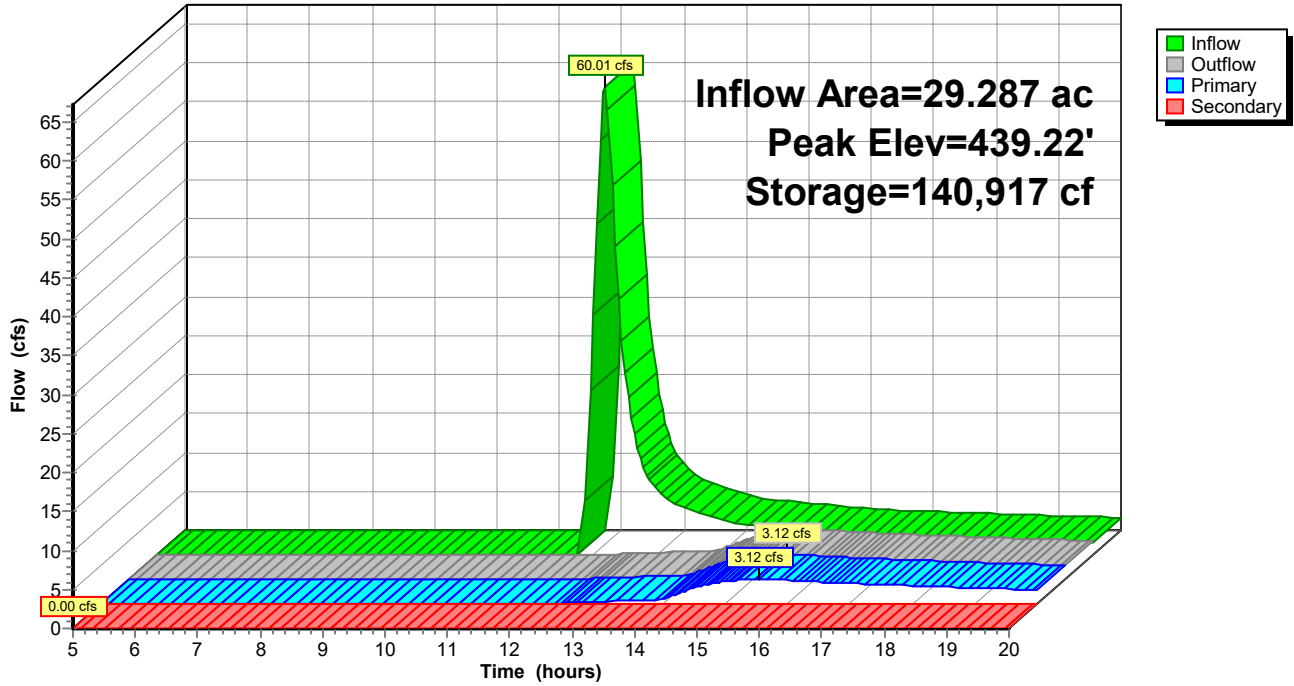
- ↑ 1=Culvert (Passes 3.10 cfs of 7.29 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.15 cfs @ 7.04 fps)
- ↑ 3=Orifice/Grate (Orifice Controls 0.27 cfs @ 5.58 fps)
- ↑ 4=Sharp-Crested Rectangular Weir (Weir Controls 2.67 cfs @ 1.62 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=435.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 8P: Detention Pond #1

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Pond 8P: Dentention Pond #1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	435.00	0.00	0.00	0.00
5.50	0.00	0	435.00	0.00	0.00	0.00
6.00	0.00	0	435.00	0.00	0.00	0.00
6.50	0.00	0	435.00	0.00	0.00	0.00
7.00	0.00	0	435.00	0.00	0.00	0.00
7.50	0.00	0	435.00	0.00	0.00	0.00
8.00	0.00	0	435.00	0.00	0.00	0.00
8.50	0.00	0	435.00	0.00	0.00	0.00
9.00	0.00	0	435.00	0.00	0.00	0.00
9.50	0.00	0	435.00	0.00	0.00	0.00
10.00	0.00	0	435.00	0.00	0.00	0.00
10.50	0.00	0	435.00	0.00	0.00	0.00
11.00	0.00	0	435.00	0.00	0.00	0.00
11.50	0.00	0	435.00	0.00	0.00	0.00
12.00	30.91	9,086	435.35	0.00	0.00	0.00
12.50	23.30	88,820	437.91	0.14	0.14	0.00
13.00	8.49	112,714	438.53	0.32	0.32	0.00
13.50	5.88	124,573	438.83	0.37	0.37	0.00
14.00	4.62	133,221	439.04	0.61	0.61	0.00
14.50	3.86	138,329	439.16	2.06	2.06	0.00
15.00	3.50	140,395	439.21	2.88	2.88	0.00
15.50	3.16	140,916	439.22	3.12	3.12	0.00
16.00	2.80	140,712	439.22	3.03	3.03	0.00
16.50	2.52	140,215	439.20	2.80	2.80	0.00
17.00	2.39	139,772	439.19	2.62	2.62	0.00
17.50	2.27	139,390	439.18	2.47	2.47	0.00
18.00	2.14	139,035	439.18	2.33	2.33	0.00
18.50	2.01	138,690	439.17	2.20	2.20	0.00
19.00	1.87	138,347	439.16	2.06	2.06	0.00
19.50	1.74	138,001	439.15	1.93	1.93	0.00
20.00	1.60	137,653	439.14	1.80	1.80	0.00

21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Summary for Pond 10P: Forbay

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 2.64" for 25-yr event
 Inflow = 24.78 cfs @ 12.09 hrs, Volume= 2.653 af
 Outflow = 26.61 cfs @ 12.12 hrs, Volume= 2.184 af, Atten= 0%, Lag= 2.0 min
 Primary = 26.61 cfs @ 12.12 hrs, Volume= 2.184 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 438.12' @ 12.10 hrs Surf.Area= 6,726 sf Storage= 21,057 cf

Plug-Flow detention time= 72.6 min calculated for 2.184 af (82% of inflow)
 Center-of-Mass det. time= 23.2 min (831.5 - 808.3)

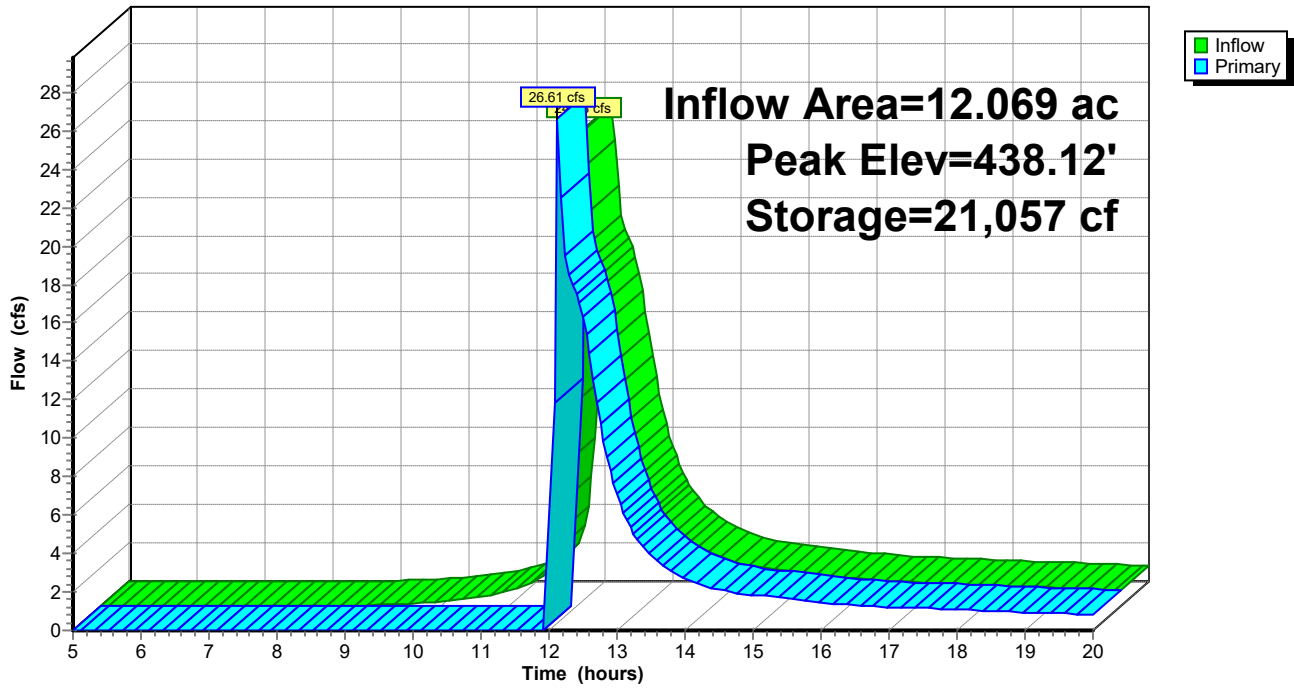
Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	27,396 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	1,890	223.0	0	0	1,890	
434.00	2,638	250.0	2,254	2,254	2,933	
435.00	3,491	280.0	3,055	5,308	4,226	
436.00	4,436	311.0	3,954	9,262	5,714	
437.00	5,474	342.0	4,946	14,208	7,357	
438.00	6,584	369.0	6,020	20,229	8,926	
439.00	7,767	396.0	7,167	27,396	10,613	

Device	Routing	Invert	Outlet Devices									
#1	Primary	437.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=23.73 cfs @ 12.12 hrs HW=438.12' TW=438.00' (Fixed TW Elev= 438.00')
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 23.73 cfs @ 1.41 fps)

Pond 10P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Pond 10P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	433.00	0.00
5.50	0.00	0	433.00	0.00
6.00	0.00	0	433.00	0.00
6.50	0.00	0	433.00	0.00
7.00	0.00	0	433.00	0.00
7.50	0.00	0	433.00	0.00
8.00	0.00	0	433.00	0.00
8.50	0.00	1	433.00	0.00
9.00	0.04	38	433.02	0.00
9.50	0.11	167	433.09	0.00
10.00	0.22	452	433.23	0.00
10.50	0.42	1,010	433.49	0.00
11.00	0.77	2,047	433.92	0.00
11.50	1.56	4,036	434.62	0.00
12.00	19.86	15,068	437.15	0.00
12.50	16.04	20,610	438.06	16.28
13.00	7.03	20,361	438.02	7.08
13.50	3.87	20,301	438.01	3.89
14.00	2.70	20,279	438.01	2.71
14.50	2.12	20,268	438.01	2.12
15.00	1.85	20,263	438.01	1.85
15.50	1.66	20,260	438.00	1.66
16.00	1.47	20,256	438.00	1.47
16.50	1.32	20,253	438.00	1.32
17.00	1.23	20,252	438.00	1.23
17.50	1.15	20,250	438.00	1.16
18.00	1.09	20,249	438.00	1.09
18.50	1.02	20,248	438.00	1.02
19.00	0.95	20,246	438.00	0.95
19.50	0.88	20,245	438.00	0.88
20.00	0.81	20,244	438.00	0.81

