12 LECLAIR DRIVE SUBDIVISION PLAN & CONDITIONAL USE PERMIT

SB# 01-26 & CUP# 03-26

STAFF REPORT

April 22, 2026

SITE: 12 Leclair Drive, Map 147 /Lot 006-000

ZONING: Residential – Two (R-2)

PURPOSE OF PLAN: to depict the subdivision of Map 147/Lot 006 into seven (7) residential lots, consisting of six (6) new residential lots and one (1) existing residential lot. The proposed development will utilize the existing wetland crossing and includes an increase in wetland disturbance.

PLAN UNDER REVIEW:

Proposed Subdivision Plan, SB# 01-26 & CUP# 03-26, Map 147 Lot 006, 12 Leclair Drive, Hudson, New Hampshire; prepared by: Meridian Land Services Inc., 31 Old Nashua Road, Amherst, NH 03031; prepared for: MR Lacasse Homes, LLC., 9 Scenic Lane, Hudson, NH 03051; consisting of 19 sheets and general notes 1-27 on Sheet GN-1, dated March 3, 2026, last revised March 11, 2026.

ATTACHMENTS:

1) Site Plan & CUP Applications received March 3, 2026– Attachment "**A**".
2) Project Narrative – Attachment "**B**".
3) Department Review Comments– Attachment "**C**".
4) Stormwater Management Report, prepared by Meridian, dated April 8, 2026 – Attachment "**D**". (Digital Only)
5) Peer Review Comments, prepared by Fuss & O'Neill, dated February 10, 2026 – Attachment "**E**".
6) Response Letter, prepared by Meridian, dated April 8, 2026 – Attachment "**F**".
7) CAP fee sheet – Attachment "**G**".
8) Site Plan dated March 3, 2026, last revised March 11, 2026.

APPLICATION TRACKING:

- March 3, 2026 – Site plan & CUP applications received.
- April 22, 2026 – Public Hearing scheduled.

WAIVERS REQUESTED:

- §289-18.C.(1) – Horizontal and Vertical Curves

COMMENTS & RECOMMENDATIONS:

BACKGROUND

The subject site consists of approximately 12.44 acres located within the Residential – Two (R-2) Zoning District. The property is currently improved with a single-family dwelling constructed in 1994 and is accessed by a gravel driveway.

The proposed development includes the creation of new residential lots to be serviced by municipal water and sewer. The site contains wetlands along the central portion of the property.

At present, the site is accessed by one curb cut. The applicant proposes to extend Leclair Drive to provide access to the newly created lots. Utilities are proposed to be installed within the roadway layout or alternatively via an existing easement located to the rear of 1, 3, & 5 Shoreline Drive.

As part of the proposed development, the applicant is seeking to modify an existing wetland crossing. This work is subject to a Conditional Use Permit, which is currently under review by the Conservation Commission.

WAIVER REQUESTS

The applicant has submitted one waiver at this time:

§289-18.C.(1) – Horizontal and Vertical Curves – To allow for a center-line radius of less than 150 feet where elsewise 150 feet would be required. The applicant states that this is to better fit the existing topography of the site and due to the low speeds should not be a hinderance.

DEPARTMENT COMMENTS

Comments have been provided by the following departments:

Engineering provided the following comments:

1. *Item 6. Sidewalk waiver request: I did not see the waiver request and Engineering Department does not recommend the sidewalk relief waiver.*

2. *Item 10. The applicant needs confirmation form Public Works, in writing, that it's not an issue, or J can piggy back on this email and state he is all set*

    a. **DPW** provided the following reply: *No waiver, no relief. DPW does not recommend the sidewalk waiver. We should not even entertain the idea if we aren't getting something in return.*

DPW provided the following comment:

Public Works has no additional comments over what engineering has stated.

Fire provided the following comment:

Revised plans do show apparatus turning plan and the additional fire hydrants. Acceptable 4-13-2026.

Staff review of F&O provided the following comments:

1. *Did the current submittal to Planning include the following waiver requests?*
    a. *Phasing of subdivision construction waiver?*
    b. *Sidewalk waiver?*
    c. *Waiver for horizontal curve minimum?*

2. *Comments ff. and hh. of Section 4 were not addressed.*

Full Comments can be found in **Attachment "C"**.

STORMWATER MANAGEMENT REPORT

As part of the application, a Stormwater Management Report dated April 8, 2026, has been submitted (Attachment "**D**"). The report concludes that the proposed development will result in either a decrease or no change in the peak rates of stormwater runoff at the designated discharge points from the site.

