Piermont Village Green **LJA 06112**

STORMWATER POLLUTION PREVENTION PLAN

Last Revised 9/20/2021

LJA | **Leonard Jackson Associates** **Consulting Engineers**
26 Firemens Memorial Drive . Pomona, New York 10970 . (845) 354-4382 . FAX (845) 354-4401

STORMWATER POLLUTION PREVENTION PLAN

For Compliance With NYSDEC General Permit GP-0-15-002 for Stormwater Discharges From Construction Activities

Prepared for

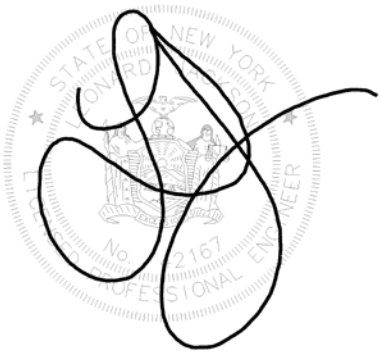
PIERMONT VILLAGE GREEN

VILLAGE OF PIERMONT, TOWN OF ORANGETOWN
ROCKLAND COUNTY, NEW YORK

Owner/Applicant: **Delores James**
540 Piermont Avenue
Piermont, NY 10968

LJA # 06112

LAST REVISED: 9/20/2021
REVISION DATE: 1/25/2010
DATE: 8/12/2009



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September 20, 2021

Village of Piermont Planning Board
478 Piermont Avenue
Piermont, NY 10968

Attn: Debbie Arbolino, Planning Board Secretary

Re: Piermont Village Green
Drainage Analysis
LJA # 06112

Dear Ms. Arbolino:

The Piermont Village Green project will provide stormwater management systems to meet the Village of Piermont stormwater management requirements.

These requirements will be met by detaining the storm flows in an underground detention tank system. The stored runoff will gradually be released using an outlet control structure that yields zero increase in peak rate of runoff for all storm frequencies between one year through one hundred year.

These reduced flows will be discharged into an existing curb inlet located in Piermont Avenue.

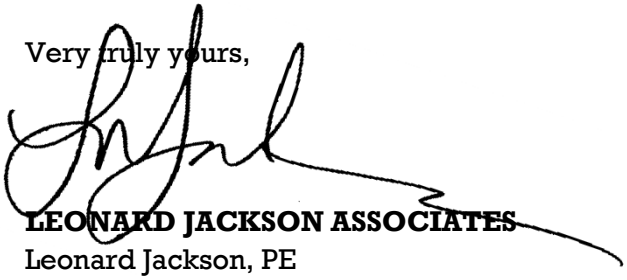
The attached Stormwater Management Analysis quantifies the detention requirements and how they were satisfied.

Summary of Discharges at Design Point A*

*Design Point A represents the existing catch basin located in Piermont Avenue.

Storm Frequency	**Existing Conditions (cfs)**	**Developed Conditions (cfs)**	**Net Change (cfs)**
100 Year	28.6	28.5	(-) 0.1
25 Year	18.3	17.5	(-) 0.8
10 Year	13.3	12.6	(-) 0.7
2 Year	7.0	6.5	(-) 0.5

Very truly yours,



LEONARD JACKSON ASSOCIATES
Leonard Jackson, PE
Attach

Cc: Delores James

P:\PROJECTS\06\06112\MANAGEMENTDOCS\TechReportsAnalyses\SWPPP\2021-x-x(Unsubmitted)\SWPPP Parts\1-SWPPP Letter.docx

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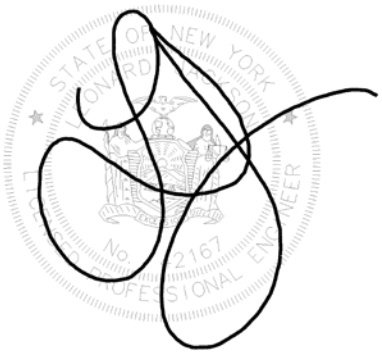
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VILLAGE OF PIERMONT, ROCKLAND COUNTY, NEW YORK

Owner/Applicant: **Delores James**
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LAST REVISED: 9/20/2021
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Leonard Jackson PE PLLC dba Leonard Jackson Associates

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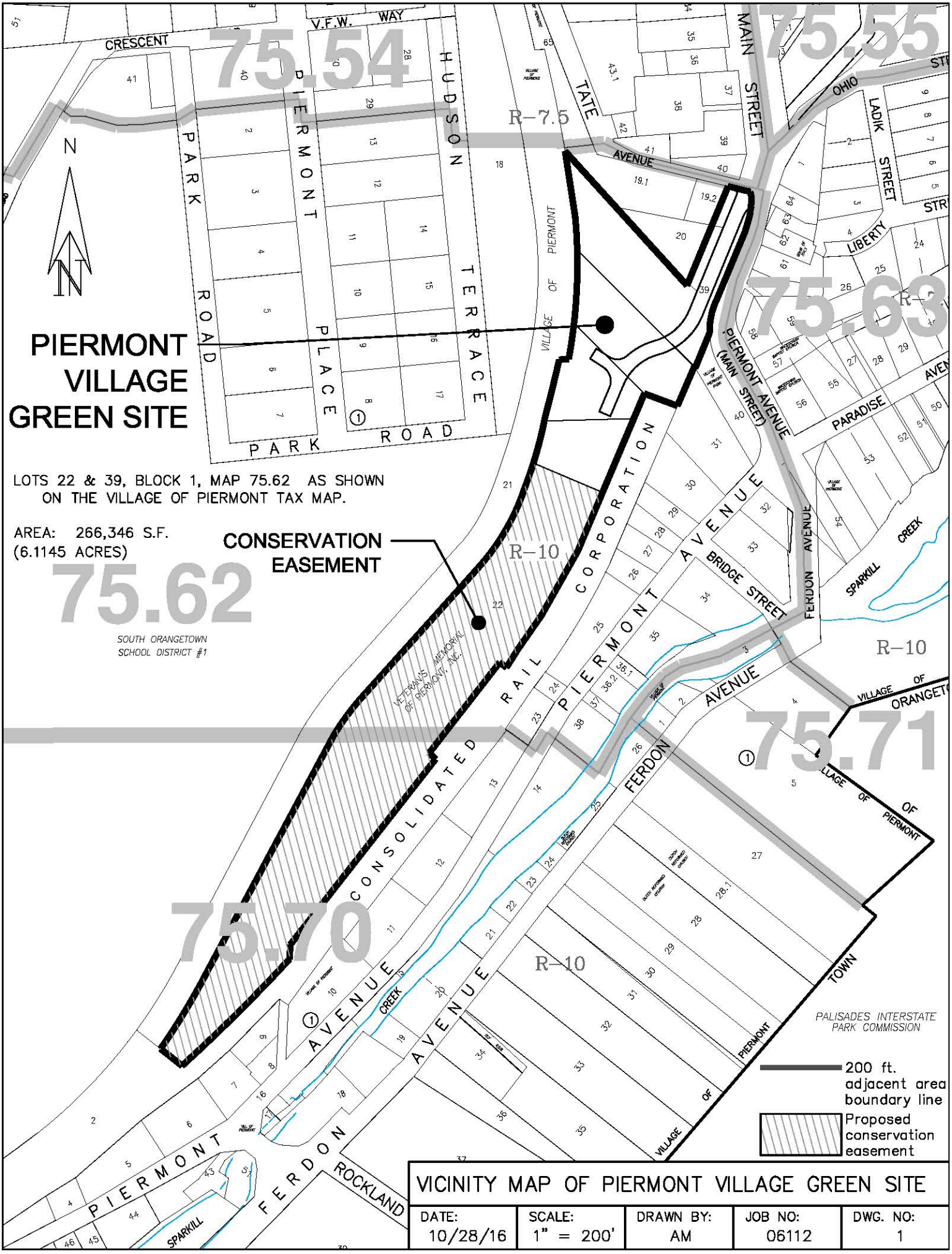
A. Existing Condition Hydrologic Calculations
    1) Time of Concentration Calculations
    2) Curve Number Calculations
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C. References
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    b. Extreme Precipitation Tables
D. Stormwater Practice Construction Inspection Checklist
E. Operation And Maintenance Plan (OMP)
F. Notice of Intent (NOI) and MS4 Acceptance form
G. Contractors' Certification
H. SPDES General Permit GP-01-15-002
I. Project Drawings

1.0 INTRODUCTION

This Stormwater Pollution Prevention Plan has been prepared for the 6.0 acre Piermont Village Green site, located on the southwest corner of Tate Avenue and Piermont Avenue in the Village of Piermont, Rockland County, New York (hereinafter referred to as the "Site"). This project has been designed in accordance with the following:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-15-002, effective January 29, 2015.
- Chapter 169 "Stormwater Control" of the Village of Piermont, NY Zoning Code.

The existing conditions of the site consist of wooded areas. The southern portion of the site, approximately 4 acres, is within conservation easement and will remain undeveloped. It is proposed to construct four single family dwellings on the remaining 2 acres of the property with the associated driveways and landscaping areas and a roadway to serve the development.



VICINITY MAP OF PIERMONT VILLAGE GREEN SITE

DATE:	SCALE:	DRAWN BY:	JOB NO:	DWG. NO:
10/28/16	1" = 200'	AM	06112	1

2.0 STORMWATER MANAGEMENT PLANNING

A Stormwater Pollution Prevention Plan (SWPPP) with Water Quality Control is not required for this project because it is a single family residential subdivision that involves a soil disturbance of less than five (5) acres of land (approximately 2 acres). Therefore, a SWPPP with Water Quantity Control and Erosion and Sediment Controls only has been prepared for this project.

The proposed stormwater facilities have been designed such that the quantity of stormwater runoff during and after construction is not adversely altered or is enhanced when compared to pre-development conditions.

The reductions in peak rates of runoff in developed conditions when compared to existing conditions are shown in the table below:

Storm Frequency	Existing Discharge (cfs)	Developed Discharge (cfs)	Net Change (cfs)
100-Year	28.6	28.5	**-0.1**
25-Year	18.3	17.5	**-0.8**
10-Year	13.3	12.6	**-0.7**
2-Year	7.0	6.5	**-0.5**

3.0 SOIL EROSION & SEDIMENT CONTROL

A potential impact of the proposed development on any soils or slopes will be that of erosion and transport of sediment during construction. An Erosion and Sediment Control Management Program will be established for the proposed development, beginning at the start of construction and continuing throughout its course, as outlined in the "New York State Standards and Specifications for Erosion and Sediment Control," dated November 2016. A continuing maintenance program will be implemented for the control of sediment transport and erosion control after construction and throughout the useful life of the project.

The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify that the appropriate erosion and sediment controls, as shown on the Sediment & Erosion Control Plans, have been adequately installed to ensure overall preparedness of the site for the commencement of construction. In addition, the Operator shall have a qualified professional conduct one site inspection at least every seven calendar days and immediately following any storm event of 0.5 inches or greater. All measures shall be maintained in good working order. If a repair is necessary, it shall be initiated within 24 hours of report.

Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.

The owner or operator shall have each of the contractors and subcontractors identified above sign a copy of the certification statement provided in Appendix G before they commence any construction activity.

3.1. Soil Description

As provided by the United States Department of Agriculture, Soil Conservation Service "Web Soil Survey," the soils listed below is present at the site. Following this list is a detailed description of each soil type found on the property:

SYM.	HSG	DESCRIPTION
HoF	N/A	Holyoke-Rock outcrop complex, very steep
WuB	C	Wethersfield-Urban land complex, 2 to 8 percent slopes

HoF, Holyoke-Rock outcrop complex, very steep

The parent material consists of Holyoke-Rock.

Erosion Hazard Rating: NOT RATED

WuB, Wethersfield-Urban land complex, 2 to 8 percent slopes

This soil is well drained. The parent material consists of loamy acid till derived mainly from reddish sandstone, shale, and conglomerate, with some basalt.

Erosion Hazard Rating: SLIGHT

3.2. On-Site Pollution Prevention

3.2.1. Temporary Control Measures

There are temporary and permanent pollution prevention measures used to control litter and construction debris on site.

Temporary control measures and facilities will include silt fences, stabilized construction access, temporary seeding and mulching, curb/field inlet protection, and temporary rock stabilization.

Throughout the construction of the proposed development, temporary control facilities will be implemented to control on-site erosion and sediment transfer. Topsoil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 21 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area. Areas of the site which are paved will be temporarily stabilized by applying stone sub-base until bituminous pavement can be applied. Interceptor swales, if required, will be used to direct stormwater runoff to temporary sediment traps for settlement.

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Descriptions of the temporary sediment & erosion controls that will be used during the development of the site including silt fence, stabilized construction entrance, seeding, mulching and inlet protection are as follows:

1. Silt Fence is constructed using a geotextile fabric. The fence shall be 24 inches high. The height of the fence can be increased in the event of placing these devices on uncompacted fills or extremely loose undisturbed soils. The fences will not be placed in areas which receive concentrated flows such as ditches, swales and channels nor will the filter fabric material be placed across the entrance to pipes, culverts, spillway structures, sediment traps or basins. Built-up sediment shall be removed from silt fence when it has reached one-third the height of the fence. Silt fence shall be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
2. Stabilized Construction Entrance consists of 2 inch stone, or reclaimed or recycled concrete equivalent. The rock entrance will be a minimum of 50 feet in length by 24 feet in width by 6 inches in depth.
3. Seeding will be used to create a vegetative surface to stabilize disturbed earth until at least 70% of the disturbed area has a perennial vegetative cover. This amount is required to adequately function as a sediment and erosion control facility. Grass lining will also be used to line temporary channels and the surrounding disturbed areas. Temporary and permanent seeding and planting shall be inspected for bare spots, washouts, and healthy growth.
4. Mulching is used as an anchor for seeding and disturbed areas to reduce soil loss due to storm events. These areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket. Mulch must be placed after seeding or within 48 hours after seeding is completed.
5. Inlet Protection will be provided for all stormwater basins and inlets with the use of curb & gutter inlet protection and stone & block inlet protection structures, which will keep silt, sediment and construction debris out of the storm system.

6. Sediments Traps will be used until their contributing areas are stabilized.
7. Temporary Rock Stabilization will be provided using rock fall protection systems.

The contractor shall be responsible for maintaining the temporary sediment and erosion control measures throughout construction.

An erosion control system will be utilized by the developer to minimize the production of sediment from the site. Methods to be utilized will be those found most effective for the site and shall include, but are not limited to, one or more of the following, as applicable:

1. The proposed limit of disturbance shall be demarcated in the field with snow fence.
2. Temporary sediment entrapment areas shall be provided at key locations to intercept and clarify silt laden runoff form the site. These may be excavated or may be created utilizing earthen berms, rip-rap or crushed stone dams, hay bales or other suitable materials. Diversion swales, berms or other channelization shall be constructed to ensure that all silt laden waters are directed into the entrapment areas, which shall not be permitted to fill in, but shall be cleaned periodically during the course of construction. The collected silt shall be deposited in areas safe from further erosion.
3. Sediment deposits shall be removed when they reach approximately ⅓ the height of the silt fence. All such sediment shall be properly disposed of in fill areas on the site, as directed by the Owner's Field Representative. Fill shall be protected following disposal with mulch, temporary and/or permanent vegetation and be completely bounded on the downhill side by silt fence.
4. All disturbed areas, except roadways, which will remain undisturbed for more than 14 days shall be temporarily seeded with 1/2 lb. of rye grass or mulched with 100 lbs. of straw or hay per 1,000 sq. ft. Roadways shall be stabilized as rapidly as

practical by the installation of the base course, but temporary asphalt stabilization may be required.

5. Silt that leaves the site in spite of the required precautions shall be collected and removed.
6. Dust control: should dust become a nuisance during construction occasional sprinkling of the site may be necessary and will be performed as required.
7. Erosion in the vicinity of soil stockpiles shall be prevented by installing silt fence reinforced with hay bales around the perimeter of the pile. Temporary seeding shall be applied to the stockpile(s) if the pile is to remain unused and undisturbed for more than 14 days.
8. Inspection of erosion and sediment control measures shall be performed at the end of each construction day and immediately following each rainfall event. All required repairs shall be immediately executed by the contractor.
9. All erosion and sediment control measures and devices shall remain in place and shall be maintained by the contractor in accordance with Piermont, Orangetown, and NYSDEC requirements and regulations until the site has been fully stabilized in accordance with NYSDEC regulations.

Construction Sequence

1. All erosion and sediment control measures shall be in place prior to any grading operations and installation of proposed structures and or utilities.
2. All erosion and sediment control measures shall remain in place and be maintained until construction is completed and/or stabilized.
3. Install stabilized construction entrance and anti-tracking pads as indicated on plan.
4. Install silt fence and/or hay bale barriers down slope of all areas to be disturbed and down slope of all areas designated for topsoil stockpiling.
5. Applicant shall maintain paved access for lots 75.62-1-20 (friscia) & 75.62-1-19 (tarashenko) throughout construction.

6. Clear existing trees, vegetation and existing structures from areas to be filled or excavated. Strip and stockpile topsoil from areas to be disturbed. Seed stockpiled topsoil with temporary rye grass cover.
7. Perform excavation and fill to bring land to desired grade. Any disturbed areas to remain bare for a period of over two months should be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.
8. Install underground utilities, manholes, catch basins, solid detention tanks, and outlet structure. Grates of curb and field inlets should be left at elevations which permit proper collection of surface runoff.
9. Install hay bale rings around curb and field inlets except for the basins located at the anti-tracking pad. Basins at the pad shall be treated with the catch basin-filter fabric detail.
10. Construct curbs and install base and binder courses of paved areas. Raise grates of the curb and field inlets accordingly.
11. Complete the grading.
12. Install surface course of pavement. Raise grates of curbs and field inlets to final elevation.
13. Upon completion of construction, all disturbed areas are to be seeded. Refer to landscaping plan for permanent seeding specifications. All temporary devices shall be removed and the affected areas regraded, planted or treated in accordance with the approved site plans.

3.2.2. Permanent Control Measures and Facilities for Long Term Protection

Towards the completion of construction, permanent sediment and erosion control measures will be developed for long term erosion protection. The disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity. The following permanent control measures and facilities have been proposed to be implemented

for the project:

1. Catch Basins will be used to capture and convey the stormwater runoff to the underground drainage system.

2. Solid Detention Tanks will be used to provide stormwater detention. The runoff will be gradually released using an outlet control structure to achieve a zero increase in the peak rates of runoff in proposed conditions when compared to existing conditions.

3. Seeding of at least 70% perennial vegetative cover will be used to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with 100 lbs. of straw or hay per 1,000 sq. ft. such that the mulch forms a continuous blanket.

3.3. Specifications for Soil Restoration

Prior to the final stabilization of the disturbed areas, soil restoration will be required for all vegetated areas to recover the original properties and porosity of the soil. Soil Restoration Requirements are provided on table below:

Soil Restoration Requirements

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

	inches of topsoil		
Heavy traffic areas on site (especially) in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per "Deep Ripping and De-compaction, DEC 2008."

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following full 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 four inches and larger size are cleaned off the site.

3.4. Specifications for Final Stabilization of Graded Areas

Final stabilization of graded areas consists of the placement of topsoil and installation of landscaping (unless the area is to be paved, or a building is to be constructed in the location). Topsoil is to be spread as soon as grading operations are completed. Topsoil is to be placed to a minimum depth of six inches on all embankments, planting areas and seeding/sod areas. The subgrade is to be scarified to a depth of two inches to provide a bond of the topsoil with the subsoil. Topsoil is to be raked to

an even surface and cleared of all debris, roots, stones and other unsatisfactory material.

Planting operations shall be conducted under favorable weather conditions as follows:

- Permanent Lawns - April 15 (provided soil is frost-free and not excessively moist) to May 15; August 15 to October 15.
- Temporary Lawn Seeding - if outside of the time periods noted above, the areas shall be seeded immediately on completion of topsoil operations with annual ryegrass (Italian rye) at a rate of six pounds per 1,000 square feet. Temporary lawn installation is permitted provided the soil is frost-free and not excessively moist. The permanent lawn is to be installed the next planting season.

Temporary rock stabilization work areas shall be provided for the steep rock areas located on the north side of the site. Seeded areas are to be mulched with 100 lbs. of straw or hay per 1,000 sq. ft. Straw or hay mulch must be spread uniformly and anchored immediately after spreading to prevent wind blowing. Mulches must be inspected periodically and in particular after rainstorms to check for erosion. If erosion is observed, additional mulch must be applied.

All denuded surfaces which will be exposed for a period of over two months or more shall be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.

Permanent turfgrass cover is to consist of a seed mixture as follows:

(a) <u>Sunny sites</u>

Kentucky Bluegrass 2.0-2.6 pounds/1000 square feet

Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	0.4-0.6 pounds/1000 square feet

(b) Shady sites

Kentucky Bluegrass	0.8-1.0 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	2.6-3.3 pounds/1000 square feet

All plant materials shall comply with the standards of the American Association Of Nurserymen with respect to height and caliper as described in its publication American Standard for Nursery Stock, latest edition.

4.0 SPILL CONTROL AND PREVENTION

4.1. Concrete Material and Equipment Management

Concrete washouts shall be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solid for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding. Installing concrete washout facilities not only prevents pollution but also is a matter of good housekeeping at your construction site.

Prefabricated concrete washout containers can be delivered to the site to provide maintenance and disposal of materials. Regular pick-ups of solid and liquid waste materials will be necessary. To prevent leaks on the job site, ensure that prefabricated washout containers are watertight. A self installed concrete washout facility can be utilized although they are much less reliable than prefabricated containers and are prone to leaks. There are many design options for the washout, but they are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Above-grade structures can also be used if they are sized and constructed correctly and are diligently maintained. One of the most common problems with self-installed concrete washout facilities is that they can leak or be breached as a result of constant use, therefore the contractor shall be sure to use quality materials and inspect the facilities on a daily basis.

Washouts must be sized to handle solids, wash water, and rainfall to prevent overflow. Concrete Washout Systems, Inc. estimates that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump truck.

For larger sites, a below-grade washout should be at least 10 feet wide and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 12-inches of freeboard must be provided. The pit must be lined with plastic sheeting of at least 10-mil thickness without holes or tears to prevent leaching of liquids into the ground. Concrete wash water should never be placed in a pit that is connected to the storm drain system or that drains to nearby waterways.

An above-grade washout can be constructed at least 10 feet wide by 10 feet long and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 4-inches of freeboard must be provided. The washout structures can be constructed with staked straw bales or sandbags double-or triple lined with plastic sheeting of at least 10-mil thickness without holes or tears.

Concrete washout facilities shall not be located within 50 feet of storm drains, open ditches, or water bodies and should be placed in locations that allow for convenient access for concrete trucks. The contractor shall check all concrete washout facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Both above-and below-ground self-installed washouts should be inspected daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities. Prefabricated washout containers should be inspected daily as well as to ensure the container is not leaking or nearing 75 percent capacity. Inspectors should also note whether the facilities are being used regularly. Additional signage for washouts may be needed in more convenient locations if concrete truck operators are not utilizing them.

The washout structures must be drained or covered prior to predicted rainstorms to prevent overflows. Hardened solids either whole or broken must be removed and then they may be reused onsite or hauled away for recycling.

Once materials are removed from the concrete washout, a new structure must be built or excavated, or if the previous structure is still intact, inspect it for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears and replace signage if necessary. It is very important that new plastic be used after every cleaning because pumps and concrete removal equipment can damage the existing liner.

4.2. Construction Site Chemical Control

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides; fertilizers used for vegetative stabilization; petrochemicals; construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary waste.

Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State and local regulations that govern their usage, handling, storage, and disposal.

Pesticides should be disposed of through a licensed waste management firm or a treatment, storage and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.

Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage areas, and notifying neighboring property owners prior to spraying.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity of 110 percent greater than that of the largest container;
- Clearly label all products;
- Keep tanks off the ground; and
- Keep lids securely fastened.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled.

4.3. Solid Waste Management and Portable Sanitary Management

The purpose of this management measure is to prevent the potential for solid waste such as construction debris, trash, etc. from construction sites due to improper handling and storage. Debris and litter should be removed periodically from the BMP's and surrounding areas to prevent clogging of pipes and structures. All construction material shall be stored in designated staging areas. Roll-off containers

shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers.

Portable sanitary units may be utilized on-site or bathrooms will be provided within construction trailers. A sanitation removal company will be hired to pump/remove any sanitary waste. In the event that portable sanitary units are used and then cleaned after being emptied, the rinse water may not be disposed of to the storm drain system. It shall be contained for later disposal if it can't be disposed of on-site. Remove paper and trash before cleaning the portable sanitary units. The portable sanitary units shall be located away from the storm drain system if possible. Provide over head cover for wash areas if possible. Maintain spill response material and equipment on site to eliminate the potential for contaminants and wash water from entering the storm drain system.

5.0 CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE

During the construction phase and following construction of the project, a number of maintenance measures will be taken with respect to the site maintenance. Measures to be taken included the following:

5.1. During Construction

A comprehensive sediment and erosion control plan will be in place during the construction period. Maintenance measures for sediment and erosion controls will include:

A qualified professional acceptable to the municipality will be hired by the owner or operator to monitor the installation and maintenance of the sediment and erosion control plans. The qualified professional shall report directly to the Engineering Consultant and shall be responsible for ensuring compliance with the design of the sediment and erosion control plans.

The qualified professional so hired will inspect all sediment and erosion control measures at least every seven calendar days. In the event that there has been a variance with the design of the sediment and erosion control measures so that the ability of the measures to adequately perform the intended function is lessened or compromised and/or the facilities are not adequately maintained, the qualified professional shall be required to report such variance to the Engineering Consultant within 48 hours and shall be empowered to order immediate repairs to the sediment and erosion control measures.

The qualified professional will also be responsible for observing the adequacy of the vegetation growth (trees, shrubs, groundcovers and turfgrasses) in newly graded areas and for ordering additional plantings in the event that the established plant materials do not adequately protect the ground surface from erosion.

5.2. Following Construction

Site maintenance activities on the property will include:

- Grounds maintenance, including mowing of lawns;
- Planting of trees, shrubs and groundcovers; pruning of trees and shrubs;
- Application of fertilizer and herbicides;
- Maintenance of stormwater management area;

Grounds maintenance on the site will be performed by landscaping contractor.

Fertilizer is typically applied twice in the year - once in the spring and once in the fall. The application of fertilizer is usually necessary to maintain healthy lawn growth due to competition for nutrients with trees and shrubs and since the clippings are often removed. It is not recommended that fertilizer be applied during the summer. It is at this time that lawns are typically dormant.

Fertilizers come in three basic types: (1) Organic; (2) Soluble synthetic and (3) Slow release.

Organic fertilizers are derived from plant or animal waste. Since they are heavier and bulkier than other fertilizers, it is necessary to apply a much greater amount at one time. Soluble synthetic fertilizers are predictable with determining the exact impact on a lawn. However more applications are necessary since their effect is often short term. Slow release fertilizers have a high percentage of nitrogen so quantities that need be handled at one time are smaller. Slow release fertilizers will be utilized by the project.

A complete fertilizer contains all three of the primary nutrients - nitrogen (N), phosphorus (P) and potassium in the form of potash (K). Typically, a 3-1-2 ratio of nutrients (N-P-K) is used for lawn applications.

Fertilizer shall be applied by the landscape contractor in accordance with the manufacturer's instructions. The application of fertilizer does require some skill on the part of the operator. Should there be a spill of fertilizer, the landscape contractor shall be required to scrape or vacuum it up. The area will then be watered in accordance with the manufacturer's instructions to ensure that the fertilizer becomes soluble and available to plants and does not run off.

Delores James will be responsible for the long-term operation and maintenance of the permanent stormwater management practices. The permanent stormwater management practices shall be maintained in accordance with the Maintenance Inspection Checklists provided in Appendix D.

6.0 STORMWATER MANAGEMENT DESIGN REPORT

6.1. Summary of Results

A reduction in the peak rates of runoff in developed conditions when compared to existing conditions are shown in the table below:

Reduction in Peak Rates of Runoff at Design Point A

Storm Frequency	Existing Discharge (cfs)	Developed Discharge (cfs)	Net Change (cfs)
100-Year	28.6	28.5	**-0.1**
25-Year	18.3	17.5	**-0.8**
10-Year	13.3	12.6	**-0.7**
2-Year	7.0	6.5	**-0.5**

6.2. Study Methodology

Runoff rates were calculated based upon the standards set forth by the United States Department of Agriculture Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986. The methodology set forth in TR-55 considers a multitude of characteristics for watershed areas including soil types, soil permeability, vegetative cover, time of concentration, topography, rainfall intensity, ponding areas, etc.

The 2, 10, 25, 100 year storm recurrence intervals were reviewed in the design of the stormwater management facilities (see Appendices A & B Existing/Proposed Hydrologic Calculations).

Anticipated drainage conditions were analyzed taking into account the rate of runoff which will result from the construction of buildings, parking areas and other impervious surfaces associated with the site development.

Base Data and Design Criteria

For the stormwater management analysis, the following base information and methodology were used:

1. The United States Department of Agriculture (USDA) Web Soil Survey of the site available on its website at http://websoilsurvey.nrcd.usda.gov.
2. The United States Department of Agriculture Natural Resources Conservation Service National Engineering Handbook, Section 4 - Hydrology", dated March 1985.
3. The United States Department of Agriculture Natural Resources Conservation Service Technical Report No. 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986.
4. Extreme Precipitation in New York & New England by National Regional Climate Center (NRCC) and Natural Resources Conservation Service (NRCS).
5. The time of concentration was calculated using the methods described in Chapter 3 of TR-55, Second Edition, June 1986. Manning's kinematics wave equation was used to determine the travel time of sheet flow. The 2-year 24 hour precipitation amount of 3.41 inches was used in the equation for all storm events. The travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. Kirpich Method was used to determine the travel time for channel reaches.
6. All hydrologic calculations were performed using the ACOE HEC-HMS software package version 4.2.1.
7. The New York State Stormwater Management Design Manual, revised January 2015.
8. New York Standards and Specifications for Erosion and Sediment Control, November 2016.
9. The storm flows for the 2, 10, 25, & 100 year recurrence interval storms were analyzed for the total watershed areas. The Type III distribution design storm for

a 24 hour duration was used and the mass rainfall for each design storm is as follows:

24 Hour Rainfall Amounts

Design Storm Recurrence Interval	Inches of Rainfall
2 Year	3.41
10 Year	5.06
25 Year	6.34
100 Year	8.93

*Rainfall Depths from http://precip.eas.cornell.edu/

6.3. Existing Conditions

The existing conditions of the project site consist mostly of wooded and lawn areas and residential dwellings on the west and the northeast portions of the drainage basin. Runoff from the offsite areas flows overland towards the Piermont Village Green site. The combined runoff from the off-site and on-site areas flows east overland towards Piermont Avenue and eventually into the existing drainage system in Piermont Avenue.

The following natural features, conservation areas, resource areas and drainage patterns of the project site have been identified and utilized to develop Drawing DA-1 "Existing Drainage Area Map" provided in Appendix A:

- Forest/vegetative cover
- Topography (steep slopes and rocky areas)
- Soil (hydrologic soil groups C and D)
- Bedrock, significant geology features
- Conservation areas located on the south side of the property

Based on the USDA Web soil survey, all on-site soils are well-drained and belong to hydrologic soil group C. The soil types, boundaries and drainage areas/designations are depicted on Drawing DA-1 within Appendix A.

The existing catch basin in Piermont Avenue was identified as the design point (Point A) for comparing peak rates of runoff in existing and proposed conditions. Four drainage areas were identified in existing conditions based on the existing drainage divides at the site.

The total runoff from EX-1, EX -2, EX -3, and EX -4 is conveyed to an existing drainage system in Piermont Avenue at Design Point A.

6.4. Proposed Conditions

The proposed residential subdivision includes the construction of four residential dwellings and associated driveways, landscaped areas and, a private road that serves the development.

The stormwater runoff from the off-site areas located on the west side of the site flows overland toward the site. It is proposed to construct a 10' wide riprapped gully to intercept the runoff from the offsite areas and convey it to the existing drainage system located in Piermont Avenue via a proposed by-pass drainage system consisting of field inlets and 15'' diameter HDPE pipes.

Stormwater runoff from the proposed development will be collected in an underground storm drainage system via catch basins and detained in an underground detention system consisting of 11-10' diameter solid tanks and an outlet control structure. The combined runoff from the off-site and detained on-site areas flows into the existing storm drainage system located in Piermont Avenue.

The existing catch basin on Piermont Avenue was identified as the design point for comparing peak rates of runoff in existing and proposed conditions. Four drainage areas were identified in proposed conditions based on the drainage divides.

The total runoff from DEV-1, DEV-2, DEV-3, and DEV-4 is conveyed to an existing

drainage system in Piermont Avenue at Design Point A.

6.5. Pipe Hydraulic Capacity Calculations

The hydraulic calculations of the proposed drainage pipe conveyance system are provided within the Storm Pipe Sizing Calculations in Appendix B. The Rational Method was used to demonstrate that the 100 year flows can be accommodated without flooding.

APPENDIX A

Existing Condition Hydrologic Calculations

1) Time of Concentration Calculations
2) Curve Number Calculations
3) HEC-HMS Input/Output Summary
4) Existing Conditions Drainage Area Map (Dwg: DA-1)

Time of Concentration

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing Developed

To Design Point: POINT A
Time of Concentration thru Sub-Area: EX-1

Sheet Flow:

	Segment ID:		
1. Surface description (table 3-1)……	51-19		
2. Manning's Roughness Coeff., n (table 3-1)…..	WOODS		
3. Flow Length, L……..(ft.)	0.4		
4. Two year, 24 hr rainfall, P_2……..(in.)	150		
5. Land Slope, S……..(ft./ft.)	3.4		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)	0.213	=	**0.186** (hrs.)
	0.19		

Shallow Concentrated Flow:

	Segment ID:			
1. Surface description (paved or unpaved)…….	19-10			
2. Flow Length, L …….. (ft.)	UNPAVED			
3. Watercourse Slope, s…….. (ft./ft.)	76			
4. Average Velocity, V (figure 3-1)…….. (ft./s)	0.118			
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)	5.55		=	**0.004** (hrs.)
	0.004			

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End) Slope, S:

T_t = 7

T_t = hrs.

= **0.00** (hrs.)

Total Tc = **0.190** (hrs.)
11.4 (min.)

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY
JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing Developed

To Design Point: Lag_2-A
Time of Concentration thru Sub-Area: EX-2

Sheet Flow:

	Segment ID:		
1. Surface description (table 3-1)……	172.5-152		
2. Manning's Roughness Coeff., n (table 3-1)…..	WOODS		
3. Flow Length, L……..(ft.)	0.4		
4. Two year, 24 hr rainfall, P_2……..(in.)	150		
5. Land Slope, S……..(ft./ft.)	3.4		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)	0.137	=	**0.223** (hrs.)
	0.22		

Shallow Concentrated Flow:

	Segment ID:			
1. Surface description (paved or unpaved)…….	152-50			
2. Flow Length, L …….. (ft.)	UNPAVED			
3. Watercourse Slope, s…….. (ft./ft.)	334			
4. Average Velocity, V (figure 3-1)…….. (ft./s)	0.305			
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)	8.92		=	**0.010** (hrs.)
	0.010			

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End)

Slope, S: *#DIV/0!*

$T_t = 0.0078(L^{0.77} \times S^{-0.385})$

T_t = **0.00** hrs.

= **0.00** (hrs.)

Total Tc = **0.233** (hrs.)
14.0 (min.)

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing Developed

To Design Point: POINT A
Time of Concentration thru Sub-Area: LAG (2 to DP-A)

Sheet Flow:

	Segment ID:			
1. Surface description (table 3-1)……				
2. Manning's Roughness Coeff., n (table 3-1)…..				
3. Flow Length, L……(ft.)				
4. Two year, 24 hr rainfall, P_2……(in.)				
5. Land Slope, S……(ft./ft.)				
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)		=		(hrs.)

Shallow Concentrated Flow:

	Segment ID:			
1. Surface description (paved or unpaved)…….				
2. Flow Length, L …… (ft.)				
3. Watercourse Slope, s…… (ft./ft.)				
4. Average Velocity, V (figure 3-1)…… (ft./s)				
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)			=	(hrs.)

Open Channel Flow (Kirpich Equation):

	(ft.)		
Flow Length, L:	*200*		
	(Start)	(End)	Slope, S:
Elevation Change:	*50.0*	*10.0*	*0.200*

$T_t = 0.0078(L^{0.77} \times S^{-0.385})$

T_t = **0.014** hrs.

= **0.014** (hrs.)

Total Tc = **0.014** (hrs.)
0.9 (min.)

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing Developed

To Design Point: POINT A
Time of Concentration thru Sub-Area: EX-3

Sheet Flow:

Segment ID:	172.5-154		
1. Surface description (table 3-1)……	WOODS		
2. Manning's Roughness Coeff., n (table 3-1)…..	0.4		
3. Flow Length, L……..(ft.)	150		
4. Two year, 24 hr rainfall, P_2……..(in.)	3.4		
5. Land Slope, S……..(ft./ft.)	0.123		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)	0.23	=	**0.232** (hrs.)

Shallow Concentrated Flow:

Segment ID:	154-22	22-14.5		
1. Surface description (paved or unpaved)…….	UNPAVED	PAVED		
2. Flow Length, L …….. (ft.)	468	132.5		
3. Watercourse Slope, s…….. (ft./ft.)	0.282	0.057		
4. Average Velocity, V (figure 3-1)…….. (ft./s)	8.57	4.84		
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)	0.015	0.008	=	**0.023** (hrs.)

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End) Slope, S:

T_t =

T_t = hrs.

= (hrs.)

Total Tc = **0.255** (hrs.)
15.3 (min.)

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing Developed

To Design Point: POINT A
Time of Concentration thru Sub-Area: EX-4

Sheet Flow:

	Segment ID:			
1. Surface description (table 3-1)……	56-17	WOODS		
2. Manning's Roughness Coeff., n (table 3-1)…..	0.4			
3. Flow Length, L……..(ft.)	150			
4. Two year, 24 hr rainfall, P_2……..(in.)	3.4			
5. Land Slope, S……..(ft./ft.)	0.260			
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)	0.17		=	**0.172** (hrs.)

Shallow Concentrated Flow:

	Segment ID:			
1. Surface description (paved or unpaved)…….	17-10			
2. Flow Length, L …….. (ft.)	UNPAVED			
3. Watercourse Slope, s…….. (ft./ft.)	172			
4. Average Velocity, V (figure 3-1)…….. (ft./s)	0.041			
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)	3.25			
	0.015		=	**0.015** (hrs.)

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End) Slope, S:

T_t =

T_t = hrs.

= (hrs.)

Total Tc = **0.187** (hrs.)
11.2 (min.)

Curve Number Calculation

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S

Revised By :

Location: **Village of Piermont, NY** Date: 6/26/2019

Shade one: Existing Developed **Sub-Area: EX-1**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoF (D)	Woods - Fair Condition (Soil Group D)	79		30850	0.71	55.95
WuB (C)	Woods - Good Condition (Soil Group C)	70		1867	0.04	3.00
HoC, HoF (D)	Lawn - Fair Condition (Soil Group D)	84		4020	0.09	7.75
WuB (C)	Lawn - Fair Condition (Soil Group C)	79		9200	0.21	16.69
	Impervious Surface	98		1193	0.03	2.68
				Totals =	1.08	86.07

CN (weighted) = total product = 86.07 = 79.55
total area 1.08

Use CN = 80

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S

Revised By :

Location: **Village of Piermont, NY** Date: 6/26/2019

Shade one: Existing Developed **Sub-Area: EX-2**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoC	Woods - Good Condition (Soil Group D)	77		74103	1.7	130.9
HoF (D)	Woods - Fair Condition (Soil Group D)	79		30980	0.71	56.19
HoC, HoF (D)	Lawn - Fair Condition (Soil Group D)	84		16331	0.37	31.49
	Impervious Surface	98		4120	0.09	9.27
				Totals =	2.88	227.85

CN (weighted) = total product = 227.85 = 79.09
total area 2.88

Use CN = 79

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S

Revised By :

Location: **Village of Piermont, NY** Date: 6/26/2019

Shade one: Existing Developed **Sub-Area: EX-3**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoC	Woods - Good Condition (Soil Group D)	77		12634	0.29	22.33
HoF (D)	Woods - Fair Condition (Soil Group D)	79		14516	0.33	26.33
HoC, HoF (D)	Lawn - Fair Condition (Soil Group D)	84		5065	0.12	9.77
WuB (C)	Lawn - Fair Condition (Soil Group C)	79		3446	0.08	6.25
	Impervious Surface	98		8022	0.18	18.05
				Totals =	1.00	82.72

CN (weighted) = total product = 82.72 = 82.49
total area 1.00

Use CN = 82

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S

Revised By :

Location: **Village of Piermont, NY** Date: 6/26/2019

Shade one: Existing Developed **Sub-Area: EX-4**

1. Runoff Curve Number (CN)

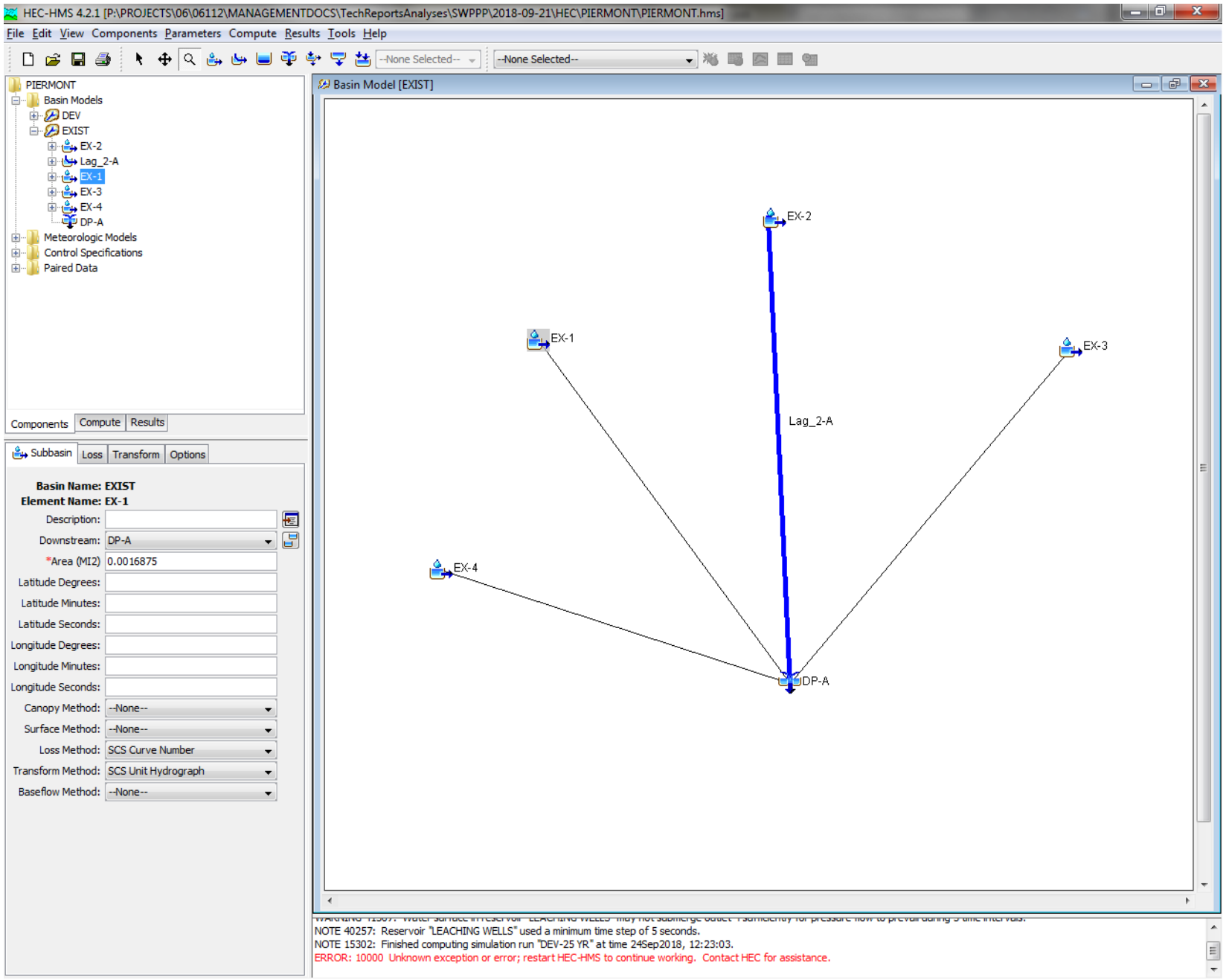
Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoF (D)	Woods - Fair Condition (Soil Group D)	79		15200	0.35	27.57
WuB (C)	Woods - Good Condition (Soil Group C)	70		1557	0.04	2.50
HoC, HoF (D)	Lawn - Fair Condition (Soil Group D)	84		8629	0.20	16.64
				Totals =	0.58	46.71

CN (weighted) = total product / total area = 46.71 / 0.58 = 80.15

Use CN = 80

HEC-HMS Input/Output

EXISTING CONDITIONS – NETWORK DIAGRAM



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EXISTING CONDITIONS – INPUT SUMMARY

HEC-HMS V.4.2.1 REPORT
EXISTING CONDITION, LJA #06112

HYDROLOGY FOR: PIERMONT VILLAGE GREEN

VILLAGE OF PIERMONT/TOWN OR ORANGETOWN, ROCKLAND COUNTY NEW YORK

SWPPP DATE: 9/20/2021

NOTE: SCS METHOD WAS USED TO COMPUTE CURVE NO. AND PEAK DISCHARGES

ANALYSIS PARAMETERS:

STORM RECURRENCE INTERVALS = 2, 10, 25 and 100 year

HYDROGRAPH METHOD: SCS

RAINFALL DISTRIBUTION: SCS TYPE III

24 HOUR RAINFALL DATA:

2 YEAR: 3.41 INCHES

10 YEAR: 5.06 INCHES

25 YEAR: 6.34 INCHES

100 YEAR: 8.93 INCHES

Loss method: CN SCS
Transform method: IUH SCS
Routing method : LAG
- -

HYDROLOGIC STUDY

SUMMARY OF DATA

BASIN MODEL: EXIST

DESCRIPTION: EXISTING CONDITIONS MODEL
VERSION: 4.2.1
UNIT SYSTEM: English

SUBBASINS TABLE

Name	Area (MI2)	Loss method	Impervious (%)	CN	Transform method	SCS lag (min)
EX-1	0.00169	SCS	0	80	SCS	6.84
EX-2	0.00450	SCS	0	79	SCS	8.40
EX-3	0.00157	SCS	0	82	SCS	9.18
EX-4	0.00091	SCS	0	80	SCS	6.72

REACHS TABLE - Routing method : LAG

Name	Routing method	Lag (min)
LAG	Lag	0.9

Last modified 6/26/2019

Project: PIERMONT Simulation Run: EX-2 YR

Start of Run: 01Dec2017, 00:00 Basin Model: EXIST
End of Run: 02Dec2017, 00:06 Meteorologic Model: 2 YR
Compute Time: 20Sep2021, 15:09:14 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
EX-2	0.0045011	3.5	01Dec2017, 12:12	0.359
Lag_2-A	0.0045011	3.5	01Dec2017, 12:12	0.359
EX-1	0.0016906	1.4	01Dec2017, 12:12	0.141
EX-3	0.0015669	1.4	01Dec2017, 12:12	0.143
EX-4	.000910597	0.8	01Dec2017, 12:06	0.076
DP-A	0.0086692	7.0	01Dec2017, 12:12	0.718