Summary for Pond 11P: Detention Pond #2

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 2.17" for 25-yr event
 Inflow = 26.61 cfs @ 12.12 hrs, Volume= 2.184 af
 Outflow = 1.14 cfs @ 17.63 hrs, Volume= 0.404 af, Atten= 96%, Lag= 330.1 min
 Primary = 1.14 cfs @ 17.63 hrs, Volume= 0.404 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 436.60' @ 17.63 hrs Surf.Area= 25,706 sf Storage= 78,112 cf

Plug-Flow detention time= 317.8 min calculated for 0.402 af (18% of inflow)
 Center-of-Mass det. time= 217.8 min (1,049.2 - 831.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	433.00'	116,426 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
433.00	17,836	696.0	0	0	17,836
434.00	19,952	714.0	18,884	18,884	19,975
435.00	22,124	733.0	21,029	39,913	22,280
436.00	24,352	752.0	23,229	63,142	24,644
437.00	26,636	771.0	25,485	88,627	27,070
438.00	28,978	790.0	27,799	116,426	29,556

Device	Routing	Invert	Outlet Devices
#1	Primary	433.50'	12.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 433.50' / 433.00' S= 0.0125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	435.00'	2.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	435.50'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	436.50'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height
#5	Secondary	437.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.14 cfs @ 17.63 hrs HW=436.60' (Free Discharge)

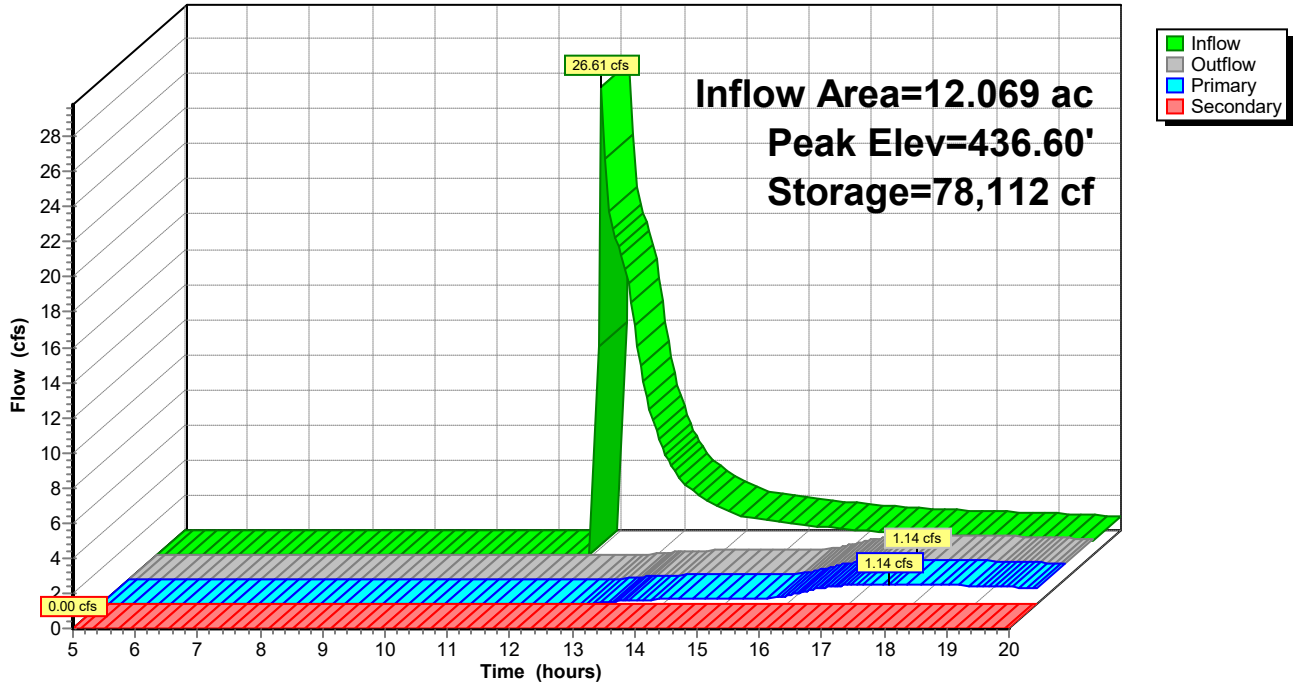
- ↑ 1=Culvert (Passes 1.14 cfs of 6.10 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 0.13 cfs @ 5.93 fps)
- ↑ 3=Orifice/Grate (Orifice Controls 0.23 cfs @ 4.75 fps)
- ↑ 4=Sharp-Crested Rectangular Weir (Weir Controls 0.77 cfs @ 1.05 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=433.00' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 11P: Detention Pond #2

Hydrograph



21-488 POST Development

Type II 24-hr 25-yr Rainfall=5.90"

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Hydrograph for Pond 11P: Detention Pond #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	433.00	0.00	0.00	0.00
5.50	0.00	0	433.00	0.00	0.00	0.00
6.00	0.00	0	433.00	0.00	0.00	0.00
6.50	0.00	0	433.00	0.00	0.00	0.00
7.00	0.00	0	433.00	0.00	0.00	0.00
7.50	0.00	0	433.00	0.00	0.00	0.00
8.00	0.00	0	433.00	0.00	0.00	0.00
8.50	0.00	0	433.00	0.00	0.00	0.00
9.00	0.00	0	433.00	0.00	0.00	0.00
9.50	0.00	0	433.00	0.00	0.00	0.00
10.00	0.00	0	433.00	0.00	0.00	0.00
10.50	0.00	0	433.00	0.00	0.00	0.00
11.00	0.00	0	433.00	0.00	0.00	0.00
11.50	0.00	0	433.00	0.00	0.00	0.00
12.00	0.00	0	433.00	0.00	0.00	0.00
12.50	16.28	30,160	434.55	0.00	0.00	0.00
13.00	7.08	50,271	435.46	0.06	0.06	0.00
13.50	3.89	59,370	435.84	0.20	0.20	0.00
14.00	2.71	64,738	436.07	0.26	0.26	0.00
14.50	2.12	68,511	436.22	0.29	0.29	0.00
15.00	1.85	71,516	436.34	0.32	0.32	0.00
15.50	1.66	74,085	436.44	0.34	0.34	0.00
16.00	1.47	76,238	436.53	0.49	0.49	0.00
16.50	1.32	77,498	436.57	0.89	0.89	0.00
17.00	1.23	77,977	436.59	1.08	1.08	0.00
17.50	1.16	78,108	436.60	1.14	1.14	0.00
18.00	1.09	78,084	436.60	1.13	1.13	0.00
18.50	1.02	77,987	436.59	1.09	1.09	0.00
19.00	0.95	77,854	436.59	1.03	1.03	0.00
19.50	0.88	77,703	436.58	0.97	0.97	0.00
20.00	0.81	77,544	436.58	0.91	0.91	0.00

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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

Subcatchment 1S: Sub Basin #1 Runoff Area=471,733 sf 19.09% Impervious Runoff Depth>2.96"
Flow Length=550' Tc=18.1 min CN=55 Runoff=40.45 cfs 2.670 af

Subcatchment 2S: Sub Basin #2 Runoff Area=804,012 sf 36.81% Impervious Runoff Depth>4.32"
Flow Length=1,300' Tc=23.2 min CN=67 Runoff=88.30 cfs 6.651 af

Subcatchment 7S: Sub Basin #3 Runoff Area=306,446 sf 54.61% Impervious Runoff Depth>4.76"
Flow Length=1,880' Tc=44.3 min CN=71 Runoff=24.26 cfs 2.788 af

Subcatchment 9S: Sub Basin #4 Runoff Area=219,262 sf 36.49% Impervious Runoff Depth>5.04"
Flow Length=950' Tc=14.6 min CN=73 Runoff=35.38 cfs 2.114 af

Reach 6R: Neversink River Inflow=15.78 cfs 6.999 af
Outflow=15.78 cfs 6.999 af

Pond 7P: Forbay Peak Elev=442.35' Storage=14,816 cf Inflow=127.01 cfs 9.320 af
Outflow=125.41 cfs 9.140 af

Pond 8P: Dentention Pond #1 Peak Elev=440.73' Storage=209,486 cf Inflow=125.41 cfs 9.140 af
Primary=8.64 cfs 4.453 af Secondary=16.67 cfs 1.453 af Outflow=25.31 cfs 5.906 af

Pond 10P: Forbay Peak Elev=438.38' Storage=22,794 cf Inflow=45.59 cfs 4.902 af
Outflow=44.70 cfs 4.452 af

Pond 11P: Dentention Pond #2 Peak Elev=437.68' Storage=107,307 cf Inflow=44.70 cfs 4.452 af
Primary=7.26 cfs 2.545 af Secondary=1.93 cfs 0.100 af Outflow=9.19 cfs 2.646 af

Total Runoff Area = 41.356 ac Runoff Volume = 14.222 af Average Runoff Depth = 4.13"
64.84% Pervious = 26.815 ac 35.16% Impervious = 14.541 ac

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Subcatchment 1S: Sub Basin #1

Runoff = 40.45 cfs @ 12.11 hrs, Volume= 2.670 af, Depth> 2.96"