PEER REVIEW

Fuss & O'Neill completed an initial peer review of the application materials, dated March 26, 2026. The current submission reflects revisions made in response to the comments contained within that review. The full peer review report is included as Attachment "**E**".

APPLICANT RESPONSE

The applicant submitted a response letter and revised plan set dated April 8, 2026, and received April 10, 2026. This submission addresses both peer review and departmental comments. The response letter is included as Attachment "**F**".

CONSERVATION COMMISSION

A Conditional Use Permit application has been filed with the Conservation Commission. A public hearing was held on April 13, 2026; however, no written comments or recommendations have been received to date.

STAFF COMMENTS

Staff notes that the peer review conducted by Fuss & O'Neill identifies the need for a sidewalk waiver. While the applicant has indicated that such a waiver has been submitted, no corresponding documentation was included in the application materials.

Additionally, the submitted plan set does not include a revision date reflecting the most recent updates.

RECOMMENDATIONS

Staff recommends that the Board accept the application and open the public hearing. Following public testimony, staff further recommends that the Board address any outstanding questions or concerns with the applicant, including clarification and submission of any requested waivers.

No final action should be taken until a written recommendation has been received from the Conservation Commission.

DRAFT MOTIONS:

TO DEFER:

I move to defer the **Proposed Subdivision Plan** for LeClair Drive Extension, SB# 01-26, Map 147 / Lot 006, 12 LeClair Drive, Hudson, New Hampshire, 03051.
Motion by: _____Second: _____Carried/Failed: _____

I move to defer the **Conditional Use Permit** for LeClair Drive Extension, CUP# 03-26, Map 147 / Lot 006, 12 Leclair Drive, Hudson, New Hampshire, 03051.
Motion by: _____Second: _____Carried/Failed: _____

TO ACCEPT:

I move to accept the **Proposed Subdivision Plan** for LeClair Drive Extension, SB# 01-26, Map 147 / Lot 006, 12 Leclair Drive, Hudson, New Hampshire, 03051.
Motion by: _____Second: _____Carried/Failed: _____

I move to accept the **Conditional Use Permit** for LeClair Drive Extension, CUP# 03-26, Map 147 / Lot 006, 12 Leclair Drive, Hudson, New Hampshire, 03051.
Motion by: _____Second: _____Carried/Failed: _____

TO CONTINUE:

I move to continue the **Proposed Subdivision Plan** for LeClair Drive Extension, SB# 01-26, Map 147 / Lot 006, 12 Leclair Drive, Hudson, New Hampshire, to date certain_____, 2026.
Motion by: _____Second: _____Carried/Failed: _____

I move to continue the **Conditional Use Permit** for LeClair Drive Extension, CUP# 03-26, Map 147 / Lot 006, 12 Leclair Drive, Hudson, New Hampshire, to date certain_____, 2026.
Motion by: _____Second: _____Carried/Failed: _____

TO GRANT A WAIVER:

I move to grant a waiver from **§289-18.C.(1) – Horizontal and Vertical Curves –** To allow for a center-line radius of less than 150 feet where elsewise 150 feet would be required, based on the Board's discussion, the testimony of the Applicant's representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____Second: _____Carried/Failed: _____

SUBDIVISION APPLICATION

Date of Application: 3/3/26 Tax Map #: 147 Lot #: 6

Site Address: 12 LeClair Dr, Hudson NH

Name of Project: LeClair Dr Extension

Zoning District: R-2 General SB#: _____
(For Town Use Only)

Z.B.A. Action: _____

PROPERTY OWNER:	DEVELOPER:
Name: Leclair, Ronald O. Trust	MR Lacasse Homes, LLC, C/o Mike Lacasse
Address: 12 LeClair Dr	9 Scenic lane
Address: HUDSON, NH 03051	Hudson, NH 03051
Telephone # 603-438-5611	603-321-8374
Email: onl70@outlook.com	michelrlacasse@gmail.com
PROJECT ENGINEER:	**SURVEYOR:**
Name: Sam Foisie, P.E., Meridian Land Services, Inc	Sam Ingram, LLS., Meridian Land Services, Inc
Address: 31 Old Nashua RD	31 Old Nashua RD
Address: Amherst, NH 03055	Amherst, NH 03055
Telephone # 603-673-1441	603-673-1441
Email: SRFoisie@meridianlandservices.com	SDIngram@meridianlandservices.com

PURPOSE OF PLAN:

The purpose of the plan is to show the site improvements to extend LeClair Dr

(For Town Use Only)

Routing Date: _____ Deadline Date: _____ Meeting Date: _____

_____ I have no comments _____ I have comments (attach to form)

_____ Title: _____ Date: _____
(Initials)

Department:

Zoning: ___ Engineering: ___ Assessor: ___ Police: ___Fire: ___ DPW: ___ Consultant: ___

SUBDIVISION PLAN DATA SHEET

PLAN NAME: LeClair Drive Extension

PLAN TYPE: Conventional Subdivision Plan or Open Space Development (Circle One)

LEGAL DESCRIPTION: MAP 147 LOT 6

DATE: 3/3/26

Address: 12 LeClair Dr

Total Area: S.F. 545,137 Acres: 12.5146

Zoning: R-2

Required Lot Area: 43,560 (Buildable area)

Required Lot Frontage: 120'

Number of Lots Proposed: 6 new lots plus 1 remaining, totaling 7lots

Water and Waste System Proposed: yes

Area in Wetlands: 27,347 sf

Existing Buildings To Be Removed: 0

Flood Zone Reference: Zone X with portion in zone AE, found on flood panel 33011C0512D

Proposed Linear Feet Of New Roadway: 1,000'

SUBDIVISION PLAN DATA SHEET

Dates/Case #/Description/
Stipulations of ZBA,
Conservation Commission,
NH Wetlands Board Action:

(Attach Stipulations on
Separate Sheet)

List Permits Required:

Hudson NH CUP for Wetland Buffer Impacts

Hudson Water and Sewer Connection

*Waivers Requested:	Hudson Town Code Reference	Regulation Description
	1. 289-18 C. Horizontal and vertical curves. (1)	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	

(Left Column for Town Use)

(For Town Use Only)

Data Sheets Checked By: _____ Date: _____

SUBDIVISION PLAN APPLICATION AUTHORIZATION

I hereby apply for *Subdivision Plan* Review and acknowledge I will comply with all of the Ordinances of the Town of Hudson, New Hampshire State Laws, as well as any stipulations of the Planning Board, in development and construction of this project. I understand that if any of the items listed under the *Subdivision Plan* specifications or application form are incomplete, the application will be considered rejected.

Pursuant to RSA 674:1-IV, the owner(s) by the filing of this application as indicated above, hereby given permission for any member of the Hudson Planning Board, the Town Planner, the Town Engineer, and such agents or employees of the Town or other persons as the Planning Board may authorize, to enter upon the property which is the subject of this application at all reasonable times for the purpose of such examinations, surveys, tests and inspections as may be appropriate. The owner(s) release(s) any claim to or right he/she (they) may now or hereafter possess against any of the above individuals as a result of any examinations, surveys, tests and/or inspections conducted on his/her (their) property in connection with this applications.

Signature of Owner: _____ Date:_____

Print Name of Owner:_____

- If other than an individual, indicate name of organization and its principal owner, partners, or corporate officers.

Signature of Developer: _____ Date:_____

Print Name of Developer:_____

- The developer/individual in charge must have control over all project work and be available to the Code Enforcement Officer/Building Inspector during the construction phase of the project. The individual in charge of the project must notify the Code Enforcement Officer/Building Inspector within two (2) working days of any change.

Attachment "A"

TOWN OF HUDSON
SUBDIVISION PLAN REVIEW CHECKLIST

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request NA=Not Applicable

§ 276-11.1 General Plan Requirements

	Y	*P*	*W*	*NA*	
1.	☑	☐	☐	☐	- A list of the names and addresses of the owner(s) of the property, the applicant(s), and all abutters as indicated in the office of the Town Assessor records not more than five (5) days prior to the day of filing [**§ 276-11.1.A.**]
2	☑	☐	☐	☐	- One (1) set of Plans on size 22" x 34" sheet [**§ 276-11.1.B.(1)**]
3.	☑	☐	☐	☐	- Scale no smaller than 50 feet to the inch (1" = 50') [**§ 276-11.1.B.(2)**]
4.	☑	☐	☐	☐	- Title block in the lower right-hand corner of the plan, containing: [**§ 276-11.1.B.(3)**]
5.	☑	☐	☐	☐	-Title, including the term "site plan" or "subdivision plan"
6.	☑	☐	☐	☐	- The name for whom the plan was prepared
7.	☑	☐	☐	☐	- Preparer of the plan
8.	☑	☐	☐	☐	- The scale(s) of the plan
9.	☑	☐	☐	☐	- Date of the plan
10.	☑	☐	☐	☐	- Appropriate revision block
11.	☑	☐	☐	☐	- