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April 16, 2025

BY FEDERAL EXPRESS
AND ELECTRONIC MAIL
Chairman Bruce Flower
and Members of the Planning Board
Town of Wappinger
20 Middlebush Road
Wappingers Falls, New York 12590

Re: Wappinger Airport Drive LLC
Supplemental Submission in Support of Application for Amended Site Plan Approval
Premises: 26 Don Bosco Boulevard, Wappingers Falls, NY
Tax Parcel No.: 6259-04-647405

Dear Chairman Flower and Members of the Planning Board:

On behalf of Wappinger Airport Drive LLC (the "Applicant"), the owner of the above-referenced Premises, we respectfully submit this letter and the referenced enclosures in furtherance of an Application for Amended Site Plan Approval (the "Application") for the Applicant's proposed warehousing operations (the "Project").

SITE PLAN REFINEMENTS AND RESPONSE TO TOWN CONSULTANT COMMENTS:

Please be advised that the Site Plans prepared by Insite Engineering, Surveying & Landscape Architecture, P.C. ("Insite") have been revised to address comments provided by this Board and the Board's Engineering and Planning Consultants at the Planning Board's April 7, 2025 public hearing.[1] In addition, a Response to Comments Memorandum prepared by Insite, providing point-by-point responses to the comment memoranda issued by the Town's Engineering and Planning Consultants, is enclosed herewith as **Exhibit A**.

As is further detailed on the enclosed revised Site Plans, the Project has been refined to include a proposed Fabco StormBasin filter cartridge at the proposed empty container power washing area, to provide additional pretreatment and ensure that any debris is removed from any associated runoff prior to discharge to the stormwater management system. Additional diversified plantings have also been added to the proposed landscape berm to further mitigate any potential visual impacts of the Project upon nearby residential properties. Finally, minor modifications and notes

[1] The Planning Board closed the public hearing on April 7, 2025. During the April 7, 2025 public hearing, the Planning Board voted to grant the Applicant's waiver request for an increase in the maximum driveway grade to permit a grade of 10% for the proposed access driveway.

have been incorporated into the Site Plans to address stormwater practices, provide additional detail on the proposed swales, and restrict tree clearing to within the NYSDEC tree felling window to avoid any potential impacts upon the Indiana Bat.

CONCLUSION AND LIST OF ENCLOSURES:

In support of this Application for Amended Site Approval, enclosed as **Exhibit A** please find twelve (12) copies of the Response to Comments Memorandum prepared by Insite, dated April 16, 2025, providing responses to Town Planning Consultant Hardesty Hanover's memorandum dated April 3, 2025 and Town Engineering Consultant Rohde, Soyka & Andrews Consulting Engineers, P.C.'s memorandum dated April 4, 2025.

In addition, enclosed please find twelve (12) copies of the Amended Site Plan for Don Bosco Boulevard, dated February 3, 2025 and last revised April 14, 2025, and two (2) copies of the updated Stormwater Pollution and Prevention Plan, dated April 14, 2025, both prepared by Insite.

We look forward to appearing at this Board's regular meeting on April 7, 2025, at which time the Applicant respectfully requests that the Board consider rendering a decision on this Application. In the meantime, should this Board or Town Staff have any questions or comments regarding the foregoing, please do not hesitate to contact us.

Thank you in advance for your consideration of this matter.

Very truly yours,

Taylor M. Palmer

Enclosures

cc: Barbara Roberti, Town of Wappinger Director of Strategic Planning and Municipal Codes
Daniel Franks, Town of Wappinger Deputy Building Inspector
Daniel Koehler, P.E., Hudson Land Design Professional Engineering, P.C.
Wappinger Airport Drive LLC
Insite Engineering, Surveying & Landscape Architecture, P.C.
Jessica Zalin, Esq.

Exhibit A

INSITE
ENGINEERING, SURVEYING &
LANDSCAPE ARCHITECTURE, P.C.

April 16, 2025

Town of Wappingers Planning Board
20 Middlebush Road
Wappingers Falls, New York 12590

RE: Wappinger Airport Drive LLC
Amended Site Plan for Don Bosco Boulevard
Tax Map No. 6259-04-647405

Dear Members of the Board:

Enclosed please find the following in support of application for Amended Site Plan:

- Site Plans "5 sheets", last revised April 14, 2025.
- Stormwater Pollution Prevention Plan, dated April 14, 2025.

Memorandum from John V. Andrews, Jr., P.E. of Rohde, Soyka & Andrews Consulting Engineers, P.C. dated April 4, 2025:

1. *The proposal is for an amendment to a previously approved site. The site appears to be fully developed. The project sponsor should confirm for the record that the current site was constructed and completed in conformance with the approved plans and that there are no open issues that are required to be resolved. Response noted. No exception taken. Considered resolved.*

   No response required.

2. *Pursuant to Town Code Section 240.100.B., the maximum grade for a new driveway is 7%. The approving authority, in this case the Planning Board has the ability to permit an increase in grade up to a maximum of 10% where it can be demonstrated to the satisfaction of the approving authority that, because of practical difficulty or unreasonable hardship affecting a particular property, such an increase in grade is warranted. The proposed access drive grade is 10%. The project sponsor should submit a written request for the proposed increase along with such other information that substantiates practical difficulty or hardship. Response noted. No exception taken. We recommend the Planning Board accept the response as submitted and grant the requested waiver to permit a driveway grade of 10%.*

   At the last Planning Board meeting it is our understanding the waiver was granted.

3. *The proposal includes a wash area where returning containers are power washed, water only with no soap or chemicals to be used, with runoff to be mingled with and treated as stormwater. This is considered a non-storm water discharge. This discharge may not be permitted under the Town Code. Additional information and details need to be provided in order to justify this discharge. The proposal may need to incorporate best management practices to control/treat this wash water prior to discharge. We received and reviewed the various documentation submitted by the project engineer. We do not agree with his assessment that it fits into an exempt category.*

Non stormwater discharges may be permitted so long as they do not violate the ECL. We are of the opinion that discharge could be allowed by the MS4 so long as it receives a higher level of pretreatment such as that afforded by a stormwater filtration system prior to discharge to the open swale. The redesign and delineation of a specific wash area and the evaluation procedure are all a step in the right direction. We request that the design engineer look into some form of filtration prior to discharge. Whatever is finally selected should be fully explained and detailed in the SWPPP.

Per correspondence between Eric Schlobohm, PE of our office and John V. Andrews, Jr., P.E., Planning Board consulting engineer, filtration for the empty container wash area has been proposed by a Fabco StormBasin filter cartridge. The Stormbasin is proposed in the yard drain collecting water from the empty container wash area. This filtration serves as redundant pretreatment for the subject area. The runoff from the subject area will also reach a dry swale standard stormwater management practice that will also filter runoff from the empty container wash area. The Fabco Stormbasin is shown on Drawings SP-2 and D-2 and discussed in sections 2.1 and 5.2 of the SWPPP.

4. *A Stormwater Pollution Prevention Plan (SWPPP) was submitted to support this proposal. The SWPPP was based on a previously approved SWPPP prepared for the original proposal. The engineer should confirm that the existing stormwater management facilities were constructed in substantial conformance with the approved SWPPP and are functioning properly. The Engineer should further confirm that the prior SWPPP was properly closed out. Any discrepancies or deficiencies should be noted, and if necessary, plans for renovation or repair incorporated into the current proposal. Response noted. The response identifies minor repair at an existing end section work and debris removal from the existing emergency spillway. The work locations should be shown and the required work noted on the plan set. As noted in the response a section should be provided in the final SWPPP addressing this issue.*

   The minor maintenance and repair of the existing Stormwater Practice is identified on Drawing SP-2. The maintenance and repair is also discussed in Sections 1.2 and 1.3 of the SWPPP.

We offer the following comments on SWPPP and stormwater plans**:**

- *The SWPPP should clearly indicate which Stormwater Design Manual was used in its preparation. Resolved.*

  No response required.

- *The SWPPP states that" The pipe collection system sizing will be provided in the final project SWPPP." We take no exception with the concept, but we request the information be provided in the next submission. Additionally, this information should include an evaluation of the existing downstream piping, demonstrating that it can accommodate the proposed modifications associated with this proposal. Resolved.*

  No response required.

- *One of the Worksheets refers to an Appendix F. No such Appendix is included in the SWPPP. Resolved.*

  No response required.

- *The SWPPP refers to vegetated swales. The references should be clarified as either existing or proposed. Generally resolved. Overall labelling has improved. A detail should be provided for the swales labelled SW 1 through SW 4. A generic detail is included in the SWPPP, but a more detailed, dimensioned detail should be added to the plan set.*

  A grass swale detail with dimensions for swale widths, depths and side slopes for swales SW 1, SW 2 and SW 4 has been provided on Drawing D-1. A Rip Rap Swale Detail has similarly been provided for swale SW 3 on Drawing D-1.

- *The rims, inverts, size, material, and slopes for the proposed culverts should be shown and noted on the Plan set. Resolved.*

  No response required.

- *The engineer should evaluate the need for check dams in the driveway swale and the southerly diversion swale. No response provided. Response required.*

  Swale sizing has been provided in Appendix G of the SWPPP. As noted in the calculations, the velocities in the grass swales are below erosive velocities (5 ft/s) so check dams are not proposed or required. Please note a check dam is proposed as pretreatment in Stormwater Management Practice 1.3P. Swale SW 3 is proposed as a Rip Rap Swale to armor the swale against erosion so check dams are not required.

- *If the wash area is to be maintained, additional detail should be provided establishing how the area will be delineated, and any special grading and/or spot elevations to ensure that runoff is properly directed. Resolved pending acceptance of the wash area.*

  No response required.

- *There are a number of erosion control measures indicated outside the limits of disturbance that should be placed inside the limits, primarily silt fence. Resolved.*

  No response required.

<u>Memorandum from Hardesty and Hanover, dated April 3, 2025:</u>

1. *Landscaping and Visual Impact. The Applicant is proposing a landscaped berm to mitigate potential visual impacts and has provided photographs of the existing site. Since the initial proposal, this berm has been widened and lengthened and now proposes a staggered line of 11 White Spruce trees. The proposal will also require the removal of 3 Cedar trees and 2 deciduous hardwood trees (Maple and Ash). We recommend diversity in mitigatory and screen plantings, particularly due to the effect that aging into maturity will have on the screening provided. This can be addressed with a line of White Spruce with a second staggered line of a planting that will fill the understory gaps in a line of mature white spruce. The Planning Board should consider the proposed use and proximity of it to the residential neighborhood to the south and consider the suitability of the proposed berm for mitigating the visual impacts.*

   Additional plantings have been added to the berm as shown on Drawing SP-1 to enhance screening to the residential neighborhood to the south as requested.

2. *SEQRA. The Proposed Action is considered an Unlisted action pursuant to SEQRA. The Planning Board has decided to pursue an uncoordinated review*

   a. *The EAF flags the Site for potential habitat for the Indiana Bat. A note should be added to the plans that the proposed tree clearing would be restricted to November 1 to March 31 in accordance with the NYSDEC tree felling window.*

      The requested note has been included on as General Note 4 on Drawing OP-1.

   b. *The EAF flags the Site as having potential for archeological sites and is flagged as a remediation site. The Applicant should address these issues and if there has been correspondence between the Applicant and the NYSDEC or NYSHPO with respect to these issues and all correspondence should be forwarded to the Town for the record.*

      The EAF Mapper and NYSDEC databases were reviewed for archeological resources and remediation sites based on the EAF mapper identifying potential sites within the vicinity of the project. It is noted the EAF identifies sites within the project locale that may have contained archeological resources or remediation and the identification by the mapper does not mean those resources are present onsite. It should be noted the proposed project is within the area of previous project improvements for which a previous negative declaration was adopted. The property itself is not flagged as either an archeological site or remediation site but is in the vicinity of these sites. The site is partially located in a buffer of an offsite archaeological resources that was flagged on the EAF mapper. The nearest listed resource is the Historic Joseph Horton House which is approximately 1,800' away. The previous development on the site is closer to this resource than the currently proposed development. A submission has been completed with the Cultural Resource Information System (CRIS) for the property. Correspondence will be shared with the board as it is received.

      The property is not noted as a remediation site but is in proximity to a superfund on the nearby airport. We do not believe there to be known contamination on site based on review of the NYSDEC GIS database.

We look forward to discussing this at the April 21, 2025 planning board meeting and reviewing the draft resolution of approval and negative declaration. Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

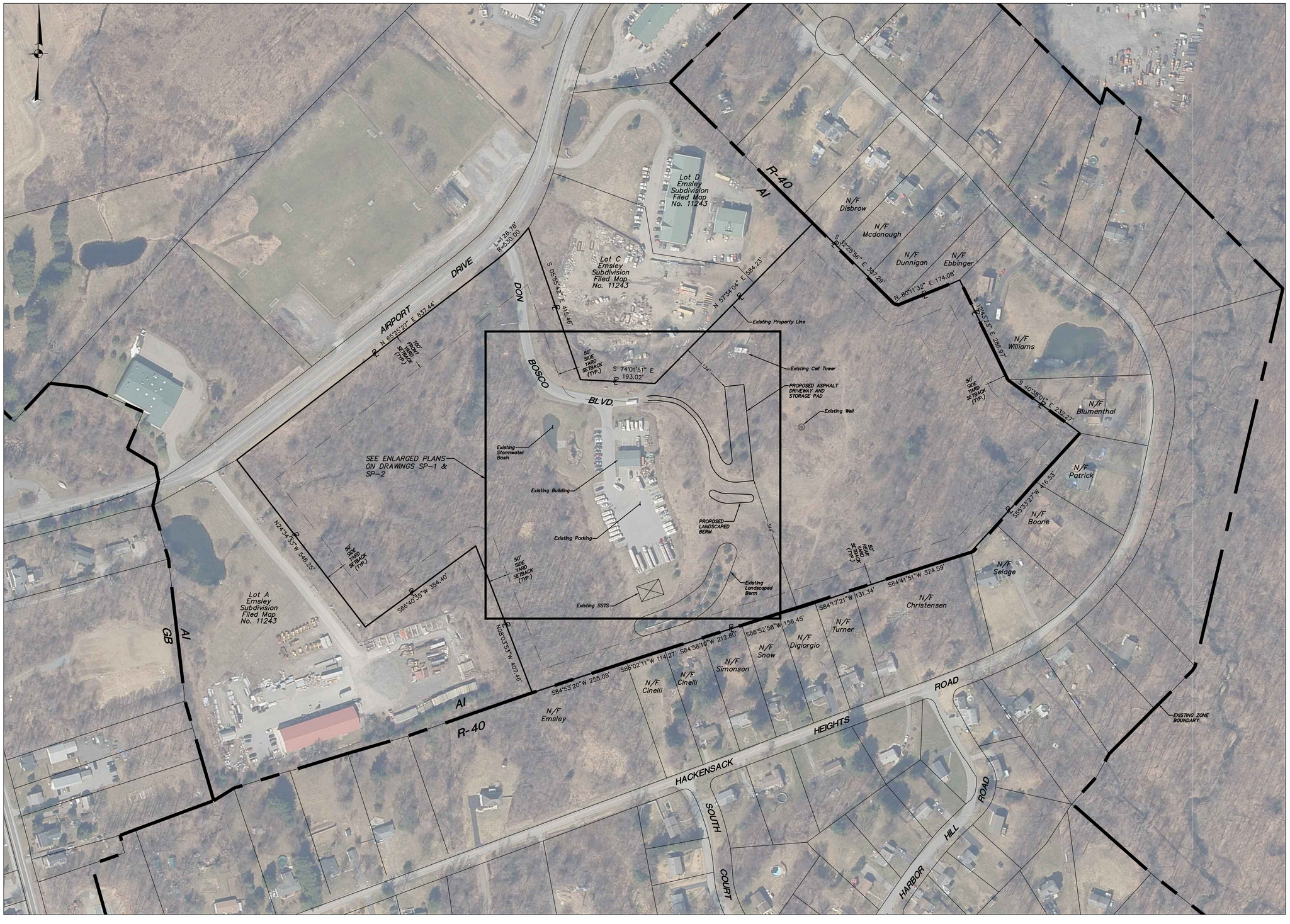
By: _____
Richard D. Williams, Jr., P.E.
Senior Principal Engineer

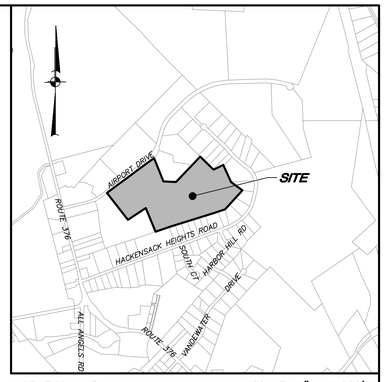
RDW/EMS/kfl

Enclosures

cc:
Insite File No. 24238.100

Site Plans





LOCATION MAP SCALE: 1" = 1,000'±

OWNER/APPLICANT:

Wappinger Airport Drive LLC
2785 West Main Street
Wappingers Falls, NY 12590

SITE DATA:

Zone:	AI–Airport Industry
Total Acreage	33.44 AC.±
Tax Map No.:	6259–04–647405

GENERAL NOTES:

1. Property lines and wetlands taken from Site Plan for Don Bosco Boulevard prepared by Povall Engineering, PLLC last revised 07–28–11. Existing features based on Map of Survey for Parcel B, Emsley Subdivision prepared by Robert V. Oswald, last revised May 1, 2012. Topography based on Site Plan Prepared for Don Bosco Boulevard with updates from Map of Survey for Parcel B.
2. Ortho–imagery shown hereon is taken from the Town of Wappinger GIS data base, dated 2021.
3. A grade of 10% for the storage pad driveway is proposed.
4. Tree removal shall be restricted to between November 1st and March 31st due to the NYSDEC restriction for the projects' proximity to Indiana Bat habitat. Should tree removal be proposed outside these dates, consultation with NYSDEC is required to determine the necessity of a Taking Permit.

PARKING SUMMARY

PARKING SPACES REQUIRED:

BUILDING 1:

A) 800 S.F. OFFICE x (1 SPACE/300 S.F.)	= 2.6 SPACES
B) 1,600 S.F. SHOP x (1 SPACE/400 S.F.)	= 4.0 SPACES
C) 10,000 S.F. STORAGE PAD x (1 SPACE/1,000 S.F.)	= 10.0 SPACES
TOTAL REQUIRED:	16.6=17 SPACES
PARKING SPACES PROVIDED:	66 SPACES*

*27 SPACES ARE FOR EMPLOYEE PARKING.
39 SPACES ARE TO ACCOMMODATE 6–WHEEL SINGLE AXLE TRUCKS, 6–WHEEL DROP AXLE TRUCKS, 10– WHEEL TRUCKS & COMPLETE TRUCK AND TRACTOR TRAILERS.

OFF STREET LOADING SPACES REQUIRED = 3
OFF STREET LOADING SPACES PROVIDED = 4

AI ZONE REQUIREMENTS

	REQUIRED/ PERMITTED	PROPOSED
Minimum Lot Area:	2 AC.	33.44 AC.±
Minimum Lot Width:	200'	509 ±
Minimum Lot Depth:	200'	546' ±
Minimum Street Frontage:	150'	966' ±
Minimum Front Yard From:		
County/State Highway:	75'	N/A
Front Lot Line of Other Street:	100'	601'
Minimum Side Yard:	50'	164'
Minimum Rear Yard:	50'	468'
Maximum Building Height:	2.5 Stories/35'	1 Story/35' Max.
Maximum Building Coverage:	20%	0.2%
Maximum Floor Area Ratio:	0.3	0.002
Maximum Impervious Surface:	75%	6%
Minimum Landscaped Open Space:	25%	94%

ZONING DISTRICT KEY

GB	General Business
AI	Airport Industry
R40	Single Family Residence–40,000 S.F.

LEGEND

- EXISTING PARCEL BOUNDARY
- EXISTING TAX MAP PROPERTY LINE
- ZONING SETBACK LINE
- EXISTING ZONING DISTRICT BOUNDARY
- EXISTING WELL
- EXISTING SSTS

GRAPHIC SCALE
0 50 100 200
(IN FEET)
1 inch = 100 ft.

NO.	DATE	REVISION	BY
2	4–14–25	REVISED PER TOWN COMMENTS	JJS
1	3–14–25	REVISED PER TOWN COMMENTS	MEU

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ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
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Carmel, NY 10512
(845) 225–9690
(845) 225–9717 fax
www.insite–eng.com

PROJECT:
AMENDED SITE PLAN FOR DON BOSCO BOULEVARD
AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY

DRAWING:
OVERALL PLAN

STATE OF NEW YORK · RICHARD D. WILLIAMS · 065866 · LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	24238.100	PROJECT MANAGER	R.D.W.
DATE	2–3–24	DRAWN BY	M.E.U.
SCALE	1" = 100'	CHECKED BY	E.M.S.

DRAWING NO. OP–1 SHEET 1 / 5

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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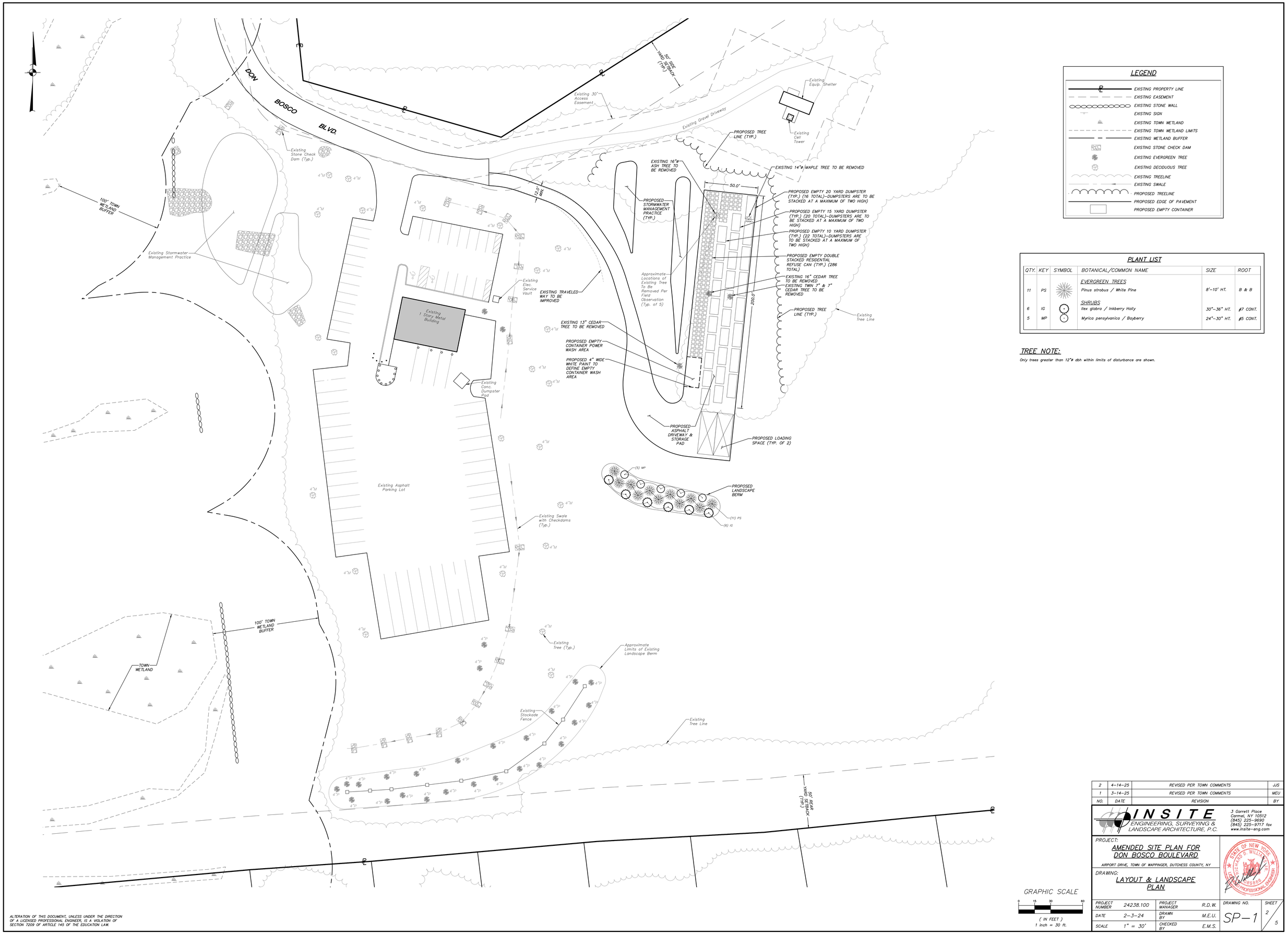

LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING STONE WALL
- EXISTING SIGN
- EXISTING TOWN WETLAND
- EXISTING TOWN WETLAND LIMITS
- EXISTING WETLAND BUFFER
- EXISTING STONE CHECK DAM
- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE
- EXISTING TREELINE
- EXISTING SWALE
- PROPOSED TREELINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED EMPTY CONTAINER

PLANT LIST

QTY.	KEY	SYMBOL	BOTANICAL/COMMON NAME	SIZE	ROOT
			EVERGREEN TREES		
11	PS		Pinus strobus / White Pine	8'–10' HT.	B & B
			SHRUBS		
6	IG		Ilex glabra / Inkberry Holly	30"–36" HT.	#7 CONT.
5	MP		Myrica pensylvanica / Bayberry	24"–30" HT.	#5 CONT.

TREE NOTE:

Only trees greater than 12"ø dbh within limits of disturbance are shown.

GRAPHIC SCALE

0 15 30 60

(IN FEET)
1 inch = 30 ft.

NO.	DATE	REVISION	BY
2	4–14–25	REVISED PER TOWN COMMENTS	JJS
1	3–14–25	REVISED PER TOWN COMMENTS	MEU

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PROJECT:
AMENDED SITE PLAN FOR DON BOSCO BOULEVARD
AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY

DRAWING:
LAYOUT & LANDSCAPE PLAN

STATE OF NEW YORK · RICHARD D. WILLIAMS JR. · 085868 · LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	24238.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	2–3–24	DRAWN BY	M.E.U.	SP–1	2 / 5
SCALE	1" = 30'	CHECKED BY	E.M.S.		

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING STONE WALL
- EXISTING SIGN
- EXISTING UNDERGROUND DRAINAGE PIPE
- EXISTING UNDERGROUND SEWER PIPE
- EXISTING DRAINAGE STRUCTURE
- EXISTING SEWER STRUCTURE
- EXISTING SEWER CLEAN OUT
- EXISTING POST MOUNTED LIGHT
- EXISTING WELL
- EXISTING TOWN WETLAND
- EXISTING TOWN WETLAND LIMITS
- EXISTING WETLAND BUFFER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING STONE CHECK DAM
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PITCH TO DRAIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION WITH RIP RAP PAD
- PROPOSED DRAINAGE PIPE
- PROPOSED GRASS SWALE
- PROPOSED DOMESTIC WELL SERVICE LINE
- PROPOSED SILT FENCE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED TEMPORARY SOIL STOCKPILE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE

PROPOSED DRAINAGE TABLE

STRUCTURE	RIM.	INV.	PIPE	LENGTH	SLOPE
OS 1.2	222.0	216.0	12" HDPE	50 L.F.	32.0%
OS 1.3	206.0	IN 200.0/OUT 199.0	12" HDPE	90 L.F.	5.4%
DMH 2	198.1	195.1	12" HDPE	31 L.F.	21.3%
ES 1	–	188.5			
ES 4	–	220.5	12" HDPE	57 L.F.	13.2%
ES 3	–	213.0			
YD 6	222.5	219.5	12" HDPE	42 L.F.	11.9%
ES 5	–	215.5			

EMPTY CONTAINER POWER WASHING NOTES:

1. Containers returning to the site will be delivered by employees of the facility. Prior to washing, the container will be inspected and any debris or waste will be removed and disposed of in the proper waste receptacle. Inspection shall also be for any wet paint, films, liquids or sheens that could be considered toxic or hazardous.
2. If any wet paint, films, liquids or sheens are observed, container washing shall not proceed until they are fully dry, evaporate or cleaned with absorbent materials. Absorbent materials shall be disposed or in accordance with pertinent regulations.
3. Only clean water shall be used for washing. No detergents or chemicals shall be added.

GRAPHIC SCALE

0 15 30 60

(IN FEET)
1 inch = 30 ft.

NO.	DATE	REVISION	BY
2	4-14-25	REVISED PER TOWN COMMENTS	JJS
1	3-14-25	REVISED PER TOWN COMMENTS	MEU

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PROJECT:
AMENDED SITE PLAN FOR DON BOSCO BOULEVARD
AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY

DRAWING: GRADING, UTILITIES & EROSION & SEDIMENT CONTROL PLAN

STATE OF NEW YORK · RICHARD D. WILLIAMS · 089866 · LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	24238.100	PROJECT MANAGER	R.D.W.
DATE	2-3-24	DRAWN BY	M.E.U.
SCALE	1" = 30'	CHECKED BY	E.M.S.

DRAWING NO. SP-2

SHEET 3 / 5

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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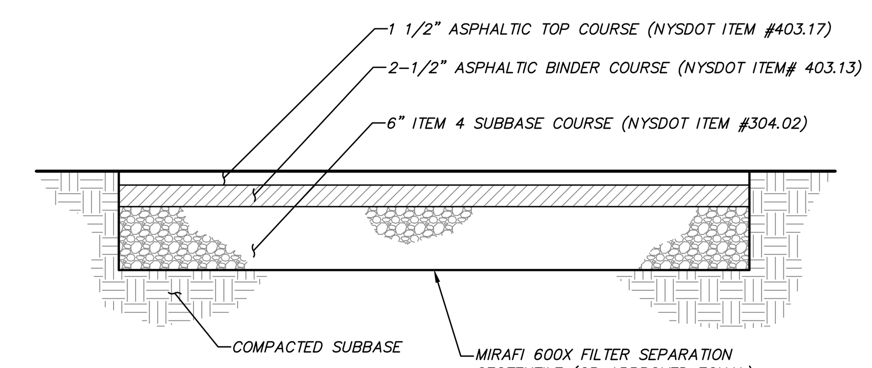
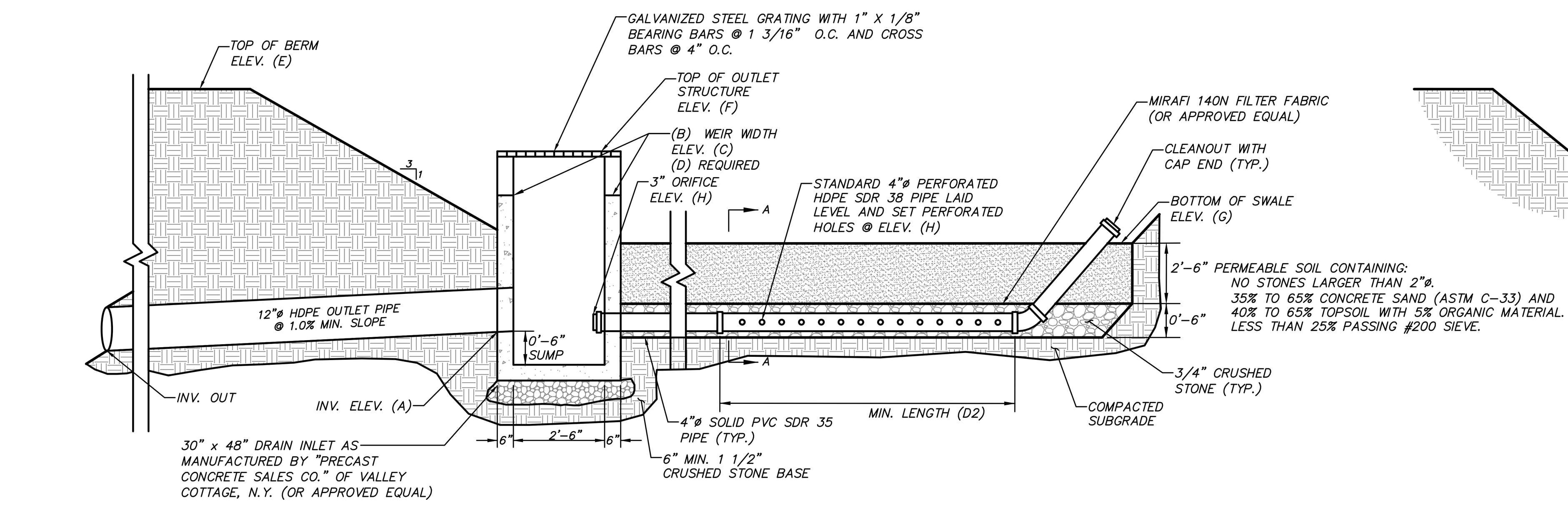
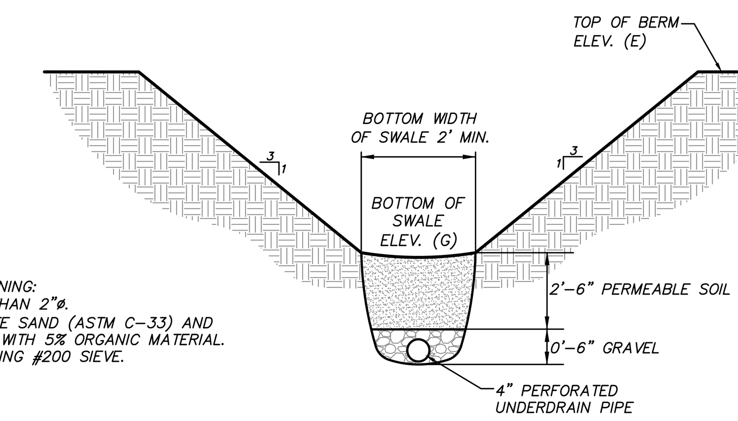


ASPHALT DRIVEWAY PAVEMENT DETAIL
(N.T.S.)



ELEVATION

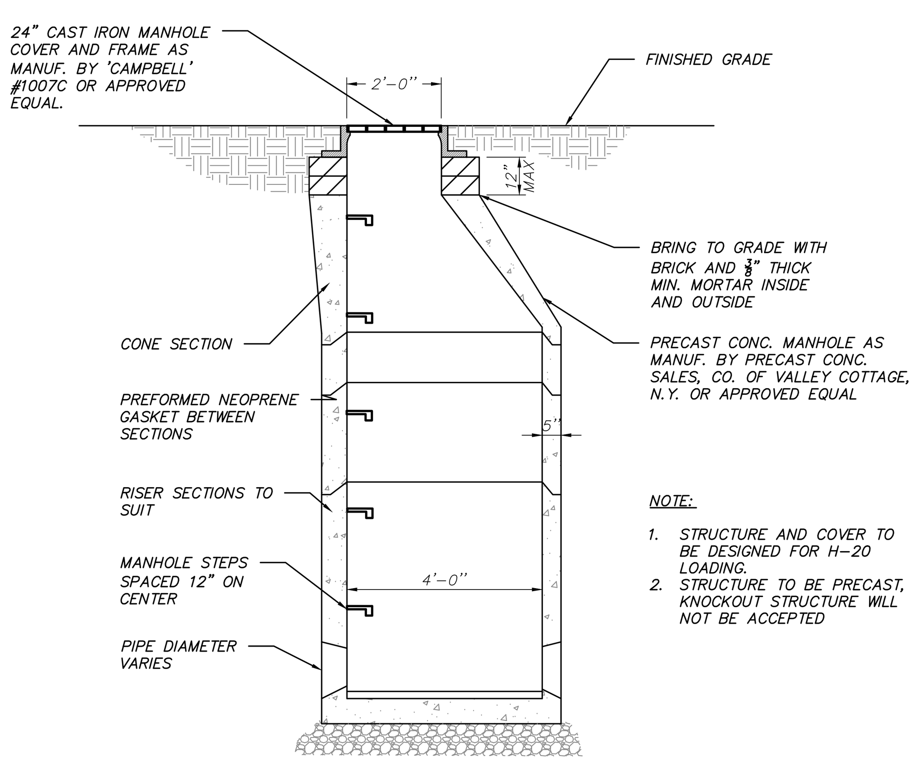


SECTION A-A

* NOTE: PERMEABLE FULL DEPTH SOIL TO EXTEND TO FULL BOTTOM AREA OF SWALE.

STORMWATER MANAGMENT PRACTICE	OUTLET PIPE ELEVATION (A)	WIER SIZE (B)	WIER ELEVATION (C)	NUMBER OF WIERS REQUIRED (D)	BERM ELEVATION (E)	TOP OF STRUCTURE ELEVATION (F)	BOTTOM OF SWALE ELEVATION (G)	ELEVATION OF ORIFICE (H)
1.2P	216.0	2.5'	221.5	4	222.2	221.7	220.0	216.0
1.3P	197.5	2.5'	205.5	4	206.2	205.7	204.0	200.0

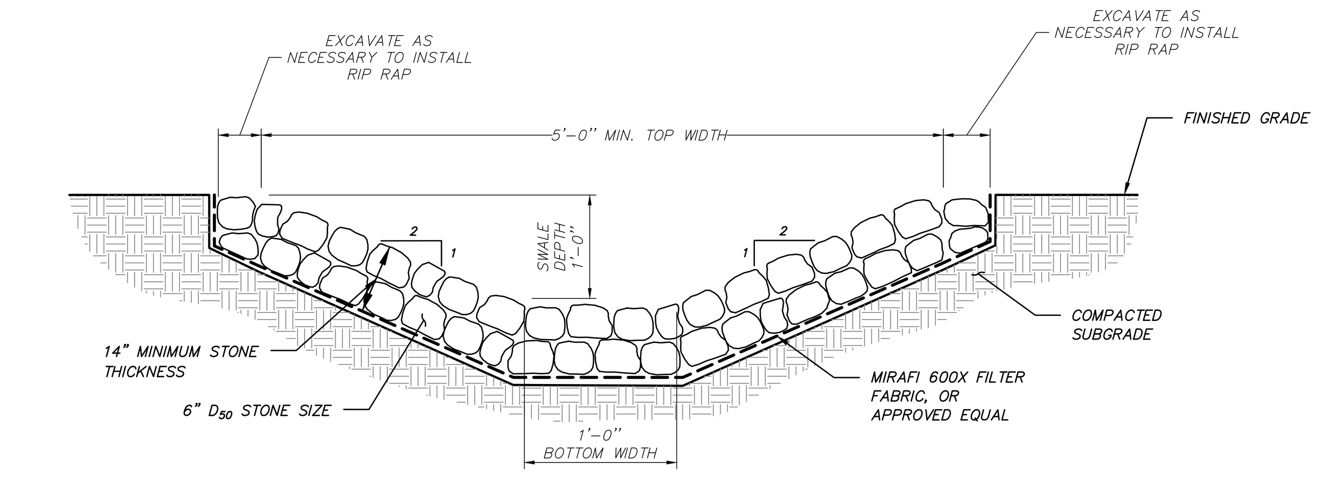
DRY SWALE (NYSDEC DESIGN O-1) PERMANENT OUTLET STRUCTURE DETAIL
(N.T.S.)



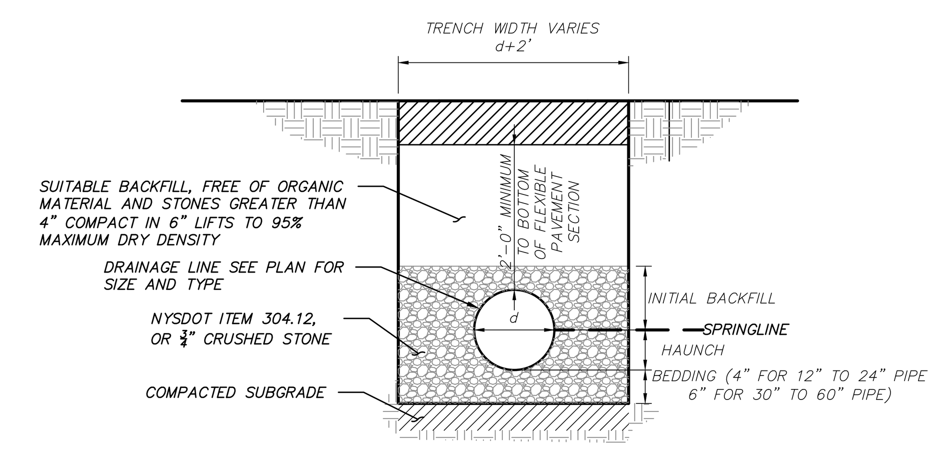
NOTE:

1. STRUCTURE AND COVER TO BE DESIGNED FOR H-20 LOADING.
2. STRUCTURE TO BE PRECAST, KNOCKOUT STRUCTURE WILL NOT BE ACCEPTED

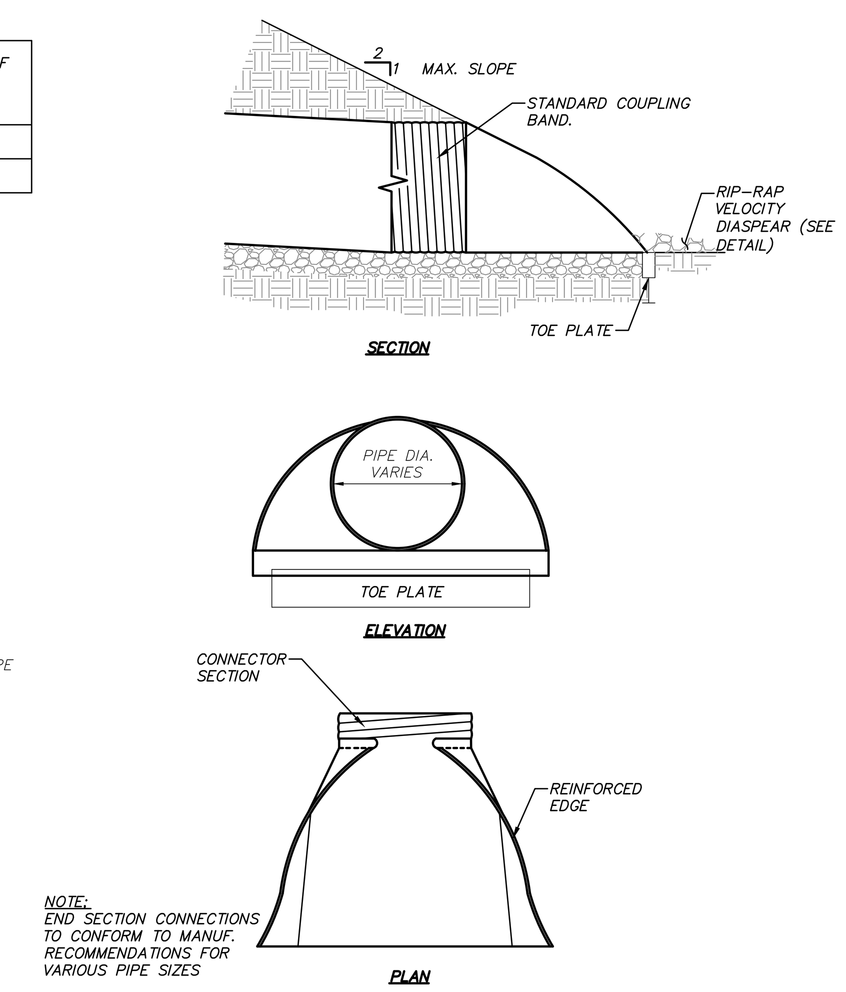
DRAINAGE MANHOLE DETAIL
(N.T.S.)



RIP RAP SWALE (SW 3) DETAIL
(N.T.S.)

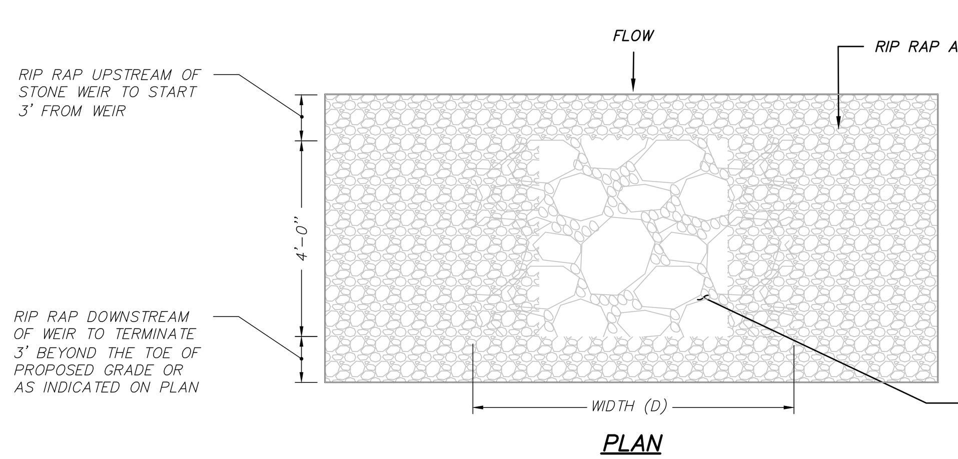


DRAINAGE LINE TRENCH DETAIL
(N.T.S.)



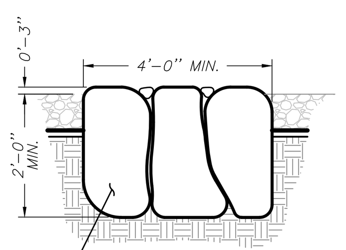
NOTE:
END SECTION CONNECTIONS TO CONFORM TO MANUF. RECOMMENDATIONS FOR VARIOUS PIPE SIZES

END SECTION DETAIL
(N.T.S.)



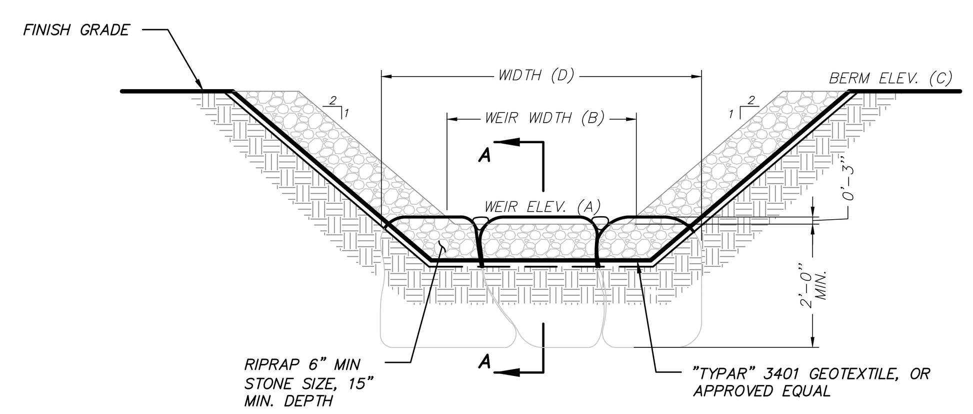
PLAN

BASIN	WEIR ELEV. (A)	WEIR WIDTH (B)	BERM ELEV. (C)	WIDTH (D)
1.2P	221.7	10'	222.2	10'
1.3P	205.7	10'	206.2	10'



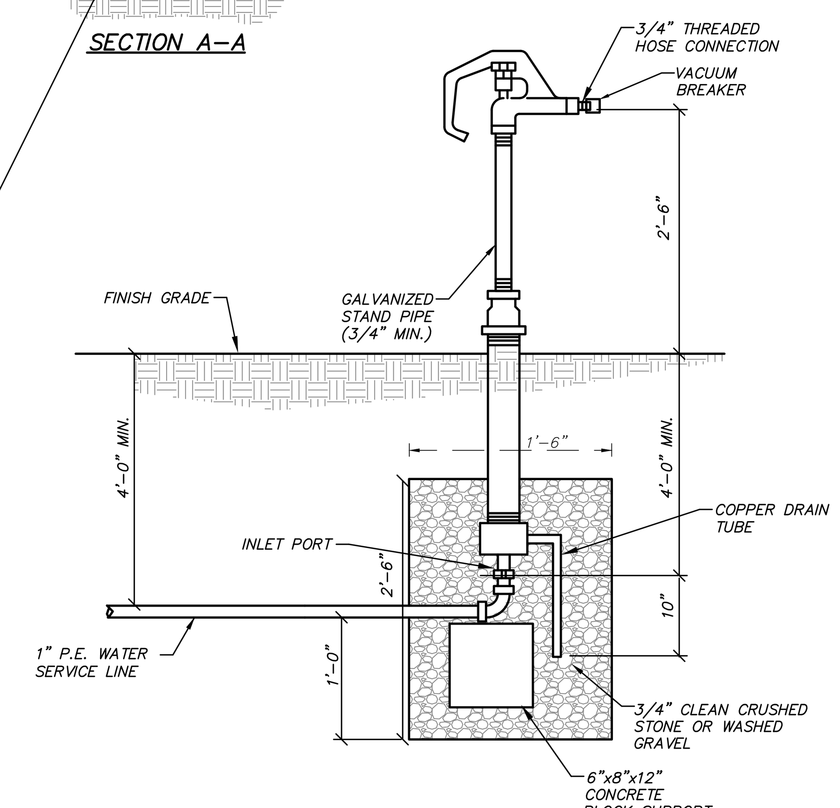
SECTION A-A

150# MIN. STONES LAYED FLAT AT WEIR ELEV. (A) WITHIN 0.1'± AND CHINKED WITH SMALLED STONES (TYP.)

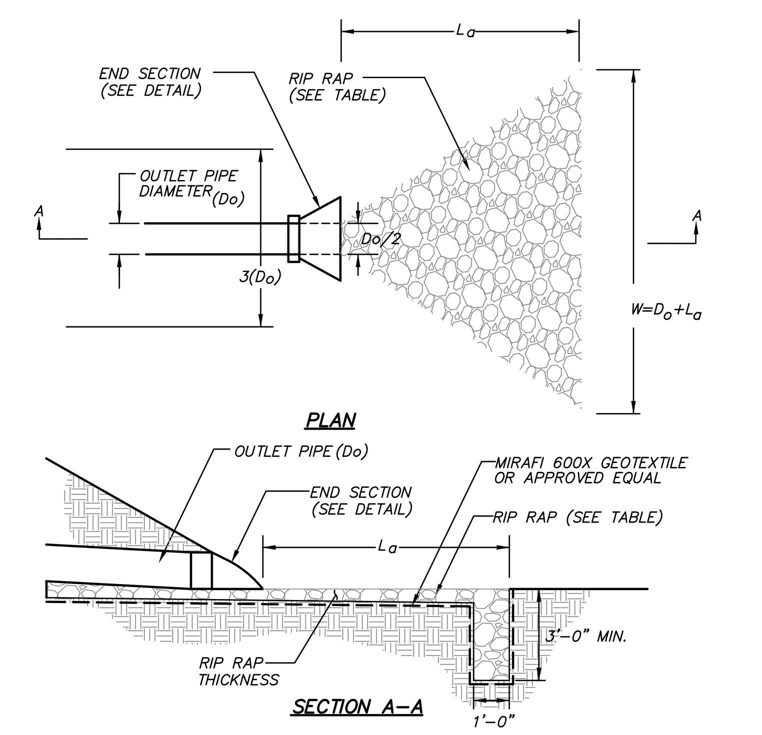


ELEVATION

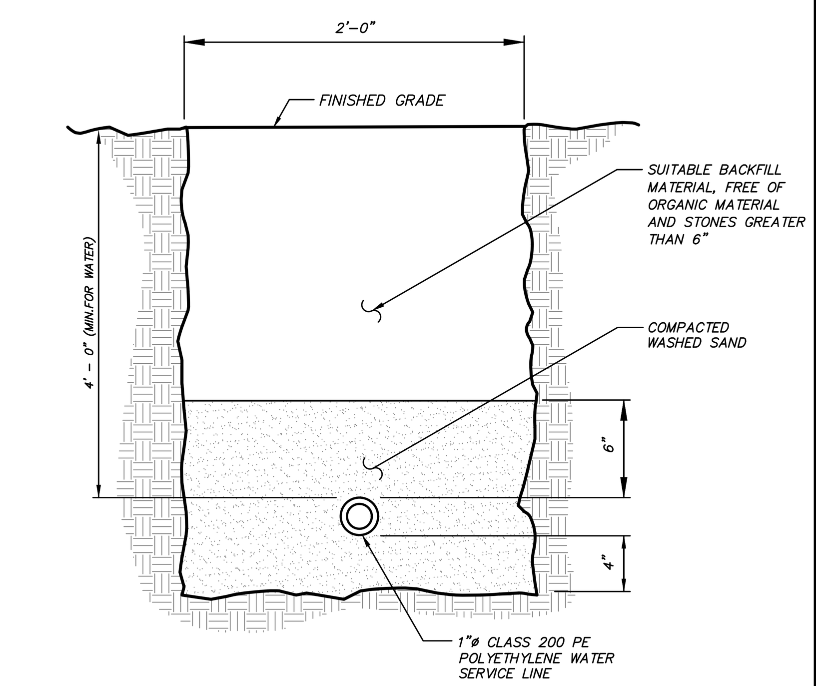
STONE AUXILIARY SPILLWAY DETAIL
(N.T.S.)



YARD HYDRANT DETAIL
(N.T.S.)



ROCK OUTLET PROTECTION DETAIL
(N.T.S.)



WELL SERVICE LINE TRENCH DETAIL
(N.T.S.)

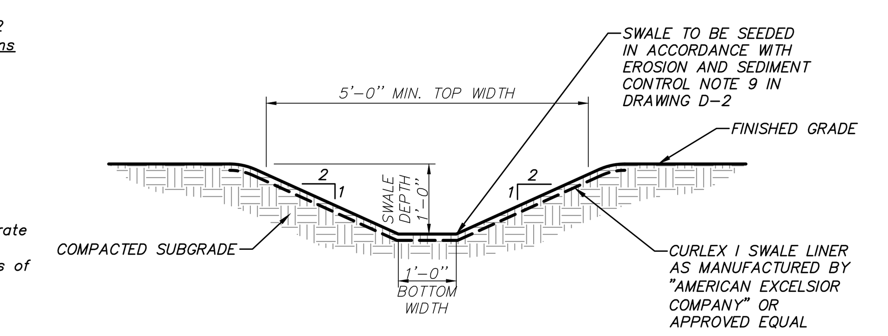
GENERAL SITE SEEDING NOTES:

1. All proposed seeded areas to receive 4" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.

2. Upon final grading and placement of topsoil and any required soil amendments, areas to receive permanent vegetation cover in combination with suitable mulch as follows:
   - select seed mixture per drawings and seeding notes.
   - fertilizer applied at the manufacturer's recommended rate using Lesco 10-0-18 (no phosphorous) fertilizer or equivalent.
   - mulch: salt hay or small grain straw applied at a rate of 90 lbs./1000 s.f. or 2 tons/acre, to be applied and anchored according to New York State Standards and Specifications for Erosion and Sediment Control, August 2005.
   - if the season prevents the establishment of a permanent vegetation cover, the disturbed areas will be mulched with straw or equivalent.

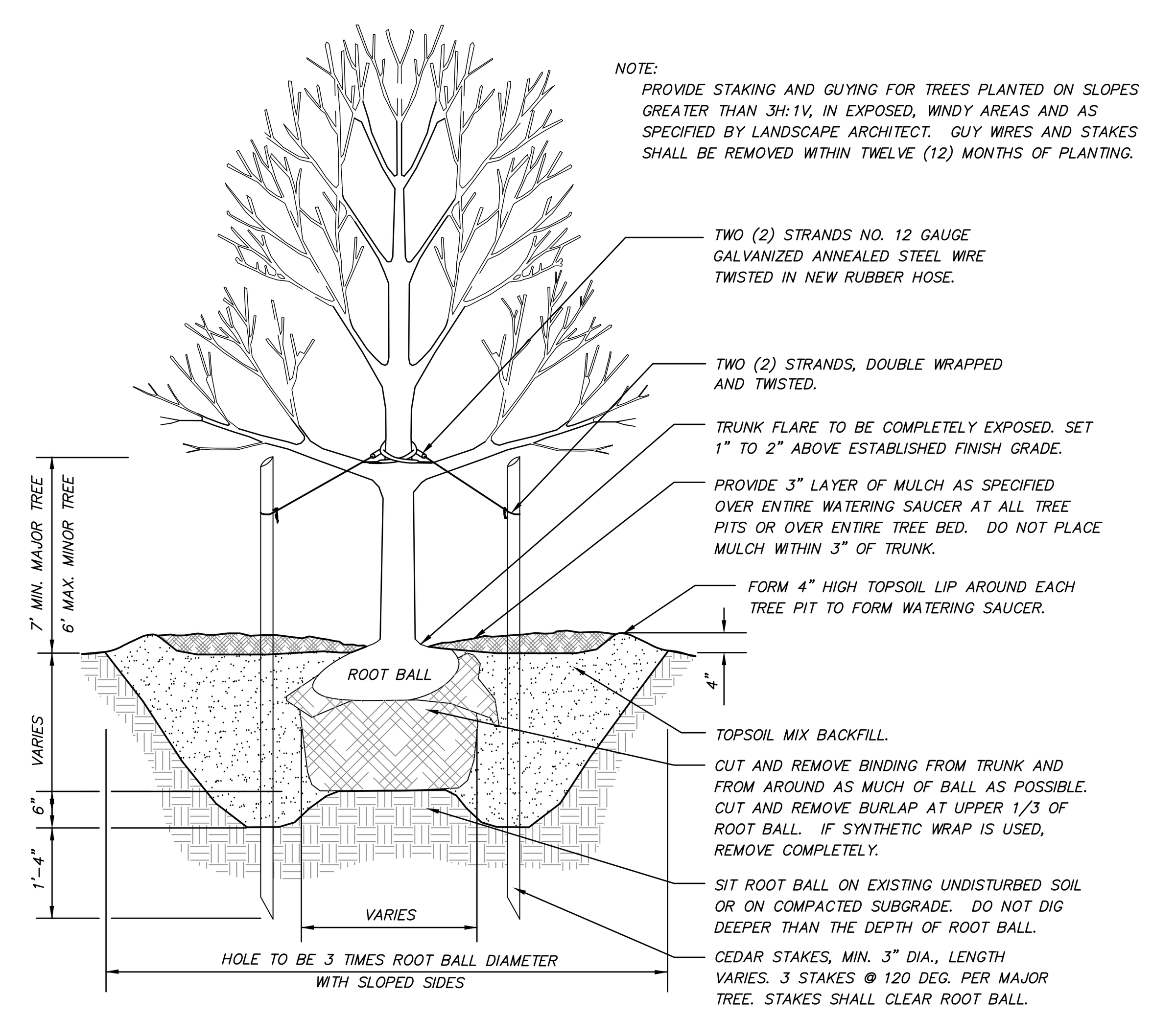
3. The seed mixes as specified on these drawings are as follows:
   A. Seed Mix for lawn areas and mow strip along roads at a rate of 100 lbs. per acre:
      Kentucky Bluegrass 20%
      Creeping Red Fescue 40%
      Perennial Ryegrass 20%
      Annual Ryegrass 20%
   B. Seed Mix for Wildflower Meadow areas and SSTS area as shown on the drawings at a rate of 15 lbs. per acre:
      Low-Growing Wildflower & Grass Mix (ERNMX-156) from Ernst Conservation Seeds of Meadville, PA.
   C. Seed Mix for Meadow areas as shown on the drawings, including tops of berms and backslopes of embankments of stormwater basins at a rate of 25 lbs. per acre:
      New England Conservation/Wildlife Mix from New England Wetland Plants, Inc. of Amherst, MA.
   D. Seed Mix #2 for areas as shown on the drawings and slope areas 2:1 at a rate of 35 lbs. per acre:
      New England Erosion Control/Restoration Mix (for Dry Sites) from New England Wetland Plants, Inc. of Amherst, MA.
   E. Seed Mix for Wildflower areas as shown on the drawings at a rate of 23 lbs. per acre:
      New England Wildflower Mix from New England Wetland Plants, Inc. of Amherst, MA.
   F. Seed Mix for dry slopes along road sides as shown on the drawings at a rate of 35 lbs. per acre:
      New England Roadside Matrix Upland Seed Mix by New England Wetland Plants, Inc. of Amherst, MA.
   G. Seed Mix for wet meadows and low areas along road side as shown on drawings at a rate of 35 lbs. per acre:
      New England Roadside Matrix Wet Meadow Seed Mix by New England Wetland Plants, Inc. of Amherst, MA.

4. See Drawing D-1 "Site Details" for Stormwater Basin seeding.

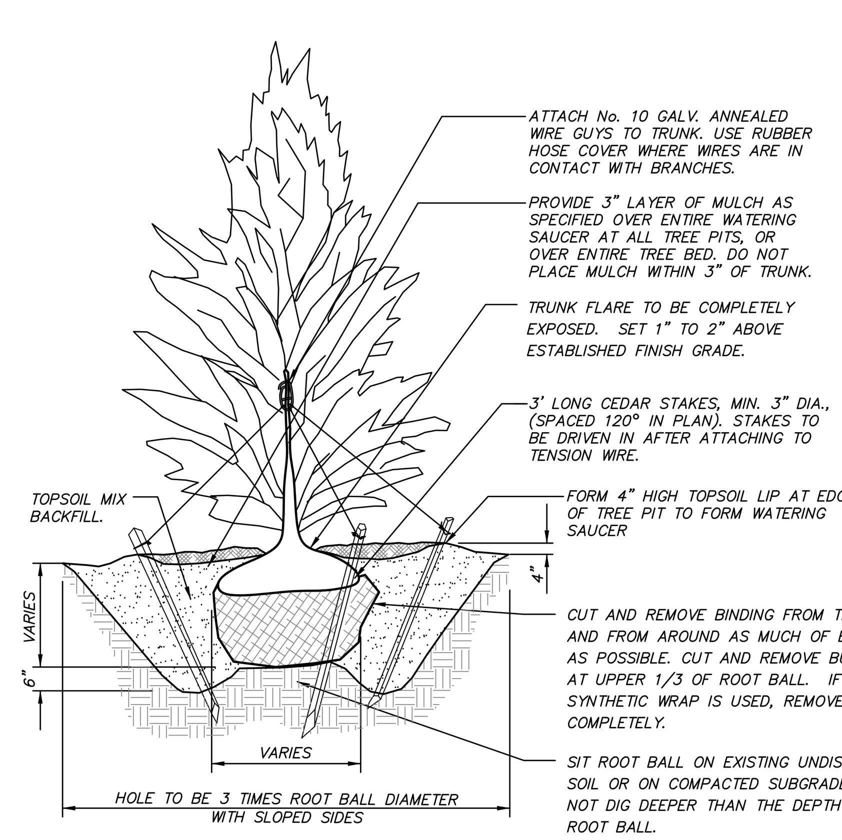


GRASS SWALE (SW 1, SW 2, SW 4) DETAIL
(N.T.S.)

NOTE:
PROVIDE STAKING AND GUYING FOR TREES PLANTED ON SLOPES GREATER THAN 3H:1V, IN EXPOSED, WINDY AREAS AND AS SPECIFIED BY LANDSCAPE ARCHITECT. GUY WIRES AND STAKES SHALL BE REMOVED WITHIN TWELVE (12) MONTHS OF PLANTING.

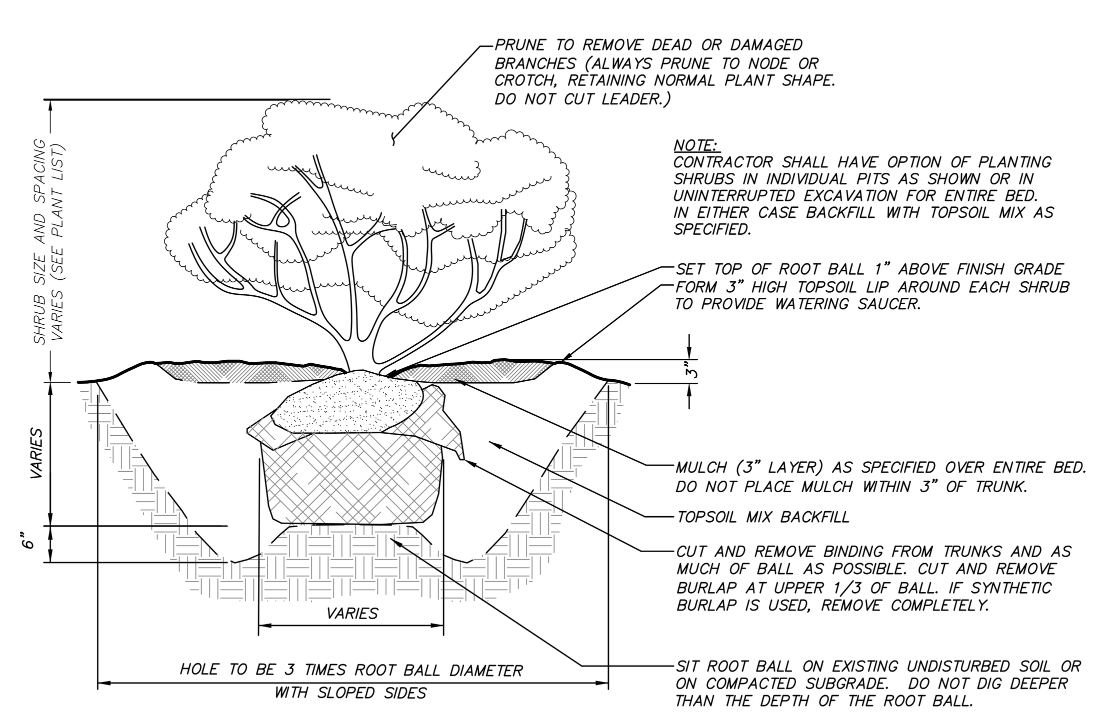


TREE PLANTING DETAIL
(N.T.S.)



NOTE:
PROVIDE STAKING AND GUYING FOR TREES PLANTED ON SLOPES GREATER THAN 3H:1V, IN EXPOSED, WINDY AREAS AND AS SPECIFIED BY LANDSCAPE ARCHITECT. GUY WIRES AND STAKES SHALL BE REMOVED WITHIN TWELVE MONTHS OF PLANTING.

EVERGREEN TREE PLANTING DETAIL
(N.T.S.)



NOTE:
CONTRACTOR SHALL HAVE OPTION OF PLANTING SHRUBS IN INDIVIDUAL PITS AS SHOWN OR IN UNINTERRUPTED EXCAVATION FOR ENTIRE BED. IN EITHER CASE BACKFILL WITH TOPSOIL MIX AS SPECIFIED.

SHRUB PLANTING DETAIL
(N.T.S.)

GENERAL PLANTING NOTES:

1. All proposed planting beds to receive a 12" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
2. Any new soils added will be amended as required by results of soil testing and placed using a method that will not cause compaction.
3. No fertilizer shall be added in stormwater basin plantings. Nutrient requirements to be met by incorporation of acceptable organic matter.
4. All plant material to be nursery grown.
5. Plants shall conform with ANSI Z60.1 American Standard for Nursery Stock in all ways including dimensions.
6. Plant material shall be taken from healthy nursery stock.
7. All plants shall be grown under climate conditions similar to those in the locality of the project.
8. Plants shall be planted in all locations designed on the plan or as staked in the field by the Landscape Architect.
9. The location and layout of landscape plants shown on the site plan shall take precedence in any discrepancies between the quantities of plants shown on the plans and the quantity of plants in the Plant List.
10. Provide a 3" layer of shredded pine bark mulch (or as specified) over entire watering saucer at all tree pits or over entire planting bed. Do not place mulch within 3" of tree or shrub trunks.
11. All landscape plantings shall be maintained in a healthy condition at all times. Any dead or diseased plants shall immediately be replaced "in kind" by the contractor (during warranty period) or project owner.
12. See Drawing D-1 "Site Details" for Stormwater Basin plantings.

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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NO.	DATE	REVISION	BY
2	4-14-25	REVISED PER TOWN COMMENTS	JJS
1	3-14-25	REVISED PER TOWN COMMENTS	MEU

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
AMENDED SITE PLAN FOR DON BOSCO BOULEVARD
AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY

DRAWING:
DETAILS

STATE OF NEW YORK · RICHARD D. WILLIAMS, JR. · 085888 · LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	24238.100	PROJECT MANAGER	R.D.W.	DRAWING NO. D-1
DATE	2-3-24	DRAWN BY	M.E.U.	SHEET 4 / 5
SCALE	AS SHOWN	CHECKED BY	E.M.S.	

EROSION & SEDIMENT CONTROL NOTES:

1. The Erosion and Sediment Control Plan is only to be referred to for the installation of erosion and sediment control measures. For all other construction related activities, including, but not limited to, grading and utilities, refer to the appropriate drawings.
2. Each contractor or subcontractor responsible for soil disturbance shall have a NYSDEC trained contractor onsite during soil disturbing activities. The NYSDEC trained contractor will be responsible to comply with the stormwater pollution prevention plan and for the implementation and maintenance of erosion and sediment control measures on this site prior to and during construction. The NYSDEC trained contractor shall sign a certification statement required by GP-0-25-001.
3. All construction activities involving the removal or disposition of soil are to be provided with appropriate protective measures to minimize erosion and contain sediment disposition within. Minimum soil erosion and sediment control measures shall be implemented as shown on the plans and shall be installed in accordance with "New York Standards and Specifications For Erosion and Sediment Control," latest edition.
4. Wherever feasible, natural vegetation should be retained and protected. Disturbance shall be minimized in the areas required to perform construction. No more than 5 acres of unprotected soil shall be exposed at any one time.
5. When land is exposed during development, the exposure shall be kept to the shortest practical period of time, but in no case more than 7 days after the construction activity in that portion of the site has ceased. Disturbance shall be minimized in the areas required to perform construction.
6. All construction vehicles shall be kept clear of the watercourses and wetland control areas outside the areas of proposed development. Silt fence and orange construction fence shall be installed in the areas where the grading is in close proximity of the watercourses or wetland control areas.
7. The stabilized construction entrances, silt fence, and orange construction fence shall be installed as shown on the plans prior to beginning any clearing, grubbing or earthwork.
8. All topsoil to be stripped from the area being developed shall be stockpiled and immediately seeded for temporary stabilization. Ryegrass (annual or perennial) at a rate of 30 lbs. per acre shall be used for temporary seeding in spring, summer or early fall. 'Aristook' Winter Rye (cereal rye) shall be used for temporary seeding in late fall and winter.
9. Any graded areas not subject to further disturbance or construction traffic shall, within 7 days of final grading, receive permanent vegetation cover in combination with a suitable mulch. All seeded areas to receive a minimum 4" topsoil (from stockpile area) and be seeded and mulched between March 21 and May 20 or between August 15 and October 15 or as directed by project representative, with specified seed mixes as shown in the General Site Seeding Notes.
   - Mulch: Salt hay or small grain straw applied at a rate of 90 lbs./1000 S.F. or 2 tons/acre, to be applied and anchored according to "New York Standards and Specification For Erosion and Sediment Control," latest edition.
10. Grass seed mix may be applied by either mechanical or hydroseeding methods. Seeding shall be performed in accordance with the current edition of the "NYSDOT Standard Specification, Construction and Materials, Section 610-3.02, Method No. 1". Hydroseeding shall be performed using materials and methods as approved by the site engineer.
11. Cut or fill slopes steeper than 2:1 shall be stabilized immediately after grading with Curlex I Single Net Erosion Control Blanket, or approved equal.
12. Paved roadways shall be kept clean at all times.
13. The site shall at all times be graded and maintained such that all stormwater runoff is diverted to soil erosion and sediment control facilities.
14. All storm drainage outlets shall be stabilized, as required, before the discharge points become operational.
15. Stormwater from disturbed areas must be passed through erosion control barriers before discharge beyond disturbed areas or discharged into other drainage systems.
16. Erosion and sediment control measures shall be inspected and maintained on a daily basis by the NYSDEC Trained Contractor. to insure that channels, temporary and permanent ditches and pipes are clear of debris, that embankments and berms have not been breached and that all straw bales and silt fences are intact. Any failure of erosion and sediment control measures shall be immediately repaired by the contractor and inspected for approval by the site engineer.
17. Dust shall be controlled by sprinkling or other approved methods as necessary, or as directed by the trained contractor or site engineer.
18. Cut and fills shall not endanger adjoining property, nor divert water onto the property of others.
19. All fills shall be placed and compacted in 6" lifts to provide stability of material and to prevent settlement.
20. The NYSDEC Trained Contractor shall inspect downstream conditions for evidence of sedimentation on a weekly basis and after rainstorms.
21. As warranted by field conditions, special additional erosion and sediment control measures, as specified by the site engineer, the Wetlands Inspector, the Town Engineer shall be installed by the contractor.
22. Erosion and sediment control measures shall remain in place until all disturbed areas are suitably stabilized.
23. After completion of the site improvements, the owner will assume responsibility for maintenance of the roads, parking lots, drainage systems and stormwater facilities. Each spring the paved areas shall be cleaned to remove the winter accumulation of traction sand. After this is completed all drain inlet and catch basin sumps should be cleaned. All pipes should be checked for debris and blockage and cleaned as required. During the cleaning process, the drain inlets, catch basins and pipes should be inspected for structural integrity and overall condition. Repairs and/or replacements should be made as required.
24. Inspection of the stormwater basins should be performed every 6 months and after large storm events. These inspections should, at a minimum, check the outlet pipes for blockage and the general overall integrity of the basin and appurtenances.
25. Maintain basin vegetation including removal of trees and replacement of vegetation that should die. Remove any litter which accumulates as necessary. Typically, the accumulated silt will be required to be removed every 10 to 20 years. Any accumulated silt shall be removed from the stormwater basins once the site has been stabilized.
26. Refer to the Stormwater Pollution Prevention Plan for additional details regarding long-term maintenance of the storm drainage facilities.
27. Cover all soil stockpiles on asphalt areas with tarps in lieu of silt fence.

REQUIRED EROSION CONTROL SWPPP CONTENTS:

Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP-0-25-001), all Stormwater Pollution Prevention Plan's (SWPPP) shall include erosion and sediment control practices designed in conformance with the most current version of the technical standard, "New York Standards and Specifications for Erosion and Sediment Control." Where erosion and sediment control practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of required SWPPP components is provided in accordance with Part III.B.1a-l of General Permit GP-0-25-001:

a. Background Information: The subject project consists of the expansion of a commercial facility.

b. Site map / construction drawing: These plans serve to satisfy this SWPPP requirement.

c. Description of the soils present at the site: Onsite soils located within the proposed limits of disturbance consist of Bernardstn silt loam (BeC) and Pittstown silt loam (PwB), as identified on the Soil Conservation Service Web Soil Survey. These soil types belong to the Hydrologic Soil Group "C/D" and "C."

d. Construction phasing plan / sequence of operations: The Construction Sequence and phasing found on these plans provide the required phasing. A Construction Sequence and Erosion and Sediment Control Maintenance Schedule has been provided. The Erosion and Sediment Control Notes contained hereon outline a general sequence of operations for the proposed project. In general all erosion and sediment control facilities shall be installed prior to commencement with land disturbing activities, and areas of disturbance shall be limited to the shortest period of time as practicable.

e. Description of erosion and sediment control practices: This plan, and details / notes shown hereon serve to satisfy this SWPPP requirement.

f. Temporary and permanent soil stabilization plan: The Sedimentation and Erosion Control Notes and Details provided heron identify temporary and permanent stabilization measures to be employed with respect to specific elements of the project, and at the various stages of development.

g. Site map / construction drawing: This plan serves to satisfy this SWPPP requirement.

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices: The details, Erosion and Sediment Control Notes, and Erosion and Sediment Control Maintenance Schedule serve to satisfy this SWPPP requirement.

i. An inspection schedule: Inspections are to be performed once weekly and by a qualified professional as required by the General Permit GP-0-25-001. In addition the NYSDEC Trained Contractor shall perform additional inspections as cited in the Sedimentation and Erosion Control Notes.

j. A description of pollution prevention measures that will be used to control litter, construction chemicals and construction debris: In general, all construction litter / debris shall be collected and removed from the site. The general contractor shall supply either waste barrels or dumpster for proper waste disposal. Any construction chemicals utilized during construction shall either be removed from site daily by the contractor or stored in a structurally sound and weatherproof building. No hazardous waste shall be disposed of onsite, and shall ultimately be disposed of in accordance with all federal, state and local regulations. Material Safety Data Sheets (MSDS), material inventory, and emergency contact numbers shall be maintained by the general contractor for all construction chemicals utilized onsite. Finally, temporary sanitary facilities (portable toilets) shall be provided onsite during the entire length of construction, and inspected weekly for evidence of leaking holding tanks.

k. A description and location of any stormwater discharges associated with industrial activity other than construction at the site: There are no known industrial stormwater discharges present or proposed at the site.

l. Identification of any elements of the design that are not in conformance with the technical standard, "New York Standards and Specifications for Erosion and Sediment Control." All proposed elements of this SWPPP have been designed in accordance with the "New York Standards and Specifications for Erosion and Sediment Control."

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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REQUIRED POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICE COMPONENTS:

1. Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP-0-25-001), all construction projects needing post-construction stormwater management practices shall prepare a SWPPP that also includes practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual"). Where post-construction stormwater management practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of SWPPP components is provided in accordance with Part III.B.2a-f and III.B.3:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project; This plan, and details/notes shown hereon serve to satisfy this SWPPP requirement.

   b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice; This plan, and details/notes shown hereon serve to satisfy this SWPPP requirement.

   c. A Stormwater Modeling and Analysis Report including pre-development conditions, post-development conditions, the results of the stormwater modeling, a summary table demonstrating that each practice has been designed in conformance with the sizing criteria, identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required. The required analysis is provided in the report titled Stormwater Pollution Prevention Plan for Don Bosco Boulevard.

   d. Soil testing results and locations to be completed.

   e. Infiltration testing results. No infiltration proposed.

   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. The Permanent Stormwater Facilities Maintenance Schedule provided on these plans serves to satisfy this requirement.

CONSTRUCTION SEQUENCE:

1. Install stabilized construction entrance/anti-tracking pad at driveway entrance.
2. Install silt fence in general locations indicated on the plan.
3. Begin clearing and grubbing operations.
4. Strip and stockpile topsoil on site for later use in lawn and landscape areas.
5. Begin excavation for lot grading, and construction of proposed driveway and pad.
6. Install stormwater management practices.
7. Upon completion of grading operations, install finished pavement surfaces.
8. Topsoil, seed, and mulch all disturbed areas as soon as practical in accordance with the Erosion and Sediment Control Notes contained on this page.

EROSION AND SEDIMENT CONTROL MAINTENANCE SCHEDULE

MONITORING REQUIREMENTS				MAINTENANCE REQUIREMENTS	
PRACTICE	DAILY	WEEKLY	AFTER RAINFALL	DURING CONSTRUCTION	AFTER CONSTRUCTION
SILT FENCE BARRIER	–	Inspect	Inspect	Clean/Replace	Remove
STABILIZED CONSTRUCTION ENTRANCE	Inspect	–	Inspect	Clean/Replace Stone and Fabric	Remove
INLET PROTECTION	–	Inspect	Inspect	Clean/Repair/ Replace	Remove
DUST CONTROL	Inspect	–	Inspect	Mulching/ Spraying Water	N/A
*VEGETATIVE ESTABLISHMENT	–	Inspect	Inspect	Water/Reseed/ Remulch	Reseed to 80% Coverage
SOIL STOCKPILES	–	Inspect	Inspect	Mulching/ Silt Fence Repair	Remove
SWALES	–	Inspect	Inspect	Clean/Mulch/ Repair	Mow Permanent Grass/Replace/ Repair Rip Rap
CONCRETE DRAINAGE STRUCTURES	–	Inspect	Inspect	Clean Sumps/ Remove Debris/ Repair/Replace	See Permanent Stormwater Facilities Maintenance Schedule on Drawing D-10
DRAINAGE PIPES	–	Inspect	Inspect	Clean/Repair	
ACCESS ROAD / PAVEMENT	–	Inspect	Inspect	Clean	Clean
SEDIMENT TRAPS / STORMWATER PONDS*	–	Inspect	Inspect	Clean/Mulch/ Repair/Reseed	See Permanent Stormwater Facilities Maintenance Schedule on Drawing D-10

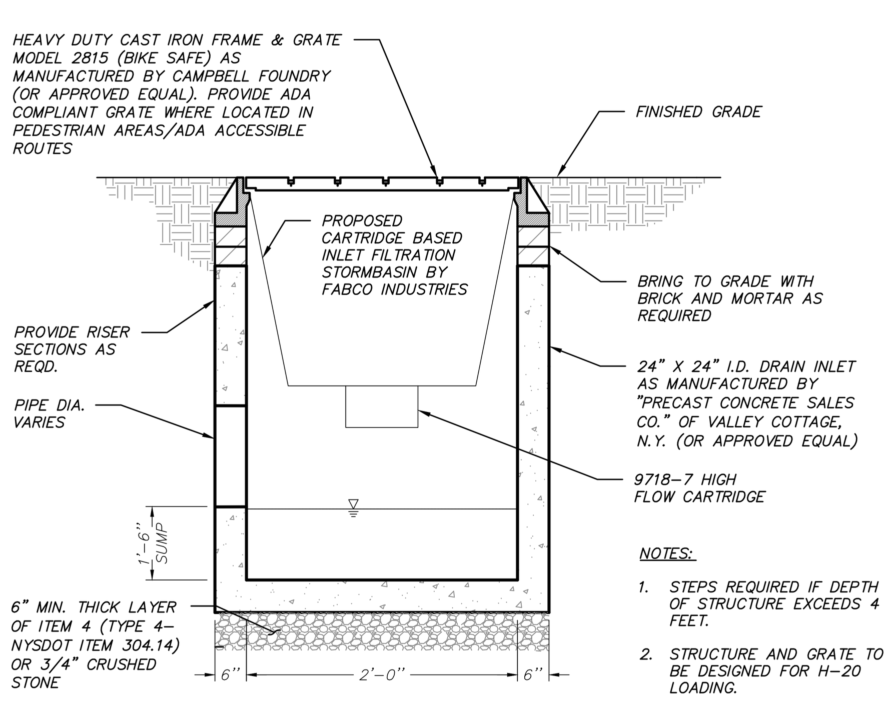
* Permanent vegetation is considered stabilized when 80% of the plant density is established. Erosion control measures shall remain in place until all disturbed areas area permanently stabilized.

PERMANENT STORMWATER FACILITIES MAINTENANCE SCHEDULE

PRACTICE/FACILITY	MONTHLY	AFTER MAJOR STORM EVENTS	BI-ANNUALLY	YEARLY	EVERY 5 to 10 YEARS
GRASS & RIP RAP SWALES	Ensure contributing areas clean of debris, no evidence of erosion, & mowing performed.	Inspect for erosion, soil permeability & evidence of flow going around structures.	–	Inspect & clean accumulated sediment.	–
WATER QUALITY SWALES	Inspect first few months after construction for eroding soils & slumpage & repair immediately	–	Inspect & clean Mow & remove debris & litter. Revegetate as needed.	–	Inspect for & remove accumulated sediment
SUBSURFACE STORMWATER COLLECTION SYSTEMS	–	–	Inspect & clean	Inspect, clean, repair and/or replace structures. Remove debris.	–
GRASS SWALES	Inspect first few months after construction for eroding soils & slumpage & repair immediately	–	Inspect & clean Mow & remove debris & litter. Revegetate as needed.	–	Inspect for & remove accumulated sediment
FABCO STORMBASIN	See manufacturer's maintenance requirements in Appendix H of the SWPPP.				

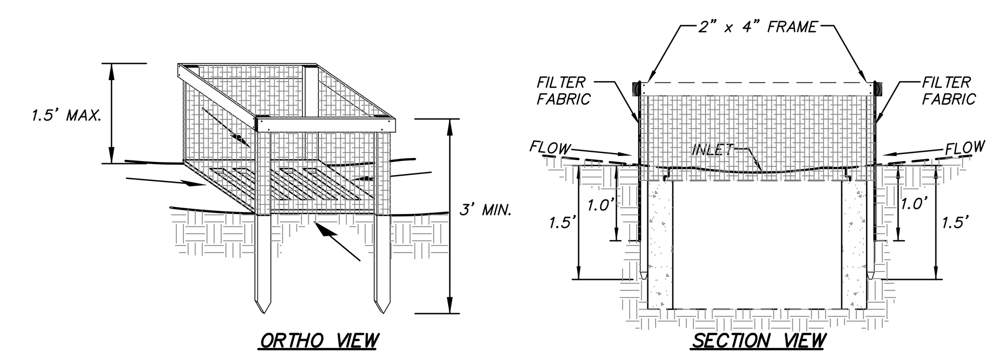
Note: The party responsible for implementation of the maintenance schedule during and after construction is:

Wappinger Airport Drive LLC
2785 West Main Street
Wappingers Falls, NY 12590



NOTES:
1. STEPS REQUIRED IF DEPTH OF STRUCTURE EXCEEDS 4 FEET.
2. STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING.

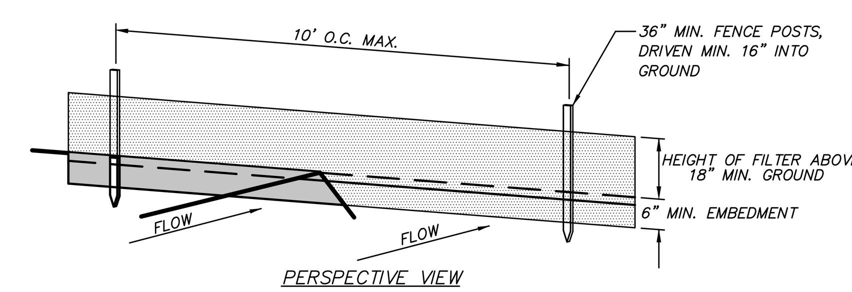
24" X 24" YARD DRAIN DETAIL
(N.T.S.)

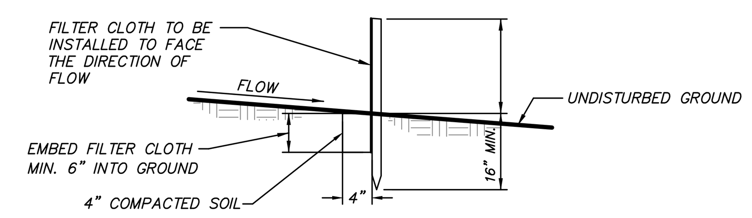


INSTALLATION NOTES
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAYBE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUM DRAINAGE AREA 1 ACRE

FILTER FABRIC INLET PROTECTION DETAIL
(N.T.S.)

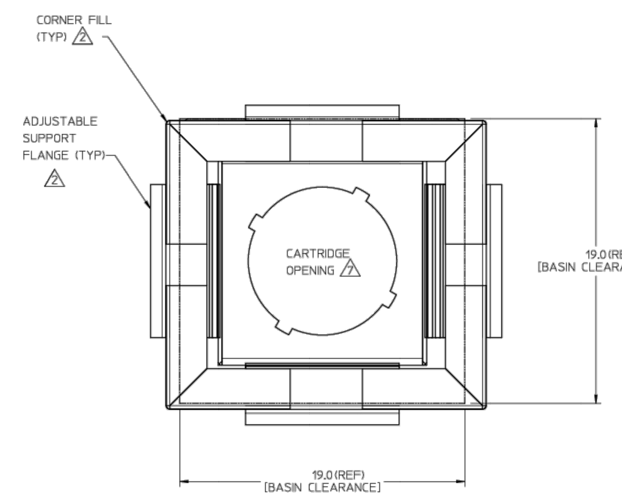


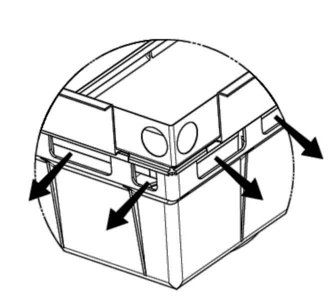


SECTION

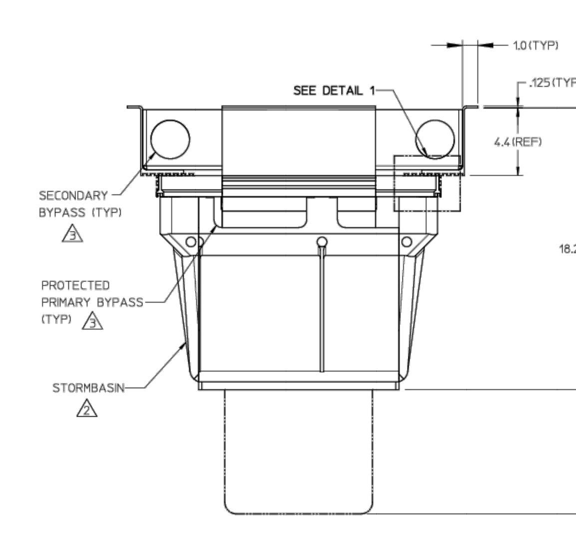
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED 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.