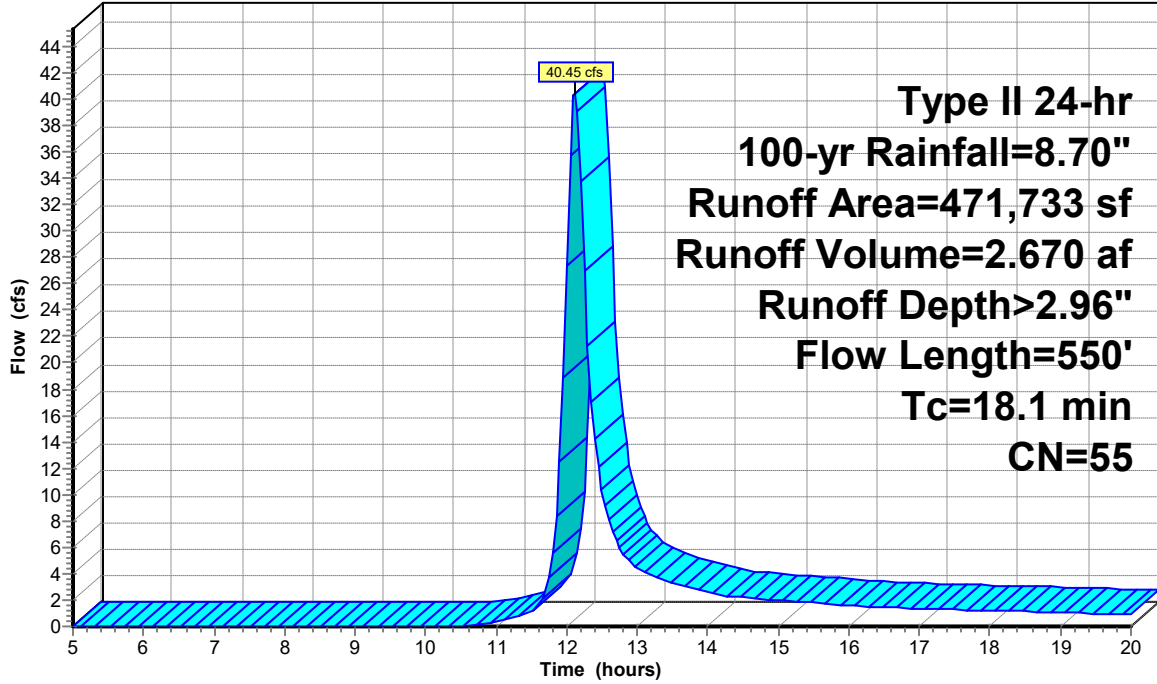
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.70"

Area (sf)	CN	Description
21,600	98	Roofs, HSG A
68,472	98	Paved parking, HSG A
283,377	39	>75% Grass cover, Good, HSG A
98,284	61	>75% Grass cover, Good, HSG B
471,733	55	Weighted Average
381,661		80.91% Pervious Area
90,072		19.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Sub Basin #1 Grass: Short n= 0.150 P2= 3.11"
2.8	225	0.0360	1.33		Shallow Concentrated Flow, Shallow Conc. to CB Short Grass Pasture Kv= 7.0 fps
0.2	25	0.0100	2.03		Shallow Concentrated Flow, Across Road Paved Kv= 20.3 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, Grass to Film Studio Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0100	2.14	0.37	Pipe Channel, SB 1 Piping from Parking Lot to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
18.1	550	Total			

Subcatchment 1S: Sub Basin #1

Hydrograph



**Type II 24-hr
100-yr Rainfall=8.70"
Runoff Area=471,733 sf
Runoff Volume=2.670 af
Runoff Depth>2.96"
Flow Length=550'
Tc=18.1 min
CN=55**

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Subcatchment 1S: Sub Basin #1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.55	0.00	0.00	18.00	8.01	2.79	1.21
5.25	0.58	0.00	0.00	18.25	8.05	2.82	1.17
5.50	0.62	0.00	0.00	18.50	8.09	2.84	1.14
5.75	0.66	0.00	0.00	18.75	8.12	2.87	1.10
6.00	0.70	0.00	0.00	19.00	8.16	2.89	1.06
6.25	0.74	0.00	0.00	19.25	8.19	2.92	1.02
6.50	0.78	0.00	0.00	19.50	8.22	2.94	0.98
6.75	0.82	0.00	0.00	19.75	8.25	2.96	0.94
7.00	0.86	0.00	0.00	20.00	8.28	2.98	0.90
7.25	0.91	0.00	0.00				
7.50	0.95	0.00	0.00				
7.75	1.00	0.00	0.00				
8.00	1.04	0.00	0.00				
8.25	1.09	0.00	0.00				
8.50	1.15	0.00	0.00				
8.75	1.21	0.00	0.00				
9.00	1.28	0.00	0.00				
9.25	1.35	0.00	0.00				
9.50	1.42	0.00	0.00				
9.75	1.49	0.00	0.00				
10.00	1.57	0.00	0.00				
10.25	1.67	0.00	0.00				
10.50	1.77	0.00	0.04				
10.75	1.90	0.01	0.16				
11.00	2.04	0.02	0.34				
11.25	2.23	0.04	0.63				
11.50	2.46	0.08	1.15				
11.75	3.37	0.30	3.66				
12.00	5.77	1.39	27.33				
12.25	6.14	1.60	27.02				
12.50	6.39	1.75	10.42				
12.75	6.57	1.86	5.94				
13.00	6.72	1.95	4.45				
13.25	6.84	2.02	3.73				
13.50	6.95	2.09	3.27				
13.75	7.05	2.15	2.89				
14.00	7.13	2.21	2.58				
14.25	7.21	2.26	2.32				
14.50	7.29	2.31	2.18				
14.75	7.36	2.35	2.08				
15.00	7.43	2.40	1.98				
15.25	7.49	2.44	1.88				
15.50	7.55	2.48	1.78				
15.75	7.60	2.52	1.68				
16.00	7.66	2.55	1.58				
16.25	7.71	2.58	1.48				
16.50	7.75	2.62	1.43				
16.75	7.80	2.65	1.39				
17.00	7.85	2.68	1.36				
17.25	7.89	2.71	1.32				
17.50	7.93	2.74	1.29				
17.75	7.97	2.77	1.25				

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Subcatchment 2S: Sub Basin #2

Runoff = 88.30 cfs @ 12.16 hrs, Volume= 6.651 af, Depth> 4.32"

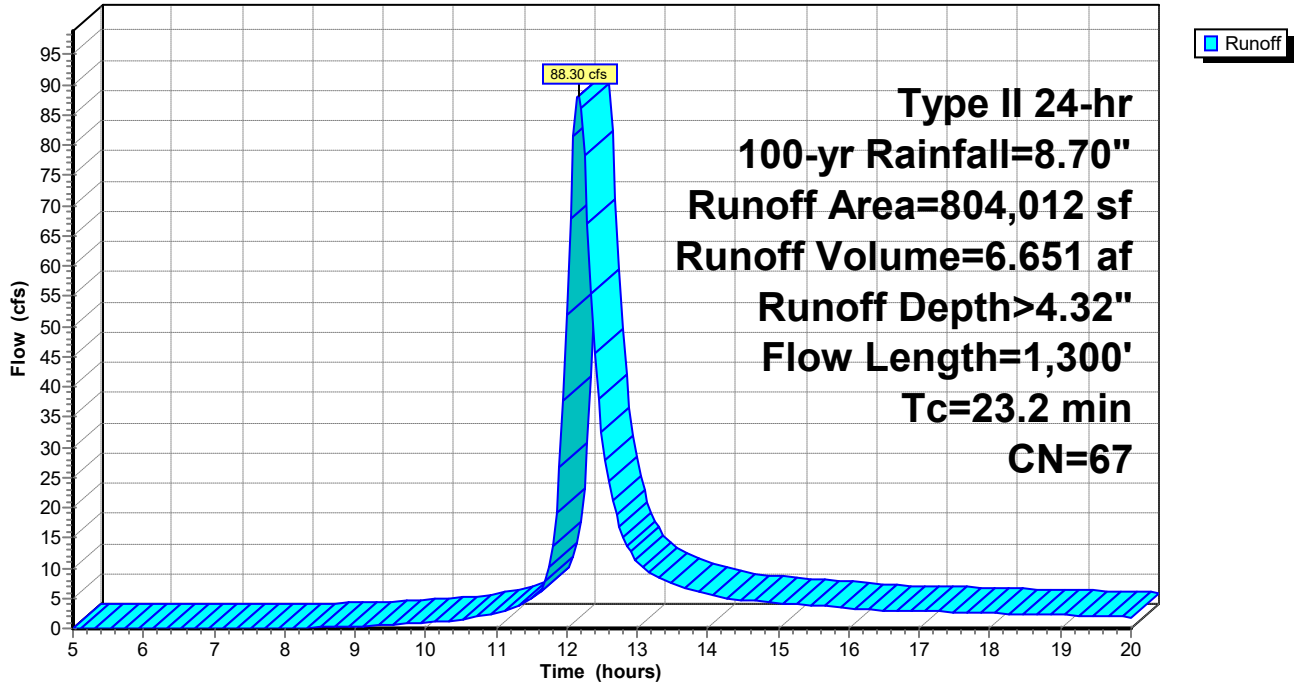
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type II 24-hr 100-yr Rainfall=8.70"

Area (sf)	CN	Description
102,546	98	Roofs, HSG A
193,419	98	Paved parking, HSG A
254,023	39	>75% Grass cover, Good, HSG A
127,012	61	>75% Grass cover, Good, HSG B
127,012	55	Woods, Good, HSG B
804,012	67	Weighted Average
508,047		63.19% Pervious Area
295,965		36.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0100	0.13		Sheet Flow, Initiated from Sub Basin #2 Grass: Short n= 0.150 P2= 3.11"
3.0	200	0.0250	1.11		Shallow Concentrated Flow, To Road Short Grass Pasture Kv= 7.0 fps
1.3	250	0.0240	3.14		Shallow Concentrated Flow, Road to CB Paved Kv= 20.3 fps
5.8	750	0.0100	2.14	0.37	Pipe Channel, CB to Pond 15.0" Round w/ 12.0" inside fill Area= 0.2 sf Perim= 2.2' r= 0.08' n= 0.013 Corrugated PE, smooth interior
23.2	1,300	Total			