Project: PIERMONT Simulation Run: EX-2 YR

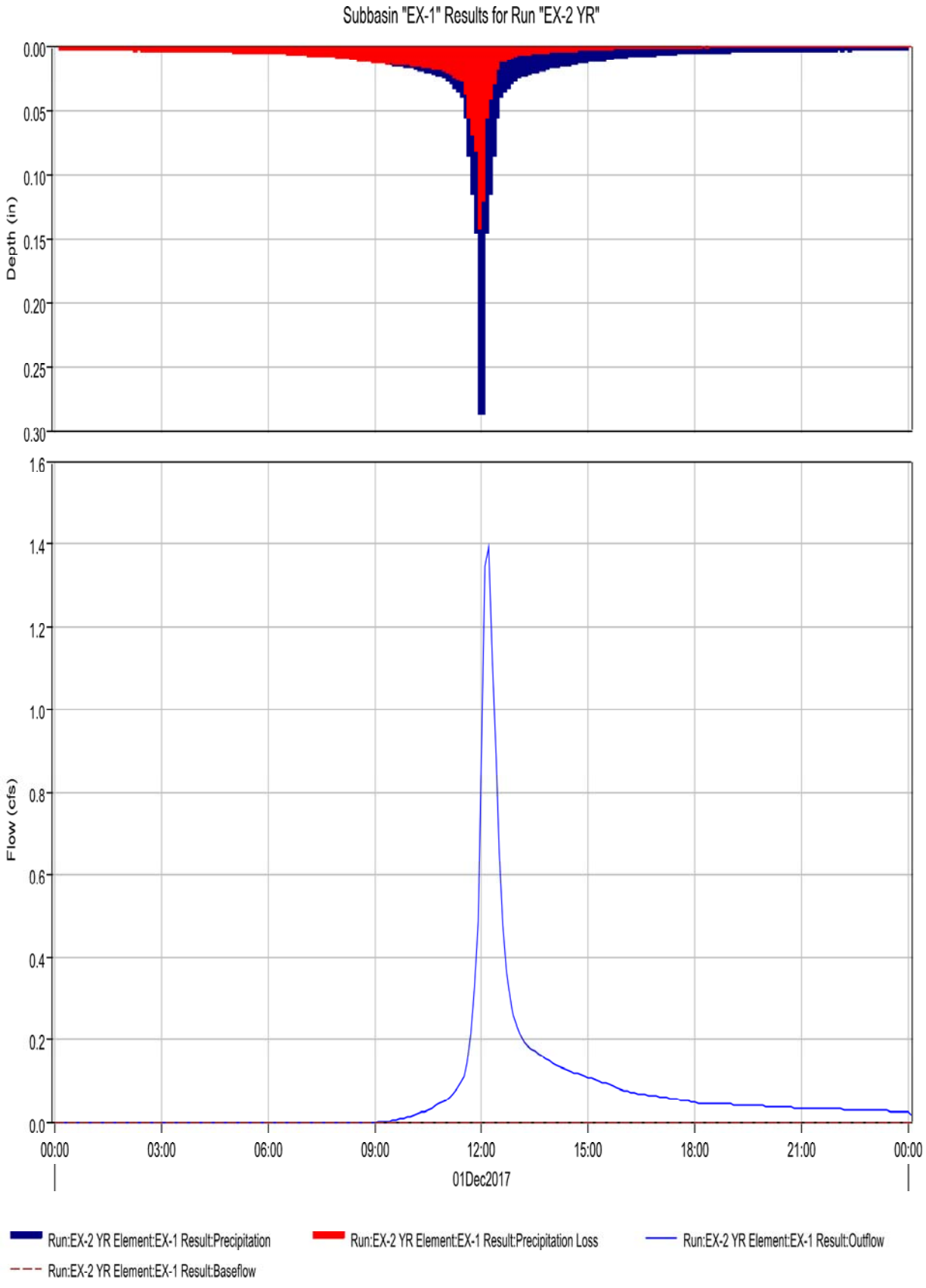
Subbasin: EX-1

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	24Sep2018, 16:32:30	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	1.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.3 (AC-FT)	Direct Runoff Volume:	0.1 (AC-FT)
Loss Volume:	0.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.1 (AC-FT)	Discharge Volume:	0.1 (AC-FT)


Subbasin "EX-1" Results for Run "EX-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-2 YR Element:EX-1 Result:Precipitation
Run:EX-2 YR Element:EX-1 Result:Precipitation Loss
Run:EX-2 YR Element:EX-1 Result:Outflow
Run:EX-2 YR Element:EX-1 Result:Baseflow

Project: PIERMONT Simulation Run: EX-2 YR

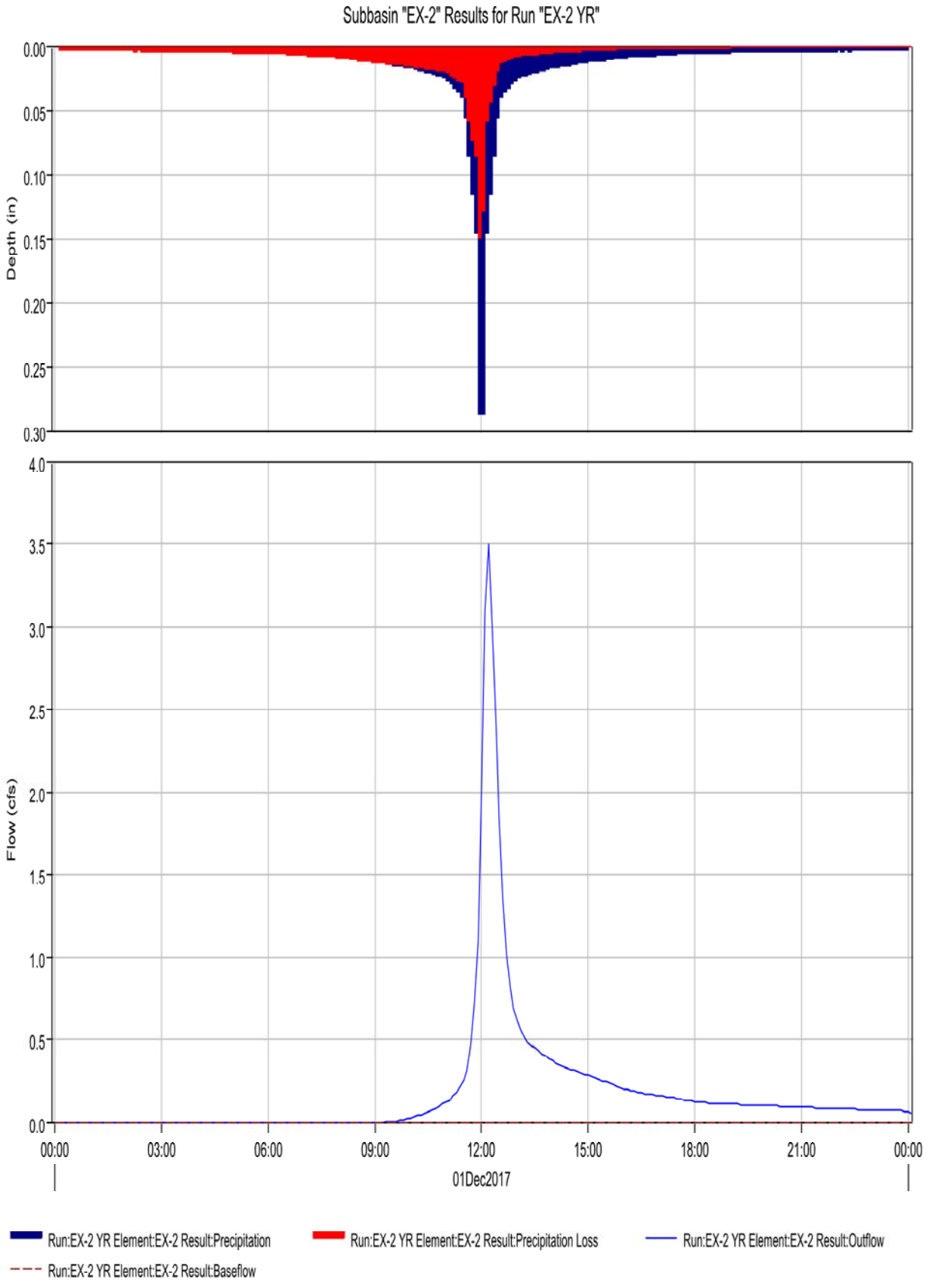
Subbasin: EX-2

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	24Sep2018, 16:32:30	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.8 (AC-FT)	Direct Runoff Volume:	0.4 (AC-FT)
Loss Volume:	0.5 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.4 (AC-FT)	Discharge Volume:	0.4 (AC-FT)


Subbasin "EX-2" Results for Run "EX-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-2 YR Element:EX-2 Result:Precipitation
Run:EX-2 YR Element:EX-2 Result:Precipitation Loss
Run:EX-2 YR Element:EX-2 Result:Outflow
Run:EX-2 YR Element:EX-2 Result:Baseflow

Project: PIERMONT Simulation Run: EX-2 YR

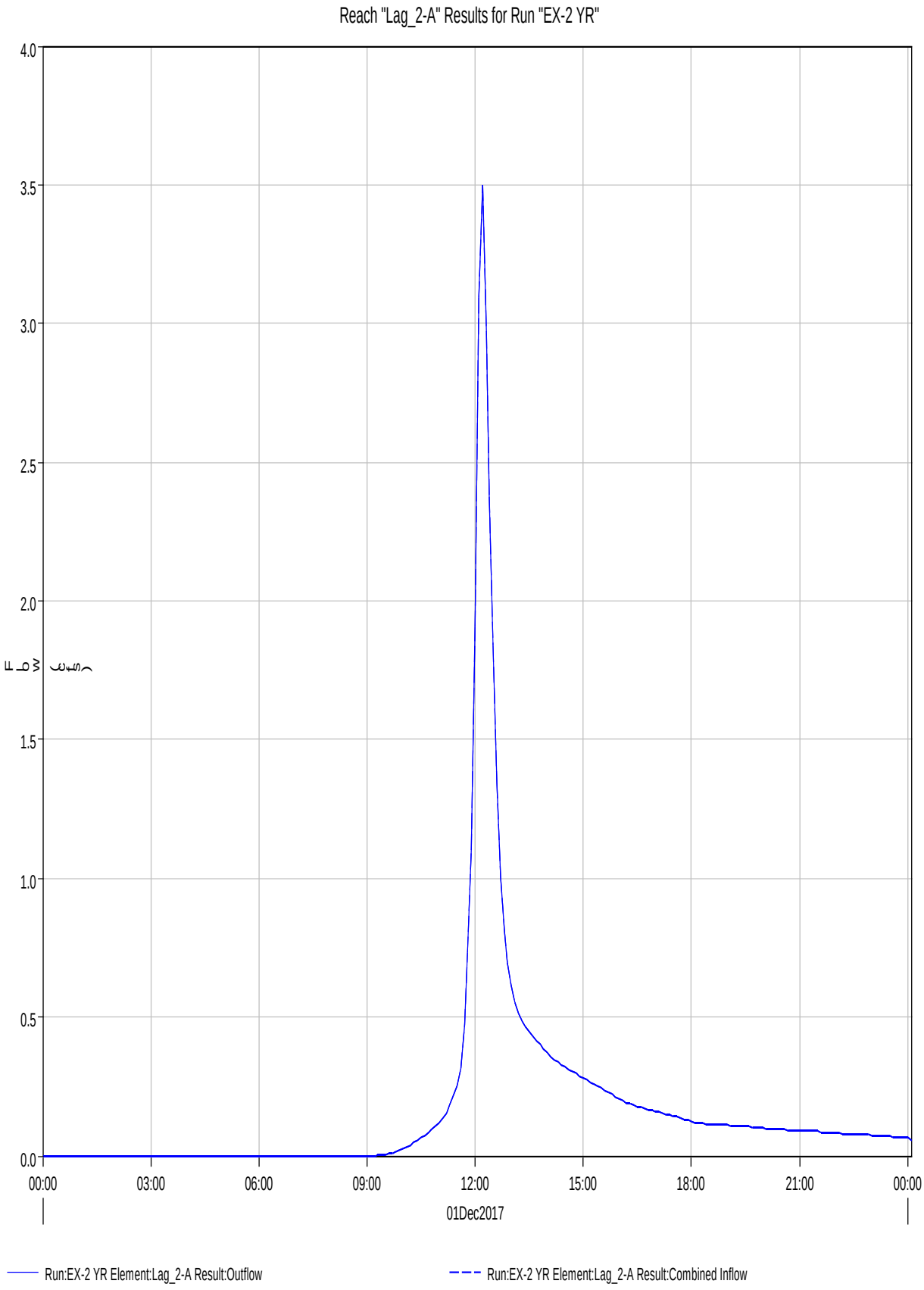
Reach: Lag_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	24Sep2018, 16:32:30	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	3.5 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	3.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.4 (AC-FT)	Discharge Volume:	0.4 (AC-FT)


Reach "Lag_2-A" Results for Run "EX-2 YR"
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Flow (cfs)
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-2 YR Element:Lag_2-A Result:Outflow
Run:EX-2 YR Element:Lag_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: EX-2 YR

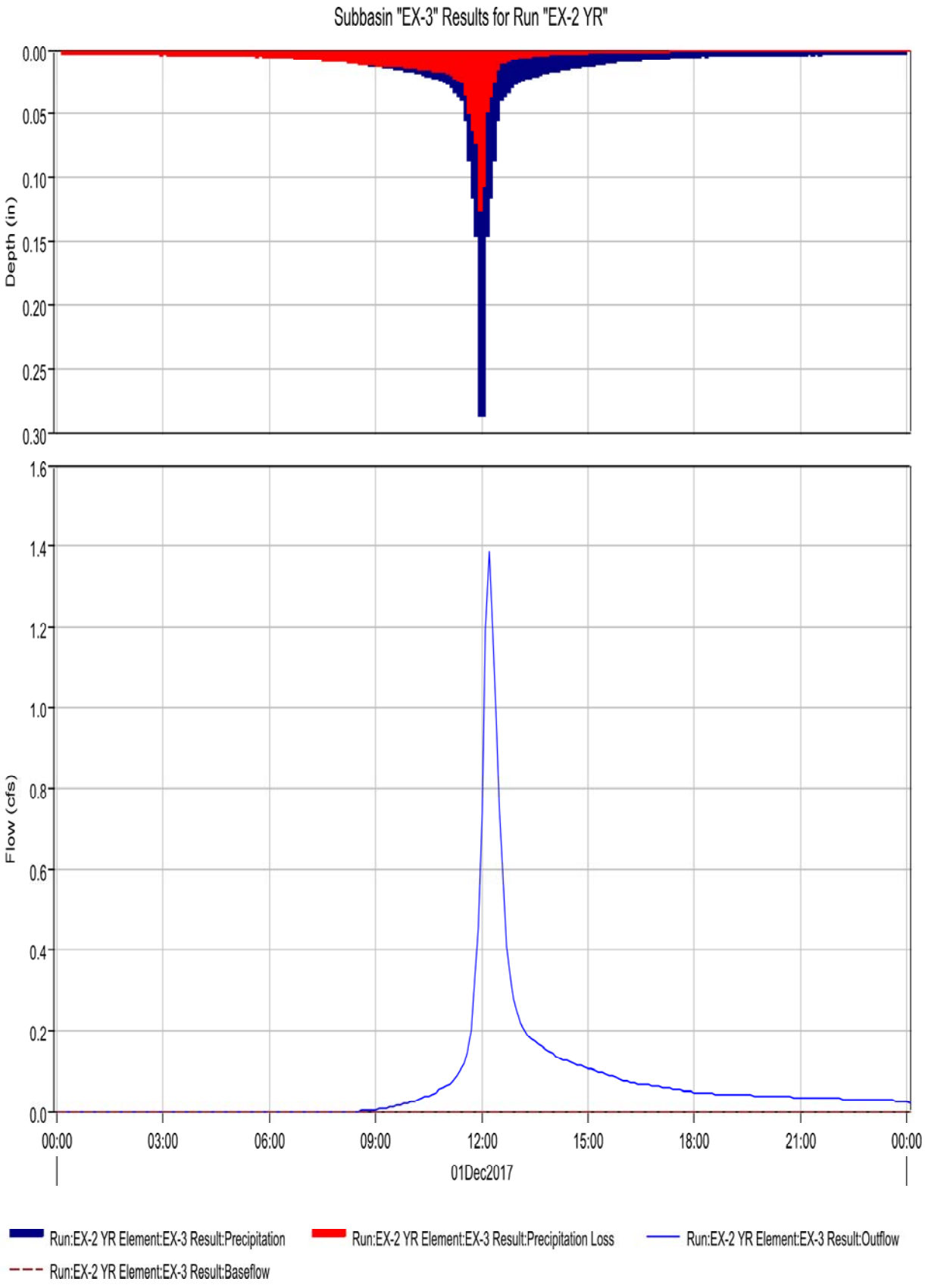
Subbasin: EX-3

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	1.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.285 (AC-FT)	Direct Runoff Volume:	0.143 (AC-FT)
Loss Volume:	0.142 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.143 (AC-FT)	Discharge Volume:	0.143 (AC-FT)


Subbasin "EX-3" Results for Run "EX-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-2 YR Element:EX-3 Result:Precipitation
Run:EX-2 YR Element:EX-3 Result:Precipitation Loss
Run:EX-2 YR Element:EX-3 Result:Outflow
Run:EX-2 YR Element:EX-3 Result:Baseflow

Project: PIERMONT Simulation Run: EX-2 YR

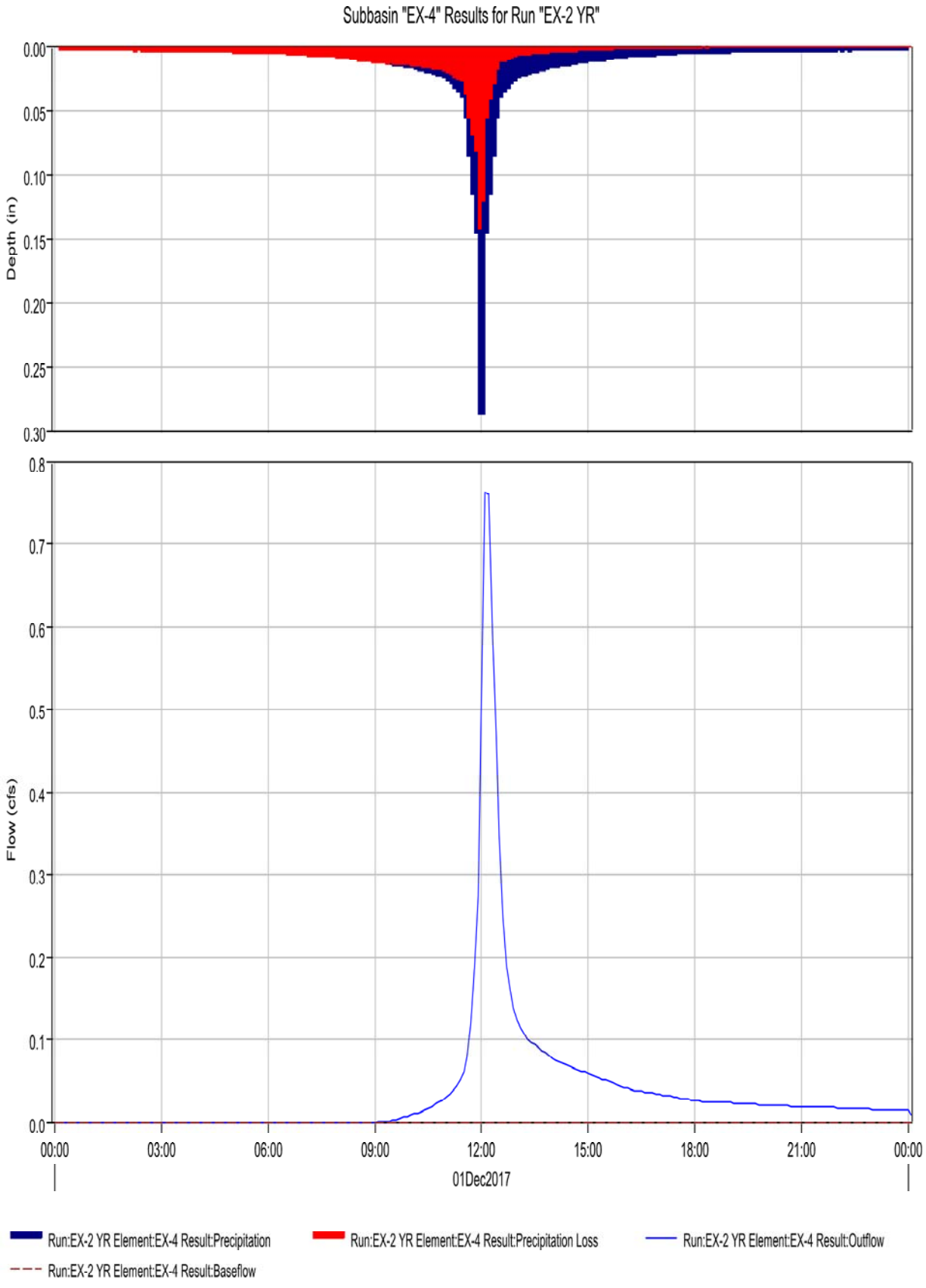
Subbasin: EX-4

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	24Sep2018, 16:32:30	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	0.8 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.2 (AC-FT)	Direct Runoff Volume:	0.1 (AC-FT)
Loss Volume:	0.1 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.1 (AC-FT)	Discharge Volume:	0.1 (AC-FT)


Subbasin "EX-4" Results for Run "EX-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-2 YR Element:EX-4 Result:Precipitation
Run:EX-2 YR Element:EX-4 Result:Precipitation Loss
Run:EX-2 YR Element:EX-4 Result:Outflow
Run:EX-2 YR Element:EX-4 Result:Baseflow

Project: PIERMONT Simulation Run: EX-2 YR

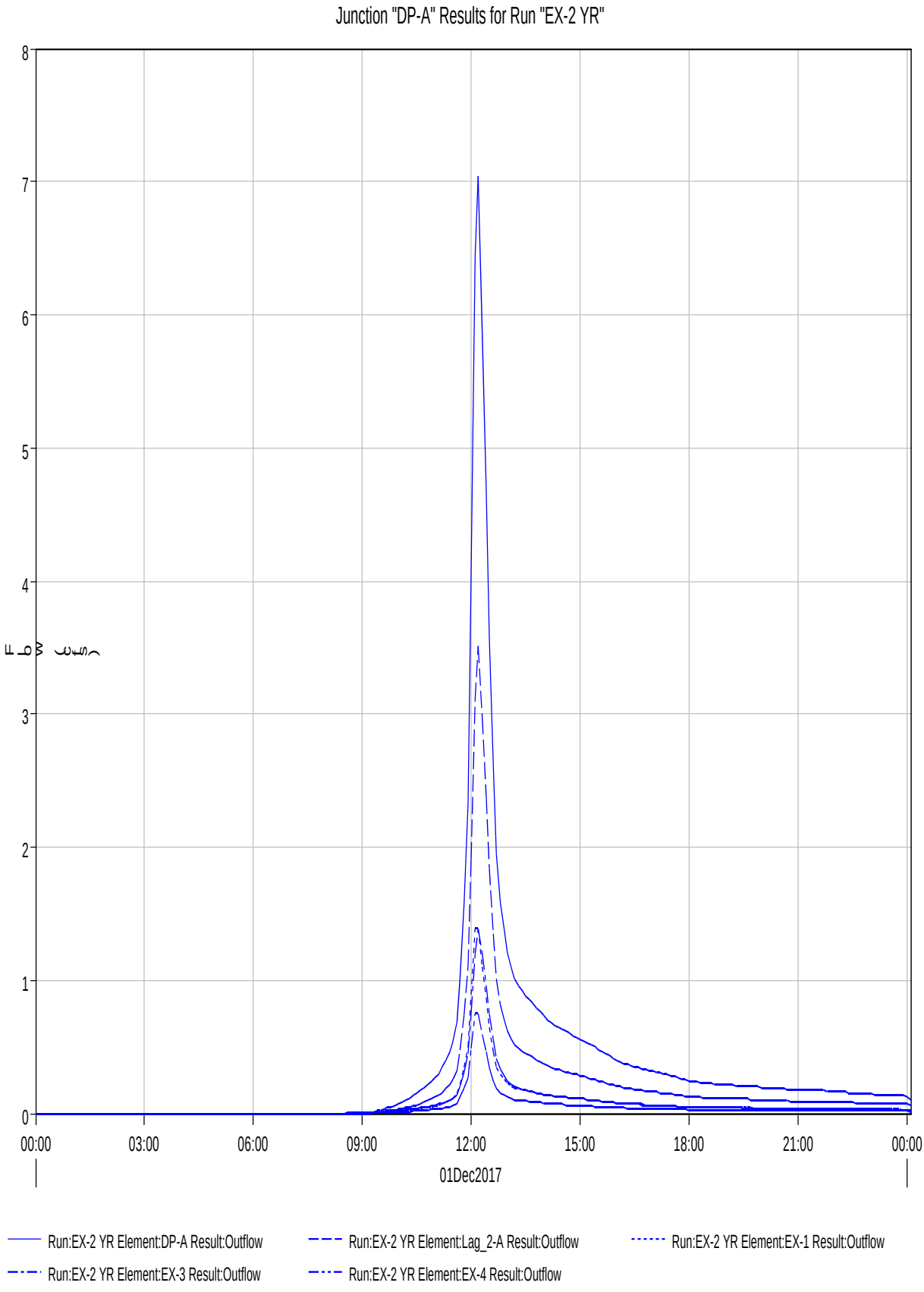
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	7.0 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	0.718 (AC-FT)		


Junction "DP-A" Results for Run "EX-2 YR"
Flow (cfs)
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-2 YR Element:DP-A Result:Outflow
Run:EX-2 YR Element:Lag_2-A Result:Outflow
Run:EX-2 YR Element:EX-1 Result:Outflow
Run:EX-2 YR Element:EX-3 Result:Outflow
Run:EX-2 YR Element:EX-4 Result:Outflow

Project: PIERMONT Simulation Run: EX-10 YR

Start of Run: 01Dec2017, 00:00 Basin Model: EXIST
End of Run: 02Dec2017, 00:06 Meteorologic Model: 10 YR
Compute Time: 20Sep2021, 15:09:13 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
EX-2	0.0045011	6.7	01Dec2017, 12:12	0.684
Lag_2-A	0.0045011	6.7	01Dec2017, 12:12	0.684
EX-1	0.0016906	2.7	01Dec2017, 12:06	0.265
EX-3	0.0015669	2.5	01Dec2017, 12:12	0.261
EX-4	.000910597	1.4	01Dec2017, 12:06	0.143
DP-A	0.0086692	13.3	01Dec2017, 12:12	1.354

Project: PIERMONT Simulation Run: EX-10 YR

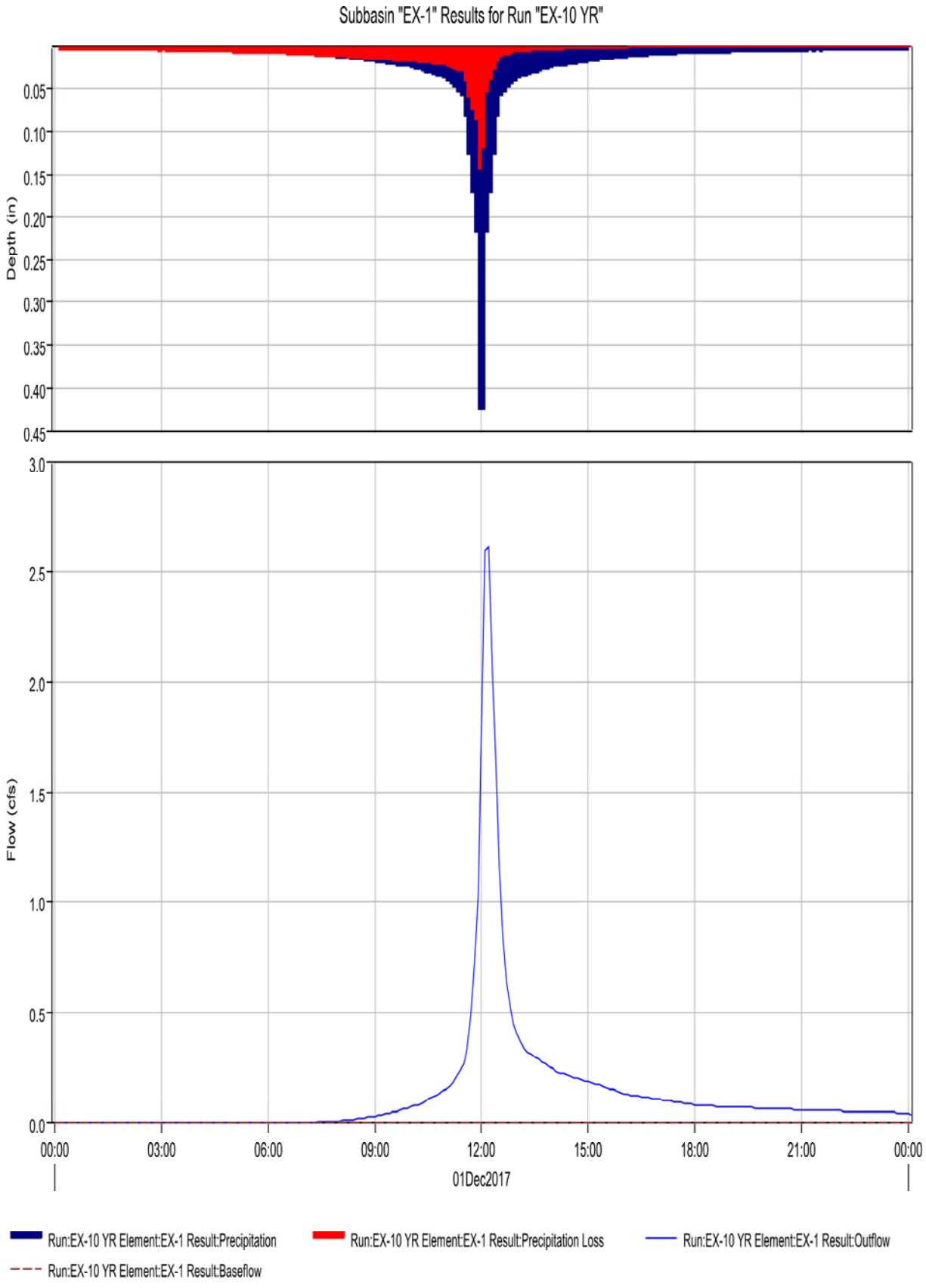
Subbasin: EX-1

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	24Sep2018, 16:32:27	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	2.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.5 (AC-FT)	Direct Runoff Volume:	0.3 (AC-FT)
Loss Volume:	0.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.3 (AC-FT)	Discharge Volume:	0.3 (AC-FT)


Subbasin "EX-1" Results for Run "EX-10 YR"
Depth (in)
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-10 YR Element:EX-1 Result:Precipitation
Run:EX-10 YR Element:EX-1 Result:Precipitation Loss
Run:EX-10 YR Element:EX-1 Result:Outflow
Run:EX-10 YR Element:EX-1 Result:Baseflow

Project: PIERMONT Simulation Run: EX-10 YR

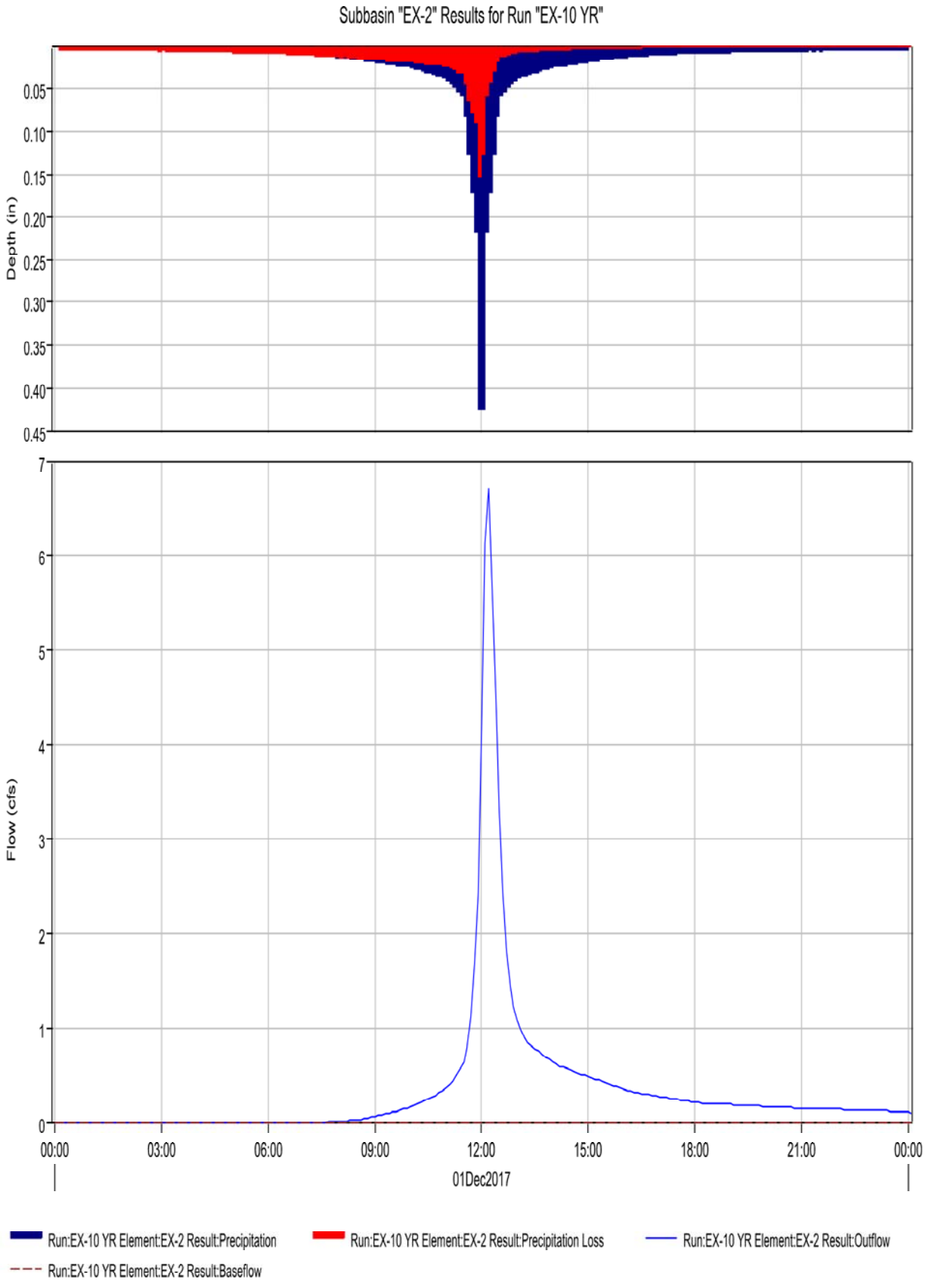
Subbasin: EX-2

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	24Sep2018, 16:32:27	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	6.7 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume:	1.2 (AC-FT)	Direct Runoff Volume:	0.7 (AC-FT)
Loss Volume:	0.5 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.7 (AC-FT)	Discharge Volume:	0.7 (AC-FT)


Subbasin "EX-2" Results for Run "EX-10 YR"
Depth (in)
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-10 YR Element:EX-2 Result:Precipitation
Run:EX-10 YR Element:EX-2 Result:Precipitation Loss
Run:EX-10 YR Element:EX-2 Result:Outflow
Run:EX-10 YR Element:EX-2 Result:Baseflow

Project: PIERMONT Simulation Run: EX-10 YR

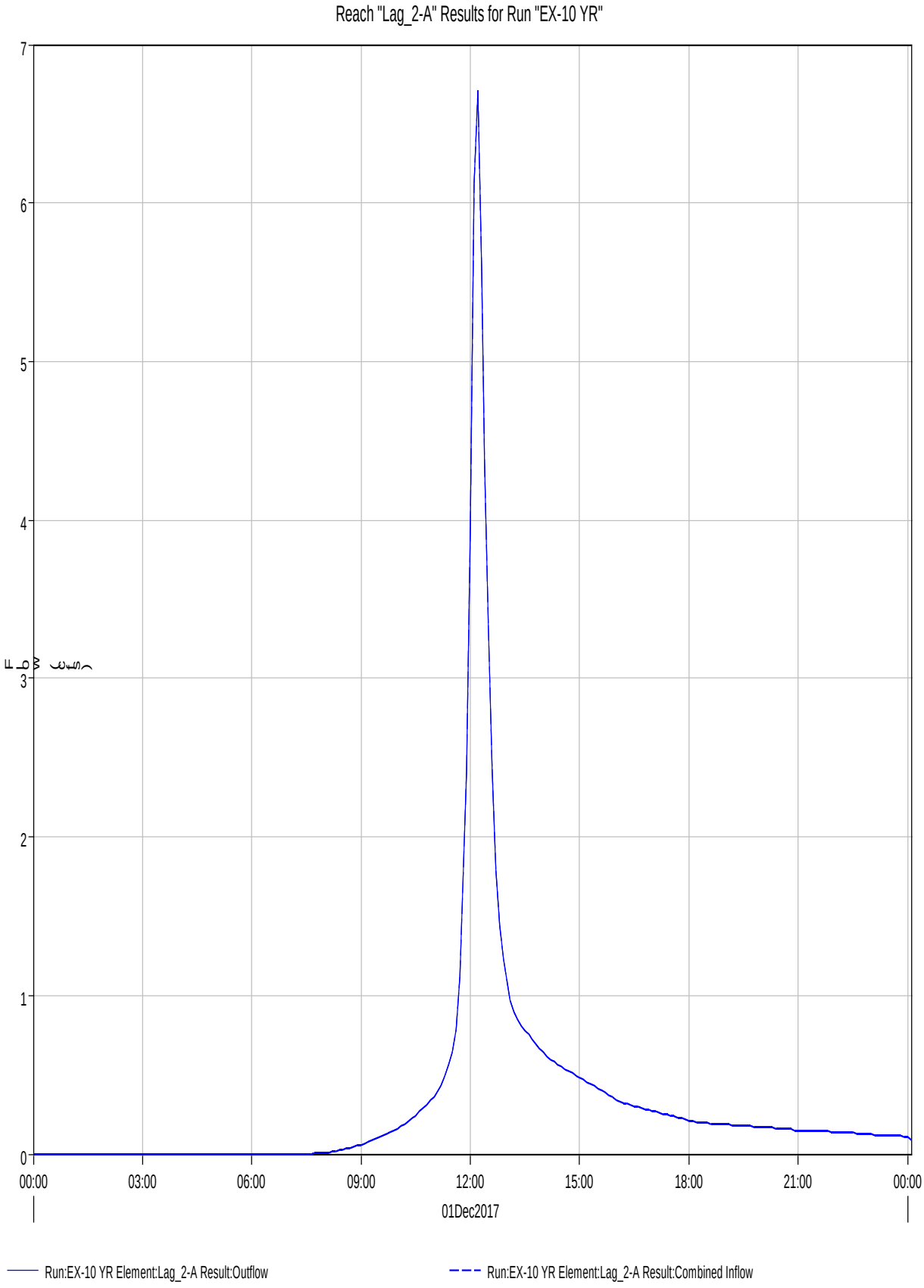
Reach: Lag_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	24Sep2018, 16:32:27	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	6.7 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	6.7 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.7 (AC-FT)	Discharge Volume:	0.7 (AC-FT)


Reach "Lag_2-A" Results for Run "EX-10 YR"
Flow (cfs)
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-10 YR Element:Lag_2-A Result:Outflow
Run:EX-10 YR Element:Lag_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: EX-10 YR

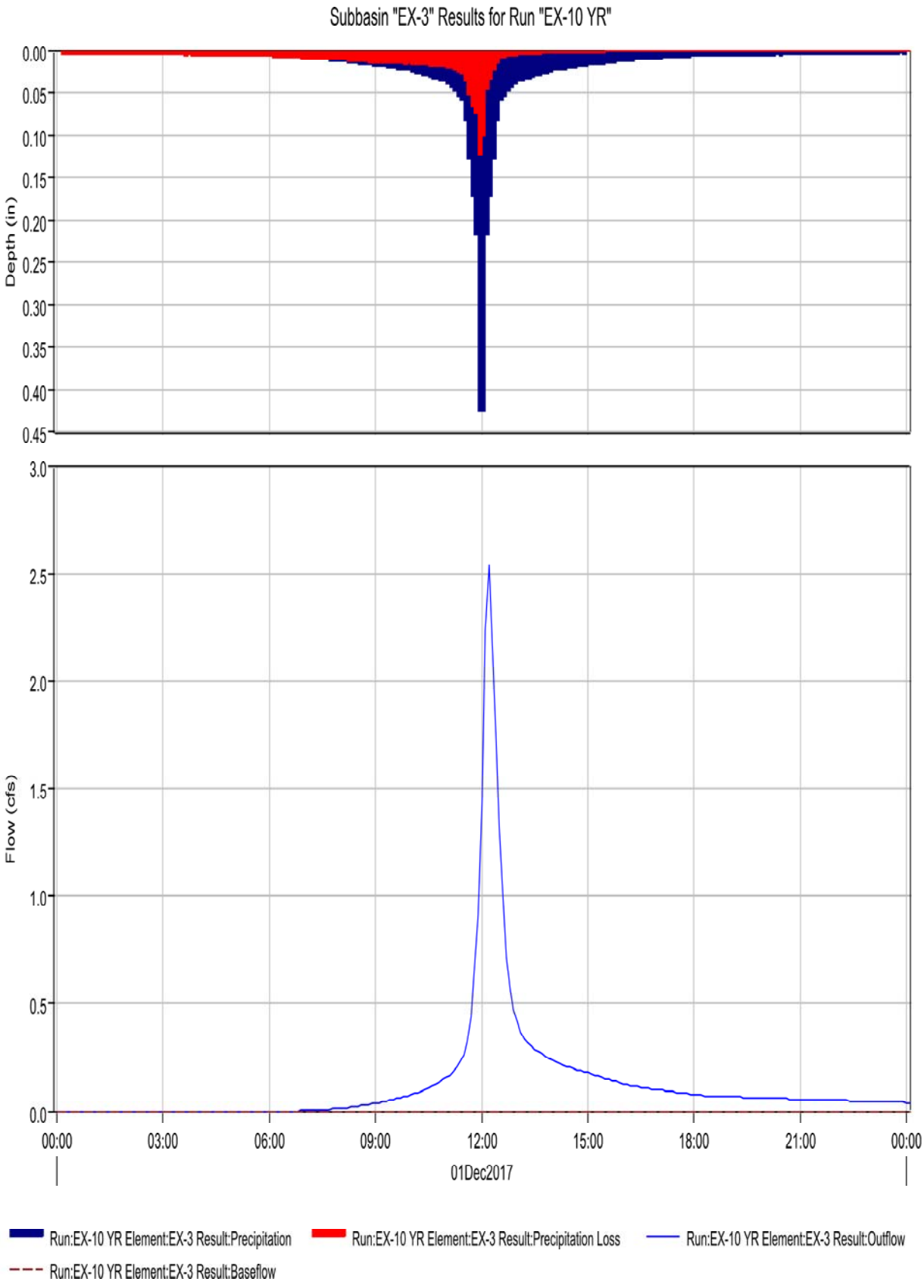
Subbasin: EX-3

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	2.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.423 (AC-FT)	Direct Runoff Volume:	0.261 (AC-FT)
Loss Volume:	0.161 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.262 (AC-FT)	Discharge Volume:	0.261 (AC-FT)


Subbasin "EX-3" Results for Run "EX-10 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-10 YR Element:EX-3 Result:Precipitation
Run:EX-10 YR Element:EX-3 Result:Precipitation Loss
Run:EX-10 YR Element:EX-3 Result:Outflow
Run:EX-10 YR Element:EX-3 Result:Baseflow

Project: PIERMONT Simulation Run: EX-10 YR

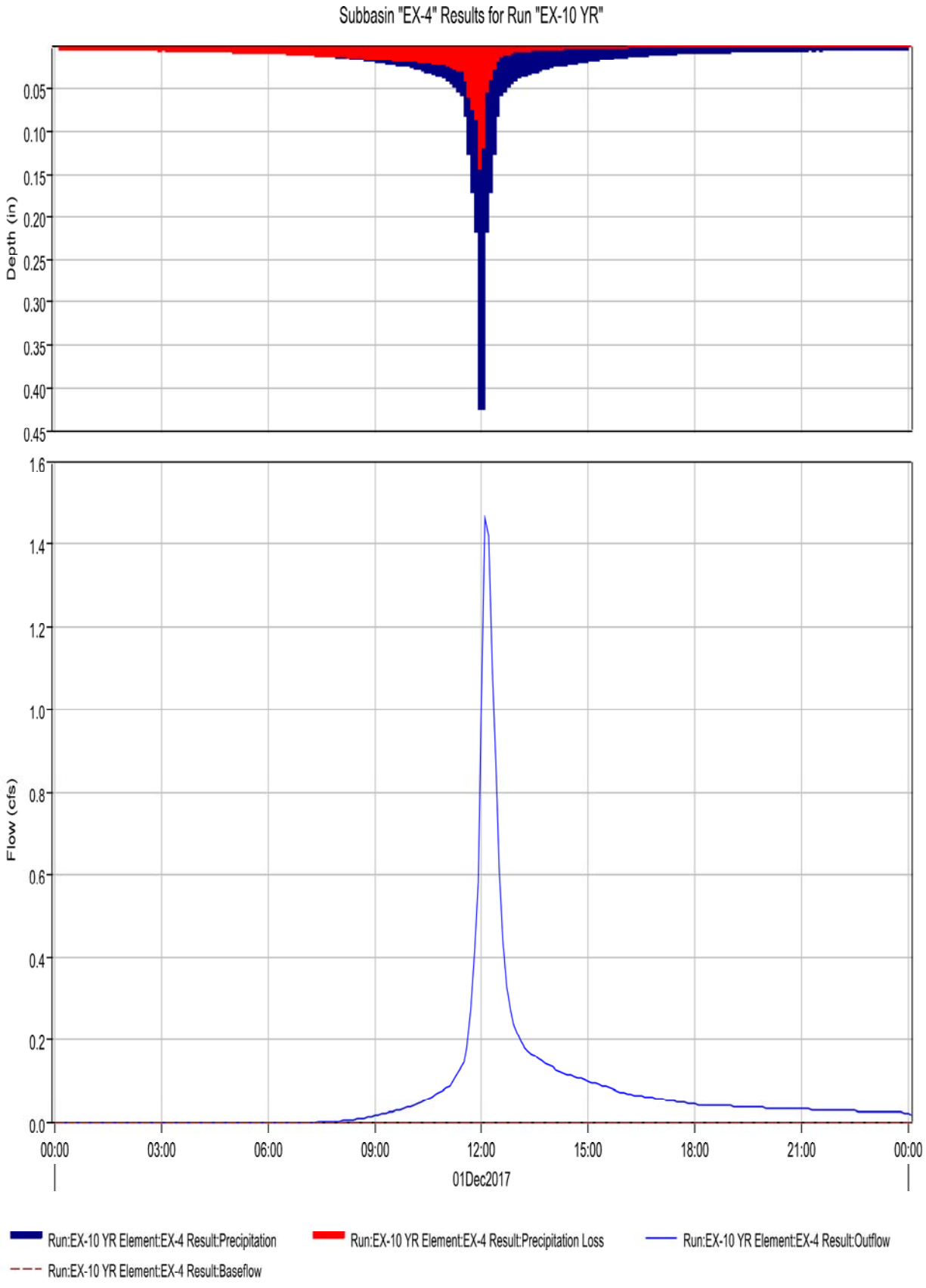
Subbasin: EX-4

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	24Sep2018, 16:32:27	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	1.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.2 (AC-FT)	Direct Runoff Volume:	0.1 (AC-FT)
Loss Volume:	0.1 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.1 (AC-FT)	Discharge Volume:	0.1 (AC-FT)


Subbasin "EX-4" Results for Run "EX-10 YR"
Depth (in)
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-10 YR Element:EX-4 Result:Precipitation
Run:EX-10 YR Element:EX-4 Result:Precipitation Loss
Run:EX-10 YR Element:EX-4 Result:Outflow
Run:EX-10 YR Element:EX-4 Result:Baseflow