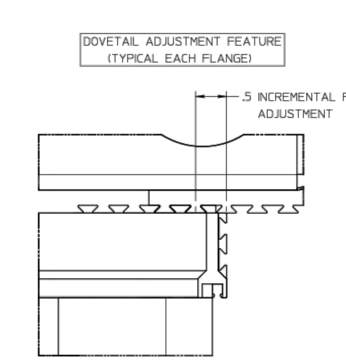
STANDARD SILT FENCE DETAIL
(N.T.S.)





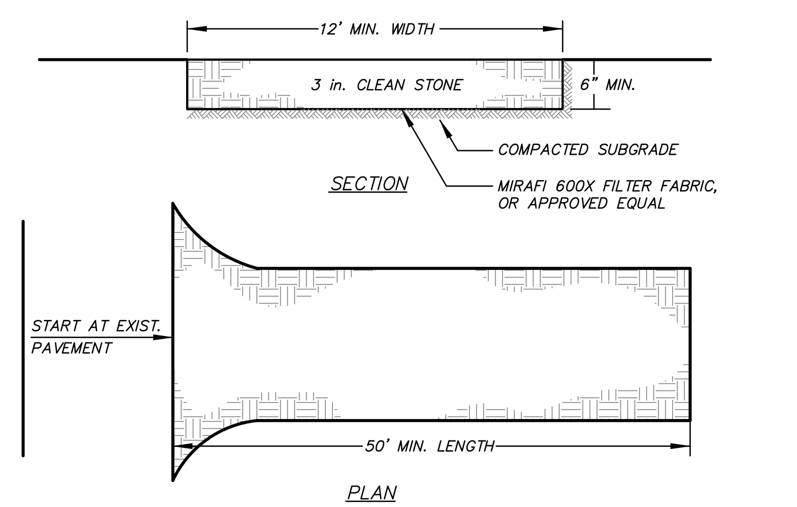
PROTECTED BYPASS, TYPICAL
(NOT TO SCALE)





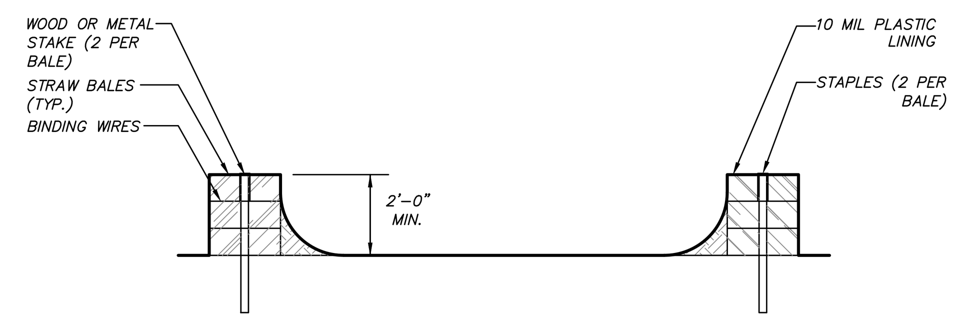
DETAIL 1
SCALE 1:1

FABCO STORMBASIN 19x19 CS DETAIL
N.T.S.

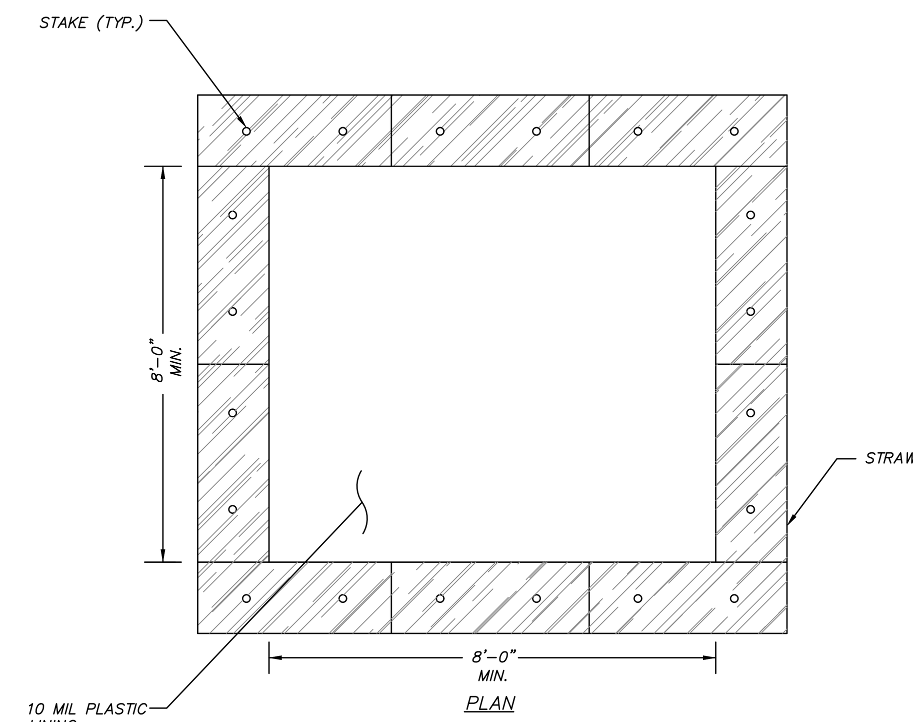


INSTALLATION NOTES
1. STONE SIZE - USE 3" STONE
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLLY
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR. TWENTY FOUR (24) FOOT IF SINGLE ACCESS TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY . THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ACCESS DETAIL
(N.T.S.)



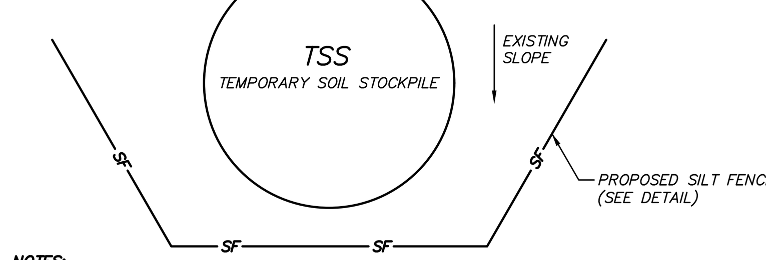
SECTION



PLAN

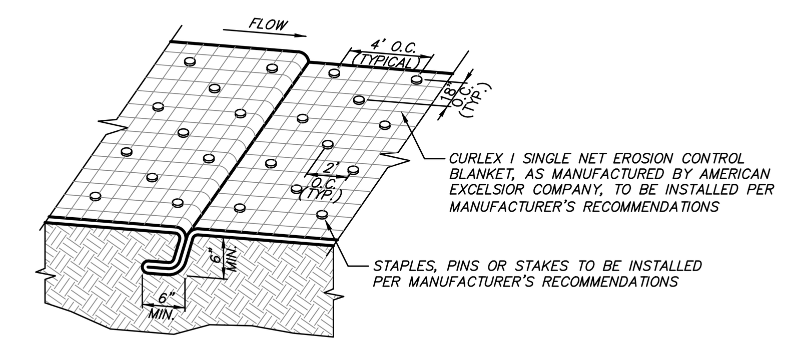
CONCRETE TRUCK WASHOUT DETAIL
(N.T.S.)

NOTES
1. TEMPORARY CONCRETE WASHOUT TYPE ABOVE GRADE WILL BE CONSTRUCTED AS SHOWN ABOVE, WITH RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 8 FT.
2. THE WASHOUT WILL BE MINIMUM OF 100 FT FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATERS.
3. PLASTIC LINING WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
4. IF THE CONCRETE WASHOUT AREA IS NOT SHOWN ON THE SITE PLANS, THE CONTRACTOR SHALL CHOOSE THE LOCATION OF THE WASHOUT AREA.



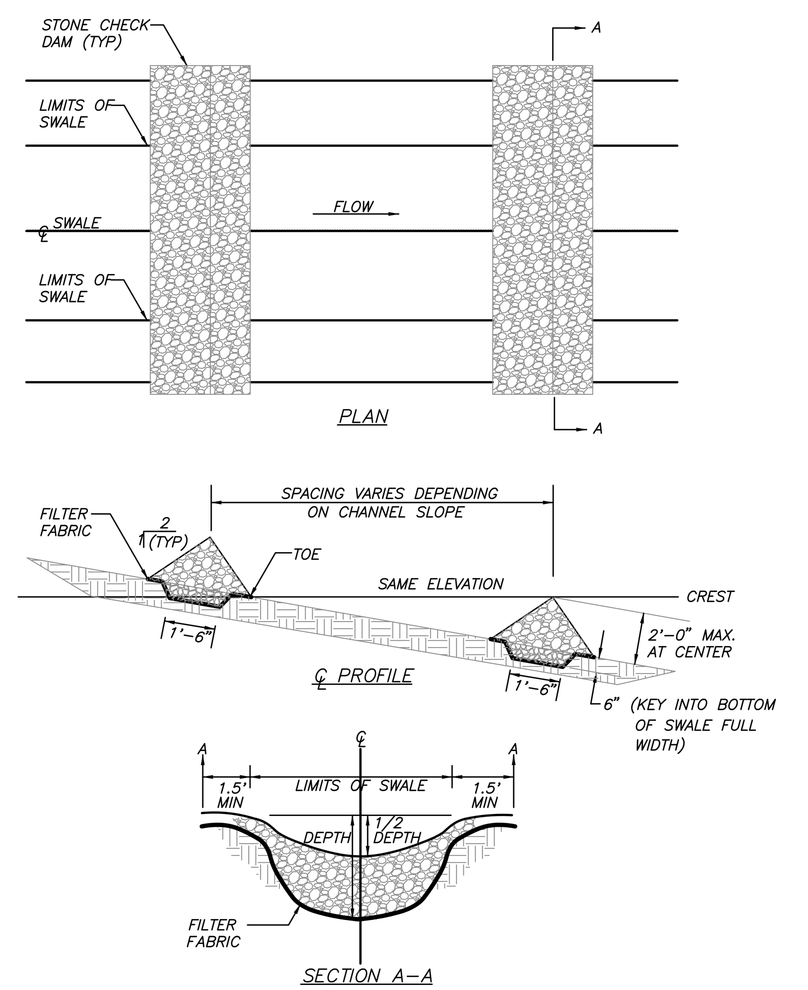
NOTES:
1. AREA CHOSEN FOR STOCKPILE LOCATION SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE IMMEDIATELY SEEDED WITH K31 PERENNIAL TALL FESCUE.
4. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED ON THE DOWNGRADIENT SIDE.

TEMPORARY SOIL STOCKPILE DETAIL
(N.T.S.)



NOTE: TO BE INSTALLED ON ALL SLOPE XH;XV OR GREATER

GEOTEXTILE ANCHORING DETAIL (2)
(N.T.S)



NOTES:
1. STONE SHALL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. SET SPACING OF CHECK DAMS SO THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
6. MAXIMUM DRAINAGE AREA 2 ACRES.

STONE CHECK DAM DETAIL
(N.T.S.)

NO.	DATE	REVISION	BY
2	4-14-25	REVISED PER TOWN COMMENTS	JJS
1	3-14-25	REVISED PER TOWN COMMENTS	MEU

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
AMENDED SITE PLAN FOR DON BOSCO BOULEVARD
AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY

DRAWING:
DETAILS

STATE OF NEW YORK · RICHARD D. WILLIAMS JR. · LICENSED PROFESSIONAL ENGINEER · 085886

PROJECT NUMBER	24238.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	2-3-24	DRAWN BY	M.E.U.	D-2	5 / 5
SCALE	AS SHOWN	CHECKED BY	E.M.S.		

SWPPP

INSITE
ENGINEERING, SURVEYING &
LANDSCAPE ARCHITECTURE, P.C.

STORMWATER POLLUTION PREVENTION PLAN

For
Don Bosco Boulevard
Airport Road, Town of Wappinger, New York

April 14, 2025

STATE OF NEW YORK
RICHARD D. WILLIAMS, JR.
085866
LICENSED PROFESSIONAL ENGINEER

Owner Information:

Wappinger Airport Drive LLC
2785 West Main Street
Wappingers Falls, NY 12590

Note: This report in conjunction with the project plans make up the complete Stormwater Pollution Prevention Plan.

Prepared by:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place
Carmel, New York 10512

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Appendix B Post-Development Computer Data
Appendix C NYSDEC Water Quality Volume (WQv) and Runoff Reduction (RRv) Calculation Worksheets
Appendix D Project and Owner Information
Appendix E NYSDEC SPDES for Construction Activities Construction Site Log Book
Appendix F Pipe Sizing Calculations
Appendix G Swale Sizing Calculations
Appendix H StormBasin Cartridge Based Inlet Filtration Guide

FIGURES
Figure 1 Location Map
Figure 2 Existing Drainage Map
Figure 3 Post-development Drainage Map

1.0 INTRODUCTION

1.1 Project Description

The subject property contains 33.44± acres located in the Airport Industry (AI) Zoning District, on Airport Drive, in the Town of Wappinger. The subject lot is currently developed with a previously approved transportation terminal and associated truck parking and includes a cell tower, and a building that is used as an office and a maintenance shop for trucks.

The applicant is proposing to construct a 10,000-sf storage pad to store empty waste containers that will be taken offsite for use at residential and commercial properties located elsewhere. While it is anticipated that predominantly new (unused) empty containers will be stored, some of the empty containers will return to the site empty and require washing prior to storage.

Water supply is provided by an existing drilled well and wastewater treatment will continue to be provided by a subsurface sewage treatment system (SSTS). There are no proposed modifications to the existing well and existing onsite SSTS with the construction of the storage pad. A yard hydrant will be added to the well service line for power washing and the well service line we be lowered as required to retain proper cover where grading is performed for construction of the storage pad.

1.2 Existing Site Conditions

The subject property is located on the south side of Airport Drive in the Town of Wappinger, New York. The lot is developed with a 2,400-sf building, comprised of approximately 800-sf of office space and 1,600-sf of a truck maintenance shop with associate access, parking and appurtenances. The property is bordered by a commercial construction material supply lot to the west, a commercial storage lot to the north and surrounded by residential lots to the east and south. A 100-foot town wetland buffer and onsite wetland are located to the west of the existing development. The land cover to the east of the existing development includes woods and fields. The site generally slopes from east to west towards the wetland. The existing developed portions of site drains into an existing stormwater practice that discharges to the wetlands. A previously approved Stormwater Pollution Prevention Plan (SWPPP) by Povall Engineering, PLLC utilized a design line along a stream within the wetland. For the purposes of this stormwater analysis, the same design line will be used. The design line will be used to assess the stormwater runoff from the property for both water quality and quantity. The existing stormwater basin is modeled per the approved SWPPP for quantitative assessment. The contributing drainage areas to the design line in the existing condition are shown on Figure 2 of this report.

The existing stormwater management practice has been observed and is generally operating per approved plans. The observation found that the end section feeding into the practice requires repair, and that debris should be removed from the existing emergency spillway.

1.3 Proposed Site Conditions

A 10,000-sf storage area and the redevelopment of the existing traveled way is proposed for the site. As previously stated, the storage pad will store empty containers that will be taken offsite for use at residential and commercial properties located elsewhere.

Stormwater runoff patterns will generally be maintained in the proposed condition. Stormwater runoff will be collected and conveyed to stormwater management practices for treatment. Two proposed dry swales (1.2P & 1.3P) NYSDEC Practice O-1 are proposed to provide stormwater management for the site. They are sized to meet the requirements for runoff reduction volume (RR_v min), water quality volume (WQ_v), and channel protection volume (CP_v). The stormwater management practices will also be sized to safely convey peak flows from larger storm events. Contributing areas to these proposed dry swales are shown on Figure 3 of this report.

No changes to the contributing area or land cover to the existing stormwater basin are proposed. The basin is modeled consistently with the previous stormwater approval for assessment of current peak flows and proposed peak flows. As no changes are proposed to the size or land cover within the contributing area of the existing basin, no change to the existing stormwater basin is necessary. However, maintenance and repairs are proposed to ensure the functionality of the existing stormwater basin. The damaged end section is proposed to be repaired, and the emergency spillway will be cleaned.

2.0 STORMWATER MANAGEMENT

The proposed stormwater management system for the project has been designed to meet the requirements of the state stormwater ordinances and guidelines, including but not limited to those of the NYSDEC and Town of Wappinger. Since 1.4 ac of disturbance is proposed both the Town and NYSDEC require a SWPPP with post-construction stormwater management control. That is because the subject development project proposes more than one (1) acre of disturbance, and thus coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-25-001 (General Permit) is required. Chapter 4 of the *New York State Stormwater Management Design Manual 2024 (Design Manual)* specifies five design criteria that are Water Quality Volume (WQ_v), Runoff Reduction Volume (RR_v), Stream Channel Protection Volume (CP_v), Overbank Flood Control (Q_p), and Extreme Storm Control (Q_f). The first two of these requirements relate to treating water quality, while the latter pertain to stormwater quantity (peak flow) attenuation.

To address stormwater quantity requirements of the NYSDEC, the “HydroCAD” Stormwater Modeling System,” by HydroCAD Software Solutions LLC in Tamworth, New Hampshire, was used to model and assess the peak stormwater flows for the subject project. HydroCAD is a computer aided design program for modeling the hydrology and hydraulics of stormwater runoff. It is based primarily on hydrology techniques developed by the United States Department of Agriculture, Soil Conservation Service (USDA, SCS) TR-20 method combined with standard hydraulic calculations. For details on the input data for the subcatchments and design storms, please refer to Appendices A and B.

The input requirements for the HydroCAD computer program are as follows:

Subcatchments (contributing watershed/sub-watersheds)

- Design storm rainfall in inches
- CN (runoff curve number) values which are based on soil type and land use/ground cover
- T_c (time of concentration) flow path information
- Watershed Area in Acres

Stormwater Dry Swales

- Surface area at appropriate elevations
- Flood elevation
- Outlet structure information

The following is a general description of the input data used to calculate the pre- and post-development stormwater runoff values. For detailed information for each subcatchment and stormwater management practice, see Appendices A & B.

The precipitation value for the 90% rainfall event is taken from the Design Manual. The precipitation values and intensity duration frequency (IDF) curves for the 1-year, 10-year, 100-year, 24-hour design storm events and rainfall distribution curves utilized for this report were obtained from the information provided by Northeast Regional Climate Center (NRCC) and the Natural Resources Conservation Service (NRCS) which is available online at *www.precip.eas.cornell.edu*. The values provided for all design storms analyzed have been listed below.

Table 2.0.1 – Precipitation Values for Corresponding Design Storms

Design Storm	24-Hour Rainfall
90%	1.4”
1-Year	2.61”
10-Year	4.66”
100-Year	8.20”

The CN (runoff curve number) values utilized in this report were referenced from the USDA, SCS publication *Urban Hydrology for Small Watersheds*. The following is a summary of the various land uses/ground covers and their associated CN values utilized in this report.

Table 2.0.2 – Project Ground Cover and Associated Curve Numbers (CN)

Land Use/Ground Cover	CN Value
Woods, Fair, C soil	73
Woods, Fair, D soil	79
>75% Grass, Good, C soil	74
>75% Grass, Good, D soil	80
50-75% Grass, Fair, C soil	79
Gravel Roads, C soil	89
Paved Parking & Roads	98

The Soil Survey for the project location in Dutchess County, New York identifies the soil types on the site as primarily BeC (Bernardston Silt Loam) and Ca (neutral substratum Canandaigua Silt Loam) which are designated in hydrological soil group C/D, FR (Fredon Silt Loam) which are designated in hydrological soil group B/D and PwB (Pittstown Silt Loam) which are designated in hydrological soil group C.

As previously discussed, one (1) design line has been selected to analyze the stormwater runoff from the proposed improvements across the site. This is the same design line used in the previous SWPPP prepared for the project site and was used to remain consistent with the previous approvals. The proposed onsite improvements will be directed to two proposed dry swales which will provide both stormwater quality and quantity mitigation. The proposed dry swales have been designed in general accordance with the Design Manual and are proposed to treat the Runoff Reduction Volume and Water Quality Volume for the respective drainage area. The proposed practice has been designed to meet the Stream Channel Protection, Overbank Flood Control, and Extreme Flood Control requirements set forth in the design manual.

2.1 NYSDEC Water Quality Volume, WQ_v

The stormwater management practices have been designed in accordance with the *Performance Criteria* (Chapter 4) of the Design Manual. As outlined in Chapter 4, the WQv is the runoff volume produced during the 90% storm. The proposed dry water quality swale practices have been designed to treat the WQv in accordance with the NYSSMDM. The following equation, per Chapter 4, was used to determine the water quality volume for the 90% storm for each of the contributing areas to the treatment practices:

The water quality volume shall be $WQ_v = \frac{(P)(R_v)(A)}{12}$

Where,

WQ_v = water quality volume (in acre-feet)

P = 90% Rainfall Event Number

R_v = 0.05 + 0.009(I), where I is percent impervious cover

A = site area in acres

The equation above, per Chapter 4, was used to determine the water quality volume for the 90% storm for each of the contributing areas to the treatment practices as summarized below:

Table 2.1.1 - Water Quality Volume Calculation Summary

Subcatchment	WQ_v[1] (cf)
1.2S	991
1.3S	896

[1] For detailed calculations see Appendix C

The stormwater management practices consist of two proposed dry swales (NYSDEC Design O-1), proposed as part of the development of the site to meet both the WQv and RRv requirements as well as provide the necessary peak flow attenuation to safely convey peak flows from the Overbank (Qp) and Extreme (Qf) Flood Control requirements.

Tables 2.1.2 and 2.1.3 below provide a summary of the water quality volume of the NYSDEC compliant practices, and its satisfaction of the NYSDEC WQv requirements: It should be noted the calculated WQv shown above for the subcatchment was used in the sizing calculation for the proposed Dry Swales summarized in the tables below.

The proposed dry swales have been sized to capture and store 100% of the WQ_v for new impervious surfaces. Pretreatment for the swale 1.2P will be by a pea gravel diaphragm. Pretreatment for swale 1.3P will be provided by the stone check dam.

The Town requested additional pre-treatment for the empty container wash area. The wash area is sloped to a yard drain. A Fabco StormBasin Cartridge Based Inlet Filtration device is proposed for the yard drain to filter runoff from the wash area. Further information on the operation and maintenance of the Fabco StormBasin is provided in Appendix H. As shown in the rational method pipe sizing calculations in Appendix F, the anticipated flow through the StormBasin is 0.3 c.f.s. Per the sizing table provided by Fabco Industries, the 9718-7 High Flow cartridge has a capacity of 0.58 c.f.s. and is sufficient for filtration.

The HydroCAD accounts for infiltration in the soil media that filters into the underdrain (known as exfiltration in the HydroCAD output). The inflation rate is based on the NYSSMDM rate for bioretention soil. Table 2.1.2 summarizes the required WQv and Proposed WQv Storage.

Table 2.1.2 Dry Swale Water Quality Volume Treatment Summary

Subcatchment	Treatment Practice	NYSDEC Design Practice Designation	Required WQ_v (c.f.)	Proposed WQ_v Storage (c.f.)
1.2S	1.2P	O-1	991	1,209
1.3S	1.3P	O-1	896	1,000

It should be noted that the above table illustrates the water quality volume storage requirements set forth in the NYSSMDM have been met for the system design. By meeting the Water Quality Volume requirements through the use of dry swales the water quality objectives of the NYSDEC have been met.

2.2 NYSDEC Runoff Reduction Volume, RR_v

The Runoff Reduction Volume (RR_v) criterion is intended to replicate pre-development hydrology by maintaining preconstruction infiltration, peak flow runoff, discharge volume, as well as minimizing concentrated stormwater flow. As stated in Chapter 4 of the Design Manual, RR_v may be treated with standard stormwater management practices (SMP's) sized in accordance with the

Chapter 4/6 requirements, or with green infrastructure practices (GIP's) sized in accordance with the requirements set forth for each practice in Chapter 5. This requirement is addressed on the subject project by providing water quality storage in the form of proposed dry swales designed as an SMP in accordance with the latest design standards, as well as the reutilization of existing green infrastructure practices in the form of existing vegetated open swales with check dams. Runoff reduction is achieved when runoff from a percentage of the impervious area on the site is captured, routed through an SMP or a GIP, infiltrated to the ground, reused, reduced by evapotranspiration, and eventually removed from the stormwater discharge from the site.

Chapter 4 of the Design Manual notes the RR_v applies to the water quality volume from impervious surfaces resulting from the 90% rain fall event. Again, it shall be the intent to provide RR_v equivalent to the entire WQ_v. Section 4.3 of the Design Manual states sites that do not achieve runoff reduction to pre-construction condition must, at a minimum reduce a percentage of the runoff from impervious areas to be constructed on the site to a minimum RR_v. The following equation can be used to determine the minimum runoff reduction volume:

The minimum runoff reduction volume shall be $RRv_{minimum} = \frac{(P)(R_v)(Ai)}{12}$

Where,

S = Hydrologic Soil Group (HSG) Specific Reduction Factor = 0.30

A*i*c = Total Area of New Impervious Cover

A*i* = Impervious cover targeted for Runoff Reduction = (S)(A*i*c)

Rv = 0.95

For detailed calculations of the runoff reduction for the proposed stormwater management practices see Appendix C. Listed in Table 2.2.1 below is a summary of the NYSDEC compliant practices, and their satisfaction of the NYSDEC RRv requirements:

RRV Calc Sheet Table 2.2.1 Runoff Reduction Volume Summary

Practice ID	**100% RR_v WQ_v (c.f.)** Sum of Table 2.1.1	**RR_v *Minimum* (c.f.)** Calculated in Appendix C	**NYSDEC Practice Designation**	**Allowable % of WQv provided to be applied towards RRv**	**Storage Volume Provided Below Outlet Weir / System Overflow (c.f.)** (From Appendix C)	**Total RRv *Provided* (c.f.)**
1.2P	991	290	O-1	20%	1,209	242
1.3P	896	246	O-1	20%	1,000	200

* % are based on Table 3.5 of the 2015 NYSSMDM.

In addition, the discharge from these practices will be supplemented with the existing vegetated open swales that provide RRv equivalent to 10% of the WQv. The existing swales includes check dams to slow velocities and promote runoff reduction. The RRv provided by the existing swale infrastructure have been provided in the table below.

RRV Calc Sheet Table 2.2.2 Runoff Reduction Volume Summary

SW ID	100% RR_v WQ_v (c.f.) Sum of Table 2.1.1	$RR_{v\ Minimum}$ (c.f.) Calculated in Appendix C	NYSDEC Practice Designation	Allowable % of WQv provided to be applied towards RRv	Total $RRv_{Provided}$ (c.f.)
1.2P	991	290	GIP (Swale)	10%	99
1.3P	896	246	GIP (Swale)	10%	79

As shown in the table above the total $RRv_{provided}$ (620 cf) is greater than the total $RRv_{minimum}$ (536 cf). Due to the uses at the site, infiltration practices are not proposed for stormwater treatment. Due to this, the full RRv could not be met but the $RRv_{minimum}$ has been met. By providing RRv to the greatest extent practical and by providing greater than $RRv_{minimum}$ it is assumed that the requirements of the NYSDEC for RRv have been met.

2.3 NYSDEC Stream Channel Protection Volume, CP_v

The Stream Channel Protection (CP_v) criterion is intended to protect stream channels from erosion and is accomplished by the 24-hour center of mass detention or plug flow detention of the 1-year, 24-hour design storm event. CPv can also be achieved through the complete reduction of the CPv using runoff reduction techniques for the 1 year, 24-hour design storm. Section 4.6 of the Design Manual notes a minimum CPv control orifice of 3" diameter. By providing a 3" diameter CPv orifice on the new dry swales, the requirements of the NYSSMDM have been met.

2.4 NYSDEC Overbank Flood Control, Q_p, and Extreme Flood Control, Q_f

The Overbank Flood Control (Q_p) requirement is intended to prevent an increase in the frequency and magnitude of out-of-bank flooding events generated by urban development. Overbank control requires storage to attenuate the post-development 10-year, 24-hour peak discharge to pre-development rates. The Extreme Flood Control (Q_f) requirement is intended to prevent the increased risk of flood damage from large storm events, maintain the boundaries of the pre-development 100-year flood plain, and protect the physical integrity of stormwater management practices. Extreme flood control requires storage to attenuate the post-development 100-year, 24-hour peak discharge to pre-development rates. As shown in Table 2.5.1, attenuation for both the 10-year and 100-year 24-hour storms has been provided, thus satisfying the Q_p and Q_f requirements.

Table 2.4.1: Pre- and Post-Development Peak Flows at the Design Point

24-HOUR DESIGN STORM PEAK FLOWS (c.f.s.)				
	10-YEAR (Overbank Flood Control)		100-YEAR (Extreme Flood Control)	
	Pre	Post	Pre	Post
Design Point 1	24.61	24.60	64.10	63.81

As shown in the above table the peak flows discharging to the design point in the proposed condition have been mitigated to the existing condition levels, therefore the receiving downstream drainage systems and resources will see no change in peak flows during the storm events shown above.

3.0 STORMWATER CONVEYANCE SYSTEM

The proposed stormwater conveyance systems for the project will consist of precast concrete drainage structures, HDPE pipe and grass swales. The pipe collection system sizing is provided in Appendix F and swale sizing is provided in Appendix G.

The stormwater conveyance system will discharge to rock outlet protection at the outlet of the proposed catch basin and all pipes. Rock outlet protection will be provided at discharge points within the site and will be designed in conformance with the New York State Standards and Specifications for Erosion and Sediment Control (Blue Book) in the final project SWPPP.

4.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment control will be accomplished by three basic principles: containment of sediment, treatment of dirty water, and stabilization of disturbed areas. Sediment will be contained with the use of silt fence at the toe of disturbed slopes. Disturbed areas will be permanently stabilized within 14 days of final grading to limit the required length of time that the temporary facilities must be utilized.

4.1 Temporary Erosion and Sediment Control Facilities

Temporary erosion and sediment control facilities will be installed and maintained as required to reduce the impacts to off-site properties. In general, the following temporary methods and materials will be used to control erosion and sedimentation from the project site:

- Dust Control
- Stabilized Construction Entrance
- Silt Fence Barriers
- Storm Drain Inlet Protection

A stabilized construction entrance should be installed in locations as shown on the plan. The design drawings will include details to guide the contractor in the construction of this entrance. The intent of the stabilized construction entrance is to prevent the “tracking” of soil from the site. Dust control should be accomplished with water sprinkling trucks if required. During dry periods, sprinkler trucks should wet all exposed earth surfaces as required to prevent the transport of air-borne particles to adjoining areas. Dust control will be accomplished with water sprinkling trucks, if required. During dry periods, sprinkler trucks will wet all exposed earth surfaces as required to prevent the transport of air-borne particles to adjoining properties.

Siltation barriers constructed of geosynthetic filter cloth (silt fence) will be installed liberally at the toe of all disturbed slopes. The intent of these barriers is to contain silt and sediment at the source and inhibit its transport by stormwater runoff. The siltation barriers will also help reduce the rate of runoff by creating numerous filters through which the stormwater must pass. Siltation barriers will also be installed around drain inlets. The intent of these barriers is to prevent silt and sedimentation from entering the stormwater collection system.

4.2 Permanent Erosion and Sediment Control Facilities

Permanent erosion and sediment control will be accomplished by controlling/reducing stormwater runoff velocities and volumes, and vegetative and structural surface stabilization. All the permanent facilities are relatively maintenance free and only require periodic inspections.

Other than impervious surfaces, the primary method for permanently stabilizing disturbed surfaces at the subject site is with vegetation. The vegetation will control stormwater runoff by preventing soil erosion, reducing runoff volume and velocities, and providing a filter medium. Permanent seeding should optimally be undertaken in the spring from March 21st through May 20th and in late summer from August 15th to October 15th.

5.0 IMPLEMENTATION AND MAINTENANCE

5.1 Construction Phase

Details associated with the implementation and maintenance of the proposed stormwater facilities and erosion control measures during construction are shown on the project drawings. A Construction Sequence has been provided to guide the contractor in the installation of the erosion control measures as well as the site plan features. The erosion control plan includes associated details and notes to aid the contractor in implementing the plan.

During construction, a Site Log Book, Appendix E, is required to be kept per NYSDEC SPDES General Permit GP-0-25-001. Erosion and sediment control inspections are required to be conducted as necessary under coverage of the permit (minimum once a week) and an updated logbook and a copy of the SWPPP is required to be kept on site for the duration of the construction activities. The Construction Site Log Book is an appendix taken from the *New York Standards and Specifications for Erosion and Sediment Control* (Blue Book).

In addition to the proposed erosion and sediment control facilities, the following good housekeeping best management practices shall be implemented to mitigate potential pollution during the construction phase of the project. The general contractor overseeing the day-to-day site operation shall be responsible for the good housekeeping best management practices included in the following general categories:

- Material Handling and Waste Management
- Establishment of Building Material Staging Areas
- Establishment of Washout Areas
- Proper Equipment Fueling and Maintenance Practices
- Spill Prevention and Control Plan

All construction waste materials shall be collected and removed from the site regularly by the general contractor. The general contractor shall supply waste barrels for proper disposal of waste materials. All personnel working on the site shall be instructed of the proper procedures for construction waste disposal.

Although it is not anticipated, any hazardous waste materials will be utilized during construction, any hazardous waste materials shall be disposed of in accordance with federal, state, and local regulations. No hazardous waste shall be disposed of on-site. Hazardous waste materials shall be stored in appropriate and clearly marked containers and segregated from the other non-waste materials. All hazardous waste shall be stored in structurally sound and sealed shipping containers located in the staging areas. Material safety data sheets, material inventory, and emergency contact numbers will be maintained in the office trailer. All personnel working on the site shall be instructed of the proper procedures for hazardous waste disposal.

Temporary sanitary facilities (portable toilets) shall be provided on site during the entire length of construction. The sanitary facilities shall be located in an alternate area away from the construction activities on the site. The portable toilets shall be inspected weekly for evidence of leaking holding tanks.

All recyclables, including wood pallets, cardboard boxes, and all other recyclable construction scraps shall be disposed of in a designated recycling barrel provided by the contractor and removed from the site regularly. All personnel working on the site shall be instructed of the proper procedures for construction waste recycling.

All construction equipment and maintenance materials shall be stored in a designated staging area. Silt fence shall be installed down gradient of the construction staging area. Shipping containers shall be utilized to store hand tools, small parts, and other construction materials, not taken off site daily. Construction waste barrels, recycling barrels and if necessary hazardous waste containers shall be located within the limits of the construction staging area.

Throughout the construction of the project, several types of vehicles and equipment will be used on-site. Fueling of the equipment shall occur within the limits of the construction staging area. Fuel will be delivered to the site as needed, by the general contractor, or a party chosen by the general contractor. Only minor vehicle equipment maintenance shall occur on-site, all major maintenance shall be performed off-site. All equipment fluids generated from minor maintenance activities shall be disposed of into designated drums and stored in accordance with the hazardous waste storage as previously discussed.

Vehicles and equipment shall be inspected on each day of use. Any leak discovered shall be repaired immediately. All leaking equipment unable to be repaired shall be removed from the site. Ample supplies of absorbent, spill-cleanup materials, and spill kits shall be located in the construction staging area. All spills shall be cleaned up immediately upon discovery. Spent absorbent materials and rags shall be hauled off-site immediately after the spill is cleaned for disposal at a local landfill. All personnel working on the site shall be instructed of the proper procedures for spill prevention and control. Any spill large enough to discharge to surface water will be immediately reported to the local fire / police departments and the National Response Center 1-800-424-8802.

Vegetation should be inspected every 30 days and after every major storm event until established, after which inspections should take place on a quarterly basis and after every large storm event. Damaged areas should be immediately re-seeded and re-mulched.

5.2 Long Term Maintenance Plan

The owner will be responsible for the maintenance of the permanent erosion control and stormwater facilities. Initially the stormwater facilities will require an increased maintenance and inspection schedule until all portions of the site are stable. The Monitoring and Maintenance will require that each spring, the paved areas will be swept clean to remove the winter's accumulation of traction sand. After this is completed, all drain inlet sumps should be cleaned. All pipes should be checked for debris and blockages and cleaned as required. During the cleaning process, the drain inlets and pipes should be inspected for structural integrity and overall condition; repairs and/or replacement will be made as required.

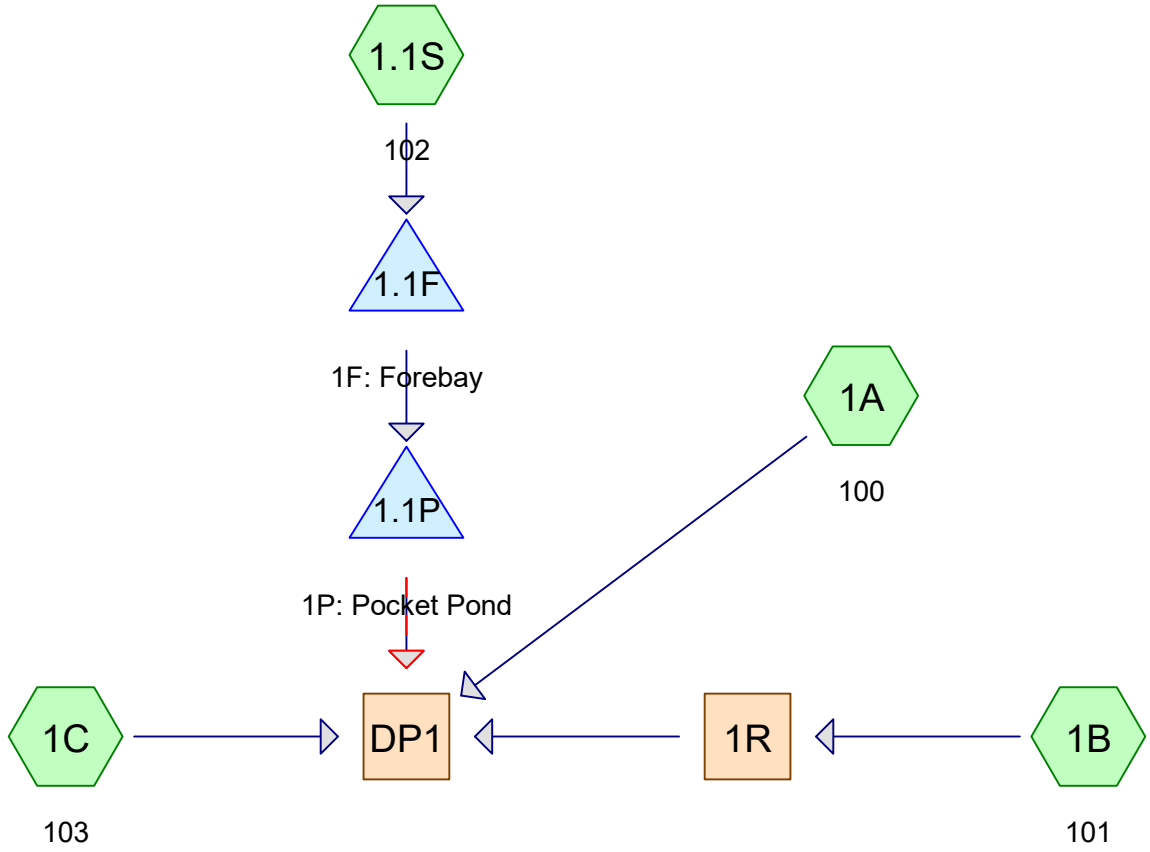
Additionally, the proposed dry swales shall be checked for deposited sediment as well. Visual inspection of the check dams shall take placed yearly, and after major storm events. If ponding of water for greater than 40 hours occurs after a rain event, the system shall be cleaned as necessary to remove deposited sediment.

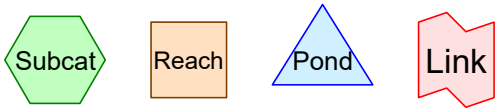
The Fabco Stormbasin Inlet shall be maintained per manufacturers requirements in Appendix H.

Maintenance requirements for the existing stormwater basin are detailed in the previously approved SWPPPP entitled Don Bosco Boulevard Site Plan.

APPENDIX A

Pre-Development Computer Data





Routing Diagram for Current Conditions

Prepared by Insite Engineering, Surveying and Landscape Architecture, P.C., Printed 2/3/2025

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Summary for Subcatchment 1.1S: 102

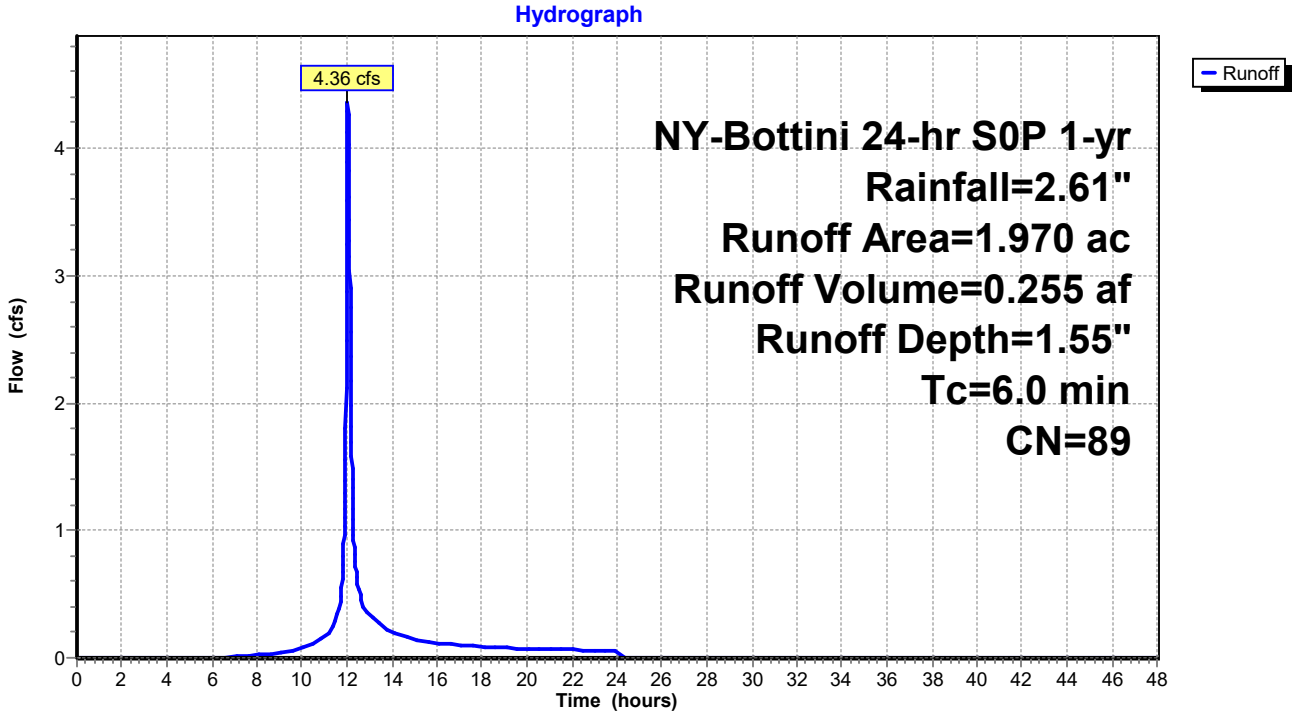
Runoff = 4.36 cfs @ 12.04 hrs, Volume= 0.255 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
1.219	98	Paved parking, HSG A
0.028	89	Gravel roads, HSG C
0.684	74	>75% Grass cover, Good, HSG C
0.039	79	50-75% Grass cover, Fair, HSG C
1.970	89	Weighted Average
0.751		38.12% Pervious Area
1.219		61.88% Impervious Area

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

Subcatchment 1.1S: 102



Hydrograph for Subcatchment 1.1S: 102

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.01
7.50	0.32	0.00	0.01
8.00	0.35	0.01	0.02
8.50	0.39	0.02	0.03
9.00	0.43	0.02	0.04
9.50	0.48	0.04	0.05
10.00	0.53	0.05	0.08
10.50	0.60	0.08	0.11
11.00	0.69	0.12	0.18
11.50	0.81	0.18	0.29
12.00	1.43	0.58	**3.60**
12.50	1.81	0.87	**0.57**
13.00	1.93	0.97	0.33
13.50	2.02	1.04	0.27
14.00	2.08	1.10	0.20
14.50	2.13	1.14	0.17
15.00	2.18	1.18	0.15
15.50	2.22	1.21	0.13
16.00	2.26	1.24	0.12
16.50	2.29	1.27	0.11
17.00	2.32	1.30	0.10
17.50	2.35	1.32	0.10
18.00	2.38	1.35	0.09
18.50	2.40	1.37	0.08
19.00	2.42	1.39	0.08
19.50	2.45	1.41	0.08
20.00	2.47	1.43	0.07
20.50	2.49	1.44	0.07
21.00	2.51	1.46	0.07
21.50	2.53	1.48	0.06
22.00	2.54	1.49	0.06
22.50	2.56	1.51	0.06
23.00	2.58	1.52	0.06
23.50	2.59	1.54	0.06
24.00	**2.61**	**1.55**	0.05
24.50	2.61	1.55	0.00
25.00	2.61	1.55	0.00
25.50	2.61	1.55	0.00
26.00	2.61	1.55	0.00
26.50	2.61	1.55	0.00
27.00	2.61	1.55	0.00
27.50	2.61	1.55	0.00
28.00	2.61	1.55	0.00
28.50	2.61	1.55	0.00
29.00	2.61	1.55	0.00
29.50	2.61	1.55	0.00
30.00	2.61	1.55	0.00
30.50	2.61	1.55	0.00
31.00	2.61	1.55	0.00
31.50	2.61	1.55	0.00
32.00	2.61	1.55	0.00
32.50	2.61	1.55	0.00
33.00	2.61	1.55	0.00
33.50	2.61	1.55	0.00
34.00	2.61	1.55	0.00
34.50	2.61	1.55	0.00
35.00	2.61	1.55	0.00
35.50	2.61	1.55	0.00
36.00	2.61	1.55	0.00
36.50	2.61	1.55	0.00
37.00	2.61	1.55	0.00
37.50	2.61	1.55	0.00
38.00	2.61	1.55	0.00
38.50	2.61	1.55	0.00
39.00	2.61	1.55	0.00
39.50	2.61	1.55	0.00
40.00	2.61	1.55	0.00
40.50	2.61	1.55	0.00
41.00	2.61	1.55	0.00
41.50	2.61	1.55	0.00
42.00	2.61	1.55	0.00
42.50	2.61	1.55	0.00
43.00	2.61	1.55	0.00
43.50	2.61	1.55	0.00
44.00	2.61	1.55	0.00
44.50	2.61	1.55	0.00
45.00	2.61	1.55	0.00
45.50	2.61	1.55	0.00
46.00	2.61	1.55	0.00
46.50	2.61	1.55	0.00
47.00	2.61	1.55	0.00
47.50	2.61	1.55	0.00
48.00	2.61	1.55	0.00

Summary for Subcatchment 1A: 100

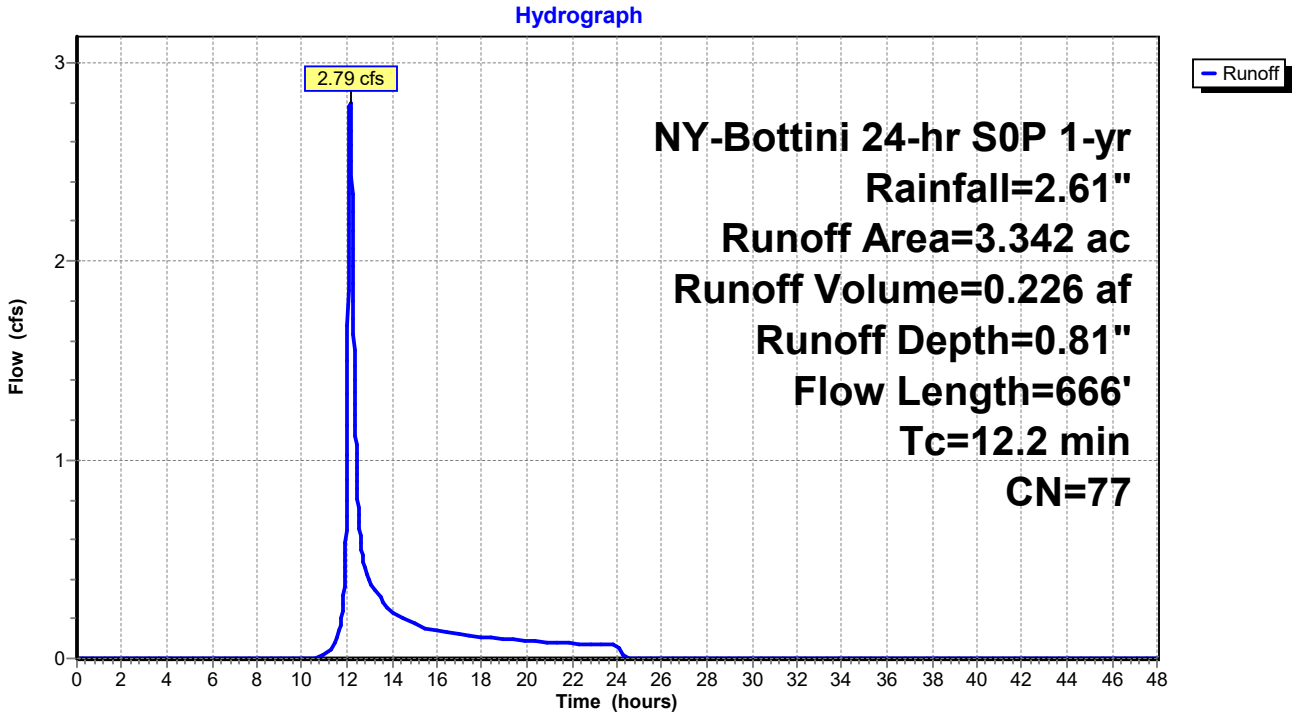
Runoff = 2.79 cfs @ 12.15 hrs, Volume= 0.226 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.087	98	Paved parking, HSG A
0.017	89	Gravel roads, HSG C
0.326	74	>75% Grass cover, Good, HSG C
1.892	79	50-75% Grass cover, Fair, HSG C
1.020	73	Woods, Fair, HSG C
3.342	77	Weighted Average
3.255		97.40% Pervious Area
0.087		2.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
0.7	96	0.1040	2.26		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	103	0.1650	2.03		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	170	0.2180	3.27		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
2.7	197	0.0161	1.21	8.49	**Trap/Vee/Rect Channel Flow, E-F** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.120
12.2	666	Total			

Subcatchment 1A: 100



Hydrograph for Subcatchment 1A: 100

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.00
7.50	0.32	0.00	0.00
8.00	0.35	0.00	0.00
8.50	0.39	0.00	0.00
9.00	0.43	0.00	0.00
9.50	0.48	0.00	0.00
10.00	0.53	0.00	0.00
10.50	0.60	0.00	0.00
11.00	0.69	0.00	0.02
11.50	0.81	0.01	0.09
12.00	1.43	0.18	**1.03**
12.50	1.81	0.35	**0.77**
13.00	1.93	0.41	0.38
13.50	2.02	0.46	0.31
14.00	2.08	0.49	0.23
14.50	2.13	0.52	0.20
15.00	2.18	0.55	0.18
15.50	2.22	0.57	0.15
16.00	2.26	0.59	0.14
16.50	2.29	0.61	0.13
17.00	2.32	0.63	0.12
17.50	2.35	0.65	0.11
18.00	2.38	0.66	0.11
18.50	2.40	0.68	0.10
19.00	2.42	0.69	0.10
19.50	2.45	0.71	0.09
20.00	2.47	0.72	0.09
20.50	2.49	0.73	0.08
21.00	2.51	0.74	0.08
21.50	2.53	0.76	0.08
22.00	2.54	0.77	0.08
22.50	2.56	0.78	0.07
23.00	2.58	0.79	0.07
23.50	2.59	0.80	0.07
24.00	**2.61**	**0.81**	0.07
24.50	2.61	0.81	0.00
25.00	2.61	0.81	0.00
25.50	2.61	0.81	0.00
26.00	2.61	0.81	0.00
26.50	2.61	0.81	0.00
27.00	2.61	0.81	0.00
27.50	2.61	0.81	0.00
28.00	2.61	0.81	0.00
28.50	2.61	0.81	0.00
29.00	2.61	0.81	0.00
29.50	2.61	0.81	0.00
30.00	2.61	0.81	0.00
30.50	2.61	0.81	0.00
31.00	2.61	0.81	0.00
31.50	2.61	0.81	0.00
32.00	2.61	0.81	0.00
32.50	2.61	0.81	0.00
33.00	2.61	0.81	0.00
33.50	2.61	0.81	0.00
34.00	2.61	0.81	0.00
34.50	2.61	0.81	0.00
35.00	2.61	0.81	0.00
35.50	2.61	0.81	0.00
36.00	2.61	0.81	0.00
36.50	2.61	0.81	0.00
37.00	2.61	0.81	0.00
37.50	2.61	0.81	0.00
38.00	2.61	0.81	0.00
38.50	2.61	0.81	0.00
39.00	2.61	0.81	0.00
39.50	2.61	0.81	0.00
40.00	2.61	0.81	0.00
40.50	2.61	0.81	0.00
41.00	2.61	0.81	0.00
41.50	2.61	0.81	0.00
42.00	2.61	0.81	0.00
42.50	2.61	0.81	0.00
43.00	2.61	0.81	0.00
43.50	2.61	0.81	0.00
44.00	2.61	0.81	0.00
44.50	2.61	0.81	0.00
45.00	2.61	0.81	0.00
45.50	2.61	0.81	0.00
46.00	2.61	0.81	0.00
46.50	2.61	0.81	0.00
47.00	2.61	0.81	0.00
47.50	2.61	0.81	0.00
48.00	2.61	0.81	0.00

Summary for Subcatchment 1B: 101

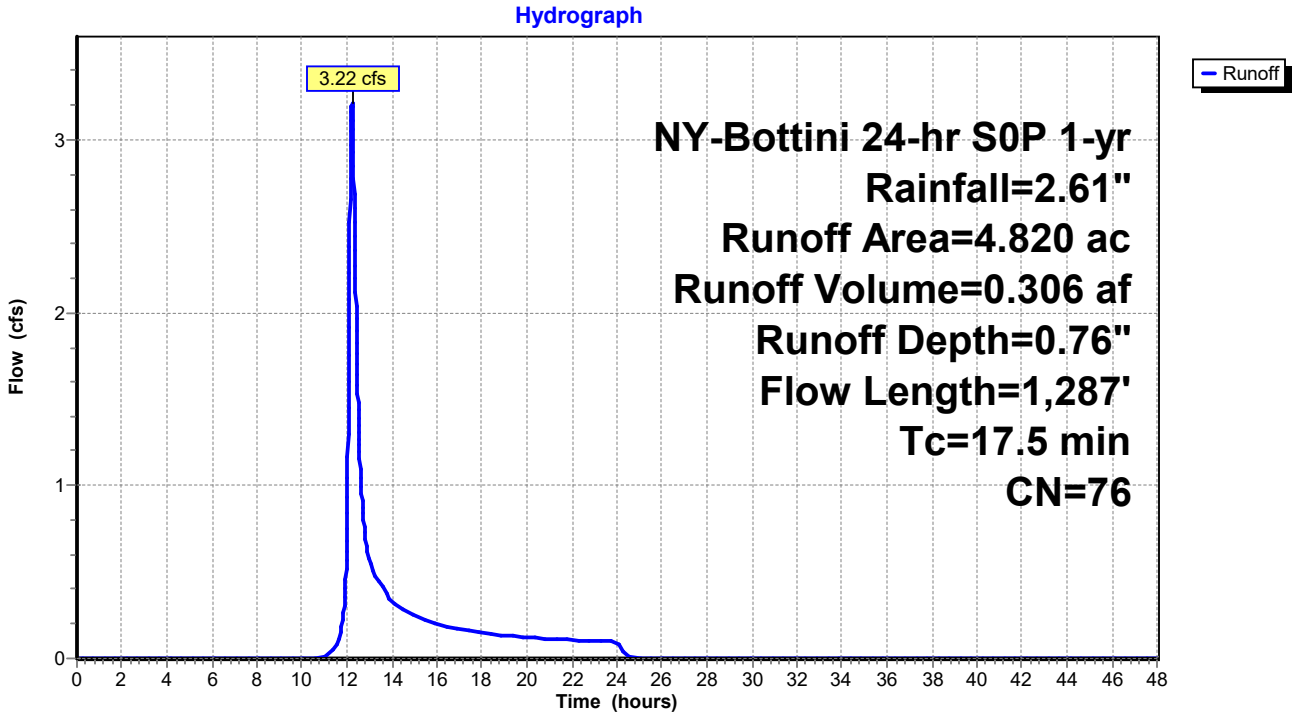
Runoff = 3.22 cfs @ 12.23 hrs, Volume= 0.306 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.807	74	>75% Grass cover, Good, HSG C
2.025	79	50-75% Grass cover, Fair, HSG C
0.943	73	Woods, Fair, HSG C
1.045	73	Woods, Fair, HSG C
4.820	76	Weighted Average
4.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
2.3	399	0.1650	2.84		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.2	285	0.0105	3.92	27.42	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
0.2	121	0.0740	10.40	72.79	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
5.6	346	0.0430	1.04		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
0.2	36	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, F-G** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
17.5	1,287	Total			

Subcatchment 1B: 101



Hydrograph for Subcatchment 1B: 101

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.00
7.50	0.32	0.00	0.00
8.00	0.35	0.00	0.00
8.50	0.39	0.00	0.00
9.00	0.43	0.00	0.00
9.50	0.48	0.00	0.00
10.00	0.53	0.00	0.00
10.50	0.60	0.00	0.00
11.00	0.69	0.00	0.01
11.50	0.81	0.01	0.08
12.00	1.43	0.16	**0.75**
12.50	1.81	0.32	**1.44**
13.00	1.93	0.38	0.57
13.50	2.02	0.42	0.44
14.00	2.08	0.46	0.33
14.50	2.13	0.48	0.28
15.00	2.18	0.51	0.25
15.50	2.22	0.53	0.22
16.00	2.26	0.55	0.20
16.50	2.29	0.57	0.18
17.00	2.32	0.59	0.17
17.50	2.35	0.60	0.16
18.00	2.38	0.62	0.15
18.50	2.40	0.63	0.14
19.00	2.42	0.65	0.13
19.50	2.45	0.66	0.13
20.00	2.47	0.67	0.12
20.50	2.49	0.69	0.12
21.00	2.51	0.70	0.11
21.50	2.53	0.71	0.11
22.00	2.54	0.72	0.11
22.50	2.56	0.73	0.10
23.00	2.58	0.74	0.10
23.50	2.59	0.75	0.10
24.00	**2.61**	**0.76**	0.10
24.50	2.61	0.76	0.01
25.00	2.61	0.76	0.00
25.50	2.61	0.76	0.00
26.00	2.61	0.76	0.00
26.50	2.61	0.76	0.00
27.00	2.61	0.76	0.00
27.50	2.61	0.76	0.00
28.00	2.61	0.76	0.00
28.50	2.61	0.76	0.00
29.00	2.61	0.76	0.00
29.50	2.61	0.76	0.00
30.00	2.61	0.76	0.00
30.50	2.61	0.76	0.00
31.00	2.61	0.76	0.00
31.50	2.61	0.76	0.00
32.00	2.61	0.76	0.00
32.50	2.61	0.76	0.00
33.00	2.61	0.76	0.00
33.50	2.61	0.76	0.00
34.00	2.61	0.76	0.00
34.50	2.61	0.76	0.00
35.00	2.61	0.76	0.00
35.50	2.61	0.76	0.00
36.00	2.61	0.76	0.00
36.50	2.61	0.76	0.00
37.00	2.61	0.76	0.00
37.50	2.61	0.76	0.00
38.00	2.61	0.76	0.00
38.50	2.61	0.76	0.00
39.00	2.61	0.76	0.00
39.50	2.61	0.76	0.00
40.00	2.61	0.76	0.00
40.50	2.61	0.76	0.00
41.00	2.61	0.76	0.00
41.50	2.61	0.76	0.00
42.00	2.61	0.76	0.00
42.50	2.61	0.76	0.00
43.00	2.61	0.76	0.00
43.50	2.61	0.76	0.00
44.00	2.61	0.76	0.00
44.50	2.61	0.76	0.00
45.00	2.61	0.76	0.00
45.50	2.61	0.76	0.00
46.00	2.61	0.76	0.00
46.50	2.61	0.76	0.00
47.00	2.61	0.76	0.00
47.50	2.61	0.76	0.00
48.00	2.61	0.76	0.00

Summary for Subcatchment 1C: 103

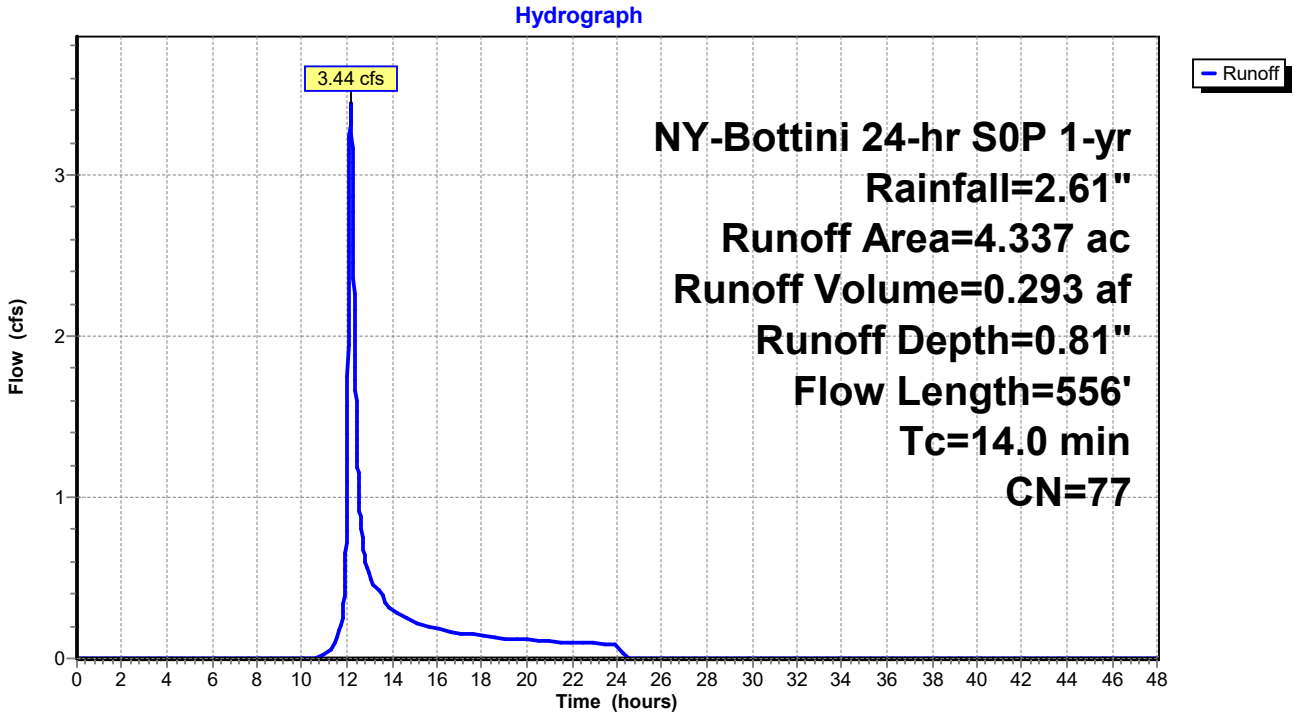
Runoff = 3.44 cfs @ 12.18 hrs, Volume= 0.293 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.400	74	>75% Grass cover, Good, HSG C
0.093	80	>75% Grass cover, Good, HSG D
0.882	73	Woods, Fair, HSG C
2.962	79	Woods, Fair, HSG D
4.337	77	Weighted Average
4.337		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	46	0.2390	0.41		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
5.8	44	0.0910	0.13		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.50"
5.4	316	0.0380	0.97		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	150	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
14.0	556	Total			

Subcatchment 1C: 103



Hydrograph for Subcatchment 1C: 103

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.00
7.50	0.32	0.00	0.00
8.00	0.35	0.00	0.00
8.50	0.39	0.00	0.00
9.00	0.43	0.00	0.00
9.50	0.48	0.00	0.00
10.00	0.53	0.00	0.00
10.50	0.60	0.00	0.00
11.00	0.69	0.00	0.03
11.50	0.81	0.01	0.11
12.00	1.43	0.18	**1.10**
12.50	1.81	0.35	**1.11**
13.00	1.93	0.41	0.50
13.50	2.02	0.46	0.40
14.00	2.08	0.49	0.30
14.50	2.13	0.52	0.26
15.00	2.18	0.55	0.23
15.50	2.22	0.57	0.20
16.00	2.26	0.59	0.18
16.50	2.29	0.61	0.17
17.00	2.32	0.63	0.16
17.50	2.35	0.65	0.15
18.00	2.38	0.66	0.14
18.50	2.40	0.68	0.13
19.00	2.42	0.69	0.13
19.50	2.45	0.71	0.12
20.00	2.47	0.72	0.11
20.50	2.49	0.73	0.11
21.00	2.51	0.74	0.11
21.50	2.53	0.76	0.10
22.00	2.54	0.77	0.10
22.50	2.56	0.78	0.10
23.00	2.58	0.79	0.09
23.50	2.59	0.80	0.09
24.00	**2.61**	**0.81**	0.09
24.50	2.61	0.81	0.00
25.00	2.61	0.81	0.00
25.50	2.61	0.81	0.00
26.00	2.61	0.81	0.00
26.50	2.61	0.81	0.00
27.00	2.61	0.81	0.00
27.50	2.61	0.81	0.00
28.00	2.61	0.81	0.00
28.50	2.61	0.81	0.00
29.00	2.61	0.81	0.00
29.50	2.61	0.81	0.00
30.00	2.61	0.81	0.00
30.50	2.61	0.81	0.00
31.00	2.61	0.81	0.00
31.50	2.61	0.81	0.00
32.00	2.61	0.81	0.00
32.50	2.61	0.81	0.00
33.00	2.61	0.81	0.00
33.50	2.61	0.81	0.00
34.00	2.61	0.81	0.00
34.50	2.61	0.81	0.00
35.00	2.61	0.81	0.00
35.50	2.61	0.81	0.00
36.00	2.61	0.81	0.00
36.50	2.61	0.81	0.00
37.00	2.61	0.81	0.00
37.50	2.61	0.81	0.00
38.00	2.61	0.81	0.00
38.50	2.61	0.81	0.00
39.00	2.61	0.81	0.00
39.50	2.61	0.81	0.00
40.00	2.61	0.81	0.00
40.50	2.61	0.81	0.00
41.00	2.61	0.81	0.00
41.50	2.61	0.81	0.00
42.00	2.61	0.81	0.00
42.50	2.61	0.81	0.00
43.00	2.61	0.81	0.00
43.50	2.61	0.81	0.00
44.00	2.61	0.81	0.00
44.50	2.61	0.81	0.00
45.00	2.61	0.81	0.00
45.50	2.61	0.81	0.00
46.00	2.61	0.81	0.00
46.50	2.61	0.81	0.00
47.00	2.61	0.81	0.00
47.50	2.61	0.81	0.00
48.00	2.61	0.81	0.00

Summary for Reach 1R:

Inflow Area = 4.820 ac, 0.00% Impervious, Inflow Depth = 0.76" for 1-yr event
Inflow = 3.22 cfs @ 12.23 hrs, Volume= 0.306 af
Outflow = 3.00 cfs @ 12.36 hrs, Volume= 0.306 af, Atten= 7%, Lag= 8.1 min

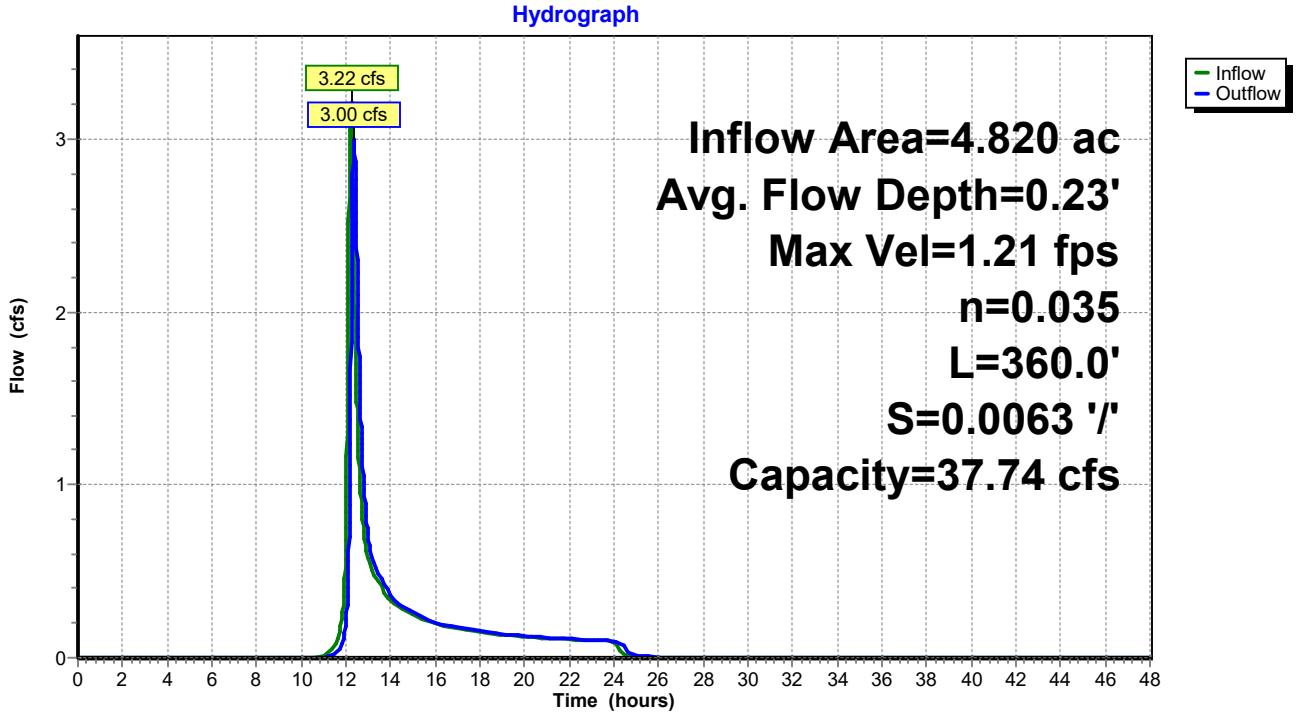
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.21 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 16.8 min

Peak Storage= 889 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00' Flow Area= 13.0 sf, Capacity= 37.74 cfs

10.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 360.0' Slope= 0.0063 '/'
Inlet Invert= 160.28', Outlet Invert= 158.00'

‡

Reach 1R:



Hydrograph for Reach 1R:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	160.28	0.00
1.00	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
3.00	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
5.00	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00
7.00	0.00	0	160.28	0.00
8.00	0.00	0	160.28	0.00
9.00	0.00	0	160.28	0.00
10.00	0.00	0	160.28	0.00
11.00	0.01	2	160.28	0.00
12.00	**0.75**	**247**	**160.35**	**0.21**
13.00	**0.57**	**339**	**160.37**	**0.71**
14.00	0.33	235	160.34	0.37
15.00	0.25	194	160.33	0.26
16.00	0.20	168	160.33	0.20
17.00	0.17	153	160.32	0.18
18.00	0.15	143	160.32	0.16
19.00	0.13	133	160.32	0.14
20.00	0.12	126	160.31	0.13
21.00	0.11	120	160.31	0.12
22.00	0.11	115	160.31	0.11
23.00	0.10	111	160.31	0.10
24.00	0.10	108	160.31	0.10
25.00	0.00	26	160.29	0.01
26.00	0.00	5	160.28	0.00
27.00	0.00	1	160.28	0.00
28.00	0.00	0	160.28	0.00
29.00	0.00	0	160.28	0.00
30.00	0.00	0	160.28	0.00
31.00	0.00	0	160.28	0.00
32.00	0.00	0	160.28	0.00
33.00	0.00	0	160.28	0.00
34.00	0.00	0	160.28	0.00
35.00	0.00	0	160.28	0.00
36.00	0.00	0	160.28	0.00
37.00	0.00	0	160.28	0.00
38.00	0.00	0	160.28	0.00
39.00	0.00	0	160.28	0.00
40.00	0.00	0	160.28	0.00
41.00	0.00	0	160.28	0.00
42.00	0.00	0	160.28	0.00
43.00	0.00	0	160.28	0.00
44.00	0.00	0	160.28	0.00
45.00	0.00	0	160.28	0.00
46.00	0.00	0	160.28	0.00
47.00	0.00	0	160.28	0.00
48.00	0.00	0	160.28	0.00

Stage-Area-Storage for Reach 1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
160.28	0.0	0
160.29	0.1	36
160.30	0.2	72
160.31	0.3	109
160.32	0.4	146
160.33	0.5	183
160.34	0.6	220
160.35	0.7	257
160.36	0.8	295
160.37	0.9	333
160.38	1.0	371
160.39	1.1	409
160.40	1.2	448
160.41	1.4	486
160.42	1.5	525
160.43	1.6	564
160.44	1.7	604
160.45	1.8	643
160.46	1.9	683
160.47	2.0	723
160.48	2.1	763
160.49	2.2	804
160.50	2.3	844
160.51	2.5	885
160.52	2.6	926
160.53	2.7	968
160.54	2.8	1,009
160.55	2.9	1,051
160.56	3.0	1,093
160.57	3.2	1,135
160.58	3.3	1,177
160.59	3.4	1,220
160.60	3.5	1,263
160.61	3.6	1,306
160.62	3.7	1,349
160.63	3.9	1,392
160.64	4.0	1,436
160.65	4.1	1,480
160.66	4.2	1,524
160.67	4.4	1,568
160.68	4.5	1,613
160.69	4.6	1,658
160.70	4.7	1,703
160.71	4.9	1,748
160.72	5.0	1,793
160.73	5.1	1,839
160.74	5.2	1,885
160.75	5.4	1,931
160.76	5.5	1,977
160.77	5.6	2,023
160.78	5.8	2,070
160.79	5.9	2,117
160.80	6.0	2,164
160.81	6.1	2,211
160.82	6.3	2,259
160.83	6.4	2,307
160.84	6.5	2,355
160.85	6.7	2,403
160.86	6.8	2,451
160.87	6.9	2,500
160.88	7.1	2,549
160.89	7.2	2,598
160.90	7.4	2,647
160.91	7.5	2,697
160.92	7.6	2,746
160.93	7.8	2,796
160.94	7.9	2,846
160.95	8.0	2,897
160.96	8.2	2,947
160.97	8.3	2,998
160.98	8.5	3,049
160.99	8.6	3,100
161.00	8.8	3,152
161.01	8.9	3,204
161.02	9.0	3,255
161.03	9.2	3,308
161.04	9.3	3,360
161.05	9.5	3,412
161.06	9.6	3,465
161.07	9.8	3,518
161.08	9.9	3,571
161.09	10.1	3,625
161.10	10.2	3,678
161.11	10.4	3,732
161.12	10.5	3,786
161.13	10.7	3,840
161.14	10.8	3,895
161.15	11.0	3,949
161.16	11.1	4,004
161.17	11.3	4,059
161.18	11.4	4,115
161.19	11.6	4,170
161.20	11.7	4,226
161.21	11.9	4,282
161.22	12.1	4,338
161.23	12.2	4,395
161.24	12.4	4,451
161.25	12.5	4,508
161.26	12.7	4,565
161.27	12.8	4,623
161.28	**13.0**	**4,680**

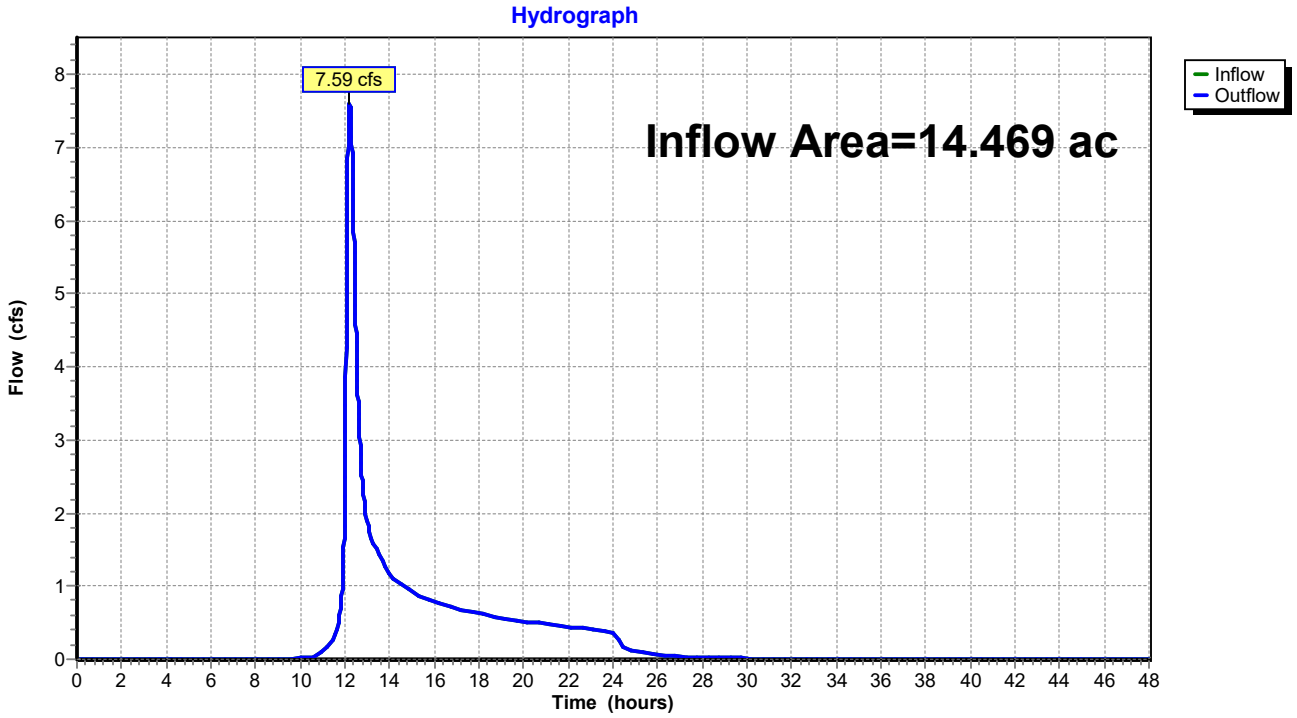
Summary for Reach DP1:

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

Inflow Area = 14.469 ac, 9.03% Impervious, Inflow Depth = 0.89" for 1-yr event
Inflow = 7.59 cfs @ 12.21 hrs, Volume= 1.079 af
Outflow = 7.59 cfs @ 12.21 hrs, Volume= 1.079 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP1:



Hydrograph for Reach DP1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.00	0.06		0.06
0.50	0.00		0.00	26.50	0.05		0.05
1.00	0.00		0.00	27.00	0.04		0.04
1.50	0.00		0.00	27.50	0.03		0.03
2.00	0.00		0.00	28.00	0.02		0.02
2.50	0.00		0.00	28.50	0.02		0.02
3.00	0.00		0.00	29.00	0.02		0.02
3.50	0.00		0.00	29.50	0.01		0.01
4.00	0.00		0.00	30.00	0.01		0.01
4.50	0.00		0.00	30.50	0.01		0.01
5.00	0.00		0.00	31.00	0.01		0.01
5.50	0.00		0.00	31.50	0.01		0.01
6.00	0.00		0.00	32.00	0.01		0.01
6.50	0.00		0.00	32.50	0.00		0.00
7.00	0.00		0.00	33.00	0.00		0.00
7.50	0.00		0.00	33.50	0.00		0.00
8.00	0.00		0.00	34.00	0.00		0.00
8.50	0.00		0.00	34.50	0.00		0.00
9.00	0.00		0.00	35.00	0.00		0.00
9.50	0.01		0.01	35.50	0.00		0.00
10.00	0.02		0.02	36.00	0.00		0.00
10.50	0.03		0.03	36.50	0.00		0.00
11.00	0.10		0.10	37.00	0.00		0.00
11.50	0.30		0.30	37.50	0.00		0.00
12.00	**2.49**		**2.49**	38.00	0.00		0.00
12.50	**4.46**		**4.46**	38.50	0.00		0.00
13.00	1.87		1.87	39.00	0.00		0.00
13.50	1.47		1.47	39.50	0.00		0.00
14.00	1.17		1.17	40.00	0.00		0.00
14.50	1.03		1.03	40.50	0.00		0.00
15.00	0.93		0.93	41.00	0.00		0.00
15.50	0.84		0.84	41.50	0.00		0.00
16.00	0.78		0.78	42.00	0.00		0.00
16.50	0.74		0.74	42.50	0.00		0.00
17.00	0.69		0.69	43.00	0.00		0.00
17.50	0.66		0.66	43.50	0.00		0.00
18.00	0.63		0.63	44.00	0.00		0.00
18.50	0.60		0.60	44.50	0.00		0.00
19.00	0.57		0.57	45.00	0.00		0.00
19.50	0.54		0.54	45.50	0.00		0.00
20.00	0.52		0.52	46.00	0.00		0.00
20.50	0.50		0.50	46.50	0.00		0.00
21.00	0.48		0.48	47.00	0.00		0.00
21.50	0.46		0.46	47.50	0.00		0.00
22.00	0.44		0.44	48.00	0.00		0.00
22.50	0.42		0.42				
23.00	0.41		0.41				
23.50	0.39		0.39				
24.00	0.38		0.38				
24.50	0.16		0.16				
25.00	0.11		0.11				
25.50	0.09		0.09				

Summary for Pond 1.1F: 1F: Forebay

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 1.55" for 1-yr event
Inflow = 4.36 cfs @ 12.04 hrs, Volume= 0.255 af
Outflow = 4.05 cfs @ 12.07 hrs, Volume= 0.255 af, Atten= 7%, Lag= 1.6 min
Primary = 4.05 cfs @ 12.07 hrs, Volume= 0.255 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 177.00' Surf.Area= 3,117 sf Storage= 4,395 cf
Peak Elev= 177.19' @ 12.07 hrs Surf.Area= 3,278 sf Storage= 4,997 cf (602 cf above start)

Plug-Flow detention time= 216.0 min calculated for 0.154 af (60% of inflow)
Center-of-Mass det. time= 4.2 min (833.8 - 829.5)

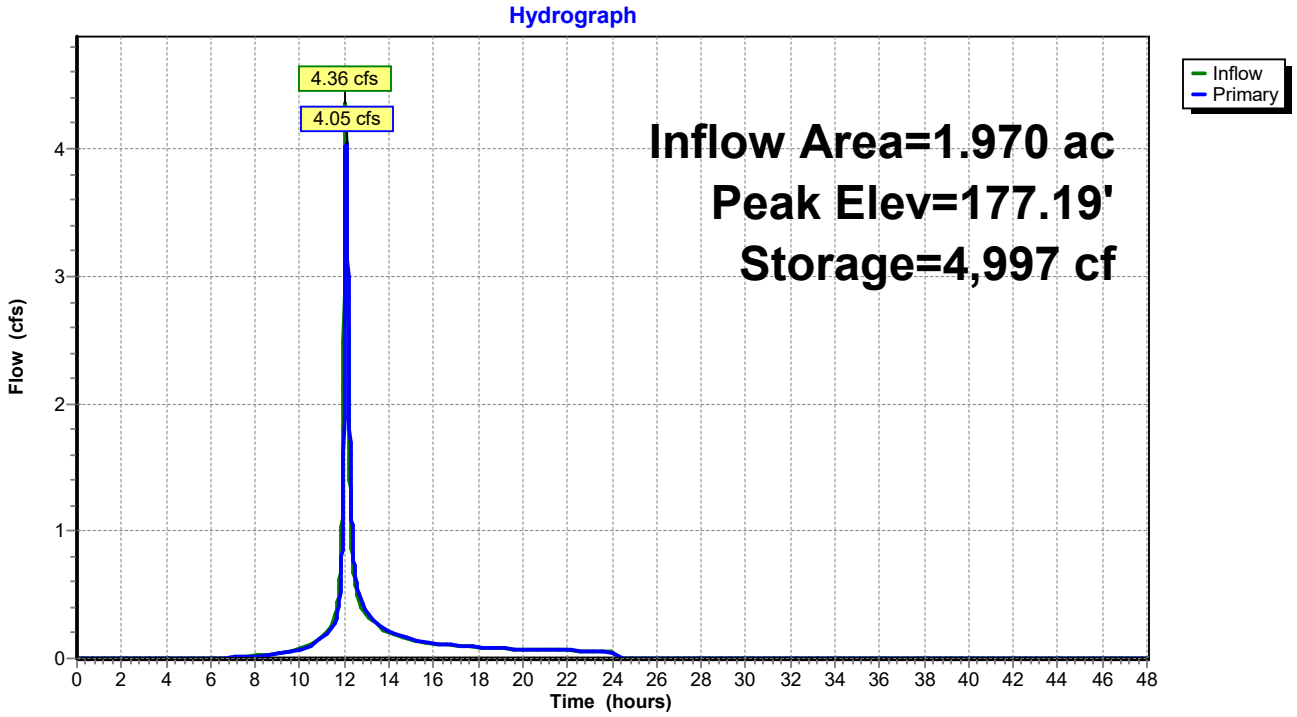
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	7,953 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.00	64	57.5	0	0	64
174.00	282	81.9	160	160	344
175.50	795	130.5	775	935	1,180
176.00	2,327	218.9	747	1,682	3,640
177.00	3,117	255.2	2,712	4,395	5,030
178.00	4,019	291.6	3,558	7,953	6,637

Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=4.03 cfs @ 12.07 hrs HW=177.19' (Free Discharge)
└─**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 4.03 cfs @ 1.32 fps)

Pond 1.1F: 1F: Forebay



Hydrograph for Pond 1.1F: 1F: Forebay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	4,395	177.00	0.00
1.00	0.00	4,395	177.00	0.00
2.00	0.00	4,395	177.00	0.00
3.00	0.00	4,395	177.00	0.00
4.00	0.00	4,395	177.00	0.00
5.00	0.00	4,395	177.00	0.00
6.00	0.00	4,395	177.00	0.00
7.00	0.01	4,397	177.00	0.01
8.00	0.02	4,400	177.00	0.02
9.00	0.04	4,406	177.00	0.04
10.00	0.08	4,416	177.01	0.07
11.00	0.18	4,444	177.02	0.16
12.00	**3.60**	**4,832**	**177.14**	**2.50**
13.00	**0.33**	**4,500**	**177.03**	**0.35**
14.00	0.20	4,456	177.02	0.21
15.00	0.15	4,440	177.01	0.15
16.00	0.12	4,431	177.01	0.12
17.00	0.10	4,425	177.01	0.10
18.00	0.09	4,422	177.01	0.09
19.00	0.08	4,419	177.01	0.08
20.00	0.07	4,417	177.01	0.07
21.00	0.07	4,415	177.01	0.07
22.00	0.06	4,413	177.01	0.06
23.00	0.06	4,412	177.01	0.06
24.00	0.05	4,411	177.01	0.06
25.00	0.00	4,395	177.00	0.00
26.00	0.00	4,395	177.00	0.00
27.00	0.00	4,395	177.00	0.00
28.00	0.00	4,395	177.00	0.00
29.00	0.00	4,395	177.00	0.00
30.00	0.00	4,395	177.00	0.00
31.00	0.00	4,395	177.00	0.00
32.00	0.00	4,395	177.00	0.00
33.00	0.00	4,395	177.00	0.00
34.00	0.00	4,395	177.00	0.00
35.00	0.00	4,395	177.00	0.00
36.00	0.00	4,395	177.00	0.00
37.00	0.00	4,395	177.00	0.00
38.00	0.00	4,395	177.00	0.00
39.00	0.00	4,395	177.00	0.00
40.00	0.00	4,395	177.00	0.00
41.00	0.00	4,395	177.00	0.00
42.00	0.00	4,395	177.00	0.00
43.00	0.00	4,395	177.00	0.00
44.00	0.00	4,395	177.00	0.00
45.00	0.00	4,395	177.00	0.00
46.00	0.00	4,395	177.00	0.00
47.00	0.00	4,395	177.00	0.00
48.00	0.00	4,395	177.00	0.00