Subcatchment 2S: Sub Basin #2

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Subcatchment 2S: Sub Basin #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.55	0.00	0.00	18.00	8.01	4.13	2.54
5.25	0.58	0.00	0.00	18.25	8.05	4.16	2.45
5.50	0.62	0.00	0.00	18.50	8.09	4.19	2.37
5.75	0.66	0.00	0.00	18.75	8.12	4.22	2.29
6.00	0.70	0.00	0.00	19.00	8.16	4.25	2.21
6.25	0.74	0.00	0.00	19.25	8.19	4.28	2.13
6.50	0.78	0.00	0.00	19.50	8.22	4.31	2.05
6.75	0.82	0.00	0.00	19.75	8.25	4.33	1.96
7.00	0.86	0.00	0.00	20.00	8.28	4.36	1.88
7.25	0.91	0.00	0.00				
7.50	0.95	0.00	0.00				
7.75	1.00	0.00	0.00				
8.00	1.04	0.00	0.01				
8.25	1.09	0.00	0.06				
8.50	1.15	0.01	0.14				
8.75	1.21	0.01	0.23				
9.00	1.28	0.02	0.36				
9.25	1.35	0.02	0.50				
9.50	1.42	0.03	0.63				
9.75	1.49	0.05	0.76				
10.00	1.57	0.06	0.95				
10.25	1.67	0.08	1.20				
10.50	1.77	0.11	1.55				
10.75	1.90	0.14	1.99				
11.00	2.04	0.19	2.61				
11.25	2.23	0.25	3.46				
11.50	2.46	0.34	4.93				
11.75	3.37	0.78	10.04				
12.00	5.77	2.36	52.02				
12.25	6.14	2.64	78.26				
12.50	6.39	2.83	32.45				
12.75	6.57	2.97	16.72				
13.00	6.72	3.08	11.08				
13.25	6.84	3.18	8.62				
13.50	6.95	3.27	7.38				
13.75	7.05	3.35	6.46				
14.00	7.13	3.41	5.73				
14.25	7.21	3.48	5.11				
14.50	7.29	3.54	4.73				
14.75	7.36	3.59	4.48				
15.00	7.43	3.65	4.26				
15.25	7.49	3.70	4.04				
15.50	7.55	3.75	3.82				
15.75	7.60	3.80	3.60				
16.00	7.66	3.84	3.38				
16.25	7.71	3.88	3.16				
16.50	7.75	3.92	3.02				
16.75	7.80	3.96	2.93				
17.00	7.85	3.99	2.85				
17.25	7.89	4.03	2.77				
17.50	7.93	4.06	2.69				
17.75	7.97	4.10	2.62				

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Subcatchment 7S: Sub Basin #3

Runoff = 24.26 cfs @ 12.42 hrs, Volume= 2.788 af, Depth> 4.76"

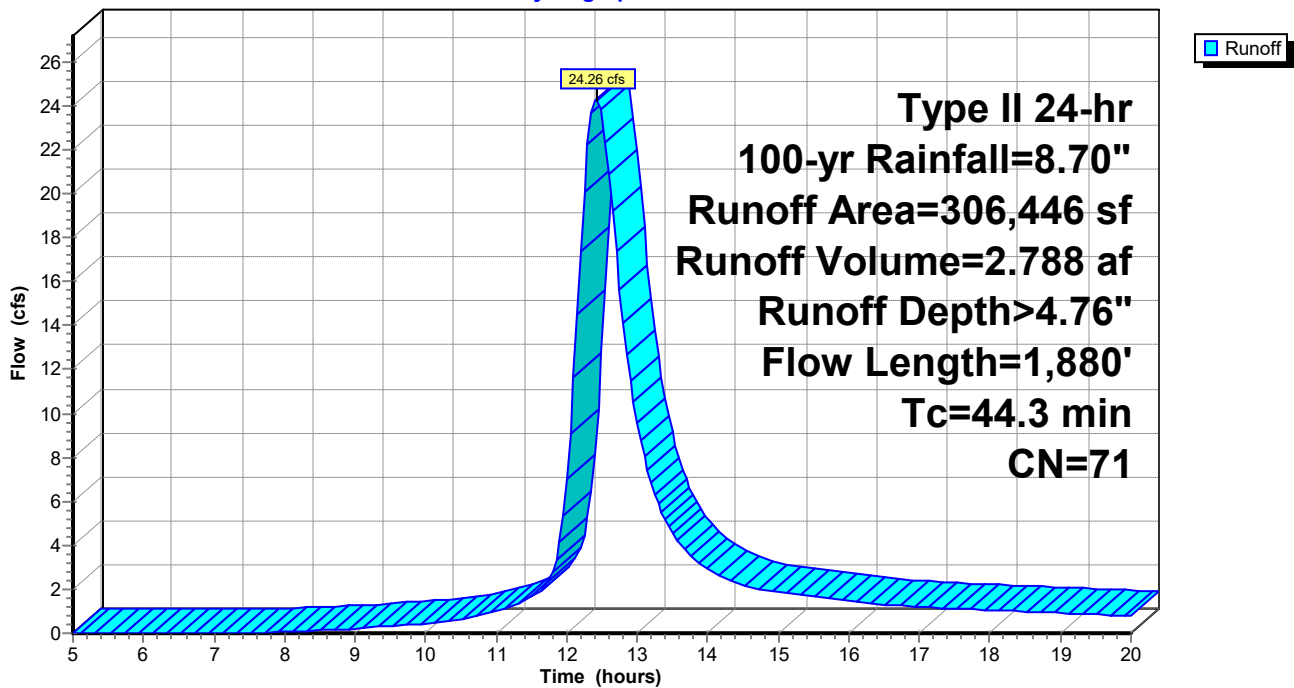
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.70"

Area (sf)	CN	Description
167,358	98	Paved parking, HSG A
139,088	39	>75% Grass cover, Good, HSG A
306,446	71	Weighted Average
139,088		45.39% Pervious Area
167,358		54.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	50	0.0050	0.06		Sheet Flow, Grass to Parking Lot Grass: Dense n= 0.240 P2= 3.11"
1.8	80	0.0050	0.74		Sheet Flow, Pavement to CB Smooth surfaces n= 0.011 P2= 3.11"
28.0	1,750	0.0100	1.04	0.04	Pipe Channel, Piping to River 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
44.3	1,880	Total			

Subcatchment 7S: Sub Basin #3

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Subcatchment 7S: Sub Basin #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.55	0.00	0.00	18.00	8.01	4.59	1.05
5.25	0.58	0.00	0.00	18.25	8.05	4.62	1.02
5.50	0.62	0.00	0.00	18.50	8.09	4.66	0.99
5.75	0.66	0.00	0.00	18.75	8.12	4.69	0.96
6.00	0.70	0.00	0.00	19.00	8.16	4.72	0.92
6.25	0.74	0.00	0.00	19.25	8.19	4.75	0.89
6.50	0.78	0.00	0.00	19.50	8.22	4.77	0.86
6.75	0.82	0.00	0.00	19.75	8.25	4.80	0.83
7.00	0.86	0.00	0.00	20.00	8.28	4.83	0.79
7.25	0.91	0.00	0.00				
7.50	0.95	0.00	0.02				
7.75	1.00	0.01	0.04				
8.00	1.04	0.01	0.06				
8.25	1.09	0.02	0.09				
8.50	1.15	0.03	0.12				
8.75	1.21	0.03	0.16				
9.00	1.28	0.05	0.21				
9.25	1.35	0.06	0.27				
9.50	1.42	0.08	0.33				
9.75	1.49	0.10	0.39				
10.00	1.57	0.12	0.45				
10.25	1.67	0.15	0.53				
10.50	1.77	0.18	0.64				
10.75	1.90	0.23	0.79				
11.00	2.04	0.28	0.99				
11.25	2.23	0.36	1.26				
11.50	2.46	0.47	1.65				
11.75	3.37	0.98	2.43				
12.00	5.77	2.71	6.97				
12.25	6.14	3.01	20.08				
12.50	6.39	3.22	23.43				
12.75	6.57	3.36	15.65				
13.00	6.72	3.49	9.57				
13.25	6.84	3.59	6.33				
13.50	6.95	3.68	4.56				
13.75	7.05	3.76	3.57				
14.00	7.13	3.84	2.94				
14.25	7.21	3.90	2.49				
14.50	7.29	3.97	2.18				
14.75	7.36	4.03	1.99				
15.00	7.43	4.08	1.85				
15.25	7.49	4.14	1.75				
15.50	7.55	4.19	1.65				
15.75	7.60	4.24	1.56				
16.00	7.66	4.28	1.47				
16.25	7.71	4.32	1.38				
16.50	7.75	4.37	1.30				
16.75	7.80	4.41	1.24				
17.00	7.85	4.45	1.19				
17.25	7.89	4.48	1.15				
17.50	7.93	4.52	1.12				
17.75	7.97	4.56	1.09				

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Subcatchment 9S: Sub Basin #4

Runoff = 35.38 cfs @ 12.06 hrs, Volume= 2.114 af, Depth> 5.04"

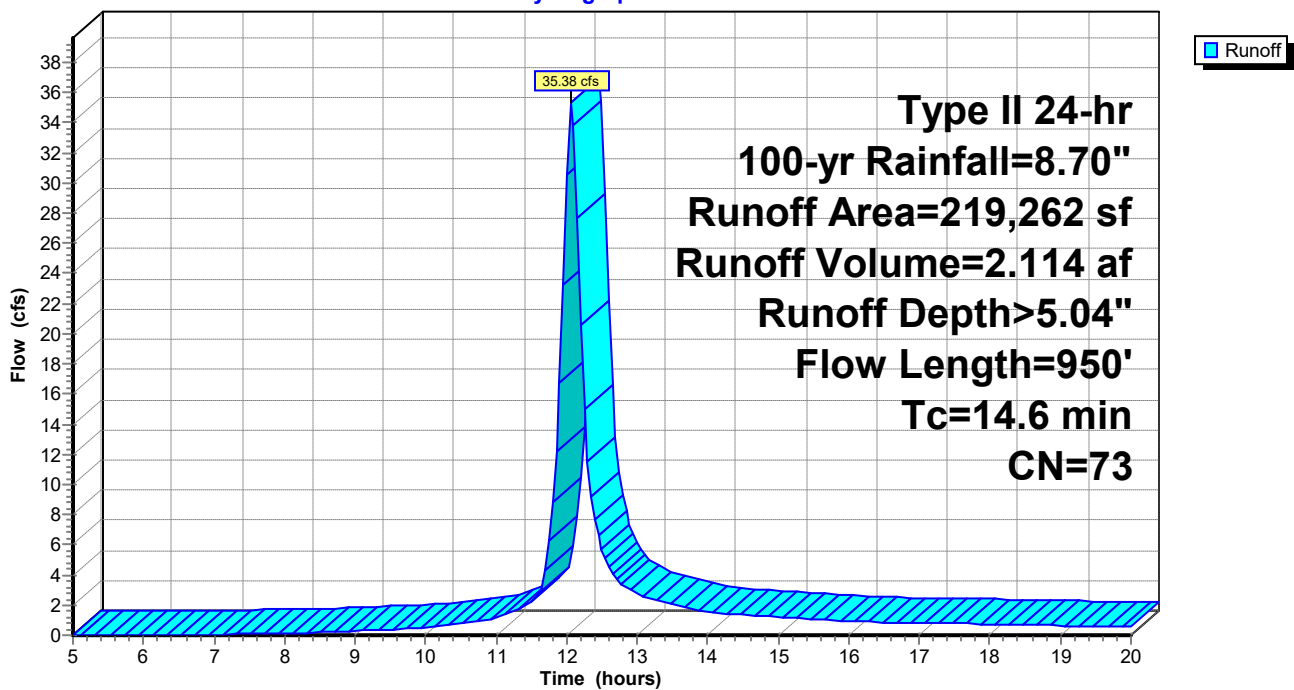
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.70"

