STORMWATER MANAGEMENT PLAN & DRAINAGE ANALYSIS

144 Dorchester Avenue
Proposed Pool & Alterations
Town of Yorktown - New York

September 16, 2026

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Narrative

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A. INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) presents the proposed Best Management Practices (BMPs) to control erosion and sedimentation, and manage stormwater during the construction of a proposed pool, patio, addition and detached garage on a 2.08 acre parcel of land located at 144 Dorchester Avenue, Yorktown Heights in the Town of Yorktown, Westchester County, New York.

This SWPPP consists of this narrative with enclosures and a plan set entitled: "Proposed Pool & Alterations – 144 Dorchester Avenue – Town of Yorktown, Westchester County – New York", all as prepared by Hudson Engineering and Consulting, P.C., Elmsford, New York, latest date September 16, 2026. The plans have been prepared to meet the requirements of the New York State Department of Environmental Conservation and the Town of Yorktown.

B. METHODOLOGY

The stormwater analysis was developed utilizing the Soil Conservation Service (SCS) TR-20 methodologies (HydroCad®) to assist with the drainage analysis and design of the mitigating practice. The "Curve Number" (CN) value determination is based on soil type, vegetation and land use. *See Soil Map & Report contained herein.* The "Time of Concentration" (T_c) was determined as a direct entry of one-minute. The CN and T_c data is input into the computer model. The project site was modeled for the peak rate of runoff from the 100-year Type III – 24-hour storm event in the Post- Developed Condition.

The stormwater management design is based on the NYSDEC "New York State Stormwater Management Design Manual", latest edition and "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMP'S", by the Metropolitan Washington Council of Governments. Stormwater quality has been analyzed in accordance with the guidelines set forth in the New York State General Permit for Storm Water Discharge, GP-0-25-001.

C. *PRE-DESIGN INVESTIGATIVE ANALYSIS*

A pre-design investigative analysis was performed including a percolation test in the location shown on the plans. Percolation test was performed in the vicinity of the potential stormwater mitigation practice [TP-1] until a constant rate was achieved, the results are as follows:

- TP-1: A percolation rate of 3.0-minutes per inch (20.0-inches per hour) was observed. A percolation rate of 10.0-inches per hour was utilized.

One (1) deep test hole was excavated and labeled TP-1, as shown on the plan.

- TP-1 was excavated to a depth of 102-inches. The test revealed brown sandy loam to the invert. No ledge rock or ground water were observed for the entire depth.

- TP-1 was excavated to a depth of 90-inches. The test revealed topsoil to a depth of 6-inches, and silty sand to the invert. No ledge rock or ground water were observed for the entire depth.

The deep test hole log and percolation test data sheets are attached.

D. *PRE-DEVELOPED CONDITION*

In the pre-developed condition, the site is characterized as sloping from west to east. The soil classification based upon USDA Web Soil Survey is a combination of Paxton fine sandy loam, 8-15% slopes and Ridgebury complex 3-8% slopes. The site vegetation can be characterized as lawn and landscaped. The site is located at the end of the cul-de-sac on Dorchester Avenue. The subject property consists of an existing single-family dwelling, deck, pool, patio, hot tub, retaining walls and asphalt driveway.

In the pre-developed condition, the site is modeled as one Watershed denoted as *Watershed 1*, tributary to Design Point 1.

Watershed 1 contains approximately 90,610 square feet, consisting of 9,160 sf of impervious area in the form of the existing dwelling, walkways, pool, patio, deck, walkways, asphalt driveway and retaining walls. The remaining 81,450 sf in Watershed 1 consists of grass areas in “C” soils. The weighted curve number (CN) value is calculated as 76 and the Time of Concentration (Tc) is calculated as 6.0 minutes. Overland flow from this watershed originates in the front yard and flows in an eastern direction eventually exiting the watershed at Design Point 1..

Pre-Developed Conditions				
	1- Year	10-Year	25-Year	100-Year
	cfs	cfs	cfs	cfs
DP-1	2.28	6.30	8.63	12.99

E. POST-DEVELOPED CONDITION

In the Post-Developed Condition, the project site is modeled as two watersheds denoted as *Watershed 1 & Watershed 2*.

Watershed 1 contains approximately 88,194 square feet, consisting of 8,172 sf of impervious area in the form of the existing dwelling, walkways, asphalt driveway, retaining walls and proposed pool, patio,. The remaining 80,022 sf in Watershed 1 consists of grass areas in "C" soils. The weighted curve number (CN) value is calculated as 76 and the Time of Concentration (Tc) is calculated as 6.0 minutes. Overland flow from this watershed originates in the front yard and flows in an eastern direction eventually exiting the watershed at Design Point 1.

Watershed 2 contains approximately 2,416 square feet, consisting of impervious area in the form of the proposed gazebo, driveway extension, detached garage and a section of the proposed patio (sunken fire pit area). This watershed has a curve number (CN) value of 98 and a direct entry Time of Concentration (Tc) of 6.0 minutes. The stormwater runoff from this tributary area is conveyed via a comprehensive drainage system to six (6) Cultec Recharger® 330XLHD units set in one foot of gravel at the sides and 18-inches at the invert. The system is designed to fully accept (no release) the entire stormwater runoff volume for all storm events up to and including 100-year storm event from the watershed and ex-filtrate into the surrounding soil sub-strata.

Post-Developed Conditions				
	1- Year	10-Year	25-Year	100-Year
	cfs	cfs	cfs	cfs
DP-1	2.22	6.13	8.40	12.64

SUMMARY OF FLOWS AT DESIGN LINE

The peak runoff rates at DP-1 were calculated as follows:

Flows at Design Point (DP-1)				
	1- Year	10-Year	25-Year	100-Year
	cfs	cfs	cfs	cfs
Pre-	2.28	6.30	8.63	12.99
Post-	**2.22**	**6.13**	**8.40**	**12.64**

F. WATER QUALITY VOLUME

The Water Quality Volume (WQv) calculations were performed for all the proposed impervious areas for Watershed 2:

(WATERSHED 2)

P= 90% Rainfall 2.79 -inches

A_i = Impervious Area = 2,416 -square feet

A_i = 0.0555 -acres

A_t = Tributary Area = 2,416 -square feet

A_t = 0.0555 -acres

I = % Impervious = 100.00%

R_v= 0.05+0.009(I); where I = Percent Impervious written as a percent

R_v= 0.950 **(0.40 minimum)**

R_v= 0.950

$$WQ_v = \frac{(P \times R_v \times A_t)}{12} = 0.01225 \text{ acre-feet} = 533.63 \text{ cubic feet}$$

Rainfall = 2.89 -inches → 535.00 cubic feet OKAY

Proposed = 535.00 cubic feet OKAY

50% Pre-Treatment

50% WQ_v= 0.006141 acre-feet = 267.50 cubic feet

Proposed = 278.37 cubic feet OKAY

The Water Quality Volume (WQv) from the proposed impervious areas results in 533.63 cubic feet. The total water quality volume is equal to a 2.89-inch storm event from *Watershed 2*. The proposed isolation row consisting of three (3) Cultec Recharger® 330XLHD units provides a total storage volume of 278.37 cubic feet. The isolation row will provide 50% pretreatment of the water quality volume. The total

storage volume provided by the six (6) Cultec Recharger® 330XLHD is equal to 556.74 cubic feet. All runoff is initially directed to the isolation row. For storm events greater than the water quality volume, a 6-inch manifold pipe is installed 24-inches above the isolation row outlet and discharges to the remaining Cultec 330XLHD Rechargers. The system is fully capable of storing the full water quality volume without exfiltration.

G. CONSTRUCTION PHASE

During the construction phase of the project, a sediment and erosion control plan shall be implemented in accordance with the NYSDEC Standards and Specifications for Erosion and Sediment Controls (2015). The primary goals of the sediment and erosion control plan are to prevent the tracking of dirt and mud onto adjacent roads, to prevent mud and silt from entering existing and proposed drainage facilities, and to protect the receiving waters from contamination during the construction.

<u>During construction, the party responsible for implementing the temporary (during construction) Stormwater Management facilities Maintenance Program will be the owner. Contact information will be filed with the Town/Village.</u>

A New York State Professional Engineer or Certified Professional in Erosion and Sediment Control (P.E. or CPESC) shall conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls shown on the plan have been adequately installed and/or implemented to ensure overall preparedness of the site for construction. Following the commencement of construction, site inspections shall be conducted by the P.E. or CPESC at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

*A trained contractor must inspect erosion and sediment control practices in active work areas daily.

During each inspection, the representative shall record the following:

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 approximate degree of sediment accumulation as a percentage of the sediment storage volume.

5. Inspect all erosion and sediment control practices and record all maintenance requirements. 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 the barrier. Record the depth of sediment within containment structures and any erosion near outlet and overflow structures.

6. All identified deficiencies.

The construction manager shall maintain a record of all inspection reports in a site logbook. The site logbook shall be maintained on-site and be made available to the Town of New Castle and/or the NYSDEC. A summary of the site inspection activities shall be posted monthly in a publicly accessible location at the site.

H. CONSTRUCTION SEQUENCING

The following erosion control schedule shall be utilized:

1. Place orange construction fencing around areas to be used for ex-filtration to avoid compaction.

2. Install a construction entrance to the development area.

3. Establish construction staging area.

4. Selective vegetation removal for silt fence installation.

5. Install silt fence down slope of all areas to be disturbed as shown on the plan.

6. Remove trees where necessary (clear & grub) for the proposed construction.

7. Strip topsoil and stockpile at the locations specified on the plans (up gradient of erosion control measures). Temporarily stabilize topsoil stockpiles (hydroseed during May 1st through October 31st planting season or by covering with a tarpaulin(s) November 1st through April 30th. Install silt fence around the toe of the slope.

8. Demolish any existing site features and/or structures noted as being removed from the construction documents and dispose of off-site.

9. Rough grade site.

10. Install additional silt fence, as necessary.

11. Excavate and construct pool.

12. Excavate and install exfiltration gallery per manufacturer's recommendations and requirements. The exfiltration system shall be

temporarily plugged until the completion of construction and the site is stabilized.

13. Install drainage work tributary including all pretreatment devices, catch basins and piping.

14. Construct patio.

15. Unplug previously installed exfiltration system. Install and connect all roof drain leaders and drainage structures to the exfiltration gallery.

16. Install 4”-6” topsoil, fine grade, seed the entire project site and install landscape plantings. Spread salt hay over seeded areas.

17. Clean drain lines, catch basins and pretreatment devices. Clean exfiltration/attenuation galleries. Ensure grass stand is achieved.

18. Remove construction entrance and restore disturbed area.

19. Remove all temporary soil erosion and sediment control measures after the site is stabilized with vegetation.

* Soil erosion and sediment control maintenance must occur weekly and prior to and after every ½” or greater rainfall event.

I. *EROSION AND SEDIMENT CONTROL COMPONENTS*

The primary aim of the soil and sediment control measures is to reduce soil erosion from areas stripped of vegetation during and after construction and to prevent silt from reaching the off-site drainage structures and downstream properties. As outlined in the Construction Sequencing schedule, the Sediment and Erosion Control Components are an integral component of the construction sequencing and will be implemented to control sedimentation and re-establish vegetation.

Planned erosion and sedimentation control practices during construction include the installation, inspection and maintenance of the inlet protection, soil stockpile areas, diversion swales and silt fencing. General land grading practices, including land stabilization and construction sequencing, are also integrated into the Sediment and Erosion Control Plan. Dust control is not expected to be a problem due to the limited area of exposure, the undisturbed perimeter of trees around the project area and the brief time of exposure. Should excessive dust be generated, it will be controlled by sprinkling.

All proposed soil erosion and sediment control practices have been designed in accordance with the following publications:

- New York State Department of Environmental Conservation Standards and Specifications for Erosion and Sediment Controls (2015).

- New York State General Permit for Stormwater Discharges, GP-0-25-001 (General permit).

- "Reducing the Impacts of Stormwater Runoff from New Development," as published by the New York State Department of Environmental Conservation (NYSDEC), second edition, April 1993.

The proposed soil erosion and sediment control devices include the planned erosion control practices outlined below. Maintenance procedures for each erosion control practice have also been outlined below.

- **SILT FENCE**

  Silt fence (geo-textile filter cloth) shall be placed in locations depicted on the approved plans. The purpose of the silt fence is to reduce the velocity of sediment laden stormwater from small drainage areas and to intercept the transported sediment load. In general, silt fence shall be used at the toe of slopes or intermediately within slopes where obvious channel concentration of stormwater is not present.

  Maintenance

  Silt fencing shall be inspected at a minimum of once per week and prior to and within 24 hours following a rain event ½" or greater. Inspections shall include ensuring that the fence material is tightly secured to the woven wire, and the wire is secured to the wood posts. In addition, overlapping filter fabric shall be secured and the fabric shall be maintained a minimum of six (6) inches below grade. If any "bulges" develop in the fence, that section of fence shall be replaced within 24 hours with a new fence section. Any sediment built-up against the fence shall be removed within 24 hours and deposited on-site a minimum of 100 feet outside of any wetland or watercourse.

  The installation of silt fencing will be maintained or replaced until the fencing is no longer necessary. Once the site is stabilized, all silt fences shall be removed. The immediate area occupied by the silt fence will be shaped to an acceptable grade and stabilized.

- ***GENERAL LAND GRADING***

  The intent of the Erosion & Sediment Control Plan is to control disturbed areas such that soil is protected from erosion by temporary methods and by permanent vegetation. Where practicable, all cut and fill slopes shall be kept to a maximum slope of 2:1. In the event that a slope must exceed a 2:1 slope, it will be stabilized with stone riprap. On fill slopes, all material will be placed in layers not to exceed 12 inches in depth and adequately compacted.

Diversion swales shall be constructed on the top of all fill embankments to divert any overland flows away from the fill slopes.

- **SURFACE STABILIZATION**

  All disturbed areas will be protected from erosion with the use of vegetative measures (i.e., grass seed mix, sod) hydro mulch netting or hay. When activities temporarily cease during construction, soil stockpiles and exposed soil should be stabilized by seed, mulch or other appropriate measures within 7 days after construction activity has ceased, or 24 hours prior to a rain event ½" or greater.

  All seeded areas will be re-seeded areas as necessary and mulched according to the site plan to maintain a vigorous, dense vegetative cover,

  Erosion control barriers (silt fencing) shall be placed around exposed areas during construction. Where exposed areas are immediately uphill from a wetland or watercourse, the erosion control barrier will consist of double rows of silt fencing. Any areas stripped of vegetation during construction will be vegetated and/or mulch, but in no case more than 14 days to prevent erosion of the exposed soils. And topsoil removed during construction will be temporarily stockpiled for future use in grading and landscaping.

  As mentioned above, temporary vegetation will be established to protect exposed soil areas during construction. If growing conditions are not suitable for the temporary vegetation, mulch will be used to the satisfaction of the Town Engineer. Materials that may be used for mulching include straw, hay, salt hay, wood fiber, synthetic soil stabilizers, mulch netting, sod or hydro mulch. In site areas where significant erosion potential exists (steep slopes) and where specifically directed by the Town's representative, Curlex Excelsior erosion control blankets (manufactured by American Excelsior or approved equal) shall be installed. A permanent vegetative cover will be established upon completion of construction of those areas that have been brought to finish-grade and to remain undisturbed.

- **SOIL RESTORATION REQUIREMENTS**

Type of Soil Disturbance	Soil Restoration Requirements	Comments/Example
No soil disturbance	Restoration not permitted	Preservation of Natural Features
Minimal soil disturbance	Restoration not required	Clearing & grubbing
Areas where topsoil is stripped only – no change in grade	Apply 6-inches of topsoil	Protect area from any ongoing construction activities
Areas of cut or fill	Aerate and apply 6 inches of topsoil	
	Apply full Soil Restoration	

Heavy traffic areas on site	(decompaction and compost enhancement)	
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration is not required but may be applied	Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single-phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area	

Soil Restoration Techniques

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following Soil Restoration steps applied:

1. Apply 3 inches of compost over subsoil.
2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing and circulating air and compost into subsoils.
3. Rock-pick until uplifted stone/rock materials of 4 inches and larger size are cleaned off the site.
4. Apply Topsoil to a depth of 6 inches.
5. Vegetate as required by the approved plan.

- **Temporary Stabilization (May 1st through October 31st planting season)**

  The following seeding application should be used depending on the time of year.

  - Spring/summer or early fall, seed the area with ryegrass (annual or perennial) at 30 lbs. per acre (Approximately 0.7 lb/1000 sq. ft. or use 1 lb/1000 sq. ft.).
  - Late fall or early winter, seed Certified ‘Aroostook’ winter rye (cereal rye) at 100 lbs. per acre (2.5 lbs/1000 sq. ft.).

- **Permanent Stabilization (May 1st through October 31st planting season)**

  1. Provide a minimum of four (4) inches of topsoil for all new lawn areas. Top dress all existing disturbed lawn areas with two (2) inches of topsoil.

  2. Grass seed shall be evenly sown by mechanical seeder at a rate of 3.0-4.0 pounds per 1,000 square feet.

  3. Fine rake, roll and water to a depth of one inch all seeded areas.

  4. Apply air-dried hay or straw mulch to provide 90% coverage of surface (approximately 90 lbs. per 1,000 sf). Use small grain straw where mulch is maintained for more than three months.

  5. Contractors shall provide, at their own expense, protection against trespassing and other damage to lawn areas.

  6. Lawn seed mix shall include:

     a. General Recreation areas and lawns:

        - 65% Kentucky Bluegrass blend
        - 20% Perennial Rye
        - 15% Fine fescue

        Sod may be used as an alternative to seeding in select areas.

        Slow-release fertilizers will be applied by hand to horticultural plantings as part of regular horticultural maintenance program and shall be limited to a single spring application.

- **Winter Stabilization (November 15th through April 1st)**

  1. Prepare a snow management plan with adequate storage for snow and control of melt water, requiring cleared snow to be stored in a manner that does not affect ongoing construction activities.

  2. Enlarge and stabilize access points to provide for snow management and stockpiling. Snow management activities must not destroy or degrade installed erosion and sediment control practices.

  3. A minimum 25-foot buffer shall be maintained from all perimeter controls such as silt fence. Mark silt fence with tall stakes that are visible above the snowpack.

  4. Edges of disturbed areas that drain to a waterbody within 100 feet will have 2 rows of silt fence, 5 feet apart, installed on the contour.

5. Drainage structures must be kept open and free of snow and ice dams. All debris, ice, dams, or debris from plowing operations that restrict the flow of runoff and meltwater, shall be removed.

6. Sediment barriers must be installed at all appropriate perimeter and sensitive locations. Silt fence and other practices requiring earth disturbance must be installed before the ground freezes.

7. Soil stockpiles must be protected using established vegetation, anchored straw mulch, rolled stabilization matting, or other durable covering. A barrier must be installed at least 15 feet from the top of the stockpile to prevent soil migration and to capture loose soil.

8. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures should be initiated by the end of the next business day and completed within three (3) days. Rolled erosion control blankets must be used on all slopes 3 horizontal to 1 vertical or steeper.

9. If straw mulch alone is used for temporary stabilization, it shall be applied at double the standard rate of 2 tons per acre, making the application rate 4 tons per acre. Other manufactured mulch should be applied at double the manufacturer's recommended rate.