Stage-Area-Storage for Pond 1.1F: 1F: Forebay

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
173.00	64	0
173.05	71	3
173.10	79	7
173.15	87	11
173.20	95	16
173.25	104	21
173.30	113	26
173.35	123	32
173.40	133	39
173.45	143	45
173.50	154	53
173.55	165	61
173.60	176	69
173.65	188	78
173.70	200	88
173.75	213	98
173.80	226	109
173.85	239	121
173.90	253	133
173.95	267	146
174.00	282	160
174.05	295	175
174.10	308	190
174.15	322	205
174.20	335	222
174.25	349	239
174.30	364	257
174.35	378	275
174.40	393	295
174.45	409	315
174.50	424	335
174.55	440	357
174.60	456	379
174.65	472	403
174.70	489	427
174.75	506	452
174.80	523	477
174.85	541	504
174.90	559	531
174.95	577	560
175.00	595	589
175.05	614	619
175.10	633	650
175.15	652	683
175.20	672	716
175.25	691	750
175.30	712	785
175.35	732	821
175.40	753	858
175.45	774	896
175.50	795	935
175.55	912	978
175.60	1,037	1,027
175.65	1,170	1,082
175.70	1,311	1,144
175.75	1,461	1,213
175.80	1,618	1,290
175.85	1,783	1,375
175.90	1,956	1,468
175.95	2,138	1,571
176.00	2,327	1,682
176.05	2,364	1,800
176.10	2,401	1,919
176.15	2,438	2,040
176.20	2,476	2,163
176.25	2,514	2,287
176.30	2,552	2,414
176.35	2,590	2,543
176.40	2,629	2,673
176.45	2,668	2,805
176.50	2,708	2,940
176.55	2,747	3,076
176.60	2,787	3,215
176.65	2,827	3,355
176.70	2,868	3,497
176.75	2,909	3,642
176.80	2,950	3,788
176.85	2,991	3,937
176.90	3,033	4,087
176.95	3,075	4,240
177.00	3,117	4,395
177.05	3,159	4,552
177.10	3,202	4,711
177.15	3,245	4,872
177.20	3,288	5,035
177.25	3,332	5,201
177.30	3,376	5,368
177.35	3,420	5,538
177.40	3,464	5,710
177.45	3,509	5,885
177.50	3,554	6,061
177.55	3,599	6,240
177.60	3,644	6,421
177.65	3,690	6,605
177.70	3,736	6,790
177.75	3,783	6,978
177.80	3,829	7,168
177.85	3,876	7,361
177.90	3,924	7,556
177.95	3,971	7,753
178.00	**4,019**	**7,953**

Summary for Pond 1.1P: 1P: Pocket Pond

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 1.55" for 1-yr event
Inflow = 4.05 cfs @ 12.07 hrs, Volume= 0.255 af
Outflow = 0.28 cfs @ 13.53 hrs, Volume= 0.254 af, Atten= 93%, Lag= 87.4 min
Primary = 0.28 cfs @ 13.53 hrs, Volume= 0.254 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 173.00' Surf.Area= 2,981 sf Storage= 3,891 cf
Peak Elev= 174.49' @ 13.53 hrs Surf.Area= 4,249 sf Storage= 9,271 cf (5,381 cf above start)

Plug-Flow detention time= 521.6 min calculated for 0.165 af (65% of inflow)
Center-of-Mass det. time= 253.8 min (1,087.6 - 833.8)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	30,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

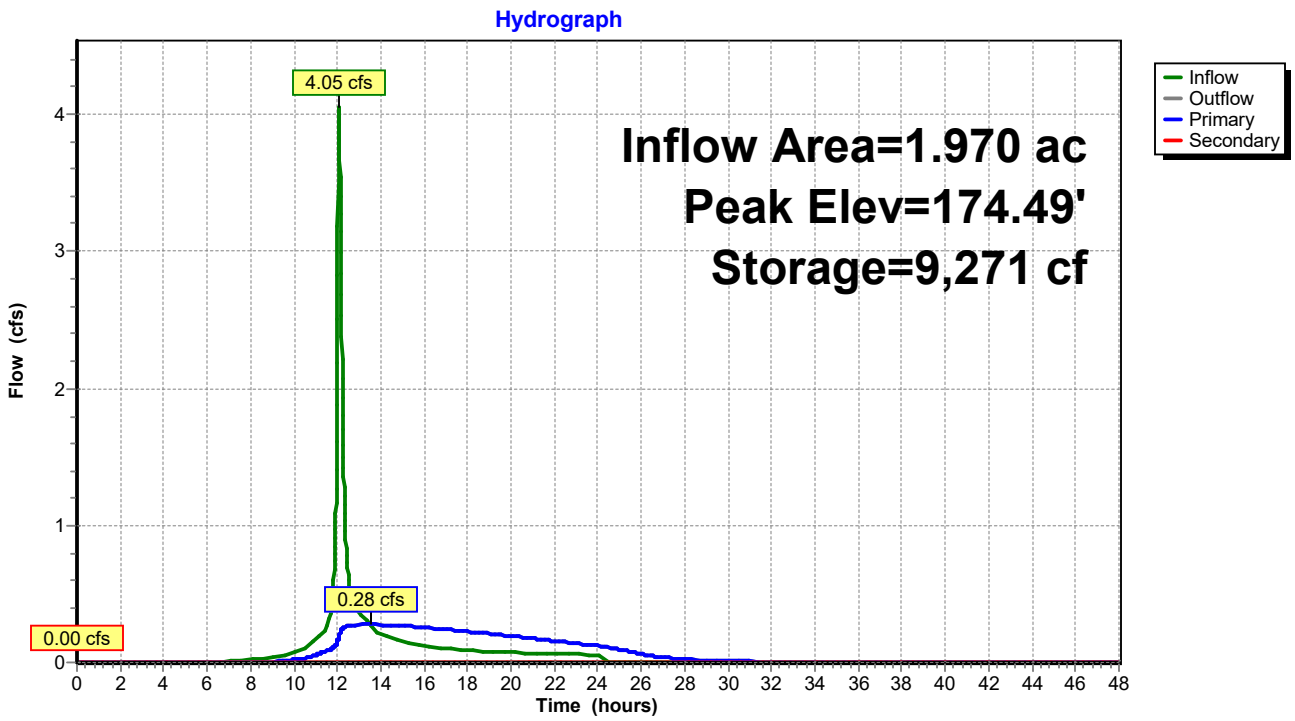
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	12	18.7	0	0	12
170.00	133	67.1	62	62	345
171.50	654	156.6	541	603	1,947
172.00	2,243	227.5	685	1,287	4,117
173.00	2,981	251.6	2,603	3,891	5,066
174.00	3,822	279.0	3,393	7,283	6,253
176.00	5,694	325.1	9,454	16,737	8,550
178.00	7,814	367.9	13,452	30,190	11,010

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**18.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 173.00' / 170.00' S= 0.0682 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	173.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	175.10'	**0.5" x 12.0" Horiz. Orifice/Grate** C= 0.600
#4	Device 1	176.50'	**25.9" x 43.8" Horiz. Orifice/Grate** C= 0.600 in 30.0" x 48.0" Grate (79% open area) Limited to weir flow at low heads
#5	Secondary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Emergency Spillway** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.28 cfs @ 13.53 hrs HW=174.49' (Free Discharge)
└─**1=Culvert** (Passes 0.28 cfs of 7.35 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.63 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.00' (Free Discharge)
└─**5=Emergency Spillway** (Controls 0.00 cfs)

Pond 1.1P: 1P: Pocket Pond



Hydrograph for Pond 1.1P: 1P: Pocket Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	3,891	173.00	0.00	0.00	**0.00**
1.00	0.00	3,891	173.00	0.00	0.00	0.00
2.00	0.00	3,891	173.00	0.00	0.00	0.00
3.00	0.00	3,891	173.00	0.00	0.00	0.00
4.00	0.00	3,891	173.00	0.00	0.00	0.00
5.00	0.00	3,891	173.00	0.00	0.00	0.00
6.00	0.00	3,891	173.00	0.00	0.00	0.00
7.00	0.01	3,897	173.00	0.00	0.00	0.00
8.00	0.02	3,937	173.02	0.00	0.00	0.00
9.00	0.04	4,023	173.04	0.00	0.00	0.00
10.00	0.07	4,173	173.09	0.02	0.02	0.00
11.00	0.16	4,438	173.18	0.05	0.05	0.00
12.00	**2.50**	5,616	173.54	0.15	0.15	0.00
13.00	**0.35**	**9,203**	**174.48**	**0.27**	**0.27**	0.00
14.00	0.21	**9,200**	**174.48**	**0.27**	**0.27**	0.00
15.00	0.15	8,859	174.39	0.27	0.27	0.00
16.00	0.12	8,403	174.28	0.25	0.25	0.00
17.00	0.10	7,911	174.16	0.24	0.24	0.00
18.00	0.09	7,419	174.04	0.23	0.23	0.00
19.00	0.08	6,941	173.91	0.21	0.21	0.00
20.00	0.07	6,493	173.79	0.19	0.19	0.00
21.00	0.07	6,084	173.67	0.18	0.18	0.00
22.00	0.06	5,719	173.57	0.16	0.16	0.00
23.00	0.06	5,401	173.48	0.14	0.14	0.00
24.00	0.06	5,133	173.40	0.12	0.12	0.00
25.00	0.00	4,774	173.29	0.09	0.09	0.00
26.00	0.00	4,492	173.20	0.06	0.06	0.00
27.00	0.00	4,319	173.14	0.04	0.04	0.00
28.00	0.00	4,211	173.11	0.02	0.02	0.00
29.00	0.00	4,139	173.08	0.02	0.02	0.00
30.00	0.00	4,091	173.07	0.01	0.01	0.00
31.00	0.00	4,058	173.06	0.01	0.01	0.00
32.00	0.00	4,037	173.05	0.01	0.01	0.00
33.00	0.00	4,019	173.04	0.00	0.00	0.00
34.00	0.00	4,004	173.04	0.00	0.00	0.00
35.00	0.00	3,990	173.03	0.00	0.00	0.00
36.00	0.00	3,978	173.03	0.00	0.00	0.00
37.00	0.00	3,968	173.03	0.00	0.00	0.00
38.00	0.00	3,958	173.02	0.00	0.00	0.00
39.00	0.00	3,950	173.02	0.00	0.00	0.00
40.00	0.00	3,943	173.02	0.00	0.00	0.00
41.00	0.00	3,937	173.02	0.00	0.00	0.00
42.00	0.00	3,931	173.01	0.00	0.00	0.00
43.00	0.00	3,926	173.01	0.00	0.00	0.00
44.00	0.00	3,922	173.01	0.00	0.00	0.00
45.00	0.00	3,918	173.01	0.00	0.00	0.00
46.00	0.00	3,915	173.01	0.00	0.00	0.00
47.00	0.00	3,912	173.01	0.00	0.00	0.00
48.00	0.00	3,910	173.01	0.00	0.00	0.00

Stage-Area-Storage for Pond 1.1P: 1P: Pocket Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
169.00	12	0
169.10	18	2
169.20	26	4
169.30	35	7
169.40	45	11
169.50	56	16
169.60	69	22
169.70	83	30
169.80	98	39
169.90	115	49
170.00	133	62
170.10	155	76
170.20	180	93
170.30	206	112
170.40	233	134
170.50	263	159
170.60	294	187
170.70	327	218
170.80	362	252
170.90	398	290
171.00	437	332
171.10	477	377
171.20	518	427
171.30	562	481
171.40	607	540
171.50	654	603
171.60	896	680
171.70	1,176	783
171.80	1,493	916
171.90	1,849	1,083
172.00	2,243	1,287
172.10	2,312	1,515
172.20	2,382	1,750
172.30	2,453	1,992
172.40	2,526	2,240
172.50	2,599	2,497
172.60	2,673	2,760
172.70	2,749	3,031
172.80	2,825	3,310
172.90	2,902	3,596
173.00	2,981	3,891
173.10	3,060	4,193
173.20	3,141	4,503
173.30	3,222	4,821
173.40	3,305	5,147
173.50	3,388	5,482
173.60	3,473	5,825
173.70	3,559	6,177
173.80	3,645	6,537
173.90	3,733	6,906
174.00	3,822	7,283
174.10	3,907	7,670
174.20	3,992	8,065
174.30	4,079	8,468
174.40	4,167	8,881
174.50	4,255	9,302
174.60	4,345	9,732
174.70	4,435	10,171
174.80	4,526	10,619
174.90	4,618	11,076
175.00	4,712	11,542
175.10	4,806	12,018
175.20	4,901	12,504
175.30	4,996	12,998
175.40	5,093	13,503
175.50	5,191	14,017
175.60	5,290	14,541
175.70	5,389	15,075
175.80	5,490	15,619
175.90	5,592	16,173
176.00	5,694	16,737
176.10	5,792	17,312
176.20	5,891	17,896
176.30	5,991	18,490
176.40	6,091	19,094
176.50	6,193	19,708
176.60	6,295	20,333
176.70	6,398	20,967
176.80	6,502	21,612
176.90	6,607	22,268
177.00	6,712	22,933
177.10	6,819	23,610
177.20	6,926	24,297
177.30	7,034	24,995
177.40	7,143	25,704
177.50	7,253	26,424
177.60	7,363	27,155
177.70	7,475	27,896
177.80	7,587	28,650
177.90	7,700	29,414
178.00	**7,814**	**30,190**

Summary for Subcatchment 1.1S: 102

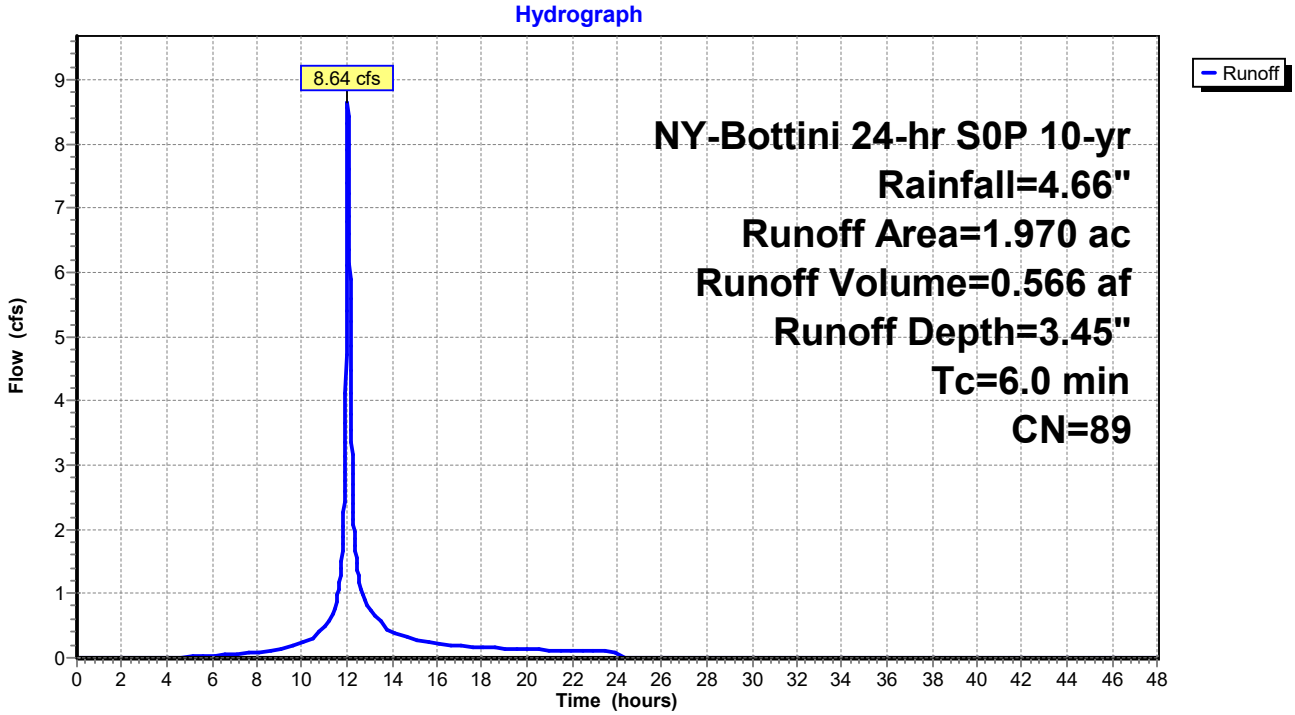
Runoff = 8.64 cfs @ 12.04 hrs, Volume= 0.566 af, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
1.219	98	Paved parking, HSG A
0.028	89	Gravel roads, HSG C
0.684	74	>75% Grass cover, Good, HSG C
0.039	79	50-75% Grass cover, Fair, HSG C
1.970	89	Weighted Average
0.751		38.12% Pervious Area
1.219		61.88% Impervious Area

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

Subcatchment 1.1S: 102



Hydrograph for Subcatchment 1.1S: 102

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.01
5.50	0.35	0.01	0.02
6.00	0.39	0.01	0.03
6.50	0.44	0.03	0.04
7.00	0.49	0.04	0.06
7.50	0.54	0.06	0.07
8.00	0.60	0.08	0.09
8.50	0.66	0.10	0.11
9.00	0.73	0.13	0.14
9.50	0.81	0.18	0.18
10.00	0.91	0.23	0.23
10.50	1.03	0.30	0.31
11.00	1.20	0.42	0.50
11.50	1.45	0.59	0.83
12.00	2.52	1.48	**7.39**
12.50	3.24	2.12	**1.34**
13.00	3.47	2.33	0.75
13.50	3.64	2.49	0.57
14.00	3.76	2.59	0.40
14.50	3.85	2.69	0.34
15.00	3.94	2.76	0.30
15.50	4.01	2.83	0.25
16.00	4.07	2.89	0.22
16.50	4.12	2.94	0.21
17.00	4.18	2.99	0.19
17.50	4.23	3.04	0.18
18.00	4.27	3.08	0.17
18.50	4.31	3.12	0.15
19.00	4.35	3.15	0.14
19.50	4.39	3.19	0.14
20.00	4.42	3.22	0.13
20.50	4.46	3.25	0.13
21.00	4.49	3.29	0.12
21.50	4.52	3.31	0.12
22.00	4.55	3.34	0.11
22.50	4.58	3.37	0.11
23.00	4.61	3.40	0.10
23.50	4.63	3.42	0.10
24.00	**4.66**	**3.45**	0.10
24.50	4.66	3.45	0.00
25.00	4.66	3.45	0.00
25.50	4.66	3.45	0.00
26.00	4.66	3.45	0.00
26.50	4.66	3.45	0.00
27.00	4.66	3.45	0.00
27.50	4.66	3.45	0.00
28.00	4.66	3.45	0.00
28.50	4.66	3.45	0.00
29.00	4.66	3.45	0.00
29.50	4.66	3.45	0.00
30.00	4.66	3.45	0.00
30.50	4.66	3.45	0.00
31.00	4.66	3.45	0.00
31.50	4.66	3.45	0.00
32.00	4.66	3.45	0.00
32.50	4.66	3.45	0.00
33.00	4.66	3.45	0.00
33.50	4.66	3.45	0.00
34.00	4.66	3.45	0.00
34.50	4.66	3.45	0.00
35.00	4.66	3.45	0.00
35.50	4.66	3.45	0.00
36.00	4.66	3.45	0.00
36.50	4.66	3.45	0.00
37.00	4.66	3.45	0.00
37.50	4.66	3.45	0.00
38.00	4.66	3.45	0.00
38.50	4.66	3.45	0.00
39.00	4.66	3.45	0.00
39.50	4.66	3.45	0.00
40.00	4.66	3.45	0.00
40.50	4.66	3.45	0.00
41.00	4.66	3.45	0.00
41.50	4.66	3.45	0.00
42.00	4.66	3.45	0.00
42.50	4.66	3.45	0.00
43.00	4.66	3.45	0.00
43.50	4.66	3.45	0.00
44.00	4.66	3.45	0.00
44.50	4.66	3.45	0.00
45.00	4.66	3.45	0.00
45.50	4.66	3.45	0.00
46.00	4.66	3.45	0.00
46.50	4.66	3.45	0.00
47.00	4.66	3.45	0.00
47.50	4.66	3.45	0.00
48.00	4.66	3.45	0.00

Summary for Subcatchment 1A: 100

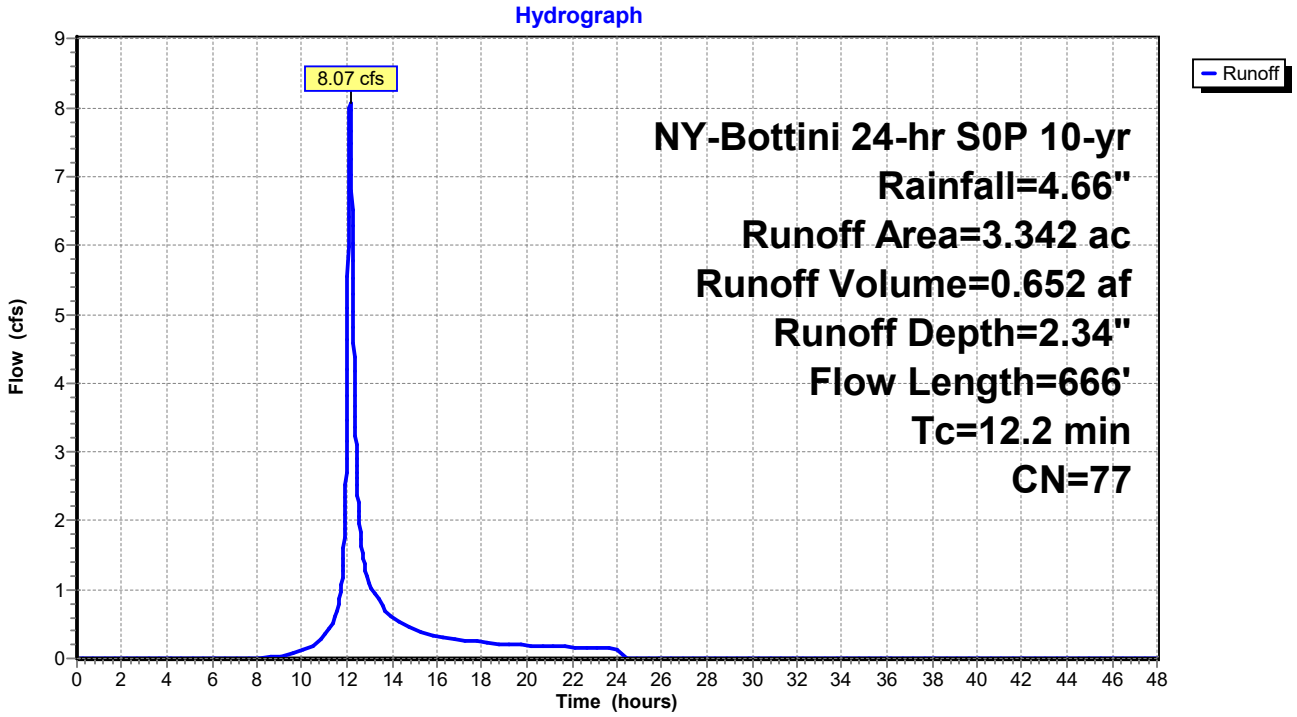
Runoff = 8.07 cfs @ 12.13 hrs, Volume= 0.652 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.087	98	Paved parking, HSG A
0.017	89	Gravel roads, HSG C
0.326	74	>75% Grass cover, Good, HSG C
1.892	79	50-75% Grass cover, Fair, HSG C
1.020	73	Woods, Fair, HSG C
3.342	77	Weighted Average
3.255		97.40% Pervious Area
0.087		2.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
0.7	96	0.1040	2.26		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	103	0.1650	2.03		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	170	0.2180	3.27		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
2.7	197	0.0161	1.21	8.49	**Trap/Vee/Rect Channel Flow, E-F** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.120
12.2	666	Total			

Subcatchment 1A: 100



Hydrograph for Subcatchment 1A: 100

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.00	0.00
8.00	0.60	0.00	0.00
8.50	0.66	0.00	0.01
9.00	0.73	0.01	0.03
9.50	0.81	0.01	0.07
10.00	0.91	0.03	0.11
10.50	1.03	0.05	0.18
11.00	1.20	0.10	0.34
11.50	1.45	0.19	0.63
12.00	2.52	0.76	**3.82**
12.50	3.24	1.24	**2.28**
13.00	3.47	1.41	1.09
13.50	3.64	1.54	0.82
14.00	3.76	1.62	0.58
14.50	3.85	1.70	0.49
15.00	3.94	1.76	0.43
15.50	4.01	1.82	0.36
16.00	4.07	1.87	0.32
16.50	4.12	1.91	0.30
17.00	4.18	1.95	0.28
17.50	4.23	1.99	0.26
18.00	4.27	2.03	0.24
18.50	4.31	2.06	0.22
19.00	4.35	2.09	0.21
19.50	4.39	2.12	0.20
20.00	4.42	2.15	0.19
20.50	4.46	2.18	0.18
21.00	4.49	2.20	0.18
21.50	4.52	2.23	0.17
22.00	4.55	2.25	0.16
22.50	4.58	2.28	0.16
23.00	4.61	2.30	0.15
23.50	4.63	2.32	0.15
24.00	**4.66**	**2.34**	0.14
24.50	4.66	2.34	0.00
25.00	4.66	2.34	0.00
25.50	4.66	2.34	0.00
26.00	4.66	2.34	0.00
26.50	4.66	2.34	0.00
27.00	4.66	2.34	0.00
27.50	4.66	2.34	0.00
28.00	4.66	2.34	0.00
28.50	4.66	2.34	0.00
29.00	4.66	2.34	0.00
29.50	4.66	2.34	0.00
30.00	4.66	2.34	0.00
30.50	4.66	2.34	0.00
31.00	4.66	2.34	0.00
31.50	4.66	2.34	0.00
32.00	4.66	2.34	0.00
32.50	4.66	2.34	0.00
33.00	4.66	2.34	0.00
33.50	4.66	2.34	0.00
34.00	4.66	2.34	0.00
34.50	4.66	2.34	0.00
35.00	4.66	2.34	0.00
35.50	4.66	2.34	0.00
36.00	4.66	2.34	0.00
36.50	4.66	2.34	0.00
37.00	4.66	2.34	0.00
37.50	4.66	2.34	0.00
38.00	4.66	2.34	0.00
38.50	4.66	2.34	0.00
39.00	4.66	2.34	0.00
39.50	4.66	2.34	0.00
40.00	4.66	2.34	0.00
40.50	4.66	2.34	0.00
41.00	4.66	2.34	0.00
41.50	4.66	2.34	0.00
42.00	4.66	2.34	0.00
42.50	4.66	2.34	0.00
43.00	4.66	2.34	0.00
43.50	4.66	2.34	0.00
44.00	4.66	2.34	0.00
44.50	4.66	2.34	0.00
45.00	4.66	2.34	0.00
45.50	4.66	2.34	0.00
46.00	4.66	2.34	0.00
46.50	4.66	2.34	0.00
47.00	4.66	2.34	0.00
47.50	4.66	2.34	0.00
48.00	4.66	2.34	0.00

Summary for Subcatchment 1B: 101

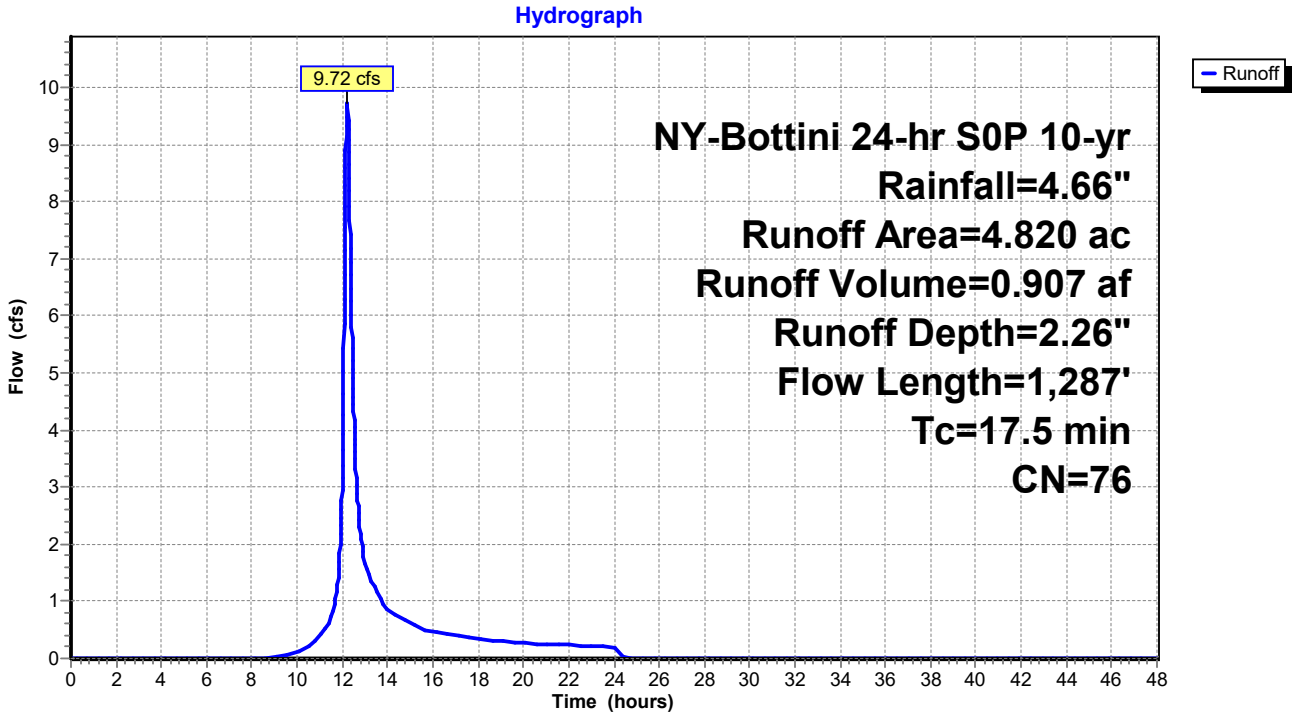
Runoff = 9.72 cfs @ 12.21 hrs, Volume= 0.907 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.807	74	>75% Grass cover, Good, HSG C
2.025	79	50-75% Grass cover, Fair, HSG C
0.943	73	Woods, Fair, HSG C
1.045	73	Woods, Fair, HSG C
4.820	76	Weighted Average
4.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
2.3	399	0.1650	2.84		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.2	285	0.0105	3.92	27.42	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
0.2	121	0.0740	10.40	72.79	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
5.6	346	0.0430	1.04		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
0.2	36	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, F-G** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
17.5	1,287	Total			

Subcatchment 1B: 101



Hydrograph for Subcatchment 1B: 101

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.00	0.00
8.00	0.60	0.00	0.00
8.50	0.66	0.00	0.00
9.00	0.73	0.00	0.02
9.50	0.81	0.01	0.07
10.00	0.91	0.02	0.12
10.50	1.03	0.04	0.21
11.00	1.20	0.09	0.40
11.50	1.45	0.17	0.75
12.00	2.52	0.71	**3.39**
12.50	3.24	1.18	**4.31**
13.00	3.47	1.35	1.67
13.50	3.64	1.47	1.20
14.00	3.76	1.55	0.85
14.50	3.85	1.63	0.71
15.00	3.94	1.69	0.63
15.50	4.01	1.74	0.52
16.00	4.07	1.79	0.46
16.50	4.12	1.83	0.43
17.00	4.18	1.88	0.40
17.50	4.23	1.91	0.37
18.00	4.27	1.95	0.35
18.50	4.31	1.98	0.32
19.00	4.35	2.01	0.30
19.50	4.39	2.04	0.29
20.00	4.42	2.07	0.27
20.50	4.46	2.10	0.26
21.00	4.49	2.12	0.25
21.50	4.52	2.15	0.24
22.00	4.55	2.17	0.23
22.50	4.58	2.19	0.22
23.00	4.61	2.22	0.22
23.50	4.63	2.24	0.21
24.00	**4.66**	**2.26**	0.20
24.50	4.66	2.26	0.01
25.00	4.66	2.26	0.00
25.50	4.66	2.26	0.00
26.00	4.66	2.26	0.00
26.50	4.66	2.26	0.00
27.00	4.66	2.26	0.00
27.50	4.66	2.26	0.00
28.00	4.66	2.26	0.00
28.50	4.66	2.26	0.00
29.00	4.66	2.26	0.00
29.50	4.66	2.26	0.00
30.00	4.66	2.26	0.00
30.50	4.66	2.26	0.00
31.00	4.66	2.26	0.00
31.50	4.66	2.26	0.00
32.00	4.66	2.26	0.00
32.50	4.66	2.26	0.00
33.00	4.66	2.26	0.00
33.50	4.66	2.26	0.00
34.00	4.66	2.26	0.00
34.50	4.66	2.26	0.00
35.00	4.66	2.26	0.00
35.50	4.66	2.26	0.00
36.00	4.66	2.26	0.00
36.50	4.66	2.26	0.00
37.00	4.66	2.26	0.00
37.50	4.66	2.26	0.00
38.00	4.66	2.26	0.00
38.50	4.66	2.26	0.00
39.00	4.66	2.26	0.00
39.50	4.66	2.26	0.00
40.00	4.66	2.26	0.00
40.50	4.66	2.26	0.00
41.00	4.66	2.26	0.00
41.50	4.66	2.26	0.00
42.00	4.66	2.26	0.00
42.50	4.66	2.26	0.00
43.00	4.66	2.26	0.00
43.50	4.66	2.26	0.00
44.00	4.66	2.26	0.00
44.50	4.66	2.26	0.00
45.00	4.66	2.26	0.00
45.50	4.66	2.26	0.00
46.00	4.66	2.26	0.00
46.50	4.66	2.26	0.00
47.00	4.66	2.26	0.00
47.50	4.66	2.26	0.00
48.00	4.66	2.26	0.00

Summary for Subcatchment 1C: 103

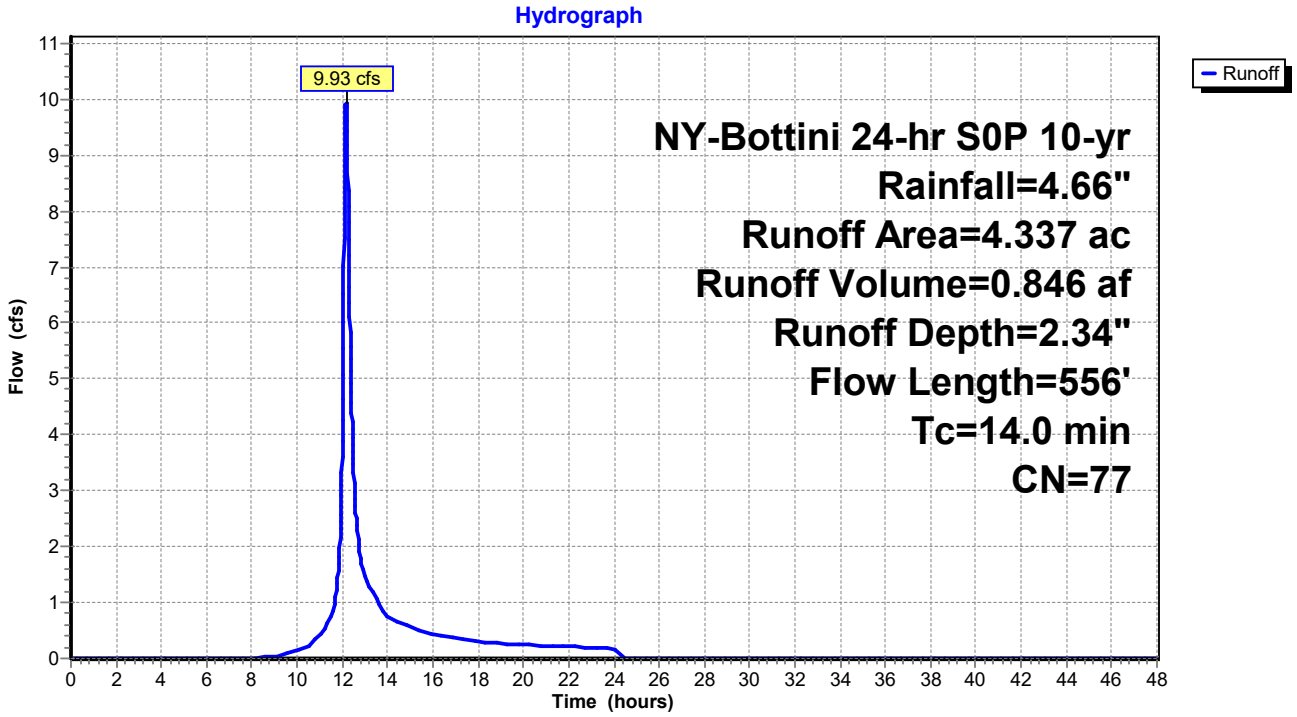
Runoff = 9.93 cfs @ 12.16 hrs, Volume= 0.846 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.400	74	>75% Grass cover, Good, HSG C
0.093	80	>75% Grass cover, Good, HSG D
0.882	73	Woods, Fair, HSG C
2.962	79	Woods, Fair, HSG D
4.337	77	Weighted Average
4.337		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	46	0.2390	0.41		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
5.8	44	0.0910	0.13		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.50"
5.4	316	0.0380	0.97		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	150	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
14.0	556	Total			

Subcatchment 1C: 103



Hydrograph for Subcatchment 1C: 103

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.00	0.00
8.00	0.60	0.00	0.00
8.50	0.66	0.00	0.01
9.00	0.73	0.01	0.04
9.50	0.81	0.01	0.08
10.00	0.91	0.03	0.14
10.50	1.03	0.05	0.22
11.00	1.20	0.10	0.42
11.50	1.45	0.19	0.78
12.00	2.52	0.76	**4.25**
12.50	3.24	1.24	**3.28**
13.00	3.47	1.41	1.45
13.50	3.64	1.54	1.08
14.00	3.76	1.62	0.76
14.50	3.85	1.70	0.65
15.00	3.94	1.76	0.57
15.50	4.01	1.82	0.47
16.00	4.07	1.87	0.42
16.50	4.12	1.91	0.39
17.00	4.18	1.95	0.36
17.50	4.23	1.99	0.34
18.00	4.27	2.03	0.32
18.50	4.31	2.06	0.29
19.00	4.35	2.09	0.27
19.50	4.39	2.12	0.26
20.00	4.42	2.15	0.25
20.50	4.46	2.18	0.24
21.00	4.49	2.20	0.23
21.50	4.52	2.23	0.22
22.00	4.55	2.25	0.21
22.50	4.58	2.28	0.20
23.00	4.61	2.30	0.20
23.50	4.63	2.32	0.19
24.00	**4.66**	**2.34**	0.19
24.50	4.66	2.34	0.00
25.00	4.66	2.34	0.00
25.50	4.66	2.34	0.00
26.00	4.66	2.34	0.00
26.50	4.66	2.34	0.00
27.00	4.66	2.34	0.00
27.50	4.66	2.34	0.00
28.00	4.66	2.34	0.00
28.50	4.66	2.34	0.00
29.00	4.66	2.34	0.00
29.50	4.66	2.34	0.00
30.00	4.66	2.34	0.00
30.50	4.66	2.34	0.00
31.00	4.66	2.34	0.00
31.50	4.66	2.34	0.00
32.00	4.66	2.34	0.00
32.50	4.66	2.34	0.00
33.00	4.66	2.34	0.00
33.50	4.66	2.34	0.00
34.00	4.66	2.34	0.00
34.50	4.66	2.34	0.00
35.00	4.66	2.34	0.00
35.50	4.66	2.34	0.00
36.00	4.66	2.34	0.00
36.50	4.66	2.34	0.00
37.00	4.66	2.34	0.00
37.50	4.66	2.34	0.00
38.00	4.66	2.34	0.00
38.50	4.66	2.34	0.00
39.00	4.66	2.34	0.00
39.50	4.66	2.34	0.00
40.00	4.66	2.34	0.00
40.50	4.66	2.34	0.00
41.00	4.66	2.34	0.00
41.50	4.66	2.34	0.00
42.00	4.66	2.34	0.00
42.50	4.66	2.34	0.00
43.00	4.66	2.34	0.00
43.50	4.66	2.34	0.00
44.00	4.66	2.34	0.00
44.50	4.66	2.34	0.00
45.00	4.66	2.34	0.00
45.50	4.66	2.34	0.00
46.00	4.66	2.34	0.00
46.50	4.66	2.34	0.00
47.00	4.66	2.34	0.00
47.50	4.66	2.34	0.00
48.00	4.66	2.34	0.00

Summary for Reach 1R:

Inflow Area = 4.820 ac, 0.00% Impervious, Inflow Depth = 2.26" for 10-yr event
Inflow = 9.72 cfs @ 12.21 hrs, Volume= 0.907 af
Outflow = 9.45 cfs @ 12.30 hrs, Volume= 0.907 af, Atten= 3%, Lag= 5.4 min

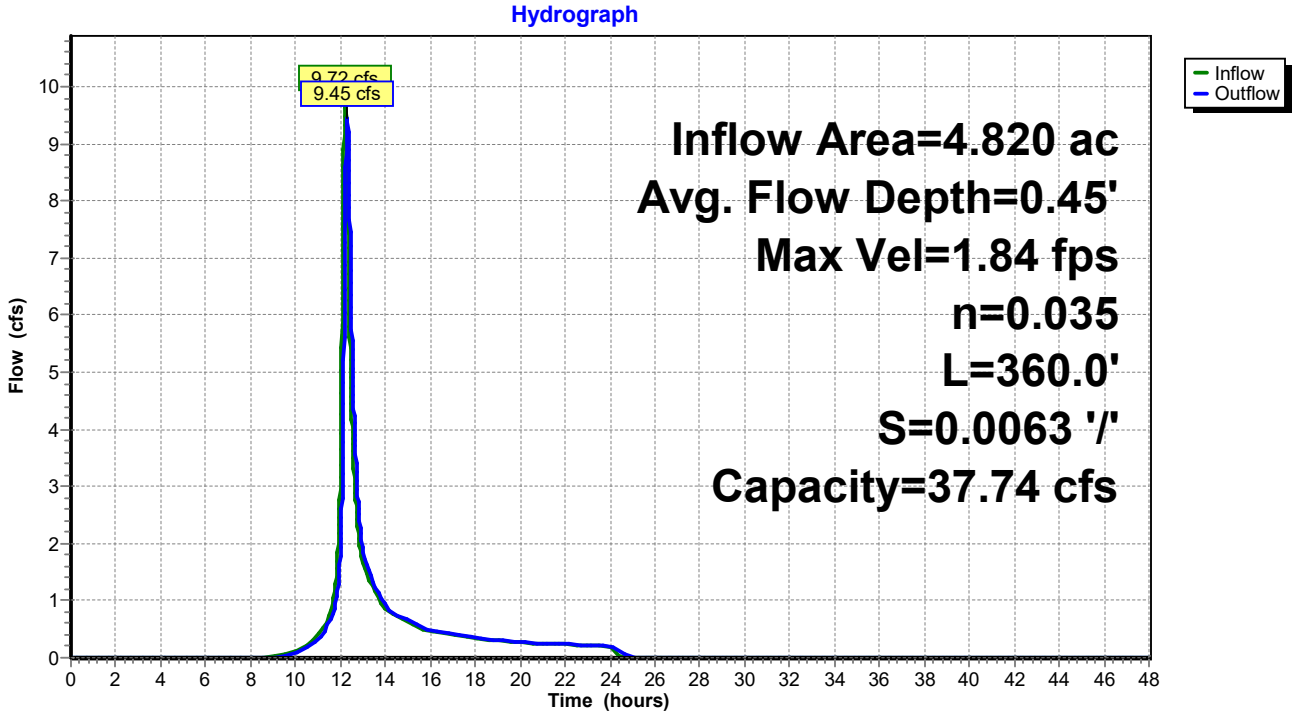
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.48 fps, Avg. Travel Time= 12.5 min

Peak Storage= 1,854 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.45'
Bank-Full Depth= 1.00' Flow Area= 13.0 sf, Capacity= 37.74 cfs

10.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 360.0' Slope= 0.0063 '/'
Inlet Invert= 160.28', Outlet Invert= 158.00'

‡

Reach 1R:



Hydrograph for Reach 1R:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	160.28	0.00
1.00	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
3.00	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
5.00	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00
7.00	0.00	0	160.28	0.00
8.00	0.00	0	160.28	0.00
9.00	0.02	15	160.28	0.01
10.00	0.12	108	160.31	0.09
11.00	0.40	235	160.34	0.32
12.00	**3.39**	**797**	**160.49**	**1.89**
13.00	**1.67**	**646**	**160.45**	**1.93**
14.00	0.85	418	160.39	0.92
15.00	0.63	341	160.37	0.65
16.00	0.46	283	160.36	0.48
17.00	0.40	256	160.35	0.40
18.00	0.35	236	160.34	0.35
19.00	0.30	216	160.34	0.31
20.00	0.27	203	160.34	0.28
21.00	0.25	193	160.33	0.25
22.00	0.23	185	160.33	0.24
23.00	0.22	177	160.33	0.22
24.00	0.20	170	160.33	0.21
25.00	0.00	33	160.29	0.02
26.00	0.00	7	160.28	0.00
27.00	0.00	1	160.28	0.00
28.00	0.00	0	160.28	0.00
29.00	0.00	0	160.28	0.00
30.00	0.00	0	160.28	0.00
31.00	0.00	0	160.28	0.00
32.00	0.00	0	160.28	0.00
33.00	0.00	0	160.28	0.00
34.00	0.00	0	160.28	0.00
35.00	0.00	0	160.28	0.00
36.00	0.00	0	160.28	0.00
37.00	0.00	0	160.28	0.00
38.00	0.00	0	160.28	0.00
39.00	0.00	0	160.28	0.00
40.00	0.00	0	160.28	0.00
41.00	0.00	0	160.28	0.00
42.00	0.00	0	160.28	0.00
43.00	0.00	0	160.28	0.00
44.00	0.00	0	160.28	0.00
45.00	0.00	0	160.28	0.00
46.00	0.00	0	160.28	0.00
47.00	0.00	0	160.28	0.00
48.00	0.00	0	160.28	0.00

Stage-Area-Storage for Reach 1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
160.28	0.0	0
160.29	0.1	36
160.30	0.2	72
160.31	0.3	109
160.32	0.4	146
160.33	0.5	183
160.34	0.6	220
160.35	0.7	257
160.36	0.8	295
160.37	0.9	333
160.38	1.0	371
160.39	1.1	409
160.40	1.2	448
160.41	1.4	486
160.42	1.5	525
160.43	1.6	564
160.44	1.7	604
160.45	1.8	643
160.46	1.9	683
160.47	2.0	723
160.48	2.1	763
160.49	2.2	804
160.50	2.3	844
160.51	2.5	885
160.52	2.6	926
160.53	2.7	968
160.54	2.8	1,009
160.55	2.9	1,051
160.56	3.0	1,093
160.57	3.2	1,135
160.58	3.3	1,177
160.59	3.4	1,220
160.60	3.5	1,263
160.61	3.6	1,306
160.62	3.7	1,349
160.63	3.9	1,392
160.64	4.0	1,436
160.65	4.1	1,480
160.66	4.2	1,524
160.67	4.4	1,568
160.68	4.5	1,613
160.69	4.6	1,658
160.70	4.7	1,703
160.71	4.9	1,748
160.72	5.0	1,793
160.73	5.1	1,839
160.74	5.2	1,885
160.75	5.4	1,931
160.76	5.5	1,977
160.77	5.6	2,023
160.78	5.8	2,070
160.79	5.9	2,117
160.80	6.0	2,164
160.81	6.1	2,211
160.82	6.3	2,259
160.83	6.4	2,307
160.84	6.5	2,355
160.85	6.7	2,403
160.86	6.8	2,451
160.87	6.9	2,500
160.88	7.1	2,549
160.89	7.2	2,598
160.90	7.4	2,647
160.91	7.5	2,697
160.92	7.6	2,746
160.93	7.8	2,796
160.94	7.9	2,846
160.95	8.0	2,897
160.96	8.2	2,947
160.97	8.3	2,998
160.98	8.5	3,049
160.99	8.6	3,100
161.00	8.8	3,152
161.01	8.9	3,204
161.02	9.0	3,255
161.03	9.2	3,308
161.04	9.3	3,360
161.05	9.5	3,412
161.06	9.6	3,465
161.07	9.8	3,518
161.08	9.9	3,571
161.09	10.1	3,625
161.10	10.2	3,678
161.11	10.4	3,732
161.12	10.5	3,786
161.13	10.7	3,840
161.14	10.8	3,895
161.15	11.0	3,949
161.16	11.1	4,004
161.17	11.3	4,059
161.18	11.4	4,115
161.19	11.6	4,170
161.20	11.7	4,226
161.21	11.9	4,282
161.22	12.1	4,338
161.23	12.2	4,395
161.24	12.4	4,451
161.25	12.5	4,508
161.26	12.7	4,565
161.27	12.8	4,623
161.28	**13.0**	**4,680**

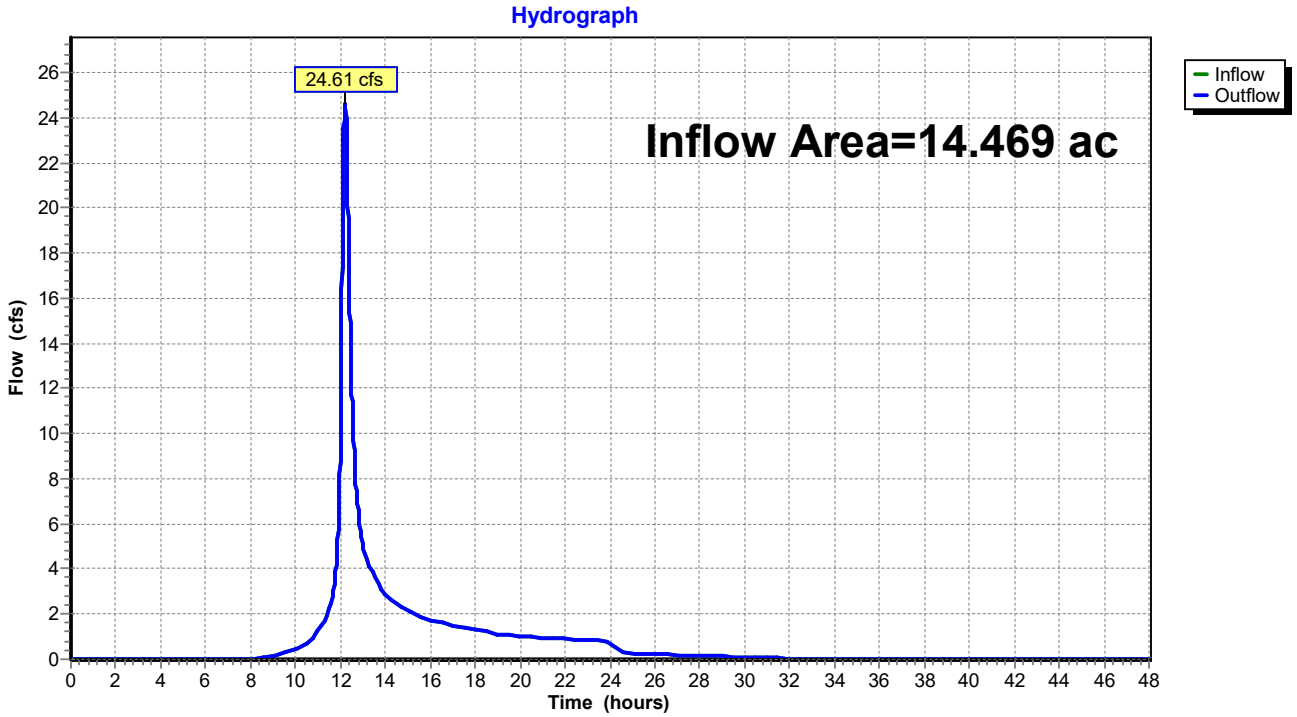
Summary for Reach DP1:

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

Inflow Area = 14.469 ac, 9.03% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 24.61 cfs @ 12.20 hrs, Volume= 2.970 af
Outflow = 24.61 cfs @ 12.20 hrs, Volume= 2.970 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP1:



Hydrograph for Reach DP1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.00	0.22		0.22
0.50	0.00		0.00	26.50	0.20		0.20
1.00	0.00		0.00	27.00	0.19		0.19
1.50	0.00		0.00	27.50	0.17		0.17
2.00	0.00		0.00	28.00	0.16		0.16
2.50	0.00		0.00	28.50	0.14		0.14
3.00	0.00		0.00	29.00	0.13		0.13
3.50	0.00		0.00	29.50	0.11		0.11
4.00	0.00		0.00	30.00	0.10		0.10
4.50	0.00		0.00	30.50	0.08		0.08
5.00	0.00		0.00	31.00	0.06		0.06
5.50	0.00		0.00	31.50	0.05		0.05
6.00	0.00		0.00	32.00	0.04		0.04
6.50	0.00		0.00	32.50	0.03		0.03
7.00	0.01		0.01	33.00	0.02		0.02
7.50	0.02		0.02	33.50	0.02		0.02
8.00	0.03		0.03	34.00	0.02		0.02
8.50	0.07		0.07	34.50	0.01		0.01
9.00	0.14		0.14	35.00	0.01		0.01
9.50	0.26		0.26	35.50	0.01		0.01
10.00	0.44		0.44	36.00	0.01		0.01
10.50	0.69		0.69	36.50	0.01		0.01
11.00	1.23		1.23	37.00	0.01		0.01
11.50	2.21		2.21	37.50	0.00		0.00
12.00	**10.23**		**10.23**	38.00	0.00		0.00
12.50	**12.06**		**12.06**	38.50	0.00		0.00
13.00	5.06		5.06	39.00	0.00		0.00
13.50	3.77		3.77	39.50	0.00		0.00
14.00	2.85		2.85	40.00	0.00		0.00
14.50	2.46		2.46	40.50	0.00		0.00
15.00	2.21		2.21	41.00	0.00		0.00
15.50	1.91		1.91	41.50	0.00		0.00
16.00	1.75		1.75	42.00	0.00		0.00
16.50	1.62		1.62	42.50	0.00		0.00
17.00	1.51		1.51	43.00	0.00		0.00
17.50	1.42		1.42	43.50	0.00		0.00
18.00	1.33		1.33	44.00	0.00		0.00
18.50	1.22		1.22	44.50	0.00		0.00
19.00	1.12		1.12	45.00	0.00		0.00
19.50	1.07		1.07	45.50	0.00		0.00
20.00	1.03		1.03	46.00	0.00		0.00
20.50	1.00		1.00	46.50	0.00		0.00
21.00	0.96		0.96	47.00	0.00		0.00
21.50	0.93		0.93	47.50	0.00		0.00
22.00	0.90		0.90	48.00	0.00		0.00
22.50	0.87		0.87				
23.00	0.85		0.85				
23.50	0.82		0.82				
24.00	0.80		0.80				
24.50	0.34		0.34				
25.00	0.25		0.25				
25.50	0.23		0.23				

Summary for Pond 1.1F: 1F: Forebay

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 3.45" for 10-yr event
Inflow = 8.64 cfs @ 12.04 hrs, Volume= 0.566 af
Outflow = 8.28 cfs @ 12.06 hrs, Volume= 0.566 af, Atten= 4%, Lag= 1.3 min
Primary = 8.28 cfs @ 12.06 hrs, Volume= 0.566 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 177.00' Surf.Area= 3,117 sf Storage= 4,395 cf
Peak Elev= 177.30' @ 12.06 hrs Surf.Area= 3,374 sf Storage= 5,361 cf (966 cf above start)

Plug-Flow detention time= 122.7 min calculated for 0.465 af (82% of inflow)
Center-of-Mass det. time= 3.8 min (804.6 - 800.8)

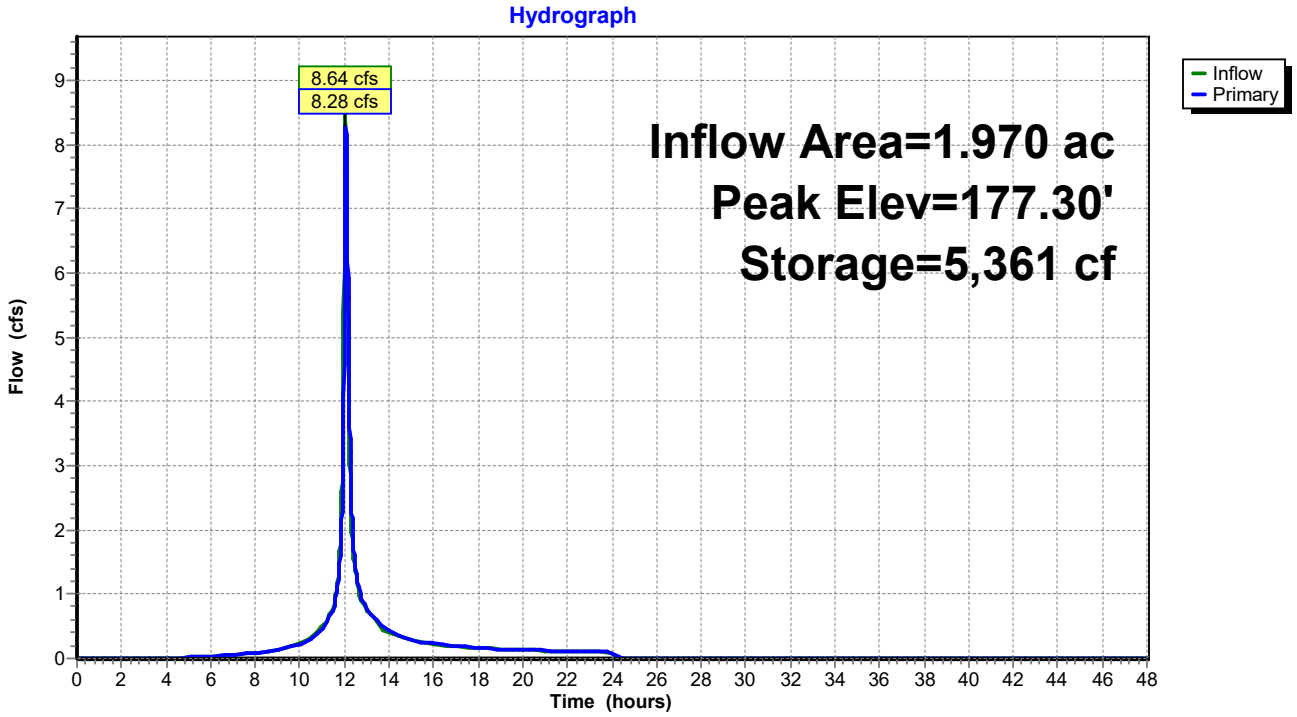
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	7,953 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.00	64	57.5	0	0	64
174.00	282	81.9	160	160	344
175.50	795	130.5	775	935	1,180
176.00	2,327	218.9	747	1,682	3,640
177.00	3,117	255.2	2,712	4,395	5,030
178.00	4,019	291.6	3,558	7,953	6,637

Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=8.27 cfs @ 12.06 hrs HW=177.30' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 8.27 cfs @ 1.65 fps)

Pond 1.1F: 1F: Forebay



Hydrograph for Pond 1.1F: 1F: Forebay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	4,395	177.00	0.00
1.00	0.00	4,395	177.00	0.00
2.00	0.00	4,395	177.00	0.00
3.00	0.00	4,395	177.00	0.00
4.00	0.00	4,395	177.00	0.00
5.00	0.01	4,398	177.00	0.01
6.00	0.03	4,404	177.00	0.03
7.00	0.06	4,411	177.01	0.06
8.00	0.09	4,420	177.01	0.09
9.00	0.14	4,434	177.01	0.13
10.00	0.23	4,462	177.02	0.22
11.00	0.50	4,535	177.04	0.47
12.00	**7.39**	**5,161**	**177.24**	**5.83**
13.00	**0.75**	**4,591**	**177.06**	**0.77**
14.00	0.40	4,519	177.04	0.42
15.00	0.30	4,487	177.03	0.31
16.00	0.22	4,463	177.02	0.23
17.00	0.19	4,452	177.02	0.19
18.00	0.17	4,445	177.02	0.17
19.00	0.14	4,438	177.01	0.15
20.00	0.13	4,434	177.01	0.13
21.00	0.12	4,431	177.01	0.12
22.00	0.11	4,428	177.01	0.11
23.00	0.10	4,426	177.01	0.10
24.00	0.10	4,424	177.01	0.10
25.00	0.00	4,395	177.00	0.00
26.00	0.00	4,395	177.00	0.00
27.00	0.00	4,395	177.00	0.00
28.00	0.00	4,395	177.00	0.00
29.00	0.00	4,395	177.00	0.00
30.00	0.00	4,395	177.00	0.00
31.00	0.00	4,395	177.00	0.00
32.00	0.00	4,395	177.00	0.00
33.00	0.00	4,395	177.00	0.00
34.00	0.00	4,395	177.00	0.00
35.00	0.00	4,395	177.00	0.00
36.00	0.00	4,395	177.00	0.00
37.00	0.00	4,395	177.00	0.00
38.00	0.00	4,395	177.00	0.00
39.00	0.00	4,395	177.00	0.00
40.00	0.00	4,395	177.00	0.00
41.00	0.00	4,395	177.00	0.00
42.00	0.00	4,395	177.00	0.00
43.00	0.00	4,395	177.00	0.00
44.00	0.00	4,395	177.00	0.00
45.00	0.00	4,395	177.00	0.00
46.00	0.00	4,395	177.00	0.00
47.00	0.00	4,395	177.00	0.00
48.00	0.00	4,395	177.00	0.00

Stage-Area-Storage for Pond 1.1F: 1F: Forebay

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
173.00	64	0
173.05	71	3
173.10	79	7
173.15	87	11
173.20	95	16
173.25	104	21
173.30	113	26
173.35	123	32
173.40	133	39
173.45	143	45
173.50	154	53
173.55	165	61
173.60	176	69
173.65	188	78
173.70	200	88
173.75	213	98
173.80	226	109
173.85	239	121
173.90	253	133
173.95	267	146
174.00	282	160
174.05	295	175
174.10	308	190
174.15	322	205
174.20	335	222
174.25	349	239
174.30	364	257
174.35	378	275
174.40	393	295
174.45	409	315
174.50	424	335
174.55	440	357
174.60	456	379
174.65	472	403
174.70	489	427
174.75	506	452
174.80	523	477
174.85	541	504
174.90	559	531
174.95	577	560
175.00	595	589
175.05	614	619
175.10	633	650
175.15	652	683
175.20	672	716
175.25	691	750
175.30	712	785
175.35	732	821
175.40	753	858
175.45	774	896
175.50	795	935
175.55	912	978
175.60	1,037	1,027
175.65	1,170	1,082
175.70	1,311	1,144
175.75	1,461	1,213
175.80	1,618	1,290
175.85	1,783	1,375
175.90	1,956	1,468
175.95	2,138	1,571
176.00	2,327	1,682
176.05	2,364	1,800
176.10	2,401	1,919
176.15	2,438	2,040
176.20	2,476	2,163
176.25	2,514	2,287
176.30	2,552	2,414
176.35	2,590	2,543
176.40	2,629	2,673
176.45	2,668	2,805
176.50	2,708	2,940
176.55	2,747	3,076
176.60	2,787	3,215
176.65	2,827	3,355
176.70	2,868	3,497
176.75	2,909	3,642
176.80	2,950	3,788
176.85	2,991	3,937
176.90	3,033	4,087
176.95	3,075	4,240
177.00	3,117	4,395
177.05	3,159	4,552
177.10	3,202	4,711
177.15	3,245	4,872
177.20	3,288	5,035
177.25	3,332	5,201
177.30	3,376	5,368
177.35	3,420	5,538
177.40	3,464	5,710
177.45	3,509	5,885
177.50	3,554	6,061
177.55	3,599	6,240
177.60	3,644	6,421
177.65	3,690	6,605
177.70	3,736	6,790
177.75	3,783	6,978
177.80	3,829	7,168
177.85	3,876	7,361
177.90	3,924	7,556
177.95	3,971	7,753
178.00	**4,019**	**7,953**

Summary for Pond 1.1P: 1P: Pocket Pond

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 3.45" for 10-yr event
Inflow = 8.28 cfs @ 12.06 hrs, Volume= 0.566 af
Outflow = 0.59 cfs @ 13.47 hrs, Volume= 0.565 af, Atten= 93%, Lag= 84.6 min
Primary = 0.59 cfs @ 13.47 hrs, Volume= 0.565 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 173.00' Surf.Area= 2,981 sf Storage= 3,891 cf
Peak Elev= 175.99' @ 13.47 hrs Surf.Area= 5,687 sf Storage= 16,699 cf (12,808 cf above start)

Plug-Flow detention time= 468.9 min calculated for 0.476 af (84% of inflow)
Center-of-Mass det. time= 318.0 min (1,122.6 - 804.6)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	30,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

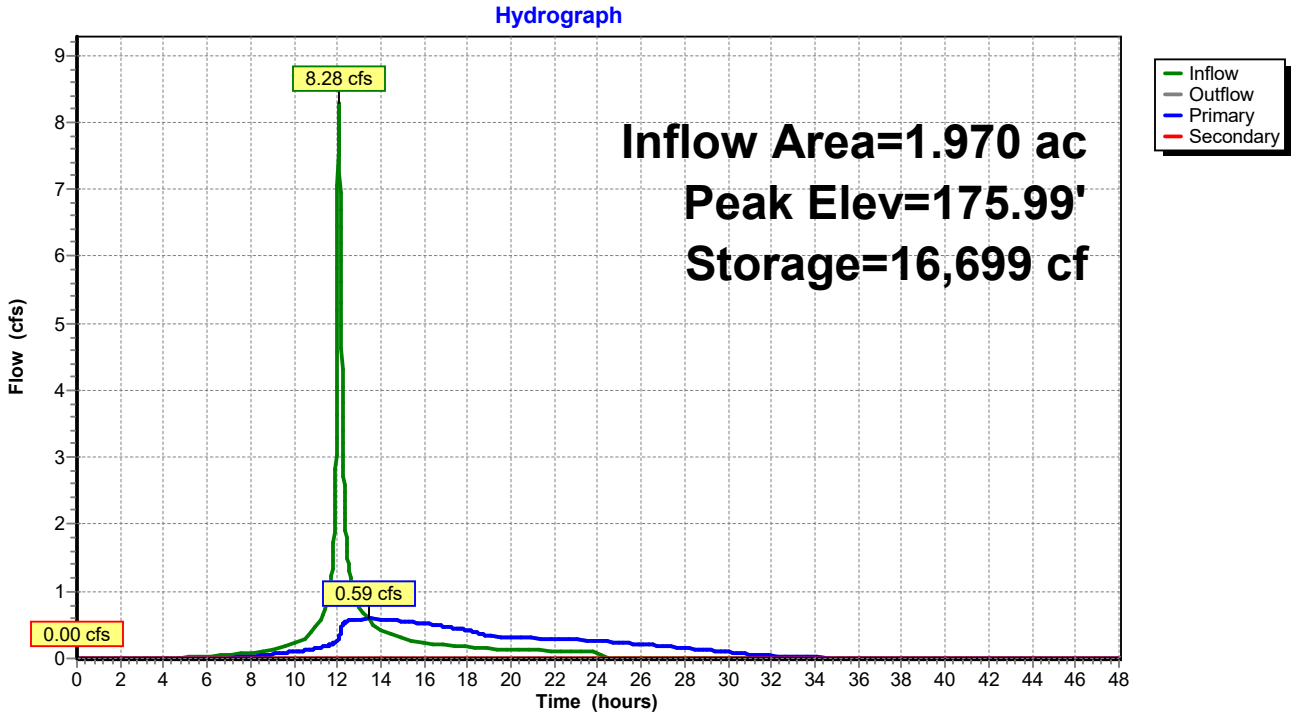
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	12	18.7	0	0	12
170.00	133	67.1	62	62	345
171.50	654	156.6	541	603	1,947
172.00	2,243	227.5	685	1,287	4,117
173.00	2,981	251.6	2,603	3,891	5,066
174.00	3,822	279.0	3,393	7,283	6,253
176.00	5,694	325.1	9,454	16,737	8,550
178.00	7,814	367.9	13,452	30,190	11,010

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**18.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 173.00' / 170.00' S= 0.0682 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	173.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	175.10'	**0.5" x 12.0" Horiz. Orifice/Grate** C= 0.600
#4	Device 1	176.50'	**25.9" x 43.8" Horiz. Orifice/Grate** C= 0.600 in 30.0" x 48.0" Grate (79% open area) Limited to weir flow at low heads
#5	Secondary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Emergency Spillway** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=0.59 cfs @ 13.47 hrs HW=175.99' (Free Discharge)
└─**1=Culvert** (Passes 0.59 cfs of 12.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.40 cfs @ 8.15 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.19 cfs @ 4.55 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.00' (Free Discharge)
└─**5=Emergency Spillway** (Controls 0.00 cfs)

Pond 1.1P: 1P: Pocket Pond



Hydrograph for Pond 1.1P: 1P: Pocket Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	3,891	173.00	0.00	0.00	**0.00**
1.00	0.00	3,891	173.00	0.00	0.00	0.00
2.00	0.00	3,891	173.00	0.00	0.00	0.00
3.00	0.00	3,891	173.00	0.00	0.00	0.00
4.00	0.00	3,891	173.00	0.00	0.00	0.00
5.00	0.01	3,904	173.00	0.00	0.00	0.00
6.00	0.03	3,972	173.03	0.00	0.00	0.00
7.00	0.06	4,103	173.07	0.01	0.01	0.00
8.00	0.09	4,276	173.13	0.03	0.03	0.00
9.00	0.13	4,496	173.20	0.06	0.06	0.00
10.00	0.22	4,842	173.31	0.10	0.10	0.00
11.00	0.47	5,553	173.52	0.15	0.15	0.00
12.00	**5.83**	9,054	174.44	0.27	0.27	0.00
13.00	**0.77**	**16,560**	**175.97**	**0.59**	**0.59**	0.00
14.00	0.42	**16,508**	**175.96**	**0.58**	**0.58**	0.00
15.00	0.31	15,728	175.82	0.56	0.56	0.00
16.00	0.23	14,710	175.63	0.52	0.52	0.00
17.00	0.19	13,671	175.43	0.47	0.47	0.00
18.00	0.17	12,709	175.24	0.42	0.42	0.00
19.00	0.15	11,914	175.08	0.33	0.33	0.00
20.00	0.13	11,245	174.94	0.32	0.32	0.00
21.00	0.12	10,578	174.79	0.31	0.31	0.00
22.00	0.11	9,924	174.64	0.29	0.29	0.00
23.00	0.10	9,290	174.50	0.28	0.28	0.00
24.00	0.10	8,684	174.35	0.26	0.26	0.00
25.00	0.00	7,843	174.14	0.24	0.24	0.00
26.00	0.00	7,030	173.93	0.21	0.21	0.00
27.00	0.00	6,315	173.74	0.18	0.18	0.00
28.00	0.00	5,700	173.56	0.16	0.16	0.00
29.00	0.00	5,190	173.41	0.13	0.13	0.00
30.00	0.00	4,790	173.29	0.10	0.10	0.00
31.00	0.00	4,502	173.20	0.06	0.06	0.00
32.00	0.00	4,325	173.14	0.04	0.04	0.00
33.00	0.00	4,215	173.11	0.02	0.02	0.00
34.00	0.00	4,142	173.08	0.02	0.02	0.00
35.00	0.00	4,092	173.07	0.01	0.01	0.00
36.00	0.00	4,059	173.06	0.01	0.01	0.00
37.00	0.00	4,037	173.05	0.01	0.01	0.00
38.00	0.00	4,020	173.04	0.00	0.00	0.00
39.00	0.00	4,004	173.04	0.00	0.00	0.00
40.00	0.00	3,991	173.03	0.00	0.00	0.00
41.00	0.00	3,979	173.03	0.00	0.00	0.00
42.00	0.00	3,968	173.03	0.00	0.00	0.00
43.00	0.00	3,959	173.02	0.00	0.00	0.00
44.00	0.00	3,951	173.02	0.00	0.00	0.00
45.00	0.00	3,943	173.02	0.00	0.00	0.00
46.00	0.00	3,937	173.02	0.00	0.00	0.00
47.00	0.00	3,932	173.01	0.00	0.00	0.00
48.00	0.00	3,927	173.01	0.00	0.00	0.00

Stage-Area-Storage for Pond 1.1P: 1P: Pocket Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
169.00	12	0
169.10	18	2
169.20	26	4
169.30	35	7
169.40	45	11
169.50	56	16
169.60	69	22
169.70	83	30
169.80	98	39
169.90	115	49
170.00	133	62
170.10	155	76
170.20	180	93
170.30	206	112
170.40	233	134
170.50	263	159
170.60	294	187
170.70	327	218
170.80	362	252
170.90	398	290
171.00	437	332
171.10	477	377
171.20	518	427
171.30	562	481
171.40	607	540
171.50	654	603
171.60	896	680
171.70	1,176	783
171.80	1,493	916
171.90	1,849	1,083
172.00	2,243	1,287
172.10	2,312	1,515
172.20	2,382	1,750
172.30	2,453	1,992
172.40	2,526	2,240
172.50	2,599	2,497
172.60	2,673	2,760
172.70	2,749	3,031
172.80	2,825	3,310
172.90	2,902	3,596
173.00	2,981	3,891
173.10	3,060	4,193
173.20	3,141	4,503
173.30	3,222	4,821
173.40	3,305	5,147
173.50	3,388	5,482
173.60	3,473	5,825
173.70	3,559	6,177
173.80	3,645	6,537
173.90	3,733	6,906
174.00	3,822	7,283
174.10	3,907	7,670
174.20	3,992	8,065
174.30	4,079	8,468
174.40	4,167	8,881
174.50	4,255	9,302
174.60	4,345	9,732
174.70	4,435	10,171
174.80	4,526	10,619
174.90	4,618	11,076
175.00	4,712	11,542
175.10	4,806	12,018
175.20	4,901	12,504
175.30	4,996	12,998
175.40	5,093	13,503
175.50	5,191	14,017
175.60	5,290	14,541
175.70	5,389	15,075
175.80	5,490	15,619
175.90	5,592	16,173
176.00	5,694	16,737
176.10	5,792	17,312
176.20	5,891	17,896
176.30	5,991	18,490
176.40	6,091	19,094
176.50	6,193	19,708
176.60	6,295	20,333
176.70	6,398	20,967
176.80	6,502	21,612
176.90	6,607	22,268
177.00	6,712	22,933
177.10	6,819	23,610
177.20	6,926	24,297
177.30	7,034	24,995
177.40	7,143	25,704
177.50	7,253	26,424
177.60	7,363	27,155
177.70	7,475	27,896
177.80	7,587	28,650
177.90	7,700	29,414
178.00	**7,814**	**30,190**

Summary for Subcatchment 1.1S: 102

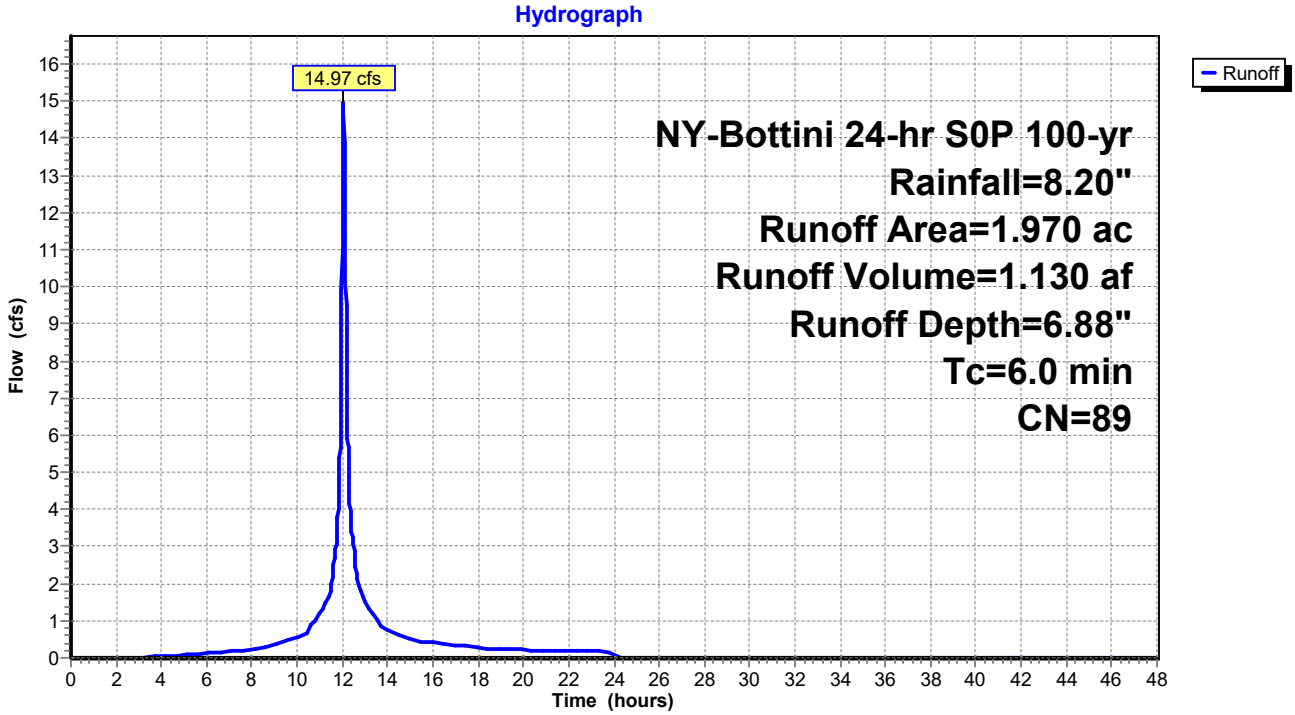
Runoff = 14.97 cfs @ 12.04 hrs, Volume= 1.130 af, Depth= 6.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
1.219	98	Paved parking, HSG A
0.028	89	Gravel roads, HSG C
0.684	74	>75% Grass cover, Good, HSG C
0.039	79	50-75% Grass cover, Fair, HSG C
1.970	89	Weighted Average
0.751		38.12% Pervious Area
1.219		61.88% Impervious Area

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

Subcatchment 1.1S: 102



Hydrograph for Subcatchment 1.1S: 102

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.01
3.50	0.32	0.00	0.02
4.00	0.38	0.01	0.04
4.50	0.44	0.02	0.05
5.00	0.50	0.04	0.07
5.50	0.56	0.06	0.09
6.00	0.63	0.09	0.11
6.50	0.70	0.12	0.15
7.00	0.79	0.16	0.17
7.50	0.88	0.21	0.20
8.00	0.98	0.27	0.24
8.50	1.08	0.34	0.28
9.00	1.20	0.42	0.33
9.50	1.35	0.52	0.44
10.00	1.53	0.65	0.54
10.50	1.73	0.81	0.69
11.00	2.06	1.08	1.16
11.50	2.53	1.48	1.90
12.00	4.38	3.19	**13.07**
12.50	5.71	4.46	**2.97**
13.00	6.17	4.90	1.53
13.50	6.48	5.20	1.12
14.00	6.69	5.40	0.74
14.50	6.86	5.57	0.63
15.00	7.00	5.71	0.55
15.50	7.12	5.83	0.44
16.00	7.23	5.93	0.40
16.50	7.33	6.03	0.37
17.00	7.42	6.11	0.34
17.50	7.50	6.20	0.32
18.00	7.58	6.27	0.30
18.50	7.64	6.34	0.25
19.00	7.71	6.40	0.24
19.50	7.77	6.46	0.23
20.00	7.82	6.51	0.22
20.50	7.88	6.57	0.21
21.00	7.93	6.62	0.20
21.50	7.98	6.67	0.19
22.00	8.03	6.71	0.18
22.50	8.07	6.76	0.18
23.00	8.12	6.80	0.17
23.50	8.16	6.84	0.16
24.00	**8.20**	**6.88**	0.16
24.50	8.20	6.88	0.00
25.00	8.20	6.88	0.00
25.50	8.20	6.88	0.00
26.00	8.20	6.88	0.00
26.50	8.20	6.88	0.00
27.00	8.20	6.88	0.00
27.50	8.20	6.88	0.00
28.00	8.20	6.88	0.00
28.50	8.20	6.88	0.00
29.00	8.20	6.88	0.00
29.50	8.20	6.88	0.00
30.00	8.20	6.88	0.00
30.50	8.20	6.88	0.00
31.00	8.20	6.88	0.00
31.50	8.20	6.88	0.00
32.00	8.20	6.88	0.00
32.50	8.20	6.88	0.00
33.00	8.20	6.88	0.00
33.50	8.20	6.88	0.00
34.00	8.20	6.88	0.00
34.50	8.20	6.88	0.00
35.00	8.20	6.88	0.00
35.50	8.20	6.88	0.00
36.00	8.20	6.88	0.00
36.50	8.20	6.88	0.00
37.00	8.20	6.88	0.00
37.50	8.20	6.88	0.00
38.00	8.20	6.88	0.00
38.50	8.20	6.88	0.00
39.00	8.20	6.88	0.00
39.50	8.20	6.88	0.00
40.00	8.20	6.88	0.00
40.50	8.20	6.88	0.00
41.00	8.20	6.88	0.00
41.50	8.20	6.88	0.00
42.00	8.20	6.88	0.00
42.50	8.20	6.88	0.00
43.00	8.20	6.88	0.00
43.50	8.20	6.88	0.00
44.00	8.20	6.88	0.00
44.50	8.20	6.88	0.00
45.00	8.20	6.88	0.00
45.50	8.20	6.88	0.00
46.00	8.20	6.88	0.00
46.50	8.20	6.88	0.00
47.00	8.20	6.88	0.00
47.50	8.20	6.88	0.00
48.00	8.20	6.88	0.00

Summary for Subcatchment 1A: 100

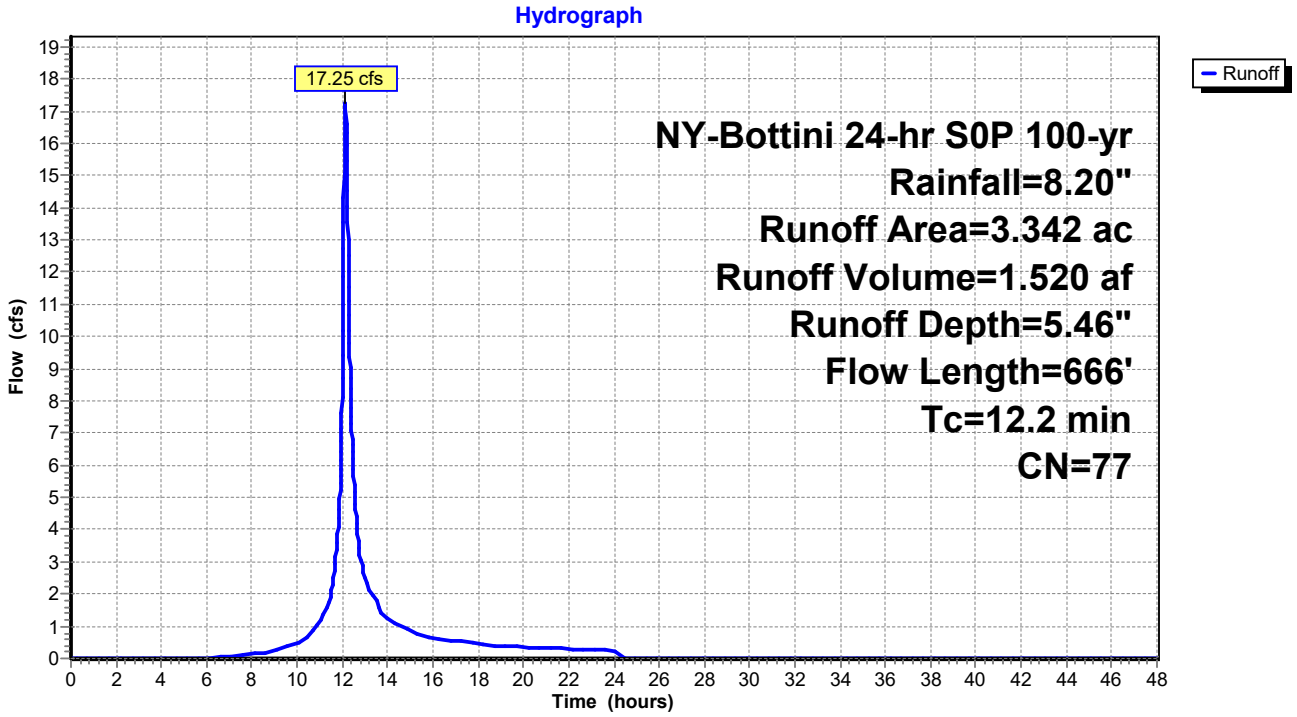
Runoff = 17.25 cfs @ 12.13 hrs, Volume= 1.520 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.087	98	Paved parking, HSG A
0.017	89	Gravel roads, HSG C
0.326	74	>75% Grass cover, Good, HSG C
1.892	79	50-75% Grass cover, Fair, HSG C
1.020	73	Woods, Fair, HSG C
3.342	77	Weighted Average
3.255		97.40% Pervious Area
0.087		2.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
0.7	96	0.1040	2.26		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	103	0.1650	2.03		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	170	0.2180	3.27		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
2.7	197	0.0161	1.21	8.49	**Trap/Vee/Rect Channel Flow, E-F** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.120
12.2	666	Total			

Subcatchment 1A: 100



Hydrograph for Subcatchment 1A: 100

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.00	0.00
6.00	0.63	0.00	0.00
6.50	0.70	0.00	0.03
7.00	0.79	0.01	0.06
7.50	0.88	0.02	0.09
8.00	0.98	0.04	0.13
8.50	1.08	0.07	0.18
9.00	1.20	0.10	0.24
9.50	1.35	0.15	0.35
10.00	1.53	0.22	0.47
10.50	1.73	0.31	0.65
11.00	2.06	0.48	1.17
11.50	2.53	0.76	2.01
12.00	4.38	2.12	**9.39**
12.50	5.71	3.23	**5.57**
13.00	6.17	3.63	2.53
13.50	6.48	3.90	1.82
14.00	6.69	4.09	1.19
14.50	6.86	4.24	1.00
15.00	7.00	4.37	0.88
15.50	7.12	4.48	0.71
16.00	7.23	4.57	0.64
16.50	7.33	4.66	0.59
17.00	7.42	4.74	0.54
17.50	7.50	4.82	0.50
18.00	7.58	4.89	0.47
18.50	7.64	4.95	0.41
19.00	7.71	5.01	0.38
19.50	7.77	5.06	0.36
20.00	7.82	5.11	0.35
20.50	7.88	5.16	0.33
21.00	7.93	5.21	0.32
21.50	7.98	5.25	0.30
22.00	8.03	5.30	0.29
22.50	8.07	5.34	0.28
23.00	8.12	5.38	0.27
23.50	8.16	5.42	0.26
24.00	**8.20**	**5.46**	0.26
24.50	8.20	5.46	0.00
25.00	8.20	5.46	0.00
25.50	8.20	5.46	0.00
26.00	8.20	5.46	0.00
26.50	8.20	5.46	0.00
27.00	8.20	5.46	0.00
27.50	8.20	5.46	0.00
28.00	8.20	5.46	0.00
28.50	8.20	5.46	0.00
29.00	8.20	5.46	0.00
29.50	8.20	5.46	0.00
30.00	8.20	5.46	0.00
30.50	8.20	5.46	0.00
31.00	8.20	5.46	0.00
31.50	8.20	5.46	0.00
32.00	8.20	5.46	0.00
32.50	8.20	5.46	0.00
33.00	8.20	5.46	0.00
33.50	8.20	5.46	0.00
34.00	8.20	5.46	0.00
34.50	8.20	5.46	0.00
35.00	8.20	5.46	0.00
35.50	8.20	5.46	0.00
36.00	8.20	5.46	0.00
36.50	8.20	5.46	0.00
37.00	8.20	5.46	0.00
37.50	8.20	5.46	0.00
38.00	8.20	5.46	0.00
38.50	8.20	5.46	0.00
39.00	8.20	5.46	0.00
39.50	8.20	5.46	0.00
40.00	8.20	5.46	0.00
40.50	8.20	5.46	0.00
41.00	8.20	5.46	0.00
41.50	8.20	5.46	0.00
42.00	8.20	5.46	0.00
42.50	8.20	5.46	0.00
43.00	8.20	5.46	0.00
43.50	8.20	5.46	0.00
44.00	8.20	5.46	0.00
44.50	8.20	5.46	0.00
45.00	8.20	5.46	0.00
45.50	8.20	5.46	0.00
46.00	8.20	5.46	0.00
46.50	8.20	5.46	0.00
47.00	8.20	5.46	0.00
47.50	8.20	5.46	0.00
48.00	8.20	5.46	0.00