Area (sf)	CN	Description
80,018	98	Paved parking, HSG A
139,244	58	Woods/grass comb., Good, HSG B
219,262	73	Weighted Average
139,244		63.51% Pervious Area
80,018		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0050	0.78		Sheet Flow, Pavement to Drain Smooth surfaces n= 0.011 P2= 3.11"
2.9	250	0.0050	1.44		Shallow Concentrated Flow, To Drain Paved Kv= 20.3 fps
9.6	600	0.0100	1.04	0.04	Pipe Channel, Pipe to Forbay 15.0" Round w/ 14.0" inside fill Area= 0.0 sf Perim= 1.3' r= 0.03' n= 0.013 Corrugated PE, smooth interior
14.6	950	Total			

Subcatchment 9S: Sub Basin #4

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Subcatchment 9S: Sub Basin #4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
5.00	0.55	0.00	0.00	18.00	8.01	4.82	0.73
5.25	0.58	0.00	0.00	18.25	8.05	4.86	0.70
5.50	0.62	0.00	0.00	18.50	8.09	4.89	0.68
5.75	0.66	0.00	0.00	18.75	8.12	4.92	0.65
6.00	0.70	0.00	0.00	19.00	8.16	4.95	0.63
6.25	0.74	0.00	0.00	19.25	8.19	4.98	0.61
6.50	0.78	0.00	0.00	19.50	8.22	5.01	0.58
6.75	0.82	0.00	0.02	19.75	8.25	5.04	0.56
7.00	0.86	0.00	0.04	20.00	8.28	5.06	0.53
7.25	0.91	0.01	0.06				
7.50	0.95	0.01	0.08				
7.75	1.00	0.02	0.10				
8.00	1.04	0.02	0.12				
8.25	1.09	0.03	0.15				
8.50	1.15	0.04	0.19				
8.75	1.21	0.05	0.23				
9.00	1.28	0.07	0.28				
9.25	1.35	0.09	0.34				
9.50	1.42	0.11	0.37				
9.75	1.49	0.13	0.42				
10.00	1.57	0.15	0.50				
10.25	1.67	0.19	0.61				
10.50	1.77	0.23	0.75				
10.75	1.90	0.28	0.93				
11.00	2.04	0.34	1.18				
11.25	2.23	0.43	1.54				
11.50	2.46	0.55	2.16				
11.75	3.37	1.09	6.25				
12.00	5.77	2.90	30.56				
12.25	6.14	3.21	15.04				
12.50	6.39	3.42	5.75				
12.75	6.57	3.57	3.42				
13.00	6.72	3.69	2.74				
13.25	6.84	3.80	2.30				
13.50	6.95	3.89	2.02				
13.75	7.05	3.98	1.78				
14.00	7.13	4.05	1.58				
14.25	7.21	4.12	1.42				
14.50	7.29	4.18	1.35				
14.75	7.36	4.25	1.28				
15.00	7.43	4.30	1.22				
15.25	7.49	4.36	1.15				
15.50	7.55	4.41	1.08				
15.75	7.60	4.46	1.02				
16.00	7.66	4.51	0.95				
16.25	7.71	4.55	0.90				
16.50	7.75	4.59	0.87				
16.75	7.80	4.63	0.84				
17.00	7.85	4.67	0.82				
17.25	7.89	4.71	0.80				
17.50	7.93	4.75	0.77				
17.75	7.97	4.79	0.75				

Summary for Reach 6R: Neversink River

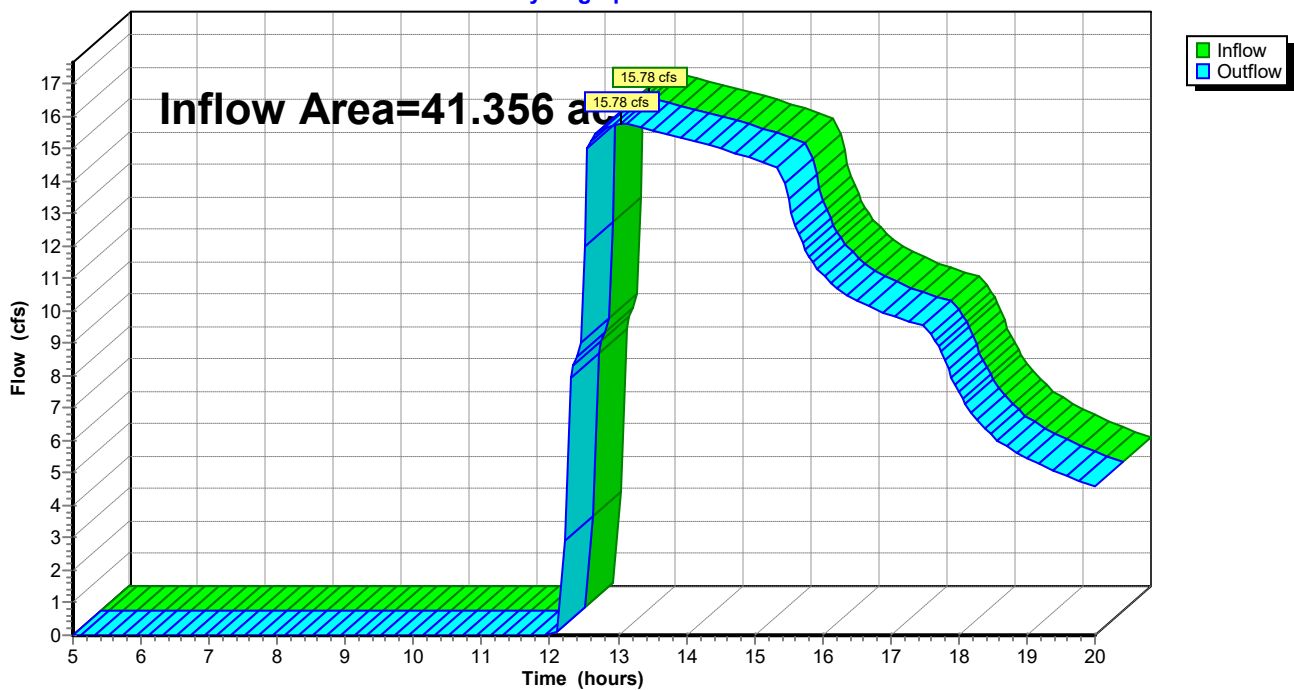
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 41.356 ac, 35.16% Impervious, Inflow Depth > 2.03" for 100-yr event
Inflow = 15.78 cfs @ 13.03 hrs, Volume= 6.999 af
Outflow = 15.78 cfs @ 13.03 hrs, Volume= 6.999 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Neversink River

Hydrograph



21-488 POST Development

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Hydrograph for Reach 6R: Neversink River

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
5.00	0.00		0.00	18.00	7.50		7.50
5.25	0.00		0.00	18.25	6.69		6.69
5.50	0.00		0.00	18.50	6.15		6.15
5.75	0.00		0.00	18.75	5.75		5.75
6.00	0.00		0.00	19.00	5.45		5.45
6.25	0.00		0.00	19.25	5.20		5.20
6.50	0.00		0.00	19.50	4.98		4.98
6.75	0.00		0.00	19.75	4.77		4.77
7.00	0.00		0.00	20.00	4.57		4.57
7.25	0.00		0.00				
7.50	0.00		0.00				
7.75	0.00		0.00				
8.00	0.00		0.00				
8.25	0.00		0.00				
8.50	0.00		0.00				
8.75	0.00		0.00				
9.00	0.00		0.00				
9.25	0.00		0.00				
9.50	0.00		0.00				
9.75	0.00		0.00				
10.00	0.00		0.00				
10.25	0.00		0.00				
10.50	0.00		0.00				
10.75	0.00		0.00				
11.00	0.00		0.00				
11.25	0.00		0.00				
11.50	0.00		0.00				
11.75	0.00		0.00				
12.00	0.00		0.00				
12.25	5.44		5.44				
12.50	12.00		12.00				
12.75	15.59		15.59				
13.00	15.78		15.78				
13.25	15.72		15.72				
13.50	15.60		15.60				
13.75	15.46		15.46				
14.00	15.32		15.32				
14.25	15.18		15.18				
14.50	15.02		15.02				
14.75	14.86		14.86				
15.00	14.69		14.69				
15.25	14.52		14.52				
15.50	13.45		13.45				
15.75	11.89		11.89				
16.00	11.12		11.12				
16.25	10.64		10.64				
16.50	10.31		10.31				
16.75	10.07		10.07				
17.00	9.87		9.87				
17.25	9.70		9.70				
17.50	9.55		9.55				
17.75	8.74		8.74				

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Pond 7P: Forbay

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 3.82" for 100-yr event
 Inflow = 127.01 cfs @ 12.15 hrs, Volume= 9.320 af
 Outflow = 125.41 cfs @ 12.16 hrs, Volume= 9.140 af, Atten= 1%, Lag= 1.0 min
 Primary = 125.41 cfs @ 12.16 hrs, Volume= 9.140 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 442.35' @ 12.16 hrs Surf.Area= 5,711 sf Storage= 14,816 cf

Plug-Flow detention time= 11.5 min calculated for 9.109 af (98% of inflow)
 Center-of-Mass det. time= 4.3 min (805.1 - 800.8)

Volume	Invert	Avail.Storage	Storage Description
#1	437.00'	18,651 cf	Custom Stage Data (Irregular) Listed below (Recalc)