10. To ensure adequate stabilization of disturbed soil in advance of a melt event, areas of disturbed soil should be stabilized at the end of each workday unless:

    a. Work will resume within 24 hours in the same area and no precipitation is forecast or;

    b. The work is in disturbed areas that collect and retain runoff, such as open utility trenches, foundation excavations, or water management areas.

11. Use stone paths to stabilize access perimeters of buildings under construction and areas where construction vehicle traffic is anticipated. Stone paths should be a minimum 10 feet in width but as wide as necessary to accommodate equipment.

J. CONSTRUCTION PRACTICES TO MINIMIZE STORMWATER CONTAMINATION

Adequate measures shall be taken to minimize contaminant particles arising from the discharge of solid materials, including building materials, grading operations, and the reclamation and placement of pavement, during project construction, including but not limited to:

- Building materials, garbage, and debris shall be cleaned up daily and deposited into dumpsters, which will be periodically removed from the site and appropriately disposed of.

- Dump trucks hauling material from the construction site will be covered with a tarpaulin.

- The paved street adjacent to the site entrance will be swept daily to remove excess mud, dirt, or rock tracked from the site.

- Petroleum products will be stored in tightly sealed containers that are clearly labeled.

- All vehicles on site will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.

- All spills will be cleaned up immediately upon discovery. Spills large enough to reach the storm system will be reported to the National Response Center at 1-800-424-8802.

- Materials and equipment necessary for spill cleanup will be kept in the temporary material storage trailer onsite. Equipment will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, saw dust, and plastic and metal trash containers.

- All paint containers and curing compounds will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm system but will be properly disposed of according to the manufacturer’s instructions.

- Sanitary waste will be collected from portable units a minimum of two times a week to avoid overfilling.

- Any asphalt substances used on-site will be applied according to the manufacturer's recommendation.

- Fertilizers will be stored in a covered shed and partially used bags will be transferred to a sealable bin to avoid spills and will be applied only in the minimum amounts recommended by the manufacturer and worked into the soil to limit exposure to stormwater.

- No disturbed area shall be left un-stabilized for longer than 14 days during the growing season.

- When erosion is likely to be a problem, grubbing operations shall be scheduled and performed such that grading operations and permanent erosion control features can follow within 24 hours thereafter.

- As work progresses, patch seeding shall be done as required on areas previously treated to maintain or establish protective cover.

- Drainage pipes and swales/ditches shall be constructed in a sequence from outlet to inlet to stabilize outlet areas and ditches before water is directed to the new installation or any portion thereof unless conditions unique to the location warrant an alternative method.

Spill Control & Spill Response:

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean-up will be clearly posted. Site personnel will be made aware of the procedures, and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as booms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean-up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well-ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill, a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The Contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.
- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.

- If oil sheen is observed on surface water, action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to the contacts listed below.
- Personnel with primary responsibility for spill response and clean-up will receive training from the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

Spill Control Notification:

- A reportable spill is a quantity of five (5) gallons or more or any spill of oil which: (1) violates water quality standards, (2) produces a" sheen" on a surface water, or (3) causes a sludge or emulsion. This spill must be reported immediately to the agencies listed below.

- Any spill of oil or hazardous substance to the waters of the state must be reported immediately by telephone to the following agencies:

  - 911 – Police, Fire and EMS
  - Yorktown Building Department
    363 Underhill Avenue
    Yorktown Heights, NY 10598
    Phone: (914) 962-5722 x233
  - Yorktown Police Department
    1 Captain Kenneth Sgroi Plaza
    Yorktown Heights, NY 10598
    Phone: (914) 962-4141
  - Yorktown Fire Department
    1916 Commerce Street
    Yorktown Heights, NY 10598
    Phone: (914) 962-2148
  - NYS Department of Environmental Conservation (NYSDEC)
    Spill Reporting Hotline
    (1800) 457–7362
  - National Response Center: (1800) 424-8802

- Local Emergency Planning Committee (LEPC)
  Westchester County Office of Emergency Management
  200 Bradhurst Avenue
  Hawthorne, NY 10532
  (914) 864–5450
- Westchester County Department of Health (WCDOH)
  Spill Reporting Hotline
  (914) 813-5000
- U.S. Environmental Protection Agency (USEPA)
  EPCRA Information Hotline
  1(800) 535–0202
- U.S. Department of Labor and Occupational Safety and Health Administration (OSHA)
  Tarrytown, NY
  (914) 524–7510

K. STORMWATER MANAGEMENT FACILITIES MAINTENANCE PROGRAM

The following maintenance plan has been developed to maintain the proper function of all drainage and erosion and sediment control facilities:

- Erosion & Sediment Control Maintenance:

  During the construction of the project, the site erosion and sediment control measures as well as the project superintendent will inspect basin embankments and outlet structures once a week and/or within 24 hours following a rainstorm ½" or greater. Any repairs required shall be performed in a timely manner. All sediment removal and/or repairs will be followed within 24 hours by re-vegetation. Remove sediment and correct erosion by re-seeding eroded areas and gullies within 7 days.

- General Stormwater Facilities Maintenance (Storm Sewer, Catch Basins/Drain Inlets, Manholes, Pre-treatment Device and Subsurface Infiltration System)

  All stormwater facilities shall be inspected immediately after completion of construction, and then monthly for the first three (3) months following the completion of the Project. Within the first three (3) months, inspections shall be performed immediately following a large storm event (i.e., producing 1/2" (one-half inch) of rain or more. Thereafter, these facilities shall be inspected as described as follows. Upon inspection, facilities should be immediately maintained and/or cleaned as may be required. Any site area exhibiting soil erosion of any kind shall be immediately restored and stabilized with vegetation, mulch or stone, depending on the area to be stabilized.

Upon each inspection, all visible debris including, but not limited to, twigs, leaf and forest litter shall be removed from the swales, overflow discharge points and frames and grates of drainage structures.

- Sumps − Catch Basin/Drain Inlets and Drain Manholes

  All catch basin/drain inlets and drain utility holes with sumps have been designed to trap sediment prior to its transport to the infiltration practice and downstream. These sumps will require periodic inspection and maintenance to ensure that adequate depth is maintained within the sumps.

  All sums shall be inspected once per month for the first three (3) months (after drainage system has been put into service). Thereafter, all sumps shall be inspected every four (4) months. The Owner, or their duly authorized representative, shall take measurements of the sump depth.

  If sediment has accumulated to 1/2 (one-half) the depth of the sump, all sediment shall be removed from the sump. Sediments can be removed with hand-labor or with a vacuum truck.

  The use of road salt shall be minimized for maintenance of roadway and driveway areas.

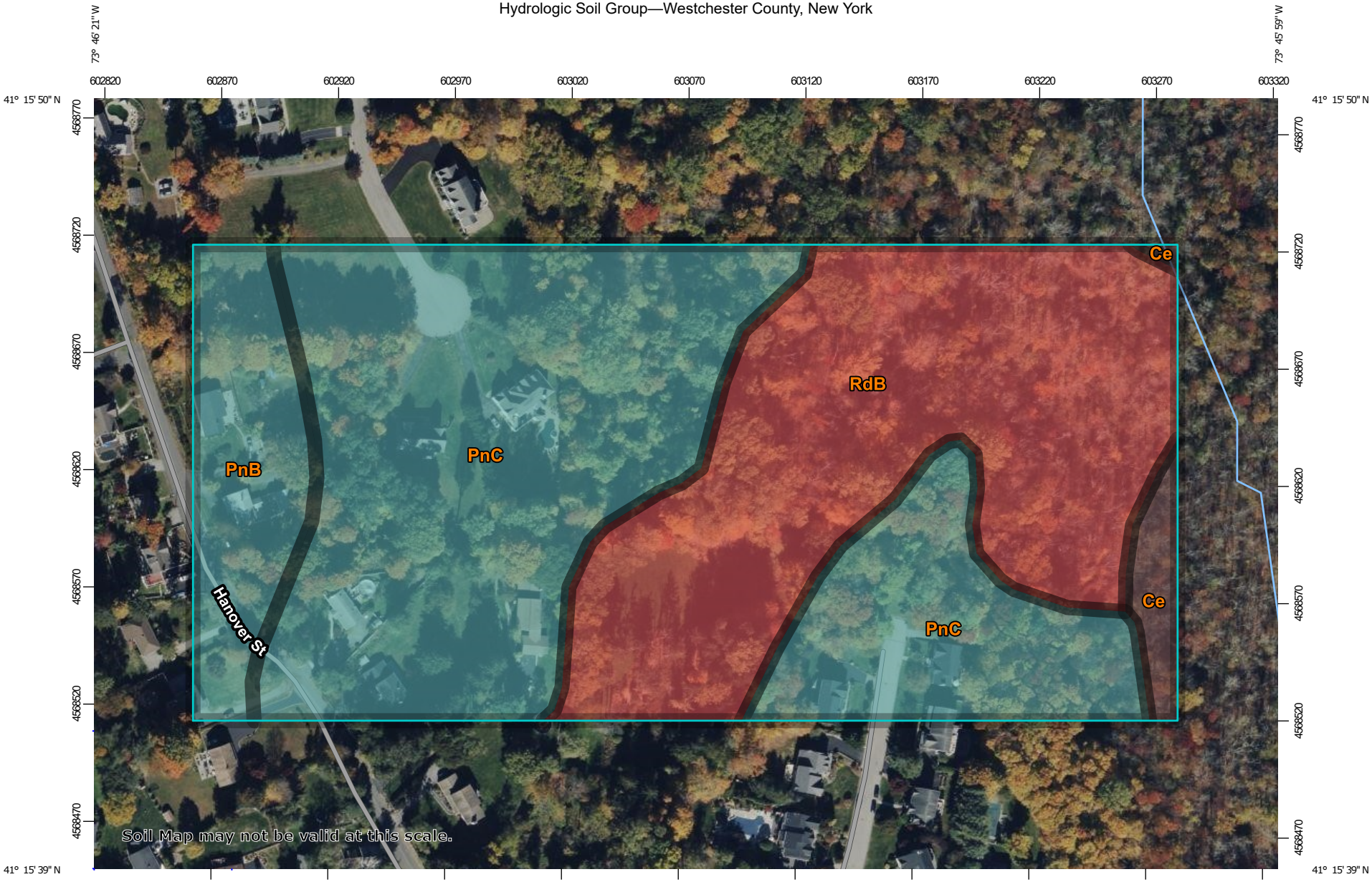
- Subsurface Attenuation/Exfiltration Gallery:

  The subsurface infiltration chambers shall be inspected immediately after construction. Thereafter, the attenuation/exfiltration gallery shall be inspected every six (6) months (Spring and Fall) for excess sediment accumulation. During dry weather conditions, when sediment has accumulated to an average depth exceeding 3" (three inches), the gallery shall be water jetted clean, and all accumulated sediments shall be vacuumed out or removed manually. A stadia rod may be inserted to determine the depth of the sediment.

L. CONCLUSION

The stormwater management plan proposed meets and exceeds all the requirements set forth by the Town of Yorktown and the New York State Department of Environmental Conservation (NYSDEC) for redevelopment projects with new development. Design modification requirements that may occur during the approval process, will be performed and submitted for review to the Town of Yorktown.

Soils Maps & Soils Data



Map Scale: 1:2,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 21, Aug 28, 2025

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

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	0.5	2.3%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	2.1	9.8%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	C	10.8	51.0%
RdB	Ridgebury complex, 3 to 8 percent slopes	D	7.8	36.9%
Totals for Area of Interest			**21.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

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

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

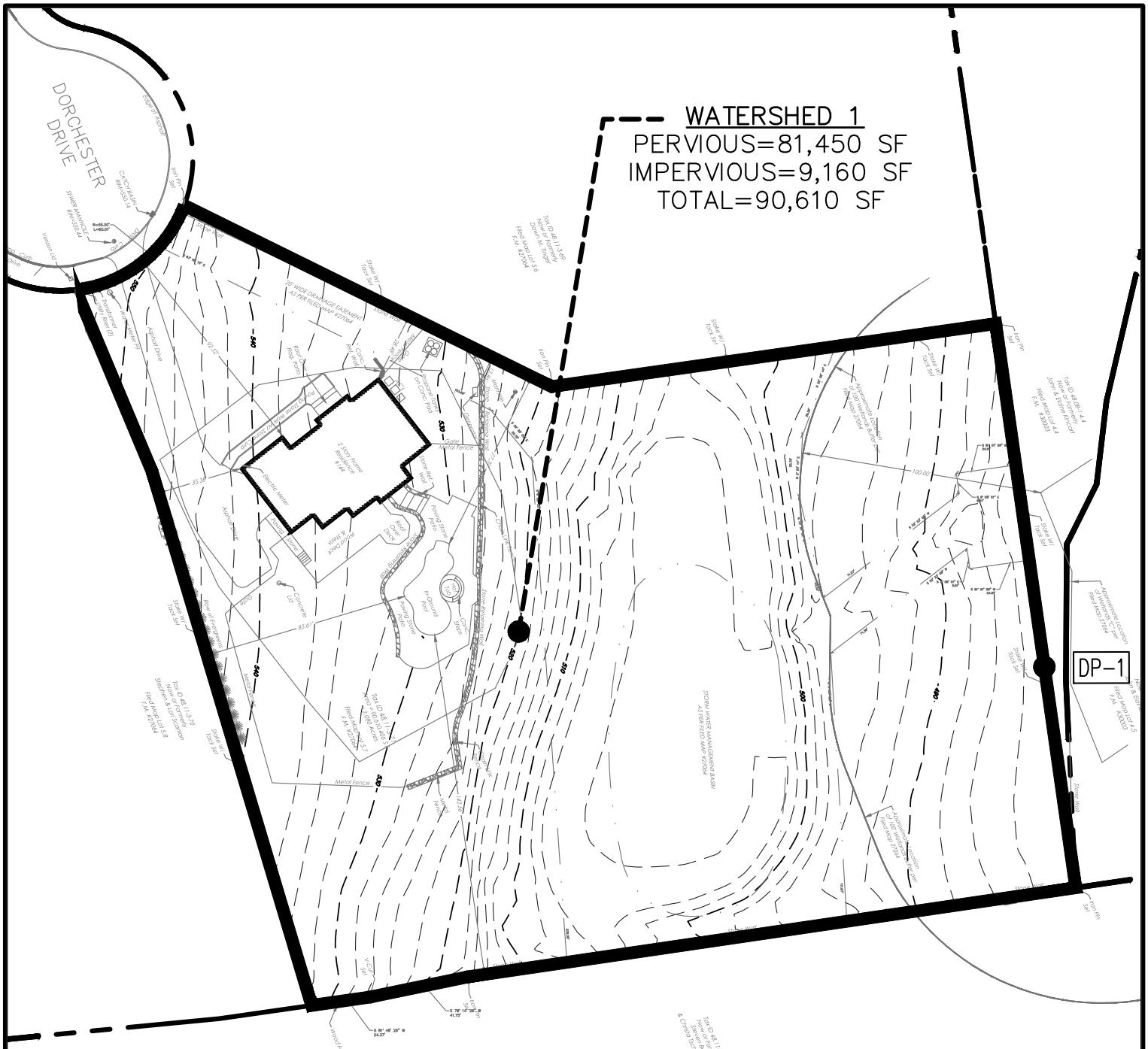
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Watershed Maps



PROJECT:

PROPOSED POOL & ALTERATIONS
144 DORCHESTER AVENUE
TOWN OF YORKTOWN
WESTCHESTER COUNTY – NEW YORK

TITLE:

WATERSHED MAP – EXISTING

ANY ALTERATIONS OR REVISIONS OF THESE PLANS, UNLESS DONE BY OR UNDER THE DIRECTION OF THE NYS LICENSED AND REGISTERED ENGINEER THAT PREPARED THEM, IS A VIOLATION OF THE NYS EDUCATION LAW.

NO	REVISIONS	DATE

Revisions

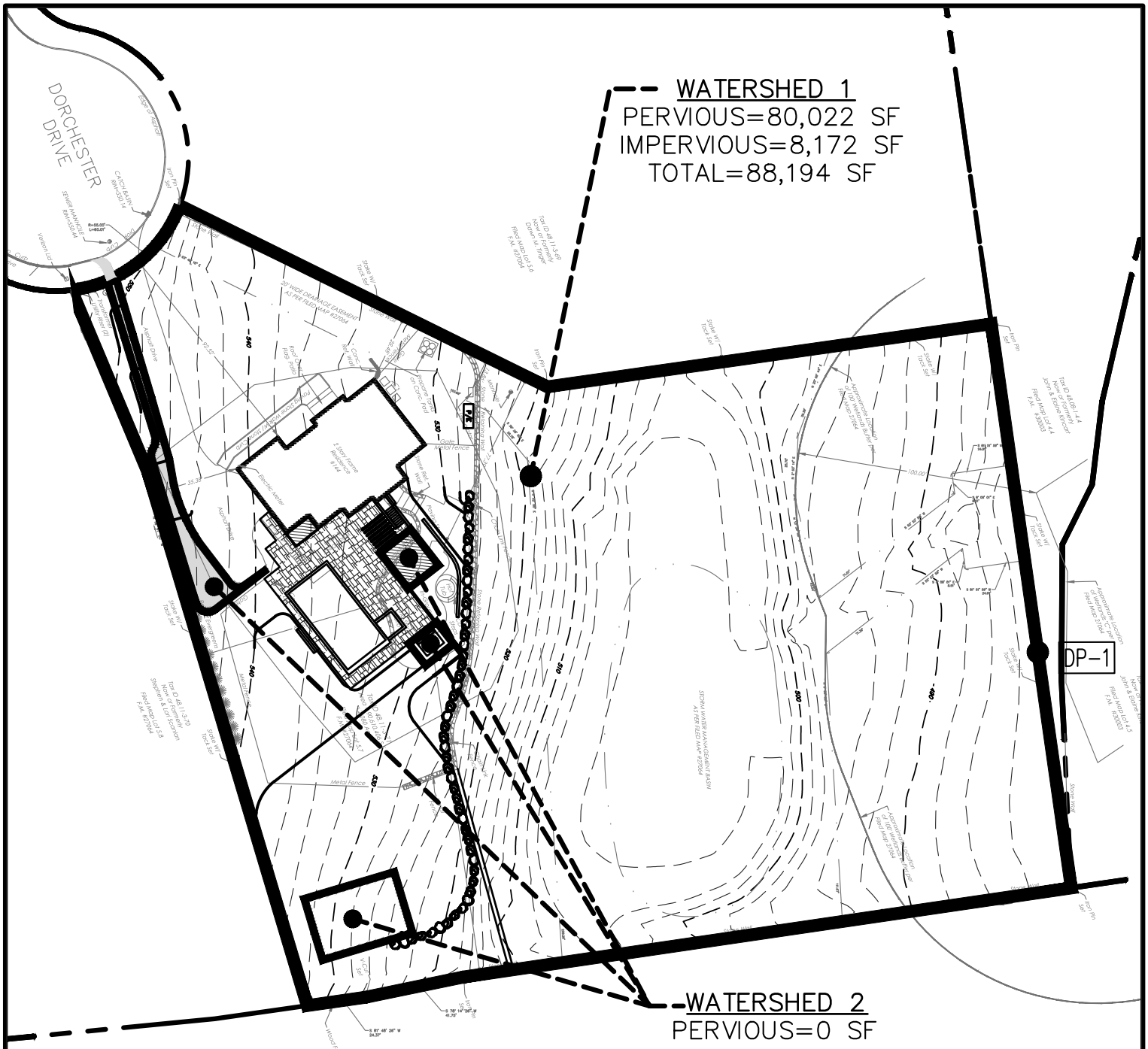
THIS PLAN NOT VALID FOR CONSTRUCTION WITHOUT ENGINEERS SEAL & SIGNATURE

CERTIFICATE OF AUTHORIZATION: 0018997

HEC

HUDSON ENGINEERING & CONSULTING, P.C.
45 Knollwood Road – Suite 201
Elmsford, NY 10523
T: 914-909-0420
F: 914-580-2086