Project: PIERMONT Simulation Run: EX-10 YR

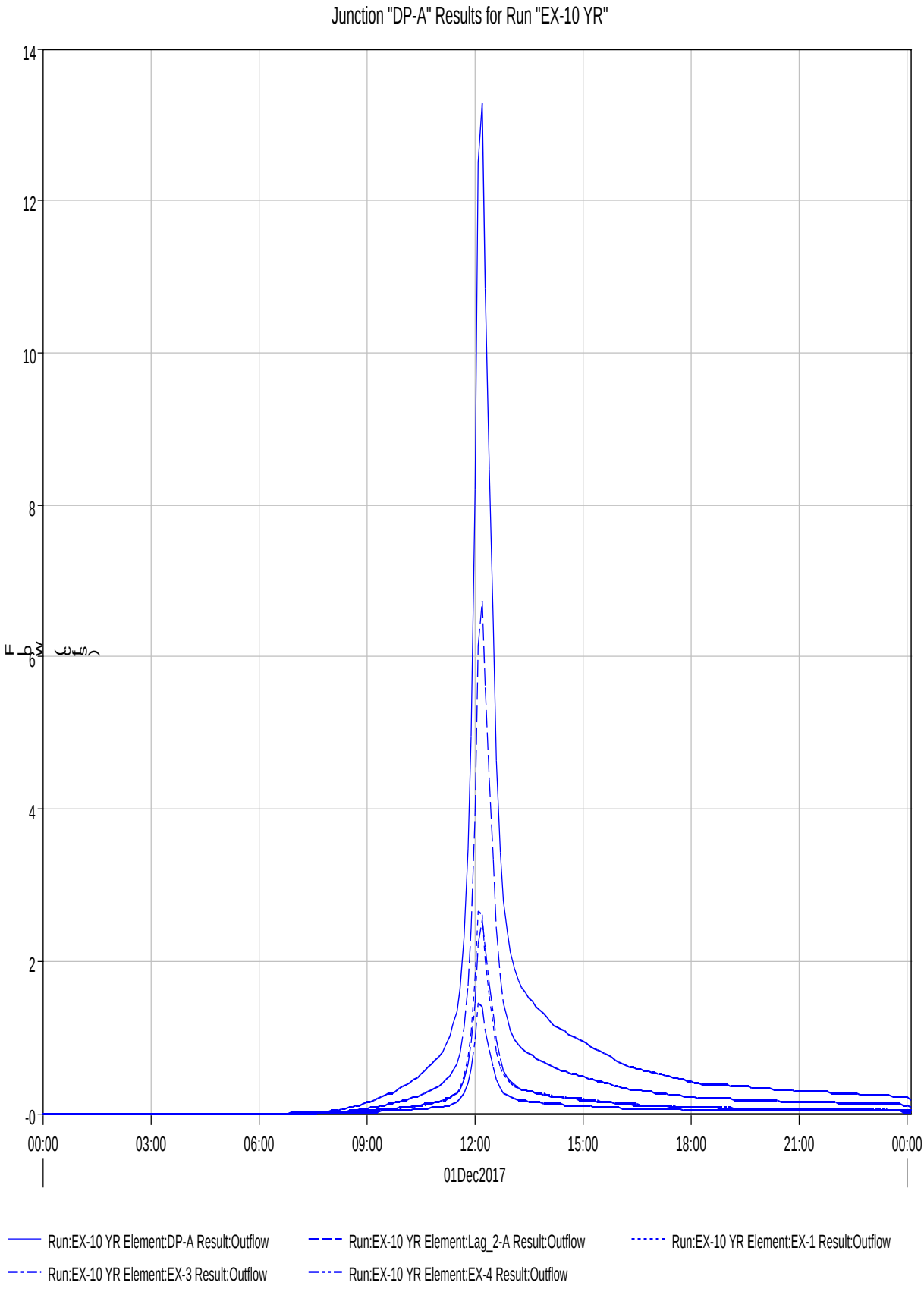
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	13.3 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	1.354 (AC-FT)		


Junction "DP-A" Results for Run "EX-10 YR"
Flow (cfs)
14
12
10
8
6
4
2
-0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-10 YR Element:DP-A Result:Outflow
Run:EX-10 YR Element:Lag_2-A Result:Outflow
Run:EX-10 YR Element:EX-1 Result:Outflow
Run:EX-10 YR Element:EX-3 Result:Outflow
Run:EX-10 YR Element:EX-4 Result:Outflow

Project: PIERMONT Simulation Run: EX-25 YR

Start of Run: 01Dec2017, 00:00 Basin Model: EXIST
End of Run: 02Dec2017, 00:06 Meteorologic Model: 25 YR
Compute Time: 20Sep2021, 15:09:15 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
EX-2	0.0045011	9.4	01Dec2017, 12:12	0.955
Lag_2-A	0.0045011	9.4	01Dec2017, 12:12	0.955
EX-1	0.0016906	3.7	01Dec2017, 12:06	0.368
EX-3	0.0015669	3.5	01Dec2017, 12:12	0.359
EX-4	.000910597	2.0	01Dec2017, 12:06	0.198
DP-A	0.0086692	18.3	01Dec2017, 12:12	1.881

Project: PIERMONT Simulation Run: EX-25 YR

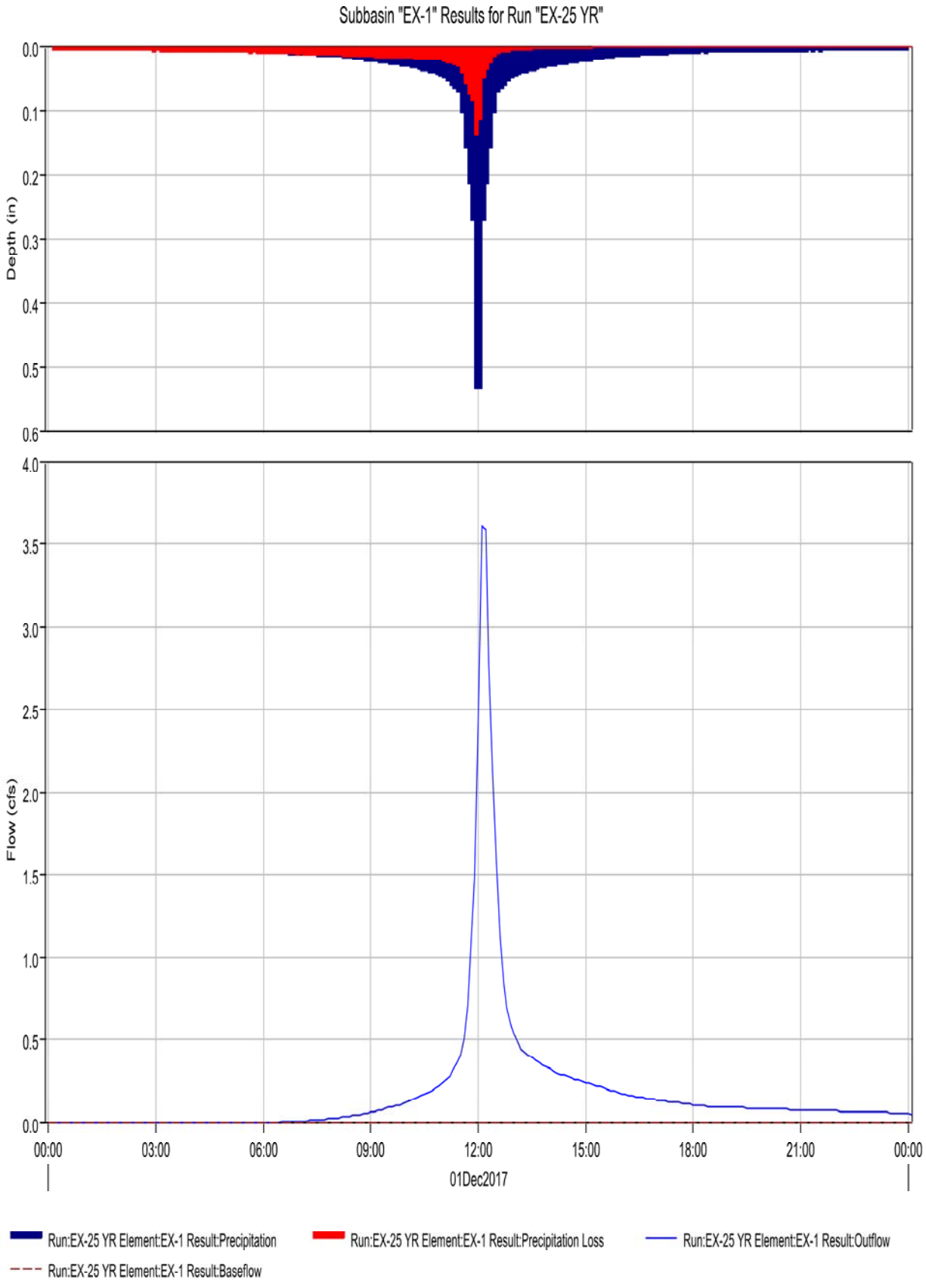
Subbasin: EX-1

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	24Sep2018, 16:32:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.6 (AC-FT)	Direct Runoff Volume:	0.4 (AC-FT)
Loss Volume:	0.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.4 (AC-FT)	Discharge Volume:	0.4 (AC-FT)


Subbasin "EX-1" Results for Run "EX-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-25 YR Element:EX-1 Result:Precipitation
Run:EX-25 YR Element:EX-1 Result:Precipitation Loss
Run:EX-25 YR Element:EX-1 Result:Outflow
Run:EX-25 YR Element:EX-1 Result:Baseflow

Project: PIERMONT Simulation Run: EX-25 YR

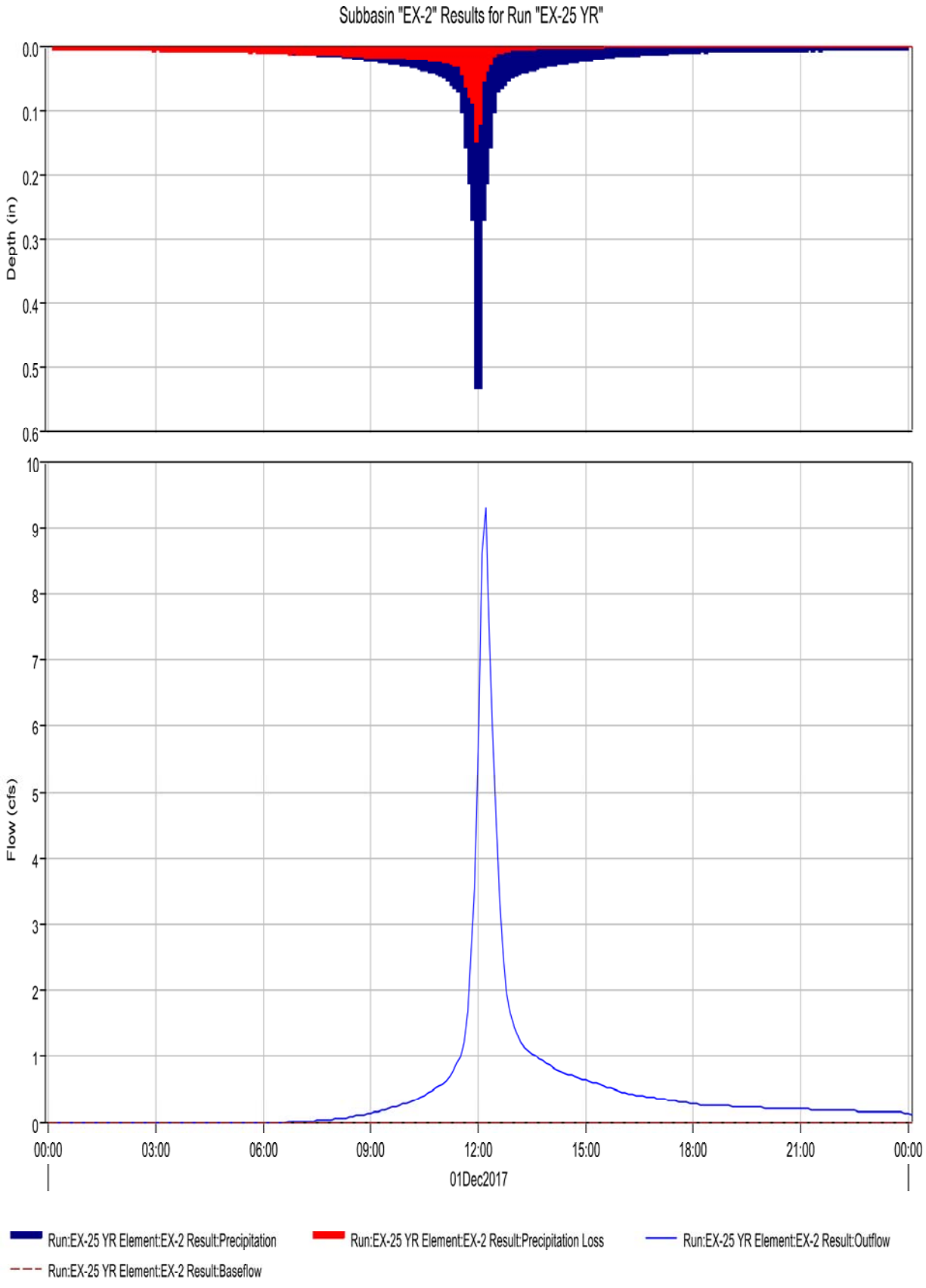
Subbasin: EX-2

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	24Sep2018, 16:32:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	9.3 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume:	1.5 (AC-FT)	Direct Runoff Volume:	1.0 (AC-FT)
Loss Volume:	0.6 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	1.0 (AC-FT)	Discharge Volume:	1.0 (AC-FT)


Subbasin "EX-2" Results for Run "EX-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
10
9
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-25 YR Element:EX-2 Result:Precipitation
Run:EX-25 YR Element:EX-2 Result:Precipitation Loss
Run:EX-25 YR Element:EX-2 Result:Outflow
Run:EX-25 YR Element:EX-2 Result:Baseflow

Project: PIERMONT Simulation Run: EX-25 YR

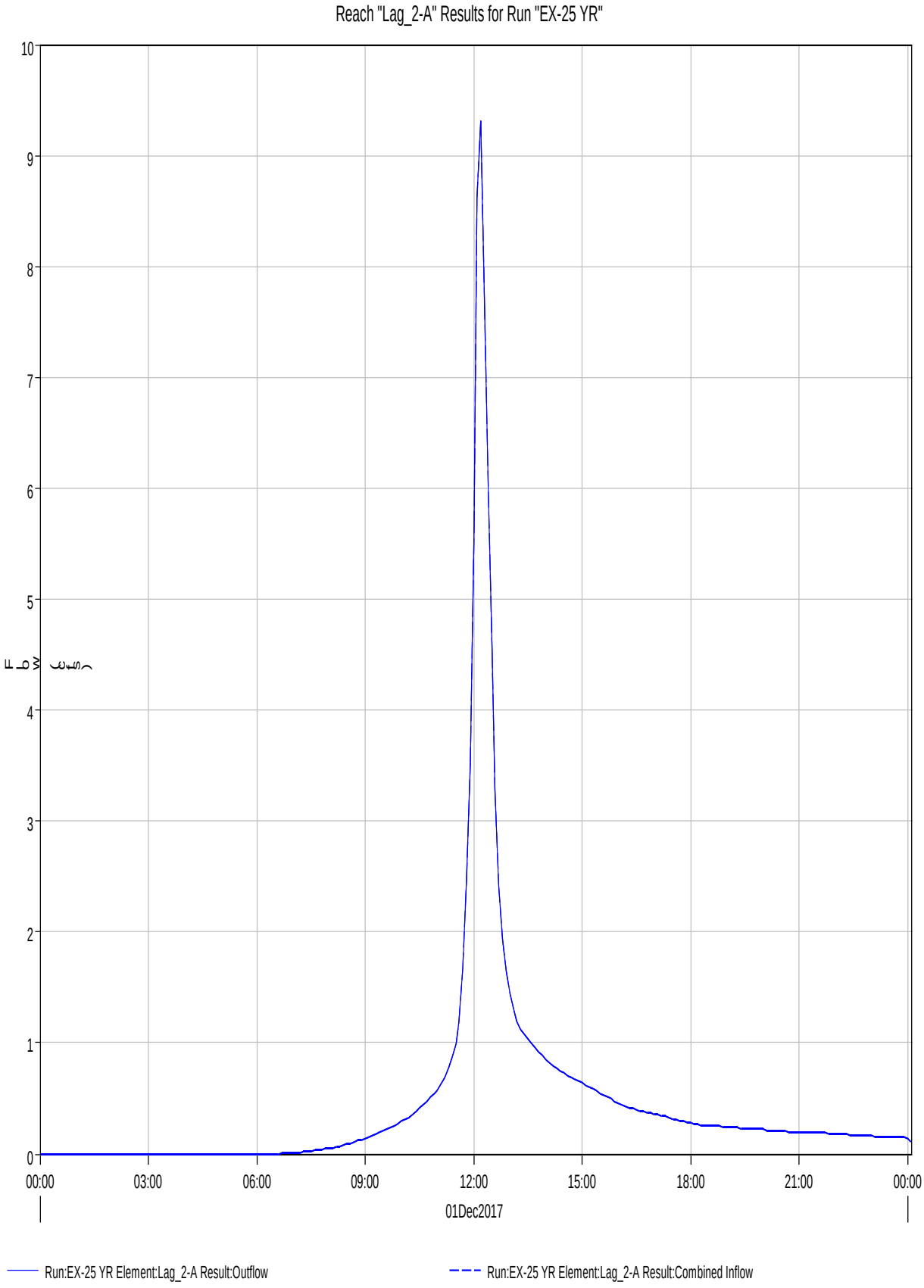
Reach: Lag_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	24Sep2018, 16:32:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	9.3 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	9.3 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	1.0 (AC-FT)	Discharge Volume:	1.0 (AC-FT)


Reach "Lag_2-A" Results for Run "EX-25 YR"
Flow (cfs)
10
9
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-25 YR Element:Lag_2-A Result:Outflow
Run:EX-25 YR Element:Lag_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: EX-25 YR

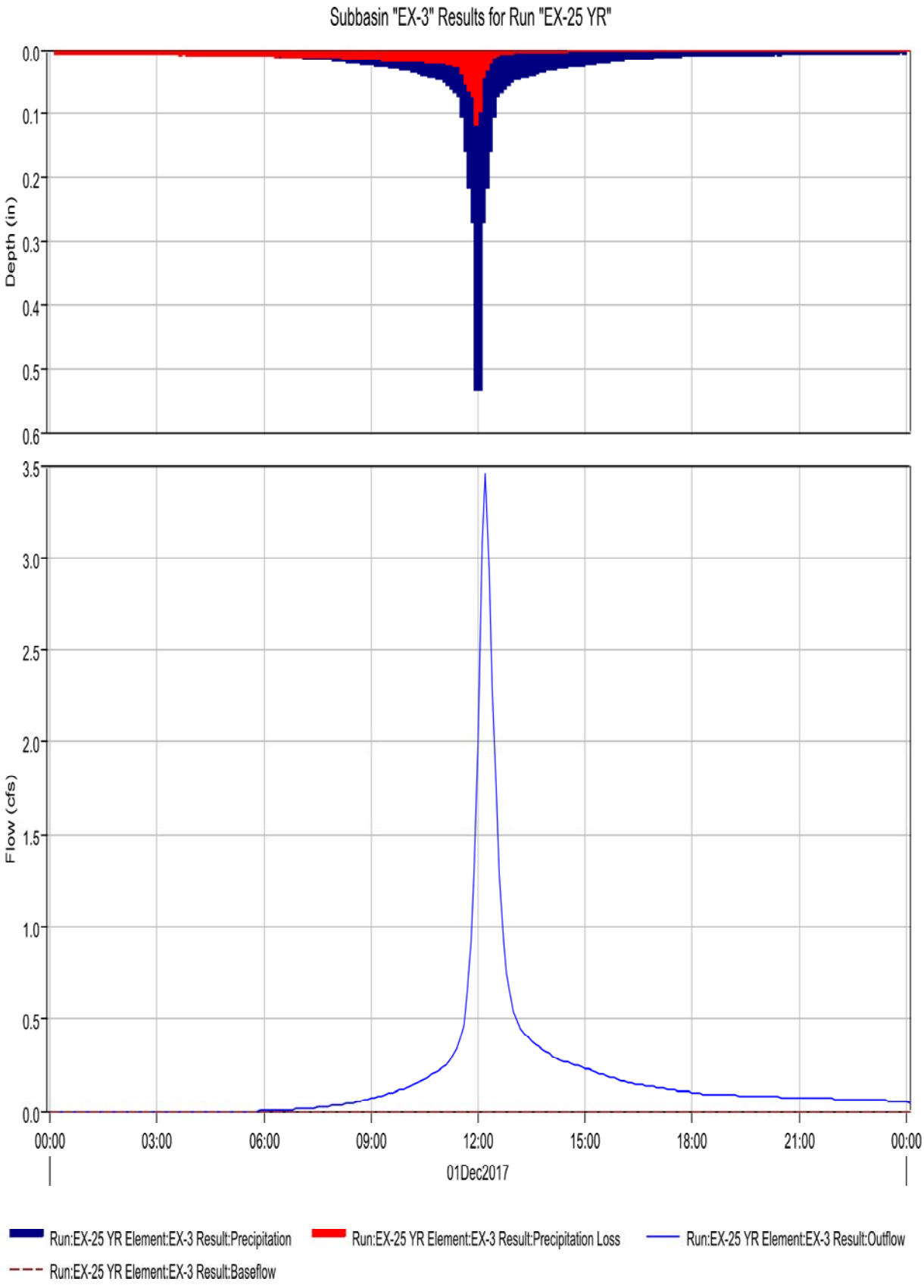
Subbasin: EX-3

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:15	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.530 (AC-FT)	Direct Runoff Volume:	0.359 (AC-FT)
Loss Volume:	0.170 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.359 (AC-FT)	Discharge Volume:	0.359 (AC-FT)


Subbasin "EX-3" Results for Run "EX-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-25 YR Element:EX-3 Result:Precipitation
Run:EX-25 YR Element:EX-3 Result:Precipitation Loss
Run:EX-25 YR Element:EX-3 Result:Outflow
Run:EX-25 YR Element:EX-3 Result:Baseflow

Project: PIERMONT Simulation Run: EX-25 YR

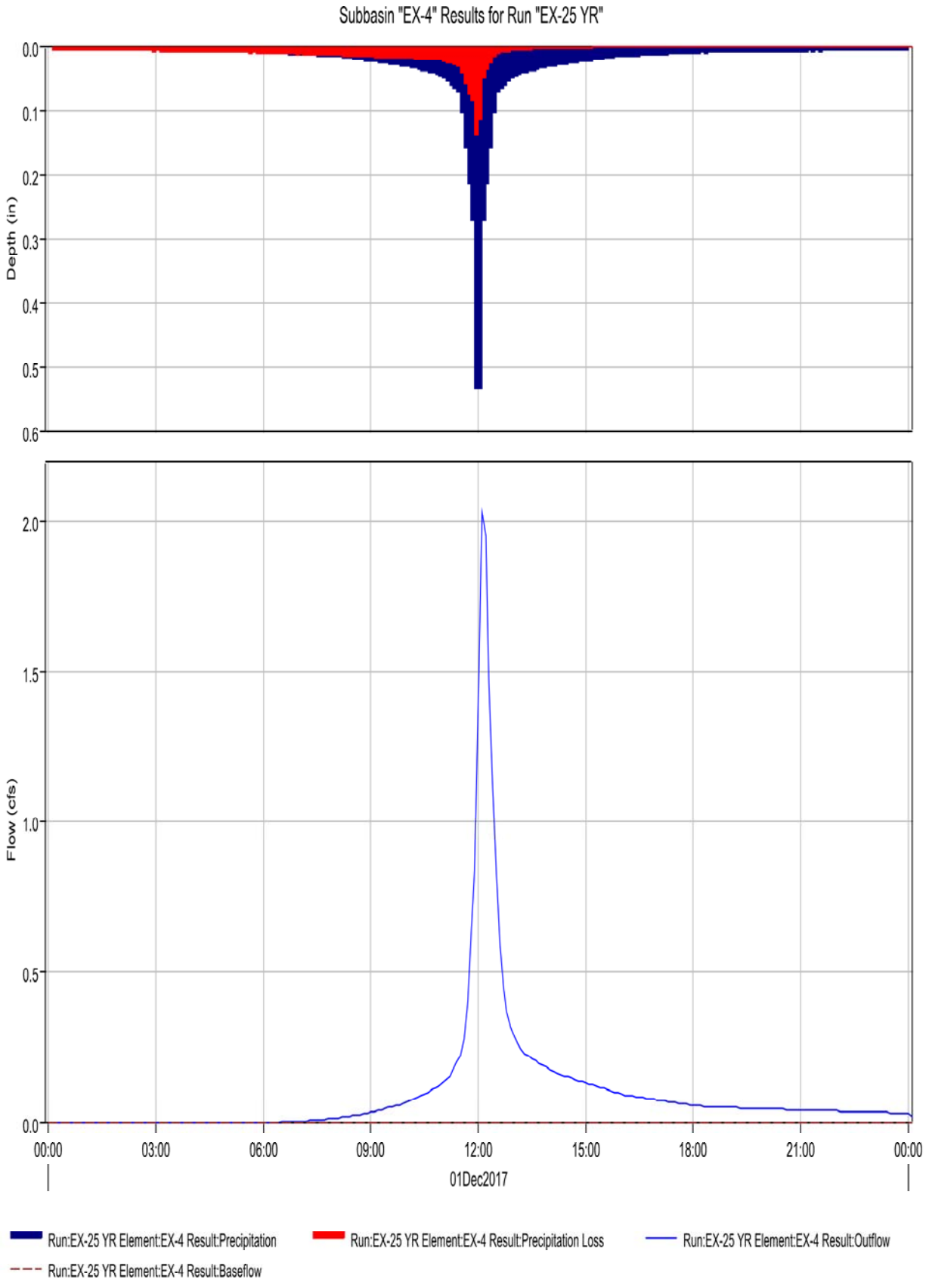
Subbasin: EX-4

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	24Sep2018, 16:32:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	2.0 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.3 (AC-FT)	Direct Runoff Volume:	0.2 (AC-FT)
Loss Volume:	0.1 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.2 (AC-FT)	Discharge Volume:	0.2 (AC-FT)


Subbasin "EX-4" Results for Run "EX-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-25 YR Element:EX-4 Result:Precipitation
Run:EX-25 YR Element:EX-4 Result:Precipitation Loss
Run:EX-25 YR Element:EX-4 Result:Outflow
Run:EX-25 YR Element:EX-4 Result:Baseflow

Project: PIERMONT Simulation Run: EX-25 YR

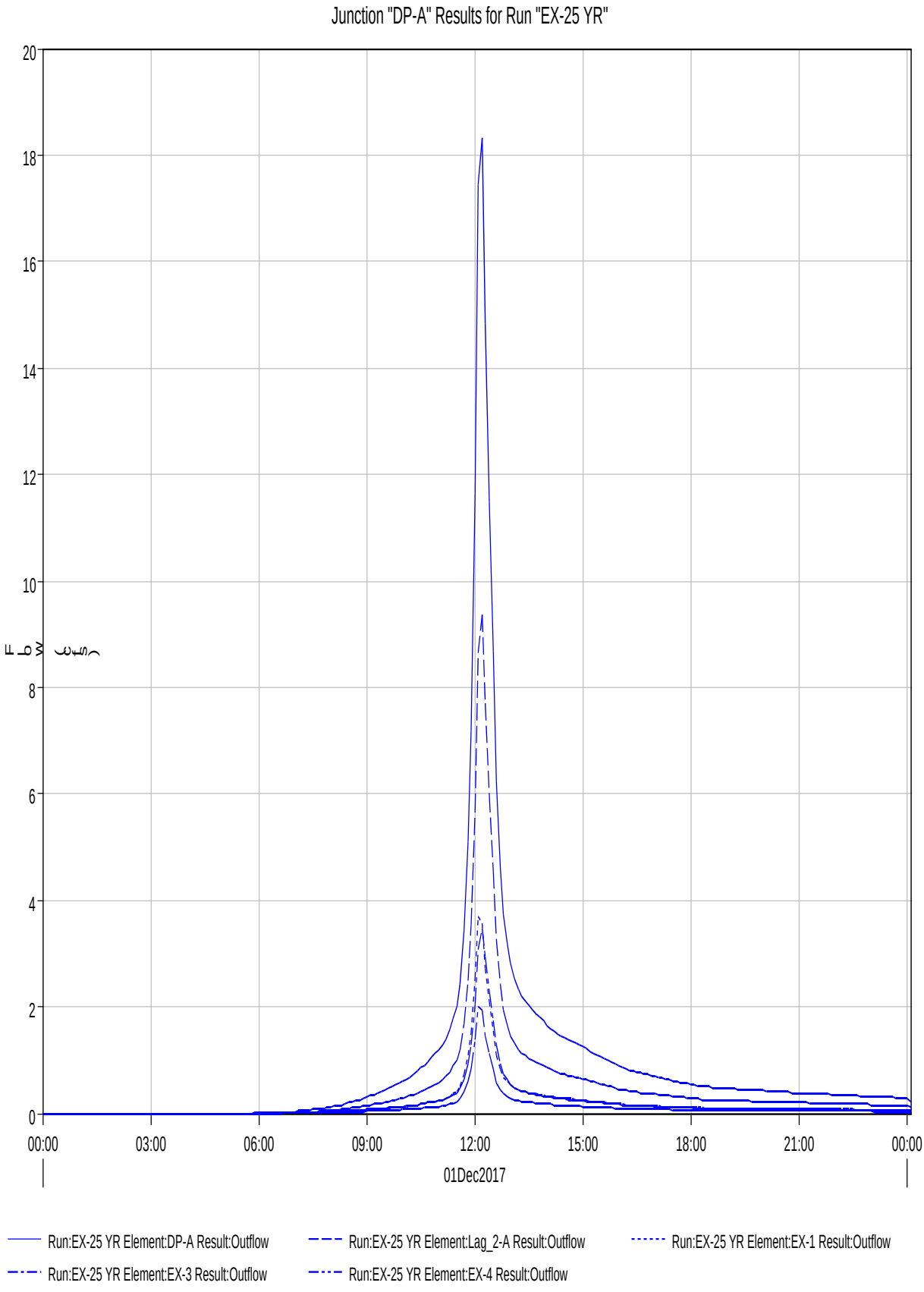
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:15	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	18.3 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	1.881 (AC-FT)		


Junction "DP-A" Results for Run "EX-25 YR"
Flow (cfs)
20
18
16
14
12
10
8
6
4
2
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-25 YR Element:DP-A Result:Outflow
Run:EX-25 YR Element:Lag_2-A Result:Outflow
Run:EX-25 YR Element:EX-1 Result:Outflow
Run:EX-25 YR Element:EX-3 Result:Outflow
Run:EX-25 YR Element:EX-4 Result:Outflow

Project: PIERMONT Simulation Run: EX-100 YR

Start of Run: 01Dec2017, 00:00 Basin Model: EXIST
End of Run: 02Dec2017, 00:06 Meteorologic Model: 100 YR
Compute Time: 20Sep2021, 15:09:14 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
EX-2	0.0045011	14.7	01Dec2017, 12:12	1.529
Lag_2-A	0.0045011	14.7	01Dec2017, 12:12	1.529
EX-1	0.0016906	5.8	01Dec2017, 12:06	0.586
EX-3	0.0015669	5.3	01Dec2017, 12:12	0.563
EX-4	.000910597	3.2	01Dec2017, 12:06	0.315
DP-A	0.0086692	28.6	01Dec2017, 12:12	2.994

Project: PIERMONT Simulation Run: EX-100 YR

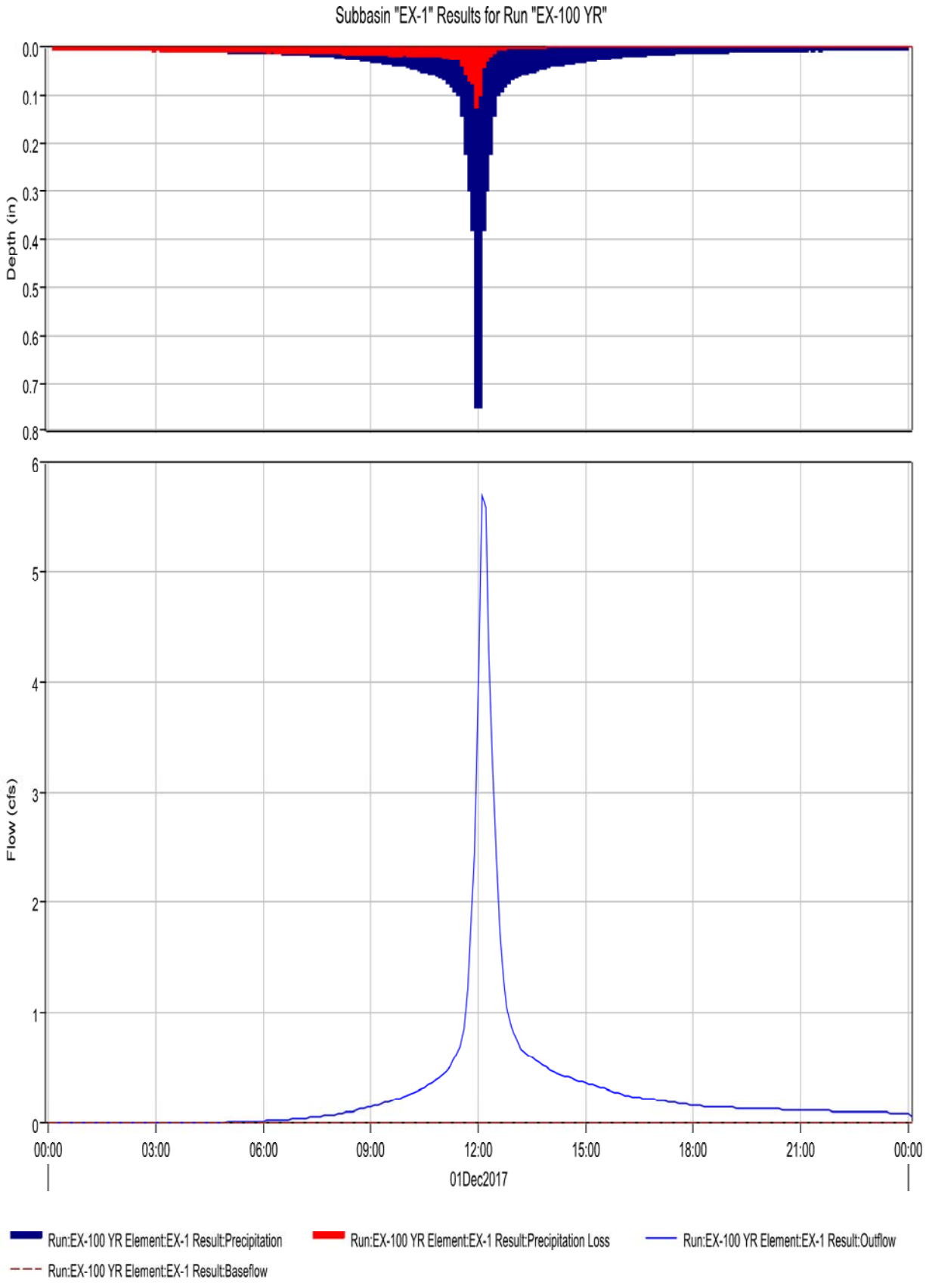
Subbasin: EX-1

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	24Sep2018, 16:32:29	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	5.7 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.8 (AC-FT)	Direct Runoff Volume:	0.6 (AC-FT)
Loss Volume:	0.2 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.6 (AC-FT)	Discharge Volume:	0.6 (AC-FT)


Subbasin "EX-1" Results for Run "EX-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-100 YR Element:EX-1 Result:Precipitation
Run:EX-100 YR Element:EX-1 Result:Precipitation Loss
Run:EX-100 YR Element:EX-1 Result:Outflow
Run:EX-100 YR Element:EX-1 Result:Baseflow

Project: PIERMONT Simulation Run: EX-100 YR

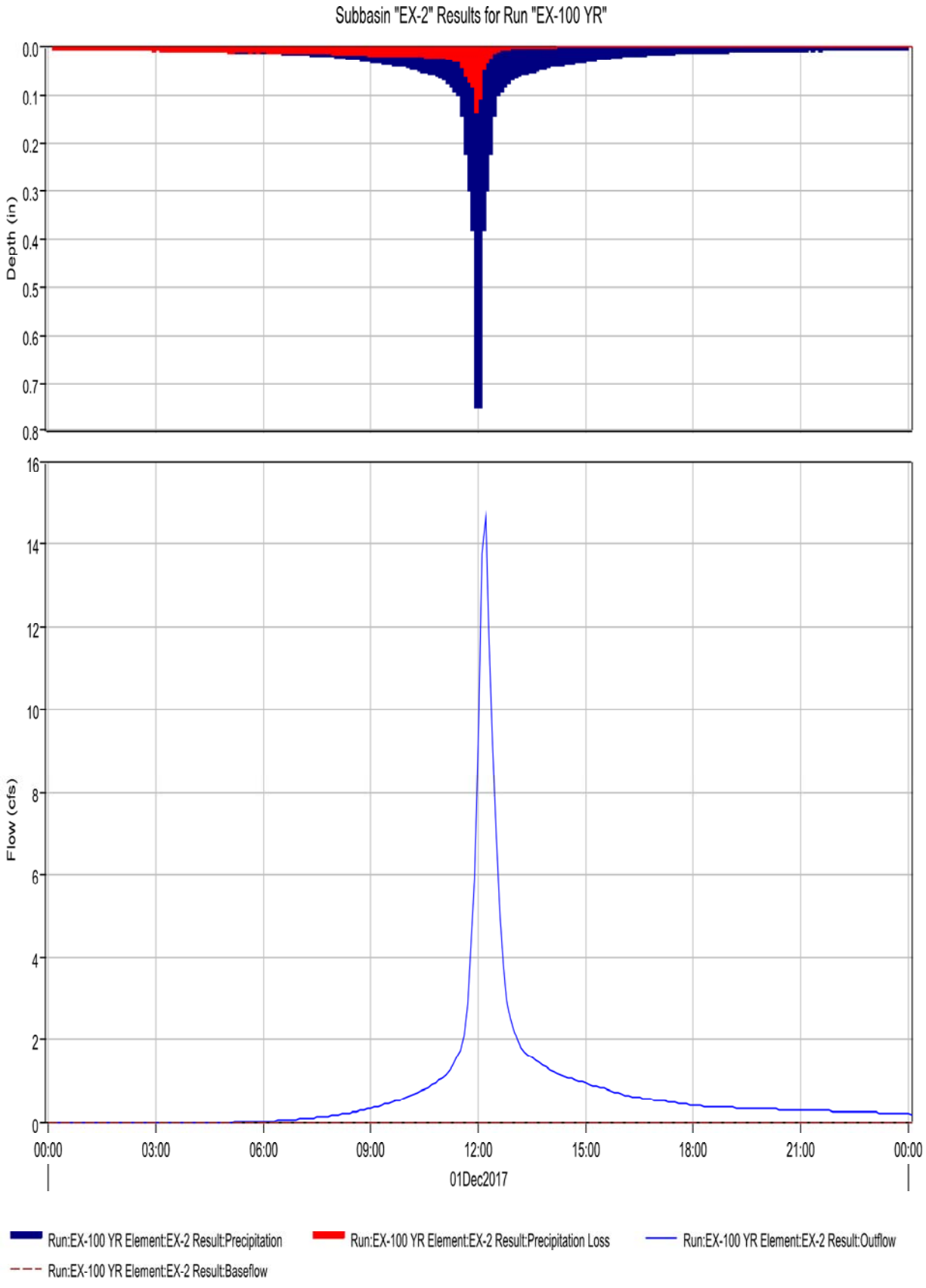
Subbasin: EX-2

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	24Sep2018, 16:32:29	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	14.7 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	2.1 (AC-FT)	Direct Runoff Volume:	1.5 (AC-FT)
Loss Volume:	0.6 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	1.5 (AC-FT)	Discharge Volume:	1.5 (AC-FT)


Subbasin "EX-2" Results for Run "EX-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
16
14
12
10
8
6
4
2
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-100 YR Element:EX-2 Result:Precipitation
Run:EX-100 YR Element:EX-2 Result:Precipitation Loss
Run:EX-100 YR Element:EX-2 Result:Outflow
Run:EX-100 YR Element:EX-2 Result:Baseflow

Project: PIERMONT Simulation Run: EX-100 YR

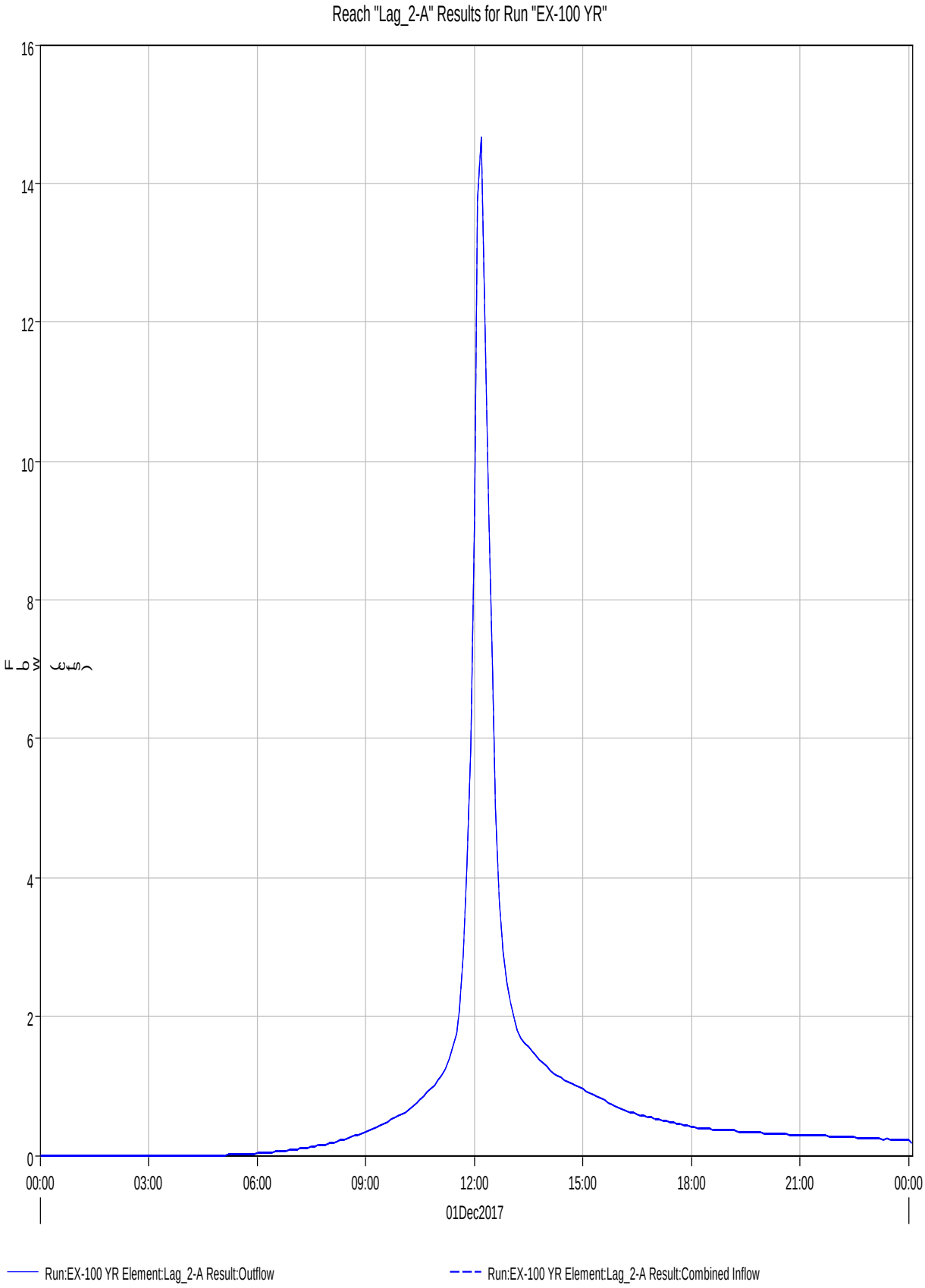
Reach: Lag_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	24Sep2018, 16:32:29	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	14.7 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	14.7 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	1.5 (AC-FT)	Discharge Volume:	1.5 (AC-FT)


Reach "Lag_2-A" Results for Run "EX-100 YR"
Flow (cfs)
16
14
12
10
8
6
4
2
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-100 YR Element:Lag_2-A Result:Outflow
Run:EX-100 YR Element:Lag_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: EX-100 YR

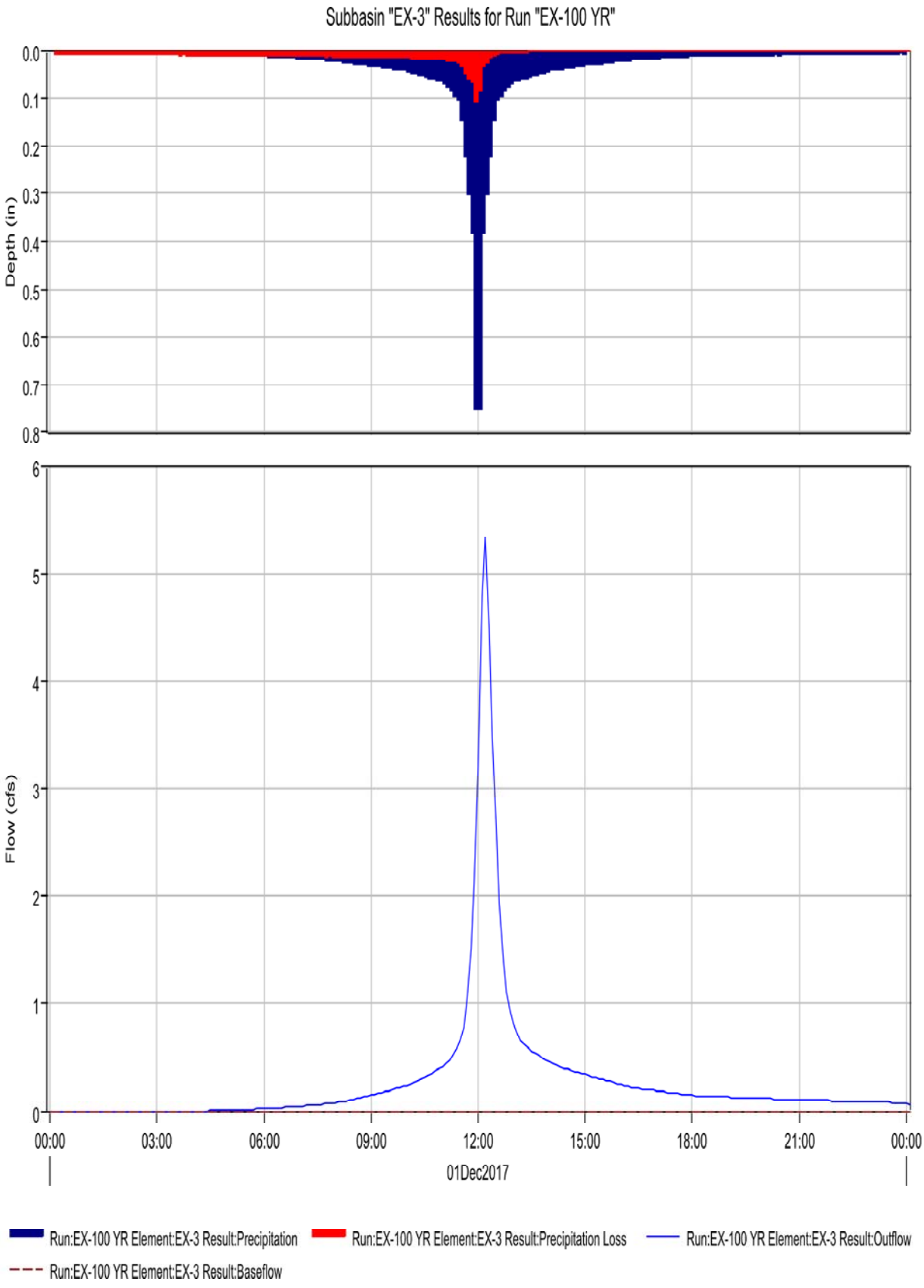
Subbasin: EX-3

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	5.3 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.746 (AC-FT)	Direct Runoff Volume:	0.563 (AC-FT)
Loss Volume:	0.182 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.564 (AC-FT)	Discharge Volume:	0.563 (AC-FT)