Summary for Subcatchment 1B: 101

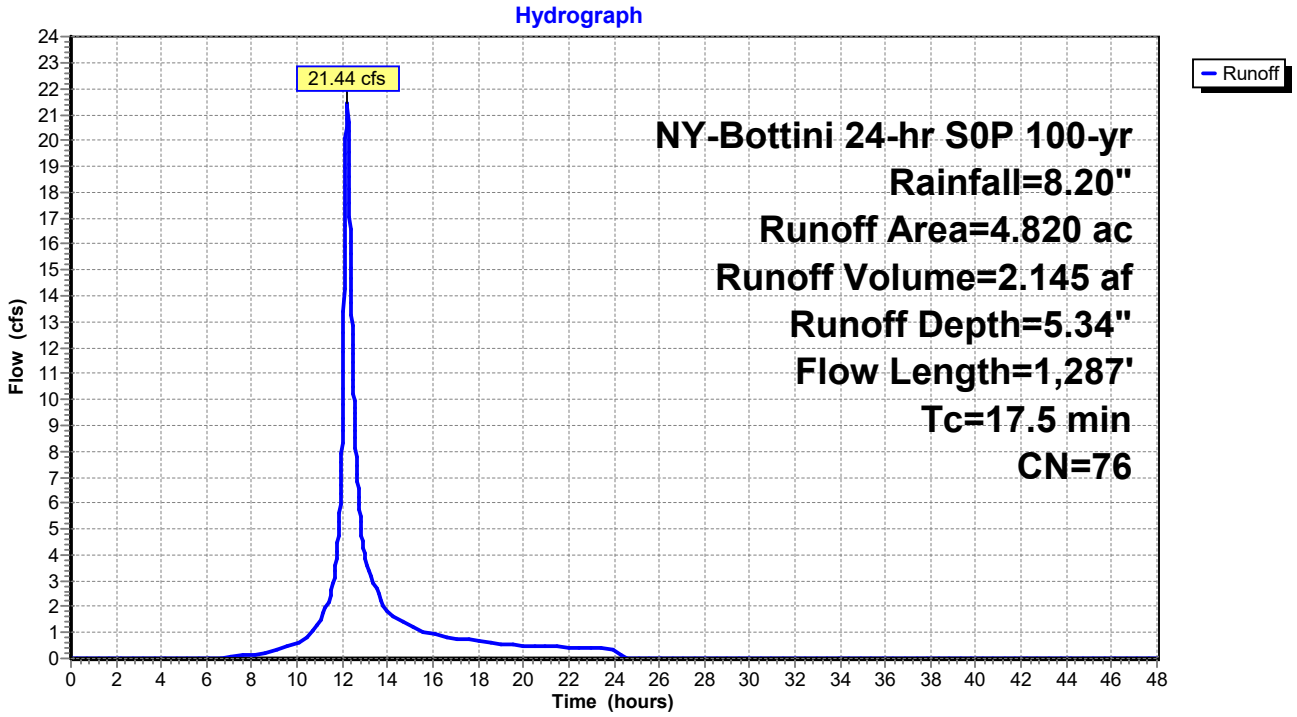
Runoff = 21.44 cfs @ 12.21 hrs, Volume= 2.145 af, Depth= 5.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.807	74	>75% Grass cover, Good, HSG C
2.025	79	50-75% Grass cover, Fair, HSG C
0.943	73	Woods, Fair, HSG C
1.045	73	Woods, Fair, HSG C
4.820	76	Weighted Average
4.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
2.3	399	0.1650	2.84		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.2	285	0.0105	3.92	27.42	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
0.2	121	0.0740	10.40	72.79	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
5.6	346	0.0430	1.04		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
0.2	36	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, F-G** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
17.5	1,287	Total			

Subcatchment 1B: 101



Hydrograph for Subcatchment 1B: 101

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.00	0.00
6.00	0.63	0.00	0.00
6.50	0.70	0.00	0.02
7.00	0.79	0.01	0.05
7.50	0.88	0.02	0.10
8.00	0.98	0.03	0.15
8.50	1.08	0.06	0.22
9.00	1.20	0.09	0.30
9.50	1.35	0.13	0.44
10.00	1.53	0.20	0.61
10.50	1.73	0.28	0.84
11.00	2.06	0.44	1.50
11.50	2.53	0.71	2.55
12.00	4.38	2.04	**9.27**
12.50	5.71	3.13	**10.23**
13.00	6.17	3.53	3.96
13.50	6.48	3.80	2.71
14.00	6.69	3.98	1.78
14.50	6.86	4.13	1.47
15.00	7.00	4.26	1.28
15.50	7.12	4.37	1.04
16.00	7.23	4.46	0.93
16.50	7.33	4.55	0.85
17.00	7.42	4.63	0.78
17.50	7.50	4.70	0.73
18.00	7.58	4.77	0.68
18.50	7.64	4.83	0.59
19.00	7.71	4.89	0.56
19.50	7.77	4.95	0.53
20.00	7.82	5.00	0.50
20.50	7.88	5.05	0.48
21.00	7.93	5.09	0.46
21.50	7.98	5.14	0.44
22.00	8.03	5.18	0.42
22.50	8.07	5.22	0.41
23.00	8.12	5.26	0.39
23.50	8.16	5.30	0.38
24.00	**8.20**	**5.34**	0.37
24.50	8.20	5.34	0.02
25.00	8.20	5.34	0.00
25.50	8.20	5.34	0.00
26.00	8.20	5.34	0.00
26.50	8.20	5.34	0.00
27.00	8.20	5.34	0.00
27.50	8.20	5.34	0.00
28.00	8.20	5.34	0.00
28.50	8.20	5.34	0.00
29.00	8.20	5.34	0.00
29.50	8.20	5.34	0.00
30.00	8.20	5.34	0.00
30.50	8.20	5.34	0.00
31.00	8.20	5.34	0.00
31.50	8.20	5.34	0.00
32.00	8.20	5.34	0.00
32.50	8.20	5.34	0.00
33.00	8.20	5.34	0.00
33.50	8.20	5.34	0.00
34.00	8.20	5.34	0.00
34.50	8.20	5.34	0.00
35.00	8.20	5.34	0.00
35.50	8.20	5.34	0.00
36.00	8.20	5.34	0.00
36.50	8.20	5.34	0.00
37.00	8.20	5.34	0.00
37.50	8.20	5.34	0.00
38.00	8.20	5.34	0.00
38.50	8.20	5.34	0.00
39.00	8.20	5.34	0.00
39.50	8.20	5.34	0.00
40.00	8.20	5.34	0.00
40.50	8.20	5.34	0.00
41.00	8.20	5.34	0.00
41.50	8.20	5.34	0.00
42.00	8.20	5.34	0.00
42.50	8.20	5.34	0.00
43.00	8.20	5.34	0.00
43.50	8.20	5.34	0.00
44.00	8.20	5.34	0.00
44.50	8.20	5.34	0.00
45.00	8.20	5.34	0.00
45.50	8.20	5.34	0.00
46.00	8.20	5.34	0.00
46.50	8.20	5.34	0.00
47.00	8.20	5.34	0.00
47.50	8.20	5.34	0.00
48.00	8.20	5.34	0.00

Summary for Subcatchment 1C: 103

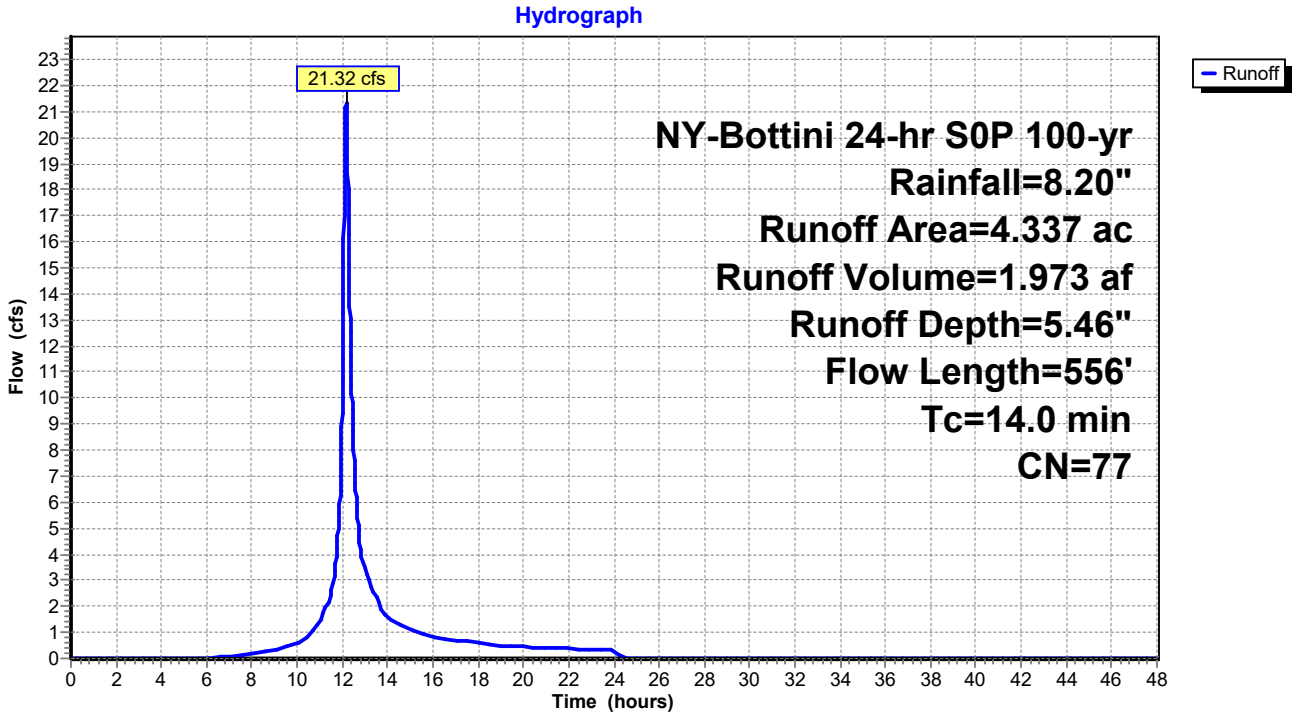
Runoff = 21.32 cfs @ 12.16 hrs, Volume= 1.973 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.400	74	>75% Grass cover, Good, HSG C
0.093	80	>75% Grass cover, Good, HSG D
0.882	73	Woods, Fair, HSG C
2.962	79	Woods, Fair, HSG D
4.337	77	Weighted Average
4.337		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	46	0.2390	0.41		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
5.8	44	0.0910	0.13		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.50"
5.4	316	0.0380	0.97		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	150	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
14.0	556	Total			

Subcatchment 1C: 103



Hydrograph for Subcatchment 1C: 103

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.00	0.00
6.00	0.63	0.00	0.00
6.50	0.70	0.00	0.03
7.00	0.79	0.01	0.07
7.50	0.88	0.02	0.11
8.00	0.98	0.04	0.17
8.50	1.08	0.07	0.23
9.00	1.20	0.10	0.30
9.50	1.35	0.15	0.45
10.00	1.53	0.22	0.60
10.50	1.73	0.31	0.83
11.00	2.06	0.48	1.49
11.50	2.53	0.76	2.53
12.00	4.38	2.12	**10.75**
12.50	5.71	3.23	**7.88**
13.00	6.17	3.63	3.37
13.50	6.48	3.90	2.39
14.00	6.69	4.09	1.57
14.50	6.86	4.24	1.31
15.00	7.00	4.37	1.15
15.50	7.12	4.48	0.93
16.00	7.23	4.57	0.84
16.50	7.33	4.66	0.76
17.00	7.42	4.74	0.71
17.50	7.50	4.82	0.66
18.00	7.58	4.89	0.62
18.50	7.64	4.95	0.53
19.00	7.71	5.01	0.50
19.50	7.77	5.06	0.47
20.00	7.82	5.11	0.45
20.50	7.88	5.16	0.43
21.00	7.93	5.21	0.41
21.50	7.98	5.25	0.40
22.00	8.03	5.30	0.38
22.50	8.07	5.34	0.37
23.00	8.12	5.38	0.35
23.50	8.16	5.42	0.34
24.00	**8.20**	**5.46**	0.33
24.50	8.20	5.46	0.01
25.00	8.20	5.46	0.00
25.50	8.20	5.46	0.00
26.00	8.20	5.46	0.00
26.50	8.20	5.46	0.00
27.00	8.20	5.46	0.00
27.50	8.20	5.46	0.00
28.00	8.20	5.46	0.00
28.50	8.20	5.46	0.00
29.00	8.20	5.46	0.00
29.50	8.20	5.46	0.00
30.00	8.20	5.46	0.00
30.50	8.20	5.46	0.00
31.00	8.20	5.46	0.00
31.50	8.20	5.46	0.00
32.00	8.20	5.46	0.00
32.50	8.20	5.46	0.00
33.00	8.20	5.46	0.00
33.50	8.20	5.46	0.00
34.00	8.20	5.46	0.00
34.50	8.20	5.46	0.00
35.00	8.20	5.46	0.00
35.50	8.20	5.46	0.00
36.00	8.20	5.46	0.00
36.50	8.20	5.46	0.00
37.00	8.20	5.46	0.00
37.50	8.20	5.46	0.00
38.00	8.20	5.46	0.00
38.50	8.20	5.46	0.00
39.00	8.20	5.46	0.00
39.50	8.20	5.46	0.00
40.00	8.20	5.46	0.00
40.50	8.20	5.46	0.00
41.00	8.20	5.46	0.00
41.50	8.20	5.46	0.00
42.00	8.20	5.46	0.00
42.50	8.20	5.46	0.00
43.00	8.20	5.46	0.00
43.50	8.20	5.46	0.00
44.00	8.20	5.46	0.00
44.50	8.20	5.46	0.00
45.00	8.20	5.46	0.00
45.50	8.20	5.46	0.00
46.00	8.20	5.46	0.00
46.50	8.20	5.46	0.00
47.00	8.20	5.46	0.00
47.50	8.20	5.46	0.00
48.00	8.20	5.46	0.00

Summary for Reach 1R:

Inflow Area = 4.820 ac, 0.00% Impervious, Inflow Depth = 5.34" for 100-yr event
Inflow = 21.44 cfs @ 12.21 hrs, Volume= 2.145 af
Outflow = 21.11 cfs @ 12.28 hrs, Volume= 2.145 af, Atten= 2%, Lag= 4.2 min

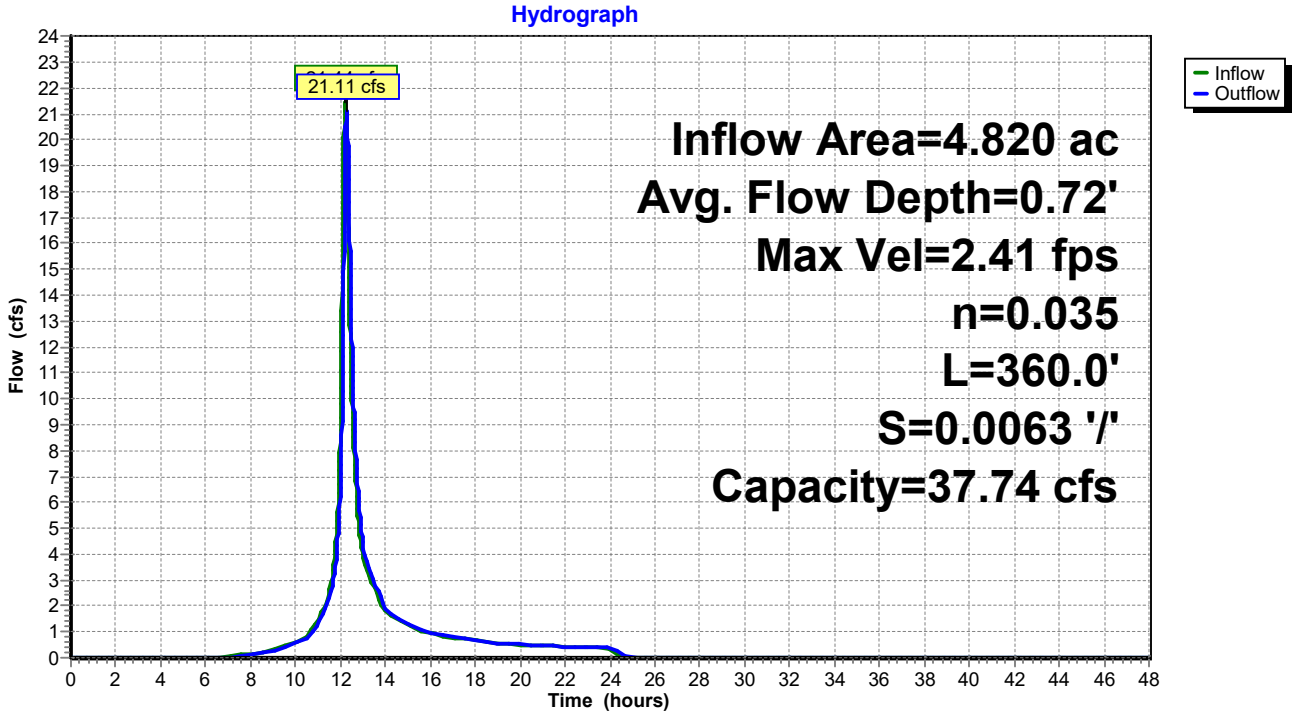
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.41 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 9.7 min

Peak Storage= 3,156 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.72'
Bank-Full Depth= 1.00' Flow Area= 13.0 sf, Capacity= 37.74 cfs

10.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 360.0' Slope= 0.0063 '/'
Inlet Invert= 160.28', Outlet Invert= 158.00'

‡

Reach 1R:



Hydrograph for Reach 1R:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	160.28	0.00
1.00	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
3.00	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
5.00	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00
7.00	0.05	47	160.29	0.02
8.00	0.15	131	160.32	0.13
9.00	0.30	204	160.34	0.27
10.00	0.61	318	160.37	0.56
11.00	1.50	553	160.43	1.34
12.00	**9.27**	**1,640**	**160.69**	**6.54**
13.00	**3.96**	**1,098**	**160.56**	**4.41**
14.00	1.78	657	160.45	1.90
15.00	1.28	528	160.42	1.32
16.00	0.93	433	160.40	0.95
17.00	0.78	389	160.38	0.80
18.00	0.68	357	160.38	0.69
19.00	0.56	314	160.37	0.56
20.00	0.50	295	160.36	0.51
21.00	0.46	279	160.36	0.46
22.00	0.42	265	160.35	0.43
23.00	0.39	254	160.35	0.40
24.00	0.37	243	160.35	0.37
25.00	0.00	38	160.29	0.02
26.00	0.00	8	160.28	0.00
27.00	0.00	2	160.28	0.00
28.00	0.00	0	160.28	0.00
29.00	0.00	0	160.28	0.00
30.00	0.00	0	160.28	0.00
31.00	0.00	0	160.28	0.00
32.00	0.00	0	160.28	0.00
33.00	0.00	0	160.28	0.00
34.00	0.00	0	160.28	0.00
35.00	0.00	0	160.28	0.00
36.00	0.00	0	160.28	0.00
37.00	0.00	0	160.28	0.00
38.00	0.00	0	160.28	0.00
39.00	0.00	0	160.28	0.00
40.00	0.00	0	160.28	0.00
41.00	0.00	0	160.28	0.00
42.00	0.00	0	160.28	0.00
43.00	0.00	0	160.28	0.00
44.00	0.00	0	160.28	0.00
45.00	0.00	0	160.28	0.00
46.00	0.00	0	160.28	0.00
47.00	0.00	0	160.28	0.00
48.00	0.00	0	160.28	0.00

Stage-Area-Storage for Reach 1R:

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
160.28	0.0	0
160.29	0.1	36
160.30	0.2	72
160.31	0.3	109
160.32	0.4	146
160.33	0.5	183
160.34	0.6	220
160.35	0.7	257
160.36	0.8	295
160.37	0.9	333
160.38	1.0	371
160.39	1.1	409
160.40	1.2	448
160.41	1.4	486
160.42	1.5	525
160.43	1.6	564
160.44	1.7	604
160.45	1.8	643
160.46	1.9	683
160.47	2.0	723
160.48	2.1	763
160.49	2.2	804
160.50	2.3	844
160.51	2.5	885
160.52	2.6	926
160.53	2.7	968
160.54	2.8	1,009
160.55	2.9	1,051
160.56	3.0	1,093
160.57	3.2	1,135
160.58	3.3	1,177
160.59	3.4	1,220
160.60	3.5	1,263
160.61	3.6	1,306
160.62	3.7	1,349
160.63	3.9	1,392
160.64	4.0	1,436
160.65	4.1	1,480
160.66	4.2	1,524
160.67	4.4	1,568
160.68	4.5	1,613
160.69	4.6	1,658
160.70	4.7	1,703
160.71	4.9	1,748
160.72	5.0	1,793
160.73	5.1	1,839
160.74	5.2	1,885
160.75	5.4	1,931
160.76	5.5	1,977
160.77	5.6	2,023
160.78	5.8	2,070
160.79	5.9	2,117
160.80	6.0	2,164
160.81	6.1	2,211
160.82	6.3	2,259
160.83	6.4	2,307
160.84	6.5	2,355
160.85	6.7	2,403
160.86	6.8	2,451
160.87	6.9	2,500
160.88	7.1	2,549
160.89	7.2	2,598
160.90	7.4	2,647
160.91	7.5	2,697
160.92	7.6	2,746
160.93	7.8	2,796
160.94	7.9	2,846
160.95	8.0	2,897
160.96	8.2	2,947
160.97	8.3	2,998
160.98	8.5	3,049
160.99	8.6	3,100
161.00	8.8	3,152
161.01	8.9	3,204
161.02	9.0	3,255
161.03	9.2	3,308
161.04	9.3	3,360
161.05	9.5	3,412
161.06	9.6	3,465
161.07	9.8	3,518
161.08	9.9	3,571
161.09	10.1	3,625
161.10	10.2	3,678
161.11	10.4	3,732
161.12	10.5	3,786
161.13	10.7	3,840
161.14	10.8	3,895
161.15	11.0	3,949
161.16	11.1	4,004
161.17	11.3	4,059
161.18	11.4	4,115
161.19	11.6	4,170
161.20	11.7	4,226
161.21	11.9	4,282
161.22	12.1	4,338
161.23	12.2	4,395
161.24	12.4	4,451
161.25	12.5	4,508
161.26	12.7	4,565
161.27	12.8	4,623
161.28	**13.0**	**4,680**

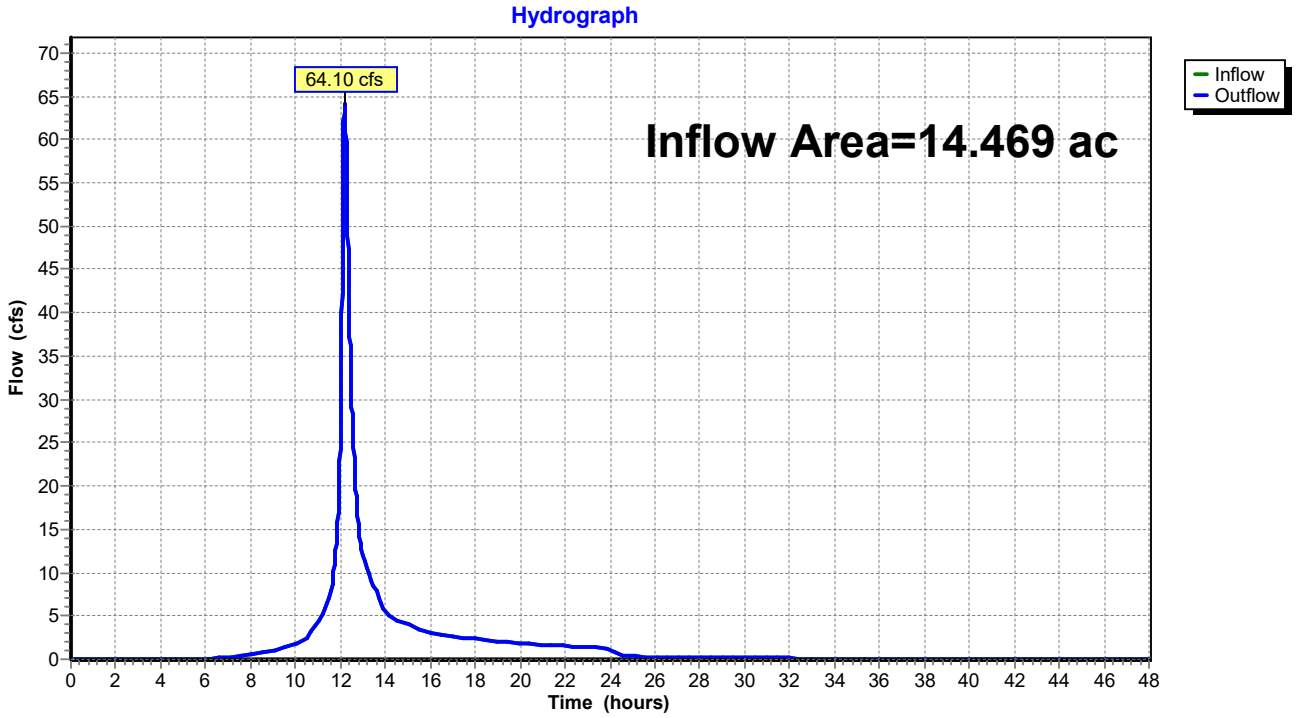
Summary for Reach DP1:

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

Inflow Area = 14.469 ac, 9.03% Impervious, Inflow Depth = 5.61" for 100-yr event
Inflow = 64.10 cfs @ 12.19 hrs, Volume= 6.767 af
Outflow = 64.10 cfs @ 12.19 hrs, Volume= 6.767 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP1:



Hydrograph for Reach DP1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	26.00	0.28		0.28
0.50	0.00		0.00	26.50	0.27		0.27
1.00	0.00		0.00	27.00	0.25		0.25
1.50	0.00		0.00	27.50	0.24		0.24
2.00	0.00		0.00	28.00	0.23		0.23
2.50	0.00		0.00	28.50	0.22		0.22
3.00	0.00		0.00	29.00	0.20		0.20
3.50	0.00		0.00	29.50	0.19		0.19
4.00	0.00		0.00	30.00	0.17		0.17
4.50	0.00		0.00	30.50	0.16		0.16
5.00	0.01		0.01	31.00	0.14		0.14
5.50	0.03		0.03	31.50	0.13		0.13
6.00	0.04		0.04	32.00	0.11		0.11
6.50	0.12		0.12	32.50	0.10		0.10
7.00	0.23		0.23	33.00	0.08		0.08
7.50	0.37		0.37	33.50	0.07		0.07
8.00	0.54		0.54	34.00	0.05		0.05
8.50	0.73		0.73	34.50	0.04		0.04
9.00	0.96		0.96	35.00	0.03		0.03
9.50	1.36		1.36	35.50	0.03		0.03
10.00	1.82		1.82	36.00	0.02		0.02
10.50	2.46		2.46	36.50	0.02		0.02
11.00	4.25		4.25	37.00	0.01		0.01
11.50	7.12		7.12	37.50	0.01		0.01
12.00	**27.27**		**27.27**	38.00	0.01		0.01
12.50	**29.77**		**29.77**	38.50	0.01		0.01
13.00	12.03		12.03	39.00	0.01		0.01
13.50	8.30		8.30	39.50	0.01		0.01
14.00	5.50		5.50	40.00	0.00		0.00
14.50	4.52		4.52	40.50	0.00		0.00
15.00	4.01		4.01	41.00	0.00		0.00
15.50	3.38		3.38	41.50	0.00		0.00
16.00	3.08		3.08	42.00	0.00		0.00
16.50	2.86		2.86	42.50	0.00		0.00
17.00	2.67		2.67	43.00	0.00		0.00
17.50	2.52		2.52	43.50	0.00		0.00
18.00	2.38		2.38	44.00	0.00		0.00
18.50	2.13		2.13	44.50	0.00		0.00
19.00	2.01		2.01	45.00	0.00		0.00
19.50	1.91		1.91	45.50	0.00		0.00
20.00	1.82		1.82	46.00	0.00		0.00
20.50	1.74		1.74	46.50	0.00		0.00
21.00	1.67		1.67	47.00	0.00		0.00
21.50	1.59		1.59	47.50	0.00		0.00
22.00	1.52		1.52	48.00	0.00		0.00
22.50	1.44		1.44				
23.00	1.36		1.36				
23.50	1.32		1.32				
24.00	1.28		1.28				
24.50	0.44		0.44				
25.00	0.32		0.32				
25.50	0.30		0.30				

Summary for Pond 1.1F: 1F: Forebay

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 6.88" for 100-yr event
Inflow = 14.97 cfs @ 12.04 hrs, Volume= 1.130 af
Outflow = 14.59 cfs @ 12.06 hrs, Volume= 1.130 af, Atten= 3%, Lag= 1.0 min
Primary = 14.59 cfs @ 12.06 hrs, Volume= 1.130 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 177.00' Surf.Area= 3,117 sf Storage= 4,395 cf
Peak Elev= 177.42' @ 12.06 hrs Surf.Area= 3,485 sf Storage= 5,791 cf (1,396 cf above start)

Plug-Flow detention time= 78.8 min calculated for 1.029 af (91% of inflow)
Center-of-Mass det. time= 3.4 min (781.8 - 778.5)

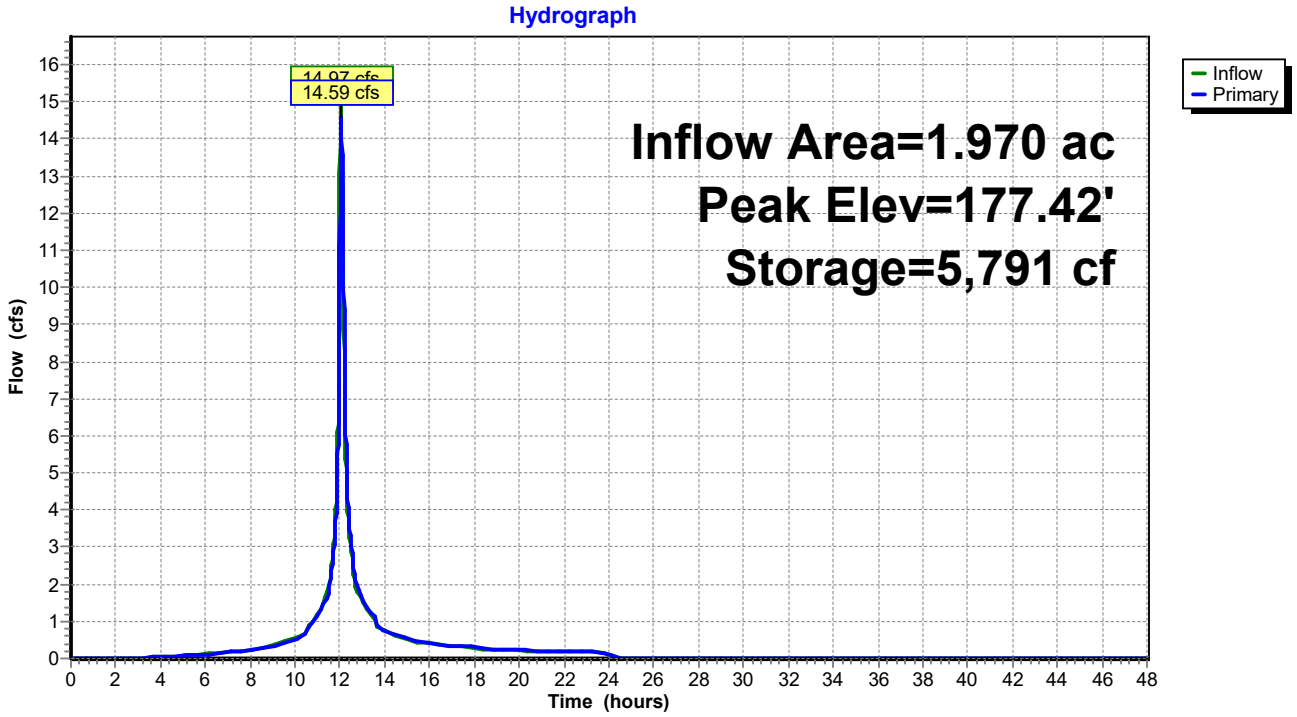
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	7,953 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.00	64	57.5	0	0	64
174.00	282	81.9	160	160	344
175.50	795	130.5	775	935	1,180
176.00	2,327	218.9	747	1,682	3,640
177.00	3,117	255.2	2,712	4,395	5,030
178.00	4,019	291.6	3,558	7,953	6,637

Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=14.54 cfs @ 12.06 hrs HW=177.42' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 14.54 cfs @ 1.95 fps)

Pond 1.1F: 1F: Forebay



Hydrograph for Pond 1.1F: 1F: Forebay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	4,395	177.00	0.00
1.00	0.00	4,395	177.00	0.00
2.00	0.00	4,395	177.00	0.00
3.00	0.01	4,396	177.00	0.00
4.00	0.04	4,405	177.00	0.03
5.00	0.07	4,415	177.01	0.07
6.00	0.11	4,427	177.01	0.11
7.00	0.17	4,445	177.02	0.17
8.00	0.24	4,464	177.02	0.23
9.00	0.33	4,491	177.03	0.32
10.00	0.54	4,551	177.05	0.52
11.00	1.16	4,648	177.08	1.12
12.00	**13.07**	**5,563**	**177.36**	**11.08**
13.00	**1.53**	**4,718**	**177.10**	**1.57**
14.00	0.74	4,588	177.06	0.75
15.00	0.55	4,556	177.05	0.55
16.00	0.40	4,516	177.04	0.41
17.00	0.34	4,497	177.03	0.34
18.00	0.30	4,484	177.03	0.30
19.00	0.24	4,467	177.02	0.24
20.00	0.22	4,460	177.02	0.22
21.00	0.20	4,454	177.02	0.20
22.00	0.18	4,450	177.02	0.18
23.00	0.17	4,446	177.02	0.17
24.00	0.16	4,443	177.02	0.16
25.00	0.00	4,395	177.00	0.00
26.00	0.00	4,395	177.00	0.00
27.00	0.00	4,395	177.00	0.00
28.00	0.00	4,395	177.00	0.00
29.00	0.00	4,395	177.00	0.00
30.00	0.00	4,395	177.00	0.00
31.00	0.00	4,395	177.00	0.00
32.00	0.00	4,395	177.00	0.00
33.00	0.00	4,395	177.00	0.00
34.00	0.00	4,395	177.00	0.00
35.00	0.00	4,395	177.00	0.00
36.00	0.00	4,395	177.00	0.00
37.00	0.00	4,395	177.00	0.00
38.00	0.00	4,395	177.00	0.00
39.00	0.00	4,395	177.00	0.00
40.00	0.00	4,395	177.00	0.00
41.00	0.00	4,395	177.00	0.00
42.00	0.00	4,395	177.00	0.00
43.00	0.00	4,395	177.00	0.00
44.00	0.00	4,395	177.00	0.00
45.00	0.00	4,395	177.00	0.00
46.00	0.00	4,395	177.00	0.00
47.00	0.00	4,395	177.00	0.00
48.00	0.00	4,395	177.00	0.00

Stage-Area-Storage for Pond 1.1F: 1F: Forebay

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
173.00	64	0
173.05	71	3
173.10	79	7
173.15	87	11
173.20	95	16
173.25	104	21
173.30	113	26
173.35	123	32
173.40	133	39
173.45	143	45
173.50	154	53
173.55	165	61
173.60	176	69
173.65	188	78
173.70	200	88
173.75	213	98
173.80	226	109
173.85	239	121
173.90	253	133
173.95	267	146
174.00	282	160
174.05	295	175
174.10	308	190
174.15	322	205
174.20	335	222
174.25	349	239
174.30	364	257
174.35	378	275
174.40	393	295
174.45	409	315
174.50	424	335
174.55	440	357
174.60	456	379
174.65	472	403
174.70	489	427
174.75	506	452
174.80	523	477
174.85	541	504
174.90	559	531
174.95	577	560
175.00	595	589
175.05	614	619
175.10	633	650
175.15	652	683
175.20	672	716
175.25	691	750
175.30	712	785
175.35	732	821
175.40	753	858
175.45	774	896
175.50	795	935
175.55	912	978
175.60	1,037	1,027
175.65	1,170	1,082
175.70	1,311	1,144
175.75	1,461	1,213
175.80	1,618	1,290
175.85	1,783	1,375
175.90	1,956	1,468
175.95	2,138	1,571
176.00	2,327	1,682
176.05	2,364	1,800
176.10	2,401	1,919
176.15	2,438	2,040
176.20	2,476	2,163
176.25	2,514	2,287
176.30	2,552	2,414
176.35	2,590	2,543
176.40	2,629	2,673
176.45	2,668	2,805
176.50	2,708	2,940
176.55	2,747	3,076
176.60	2,787	3,215
176.65	2,827	3,355
176.70	2,868	3,497
176.75	2,909	3,642
176.80	2,950	3,788
176.85	2,991	3,937
176.90	3,033	4,087
176.95	3,075	4,240
177.00	3,117	4,395
177.05	3,159	4,552
177.10	3,202	4,711
177.15	3,245	4,872
177.20	3,288	5,035
177.25	3,332	5,201
177.30	3,376	5,368
177.35	3,420	5,538
177.40	3,464	5,710
177.45	3,509	5,885
177.50	3,554	6,061
177.55	3,599	6,240
177.60	3,644	6,421
177.65	3,690	6,605
177.70	3,736	6,790
177.75	3,783	6,978
177.80	3,829	7,168
177.85	3,876	7,361
177.90	3,924	7,556
177.95	3,971	7,753
178.00	**4,019**	**7,953**

Summary for Pond 1.1P: 1P: Pocket Pond

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 6.88" for 100-yr event
Inflow = 14.59 cfs @ 12.06 hrs, Volume= 1.130 af
Outflow = 9.40 cfs @ 12.18 hrs, Volume= 1.129 af, Atten= 36%, Lag= 7.4 min
Primary = 9.40 cfs @ 12.18 hrs, Volume= 1.129 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 173.00' Surf.Area= 2,981 sf Storage= 3,891 cf
Peak Elev= 176.87' @ 12.18 hrs Surf.Area= 6,577 sf Storage= 22,084 cf (18,193 cf above start)

Plug-Flow detention time= 324.4 min calculated for 1.040 af (92% of inflow)
Center-of-Mass det. time= 244.4 min (1,026.3 - 781.8)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	30,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

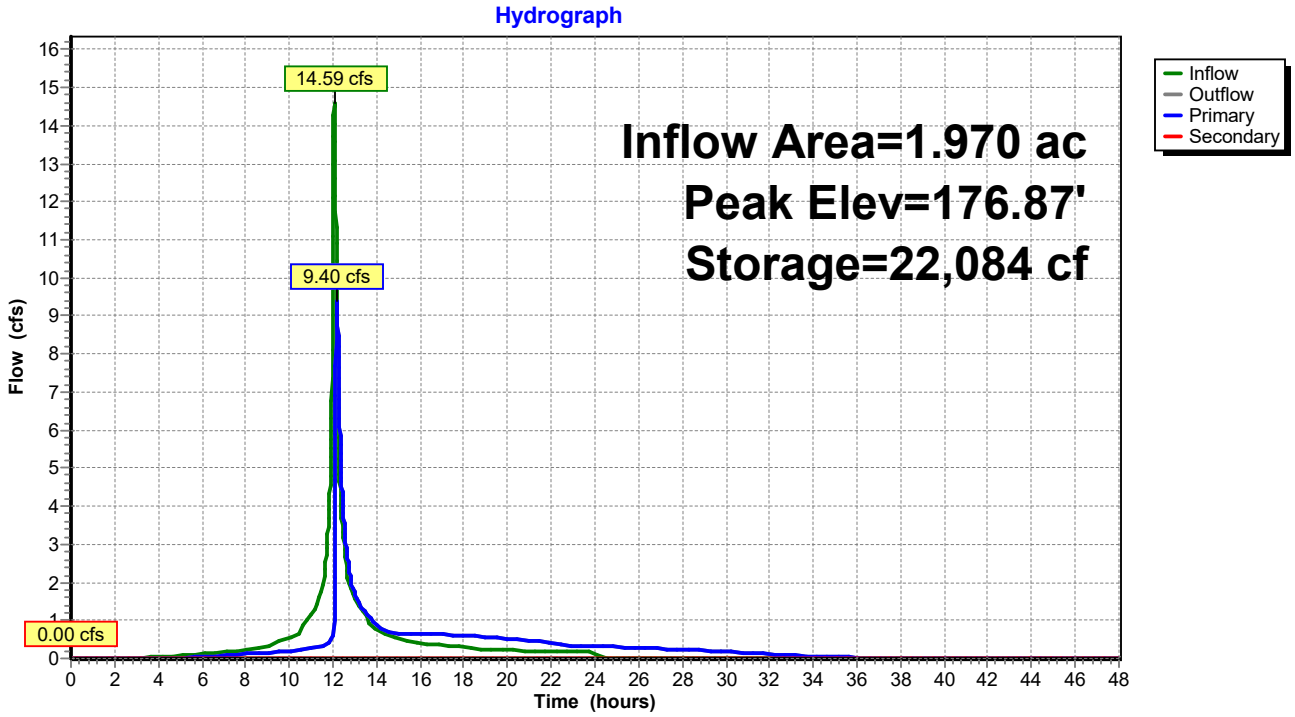
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	12	18.7	0	0	12
170.00	133	67.1	62	62	345
171.50	654	156.6	541	603	1,947
172.00	2,243	227.5	685	1,287	4,117
173.00	2,981	251.6	2,603	3,891	5,066
174.00	3,822	279.0	3,393	7,283	6,253
176.00	5,694	325.1	9,454	16,737	8,550
178.00	7,814	367.9	13,452	30,190	11,010

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**18.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 173.00' / 170.00' S= 0.0682 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	173.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	175.10'	**0.5" x 12.0" Horiz. Orifice/Grate** C= 0.600
#4	Device 1	176.50'	**25.9" x 43.8" Horiz. Orifice/Grate** C= 0.600 in 30.0" x 48.0" Grate (79% open area) Limited to weir flow at low heads
#5	Secondary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Emergency Spillway** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=9.35 cfs @ 12.18 hrs HW=176.87' (Free Discharge)
└─**1=Culvert** (Passes 9.35 cfs of 15.03 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.46 cfs @ 9.32 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.27 cfs @ 6.41 fps)
  └─**4=Orifice/Grate** (Weir Controls 8.62 cfs @ 1.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.00' (Free Discharge)
└─**5=Emergency Spillway** (Controls 0.00 cfs)

Pond 1.1P: 1P: Pocket Pond



Hydrograph for Pond 1.1P: 1P: Pocket Pond

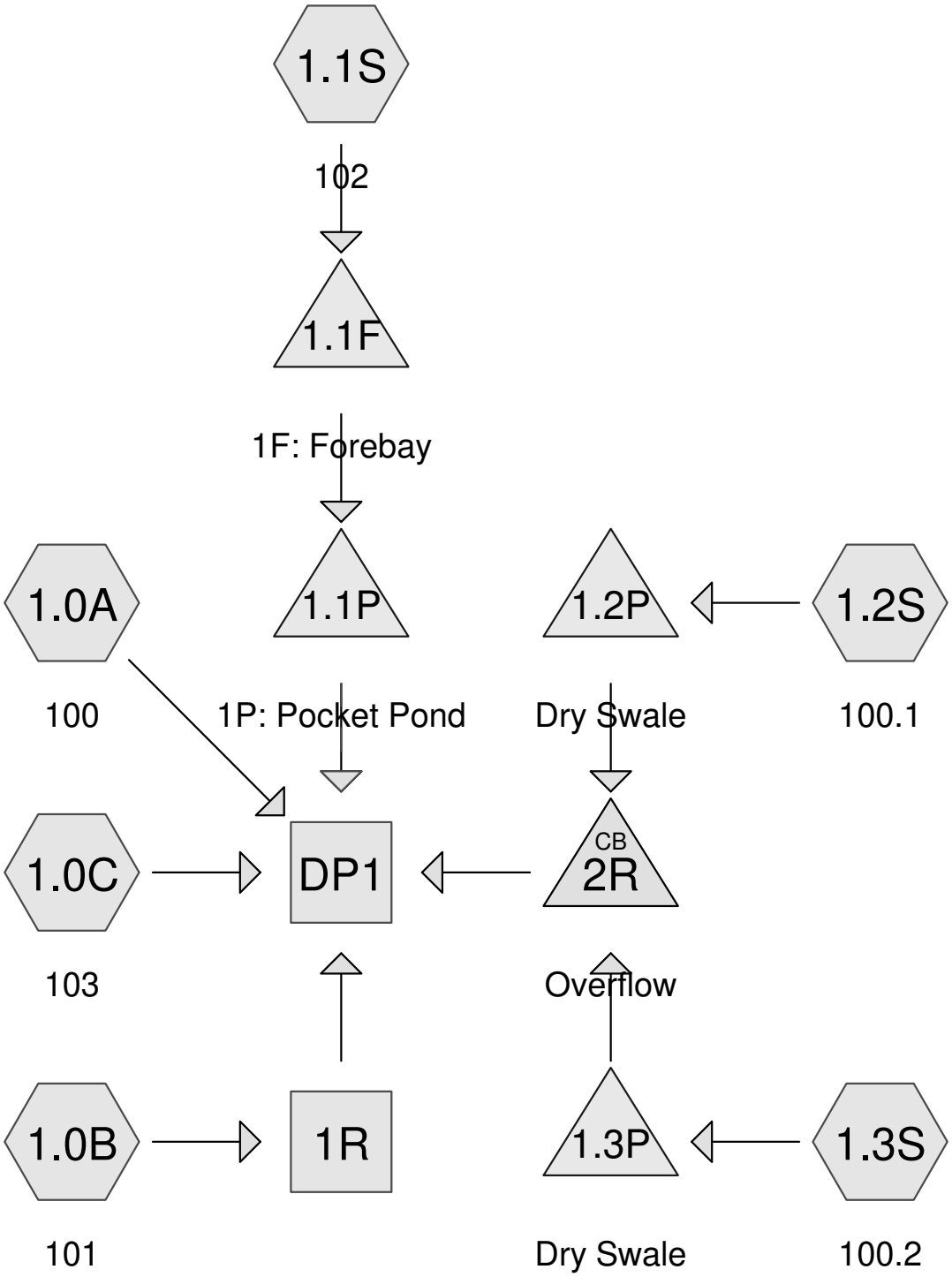
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	3,891	173.00	0.00	0.00	**0.00**
1.00	0.00	3,891	173.00	0.00	0.00	0.00
2.00	0.00	3,891	173.00	0.00	0.00	0.00
3.00	0.00	3,891	173.00	0.00	0.00	0.00
4.00	0.03	3,955	173.02	0.00	0.00	0.00
5.00	0.07	4,118	173.08	0.01	0.01	0.00
6.00	0.11	4,340	173.15	0.04	0.04	0.00
7.00	0.17	4,628	173.24	0.08	0.08	0.00
8.00	0.23	4,997	173.35	0.11	0.11	0.00
9.00	0.32	5,521	173.51	0.15	0.15	0.00
10.00	0.52	6,451	173.78	0.19	0.19	0.00
11.00	1.12	8,399	174.28	0.25	0.25	0.00
12.00	**11.08**	**16,671**	**175.99**	**0.59**	**0.59**	0.00
13.00	**1.57**	**20,243**	**176.59**	**1.71**	**1.71**	0.00
14.00	0.75	19,821	176.52	0.84	0.84	0.00
15.00	0.55	19,572	176.48	0.67	0.67	0.00
16.00	0.41	18,855	176.36	0.65	0.65	0.00
17.00	0.34	17,902	176.20	0.63	0.63	0.00
18.00	0.30	16,859	176.02	0.59	0.59	0.00
19.00	0.24	15,727	175.82	0.56	0.56	0.00
20.00	0.22	14,621	175.61	0.52	0.52	0.00
21.00	0.20	13,596	175.42	0.47	0.47	0.00
22.00	0.18	12,686	175.24	0.42	0.42	0.00
23.00	0.17	11,965	175.09	0.33	0.33	0.00
24.00	0.16	11,389	174.97	0.32	0.32	0.00
25.00	0.00	10,368	174.74	0.30	0.30	0.00
26.00	0.00	9,327	174.51	0.28	0.28	0.00
27.00	0.00	8,370	174.28	0.25	0.25	0.00
28.00	0.00	7,503	174.06	0.23	0.23	0.00
29.00	0.00	6,729	173.85	0.20	0.20	0.00
30.00	0.00	6,054	173.67	0.17	0.17	0.00
31.00	0.00	5,481	173.50	0.14	0.14	0.00
32.00	0.00	5,015	173.36	0.11	0.11	0.00
33.00	0.00	4,660	173.25	0.08	0.08	0.00
34.00	0.00	4,419	173.17	0.05	0.05	0.00
35.00	0.00	4,275	173.13	0.03	0.03	0.00
36.00	0.00	4,182	173.10	0.02	0.02	0.00
37.00	0.00	4,119	173.08	0.01	0.01	0.00
38.00	0.00	4,077	173.06	0.01	0.01	0.00
39.00	0.00	4,050	173.05	0.01	0.01	0.00
40.00	0.00	4,030	173.05	0.00	0.00	0.00
41.00	0.00	4,013	173.04	0.00	0.00	0.00
42.00	0.00	3,999	173.04	0.00	0.00	0.00
43.00	0.00	3,986	173.03	0.00	0.00	0.00
44.00	0.00	3,974	173.03	0.00	0.00	0.00
45.00	0.00	3,964	173.02	0.00	0.00	0.00
46.00	0.00	3,955	173.02	0.00	0.00	0.00
47.00	0.00	3,948	173.02	0.00	0.00	0.00
48.00	0.00	3,941	173.02	0.00	0.00	0.00

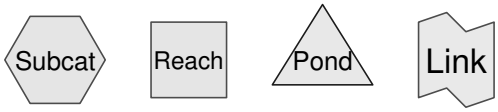
Stage-Area-Storage for Pond 1.1P: 1P: Pocket Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
169.00	12	0
169.10	18	2
169.20	26	4
169.30	35	7
169.40	45	11
169.50	56	16
169.60	69	22
169.70	83	30
169.80	98	39
169.90	115	49
170.00	133	62
170.10	155	76
170.20	180	93
170.30	206	112
170.40	233	134
170.50	263	159
170.60	294	187
170.70	327	218
170.80	362	252
170.90	398	290
171.00	437	332
171.10	477	377
171.20	518	427
171.30	562	481
171.40	607	540
171.50	654	603
171.60	896	680
171.70	1,176	783
171.80	1,493	916
171.90	1,849	1,083
172.00	2,243	1,287
172.10	2,312	1,515
172.20	2,382	1,750
172.30	2,453	1,992
172.40	2,526	2,240
172.50	2,599	2,497
172.60	2,673	2,760
172.70	2,749	3,031
172.80	2,825	3,310
172.90	2,902	3,596
173.00	2,981	3,891
173.10	3,060	4,193
173.20	3,141	4,503
173.30	3,222	4,821
173.40	3,305	5,147
173.50	3,388	5,482
173.60	3,473	5,825
173.70	3,559	6,177
173.80	3,645	6,537
173.90	3,733	6,906
174.00	3,822	7,283
174.10	3,907	7,670
174.20	3,992	8,065
174.30	4,079	8,468
174.40	4,167	8,881
174.50	4,255	9,302
174.60	4,345	9,732
174.70	4,435	10,171
174.80	4,526	10,619
174.90	4,618	11,076
175.00	4,712	11,542
175.10	4,806	12,018
175.20	4,901	12,504
175.30	4,996	12,998
175.40	5,093	13,503
175.50	5,191	14,017
175.60	5,290	14,541
175.70	5,389	15,075
175.80	5,490	15,619
175.90	5,592	16,173
176.00	5,694	16,737
176.10	5,792	17,312
176.20	5,891	17,896
176.30	5,991	18,490
176.40	6,091	19,094
176.50	6,193	19,708
176.60	6,295	20,333
176.70	6,398	20,967
176.80	6,502	21,612
176.90	6,607	22,268
177.00	6,712	22,933
177.10	6,819	23,610
177.20	6,926	24,297
177.30	7,034	24,995
177.40	7,143	25,704
177.50	7,253	26,424
177.60	7,363	27,155
177.70	7,475	27,896
177.80	7,587	28,650
177.90	7,700	29,414
178.00	**7,814**	**30,190**

APPENDIX B

Post-Development Computer Data





Routing Diagram for Proposed Development

Prepared by Insite Engineering, Surveying, and Landscape Architecture P.C., Printed 3/14/2025

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Summary for Subcatchment 1.0A: 100

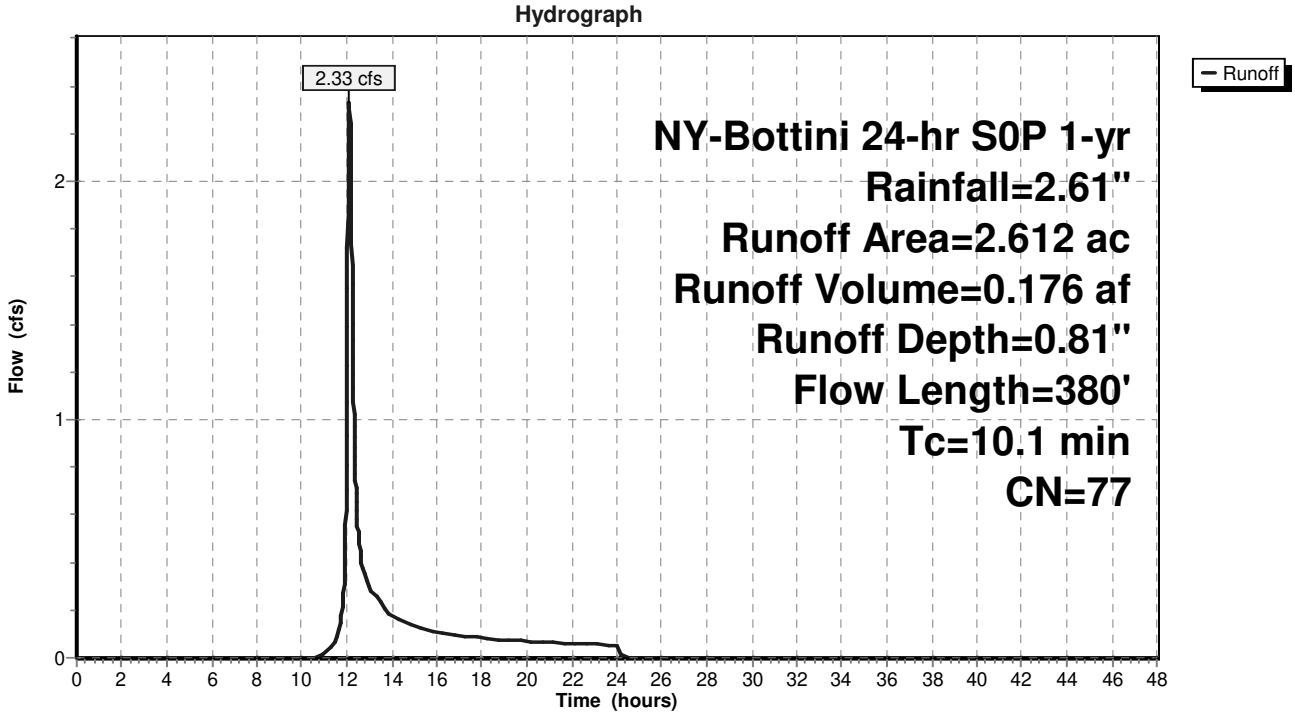
Runoff = 2.33 cfs @ 12.11 hrs, Volume= 0.176 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.096	98	Paved parking, HSG A
0.017	89	Gravel roads, HSG C
0.406	74	>75% Grass cover, Good, HSG C
1.373	79	50-75% Grass cover, Fair, HSG C
0.720	73	Woods, Fair, HSG C
2.612	77	Weighted Average
2.516		96.32% Pervious Area
0.096		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
0.4	50	0.0750	1.92		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	120	0.1330	1.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	90	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	20	0.3300	8.62		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.1	380	Total			

Subcatchment 1.0A: 100



Hydrograph for Subcatchment 1.0A: 100

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.00
7.50	0.32	0.00	0.00
8.00	0.35	0.00	0.00
8.50	0.39	0.00	0.00
9.00	0.43	0.00	0.00
9.50	0.48	0.00	0.00
10.00	0.53	0.00	0.00
10.50	0.60	0.00	0.00
11.00	0.69	0.00	0.02
11.50	0.81	0.01	0.07
12.00	1.43	0.18	**1.07**
12.50	1.81	0.35	**0.54**
13.00	1.93	0.41	0.29
13.50	2.02	0.46	0.24
14.00	2.08	0.49	0.18
14.50	2.13	0.52	0.15
15.00	2.18	0.55	0.14
15.50	2.22	0.57	0.12
16.00	2.26	0.59	0.11
16.50	2.29	0.61	0.10
17.00	2.32	0.63	0.09
17.50	2.35	0.65	0.09
18.00	2.38	0.66	0.08
18.50	2.40	0.68	0.08
19.00	2.42	0.69	0.08
19.50	2.45	0.71	0.07
20.00	2.47	0.72	0.07
20.50	2.49	0.73	0.07
21.00	2.51	0.74	0.06
21.50	2.53	0.76	0.06
22.00	2.54	0.77	0.06
22.50	2.56	0.78	0.06
23.00	2.58	0.79	0.06
23.50	2.59	0.80	0.05
24.00	**2.61**	**0.81**	0.05
24.50	2.61	0.81	0.00
25.00	2.61	0.81	0.00
25.50	2.61	0.81	0.00
26.00	2.61	0.81	0.00
26.50	2.61	0.81	0.00
27.00	2.61	0.81	0.00
27.50	2.61	0.81	0.00
28.00	2.61	0.81	0.00
28.50	2.61	0.81	0.00
29.00	2.61	0.81	0.00
29.50	2.61	0.81	0.00
30.00	2.61	0.81	0.00
30.50	2.61	0.81	0.00
31.00	2.61	0.81	0.00
31.50	2.61	0.81	0.00
32.00	2.61	0.81	0.00
32.50	2.61	0.81	0.00
33.00	2.61	0.81	0.00
33.50	2.61	0.81	0.00
34.00	2.61	0.81	0.00
34.50	2.61	0.81	0.00
35.00	2.61	0.81	0.00
35.50	2.61	0.81	0.00
36.00	2.61	0.81	0.00
36.50	2.61	0.81	0.00
37.00	2.61	0.81	0.00
37.50	2.61	0.81	0.00
38.00	2.61	0.81	0.00
38.50	2.61	0.81	0.00
39.00	2.61	0.81	0.00
39.50	2.61	0.81	0.00
40.00	2.61	0.81	0.00
40.50	2.61	0.81	0.00
41.00	2.61	0.81	0.00
41.50	2.61	0.81	0.00
42.00	2.61	0.81	0.00
42.50	2.61	0.81	0.00
43.00	2.61	0.81	0.00
43.50	2.61	0.81	0.00
44.00	2.61	0.81	0.00
44.50	2.61	0.81	0.00
45.00	2.61	0.81	0.00
45.50	2.61	0.81	0.00
46.00	2.61	0.81	0.00
46.50	2.61	0.81	0.00
47.00	2.61	0.81	0.00
47.50	2.61	0.81	0.00
48.00	2.61	0.81	0.00

Summary for Subcatchment 1.0B: 101

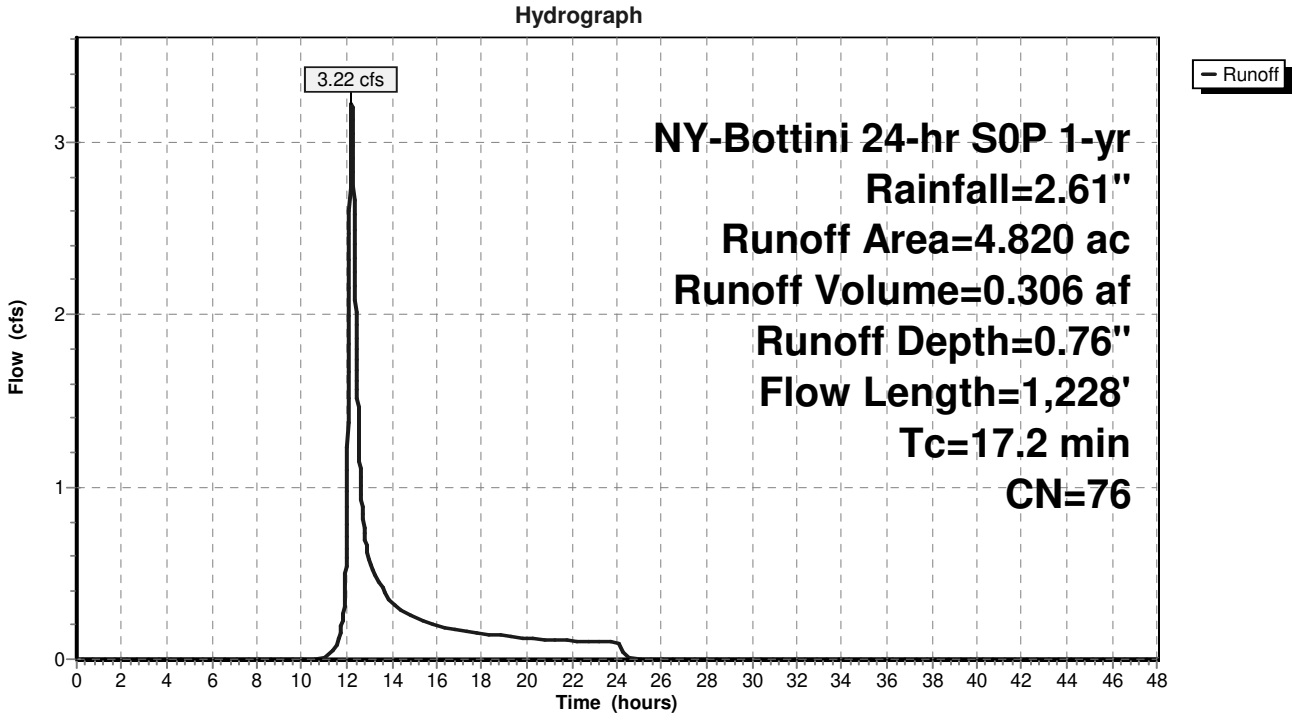
Runoff = 3.22 cfs @ 12.22 hrs, Volume= 0.306 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.807	74	>75% Grass cover, Good, HSG C
2.025	79	50-75% Grass cover, Fair, HSG C
0.943	73	Woods, Fair, HSG C
1.045	73	Woods, Fair, HSG C
4.820	76	Weighted Average
4.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
1.3	150	0.0730	1.89		**Shallow Concentrated Flow, B-Slope** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.3200	3.96		**Shallow Concentrated Flow, Slope-Swale** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0160	4.46	22.30	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.030
1.0	225	0.0105	3.92	27.42	**Trap/Vee/Rect Channel Flow, Swale-D** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
0.2	121	0.0740	10.40	72.79	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
5.6	346	0.0430	1.04		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
0.2	36	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, F-G** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
17.2	1,228	Total			

Subcatchment 1.0B: 101



Hydrograph for Subcatchment 1.0B: 101

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	33.00	2.61	0.76	0.00
0.50	0.02	0.00	0.00	33.50	2.61	0.76	0.00
1.00	0.03	0.00	0.00	34.00	2.61	0.76	0.00
1.50	0.05	0.00	0.00	34.50	2.61	0.76	0.00
2.00	0.07	0.00	0.00	35.00	2.61	0.76	0.00
2.50	0.08	0.00	0.00	35.50	2.61	0.76	0.00
3.00	0.10	0.00	0.00	36.00	2.61	0.76	0.00
3.50	0.12	0.00	0.00	36.50	2.61	0.76	0.00
4.00	0.14	0.00	0.00	37.00	2.61	0.76	0.00
4.50	0.16	0.00	0.00	37.50	2.61	0.76	0.00
5.00	0.19	0.00	0.00	38.00	2.61	0.76	0.00
5.50	0.21	0.00	0.00	38.50	2.61	0.76	0.00
6.00	0.24	0.00	0.00	39.00	2.61	0.76	0.00
6.50	0.26	0.00	0.00	39.50	2.61	0.76	0.00
7.00	0.29	0.00	0.00	40.00	2.61	0.76	0.00
7.50	0.32	0.00	0.00	40.50	2.61	0.76	0.00
8.00	0.35	0.00	0.00	41.00	2.61	0.76	0.00
8.50	0.39	0.00	0.00	41.50	2.61	0.76	0.00
9.00	0.43	0.00	0.00	42.00	2.61	0.76	0.00
9.50	0.48	0.00	0.00	42.50	2.61	0.76	0.00
10.00	0.53	0.00	0.00	43.00	2.61	0.76	0.00
10.50	0.60	0.00	0.00	43.50	2.61	0.76	0.00
11.00	0.69	0.00	0.01	44.00	2.61	0.76	0.00
11.50	0.81	0.01	0.08	44.50	2.61	0.76	0.00
12.00	1.43	0.16	**0.79**	45.00	2.61	0.76	0.00
12.50	1.81	0.32	**1.41**	45.50	2.61	0.76	0.00
13.00	1.93	0.38	0.56	46.00	2.61	0.76	0.00
13.50	2.02	0.42	0.44	46.50	2.61	0.76	0.00
14.00	2.08	0.46	0.33	47.00	2.61	0.76	0.00
14.50	2.13	0.48	0.28	47.50	2.61	0.76	0.00
15.00	2.18	0.51	0.25	48.00	2.61	0.76	0.00
15.50	2.22	0.53	0.22				
16.00	2.26	0.55	0.20				
16.50	2.29	0.57	0.18				
17.00	2.32	0.59	0.17				
17.50	2.35	0.60	0.16				
18.00	2.38	0.62	0.15				
18.50	2.40	0.63	0.14				
19.00	2.42	0.65	0.13				
19.50	2.45	0.66	0.13				
20.00	2.47	0.67	0.12				
20.50	2.49	0.69	0.12				
21.00	2.51	0.70	0.11				
21.50	2.53	0.71	0.11				
22.00	2.54	0.72	0.11				
22.50	2.56	0.73	0.10				
23.00	2.58	0.74	0.10				
23.50	2.59	0.75	0.10				
24.00	**2.61**	**0.76**	0.10				
24.50	2.61	0.76	0.01				
25.00	2.61	0.76	0.00				
25.50	2.61	0.76	0.00				
26.00	2.61	0.76	0.00				
26.50	2.61	0.76	0.00				
27.00	2.61	0.76	0.00				
27.50	2.61	0.76	0.00				
28.00	2.61	0.76	0.00				
28.50	2.61	0.76	0.00				
29.00	2.61	0.76	0.00				
29.50	2.61	0.76	0.00				
30.00	2.61	0.76	0.00				
30.50	2.61	0.76	0.00				
31.00	2.61	0.76	0.00				
31.50	2.61	0.76	0.00				
32.00	2.61	0.76	0.00				
32.50	2.61	0.76	0.00				

Summary for Subcatchment 1.0C: 103

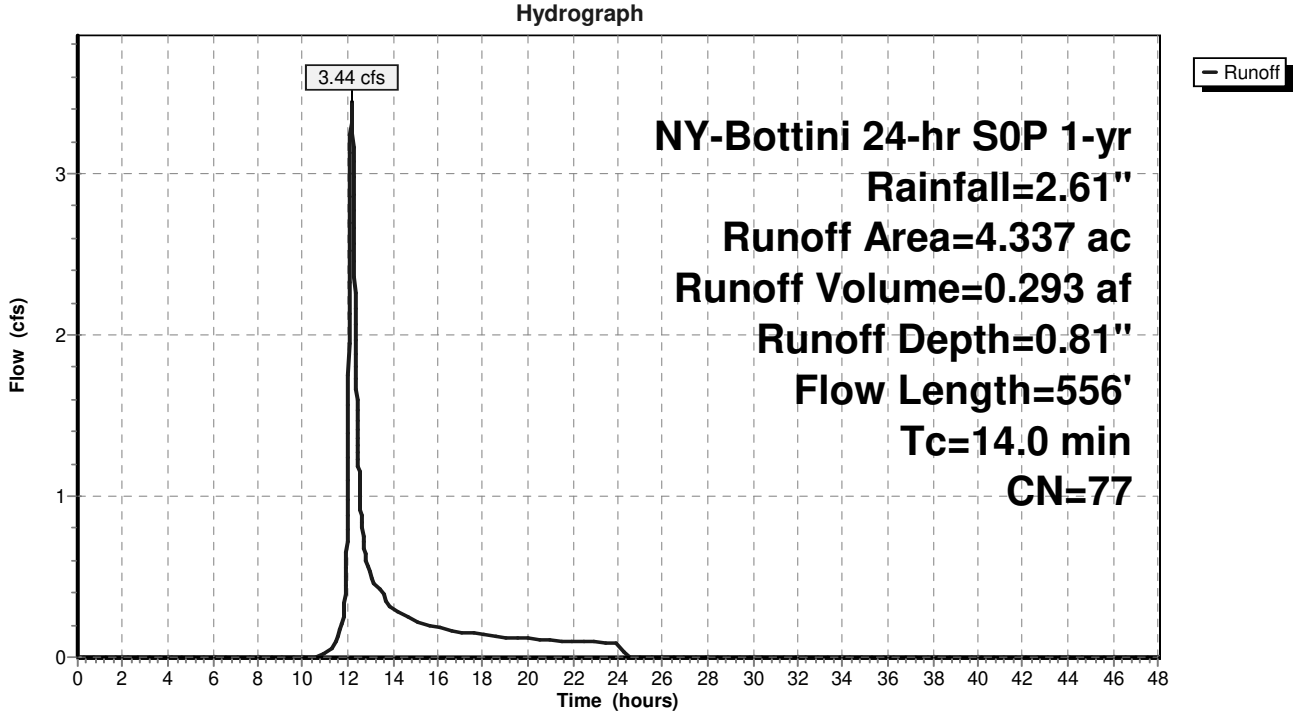
Runoff = 3.44 cfs @ 12.18 hrs, Volume= 0.293 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.400	74	>75% Grass cover, Good, HSG C
0.093	80	>75% Grass cover, Good, HSG D
0.882	73	Woods, Fair, HSG C
2.962	79	Woods, Fair, HSG D
4.337	77	Weighted Average
4.337		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	46	0.2390	0.41		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
5.8	44	0.0910	0.13		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.50"
5.4	316	0.0380	0.97		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	150	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
14.0	556	Total			

Subcatchment 1.0C: 103



Hydrograph for Subcatchment 1.0C: 103

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	33.00	2.61	0.81	0.00
0.50	0.02	0.00	0.00	33.50	2.61	0.81	0.00
1.00	0.03	0.00	0.00	34.00	2.61	0.81	0.00
1.50	0.05	0.00	0.00	34.50	2.61	0.81	0.00
2.00	0.07	0.00	0.00	35.00	2.61	0.81	0.00
2.50	0.08	0.00	0.00	35.50	2.61	0.81	0.00
3.00	0.10	0.00	0.00	36.00	2.61	0.81	0.00
3.50	0.12	0.00	0.00	36.50	2.61	0.81	0.00
4.00	0.14	0.00	0.00	37.00	2.61	0.81	0.00
4.50	0.16	0.00	0.00	37.50	2.61	0.81	0.00
5.00	0.19	0.00	0.00	38.00	2.61	0.81	0.00
5.50	0.21	0.00	0.00	38.50	2.61	0.81	0.00
6.00	0.24	0.00	0.00	39.00	2.61	0.81	0.00
6.50	0.26	0.00	0.00	39.50	2.61	0.81	0.00
7.00	0.29	0.00	0.00	40.00	2.61	0.81	0.00
7.50	0.32	0.00	0.00	40.50	2.61	0.81	0.00
8.00	0.35	0.00	0.00	41.00	2.61	0.81	0.00
8.50	0.39	0.00	0.00	41.50	2.61	0.81	0.00
9.00	0.43	0.00	0.00	42.00	2.61	0.81	0.00
9.50	0.48	0.00	0.00	42.50	2.61	0.81	0.00
10.00	0.53	0.00	0.00	43.00	2.61	0.81	0.00
10.50	0.60	0.00	0.00	43.50	2.61	0.81	0.00
11.00	0.69	0.00	0.03	44.00	2.61	0.81	0.00
11.50	0.81	0.01	0.11	44.50	2.61	0.81	0.00
12.00	1.43	0.18	**1.10**	45.00	2.61	0.81	0.00
12.50	1.81	0.35	**1.11**	45.50	2.61	0.81	0.00
13.00	1.93	0.41	0.50	46.00	2.61	0.81	0.00
13.50	2.02	0.46	0.40	46.50	2.61	0.81	0.00
14.00	2.08	0.49	0.30	47.00	2.61	0.81	0.00
14.50	2.13	0.52	0.26	47.50	2.61	0.81	0.00
15.00	2.18	0.55	0.23	48.00	2.61	0.81	0.00
15.50	2.22	0.57	0.20				
16.00	2.26	0.59	0.18				
16.50	2.29	0.61	0.17				
17.00	2.32	0.63	0.16				
17.50	2.35	0.65	0.15				
18.00	2.38	0.66	0.14				
18.50	2.40	0.68	0.13				
19.00	2.42	0.69	0.13				
19.50	2.45	0.71	0.12				
20.00	2.47	0.72	0.11				
20.50	2.49	0.73	0.11				
21.00	2.51	0.74	0.11				
21.50	2.53	0.76	0.10				
22.00	2.54	0.77	0.10				
22.50	2.56	0.78	0.10				
23.00	2.58	0.79	0.09				
23.50	2.59	0.80	0.09				
24.00	**2.61**	**0.81**	0.09				
24.50	2.61	0.81	0.00				
25.00	2.61	0.81	0.00				
25.50	2.61	0.81	0.00				
26.00	2.61	0.81	0.00				
26.50	2.61	0.81	0.00				
27.00	2.61	0.81	0.00				
27.50	2.61	0.81	0.00				
28.00	2.61	0.81	0.00				
28.50	2.61	0.81	0.00				
29.00	2.61	0.81	0.00				
29.50	2.61	0.81	0.00				
30.00	2.61	0.81	0.00				
30.50	2.61	0.81	0.00				
31.00	2.61	0.81	0.00				
31.50	2.61	0.81	0.00				
32.00	2.61	0.81	0.00				
32.50	2.61	0.81	0.00				

Summary for Subcatchment 1.1S: 102

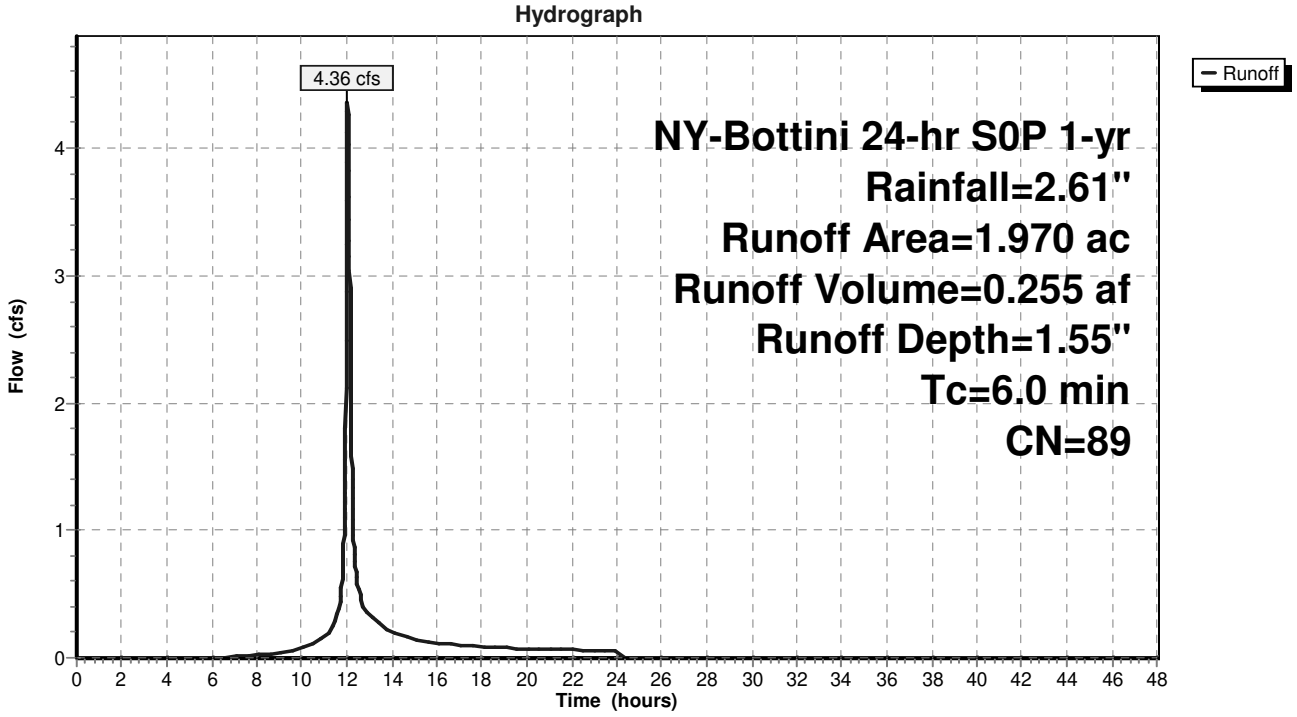
Runoff = 4.36 cfs @ 12.04 hrs, Volume= 0.255 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
1.219	98	Paved parking, HSG A
0.028	89	Gravel roads, HSG C
0.684	74	>75% Grass cover, Good, HSG C
0.039	79	50-75% Grass cover, Fair, HSG C
1.970	89	Weighted Average
0.751		38.12% Pervious Area
1.219		61.88% Impervious Area

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

Subcatchment 1.1S: 102



Hydrograph for Subcatchment 1.1S: 102

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.01
7.50	0.32	0.00	0.01
8.00	0.35	0.01	0.02
8.50	0.39	0.02	0.03
9.00	0.43	0.02	0.04
9.50	0.48	0.04	0.05
10.00	0.53	0.05	0.08
10.50	0.60	0.08	0.11
11.00	0.69	0.12	0.18
11.50	0.81	0.18	0.29
12.00	1.43	0.58	**3.60**
12.50	1.81	0.87	**0.57**
13.00	1.93	0.97	0.33
13.50	2.02	1.04	0.27
14.00	2.08	1.10	0.20
14.50	2.13	1.14	0.17
15.00	2.18	1.18	0.15
15.50	2.22	1.21	0.13
16.00	2.26	1.24	0.12
16.50	2.29	1.27	0.11
17.00	2.32	1.30	0.10
17.50	2.35	1.32	0.10
18.00	2.38	1.35	0.09
18.50	2.40	1.37	0.08
19.00	2.42	1.39	0.08
19.50	2.45	1.41	0.08
20.00	2.47	1.43	0.07
20.50	2.49	1.44	0.07
21.00	2.51	1.46	0.07
21.50	2.53	1.48	0.06
22.00	2.54	1.49	0.06
22.50	2.56	1.51	0.06
23.00	2.58	1.52	0.06
23.50	2.59	1.54	0.06
24.00	**2.61**	**1.55**	0.05
24.50	2.61	1.55	0.00
25.00	2.61	1.55	0.00
25.50	2.61	1.55	0.00
26.00	2.61	1.55	0.00
26.50	2.61	1.55	0.00
27.00	2.61	1.55	0.00
27.50	2.61	1.55	0.00
28.00	2.61	1.55	0.00
28.50	2.61	1.55	0.00
29.00	2.61	1.55	0.00
29.50	2.61	1.55	0.00
30.00	2.61	1.55	0.00
30.50	2.61	1.55	0.00
31.00	2.61	1.55	0.00
31.50	2.61	1.55	0.00
32.00	2.61	1.55	0.00
32.50	2.61	1.55	0.00
33.00	2.61	1.55	0.00
33.50	2.61	1.55	0.00
34.00	2.61	1.55	0.00
34.50	2.61	1.55	0.00
35.00	2.61	1.55	0.00
35.50	2.61	1.55	0.00
36.00	2.61	1.55	0.00
36.50	2.61	1.55	0.00
37.00	2.61	1.55	0.00
37.50	2.61	1.55	0.00
38.00	2.61	1.55	0.00
38.50	2.61	1.55	0.00
39.00	2.61	1.55	0.00
39.50	2.61	1.55	0.00
40.00	2.61	1.55	0.00
40.50	2.61	1.55	0.00
41.00	2.61	1.55	0.00
41.50	2.61	1.55	0.00
42.00	2.61	1.55	0.00
42.50	2.61	1.55	0.00
43.00	2.61	1.55	0.00
43.50	2.61	1.55	0.00
44.00	2.61	1.55	0.00
44.50	2.61	1.55	0.00
45.00	2.61	1.55	0.00
45.50	2.61	1.55	0.00
46.00	2.61	1.55	0.00
46.50	2.61	1.55	0.00
47.00	2.61	1.55	0.00
47.50	2.61	1.55	0.00
48.00	2.61	1.55	0.00

Summary for Subcatchment 1.2S: 100.1

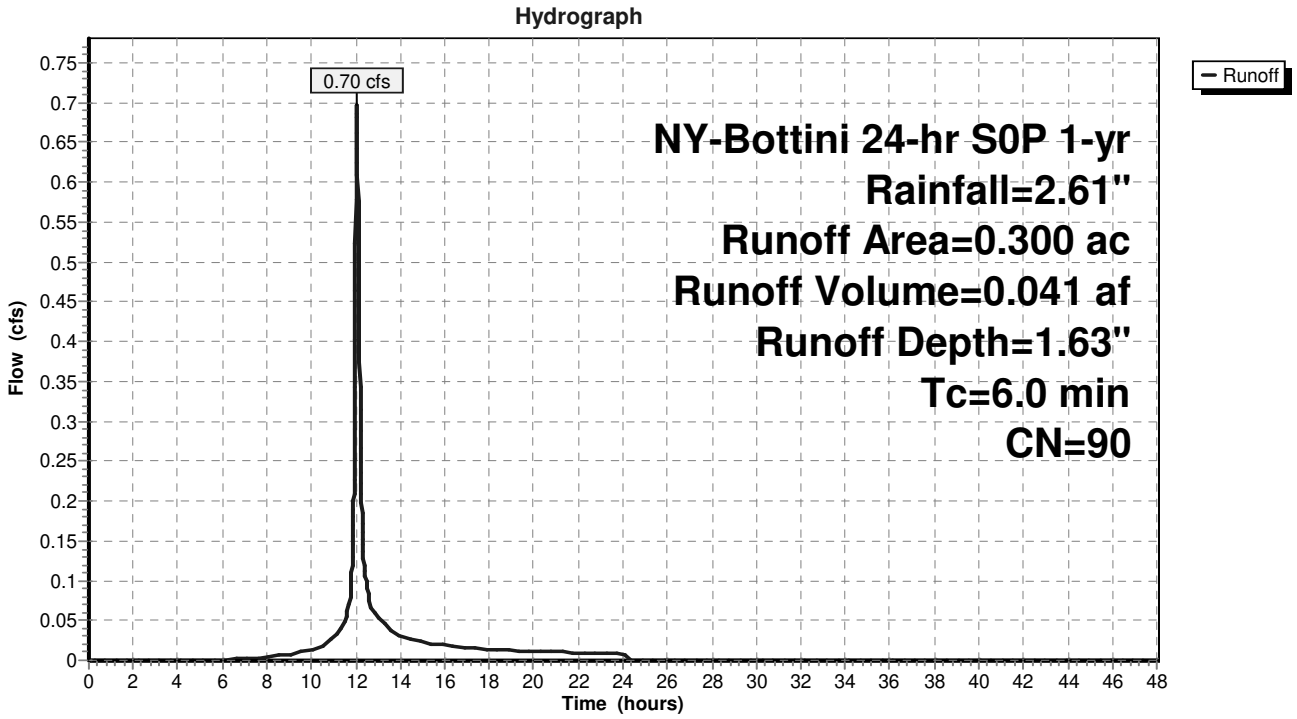
Runoff = 0.70 cfs @ 12.04 hrs, Volume= 0.041 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.200	98	Paved parking, HSG A
0.100	74	>75% Grass cover, Good, HSG C
0.300	90	Weighted Average
0.100		33.33% Pervious Area
0.200		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC 6 min path**

Subcatchment 1.2S: 100.1



Hydrograph for Subcatchment 1.2S: 100.1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.00
7.50	0.32	0.01	0.00
8.00	0.35	0.01	0.00
8.50	0.39	0.02	0.01
9.00	0.43	0.03	0.01
9.50	0.48	0.05	0.01
10.00	0.53	0.07	0.01
10.50	0.60	0.09	0.02
11.00	0.69	0.14	0.03
11.50	0.81	0.20	0.05
12.00	1.43	0.63	**0.58**
12.50	1.81	0.94	**0.09**
13.00	1.93	1.03	0.05
13.50	2.02	1.11	0.04
14.00	2.08	1.16	0.03
14.50	2.13	1.21	0.03
15.00	2.18	1.25	0.02
15.50	2.22	1.28	0.02
16.00	2.26	1.32	0.02
16.50	2.29	1.35	0.02
17.00	2.32	1.37	0.02
17.50	2.35	1.40	0.01
18.00	2.38	1.42	0.01
18.50	2.40	1.44	0.01
19.00	2.42	1.46	0.01
19.50	2.45	1.48	0.01
20.00	2.47	1.50	0.01
20.50	2.49	1.52	0.01
21.00	2.51	1.54	0.01
21.50	2.53	1.55	0.01
22.00	2.54	1.57	0.01
22.50	2.56	1.59	0.01
23.00	2.58	1.60	0.01
23.50	2.59	1.62	0.01
24.00	**2.61**	**1.63**	0.01
24.50	2.61	1.63	0.00
25.00	2.61	1.63	0.00
25.50	2.61	1.63	0.00
26.00	2.61	1.63	0.00
26.50	2.61	1.63	0.00
27.00	2.61	1.63	0.00
27.50	2.61	1.63	0.00
28.00	2.61	1.63	0.00
28.50	2.61	1.63	0.00
29.00	2.61	1.63	0.00
29.50	2.61	1.63	0.00
30.00	2.61	1.63	0.00
30.50	2.61	1.63	0.00
31.00	2.61	1.63	0.00
31.50	2.61	1.63	0.00
32.00	2.61	1.63	0.00
32.50	2.61	1.63	0.00
33.00	2.61	1.63	0.00
33.50	2.61	1.63	0.00
34.00	2.61	1.63	0.00
34.50	2.61	1.63	0.00
35.00	2.61	1.63	0.00
35.50	2.61	1.63	0.00
36.00	2.61	1.63	0.00
36.50	2.61	1.63	0.00
37.00	2.61	1.63	0.00
37.50	2.61	1.63	0.00
38.00	2.61	1.63	0.00
38.50	2.61	1.63	0.00
39.00	2.61	1.63	0.00
39.50	2.61	1.63	0.00
40.00	2.61	1.63	0.00
40.50	2.61	1.63	0.00
41.00	2.61	1.63	0.00
41.50	2.61	1.63	0.00
42.00	2.61	1.63	0.00
42.50	2.61	1.63	0.00
43.00	2.61	1.63	0.00
43.50	2.61	1.63	0.00
44.00	2.61	1.63	0.00
44.50	2.61	1.63	0.00
45.00	2.61	1.63	0.00
45.50	2.61	1.63	0.00
46.00	2.61	1.63	0.00
46.50	2.61	1.63	0.00
47.00	2.61	1.63	0.00
47.50	2.61	1.63	0.00
48.00	2.61	1.63	0.00