Date: 09/02/26
Scale: 1" = 60'
Drawn By: X.X.
Checked By: M.S.
Sheet: 1 / 1
Sheet No.
WS-E



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144 DORCHESTER AVENUE
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	Revisions	

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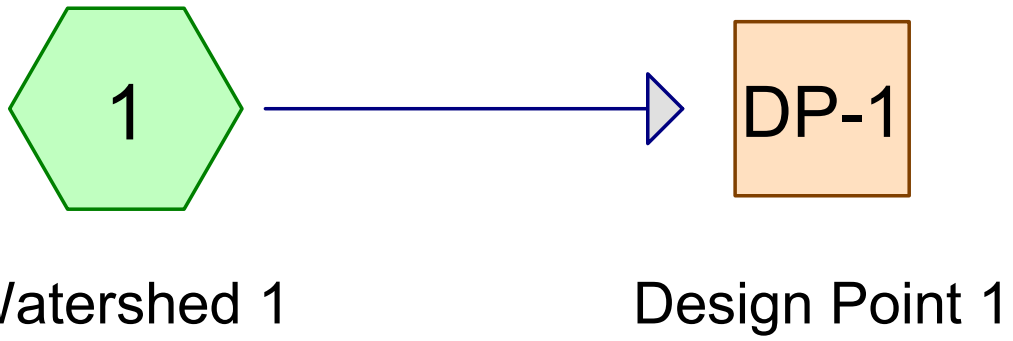
Date: 09/02/26
Scale: 1" = 60'
Drawn By: N.S.
Checked By: M.S.
Sheet: 1 / 1
Sheet No.
WS-P

Pre-Development Analysis for the 1-, 10-, 25-, 100-year Storm Event



Subcat Reach Pond Link

Routing Diagram for Existing Condition 2026-09-02
Prepared by Hudson Engineering, Printed 9/2/2026

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-144 Dorchester 24-hr S1	1-yr	Default	24.00	1	2.78	2
2	10-yr	NY-144 Dorchester 24-hr S1	10-yr	Default	24.00	1	5.11	2
3	25-yr	NY-144 Dorchester 24-hr S1	25-yr	Default	24.00	1	6.47	2
4	100-yr	NY-144 Dorchester 24-hr S1	100-yr	Default	24.00	1	9.26	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
81,450	74	>75% Grass cover, Good, HSG C (1)
9,160	98	Existing Impervious Area (1)
90,610	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
81,450	HSG C	1
0	HSG D	
9,160	Other	1
90,610		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	81,450	0	0	81,450	>75% Grass cover, Good	
0	0	0	0	9,160	9,160	Existing Impervious Area	
0	**0**	**81,450**	**0**	**9,160**	**90,610**	**TOTAL AREA**	

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=90,610 sf 10.11% Impervious Runoff Depth=0.87"
Tc=6.0 min CN=76 Runoff=2.28 cfs 6,568 cf

Reach DP-1: Design Point 1 Inflow=2.28 cfs 6,568 cf
Outflow=2.28 cfs 6,568 cf

Total Runoff Area = 90,610 sf Runoff Volume = 6,568 cf Average Runoff Depth = 0.87"
89.89% Pervious = 81,450 sf 10.11% Impervious = 9,160 sf

Summary for Subcatchment 1: Watershed 1

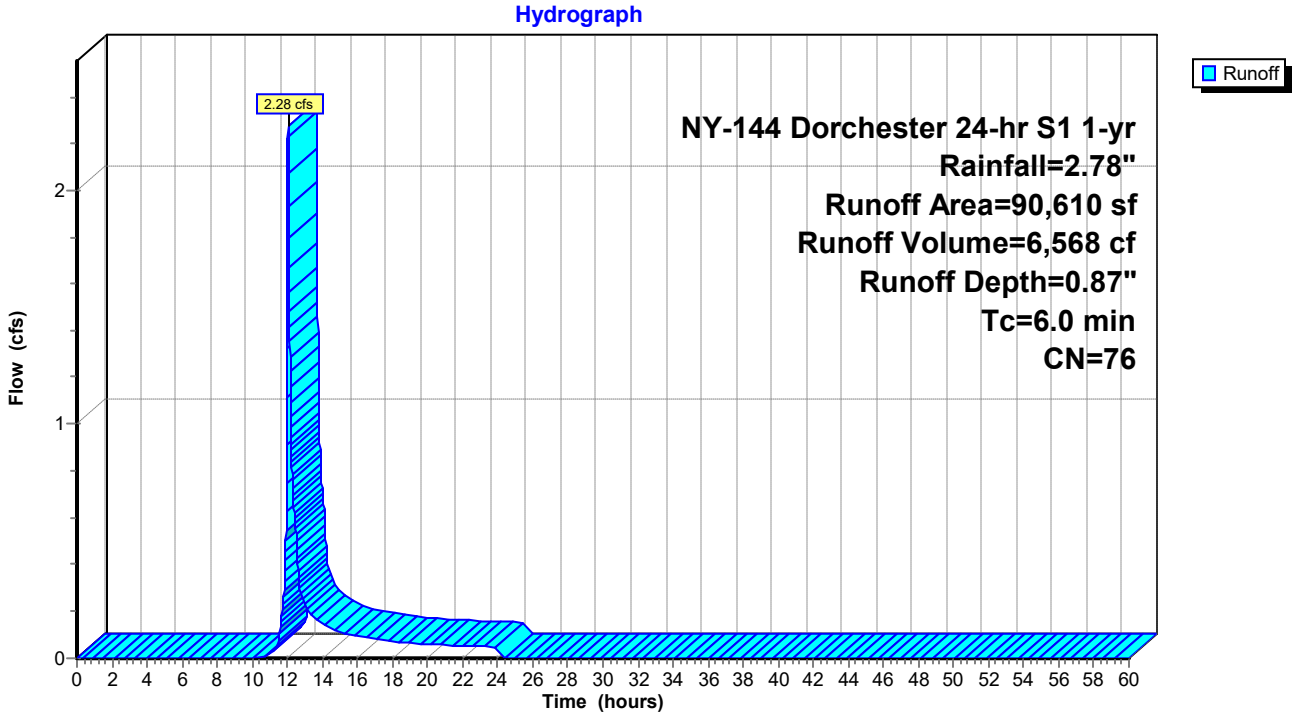
Runoff = 2.28 cfs @ 12.04 hrs, Volume= 6,568 cf, Depth= 0.87"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 1-yr Rainfall=2.78"

	Area (sf)	CN	Description
*	9,160	98	Existing Impervious Area
	81,450	74	>75% Grass cover, Good, HSG C
	90,610	76	Weighted Average
	81,450		89.89% Pervious Area
	9,160		10.11% Impervious Area

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

Subcatchment 1: Watershed 1



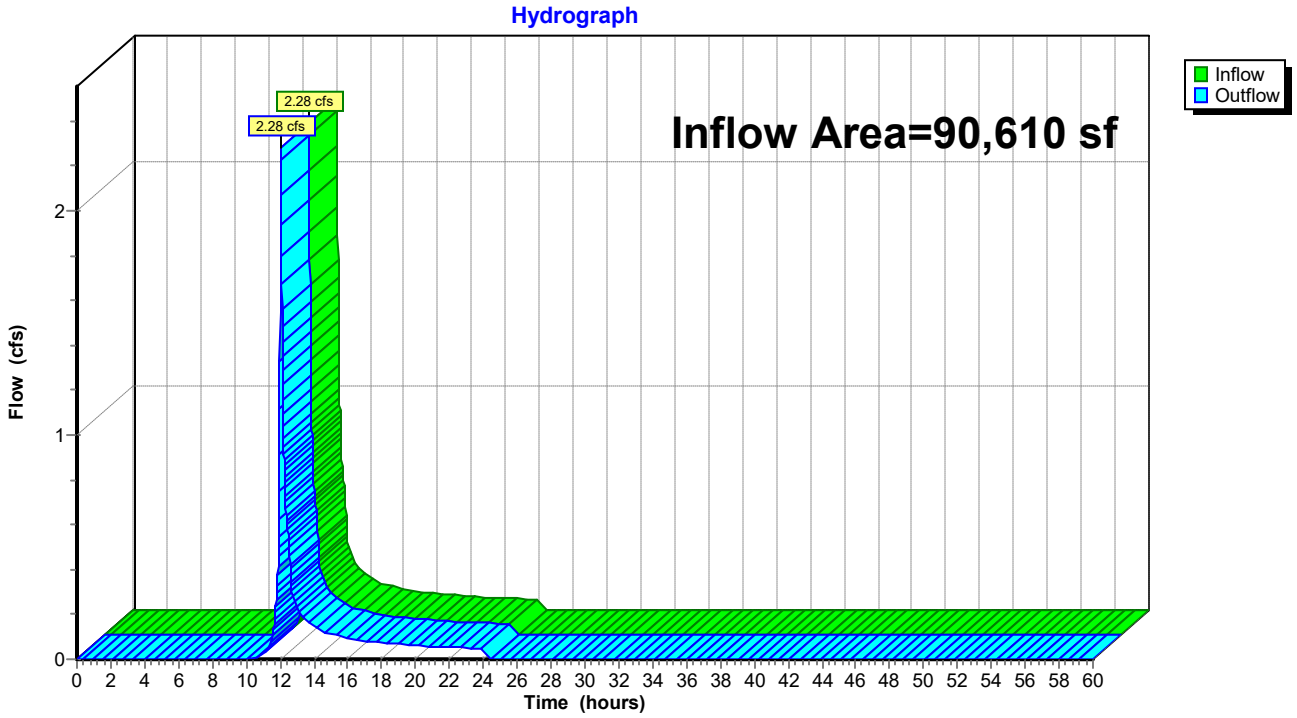
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 90,610 sf, 10.11% Impervious, Inflow Depth = 0.87" for 1-yr event
Inflow = 2.28 cfs @ 12.04 hrs, Volume= 6,568 cf
Outflow = 2.28 cfs @ 12.04 hrs, Volume= 6,568 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=90,610 sf 10.11% Impervious Runoff Depth=2.63"
Tc=6.0 min CN=76 Runoff=6.30 cfs 19,832 cf

Reach DP-1: Design Point 1 Inflow=6.30 cfs 19,832 cf
Outflow=6.30 cfs 19,832 cf

Total Runoff Area = 90,610 sf Runoff Volume = 19,832 cf Average Runoff Depth = 2.63"
89.89% Pervious = 81,450 sf 10.11% Impervious = 9,160 sf

Summary for Subcatchment 1: Watershed 1

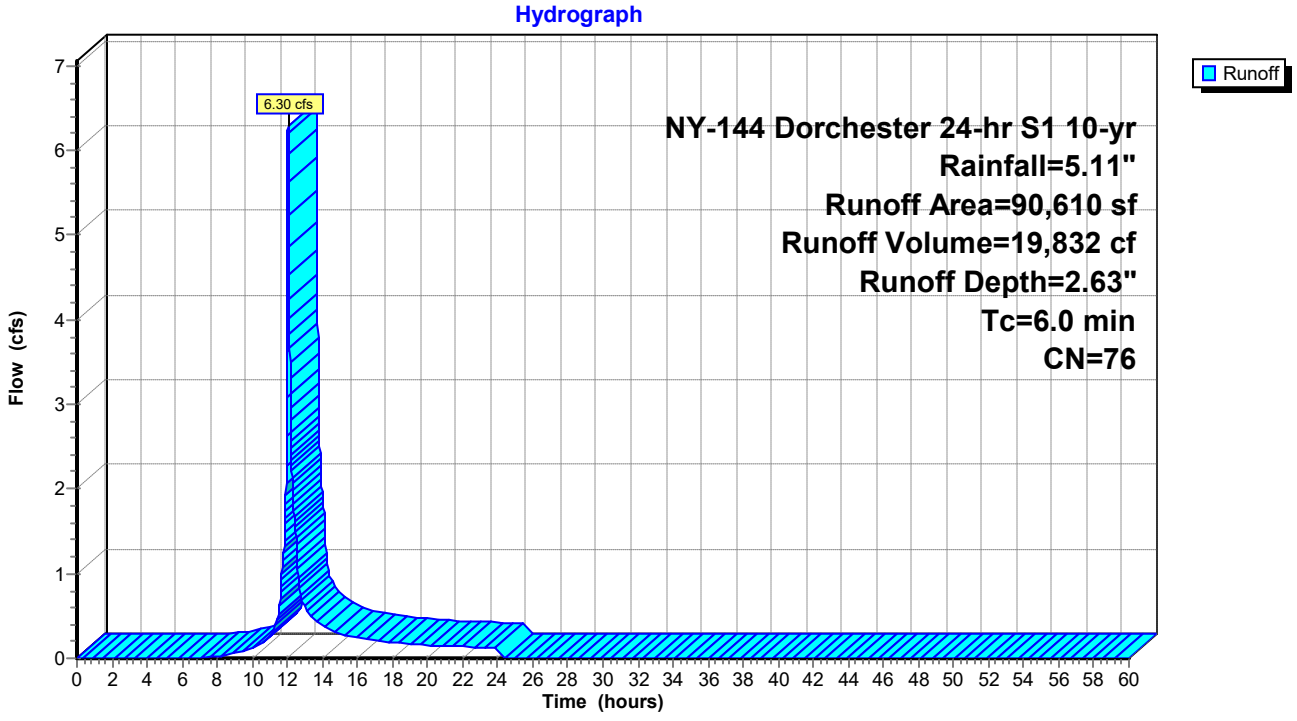
Runoff = 6.30 cfs @ 12.04 hrs, Volume= 19,832 cf, Depth= 2.63"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 10-yr Rainfall=5.11"

	Area (sf)	CN	Description
*	9,160	98	Existing Impervious Area
	81,450	74	>75% Grass cover, Good, HSG C
	90,610	76	Weighted Average
	81,450		89.89% Pervious Area
	9,160		10.11% Impervious Area

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

Subcatchment 1: Watershed 1



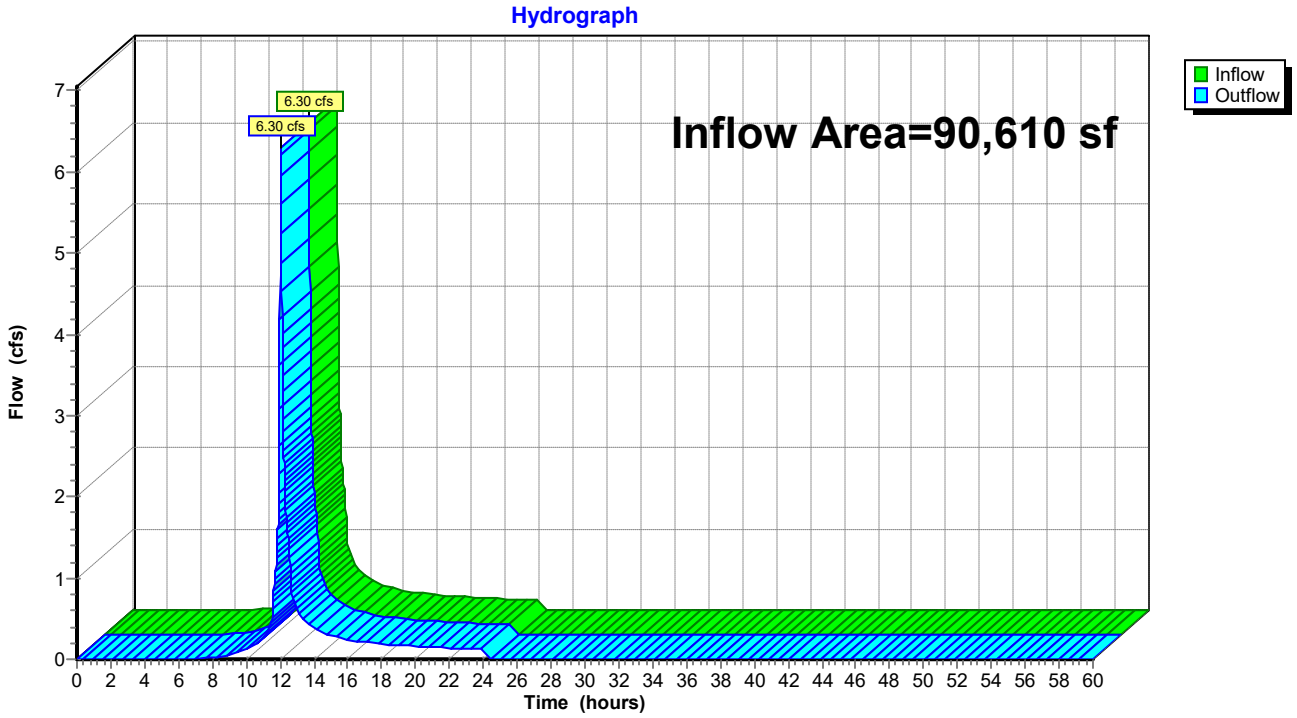
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 90,610 sf, 10.11% Impervious, Inflow Depth = 2.63" for 10-yr event
Inflow = 6.30 cfs @ 12.04 hrs, Volume= 19,832 cf
Outflow = 6.30 cfs @ 12.04 hrs, Volume= 19,832 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=90,610 sf 10.11% Impervious Runoff Depth=3.79"
Tc=6.0 min CN=76 Runoff=8.63 cfs 28,610 cf

Reach DP-1: Design Point 1 Inflow=8.63 cfs 28,610 cf
Outflow=8.63 cfs 28,610 cf

Total Runoff Area = 90,610 sf Runoff Volume = 28,610 cf Average Runoff Depth = 3.79"
89.89% Pervious = 81,450 sf 10.11% Impervious = 9,160 sf

Summary for Subcatchment 1: Watershed 1

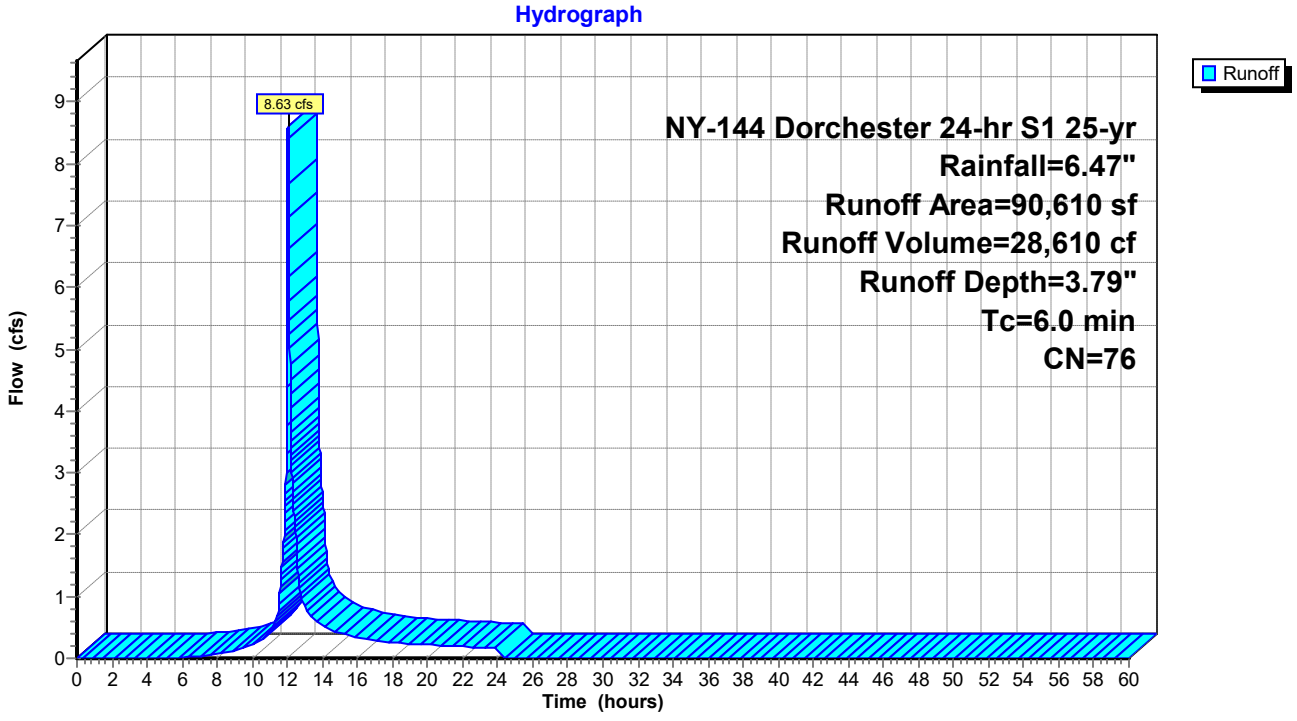
Runoff = 8.63 cfs @ 12.04 hrs, Volume= 28,610 cf, Depth= 3.79"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 25-yr Rainfall=6.47"

	Area (sf)	CN	Description
*	9,160	98	Existing Impervious Area
	81,450	74	>75% Grass cover, Good, HSG C
	90,610	76	Weighted Average
	81,450		89.89% Pervious Area
	9,160		10.11% Impervious Area

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

Subcatchment 1: Watershed 1



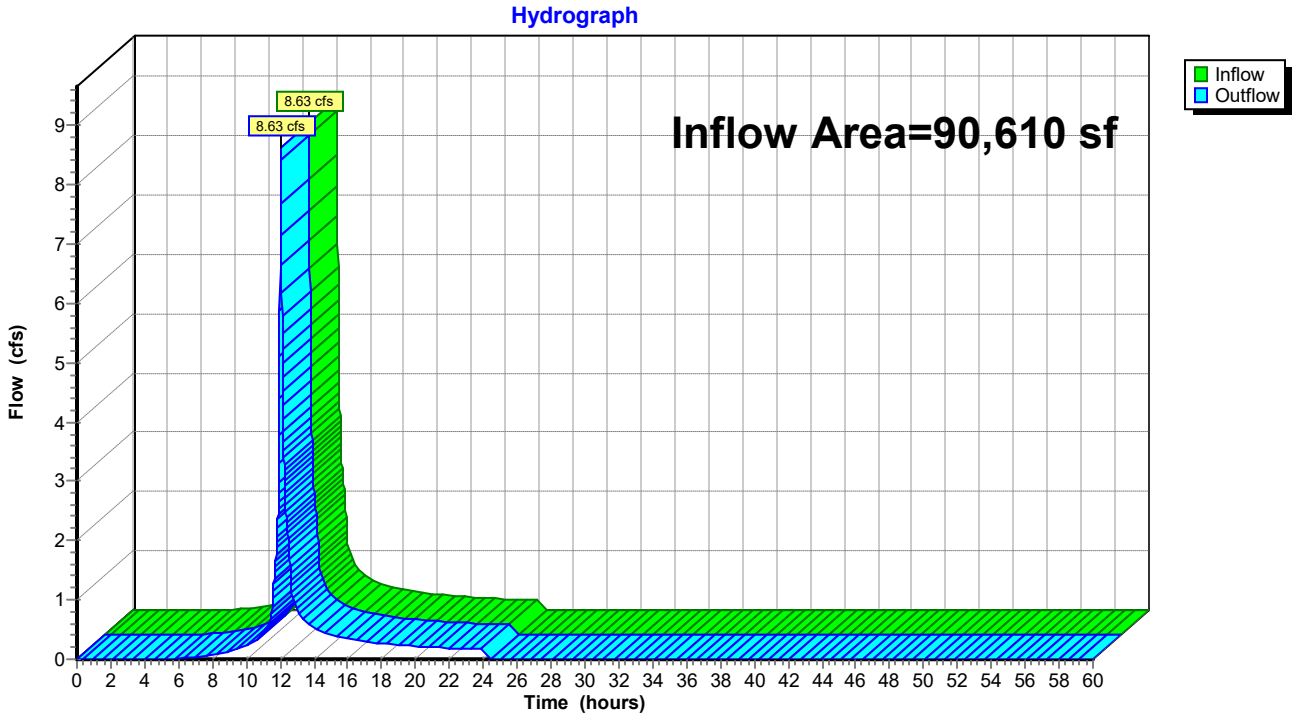
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 90,610 sf, 10.11% Impervious, Inflow Depth = 3.79" for 25-yr event
Inflow = 8.63 cfs @ 12.04 hrs, Volume= 28,610 cf
Outflow = 8.63 cfs @ 12.04 hrs, Volume= 28,610 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=90,610 sf 10.11% Impervious Runoff Depth=6.32"
Tc=6.0 min CN=76 Runoff=12.99 cfs 47,696 cf

Reach DP-1: Design Point 1 Inflow=12.99 cfs 47,696 cf
Outflow=12.99 cfs 47,696 cf

Total Runoff Area = 90,610 sf Runoff Volume = 47,696 cf Average Runoff Depth = 6.32"
89.89% Pervious = 81,450 sf 10.11% Impervious = 9,160 sf

Summary for Subcatchment 1: Watershed 1

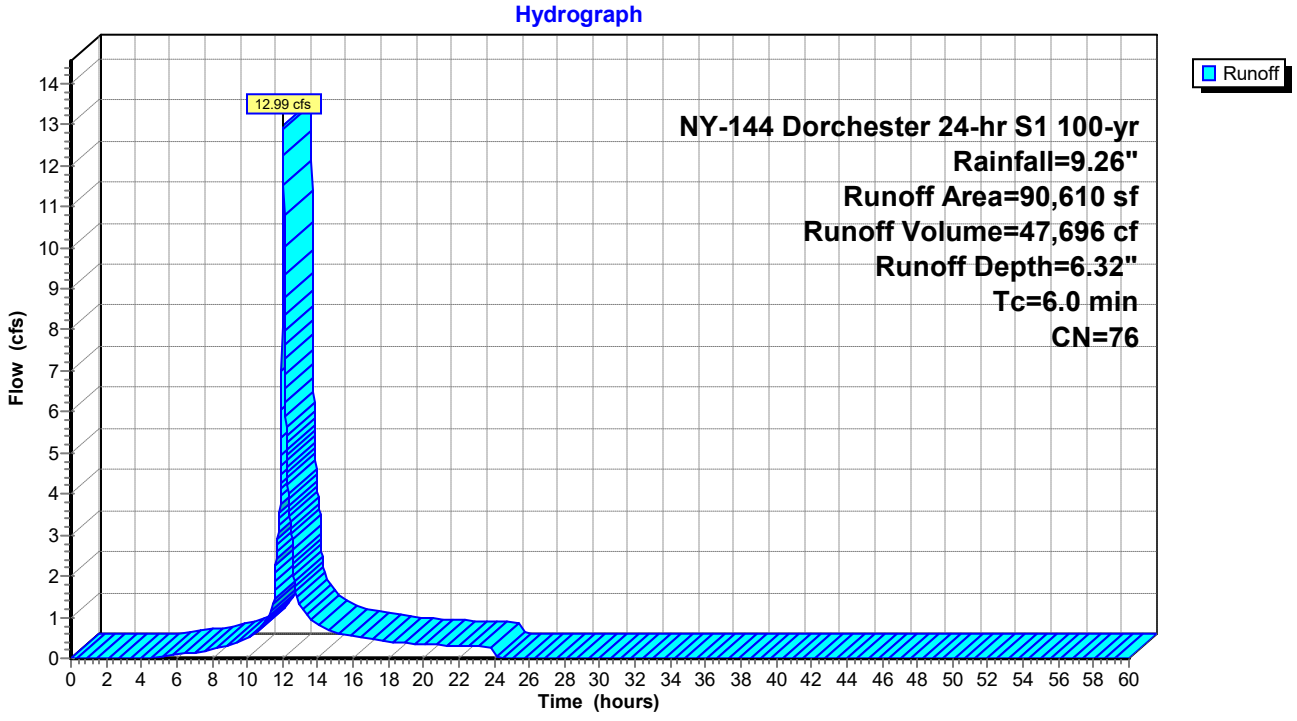
Runoff = 12.99 cfs @ 12.04 hrs, Volume= 47,696 cf, Depth= 6.32"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 100-yr Rainfall=9.26"

	Area (sf)	CN	Description
*	9,160	98	Existing Impervious Area
	81,450	74	>75% Grass cover, Good, HSG C
	90,610	76	Weighted Average
	81,450		89.89% Pervious Area
	9,160		10.11% Impervious Area

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

Subcatchment 1: Watershed 1



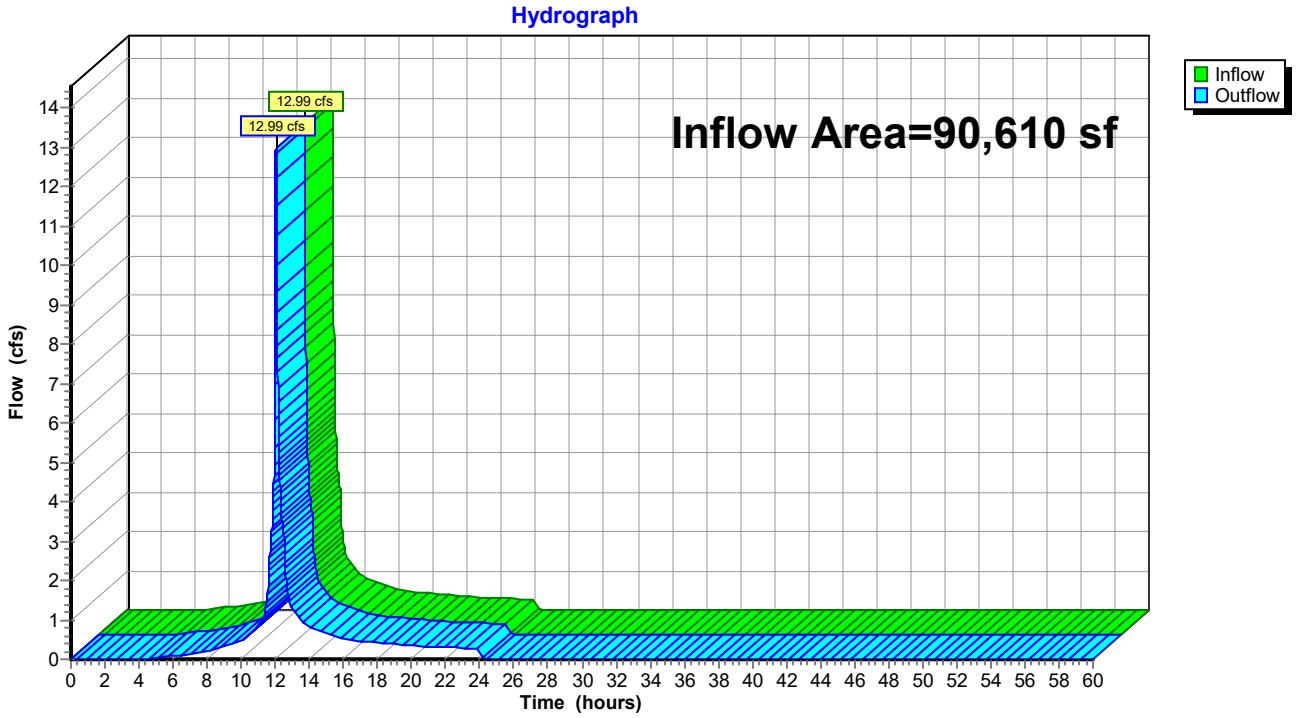
Summary for Reach DP-1: Design Point 1

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

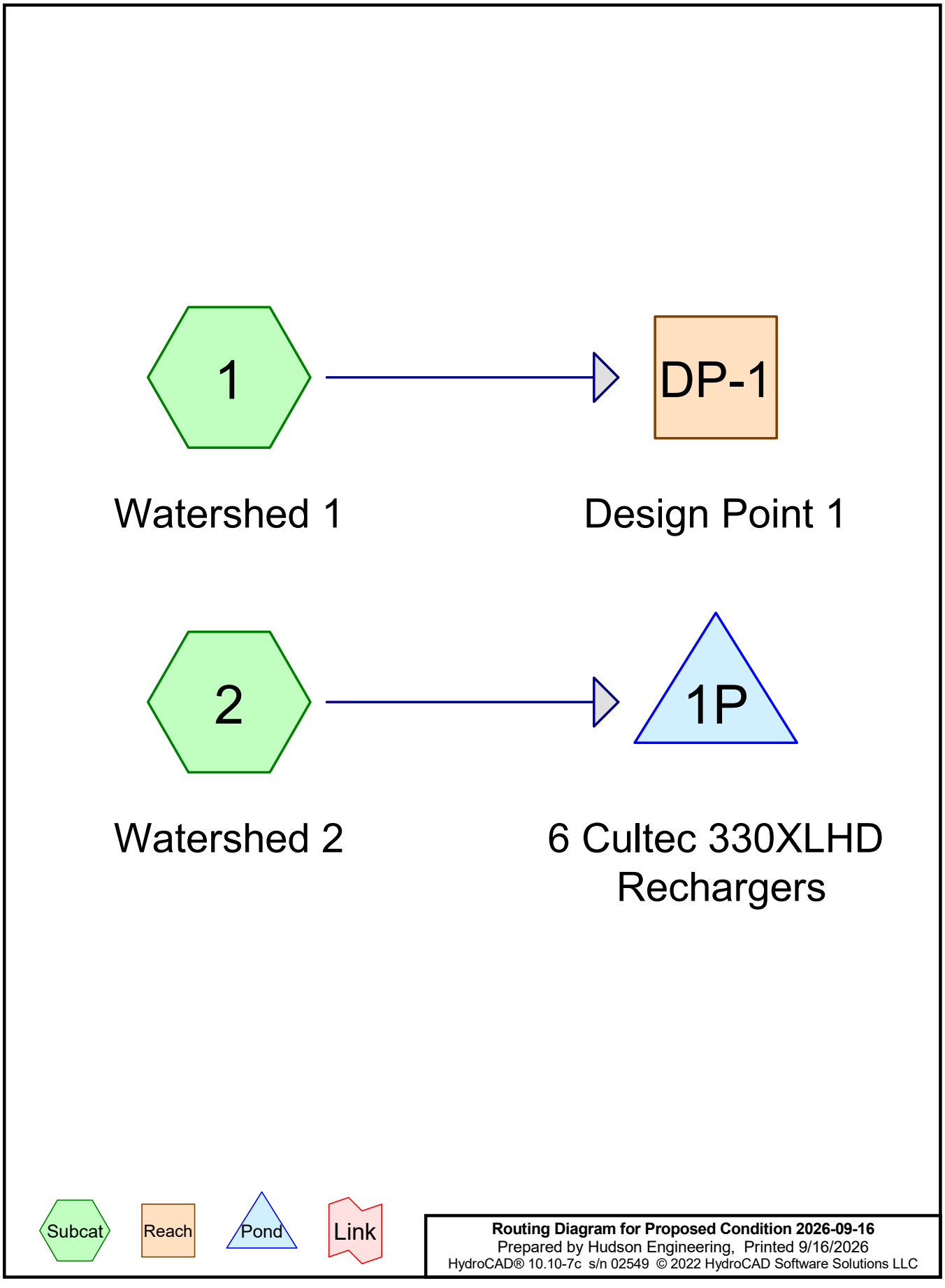
Inflow Area = 90,610 sf, 10.11% Impervious, Inflow Depth = 6.32" for 100-yr event
Inflow = 12.99 cfs @ 12.04 hrs, Volume= 47,696 cf
Outflow = 12.99 cfs @ 12.04 hrs, Volume= 47,696 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Post-Development Analysis for the 1-, 10-, 25-, 100-year Storm Event



Routing Diagram for Proposed Condition 2026-09-16
Prepared by Hudson Engineering, Printed 9/16/2026

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-144 Dorchester 24-hr S1	1-yr	Default	24.00	1	2.78	2
2	10-yr	NY-144 Dorchester 24-hr S1	10-yr	Default	24.00	1	5.11	2
3	25-yr	NY-144 Dorchester 24-hr S1	25-yr	Default	24.00	1	6.47	2
4	100-yr	NY-144 Dorchester 24-hr S1	100-yr	Default	24.00	1	9.26	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
80,022	74	>75% Grass cover, Good, HSG C (1)
1,035	98	Detached Garage (2)
5,710	98	Existing Impervious Area (1)
906	98	Proposed Driveway Extension (2)
475	98	Proposed Gazebo and Fire Pit Area (2)
2,462	98	Proposed Impervious Area (1)
90,610	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
80,022	HSG C	1
0	HSG D	
10,588	Other	1, 2
90,610		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	80,022	0	0	80,022	>75% Grass cover, Good
0	0	0	0	1,035	1,035	Detached Garage
0	0	0	0	5,710	5,710	Existing Impervious Area
0	0	0	0	906	906	Proposed Driveway Extension
0	0	0	0	475	475	Proposed Gazebo and Fire Pit Area
0	0	0	0	2,462	2,462	Proposed Impervious Area
0	**0**	**80,022**	**0**	**10,588**	**90,610**	**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=88,194 sf 9.27% Impervious Runoff Depth=0.87"
Tc=6.0 min CN=76 Runoff=2.22 cfs 6,393 cf

Subcatchment 2: Watershed 2 Runoff Area=2,416 sf 100.00% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=98 Runoff=0.18 cfs 513 cf

Reach DP-1: Design Point 1 Inflow=2.22 cfs 6,393 cf
Outflow=2.22 cfs 6,393 cf

Pond 1P: 6 Cultec 330XLHD Rechargers Peak Elev=0.65' Storage=54 cf Inflow=0.18 cfs 513 cf
Outflow=0.06 cfs 513 cf

Total Runoff Area = 90,610 sf Runoff Volume = 6,906 cf Average Runoff Depth = 0.91"
88.31% Pervious = 80,022 sf 11.69% Impervious = 10,588 sf