Subbasin "EX-3" Results for Run "EX-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-100 YR Element:EX-3 Result:Precipitation
Run:EX-100 YR Element:EX-3 Result:Precipitation Loss
Run:EX-100 YR Element:EX-3 Result:Outflow
Run:EX-100 YR Element:EX-3 Result:Baseflow

Project: PIERMONT Simulation Run: EX-100 YR

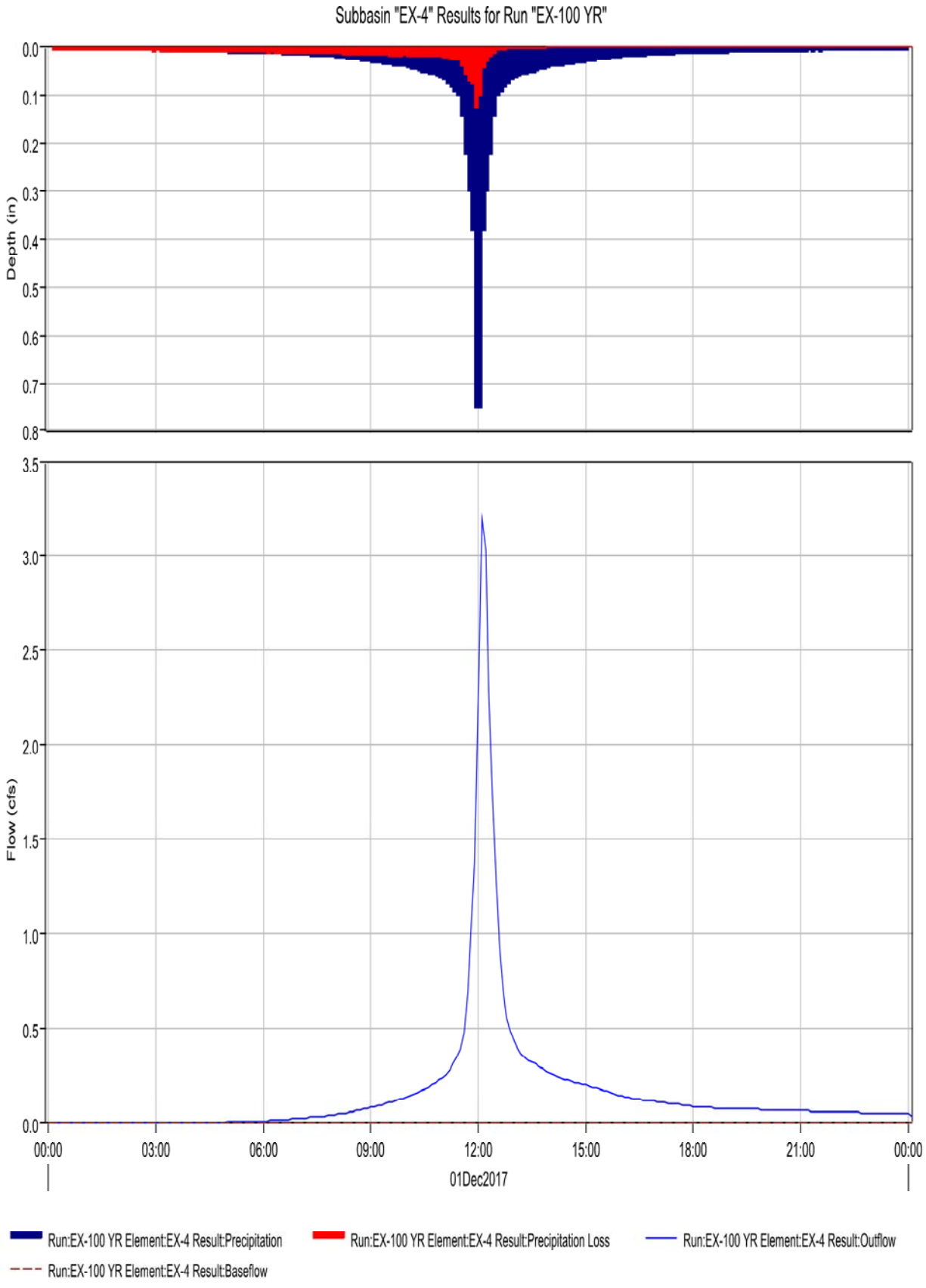
Subbasin: EX-4

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	24Sep2018, 16:32:29	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.2 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.4 (AC-FT)	Direct Runoff Volume:	0.3 (AC-FT)
Loss Volume:	0.1 (AC-FT)	Baseflow Volume:	0.0 (AC-FT)
Excess Volume:	0.3 (AC-FT)	Discharge Volume:	0.3 (AC-FT)


Subbasin "EX-4" Results for Run "EX-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-100 YR Element:EX-4 Result:Precipitation
Run:EX-100 YR Element:EX-4 Result:Precipitation Loss
Run:EX-100 YR Element:EX-4 Result:Outflow
Run:EX-100 YR Element:EX-4 Result:Baseflow

Project: PIERMONT Simulation Run: EX-100 YR

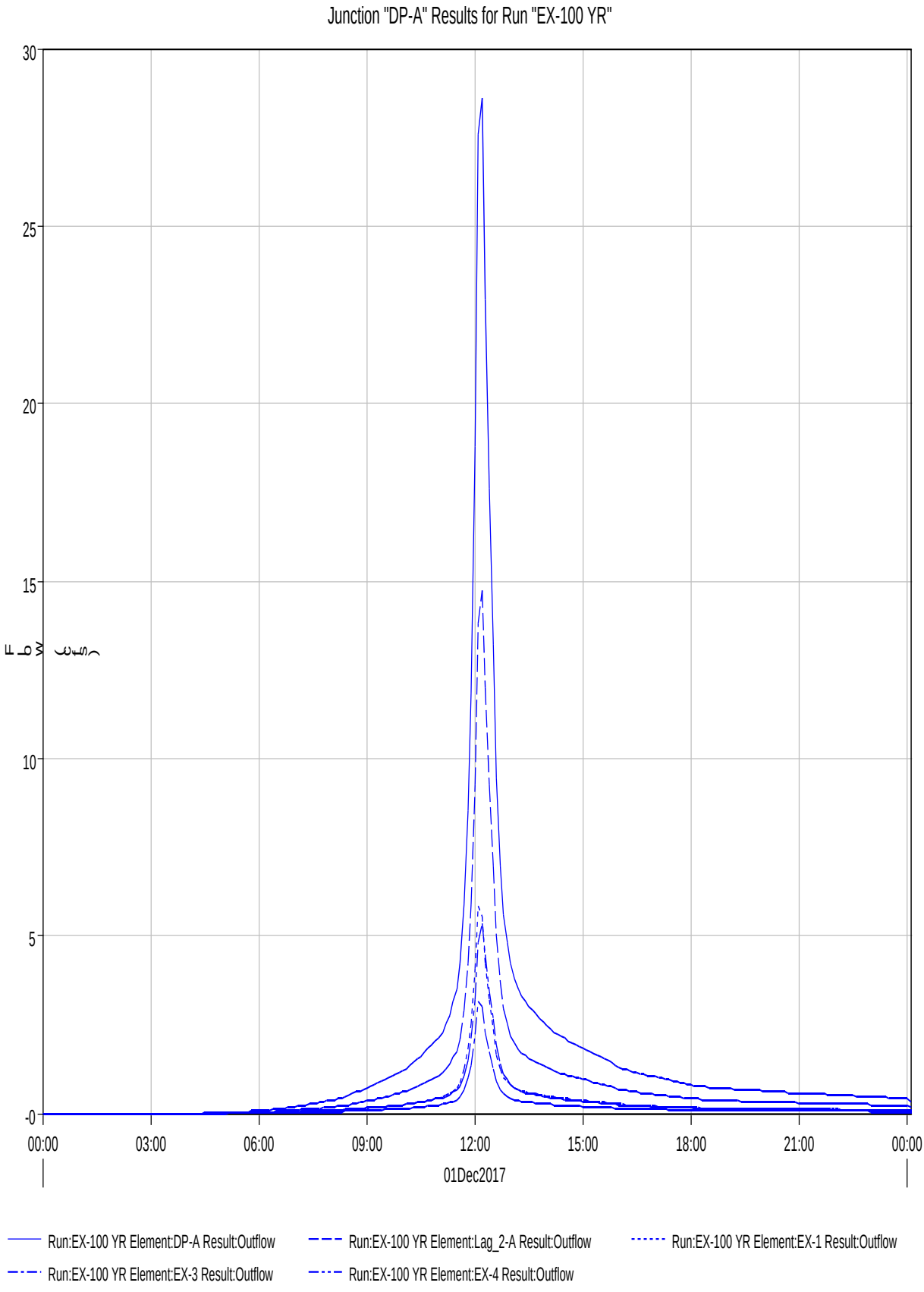
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	EXIST
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

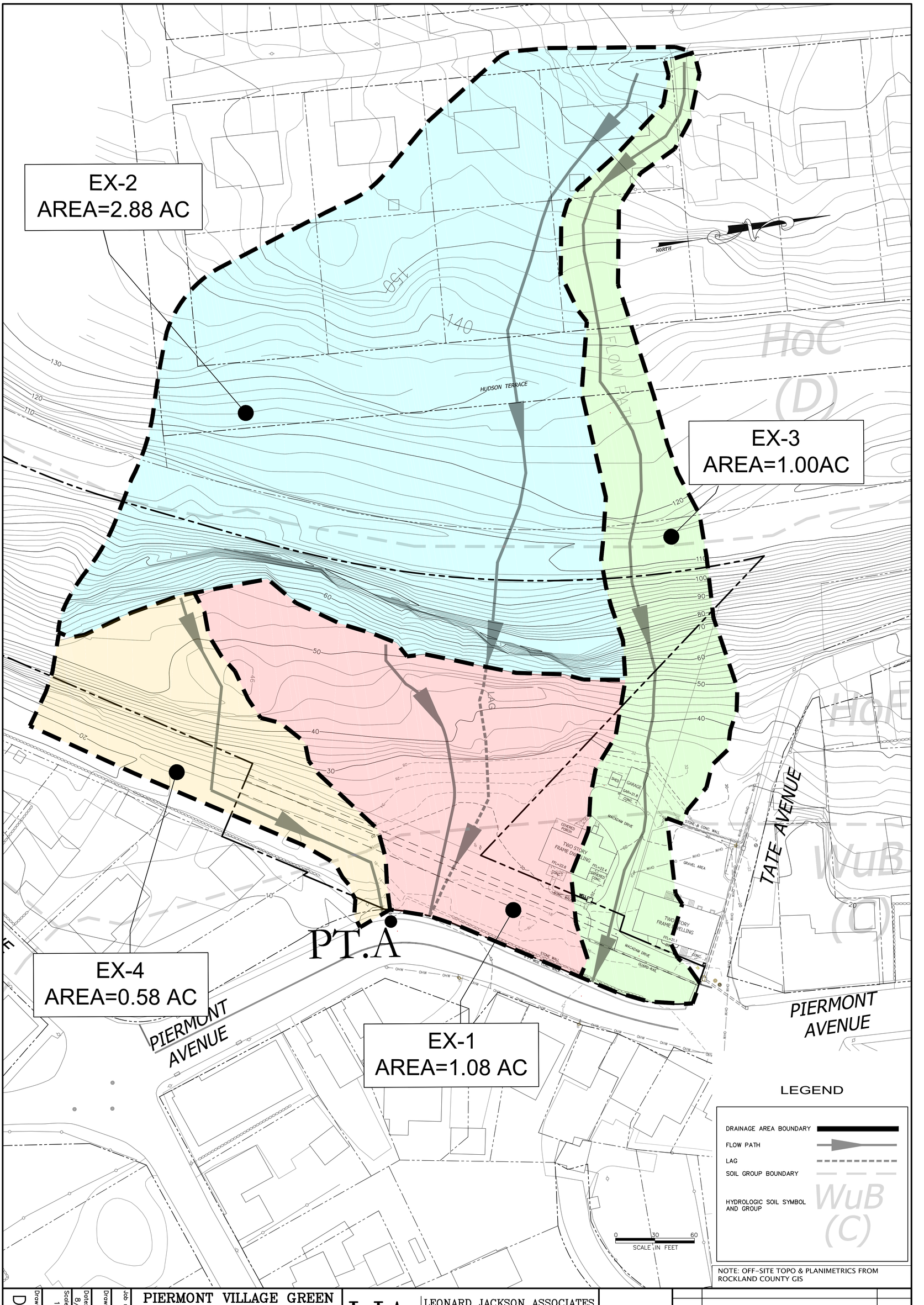
Peak Discharge:	28.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	2.994 (AC-FT)		


Junction "DP-A" Results for Run "EX-100 YR"
Flow (cfs)
30
25
20
15
10
5
-0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:EX-100 YR Element:DP-A Result:Outflow
Run:EX-100 YR Element:Lag_2-A Result:Outflow
Run:EX-100 YR Element:EX-1 Result:Outflow
Run:EX-100 YR Element:EX-3 Result:Outflow
Run:EX-100 YR Element:EX-4 Result:Outflow

Existing Condition Drainage Area Map

(Dwg:DA-1)

P:\PROJECTS\06061\12\DWGSHEETS\Drainage-EX.dwg, EX, 9/20/2021 4:03:21 PM, justins, AutoCAD PDF (Web and Mobile).pc3, ARCH full bleed D (36.00 x 24.00 Inches), 1:1



NOTE: OFF-SITE TOPO & PLANIMETRICS FROM ROCKLAND COUNTY GIS

2	UPDATED DRAINAGE AREAS	09/20/21
1	REVISED AS PER TOWN ENGINEER COMMENT	01/25/10
REV.	DESCRIPTION	DATE

LJA LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970
phone: (845) 354-4382 fax: (845) 354-4401

PIERMONT VILLAGE GREEN
VILLAGE OF PIERMONT, TOWN OF ORANGETOWN
ROCKALND COUNTY, NEW YORK
EXISTING CONDITIONS DRAINAGE MAP

Drawing Number: DA-1
Scale: 1" = 30'
Date: 8/12/2009
Drawn by: JS
Job number: 06112

Leonard Jackson Associates

APPENDIX B

Developed Condition Hydrologic Calculations

1) Time of Concentration Calculations
2) Curve Number Calculations
3) Solid Tank Sizing Calculations
4) HEC-HMS Input/Output Summary
5) Storm Pipe Sizing Calculations
6) Developed Conditions Drainage Area Map (Dwg: DA-2)

Time of Concentration

LEONARD JACKSON ASSOCIATES
26 Firemens Memorial Drive
Pomona, NY 10970
845-354-4382

Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing **Developed**

To Design Point: POINT A (THROUGH DRYWELLS)
Time of Concentration thru Sub-Area: DEV-1

Sheet Flow:

	Segment ID:	
1. Surface description (table 3-1)……		
2. Manning's Roughness Coeff., n (table 3-1)…..		
3. Flow Length, L……(ft.)		
4. Two year, 24 hr rainfall, P_2……(in.)		
5. Land Slope, S……(ft./ft.)		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)		= (hrs.)

Shallow Concentrated Flow:

	Segment ID:		
1. Surface description (paved or unpaved)…….		UNPAVED	
2. Flow Length, L …… (ft.)		202	
3. Watercourse Slope, s…… (ft./ft.)		0.141	
4. Average Velocity, V (figure 3-1)…… (ft./s)		6.06	
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)		0.009	= **0.0093** (hrs.)

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End) Slope, S:

T_t =

T_t = hrs. = (hrs.)

Total Tc = 0.009 (hrs.)
0.56 (min.)

LEONARD JACKSON ASSOCIATES
26 Firemens Memorial Drive
Pomona, NY 10970
845-354-4382

Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing **Developed**

To Design Point: LAG_2-A
Time of Concentration thru Sub-Area: DEV-2

Sheet Flow:

	Segment ID:	
1. Surface description (table 3-1)……	WOODS	
2. Manning's Roughness Coeff., n (table 3-1)…..	0.4	
3. Flow Length, L……..(ft.)	150	
4. Two year, 24 hr rainfall, P_2……..(in.)	3.4	
5. Land Slope, S……..(ft./ft.)	0.107	
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)	0.25	= **0.246** (hrs.)

Shallow Concentrated Flow:

	Segment ID:		
1. Surface description (paved or unpaved)…….	156.5-41 UNPAVED	41-38 PAVED	
2. Flow Length, L …….. (ft.)	407	67	
3. Watercourse Slope, s…….. (ft./ft.)	0.284	0.045	
4. Average Velocity, V (figure 3-1)…….. (ft./s)	8.60	4.30	
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)	0.013	0.004	= **0.017** (hrs.)

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End)

Slope, S: *#DIV/0!*

$T_t = 0.0078(L^{0.77} \times S^{-0.385})$

T_t = hrs.

0.00 (hrs.)

Total Tc = **0.263** (hrs.)
15.8 (min.)

LEONARD JACKSON ASSOCIATES
26 Firemens Memorial Drive
Pomona, NY 10970
845-354-4382

Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing **Developed**

To Design Point: POINT A
Time of Concentration thru Sub-Area: LAG (2 to A)

Sheet Flow:

	Segment ID:		
1. Surface description (table 3-1)……			
2. Manning's Roughness Coeff., n (table 3-1)…..			
3. Flow Length, L……(ft.)			
4. Two year, 24 hr rainfall, P_2……(in.)			
5. Land Slope, S……(ft./ft.)			
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)		=	**0.000** (hrs.)

Shallow Concentrated Flow:

	Segment ID:			
1. Surface description (paved or unpaved)…….				
2. Flow Length, L …… (ft.)				
3. Watercourse Slope, s…… (ft./ft.)				
4. Average Velocity, V (figure 3-1)…… (ft./s)				
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)			=	**0.000** (hrs.)

Open Channel Flow (Kirpich Equation):

	(ft.)		
Flow Length, L:	*240*		
	(Start)	(End)	Slope, S:
Elevation Change:	*38.0*	*13.0*	*0.104*

$T_t = 0.0078(L^{0.77} \times S^{-0.385})$

T_t = **0.021** hrs.

0.02 (hrs.)

Total Tc = **0.021** (hrs.)
1.3 (min.)

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing **Developed**

To Design Point: POINT A
Time of Concentration thru Sub-Area: DEV-3

Sheet Flow:

	Segment ID:	
1. Surface description (table 3-1)……	172.5-154	
2. Manning's Roughness Coeff., n (table 3-1)…..	WOODS	
3. Flow Length, L……..(ft.)	0.4	
4. Two year, 24 hr rainfall, P_2……..(in.)	150	
5. Land Slope, S……..(ft./ft.)	3.4	
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)	0.123	
	0.23	= **0.232** (hrs.)

Shallow Concentrated Flow:

	Segment ID:		
1. Surface description (paved or unpaved)…….	154-22	22-15	
2. Flow Length, L …….. (ft.)	UNPAVED	PAVED	
3. Watercourse Slope, s…….. (ft./ft.)	468	132	
4. Average Velocity, V (figure 3-1)…….. (ft./s)	0.282	0.053	
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)	8.57	4.68	
	0.015	0.008	= **0.023** (hrs.)

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End) Slope, S:

T_t =

T_t = hrs.

(hrs.)

Total Tc = **0.255** (hrs.)
15.3 (min.)

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Worksheet: Time of Concentration (Tc) Calculations

PROJECT: PIERMONT VILLAGE GREEN
LOCATION: VILLAGE OF PIERMONT, NY

JOB #: 06112 BY: JS
DATE: 6/26/2019

Mark One: Existing **Developed**

To Design Point: POINT A
Time of Concentration thru Sub-Area: DEV-4

Sheet Flow:

	Segment ID:	
1. Surface description (table 3-1)……		
2. Manning's Roughness Coeff., n (table 3-1)…..		
3. Flow Length, L……..(ft.)		
4. Two year, 24 hr rainfall, P_2……..(in.)		
5. Land Slope, S……..(ft./ft.)		
6. $T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ S^{0.4}}$ Compute T_t = ……(hr.)		= **0.000** (hrs.)

Shallow Concentrated Flow:

	Segment ID:	52-48	48-10	
1. Surface description (paved or unpaved)…….		PAVED	UNPAVED	
2. Flow Length, L …….. (ft.)		66	239	
3. Watercourse Slope, s…….. (ft./ft.)		0.576	0.017	
4. Average Velocity, V (figure 3-1)…….. (ft./s)		15.42	2.09	
6. $T_t = \frac{L}{3600\ V}$ Compute T_t = ……(hr.)		0.001	0.032	= **0.033** (hrs.)

Open Channel Flow (Kirpich Equation):

Flow Length, L: (ft.)

Elevation Change: (Start) (End) Slope, S:

T_t =

T_t = hrs.

(hrs.)

Total Tc = **0.033** (hrs.)
2.0 (min.)

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S Revised By :
Date: 6/25/2019

Location: **Village of Piermont, NY**

Shade one: Existing Developed **Sub-Area: DEV-1**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoC (D)	Woods - Good Condition (Soil Group D)	77		5512	0.13	9.74
HoF (D)	Woods - Fair Condition (Soil Group D)	79		14195	0.33	25.74
HoF (D)	Lawn - Good Condition (Soil Group D)	80		10870	0.25	19.96
WuB (C)	Lawn - Good Condition (Soil Group C)	74		2706	0.06	4.60
HoF (D)	Lawn - Fair Condition (Soil Group D)	84		1616	0.04	3.12
WuB (C)	Lawn - Fair Condition (Soil Group C)	79		1624	0.04	2.95
	Impervious Surface	98		18560	0.43	41.76
				Totals =	1.26	107.86

*Average curve number for hydrologic group C and D.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{107.86}{1.26} = 85.30$

Use CN = 85

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S Revised By :

Date: 6/25/2019

Location: **Village of Piermont, NY**

Shade one: Existing Developed **Sub-Area: DEV-2**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoC (D)	Woods - Good Condition (Soil Group D)	77		68594	1.57	121.25
HoF (D)	Woods - Fair Condition (Soil Group D)	79		24087	0.55	43.68
HoF (D)	Lawn - Good Condition (Soil Group D)	80		1805	0.04	3.31
HoF (D)	Lawn - Fair Condition (Soil Group D)	84		16400	0.38	31.63
	Impervious Surface	98		8633	0.20	19.42
				Totals =	2.74	219.30

*Average curve number for hydrologic group C and D.

CN (weighted) = total product = 219.30 = 79.93
total area 2.74

Use CN = 80

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S Revised By :

Date: 6/25/2019

Location: **Village of Piermont, NY**

Shade one: Existing Developed **Sub-Area: DEV-3**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoC (D)	Woods - Good Condition (Soil Group D)	77		12583	0.29	22.24
HoF (D)	Woods - Fair Condition (Soil Group D)	79		14516	0.33	26.33
WuB (C)	Lawn - Good Condition (Soil Group C)	74		150	0.003	0.25
HoF (D)	Lawn - Fair Condition (Soil Group D)	84		5126	0.12	9.88
WuB (C)	Lawn - Fair Condition (Soil Group C)	79		1398	0.03	2.54
	Impervious Surface	98		11280	0.26	25.38
				Totals =	1.03	86.62

*Average curve number for hydrologic group C and D.

CN (weighted) = total product = 86.62 = 83.75
total area 1.03

Use CN = 84

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Worksheet 2: Curve Number

Project: **Piermont Village Green** By: Justin S Revised By :
Date: 6/25/2019

Location: **Village of Piermont, NY**

Shade one: Existing Developed **Sub-Area: DEV-4**

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	**Cover Description** (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	**CN** Table 2-2	**CN** Figure 2.3	**Area (sf)**	**Area (ac)**	**Product of CN X AREA**
HoF (D)	Woods - Fair Condition (Soil Group D)	79		7031	0.16	12.75
HoF (D)	Lawn - Good Condition (Soil Group D)	80		3152	0.07	5.79
WuB (C)	Lawn - Good Condition (Soil Group C)	74		829	0.02	1.41
HoF (D)	Lawn - Fair Condition (Soil Group D)	84		6932	0.16	13.37
	Impervious Surface	98		3035	0.07	6.83
				Totals =	0.48	40.14

*Average curve number for hydrologic group C and D.

CN (weighted) = total product = 40.14 = 83.35
total area 0.48

Use CN = 83

Detention Sizing Calculations

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Solid Tank Sizing Calculations

Project: **Piermont Village Green** By: JS
Location: **Piermont, NY** Date: 6/26/2019
Job Number: **06112** Revision Date:

Site Data				
Proposed Solid Tank Diameter	Do	10	*ft*	
Proposed number of Solid Tanks	N_D	11		
Design Elements				
Eff. Area of 11 Tanks	A_D	753	ft^2	*11 x π*(10-0.66)^2 / 4*

Volume per vertical foot of system in Solid Tanks

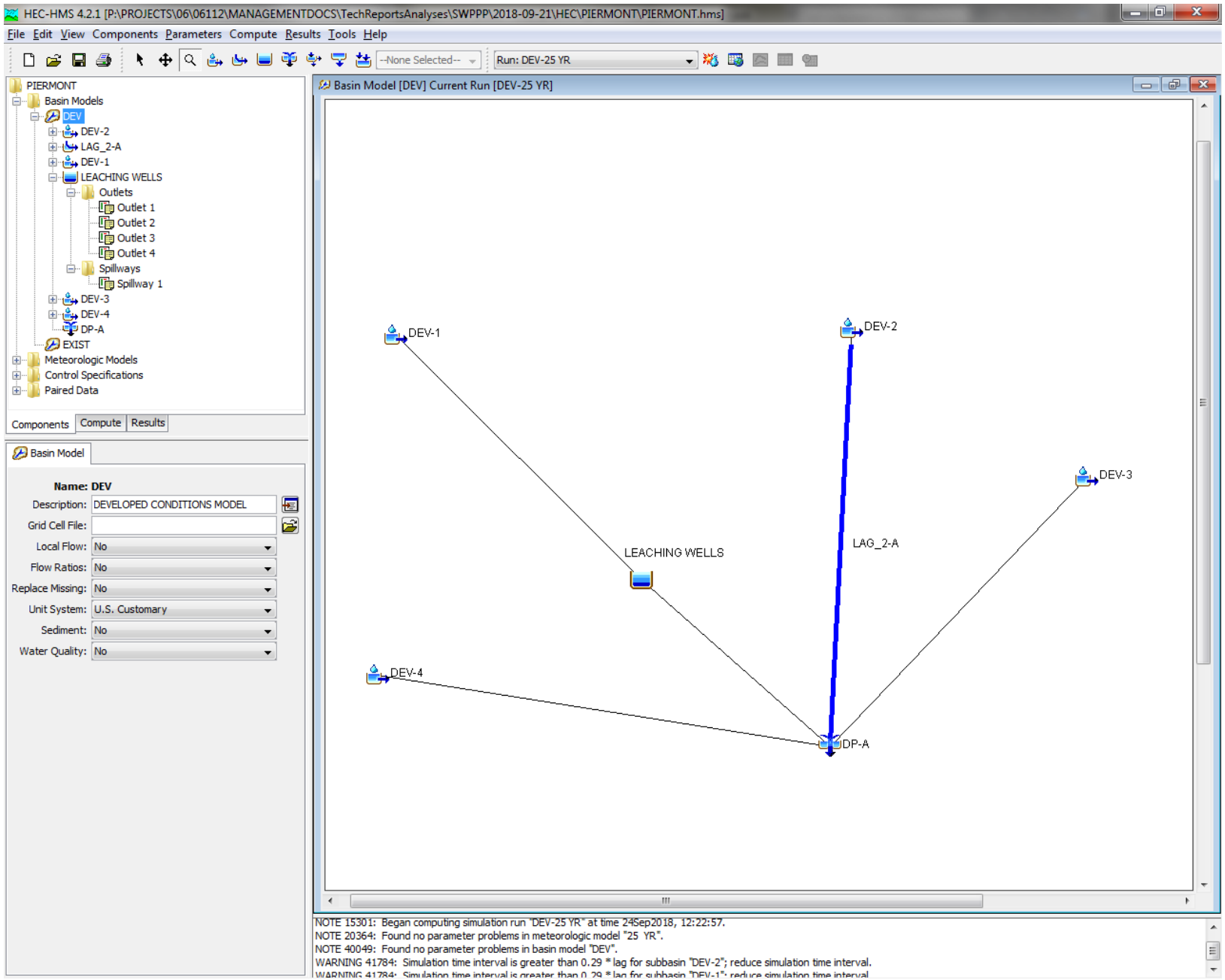
Volume / FT = Area of 11 Solid Tanks
= **753** FT^3/FT

Stage vs. Volume

(1) Stage (ft)	*(2) Depth (ft)*	*(3) Volume (ft^3)*	*(4) Cummulative Volume (ft^3)*	*(5) Cummulative Volume (ac-ft)*
7.30	0	0	0	0.0000
8.30	1.00	753	753	0.0173
9.30	1.00	753	1,505	0.0346
10.30	1.00	753	2,258	0.0518
11.30	1.00	753	3,011	0.0691
12.30	1.00	753	3,763	0.0864
13.30	1.00	753	4,516	0.1037
14.30	1.00	753	5,269	0.1210
15.60	1.30	979	6,247	0.1434

HEC-HMS Input/Output

DEVELOPED CONDITIONS – NETWORK DIAGRAM



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DEVELOPED CONDITIONS – INPUT SUMMARY

HEC-HMS V.4.2.1 REPORT
DEVELOPED CONDITION, LJA #06112

HYDROLOGY FOR: PIERMONT VILLAGE GREEN

VILLAGE OF PIERMONT/TOWN OR ORANGETOWN, ROCKLAND COUNTY NEW YORK

SWPPP DATE: 9/20/2021

NOTE: SCS METHOD WAS USED TO COMPUTE CURVE NO. AND PEAK DISCHARGES

ANALYSIS PARAMETERS:

STORM RECURRENCE INTERVALS = 2, 10, 25 and 100 year

HYDROGRAPH METHOD: SCS

RAINFALL DISTRIBUTION: SCS TYPE III

24 HOUR RAINFALL DATA:

2 YEAR: 3.41 INCHES

10 YEAR: 5.06 INCHES

25 YEAR: 6.34 INCHES

100 YEAR: 8.93 INCHES

Loss method: CN SCS
Transform method: IUH SCS
Routing method : LAG

- -

HYDROLOGIC STUDY
SUMMARY OF DATA

BASIN MODEL: DEV

DESCRIPTION: DEVELOPED CONDITIONS MODEL
VERSION: 4.2.1
UNIT SYSTEM: English

SUBBASINS TABLE

Name	Area (MI2)	Loss method	Impervious (%)	CN	Transform method	SCS lag (min)
DEV-1	0.00198	SCS	0	85	SCS	3.6
DEV-2	0.00429	SCS	0	80	SCS	9.48
DEV-3	0.00162	SCS	0	84	SCS	9.18
DEV-4	0.00075	SCS	0	83	SCS	3.6

REACHS TABLE - Routing method : LAG

Name	Routing method	Lag (min)
LAG_2-A	Lag	1.3

RESERVOIR TABLE (DETENTION TANKS)

Name	Downstream	Method	Elev-Stor Function:		Initial Condition	Outlets	Spillways
DETENTION.TANKS	DP-A	Outflow Structures	LW		Inflow = Outflow	4	1
			Elevation (FT)	Storage (AC-FT)			
			7.30	0.0000			
			8.30	0.0173			
			9.30	0.0346			
			10.30	0.0518			
			11.30	0.0691			
			12.30	0.0864			
			13.30	0.1037			
			14.30	0.1210			
			15.60	0.1434			

OUTLET STRUCTURE: OUTLET TABLE

Name	Method	Direction	Number Barrels	Centerline Elev. (ft)	Area (FT2)	Coefficient
Outlet 1	Orifice Outlet	Main	1	7.47	0.0871 (4” Ø)	0.6
Outlet 2	Orifice Outlet	Main	1	8.3	0.0491 (3” Ø)	0.6
Outlet 3	Orifice Outlet	Main	1	11.3	0.267 (7” Ø)	0.6
Outlet 4	Orifice Outlet	Main	1	12.6	0.0871 (4” Ø)	0.6

OUTLET STRUCTURE: SPILLWAY TABLE

Name	Method	Direction	Elevation (FT)	Length (FT)	Coefficient
Spillway 1	Broad-Crested Spillway	Main	14.5	1.5	3

Last modified 6/26/2019

Project: PIERMONT Simulation Run: DEV-2 YR

Start of Run: 01Dec2017, 00:00 Basin Model: DEV
End of Run: 02Dec2017, 00:06 Meteorologic Model: 2 YR
Compute Time: 20Sep2021, 15:09:08 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DEV-2	0.0042872	3.4	01Dec2017, 12:12	0.357
LAG_2-A	0.0042872	3.3	01Dec2017, 12:12	0.357
DEV-1	0.0019758	2.4	01Dec2017, 12:06	0.204
DETENTION.TANK	0.0019758	1.0	01Dec2017, 12:24	0.204
DEV-3	0.0016161	1.6	01Dec2017, 12:12	0.160
DEV-4	.000752518	0.8	01Dec2017, 12:06	0.072
DP-A	0.0086316	6.5	01Dec2017, 12:12	0.793

Project: PIERMONT Simulation Run: DEV-2 YR

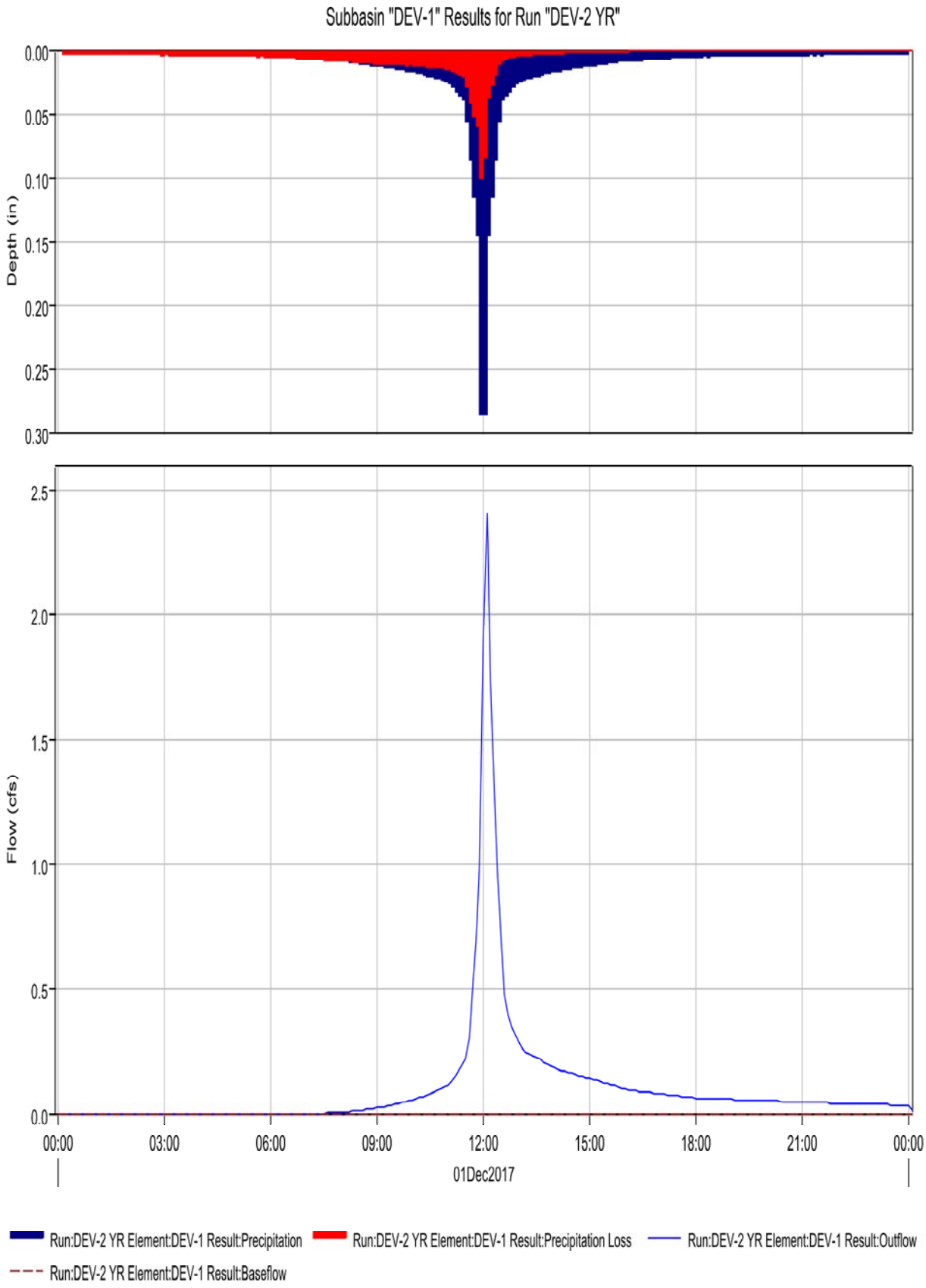
Subbasin: DEV-1

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	2.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.359 (AC-FT)	Direct Runoff Volume:	0.204 (AC-FT)
Loss Volume:	0.155 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.204 (AC-FT)	Discharge Volume:	0.204 (AC-FT)


Subbasin "DEV-1" Results for Run "DEV-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:DEV-1 Result:Precipitation
Run:DEV-2 YR Element:DEV-1 Result:Precipitation Loss
Run:DEV-2 YR Element:DEV-1 Result:Outflow
Run:DEV-2 YR Element:DEV-1 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-2 YR

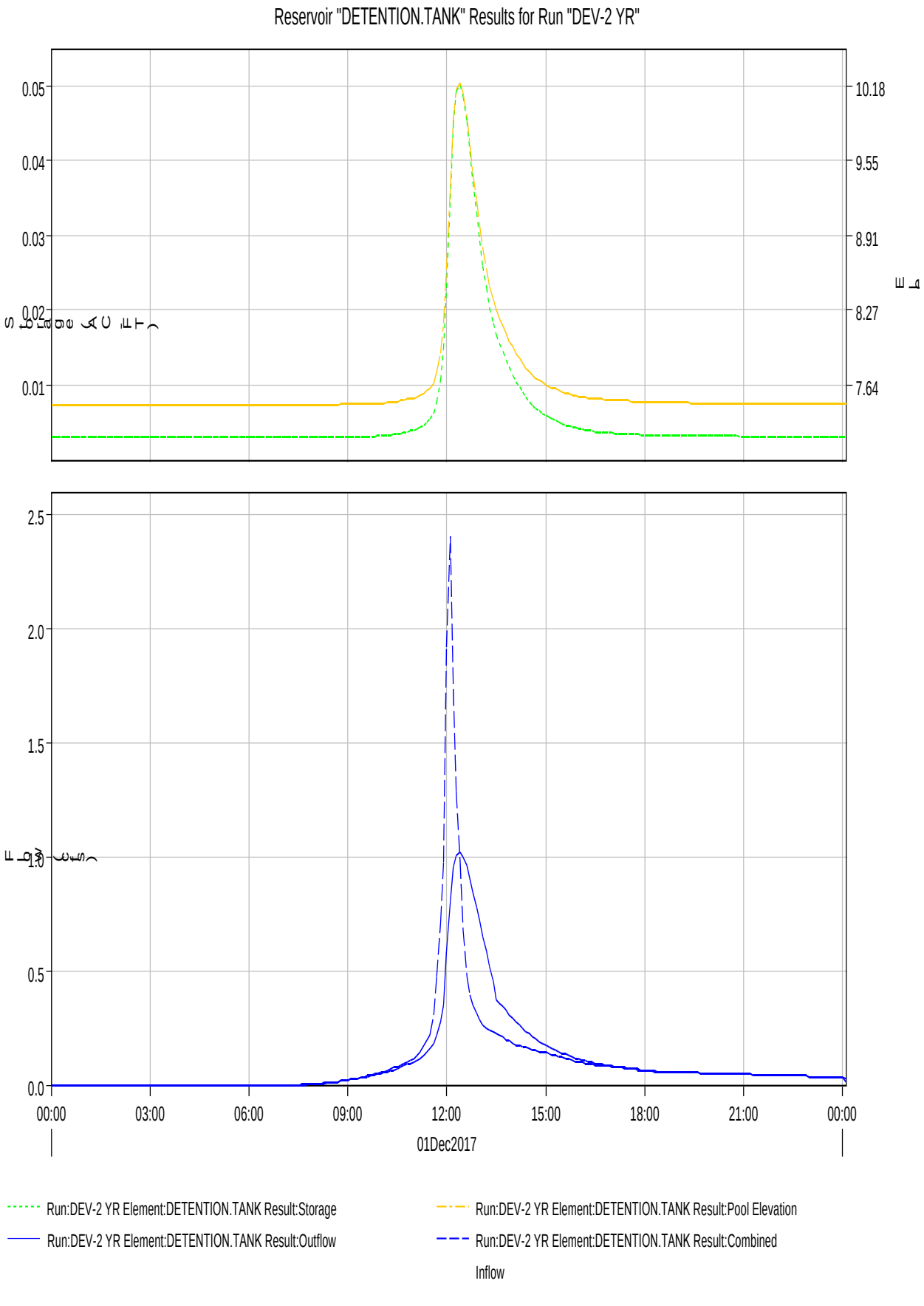
Reservoir: DETENTION.TANK

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	2.4 (CFS)	Date/Time of Peak Inflow:	01Dec2017, 12:06
Peak Discharge:	1.0 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:24
Inflow Volume:	0.204 (AC-FT)	Peak Storage:	0.050 (AC-FT)
Discharge Volume	0.204 (AC-FT)	Peak Elevation:	10.2 (FT)


Reservoir "DETENTION.TANK" Results for Run "DEV-2 YR"
Storage (AC-FT)
Elev (FT)
0.05
0.04
0.03
0.02
0.01
10.18
9.55
8.91
8.27
7.64
Flow (CFS)
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:DETENTION.TANK Result:Storage
Run:DEV-2 YR Element:DETENTION.TANK Result:Pool Elevation
Run:DEV-2 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-2 YR Element:DETENTION.TANK Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-2 YR

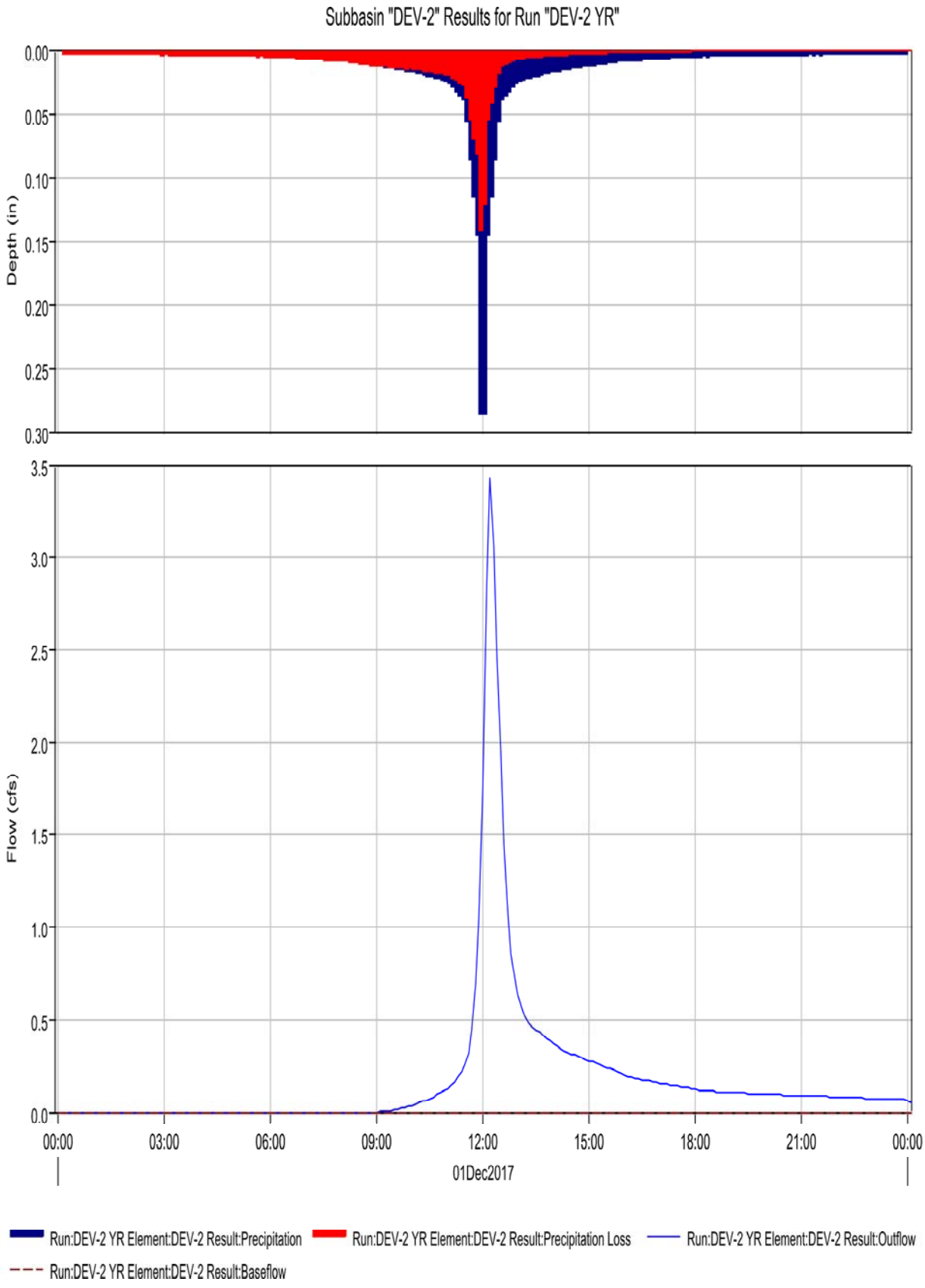
Subbasin: DEV-2

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.780 (AC-FT)	Direct Runoff Volume:	0.357 (AC-FT)
Loss Volume:	0.422 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.358 (AC-FT)	Discharge Volume:	0.357 (AC-FT)


Subbasin "DEV-2" Results for Run "DEV-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:DEV-2 Result:Precipitation
Run:DEV-2 YR Element:DEV-2 Result:Precipitation Loss
Run:DEV-2 YR Element:DEV-2 Result:Outflow
Run:DEV-2 YR Element:DEV-2 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-2 YR