Summary for Subcatchment 1.3S: 100.2

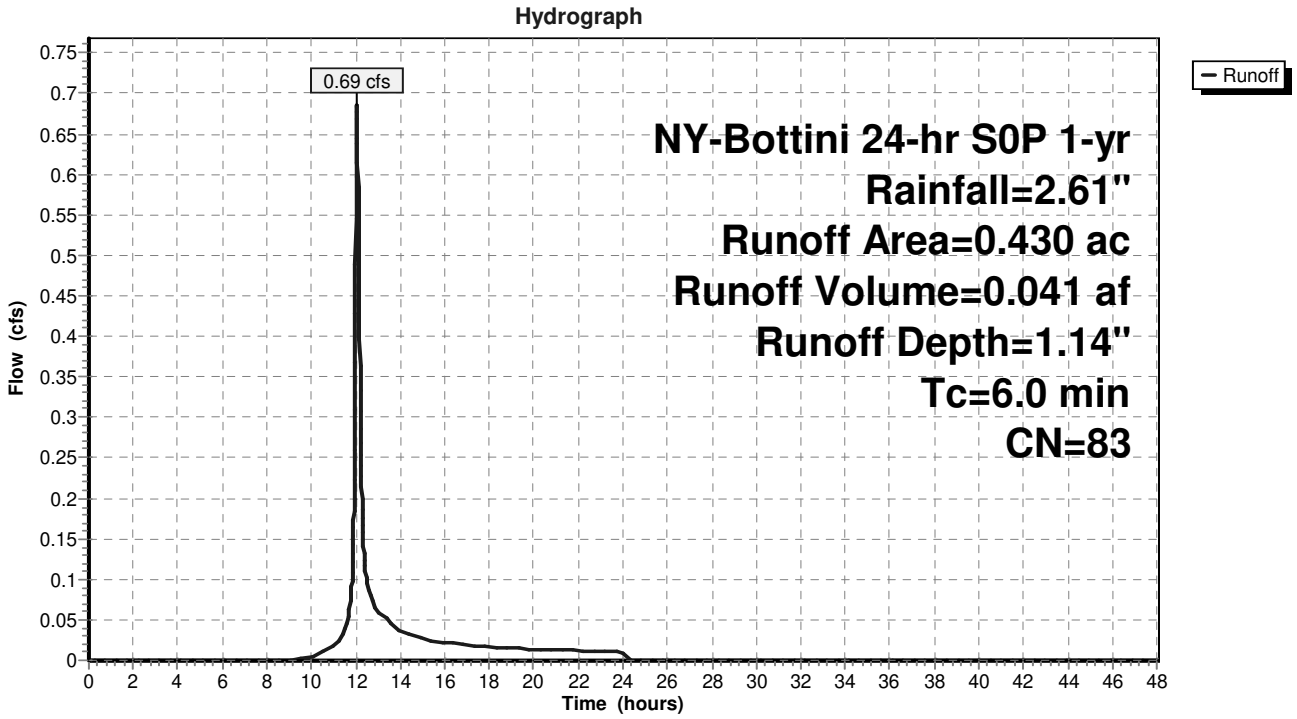
Runoff = 0.69 cfs @ 12.04 hrs, Volume= 0.041 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.170	98	Paved parking, HSG A
0.260	74	>75% Grass cover, Good, HSG C
0.430	83	Weighted Average
0.260		60.47% Pervious Area
0.170		39.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC 6 min path**

Subcatchment 1.3S: 100.2



Hydrograph for Subcatchment 1.3S: 100.2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.08	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.14	0.00	0.00
4.50	0.16	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.21	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.26	0.00	0.00
7.00	0.29	0.00	0.00
7.50	0.32	0.00	0.00
8.00	0.35	0.00	0.00
8.50	0.39	0.00	0.00
9.00	0.43	0.00	0.00
9.50	0.48	0.00	0.00
10.00	0.53	0.01	0.01
10.50	0.60	0.02	0.01
11.00	0.69	0.03	0.02
11.50	0.81	0.07	0.04
12.00	1.43	0.34	**0.55**
12.50	1.81	0.57	**0.10**
13.00	1.93	0.65	0.06
13.50	2.02	0.71	0.05
14.00	2.08	0.75	0.04
14.50	2.13	0.79	0.03
15.00	2.18	0.82	0.03
15.50	2.22	0.85	0.02
16.00	2.26	0.88	0.02
16.50	2.29	0.90	0.02
17.00	2.32	0.92	0.02
17.50	2.35	0.94	0.02
18.00	2.38	0.96	0.02
18.50	2.40	0.98	0.02
19.00	2.42	1.00	0.01
19.50	2.45	1.02	0.01
20.00	2.47	1.03	0.01
20.50	2.49	1.05	0.01
21.00	2.51	1.06	0.01
21.50	2.53	1.08	0.01
22.00	2.54	1.09	0.01
22.50	2.56	1.10	0.01
23.00	2.58	1.12	0.01
23.50	2.59	1.13	0.01
24.00	**2.61**	**1.14**	0.01
24.50	2.61	1.14	0.00
25.00	2.61	1.14	0.00
25.50	2.61	1.14	0.00
26.00	2.61	1.14	0.00
26.50	2.61	1.14	0.00
27.00	2.61	1.14	0.00
27.50	2.61	1.14	0.00
28.00	2.61	1.14	0.00
28.50	2.61	1.14	0.00
29.00	2.61	1.14	0.00
29.50	2.61	1.14	0.00
30.00	2.61	1.14	0.00
30.50	2.61	1.14	0.00
31.00	2.61	1.14	0.00
31.50	2.61	1.14	0.00
32.00	2.61	1.14	0.00
32.50	2.61	1.14	0.00
33.00	2.61	1.14	0.00
33.50	2.61	1.14	0.00
34.00	2.61	1.14	0.00
34.50	2.61	1.14	0.00
35.00	2.61	1.14	0.00
35.50	2.61	1.14	0.00
36.00	2.61	1.14	0.00
36.50	2.61	1.14	0.00
37.00	2.61	1.14	0.00
37.50	2.61	1.14	0.00
38.00	2.61	1.14	0.00
38.50	2.61	1.14	0.00
39.00	2.61	1.14	0.00
39.50	2.61	1.14	0.00
40.00	2.61	1.14	0.00
40.50	2.61	1.14	0.00
41.00	2.61	1.14	0.00
41.50	2.61	1.14	0.00
42.00	2.61	1.14	0.00
42.50	2.61	1.14	0.00
43.00	2.61	1.14	0.00
43.50	2.61	1.14	0.00
44.00	2.61	1.14	0.00
44.50	2.61	1.14	0.00
45.00	2.61	1.14	0.00
45.50	2.61	1.14	0.00
46.00	2.61	1.14	0.00
46.50	2.61	1.14	0.00
47.00	2.61	1.14	0.00
47.50	2.61	1.14	0.00
48.00	2.61	1.14	0.00

Summary for Reach 1R:

Inflow Area = 4.820 ac, 0.00% Impervious, Inflow Depth = 0.76" for 1-yr event
Inflow = 3.22 cfs @ 12.22 hrs, Volume= 0.306 af
Outflow = 3.01 cfs @ 12.36 hrs, Volume= 0.306 af, Atten= 7%, Lag= 8.5 min

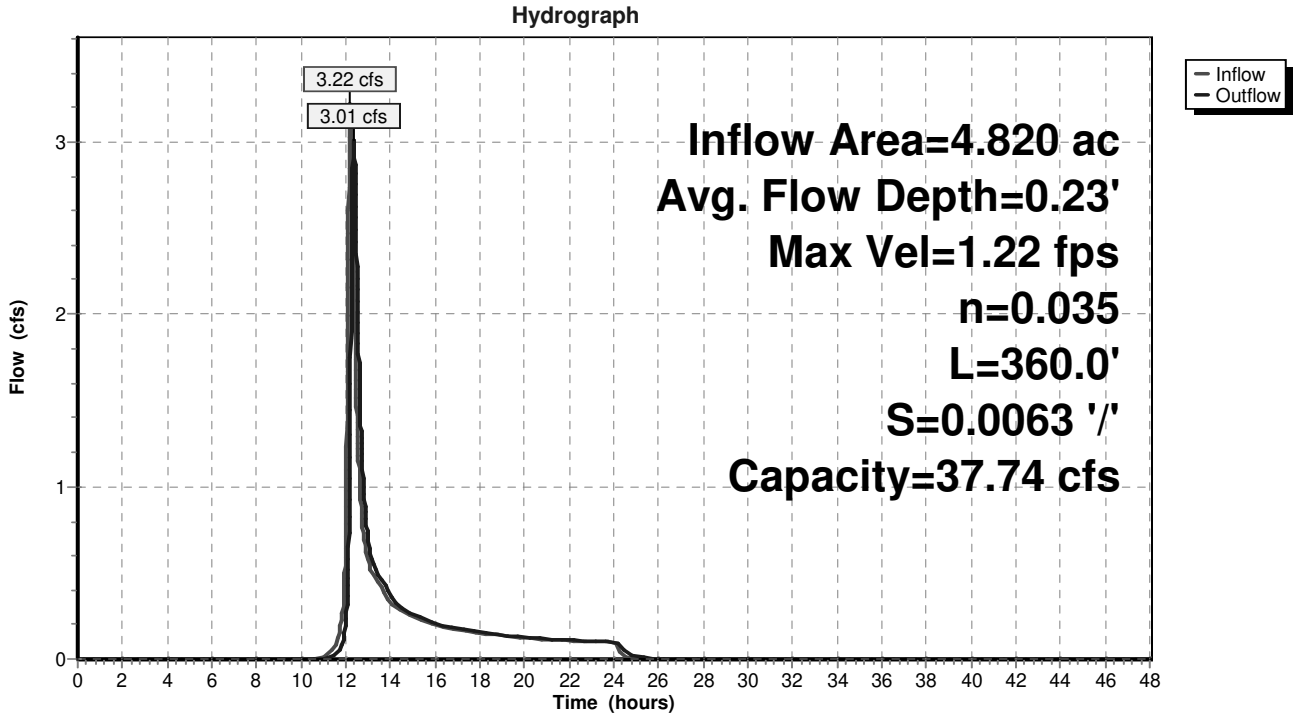
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.22 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 16.8 min

Peak Storage= 891 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00' Flow Area= 13.0 sf, Capacity= 37.74 cfs

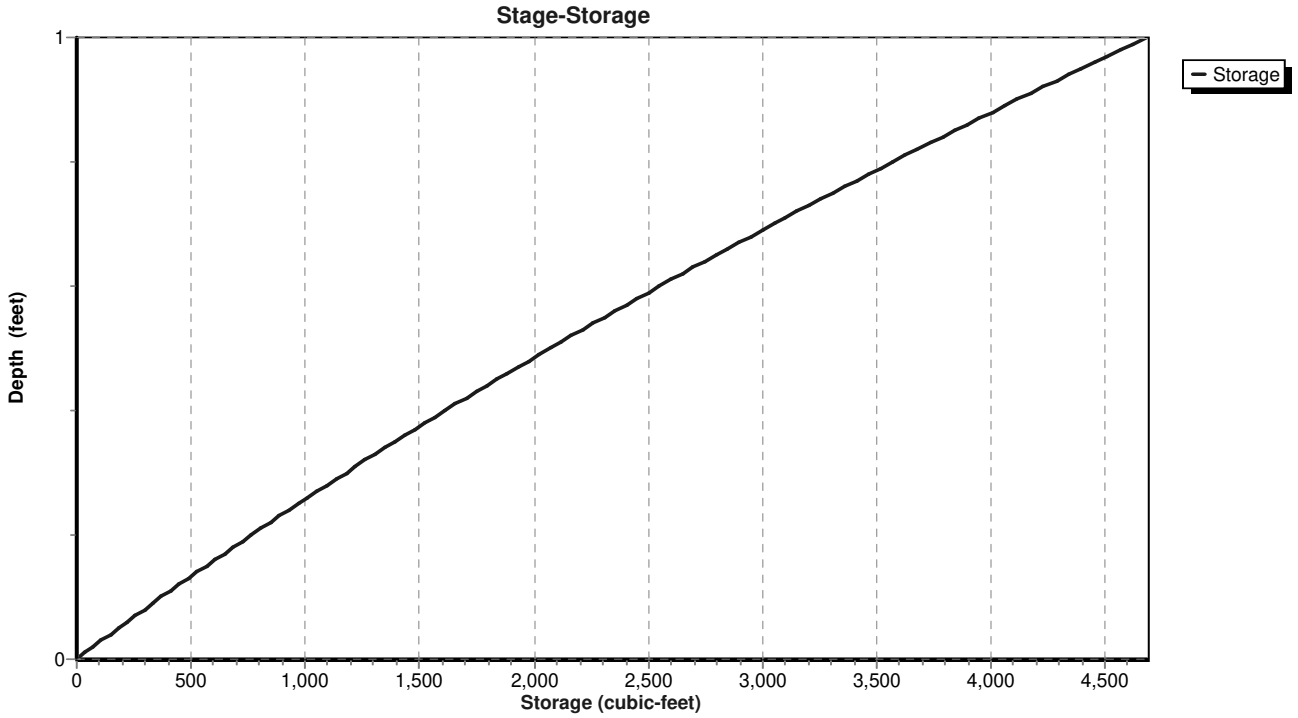
10.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 360.0' Slope= 0.0063 '/'
Inlet Invert= 160.28', Outlet Invert= 158.00'

‡

Reach 1R:



Reach 1R:


Stage-Storage
Storage
Depth (feet)
1
0
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
4,500
Storage (cubic-feet)

Hydrograph for Reach 1R:

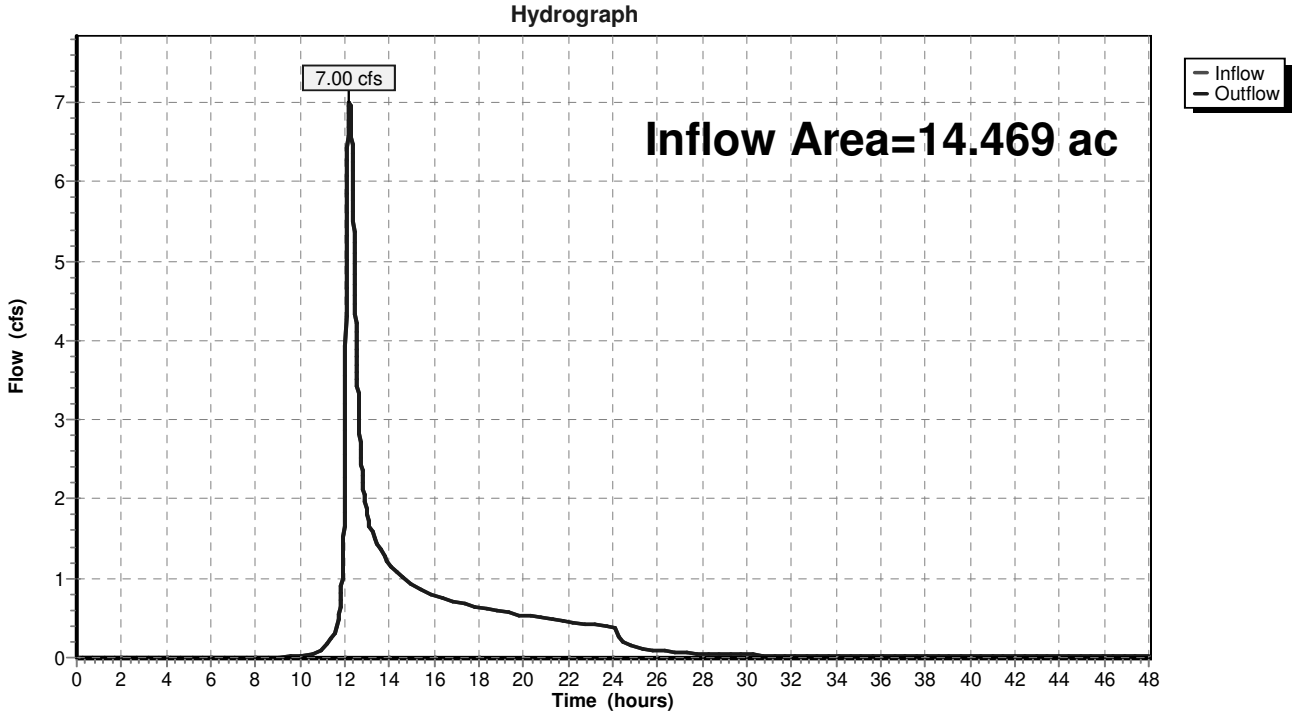
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	160.28	0.00	33.00	0.00	0	160.28	0.00
0.50	0.00	0	160.28	0.00	33.50	0.00	0	160.28	0.00
1.00	0.00	0	160.28	0.00	34.00	0.00	0	160.28	0.00
1.50	0.00	0	160.28	0.00	34.50	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00	35.00	0.00	0	160.28	0.00
2.50	0.00	0	160.28	0.00	35.50	0.00	0	160.28	0.00
3.00	0.00	0	160.28	0.00	36.00	0.00	0	160.28	0.00
3.50	0.00	0	160.28	0.00	36.50	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00	37.00	0.00	0	160.28	0.00
4.50	0.00	0	160.28	0.00	37.50	0.00	0	160.28	0.00
5.00	0.00	0	160.28	0.00	38.00	0.00	0	160.28	0.00
5.50	0.00	0	160.28	0.00	38.50	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00	39.00	0.00	0	160.28	0.00
6.50	0.00	0	160.28	0.00	39.50	0.00	0	160.28	0.00
7.00	0.00	0	160.28	0.00	40.00	0.00	0	160.28	0.00
7.50	0.00	0	160.28	0.00	40.50	0.00	0	160.28	0.00
8.00	0.00	0	160.28	0.00	41.00	0.00	0	160.28	0.00
8.50	0.00	0	160.28	0.00	41.50	0.00	0	160.28	0.00
9.00	0.00	0	160.28	0.00	42.00	0.00	0	160.28	0.00
9.50	0.00	0	160.28	0.00	42.50	0.00	0	160.28	0.00
10.00	0.00	0	160.28	0.00	43.00	0.00	0	160.28	0.00
10.50	0.00	0	160.28	0.00	43.50	0.00	0	160.28	0.00
11.00	0.01	2	160.28	0.00	44.00	0.00	0	160.28	0.00
11.50	0.08	51	160.29	0.02	44.50	0.00	0	160.28	0.00
12.00	**0.79**	**253**	**160.35**	**0.22**	45.00	0.00	0	160.28	0.00
12.50	**1.41**	**636**	**160.45**	**2.28**	45.50	0.00	0	160.28	0.00
13.00	0.56	337	160.37	0.70	46.00	0.00	0	160.28	0.00
13.50	0.44	278	160.36	0.48	46.50	0.00	0	160.28	0.00
14.00	0.33	235	160.34	0.36	47.00	0.00	0	160.28	0.00
14.50	0.28	210	160.34	0.30	47.50	0.00	0	160.28	0.00
15.00	0.25	194	160.33	0.26	48.00	0.00	0	160.28	0.00
15.50	0.22	179	160.33	0.23					
16.00	0.20	168	160.33	0.20					
16.50	0.18	160	160.32	0.19					
17.00	0.17	153	160.32	0.18					
17.50	0.16	148	160.32	0.16					
18.00	0.15	143	160.32	0.16					
18.50	0.14	137	160.32	0.15					
19.00	0.13	133	160.32	0.14					
19.50	0.13	129	160.32	0.13					
20.00	0.12	126	160.31	0.13					
20.50	0.12	123	160.31	0.12					
21.00	0.11	120	160.31	0.12					
21.50	0.11	117	160.31	0.11					
22.00	0.11	115	160.31	0.11					
22.50	0.10	113	160.31	0.11					
23.00	0.10	111	160.31	0.10					
23.50	0.10	109	160.31	0.10					
24.00	0.10	108	160.31	0.10					
24.50	0.01	61	160.30	0.05					
25.00	0.00	26	160.29	0.01					
25.50	0.00	12	160.28	0.01					
26.00	0.00	5	160.28	0.00					
26.50	0.00	2	160.28	0.00					
27.00	0.00	1	160.28	0.00					
27.50	0.00	1	160.28	0.00					
28.00	0.00	0	160.28	0.00					
28.50	0.00	0	160.28	0.00					
29.00	0.00	0	160.28	0.00					
29.50	0.00	0	160.28	0.00					
30.00	0.00	0	160.28	0.00					
30.50	0.00	0	160.28	0.00					
31.00	0.00	0	160.28	0.00					
31.50	0.00	0	160.28	0.00					
32.00	0.00	0	160.28	0.00					
32.50	0.00	0	160.28	0.00					

Summary for Reach DP1:

Inflow Area = 14.469 ac, 11.65% Impervious, Inflow Depth > 0.91" for 1-yr event
Inflow = 7.00 cfs @ 12.21 hrs, Volume= 1.103 af
Outflow = 7.00 cfs @ 12.21 hrs, Volume= 1.103 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP1:



Hydrograph for Reach DP1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	33.00	0.03		0.03
0.50	0.00		0.00	33.50	0.03		0.03
1.00	0.00		0.00	34.00	0.02		0.02
1.50	0.00		0.00	34.50	0.02		0.02
2.00	0.00		0.00	35.00	0.02		0.02
2.50	0.00		0.00	35.50	0.02		0.02
3.00	0.00		0.00	36.00	0.02		0.02
3.50	0.00		0.00	36.50	0.02		0.02
4.00	0.00		0.00	37.00	0.02		0.02
4.50	0.00		0.00	37.50	0.02		0.02
5.00	0.00		0.00	38.00	0.02		0.02
5.50	0.00		0.00	38.50	0.02		0.02
6.00	0.00		0.00	39.00	0.02		0.02
6.50	0.00		0.00	39.50	0.02		0.02
7.00	0.00		0.00	40.00	0.02		0.02
7.50	0.00		0.00	40.50	0.02		0.02
8.00	0.00		0.00	41.00	0.02		0.02
8.50	0.01		0.01	41.50	0.02		0.02
9.00	0.01		0.01	42.00	0.02		0.02
9.50	0.02		0.02	42.50	0.02		0.02
10.00	0.03		0.03	43.00	0.02		0.02
10.50	0.04		0.04	43.50	0.02		0.02
11.00	0.11		0.11	44.00	0.02		0.02
11.50	0.29		0.29	44.50	0.02		0.02
12.00	**2.55**		**2.55**	45.00	0.01		0.01
12.50	**4.22**		**4.22**	45.50	0.01		0.01
13.00	1.79		1.79	46.00	0.01		0.01
13.50	1.42		1.42	46.50	0.01		0.01
14.00	1.17		1.17	47.00	0.01		0.01
14.50	1.03		1.03	47.50	0.01		0.01
15.00	0.94		0.94	48.00	0.01		0.01
15.50	0.85		0.85				
16.00	0.79		0.79				
16.50	0.74		0.74				
17.00	0.70		0.70				
17.50	0.67		0.67				
18.00	0.64		0.64				
18.50	0.61		0.61				
19.00	0.58		0.58				
19.50	0.55		0.55				
20.00	0.53		0.53				
20.50	0.51		0.51				
21.00	0.49		0.49				
21.50	0.47		0.47				
22.00	0.45		0.45				
22.50	0.44		0.44				
23.00	0.42		0.42				
23.50	0.40		0.40				
24.00	0.39		0.39				
24.50	0.19		0.19				
25.00	0.13		0.13				
25.50	0.11		0.11				
26.00	0.09		0.09				
26.50	0.07		0.07				
27.00	0.06		0.06				
27.50	0.05		0.05				
28.00	0.05		0.05				
28.50	0.04		0.04				
29.00	0.04		0.04				
29.50	0.04		0.04				
30.00	0.03		0.03				
30.50	0.03		0.03				
31.00	0.03		0.03				
31.50	0.03		0.03				
32.00	0.03		0.03				
32.50	0.03		0.03				

Summary for Pond 1.1F: 1F: Forebay

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 1.55" for 1-yr event
Inflow = 4.36 cfs @ 12.04 hrs, Volume= 0.255 af
Outflow = 4.05 cfs @ 12.07 hrs, Volume= 0.255 af, Atten= 7%, Lag= 1.6 min
Primary = 4.05 cfs @ 12.07 hrs, Volume= 0.255 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 177.00' Surf.Area= 3,117 sf Storage= 4,395 cf
Peak Elev= 177.19' @ 12.07 hrs Surf.Area= 3,278 sf Storage= 4,997 cf (602 cf above start)

Plug-Flow detention time= 216.0 min calculated for 0.154 af (60% of inflow)
Center-of-Mass det. time= 4.2 min (833.8 - 829.5)

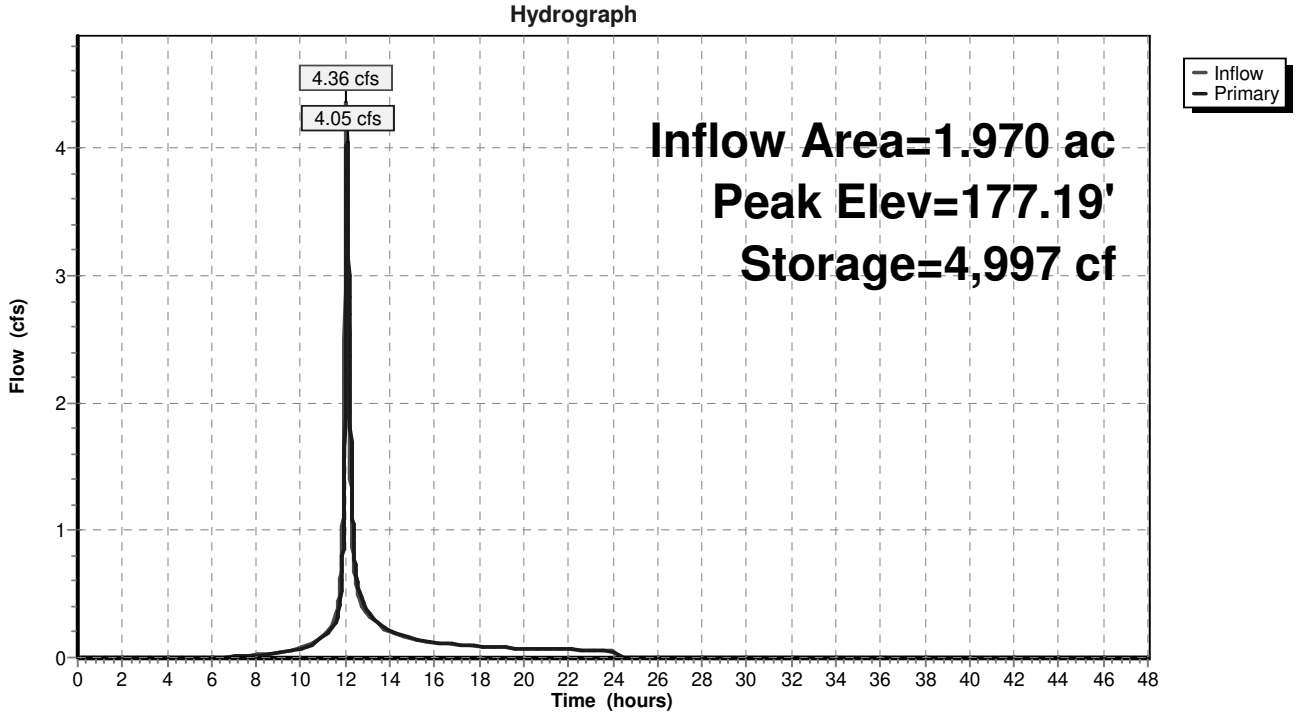
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	7,953 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.00	64	57.5	0	0	64
174.00	282	81.9	160	160	344
175.50	795	130.5	775	935	1,180
176.00	2,327	218.9	747	1,682	3,640
177.00	3,117	255.2	2,712	4,395	5,030
178.00	4,019	291.6	3,558	7,953	6,637

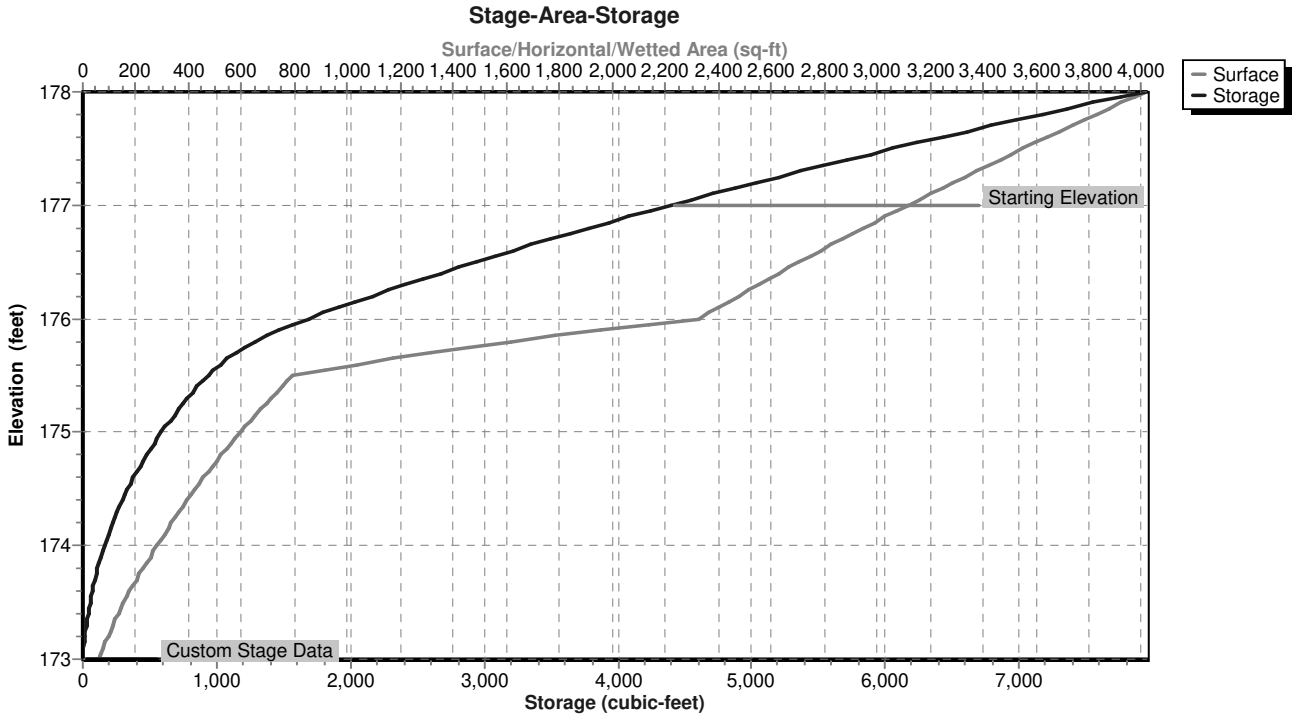
Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=4.03 cfs @ 12.07 hrs HW=177.19' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 4.03 cfs @ 1.32 fps)

Pond 1.1F: 1F: Forebay



Pond 1.1F: 1F: Forebay



Hydrograph for Pond 1.1F: 1F: Forebay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	4,395	177.00	0.00
0.50	0.00	4,395	177.00	0.00
1.00	0.00	4,395	177.00	0.00
1.50	0.00	4,395	177.00	0.00
2.00	0.00	4,395	177.00	0.00
2.50	0.00	4,395	177.00	0.00
3.00	0.00	4,395	177.00	0.00
3.50	0.00	4,395	177.00	0.00
4.00	0.00	4,395	177.00	0.00
4.50	0.00	4,395	177.00	0.00
5.00	0.00	4,395	177.00	0.00
5.50	0.00	4,395	177.00	0.00
6.00	0.00	4,395	177.00	0.00
6.50	0.00	4,395	177.00	0.00
7.00	0.01	4,397	177.00	0.01
7.50	0.01	4,398	177.00	0.01
8.00	0.02	4,400	177.00	0.02
8.50	0.03	4,403	177.00	0.03
9.00	0.04	4,406	177.00	0.04
9.50	0.05	4,410	177.00	0.05
10.00	0.08	4,416	177.01	0.07
10.50	0.11	4,424	177.01	0.10
11.00	0.18	4,444	177.02	0.16
11.50	0.29	4,473	177.02	0.26
12.00	**3.60**	**4,832**	**177.14**	**2.50**
12.50	**0.57**	**4,568**	**177.06**	**0.63**
13.00	0.33	4,500	177.03	0.35
13.50	0.27	4,478	177.03	0.28
14.00	0.20	4,456	177.02	0.21
14.50	0.17	4,447	177.02	0.17
15.00	0.15	4,440	177.01	0.15
15.50	0.13	4,434	177.01	0.13
16.00	0.12	4,431	177.01	0.12
16.50	0.11	4,428	177.01	0.11
17.00	0.10	4,425	177.01	0.10
17.50	0.10	4,423	177.01	0.10
18.00	0.09	4,422	177.01	0.09
18.50	0.08	4,420	177.01	0.08
19.00	0.08	4,419	177.01	0.08
19.50	0.08	4,418	177.01	0.08
20.00	0.07	4,417	177.01	0.07
20.50	0.07	4,416	177.01	0.07
21.00	0.07	4,415	177.01	0.07
21.50	0.06	4,414	177.01	0.06
22.00	0.06	4,413	177.01	0.06
22.50	0.06	4,413	177.01	0.06
23.00	0.06	4,412	177.01	0.06
23.50	0.06	4,412	177.01	0.06
24.00	0.05	4,411	177.01	0.06
24.50	0.00	4,395	177.00	0.00
25.00	0.00	4,395	177.00	0.00
25.50	0.00	4,395	177.00	0.00
26.00	0.00	4,395	177.00	0.00
26.50	0.00	4,395	177.00	0.00
27.00	0.00	4,395	177.00	0.00
27.50	0.00	4,395	177.00	0.00
28.00	0.00	4,395	177.00	0.00
28.50	0.00	4,395	177.00	0.00
29.00	0.00	4,395	177.00	0.00
29.50	0.00	4,395	177.00	0.00
30.00	0.00	4,395	177.00	0.00
30.50	0.00	4,395	177.00	0.00
31.00	0.00	4,395	177.00	0.00
31.50	0.00	4,395	177.00	0.00
32.00	0.00	4,395	177.00	0.00
32.50	0.00	4,395	177.00	0.00
33.00	0.00	4,395	177.00	0.00
33.50	0.00	4,395	177.00	0.00
34.00	0.00	4,395	177.00	0.00
34.50	0.00	4,395	177.00	0.00
35.00	0.00	4,395	177.00	0.00
35.50	0.00	4,395	177.00	0.00
36.00	0.00	4,395	177.00	0.00
36.50	0.00	4,395	177.00	0.00
37.00	0.00	4,395	177.00	0.00
37.50	0.00	4,395	177.00	0.00
38.00	0.00	4,395	177.00	0.00
38.50	0.00	4,395	177.00	0.00
39.00	0.00	4,395	177.00	0.00
39.50	0.00	4,395	177.00	0.00
40.00	0.00	4,395	177.00	0.00
40.50	0.00	4,395	177.00	0.00
41.00	0.00	4,395	177.00	0.00
41.50	0.00	4,395	177.00	0.00
42.00	0.00	4,395	177.00	0.00
42.50	0.00	4,395	177.00	0.00
43.00	0.00	4,395	177.00	0.00
43.50	0.00	4,395	177.00	0.00
44.00	0.00	4,395	177.00	0.00
44.50	0.00	4,395	177.00	0.00
45.00	0.00	4,395	177.00	0.00
45.50	0.00	4,395	177.00	0.00
46.00	0.00	4,395	177.00	0.00
46.50	0.00	4,395	177.00	0.00
47.00	0.00	4,395	177.00	0.00
47.50	0.00	4,395	177.00	0.00
48.00	0.00	4,395	177.00	0.00

Summary for Pond 1.1P: 1P: Pocket Pond

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 1.55" for 1-yr event
Inflow = 4.05 cfs @ 12.07 hrs, Volume= 0.255 af
Outflow = 0.28 cfs @ 13.53 hrs, Volume= 0.254 af, Atten= 93%, Lag= 87.4 min
Primary = 0.28 cfs @ 13.53 hrs, Volume= 0.254 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 173.00' Surf.Area= 2,981 sf Storage= 3,891 cf
Peak Elev= 174.49' @ 13.53 hrs Surf.Area= 4,249 sf Storage= 9,271 cf (5,381 cf above start)

Plug-Flow detention time= 521.6 min calculated for 0.165 af (65% of inflow)
Center-of-Mass det. time= 253.8 min (1,087.6 - 833.8)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	30,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

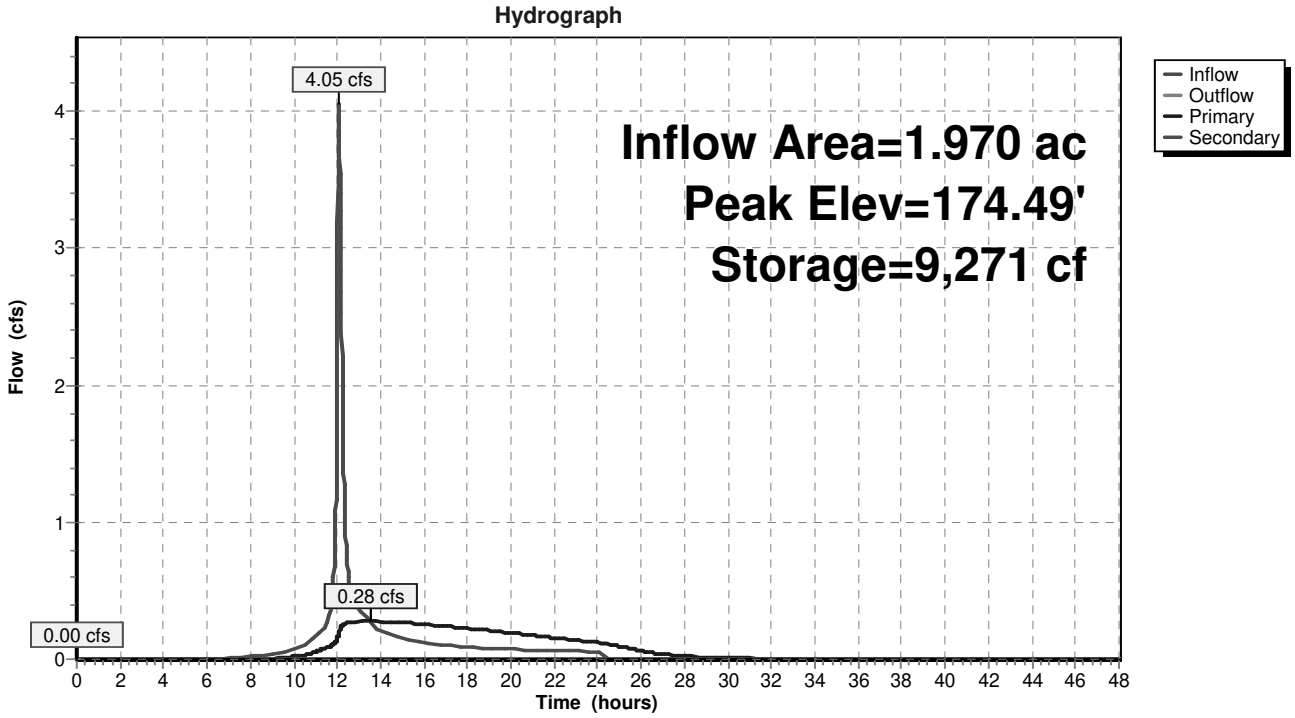
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	12	18.7	0	0	12
170.00	133	67.1	62	62	345
171.50	654	156.6	541	603	1,947
172.00	2,243	227.5	685	1,287	4,117
173.00	2,981	251.6	2,603	3,891	5,066
174.00	3,822	279.0	3,393	7,283	6,253
176.00	5,694	325.1	9,454	16,737	8,550
178.00	7,814	367.9	13,452	30,190	11,010

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**18.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 173.00' / 170.00' S= 0.0682 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	173.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	175.10'	**0.5" x 12.0" Horiz. Orifice/Grate** C= 0.600
#4	Device 1	176.50'	**25.9" x 43.8" Horiz. Orifice/Grate** C= 0.600 in 30.0" x 48.0" Grate (79% open area) Limited to weir flow at low heads
#5	Secondary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Emergency Spillway** Cv= 2.47 (C= 3.09)

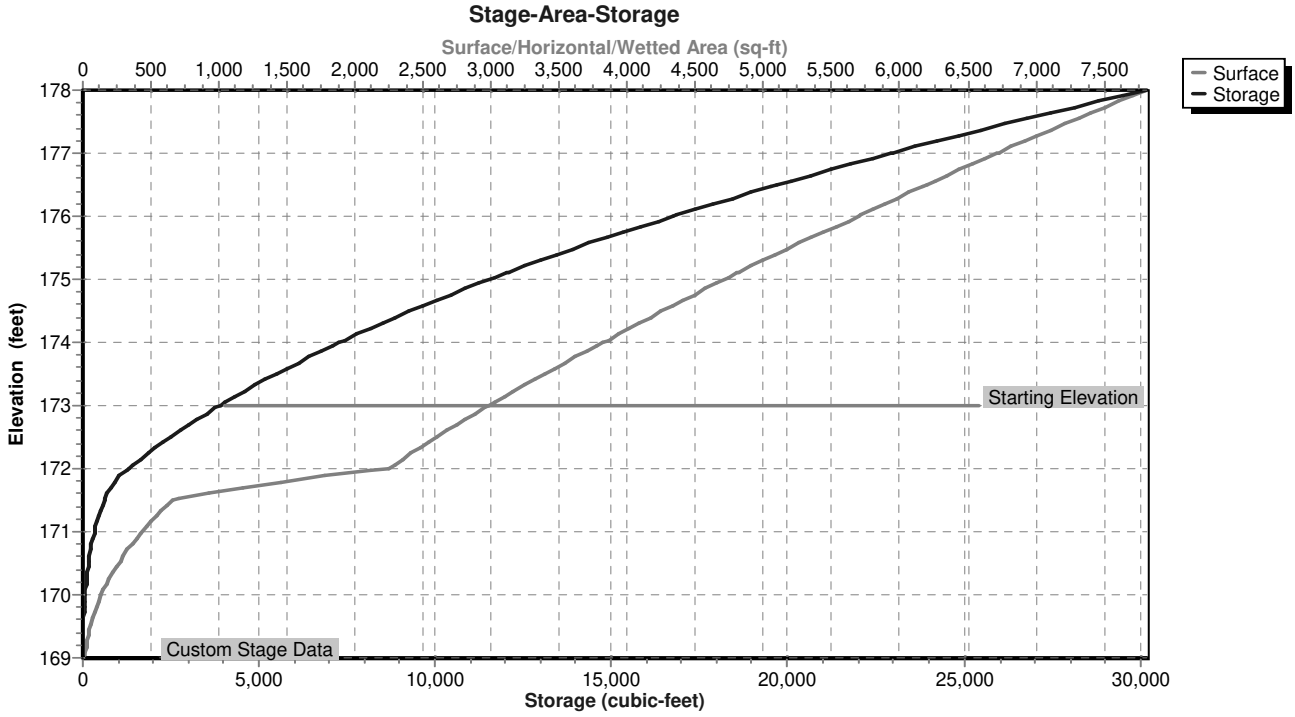
Primary OutFlow Max=0.28 cfs @ 13.53 hrs HW=174.49' (Free Discharge)
└─**1=Culvert** (Passes 0.28 cfs of 7.35 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.63 fps)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.00' (Free Discharge)
└─**5=Emergency Spillway** (Controls 0.00 cfs)

Pond 1.1P: 1P: Pocket Pond



Pond 1.1P: 1P: Pocket Pond



Hydrograph for Pond 1.1P: 1P: Pocket Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	3,891	173.00	0.00	0.00	**0.00**
1.00	0.00	3,891	173.00	0.00	0.00	0.00
2.00	0.00	3,891	173.00	0.00	0.00	0.00
3.00	0.00	3,891	173.00	0.00	0.00	0.00
4.00	0.00	3,891	173.00	0.00	0.00	0.00
5.00	0.00	3,891	173.00	0.00	0.00	0.00
6.00	0.00	3,891	173.00	0.00	0.00	0.00
7.00	0.01	3,897	173.00	0.00	0.00	0.00
8.00	0.02	3,937	173.02	0.00	0.00	0.00
9.00	0.04	4,023	173.04	0.00	0.00	0.00
10.00	0.07	4,173	173.09	0.02	0.02	0.00
11.00	0.16	4,438	173.18	0.05	0.05	0.00
12.00	**2.50**	5,616	173.54	0.15	0.15	0.00
13.00	**0.35**	**9,203**	**174.48**	**0.27**	**0.27**	0.00
14.00	0.21	**9,200**	**174.48**	**0.27**	**0.27**	0.00
15.00	0.15	8,859	174.39	0.27	0.27	0.00
16.00	0.12	8,403	174.28	0.25	0.25	0.00
17.00	0.10	7,911	174.16	0.24	0.24	0.00
18.00	0.09	7,419	174.04	0.23	0.23	0.00
19.00	0.08	6,941	173.91	0.21	0.21	0.00
20.00	0.07	6,493	173.79	0.19	0.19	0.00
21.00	0.07	6,084	173.67	0.18	0.18	0.00
22.00	0.06	5,719	173.57	0.16	0.16	0.00
23.00	0.06	5,401	173.48	0.14	0.14	0.00
24.00	0.06	5,133	173.40	0.12	0.12	0.00
25.00	0.00	4,774	173.29	0.09	0.09	0.00
26.00	0.00	4,492	173.20	0.06	0.06	0.00
27.00	0.00	4,319	173.14	0.04	0.04	0.00
28.00	0.00	4,211	173.11	0.02	0.02	0.00
29.00	0.00	4,139	173.08	0.02	0.02	0.00
30.00	0.00	4,091	173.07	0.01	0.01	0.00
31.00	0.00	4,058	173.06	0.01	0.01	0.00
32.00	0.00	4,037	173.05	0.01	0.01	0.00
33.00	0.00	4,019	173.04	0.00	0.00	0.00
34.00	0.00	4,004	173.04	0.00	0.00	0.00
35.00	0.00	3,990	173.03	0.00	0.00	0.00
36.00	0.00	3,978	173.03	0.00	0.00	0.00
37.00	0.00	3,968	173.03	0.00	0.00	0.00
38.00	0.00	3,958	173.02	0.00	0.00	0.00
39.00	0.00	3,950	173.02	0.00	0.00	0.00
40.00	0.00	3,943	173.02	0.00	0.00	0.00
41.00	0.00	3,937	173.02	0.00	0.00	0.00
42.00	0.00	3,931	173.01	0.00	0.00	0.00
43.00	0.00	3,926	173.01	0.00	0.00	0.00
44.00	0.00	3,922	173.01	0.00	0.00	0.00
45.00	0.00	3,918	173.01	0.00	0.00	0.00
46.00	0.00	3,915	173.01	0.00	0.00	0.00
47.00	0.00	3,912	173.01	0.00	0.00	0.00
48.00	0.00	3,910	173.01	0.00	0.00	0.00

Summary for Pond 1.2P: Dry Swale

Inflow Area = 0.300 ac, 66.67% Impervious, Inflow Depth = 1.63" for 1-yr event
Inflow = 0.70 cfs @ 12.04 hrs, Volume= 0.041 af
Outflow = 0.02 cfs @ 16.87 hrs, Volume= 0.038 af, Atten= 98%, Lag= 289.7 min
Primary = 0.02 cfs @ 16.87 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 221.45' @ 16.87 hrs Surf.Area= 1,393 sf Storage= 1,143 cf

Plug-Flow detention time= 807.4 min calculated for 0.038 af (93% of inflow)
Center-of-Mass det. time= 769.3 min (1,593.7 - 824.5)

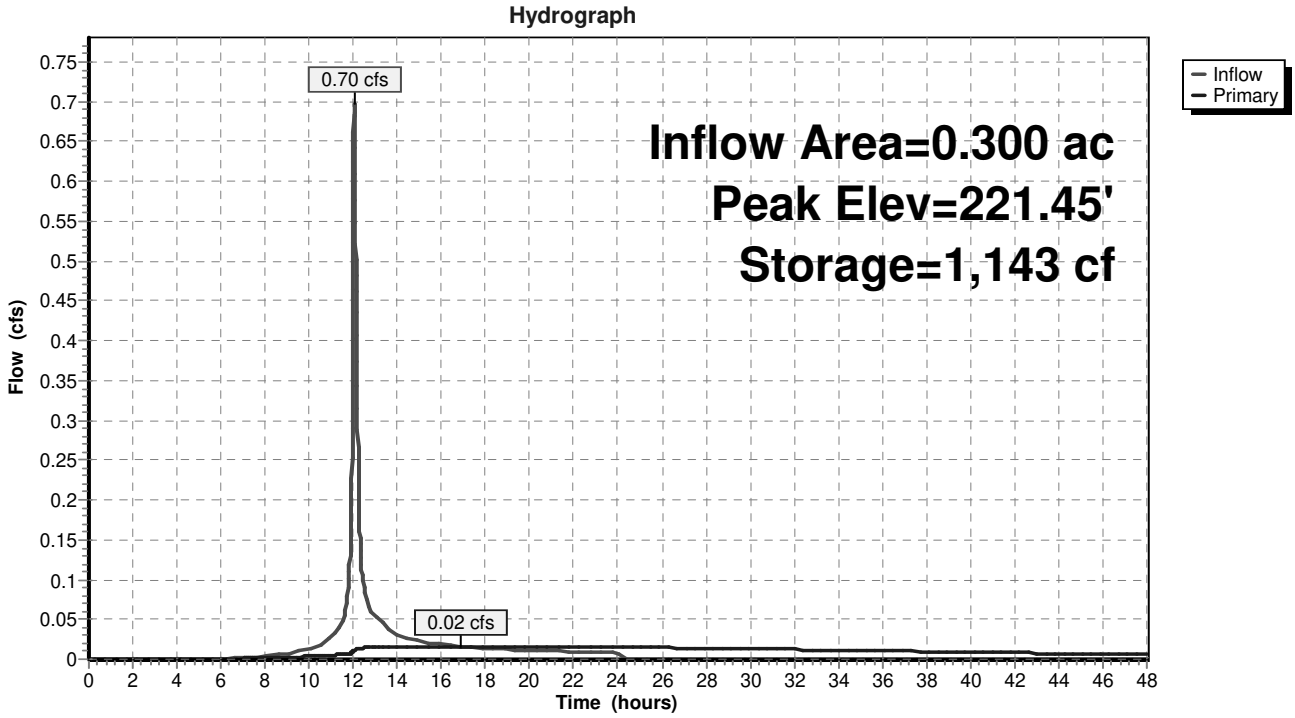
Volume	Invert	Avail.Storage	Storage Description
#1	220.00'	2,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
220.00	180	0	0
222.00	1,850	2,030	2,030

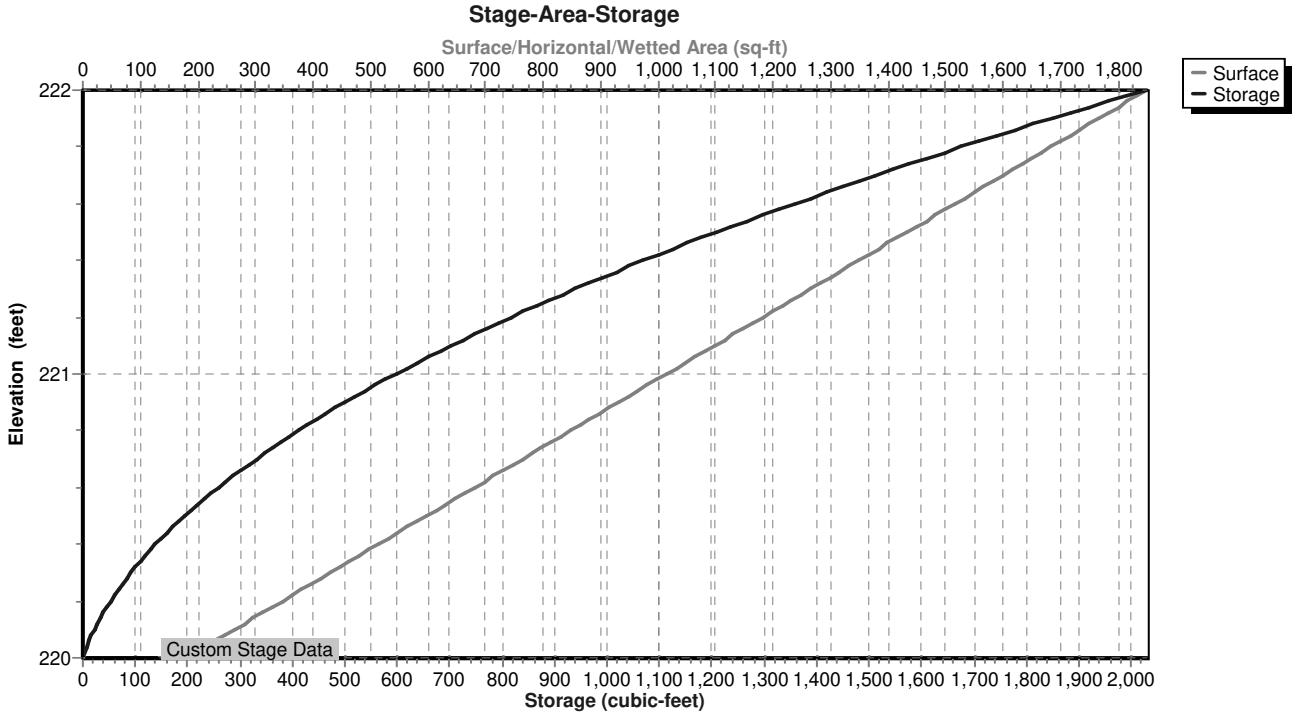
Device	Routing	Invert	Outlet Devices
#1	Primary	216.00'	**12.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 216.00' / 200.00' S= 0.3200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	216.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	221.50'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 4.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 2	220.00'	**0.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.02 cfs @ 16.87 hrs HW=221.45' (Free Discharge)
└─**1=Culvert** (Passes 0.02 cfs of 8.42 cfs potential flow)
  ├─**2=Orifice/Grate** (Passes 0.02 cfs of 0.55 cfs potential flow)
  │ └─**4=Exfiltration** (Exfiltration Controls 0.02 cfs)
  └─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1.2P: Dry Swale



Pond 1.2P: Dry Swale



Hydrograph for Pond 1.2P: Dry Swale

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	220.00	0.00
0.50	0.00	0	220.00	0.00
1.00	0.00	0	220.00	0.00
1.50	0.00	0	220.00	0.00
2.00	0.00	0	220.00	0.00
2.50	0.00	0	220.00	0.00
3.00	0.00	0	220.00	0.00
3.50	0.00	0	220.00	0.00
4.00	0.00	0	220.00	0.00
4.50	0.00	0	220.00	0.00
5.00	0.00	0	220.00	0.00
5.50	0.00	0	220.00	0.00
6.00	0.00	0	220.00	0.00
6.50	0.00	1	220.00	0.00
7.00	0.00	2	220.01	0.00
7.50	0.00	3	220.02	0.00
8.00	0.00	5	220.03	0.00
8.50	0.01	9	220.05	0.00
9.00	0.01	16	220.07	0.00
9.50	0.01	26	220.11	0.00
10.00	0.01	40	220.16	0.00
10.50	0.02	61	220.22	0.00
11.00	0.03	95	220.31	0.01
11.50	0.05	151	220.42	0.01
12.00	**0.58**	381	220.76	0.01
12.50	**0.09**	899	221.27	0.01
13.00	0.05	991	221.34	0.02
13.50	0.04	1,049	221.38	0.02
14.00	0.03	1,084	221.41	0.02
14.50	0.03	1,107	221.43	0.02
15.00	0.02	1,123	221.44	0.02
15.50	0.02	1,133	221.45	0.02
16.00	0.02	1,139	221.45	0.02
16.50	0.02	**1,142**	**221.45**	**0.02**
17.00	0.02	**1,143**	**221.45**	**0.02**
17.50	0.01	1,141	221.45	0.02
18.00	0.01	1,138	221.45	0.02
18.50	0.01	1,133	221.45	0.02
19.00	0.01	1,127	221.44	0.02
19.50	0.01	1,120	221.44	0.02
20.00	0.01	1,112	221.43	0.02
20.50	0.01	1,103	221.42	0.02
21.00	0.01	1,094	221.42	0.02
21.50	0.01	1,084	221.41	0.02
22.00	0.01	1,073	221.40	0.02
22.50	0.01	1,062	221.39	0.02
23.00	0.01	1,051	221.39	0.02
23.50	0.01	1,039	221.38	0.02
24.00	0.01	1,027	221.37	0.02
24.50	0.00	1,003	221.35	0.02
25.00	0.00	976	221.33	0.01
25.50	0.00	949	221.31	0.01
26.00	0.00	923	221.29	0.01
26.50	0.00	897	221.27	0.01
27.00	0.00	871	221.24	0.01
27.50	0.00	846	221.22	0.01
28.00	0.00	821	221.20	0.01
28.50	0.00	797	221.18	0.01
29.00	0.00	772	221.16	0.01
29.50	0.00	749	221.14	0.01
30.00	0.00	725	221.12	0.01
30.50	0.00	702	221.10	0.01
31.00	0.00	679	221.08	0.01
31.50	0.00	657	221.06	0.01
32.00	0.00	635	221.04	0.01
32.50	0.00	614	221.02	0.01
33.00	0.00	592	220.99	0.01
33.50	0.00	571	220.97	0.01
34.00	0.00	551	220.95	0.01
34.50	0.00	531	220.93	0.01
35.00	0.00	511	220.91	0.01
35.50	0.00	492	220.89	0.01
36.00	0.00	473	220.87	0.01
36.50	0.00	454	220.85	0.01
37.00	0.00	435	220.83	0.01
37.50	0.00	418	220.81	0.01
38.00	0.00	400	220.79	0.01
38.50	0.00	383	220.77	0.01
39.00	0.00	366	220.74	0.01
39.50	0.00	349	220.72	0.01
40.00	0.00	333	220.70	0.01
40.50	0.00	317	220.68	0.01
41.00	0.00	302	220.66	0.01
41.50	0.00	287	220.64	0.01
42.00	0.00	272	220.62	0.01
42.50	0.00	258	220.60	0.01
43.00	0.00	244	220.58	0.01
43.50	0.00	230	220.56	0.01
44.00	0.00	217	220.54	0.01
44.50	0.00	204	220.52	0.01
45.00	0.00	191	220.49	0.01
45.50	0.00	179	220.47	0.01
46.00	0.00	167	220.45	0.01
46.50	0.00	156	220.43	0.01
47.00	0.00	145	220.41	0.01
47.50	0.00	134	220.39	0.01
48.00	0.00	124	220.37	0.01

Summary for Pond 1.3P: Dry Swale

Inflow Area = 0.430 ac, 39.53% Impervious, Inflow Depth = 1.14" for 1-yr event
Inflow = 0.69 cfs @ 12.04 hrs, Volume= 0.041 af
Outflow = 0.04 cfs @ 13.86 hrs, Volume= 0.036 af, Atten= 94%, Lag= 109.0 min
Primary = 0.04 cfs @ 13.86 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 205.51' @ 13.86 hrs Surf.Area= 1,028 sf Storage= 1,015 cf

Plug-Flow detention time= 764.9 min calculated for 0.036 af (88% of inflow)
Center-of-Mass det. time= 704.9 min (1,561.2 - 856.3)

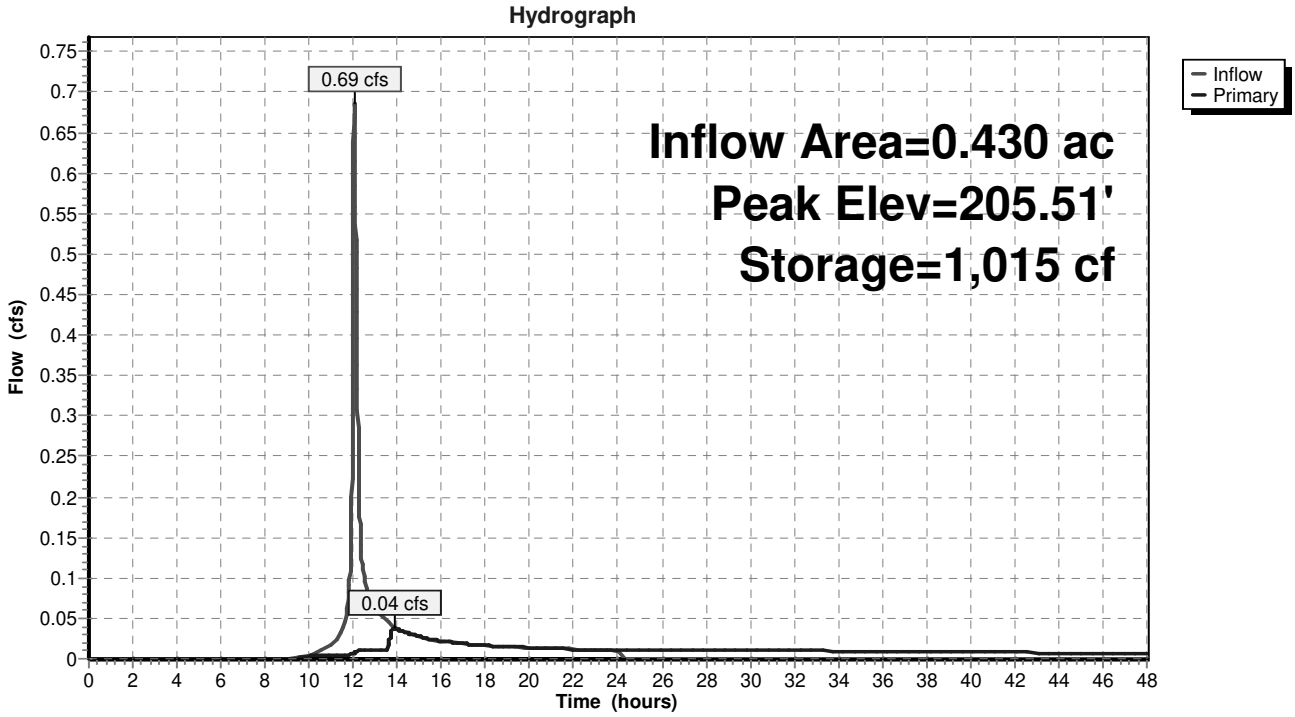
Volume	Invert	Avail.Storage	Storage Description
#1	204.00'	1,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
204.00	320	0	0
206.00	1,260	1,580	1,580

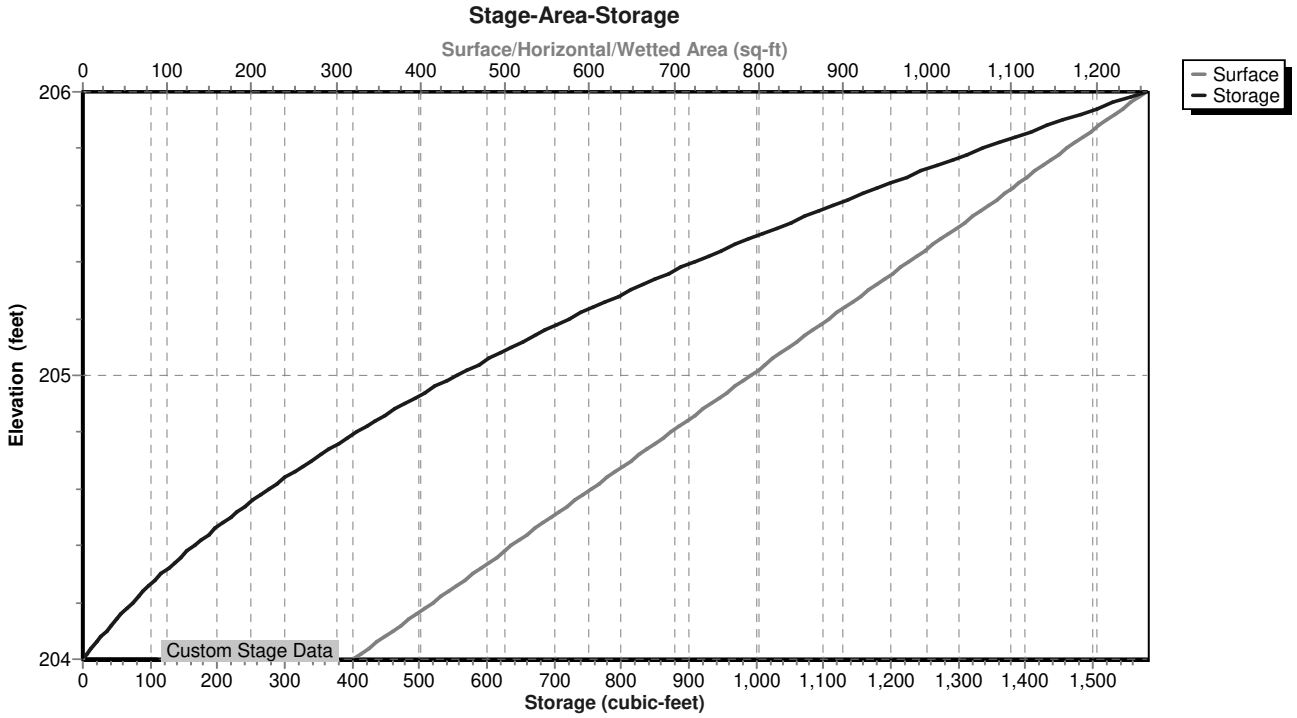
Device	Routing	Invert	Outlet Devices
#1	Primary	200.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	205.50'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 4.00**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	204.00'	**0.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.03 cfs @ 13.86 hrs HW=205.51' (Free Discharge)
- **1=Orifice/Grate** (Passes 0.01 cfs of 0.55 cfs potential flow)
  - **3=Exfiltration** (Exfiltration Controls 0.01 cfs)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.23 fps)

Pond 1.3P: Dry Swale



Pond 1.3P: Dry Swale



Hydrograph for Pond 1.3P: Dry Swale

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	204.00	0.00
0.50	0.00	0	204.00	0.00
1.00	0.00	0	204.00	0.00
1.50	0.00	0	204.00	0.00
2.00	0.00	0	204.00	0.00
2.50	0.00	0	204.00	0.00
3.00	0.00	0	204.00	0.00
3.50	0.00	0	204.00	0.00
4.00	0.00	0	204.00	0.00
4.50	0.00	0	204.00	0.00
5.00	0.00	0	204.00	0.00
5.50	0.00	0	204.00	0.00
6.00	0.00	0	204.00	0.00
6.50	0.00	0	204.00	0.00
7.00	0.00	0	204.00	0.00
7.50	0.00	0	204.00	0.00
8.00	0.00	0	204.00	0.00
8.50	0.00	0	204.00	0.00
9.00	0.00	0	204.00	0.00
9.50	0.00	2	204.01	0.00
10.00	0.01	5	204.02	0.00
10.50	0.01	11	204.03	0.00
11.00	0.02	28	204.08	0.00
11.50	0.04	65	204.18	0.00
12.00	**0.55**	262	204.58	0.01
12.50	**0.10**	805	205.29	0.01
13.00	0.06	918	205.41	0.01
13.50	0.05	**994**	**205.49**	**0.01**
14.00	0.04	**1,015**	**205.51**	**0.04**
14.50	0.03	1,014	205.51	0.03
15.00	0.03	1,013	205.50	0.03
15.50	0.02	1,012	205.50	0.02
16.00	0.02	1,011	205.50	0.02
16.50	0.02	1,011	205.50	0.02
17.00	0.02	1,011	205.50	0.02
17.50	0.02	1,010	205.50	0.02
18.00	0.02	1,010	205.50	0.02
18.50	0.02	1,010	205.50	0.02
19.00	0.01	1,010	205.50	0.01
19.50	0.01	1,009	205.50	0.01
20.00	0.01	1,009	205.50	0.01
20.50	0.01	1,009	205.50	0.01
21.00	0.01	1,009	205.50	0.01
21.50	0.01	1,009	205.50	0.01
22.00	0.01	1,009	205.50	0.01
22.50	0.01	1,008	205.50	0.01
23.00	0.01	1,007	205.50	0.01
23.50	0.01	1,005	205.50	0.01
24.00	0.01	1,003	205.49	0.01
24.50	0.00	985	205.48	0.01
25.00	0.00	964	205.46	0.01
25.50	0.00	943	205.44	0.01
26.00	0.00	923	205.41	0.01
26.50	0.00	902	205.39	0.01
27.00	0.00	882	205.37	0.01
27.50	0.00	862	205.35	0.01
28.00	0.00	842	205.33	0.01
28.50	0.00	823	205.31	0.01
29.00	0.00	803	205.29	0.01
29.50	0.00	784	205.27	0.01
30.00	0.00	765	205.25	0.01
30.50	0.00	746	205.23	0.01
31.00	0.00	728	205.21	0.01
31.50	0.00	709	205.19	0.01
32.00	0.00	691	205.16	0.01
32.50	0.00	673	205.14	0.01
33.00	0.00	655	205.12	0.01
33.50	0.00	638	205.10	0.01
34.00	0.00	621	205.08	0.01
34.50	0.00	603	205.06	0.01
35.00	0.00	586	205.04	0.01
35.50	0.00	570	205.02	0.01
36.00	0.00	553	205.00	0.01
36.50	0.00	537	204.98	0.01
37.00	0.00	521	204.96	0.01
37.50	0.00	505	204.94	0.01
38.00	0.00	489	204.91	0.01
38.50	0.00	474	204.89	0.01
39.00	0.00	458	204.87	0.01
39.50	0.00	443	204.85	0.01
40.00	0.00	428	204.83	0.01
40.50	0.00	414	204.81	0.01
41.00	0.00	399	204.79	0.01
41.50	0.00	385	204.77	0.01
42.00	0.00	371	204.75	0.01
42.50	0.00	357	204.73	0.01
43.00	0.00	343	204.71	0.01
43.50	0.00	330	204.69	0.01
44.00	0.00	316	204.66	0.01
44.50	0.00	303	204.64	0.01
45.00	0.00	290	204.62	0.01
45.50	0.00	278	204.60	0.01
46.00	0.00	265	204.58	0.01
46.50	0.00	253	204.56	0.01
47.00	0.00	241	204.54	0.01
47.50	0.00	229	204.52	0.01
48.00	0.00	217	204.50	0.01

Summary for Pond 2R: Overflow

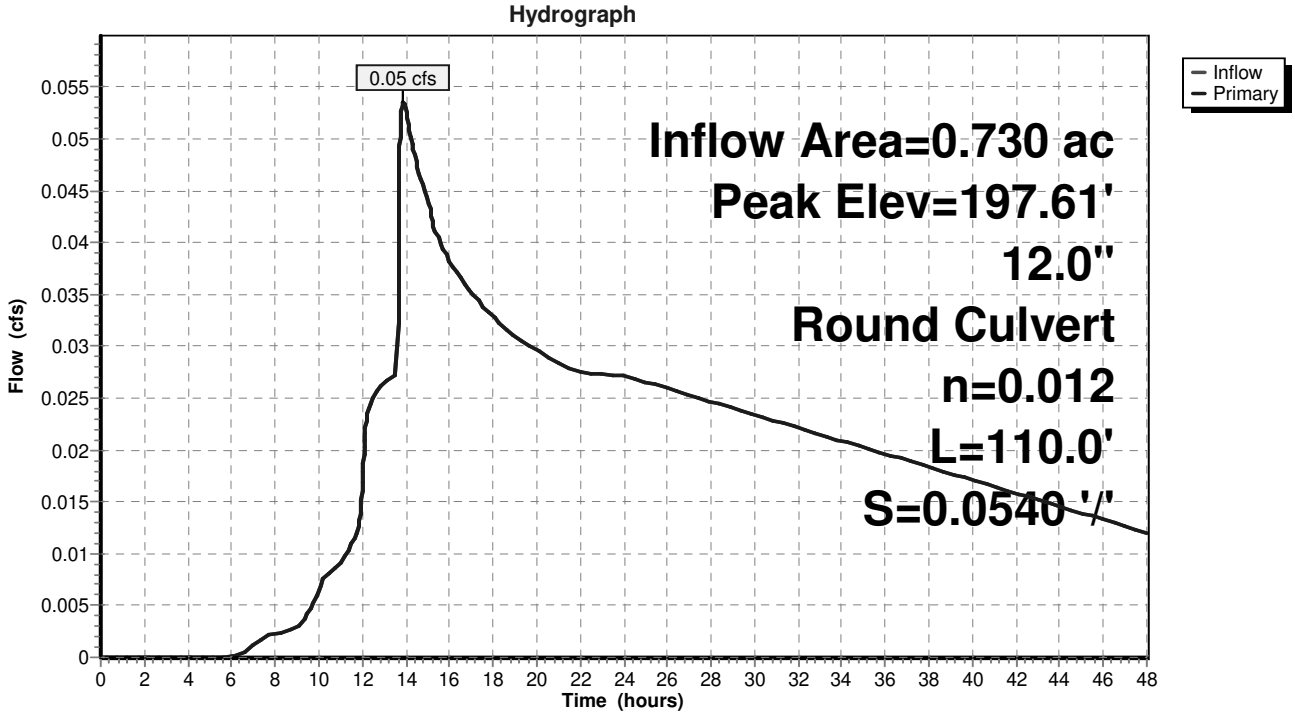
Inflow Area = 0.730 ac, 50.68% Impervious, Inflow Depth > 1.21" for 1-yr event
Inflow = 0.05 cfs @ 13.86 hrs, Volume= 0.074 af
Outflow = 0.05 cfs @ 13.86 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 13.86 hrs, Volume= 0.074 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 197.61' @ 13.86 hrs

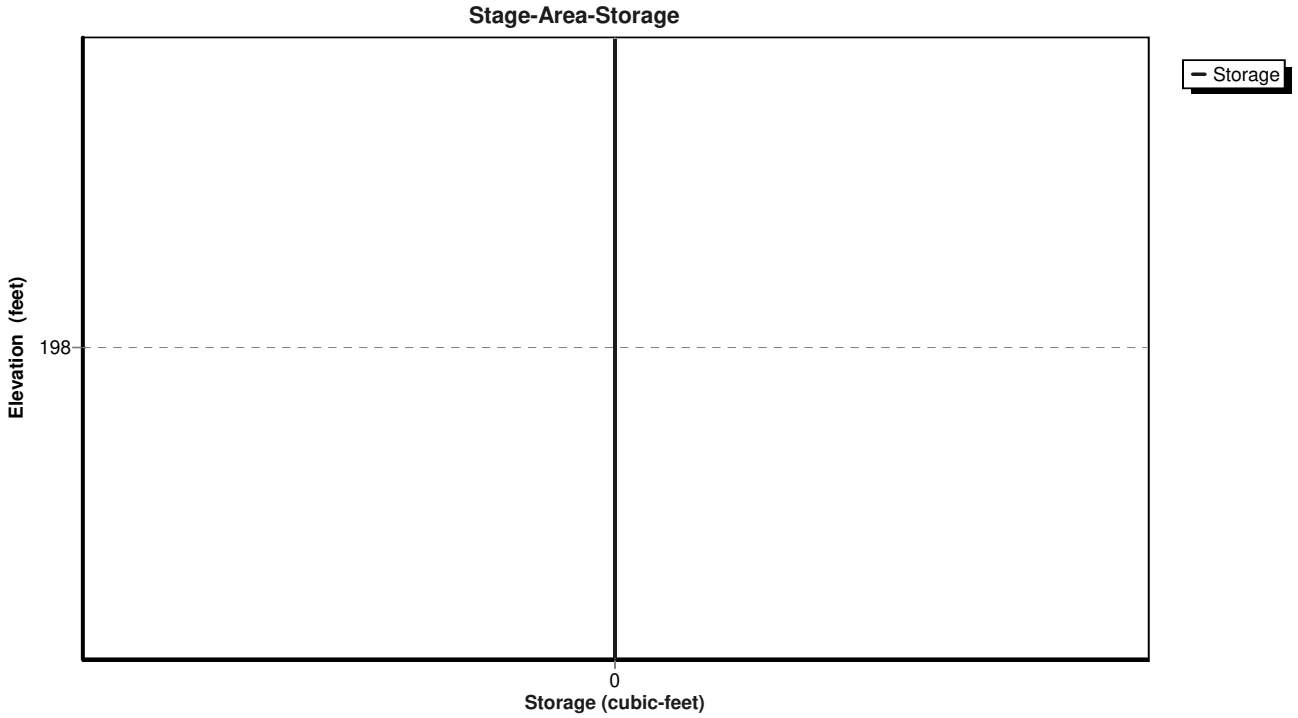
Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	**12.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 197.50' / 191.56' S= 0.0540 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.05 cfs @ 13.86 hrs HW=197.61' (Free Discharge)
└─**1=Culvert** (Inlet Controls 0.05 cfs @ 1.13 fps)

Pond 2R: Overflow



Pond 2R: Overflow



Hydrograph for Pond 2R: Overflow

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	197.50	0.00
0.50	0.00	197.50	0.00
1.00	0.00	197.50	0.00
1.50	0.00	197.50	0.00
2.00	0.00	197.50	0.00
2.50	0.00	197.50	0.00
3.00	0.00	197.50	0.00
3.50	0.00	197.50	0.00
4.00	0.00	197.50	0.00
4.50	0.00	197.50	0.00
5.00	0.00	197.50	0.00
5.50	0.00	197.50	0.00
6.00	0.00	197.50	0.00
6.50	0.00	197.51	0.00
7.00	0.00	197.52	0.00
7.50	0.00	197.52	0.00
8.00	0.00	197.52	0.00
8.50	0.00	197.52	0.00
9.00	0.00	197.52	0.00
9.50	0.00	197.53	0.00
10.00	0.01	197.54	0.01
10.50	0.01	197.54	0.01
11.00	0.01	197.55	0.01
11.50	0.01	197.55	0.01
12.00	0.02	197.56	0.02
12.50	0.03	197.58	0.03
13.00	0.03	197.58	0.03
13.50	**0.03**	**197.58**	**0.03**
14.00	**0.05**	**197.61**	**0.05**
14.50	0.05	197.60	0.05
15.00	0.04	197.60	0.04
15.50	0.04	197.60	0.04
16.00	0.04	197.59	0.04
16.50	0.04	197.59	0.04
17.00	0.04	197.59	0.04
17.50	0.03	197.59	0.03
18.00	0.03	197.59	0.03
18.50	0.03	197.58	0.03
19.00	0.03	197.58	0.03
19.50	0.03	197.58	0.03
20.00	0.03	197.58	0.03
20.50	0.03	197.58	0.03
21.00	0.03	197.58	0.03
21.50	0.03	197.58	0.03
22.00	0.03	197.58	0.03
22.50	0.03	197.58	0.03
23.00	0.03	197.58	0.03
23.50	0.03	197.58	0.03
24.00	0.03	197.58	0.03
24.50	0.03	197.58	0.03
25.00	0.03	197.58	0.03
25.50	0.03	197.58	0.03
26.00	0.03	197.58	0.03
26.50	0.03	197.58	0.03
27.00	0.03	197.58	0.03
27.50	0.02	197.57	0.02
28.00	0.02	197.57	0.02
28.50	0.02	197.57	0.02
29.00	0.02	197.57	0.02
29.50	0.02	197.57	0.02
30.00	0.02	197.57	0.02
30.50	0.02	197.57	0.02
31.00	0.02	197.57	0.02
31.50	0.02	197.57	0.02
32.00	0.02	197.57	0.02
32.50	0.02	197.57	0.02
33.00	0.02	197.57	0.02
33.50	0.02	197.57	0.02
34.00	0.02	197.57	0.02
34.50	0.02	197.57	0.02
35.00	0.02	197.57	0.02
35.50	0.02	197.57	0.02
36.00	0.02	197.57	0.02
36.50	0.02	197.57	0.02
37.00	0.02	197.57	0.02
37.50	0.02	197.56	0.02
38.00	0.02	197.56	0.02
38.50	0.02	197.56	0.02
39.00	0.02	197.56	0.02
39.50	0.02	197.56	0.02
40.00	0.02	197.56	0.02
40.50	0.02	197.56	0.02
41.00	0.02	197.56	0.02
41.50	0.02	197.56	0.02
42.00	0.02	197.56	0.02
42.50	0.02	197.56	0.02
43.00	0.02	197.56	0.02
43.50	0.01	197.56	0.01
44.00	0.01	197.56	0.01
44.50	0.01	197.56	0.01
45.00	0.01	197.56	0.01
45.50	0.01	197.56	0.01
46.00	0.01	197.55	0.01
46.50	0.01	197.55	0.01
47.00	0.01	197.55	0.01
47.50	0.01	197.55	0.01
48.00	0.01	197.55	0.01

Summary for Subcatchment 1.0A: 100

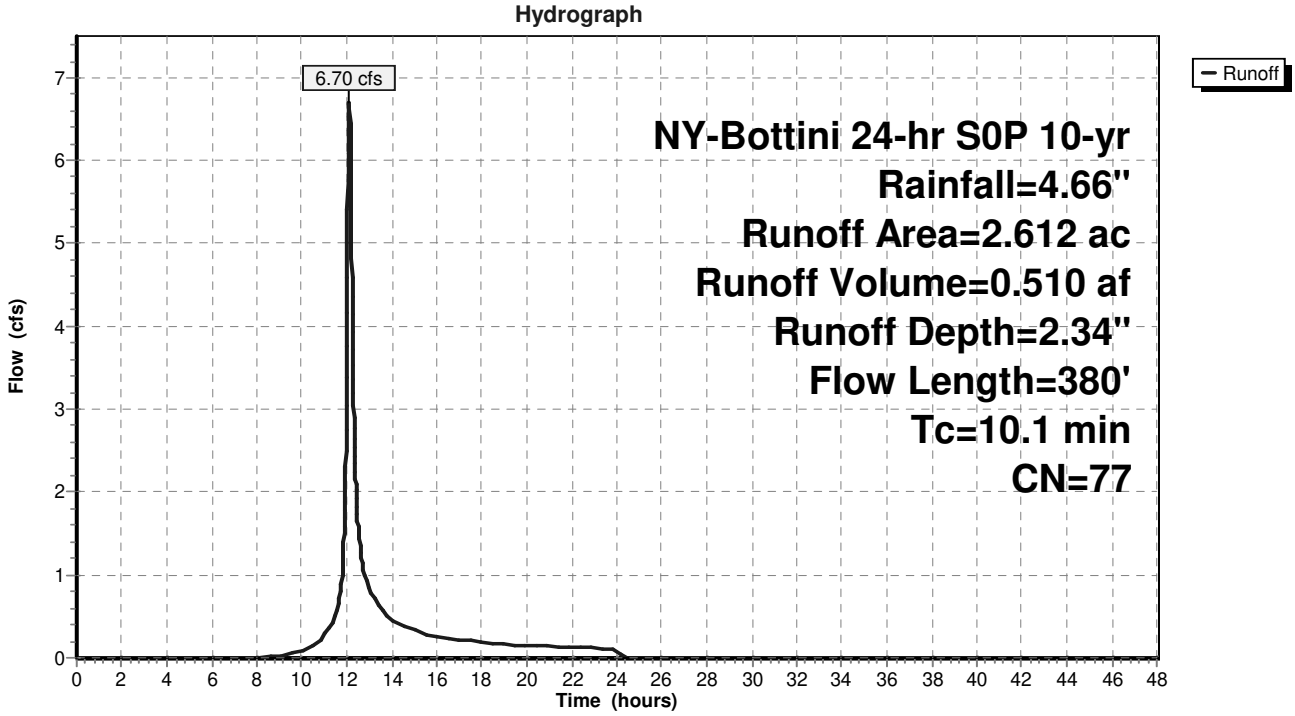
Runoff = 6.70 cfs @ 12.10 hrs, Volume= 0.510 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.096	98	Paved parking, HSG A
0.017	89	Gravel roads, HSG C
0.406	74	>75% Grass cover, Good, HSG C
1.373	79	50-75% Grass cover, Fair, HSG C
0.720	73	Woods, Fair, HSG C
2.612	77	Weighted Average
2.516		96.32% Pervious Area
0.096		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
0.4	50	0.0750	1.92		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	120	0.1330	1.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	90	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	20	0.3300	8.62		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.1	380	Total			

Subcatchment 1.0A: 100



Hydrograph for Subcatchment 1.0A: 100

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.00	0.00
8.00	0.60	0.00	0.00
8.50	0.66	0.00	0.01
9.00	0.73	0.01	0.03
9.50	0.81	0.01	0.05
10.00	0.91	0.03	0.09
10.50	1.03	0.05	0.14
11.00	1.20	0.10	0.27
11.50	1.45	0.19	0.51
12.00	2.52	0.76	**3.76**
12.50	3.24	1.24	**1.60**
13.00	3.47	1.41	0.83
13.50	3.64	1.54	0.63
14.00	3.76	1.62	0.45
14.50	3.85	1.70	0.38
15.00	3.94	1.76	0.34
15.50	4.01	1.82	0.28
16.00	4.07	1.87	0.25
16.50	4.12	1.91	0.23
17.00	4.18	1.95	0.21
17.50	4.23	1.99	0.20
18.00	4.27	2.03	0.19
18.50	4.31	2.06	0.17
19.00	4.35	2.09	0.16
19.50	4.39	2.12	0.16
20.00	4.42	2.15	0.15
20.50	4.46	2.18	0.14
21.00	4.49	2.20	0.14
21.50	4.52	2.23	0.13
22.00	4.55	2.25	0.13
22.50	4.58	2.28	0.12
23.00	4.61	2.30	0.12
23.50	4.63	2.32	0.12
24.00	**4.66**	**2.34**	0.11
24.50	4.66	2.34	0.00
25.00	4.66	2.34	0.00
25.50	4.66	2.34	0.00
26.00	4.66	2.34	0.00
26.50	4.66	2.34	0.00
27.00	4.66	2.34	0.00
27.50	4.66	2.34	0.00
28.00	4.66	2.34	0.00
28.50	4.66	2.34	0.00
29.00	4.66	2.34	0.00
29.50	4.66	2.34	0.00
30.00	4.66	2.34	0.00
30.50	4.66	2.34	0.00
31.00	4.66	2.34	0.00
31.50	4.66	2.34	0.00
32.00	4.66	2.34	0.00
32.50	4.66	2.34	0.00
33.00	4.66	2.34	0.00
33.50	4.66	2.34	0.00
34.00	4.66	2.34	0.00
34.50	4.66	2.34	0.00
35.00	4.66	2.34	0.00
35.50	4.66	2.34	0.00
36.00	4.66	2.34	0.00
36.50	4.66	2.34	0.00
37.00	4.66	2.34	0.00
37.50	4.66	2.34	0.00
38.00	4.66	2.34	0.00
38.50	4.66	2.34	0.00
39.00	4.66	2.34	0.00
39.50	4.66	2.34	0.00
40.00	4.66	2.34	0.00
40.50	4.66	2.34	0.00
41.00	4.66	2.34	0.00
41.50	4.66	2.34	0.00
42.00	4.66	2.34	0.00
42.50	4.66	2.34	0.00
43.00	4.66	2.34	0.00
43.50	4.66	2.34	0.00
44.00	4.66	2.34	0.00
44.50	4.66	2.34	0.00
45.00	4.66	2.34	0.00
45.50	4.66	2.34	0.00
46.00	4.66	2.34	0.00
46.50	4.66	2.34	0.00
47.00	4.66	2.34	0.00
47.50	4.66	2.34	0.00
48.00	4.66	2.34	0.00