Summary for Subcatchment 1: Watershed 1

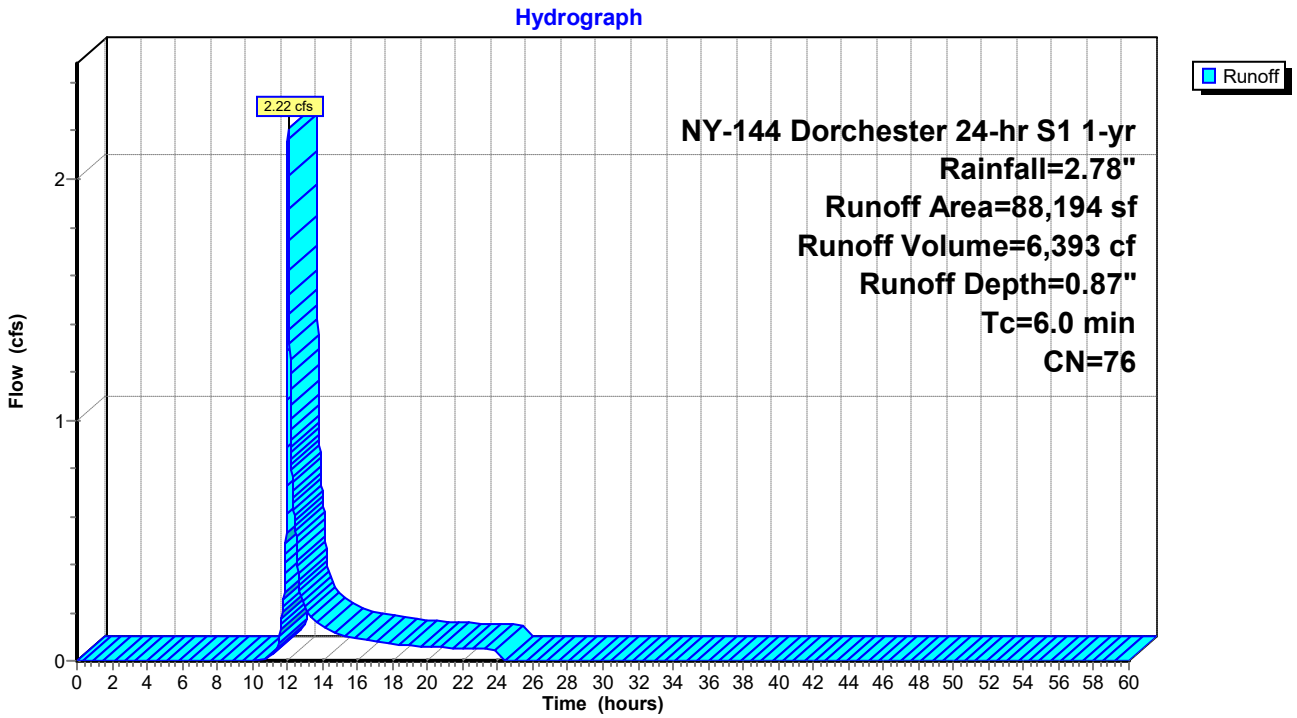
Runoff = 2.22 cfs @ 12.04 hrs, Volume= 6,393 cf, Depth= 0.87"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 1-yr Rainfall=2.78"

	Area (sf)	CN	Description
*	5,710	98	Existing Impervious Area
*	2,462	98	Proposed Impervious Area
	80,022	74	>75% Grass cover, Good, HSG C
	88,194	76	Weighted Average
	80,022		90.73% Pervious Area
	8,172		9.27% Impervious Area

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

Subcatchment 1: Watershed 1



Summary for Subcatchment 2: Watershed 2

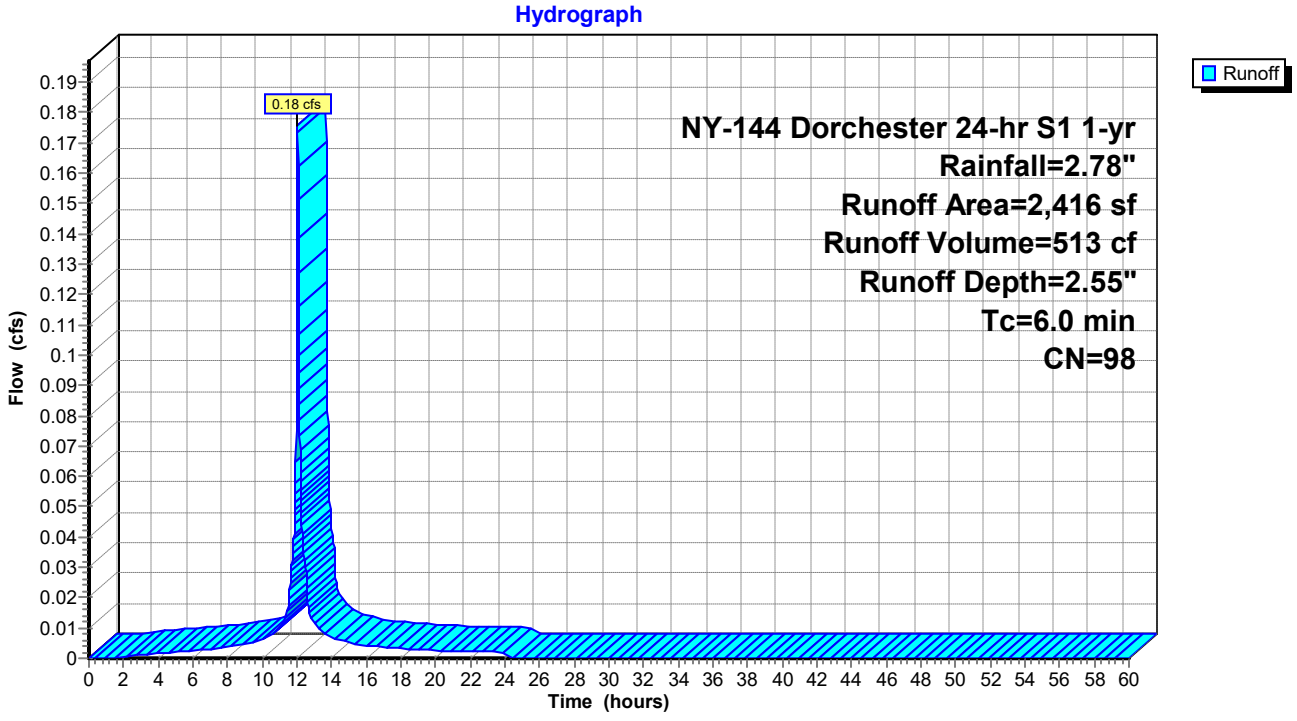
Runoff = 0.18 cfs @ 12.04 hrs, Volume= 513 cf, Depth= 2.55"
Routed to Pond 1P : 6 Cultec 330XLHD Rechargers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 1-yr Rainfall=2.78"

	Area (sf)	CN	Description
*	475	98	Proposed Gazebo and Fire Pit Area
*	906	98	Proposed Driveway Extension
*	1,035	98	Detached Garage
	2,416	98	Weighted Average
	2,416		100.00% Impervious Area

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

Subcatchment 2: Watershed 2



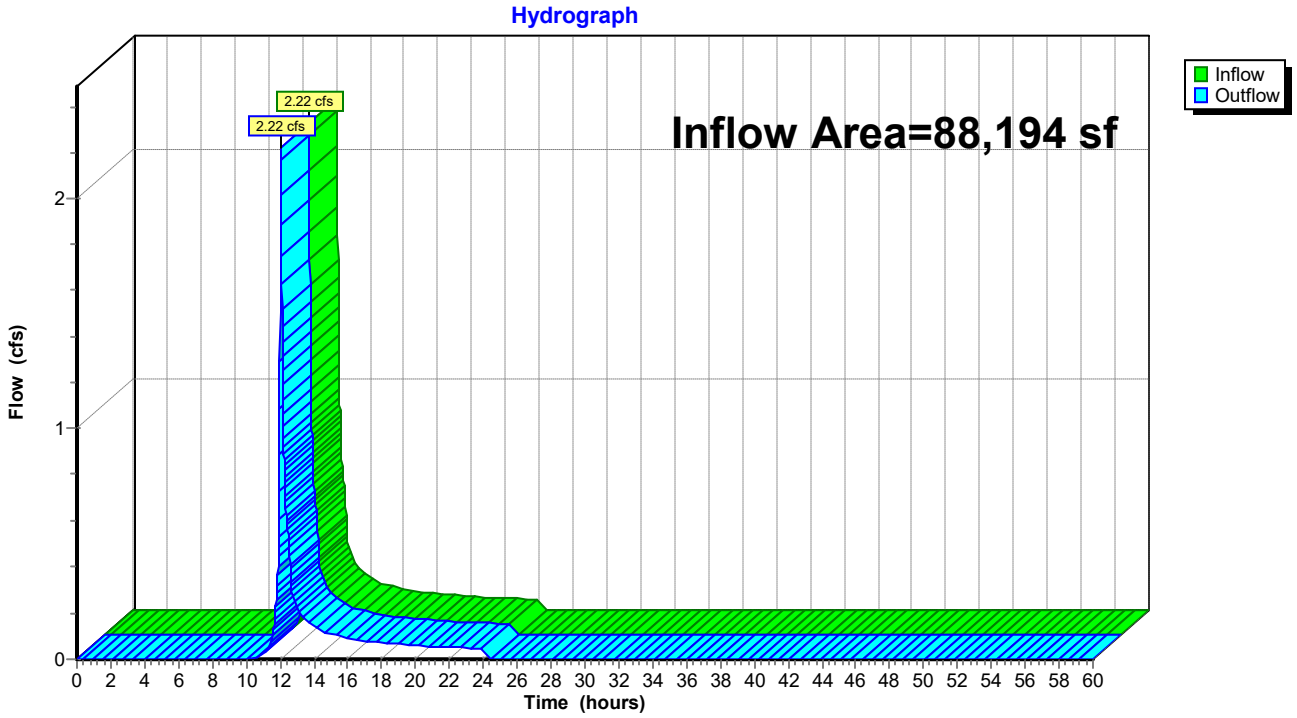
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 88,194 sf, 9.27% Impervious, Inflow Depth = 0.87" for 1-yr event
Inflow = 2.22 cfs @ 12.04 hrs, Volume= 6,393 cf
Outflow = 2.22 cfs @ 12.04 hrs, Volume= 6,393 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Summary for Pond 1P: 6 Cultec 330XLHD Rechargers

Inflow Area = 2,416 sf,100.00% Impervious, Inflow Depth = 2.55" for 1-yr event
Inflow = 0.18 cfs @ 12.04 hrs, Volume= 513 cf
Outflow = 0.06 cfs @ 11.95 hrs, Volume= 513 cf, Atten= 64%, Lag= 0.0 min
Primary = 0.06 cfs @ 11.95 hrs, Volume= 513 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 0.65' @ 12.19 hrs Surf.Area= 274 sf Storage= 54 cf

Plug-Flow detention time= 3.4 min calculated for 513 cf (100% of inflow)
Center-of-Mass det. time= 3.4 min (765.1 - 761.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	231 cf	**11.17'W x 24.50'L x 4.04'H Field A** 1,106 cf Overall - 335 cf Embedded = 770 cf x 30.0% Voids
#2A	1.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		566 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.06 cfs @ 11.95 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond 1P: 6 Cultec 330XLHD Rechargers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

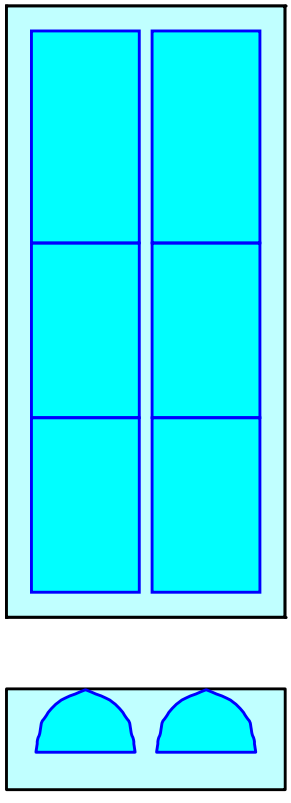
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
18.0" Stone Base + 30.5" Chamber Height = 4.04' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

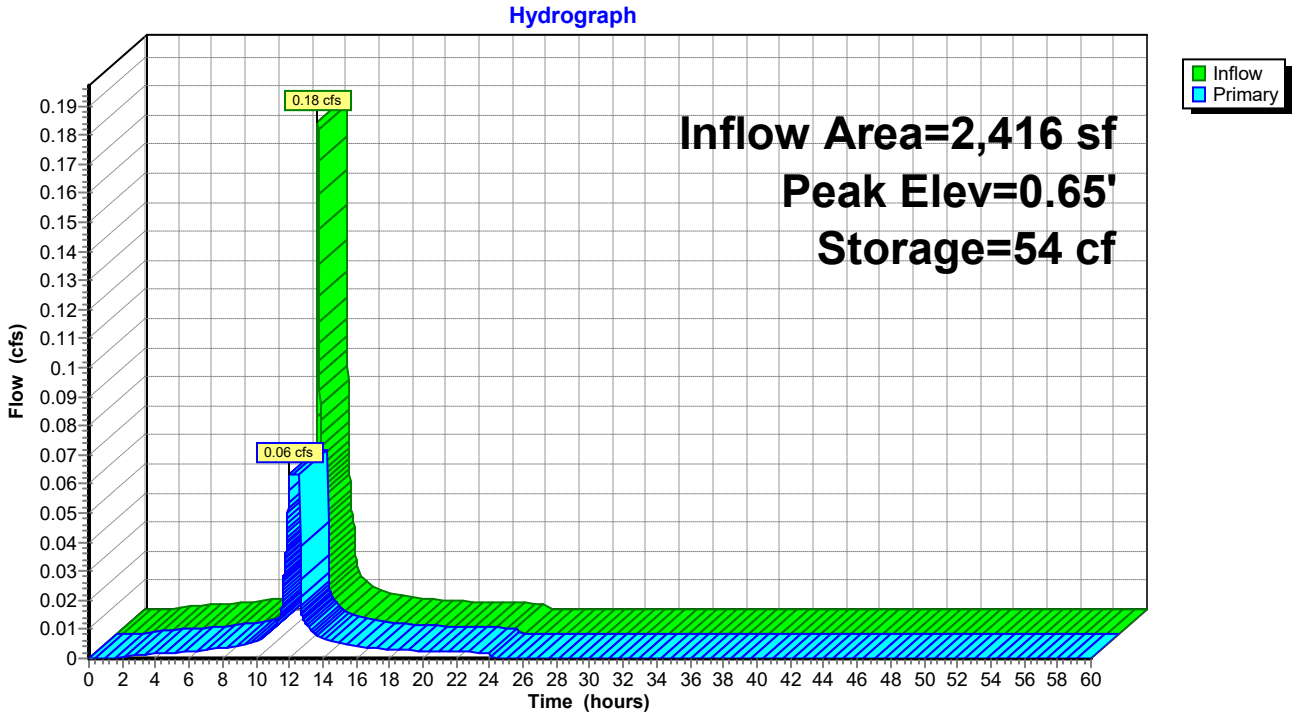
1,105.7 cf Field - 335.3 cf Chambers = 770.4 cf Stone x 30.0% Voids = 231.1 cf Stone Storage

Chamber Storage + Stone Storage = 566.4 cf = 0.013 af
Overall Storage Efficiency = 51.2%
Overall System Size = 24.50' x 11.17' x 4.04'

6 Chambers
41.0 cy Field
28.5 cy Stone



Pond 1P: 6 Cultec 330XLHD Rechargers



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=88,194 sf 9.27% Impervious Runoff Depth=2.63"
Tc=6.0 min CN=76 Runoff=6.13 cfs 19,303 cf

Subcatchment 2: Watershed 2 Runoff Area=2,416 sf 100.00% Impervious Runoff Depth=4.87"
Tc=6.0 min CN=98 Runoff=0.28 cfs 981 cf

Reach DP-1: Design Point 1 Inflow=6.13 cfs 19,303 cf
Outflow=6.13 cfs 19,303 cf

Pond 1P: 6 Cultec 330XLHD Rechargers Peak Elev=1.60' Storage=144 cf Inflow=0.28 cfs 981 cf
Outflow=0.06 cfs 981 cf

Total Runoff Area = 90,610 sf Runoff Volume = 20,284 cf Average Runoff Depth = 2.69"
88.31% Pervious = 80,022 sf 11.69% Impervious = 10,588 sf

Summary for Subcatchment 1: Watershed 1

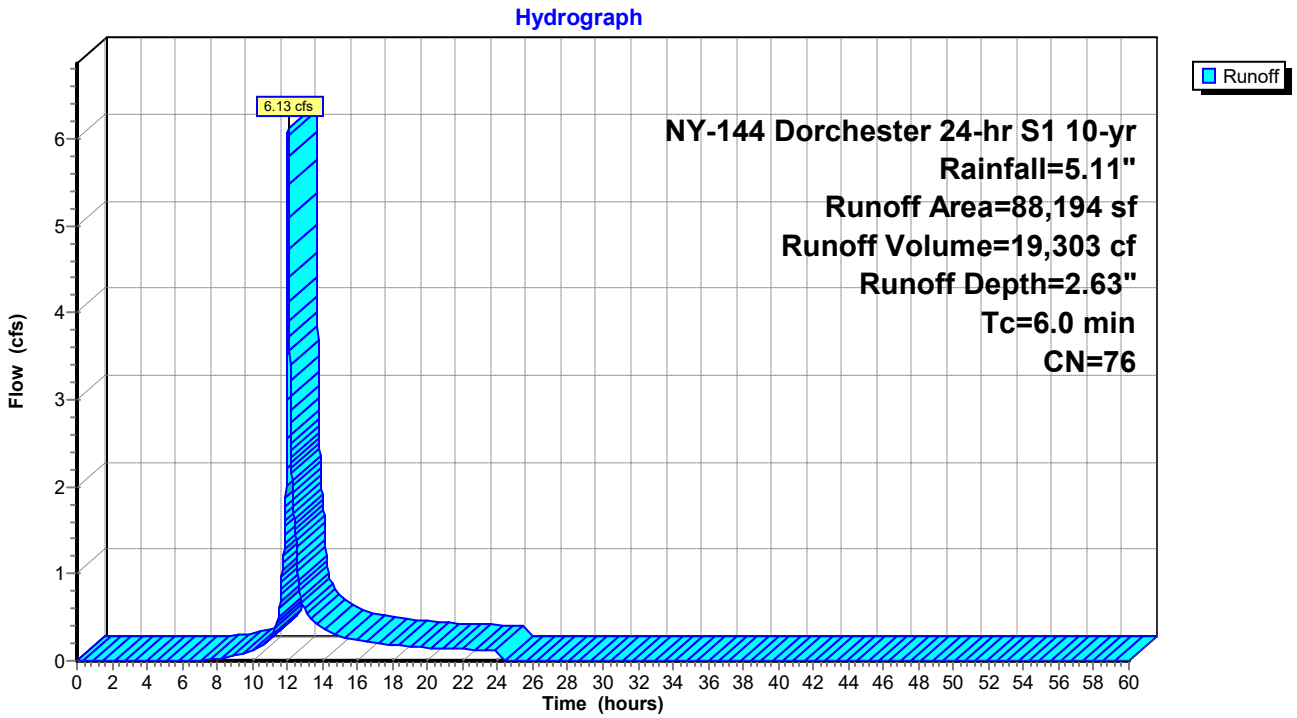
Runoff = 6.13 cfs @ 12.04 hrs, Volume= 19,303 cf, Depth= 2.63"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 10-yr Rainfall=5.11"

	Area (sf)	CN	Description
*	5,710	98	Existing Impervious Area
*	2,462	98	Proposed Impervious Area
	80,022	74	>75% Grass cover, Good, HSG C
	88,194	76	Weighted Average
	80,022		90.73% Pervious Area
	8,172		9.27% Impervious Area