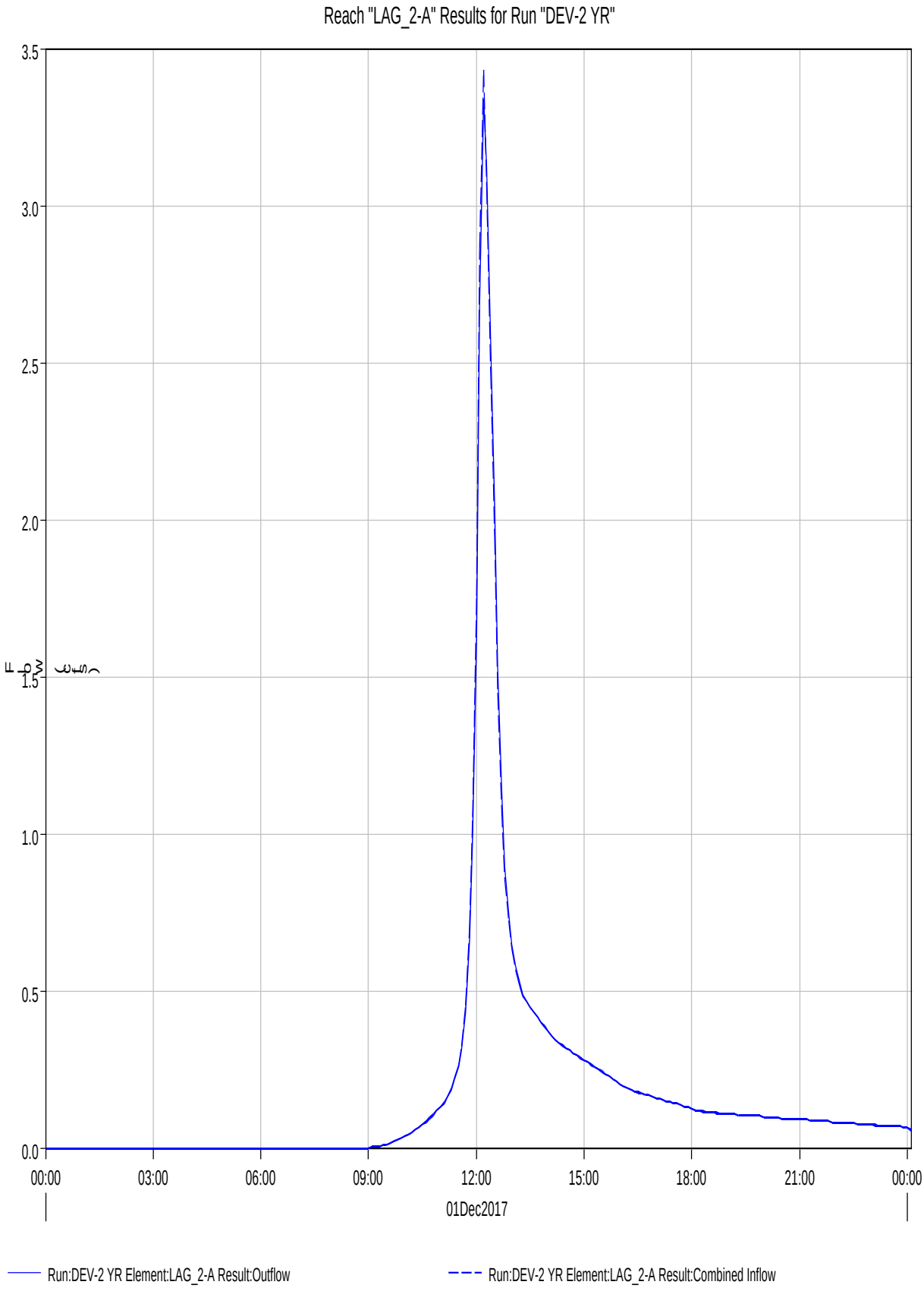
Reach: LAG_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	3.4 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	3.3 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.357 (AC-FT)	Discharge Volume:	0.357 (AC-FT)


Reach "LAG_2-A" Results for Run "DEV-2 YR"
Flow (cfs)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:LAG_2-A Result:Outflow
Run:DEV-2 YR Element:LAG_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-2 YR

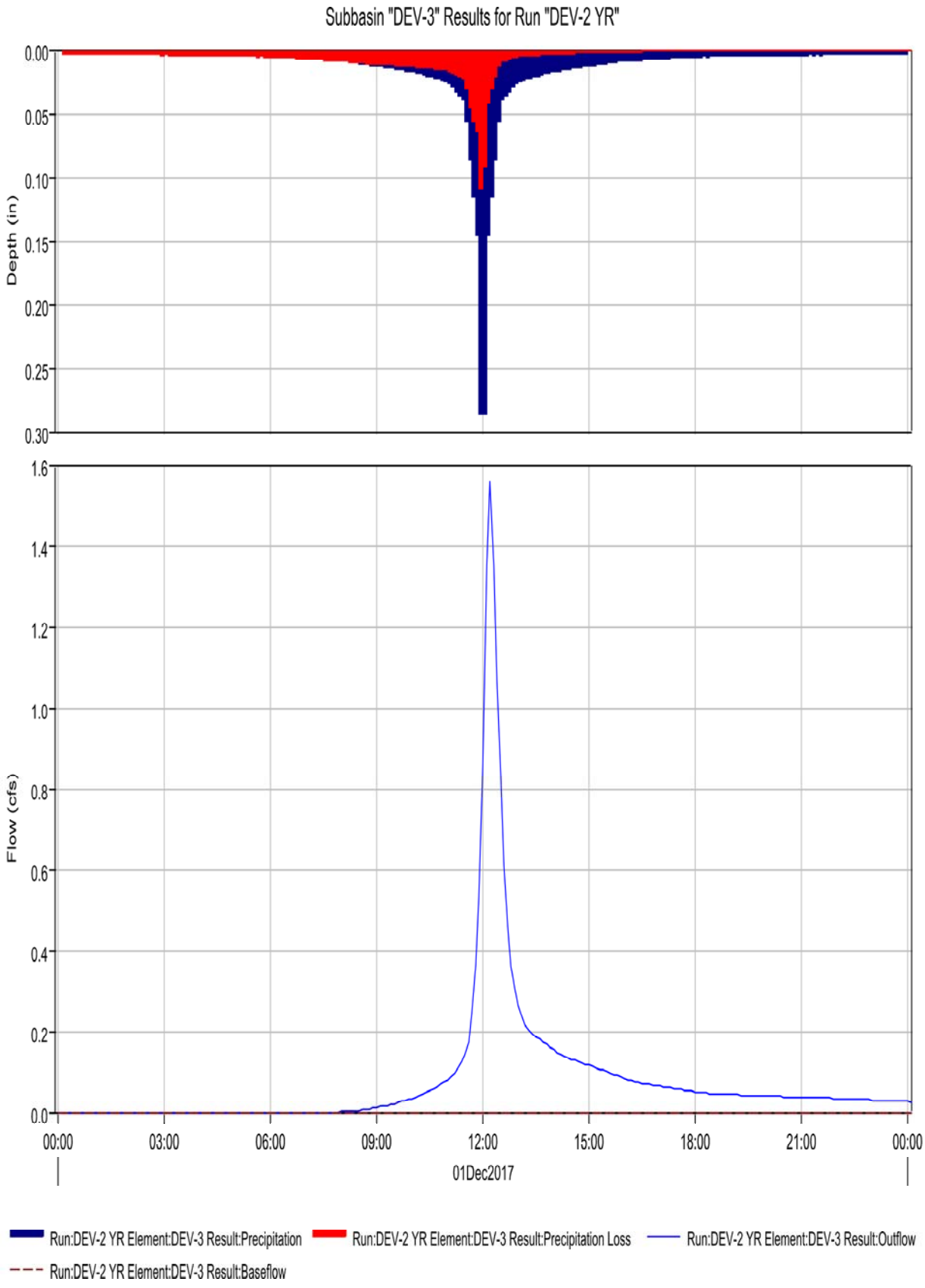
Subbasin: DEV-3

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	1.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.294 (AC-FT)	Direct Runoff Volume:	0.160 (AC-FT)
Loss Volume:	0.134 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.160 (AC-FT)	Discharge Volume:	0.160 (AC-FT)


Subbasin "DEV-3" Results for Run "DEV-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:DEV-3 Result:Precipitation
Run:DEV-2 YR Element:DEV-3 Result:Precipitation Loss
Run:DEV-2 YR Element:DEV-3 Result:Outflow
Run:DEV-2 YR Element:DEV-3 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-2 YR

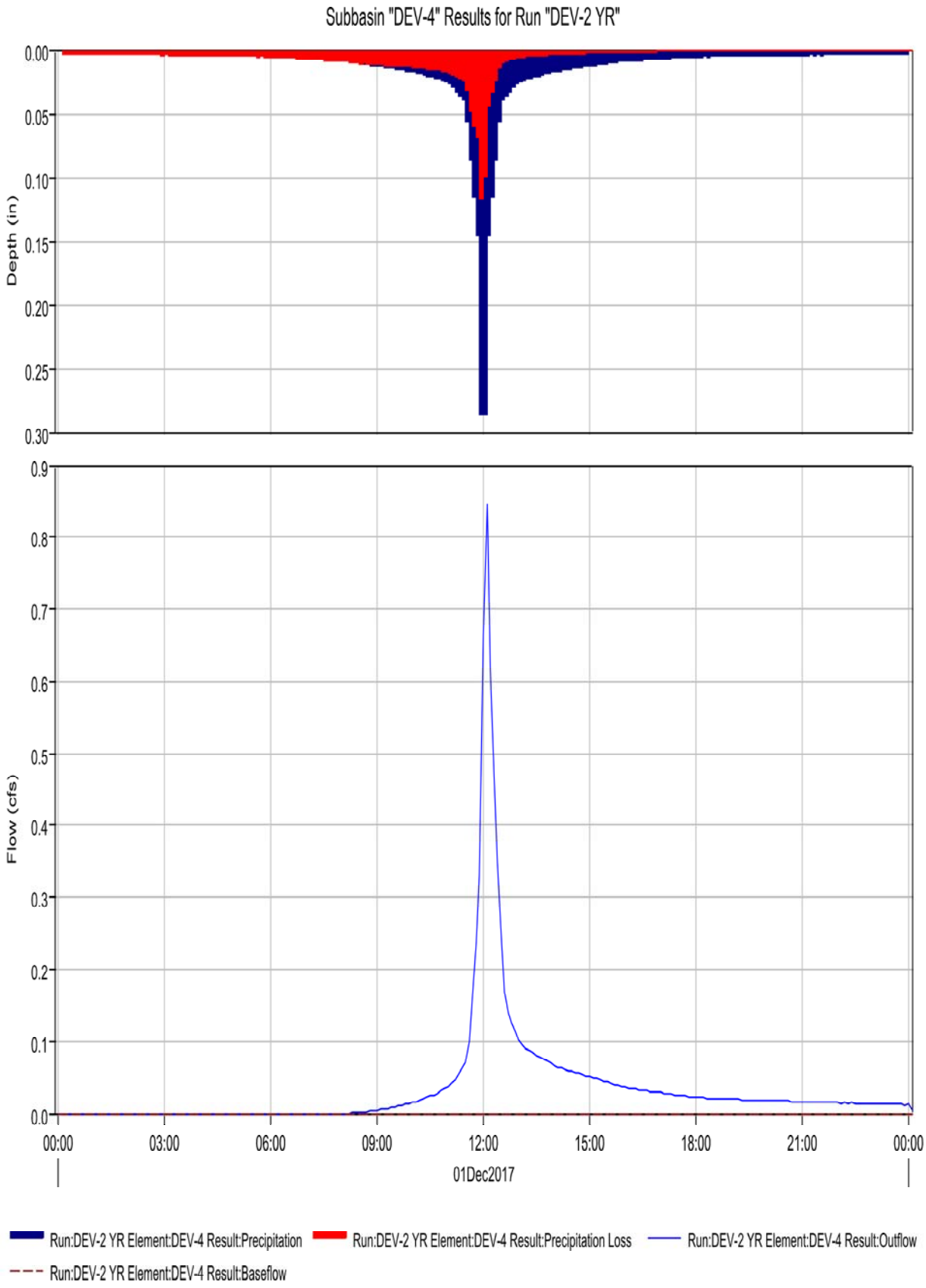
Subbasin: DEV-4

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	0.8 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.137 (AC-FT)	Direct Runoff Volume:	0.072 (AC-FT)
Loss Volume:	0.065 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.072 (AC-FT)	Discharge Volume:	0.072 (AC-FT)


Subbasin "DEV-4" Results for Run "DEV-2 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Flow (cfs)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:DEV-4 Result:Precipitation
Run:DEV-2 YR Element:DEV-4 Result:Precipitation Loss
Run:DEV-2 YR Element:DEV-4 Result:Outflow
Run:DEV-2 YR Element:DEV-4 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-2 YR

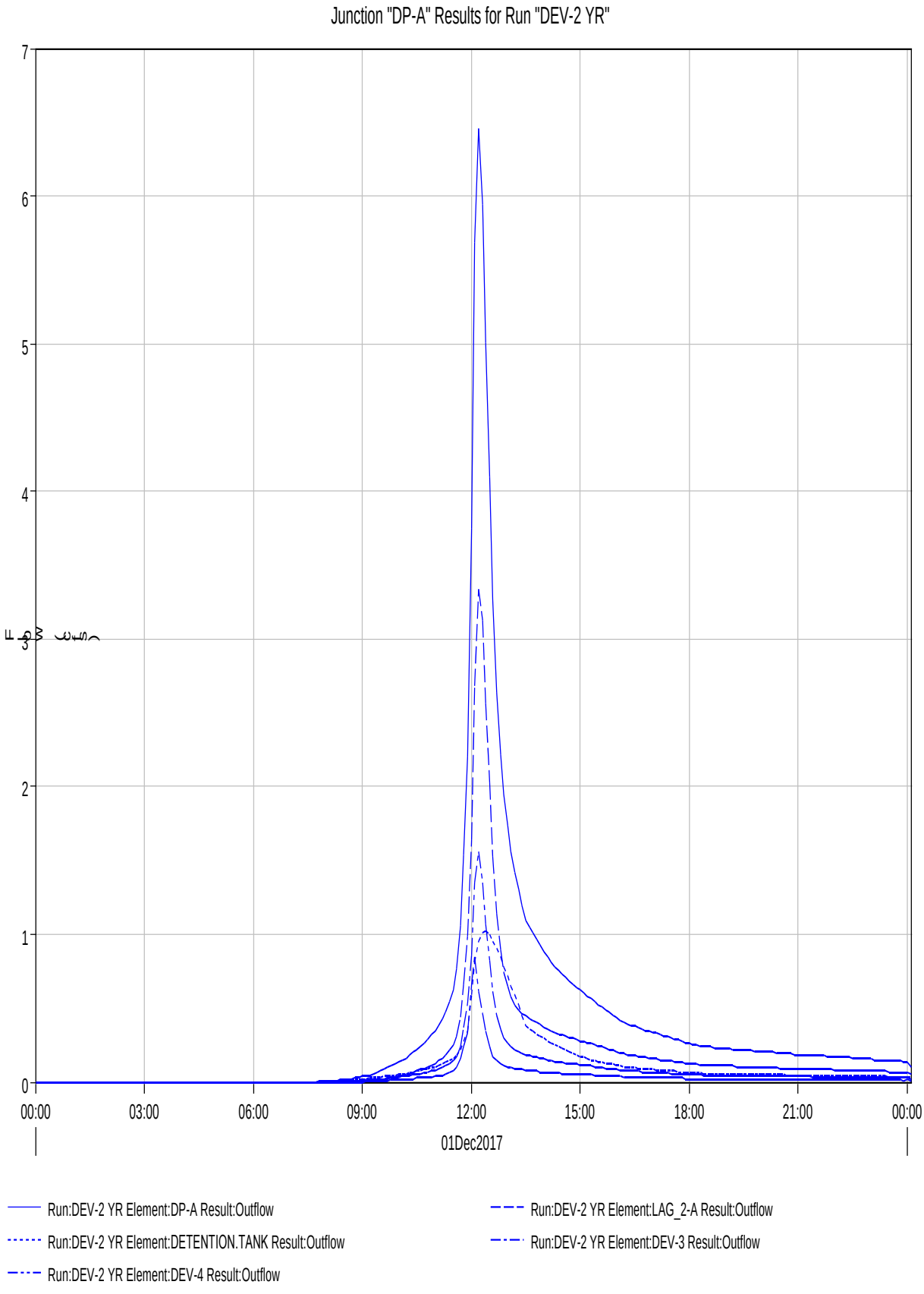
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	2 YR
Compute Time:	20Sep2021, 15:09:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	6.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	0.793 (AC-FT)		


Junction "DP-A" Results for Run "DEV-2 YR"
Flow (cfs)
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-2 YR Element:DP-A Result:Outflow
Run:DEV-2 YR Element:LAG_2-A Result:Outflow
Run:DEV-2 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-2 YR Element:DEV-3 Result:Outflow
Run:DEV-2 YR Element:DEV-4 Result:Outflow

Project: PIERMONT Simulation Run: DEV-10 YR

Start of Run: 01Dec2017, 00:00 Basin Model: DEV
End of Run: 02Dec2017, 00:06 Meteorologic Model: 10 YR
Compute Time: 20Sep2021, 15:09:01 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DEV-2	0.0042872	6.5	01Dec2017, 12:12	0.672
LAG_2-A	0.0042872	6.4	01Dec2017, 12:12	0.672
DEV-1	0.0019758	4.2	01Dec2017, 12:06	0.361
DETENTION.TANK	0.0019758	2.4	01Dec2017, 12:18	0.360
DEV-3	0.0016161	2.8	01Dec2017, 12:12	0.286
DEV-4	.000752518	1.5	01Dec2017, 12:06	0.130
DP-A	0.0086316	12.6	01Dec2017, 12:12	1.448

Project: PIERMONT Simulation Run: DEV-10 YR

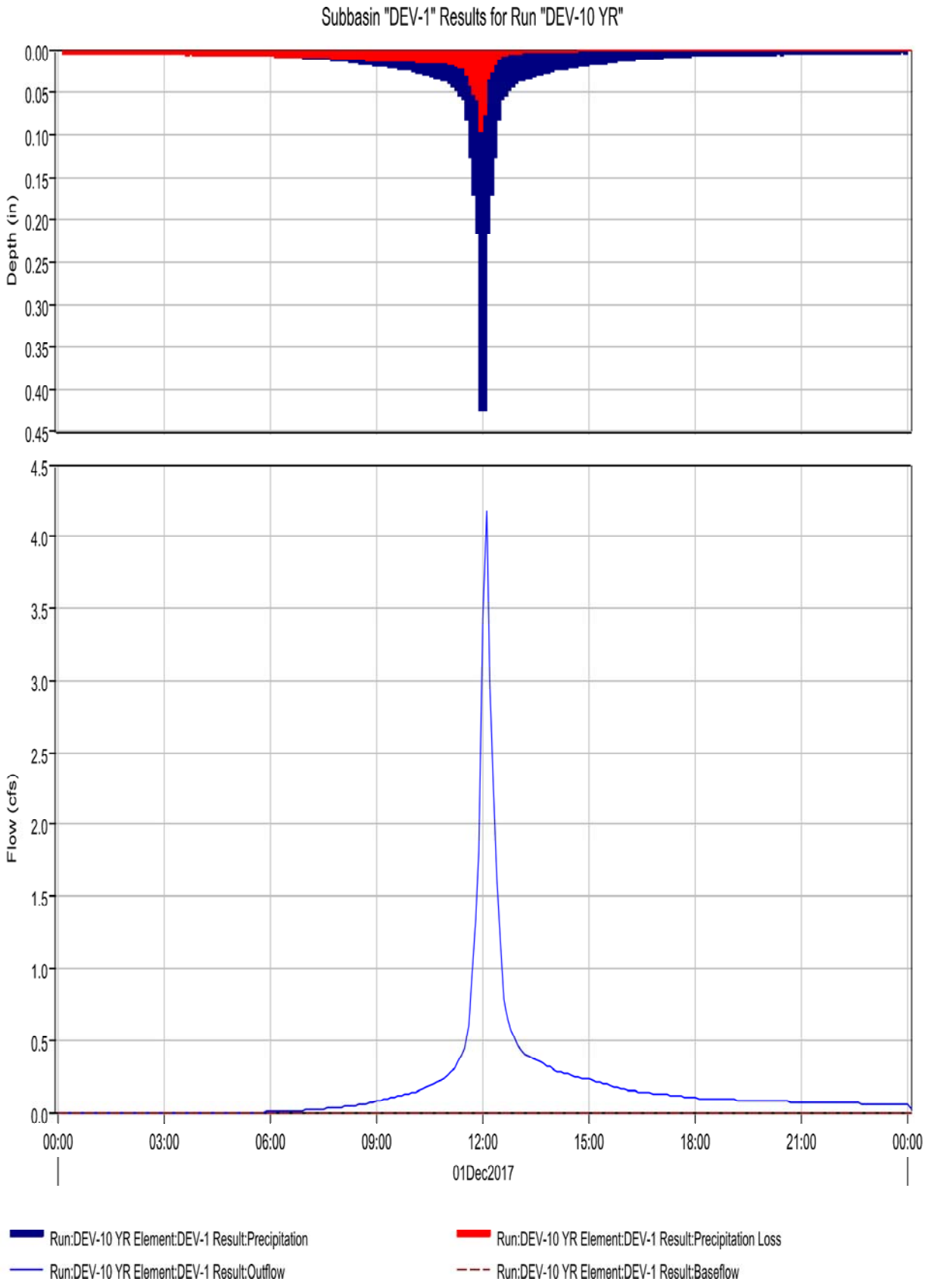
Subbasin: DEV-1

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	4.2 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.533 (AC-FT)	Direct Runoff Volume:	0.361 (AC-FT)
Loss Volume:	0.172 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.361 (AC-FT)	Discharge Volume:	0.361 (AC-FT)


Subbasin "DEV-1" Results for Run "DEV-10 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:DEV-1 Result:Precipitation
Run:DEV-10 YR Element:DEV-1 Result:Precipitation Loss
Run:DEV-10 YR Element:DEV-1 Result:Outflow
Run:DEV-10 YR Element:DEV-1 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-10 YR

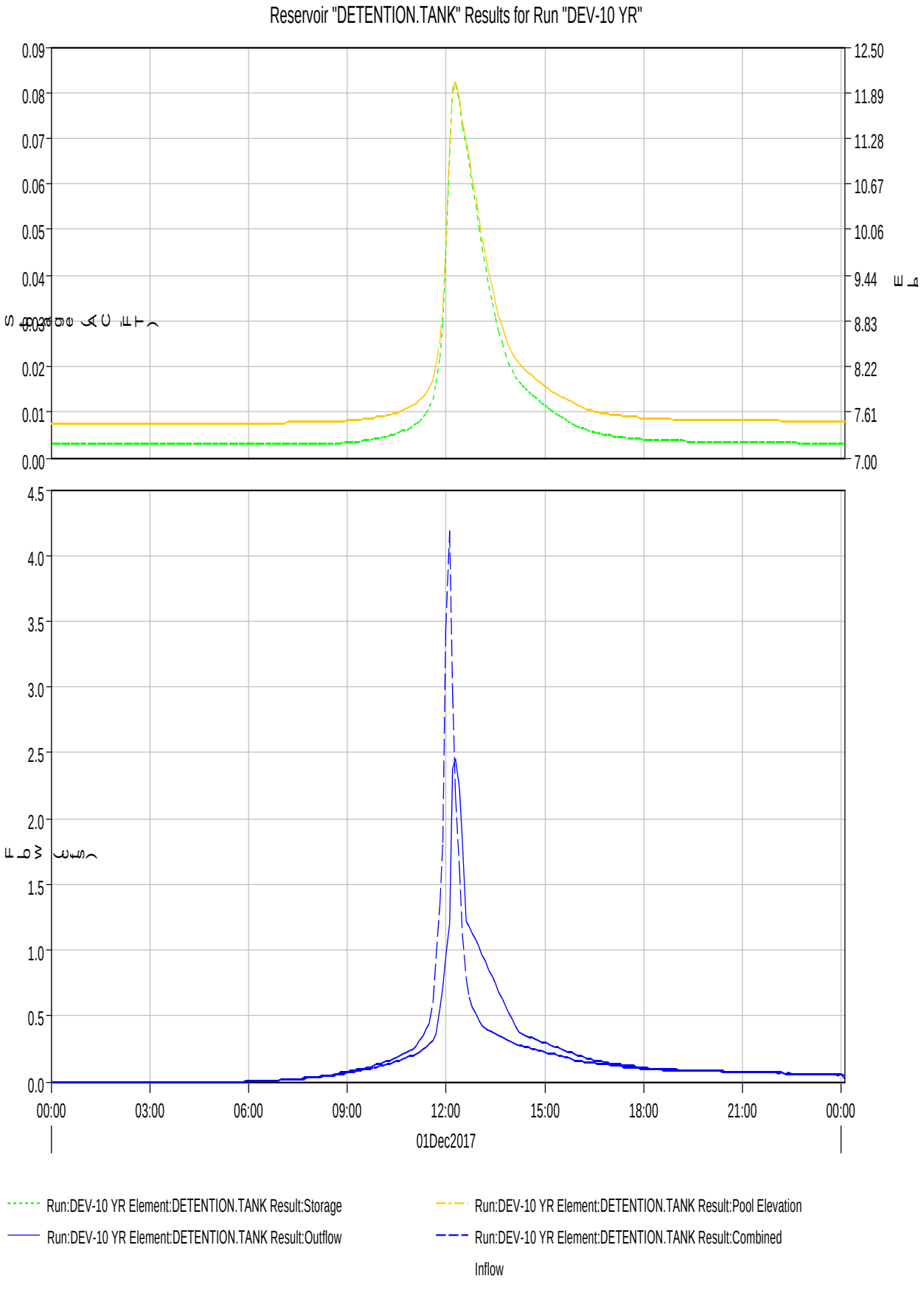
Reservoir: DETENTION.TANK

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	4.2 (CFS)	Date/Time of Peak Inflow:	01Dec2017, 12:06
Peak Discharge:	2.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:18
Inflow Volume:	0.361 (AC-FT)	Peak Storage:	0.082 (AC-FT)
Discharge Volume	0.360 (AC-FT)	Peak Elevation:	12.0 (FT)


Reservoir "DETENTION.TANK" Results for Run "DEV-10 YR"
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
12.50
11.89
11.28
10.67
10.06
9.44
8.83
8.22
7.61
7.00
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:DETENTION.TANK Result:Storage
Run:DEV-10 YR Element:DETENTION.TANK Result:Pool Elevation
Run:DEV-10 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-10 YR Element:DETENTION.TANK Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-10 YR

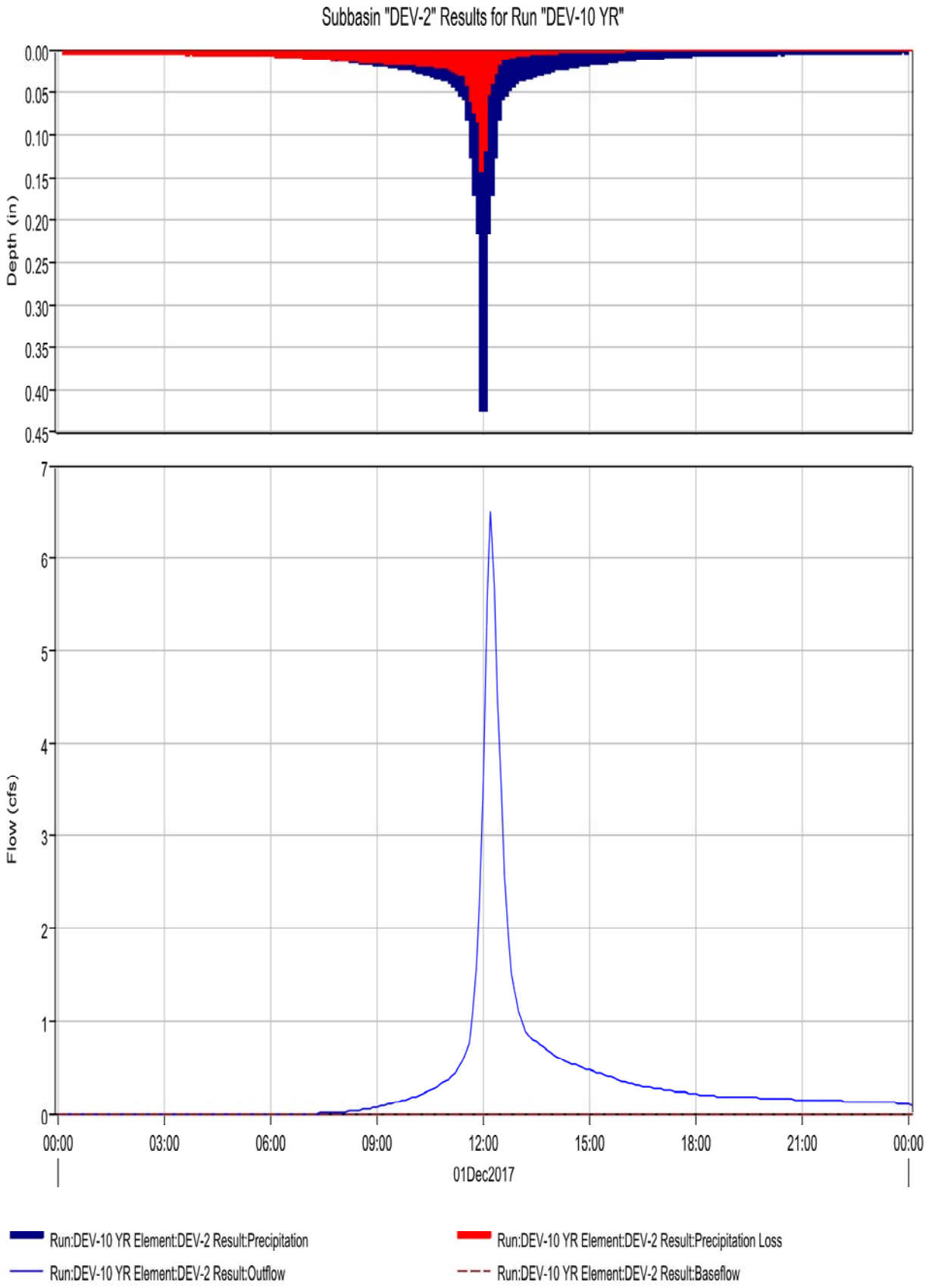
Subbasin: DEV-2

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	6.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	1.157 (AC-FT)	Direct Runoff Volume:	0.672 (AC-FT)
Loss Volume:	0.484 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.673 (AC-FT)	Discharge Volume:	0.672 (AC-FT)


Subbasin "DEV-2" Results for Run "DEV-10 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
0
1
2
3
4
5
6
7
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:DEV-2 Result:Precipitation
Run:DEV-10 YR Element:DEV-2 Result:Precipitation Loss
Run:DEV-10 YR Element:DEV-2 Result:Outflow
Run:DEV-10 YR Element:DEV-2 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-10 YR

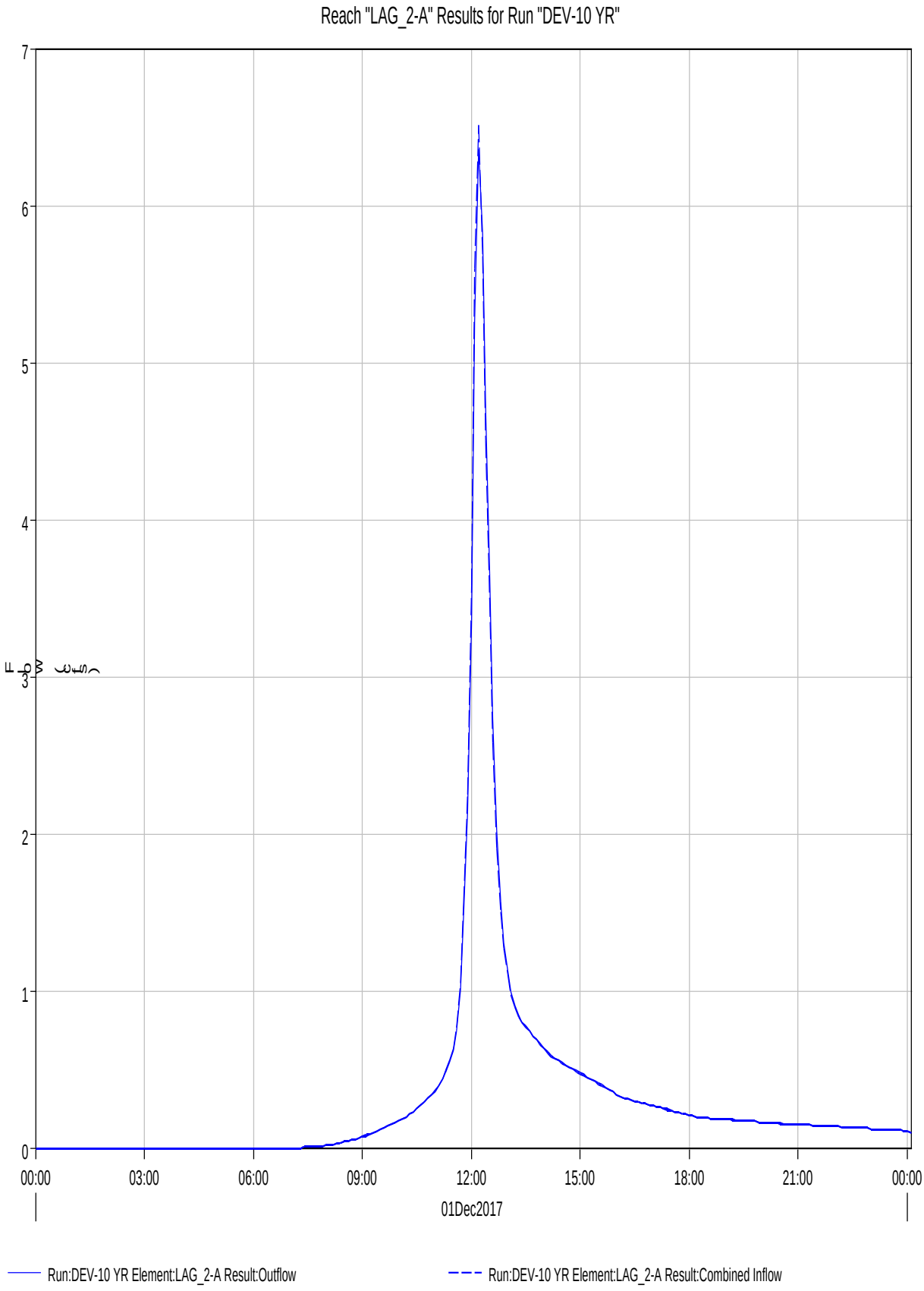
Reach: LAG_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	6.5 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	6.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.672 (AC-FT)	Discharge Volume:	0.672 (AC-FT)


Reach "LAG_2-A" Results for Run "DEV-10 YR"
Flow (cfs)
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:LAG_2-A Result:Outflow
Run:DEV-10 YR Element:LAG_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-10 YR

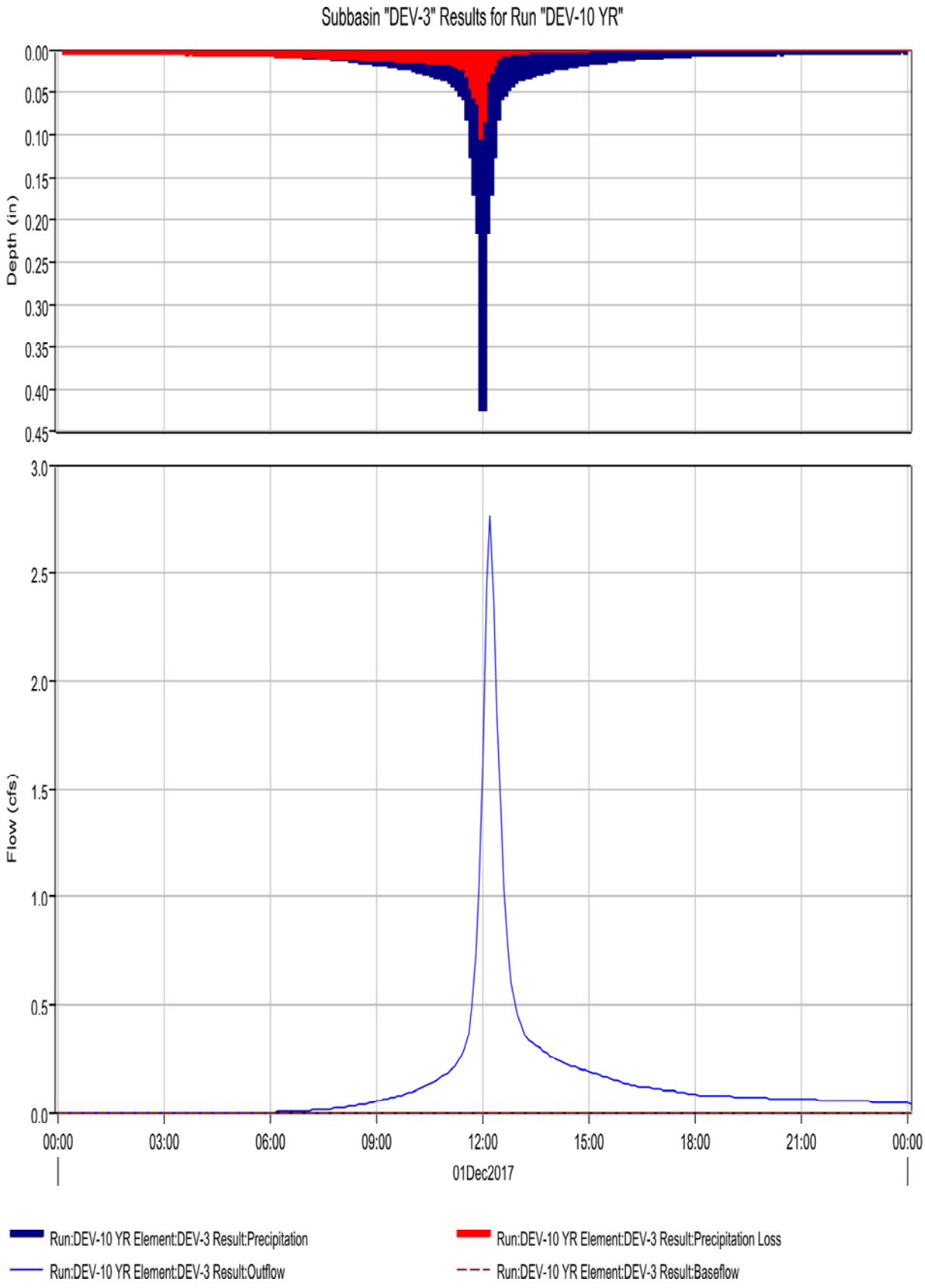
Subbasin: DEV-3

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	2.8 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.436 (AC-FT)	Direct Runoff Volume:	0.286 (AC-FT)
Loss Volume:	0.150 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.287 (AC-FT)	Discharge Volume:	0.286 (AC-FT)


Subbasin "DEV-3" Results for Run "DEV-10 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:DEV-3 Result:Precipitation
Run:DEV-10 YR Element:DEV-3 Result:Precipitation Loss
Run:DEV-10 YR Element:DEV-3 Result:Outflow
Run:DEV-10 YR Element:DEV-3 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-10 YR

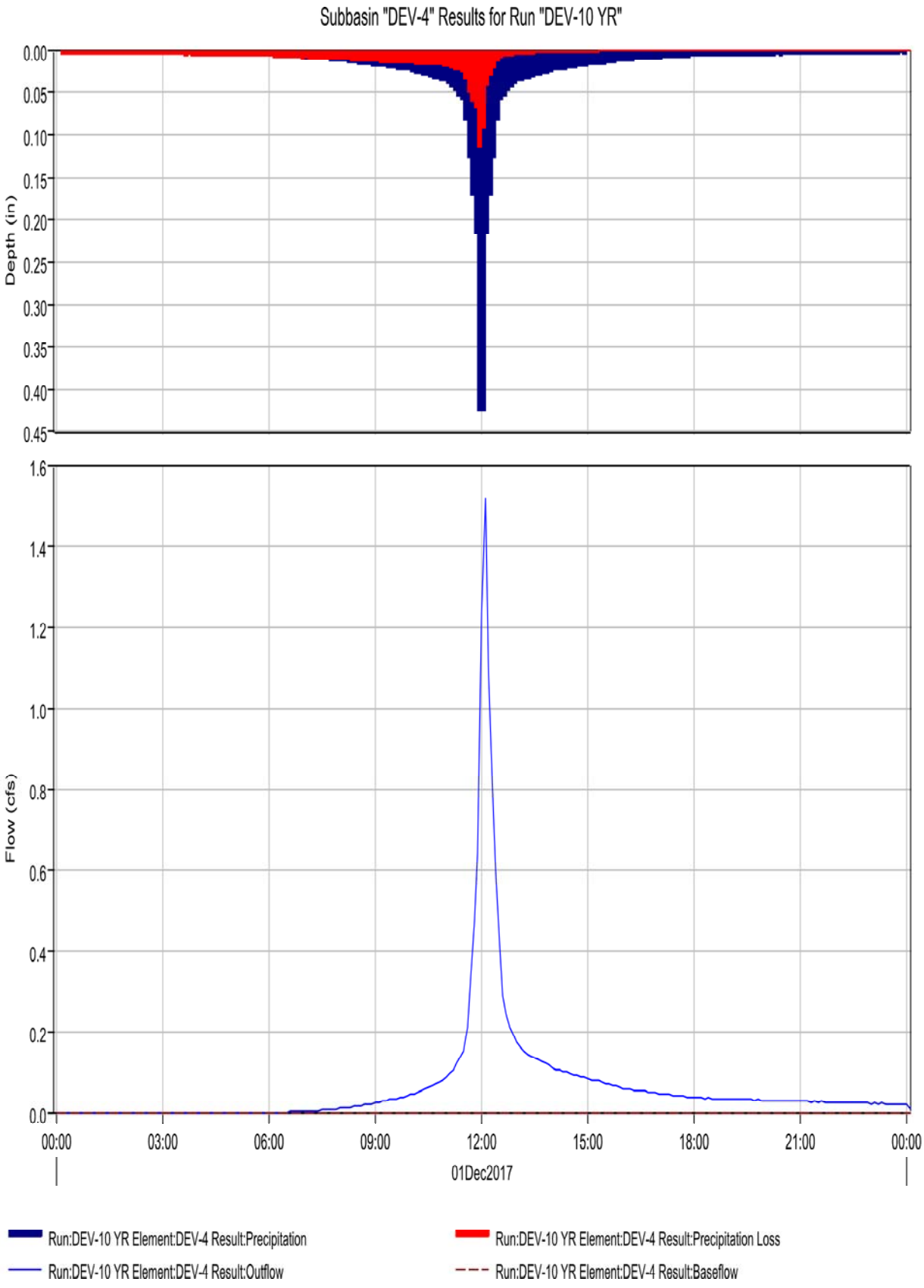
Subbasin: DEV-4

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	1.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.203 (AC-FT)	Direct Runoff Volume:	0.130 (AC-FT)
Loss Volume:	0.074 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.130 (AC-FT)	Discharge Volume:	0.130 (AC-FT)


Subbasin "DEV-4" Results for Run "DEV-10 YR"
Depth (in)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
Flow (cfs)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:DEV-4 Result:Precipitation
Run:DEV-10 YR Element:DEV-4 Result:Precipitation Loss
Run:DEV-10 YR Element:DEV-4 Result:Outflow
Run:DEV-10 YR Element:DEV-4 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-10 YR

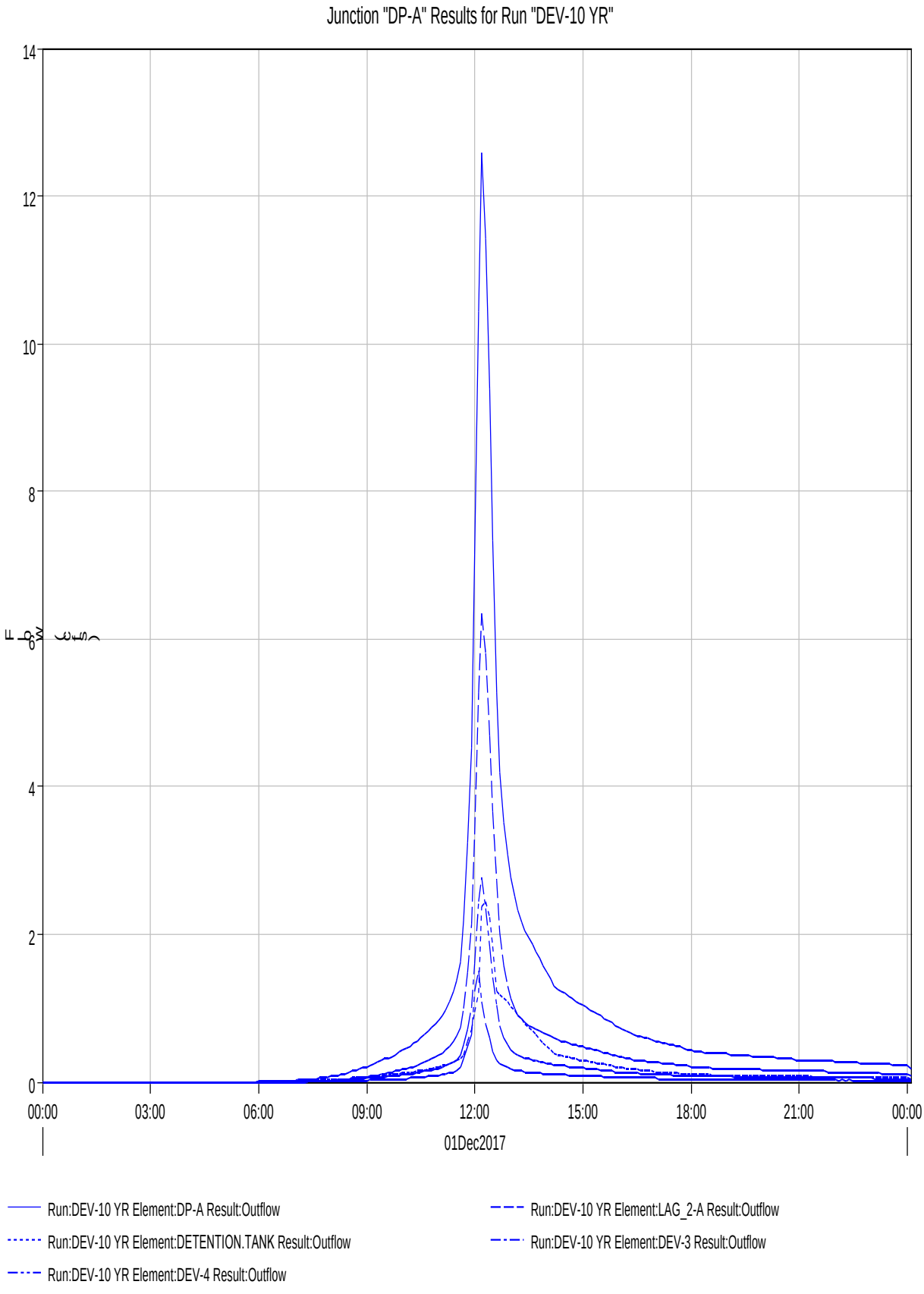
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	10 YR
Compute Time:	20Sep2021, 15:09:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	12.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	1.448 (AC-FT)		


Junction "DP-A" Results for Run "DEV-10 YR"
Flow (cfs)
14
12
10
8
6
4
2
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-10 YR Element:DP-A Result:Outflow
Run:DEV-10 YR Element:LAG_2-A Result:Outflow
Run:DEV-10 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-10 YR Element:DEV-3 Result:Outflow
Run:DEV-10 YR Element:DEV-4 Result:Outflow

Project: PIERMONT Simulation Run: DEV-25 YR

Start of Run: 01Dec2017, 00:00 Basin Model: DEV
End of Run: 02Dec2017, 00:06 Meteorologic Model: 25 YR
Compute Time: 20Sep2021, 15:09:10 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DEV-2	0.0042872	9.0	01Dec2017, 12:12	0.934
LAG_2-A	0.0042872	8.8	01Dec2017, 12:12	0.933
DEV-1	0.0019758	5.6	01Dec2017, 12:06	0.487
DETENTION.TANK	0.0019758	3.6	01Dec2017, 12:12	0.485
DEV-3	0.0016161	3.7	01Dec2017, 12:12	0.389
DEV-4	.000752518	2.0	01Dec2017, 12:06	0.177
DP-A	0.0086316	17.5	01Dec2017, 12:12	1.984