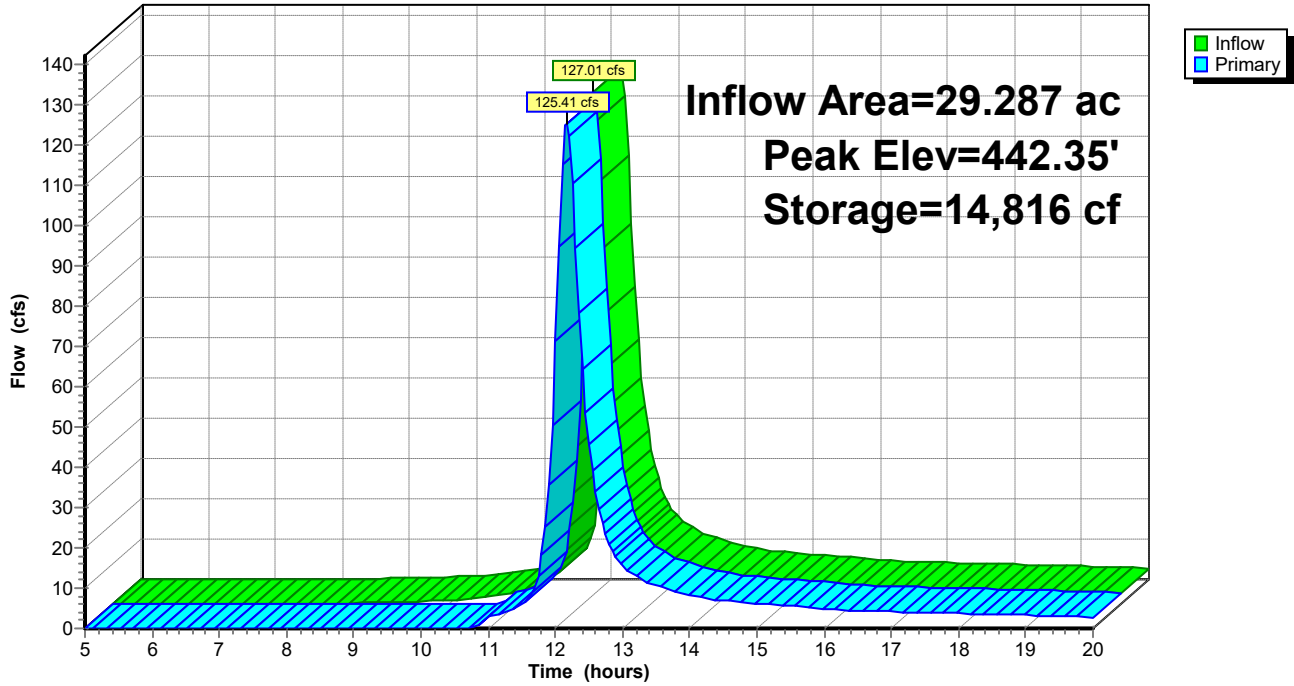
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
437.00	51	51.0	0	0	51
438.00	299	99.0	158	158	629
439.00	2,282	267.0	1,136	1,294	5,525
440.00	3,302	301.0	2,776	4,070	7,088
441.00	4,394	323.0	3,835	7,905	8,224
442.00	5,562	345.0	4,967	12,871	9,440
443.00	6,000	380.0	5,780	18,651	11,492

Device	Routing	Invert	Outlet Devices
#1	Primary	440.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=124.14 cfs @ 12.16 hrs HW=442.33' TW=441.00' (Fixed TW Elev= 441.00')
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 124.14 cfs @ 3.55 fps)

Pond 7P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Pond 7P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	437.00	0.00
5.50	0.00	0	437.00	0.00
6.00	0.00	0	437.00	0.00
6.50	0.00	0	437.00	0.00
7.00	0.00	0	437.00	0.00
7.50	0.00	0	437.00	0.00
8.00	0.01	3	437.05	0.00
8.50	0.14	119	437.86	0.00
9.00	0.36	548	438.56	0.00
9.50	0.63	1,443	439.06	0.00
10.00	0.95	2,830	439.60	0.00
10.50	1.58	5,034	440.28	0.00
11.00	2.95	7,929	441.01	2.92
11.50	6.07	7,955	441.01	6.05
12.00	79.35	11,361	441.72	71.27
12.50	42.87	9,692	441.39	45.49
13.00	15.53	8,149	441.06	15.69
13.50	10.64	7,995	441.02	10.69
14.00	8.31	7,974	441.02	8.32
14.50	6.91	7,962	441.01	6.92
15.00	6.24	7,957	441.01	6.24
15.50	5.60	7,951	441.01	5.61
16.00	4.95	7,946	441.01	4.96
16.50	4.46	7,942	441.01	4.46
17.00	4.21	7,940	441.01	4.21
17.50	3.98	7,938	441.01	3.98
18.00	3.75	7,936	441.01	3.75
18.50	3.51	7,934	441.01	3.51
19.00	3.27	7,932	441.01	3.27
19.50	3.03	7,930	441.01	3.03
20.00	2.79	7,928	441.01	2.79

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Pond 8P: Dentention Pond #1

Inflow Area = 29.287 ac, 30.26% Impervious, Inflow Depth > 3.74" for 100-yr event
 Inflow = 125.41 cfs @ 12.16 hrs, Volume= 9.140 af
 Outflow = 25.31 cfs @ 12.72 hrs, Volume= 5.906 af, Atten= 80%, Lag= 33.2 min
 Primary = 8.64 cfs @ 12.72 hrs, Volume= 4.453 af
 Secondary = 16.67 cfs @ 12.72 hrs, Volume= 1.453 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 440.73' @ 12.72 hrs Surf.Area= 48,813 sf Storage= 209,486 cf

Plug-Flow detention time= 166.1 min calculated for 5.886 af (64% of inflow)
 Center-of-Mass det. time= 95.0 min (900.2 - 805.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	435.00'	223,034 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
435.00	25,630	1,080.0	0	0	25,630
436.00	27,459	1,106.0	26,539	26,539	30,283
437.00	33,379	1,131.0	30,371	56,910	34,872
438.00	37,378	1,153.0	35,360	92,270	39,030
439.00	41,472	1,178.0	39,407	131,677	43,812
440.00	45,633	1,200.0	43,536	175,213	48,142
441.00	50,042	1,223.0	47,821	223,034	52,739

Device	Routing	Invert	Outlet Devices
#1	Primary	435.00'	12.0" Round Culvert L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.00' S= 0.0333 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	437.00'	2.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	437.75'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	439.00'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height
#5	Secondary	440.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=8.64 cfs @ 12.72 hrs HW=440.72' (Free Discharge)

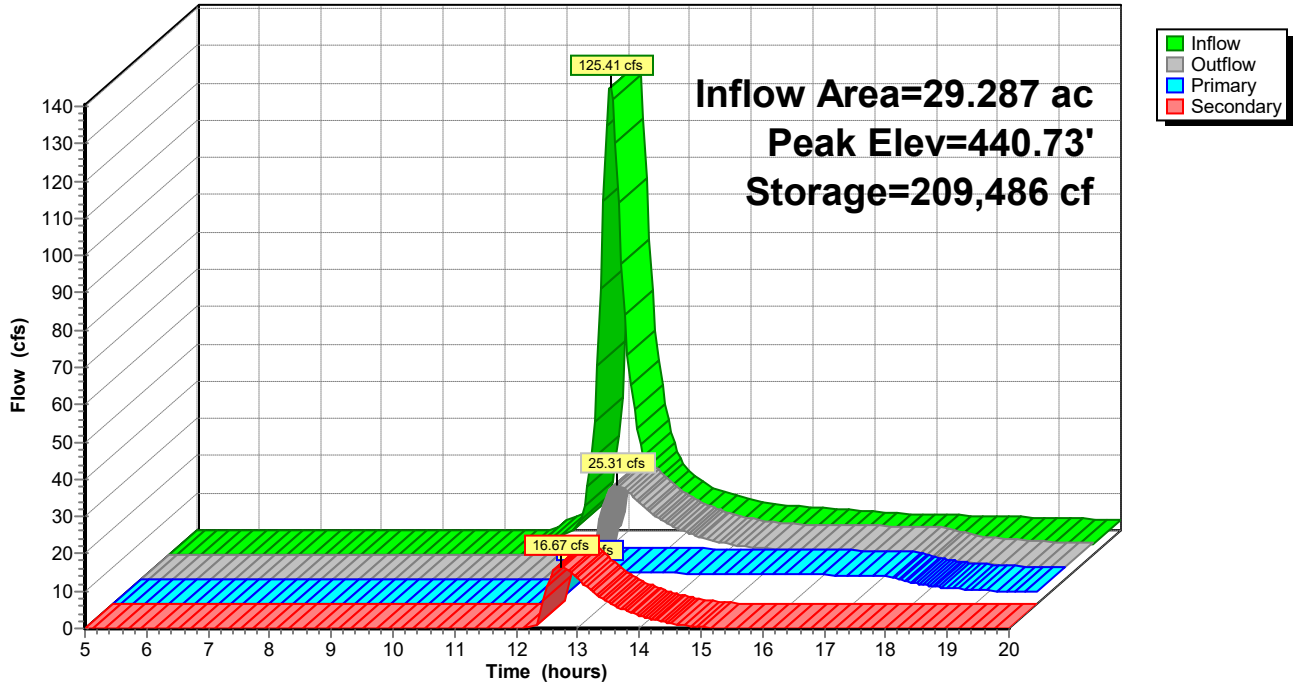
- ↑ 1=Culvert (Inlet Controls 8.64 cfs @ 11.01 fps)
- ↑ 2=Orifice/Grate (Passes < 0.20 cfs potential flow)
- ↑ 3=Orifice/Grate (Passes < 0.40 cfs potential flow)
- ↑ 4=Sharp-Crested Rectangular Weir (Passes < 78.98 cfs potential flow)

Secondary OutFlow Max=16.61 cfs @ 12.72 hrs HW=440.72' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Weir Controls 16.61 cfs @ 2.29 fps)