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

Subcatchment 1: Watershed 1



Summary for Subcatchment 2: Watershed 2

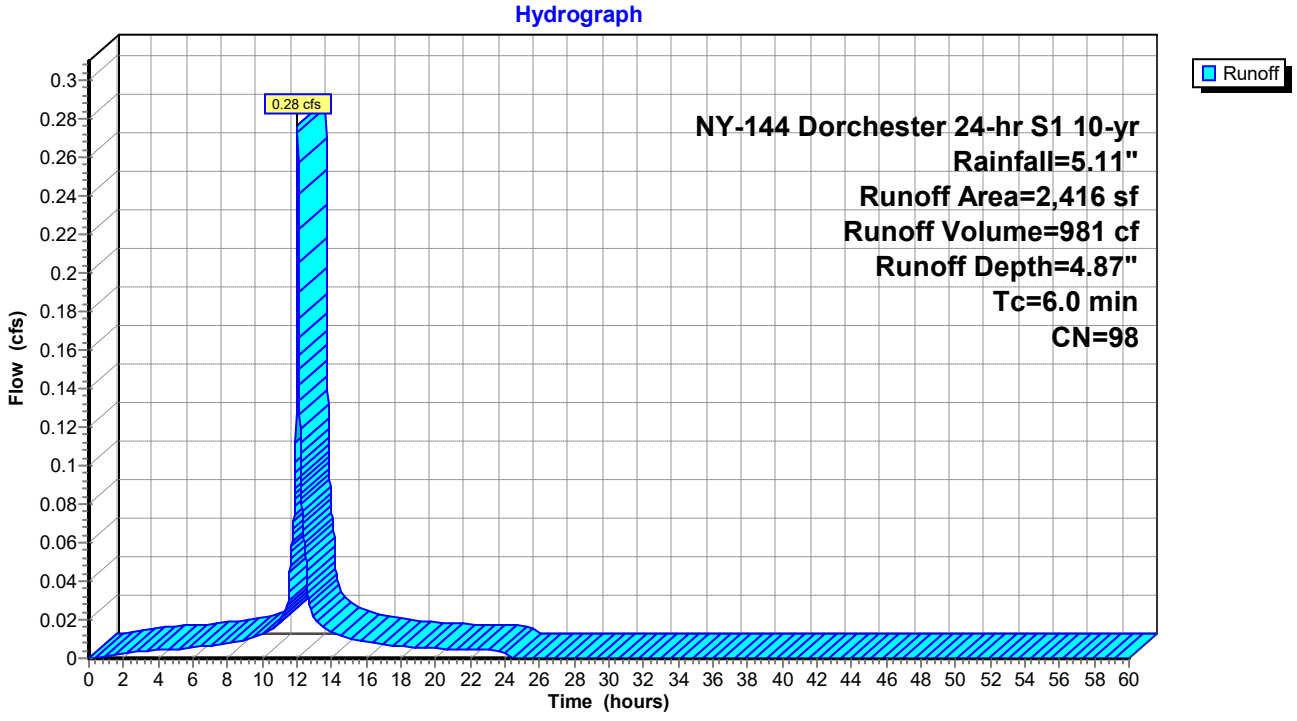
Runoff = 0.28 cfs @ 12.04 hrs, Volume= 981 cf, Depth= 4.87"
Routed to Pond 1P : 6 Cultec 330XLHD Rechargers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 10-yr Rainfall=5.11"

	Area (sf)	CN	Description
*	475	98	Proposed Gazebo and Fire Pit Area
*	906	98	Proposed Driveway Extension
*	1,035	98	Detached Garage
	2,416	98	Weighted Average
	2,416		100.00% Impervious Area

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

Subcatchment 2: Watershed 2



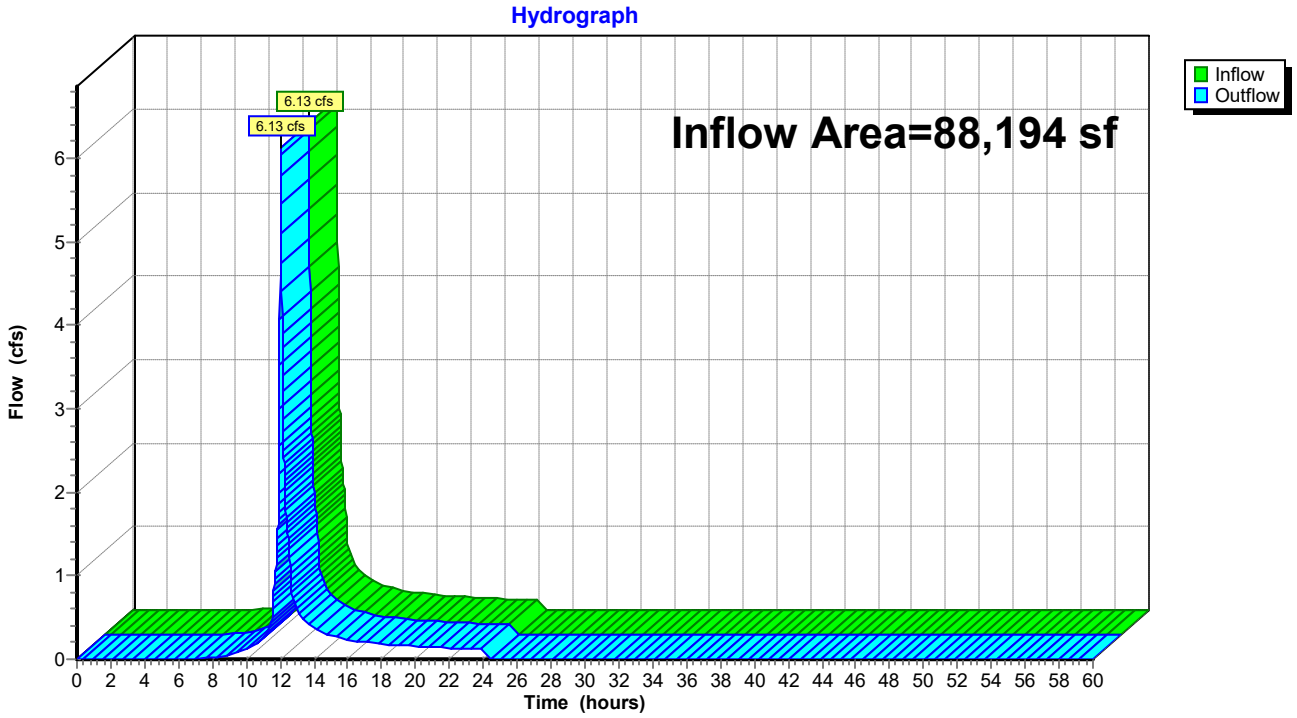
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 88,194 sf, 9.27% Impervious, Inflow Depth = 2.63" for 10-yr event
Inflow = 6.13 cfs @ 12.04 hrs, Volume= 19,303 cf
Outflow = 6.13 cfs @ 12.04 hrs, Volume= 19,303 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Summary for Pond 1P: 6 Cultec 330XLHD Rechargers

Inflow Area = 2,416 sf,100.00% Impervious, Inflow Depth = 4.87" for 10-yr event
Inflow = 0.28 cfs @ 12.04 hrs, Volume= 981 cf
Outflow = 0.06 cfs @ 11.77 hrs, Volume= 981 cf, Atten= 77%, Lag= 0.0 min
Primary = 0.06 cfs @ 11.77 hrs, Volume= 981 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1.60' @ 12.39 hrs Surf.Area= 274 sf Storage= 144 cf

Plug-Flow detention time= 9.4 min calculated for 981 cf (100% of inflow)
Center-of-Mass det. time= 9.4 min (758.2 - 748.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	231 cf	**11.17'W x 24.50'L x 4.04'H Field A** 1,106 cf Overall - 335 cf Embedded = 770 cf x 30.0% Voids
#2A	1.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		566 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.06 cfs @ 11.77 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond 1P: 6 Cultec 330XLHD Rechargers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

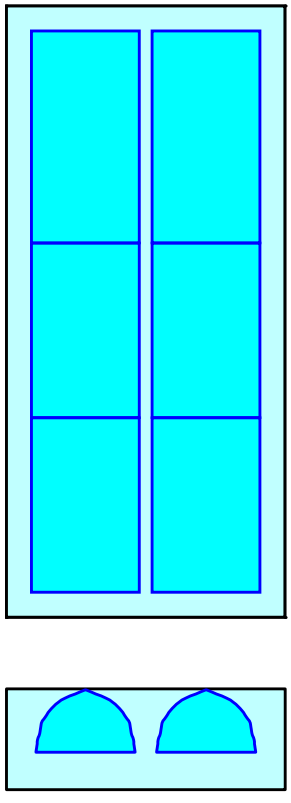
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
18.0" Stone Base + 30.5" Chamber Height = 4.04' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

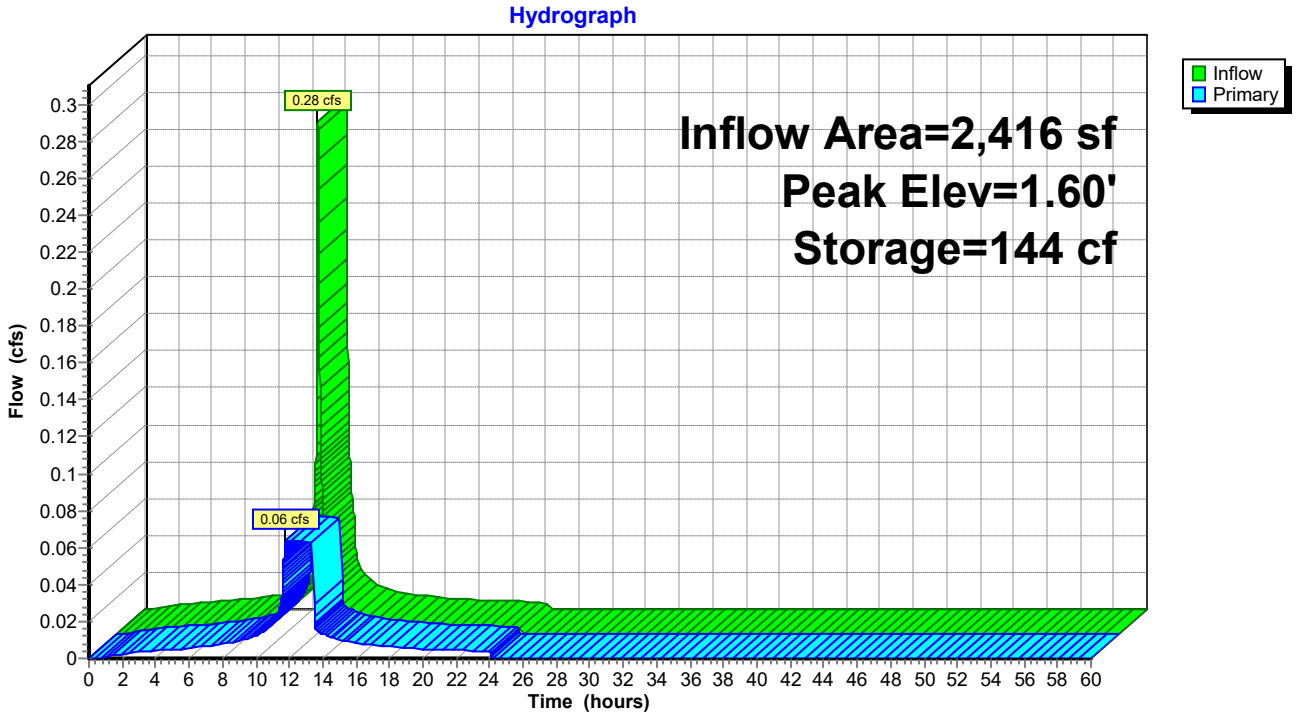
1,105.7 cf Field - 335.3 cf Chambers = 770.4 cf Stone x 30.0% Voids = 231.1 cf Stone Storage

Chamber Storage + Stone Storage = 566.4 cf = 0.013 af
Overall Storage Efficiency = 51.2%
Overall System Size = 24.50' x 11.17' x 4.04'

6 Chambers
41.0 cy Field
28.5 cy Stone



Pond 1P: 6 Cultec 330XLHD Rechargers



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=88,194 sf 9.27% Impervious Runoff Depth=3.79"
Tc=6.0 min CN=76 Runoff=8.40 cfs 27,847 cf

Subcatchment 2: Watershed 2 Runoff Area=2,416 sf 100.00% Impervious Runoff Depth=6.23"
Tc=6.0 min CN=98 Runoff=0.33 cfs 1,255 cf

Reach DP-1: Design Point 1 Inflow=8.40 cfs 27,847 cf
Outflow=8.40 cfs 27,847 cf

Pond 1P: 6 Cultec 330XLHD Rechargers Peak Elev=1.95' Storage=215 cf Inflow=0.33 cfs 1,255 cf
Outflow=0.06 cfs 1,255 cf

Total Runoff Area = 90,610 sf Runoff Volume = 29,102 cf Average Runoff Depth = 3.85"
88.31% Pervious = 80,022 sf 11.69% Impervious = 10,588 sf

Summary for Subcatchment 1: Watershed 1

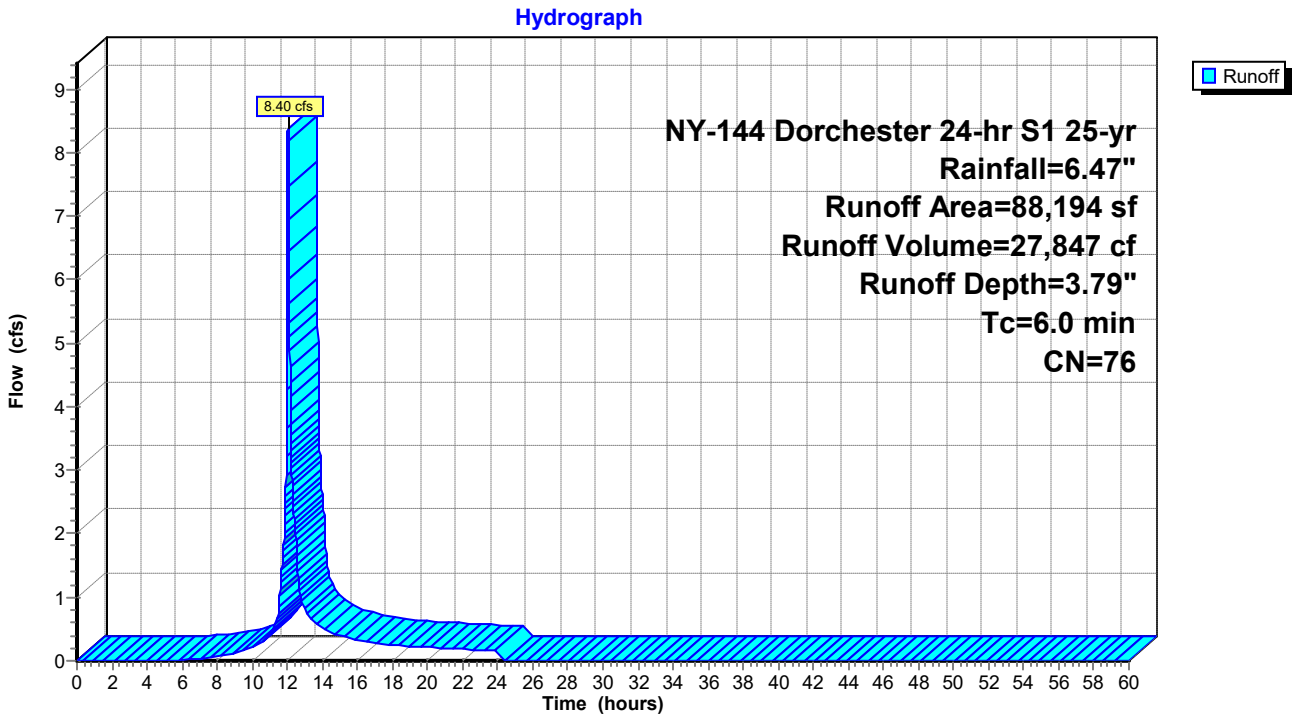
Runoff = 8.40 cfs @ 12.04 hrs, Volume= 27,847 cf, Depth= 3.79"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 25-yr Rainfall=6.47"

	Area (sf)	CN	Description
*	5,710	98	Existing Impervious Area
*	2,462	98	Proposed Impervious Area
	80,022	74	>75% Grass cover, Good, HSG C
	88,194	76	Weighted Average
	80,022		90.73% Pervious Area
	8,172		9.27% Impervious Area

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

Subcatchment 1: Watershed 1



Summary for Subcatchment 2: Watershed 2

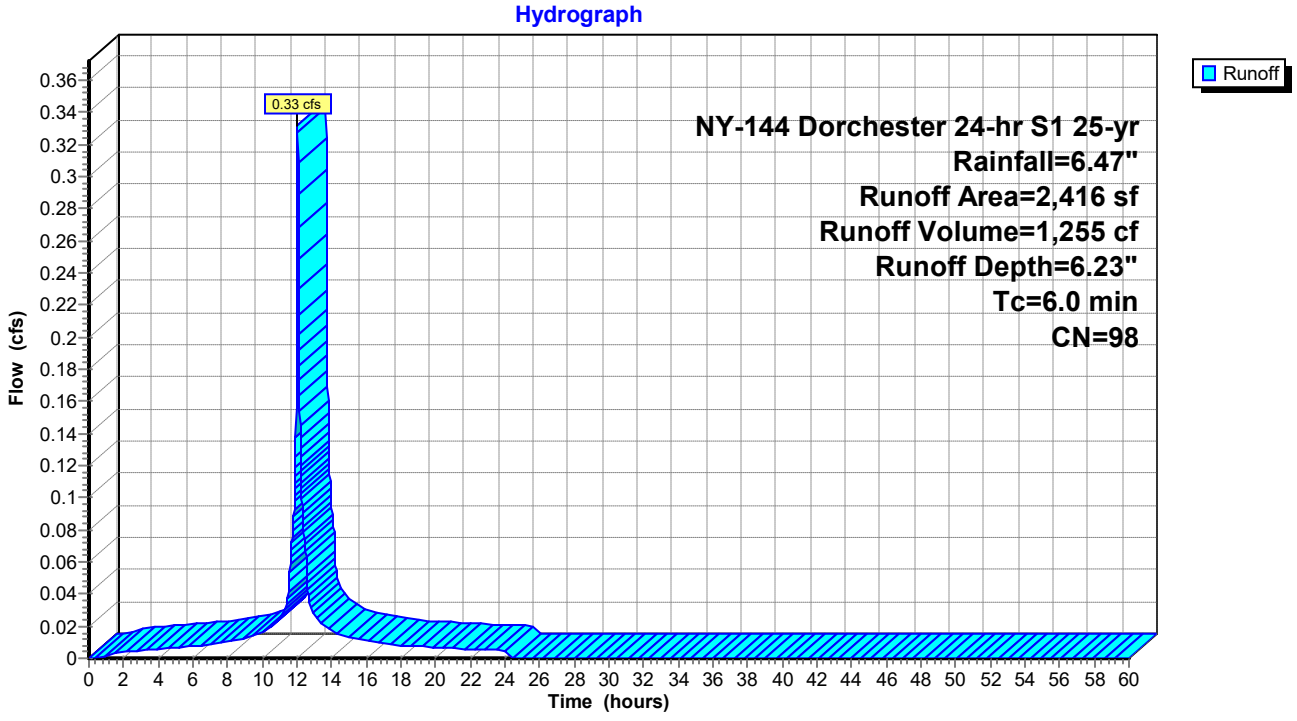
Runoff = 0.33 cfs @ 12.04 hrs, Volume= 1,255 cf, Depth= 6.23"
Routed to Pond 1P : 6 Cultec 330XLHD Rechargers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 25-yr Rainfall=6.47"