Project: PIERMONT Simulation Run: DEV-25 YR

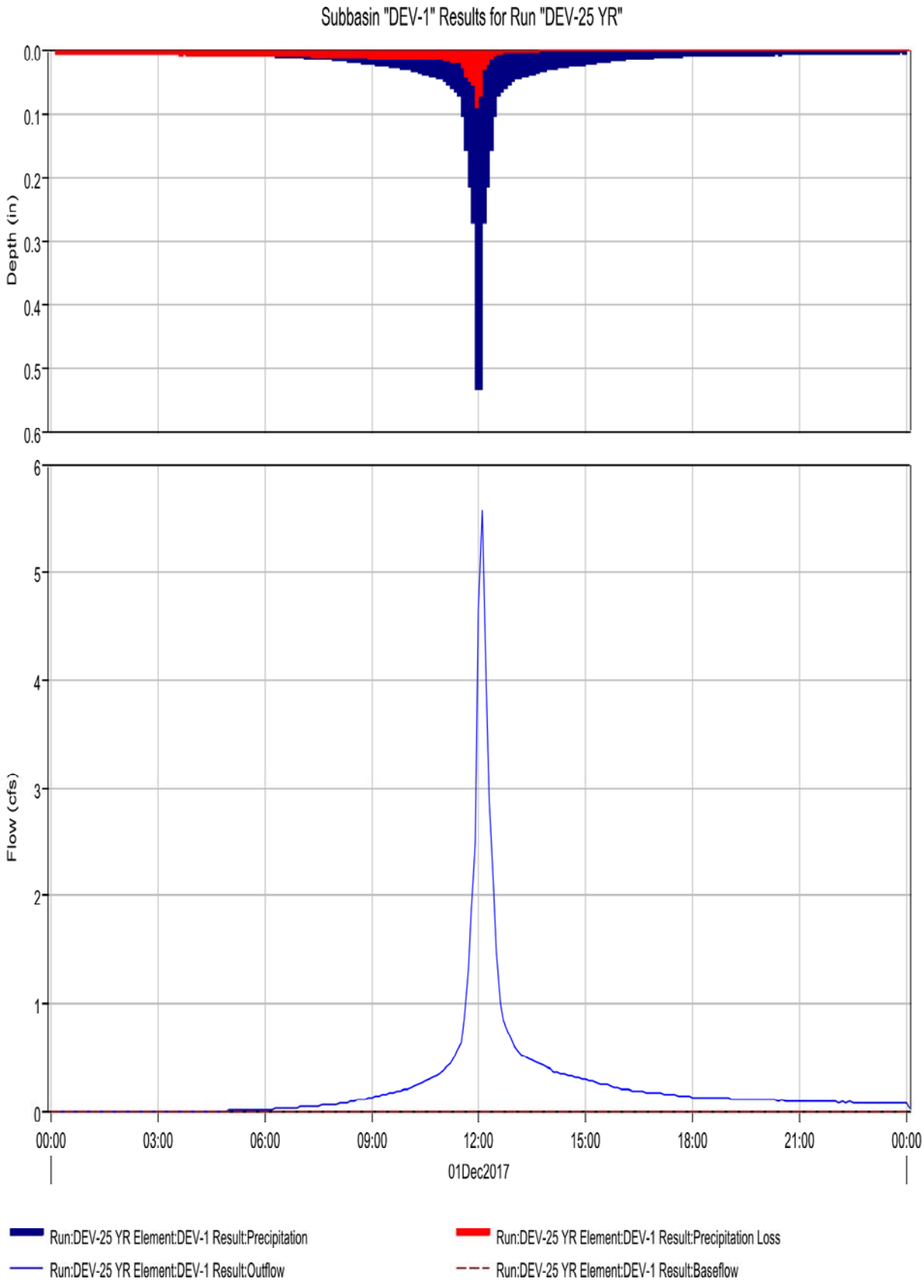
Subbasin: DEV-1

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	5.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.668 (AC-FT)	Direct Runoff Volume:	0.487 (AC-FT)
Loss Volume:	0.181 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.487 (AC-FT)	Discharge Volume:	0.487 (AC-FT)


Subbasin "DEV-1" Results for Run "DEV-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:DEV-1 Result:Precipitation
Run:DEV-25 YR Element:DEV-1 Result:Precipitation Loss
Run:DEV-25 YR Element:DEV-1 Result:Outflow
Run:DEV-25 YR Element:DEV-1 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-25 YR

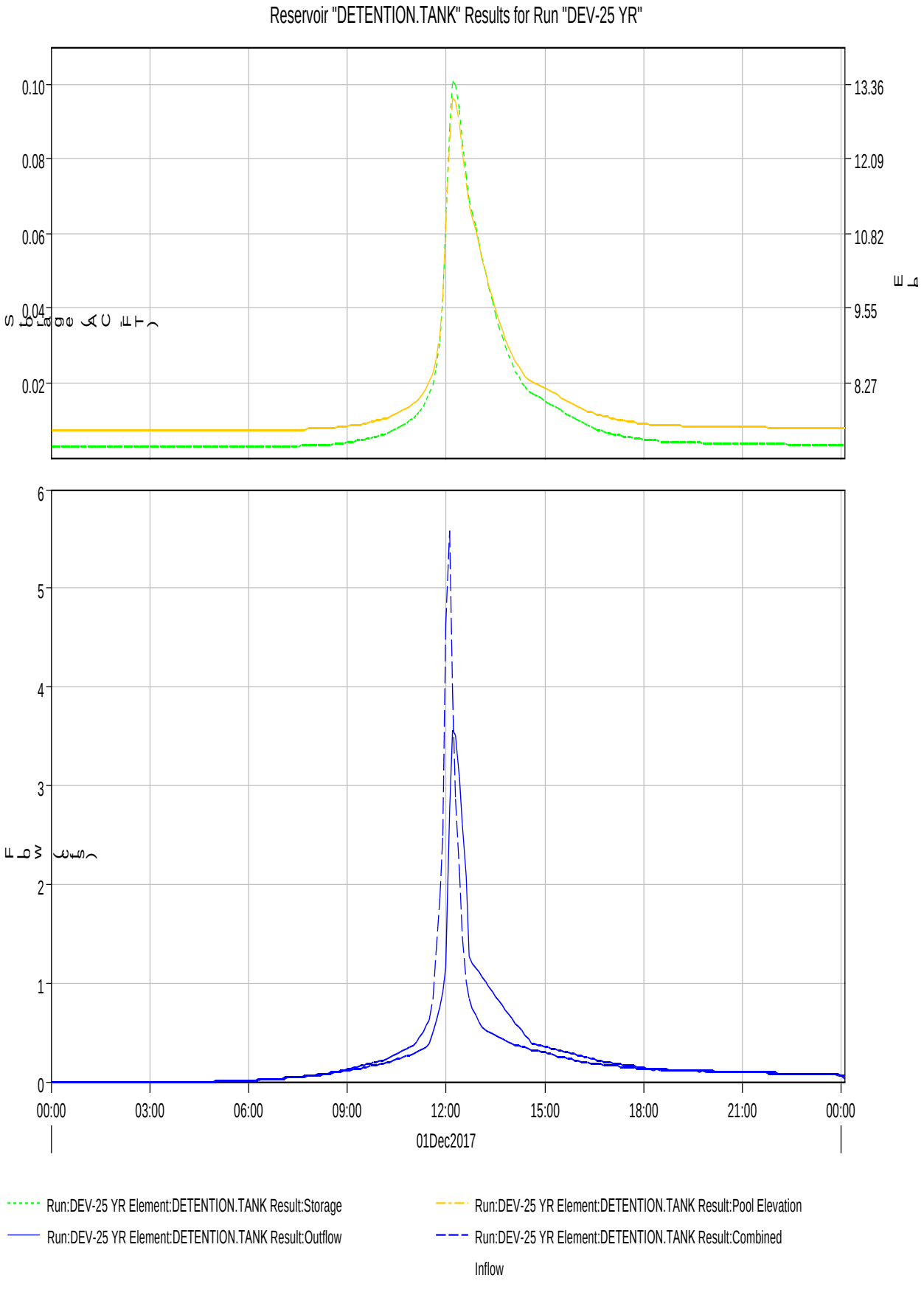
Reservoir: DETENTION.TANK

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	5.6 (CFS)	Date/Time of Peak Inflow:	01Dec2017, 12:06
Peak Discharge:	3.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.487 (AC-FT)	Peak Storage:	0.101 (AC-FT)
Discharge Volume	0.485 (AC-FT)	Peak Elevation:	13.1 (FT)


Reservoir "DETENTION.TANK" Results for Run "DEV-25 YR"
Storage (AC-FT)
0.10
0.08
0.06
0.04
0.02
13.36
12.09
10.82
9.55
8.27
Elev
Flow (CFS)
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:DETENTION.TANK Result:Storage
Run:DEV-25 YR Element:DETENTION.TANK Result:Pool Elevation
Run:DEV-25 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-25 YR Element:DETENTION.TANK Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-25 YR

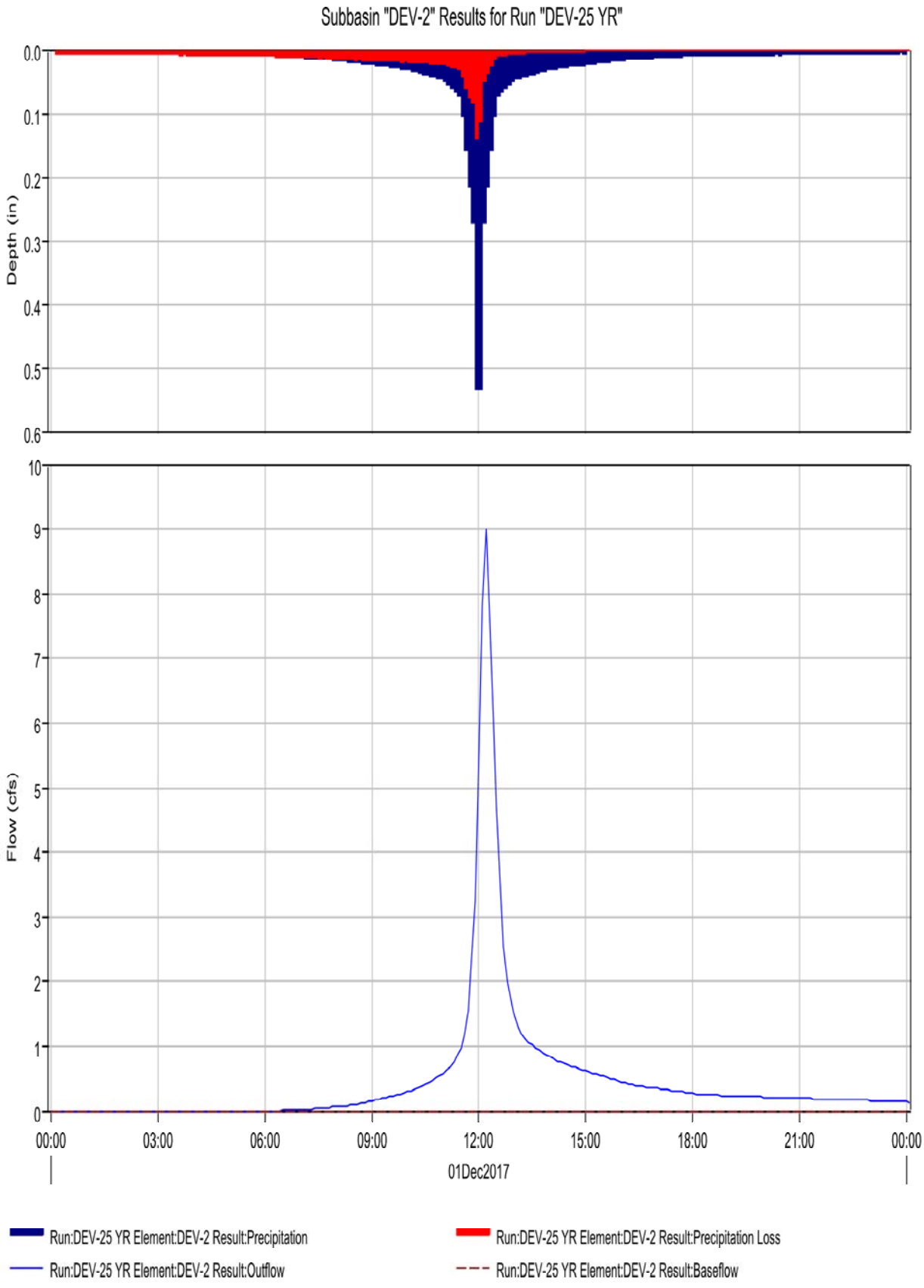
Subbasin: DEV-2

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	9.0 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	1.450 (AC-FT)	Direct Runoff Volume:	0.934 (AC-FT)
Loss Volume:	0.515 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.935 (AC-FT)	Discharge Volume:	0.934 (AC-FT)


Subbasin "DEV-2" Results for Run "DEV-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
10
9
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:DEV-2 Result:Precipitation
Run:DEV-25 YR Element:DEV-2 Result:Precipitation Loss
Run:DEV-25 YR Element:DEV-2 Result:Outflow
Run:DEV-25 YR Element:DEV-2 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-25 YR

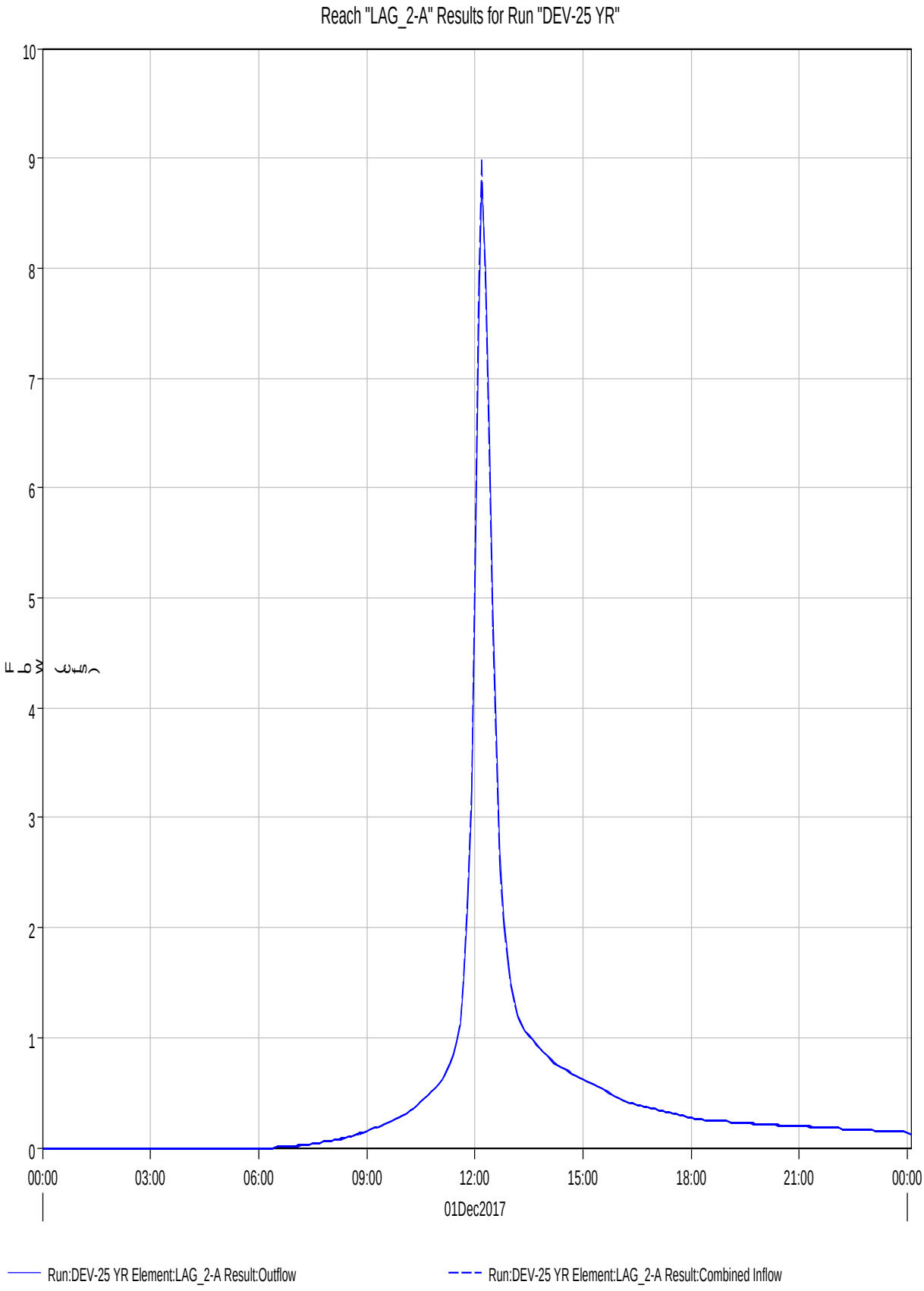
Reach: LAG_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	9.0 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	8.8 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.934 (AC-FT)	Discharge Volume:	0.933 (AC-FT)


Reach "LAG_2-A" Results for Run "DEV-25 YR"
10
9
8
7
6
5
4
3
2
1
0
Flow (cfs)
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:LAG_2-A Result:Outflow
Run:DEV-25 YR Element:LAG_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-25 YR

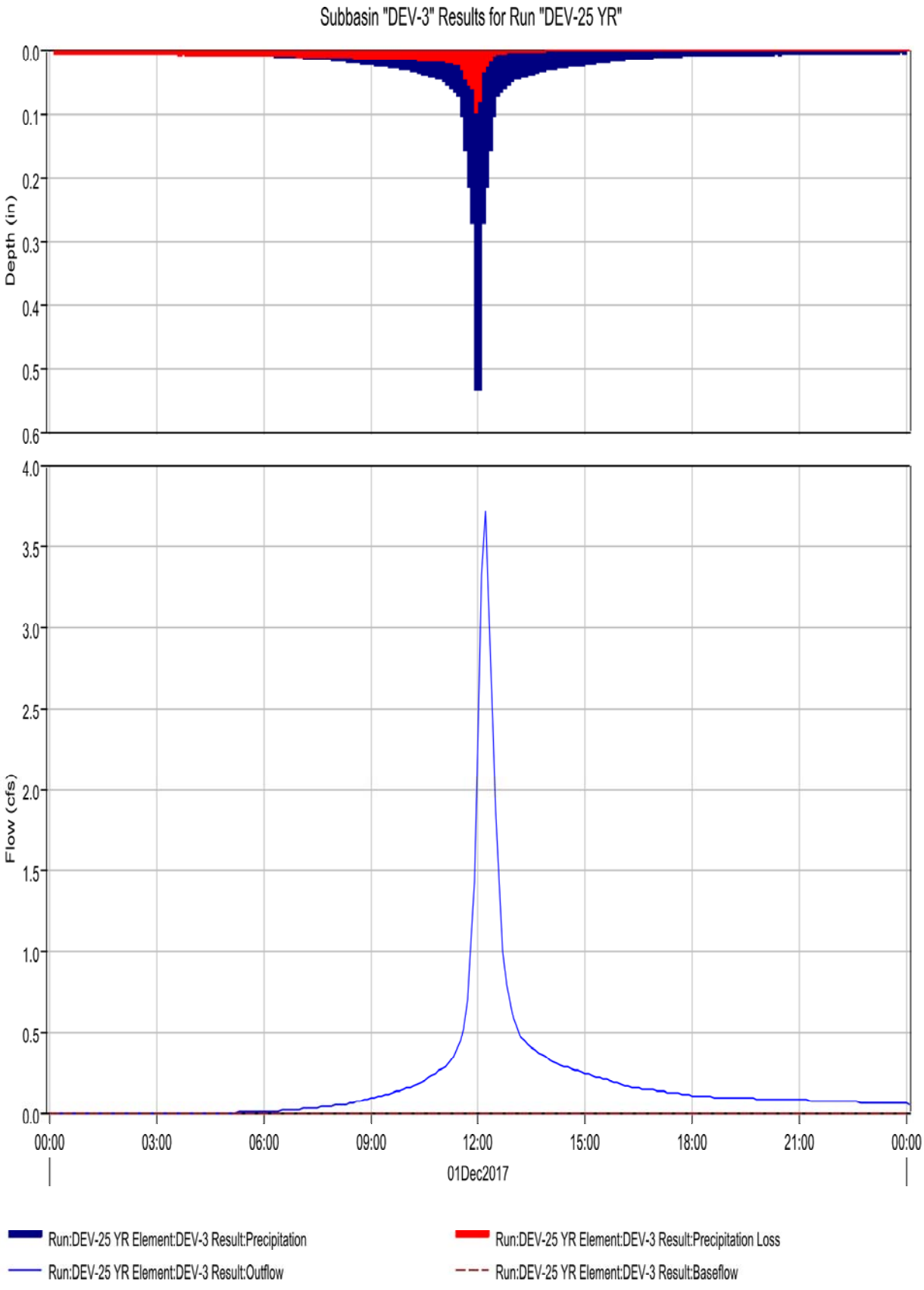
Subbasin: DEV-3

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.7 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.546 (AC-FT)	Direct Runoff Volume:	0.389 (AC-FT)
Loss Volume:	0.157 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.389 (AC-FT)	Discharge Volume:	0.389 (AC-FT)


Subbasin "DEV-3" Results for Run "DEV-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:DEV-3 Result:Precipitation
Run:DEV-25 YR Element:DEV-3 Result:Precipitation Loss
Run:DEV-25 YR Element:DEV-3 Result:Outflow
Run:DEV-25 YR Element:DEV-3 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-25 YR

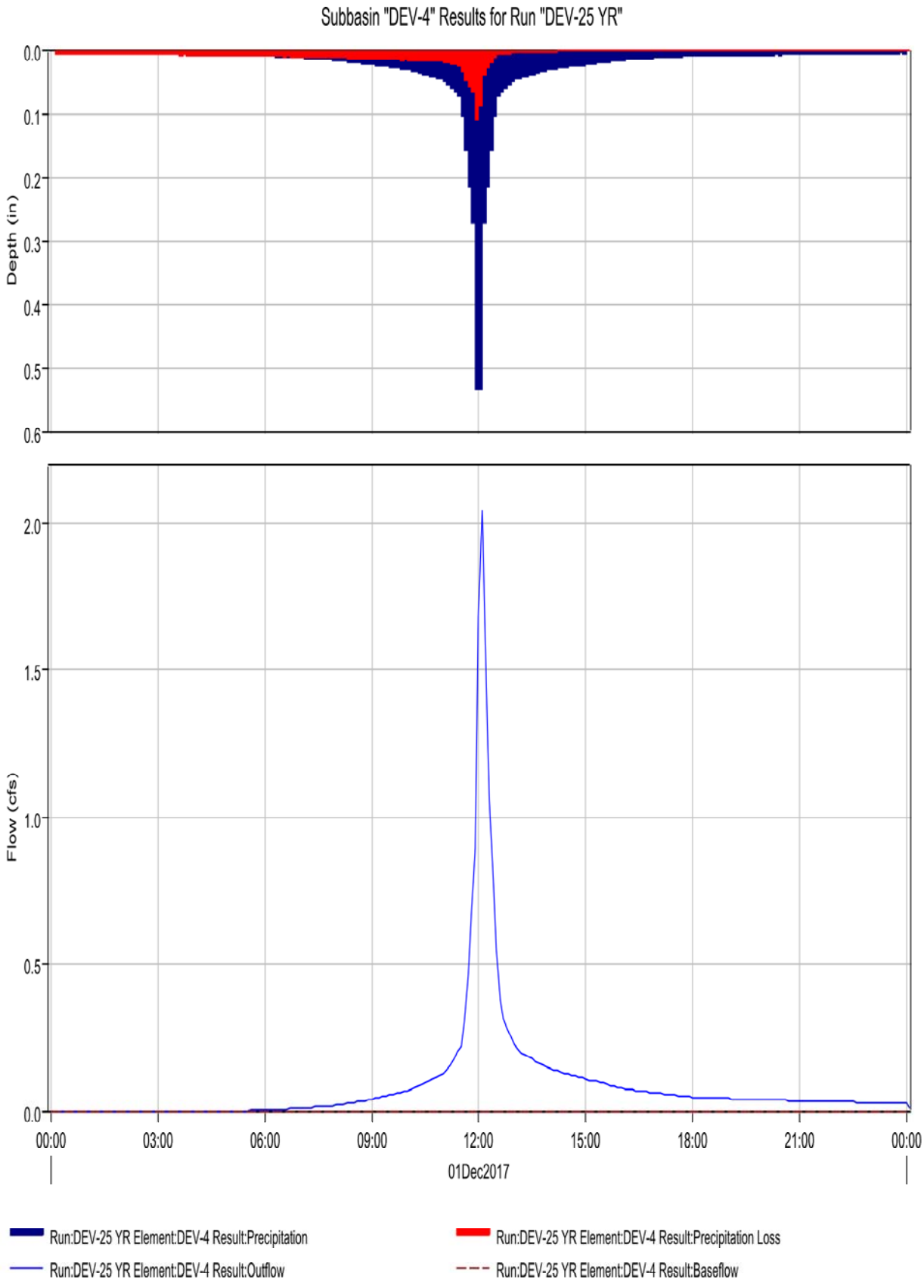
Subbasin: DEV-4

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	2.0 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.254 (AC-FT)	Direct Runoff Volume:	0.177 (AC-FT)
Loss Volume:	0.078 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.177 (AC-FT)	Discharge Volume:	0.177 (AC-FT)


Subbasin "DEV-4" Results for Run "DEV-25 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Flow (cfs)
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:DEV-4 Result:Precipitation
Run:DEV-25 YR Element:DEV-4 Result:Precipitation Loss
Run:DEV-25 YR Element:DEV-4 Result:Outflow
Run:DEV-25 YR Element:DEV-4 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-25 YR

Junction: DP-A

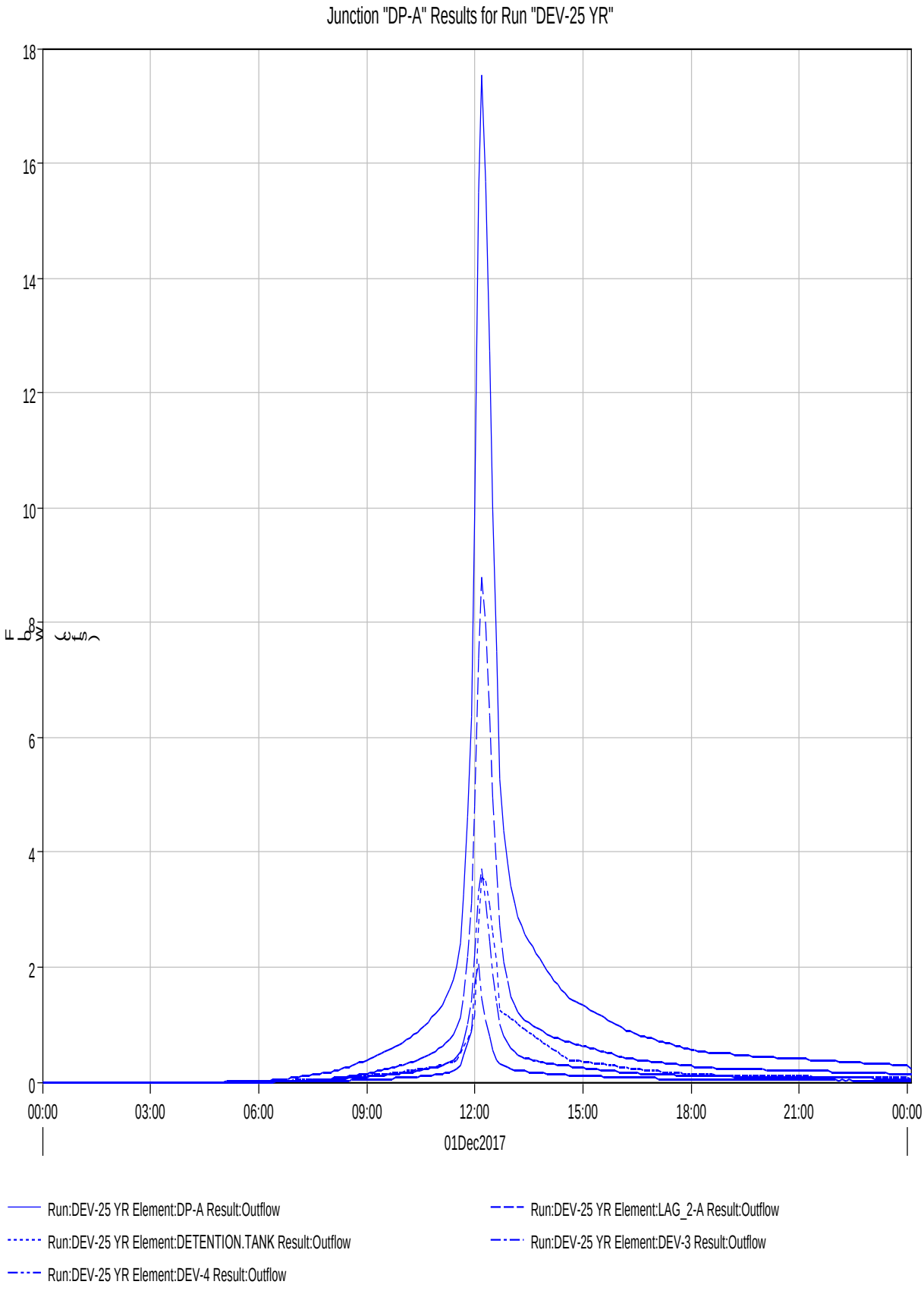
Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	25 YR
Compute Time:	20Sep2021, 15:09:10	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge: 17.5 (CFS) Date/Time of Peak Discharge 01Dec2017, 12:12

Volume: 1.984 (AC-FT)


Junction "DP-A" Results for Run "DEV-25 YR"
Flow (cfs)
18
16
14
12
10
8
6
4
2
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-25 YR Element:DP-A Result:Outflow
Run:DEV-25 YR Element:LAG_2-A Result:Outflow
Run:DEV-25 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-25 YR Element:DEV-3 Result:Outflow
Run:DEV-25 YR Element:DEV-4 Result:Outflow

Project: PIERMONT Simulation Run: DEV-100 YR

Start of Run: 01Dec2017, 00:00 Basin Model: DEV
End of Run: 02Dec2017, 00:06 Meteorologic Model: 100 YR
Compute Time: 20Sep2021, 15:09:05 Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DEV-2	0.0042872	14.1	01Dec2017, 12:12	1.484
LAG_2-A	0.0042872	13.8	01Dec2017, 12:12	1.484
DEV-1	0.0019758	8.4	01Dec2017, 12:06	0.749
DETENTION.TANK	0.0019758	6.9	01Dec2017, 12:12	0.750
DEV-3	0.0016161	5.6	01Dec2017, 12:12	0.602
DEV-4	.000752518	3.1	01Dec2017, 12:06	0.276
DP-A	0.0086316	28.5	01Dec2017, 12:12	3.111

Project: PIERMONT Simulation Run: DEV-100 YR

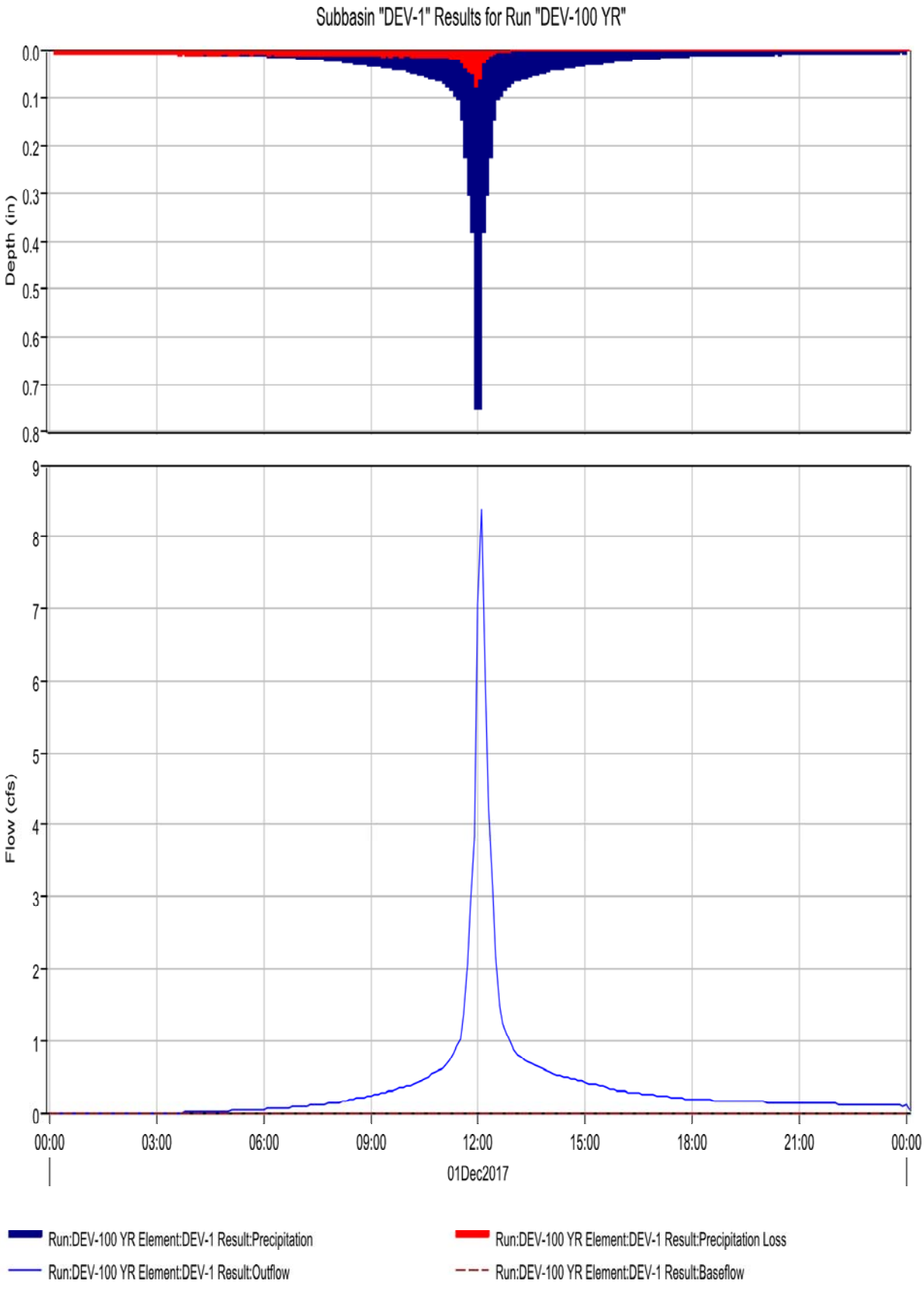
Subbasin: DEV-1

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	8.4 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.941 (AC-FT)	Direct Runoff Volume:	0.749 (AC-FT)
Loss Volume:	0.191 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.750 (AC-FT)	Discharge Volume:	0.749 (AC-FT)


Subbasin "DEV-1" Results for Run "DEV-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
9
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:DEV-1 Result:Precipitation
Run:DEV-100 YR Element:DEV-1 Result:Precipitation Loss
Run:DEV-100 YR Element:DEV-1 Result:Outflow
Run:DEV-100 YR Element:DEV-1 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-100 YR

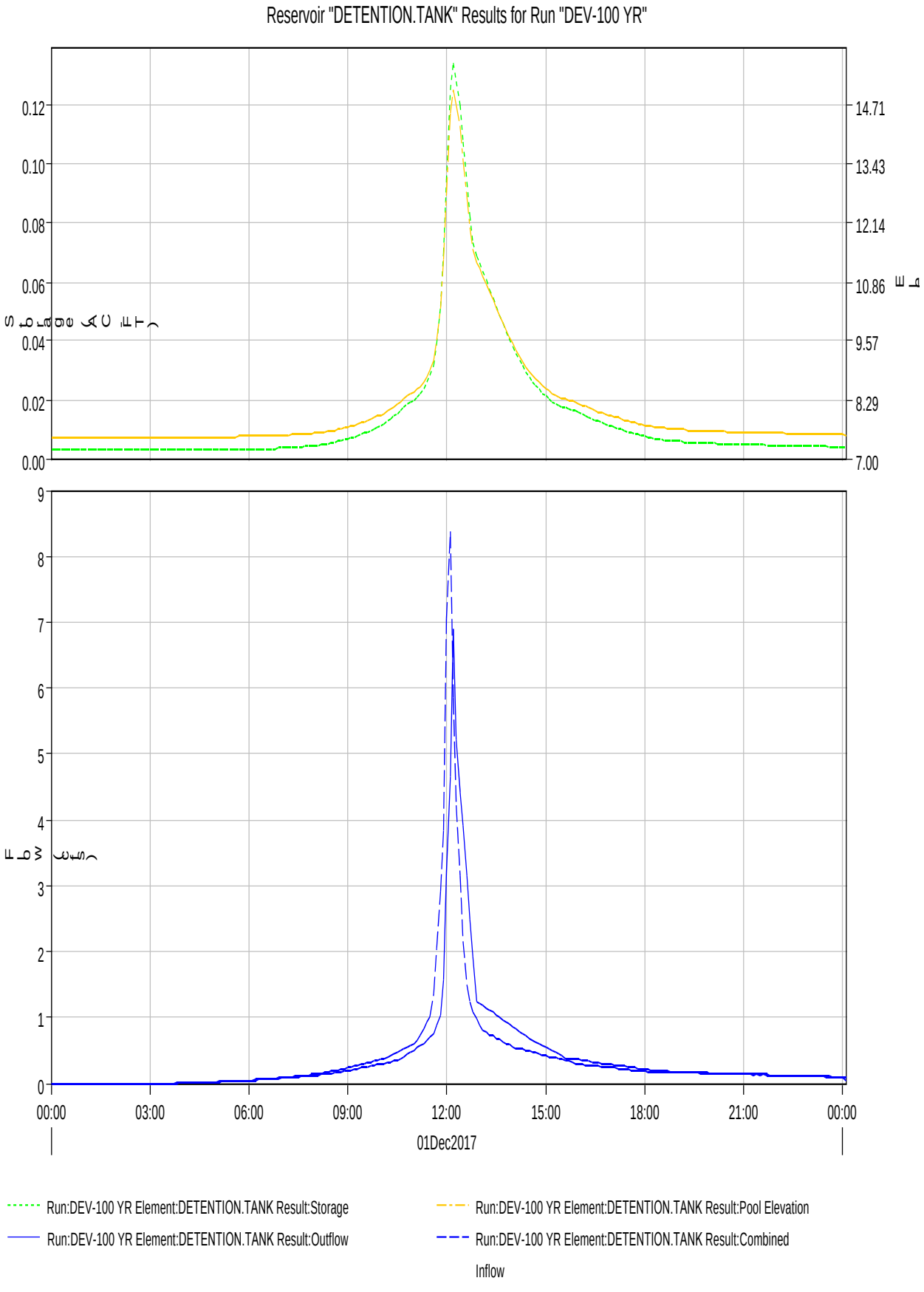
Reservoir: DETENTION.TANK

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	8.4 (CFS)	Date/Time of Peak Inflow:	01Dec2017, 12:06
Peak Discharge:	6.9 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	0.749 (AC-FT)	Peak Storage:	0.134 (AC-FT)
Discharge Volume	0.750 (AC-FT)	Peak Elevation:	15.1 (FT)


Reservoir "DETENTION.TANK" Results for Run "DEV-100 YR"
Storage (AC-FT)
0.12
0.10
0.08
0.06
0.04
0.02
0.00
Pool Elevation (FT)
14.71
13.43
12.14
10.86
9.57
8.29
7.00
Flow (CFS)
9
8
7
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:DETENTION.TANK Result:Storage
Run:DEV-100 YR Element:DETENTION.TANK Result:Pool Elevation
Run:DEV-100 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-100 YR Element:DETENTION.TANK Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-100 YR

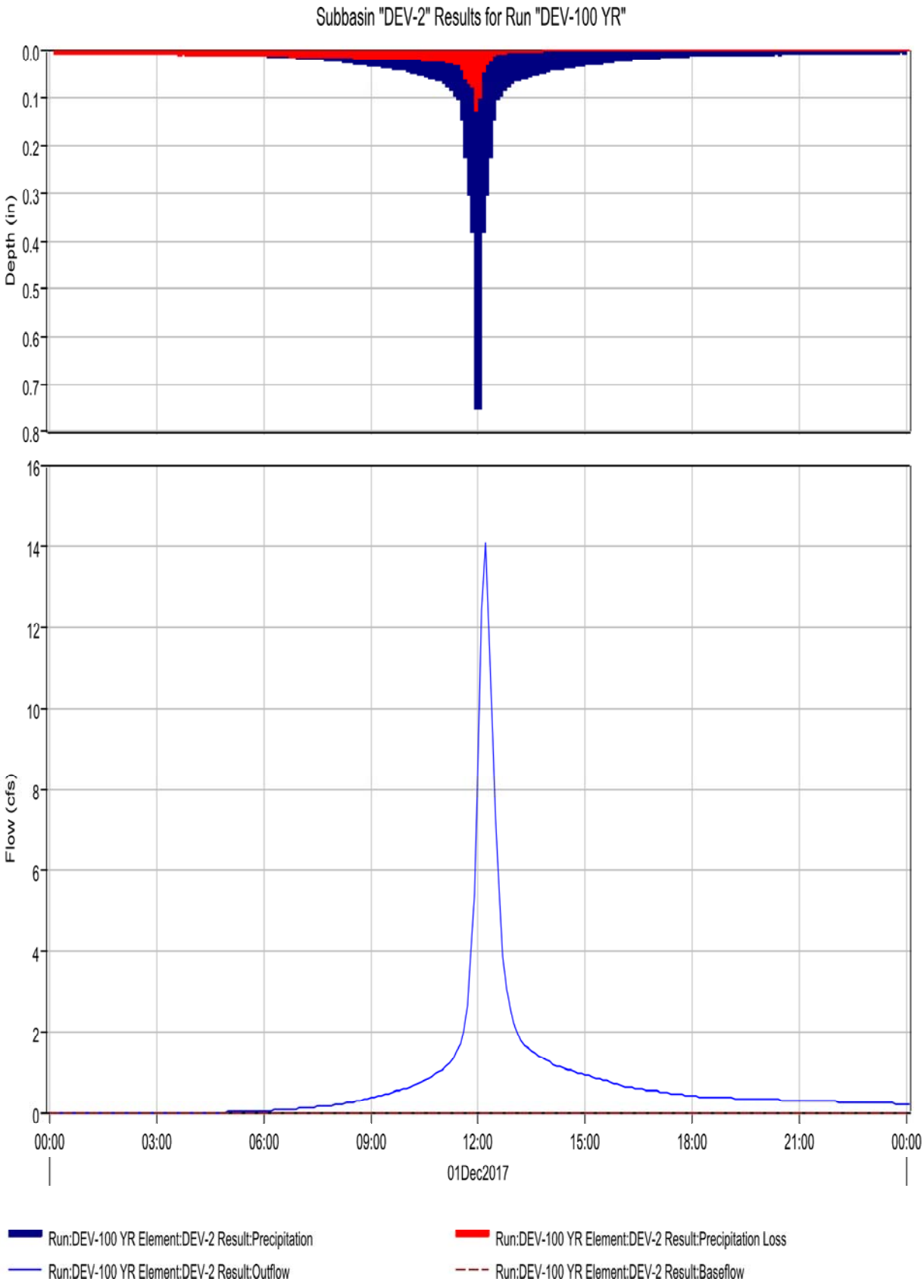
Subbasin: DEV-2

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	14.1 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	2.042 (AC-FT)	Direct Runoff Volume:	1.484 (AC-FT)
Loss Volume:	0.555 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	1.487 (AC-FT)	Discharge Volume:	1.484 (AC-FT)


Subbasin "DEV-2" Results for Run "DEV-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
16
14
12
10
8
6
4
2
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:DEV-2 Result:Precipitation
Run:DEV-100 YR Element:DEV-2 Result:Precipitation Loss
Run:DEV-100 YR Element:DEV-2 Result:Outflow
Run:DEV-100 YR Element:DEV-2 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-100 YR

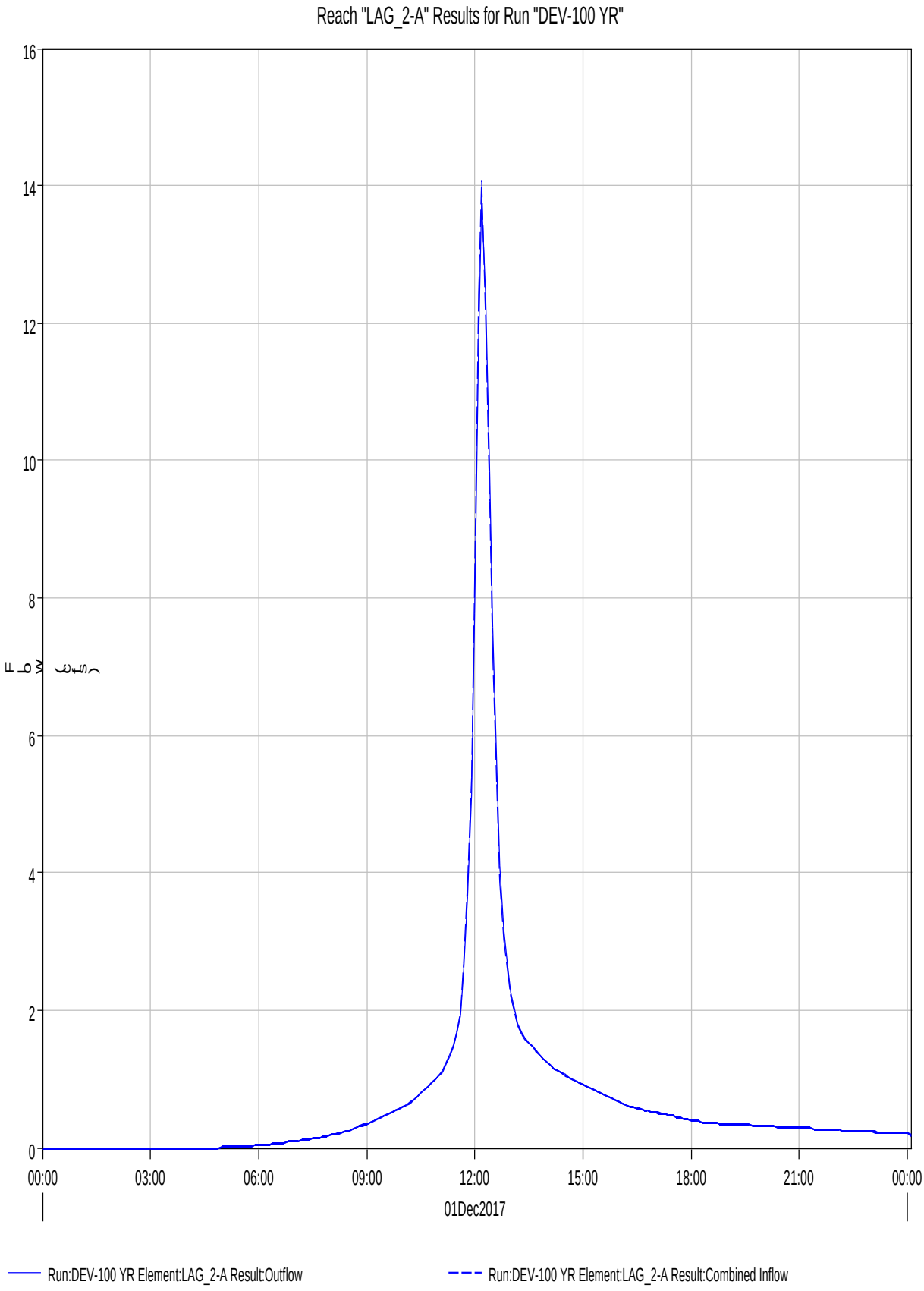
Reach: LAG_2-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	14.1 (CFS)	Date/Time of Peak Inflow	01Dec2017, 12:12
Peak Discharge:	13.8 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Inflow Volume:	1.484 (AC-FT)	Discharge Volume:	1.484 (AC-FT)


Reach "LAG_2-A" Results for Run "DEV-100 YR"
16
14
12
10
8
6
4
2
0
Flow (cfs)
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:LAG_2-A Result:Outflow
Run:DEV-100 YR Element:LAG_2-A Result:Combined Inflow