Pond 8P: Dentention Pond #1

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Pond 8P: Detention Pond #1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	435.00	0.00	0.00	0.00
5.50	0.00	0	435.00	0.00	0.00	0.00
6.00	0.00	0	435.00	0.00	0.00	0.00
6.50	0.00	0	435.00	0.00	0.00	0.00
7.00	0.00	0	435.00	0.00	0.00	0.00
7.50	0.00	0	435.00	0.00	0.00	0.00
8.00	0.00	0	435.00	0.00	0.00	0.00
8.50	0.00	0	435.00	0.00	0.00	0.00
9.00	0.00	0	435.00	0.00	0.00	0.00
9.50	0.00	0	435.00	0.00	0.00	0.00
10.00	0.00	0	435.00	0.00	0.00	0.00
10.50	0.00	0	435.00	0.00	0.00	0.00
11.00	2.92	1,105	435.04	0.00	0.00	0.00
11.50	6.05	8,714	435.34	0.00	0.00	0.00
12.00	71.27	47,182	436.70	0.00	0.00	0.00
12.50	45.49	201,462	440.56	19.73	8.51	11.22
13.00	15.69	204,855	440.63	22.07	8.57	13.51
13.50	10.69	194,603	440.42	15.32	8.39	6.93
14.00	8.32	187,513	440.27	11.72	8.26	3.46
14.50	6.92	182,020	440.15	9.59	8.15	1.43
15.00	6.24	177,749	440.06	8.42	8.07	0.35
15.50	5.61	173,781	439.97	7.99	7.99	0.00
16.00	4.96	168,983	439.86	7.90	7.90	0.00
16.50	4.46	163,271	439.74	7.78	7.78	0.00
17.00	4.21	157,171	439.60	7.65	7.65	0.00
17.50	3.98	150,889	439.45	7.52	7.52	0.00
18.00	3.75	145,804	439.34	5.61	5.61	0.00
18.50	3.51	143,521	439.28	4.37	4.37	0.00
19.00	3.27	142,350	439.25	3.78	3.78	0.00
19.50	3.03	141,562	439.24	3.42	3.42	0.00
20.00	2.79	140,919	439.22	3.12	3.12	0.00

21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Summary for Pond 10P: Forbay

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 4.87" for 100-yr event
 Inflow = 45.59 cfs @ 12.09 hrs, Volume= 4.902 af
 Outflow = 44.70 cfs @ 12.11 hrs, Volume= 4.452 af, Atten= 2%, Lag= 1.5 min
 Primary = 44.70 cfs @ 12.11 hrs, Volume= 4.452 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 438.38' @ 12.11 hrs Surf.Area= 7,019 sf Storage= 22,794 cf

Plug-Flow detention time= 45.4 min calculated for 4.437 af (91% of inflow)
 Center-of-Mass det. time= 15.8 min (811.3 - 795.5)

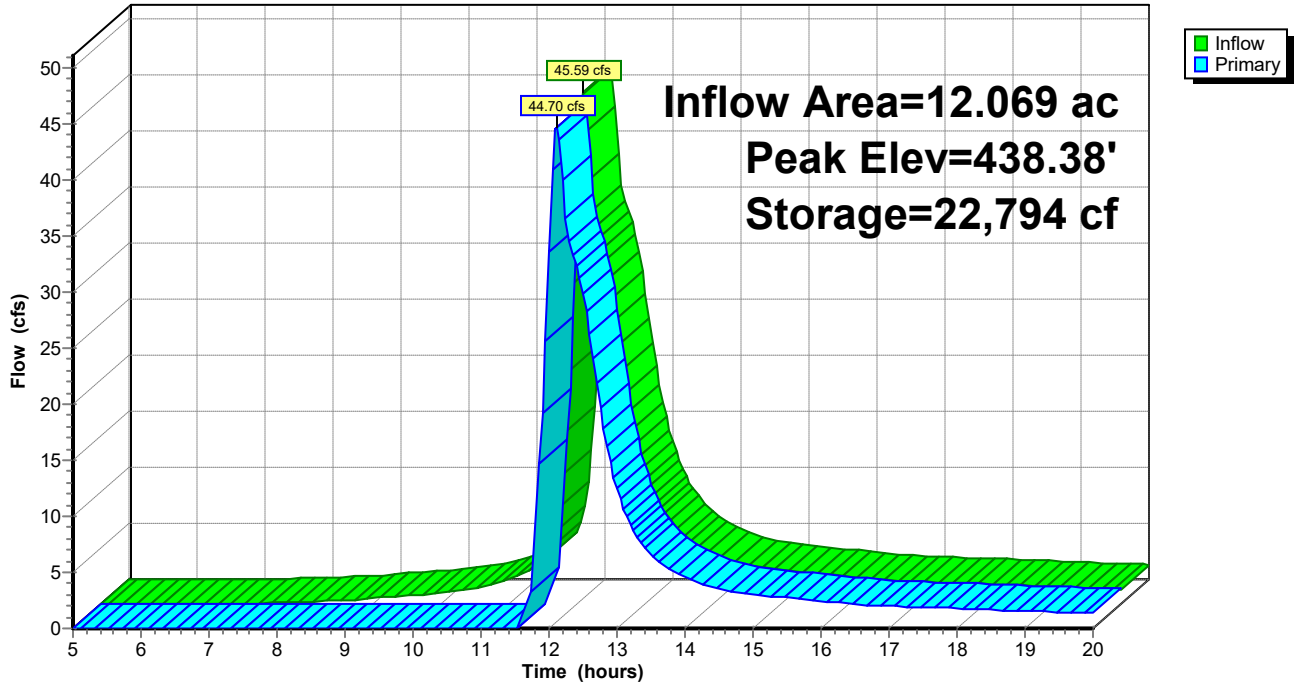
Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	27,396 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	1,890	223.0	0	0	1,890	
434.00	2,638	250.0	2,254	2,254	2,933	
435.00	3,491	280.0	3,055	5,308	4,226	
436.00	4,436	311.0	3,954	9,262	5,714	
437.00	5,474	342.0	4,946	14,208	7,357	
438.00	6,584	369.0	6,020	20,229	8,926	
439.00	7,767	396.0	7,167	27,396	10,613	

Device	Routing	Invert	Outlet Devices									
#1	Primary	437.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=44.23 cfs @ 12.11 hrs HW=438.37' TW=438.00' (Fixed TW Elev= 438.00')
 ↗ **1=Broad-Crested Rectangular Weir** (Weir Controls 44.23 cfs @ 2.15 fps)

Pond 10P: Forbay

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Pond 10P: Forbay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
5.00	0.00	0	433.00	0.00
5.50	0.00	0	433.00	0.00
6.00	0.00	0	433.00	0.00
6.50	0.00	1	433.00	0.00
7.00	0.04	35	433.02	0.00
7.50	0.10	149	433.08	0.00
8.00	0.18	398	433.20	0.00
8.50	0.31	831	433.41	0.00
9.00	0.49	1,541	433.72	0.00
9.50	0.70	2,622	434.14	0.00
10.00	0.95	4,084	434.63	0.00
10.50	1.39	6,155	435.24	0.00
11.00	2.17	9,292	436.01	0.00
11.50	3.81	14,454	437.04	0.00
12.00	37.53	21,822	438.24	33.62
12.50	29.18	21,515	438.19	29.85
13.00	12.31	20,460	438.04	12.42
13.50	6.58	20,352	438.02	6.62
14.00	4.52	20,313	438.01	4.54
14.50	3.52	20,294	438.01	3.53
15.00	3.07	20,286	438.01	3.07
15.50	2.74	20,280	438.01	2.74
16.00	2.42	20,274	438.01	2.42
16.50	2.17	20,269	438.01	2.17
17.00	2.01	20,266	438.01	2.01
17.50	1.89	20,264	438.01	1.89
18.00	1.78	20,262	438.01	1.78
18.50	1.67	20,260	438.00	1.67
19.00	1.55	20,258	438.00	1.56
19.50	1.44	20,256	438.00	1.44
20.00	1.33	20,253	438.00	1.33

Summary for Pond 11P: Dentention Pond #2

Inflow Area = 12.069 ac, 47.06% Impervious, Inflow Depth > 4.43" for 100-yr event
 Inflow = 44.70 cfs @ 12.11 hrs, Volume= 4.452 af
 Outflow = 9.19 cfs @ 13.21 hrs, Volume= 2.646 af, Atten= 79%, Lag= 65.7 min
 Primary = 7.26 cfs @ 13.21 hrs, Volume= 2.545 af
 Secondary = 1.93 cfs @ 13.21 hrs, Volume= 0.100 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 437.68' @ 13.21 hrs Surf.Area= 28,220 sf Storage= 107,307 cf

Plug-Flow detention time= 161.4 min calculated for 2.646 af (59% of inflow)
 Center-of-Mass det. time= 89.2 min (900.4 - 811.3)

Volume	Invert	Avail.Storage	Storage Description			
#1	433.00'	116,426 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
433.00	17,836	696.0	0	0	17,836	
434.00	19,952	714.0	18,884	18,884	19,975	
435.00	22,124	733.0	21,029	39,913	22,280	
436.00	24,352	752.0	23,229	63,142	24,644	
437.00	26,636	771.0	25,485	88,627	27,070	
438.00	28,978	790.0	27,799	116,426	29,556	

Device	Routing	Invert	Outlet Devices
#1	Primary	433.50'	12.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 433.50' / 433.00' S= 0.0125 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	435.00'	2.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	435.50'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	436.50'	7.5' long Sharp-Crested Rectangular Weir 0 End Contraction(s) 0.5' Crest Height
#5	Secondary	437.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.26 cfs @ 13.21 hrs HW=437.68' (Free Discharge)

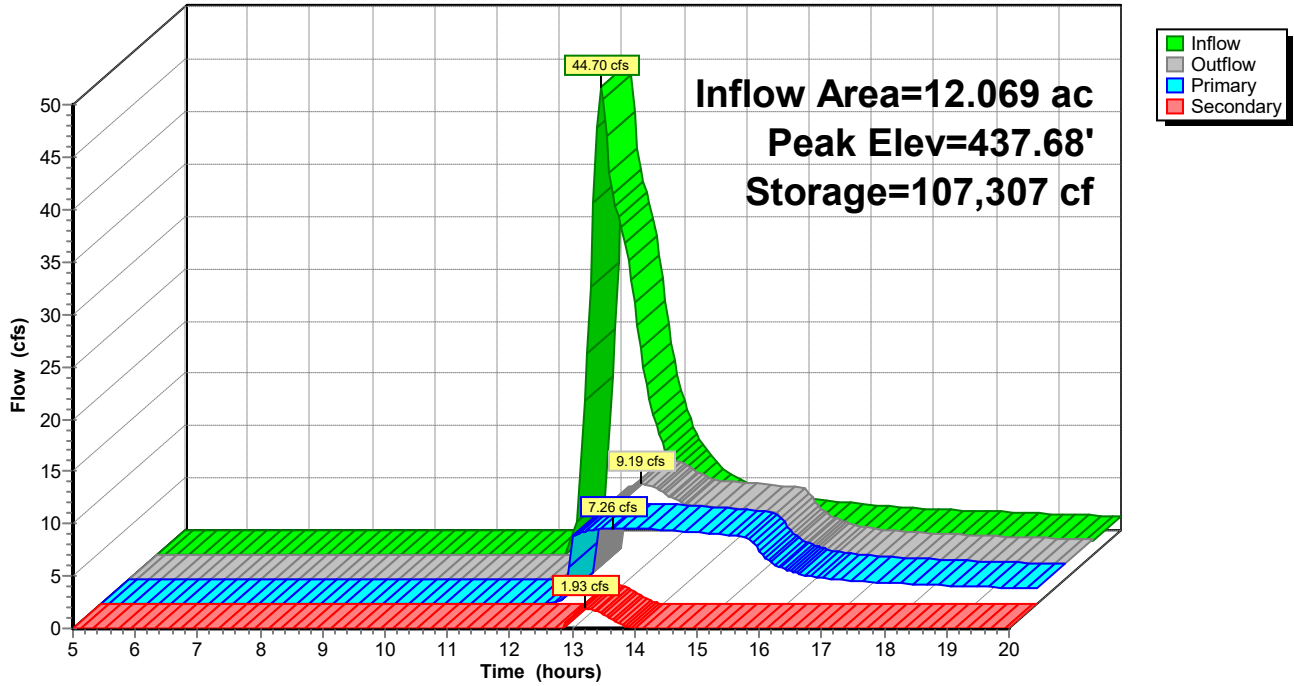
- ↑ 1=Culvert (Inlet Controls 7.26 cfs @ 9.24 fps)
- ↑ 2=Orifice/Grate (Passes < 0.17 cfs potential flow)
- ↑ 3=Orifice/Grate (Passes < 0.34 cfs potential flow)
- ↑ 4=Sharp-Crested Rectangular Weir (Passes < 40.56 cfs potential flow)

Secondary OutFlow Max=1.91 cfs @ 13.21 hrs HW=437.68' (Free Discharge)

- ↑ 5=Broad-Crested Rectangular Weir (Weir Controls 1.91 cfs @ 1.06 fps)

Pond 11P: Detention Pond #2

Hydrograph



21-488 POST Development

Type II 24-hr 100-yr Rainfall=8.70"

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Hydrograph for Pond 11P: Dentention Pond #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	433.00	0.00	0.00	0.00
5.50	0.00	0	433.00	0.00	0.00	0.00
6.00	0.00	0	433.00	0.00	0.00	0.00
6.50	0.00	0	433.00	0.00	0.00	0.00
7.00	0.00	0	433.00	0.00	0.00	0.00
7.50	0.00	0	433.00	0.00	0.00	0.00
8.00	0.00	0	433.00	0.00	0.00	0.00
8.50	0.00	0	433.00	0.00	0.00	0.00
9.00	0.00	0	433.00	0.00	0.00	0.00
9.50	0.00	0	433.00	0.00	0.00	0.00
10.00	0.00	0	433.00	0.00	0.00	0.00
10.50	0.00	0	433.00	0.00	0.00	0.00
11.00	0.00	0	433.00	0.00	0.00	0.00
11.50	0.00	0	433.00	0.00	0.00	0.00
12.00	33.62	16,103	433.86	0.00	0.00	0.00
12.50	29.85	81,850	436.74	3.50	3.50	0.00
13.00	12.42	106,019	437.64	8.46	7.21	1.25
13.50	6.62	106,086	437.64	8.50	7.21	1.29
14.00	4.54	102,050	437.49	7.07	7.07	0.00
14.50	3.53	96,636	437.30	6.87	6.87	0.00
15.00	3.07	90,398	437.07	6.62	6.62	0.00
15.50	2.74	84,155	436.83	5.46	5.46	0.00
16.00	2.42	81,474	436.73	3.22	3.22	0.00
16.50	2.17	80,508	436.69	2.53	2.53	0.00
17.00	2.01	80,017	436.67	2.21	2.21	0.00
17.50	1.89	79,726	436.66	2.03	2.03	0.00
18.00	1.78	79,512	436.65	1.89	1.89	0.00
18.50	1.67	79,319	436.65	1.78	1.78	0.00
19.00	1.56	79,116	436.64	1.67	1.67	0.00
19.50	1.44	78,907	436.63	1.56	1.56	0.00
20.00	1.33	78,696	436.62	1.45	1.45	0.00

APPENDIX E

DRAFT NOTICE OF INTENT (NOI) FORM

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.35

(Submission #: HPR-Z49W-BZTQ7, version 1)

Details

Originally Started By Joe Brunning
Alternate Identifier New Century Film Site Plan
Submission ID HPR-Z49W-BZTQ7
Submission Reason New
Status Draft

Form Input

Owner/Operator Information

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

Xin Shi Ji Corporation

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Wei

Owner/Operator Contact Person First Name

Peter

Owner/Operator Mailing Address

517 Neversink Drive

City

Port Jervis

State

NY

Zip

12771

Phone

6269997538

Email

peter.wei@newcenturyfilm.com

Federal Tax ID

NONE PROVIDED

Project Location

Project/Site Name

New Century Film Site Plan

Street Address (Not P.O. Box)

517 Neversink Drive

Side of Street

West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Town of Deerpark

State

NY

Zip

12771

DEC Region

3

County

ORANGE

Name of Nearest Cross Street

Route 209

Distance to Nearest Cross Street (Feet)

20

Project In Relation to Cross Street

North

Tax Map Numbers Section-Block-Parcel

50-1-38.23

Tax Map Numbers

NONE PROVIDED

1. Coordinates

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

- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.

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

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

41.40789289845075,-74.63656425476074

Project Details**2. What is the nature of this project?**

Redevelopment with increase in impervious area

3. Select the predominant land use for both pre and post development conditions.**Pre-Development Existing Landuse**

Other: Event and Festival Space

Post-Development Future Land Use

Other: Event and Festival Space, Film Studios and Restaurants

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

NONE PROVIDED

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

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

Total Site Area (acres)

40.7

Total Area to be Disturbed (acres)

8.5

Existing Impervious Area to be Disturbed (acres)

0

Future Impervious Area Within Disturbed Area (acres)

7.8

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

No

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

50

B (%)

50

C (%)

0

D (%)

0

7. Is this a phased project?

No

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

08/21/2023

End Date

08/30/2024

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

Neversink River

9a. Type of waterbody identified in question 9?

River Off Site

Other Waterbody Type Off Site Description

NONE PROVIDED

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

NONE PROVIDED

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

No

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

No

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

No

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?

NONE PROVIDED

If Yes, what is the acreage to be disturbed?

NONE PROVIDED

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

No

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

Yes

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

Orange County

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

No

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

No

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

No

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

No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?

Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?

Yes

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

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

Yes

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

SWPPP Preparer

Fellenzer Engineering

Contact Name (Last, Space, First)

Fellenzer, Ryan

Mailing Address

22 Mulberry Street

City

Middletown

State

NY

Zip

10940

Phone

8453431481

Email

rdf@fello.com

Download SWPPP Preparer Certification Form

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

- 1) Click on the link below to download a blank certification form
- 2) The certified SWPPP preparer should sign this form

3) Scan the signed form

4) Upload the scanned document

[Download SWPPP Preparer Certification Form](#)

Please upload the SWPPP Preparer Certification

NONE PROVIDED

Comment

NONE PROVIDED

Erosion & Sediment Control Criteria

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

No

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

Temporary Structural

Silt Fence

Stabilized Construction Entrance

Biotechnical

None

Vegetative Measures

Seeding

Mulching

Permanent Structural

Land Grading

Retaining Wall

Other

NONE PROVIDED

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

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

Preservation of Undisturbed Area

Preservation of Buffers

Reduction of Clearing and Grading

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

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

1.2

29. Post-construction SMP Identification

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

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

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

2.1

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

Yes

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)

NONE PROVIDED

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

NONE PROVIDED

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

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

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

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)

NONE PROVIDED

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

NONE PROVIDED

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

NONE PROVIDED

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)

1.1

CPv Provided (acre-feet)

2.1

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

NONE PROVIDED

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)

29.0

Post-Development (CFS)

0.46

Total Extreme Flood Control Criteria (Qf)**Pre-Development (CFS)**

126.2

Post-Development (CFS)

15.8

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

NONE PROVIDED

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

Yes

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

New Century Film

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.

NONE PROVIDED

Post-Construction SMP Identification**Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs**

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

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

NONE PROVIDED

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

NONE PROVIDED

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

NONE PROVIDED

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

NONE PROVIDED

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

NONE PROVIDED

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

NONE PROVIDED

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

NONE PROVIDED

RR Techniques (Volume Reduction)

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

NONE PROVIDED

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

NONE PROVIDED

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

NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)

NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)

NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)

NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)

NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)

NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)

NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)

NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)

NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)

NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)

NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)

NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)

14.5

Total Contributing Impervious Acres for Wet Extended Detention (P-3)

NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)

NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)

NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)

NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)

NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)

NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)

NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)

NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)

NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)

NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)

NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)

NONE PROVIDED

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

Total Contributing Impervious Area for Hydrodynamic

NONE PROVIDED

Total Contributing Impervious Area for Wet Vault

NONE PROVIDED

Total Contributing Impervious Area for Media Filter

NONE PROVIDED

"Other" Alternative SMP?

NONE PROVIDED

Total Contributing Impervious Area for "Other"

NONE PROVIDED

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

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP

NONE PROVIDED

Name of Alternative SMP

NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.

Individual SPDES

If SPDES Multi-Sector GP, then give permit ID

NONE PROVIDED

If Other, then identify

NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?

No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth

NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.

NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?

No

If No, skip question 44

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

NONE PROVIDED

MS4 SWPPP Acceptance Form Download

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

[MS4 SWPPP Acceptance Form](#)

MS4 Acceptance Form Upload

NONE PROVIDED

Comment

NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

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

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

Upload Owner/Operator Certification Form

NONE PROVIDED

Comment

NONE PROVIDED