Summary for Subcatchment 1.0B: 101

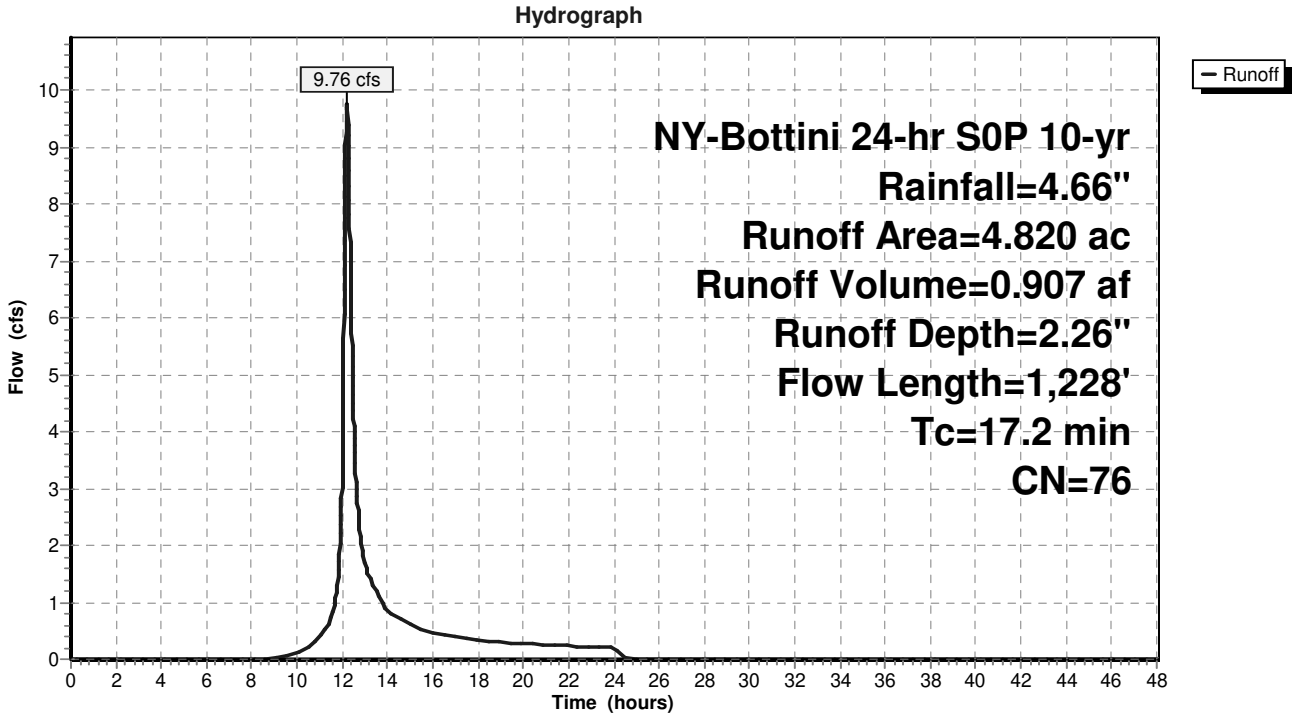
Runoff = 9.76 cfs @ 12.21 hrs, Volume= 0.907 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.807	74	>75% Grass cover, Good, HSG C
2.025	79	50-75% Grass cover, Fair, HSG C
0.943	73	Woods, Fair, HSG C
1.045	73	Woods, Fair, HSG C
4.820	76	Weighted Average
4.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
1.3	150	0.0730	1.89		**Shallow Concentrated Flow, B-Slope** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.3200	3.96		**Shallow Concentrated Flow, Slope-Swale** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0160	4.46	22.30	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.030
1.0	225	0.0105	3.92	27.42	**Trap/Vee/Rect Channel Flow, Swale-D** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
0.2	121	0.0740	10.40	72.79	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
5.6	346	0.0430	1.04		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
0.2	36	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, F-G** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
17.2	1,228	Total			

Subcatchment 1.0B: 101



Hydrograph for Subcatchment 1.0B: 101

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.00	0.00
8.00	0.60	0.00	0.00
8.50	0.66	0.00	0.00
9.00	0.73	0.00	0.02
9.50	0.81	0.01	0.07
10.00	0.91	0.02	0.12
10.50	1.03	0.04	0.21
11.00	1.20	0.09	0.40
11.50	1.45	0.17	0.76
12.00	2.52	0.71	**3.50**
12.50	3.24	1.18	**4.23**
13.00	3.47	1.35	1.66
13.50	3.64	1.47	1.20
14.00	3.76	1.55	0.85
14.50	3.85	1.63	0.71
15.00	3.94	1.69	0.63
15.50	4.01	1.74	0.51
16.00	4.07	1.79	0.46
16.50	4.12	1.83	0.43
17.00	4.18	1.88	0.39
17.50	4.23	1.91	0.37
18.00	4.27	1.95	0.35
18.50	4.31	1.98	0.32
19.00	4.35	2.01	0.30
19.50	4.39	2.04	0.29
20.00	4.42	2.07	0.27
20.50	4.46	2.10	0.26
21.00	4.49	2.12	0.25
21.50	4.52	2.15	0.24
22.00	4.55	2.17	0.23
22.50	4.58	2.19	0.22
23.00	4.61	2.22	0.22
23.50	4.63	2.24	0.21
24.00	**4.66**	**2.26**	0.20
24.50	4.66	2.26	0.01
25.00	4.66	2.26	0.00
25.50	4.66	2.26	0.00
26.00	4.66	2.26	0.00
26.50	4.66	2.26	0.00
27.00	4.66	2.26	0.00
27.50	4.66	2.26	0.00
28.00	4.66	2.26	0.00
28.50	4.66	2.26	0.00
29.00	4.66	2.26	0.00
29.50	4.66	2.26	0.00
30.00	4.66	2.26	0.00
30.50	4.66	2.26	0.00
31.00	4.66	2.26	0.00
31.50	4.66	2.26	0.00
32.00	4.66	2.26	0.00
32.50	4.66	2.26	0.00
33.00	4.66	2.26	0.00
33.50	4.66	2.26	0.00
34.00	4.66	2.26	0.00
34.50	4.66	2.26	0.00
35.00	4.66	2.26	0.00
35.50	4.66	2.26	0.00
36.00	4.66	2.26	0.00
36.50	4.66	2.26	0.00
37.00	4.66	2.26	0.00
37.50	4.66	2.26	0.00
38.00	4.66	2.26	0.00
38.50	4.66	2.26	0.00
39.00	4.66	2.26	0.00
39.50	4.66	2.26	0.00
40.00	4.66	2.26	0.00
40.50	4.66	2.26	0.00
41.00	4.66	2.26	0.00
41.50	4.66	2.26	0.00
42.00	4.66	2.26	0.00
42.50	4.66	2.26	0.00
43.00	4.66	2.26	0.00
43.50	4.66	2.26	0.00
44.00	4.66	2.26	0.00
44.50	4.66	2.26	0.00
45.00	4.66	2.26	0.00
45.50	4.66	2.26	0.00
46.00	4.66	2.26	0.00
46.50	4.66	2.26	0.00
47.00	4.66	2.26	0.00
47.50	4.66	2.26	0.00
48.00	4.66	2.26	0.00

Summary for Subcatchment 1.0C: 103

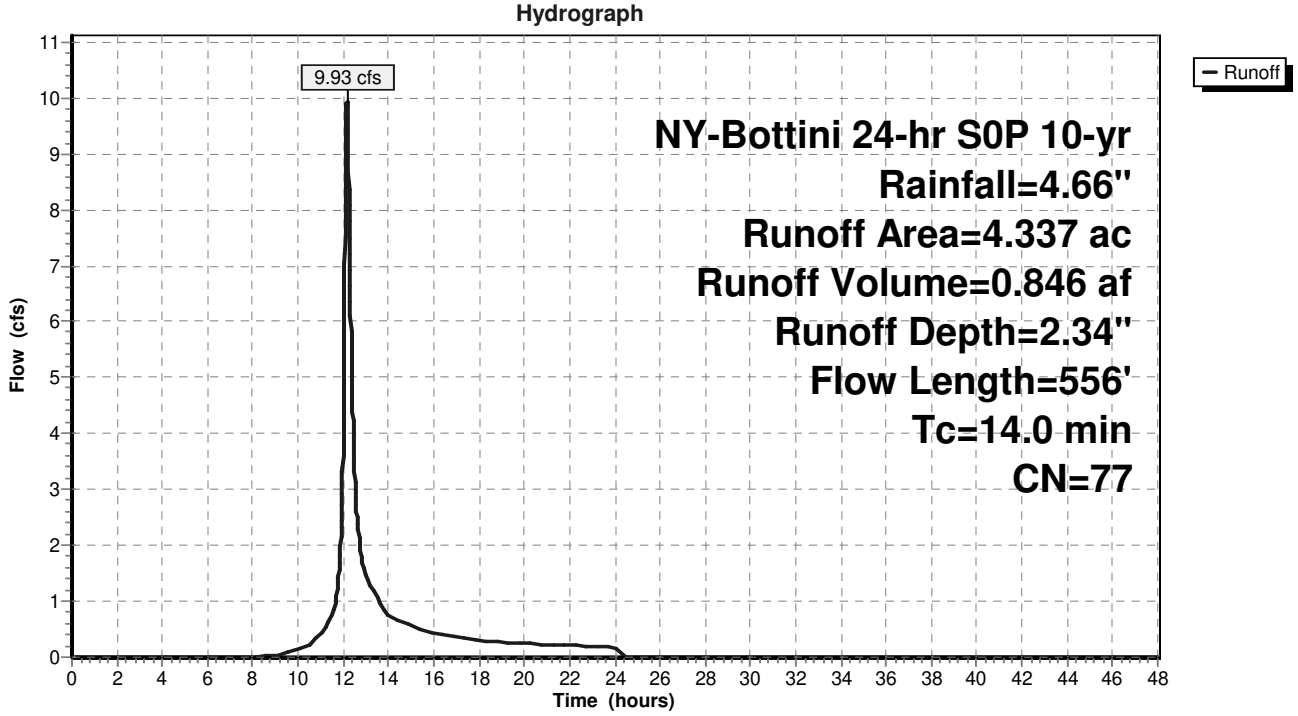
Runoff = 9.93 cfs @ 12.16 hrs, Volume= 0.846 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.400	74	>75% Grass cover, Good, HSG C
0.093	80	>75% Grass cover, Good, HSG D
0.882	73	Woods, Fair, HSG C
2.962	79	Woods, Fair, HSG D
4.337	77	Weighted Average
4.337		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	46	0.2390	0.41		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
5.8	44	0.0910	0.13		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.50"
5.4	316	0.0380	0.97		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	150	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
14.0	556	Total			

Subcatchment 1.0C: 103



Hydrograph for Subcatchment 1.0C: 103

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.00	0.00
8.00	0.60	0.00	0.00
8.50	0.66	0.00	0.01
9.00	0.73	0.01	0.04
9.50	0.81	0.01	0.08
10.00	0.91	0.03	0.14
10.50	1.03	0.05	0.22
11.00	1.20	0.10	0.42
11.50	1.45	0.19	0.78
12.00	2.52	0.76	**4.25**
12.50	3.24	1.24	**3.28**
13.00	3.47	1.41	1.45
13.50	3.64	1.54	1.08
14.00	3.76	1.62	0.76
14.50	3.85	1.70	0.65
15.00	3.94	1.76	0.57
15.50	4.01	1.82	0.47
16.00	4.07	1.87	0.42
16.50	4.12	1.91	0.39
17.00	4.18	1.95	0.36
17.50	4.23	1.99	0.34
18.00	4.27	2.03	0.32
18.50	4.31	2.06	0.29
19.00	4.35	2.09	0.27
19.50	4.39	2.12	0.26
20.00	4.42	2.15	0.25
20.50	4.46	2.18	0.24
21.00	4.49	2.20	0.23
21.50	4.52	2.23	0.22
22.00	4.55	2.25	0.21
22.50	4.58	2.28	0.20
23.00	4.61	2.30	0.20
23.50	4.63	2.32	0.19
24.00	**4.66**	**2.34**	0.19
24.50	4.66	2.34	0.00
25.00	4.66	2.34	0.00
25.50	4.66	2.34	0.00
26.00	4.66	2.34	0.00
26.50	4.66	2.34	0.00
27.00	4.66	2.34	0.00
27.50	4.66	2.34	0.00
28.00	4.66	2.34	0.00
28.50	4.66	2.34	0.00
29.00	4.66	2.34	0.00
29.50	4.66	2.34	0.00
30.00	4.66	2.34	0.00
30.50	4.66	2.34	0.00
31.00	4.66	2.34	0.00
31.50	4.66	2.34	0.00
32.00	4.66	2.34	0.00
32.50	4.66	2.34	0.00
33.00	4.66	2.34	0.00
33.50	4.66	2.34	0.00
34.00	4.66	2.34	0.00
34.50	4.66	2.34	0.00
35.00	4.66	2.34	0.00
35.50	4.66	2.34	0.00
36.00	4.66	2.34	0.00
36.50	4.66	2.34	0.00
37.00	4.66	2.34	0.00
37.50	4.66	2.34	0.00
38.00	4.66	2.34	0.00
38.50	4.66	2.34	0.00
39.00	4.66	2.34	0.00
39.50	4.66	2.34	0.00
40.00	4.66	2.34	0.00
40.50	4.66	2.34	0.00
41.00	4.66	2.34	0.00
41.50	4.66	2.34	0.00
42.00	4.66	2.34	0.00
42.50	4.66	2.34	0.00
43.00	4.66	2.34	0.00
43.50	4.66	2.34	0.00
44.00	4.66	2.34	0.00
44.50	4.66	2.34	0.00
45.00	4.66	2.34	0.00
45.50	4.66	2.34	0.00
46.00	4.66	2.34	0.00
46.50	4.66	2.34	0.00
47.00	4.66	2.34	0.00
47.50	4.66	2.34	0.00
48.00	4.66	2.34	0.00

Summary for Subcatchment 1.1S: 102

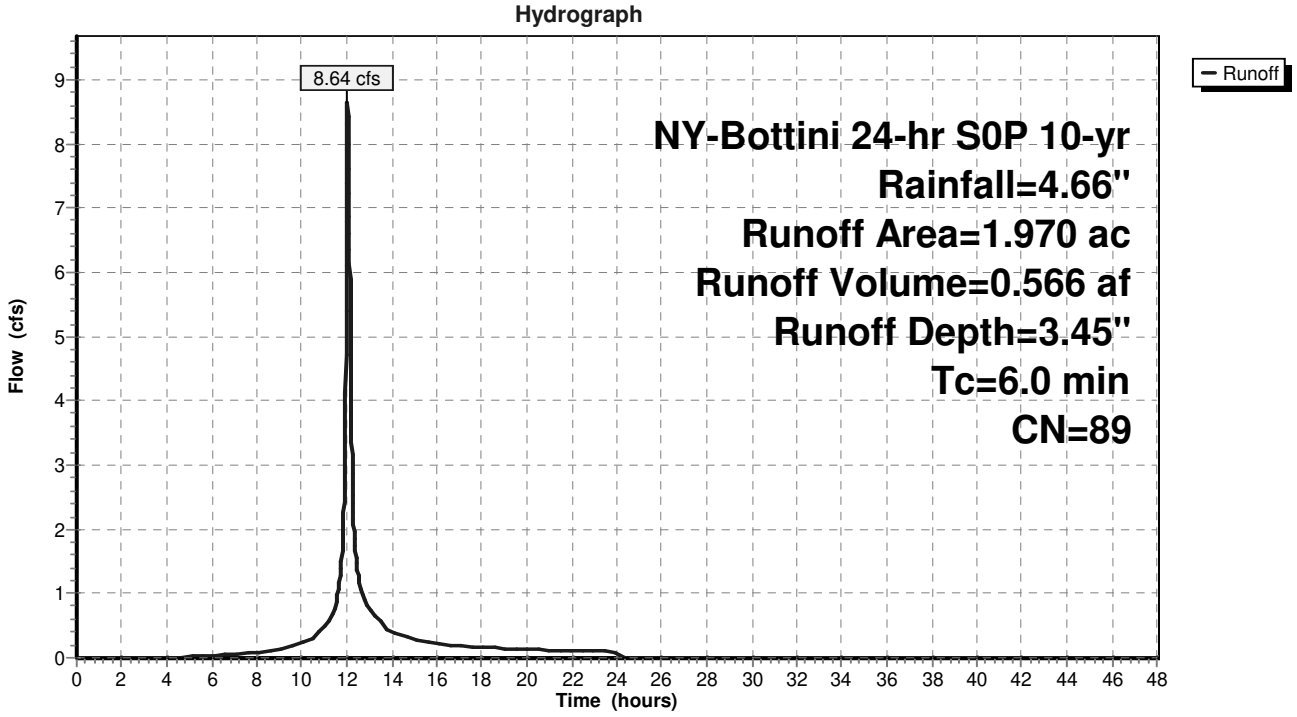
Runoff = 8.64 cfs @ 12.04 hrs, Volume= 0.566 af, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
1.219	98	Paved parking, HSG A
0.028	89	Gravel roads, HSG C
0.684	74	>75% Grass cover, Good, HSG C
0.039	79	50-75% Grass cover, Fair, HSG C
1.970	89	Weighted Average
0.751		38.12% Pervious Area
1.219		61.88% Impervious Area

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

Subcatchment 1.1S: 102



Hydrograph for Subcatchment 1.1S: 102

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.01
5.50	0.35	0.01	0.02
6.00	0.39	0.01	0.03
6.50	0.44	0.03	0.04
7.00	0.49	0.04	0.06
7.50	0.54	0.06	0.07
8.00	0.60	0.08	0.09
8.50	0.66	0.10	0.11
9.00	0.73	0.13	0.14
9.50	0.81	0.18	0.18
10.00	0.91	0.23	0.23
10.50	1.03	0.30	0.31
11.00	1.20	0.42	0.50
11.50	1.45	0.59	0.83
12.00	2.52	1.48	**7.39**
12.50	3.24	2.12	**1.34**
13.00	3.47	2.33	0.75
13.50	3.64	2.49	0.57
14.00	3.76	2.59	0.40
14.50	3.85	2.69	0.34
15.00	3.94	2.76	0.30
15.50	4.01	2.83	0.25
16.00	4.07	2.89	0.22
16.50	4.12	2.94	0.21
17.00	4.18	2.99	0.19
17.50	4.23	3.04	0.18
18.00	4.27	3.08	0.17
18.50	4.31	3.12	0.15
19.00	4.35	3.15	0.14
19.50	4.39	3.19	0.14
20.00	4.42	3.22	0.13
20.50	4.46	3.25	0.13
21.00	4.49	3.29	0.12
21.50	4.52	3.31	0.12
22.00	4.55	3.34	0.11
22.50	4.58	3.37	0.11
23.00	4.61	3.40	0.10
23.50	4.63	3.42	0.10
24.00	**4.66**	**3.45**	0.10
24.50	4.66	3.45	0.00
25.00	4.66	3.45	0.00
25.50	4.66	3.45	0.00
26.00	4.66	3.45	0.00
26.50	4.66	3.45	0.00
27.00	4.66	3.45	0.00
27.50	4.66	3.45	0.00
28.00	4.66	3.45	0.00
28.50	4.66	3.45	0.00
29.00	4.66	3.45	0.00
29.50	4.66	3.45	0.00
30.00	4.66	3.45	0.00
30.50	4.66	3.45	0.00
31.00	4.66	3.45	0.00
31.50	4.66	3.45	0.00
32.00	4.66	3.45	0.00
32.50	4.66	3.45	0.00
33.00	4.66	3.45	0.00
33.50	4.66	3.45	0.00
34.00	4.66	3.45	0.00
34.50	4.66	3.45	0.00
35.00	4.66	3.45	0.00
35.50	4.66	3.45	0.00
36.00	4.66	3.45	0.00
36.50	4.66	3.45	0.00
37.00	4.66	3.45	0.00
37.50	4.66	3.45	0.00
38.00	4.66	3.45	0.00
38.50	4.66	3.45	0.00
39.00	4.66	3.45	0.00
39.50	4.66	3.45	0.00
40.00	4.66	3.45	0.00
40.50	4.66	3.45	0.00
41.00	4.66	3.45	0.00
41.50	4.66	3.45	0.00
42.00	4.66	3.45	0.00
42.50	4.66	3.45	0.00
43.00	4.66	3.45	0.00
43.50	4.66	3.45	0.00
44.00	4.66	3.45	0.00
44.50	4.66	3.45	0.00
45.00	4.66	3.45	0.00
45.50	4.66	3.45	0.00
46.00	4.66	3.45	0.00
46.50	4.66	3.45	0.00
47.00	4.66	3.45	0.00
47.50	4.66	3.45	0.00
48.00	4.66	3.45	0.00

Summary for Subcatchment 1.2S: 100.1

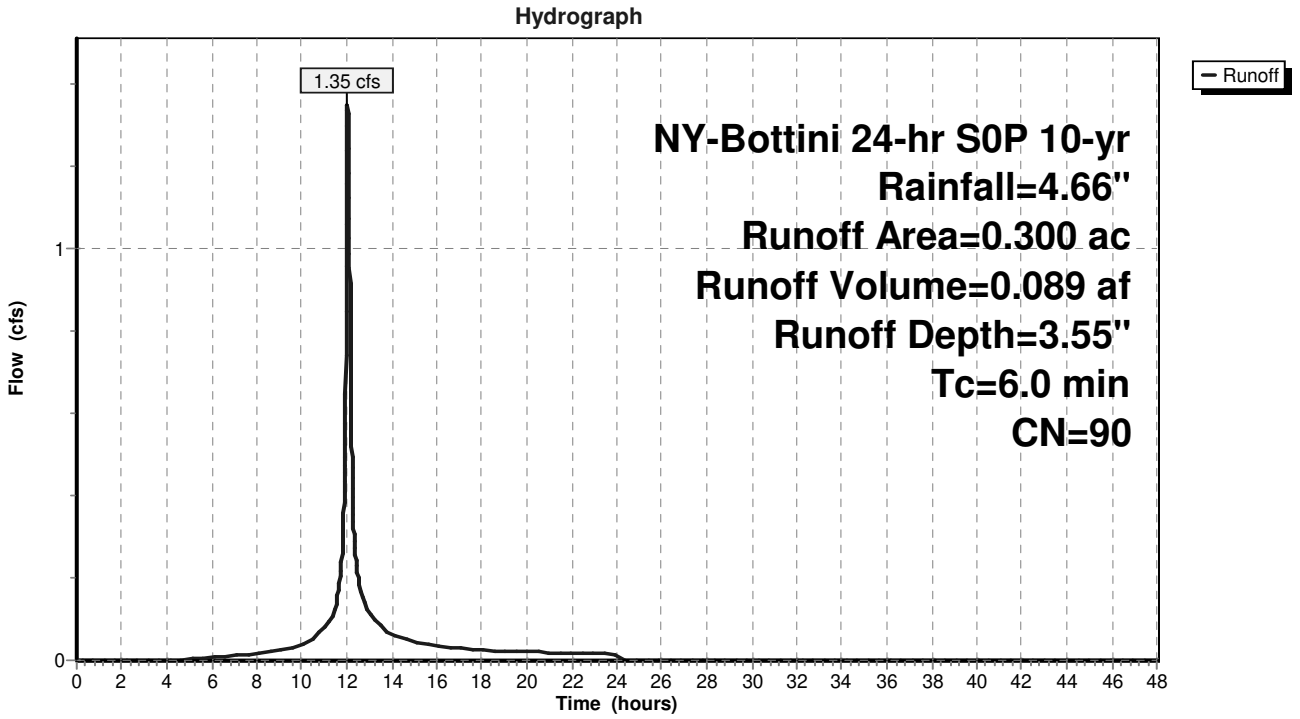
Runoff = 1.35 cfs @ 12.04 hrs, Volume= 0.089 af, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.200	98	Paved parking, HSG A
0.100	74	>75% Grass cover, Good, HSG C
0.300	90	Weighted Average
0.100		33.33% Pervious Area
0.200		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC 6 min path**

Subcatchment 1.2S: 100.1



Hydrograph for Subcatchment 1.2S: 100.1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.01	0.00
5.50	0.35	0.01	0.00
6.00	0.39	0.02	0.01
6.50	0.44	0.03	0.01
7.00	0.49	0.05	0.01
7.50	0.54	0.07	0.01
8.00	0.60	0.09	0.02
8.50	0.66	0.12	0.02
9.00	0.73	0.16	0.02
9.50	0.81	0.21	0.03
10.00	0.91	0.26	0.04
10.50	1.03	0.34	0.05
11.00	1.20	0.46	0.08
11.50	1.45	0.64	0.13
12.00	2.52	1.55	**1.15**
12.50	3.24	2.20	**0.21**
13.00	3.47	2.42	0.11
13.50	3.64	2.58	0.09
14.00	3.76	2.69	0.06
14.50	3.85	2.78	0.05
15.00	3.94	2.86	0.05
15.50	4.01	2.92	0.04
16.00	4.07	2.98	0.03
16.50	4.12	3.04	0.03
17.00	4.18	3.09	0.03
17.50	4.23	3.13	0.03
18.00	4.27	3.18	0.03
18.50	4.31	3.22	0.02
19.00	4.35	3.25	0.02
19.50	4.39	3.29	0.02
20.00	4.42	3.32	0.02
20.50	4.46	3.36	0.02
21.00	4.49	3.39	0.02
21.50	4.52	3.42	0.02
22.00	4.55	3.44	0.02
22.50	4.58	3.47	0.02
23.00	4.61	3.50	0.02
23.50	4.63	3.52	0.02
24.00	**4.66**	**3.55**	0.01
24.50	4.66	3.55	0.00
25.00	4.66	3.55	0.00
25.50	4.66	3.55	0.00
26.00	4.66	3.55	0.00
26.50	4.66	3.55	0.00
27.00	4.66	3.55	0.00
27.50	4.66	3.55	0.00
28.00	4.66	3.55	0.00
28.50	4.66	3.55	0.00
29.00	4.66	3.55	0.00
29.50	4.66	3.55	0.00
30.00	4.66	3.55	0.00
30.50	4.66	3.55	0.00
31.00	4.66	3.55	0.00
31.50	4.66	3.55	0.00
32.00	4.66	3.55	0.00
32.50	4.66	3.55	0.00
33.00	4.66	3.55	0.00
33.50	4.66	3.55	0.00
34.00	4.66	3.55	0.00
34.50	4.66	3.55	0.00
35.00	4.66	3.55	0.00
35.50	4.66	3.55	0.00
36.00	4.66	3.55	0.00
36.50	4.66	3.55	0.00
37.00	4.66	3.55	0.00
37.50	4.66	3.55	0.00
38.00	4.66	3.55	0.00
38.50	4.66	3.55	0.00
39.00	4.66	3.55	0.00
39.50	4.66	3.55	0.00
40.00	4.66	3.55	0.00
40.50	4.66	3.55	0.00
41.00	4.66	3.55	0.00
41.50	4.66	3.55	0.00
42.00	4.66	3.55	0.00
42.50	4.66	3.55	0.00
43.00	4.66	3.55	0.00
43.50	4.66	3.55	0.00
44.00	4.66	3.55	0.00
44.50	4.66	3.55	0.00
45.00	4.66	3.55	0.00
45.50	4.66	3.55	0.00
46.00	4.66	3.55	0.00
46.50	4.66	3.55	0.00
47.00	4.66	3.55	0.00
47.50	4.66	3.55	0.00
48.00	4.66	3.55	0.00

Summary for Subcatchment 1.3S: 100.2

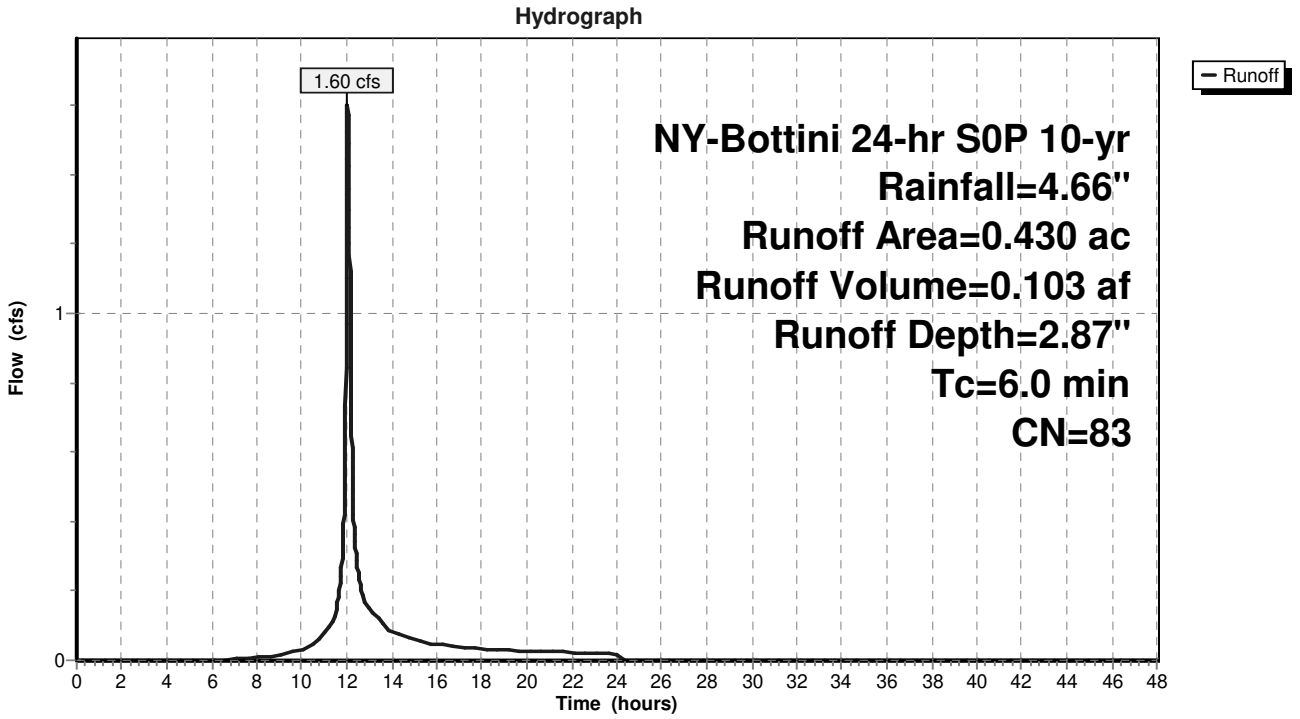
Runoff = 1.60 cfs @ 12.04 hrs, Volume= 0.103 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 10-yr Rainfall=4.66"

Area (ac)	CN	Description
0.170	98	Paved parking, HSG A
0.260	74	>75% Grass cover, Good, HSG C
0.430	83	Weighted Average
0.260		60.47% Pervious Area
0.170		39.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC 6 min path**

Subcatchment 1.3S: 100.2



Hydrograph for Subcatchment 1.3S: 100.2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.11	0.00	0.00
2.50	0.14	0.00	0.00
3.00	0.17	0.00	0.00
3.50	0.20	0.00	0.00
4.00	0.24	0.00	0.00
4.50	0.27	0.00	0.00
5.00	0.31	0.00	0.00
5.50	0.35	0.00	0.00
6.00	0.39	0.00	0.00
6.50	0.44	0.00	0.00
7.00	0.49	0.00	0.00
7.50	0.54	0.01	0.00
8.00	0.60	0.02	0.01
8.50	0.66	0.03	0.01
9.00	0.73	0.04	0.02
9.50	0.81	0.07	0.02
10.00	0.91	0.10	0.03
10.50	1.03	0.14	0.04
11.00	1.20	0.22	0.08
11.50	1.45	0.35	0.13
12.00	2.52	1.07	**1.34**
12.50	3.24	1.64	**0.26**
13.00	3.47	1.84	0.15
13.50	3.64	1.98	0.11
14.00	3.76	2.08	0.08
14.50	3.85	2.16	0.07
15.00	3.94	2.23	0.06
15.50	4.01	2.29	0.05
16.00	4.07	2.35	0.05
16.50	4.12	2.39	0.04
17.00	4.18	2.44	0.04
17.50	4.23	2.48	0.04
18.00	4.27	2.52	0.03
18.50	4.31	2.56	0.03
19.00	4.35	2.59	0.03
19.50	4.39	2.63	0.03
20.00	4.42	2.66	0.03
20.50	4.46	2.69	0.03
21.00	4.49	2.72	0.02
21.50	4.52	2.74	0.02
22.00	4.55	2.77	0.02
22.50	4.58	2.80	0.02
23.00	4.61	2.82	0.02
23.50	4.63	2.84	0.02
24.00	**4.66**	**2.87**	0.02
24.50	4.66	2.87	0.00
25.00	4.66	2.87	0.00
25.50	4.66	2.87	0.00
26.00	4.66	2.87	0.00
26.50	4.66	2.87	0.00
27.00	4.66	2.87	0.00
27.50	4.66	2.87	0.00
28.00	4.66	2.87	0.00
28.50	4.66	2.87	0.00
29.00	4.66	2.87	0.00
29.50	4.66	2.87	0.00
30.00	4.66	2.87	0.00
30.50	4.66	2.87	0.00
31.00	4.66	2.87	0.00
31.50	4.66	2.87	0.00
32.00	4.66	2.87	0.00
32.50	4.66	2.87	0.00
33.00	4.66	2.87	0.00
33.50	4.66	2.87	0.00
34.00	4.66	2.87	0.00
34.50	4.66	2.87	0.00
35.00	4.66	2.87	0.00
35.50	4.66	2.87	0.00
36.00	4.66	2.87	0.00
36.50	4.66	2.87	0.00
37.00	4.66	2.87	0.00
37.50	4.66	2.87	0.00
38.00	4.66	2.87	0.00
38.50	4.66	2.87	0.00
39.00	4.66	2.87	0.00
39.50	4.66	2.87	0.00
40.00	4.66	2.87	0.00
40.50	4.66	2.87	0.00
41.00	4.66	2.87	0.00
41.50	4.66	2.87	0.00
42.00	4.66	2.87	0.00
42.50	4.66	2.87	0.00
43.00	4.66	2.87	0.00
43.50	4.66	2.87	0.00
44.00	4.66	2.87	0.00
44.50	4.66	2.87	0.00
45.00	4.66	2.87	0.00
45.50	4.66	2.87	0.00
46.00	4.66	2.87	0.00
46.50	4.66	2.87	0.00
47.00	4.66	2.87	0.00
47.50	4.66	2.87	0.00
48.00	4.66	2.87	0.00

Summary for Reach 1R:

Inflow Area = 4.820 ac, 0.00% Impervious, Inflow Depth = 2.26" for 10-yr event
Inflow = 9.76 cfs @ 12.21 hrs, Volume= 0.907 af
Outflow = 9.47 cfs @ 12.30 hrs, Volume= 0.907 af, Atten= 3%, Lag= 5.4 min

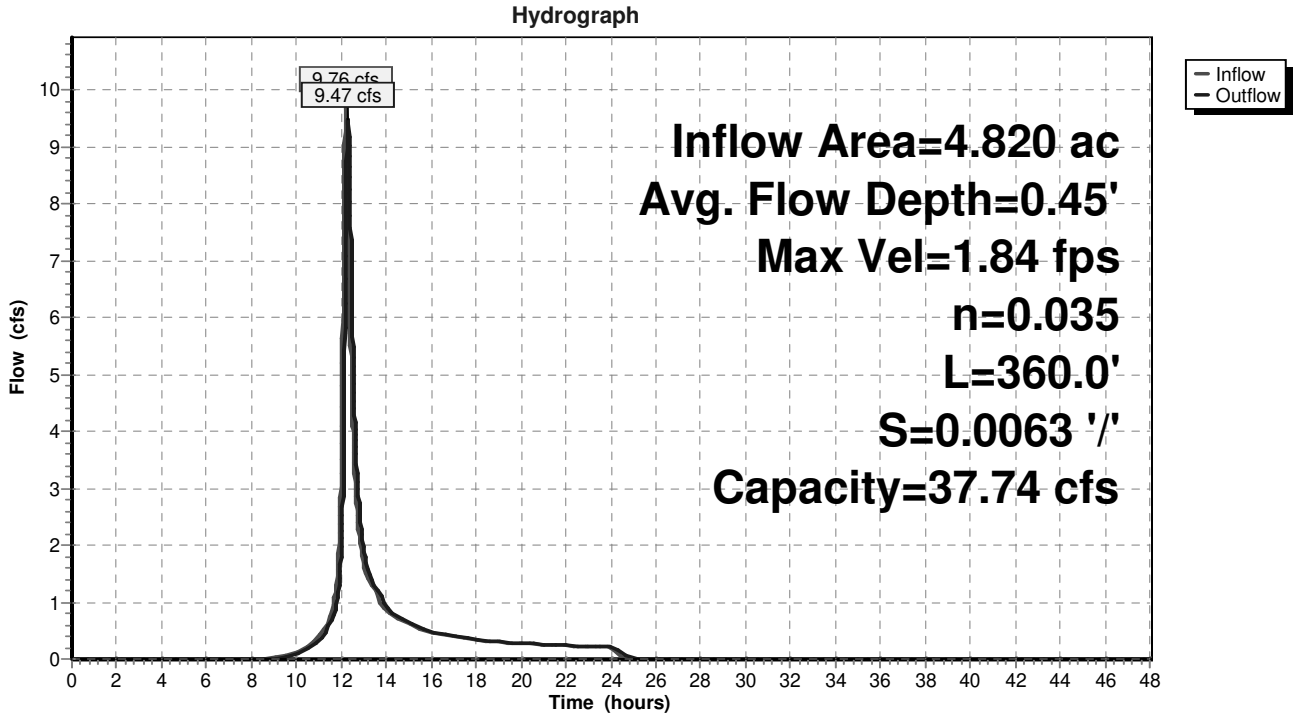
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.48 fps, Avg. Travel Time= 12.5 min

Peak Storage= 1,857 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.45'
Bank-Full Depth= 1.00' Flow Area= 13.0 sf, Capacity= 37.74 cfs

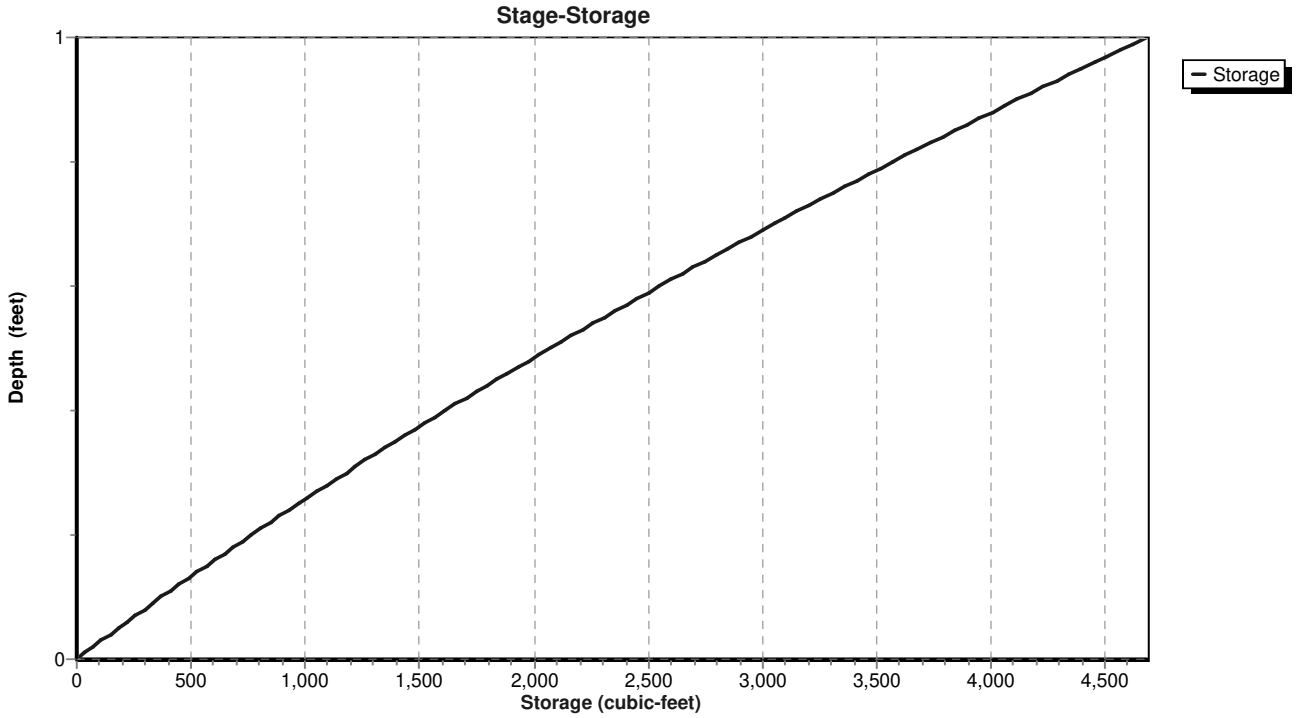
10.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 360.0' Slope= 0.0063 '/'
Inlet Invert= 160.28', Outlet Invert= 158.00'

‡

Reach 1R:



Reach 1R:


Stage-Storage
Storage
Depth (feet)
1
0
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
4,500
Storage (cubic-feet)

Hydrograph for Reach 1R:

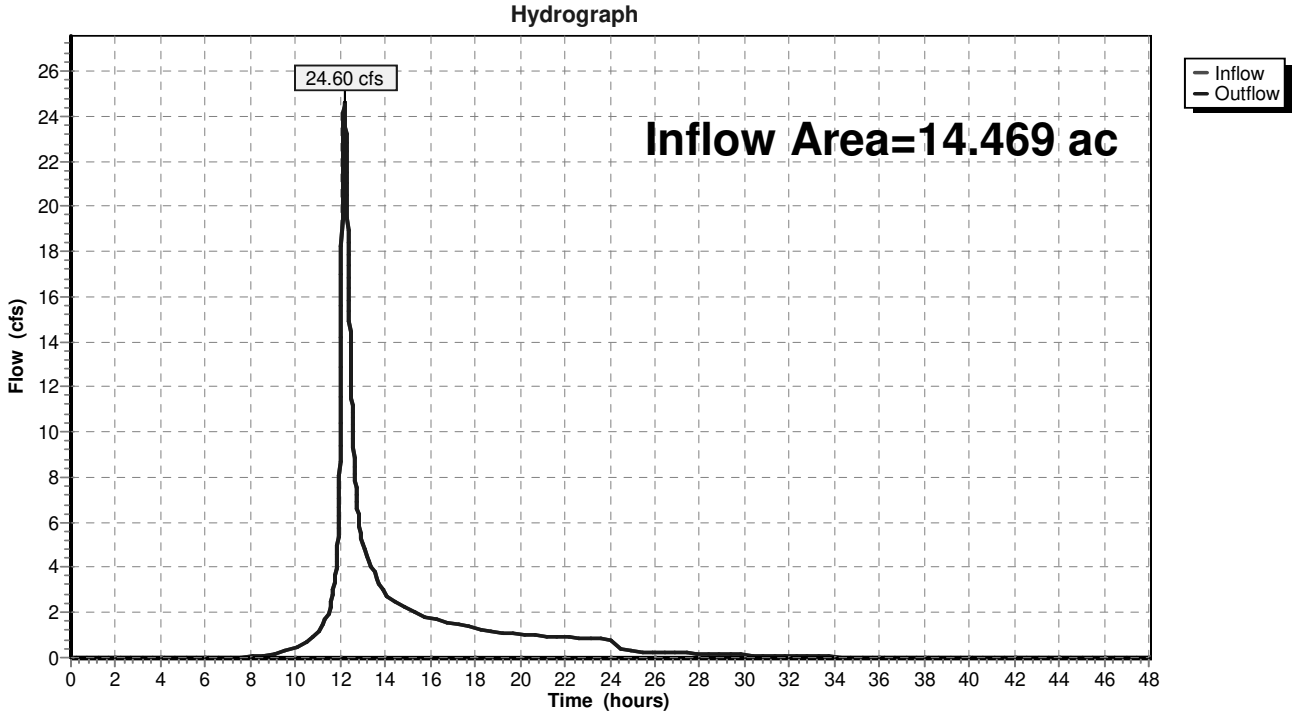
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	160.28	0.00	33.00	0.00	0	160.28	0.00
0.50	0.00	0	160.28	0.00	33.50	0.00	0	160.28	0.00
1.00	0.00	0	160.28	0.00	34.00	0.00	0	160.28	0.00
1.50	0.00	0	160.28	0.00	34.50	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00	35.00	0.00	0	160.28	0.00
2.50	0.00	0	160.28	0.00	35.50	0.00	0	160.28	0.00
3.00	0.00	0	160.28	0.00	36.00	0.00	0	160.28	0.00
3.50	0.00	0	160.28	0.00	36.50	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00	37.00	0.00	0	160.28	0.00
4.50	0.00	0	160.28	0.00	37.50	0.00	0	160.28	0.00
5.00	0.00	0	160.28	0.00	38.00	0.00	0	160.28	0.00
5.50	0.00	0	160.28	0.00	38.50	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00	39.00	0.00	0	160.28	0.00
6.50	0.00	0	160.28	0.00	39.50	0.00	0	160.28	0.00
7.00	0.00	0	160.28	0.00	40.00	0.00	0	160.28	0.00
7.50	0.00	0	160.28	0.00	40.50	0.00	0	160.28	0.00
8.00	0.00	0	160.28	0.00	41.00	0.00	0	160.28	0.00
8.50	0.00	0	160.28	0.00	41.50	0.00	0	160.28	0.00
9.00	0.02	16	160.28	0.01	42.00	0.00	0	160.28	0.00
9.50	0.07	61	160.30	0.03	42.50	0.00	0	160.28	0.00
10.00	0.12	108	160.31	0.09	43.00	0.00	0	160.28	0.00
10.50	0.21	156	160.32	0.17	43.50	0.00	0	160.28	0.00
11.00	0.40	236	160.34	0.33	44.00	0.00	0	160.28	0.00
11.50	0.76	350	160.37	0.62	44.50	0.00	0	160.28	0.00
12.00	**3.50**	**810**	**160.49**	**1.92**	45.00	0.00	0	160.28	0.00
12.50	**4.23**	**1,215**	**160.59**	**5.85**	45.50	0.00	0	160.28	0.00
13.00	1.66	643	160.45	1.91	46.00	0.00	0	160.28	0.00
13.50	1.20	513	160.42	1.28	46.50	0.00	0	160.28	0.00
14.00	0.85	417	160.39	0.92	47.00	0.00	0	160.28	0.00
14.50	0.71	370	160.38	0.74	47.50	0.00	0	160.28	0.00
15.00	0.63	340	160.37	0.65	48.00	0.00	0	160.28	0.00
15.50	0.51	304	160.36	0.54					
16.00	0.46	283	160.36	0.48					
16.50	0.43	268	160.35	0.44					
17.00	0.39	256	160.35	0.40					
17.50	0.37	245	160.35	0.38					
18.00	0.35	236	160.34	0.35					
18.50	0.32	224	160.34	0.33					
19.00	0.30	216	160.34	0.31					
19.50	0.29	209	160.34	0.29					
20.00	0.27	203	160.34	0.28					
20.50	0.26	198	160.33	0.26					
21.00	0.25	193	160.33	0.25					
21.50	0.24	189	160.33	0.24					
22.00	0.23	185	160.33	0.24					
22.50	0.22	181	160.33	0.23					
23.00	0.22	177	160.33	0.22					
23.50	0.21	173	160.33	0.21					
24.00	0.20	170	160.33	0.21					
24.50	0.01	85	160.30	0.08					
25.00	0.00	32	160.29	0.02					
25.50	0.00	15	160.28	0.01					
26.00	0.00	7	160.28	0.00					
26.50	0.00	3	160.28	0.00					
27.00	0.00	1	160.28	0.00					
27.50	0.00	1	160.28	0.00					
28.00	0.00	0	160.28	0.00					
28.50	0.00	0	160.28	0.00					
29.00	0.00	0	160.28	0.00					
29.50	0.00	0	160.28	0.00					
30.00	0.00	0	160.28	0.00					
30.50	0.00	0	160.28	0.00					
31.00	0.00	0	160.28	0.00					
31.50	0.00	0	160.28	0.00					
32.00	0.00	0	160.28	0.00					
32.50	0.00	0	160.28	0.00					

Summary for Reach DP1:

Inflow Area = 14.469 ac, 11.65% Impervious, Inflow Depth > 2.50" for 10-yr event
Inflow = 24.60 cfs @ 12.18 hrs, Volume= 3.010 af
Outflow = 24.60 cfs @ 12.18 hrs, Volume= 3.010 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP1:



Hydrograph for Reach DP1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	33.00	0.05		0.05
0.50	0.00		0.00	33.50	0.04		0.04
1.00	0.00		0.00	34.00	0.04		0.04
1.50	0.00		0.00	34.50	0.04		0.04
2.00	0.00		0.00	35.00	0.03		0.03
2.50	0.00		0.00	35.50	0.03		0.03
3.00	0.00		0.00	36.00	0.03		0.03
3.50	0.00		0.00	36.50	0.03		0.03
4.00	0.00		0.00	37.00	0.03		0.03
4.50	0.00		0.00	37.50	0.02		0.02
5.00	0.00		0.00	38.00	0.02		0.02
5.50	0.00		0.00	38.50	0.02		0.02
6.00	0.01		0.01	39.00	0.02		0.02
6.50	0.01		0.01	39.50	0.02		0.02
7.00	0.02		0.02	40.00	0.02		0.02
7.50	0.03		0.03	40.50	0.02		0.02
8.00	0.04		0.04	41.00	0.02		0.02
8.50	0.08		0.08	41.50	0.02		0.02
9.00	0.14		0.14	42.00	0.02		0.02
9.50	0.26		0.26	42.50	0.02		0.02
10.00	0.43		0.43	43.00	0.02		0.02
10.50	0.67		0.67	43.50	0.02		0.02
11.00	1.19		1.19	44.00	0.02		0.02
11.50	2.12		2.12	44.50	0.02		0.02
12.00	**10.37**		**10.37**	45.00	0.02		0.02
12.50	**11.79**		**11.79**	45.50	0.02		0.02
13.00	5.05		5.05	46.00	0.02		0.02
13.50	3.78		3.78	46.50	0.02		0.02
14.00	2.86		2.86	47.00	0.02		0.02
14.50	2.47		2.47	47.50	0.02		0.02
15.00	2.22		2.22	48.00	0.01		0.01
15.50	1.91		1.91				
16.00	1.75		1.75				
16.50	1.63		1.63				
17.00	1.52		1.52				
17.50	1.43		1.43				
18.00	1.34		1.34				
18.50	1.22		1.22				
19.00	1.13		1.13				
19.50	1.08		1.08				
20.00	1.04		1.04				
20.50	1.00		1.00				
21.00	0.97		0.97				
21.50	0.94		0.94				
22.00	0.91		0.91				
22.50	0.88		0.88				
23.00	0.85		0.85				
23.50	0.83		0.83				
24.00	0.80		0.80				
24.50	0.37		0.37				
25.00	0.28		0.28				
25.50	0.26		0.26				
26.00	0.24		0.24				
26.50	0.23		0.23				
27.00	0.21		0.21				
27.50	0.20		0.20				
28.00	0.18		0.18				
28.50	0.17		0.17				
29.00	0.15		0.15				
29.50	0.14		0.14				
30.00	0.12		0.12				
30.50	0.10		0.10				
31.00	0.09		0.09				
31.50	0.07		0.07				
32.00	0.06		0.06				
32.50	0.05		0.05				

Summary for Pond 1.1F: 1F: Forebay

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 3.45" for 10-yr event
Inflow = 8.64 cfs @ 12.04 hrs, Volume= 0.566 af
Outflow = 8.28 cfs @ 12.06 hrs, Volume= 0.566 af, Atten= 4%, Lag= 1.3 min
Primary = 8.28 cfs @ 12.06 hrs, Volume= 0.566 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 177.00' Surf.Area= 3,117 sf Storage= 4,395 cf
Peak Elev= 177.30' @ 12.06 hrs Surf.Area= 3,374 sf Storage= 5,361 cf (966 cf above start)

Plug-Flow detention time= 122.7 min calculated for 0.465 af (82% of inflow)
Center-of-Mass det. time= 3.8 min (804.6 - 800.8)

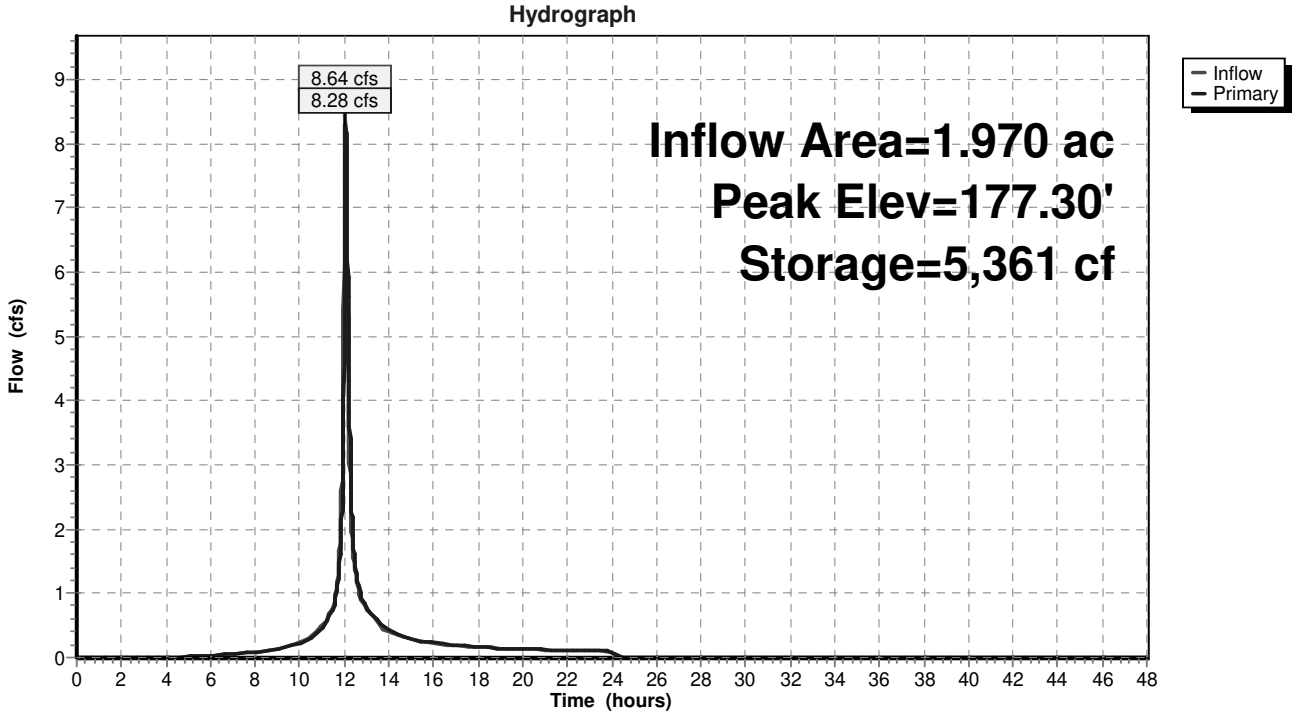
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	7,953 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.00	64	57.5	0	0	64
174.00	282	81.9	160	160	344
175.50	795	130.5	775	935	1,180
176.00	2,327	218.9	747	1,682	3,640
177.00	3,117	255.2	2,712	4,395	5,030
178.00	4,019	291.6	3,558	7,953	6,637

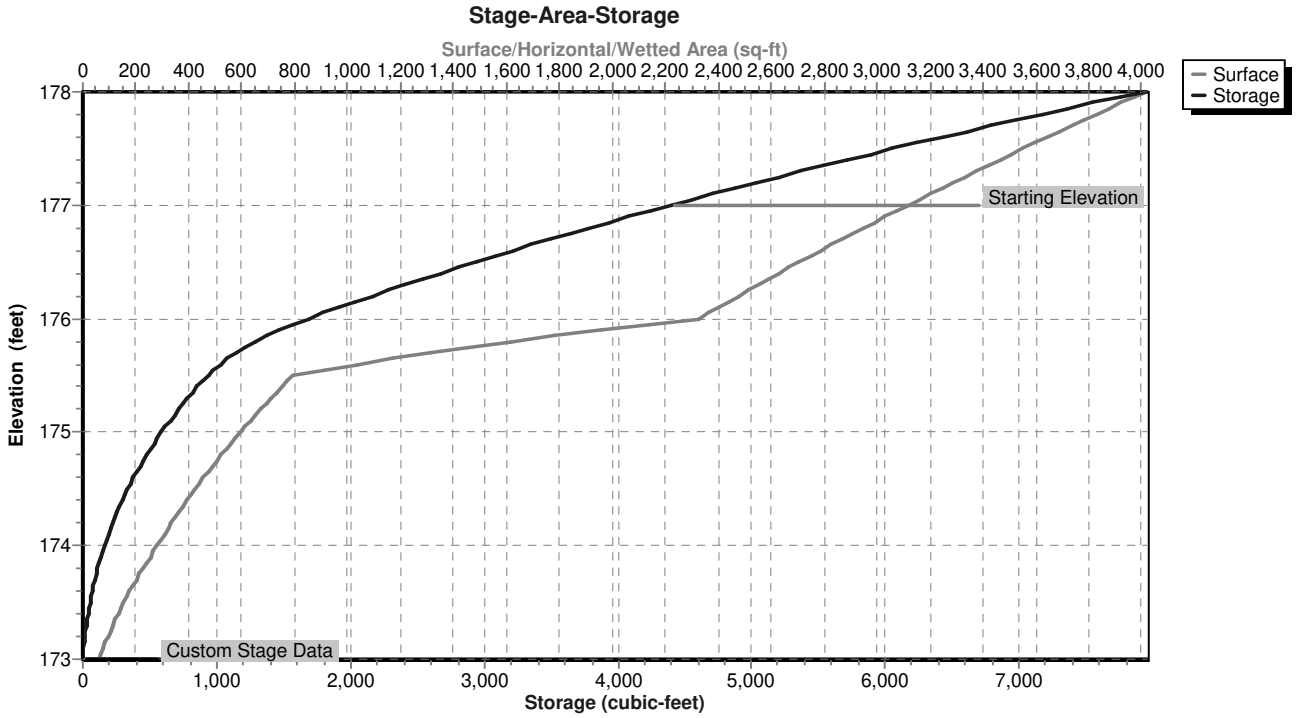
Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=8.27 cfs @ 12.06 hrs HW=177.30' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 8.27 cfs @ 1.65 fps)

Pond 1.1F: 1F: Forebay



Pond 1.1F: 1F: Forebay



Hydrograph for Pond 1.1F: 1F: Forebay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	4,395	177.00	0.00
0.50	0.00	4,395	177.00	0.00
1.00	0.00	4,395	177.00	0.00
1.50	0.00	4,395	177.00	0.00
2.00	0.00	4,395	177.00	0.00
2.50	0.00	4,395	177.00	0.00
3.00	0.00	4,395	177.00	0.00
3.50	0.00	4,395	177.00	0.00
4.00	0.00	4,395	177.00	0.00
4.50	0.00	4,396	177.00	0.00
5.00	0.01	4,398	177.00	0.01
5.50	0.02	4,401	177.00	0.02
6.00	0.03	4,404	177.00	0.03
6.50	0.04	4,407	177.00	0.04
7.00	0.06	4,411	177.01	0.06
7.50	0.07	4,415	177.01	0.07
8.00	0.09	4,420	177.01	0.09
8.50	0.11	4,426	177.01	0.11
9.00	0.14	4,434	177.01	0.13
9.50	0.18	4,448	177.02	0.18
10.00	0.23	4,462	177.02	0.22
10.50	0.31	4,482	177.03	0.29
11.00	0.50	4,535	177.04	0.47
11.50	0.83	4,593	177.06	0.78
12.00	**7.39**	**5,161**	**177.24**	**5.83**
12.50	**1.34**	**4,699**	**177.10**	**1.44**
13.00	0.75	4,591	177.06	0.77
13.50	0.57	4,561	177.05	0.58
14.00	0.40	4,519	177.04	0.42
14.50	0.34	4,500	177.03	0.35
15.00	0.30	4,487	177.03	0.31
15.50	0.25	4,470	177.02	0.25
16.00	0.22	4,463	177.02	0.23
16.50	0.21	4,457	177.02	0.21
17.00	0.19	4,452	177.02	0.19
17.50	0.18	4,448	177.02	0.18
18.00	0.17	4,445	177.02	0.17
18.50	0.15	4,441	177.01	0.15
19.00	0.14	4,438	177.01	0.15
19.50	0.14	4,436	177.01	0.14
20.00	0.13	4,434	177.01	0.13
20.50	0.13	4,432	177.01	0.13
21.00	0.12	4,431	177.01	0.12
21.50	0.12	4,429	177.01	0.12
22.00	0.11	4,428	177.01	0.11
22.50	0.11	4,427	177.01	0.11
23.00	0.10	4,426	177.01	0.10
23.50	0.10	4,425	177.01	0.10
24.00	0.10	4,424	177.01	0.10
24.50	0.00	4,395	177.00	0.00
25.00	0.00	4,395	177.00	0.00
25.50	0.00	4,395	177.00	0.00
26.00	0.00	4,395	177.00	0.00
26.50	0.00	4,395	177.00	0.00
27.00	0.00	4,395	177.00	0.00
27.50	0.00	4,395	177.00	0.00
28.00	0.00	4,395	177.00	0.00
28.50	0.00	4,395	177.00	0.00
29.00	0.00	4,395	177.00	0.00
29.50	0.00	4,395	177.00	0.00
30.00	0.00	4,395	177.00	0.00
30.50	0.00	4,395	177.00	0.00
31.00	0.00	4,395	177.00	0.00
31.50	0.00	4,395	177.00	0.00
32.00	0.00	4,395	177.00	0.00
32.50	0.00	4,395	177.00	0.00
33.00	0.00	4,395	177.00	0.00
33.50	0.00	4,395	177.00	0.00
34.00	0.00	4,395	177.00	0.00
34.50	0.00	4,395	177.00	0.00
35.00	0.00	4,395	177.00	0.00
35.50	0.00	4,395	177.00	0.00
36.00	0.00	4,395	177.00	0.00
36.50	0.00	4,395	177.00	0.00
37.00	0.00	4,395	177.00	0.00
37.50	0.00	4,395	177.00	0.00
38.00	0.00	4,395	177.00	0.00
38.50	0.00	4,395	177.00	0.00
39.00	0.00	4,395	177.00	0.00
39.50	0.00	4,395	177.00	0.00
40.00	0.00	4,395	177.00	0.00
40.50	0.00	4,395	177.00	0.00
41.00	0.00	4,395	177.00	0.00
41.50	0.00	4,395	177.00	0.00
42.00	0.00	4,395	177.00	0.00
42.50	0.00	4,395	177.00	0.00
43.00	0.00	4,395	177.00	0.00
43.50	0.00	4,395	177.00	0.00
44.00	0.00	4,395	177.00	0.00
44.50	0.00	4,395	177.00	0.00
45.00	0.00	4,395	177.00	0.00
45.50	0.00	4,395	177.00	0.00
46.00	0.00	4,395	177.00	0.00
46.50	0.00	4,395	177.00	0.00
47.00	0.00	4,395	177.00	0.00
47.50	0.00	4,395	177.00	0.00
48.00	0.00	4,395	177.00	0.00

Summary for Pond 1.1P: 1P: Pocket Pond

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 3.45" for 10-yr event
Inflow = 8.28 cfs @ 12.06 hrs, Volume= 0.566 af
Outflow = 0.59 cfs @ 13.47 hrs, Volume= 0.565 af, Atten= 93%, Lag= 84.6 min
Primary = 0.59 cfs @ 13.47 hrs, Volume= 0.565 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 173.00' Surf.Area= 2,981 sf Storage= 3,891 cf
Peak Elev= 175.99' @ 13.47 hrs Surf.Area= 5,687 sf Storage= 16,699 cf (12,808 cf above start)

Plug-Flow detention time= 468.9 min calculated for 0.476 af (84% of inflow)
Center-of-Mass det. time= 318.0 min (1,122.6 - 804.6)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	30,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

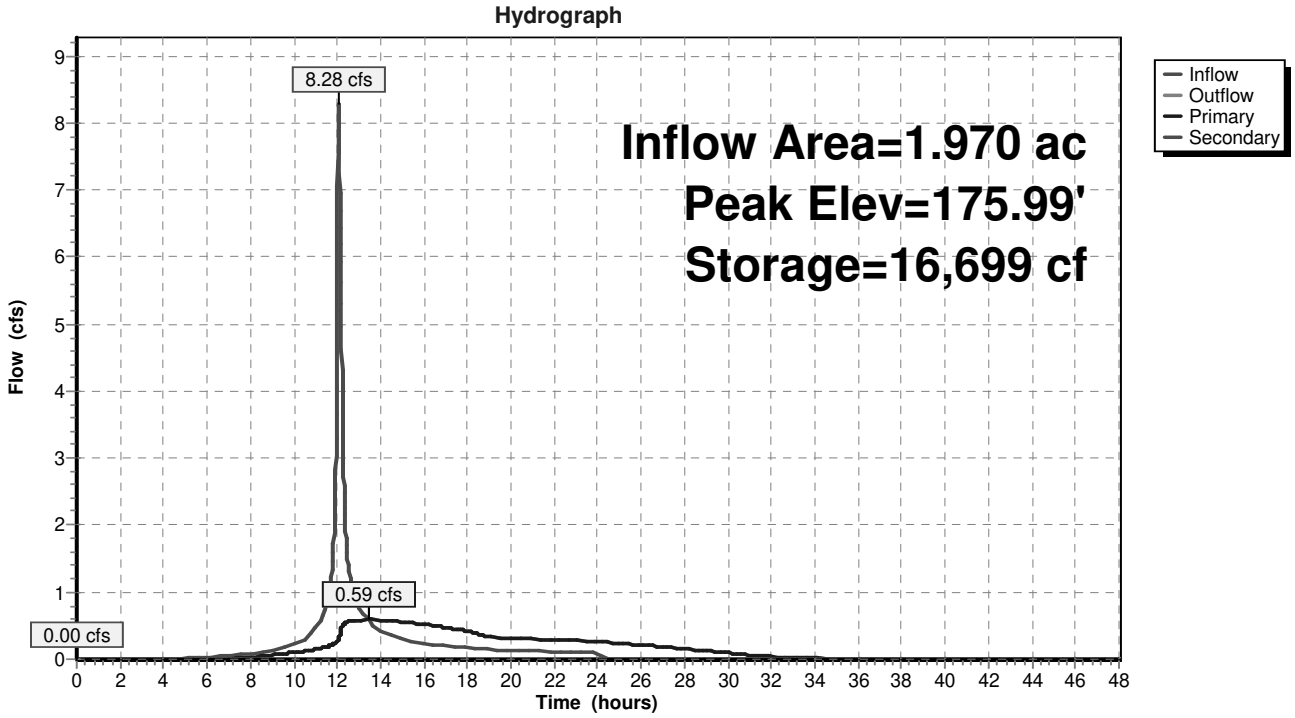
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	12	18.7	0	0	12
170.00	133	67.1	62	62	345
171.50	654	156.6	541	603	1,947
172.00	2,243	227.5	685	1,287	4,117
173.00	2,981	251.6	2,603	3,891	5,066
174.00	3,822	279.0	3,393	7,283	6,253
176.00	5,694	325.1	9,454	16,737	8,550
178.00	7,814	367.9	13,452	30,190	11,010

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**18.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 173.00' / 170.00' S= 0.0682 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	173.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	175.10'	**0.5" x 12.0" Horiz. Orifice/Grate** C= 0.600
#4	Device 1	176.50'	**25.9" x 43.8" Horiz. Orifice/Grate** C= 0.600 in 30.0" x 48.0" Grate (79% open area) Limited to weir flow at low heads
#5	Secondary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Emergency Spillway** Cv= 2.47 (C= 3.09)

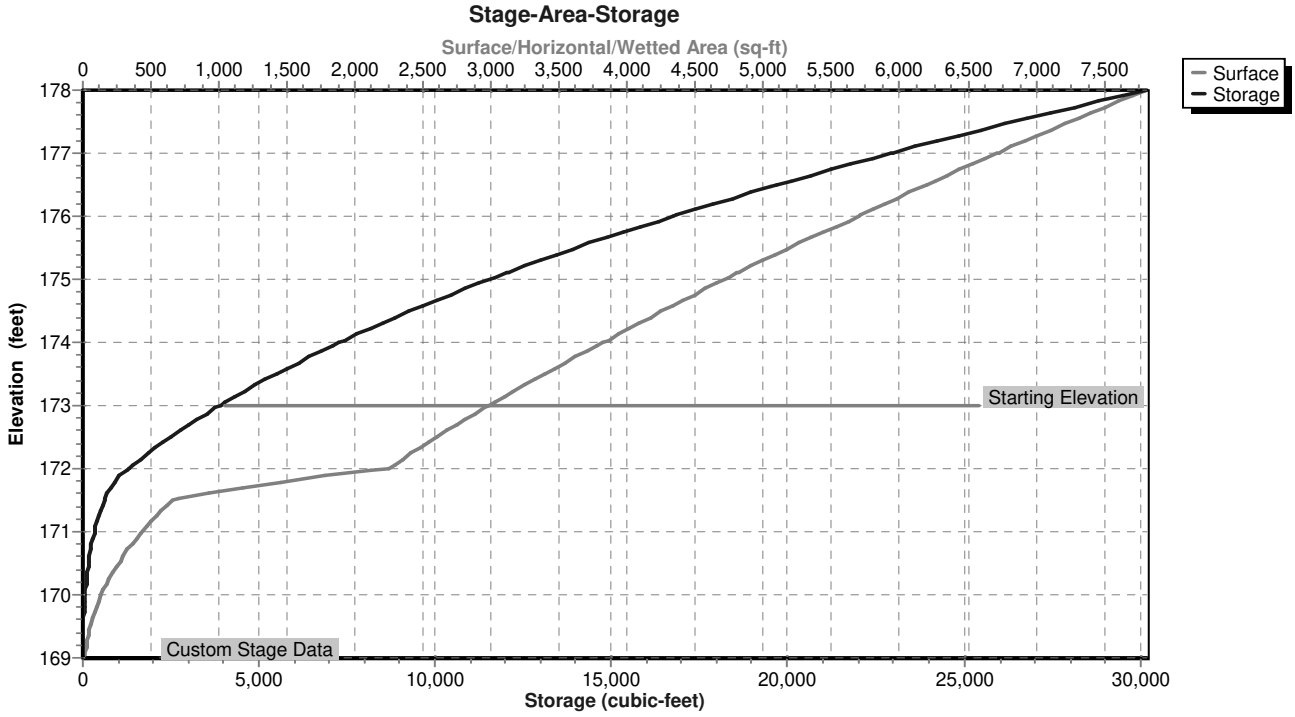
Primary OutFlow Max=0.59 cfs @ 13.47 hrs HW=175.99' (Free Discharge)
└─**1=Culvert** (Passes 0.59 cfs of 12.74 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.40 cfs @ 8.15 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.19 cfs @ 4.55 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.00' (Free Discharge)
└─**5=Emergency Spillway** (Controls 0.00 cfs)

Pond 1.1P: 1P: Pocket Pond



Pond 1.1P: 1P: Pocket Pond



Hydrograph for Pond 1.1P: 1P: Pocket Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	3,891	173.00	0.00	0.00	**0.00**
1.00	0.00	3,891	173.00	0.00	0.00	0.00
2.00	0.00	3,891	173.00	0.00	0.00	0.00
3.00	0.00	3,891	173.00	0.00	0.00	0.00
4.00	0.00	3,891	173.00	0.00	0.00	0.00
5.00	0.01	3,904	173.00	0.00	0.00	0.00
6.00	0.03	3,972	173.03	0.00	0.00	0.00
7.00	0.06	4,103	173.07	0.01	0.01	0.00
8.00	0.09	4,276	173.13	0.03	0.03	0.00
9.00	0.13	4,496	173.20	0.06	0.06	0.00
10.00	0.22	4,842	173.31	0.10	0.10	0.00
11.00	0.47	5,553	173.52	0.15	0.15	0.00
12.00	**5.83**	9,054	174.44	0.27	0.27	0.00
13.00	**0.77**	**16,560**	**175.97**	**0.59**	**0.59**	0.00
14.00	0.42	**16,508**	**175.96**	**0.58**	**0.58**	0.00
15.00	0.31	15,728	175.82	0.56	0.56	0.00
16.00	0.23	14,710	175.63	0.52	0.52	0.00
17.00	0.19	13,671	175.43	0.47	0.47	0.00
18.00	0.17	12,709	175.24	0.42	0.42	0.00
19.00	0.15	11,914	175.08	0.33	0.33	0.00
20.00	0.13	11,245	174.94	0.32	0.32	0.00
21.00	0.12	10,578	174.79	0.31	0.31	0.00
22.00	0.11	9,924	174.64	0.29	0.29	0.00
23.00	0.10	9,290	174.50	0.28	0.28	0.00
24.00	0.10	8,684	174.35	0.26	0.26	0.00
25.00	0.00	7,843	174.14	0.24	0.24	0.00
26.00	0.00	7,030	173.93	0.21	0.21	0.00
27.00	0.00	6,315	173.74	0.18	0.18	0.00
28.00	0.00	5,700	173.56	0.16	0.16	0.00
29.00	0.00	5,190	173.41	0.13	0.13	0.00
30.00	0.00	4,790	173.29	0.10	0.10	0.00
31.00	0.00	4,502	173.20	0.06	0.06	0.00
32.00	0.00	4,325	173.14	0.04	0.04	0.00
33.00	0.00	4,215	173.11	0.02	0.02	0.00
34.00	0.00	4,142	173.08	0.02	0.02	0.00
35.00	0.00	4,092	173.07	0.01	0.01	0.00
36.00	0.00	4,059	173.06	0.01	0.01	0.00
37.00	0.00	4,037	173.05	0.01	0.01	0.00
38.00	0.00	4,020	173.04	0.00	0.00	0.00
39.00	0.00	4,004	173.04	0.00	0.00	0.00
40.00	0.00	3,991	173.03	0.00	0.00	0.00
41.00	0.00	3,979	173.03	0.00	0.00	0.00
42.00	0.00	3,968	173.03	0.00	0.00	0.00
43.00	0.00	3,959	173.02	0.00	0.00	0.00
44.00	0.00	3,951	173.02	0.00	0.00	0.00
45.00	0.00	3,943	173.02	0.00	0.00	0.00
46.00	0.00	3,937	173.02	0.00	0.00	0.00
47.00	0.00	3,932	173.01	0.00	0.00	0.00
48.00	0.00	3,927	173.01	0.00	0.00	0.00

Summary for Pond 1.2P: Dry Swale

Inflow Area = 0.300 ac, 66.67% Impervious, Inflow Depth = 3.55" for 10-yr event
Inflow = 1.35 cfs @ 12.04 hrs, Volume= 0.089 af
Outflow = 1.03 cfs @ 12.11 hrs, Volume= 0.084 af, Atten= 24%, Lag= 4.2 min
Primary = 1.03 cfs @ 12.11 hrs, Volume= 0.084 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 221.61' @ 12.11 hrs Surf.Area= 1,523 sf Storage= 1,370 cf

Plug-Flow detention time= 424.8 min calculated for 0.084 af (95% of inflow)
Center-of-Mass det. time= 396.0 min (1,192.7 - 796.7)

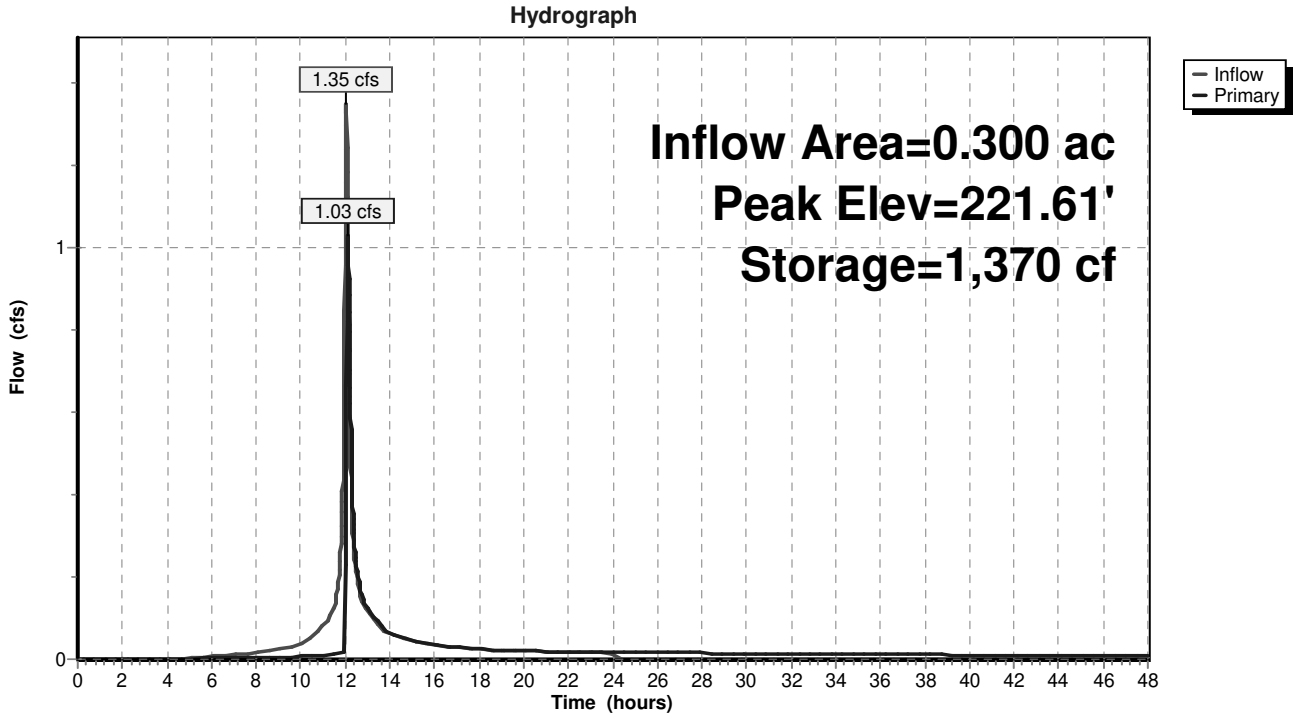
Volume	Invert	Avail.Storage	Storage Description
#1	220.00'	2,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
220.00	180	0	0
222.00	1,850	2,030	2,030

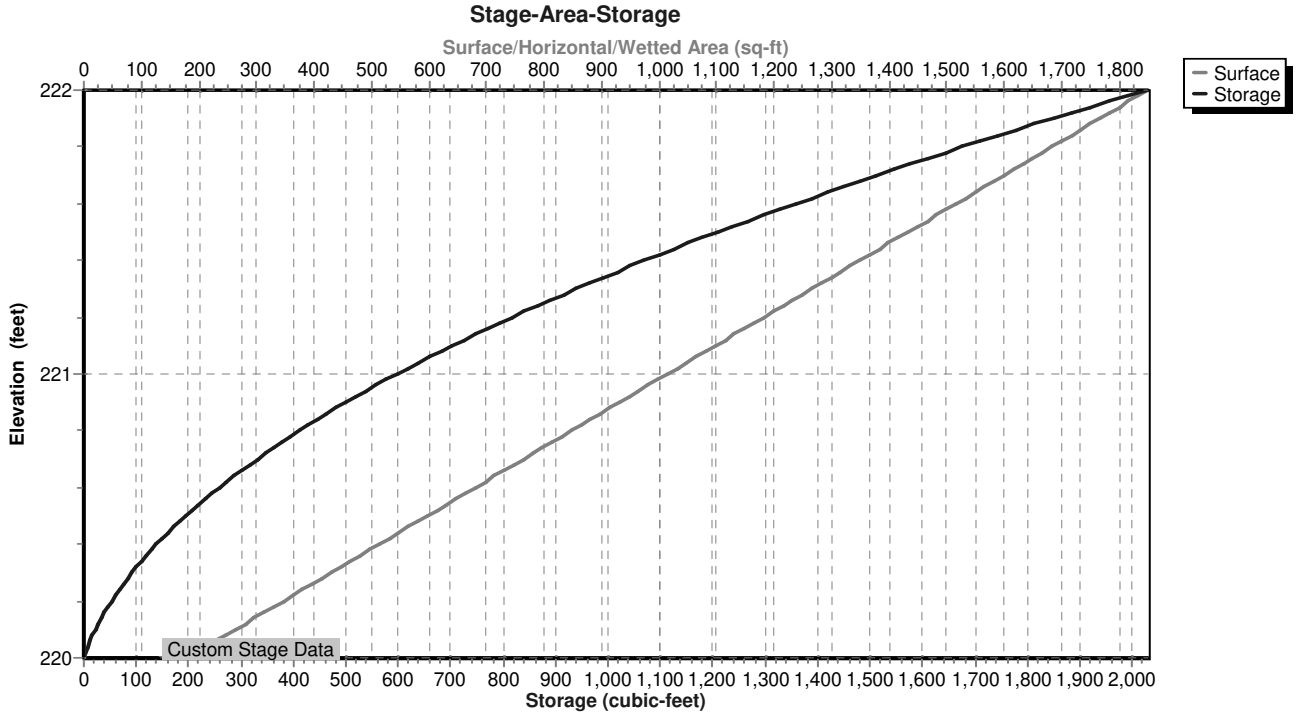
Device	Routing	Invert	Outlet Devices
#1	Primary	216.00'	**12.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 216.00' / 200.00' S= 0.3200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	216.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	221.50'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 4.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 2	220.00'	**0.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=1.02 cfs @ 12.11 hrs HW=221.61' (Free Discharge)
└─**1=Culvert** (Passes 1.02 cfs of 8.55 cfs potential flow)
  ├─**2=Orifice/Grate** (Passes 0.02 cfs of 0.55 cfs potential flow)
  │ └─**4=Exfiltration** (Exfiltration Controls 0.02 cfs)
  └─**3=Broad-Crested Rectangular Weir** (Weir Controls 1.01 cfs @ 0.92 fps)

Pond 1.2P: Dry Swale



Pond 1.2P: Dry Swale



Hydrograph for Pond 1.2P: Dry Swale

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	220.00	0.00
0.50	0.00	0	220.00	0.00
1.00	0.00	0	220.00	0.00
1.50	0.00	0	220.00	0.00
2.00	0.00	0	220.00	0.00
2.50	0.00	0	220.00	0.00
3.00	0.00	0	220.00	0.00
3.50	0.00	0	220.00	0.00
4.00	0.00	0	220.00	0.00
4.50	0.00	1	220.01	0.00
5.00	0.00	3	220.02	0.00
5.50	0.00	6	220.03	0.00
6.00	0.01	11	220.05	0.00
6.50	0.01	19	220.09	0.00
7.00	0.01	30	220.13	0.00
7.50	0.01	44	220.17	0.00
8.00	0.02	61	220.22	0.00
8.50	0.02	84	220.28	0.00
9.00	0.02	111	220.34	0.01
9.50	0.03	150	220.42	0.01
10.00	0.04	199	220.51	0.01
10.50	0.05	265	220.61	0.01
11.00	0.08	369	220.75	0.01
11.50	0.13	532	220.93	0.01
12.00	**1.15**	**1,089**	**221.41**	**0.02**
12.50	**0.21**	**1,265**	**221.54**	**0.23**
13.00	0.11	1,243	221.52	0.12
13.50	0.09	1,237	221.52	0.09
14.00	0.06	1,227	221.51	0.06
14.50	0.05	1,223	221.51	0.05
15.00	0.05	1,221	221.51	0.05
15.50	0.04	1,218	221.51	0.04
16.00	0.03	1,216	221.50	0.04
16.50	0.03	1,215	221.50	0.03
17.00	0.03	1,214	221.50	0.03
17.50	0.03	1,213	221.50	0.03
18.00	0.03	1,213	221.50	0.03
18.50	0.02	1,212	221.50	0.02
19.00	0.02	1,212	221.50	0.02
19.50	0.02	1,211	221.50	0.02
20.00	0.02	1,211	221.50	0.02
20.50	0.02	1,210	221.50	0.02
21.00	0.02	1,210	221.50	0.02
21.50	0.02	1,210	221.50	0.02
22.00	0.02	1,210	221.50	0.02
22.50	0.02	1,209	221.50	0.02
23.00	0.02	1,209	221.50	0.02
23.50	0.02	1,207	221.50	0.02
24.00	0.01	1,205	221.50	0.02
24.50	0.00	1,180	221.48	0.02
25.00	0.00	1,151	221.46	0.02
25.50	0.00	1,122	221.44	0.02
26.00	0.00	1,093	221.42	0.02
26.50	0.00	1,065	221.40	0.02
27.00	0.00	1,037	221.38	0.02
27.50	0.00	1,010	221.35	0.02
28.00	0.00	982	221.33	0.01
28.50	0.00	956	221.31	0.01
29.00	0.00	929	221.29	0.01
29.50	0.00	903	221.27	0.01
30.00	0.00	878	221.25	0.01
30.50	0.00	852	221.23	0.01
31.00	0.00	827	221.21	0.01
31.50	0.00	803	221.19	0.01
32.00	0.00	779	221.17	0.01
32.50	0.00	755	221.15	0.01
33.00	0.00	731	221.13	0.01
33.50	0.00	708	221.10	0.01
34.00	0.00	685	221.08	0.01
34.50	0.00	663	221.06	0.01
35.00	0.00	641	221.04	0.01
35.50	0.00	619	221.02	0.01
36.00	0.00	598	221.00	0.01
36.50	0.00	577	220.98	0.01
37.00	0.00	556	220.96	0.01
37.50	0.00	536	220.94	0.01
38.00	0.00	516	220.92	0.01
38.50	0.00	497	220.90	0.01
39.00	0.00	477	220.88	0.01
39.50	0.00	459	220.85	0.01
40.00	0.00	440	220.83	0.01
40.50	0.00	422	220.81	0.01
41.00	0.00	404	220.79	0.01
41.50	0.00	387	220.77	0.01
42.00	0.00	370	220.75	0.01
42.50	0.00	353	220.73	0.01
43.00	0.00	337	220.71	0.01
43.50	0.00	321	220.69	0.01
44.00	0.00	306	220.67	0.01
44.50	0.00	291	220.65	0.01
45.00	0.00	276	220.63	0.01
45.50	0.00	261	220.60	0.01
46.00	0.00	247	220.58	0.01
46.50	0.00	234	220.56	0.01
47.00	0.00	220	220.54	0.01
47.50	0.00	207	220.52	0.01
48.00	0.00	195	220.50	0.01

Summary for Pond 1.3P: Dry Swale

Inflow Area = 0.430 ac, 39.53% Impervious, Inflow Depth = 2.87" for 10-yr event
Inflow = 1.60 cfs @ 12.04 hrs, Volume= 0.103 af
Outflow = 1.49 cfs @ 12.07 hrs, Volume= 0.098 af, Atten= 7%, Lag= 1.7 min
Primary = 1.49 cfs @ 12.07 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 205.64' @ 12.07 hrs Surf.Area= 1,091 sf Storage= 1,158 cf

Plug-Flow detention time= 299.4 min calculated for 0.098 af (95% of inflow)
Center-of-Mass det. time= 271.7 min (1,093.7 - 822.0)

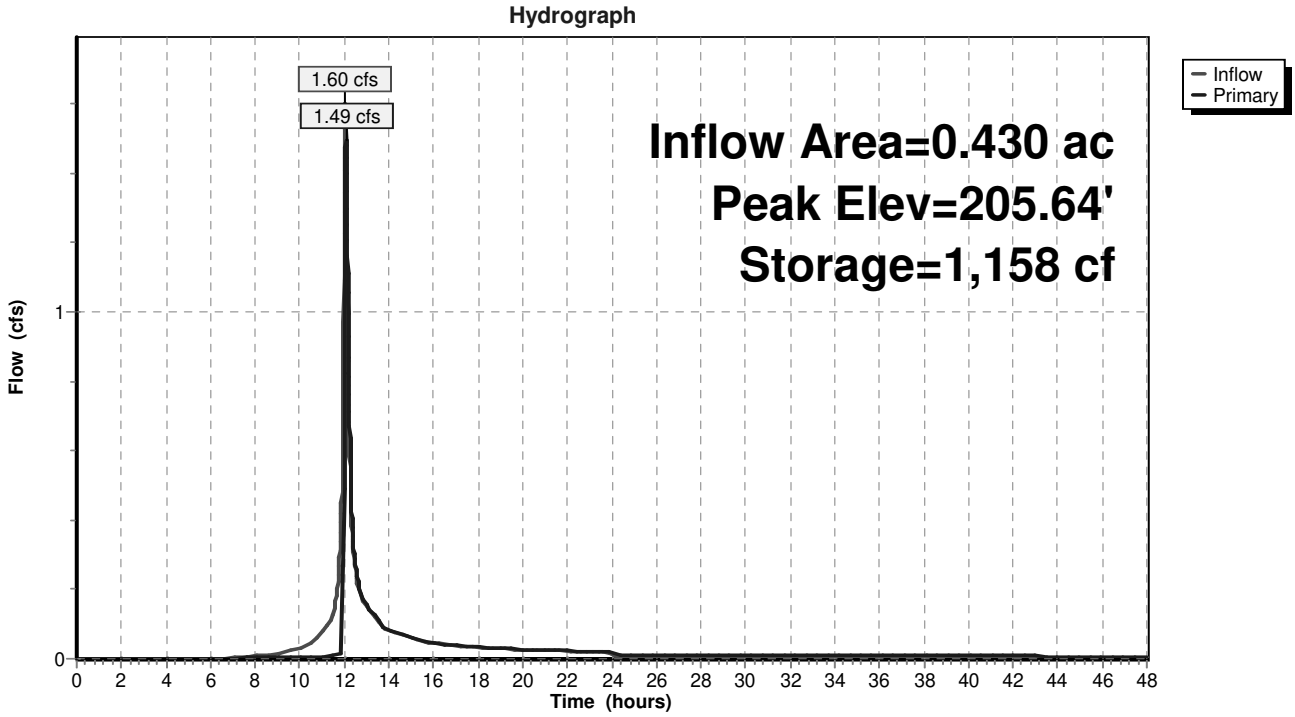
Volume	Invert	Avail.Storage	Storage Description
#1	204.00'	1,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
204.00	320	0	0
206.00	1,260	1,580	1,580