	Area (sf)	CN	Description
*	475	98	Proposed Gazebo and Fire Pit Area
*	906	98	Proposed Driveway Extension
*	1,035	98	Detached Garage
	2,416	98	Weighted Average
	2,416		100.00% Impervious Area

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

Subcatchment 2: Watershed 2



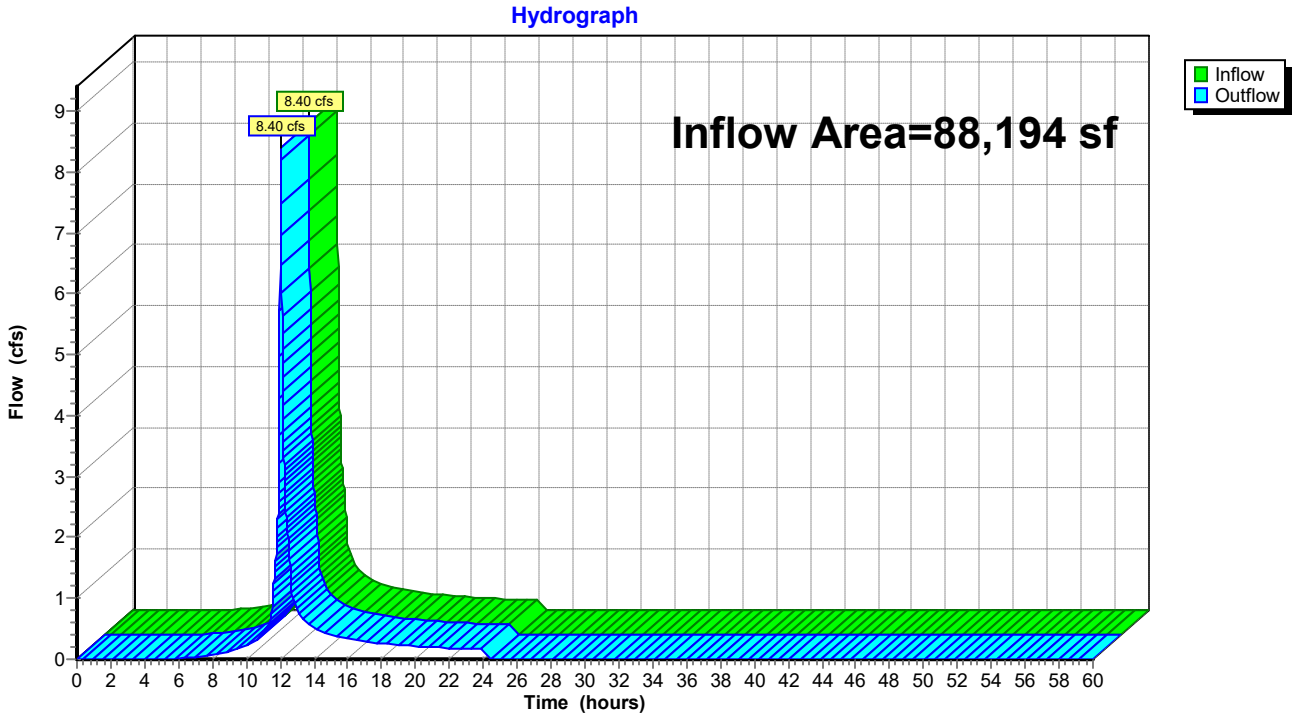
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 88,194 sf, 9.27% Impervious, Inflow Depth = 3.79" for 25-yr event
Inflow = 8.40 cfs @ 12.04 hrs, Volume= 27,847 cf
Outflow = 8.40 cfs @ 12.04 hrs, Volume= 27,847 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Summary for Pond 1P: 6 Cultec 330XLHD Rechargers

Inflow Area = 2,416 sf,100.00% Impervious, Inflow Depth = 6.23" for 25-yr event
Inflow = 0.33 cfs @ 12.04 hrs, Volume= 1,255 cf
Outflow = 0.06 cfs @ 11.65 hrs, Volume= 1,255 cf, Atten= 81%, Lag= 0.0 min
Primary = 0.06 cfs @ 11.65 hrs, Volume= 1,255 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 1.95' @ 12.54 hrs Surf.Area= 274 sf Storage= 215 cf

Plug-Flow detention time= 14.5 min calculated for 1,254 cf (100% of inflow)
Center-of-Mass det. time= 14.5 min (759.3 - 744.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	231 cf	**11.17'W x 24.50'L x 4.04'H Field A** 1,106 cf Overall - 335 cf Embedded = 770 cf x 30.0% Voids
#2A	1.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		566 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.06 cfs @ 11.65 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond 1P: 6 Cultec 330XLHD Rechargers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

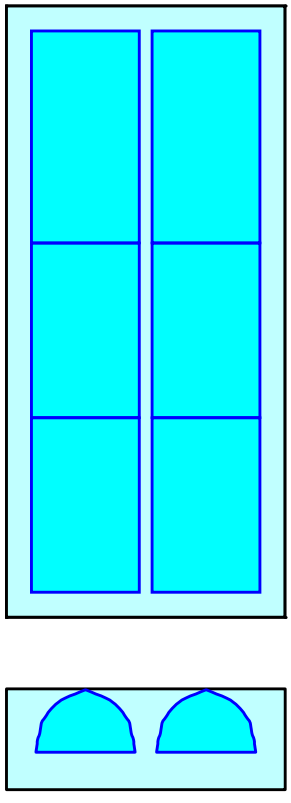
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
18.0" Stone Base + 30.5" Chamber Height = 4.04' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

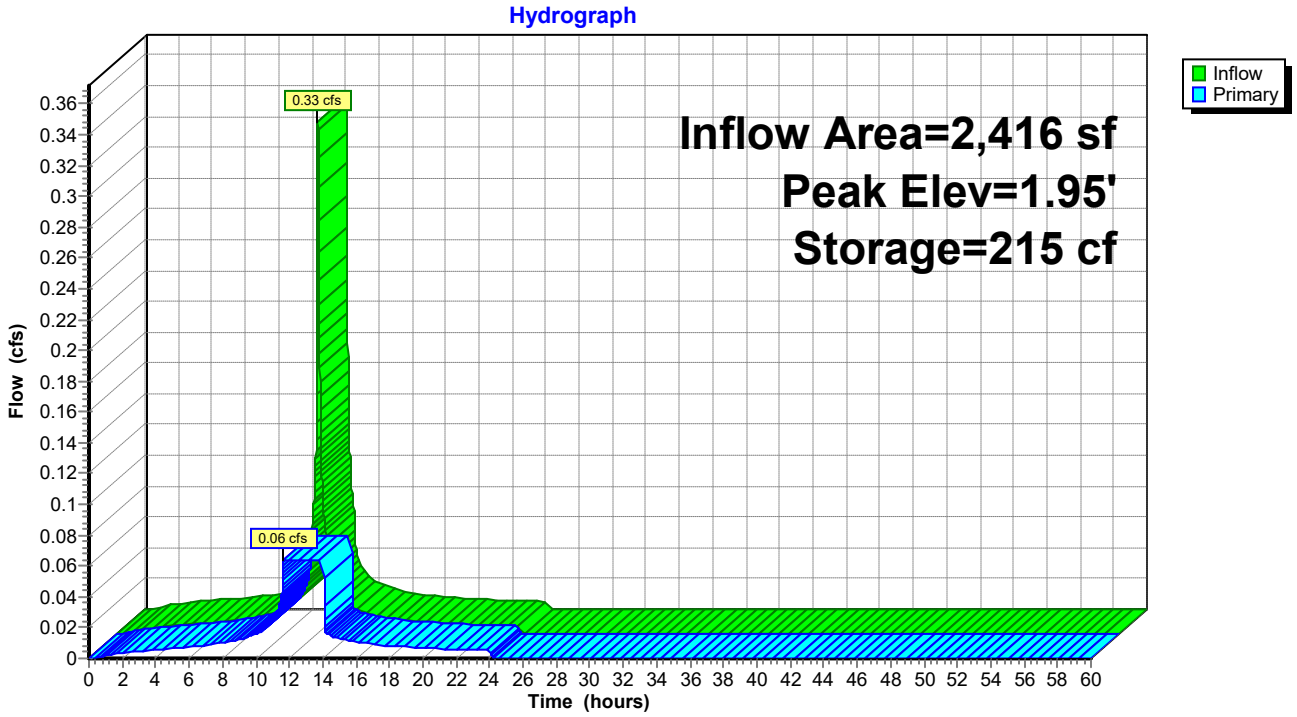
1,105.7 cf Field - 335.3 cf Chambers = 770.4 cf Stone x 30.0% Voids = 231.1 cf Stone Storage

Chamber Storage + Stone Storage = 566.4 cf = 0.013 af
Overall Storage Efficiency = 51.2%
Overall System Size = 24.50' x 11.17' x 4.04'

6 Chambers
41.0 cy Field
28.5 cy Stone



Pond 1P: 6 Cultec 330XLHD Rechargers



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 1: Watershed 1 Runoff Area=88,194 sf 9.27% Impervious Runoff Depth=6.32"
Tc=6.0 min CN=76 Runoff=12.64 cfs 46,424 cf

Subcatchment 2: Watershed 2 Runoff Area=2,416 sf 100.00% Impervious Runoff Depth=9.02"
Tc=6.0 min CN=98 Runoff=0.43 cfs 1,816 cf

Reach DP-1: Design Point 1 Inflow=12.64 cfs 46,424 cf
Outflow=12.64 cfs 46,424 cf

Pond 1P: 6 Cultec 330XLHD Rechargers Peak Elev=2.76' Storage=375 cf Inflow=0.43 cfs 1,816 cf
Outflow=0.06 cfs 1,816 cf

Total Runoff Area = 90,610 sf Runoff Volume = 48,240 cf Average Runoff Depth = 6.39"
88.31% Pervious = 80,022 sf 11.69% Impervious = 10,588 sf

Summary for Subcatchment 1: Watershed 1

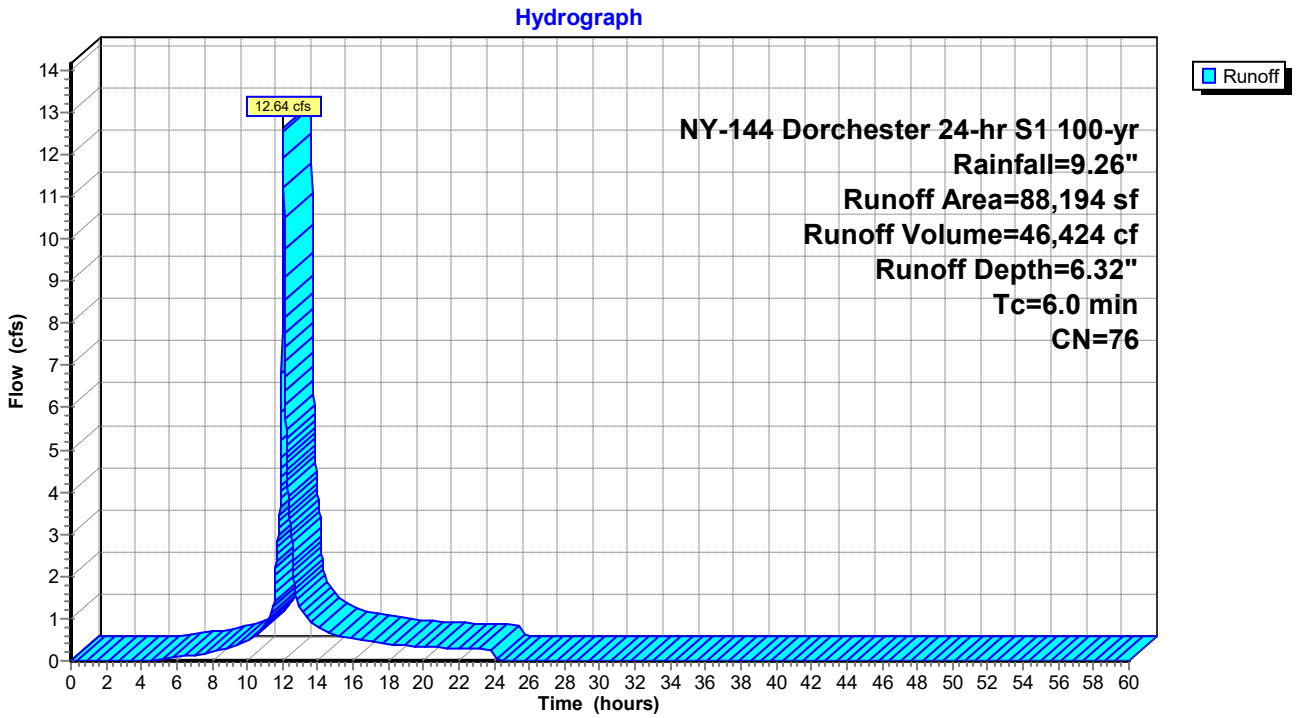
Runoff = 12.64 cfs @ 12.04 hrs, Volume= 46,424 cf, Depth= 6.32"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 100-yr Rainfall=9.26"

	Area (sf)	CN	Description
*	5,710	98	Existing Impervious Area
*	2,462	98	Proposed Impervious Area
	80,022	74	>75% Grass cover, Good, HSG C
	88,194	76	Weighted Average
	80,022		90.73% Pervious Area
	8,172		9.27% Impervious Area

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

Subcatchment 1: Watershed 1



Summary for Subcatchment 2: Watershed 2

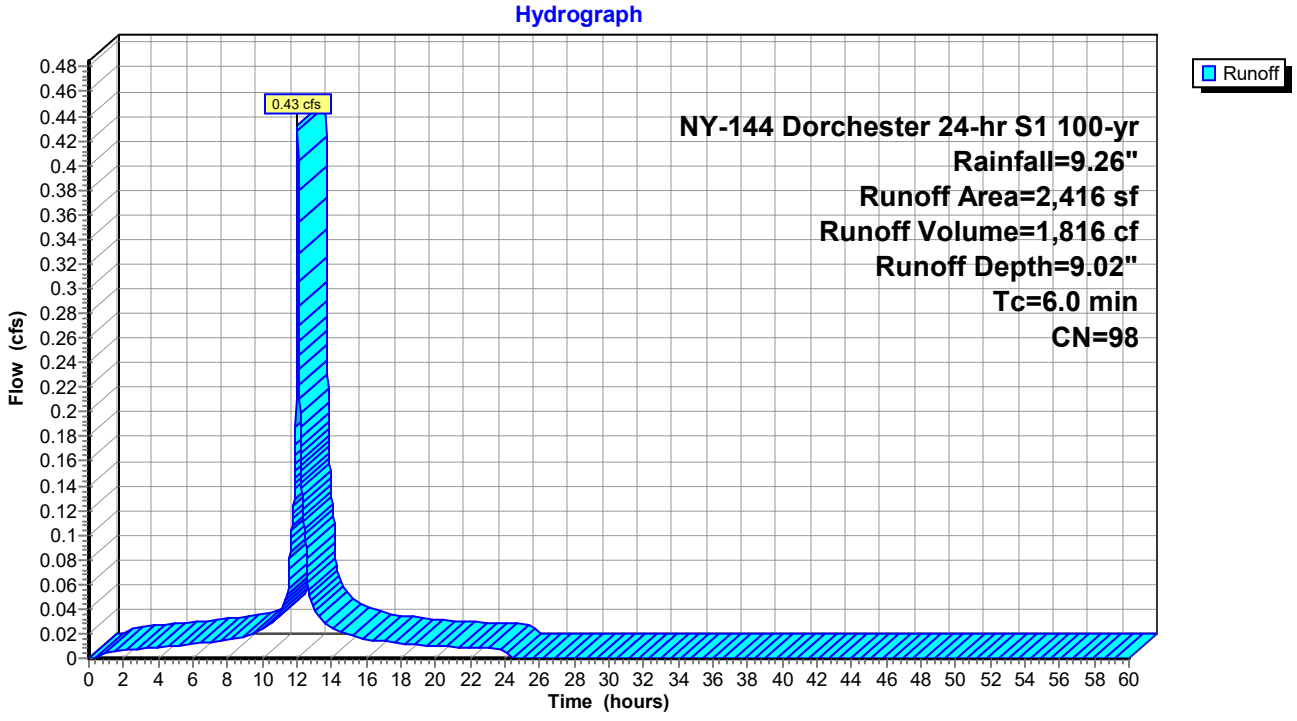
Runoff = 0.43 cfs @ 12.04 hrs, Volume= 1,816 cf, Depth= 9.02"
Routed to Pond 1P : 6 Cultec 330XLHD Rechargers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 100-yr Rainfall=9.26"

	Area (sf)	CN	Description
*	475	98	Proposed Gazebo and Fire Pit Area
*	906	98	Proposed Driveway Extension
*	1,035	98	Detached Garage
	2,416	98	Weighted Average
	2,416		100.00% Impervious Area

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

Subcatchment 2: Watershed 2



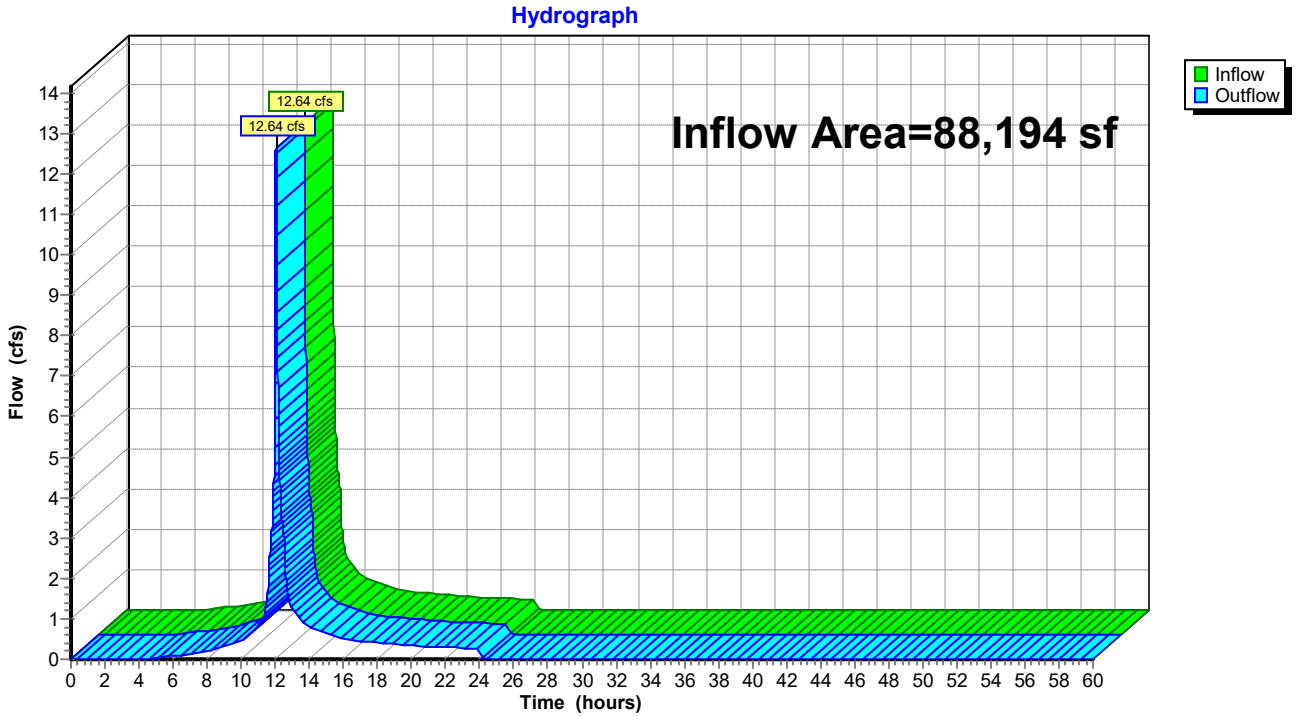
Summary for Reach DP-1: Design Point 1

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

Inflow Area = 88,194 sf, 9.27% Impervious, Inflow Depth = 6.32" for 100-yr event
Inflow = 12.64 cfs @ 12.04 hrs, Volume= 46,424 cf
Outflow = 12.64 cfs @ 12.04 hrs, Volume= 46,424 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Summary for Pond 1P: 6 Cultec 330XLHD Rechargers