Project: PIERMONT Simulation Run: DEV-100 YR

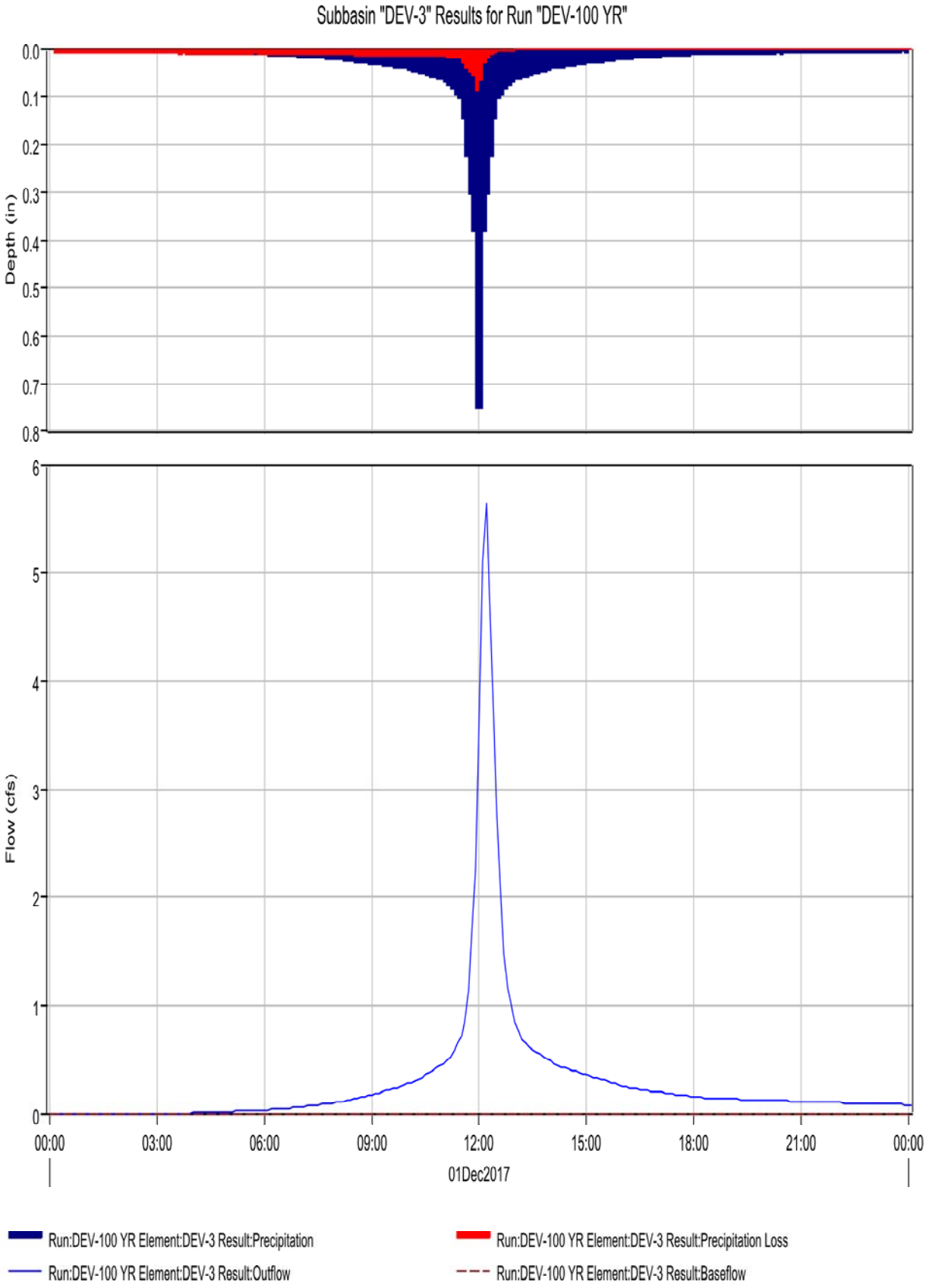
Subbasin: DEV-3

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	5.6 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Precipitation Volume	0.770 (AC-FT)	Direct Runoff Volume:	0.602 (AC-FT)
Loss Volume:	0.167 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.603 (AC-FT)	Discharge Volume:	0.602 (AC-FT)


Subbasin "DEV-3" Results for Run "DEV-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
6
5
4
3
2
1
0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:DEV-3 Result:Precipitation
Run:DEV-100 YR Element:DEV-3 Result:Precipitation Loss
Run:DEV-100 YR Element:DEV-3 Result:Outflow
Run:DEV-100 YR Element:DEV-3 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-100 YR

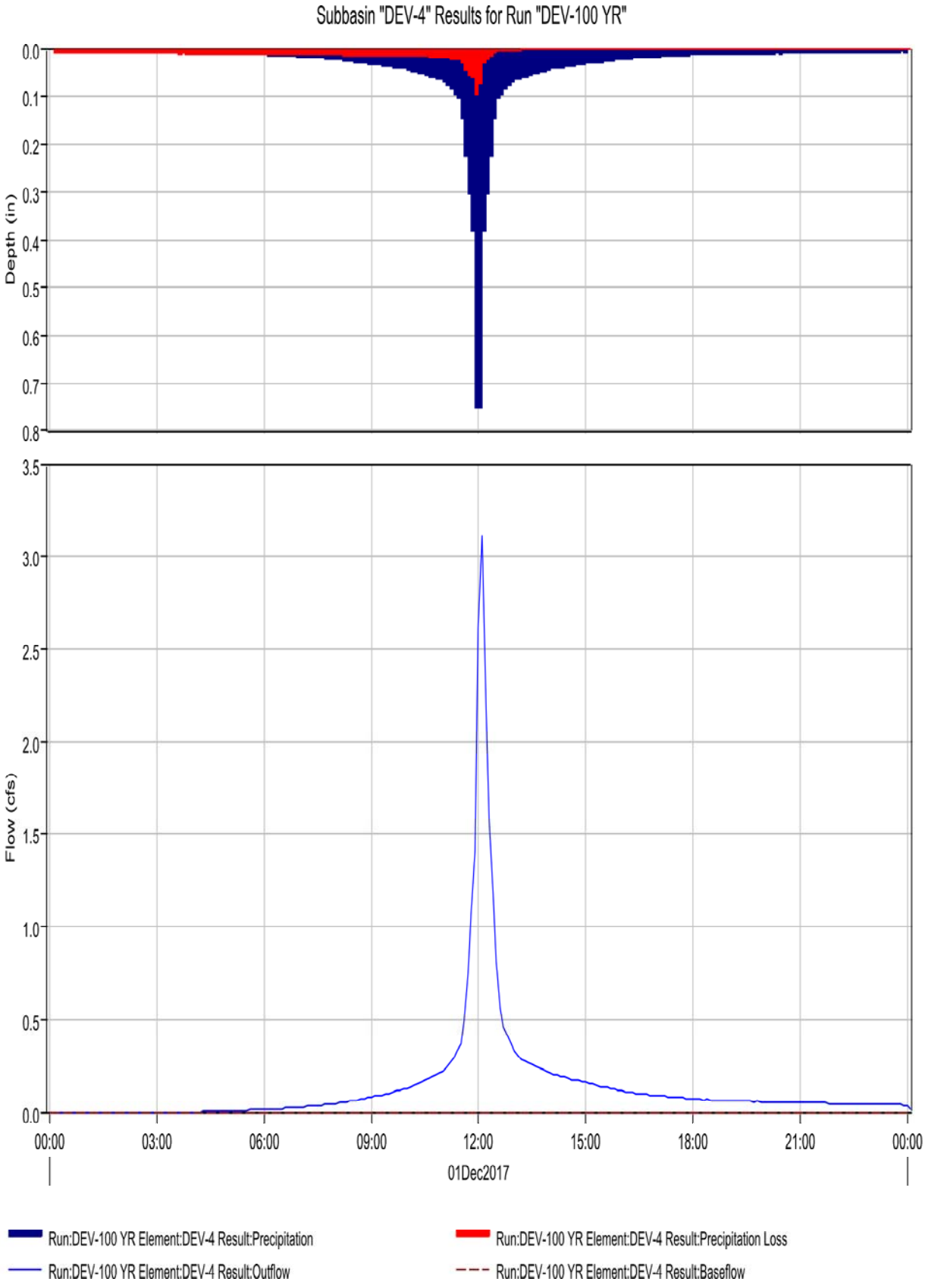
Subbasin: DEV-4

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	3.1 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:06
Precipitation Volume	0.358 (AC-FT)	Direct Runoff Volume:	0.276 (AC-FT)
Loss Volume:	0.083 (AC-FT)	Baseflow Volume:	0.000 (AC-FT)
Excess Volume:	0.276 (AC-FT)	Discharge Volume:	0.276 (AC-FT)


Subbasin "DEV-4" Results for Run "DEV-100 YR"
Depth (in)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Flow (cfs)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:DEV-4 Result:Precipitation
Run:DEV-100 YR Element:DEV-4 Result:Precipitation Loss
Run:DEV-100 YR Element:DEV-4 Result:Outflow
Run:DEV-100 YR Element:DEV-4 Result:Baseflow

Project: PIERMONT Simulation Run: DEV-100 YR

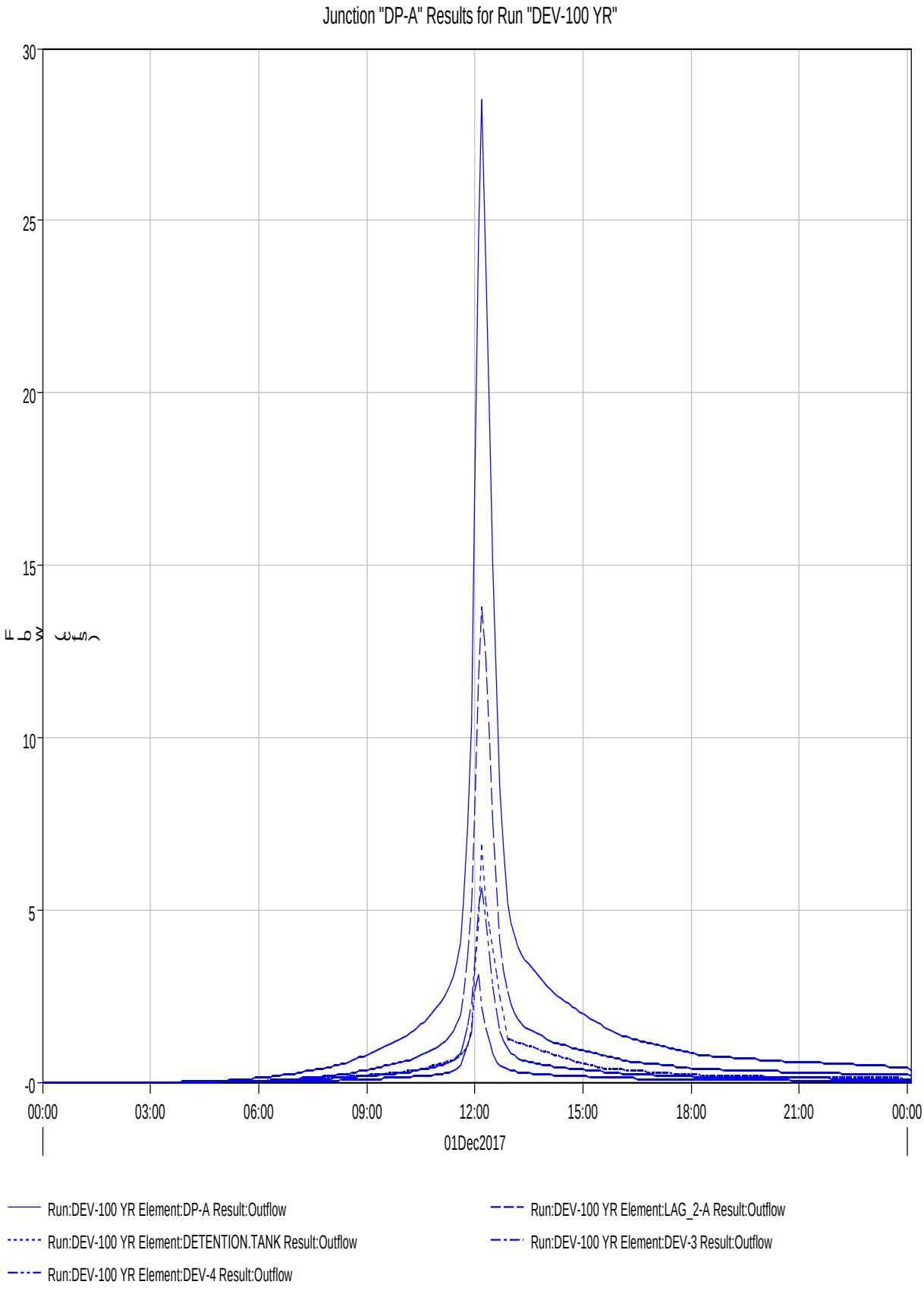
Junction: DP-A

Start of Run:	01Dec2017, 00:00	Basin Model:	DEV
End of Run:	02Dec2017, 00:06	Meteorologic Model:	100 YR
Compute Time:	20Sep2021, 15:09:05	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Discharge:	28.5 (CFS)	Date/Time of Peak Discharge	01Dec2017, 12:12
Volume:	3.111 (AC-FT)		


Junction "DP-A" Results for Run "DEV-100 YR"
30
25
20
15
10
5
-0
Flow (cfs)
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
01Dec2017
Run:DEV-100 YR Element:DP-A Result:Outflow
Run:DEV-100 YR Element:LAG_2-A Result:Outflow
Run:DEV-100 YR Element:DETENTION.TANK Result:Outflow
Run:DEV-100 YR Element:DEV-3 Result:Outflow
Run:DEV-100 YR Element:DEV-4 Result:Outflow

Storm Pipe Sizing Calculations

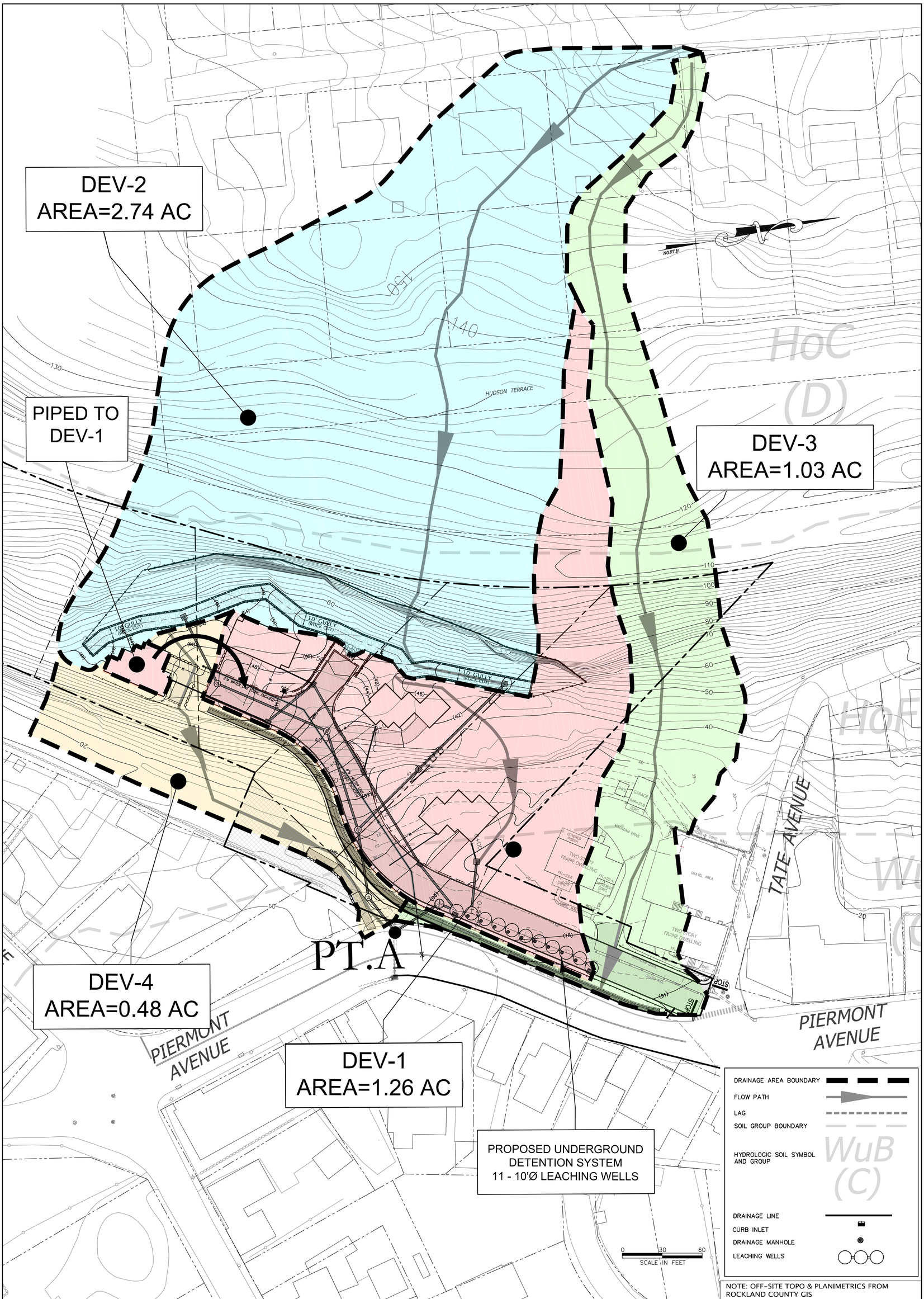
Pipe Capacity Analysis

for 100-Yr Storm Event
06112 - Piermont Village Green
9/20/2021

From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Slope (ft/ft)	Pipe Diameter (inches)	Manning's Roughness	Peak Flow (cfs)	Capacity (cfs)	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth / Total Depth Ratio
FI #7	DMH #8	52	42.00	40.90	0.0212	15	0.012	4.35	10.18	15.94	0.62	0.50
DMH #8	DMH #9	86	40.90	33.00	0.0919	15	0.012	4.00	21.21	20.05	0.38	0.30
DMH #9	DMH #10	74	33.00	23.50	0.1284	15	0.012	3.44	25.07	15.80	0.32	0.26
FI #11	FI #10A	88	34.40	26.50	0.0898	15	0.012	6.66	20.97	31.69	0.54	0.43
FI #10A	DMH #10	61	24.40	17.50	0.1131	15	0.012	6.75	23.54	22.87	0.46	0.37
DMH #10	DMH #10A	47	17.50	9.30	0.1745	15	0.012	8.58	29.23	20.56	0.47	0.37
DMH #10A	EX CB#5	29	7.10	6.40	0.0241	15	0.012	7.71	10.87	10.12	0.81	0.65
CI #1	CI #2	41	40.10	37.60	0.0610	15	0.012	0.19	17.28	5.69	0.08	0.07
CI #2	CI #3	73	37.60	29.00	0.1178	15	0.012	1.66	24.02	19.94	0.23	0.19
CI #3	CI #4	77	29.00	18.30	0.1390	15	0.012	1.97	26.09	15.41	0.24	0.19
CI #4	CI/DT-1	38	18.30	15.40	0.0763	15	0.012	1.87	19.33	10.48	0.26	0.21
CI #5	DT-2	33	16.40	15.40	0.0303	15	0.012	1.55	12.18	12.74	0.35	0.28
OS#5B	EX CB#5	34	7.30	6.40	0.0265	15	0.012	6.50	11.39	10.05	0.65	0.52

Developed Condition Drainage Area Map (Dwg:DA-2)

P:\PROJECTS\06061\12\DWGSHEETS\Drainage-DEV.dwg, DEV, 9/21/2021 9:20:01 AM, justins, AutoCAD PDF (Web and Mobile).pc3, ARCH full bleed D (36.00 x 24.00 Inches), 1:1



Drawing Number: DA-2	Scale: 1" = 30'	Date: 8/12/2009	Drawn by: JS	Job number: 06172	PIERMONT VILLAGE GREEN VILLAGE OF PIERMONT, TOWN OF ORANGETOWN ROCKALND COUNTY, NEW YORK DEVELOPED CONDITIONS DRAINAGE MAP	LJA LEONARD JACKSON ASSOCIATES CONSULTING ENGINEERS 26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970 phone: (845) 354-4382 fax: (845) 354-4401	LEONARD JACKSON, P.E. N.Y.S. Lic. No. 42167

REV.	DESCRIPTION	DATE
2	UPDATED DRAINAGE AREAS	9/20/21

Leonard Jackson Associates

APPENDIX C

References

- USDA Web Soil Survey
- Extreme Precipitation Tables



Map Scale: 1:1,970 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Rockland County, New York
Survey Area Data: Version 15, Oct 8, 2017

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

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

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
HoC	Holyoke-Rock outcrop complex, rolling	8.5	49.1%
HoF	Holyoke-Rock outcrop complex, very steep	4.4	25.4%
Uw	Udorthents, wet substratum	0.0	0.1%
WuB	Wethersfield-Urban land complex, 2 to 8 percent slopes	4.4	25.5%
Totals for Area of Interest		**17.4**	**100.0%**

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New York
Location	
Longitude	73.916 degrees West
Latitude	41.039 degrees North
Elevation	0 feet
Date/Time	Wed, 06 Jun 2018 12:07:03 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.33	0.50	0.63	0.82	1.03	1.28	**1yr**	0.89	1.23	1.48	1.83	2.27	2.80	3.20	**1yr**	2.48	3.07	3.56	4.28	4.92	**1yr**
2yr	0.41	0.63	0.78	1.01	1.27	1.58	**2yr**	1.10	1.49	1.81	2.24	2.77	3.41	3.84	**2yr**	3.02	3.69	4.25	5.04	5.72	**2yr**
5yr	0.47	0.73	0.91	1.22	1.56	1.98	**5yr**	1.35	1.84	2.28	2.83	3.48	4.27	4.86	**5yr**	3.78	4.67	5.41	6.30	7.06	**5yr**
10yr	0.52	0.82	1.04	1.41	1.83	2.34	**10yr**	1.58	2.16	2.71	3.36	4.14	5.06	5.81	**10yr**	4.48	5.59	6.50	7.45	8.27	**10yr**
25yr	0.61	0.97	1.23	1.70	2.27	2.92	**25yr**	1.96	2.68	3.40	4.23	5.21	6.34	7.36	**25yr**	5.61	7.08	8.30	9.32	10.22	**25yr**
50yr	0.69	1.11	1.42	1.98	2.67	3.46	**50yr**	2.30	3.15	4.03	5.03	6.18	7.52	8.81	**50yr**	6.65	8.47	9.98	11.04	11.99	**50yr**
100yr	0.78	1.26	1.62	2.30	3.14	4.10	**100yr**	2.71	3.72	4.80	5.99	7.36	8.93	10.55	**100yr**	7.90	10.14	12.01	13.08	14.08	**100yr**
200yr	0.88	1.44	1.87	2.68	3.70	4.87	**200yr**	3.19	4.38	5.70	7.13	8.75	10.61	12.63	**200yr**	9.39	12.15	14.46	15.50	16.54	**200yr**
500yr	1.05	1.74	2.26	3.29	4.60	6.10	**500yr**	3.97	5.45	7.17	8.97	11.02	13.33	16.05	**500yr**	11.80	15.43	18.49	19.42	20.48	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.73	0.90	1.14	**1yr**	0.77	1.12	1.27	1.61	2.14	2.37	2.79	**1yr**	2.10	2.69	3.32	3.92	4.31	**1yr**
2yr	0.38	0.59	0.73	0.99	1.22	1.46	**2yr**	1.05	1.43	1.68	2.17	2.70	3.32	3.74	**2yr**	2.93	3.59	4.12	4.87	5.55	**2yr**
5yr	0.42	0.65	0.80	1.10	1.40	1.71	**5yr**	1.21	1.68	1.96	2.54	3.16	3.98	4.52	**5yr**	3.53	4.35	5.02	5.86	6.56	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.91	**10yr**	1.35	1.87	2.20	2.82	3.55	4.57	5.22	**10yr**	4.05	5.02	5.81	6.63	7.29	**10yr**
25yr	0.50	0.76	0.95	1.35	1.78	2.21	**25yr**	1.54	2.16	2.56	3.24	4.14	5.51	6.31	**25yr**	4.88	6.06	7.02	7.90	8.39	**25yr**
50yr	0.54	0.82	1.02	1.46	1.97	2.47	**50yr**	1.70	2.42	2.88	3.61	4.64	6.34	7.27	**50yr**	5.61	6.99	8.08	9.01	9.29	**50yr**
100yr	0.58	0.87	1.09	1.58	2.16	2.76	**100yr**	1.87	2.70	3.23	4.01	5.21	7.32	8.38	**100yr**	6.48	8.06	9.33	10.27	10.26	**100yr**
200yr	0.61	0.92	1.17	1.69	2.35	3.06	**200yr**	2.03	3.00	3.64	4.47	5.87	8.48	9.67	**200yr**	7.50	9.30	10.77	11.72	11.28	**200yr**
500yr	0.67	0.99	1.28	1.85	2.64	3.54	**500yr**	2.28	3.46	4.26	5.16	6.91	10.30	11.67	**500yr**	9.12	11.22	13.00	13.93	12.73	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.37	0.57	0.70	0.94	1.16	1.38	**1yr**	1.00	1.35	1.62	2.13	2.46	3.01	3.45	**1yr**	2.66	3.32	3.85	4.59	5.24	**1yr**
2yr	0.42	0.64	0.79	1.07	1.32	1.59	**2yr**	1.14	1.56	1.82	2.35	2.93	3.53	3.99	**2yr**	3.12	3.83	4.40	5.22	5.98	**2yr**
5yr	0.51	0.79	0.98	1.35	1.72	2.03	**5yr**	1.48	1.99	2.35	3.04	3.82	4.57	5.21	**5yr**	4.04	5.01	5.81	6.74	7.52	**5yr**
10yr	0.61	0.94	1.17	1.63	2.11	2.47	**10yr**	1.82	2.41	2.85	3.69	4.68	5.56	6.42	**10yr**	4.92	6.17	7.19	8.31	9.18	**10yr**
25yr	0.78	1.19	1.47	2.11	2.77	3.19	**25yr**	2.39	3.12	3.71	4.82	6.14	7.20	8.46	**25yr**	6.38	8.13	9.53	10.88	11.83	**25yr**
50yr	0.93	1.42	1.77	2.55	3.43	3.91	**50yr**	2.96	3.82	4.52	5.91	7.52	8.76	10.42	**50yr**	7.75	10.02	11.82	13.33	14.34	**50yr**
100yr	1.13	1.71	2.15	3.10	4.25	4.76	**100yr**	3.67	4.65	5.51	7.27	9.23	10.66	12.84	**100yr**	9.43	12.35	14.68	16.33	17.42	**100yr**
200yr	1.37	2.07	2.62	3.79	5.29	5.82	**200yr**	4.56	5.69	6.73	8.95	11.33	12.96	15.84	**200yr**	11.47	15.23	18.24	20.03	21.18	**200yr**
500yr	1.80	2.68	3.44	5.00	7.11	7.59	**500yr**	6.14	7.42	8.75	11.82	14.85	16.80	20.90	**500yr**	14.86	20.10	24.33	26.24	27.47	**500yr**

Powered by ACIS Northeast Regional Climate Center

Leonard Jackson Associates

APPENDIX D

Stormwater Practice Construction Inspection Checklist

APPENDIX E
EROSION AND SEDIMENT CONTROL
PLAN REVIEW CHECKLIST

Project Name _____ Site Location _____

Applicant's Name & Address _____
_____

General

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

I. Construction Drawings

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

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

III. Erosion & Sediment Control Practices

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

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

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

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

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

Additional Comments and Notes

Plan Reviewed By: _____ Date: _____

APPENDIX F
CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents
   a. Preamble to Site Assessment and Inspections
   b. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections
   a. Directions
   b. Modification to the SWPPP

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

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

Name of Operator _____

Prime Contractor _____

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

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

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

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

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

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

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

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

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

Yes No NA

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

2. Resource Protection

Yes No NA

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

3. Surface Water Protection

Yes No NA

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

4. Stabilized Construction Access

Yes No NA

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

5. Sediment Controls

Yes No NA

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

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

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

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

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

Required Elements:

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

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

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

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

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

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

SITE PLAN/SKETCH

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

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

Maintaining Water Quality

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

Housekeeping

1. General Site Conditions

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

2. Temporary Stream Crossing

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

3. Stabilized Construction Access

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

Runoff Control Practices

1. Excavation Dewatering

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

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

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

3. Interceptor Dikes and Swales

Yes No NA

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

4. Stone Check Dam

Yes No NA

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

5. Rock Outlet Protection

Yes No NA

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

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

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

2. Revegetation

Yes No NA

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

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

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

Sediment Control Practices (continued)

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

Yes No NA

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

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

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

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

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

Sediment accumulation is ___% of design capacity.

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

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

CONSTRUCTION DURATION INSPECTIONS

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

The Operator shall amend the SWPPP whenever:

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

Modification & Reason:

Leonard Jackson Associates

APPENDIX E

Operation and Maintenance Plan (OMP)

- **Temporary Erosion and Sediment Control Inspection and Maintenance Checklist**
- **Winter Stabilization Inspection and maintenance Checklist**
- **Permanent Stormwater Management Practice Inspection and Maintenance Checklist**

LJA Project 06112
Piermont Village Green
Piermont and Tate Avenue
Village of Piermont, Town of Orangetown, NY

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Daily	• Periodic top dressing with additional aggregate as required • Clean sediment in public right-of-ways immediately
Silt Fence	Weekly + After Each Rain	• Remove & redistribute sediment when bulges develop in the silt fence.
Inlet Protection	Weekly + After Each Rain	• Refer to Figures A5.11, A5.12, A5.13 & A5.14 within the NYSDEC New York State Standard and Specifications for Erosion and Sediment Control

LJA Project 06112
Piermont Village Green
Piermont and Tate Avenue
Village of Piermont, Town of Orangetown, NY

Winter Stabilization Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Daily	• Provide for snow management and stockpiling • Protect installed erosion control practices
Silt Fence	Weekly + After Each Rain	• Install before ground freezes • 25 foot buffer maintained from perimeter silt fence
Inlet Protection	Weekly + After Each Rain	• Installed structures must be kept open and clear snow and ice dams
Stopped Soil disturbance activities	Monthly	• Soil stabilization measures • Straw Mulch applied at 4 tons per acre • Rolled erosion control blankets on slopes 3: 1 or steeper
General Site Stabilization	Daily	• Stone paths 10 feet wide to access construction areas • Stabilization of disturbed soils daily in advance of a melt event except in active construction areas

Permanent Stormwater Management Practice Inspection and Maintenance Checklist

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Drain Inlets	Monthly	• Check for blockage and/or erosion at top of each inlet. Repair/remove as necessary. • Check for sediment and debris collected within sumps and clean out as necessary.
Subsurface Stormwater Management Detention Facility	Annually + After Major Storms	• Check level of sediment and debris accumulated within the system. • Check structural integrity of the system pipes, structures, etc. for cracking, bulging or deterioration. Repair/remove as necessary. • Confirm all inlets and outlet structures/pipes are operating properly.

Delores James is responsible for inspection and maintenance as outlined above:

Griffin Construction
540 Piermont Avenue
Piermont, NY 10968

p:\projects\06\06112\managementdocs\techreportsanalyses\swppp\2018-05-17\operation&maintplan (omp).docx

Leonard Jackson Associates

APPENDIX F

Notice of Intent (NOI)

MS4 Acceptance form

0644089821

NOTICE OF INTENT

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

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

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

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
JAMES

Owner/Operator Contact Person First Name
DELORES

Owner/Operator Mailing Address
540 PIERMONT AVENUE

City
PIERMONT

State
NY

Zip
10968-

Phone (Owner/Operator)
8453653330

Fax (Owner/Operator)
___-___-____

Email (Owner/Operator)
GRIFF9950@YAHOO.COM

FED TAX ID
__-_____ (not required for individuals)

Project Site Information

Project/Site Name
PIERMONT VILLAGE GREEN

Street Address (NOT P.O. BOX)
PIERMONT AVENUE

Side of Street
○ **North** ○ **South** ○ **East** ● **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
VILLAGE OF PIERMONT

State: NY
Zip: 10968-
County: ROCKLAND
DEC Region: 3

Name of Nearest Cross Street
TATE AVENUE

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
○ **North** ● **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
75.62-1-22

Tax Map Numbers
75.62-1-39

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 591079

Y Coordinates (Northing): 4554336662

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ● PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ● SINGLE FAMILY SUBDIVISION — Number of Lots: 4
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
6.16.1	1.61.6	0.00.0	0.40.4

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

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

A	B	C	D	UNASSIGNED
%	%	6 %	%	94%

7. Is this a phased project? ○ **Yes** ● **No**

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

Start Date 10/26/2018 - **End Date** 05/01/2019

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

Name

SPARKILL CREEK

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ● Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ● **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **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 an E or F on the USDA Soil Survey? ○ **Yes** ● **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ● Yes ○ No ○ Unknown

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

VILLAGE OF PIERMONT

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

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 ○ No

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 ● No
If No, skip questions 23 and 27-39.

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 ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer
LEONARD JACKSON ASSOCIATES

Contact Name (Last, Space, First)
JACKSON LEONARD

Mailing Address
26 FIREMENS MEMORIAL DRIVE

City
SUFFERN

State NY Zip 10970 -

Phone 8453544382382

Fax 8453544401401

Email
lja@leonardjackson.net

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name LEONARD **MI**

Last Name JACKSON

Signature



Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

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

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ● Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ● Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ● Grade Stabilization Structure
- ● Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ● Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

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 Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

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).

- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

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

Total WQv Required

			.			
			.			**acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 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 Tables 1 and 2 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.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4)	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ **Hydrodynamic**	
○ **Wet Vault**	
○ **Media Filter**	
○ **Other**	

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

Name

Manufacturer

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.

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

Total RRv provided

. **acre-feet**

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

○ **Yes** ○ **No**

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)]

Minimum RRv Required

. **acre-feet**

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

○ **Yes** ○ **No**

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, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 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.

WQv Provided

☐☐☐.☐☐☐ **acre-feet**

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 - RRv 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). ☐☐☐.☐☐☐

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ○ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so 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**

CPv Provided

☐☐☐.☐☐☐ **acre-feet**

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

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

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

Total Overbank Flood Control Criteria (Qp)

Pre-Development

☐☐☐.☐☐☐ **CFS**

Post-development

☐☐☐.☐☐☐ **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

☐☐☐.☐☐☐ **CFS**

Post-development

☐☐☐.☐☐☐ **CFS**

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

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ **Yes** ○ **No**

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

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.

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

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. 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. [N][Y][R][ ][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

DELROSE

MI

Print Last Name

JAMES

Owner/Operator Signature

Date

/ /

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information
1. Owner/Operator Name: DELROSE JAMES
2. Contact Person: PHIL GRIFFIN
3. Street Address: 540 PIERMONT AVENUE
4. City/State/Zip: PIERMONT, NY 10968
II. Project Site Information
5. Project/Site Name: PIERMONT VILLAGE GREEN
6. Street Address: PIERMONT AVENUE & TATE AVENUE
7. City/State/Zip: PIERMONT, NY 10968
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A _____
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

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

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

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

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

Leonard Jackson Associates

APPENDIX G

Contractors' Certification

CONTRACTOR and SUBCONTRACTOR CERTIFICATION

Piermont Village Green
Piermont Avenue and Tate Avenue
Village of Piermont, Town of Orangetown, NY
LJA 06112

---

for the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System Permit for Stormwater Discharges from Construction Activity (GP-0-15-002)

As per Part III.A.6 on page 19 of GP-0-15-002 (effective January 29, 2015):

The owner or operator shall have each of the contractors and subcontractors sign a copy of the following certification statement below before they commence any construction activity:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations".

Name of the Construction Company	Address
Printed Name of Authorized Representative (Trained Contractor)	Title
Signature of Authorized Representative	Date Signed
Name of the Construction Company (Subcontractor)	Address
Printed Name of Authorized Representative (Trained Contractor)	Title
Signature of Authorized Representative	Date Signed

Leonard Jackson Associates

APPENDIX I

SPDES General Permit GP-01-15-002

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-15-002

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

Effective Date: January 29, 2015 Expiration Date: January 28, 2020

Modification Date:
July 14, 2015 – Correction of typographical error in definition of "New Development", Appendix A

November 23, 2016 – Updated to require the use of the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. The use of this standard will be required as of February 1, 2017.

John J. Ferguson
Chief Permit Administrator

Authorized Signature 11-14-16 Date

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

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES
FROM CONSTRUCTION ACTIVITIES

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(Part I)

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan ("SWPPP") the reason(s) for the deviation or alternative design and provide information

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from dewatering activities, including *discharge*s

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharge*s.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. ***Sizing Criteria* for *New Development***

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv

that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

b. ***Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed**

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

c. ***Sizing Criteria* for *Redevelopment Activity***

(Part I.C.2.c.i)

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

d. ***Sizing Criteria*** **for Combination of** ***Redevelopment Activity*** **and** ***New Development***

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharge*s from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharge*s from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharge*s must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb one or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb two or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
      (i) No Affect
      (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. OBTAINING PERMIT COVERAGE

A.Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

NOTICE OF INTENT
NYS DEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

(ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

(iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. The Department may suspend or deny an *owner's or operator's* coverage

(Part II.B.4)

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

   a. The *owner or operator* shall

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

D. Permit Coverage for Discharges Authorized Under GP-0-10-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of *a construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

E. Change of *Owner or Operator*

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

   b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   > "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

   In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

trained contractor responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project;

   b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

   c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

   d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

   b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

   c. A Stormwater Modeling and Analysis Report that includes:

      (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

      (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

      (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

      (iv) Summary table, with supporting calculations, which demonstrates

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

   b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

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

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

Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

(Part VII)

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

(Part VII.E)

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

   a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      (i) a president, secretary, treasurer, or vice-president of the

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

(Part VII.H.2.b)

individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharge*r authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharge*r in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

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

APPENDIX A

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

***Construction Activity*(ies) -** means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State
or National Registers of Historic Places.

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

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made
channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a *combined sewer*; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

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

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

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

APPENDIX B

Required SWPPP Components by Project Type

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

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

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

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

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

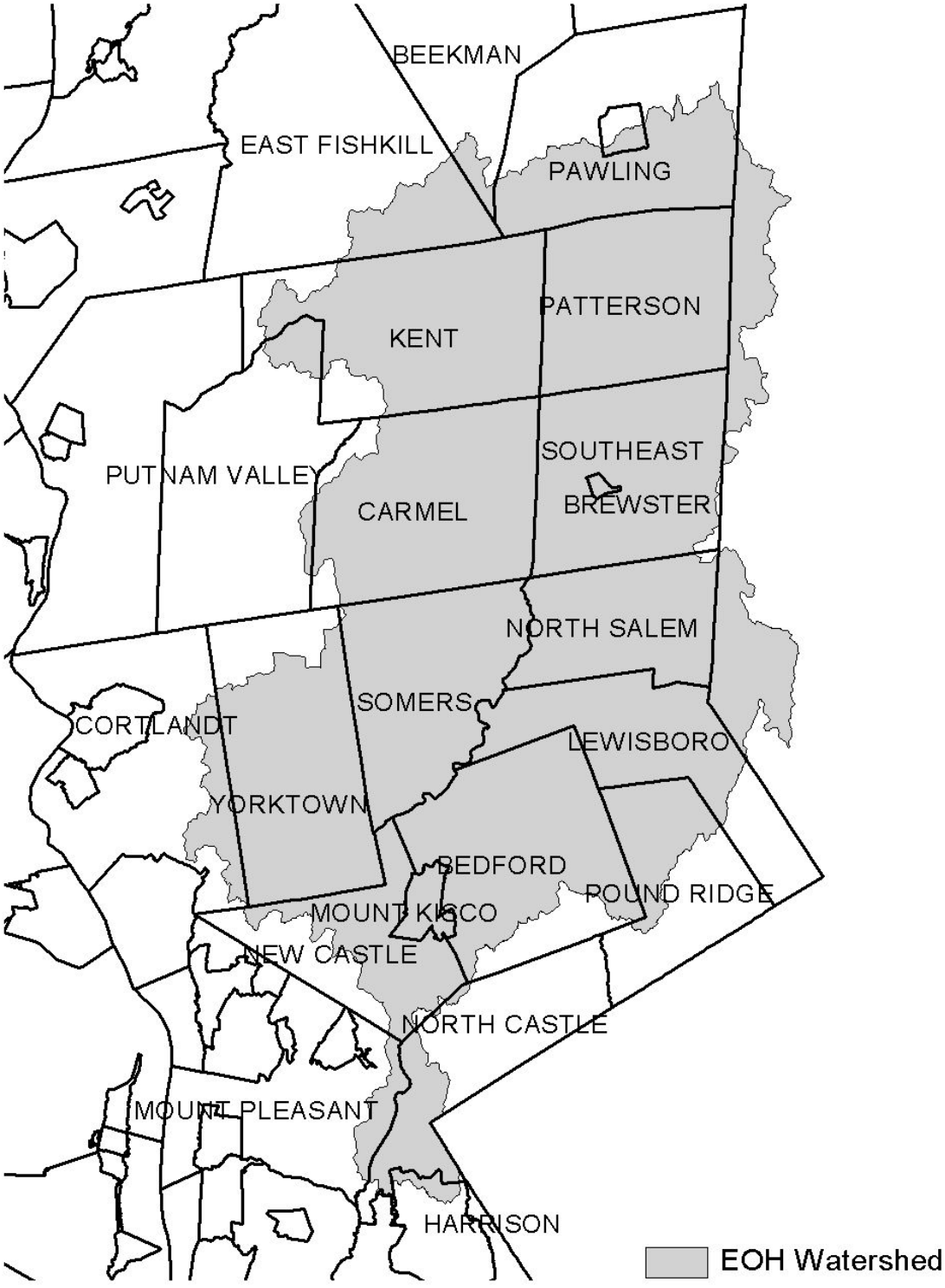


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

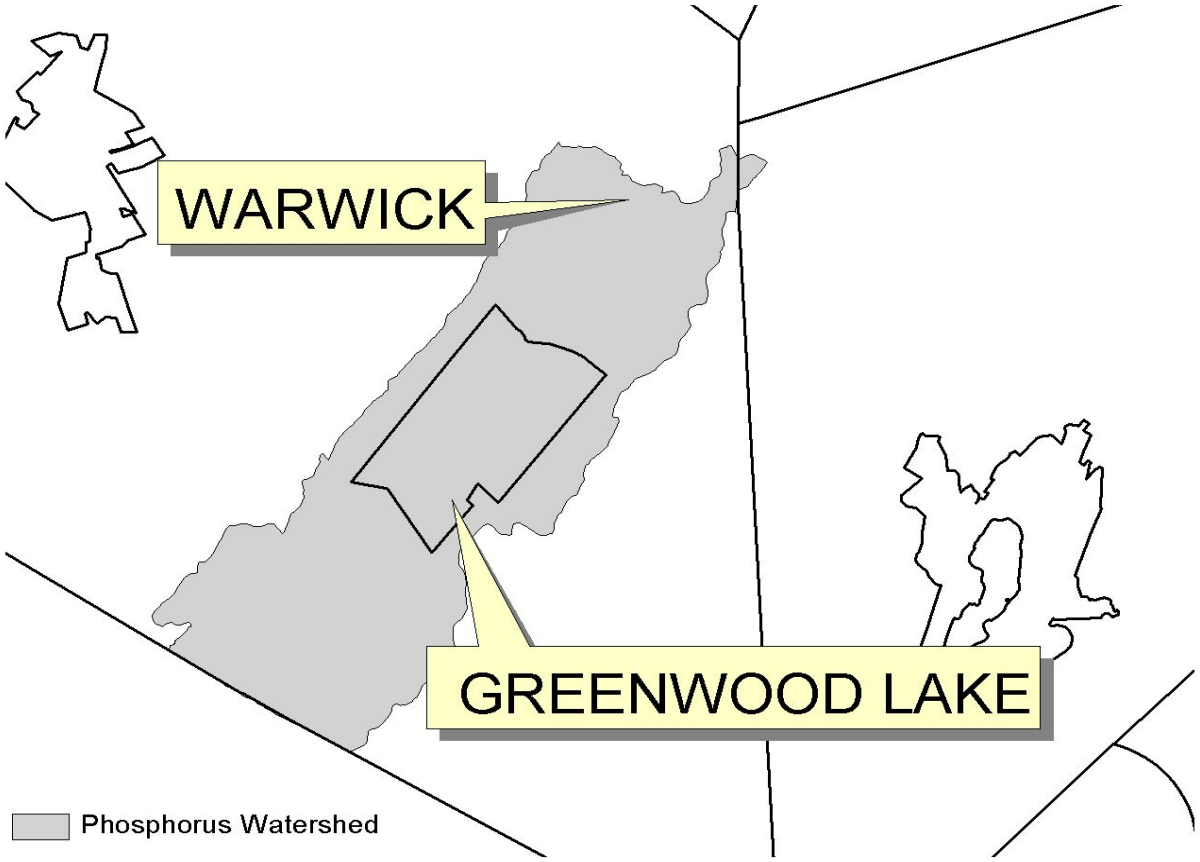


Figure 4 - Oscawana Lake Watershed

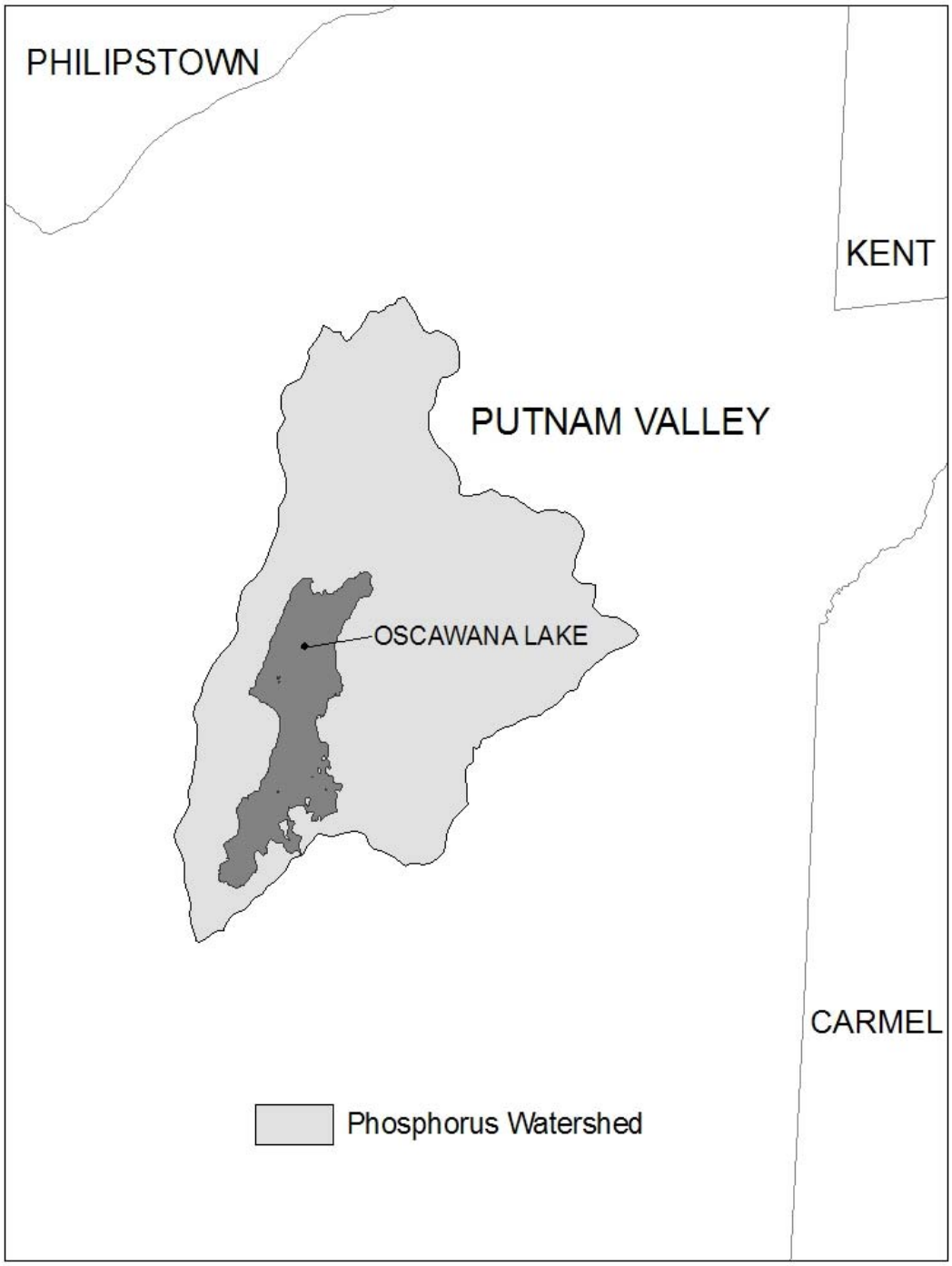
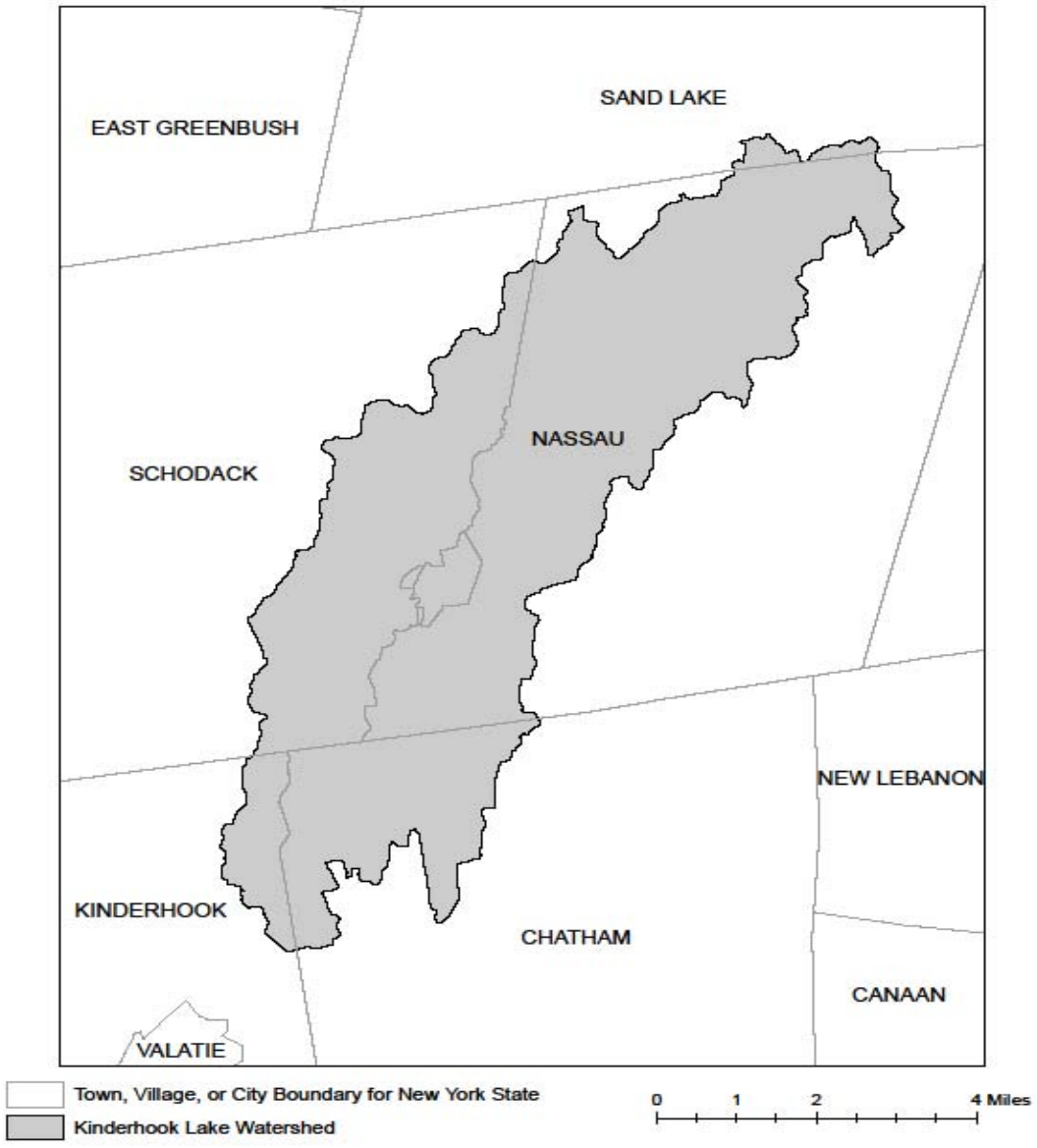