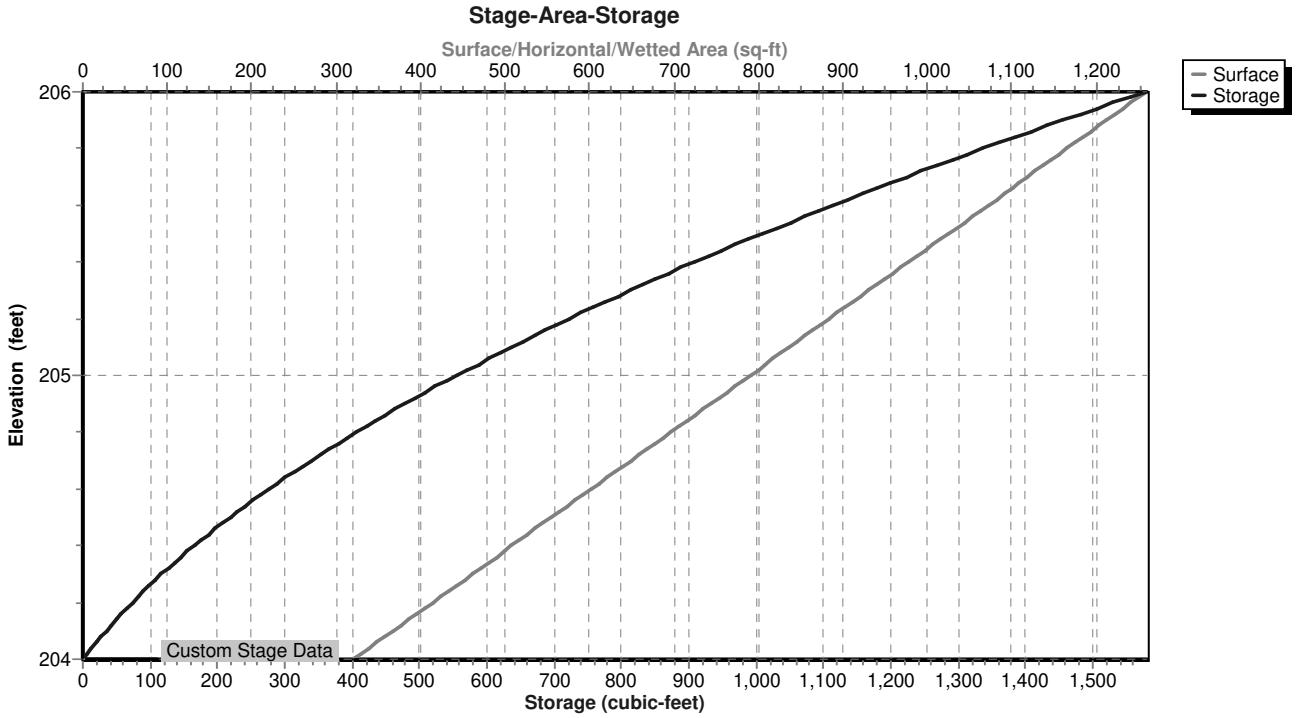
Device	Routing	Invert	Outlet Devices
#1	Primary	200.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	205.50'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 4.00**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	204.00'	**0.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=1.49 cfs @ 12.07 hrs HW=205.64' (Free Discharge)
- **1=Orifice/Grate** (Passes 0.01 cfs of 0.56 cfs potential flow)
  - **3=Exfiltration** (Exfiltration Controls 0.01 cfs)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 1.48 cfs @ 1.05 fps)

Pond 1.3P: Dry Swale



Pond 1.3P: Dry Swale



Hydrograph for Pond 1.3P: Dry Swale

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	204.00	0.00
0.50	0.00	0	204.00	0.00
1.00	0.00	0	204.00	0.00
1.50	0.00	0	204.00	0.00
2.00	0.00	0	204.00	0.00
2.50	0.00	0	204.00	0.00
3.00	0.00	0	204.00	0.00
3.50	0.00	0	204.00	0.00
4.00	0.00	0	204.00	0.00
4.50	0.00	0	204.00	0.00
5.00	0.00	0	204.00	0.00
5.50	0.00	0	204.00	0.00
6.00	0.00	0	204.00	0.00
6.50	0.00	0	204.00	0.00
7.00	0.00	2	204.01	0.00
7.50	0.00	5	204.02	0.00
8.00	0.01	10	204.03	0.00
8.50	0.01	19	204.06	0.00
9.00	0.02	35	204.10	0.00
9.50	0.02	62	204.17	0.00
10.00	0.03	101	204.26	0.01
10.50	0.04	157	204.38	0.01
11.00	0.08	255	204.56	0.01
11.50	0.13	421	204.82	0.01
12.00	**1.34**	**1,039**	**205.53**	**0.16**
12.50	**0.26**	**1,055**	**205.54**	**0.28**
13.00	0.15	1,038	205.53	0.15
13.50	0.11	1,033	205.52	0.12
14.00	0.08	1,027	205.52	0.08
14.50	0.07	1,024	205.51	0.07
15.00	0.06	1,022	205.51	0.06
15.50	0.05	1,019	205.51	0.05
16.00	0.05	1,018	205.51	0.05
16.50	0.04	1,017	205.51	0.04
17.00	0.04	1,016	205.51	0.04
17.50	0.04	1,015	205.51	0.04
18.00	0.03	1,015	205.51	0.03
18.50	0.03	1,014	205.50	0.03
19.00	0.03	1,013	205.50	0.03
19.50	0.03	1,013	205.50	0.03
20.00	0.03	1,013	205.50	0.03
20.50	0.03	1,012	205.50	0.03
21.00	0.02	1,012	205.50	0.02
21.50	0.02	1,012	205.50	0.02
22.00	0.02	1,012	205.50	0.02
22.50	0.02	1,011	205.50	0.02
23.00	0.02	1,011	205.50	0.02
23.50	0.02	1,011	205.50	0.02
24.00	0.02	1,011	205.50	0.02
24.50	0.00	993	205.49	0.01
25.00	0.00	972	205.46	0.01
25.50	0.00	951	205.44	0.01
26.00	0.00	931	205.42	0.01
26.50	0.00	910	205.40	0.01
27.00	0.00	890	205.38	0.01
27.50	0.00	870	205.36	0.01
28.00	0.00	850	205.34	0.01
28.50	0.00	830	205.32	0.01
29.00	0.00	811	205.30	0.01
29.50	0.00	792	205.28	0.01
30.00	0.00	773	205.26	0.01
30.50	0.00	754	205.24	0.01
31.00	0.00	735	205.21	0.01
31.50	0.00	717	205.19	0.01
32.00	0.00	698	205.17	0.01
32.50	0.00	680	205.15	0.01
33.00	0.00	662	205.13	0.01
33.50	0.00	645	205.11	0.01
34.00	0.00	627	205.09	0.01
34.50	0.00	610	205.07	0.01
35.00	0.00	593	205.05	0.01
35.50	0.00	576	205.03	0.01
36.00	0.00	560	205.01	0.01
36.50	0.00	543	204.99	0.01
37.00	0.00	527	204.96	0.01
37.50	0.00	511	204.94	0.01
38.00	0.00	495	204.92	0.01
38.50	0.00	480	204.90	0.01
39.00	0.00	464	204.88	0.01
39.50	0.00	449	204.86	0.01
40.00	0.00	434	204.84	0.01
40.50	0.00	419	204.82	0.01
41.00	0.00	405	204.80	0.01
41.50	0.00	390	204.78	0.01
42.00	0.00	376	204.76	0.01
42.50	0.00	362	204.74	0.01
43.00	0.00	348	204.71	0.01
43.50	0.00	335	204.69	0.01
44.00	0.00	322	204.67	0.01
44.50	0.00	308	204.65	0.01
45.00	0.00	295	204.63	0.01
45.50	0.00	283	204.61	0.01
46.00	0.00	270	204.59	0.01
46.50	0.00	258	204.57	0.01
47.00	0.00	246	204.55	0.01
47.50	0.00	234	204.53	0.01
48.00	0.00	222	204.51	0.01

Summary for Pond 2R: Overflow

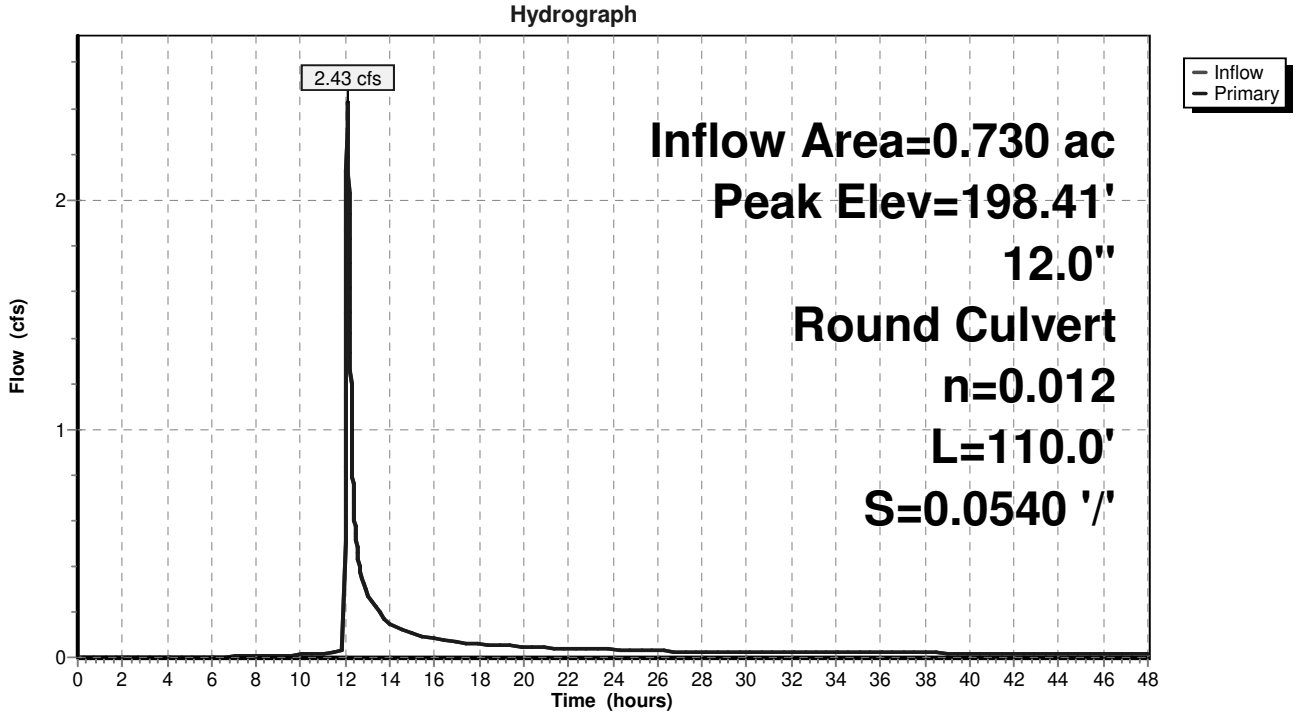
Inflow Area = 0.730 ac, 50.68% Impervious, Inflow Depth > 2.99" for 10-yr event
Inflow = 2.43 cfs @ 12.09 hrs, Volume= 0.182 af
Outflow = 2.43 cfs @ 12.09 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min
Primary = 2.43 cfs @ 12.09 hrs, Volume= 0.182 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 198.41' @ 12.09 hrs

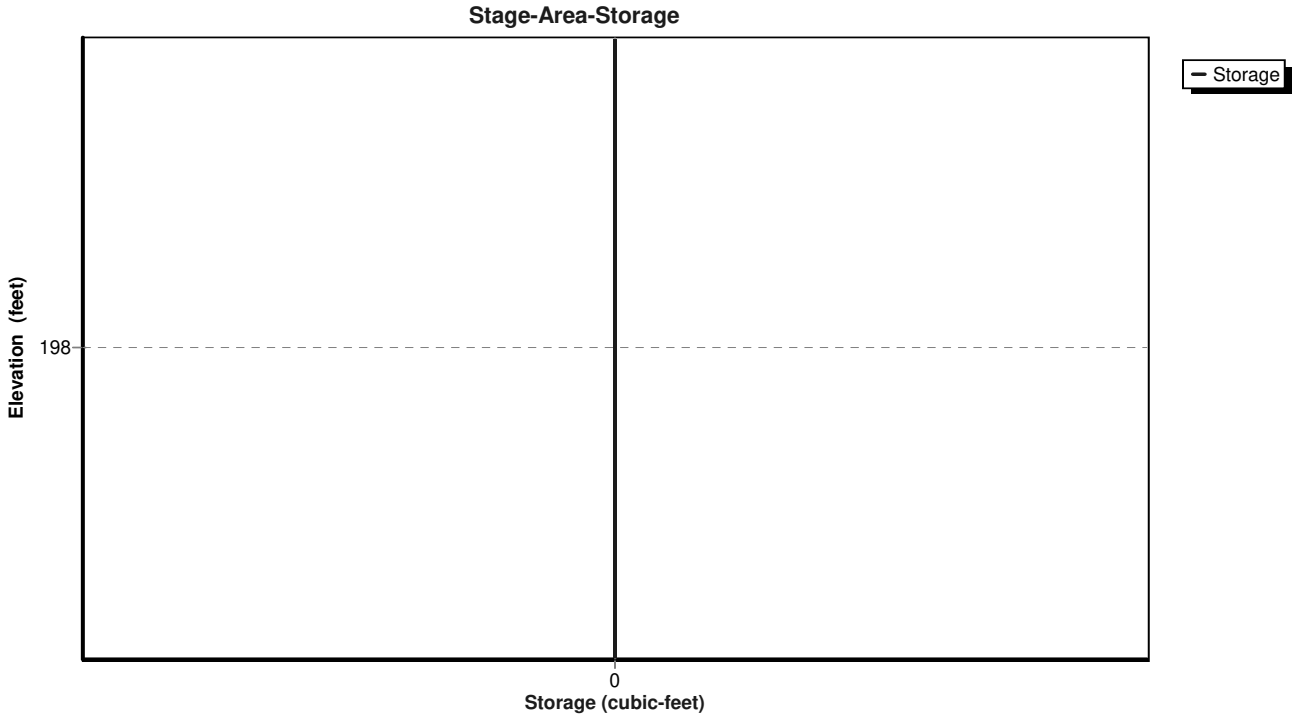
Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	**12.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 197.50' / 191.56' S= 0.0540 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.43 cfs @ 12.09 hrs HW=198.41' (Free Discharge)
└─**1=Culvert** (Inlet Controls 2.43 cfs @ 3.24 fps)

Pond 2R: Overflow



Pond 2R: Overflow



Hydrograph for Pond 2R: Overflow

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	197.50	0.00
0.50	0.00	197.50	0.00
1.00	0.00	197.50	0.00
1.50	0.00	197.50	0.00
2.00	0.00	197.50	0.00
2.50	0.00	197.50	0.00
3.00	0.00	197.50	0.00
3.50	0.00	197.50	0.00
4.00	0.00	197.50	0.00
4.50	0.00	197.51	0.00
5.00	0.00	197.52	0.00
5.50	0.00	197.52	0.00
6.00	0.00	197.52	0.00
6.50	0.00	197.53	0.00
7.00	0.00	197.53	0.00
7.50	0.01	197.54	0.01
8.00	0.01	197.54	0.01
8.50	0.01	197.54	0.01
9.00	0.01	197.55	0.01
9.50	0.01	197.55	0.01
10.00	0.01	197.55	0.01
10.50	0.01	197.56	0.01
11.00	0.02	197.56	0.02
11.50	0.02	197.57	0.02
12.00	**0.17**	**197.70**	**0.17**
12.50	**0.51**	**197.85**	**0.51**
13.00	0.27	197.76	0.27
13.50	0.21	197.72	0.21
14.00	0.15	197.69	0.15
14.50	0.12	197.67	0.12
15.00	0.11	197.66	0.11
15.50	0.09	197.64	0.09
16.00	0.08	197.64	0.08
16.50	0.07	197.63	0.07
17.00	0.07	197.63	0.07
17.50	0.06	197.62	0.06
18.00	0.06	197.62	0.06
18.50	0.06	197.61	0.06
19.00	0.05	197.61	0.05
19.50	0.05	197.61	0.05
20.00	0.05	197.60	0.05
20.50	0.05	197.60	0.05
21.00	0.04	197.60	0.04
21.50	0.04	197.60	0.04
22.00	0.04	197.60	0.04
22.50	0.04	197.59	0.04
23.00	0.04	197.59	0.04
23.50	0.04	197.59	0.04
24.00	0.04	197.59	0.04
24.50	0.03	197.58	0.03
25.00	0.03	197.58	0.03
25.50	0.03	197.58	0.03
26.00	0.03	197.58	0.03
26.50	0.03	197.58	0.03
27.00	0.03	197.58	0.03
27.50	0.03	197.58	0.03
28.00	0.03	197.58	0.03
28.50	0.03	197.58	0.03
29.00	0.03	197.58	0.03
29.50	0.03	197.57	0.03
30.00	0.02	197.57	0.02
30.50	0.02	197.57	0.02
31.00	0.02	197.57	0.02
31.50	0.02	197.57	0.02
32.00	0.02	197.57	0.02
32.50	0.02	197.57	0.02
33.00	0.02	197.57	0.02
33.50	0.02	197.57	0.02
34.00	0.02	197.57	0.02
34.50	0.02	197.57	0.02
35.00	0.02	197.57	0.02
35.50	0.02	197.57	0.02
36.00	0.02	197.57	0.02
36.50	0.02	197.57	0.02
37.00	0.02	197.57	0.02
37.50	0.02	197.57	0.02
38.00	0.02	197.57	0.02
38.50	0.02	197.57	0.02
39.00	0.02	197.57	0.02
39.50	0.02	197.56	0.02
40.00	0.02	197.56	0.02
40.50	0.02	197.56	0.02
41.00	0.02	197.56	0.02
41.50	0.02	197.56	0.02
42.00	0.02	197.56	0.02
42.50	0.02	197.56	0.02
43.00	0.02	197.56	0.02
43.50	0.02	197.56	0.02
44.00	0.02	197.56	0.02
44.50	0.02	197.56	0.02
45.00	0.02	197.56	0.02
45.50	0.01	197.56	0.01
46.00	0.01	197.56	0.01
46.50	0.01	197.56	0.01
47.00	0.01	197.56	0.01
47.50	0.01	197.56	0.01
48.00	0.01	197.55	0.01

Summary for Subcatchment 1.0A: 100

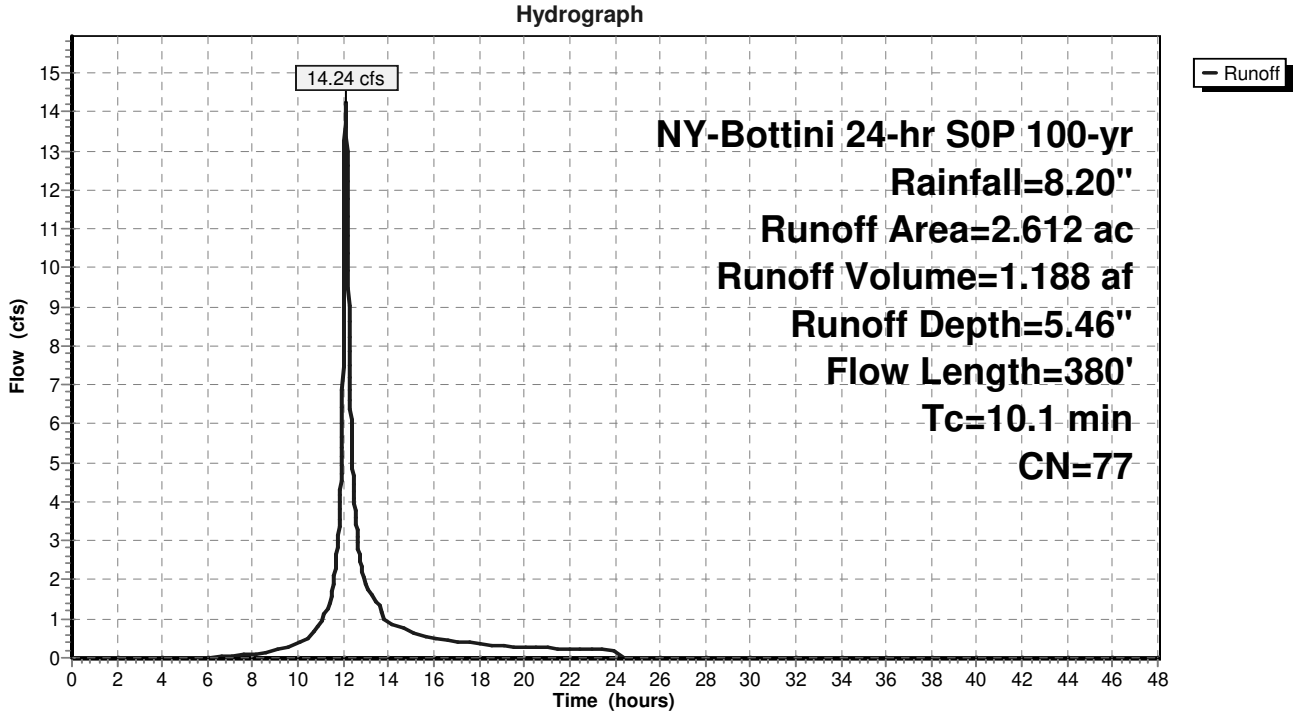
Runoff = 14.24 cfs @ 12.10 hrs, Volume= 1.188 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.096	98	Paved parking, HSG A
0.017	89	Gravel roads, HSG C
0.406	74	>75% Grass cover, Good, HSG C
1.373	79	50-75% Grass cover, Fair, HSG C
0.720	73	Woods, Fair, HSG C
2.612	77	Weighted Average
2.516		96.32% Pervious Area
0.096		3.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
0.4	50	0.0750	1.92		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	120	0.1330	1.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	90	0.1400	2.62		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	20	0.3300	8.62		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.1	380	Total			

Subcatchment 1.0A: 100



Hydrograph for Subcatchment 1.0A: 100

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.00	0.00
6.00	0.63	0.00	0.00
6.50	0.70	0.00	0.02
7.00	0.79	0.01	0.05
7.50	0.88	0.02	0.07
8.00	0.98	0.04	0.10
8.50	1.08	0.07	0.14
9.00	1.20	0.10	0.19
9.50	1.35	0.15	0.28
10.00	1.53	0.22	0.38
10.50	1.73	0.31	0.52
11.00	2.06	0.48	0.94
11.50	2.53	0.76	1.64
12.00	4.38	2.12	**8.89**
12.50	5.71	3.23	**3.97**
13.00	6.17	3.63	1.92
13.50	6.48	3.90	1.40
14.00	6.69	4.09	0.92
14.50	6.86	4.24	0.78
15.00	7.00	4.37	0.68
15.50	7.12	4.48	0.55
16.00	7.23	4.57	0.50
16.50	7.33	4.66	0.46
17.00	7.42	4.74	0.42
17.50	7.50	4.82	0.39
18.00	7.58	4.89	0.37
18.50	7.64	4.95	0.32
19.00	7.71	5.01	0.30
19.50	7.77	5.06	0.28
20.00	7.82	5.11	0.27
20.50	7.88	5.16	0.26
21.00	7.93	5.21	0.25
21.50	7.98	5.25	0.24
22.00	8.03	5.30	0.23
22.50	8.07	5.34	0.22
23.00	8.12	5.38	0.21
23.50	8.16	5.42	0.21
24.00	**8.20**	**5.46**	0.20
24.50	8.20	5.46	0.00
25.00	8.20	5.46	0.00
25.50	8.20	5.46	0.00
26.00	8.20	5.46	0.00
26.50	8.20	5.46	0.00
27.00	8.20	5.46	0.00
27.50	8.20	5.46	0.00
28.00	8.20	5.46	0.00
28.50	8.20	5.46	0.00
29.00	8.20	5.46	0.00
29.50	8.20	5.46	0.00
30.00	8.20	5.46	0.00
30.50	8.20	5.46	0.00
31.00	8.20	5.46	0.00
31.50	8.20	5.46	0.00
32.00	8.20	5.46	0.00
32.50	8.20	5.46	0.00
33.00	8.20	5.46	0.00
33.50	8.20	5.46	0.00
34.00	8.20	5.46	0.00
34.50	8.20	5.46	0.00
35.00	8.20	5.46	0.00
35.50	8.20	5.46	0.00
36.00	8.20	5.46	0.00
36.50	8.20	5.46	0.00
37.00	8.20	5.46	0.00
37.50	8.20	5.46	0.00
38.00	8.20	5.46	0.00
38.50	8.20	5.46	0.00
39.00	8.20	5.46	0.00
39.50	8.20	5.46	0.00
40.00	8.20	5.46	0.00
40.50	8.20	5.46	0.00
41.00	8.20	5.46	0.00
41.50	8.20	5.46	0.00
42.00	8.20	5.46	0.00
42.50	8.20	5.46	0.00
43.00	8.20	5.46	0.00
43.50	8.20	5.46	0.00
44.00	8.20	5.46	0.00
44.50	8.20	5.46	0.00
45.00	8.20	5.46	0.00
45.50	8.20	5.46	0.00
46.00	8.20	5.46	0.00
46.50	8.20	5.46	0.00
47.00	8.20	5.46	0.00
47.50	8.20	5.46	0.00
48.00	8.20	5.46	0.00

Summary for Subcatchment 1.0B: 101

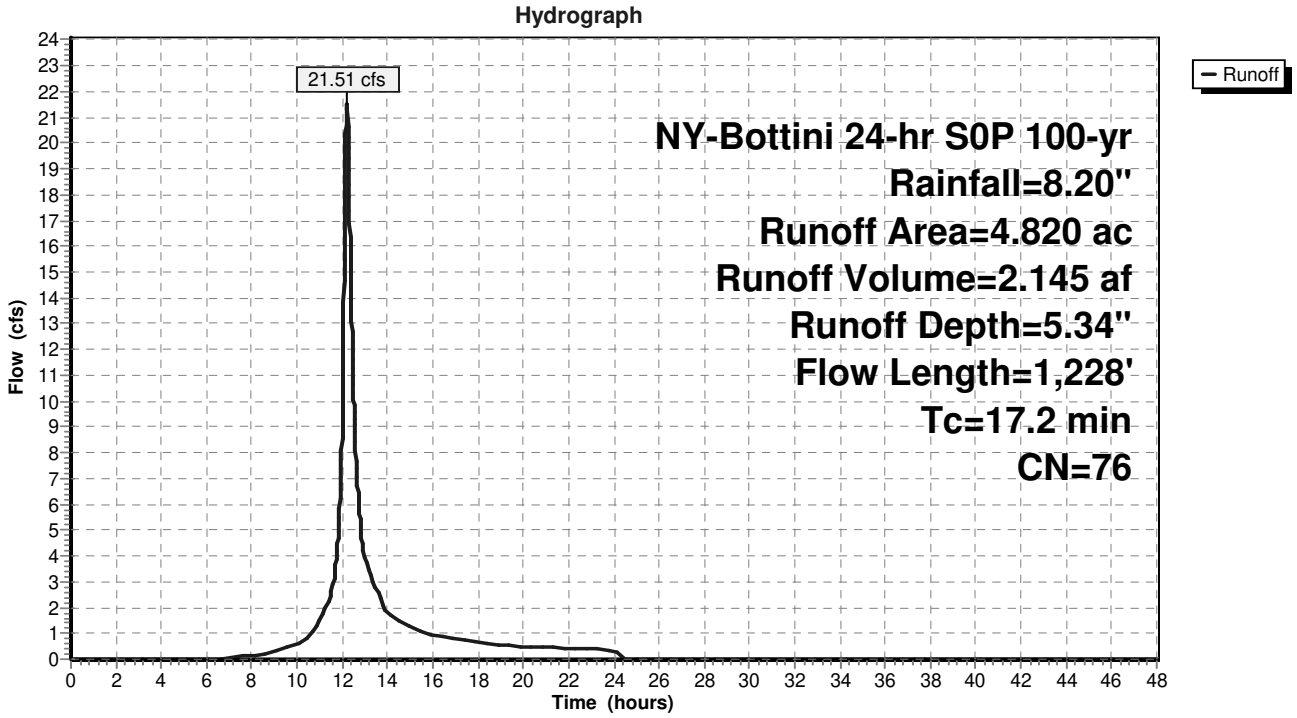
Runoff = 21.51 cfs @ 12.21 hrs, Volume= 2.145 af, Depth= 5.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.807	74	>75% Grass cover, Good, HSG C
2.025	79	50-75% Grass cover, Fair, HSG C
0.943	73	Woods, Fair, HSG C
1.045	73	Woods, Fair, HSG C
4.820	76	Weighted Average
4.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0300	0.21		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
1.3	150	0.0730	1.89		**Shallow Concentrated Flow, B-Slope** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.3200	3.96		**Shallow Concentrated Flow, Slope-Swale** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0160	4.46	22.30	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.030
1.0	225	0.0105	3.92	27.42	**Trap/Vee/Rect Channel Flow, Swale-D** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
0.2	121	0.0740	10.40	72.79	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=4.00' D=1.00' Z= 3.0 '/' Top.W=10.00' n= 0.030
5.6	346	0.0430	1.04		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
0.2	36	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, F-G** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
17.2	1,228	Total			

Subcatchment 1.0B: 101



Hydrograph for Subcatchment 1.0B: 101

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.00	0.00
6.00	0.63	0.00	0.00
6.50	0.70	0.00	0.02
7.00	0.79	0.01	0.05
7.50	0.88	0.02	0.10
8.00	0.98	0.03	0.15
8.50	1.08	0.06	0.22
9.00	1.20	0.09	0.30
9.50	1.35	0.13	0.45
10.00	1.53	0.20	0.61
10.50	1.73	0.28	0.84
11.00	2.06	0.44	1.51
11.50	2.53	0.71	2.56
12.00	4.38	2.04	**9.51**
12.50	5.71	3.13	**10.06**
13.00	6.17	3.53	3.93
13.50	6.48	3.80	2.71
14.00	6.69	3.98	1.77
14.50	6.86	4.13	1.47
15.00	7.00	4.26	1.28
15.50	7.12	4.37	1.04
16.00	7.23	4.46	0.93
16.50	7.33	4.55	0.85
17.00	7.42	4.63	0.78
17.50	7.50	4.70	0.73
18.00	7.58	4.77	0.68
18.50	7.64	4.83	0.59
19.00	7.71	4.89	0.55
19.50	7.77	4.95	0.53
20.00	7.82	5.00	0.50
20.50	7.88	5.05	0.48
21.00	7.93	5.09	0.46
21.50	7.98	5.14	0.44
22.00	8.03	5.18	0.42
22.50	8.07	5.22	0.41
23.00	8.12	5.26	0.39
23.50	8.16	5.30	0.38
24.00	**8.20**	**5.34**	0.37
24.50	8.20	5.34	0.02
25.00	8.20	5.34	0.00
25.50	8.20	5.34	0.00
26.00	8.20	5.34	0.00
26.50	8.20	5.34	0.00
27.00	8.20	5.34	0.00
27.50	8.20	5.34	0.00
28.00	8.20	5.34	0.00
28.50	8.20	5.34	0.00
29.00	8.20	5.34	0.00
29.50	8.20	5.34	0.00
30.00	8.20	5.34	0.00
30.50	8.20	5.34	0.00
31.00	8.20	5.34	0.00
31.50	8.20	5.34	0.00
32.00	8.20	5.34	0.00
32.50	8.20	5.34	0.00
33.00	8.20	5.34	0.00
33.50	8.20	5.34	0.00
34.00	8.20	5.34	0.00
34.50	8.20	5.34	0.00
35.00	8.20	5.34	0.00
35.50	8.20	5.34	0.00
36.00	8.20	5.34	0.00
36.50	8.20	5.34	0.00
37.00	8.20	5.34	0.00
37.50	8.20	5.34	0.00
38.00	8.20	5.34	0.00
38.50	8.20	5.34	0.00
39.00	8.20	5.34	0.00
39.50	8.20	5.34	0.00
40.00	8.20	5.34	0.00
40.50	8.20	5.34	0.00
41.00	8.20	5.34	0.00
41.50	8.20	5.34	0.00
42.00	8.20	5.34	0.00
42.50	8.20	5.34	0.00
43.00	8.20	5.34	0.00
43.50	8.20	5.34	0.00
44.00	8.20	5.34	0.00
44.50	8.20	5.34	0.00
45.00	8.20	5.34	0.00
45.50	8.20	5.34	0.00
46.00	8.20	5.34	0.00
46.50	8.20	5.34	0.00
47.00	8.20	5.34	0.00
47.50	8.20	5.34	0.00
48.00	8.20	5.34	0.00

Summary for Subcatchment 1.0C: 103

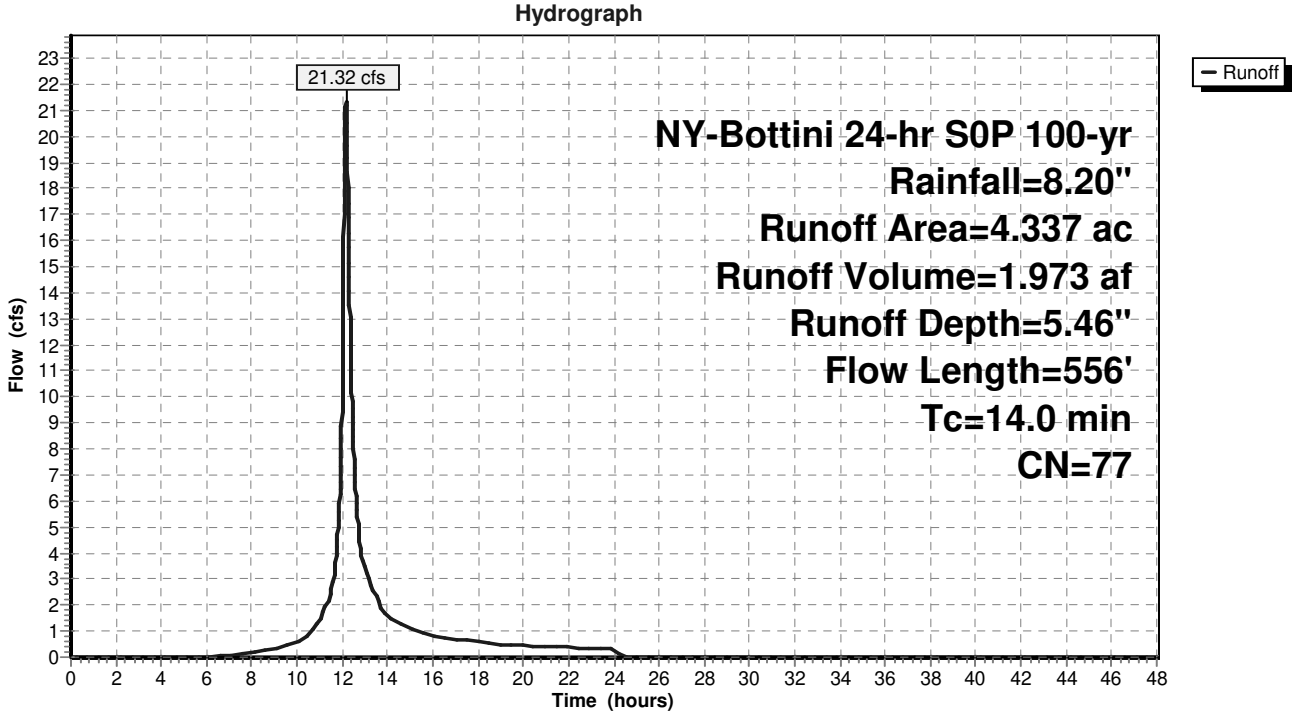
Runoff = 21.32 cfs @ 12.16 hrs, Volume= 1.973 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.400	74	>75% Grass cover, Good, HSG C
0.093	80	>75% Grass cover, Good, HSG D
0.882	73	Woods, Fair, HSG C
2.962	79	Woods, Fair, HSG D
4.337	77	Weighted Average
4.337		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	46	0.2390	0.41		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.50"
5.8	44	0.0910	0.13		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.50"
5.4	316	0.0380	0.97		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	150	0.0063	2.90	37.64	**Trap/Vee/Rect Channel Flow, D-E** Bot.W=10.00' D=1.00' Z= 3.0 '/' Top.W=16.00' n= 0.035
14.0	556	Total			

Subcatchment 1.0C: 103



Hydrograph for Subcatchment 1.0C: 103

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.00	0.00
6.00	0.63	0.00	0.00
6.50	0.70	0.00	0.03
7.00	0.79	0.01	0.07
7.50	0.88	0.02	0.11
8.00	0.98	0.04	0.17
8.50	1.08	0.07	0.23
9.00	1.20	0.10	0.30
9.50	1.35	0.15	0.45
10.00	1.53	0.22	0.60
10.50	1.73	0.31	0.83
11.00	2.06	0.48	1.49
11.50	2.53	0.76	2.53
12.00	4.38	2.12	**10.75**
12.50	5.71	3.23	**7.88**
13.00	6.17	3.63	3.37
13.50	6.48	3.90	2.39
14.00	6.69	4.09	1.57
14.50	6.86	4.24	1.31
15.00	7.00	4.37	1.15
15.50	7.12	4.48	0.93
16.00	7.23	4.57	0.84
16.50	7.33	4.66	0.76
17.00	7.42	4.74	0.71
17.50	7.50	4.82	0.66
18.00	7.58	4.89	0.62
18.50	7.64	4.95	0.53
19.00	7.71	5.01	0.50
19.50	7.77	5.06	0.47
20.00	7.82	5.11	0.45
20.50	7.88	5.16	0.43
21.00	7.93	5.21	0.41
21.50	7.98	5.25	0.40
22.00	8.03	5.30	0.38
22.50	8.07	5.34	0.37
23.00	8.12	5.38	0.35
23.50	8.16	5.42	0.34
24.00	**8.20**	**5.46**	0.33
24.50	8.20	5.46	0.01
25.00	8.20	5.46	0.00
25.50	8.20	5.46	0.00
26.00	8.20	5.46	0.00
26.50	8.20	5.46	0.00
27.00	8.20	5.46	0.00
27.50	8.20	5.46	0.00
28.00	8.20	5.46	0.00
28.50	8.20	5.46	0.00
29.00	8.20	5.46	0.00
29.50	8.20	5.46	0.00
30.00	8.20	5.46	0.00
30.50	8.20	5.46	0.00
31.00	8.20	5.46	0.00
31.50	8.20	5.46	0.00
32.00	8.20	5.46	0.00
32.50	8.20	5.46	0.00
33.00	8.20	5.46	0.00
33.50	8.20	5.46	0.00
34.00	8.20	5.46	0.00
34.50	8.20	5.46	0.00
35.00	8.20	5.46	0.00
35.50	8.20	5.46	0.00
36.00	8.20	5.46	0.00
36.50	8.20	5.46	0.00
37.00	8.20	5.46	0.00
37.50	8.20	5.46	0.00
38.00	8.20	5.46	0.00
38.50	8.20	5.46	0.00
39.00	8.20	5.46	0.00
39.50	8.20	5.46	0.00
40.00	8.20	5.46	0.00
40.50	8.20	5.46	0.00
41.00	8.20	5.46	0.00
41.50	8.20	5.46	0.00
42.00	8.20	5.46	0.00
42.50	8.20	5.46	0.00
43.00	8.20	5.46	0.00
43.50	8.20	5.46	0.00
44.00	8.20	5.46	0.00
44.50	8.20	5.46	0.00
45.00	8.20	5.46	0.00
45.50	8.20	5.46	0.00
46.00	8.20	5.46	0.00
46.50	8.20	5.46	0.00
47.00	8.20	5.46	0.00
47.50	8.20	5.46	0.00
48.00	8.20	5.46	0.00

Summary for Subcatchment 1.1S: 102

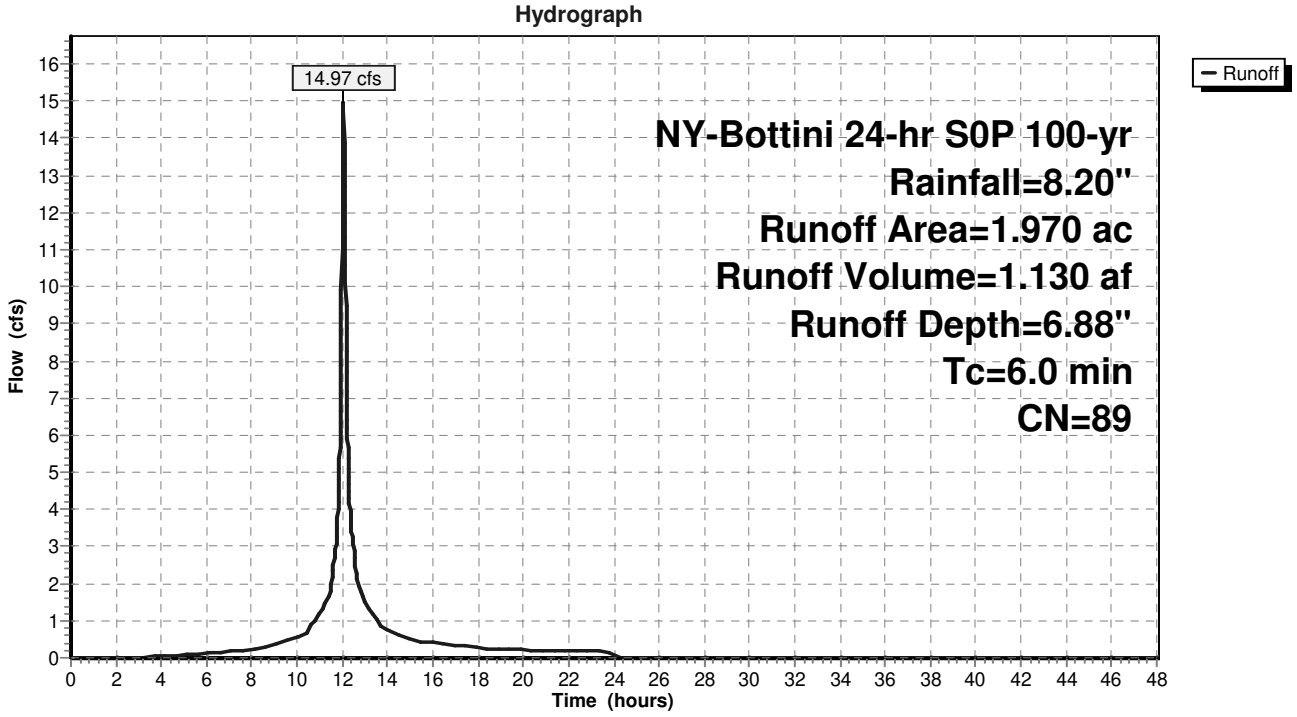
Runoff = 14.97 cfs @ 12.04 hrs, Volume= 1.130 af, Depth= 6.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
1.219	98	Paved parking, HSG A
0.028	89	Gravel roads, HSG C
0.684	74	>75% Grass cover, Good, HSG C
0.039	79	50-75% Grass cover, Fair, HSG C
1.970	89	Weighted Average
0.751		38.12% Pervious Area
1.219		61.88% Impervious Area

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

Subcatchment 1.1S: 102



Hydrograph for Subcatchment 1.1S: 102

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	33.00	8.20	6.88	0.00
0.50	0.04	0.00	0.00	33.50	8.20	6.88	0.00
1.00	0.08	0.00	0.00	34.00	8.20	6.88	0.00
1.50	0.13	0.00	0.00	34.50	8.20	6.88	0.00
2.00	0.17	0.00	0.00	35.00	8.20	6.88	0.00
2.50	0.22	0.00	0.00	35.50	8.20	6.88	0.00
3.00	0.27	0.00	0.01	36.00	8.20	6.88	0.00
3.50	0.32	0.00	0.02	36.50	8.20	6.88	0.00
4.00	0.38	0.01	0.04	37.00	8.20	6.88	0.00
4.50	0.44	0.02	0.05	37.50	8.20	6.88	0.00
5.00	0.50	0.04	0.07	38.00	8.20	6.88	0.00
5.50	0.56	0.06	0.09	38.50	8.20	6.88	0.00
6.00	0.63	0.09	0.11	39.00	8.20	6.88	0.00
6.50	0.70	0.12	0.15	39.50	8.20	6.88	0.00
7.00	0.79	0.16	0.17	40.00	8.20	6.88	0.00
7.50	0.88	0.21	0.20	40.50	8.20	6.88	0.00
8.00	0.98	0.27	0.24	41.00	8.20	6.88	0.00
8.50	1.08	0.34	0.28	41.50	8.20	6.88	0.00
9.00	1.20	0.42	0.33	42.00	8.20	6.88	0.00
9.50	1.35	0.52	0.44	42.50	8.20	6.88	0.00
10.00	1.53	0.65	0.54	43.00	8.20	6.88	0.00
10.50	1.73	0.81	0.69	43.50	8.20	6.88	0.00
11.00	2.06	1.08	1.16	44.00	8.20	6.88	0.00
11.50	2.53	1.48	1.90	44.50	8.20	6.88	0.00
12.00	4.38	3.19	**13.07**	45.00	8.20	6.88	0.00
12.50	5.71	4.46	**2.97**	45.50	8.20	6.88	0.00
13.00	6.17	4.90	1.53	46.00	8.20	6.88	0.00
13.50	6.48	5.20	1.12	46.50	8.20	6.88	0.00
14.00	6.69	5.40	0.74	47.00	8.20	6.88	0.00
14.50	6.86	5.57	0.63	47.50	8.20	6.88	0.00
15.00	7.00	5.71	0.55	48.00	8.20	6.88	0.00
15.50	7.12	5.83	0.44				
16.00	7.23	5.93	0.40				
16.50	7.33	6.03	0.37				
17.00	7.42	6.11	0.34				
17.50	7.50	6.20	0.32				
18.00	7.58	6.27	0.30				
18.50	7.64	6.34	0.25				
19.00	7.71	6.40	0.24				
19.50	7.77	6.46	0.23				
20.00	7.82	6.51	0.22				
20.50	7.88	6.57	0.21				
21.00	7.93	6.62	0.20				
21.50	7.98	6.67	0.19				
22.00	8.03	6.71	0.18				
22.50	8.07	6.76	0.18				
23.00	8.12	6.80	0.17				
23.50	8.16	6.84	0.16				
24.00	**8.20**	**6.88**	0.16				
24.50	8.20	6.88	0.00				
25.00	8.20	6.88	0.00				
25.50	8.20	6.88	0.00				
26.00	8.20	6.88	0.00				
26.50	8.20	6.88	0.00				
27.00	8.20	6.88	0.00				
27.50	8.20	6.88	0.00				
28.00	8.20	6.88	0.00				
28.50	8.20	6.88	0.00				
29.00	8.20	6.88	0.00				
29.50	8.20	6.88	0.00				
30.00	8.20	6.88	0.00				
30.50	8.20	6.88	0.00				
31.00	8.20	6.88	0.00				
31.50	8.20	6.88	0.00				
32.00	8.20	6.88	0.00				
32.50	8.20	6.88	0.00				

Summary for Subcatchment 1.2S: 100.1

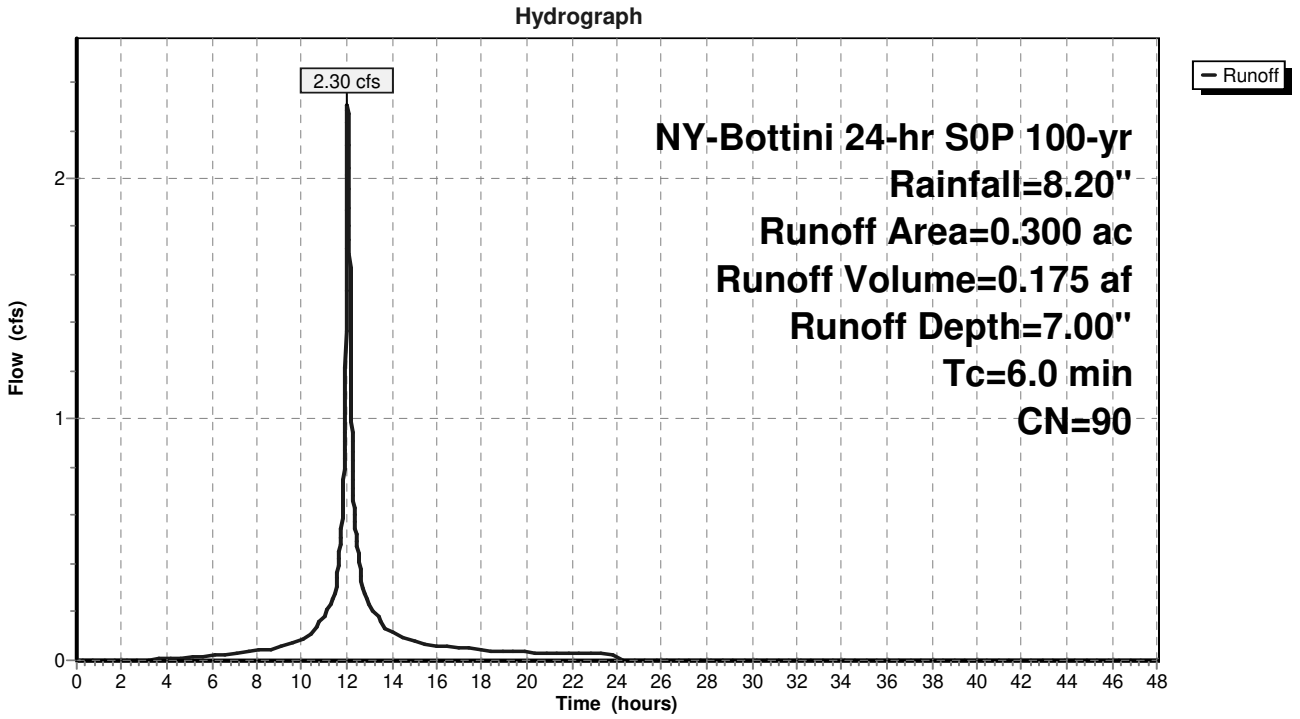
Runoff = 2.30 cfs @ 12.04 hrs, Volume= 0.175 af, Depth= 7.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.200	98	Paved parking, HSG A
0.100	74	>75% Grass cover, Good, HSG C
0.300	90	Weighted Average
0.100		33.33% Pervious Area
0.200		66.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC 6 min path**

Subcatchment 1.2S: 100.1



Hydrograph for Subcatchment 1.2S: 100.1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.01	0.00
4.00	0.38	0.02	0.01
4.50	0.44	0.03	0.01
5.00	0.50	0.05	0.01
5.50	0.56	0.08	0.02
6.00	0.63	0.11	0.02
6.50	0.70	0.15	0.02
7.00	0.79	0.19	0.03
7.50	0.88	0.24	0.03
8.00	0.98	0.31	0.04
8.50	1.08	0.38	0.05
9.00	1.20	0.46	0.05
9.50	1.35	0.57	0.07
10.00	1.53	0.70	0.09
10.50	1.73	0.87	0.11
11.00	2.06	1.14	0.18
11.50	2.53	1.56	0.29
12.00	4.38	3.28	**2.01**
12.50	5.71	4.57	**0.46**
13.00	6.17	5.01	0.23
13.50	6.48	5.32	0.17
14.00	6.69	5.52	0.11
14.50	6.86	5.68	0.10
15.00	7.00	5.83	0.08
15.50	7.12	5.94	0.07
16.00	7.23	6.05	0.06
16.50	7.33	6.14	0.06
17.00	7.42	6.23	0.05
17.50	7.50	6.31	0.05
18.00	7.58	6.39	0.05
18.50	7.64	6.45	0.04
19.00	7.71	6.52	0.04
19.50	7.77	6.58	0.03
20.00	7.82	6.63	0.03
20.50	7.88	6.68	0.03
21.00	7.93	6.74	0.03
21.50	7.98	6.78	0.03
22.00	8.03	6.83	0.03
22.50	8.07	6.88	0.03
23.00	8.12	6.92	0.03
23.50	8.16	6.96	0.03
24.00	**8.20**	**7.00**	0.02
24.50	8.20	7.00	0.00
25.00	8.20	7.00	0.00
25.50	8.20	7.00	0.00
26.00	8.20	7.00	0.00
26.50	8.20	7.00	0.00
27.00	8.20	7.00	0.00
27.50	8.20	7.00	0.00
28.00	8.20	7.00	0.00
28.50	8.20	7.00	0.00
29.00	8.20	7.00	0.00
29.50	8.20	7.00	0.00
30.00	8.20	7.00	0.00
30.50	8.20	7.00	0.00
31.00	8.20	7.00	0.00
31.50	8.20	7.00	0.00
32.00	8.20	7.00	0.00
32.50	8.20	7.00	0.00
33.00	8.20	7.00	0.00
33.50	8.20	7.00	0.00
34.00	8.20	7.00	0.00
34.50	8.20	7.00	0.00
35.00	8.20	7.00	0.00
35.50	8.20	7.00	0.00
36.00	8.20	7.00	0.00
36.50	8.20	7.00	0.00
37.00	8.20	7.00	0.00
37.50	8.20	7.00	0.00
38.00	8.20	7.00	0.00
38.50	8.20	7.00	0.00
39.00	8.20	7.00	0.00
39.50	8.20	7.00	0.00
40.00	8.20	7.00	0.00
40.50	8.20	7.00	0.00
41.00	8.20	7.00	0.00
41.50	8.20	7.00	0.00
42.00	8.20	7.00	0.00
42.50	8.20	7.00	0.00
43.00	8.20	7.00	0.00
43.50	8.20	7.00	0.00
44.00	8.20	7.00	0.00
44.50	8.20	7.00	0.00
45.00	8.20	7.00	0.00
45.50	8.20	7.00	0.00
46.00	8.20	7.00	0.00
46.50	8.20	7.00	0.00
47.00	8.20	7.00	0.00
47.50	8.20	7.00	0.00
48.00	8.20	7.00	0.00

Summary for Subcatchment 1.3S: 100.2

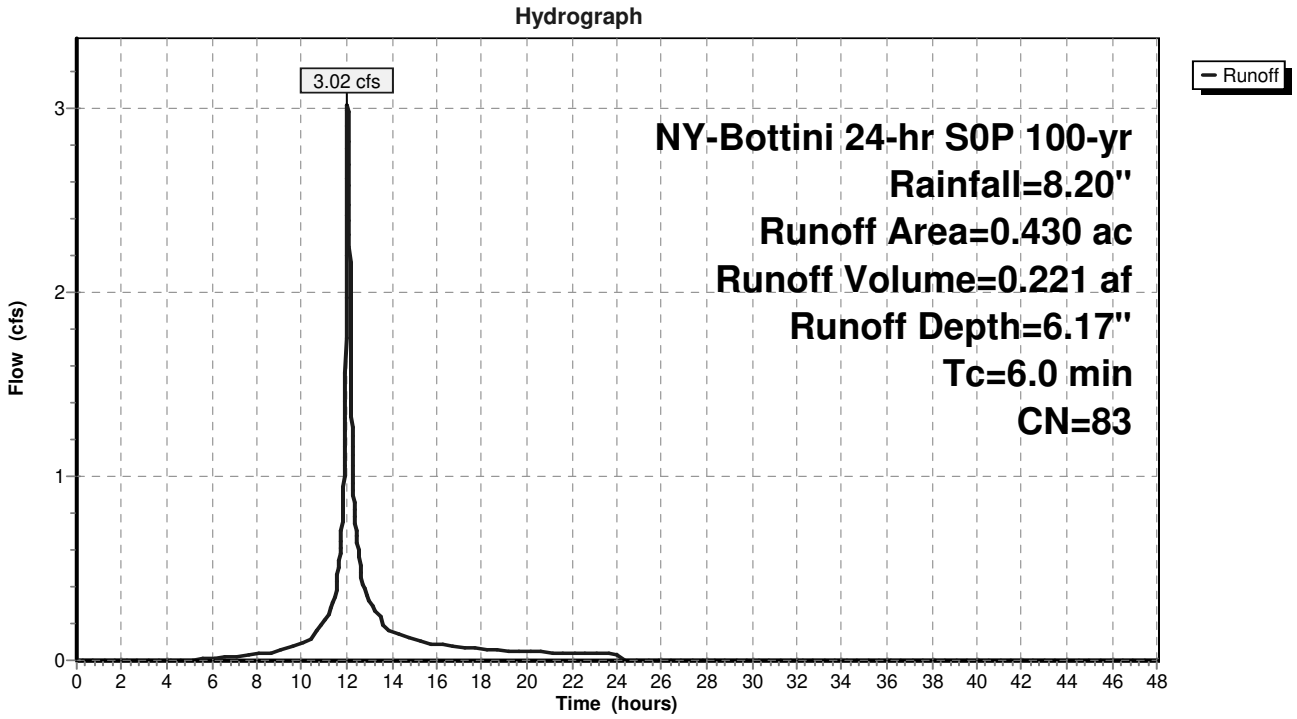
Runoff = 3.02 cfs @ 12.04 hrs, Volume= 0.221 af, Depth= 6.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Bottini 24-hr S0P 100-yr Rainfall=8.20"

Area (ac)	CN	Description
0.170	98	Paved parking, HSG A
0.260	74	>75% Grass cover, Good, HSG C
0.430	83	Weighted Average
0.260		60.47% Pervious Area
0.170		39.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC 6 min path**

Subcatchment 1.3S: 100.2



Hydrograph for Subcatchment 1.3S: 100.2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.17	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.32	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.50	0.00	0.00
5.50	0.56	0.01	0.01
6.00	0.63	0.02	0.01
6.50	0.70	0.04	0.02
7.00	0.79	0.06	0.02
7.50	0.88	0.09	0.03
8.00	0.98	0.12	0.03
8.50	1.08	0.17	0.04
9.00	1.20	0.22	0.05
9.50	1.35	0.30	0.07
10.00	1.53	0.39	0.09
10.50	1.73	0.52	0.12
11.00	2.06	0.73	0.21
11.50	2.53	1.08	0.36
12.00	4.38	2.62	**2.61**
12.50	5.71	3.83	**0.62**
13.00	6.17	4.25	0.32
13.50	6.48	4.54	0.24
14.00	6.69	4.73	0.15
14.50	6.86	4.89	0.13
15.00	7.00	5.03	0.12
15.50	7.12	5.14	0.09
16.00	7.23	5.24	0.08
16.50	7.33	5.34	0.08
17.00	7.42	5.42	0.07
17.50	7.50	5.50	0.07
18.00	7.58	5.57	0.06
18.50	7.64	5.64	0.05
19.00	7.71	5.70	0.05
19.50	7.77	5.75	0.05
20.00	7.82	5.81	0.05
20.50	7.88	5.86	0.04
21.00	7.93	5.91	0.04
21.50	7.98	5.96	0.04
22.00	8.03	6.00	0.04
22.50	8.07	6.05	0.04
23.00	8.12	6.09	0.04
23.50	8.16	6.13	0.04
24.00	**8.20**	**6.17**	0.03
24.50	8.20	6.17	0.00
25.00	8.20	6.17	0.00
25.50	8.20	6.17	0.00
26.00	8.20	6.17	0.00
26.50	8.20	6.17	0.00
27.00	8.20	6.17	0.00
27.50	8.20	6.17	0.00
28.00	8.20	6.17	0.00
28.50	8.20	6.17	0.00
29.00	8.20	6.17	0.00
29.50	8.20	6.17	0.00
30.00	8.20	6.17	0.00
30.50	8.20	6.17	0.00
31.00	8.20	6.17	0.00
31.50	8.20	6.17	0.00
32.00	8.20	6.17	0.00
32.50	8.20	6.17	0.00
33.00	8.20	6.17	0.00
33.50	8.20	6.17	0.00
34.00	8.20	6.17	0.00
34.50	8.20	6.17	0.00
35.00	8.20	6.17	0.00
35.50	8.20	6.17	0.00
36.00	8.20	6.17	0.00
36.50	8.20	6.17	0.00
37.00	8.20	6.17	0.00
37.50	8.20	6.17	0.00
38.00	8.20	6.17	0.00
38.50	8.20	6.17	0.00
39.00	8.20	6.17	0.00
39.50	8.20	6.17	0.00
40.00	8.20	6.17	0.00
40.50	8.20	6.17	0.00
41.00	8.20	6.17	0.00
41.50	8.20	6.17	0.00
42.00	8.20	6.17	0.00
42.50	8.20	6.17	0.00
43.00	8.20	6.17	0.00
43.50	8.20	6.17	0.00
44.00	8.20	6.17	0.00
44.50	8.20	6.17	0.00
45.00	8.20	6.17	0.00
45.50	8.20	6.17	0.00
46.00	8.20	6.17	0.00
46.50	8.20	6.17	0.00
47.00	8.20	6.17	0.00
47.50	8.20	6.17	0.00
48.00	8.20	6.17	0.00

Summary for Reach 1R:

Inflow Area = 4.820 ac, 0.00% Impervious, Inflow Depth = 5.34" for 100-yr event
Inflow = 21.51 cfs @ 12.21 hrs, Volume= 2.145 af
Outflow = 21.16 cfs @ 12.27 hrs, Volume= 2.145 af, Atten= 2%, Lag= 4.0 min

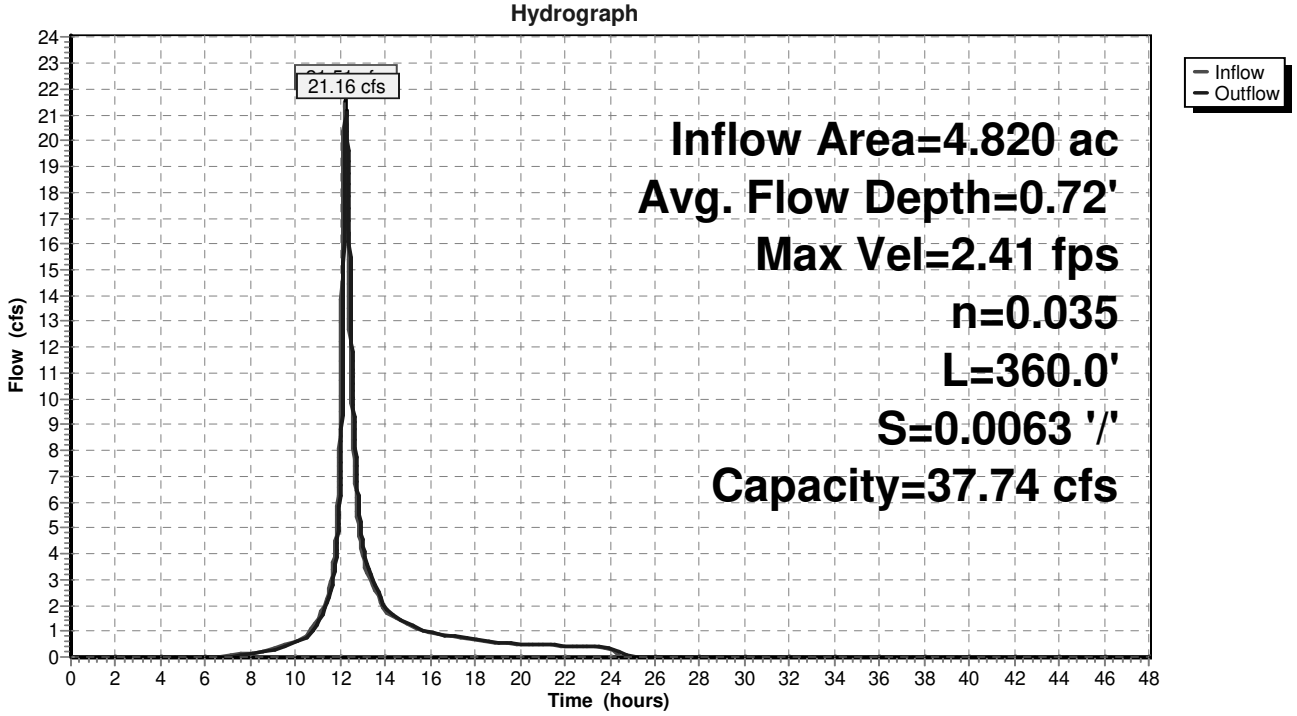
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.41 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 9.7 min

Peak Storage= 3,161 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.72'
Bank-Full Depth= 1.00' Flow Area= 13.0 sf, Capacity= 37.74 cfs

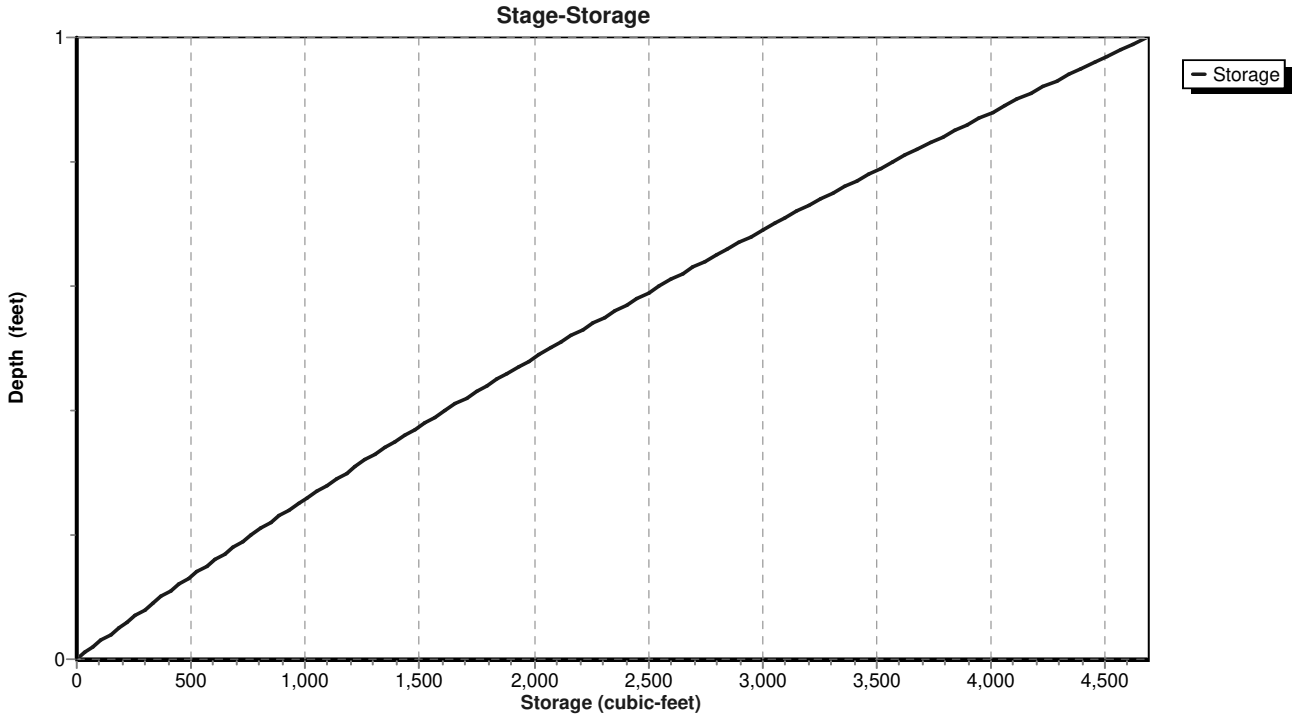
10.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 3.0 '/' Top Width= 16.00'
Length= 360.0' Slope= 0.0063 '/'
Inlet Invert= 160.28', Outlet Invert= 158.00'

‡

Reach 1R:



Reach 1R:


Stage-Storage
Storage
Depth (feet)
1
0
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
4,500
Storage (cubic-feet)

Hydrograph for Reach 1R:

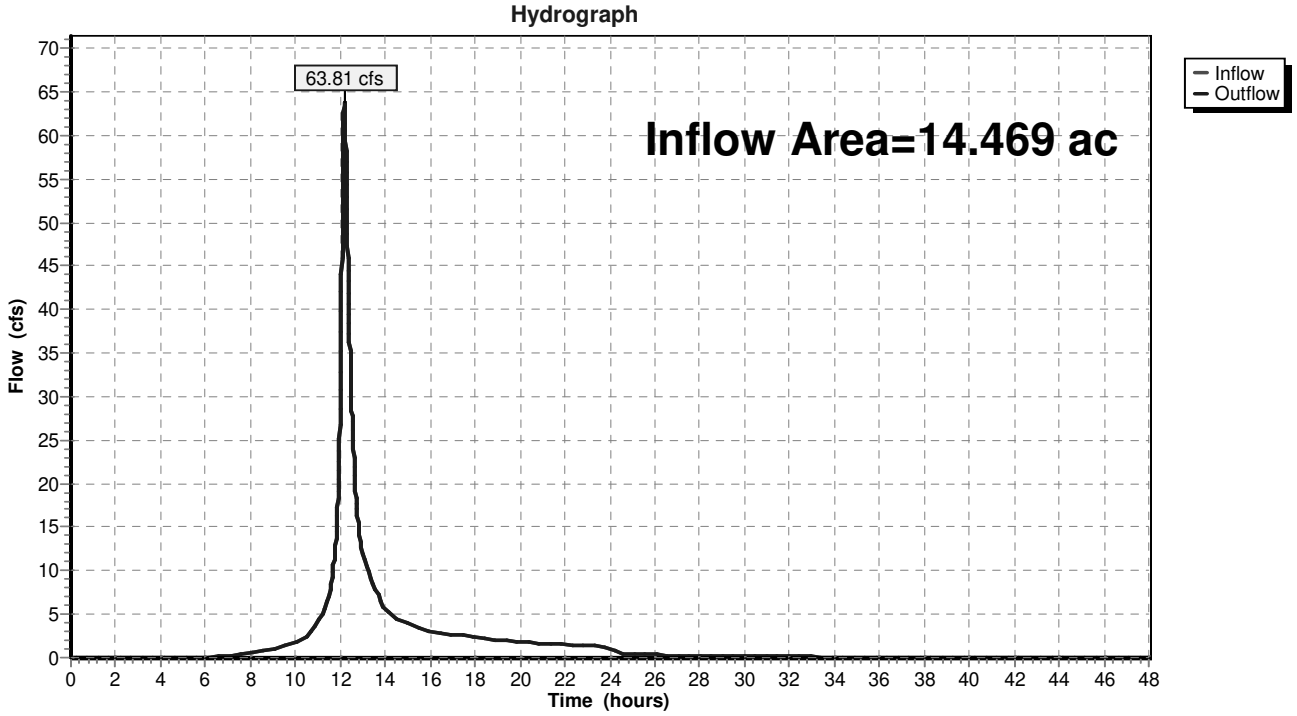
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	160.28	0.00
0.50	0.00	0	160.28	0.00
1.00	0.00	0	160.28	0.00
1.50	0.00	0	160.28	0.00
2.00	0.00	0	160.28	0.00
2.50	0.00	0	160.28	0.00
3.00	0.00	0	160.28	0.00
3.50	0.00	0	160.28	0.00
4.00	0.00	0	160.28	0.00
4.50	0.00	0	160.28	0.00
5.00	0.00	0	160.28	0.00
5.50	0.00	0	160.28	0.00
6.00	0.00	0	160.28	0.00
6.50	0.02	6	160.28	0.00
7.00	0.05	48	160.29	0.02
7.50	0.10	94	160.31	0.07
8.00	0.15	131	160.32	0.13
8.50	0.22	167	160.33	0.19
9.00	0.30	204	160.34	0.27
9.50	0.45	260	160.35	0.40
10.00	0.61	318	160.37	0.56
10.50	0.84	389	160.38	0.77
11.00	1.51	554	160.43	1.35
11.50	2.56	773	160.48	2.29
12.00	**9.51**	**1,663**	**160.69**	**6.64**
12.50	**10.06**	**2,061**	**160.78**	**12.51**
13.00	3.93	1,092	160.56	4.37
13.50	2.71	849	160.50	2.86
14.00	1.77	656	160.45	1.90
14.50	1.47	576	160.43	1.52
15.00	1.28	528	160.42	1.32
15.50	1.04	465	160.40	1.08
16.00	0.93	432	160.40	0.95
16.50	0.85	409	160.39	0.87
17.00	0.78	389	160.38	0.80
17.50	0.73	372	160.38	0.74
18.00	0.68	357	160.38	0.69
18.50	0.59	329	160.37	0.61
19.00	0.55	314	160.37	0.56
19.50	0.53	304	160.36	0.53
20.00	0.50	295	160.36	0.51
20.50	0.48	286	160.36	0.48
21.00	0.46	279	160.36	0.46
21.50	0.44	272	160.35	0.44
22.00	0.42	265	160.35	0.43
22.50	0.41	259	160.35	0.41
23.00	0.39	254	160.35	0.40
23.50	0.38	248	160.35	0.38
24.00	0.37	243	160.35	0.37
24.50	0.02	110	160.31	0.12
25.00	0.00	37	160.29	0.02
25.50	0.00	17	160.28	0.01
26.00	0.00	8	160.28	0.00
26.50	0.00	4	160.28	0.00
27.00	0.00	2	160.28	0.00
27.50	0.00	1	160.28	0.00
28.00	0.00	0	160.28	0.00
28.50	0.00	0	160.28	0.00
29.00	0.00	0	160.28	0.00
29.50	0.00	0	160.28	0.00
30.00	0.00	0	160.28	0.00
30.50	0.00	0	160.28	0.00
31.00	0.00	0	160.28	0.00
31.50	0.00	0	160.28	0.00
32.00	0.00	0	160.28	0.00
32.50	0.00	0	160.28	0.00
33.00	0.00	0	160.28	0.00
33.50	0.00	0	160.28	0.00
34.00	0.00	0	160.28	0.00
34.50	0.00	0	160.28	0.00
35.00	0.00	0	160.28	0.00
35.50	0.00	0	160.28	0.00
36.00	0.00	0	160.28	0.00
36.50	0.00	0	160.28	0.00
37.00	0.00	0	160.28	0.00
37.50	0.00	0	160.28	0.00
38.00	0.00	0	160.28	0.00
38.50	0.00	0	160.28	0.00
39.00	0.00	0	160.28	0.00
39.50	0.00	0	160.28	0.00
40.00	0.00	0	160.28	0.00
40.50	0.00	0	160.28	0.00
41.00	0.00	0	160.28	0.00
41.50	0.00	0	160.28	0.00
42.00	0.00	0	160.28	0.00
42.50	0.00	0	160.28	0.00
43.00	0.00	0	160.28	0.00
43.50	0.00	0	160.28	0.00
44.00	0.00	0	160.28	0.00
44.50	0.00	0	160.28	0.00
45.00	0.00	0	160.28	0.00
45.50	0.00	0	160.28	0.00
46.00	0.00	0	160.28	0.00
46.50	0.00	0	160.28	0.00
47.00	0.00	0	160.28	0.00
47.50	0.00	0	160.28	0.00
48.00	0.00	0	160.28	0.00

Summary for Reach DP1:

Inflow Area = 14.469 ac, 11.65% Impervious, Inflow Depth > 5.66" for 100-yr event
Inflow = 63.81 cfs @ 12.18 hrs, Volume= 6.821 af
Outflow = 63.81 cfs @ 12.18 hrs, Volume= 6.821 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP1:



Hydrograph for Reach DP1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	33.00	0.11		0.11
0.50	0.00		0.00	33.50	0.09		0.09
1.00	0.00		0.00	34.00	0.07		0.07
1.50	0.00		0.00	34.50	0.06		0.06
2.00	0.00		0.00	35.00	0.05		0.05
2.50	0.00		0.00	35.50	0.05		0.05
3.00	0.00		0.00	36.00	0.04		0.04
3.50	0.00		0.00	36.50	0.04		0.04
4.00	0.00		0.00	37.00	0.03		0.03
4.50	0.01		0.01	37.50	0.03		0.03
5.00	0.02		0.02	38.00	0.03		0.03
5.50	0.03		0.03	38.50	0.03		0.03
6.00	0.05		0.05	39.00	0.03		0.03
6.50	0.13		0.13	39.50	0.02		0.02
7.00	0.23		0.23	40.00	0.02		0.02
7.50	0.37		0.37	40.50	0.02		0.02
8.00	0.53		0.53	41.00	0.02		0.02
8.50	0.71		0.71	41.50	0.02		0.02
9.00	0.93		0.93	42.00	0.02		0.02
9.50	1.31		1.31	42.50	0.02		0.02
10.00	1.75		1.75	43.00	0.02		0.02
10.50	2.36		2.36	43.50	0.02		0.02
11.00	4.06		4.06	44.00	0.02		0.02
11.50	7.37		7.37	44.50	0.02		0.02
12.00	**30.73**		**30.73**	45.00	0.02		0.02
12.50	**29.12**		**29.12**	45.50	0.02		0.02
13.00	11.95		11.95	46.00	0.02		0.02
13.50	8.29		8.29	46.50	0.02		0.02
14.00	5.49		5.49	47.00	0.02		0.02
14.50	4.52		4.52	47.50	0.02		0.02
15.00	4.01		4.01	48.00	0.02		0.02
15.50	3.38		3.38				
16.00	3.08		3.08				
16.50	2.86		2.86				
17.00	2.68		2.68				
17.50	2.52		2.52				
18.00	2.38		2.38				
18.50	2.13		2.13				
19.00	2.01		2.01				
19.50	1.91		1.91				
20.00	1.83		1.83				
20.50	1.75		1.75				
21.00	1.67		1.67				
21.50	1.59		1.59				
22.00	1.52		1.52				
22.50	1.44		1.44				
23.00	1.36		1.36				
23.50	1.32		1.32				
24.00	1.28		1.28				
24.50	0.47		0.47				
25.00	0.35		0.35				
25.50	0.32		0.32				
26.00	0.31		0.31				
26.50	0.29		0.29				
27.00	0.28		0.28				
27.50	0.27		0.27				
28.00	0.25		0.25				
28.50	0.24		0.24				
29.00	0.23		0.23				
29.50	0.21		0.21				
30.00	0.20		0.20				
30.50	0.18		0.18				
31.00	0.17		0.17				
31.50	0.15		0.15				
32.00	0.14		0.14				
32.50	0.12		0.12				

Summary for Pond 1.1F: 1F: Forebay

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 6.88" for 100-yr event
Inflow = 14.97 cfs @ 12.04 hrs, Volume= 1.130 af
Outflow = 14.59 cfs @ 12.06 hrs, Volume= 1.130 af, Atten= 3%, Lag= 1.0 min
Primary = 14.59 cfs @ 12.06 hrs, Volume= 1.130 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 177.00' Surf.Area= 3,117 sf Storage= 4,395 cf
Peak Elev= 177.42' @ 12.06 hrs Surf.Area= 3,485 sf Storage= 5,791 cf (1,396 cf above start)

Plug-Flow detention time= 78.8 min calculated for 1.029 af (91% of inflow)
Center-of-Mass det. time= 3.4 min (781.8 - 778.5)

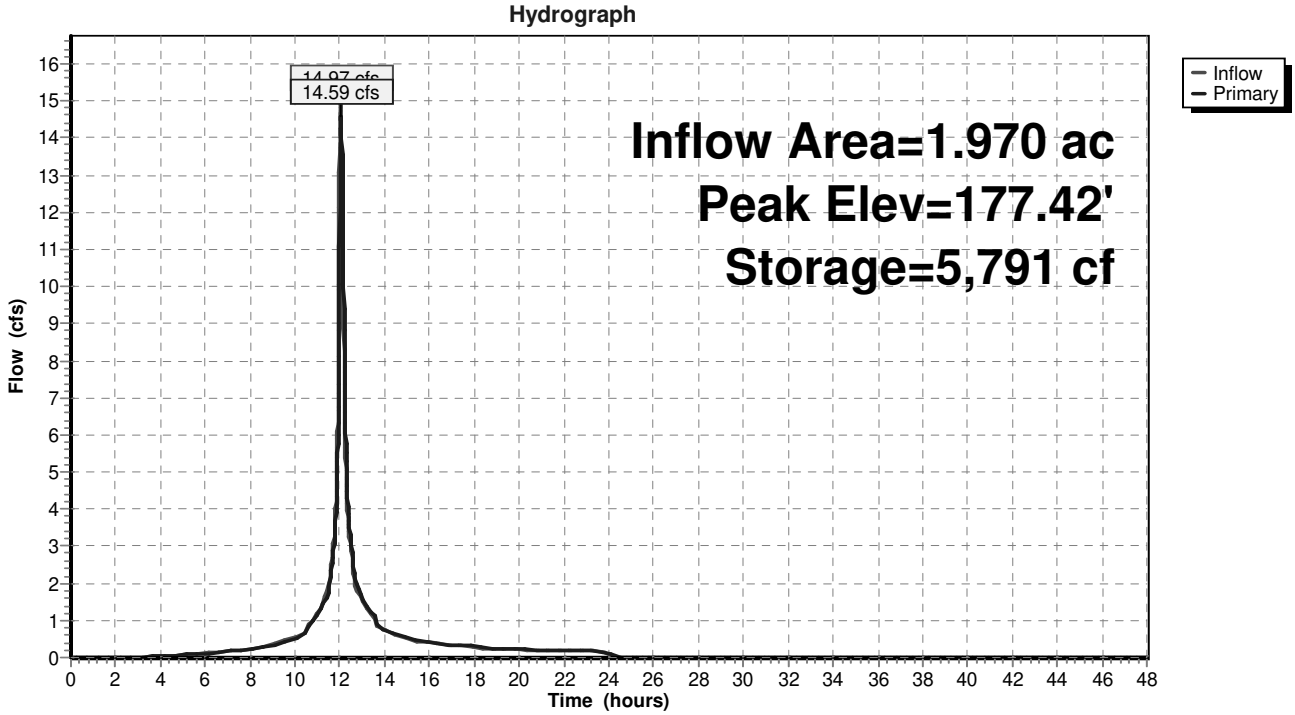
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	7,953 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.00	64	57.5	0	0	64
174.00	282	81.9	160	160	344
175.50	795	130.5	775	935	1,180
176.00	2,327	218.9	747	1,682	3,640
177.00	3,117	255.2	2,712	4,395	5,030
178.00	4,019	291.6	3,558	7,953	6,637

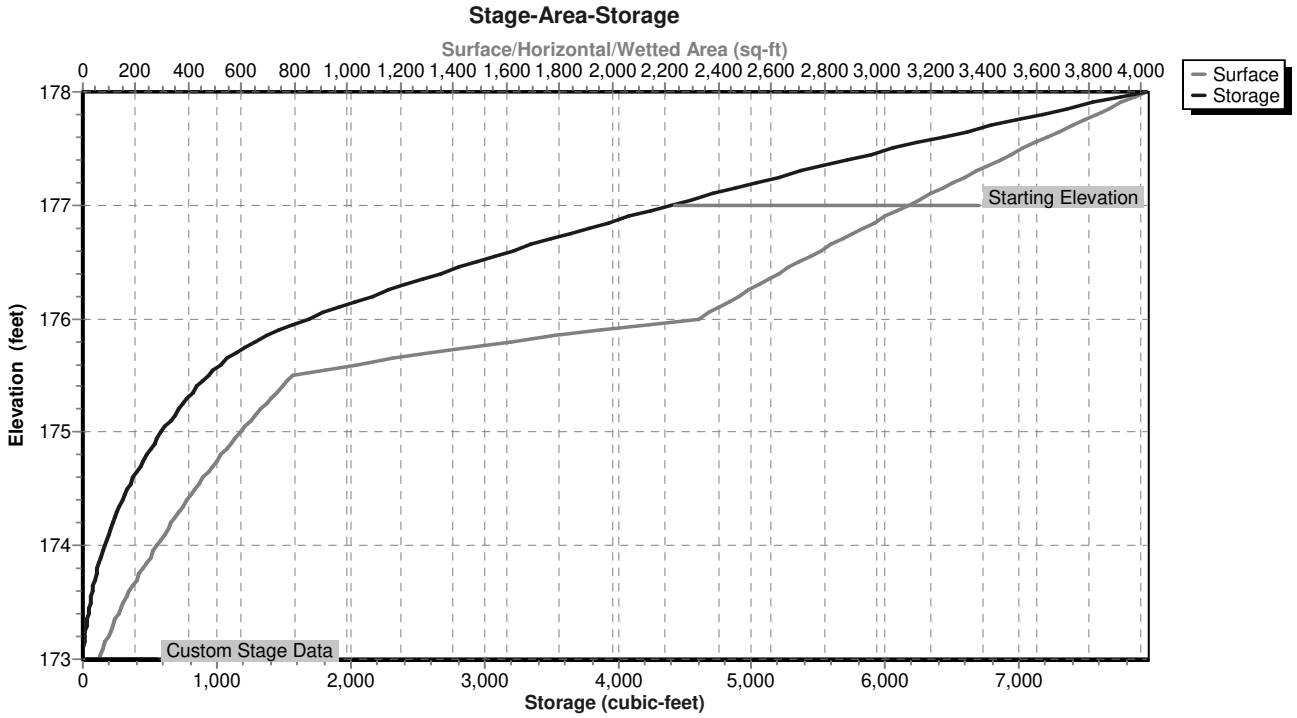
Device	Routing	Invert	Outlet Devices
#1	Primary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.47 (C= 3.09)

Primary OutFlow Max=14.54 cfs @ 12.06 hrs HW=177.42' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 14.54 cfs @ 1.95 fps)

Pond 1.1F: 1F: Forebay



Pond 1.1F: 1F: Forebay



Hydrograph for Pond 1.1F: 1F: Forebay

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	4,395	177.00	0.00
0.50	0.00	4,395	177.00	0.00
1.00	0.00	4,395	177.00	0.00
1.50	0.00	4,395	177.00	0.00
2.00	0.00	4,395	177.00	0.00
2.50	0.00	4,395	177.00	0.00
3.00	0.01	4,396	177.00	0.00
3.50	0.02	4,400	177.00	0.02
4.00	0.04	4,405	177.00	0.03
4.50	0.05	4,410	177.00	0.05
5.00	0.07	4,415	177.01	0.07
5.50	0.09	4,421	177.01	0.09
6.00	0.11	4,427	177.01	0.11
6.50	0.15	4,437	177.01	0.14
7.00	0.17	4,445	177.02	0.17
7.50	0.20	4,454	177.02	0.20
8.00	0.24	4,464	177.02	0.23
8.50	0.28	4,476	177.03	0.27
9.00	0.33	4,491	177.03	0.32
9.50	0.44	4,522	177.04	0.43
10.00	0.54	4,551	177.05	0.52
10.50	0.69	4,576	177.06	0.68
11.00	1.16	4,648	177.08	1.12
11.50	1.90	4,748	177.11	1.82
12.00	**13.07**	**5,563**	**177.36**	**11.08**
12.50	**2.97**	**4,901**	**177.16**	**3.11**
13.00	1.53	4,718	177.10	1.57
13.50	1.12	4,652	177.08	1.15
14.00	0.74	4,588	177.06	0.75
14.50	0.63	4,569	177.06	0.63
15.00	0.55	4,556	177.05	0.55
15.50	0.44	4,529	177.04	0.45
16.00	0.40	4,516	177.04	0.41
16.50	0.37	4,506	177.04	0.37
17.00	0.34	4,497	177.03	0.34
17.50	0.32	4,490	177.03	0.32
18.00	0.30	4,484	177.03	0.30
18.50	0.25	4,472	177.02	0.26
19.00	0.24	4,467	177.02	0.24
19.50	0.23	4,463	177.02	0.23
20.00	0.22	4,460	177.02	0.22
20.50	0.21	4,457	177.02	0.21
21.00	0.20	4,454	177.02	0.20
21.50	0.19	4,452	177.02	0.19
22.00	0.18	4,450	177.02	0.18
22.50	0.18	4,448	177.02	0.18
23.00	0.17	4,446	177.02	0.17
23.50	0.16	4,444	177.02	0.17
24.00	0.16	4,443	177.02	0.16
24.50	0.00	4,395	177.00	0.00
25.00	0.00	4,395	177.00	0.00
25.50	0.00	4,395	177.00	0.00
26.00	0.00	4,395	177.00	0.00
26.50	0.00	4,395	177.00	0.00
27.00	0.00	4,395	177.00	0.00
27.50	0.00	4,395	177.00	0.00
28.00	0.00	4,395	177.00	0.00
28.50	0.00	4,395	177.00	0.00
29.00	0.00	4,395	177.00	0.00
29.50	0.00	4,395	177.00	0.00
30.00	0.00	4,395	177.00	0.00
30.50	0.00	4,395	177.00	0.00
31.00	0.00	4,395	177.00	0.00
31.50	0.00	4,395	177.00	0.00
32.00	0.00	4,395	177.00	0.00
32.50	0.00	4,395	177.00	0.00
33.00	0.00	4,395	177.00	0.00
33.50	0.00	4,395	177.00	0.00
34.00	0.00	4,395	177.00	0.00
34.50	0.00	4,395	177.00	0.00
35.00	0.00	4,395	177.00	0.00
35.50	0.00	4,395	177.00	0.00
36.00	0.00	4,395	177.00	0.00
36.50	0.00	4,395	177.00	0.00
37.00	0.00	4,395	177.00	0.00
37.50	0.00	4,395	177.00	0.00
38.00	0.00	4,395	177.00	0.00
38.50	0.00	4,395	177.00	0.00
39.00	0.00	4,395	177.00	0.00
39.50	0.00	4,395	177.00	0.00
40.00	0.00	4,395	177.00	0.00
40.50	0.00	4,395	177.00	0.00
41.00	0.00	4,395	177.00	0.00
41.50	0.00	4,395	177.00	0.00
42.00	0.00	4,395	177.00	0.00
42.50	0.00	4,395	177.00	0.00
43.00	0.00	4,395	177.00	0.00
43.50	0.00	4,395	177.00	0.00
44.00	0.00	4,395	177.00	0.00
44.50	0.00	4,395	177.00	0.00
45.00	0.00	4,395	177.00	0.00
45.50	0.00	4,395	177.00	0.00
46.00	0.00	4,395	177.00	0.00
46.50	0.00	4,395	177.00	0.00
47.00	0.00	4,395	177.00	0.00
47.50	0.00	4,395	177.00	0.00
48.00	0.00	4,395	177.00	0.00

Summary for Pond 1.1P: 1P: Pocket Pond

Inflow Area = 1.970 ac, 61.88% Impervious, Inflow Depth = 6.88" for 100-yr event
Inflow = 14.59 cfs @ 12.06 hrs, Volume= 1.130 af
Outflow = 9.40 cfs @ 12.18 hrs, Volume= 1.129 af, Atten= 36%, Lag= 7.4 min
Primary = 9.40 cfs @ 12.18 hrs, Volume= 1.129 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 173.00' Surf.Area= 2,981 sf Storage= 3,891 cf
Peak Elev= 176.87' @ 12.18 hrs Surf.Area= 6,577 sf Storage= 22,084 cf (18,193 cf above start)

Plug-Flow detention time= 324.4 min calculated for 1.040 af (92% of inflow)
Center-of-Mass det. time= 244.4 min (1,026.3 - 781.8)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	30,190 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

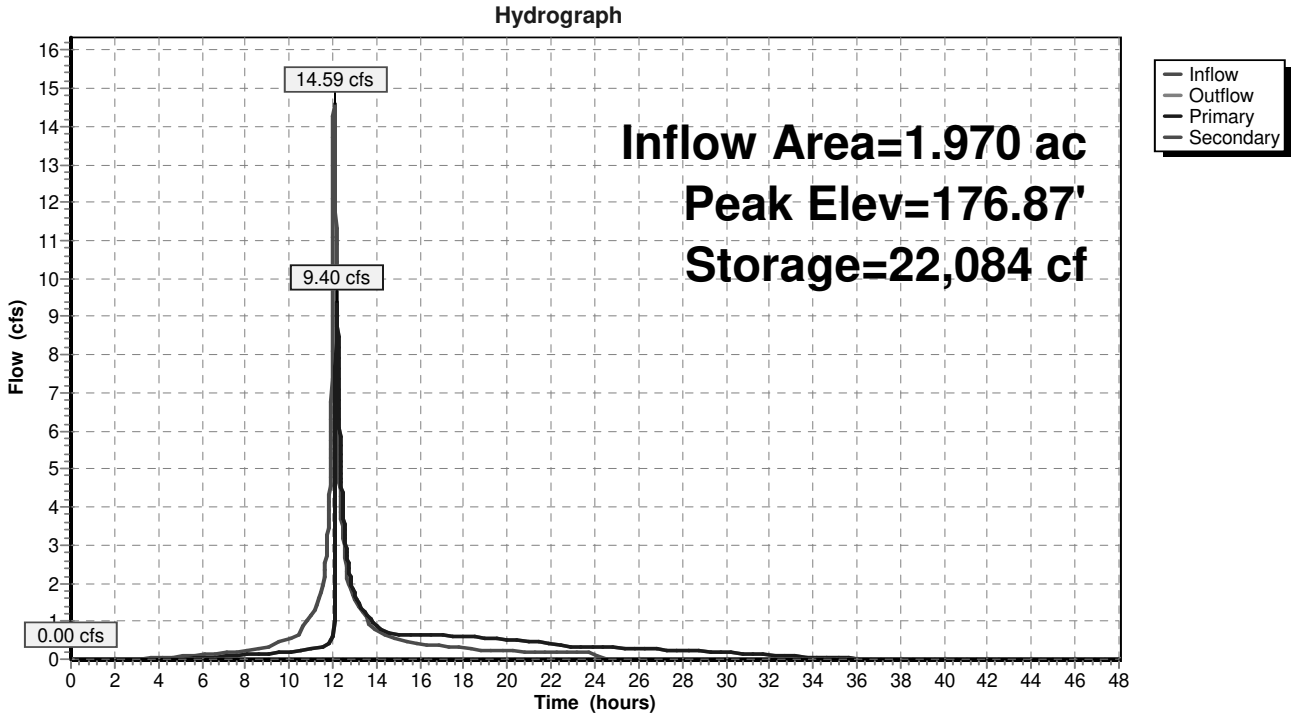
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	12	18.7	0	0	12
170.00	133	67.1	62	62	345
171.50	654	156.6	541	603	1,947
172.00	2,243	227.5	685	1,287	4,117
173.00	2,981	251.6	2,603	3,891	5,066
174.00	3,822	279.0	3,393	7,283	6,253
176.00	5,694	325.1	9,454	16,737	8,550
178.00	7,814	367.9	13,452	30,190	11,010

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**18.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 173.00' / 170.00' S= 0.0682 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	173.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	175.10'	**0.5" x 12.0" Horiz. Orifice/Grate** C= 0.600
#4	Device 1	176.50'	**25.9" x 43.8" Horiz. Orifice/Grate** C= 0.600 in 30.0" x 48.0" Grate (79% open area) Limited to weir flow at low heads
#5	Secondary	177.00'	**162.0 deg x 15.0' long x 1.00' rise Emergency Spillway** Cv= 2.47 (C= 3.09)

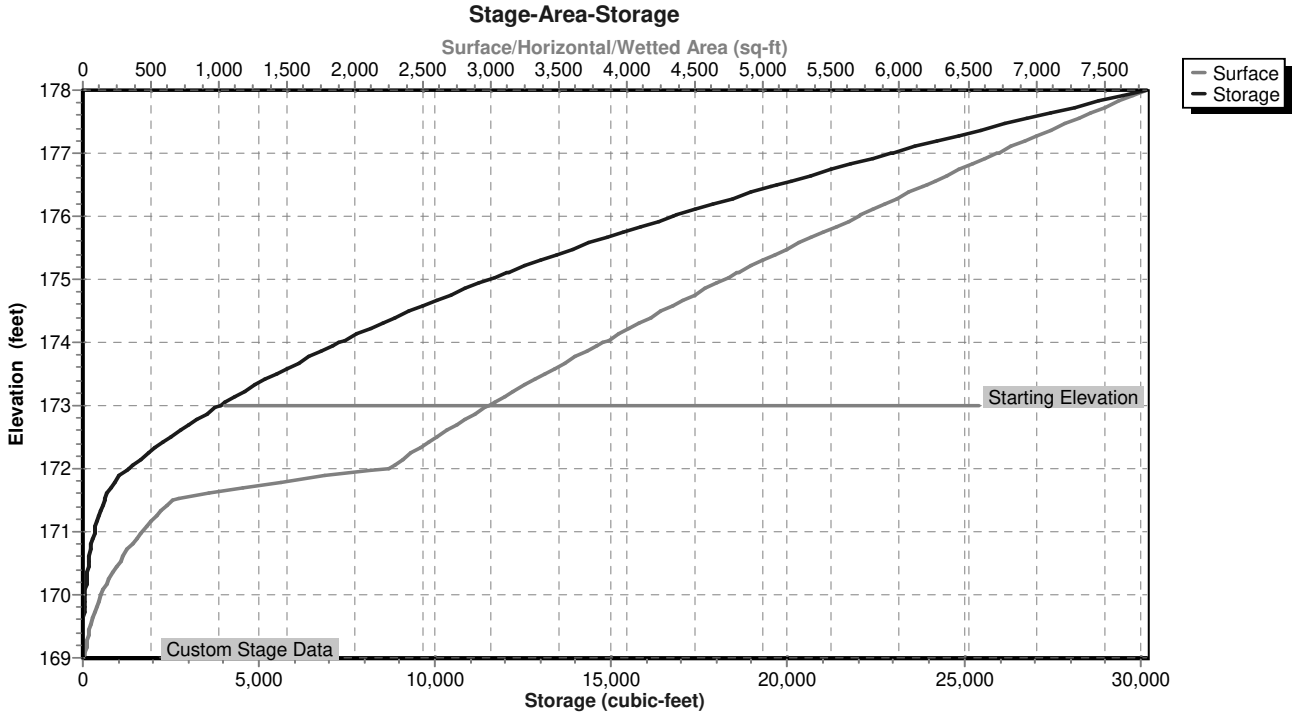
Primary OutFlow Max=9.35 cfs @ 12.18 hrs HW=176.87' (Free Discharge)
└─**1=Culvert** (Passes 9.35 cfs of 15.03 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.46 cfs @ 9.32 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.27 cfs @ 6.41 fps)
  └─**4=Orifice/Grate** (Weir Controls 8.62 cfs @ 1.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=173.00' (Free Discharge)
└─**5=Emergency Spillway** (Controls 0.00 cfs)

Pond 1.1P: 1P: Pocket Pond



Pond 1.1P: 1P: Pocket Pond



Hydrograph for Pond 1.1P: 1P: Pocket Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	3,891	173.00	0.00	0.00	**0.00**
1.00	0.00	3,891	173.00	0.00	0.00	0.00
2.00	0.00	3,891	173.00	0.00	0.00	0.00
3.00	0.00	3,891	173.00	0.00	0.00	0.00
4.00	0.03	3,955	173.02	0.00	0.00	0.00
5.00	0.07	4,118	173.08	0.01	0.01	0.00
6.00	0.11	4,340	173.15	0.04	0.04	0.00
7.00	0.17	4,628	173.24	0.08	0.08	0.00
8.00	0.23	4,997	173.35	0.11	0.11	0.00
9.00	0.32	5,521	173.51	0.15	0.15	0.00
10.00	0.52	6,451	173.78	0.19	0.19	0.00
11.00	1.12	8,399	174.28	0.25	0.25	0.00
12.00	**11.08**	**16,671**	**175.99**	**0.59**	**0.59**	0.00
13.00	**1.57**	**20,243**	**176.59**	**1.71**	**1.71**	0.00
14.00	0.75	19,821	176.52	0.84	0.84	0.00
15.00	0.55	19,572	176.48	0.67	0.67	0.00
16.00	0.41	18,855	176.36	0.65	0.65	0.00
17.00	0.34	17,902	176.20	0.63	0.63	0.00
18.00	0.30	16,859	176.02	0.59	0.59	0.00
19.00	0.24	15,727	175.82	0.56	0.56	0.00
20.00	0.22	14,621	175.61	0.52	0.52	0.00
21.00	0.20	13,596	175.42	0.47	0.47	0.00
22.00	0.18	12,686	175.24	0.42	0.42	0.00
23.00	0.17	11,965	175.09	0.33	0.33	0.00
24.00	0.16	11,389	174.97	0.32	0.32	0.00
25.00	0.00	10,368	174.74	0.30	0.30	0.00
26.00	0.00	9,327	174.51	0.28	0.28	0.00
27.00	0.00	8,370	174.28	0.25	0.25	0.00
28.00	0.00	7,503	174.06	0.23	0.23	0.00
29.00	0.00	6,729	173.85	0.20	0.20	0.00
30.00	0.00	6,054	173.67	0.17	0.17	0.00
31.00	0.00	5,481	173.50	0.14	0.14	0.00
32.00	0.00	5,015	173.36	0.11	0.11	0.00
33.00	0.00	4,660	173.25	0.08	0.08	0.00
34.00	0.00	4,419	173.17	0.05	0.05	0.00
35.00	0.00	4,275	173.13	0.03	0.03	0.00
36.00	0.00	4,182	173.10	0.02	0.02	0.00
37.00	0.00	4,119	173.08	0.01	0.01	0.00
38.00	0.00	4,077	173.06	0.01	0.01	0.00
39.00	0.00	4,050	173.05	0.01	0.01	0.00
40.00	0.00	4,030	173.05	0.00	0.00	0.00
41.00	0.00	4,013	173.04	0.00	0.00	0.00
42.00	0.00	3,999	173.04	0.00	0.00	0.00
43.00	0.00	3,986	173.03	0.00	0.00	0.00
44.00	0.00	3,974	173.03	0.00	0.00	0.00
45.00	0.00	3,964	173.02	0.00	0.00	0.00
46.00	0.00	3,955	173.02	0.00	0.00	0.00
47.00	0.00	3,948	173.02	0.00	0.00	0.00
48.00	0.00	3,941	173.02	0.00	0.00	0.00

Summary for Pond 1.2P: Dry Swale

Inflow Area = 0.300 ac, 66.67% Impervious, Inflow Depth = 7.00" for 100-yr event
Inflow = 2.30 cfs @ 12.04 hrs, Volume= 0.175 af
Outflow = 2.20 cfs @ 12.06 hrs, Volume= 0.171 af, Atten= 5%, Lag= 1.4 min
Primary = 2.20 cfs @ 12.06 hrs, Volume= 0.171 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 221.68' @ 12.06 hrs Surf.Area= 1,585 sf Storage= 1,484 cf

Plug-Flow detention time= 228.5 min calculated for 0.170 af (97% of inflow)
Center-of-Mass det. time= 212.7 min (987.9 - 775.2)

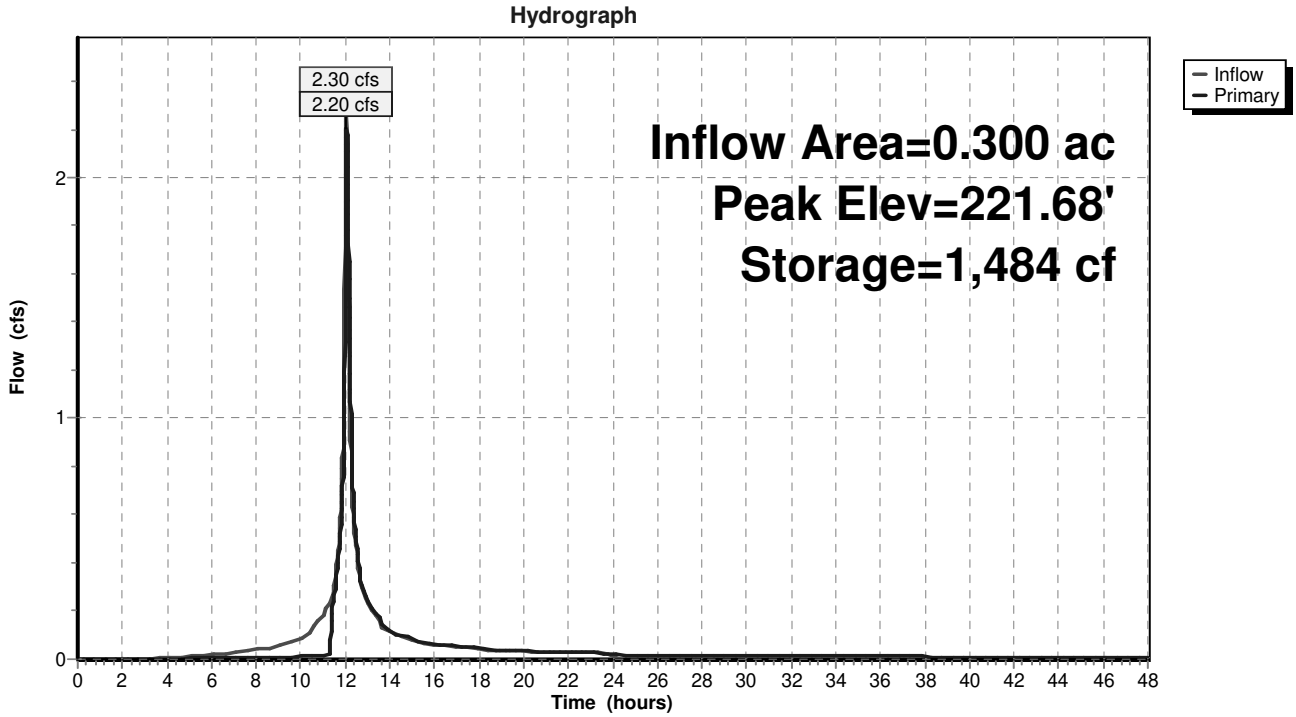
Volume	Invert	Avail.Storage	Storage Description
#1	220.00'	2,030 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
220.00	180	0	0
222.00	1,850	2,030	2,030

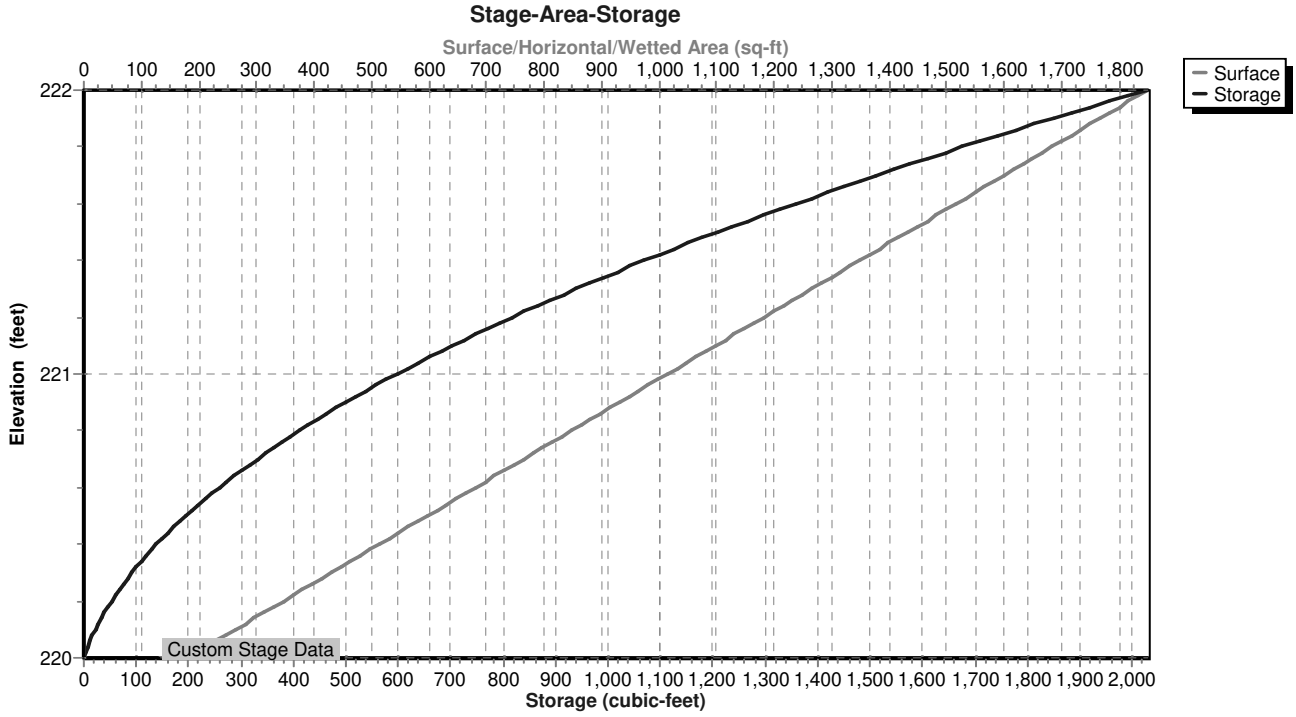
Device	Routing	Invert	Outlet Devices
#1	Primary	216.00'	**12.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 216.00' / 200.00' S= 0.3200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	216.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	221.50'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 4.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 2	220.00'	**0.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=2.19 cfs @ 12.06 hrs HW=221.68' (Free Discharge)
└─**1=Culvert** (Passes 2.19 cfs of 8.61 cfs potential flow)
  ├─**2=Orifice/Grate** (Passes 0.02 cfs of 0.56 cfs potential flow)
  │ └─**4=Exfiltration** (Exfiltration Controls 0.02 cfs)
  └─**3=Broad-Crested Rectangular Weir** (Weir Controls 2.18 cfs @ 1.19 fps)

Pond 1.2P: Dry Swale



Pond 1.2P: Dry Swale



Hydrograph for Pond 1.2P: Dry Swale

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	220.00	0.00
0.50	0.00	0	220.00	0.00
1.00	0.00	0	220.00	0.00
1.50	0.00	0	220.00	0.00
2.00	0.00	0	220.00	0.00
2.50	0.00	0	220.00	0.00
3.00	0.00	1	220.01	0.00
3.50	0.00	4	220.02	0.00
4.00	0.01	11	220.05	0.00
4.50	0.01	21	220.10	0.00
5.00	0.01	36	220.15	0.00
5.50	0.02	55	220.21	0.00
6.00	0.02	78	220.27	0.00
6.50	0.02	109	220.34	0.01
7.00	0.03	146	220.41	0.01
7.50	0.03	190	220.49	0.01
8.00	0.04	242	220.58	0.01
8.50	0.05	303	220.66	0.01
9.00	0.05	376	220.76	0.01
9.50	0.07	472	220.87	0.01
10.00	0.09	592	220.99	0.01
10.50	0.11	744	221.14	0.01
11.00	0.18	990	221.34	0.02
11.50	0.29	1,272	221.54	0.27
12.00	**2.01**	**1,430**	**221.65**	**1.61**
12.50	**0.46**	**1,304**	**221.57**	**0.48**
13.00	0.23	1,268	221.54	0.24
13.50	0.17	1,254	221.53	0.18
14.00	0.11	1,242	221.52	0.12
14.50	0.10	1,238	221.52	0.10
15.00	0.08	1,235	221.52	0.09
15.50	0.07	1,229	221.51	0.07
16.00	0.06	1,226	221.51	0.06
16.50	0.06	1,224	221.51	0.06
17.00	0.05	1,222	221.51	0.05
17.50	0.05	1,221	221.51	0.05
18.00	0.05	1,220	221.51	0.05
18.50	0.04	1,218	221.51	0.04
19.00	0.04	1,217	221.51	0.04
19.50	0.03	1,216	221.50	0.04
20.00	0.03	1,216	221.50	0.03
20.50	0.03	1,215	221.50	0.03
21.00	0.03	1,214	221.50	0.03
21.50	0.03	1,214	221.50	0.03
22.00	0.03	1,214	221.50	0.03
22.50	0.03	1,213	221.50	0.03
23.00	0.03	1,213	221.50	0.03
23.50	0.03	1,213	221.50	0.03
24.00	0.02	1,212	221.50	0.02
24.50	0.00	1,188	221.48	0.02
25.00	0.00	1,159	221.46	0.02
25.50	0.00	1,130	221.44	0.02
26.00	0.00	1,101	221.42	0.02
26.50	0.00	1,073	221.40	0.02
27.00	0.00	1,045	221.38	0.02
27.50	0.00	1,017	221.36	0.02
28.00	0.00	990	221.34	0.02
28.50	0.00	963	221.32	0.01
29.00	0.00	936	221.30	0.01
29.50	0.00	910	221.28	0.01
30.00	0.00	884	221.26	0.01
30.50	0.00	859	221.23	0.01
31.00	0.00	834	221.21	0.01
31.50	0.00	809	221.19	0.01
32.00	0.00	785	221.17	0.01
32.50	0.00	761	221.15	0.01
33.00	0.00	737	221.13	0.01
33.50	0.00	714	221.11	0.01
34.00	0.00	691	221.09	0.01
34.50	0.00	669	221.07	0.01
35.00	0.00	647	221.05	0.01
35.50	0.00	625	221.03	0.01
36.00	0.00	603	221.01	0.01
36.50	0.00	582	220.98	0.01
37.00	0.00	562	220.96	0.01
37.50	0.00	541	220.94	0.01
38.00	0.00	521	220.92	0.01
38.50	0.00	502	220.90	0.01
39.00	0.00	482	220.88	0.01
39.50	0.00	464	220.86	0.01
40.00	0.00	445	220.84	0.01
40.50	0.00	427	220.82	0.01
41.00	0.00	409	220.80	0.01
41.50	0.00	392	220.78	0.01
42.00	0.00	375	220.76	0.01
42.50	0.00	358	220.73	0.01
43.00	0.00	341	220.71	0.01
43.50	0.00	325	220.69	0.01
44.00	0.00	310	220.67	0.01
44.50	0.00	295	220.65	0.01
45.00	0.00	280	220.63	0.01
45.50	0.00	265	220.61	0.01
46.00	0.00	251	220.59	0.01
46.50	0.00	237	220.57	0.01
47.00	0.00	224	220.55	0.01
47.50	0.00	211	220.53	0.01
48.00	0.00	198	220.51	0.01

Summary for Pond 1.3P: Dry Swale

Inflow Area = 0.430 ac, 39.53% Impervious, Inflow Depth = 6.17" for 100-yr event
Inflow = 3.02 cfs @ 12.04 hrs, Volume= 0.221 af
Outflow = 2.96 cfs @ 12.06 hrs, Volume= 0.216 af, Atten= 2%, Lag= 0.9 min
Primary = 2.96 cfs @ 12.06 hrs, Volume= 0.216 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 205.72' @ 12.06 hrs Surf.Area= 1,129 sf Storage= 1,248 cf

Plug-Flow detention time= 148.2 min calculated for 0.216 af (98% of inflow)
Center-of-Mass det. time= 134.0 min (929.3 - 795.3)

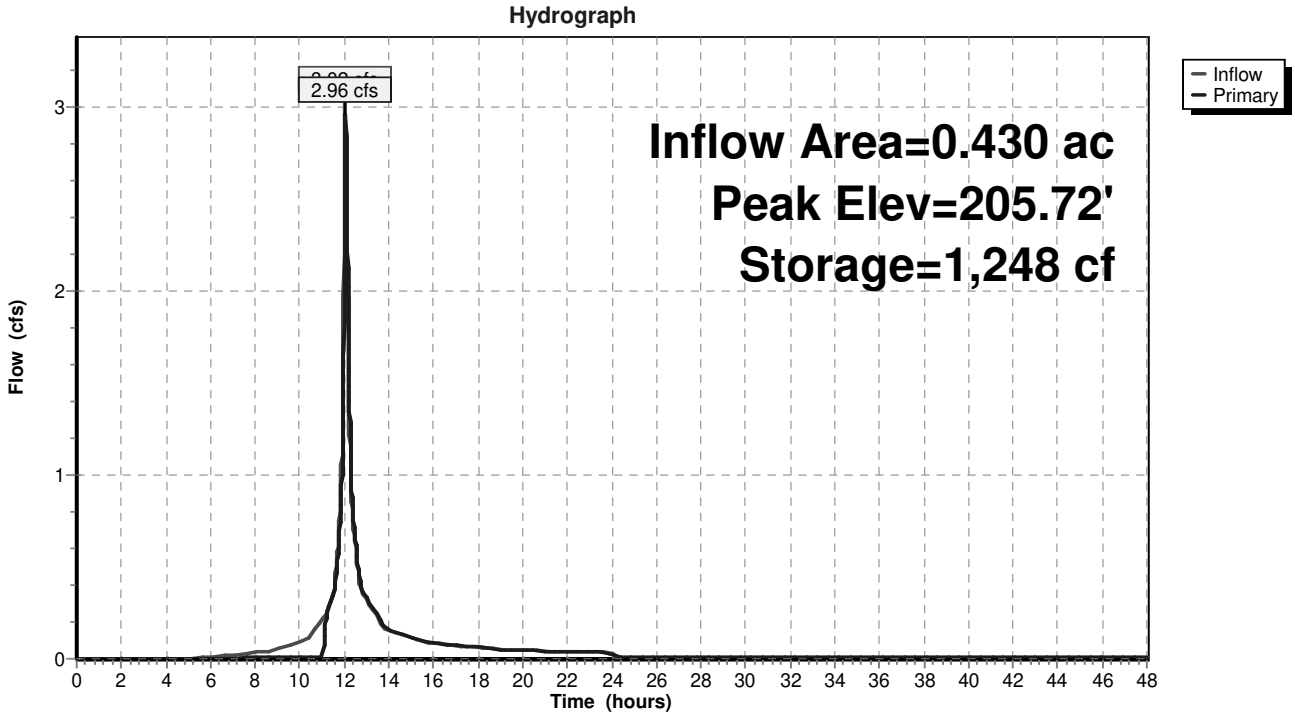
Volume	Invert	Avail.Storage	Storage Description
#1	204.00'	1,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
204.00	320	0	0
206.00	1,260	1,580	1,580

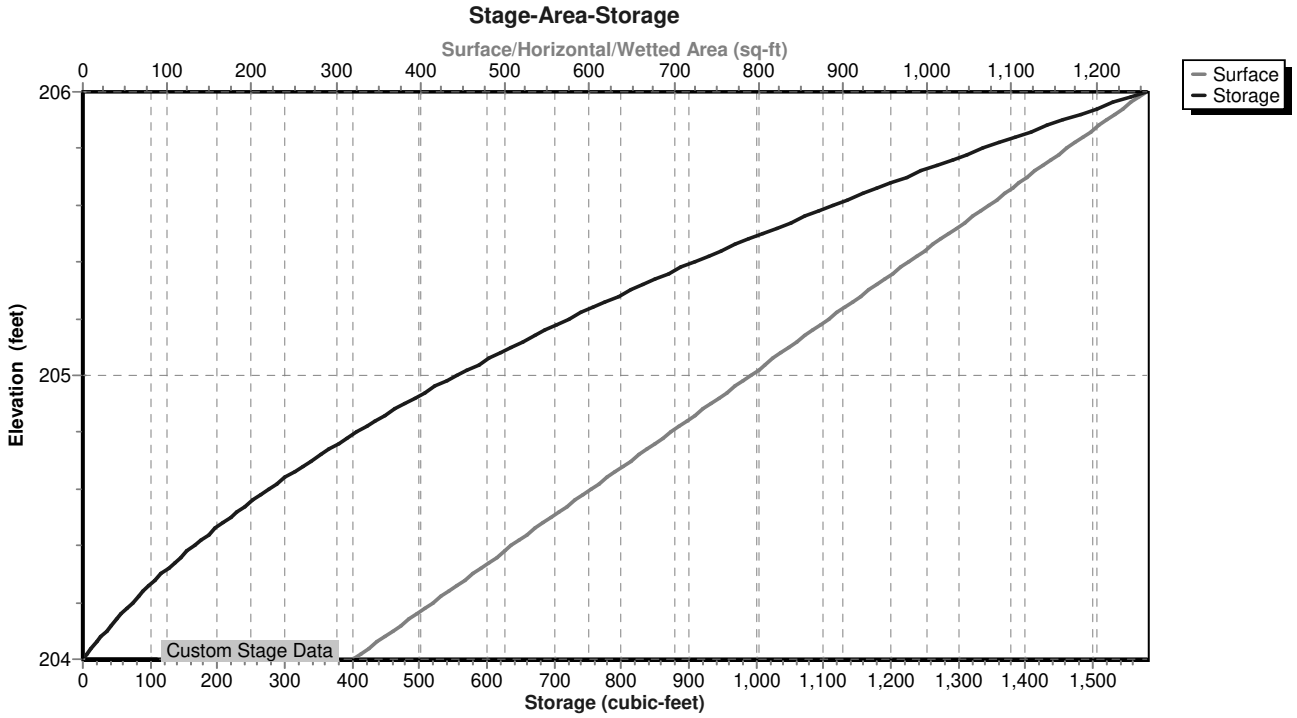
Device	Routing	Invert	Outlet Devices
#1	Primary	200.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	205.50'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 4.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	204.00'	**0.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=2.95 cfs @ 12.06 hrs HW=205.72' (Free Discharge)
└─**1=Orifice/Grate** (Passes 0.01 cfs of 0.56 cfs potential flow)
└─**3=Exfiltration** (Exfiltration Controls 0.01 cfs)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.94 cfs @ 1.32 fps)

Pond 1.3P: Dry Swale



Pond 1.3P: Dry Swale



Hydrograph for Pond 1.3P: Dry Swale

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	204.00	0.00
0.50	0.00	0	204.00	0.00
1.00	0.00	0	204.00	0.00
1.50	0.00	0	204.00	0.00
2.00	0.00	0	204.00	0.00
2.50	0.00	0	204.00	0.00
3.00	0.00	0	204.00	0.00
3.50	0.00	0	204.00	0.00
4.00	0.00	0	204.00	0.00
4.50	0.00	0	204.00	0.00
5.00	0.00	3	204.01	0.00
5.50	0.01	7	204.02	0.00
6.00	0.01	15	204.05	0.00
6.50	0.02	32	204.09	0.00
7.00	0.02	57	204.16	0.00
7.50	0.03	90	204.24	0.01
8.00	0.03	134	204.34	0.01
8.50	0.04	190	204.45	0.01
9.00	0.05	260	204.57	0.01
9.50	0.07	359	204.73	0.01
10.00	0.09	488	204.91	0.01
10.50	0.12	657	205.13	0.01
11.00	0.21	944	205.44	0.01
11.50	0.36	1,062	205.55	0.34
12.00	**2.61**	**1,207**	**205.69**	**2.25**
12.50	**0.62**	**1,092**	**205.58**	**0.64**
13.00	0.32	1,060	205.55	0.33
13.50	0.24	1,051	205.54	0.24
14.00	0.15	1,039	205.53	0.16
14.50	0.13	1,035	205.53	0.13
15.00	0.12	1,033	205.52	0.12
15.50	0.09	1,030	205.52	0.09
16.00	0.08	1,028	205.52	0.09
16.50	0.08	1,026	205.52	0.08
17.00	0.07	1,025	205.52	0.07
17.50	0.07	1,023	205.51	0.07
18.00	0.06	1,022	205.51	0.06
18.50	0.05	1,020	205.51	0.05
19.00	0.05	1,019	205.51	0.05
19.50	0.05	1,018	205.51	0.05
20.00	0.05	1,018	205.51	0.05
20.50	0.04	1,017	205.51	0.04
21.00	0.04	1,017	205.51	0.04
21.50	0.04	1,016	205.51	0.04
22.00	0.04	1,016	205.51	0.04
22.50	0.04	1,015	205.51	0.04
23.00	0.04	1,015	205.51	0.04
23.50	0.04	1,015	205.51	0.04
24.00	0.03	1,015	205.51	0.03
24.50	0.00	995	205.49	0.01
25.00	0.00	974	205.47	0.01
25.50	0.00	953	205.45	0.01
26.00	0.00	933	205.42	0.01
26.50	0.00	912	205.40	0.01
27.00	0.00	892	205.38	0.01
27.50	0.00	872	205.36	0.01
28.00	0.00	852	205.34	0.01
28.50	0.00	832	205.32	0.01
29.00	0.00	813	205.30	0.01
29.50	0.00	793	205.28	0.01
30.00	0.00	774	205.26	0.01
30.50	0.00	755	205.24	0.01
31.00	0.00	737	205.22	0.01
31.50	0.00	718	205.20	0.01
32.00	0.00	700	205.17	0.01
32.50	0.00	682	205.15	0.01
33.00	0.00	664	205.13	0.01
33.50	0.00	646	205.11	0.01
34.00	0.00	629	205.09	0.01
34.50	0.00	612	205.07	0.01
35.00	0.00	595	205.05	0.01
35.50	0.00	578	205.03	0.01
36.00	0.00	561	205.01	0.01
36.50	0.00	545	204.99	0.01
37.00	0.00	528	204.97	0.01
37.50	0.00	512	204.95	0.01
38.00	0.00	497	204.92	0.01
38.50	0.00	481	204.90	0.01
39.00	0.00	466	204.88	0.01
39.50	0.00	450	204.86	0.01
40.00	0.00	435	204.84	0.01
40.50	0.00	421	204.82	0.01
41.00	0.00	406	204.80	0.01
41.50	0.00	392	204.78	0.01
42.00	0.00	377	204.76	0.01
42.50	0.00	363	204.74	0.01
43.00	0.00	350	204.72	0.01
43.50	0.00	336	204.70	0.01
44.00	0.00	323	204.67	0.01
44.50	0.00	309	204.65	0.01
45.00	0.00	297	204.63	0.01
45.50	0.00	284	204.61	0.01
46.00	0.00	271	204.59	0.01
46.50	0.00	259	204.57	0.01
47.00	0.00	247	204.55	0.01
47.50	0.00	235	204.53	0.01
48.00	0.00	223	204.51	0.01

Summary for Pond 2R: Overflow

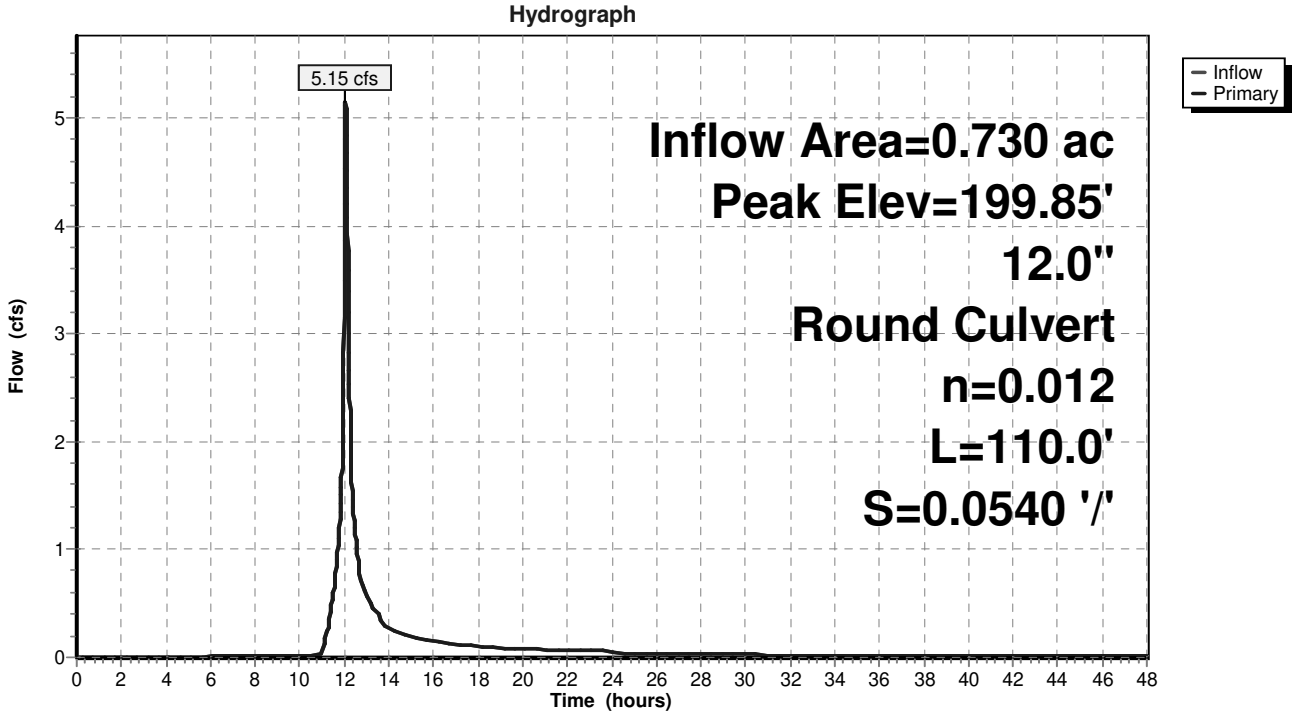
Inflow Area = 0.730 ac, 50.68% Impervious, Inflow Depth > 6.35" for 100-yr event
Inflow = 5.15 cfs @ 12.06 hrs, Volume= 0.386 af
Outflow = 5.15 cfs @ 12.06 hrs, Volume= 0.386 af, Atten= 0%, Lag= 0.0 min
Primary = 5.15 cfs @ 12.06 hrs, Volume= 0.386 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 199.85' @ 12.06 hrs

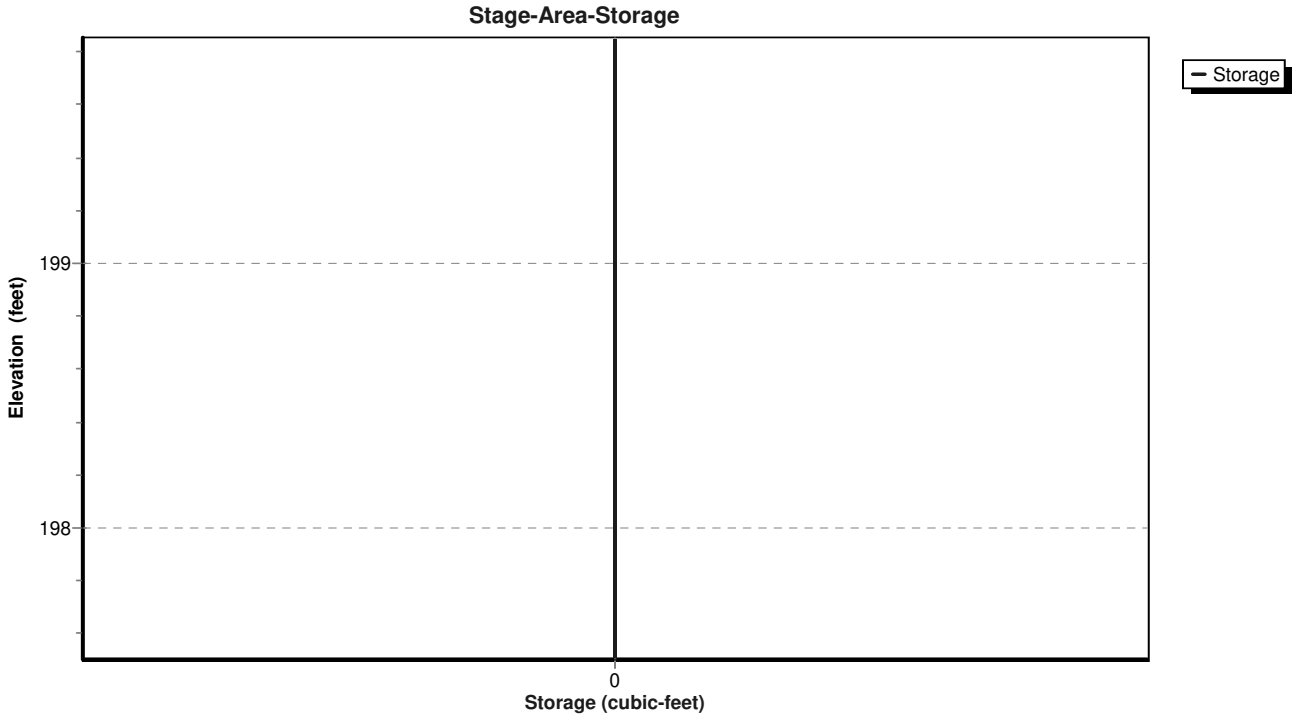
Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	**12.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 197.50' / 191.56' S= 0.0540 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.15 cfs @ 12.06 hrs HW=199.85' (Free Discharge)
└─**1=Culvert** (Inlet Controls 5.15 cfs @ 6.55 fps)

Pond 2R: Overflow



Pond 2R: Overflow



Hydrograph for Pond 2R: Overflow

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	197.50	0.00
0.50	0.00	197.50	0.00
1.00	0.00	197.50	0.00
1.50	0.00	197.50	0.00
2.00	0.00	197.50	0.00
2.50	0.00	197.50	0.00
3.00	0.00	197.51	0.00
3.50	0.00	197.52	0.00
4.00	0.00	197.52	0.00
4.50	0.00	197.52	0.00
5.00	0.01	197.53	0.01
5.50	0.01	197.54	0.01
6.00	0.01	197.54	0.01
6.50	0.01	197.55	0.01
7.00	0.01	197.55	0.01
7.50	0.01	197.55	0.01
8.00	0.01	197.55	0.01
8.50	0.01	197.56	0.01
9.00	0.02	197.56	0.02
9.50	0.02	197.56	0.02
10.00	0.02	197.57	0.02
10.50	0.02	197.57	0.02
11.00	0.03	197.58	0.03
11.50	0.61	197.89	0.61
12.00	**3.86**	**199.04**	**3.86**
12.50	**1.13**	**198.05**	**1.13**
13.00	0.57	197.88	0.57
13.50	0.42	197.82	0.42
14.00	0.27	197.76	0.27
14.50	0.23	197.73	0.23
15.00	0.20	197.72	0.20
15.50	0.16	197.70	0.16
16.00	0.15	197.69	0.15
16.50	0.14	197.68	0.14
17.00	0.13	197.67	0.13
17.50	0.12	197.66	0.12
18.00	0.11	197.66	0.11
18.50	0.09	197.65	0.09
19.00	0.09	197.64	0.09
19.50	0.08	197.64	0.08
20.00	0.08	197.64	0.08
20.50	0.08	197.63	0.08
21.00	0.07	197.63	0.07
21.50	0.07	197.63	0.07
22.00	0.07	197.62	0.07
22.50	0.06	197.62	0.06
23.00	0.06	197.62	0.06
23.50	0.06	197.62	0.06
24.00	0.06	197.62	0.06
24.50	0.03	197.58	0.03
25.00	0.03	197.58	0.03
25.50	0.03	197.58	0.03
26.00	0.03	197.58	0.03
26.50	0.03	197.58	0.03
27.00	0.03	197.58	0.03
27.50	0.03	197.58	0.03
28.00	0.03	197.58	0.03
28.50	0.03	197.58	0.03
29.00	0.03	197.58	0.03
29.50	0.03	197.57	0.03
30.00	0.02	197.57	0.02
30.50	0.02	197.57	0.02
31.00	0.02	197.57	0.02
31.50	0.02	197.57	0.02
32.00	0.02	197.57	0.02
32.50	0.02	197.57	0.02
33.00	0.02	197.57	0.02
33.50	0.02	197.57	0.02
34.00	0.02	197.57	0.02
34.50	0.02	197.57	0.02
35.00	0.02	197.57	0.02
35.50	0.02	197.57	0.02
36.00	0.02	197.57	0.02
36.50	0.02	197.57	0.02
37.00	0.02	197.57	0.02
37.50	0.02	197.57	0.02
38.00	0.02	197.57	0.02
38.50	0.02	197.57	0.02
39.00	0.02	197.56	0.02
39.50	0.02	197.56	0.02
40.00	0.02	197.56	0.02
40.50	0.02	197.56	0.02
41.00	0.02	197.56	0.02
41.50	0.02	197.56	0.02
42.00	0.02	197.56	0.02
42.50	0.02	197.56	0.02
43.00	0.02	197.56	0.02
43.50	0.02	197.56	0.02
44.00	0.02	197.56	0.02
44.50	0.02	197.56	0.02
45.00	0.02	197.56	0.02
45.50	0.02	197.56	0.02
46.00	0.01	197.56	0.01
46.50	0.01	197.56	0.01
47.00	0.01	197.56	0.01
47.50	0.01	197.55	0.01
48.00	0.01	197.55	0.01

APPENDIX C

NYSDEC Water Quality Volume (WQv) and Runoff Reduction (RRv) Calculation Worksheets

WQv Flow Calculation Worksheet

Project: Bottini Airport Road, Wappinger
Project #: 24238.100
Date: 3/14/2025

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

The following calculation determines the water quality flow rate for the 90% Water Quality Event using the Small Storm Hydrology Method specified in Appendix B of the New York State Stormwater Management Design Manual.

Subcatchment ID: 1.2

1.Water Quality Volume $= WQ_v = \frac{P * R_v * A}{12}$

P = WQv 24-hour Rainfall Amount	=	1.4	in.
A = Subcatchment Area	=	13068	SF
Ai= Impervious Area within Subcatchment Area	=	8712	SF
I = Ai/A	=	66.7	%
Rv = 0.05 + 0.009 (I%)	=	0.65	
WQv = Water Quality Volume	=	991	CF

Subcatchment ID: 1.3

1.Water Quality Volume $= WQ_v = \frac{P * R_v * A}{12}$

P = WQv 24-hour Rainfall Amount	=	1.4	in.
A = Subcatchment Area	=	18731	SF
Ai= Impervious Area within Subcatchment Area	=	7405	SF
I = Ai/A	=	39.5	%
Rv = 0.05 + 0.009 (I%)	=	0.41	
WQv = Water Quality Volume	=	896	CF

RRv Calculation Worksheet - Dry Swale 1.2P

Project: Bottini Airport Road, Wappinger
Project #: 24238.100
Date: 1/28/2025

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1. RRv Initial = Water Quality Volume (WQv) *0.023 ac-ft* = *991 c.f.*
(refer to HydroCAD Subcatchments 1.1S for Water Quality Volume)

2. *RRv Minimum* = [(P) (Rv) (S) (Aic)] /12 where…

P = Rainfall (in.)	=	1.40	in.
Rv = 0.05 + 0.009 (100%)	=	0.95	
S = Hydrologic Soil Group Specific Reduction Factor	=	0.30	
[HSG A = 0.55] [HSG B = 0.40] [HSG C = 0.30] [HSG D = 0.20]			
Aic = Total area of new impervious cover	=	0.2	Acres
RRv Minimum	=	*290*	*c.f.*

3. *RRv Required* = RRv Initial - Green Infrastructure Practice (GIP) with Area Reduction

GIP with Area Reduction Applied in Project

5.3.1 Conservation of Natural Area	N/A		
5.3.2 Sheet Flow to Riparian Buffers or Filter Strips	N/A		
5.3.4 Tree Planting / Tree Box			c.f.
5.3.5 Disconnection of Rooftop Runoff		-	
5.3.6 Stream Daylighting	N/A		
RRv Required(=WQv-RRV by area)(Refer to HydroCAD output in this Appendix)	=	991	c.f.

4. *RRv Provided*

GIP with Volume Reduction Applied in Project	WQv Treated (c.f.)	% of WQv Applied to *RRv Provided*	*RRv Provided (c.f.)*
5.3.3 Vegetated Open Swales		20%	0
[HSG A / B = 20%] [HSG C / D = 10%] {Modified HSG C - D = 15% - 12%]	991	10%	99
5.3.7 Rain Garden [No underdrains / Good Soils = 100%] [With underdrains / Poor Soils = 40%]		40%	0
5.3.8 Green Roof [RRv provided equals volume provided in Green Roof]		100%	0
5.3.9 Stormwater Planters [Infiltration Planters = 100%] [Flow Through HSG C = 45%] [Flow Though HSG D = 30%]		45%	0
5.3.10 Rain Tank / Cisterns		100%	0
5.3.11 Porous Pavement		100%	0
Infiltration Practice (Standard SMP)		100%	0
Bioretention Practice (Standard SMP) [Without Underdrains HSG A/B = 80%] [With Underdrain HSG C\D = 40%]		40%	0
Dry Swale (Open Channel Practice) (Standard SMP) [HSG A/B = 40%] [HSG C/D = 20%]	1209	20%	242
RRv Provided =			*341*

5. Summary

RRv Initial	=	991 c.f.	
RRv Required	=	991 c.f.	
RRv Minimum	=	290 c.f.	
RRv Provided	=	341 c.f.	
WQv Required for Downstream SMP	=	650 c.f.	(= RRv Required - RRv Provided)

Is RRv Provided greater than or equal to RRv Minimum? Yes

RRv Calculation Worksheet - Dry Swale 1.3P

Project: Bottini Airport Road, Wappinger
Project #: 24238.100
Date: 1/28/2025

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1. RRv Initial = Water Quality Volume (WQv) *0.021 ac-ft* = *896 c.f.*
(refer to HydroCAD Subcatchments 1.1S for Water Quality Volume)

2. *RRv Minimum* = [(P) (Rv) (S) (Aic)] /12 where…

P = Rainfall (in.)	=	1.40	in.
Rv = 0.05 + 0.009 (100%)	=	0.95	
S = Hydrologic Soil Group Specific Reduction Factor	=	0.30	
[HSG A = 0.55] [HSG B = 0.40] [HSG C = 0.30] [HSG D = 0.20]			
Aic = Total area of new impervious cover	=	0.17	Acres
RRv Minimum	=	*246*	*c.f.*

3. *RRv Required* = RRv Initial - Green Infrastructure Practice (GIP) with Area Reduction

GIP with Area Reduction Applied in Project

5.3.1 Conservation of Natural Area	N/A		
5.3.2 Sheet Flow to Riparian Buffers or Filter Strips	N/A		
5.3.4 Tree Planting / Tree Box			c.f.
5.3.5 Disconnection of Rooftop Runoff		-	
5.3.6 Stream Daylighting	N/A		
RRv Required(=WQv-RRV by area)(Refer to HydroCAD output in this Appendix)	=	896	c.f.

4. *RRv Provided*

GIP with Volume Reduction Applied in Project	WQv Treated (c.f.)	% of WQv Applied to *RRv Provided*	*RRv Provided (c.f.)*
5.3.3 Vegetated Open Swales		20%	0
[HSG A / B = 20%] [HSG C / D = 10%] {Modified HSG C - D = 15% - 12%]	896	10%	90
5.3.7 Rain Garden [No underdrains / Good Soils = 100%] [With underdrains / Poor Soils = 40%]		40%	0
5.3.8 Green Roof [RRv provided equals volume provided in Green Roof]		100%	0
5.3.9 Stormwater Planters [Infiltration Planters = 100%] [Flow Through HSG C = 45%] [Flow Though HSG D = 30%]		45%	0
5.3.10 Rain Tank / Cisterns		100%	0
5.3.11 Porous Pavement		100%	0
Infiltration Practice (Standard SMP)		100%	0
Bioretention Practice (Standard SMP) [Without Underdrains HSG A/B = 80%] [With Underdrain HSG C\D = 40%]		40%	0
Dry Swale (Open Channel Practice) (Standard SMP) [HSG A/B = 40%] [HSG C/D = 20%]	1000	20%	200
RRv Provided =			*290*

5. Summary

RRv Initial	=	896	c.f.	
RRv Required	=	896	c.f.	
RRv Minimum	=	246	c.f.	
RRv Provided	=	290	c.f.	
WQv Required for Downstream SMP	=	606	c.f.	(= RRv Required - RRv Provided)

Is RRv Provided greater than or equal to RRv Minimum? Yes

APPENDIX D

Project and Owner Information

Owner/Operator:

Wappinger Airport Drive LLC
2785 West Main Street Wappinger Falls, NY 12590

Party Responsible for Implementation of the Stormwater Pollution Prevention Plan:

To be determined prior to construction

Qualified Professional Responsible for Inspection of the Stormwater Pollution Prevention Plan:

Inspector to be determined at time of construction.

APPENDIX E

NYSDEC SPDES for Construction Activities Construction Site Log Book

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM
FOR CONSTRUCTION ACTIVITIES

CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents.

a. Preamble to Site Assessment and Inspections

b. Operator's Certification

c. Qualified Professional's Credentials & Certification

d. Contractors Certification

e. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections

a. Directions

b. Modification to the SWPPP

Properly completing forms such as those contained in this document meet the inspection requirement of NYSDEC SPDES GP-0-20-001 for Construction Activities, or superceding permit. Completed forms shall be kept on site at all times and made available to authorities upon request.

I. PRE-CONSTRUCTION MEETING DOCUMENTS

Project Name _____

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

Name of Operator _____

Prime Contractor _____

a. Preamble to Site Assessment and Inspections -The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional[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.

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

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

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

Name (please print):_____

Title: _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

c. Qualified Professional's Credentials & Certification

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

Name (please print):_____

Title _____**Date:**_____

Address: _____

Phone: _____ **Email:** _____

Signature:_____

d. Contractors Certification Statement

"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."

_____

Signature of Contractor Date

_____

Print Name Title

_____

Signature of Trained Contractor Date

_____

Print Name of Trained Contractor Title

Name of Contracting Firm _____

Street Address _____

City, State, Zip _____

Telephone No. _____

A copy of this statement shall be retained as part of the Stormwater Pollution Prevention Plan (SWPPP) for a period off at least five (5) years after the subject property is stabilized.

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

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

Yes No NA

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

2. Resource Protection

Yes No NA

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

3. Surface Water Protection

Yes No NA

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

4. Stabilized Construction Entrance

Yes No NA

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

5. Perimeter Sediment Controls

Yes No NA

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

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

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

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 7-day period;

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 Professional (print name) **Qualified Professional Signature**

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

Maintaining Water Quality

Yes No NA

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?

[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?

[ ] [ ] [ ] All disturbance is within the limits of the approved plans.

[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

[ ] [ ] [ ] Is construction site litter and debris appropriately managed?

[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?

[ ] [ ] [ ] Is construction impacting the adjacent property?

[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.

[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.

[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?

[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.

[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.

[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.

[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.

[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.

[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.

[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.

[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

Runoff Control Practices (continued)

4. Stone Check Dam

Yes No NA

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

5. Rock Outlet Protection

Yes No NA

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

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

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

2. Revegetation

Yes No NA

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

Sediment Control

1. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes No NA

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

Sediment accumulation is ___% of design capacity.

Sediment Control (continued)

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

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 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.

Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

Yes No NA

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

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

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

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

Modification & Reason:

APPENDIX F

Pipe Sizing Calculations

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

DRAINAGE SYSTEM CALCULATIONS
Design Storm: 10-Year

PROJECT: **Bottini**
JOB NUMBER: **24238.100**
BY: JJS DATE: 3-13-2025
CHK: EMS DATE: 3-14-2025

STRUCTURE		IMPERVIOUS AREA			PERVIOUS AREA			CA	TIME OF CONC. (min.)			I	Q (cfs)		PIPE DESIGN				
FROM	TO	A (ac.)	C	CA	A (ac.)	C	CA		INLET	PIPE	TOTAL		DESIGN	CAP.	V(ft/s)	n	s (%)	L (ft)	DIA (in)
OS 1.2	OS 1.3	**0.20**	0.9	0.18	**0.10**	0.3	0.03	0.21	**6**	-	6	**6.2**	1.3	21.8	15.4	**0.012**	**32.0**	**50**	**12**
OS 1.3	DMH 2	**0.15**	0.9	0.14	**0.25**	0.3	0.08	0.43	**6**	-	6	**6.2**	2.7	9.0	10.0	**0.012**	**5.4**	**90**	**12**
DMH 2	ES 1	**0.00**	0.9	0.00	**0.00**	0.3	0.00	0.43	**6**	-	6	**6.2**	2.7	17.8	16.4	**0.012**	**21.3**	**31**	**12**
ES 4	ES 3	**0.00**	0.9	0.00	**1.45**	0.3	0.44	0.44	**13.2**	-	13.2	**4.7**	2.1	14.0	12.8	**0.012**	**13.2**	**57**	**12**
DI 6	ES 5	**0.05**	0.9	0.05	**0.00**	0.3	0.00	0.05	**6**	-	6	**6.2**	0.3	13.3	7.1	**0.012**	**11.9**	**42**	**12**
Ex ES E	Ex ES W	**0.20**	0.9	0.18	**0.57**	0.3	0.17	0.78	**6**	-	6	**6.2**	4.8	13.5	7.0	**0.012**	**1.4**	**102**	**18**

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

APPENDIX G

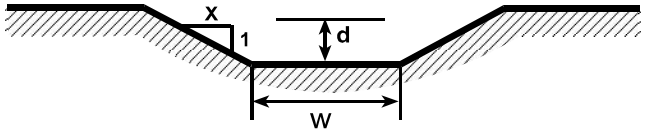
Swale Sizing Calculations

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

Appendix G

SWALE SIZING CALCULATIONS

Design Storm: 10-YEAR
Project: Don Bosco Boulevard
Job #: 24238.100
Date: 3/13/2025
By: JJS
Sheet: 1 of 1



Swale	Swale Type	Impervious Area			Pervious Area			CA Total	TC	I	Q (cfs)	w (ft)	d (ft)	x	n	S (%)	A (ft^2)	W_p (ft)	R_h (ft)	V (ft/s)	Q (cfs)
		A (ac.)	C	CA	A (ac.)	C	CA														
		Contributing Area	Runoff Coefficient	Impervious	Contributing Area	Runoff Coefficient	Pervious	Impervious & Pervious	Time of Concentration	Rainfall Intensity	Design Flow	Swale Bottom Width	Depth of Flow	Swale Side Slope (x:1)	Manning's "n"	Swale Slope	Swale Area	Wetted Perimeter	Hydraulic Radius	Swale Velocity	Swale Capacity
SW 1 Max	Grass	0.00	0.90	0.00	1.45	0.30	0.44	0.44	13.2	4.7	**2.1**	1.00	0.44	2.00	0.035	2.0	0.82	2.96	0.28	2.6	**2.10**
SW 1 Min	Grass	0.00	0.90	0.00	1.45	0.30	0.44	0.44	13.2	4.7	**2.1**	1.00	0.48	2.00	0.035	1.4	0.93	3.14	0.30	2.2	**2.10**
SW 2 Max	Grass	0.12	0.90	0.11	0.13	0.30	0.04	0.15	6.0	6.2	**0.9**	1.00	0.16	2.00	0.035	16.6	0.21	1.71	0.12	4.3	**0.90**
SW 2 Min	Grass	0.12	0.90	0.11	0.13	0.30	0.04	0.15	6.0	6.2	**0.9**	1.00	0.19	2.00	0.035	8.6	0.26	1.85	0.14	3.4	**0.90**
SW 3 Max	Riprap	0.00	0.90	0.00	0.14	0.30	0.05	0.49	13.2	4.7	**2.3**	1.00	0.27	2.00	0.060	43.5	0.42	2.23	0.19	5.4	**2.30**
SW 3 Min	Riprap	0.00	0.90	0.00	0.14	0.30	0.05	0.49	13.2	4.7	**2.3**	1.00	0.32	2.00	0.060	25.0	0.52	2.42	0.21	4.4	**2.30**
SW 4 Max	Grass	0.03	0.90	0.03	0.06	0.30	0.02	0.05	6.0	6.2	**0.3**	1.00	0.10	2.00	0.035	9.1	0.12	1.45	0.08	2.5	**0.30**
SW 4 Min	Grass	0.03	0.90	0.03	0.06	0.30	0.02	0.05	6.0	6.2	**0.3**	1.00	0.10	2.00	0.035	8.6	0.12	1.46	0.09	2.4	**0.30**

Swale #	Swale Location Description
SW 1	Swale 1 starts along the northeast corner of the proposed asphalt storage area and travels south, ending in ES 4.
SW 2	Swale 2 starts along the east side of the proposed access driveway hillside and travels north, ending in the proposed SMP 1.3P.
SW 3	Swale 3 starts at the discharge of ES 3 and travels west and then south towards the existing swale with checkdams along the southeast of the asphalt parking lot.
SW 4	Swale 4 starts from the transition of Swale 2 into SMP 1.3P and travels northwest, ending at the bottom of the proposed driveway.

APPENDIX H

StormBasin Cartridge Based Inlet Filtration Guide

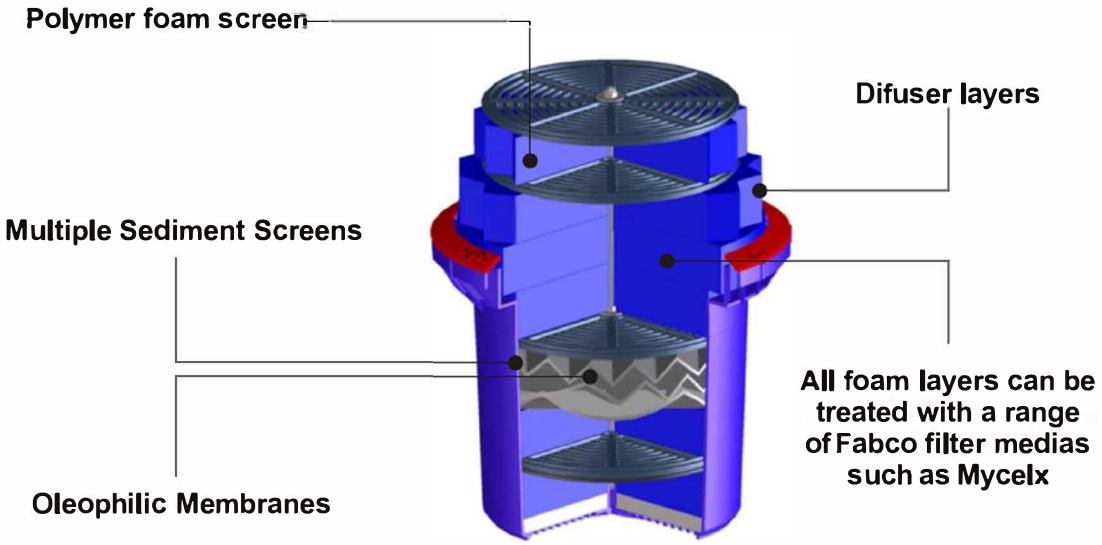
FABCO FILTER CARTRIDGE

Specifically designed to contain TSS sediments and the full range of stormwater pollutants, Fabco Industries' unique filter cartridge system assists you in meeting NPDES II Requirements and can be used to target specifici problems.

Fabco Industries is a world leader in filtration media research and development with over 10 years of experience in applying its proprietary treatment technologies to both industrial wastewater and stormwater applications. Our StormBasin filter cartridges utilize the latest, environmentally safe, filter media technologies to provide effective pollutant reductions while maintaining high flow rates throughout the life of the cartridge.

Fabco filter cartridges are available in various treatment configurations, allowing you to fine tune performance in terms of sediments and debris, heavy metals, hydrocarbons/toxic chemicals, pathogens/bacteria and nutrients. The lightweight filter cartridge comes fully assembled and snaps securely in place with a quick twist to the lock position. The modular cartridge design allows quick and easy replacement while containing the spent material for safe transport and disposal.

KEY FEATURES



Designed for Easy Installation and Maintenance
Addresses All Major Pollutants at High Flow Rates
Easy Disposal by Burning or Landfill
Can be Used to Target Specific Problems

www.fabco-industries.com
(631) 393-6024

Evolved Stormwater Solutions

STORMBASIN BMP CARTRIDGE BASED STORMWATER FILTER

The StormBasin BMP is a special model in the StormBasin product line which is specifically designed to fit non-standard storm drain inlets; drain inlets with construction flaws and obstacles such as ledges, shallow depth or other irregularities and in situations where additional cartridges or treatment flow rate is requested.

The StormBasin will accept any of the Fabco Filter Cartridge configurations, allowing it to effectively treat any of the major pollutants identified in surface water runoff. The StormBasin is available in both round (23” - 30” diameter) and square (24” x 24” and 26” x 26”) configurations that fit one Fabco filter cartridge each.

Installing the StormBasin takes only a few minutes: Lift the grate cover from the catch basin, place the insert on the frame and replace the cover.

- Full, welded aluminum construction suitable for extreme duty or HD commercial use.
- Large volume welded Aluminum collection basin
- Custom sizes and filter configurations are available
- Adjustable, aluminum support system with 2.0” of adjustability (X&Y) lets you adjust the filter size to fit real inlet dimensions and irregularities
- Replaceable filtering cartridges target specific pollutants

www.fabco-industries.com
(631) 393-6024

24 Central Drive
Farmingdale, NY 11735

StormBasin

Cartridge Based Filter System

Servicing, Maintenance and Disposal

The Fabco StormBasin, like other storm water remediation devices, requires regular maintenance to remain efficient as stormwater filters. By their nature, filters are meant to retain materials whether its coarse debris, dissolved pollutants or even bacteria and eventually this collection of *"stuff"* must be removed, and the spent filtering media exchanged. This fact was quickly recognized as we evaluated competitive insert filters during the design phase of the StormBasin. To minimize servicing requirements and extend maintenance intervals both units have benefited from a number of simple but effective features:

Large Collection Basin:

The StormBasin features extra-large, HD plastic or aluminum collection basins. In standard filtering mode, the basin collects and focuses the runoff to the cartridges while providing storage volume for the collection of sediments, trash and debris. A large basin will be able to operate longer and retain more debris while still maintaining the flow of water to the cartridges.

Sealed, High-flow, Filter Cartridge System:

The StormBasin uses Fabco's patented Filter Cartridge system. New Cartridges are quickly installed through a hole in the bottom of the basin. A simple twist locks the filter securely in place even during back flow conditions.

During maintenance the cartridge remains in place for Vac-truck operations. With the debris removed, the one-piece cartridge can be removed and easily transported for disposal. The unique Fabco Filter Cartridge fits all StormBasin designs!

Unique, Cartridge Pre-filter extends filter life:

Each Fabco Filter Cartridge features a large, coarse, polyurethane foam pre-filter at the top of the cartridge body that extends upwards into the plastic basin. Unlike some competitive designs that actually collect sediments and debris in a recessed box above the filter media resulting in reduced treatment and by-pass, the Fabco pre-filter offers more surface area and is designed to shed debris and keep it in the basin. Up to 6 inches or as much as 4 to 5 cubic feet of debris can be collected before the pre-filter is covered. The flexible foam is easily brushed off during maintenance activities and is ready for more use.

Suggested Servicing and Maintenance activities:

Prior to installation of the StormBasin, Fabco Industries recommends thoroughly cleaning the selected catch basin vault of any accumulated sediments and debris.

Once installed, the StormBasin requires periodic cleaning which is wholly dependent upon local conditions. In general, Fabco Industries recommends cleaning the StormBasin unit 2 to 3 times per annum by removing the debris, sand and silt.

A cleaning schedule should consider, road grades, surrounding vegetation, size of the filtering unit and seasonal changes. A large parking lot with limited trees and bushes would have a different schedule than a tree lined housing development.

Maintenance schedule example:

1) Customer located in the northeast 2) Unit installed in the month of June 3) Site is a relatively flat parking field with some trees and bushes.

1) First Cleanout October/November
2) Second cleanout March
3) Third Cleanout May with Filter change

By examining the quantity of debris removed changes can be made to the schedule.

Filter Cartridge Exchange:

The Fabco Industries filter cartridges used in the StormBasin product are designed primarily to capture floating and emulsified hydrocarbon compounds, dissolved heavy metals nutrients and pathogens (bacteria).

5-types of filtering media can be used together or independently in our cartridge body:

- FABGUARD: treated open cell foam product restricts build up (scum) and movement of bacteria through the cartridge
- FABMAX: treated filter media for treating hydrocarbon-based compounds
- FABSORB: Fibrous filter material for absorbing hydrocarbon-based compounds
- FABLITE: Natural ION exchange compound for heavy metals
- FABPHOS proprietary filter media for treating the soluble Phosphates and Nitrogen compounds

Based on typical pollutant concentrations as published in numerous State Stormwater management Design manuals, Fabco recommends changing the cartridge(s) on an annual basis. Users with suspected higher than normal levels of Hydrocarbons and Heavy metals should consider more frequent changes. Fabco can supply specially modified StormBasins to enable field testing.

Disposal:

There are two disposal aspects to consider with the Fabco Industries StormBasin unit.

1. Disposal of the captured sediments, debris and trash
2. Disposal of the spent filter cartridge

Fabco Industries is recommending a minimum 2-3 basin clean outs per year. Under typical local and state regulations, the collected material is considered equivalent to material collected during street sweeping operations. This material is normally considered contaminated non-hazardous solid waste. However as with all waste products intended for disposal, it is up to the generator to properly characterize the waste prior to disposal. After proper characterization the generator can proceed with disposal under the guidance of local, state and federal regulations.

The Fabco Industries Filter Cartridges are manufactured from some or all of the following listed items

1. Polypropylene: Body, grills, and color rings
2. Polypropylene open cell foam
3. FABGUARD treated antimicrobial treated foam pad
4. FABMAX treated hydrocarbon filter media
5. FABSORB polypropylene, fibrous absorbent pad

6. FABPHOS synthetic pad treated for nutrients
7. FABLITE, natural Zeolite compound

The MSDS sheets for each of these materials (accessible on the website) shows that each of the virgin materials is non-toxic and safe for the environment.

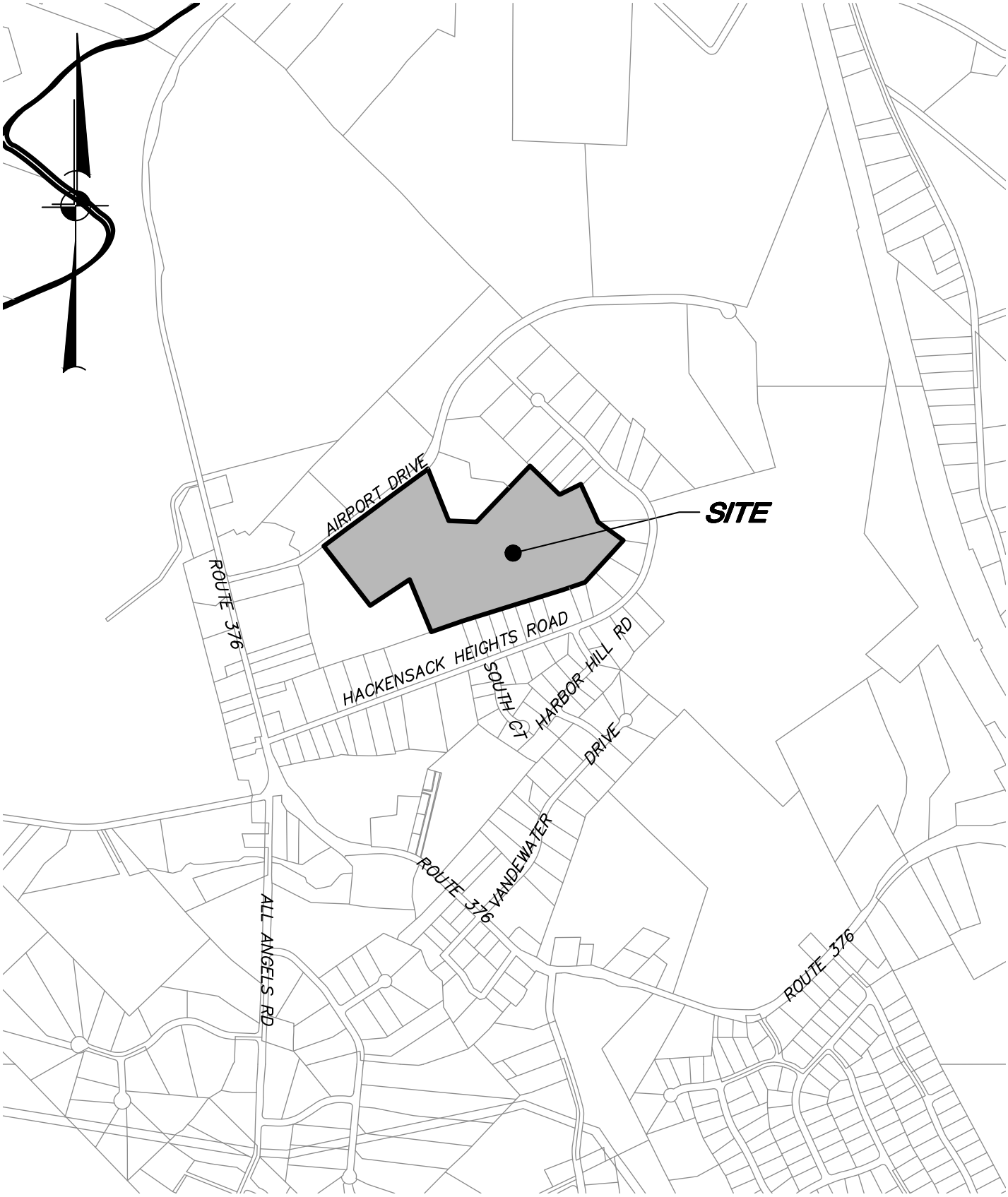
Based on the pollutant concentrations listed in the New York State Storm water design manual, spent filter cartridges typically will be considered non-hazardous solid waste and can be disposed of in a landfill.

- The FABGUARD treated foam pre-filter has no absorbent properties and will certainly contain captured solids and trace levels of hydrocarbons.
- The FABSORB oil absorbent pads will be considered similar to oily rags.
- The FABMAX treated foam pads permanently bond with hydrocarbon compounds. Testing under Federal RCRA disposal guidelines confirms that in most cases spent pads pass TCLP testing protocols for non-hazardous disposal.
- The FABLITE should capture and retain the majority of heavy metals. Extensive testing of the FABLITE material confirms that it is capable of capturing and permanently retaining these ionic species, allowing non-hazardous disposal.
- FABPHOS treated pads when used for nutrient treatment should be safe for disposal. The pads are a treated, synthetic material that is non-hazardous, non-toxic and non-biodegradable. Fabco recommends that the pads be characterized by the generator prior to disposal.

Based on discussions with NY State DEC officials and local disposal companies while landfill is a possibility, the high BTU value of the spent cartridge suggests incineration as the preferred method of disposal. Laboratory analysis of spent cartridges by COVANTA Secure Services confirms that it would be acceptable by them for disposal.

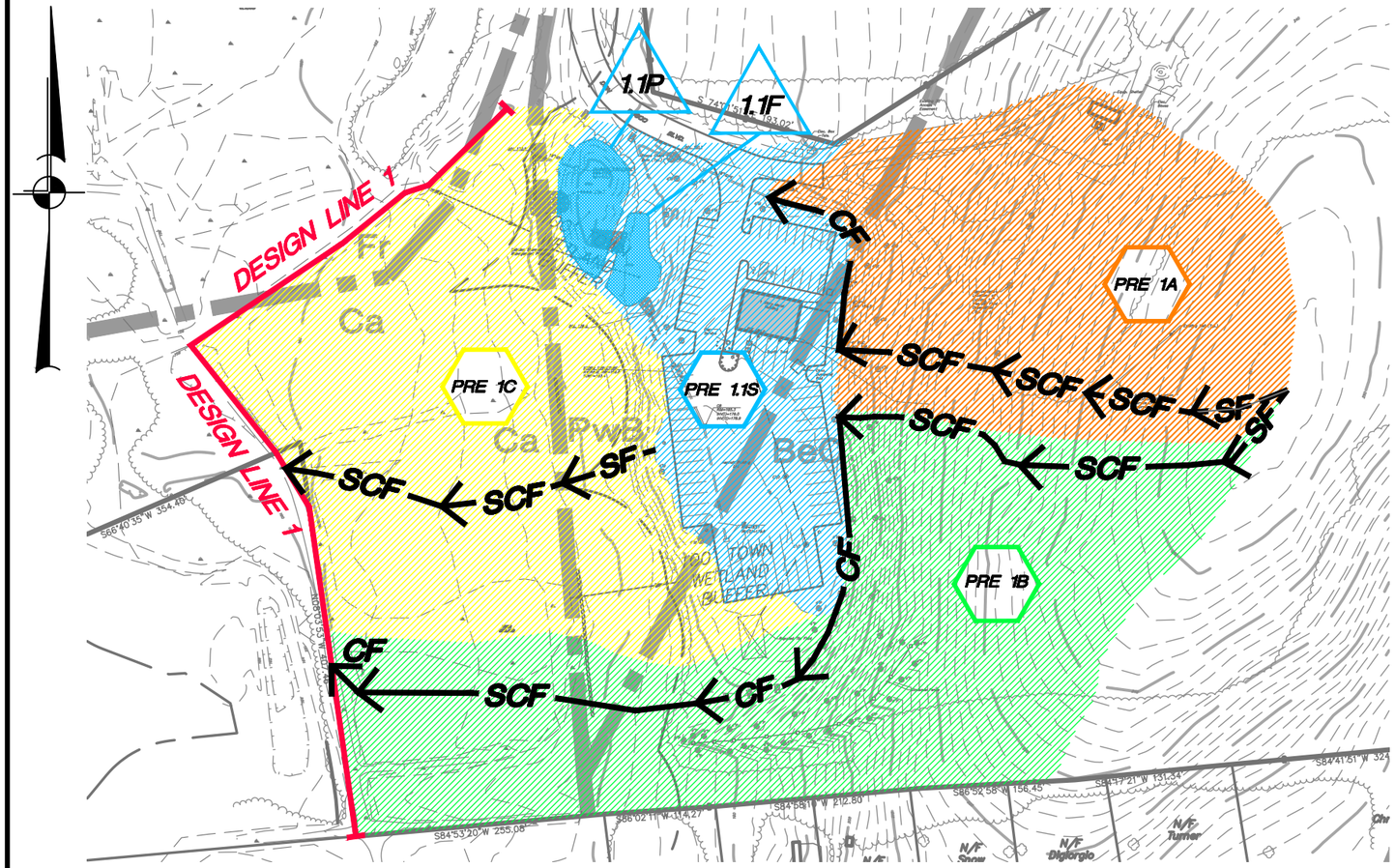
Fabco Industries would like to conclude by reaffirming that it is up to the generator to properly characterize all waste products and to arrange for proper disposal, under local, state and federal regulations.

FIGURES



Z:\E\24238100 Bottini, Airport Road, Wappinger\Stormwater\Figures\Figure 1 - Location Map.dwg, 1/30/2025 3:47:00 PM, jsalazar, 1:1

PROJECT: AMENDED SITE PLAN FOR DON BOSCO BOULEVARD AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY	PREPARED BY: INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C. 3 Garrett Place • Carmel, New York 10512 Phone (845) 225-9690 • Fax (845) 225-9717 www.insite-eng.com	DATE: 1-28-25
DRAWING: LOCATION MAP		SCALE: 1" = 1,000'
		PROJECT NO.: 24238.100
		FIGURE: 1



LEGEND

PRE 1	SUBCATCHMENT
1.1F	STORMWATER MANAGEMENT PRACTICE
SF	TIME OF CONCENTRATION SHEET FLOW
SCF	TIME OF CONCENTRATION SHALLOW CONCENTRATED FLOW
CF	TIME OF CONCENTRATION CHANNEL FLOW
DESIGN LINE 1	DESIGN LINE
	SUBCATCHMENT CONTRIBUTING AREA
	STORMWATER MANAGEMENT PRACTICE AREA

TEMP SOILS LEGEND

SOILS	DESCRIPTION	HYDROLOGICAL GROUP
BeC	Bernardston silt loam, 8% to 15% slopes	C/D
Ca	Canandaigua silt loam, neutral substratum	C/D
Fr	Fredon silt loam, 0% to 3% slopes	B/D
PwB	Pittstown silt loam, 3% to 8% slopes	C
	NRCS Soil Boundary Line	

PROJECT:
BOTTINI, AIRPORT ROAD, WAPPINGER
95 AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY 12590

DRAWING:
EXISTING DEVELOPMENT DRAINAGE MAP

PREPARED BY:
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Phone (845) 225-9690 • Fax (845) 225-9717
www.insite-eng.com

GRAPHIC SCALE
0 75 150 300
(IN FEET)
1 inch = 150 ft.

DATE:	1-13-25
SCALE:	1" = 150'
PROJECT NO.:	16226.100
FIGURE:	FIGURE-2

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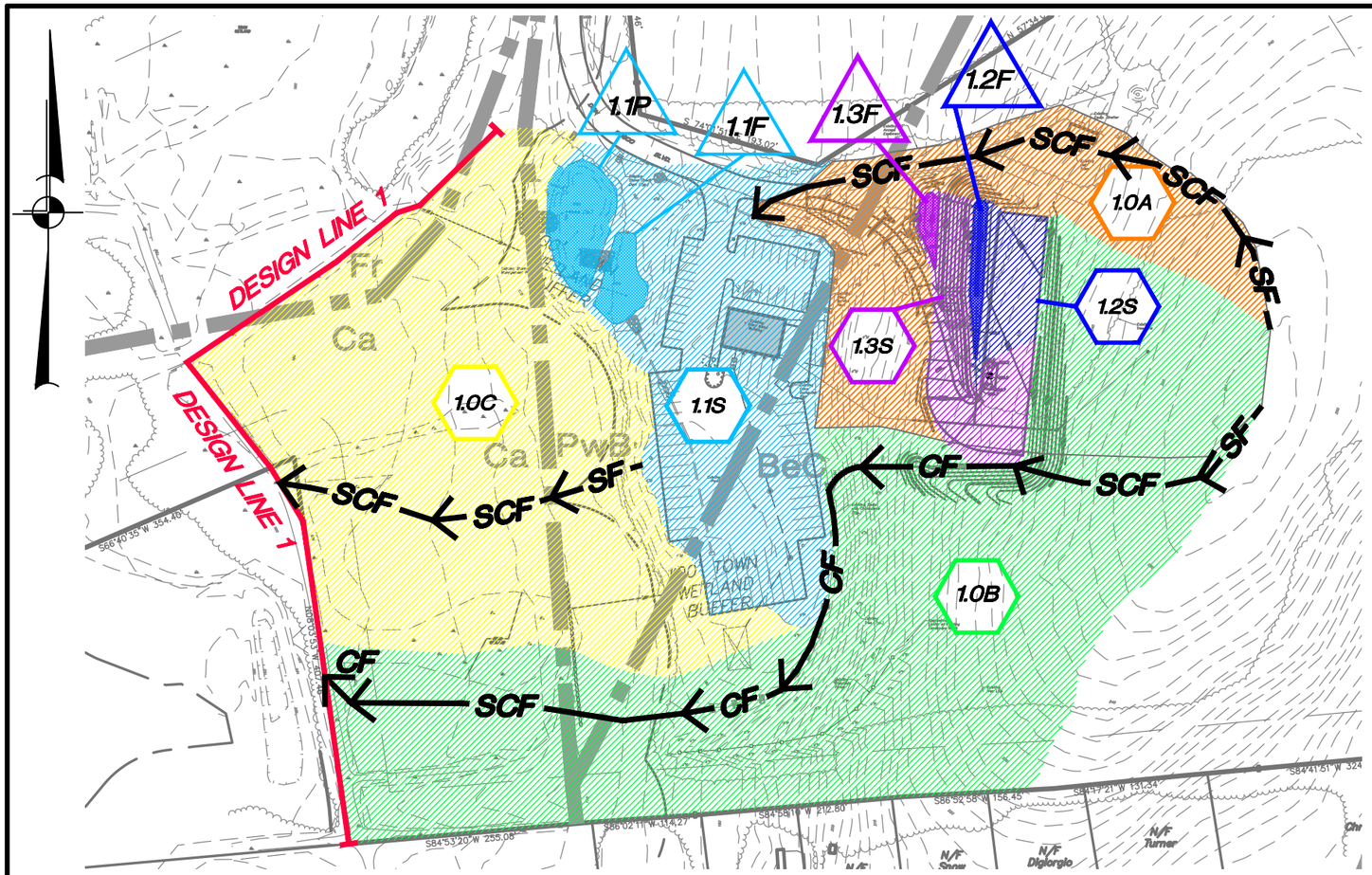

LEGEND

1.0B	SUBCATCHMENT
1.1F	STORMWATER MANAGEMENT PRACTICE
SF	TIME OF CONCENTRATION SHEET FLOW
SCF	TIME OF CONCENTRATION SHALLOW CONCENTRATED FLOW
CF	TIME OF CONCENTRATION CHANNEL FLOW
DESIGN LINE 1	DESIGN LINE
	SUBCATCHMENT CONTRIBUTING AREA
	STORMWATER MANAGEMENT PRACTICE AREA

TEMP SOILS LEGEND

SOILS	DESCRIPTION	HYDROLOGICAL GROUP
BeC	Bernardston silt loam, 8% to 15% slopes	C/D
Ca	Canandaigua silt loam, neutral substratum	C/D
Fr	Fredon silt loam, 0% to 3% slopes	B/D
PwB	Pittstown silt loam, 3% to 8% slopes	C
	NRCS Soil Boundary Line	

PROJECT:

BOTTINI, AIRPORT ROAD, WAPPINGER

95 AIRPORT DRIVE, TOWN OF WAPPINGER, DUTCHESS COUNTY, NY 12590

DRAWING:

PROPOSED DEVELOPMENT DRAINAGE MAP

PREPARED BY:

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GRAPHIC SCALE

0 75 150 300

(IN FEET)
1 inch = 150 ft.

DATE:	1-13-25
SCALE:	1" = 150'
PROJECT NO.:	16226.100
FIGURE:	FIGURE-3

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