Inflow Area = 2,416 sf,100.00% Impervious, Inflow Depth = 9.02" for 100-yr event
Inflow = 0.43 cfs @ 12.04 hrs, Volume= 1,816 cf
Outflow = 0.06 cfs @ 11.57 hrs, Volume= 1,816 cf, Atten= 85%, Lag= 0.0 min
Primary = 0.06 cfs @ 11.57 hrs, Volume= 1,816 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 2.76' @ 12.62 hrs Surf.Area= 274 sf Storage= 375 cf

Plug-Flow detention time= 27.9 min calculated for 1,816 cf (100% of inflow)
Center-of-Mass det. time= 27.9 min (767.7 - 739.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	231 cf	**11.17'W x 24.50'L x 4.04'H Field A** 1,106 cf Overall - 335 cf Embedded = 770 cf x 30.0% Voids
#2A	1.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		566 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.06 cfs @ 11.57 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond 1P: 6 Cultec 330XLHD Rechargers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

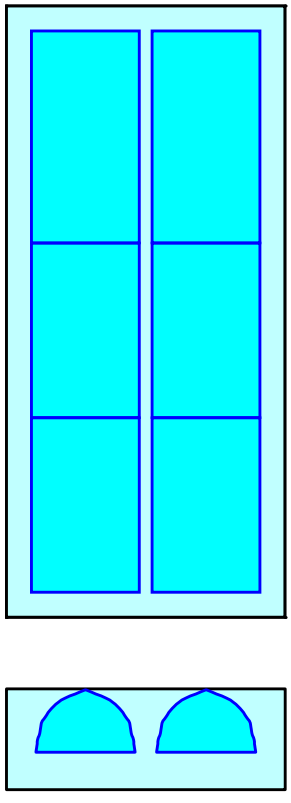
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
18.0" Stone Base + 30.5" Chamber Height = 4.04' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

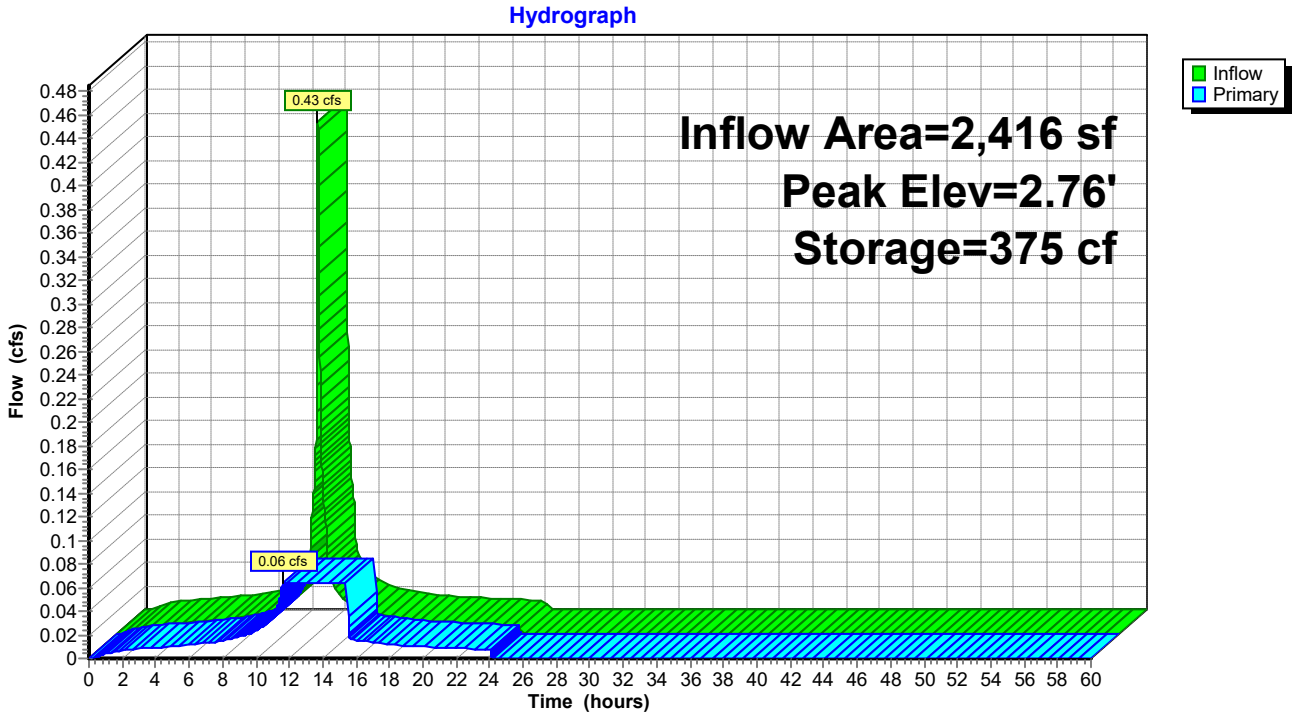
1,105.7 cf Field - 335.3 cf Chambers = 770.4 cf Stone x 30.0% Voids = 231.1 cf Stone Storage

Chamber Storage + Stone Storage = 566.4 cf = 0.013 af
Overall Storage Efficiency = 51.2%
Overall System Size = 24.50' x 11.17' x 4.04'

6 Chambers
41.0 cy Field
28.5 cy Stone



Pond 1P: 6 Cultec 330XLHD Rechargers



Water Quality Volume Calculations

Watershed 2

6 Cultec 330XLHD Rechargers

Subcat Reach Pond Link

Routing Diagram for Proposed Condition 2026-09-16
Prepared by Hudson Engineering, Printed 9/16/2026

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	WQv	NY-144 Dorchester 24-hr S1	100-yr	Default	24.00	1	2.89	2

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,035	98	Detached Garage (2)
906	98	Proposed Driveway Extension (2)
475	98	Proposed Gazebo and Fire Pit Area (2)
2,416	**98**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
2,416	Other	2
2,416		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	0	0	1,035	1,035	Detached Garage
0	0	0	0	906	906	Proposed Driveway Extension
0	0	0	0	475	475	Proposed Gazebo and Fire Pit Area
0	**0**	**0**	**0**	**2,416**	**2,416**	**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 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 2: Watershed 2 Runoff Area=2,416 sf 100.00% Impervious Runoff Depth=2.66"
Tc=6.0 min CN=98 Runoff=0.13 cfs 535 cf

Pond 1P: 6 Cultec 330XLHD Rechargers Peak Elev=0.39' Storage=32 cf Inflow=0.13 cfs 535 cf
Outflow=0.06 cfs 535 cf

Total Runoff Area = 2,416 sf Runoff Volume = 535 cf Average Runoff Depth = 2.66"
0.00% Pervious = 0 sf 100.00% Impervious = 2,416 sf

Summary for Subcatchment 2: Watershed 2

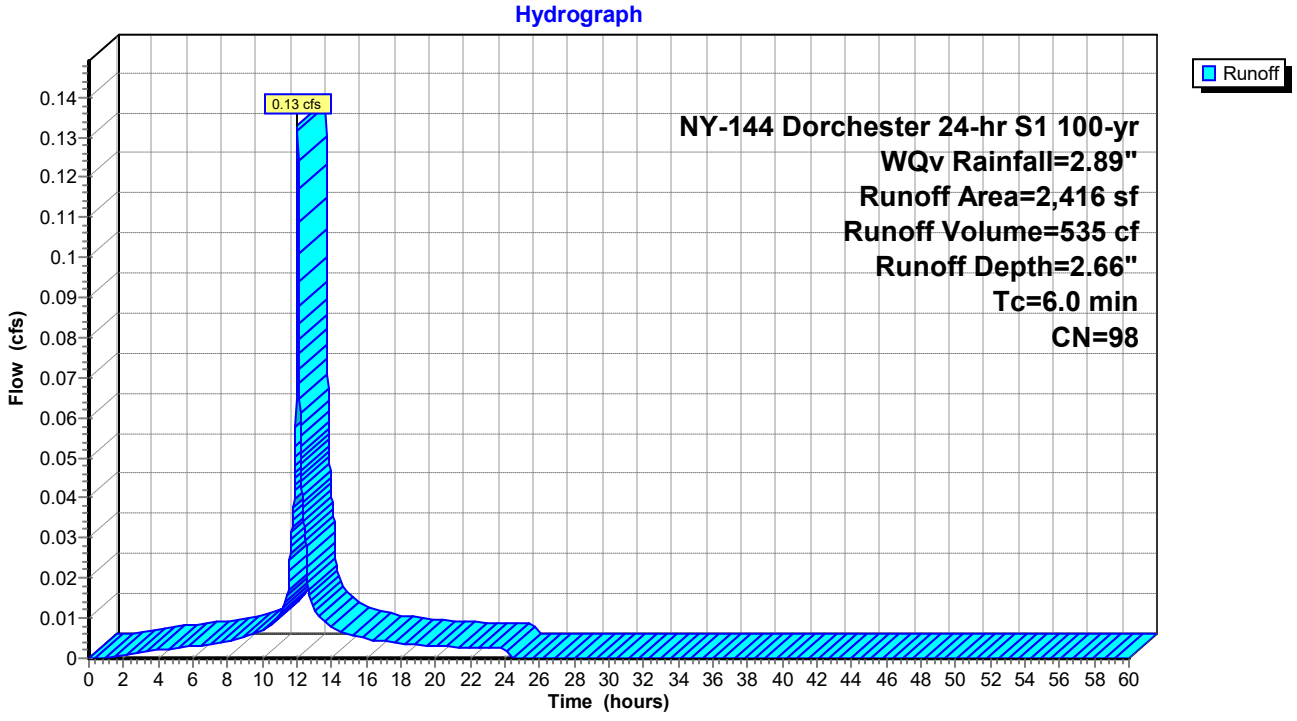
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 535 cf, Depth= 2.66"
Routed to Pond 1P : 6 Cultec 330XLHD Rechargers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
NY-144 Dorchester 24-hr S1 100-yr WQv Rainfall=2.89"

	Area (sf)	CN	Description
*	475	98	Proposed Gazebo and Fire Pit Area
*	906	98	Proposed Driveway Extension
*	1,035	98	Detached Garage
	2,416	98	Weighted Average
	2,416		100.00% Impervious Area

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

Subcatchment 2: Watershed 2



Summary for Pond 1P: 6 Cultec 330XLHD Rechargers

Inflow Area = 2,416 sf,100.00% Impervious, Inflow Depth = 2.66" for WQv event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 535 cf
Outflow = 0.06 cfs @ 11.96 hrs, Volume= 535 cf, Atten= 52%, Lag= 0.0 min
Primary = 0.06 cfs @ 11.96 hrs, Volume= 535 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 0.39' @ 12.17 hrs Surf.Area= 274 sf Storage= 32 cf

Plug-Flow detention time= 2.0 min calculated for 535 cf (100% of inflow)
Center-of-Mass det. time= 2.0 min (764.5 - 762.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	231 cf	**11.17'W x 24.50'L x 4.04'H Field A** 1,106 cf Overall - 335 cf Embedded = 770 cf x 30.0% Voids
#2A	1.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		566 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.06 cfs @ 11.96 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond 1P: 6 Cultec 330XLHD Rechargers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

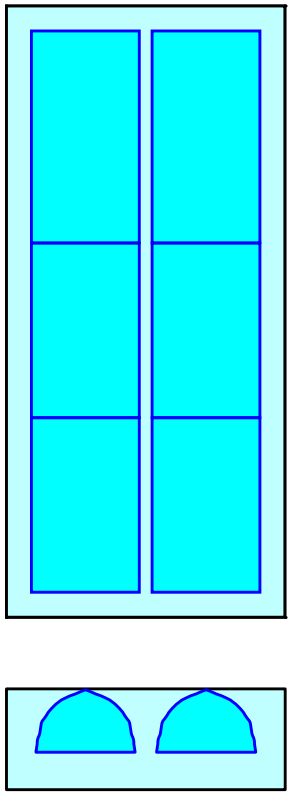
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
18.0" Stone Base + 30.5" Chamber Height = 4.04' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

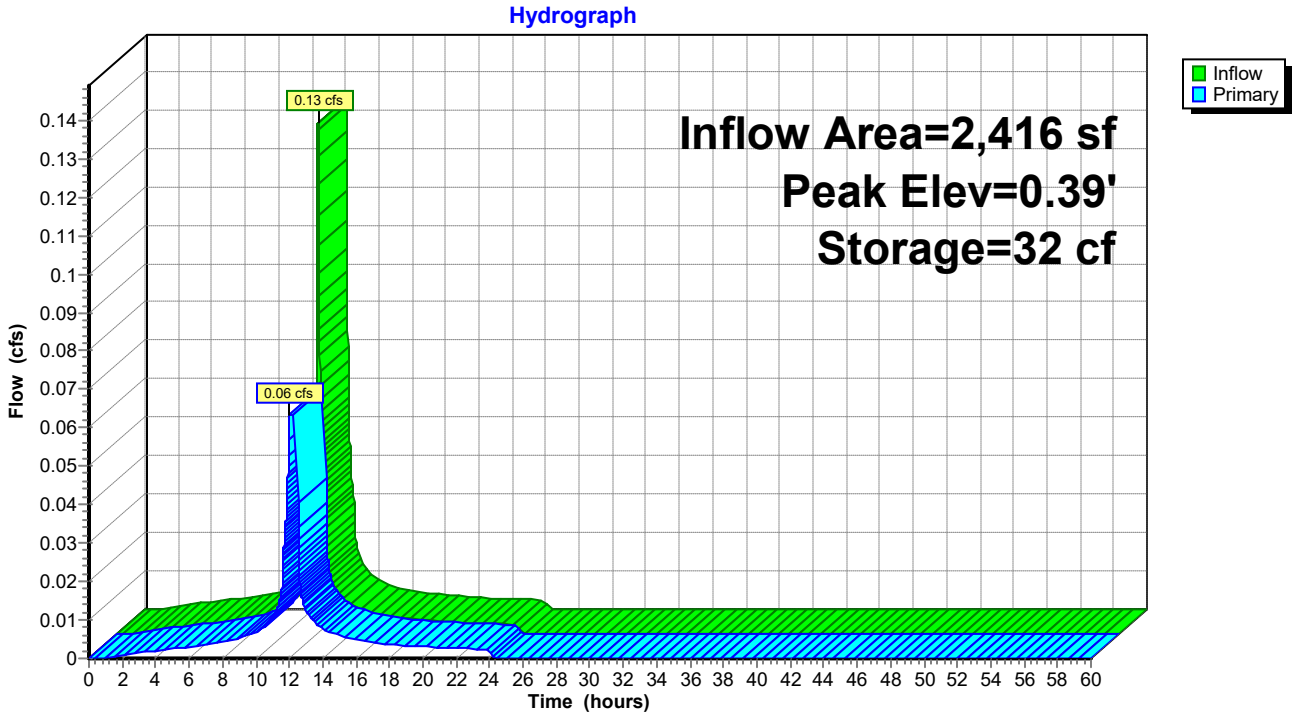
1,105.7 cf Field - 335.3 cf Chambers = 770.4 cf Stone x 30.0% Voids = 231.1 cf Stone Storage

Chamber Storage + Stone Storage = 566.4 cf = 0.013 af
Overall Storage Efficiency = 51.2%
Overall System Size = 24.50' x 11.17' x 4.04'

6 Chambers
41.0 cy Field
28.5 cy Stone



Pond 1P: 6 Cultec 330XLHD Rechargers



Deep Hole & Percolation Test Hole Results

HUDSON ENGINEERING & CONSULTING, P.C.

SITE ADDRESS: 144 Dorchester Avenue

TOWN/VILLAGE: Yorktown

DATE: 08/19/2026 TIME: 11:03am

WEATHER: Sunny TEMP. 85° F

WITNESSED BY: Abdulazeez Yusuf

DEEP TEST HOLE DATA SHEET – STORMWATER MANAGEMENT SYSTEM

DEPTH	HOLE NO. 1	HOLE NO. 2	HOLE NO. 3	HOLE NO. 4
G.L.	0 – 54”	0 – 6”	0 – 24”	
6”	Brown Sandy	Topsoil	Brown Sandy	
12”	Loam		Loam	
18”				
24”			Existing Pool	
30”			Patio buried	
36”				
42”				
48”	Filter fabric @			
54”	54”			
60”				
66”				
72”				
78”				
84”	54 – 102”	6 – 90”		
90”	Brown Sandy	Silty Sand		
96”	Loam			
102”	**No GW**	**No GW**		
108”	**No Ledge**	**No Ledge**		

- *Indicate level at which Ground Water (GW), Mottling and/or Ledge Rock is encountered.*
- *Indicate level for which water level rises after being encountered.*

EXCAVATION PERFORMED BY: **OWNER**

45 Knollwood Road - Elmsford, NY 10523 (914) 909-0420 Fax (914) 560-2086

HUDSON ENGINEERING & CONSULTING, P.C.

SITE ADDRESS: 144 Dorchester Avenue

TOWN/VILLAGE: Yorktown

DATE: 08/19/2026 TIME: 12:30pm

WEATHER: Sunny TEMP. 85° F

WITNESSED BY: Nicholas Shirriah

PERCOLATION TEST HOLE DATA SHEET – STORMWATER MANAGEMENT SYSTEM

Owner _____

HOLE #	CLOCK TIME				PERCOLATION				
					Depth to Water From Ground Surface			Soil Rate	
Hole Number	Run No.	Start	Stop	Elapse Time (Min.)	Start Inches	Stop Inches	Water Level in Inches Drop in inches	Min. per inch	Inches per Hour
# 1	1	12:30	1:30	60	20	44	24	2.5	24
	2	1:30	2:30	60	20	43	23	2.61	23
4" Ø	3	2:30	3:30	60	20	41	21	2.86	21
	4	3:30	4:30	60	20	40	20	3	20
# 2	1	12:32	1:32	60	20	44	24	2.5	24
	2	1:32	2:32	60	20	42.5	22.5	2.67	22.5
4" Ø	3	2:32	3:32	60	20	40	20	3	20
	4	3:32	4:32	60	20	40	20	3	20
# ___	1								
	2								
4" Ø	3								
	4								

Notes:

1) Tests to be repeated at the same depth until approximately equal soil rates are obtained at each percolation test hole. All data to be submitted for review.
2) Depth measurements to be made from top of hole.