Figure 5: Kinderhook Lake Watershed



APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Greene	Sleepy Hollow Lake
Albany	Basic Creek Reservoir	Herkimer	Steele Creek tribs
Allegheny	Amity Lake, Saunders Pond	Kings	Hendrix Creek
Bronx	Van Cortlandt Lake	Lewis	Mill Creek/South Branch and tribs
Broome	Whitney Point Lake/Reservoir	Livingston	Conesus Lake
Broome	Fly Pond, Deer Lake	Livingston	Jaycox Creek and tribs
Broome	Minor Tribs to Lower Susquehanna (north)	Livingston	Mill Creek and minor tribs
		Livingston	Bradner Creek and tribs
Cattaraugus	Allegheny River/Reservoir	Livingston	Christie Creek and tribs
Cattaraugus	Case Lake	Monroe	Lake Ontario Shoreline, Western
Cattaraugus	Linlyco/Club Pond	Monroe	Mill Creek/Blue Pond Outlet and tribs
Cayuga	Duck Lake	Monroe	Rochester Embayment - East
Chautauqua	Chautauqua Lake, North	Monroe	Rochester Embayment - West
Chautauqua	Chautauqua Lake, South	Monroe	Unnamed Trib to Honeoye Creek
Chautauqua	Bear Lake	Monroe	Genesee River, Lower, Main Stem
Chautauqua	Chadakoin River and tribs	Monroe	Genesee River, Middle, Main Stem
Chautauqua	Lower Cassadaga Lake	Monroe	Black Creek, Lower, and minor tribs
Chautauqua	Middle Cassadaga Lake	Monroe	Buck Pond
Chautauqua	Findley Lake	Monroe	Long Pond
Clinton	Great Chazy River, Lower, Main Stem	Monroe	Cranberry Pond
Columbia	Kinderhook Lake	Monroe	Mill Creek and tribs
Columbia	Robinson Pond	Monroe	Shipbuilders Creek and tribs
Dutchess	Hillside Lake	Monroe	Minor tribs to Irondequoit Bay
Dutchess	Wappinger Lakes	Monroe	Thomas Creek/White Brook and tribs
Dutchess	Fall Kill and tribs	Nassau	Glen Cove Creek, Lower, and tribs
Erie	Green Lake	Nassau	LI Tribs (fresh) to East Bay
Erie	Scajaquada Creek, Lower, and tribs	Nassau	East Meadow Brook, Upper, and tribs
Erie	Scajaquada Creek, Middle, and tribs	Nassau	Hempstead Bay
Erie	Scajaquada Creek, Upper, and tribs	Nassau	Hempstead Lake
Erie	Rush Creek and tribs	Nassau	Grant Park Pond
Erie	Ellicott Creek, Lower, and tribs	Nassau	Beaver Lake
Erie	Beeman Creek and tribs	Nassau	Camaans Pond
Erie	Murder Creek, Lower, and tribs	Nassau	Halls Pond
Erie	South Branch Smoke Cr, Lower, and tribs	Nassau	LI Tidal Tribs to Hempstead Bay
		Nassau	Massapequa Creek and tribs
Erie	Little Sister Creek, Lower, and tribs	Nassau	Reynolds Channel, east
Essex	Lake George (primary county: Warren)	Nassau	Reynolds Channel, west
Genesee	Black Creek, Upper, and minor tribs	Nassau	Silver Lake, Lofts Pond
Genesee	Tonawanda Creek, Middle, Main Stem	Nassau	Woodmere Channel
Genesee	Oak Orchard Creek, Upper, and tribs	Niagara	Hyde Park Lake
Genesee	Bowen Brook and tribs	Niagara	Lake Ontario Shoreline, Western
Genesee	Bigelow Creek and tribs	Niagara	Bergholtz Creek and tribs
Genesee	Black Creek, Middle, and minor tribs	Oneida	Ballou, Nail Creeks
Genesee	LeRoy Reservoir	Onondaga	Ley Creek and tribs
Greene	Schoharie Reservoir	Onondaga	Onondaga Creek, Lower and tribs

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake		
Putnam	Palmer Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Lake Carmel	Ulster	Esopus Creek, Middle, and minor tribs
Queens	Jamaica Bay, Eastern, and tribs (Queens)		
Queens	Bergen Basin	Warren	Lake George
Queens	Shellbank Basin	Warren	Tribs to L.George, Village of L George
Rensselaer	Nassau Lake		
Rensselaer	Snyders Lake	Warren	Huddle/Finkle Brooks and tribs
Richmond	Grasmere, Arbutus and Wolfes Lakes	Warren	Indian Brook and tribs
Rockland	Congers Lake, Swartout Lake	Warren	Hague Brook and tribs
Rockland	Rockland Lake	Washington	Tribs to L.George, East Shr Lk George
Saratoga	Ballston Lake		
Saratoga	Round Lake	Washington	Cossayuna Lake
Saratoga	Dwaas Kill and tribs	Washington	Wood Cr/Champlain Canal, minor tribs
Saratoga	Tribs to Lake Lonely		
Saratoga	Lake Lonely	Wayne	Port Bay
Schenectady	Collins Lake	Wayne	Marbletown Creek and tribs
Schenectady	Duane Lake	Westchester	Lake Katonah
Schenectady	Mariaville Lake	Westchester	Lake Mohegan
Schoharie	Engleville Pond	Westchester	Lake Shenorock
Schoharie	Summit Lake	Westchester	Reservoir No.1 (Lake Isle)
Schuyler	Cayuta Lake	Westchester	Saw Mill River, Middle, and tribs
St. Lawrence	Fish Creek and minor tribs	Westchester	Silver Lake
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Teatown Lake
Steuben	Lake Salubria	Westchester	Truesdale Lake
Steuben	Smith Pond	Westchester	Wallace Pond
Suffolk	Millers Pond	Westchester	Peach Lake
Suffolk	Mattituck (Marratooka) Pond	Westchester	Mamaroneck River, Lower
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Mamaroneck River, Upp, and tribs
Suffolk	Canaan Lake	Westchester	Sheldrake River and tribs
Suffolk	Lake Ronkonkoma	Westchester	Blind Brook, Lower
Suffolk	Beaverdam Creek and tribs	Westchester	Blind Brook, Upper, and tribs
Suffolk	Big/Little Fresh Ponds	Westchester	Lake Lincolndale
Suffolk	Fresh Pond	Westchester	Lake Meahaugh
Suffolk	Great South Bay, East	Wyoming	Java Lake
Suffolk	Great South Bay, Middle	Wyoming	Silver Lake

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

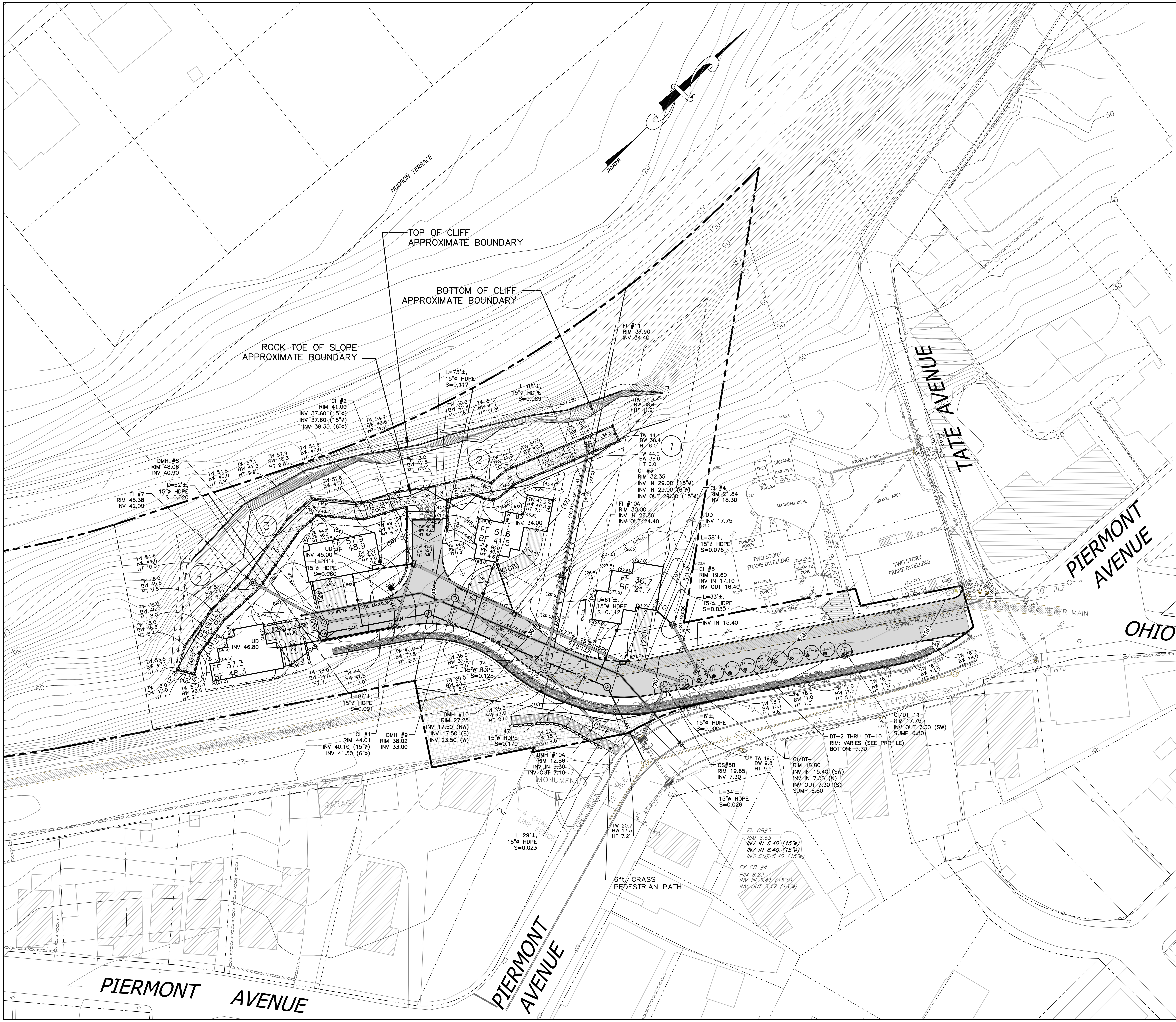
Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Leonard Jackson Associates

APPENDIX I

Project Drawings

Title	Date
Grading and Drainage Plan	8/01/2018
Erosion Control Plan	8/01/2018
Construction Details	8/01/2018
Storm Drainage Profiles	1/03/2017



LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	SETBACK LINE	
	EASEMENT LINE	
90	CONTOUR LINE	(406)
	SPOT ELEVATION	× (406.8)
	SWALE	SWALE
	EDGE OF PAVEMENT	
	CURB	
	BUILDING	
	STONE WALL	
	ROCK CUT WALL	
	REDI-ROCK GRAVITY RETAINING WALL	
	GUIDE RAIL	
18" CMP	DRAINAGE LINE	
	CURB INLET	
	DRAINAGE MANHOLE (DMH)	
	DETENTION TANKS (DT)	
SMH "A"	SANITARY MANHOLE (SMH)	
	SANITARY LINE	SAN
UP	UTILITY POLE	
	WATER LINE	W
	WATER VALVE	WV
HYD	FIRE HYDRANT	
	ROOF LEADER	RL
	UNDER DRAIN	UD

0 30 60
SCALE IN FEET

GRADING AND DRAINAGE NOTES:

1. ALL STORM DRAINAGE PIPE TO BE HIGH DENSITY POLYETHYLENE PIPE (HDPP), UNLESS OTHERWISE SPECIFIED.
2. ALL ROOF LEADERS SHALL DISCHARGE TO CATCH BASINS.
3. ALL EXISTING OFF-SITE PAVEMENT, FENCES, CURBS, WALKS AND OTHER FACILITIES DISTURBED BY CONSTRUCTION SHALL BE RESTORED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
4. PROJECT SAFETY AND TRAFFIC MAINTENANCE ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. THE EXTENT OF THE CONSTRUCTION AND DISTURBANCE AREAS SHALL BE THE MINIMUM REQUIRED TO PERFORM THE CONTRACT WORK, WITH AS MINIMAL EFFECT ON ADJACENT AREAS AS POSSIBLE.
6. AS BUILT CONSTRUCTION OF ALL WALLS GREATER THAN 4 FEET EXPOSED HEIGHT SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.

REV.	DESCRIPTION	DATE
4	AS PER TOWN ENGINEER COMMENTS DATED 2/25/10	08/01/18
1	AS PER TOWN ENGINEER COMMENT DATED 11/19/09	01/25/10

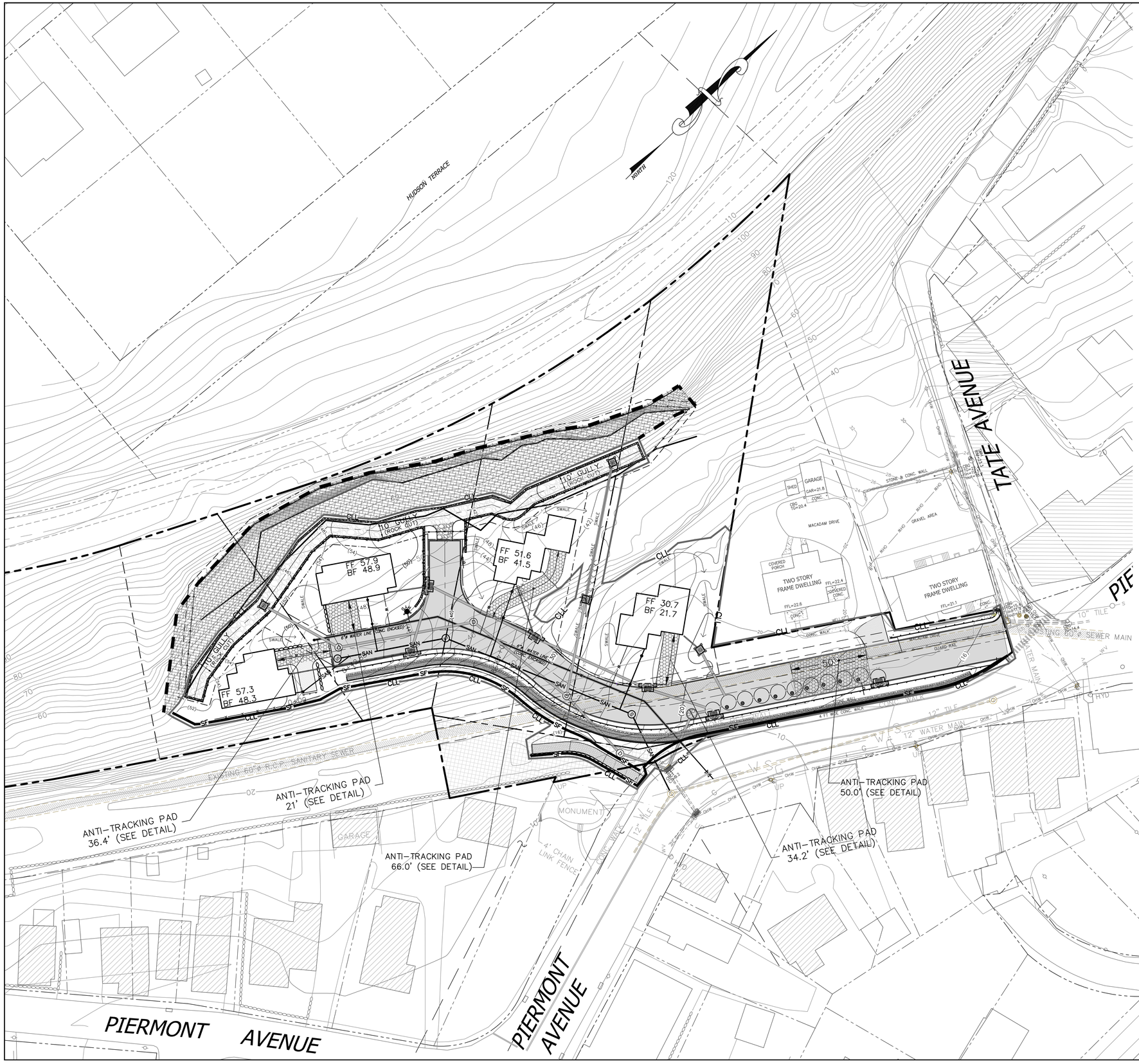
STATE OF NEW YORK LEONARD JACKSON No. 42167 LICENSED PROFESSIONAL ENGINEER

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970
phone: (845) 354-4382 fax: (845) 354-4401
LJA

PIERMONT VILLAGE GREEN
VILLAGE OF PIERMONT, TOWN OF ORANGETOWN
ROCKALND COUNTY, NEW YORK

GRADING & DRAINAGE PLAN

Job number: 06112
Drawn by: MAK
Date: 8/14/09
Scale: 1" = 30'
Drawing Number: 5



STANDARD EROSION CONTROL NOTES:

AN EROSION CONTROL SYSTEM WILL BE UTILIZED BY THE DEVELOPER TO MINIMIZE THE PRODUCTION OF SEDIMENT FROM THE SITE. METHODS TO BE UTILIZED WILL BE THOSE FOUND MOST EFFECTIVE FOR THE SITE AND SHALL INCLUDE, BUT ARE NOT LIMITED TO, ONE OR MORE OF THE FOLLOWING, AS APPLICABLE:

1. THE PROPOSED LIMIT OF DISTURBANCE SHALL BE DEMARCATED IN THE FIELD WITH SNOW FENCE.
2. TEMPORARY SEDIMENT ENTRAPMENT AREAS SHALL BE PROVIDED AT KEY LOCATIONS TO INTERCEPT AND CLARIFY SILT LADEN RUNOFF FORM THE SITE. THESE MAY BE EXCAVATED OR MAY BE CREATED UTILIZING EARTHEN BERMS, RIP-RAP OR CRUSHED STONE DAMS, HAY BALES OR OTHER SUITABLE MATERIALS. DIVERSION SWALES, BERMS OR OTHER CHANNELIZATION SHALL BE CONSTRUCTED TO ENSURE THAT ALL SILT LADEN WATERS ARE DIRECTED INTO THE ENTRAPMENT AREAS, WHICH SHALL NOT BE PERMITTED TO FILL IN, BUT SHALL BE CLEANED PERIODICALLY DURING THE COURSE OF CONSTRUCTION. THE COLLECTED SILT SHALL BE DEPOSITED IN AREAS SAFE FROM FURTHER EROSION.
3. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH APPROXIMATELY ½ THE HEIGHT OF THE SILT FENCE. ALL SUCH SEDIMENT SHALL BE PROPERLY DISPOSED OF IN FILL AREAS ON THE SITE, AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE. FILL SHALL BE PROTECTED FOLLOWING DISPOSAL WITH MULCH, TEMPORARY AND/OR PERMANENT VEGETATION AND BE COMPLETELY BOUNDED ON THE DOWNHILL SIDE BY SILT FENCE.
4. ALL DISTURBED AREAS, EXCEPT ROADWAYS, WHICH WILL REMAIN UNDISTURBED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED WITH 1/2 LB. OF RYE GRASS OR MULCHED WITH 100 LBS. OF STRAW OR HAY PER 1,000 SQ. FT. ROADWAYS SHALL BE STABILIZED AS RAPIDLY AS PRACTICAL BY THE INSTALLATION OF THE BASE COURSE, BUT TEMPORARY ASPHALT STABILIZATION MAY BE REQUIRED.
5. SILT THAT LEAVES THE SITE IN SPITE OF THE REQUIRED PRECAUTIONS SHALL BE COLLECTED AND REMOVED.
6. DUST CONTROL: SHOULD DUST BECOME A NUISANCE DURING CONSTRUCTION OCCASIONAL SPRINKLING OF THE SITE MAY BE NECESSARY AND WILL BE PERFORMED AS REQUIRED.
7. EROSION IN THE VICINITY OF SOIL STOCKPILES SHALL BE PREVENTED BY INSTALLING SILT FENCE REINFORCED WITH HAY BALES AROUND THE PERIMETER OF THE PILE. TEMPORARY SEEDING SHALL BE APPLIED TO THE STOCKPILE(S) IF THE PILE IS TO REMAIN UNUSED AND UNDISTURBED FOR MORE THAN 14 DAYS.
8. INSPECTION OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PERFORMED AT THE END OF EACH CONSTRUCTION DAY AND IMMEDIATELY FOLLOWING EACH RAINFALL EVENT. ALL REQUIRED REPAIRS SHALL BE IMMEDIATELY EXECUTED BY THE CONTRACTOR.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES AND DEVICES SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH PIERMONT, ORANGETOWN, AND NYSDEC REQUIREMENTS AND REGULATIONS UNTIL THE SITE HAS BEEN FULLY STABILIZED IN ACCORDANCE WITH NYSDEC REGULATIONS.

CONSTRUCTION SEQUENCE:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATIONS AND INSTALLATION OF PROPOSED STRUCTURES AND OR UTILITIES.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND/OR STABILIZED.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND ANTI-TRACKING PADS AS INDICATED ON PLAN.
4. INSTALL SILT FENCE AND/OR HAY BALE BARRIERS DOWN SLOPE OF ALL AREAS TO BE DISTURBED AND DOWN SLOPE OF ALL AREAS DESIGNATED FOR TOPSOIL STOCKPILING.
5. APPLICANT SHALL MAINTAIN PAVED ACCESS FOR LOTS 75.62-1-20 (FRISCIA) & 75.62-1-19 (TARASHENKO) THROUGHOUT CONSTRUCTION.
6. CLEAR EXISTING TREES, VEGETATION AND EXISTING STRUCTURES FROM AREAS TO BE FILLED OR EXCAVATED. STRIP AND STOCKPILE TOPSOIL FROM AREAS TO BE DISTURBED. SEED STOCKPILED TOPSOIL WITH TEMPORARY RYE GRASS COVER.
7. PERFORM EXCAVATION AND FILL TO BRING LAND TO DESIRED GRADE. ANY DISTURBED AREAS TO REMAIN BARE FOR A PERIOD OF OVER TWO MONTHS SHOULD BE TEMPORARILY HYDROSEEDED WITH (A) PERENNIAL RYEGRASS AT A RATE OF 40 LBS PER ACRE (1.0 LB PER 1000 SQUARE FEET); (B) CERTIFIED "AROOSTOOK" WINTER RYE (CEREAL RYE) @ 100 LB PER ACRE (2.5 LB/1000 S.F.) TO BE USED IN THE MONTHS OF OCTOBER AND NOVEMBER.
8. INSTALL UNDERGROUND UTILITIES, MANHOLES, CATCH BASINS, SOLID DETENTION TANKS, AND OUTLET STRUCTURE. GRATES OF CURB AND FIELD INLETS SHOULD BE LEFT AT ELEVATIONS WHICH PERMIT PROPER COLLECTION OF SURFACE RUNOFF.
9. INSTALL HAY BALE RINGS AROUND CURB AND FIELD INLETS EXCEPT FOR THE BASINS LOCATED AT THE ANTI-TRACKING PAD. BASINS AT THE PAD SHALL BE TREATED WITH THE CATCH BASIN-FILTER FABRIC DETAIL.
10. CONSTRUCT CURBS AND INSTALL BASE AND BINDER COURSES OF PAVED AREAS. RAISE GRATES OF THE CURB AND FIELD INLETS ACCORDINGLY.
11. COMPLETE THE GRADING.
12. INSTALL SURFACE COURSE OF PAVEMENT. RAISE GRATES OF CURBS AND FIELD INLETS TO FINAL ELEVATION.
13. UPON COMPLETION OF CONSTRUCTION, ALL DISTURBED AREAS ARE TO BE SEEDED. REFER TO LANDSCAPING PLAN FOR PERMANENT SEEDING SPECIFICATIONS. ALL TEMPORARY DEVICES SHALL BE REMOVED AND THE AFFECTED AREAS REGRADED, PLANTED OR TREATED IN ACCORDANCE WITH THE APPROVED SITE PLANS.

EROSION CONTROL PLAN LEGEND

SILT FENCE	SF
CURB INLET PROTECTION	
FIELD INLET PROTECTION	
ANTI-TRACKING PAD	
CONSTRUCTION LIMIT LINE	CLL
TEMPORARY ROCK STABILIZATION WORK AREA	

0 30 60
SCALE IN FEET

REV.	DESCRIPTION	DATE
4	AS PER TOWN ENGINEER COMMENTS DATED 2/25/10	08/01/18
3	PHYS. BARRIER AT TEMP. ROCK STAB. WORK AREA	06/22/10
2	TEMPORARY ROCK STABILIZATION WORK AREA	05/24/10

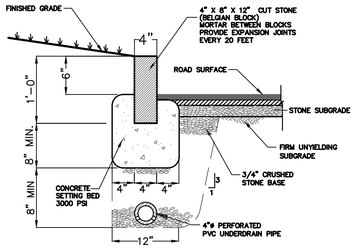
LEONARD JACKSON ASSOCIATES
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26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970
phone: (845) 354-4382 fax: (845) 354-4401

LJA

PIERMONT VILLAGE GREEN
VILLAGE OF PIERMONT, TOWN OF ORANGETOWN
ROCKALND COUNTY, NEW YORK

EROSION CONTROL PLAN

Job number: 06112
Drawn by: MAK
Date: 8/14/09
Scale: 1" = 30'
Drawing Number: 7

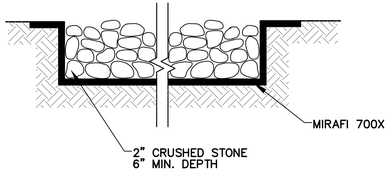


CURB DETAIL: BELGIAN BLOCK

N.T.S.

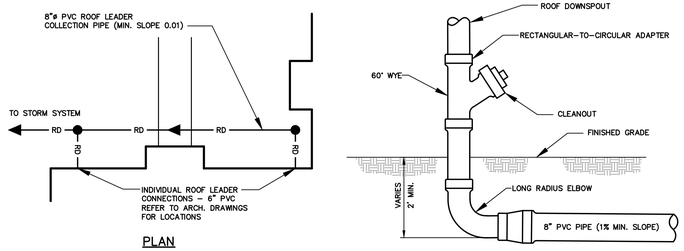
NOTES:

1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR MATERIAL SHALL BE PLACED AT 20' INTERVALS, TO FULL DEPTH OF CURB.
2. UNDERDRAIN MAY BE ELIMINATED IN PARKING LOTS AND OTHER NON-PUBLIC FACILITIES.



ANTI-TRACKING PAD DETAIL

N.T.S.



PLAN

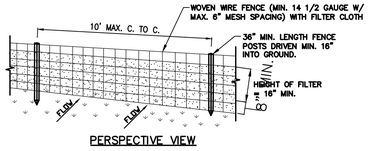
SECTION

NOTES:

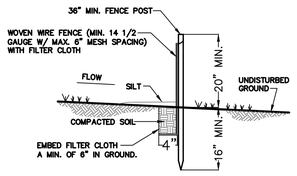
1. COLLECTION SYSTEM SHALL INTERCEPT ALL BUILDING ROOF DOWNSPOUTS (FRONT & REAR)
2. ROOF DRAINS SHALL BE PIPED SEPARATELY AND INDEPENDENT OF FOUNDATION UNDERDRAINS AND CELLAR DRAINS

TYPICAL ROOF DRAIN COLLECTION SYSTEM DETAILS

N.T.S.



PERSPECTIVE VIEW



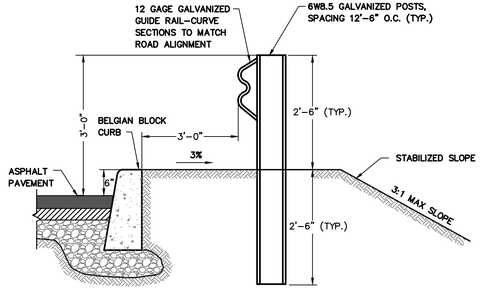
SECTION VIEW

SILT FENCE DETAIL

N.T.S.

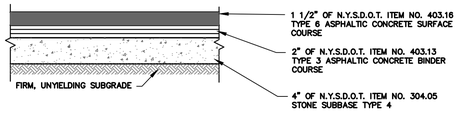
CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.



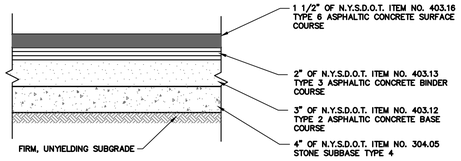
TYPICAL GUIDE RAIL DETAIL

N.T.S.



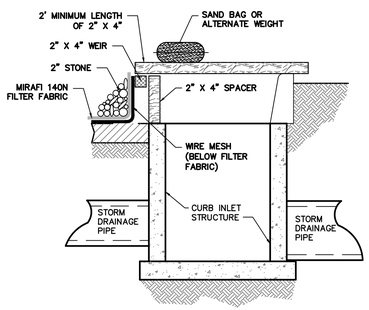
TYPICAL PAVEMENT SECTION: DRIVEWAYS

N.T.S.



PAVEMENT SECTION: ROAD

N.T.S.

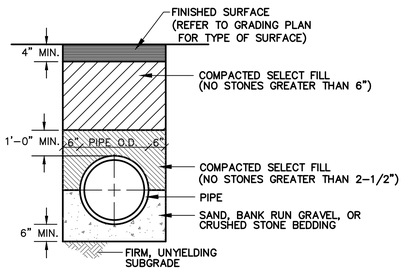


CURB INLET PROTECTION DETAIL

N.T.S.

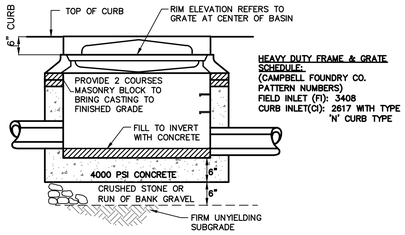
NOTES:

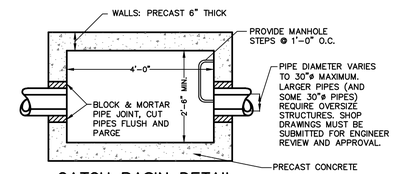
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2" X 4" CONSTRUCTION GRADE LUMBER.
3. WIRE MESH ACROSS THROAT SHALL BE A CONTINUOUS PIECE 30 INCH MINIMUM WIDTH WITH A LENGTH 4 FEET LONGER THAN THE THROAT. IT SHALL BE SHAPED AND SECURELY NAILED TO A 2" X 4" WEIR.
4. THE WEIR SHALL BE SECURELY NAILED TO 2" X 4" SPACERS 9 INCHES LONG SPACED NO MORE THAN 6 FEET APART.
5. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2" X 4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE INLET AND HELD IN PLACE BY SAND BAGS OR ALTERNATE WEIGHTS.



PIPE BEDDING DETAIL

N.T.S.



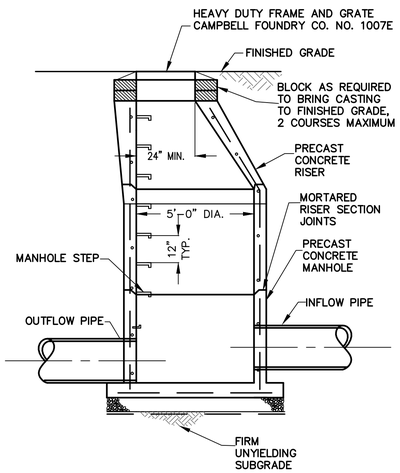


CATCH BASIN DETAIL
CURB INLET (CI) & FIELD INLET (FI)

N.T.S.

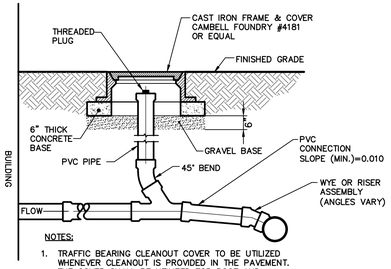
NOTES:

1. SLOPE CASTINGS TO MATCH SLOPE OF FINISHED PAVEMENT GRADE.
2. MANUFACTURER SHALL CERTIFY STRUCTURES FOR HS20 LOADING.



STORM SYSTEM MANHOLE

N.T.S.

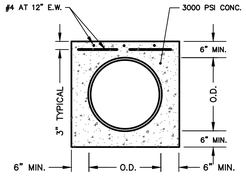


NOTES:

1. TRAFFIC BEARING CLEANOUT COVER TO BE UTILIZED WHENEVER CLEANOUT IS PROVIDED IN THE PAVEMENT. THE COVER SHALL BE UTILIZED FOR ROOF AND FOOTING DRAINS ONLY.
2. ALL PIPE SIZES AS SPECIFIED ON GRADING & DRAINAGE PLAN.

CLEANOUT DETAIL: TRAFFIC BEARING

N.T.S.

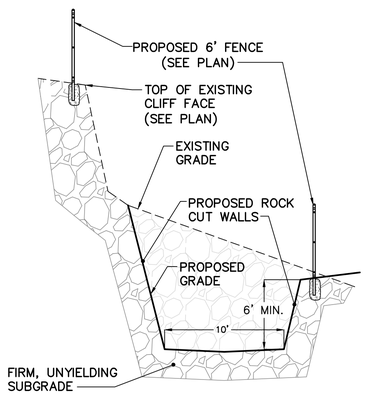


CONCRETE ENCASEMENT DETAIL

N.T.S.

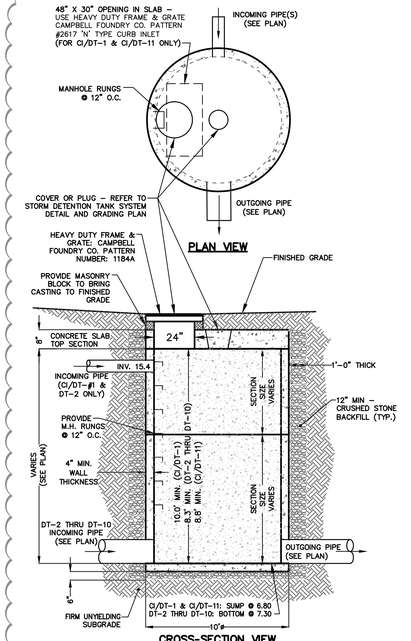
NOTES:

1. ALL PIPE SHALL BE CONCRETE ENCASED WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIED, OR UNDER PAVEMENT WHERE COVER IS LESS THAN 2'-0".
2. SEWER LINES SHALL BE ENCASED WHEN PASSING OVER WATER LINES. ENCASEMENT SHALL EXTEND FOR 10' FEET ON EACH SIDE OF THE CROSSING.
3. SEWER LINES SHALL BE ENCASED WHEN PASSING UNDER WATER LINES WITH LESS THAN 18" CLEARANCE. ENCASEMENT SHALL EXTEND FOR 10' ON EITHER SIDE OF THE CROSSING.
4. WATER LINES SHALL BE ENCASED AT CROSSINGS WHERE SEWER LINES ARE ENCASED.



PROPOSED GULLY DETAIL

N.T.S.

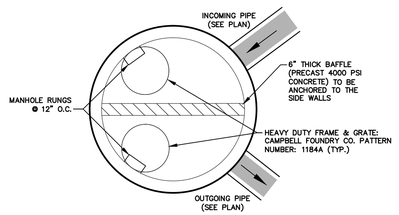


STORM DETENTION TANK DETAIL 4

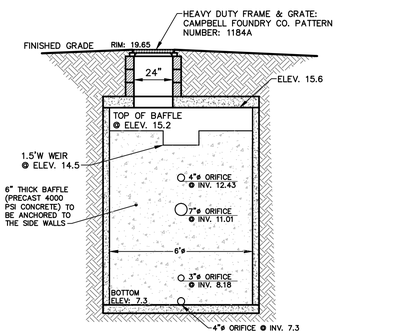
N.T.S.

NOTES:

1. CONTRACTOR TO SUBMIT P.E. CERTIFIED SHOP DRAWINGS FOR APPROVAL BY THE ENGINEERPRIOR TO CONSTRUCTION.
2. MINIMUM STRENGTH CONCRETE 4000 PSI WALL THICKNESS 4" WITH ADEQUATE STEEL REINFORCEMENT TO WITHSTAND CONSTRUCTION LOADS. MANUFACTURERS SHALL CERTIFY STRUCTURES FOR HS20 LOADING.
3. REFER TO GRADING AND UTILITIES PLANS FOR ADDITIONAL SIZING, SPECIFICATION AND CONFIGURATION DETAILS.



PLAN VIEW



OUTLET STRUCTURE (OS#5A) DETAIL 4

N.T.S.

NOTES:

1. OUTLET STRUCTURE TO CONFORM TO A.S.T.M. C478 (LATEST REVISION).
2. PRECAST CONCRETE MANHOLES WITH RESILENT SEALS AT JOINTS.
3. MANUFACTURER SHALL CERTIFY ALL COMPONENTS MANHOLE FOR HS20 LOADING
4. RISER SECTION JOINTS SHALL BE FIELD-MORTARED

REV.	DESCRIPTION	DATE
4	REVISED DESIGN AS PER CURRENT NYSDEC REQUIREMENTS	08/01/18

LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — LEONARD JACKSON — No. 057

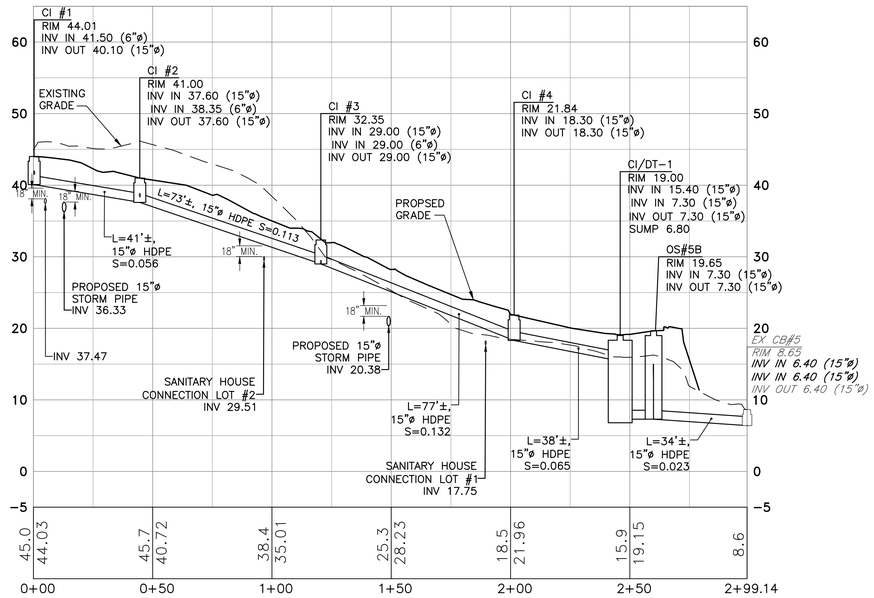
LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970
phone: (845) 354-4382 fax: (845) 354-4401

LJA

PIERMONT VILLAGE GREEN
VILLAGE OF PIERMONT, TOWN OF ORANGETOWN
ROCKALND COUNTY, NEW YORK

CONSTRUCTION DETAILS (2 OF 3)

Job number: 06112
Drawn by: CS
Date: 8/14/09
Scale: AS NOTED
Drawing Number: 10



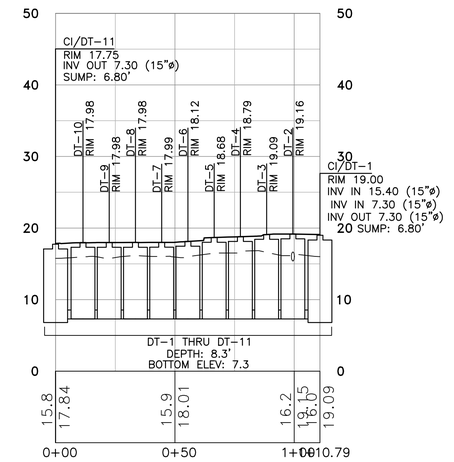
STORM PROFILE – CI#1 TO CB#5 (Existing)

(STA: 0+00.00 TO STA: 2+99.14)

SCALE:

Vertical: 1" = 10'

Horizontal: 1" = 30'



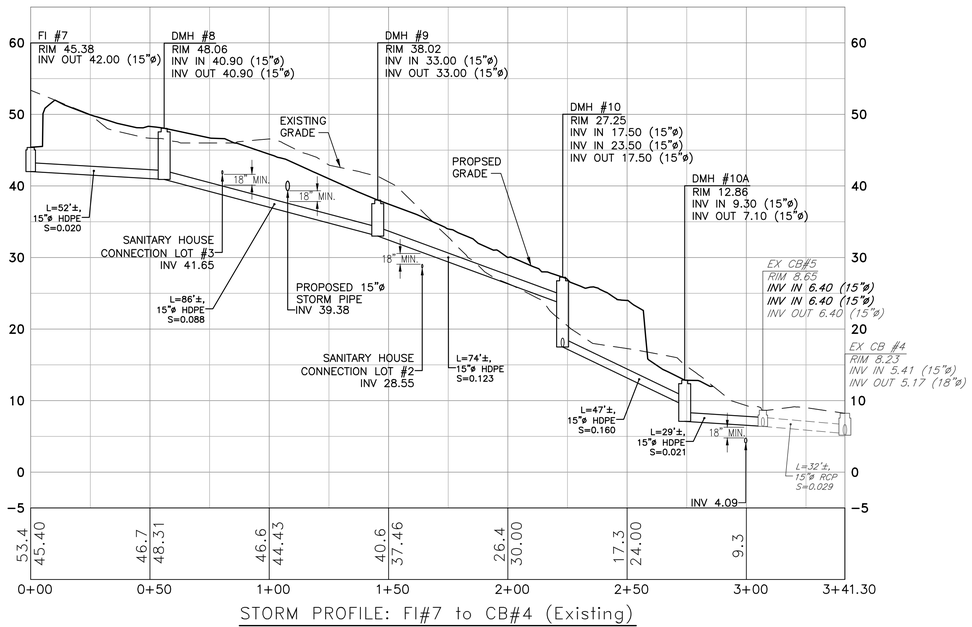
STORM DETENTION SYSTEM (CI/DT-1 THRU CI/DT-11)

(STA: 0+00.00 TO STA: 1+10.79)

SCALE:

Vertical: 1" = 10'

Horizontal: 1" = 30'



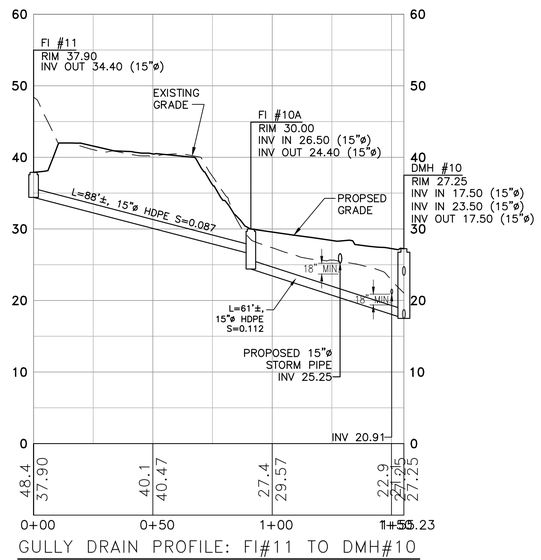
STORM PROFILE: FI#7 to CB#4 (Existing)

(STA: 0+00.00 TO STA: 3+41.30)

SCALE:

Vertical: 1" = 10'

Horizontal: 1" = 30'



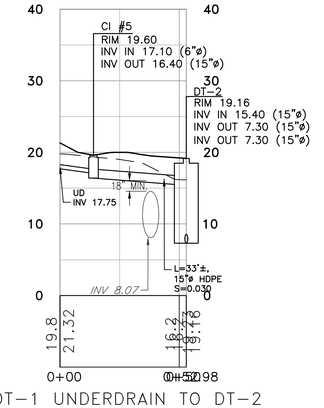
GULLY DRAIN PROFILE: FI#11 TO DMH#10

(STA: 0+00.00 TO STA: 1+55.23)

SCALE:

Vertical: 1" = 10'

Horizontal: 1" = 30'



LOT-1 UNDERDRAIN TO DT-2

(STA: 0+00.00 TO STA: 0+52.98)

SCALE:

Vertical: 1" = 10'

Horizontal: 1" = 30'

DATE	DESCRIPTION	REV.

LEONARD JACKSON ASSOCIATES
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PIERMONT VILLAGE GREEN
VILLAGE OF PIERMONT, TOWN OF ORANGETOWN
ROCKALND COUNTY, NEW YORK

STORMWATER MANAGEMENT PROFILES

Job number: 06112

Drawn by: MAK

Date: 1/3/17

Scale: AS SHOWN

Drawing Number: 13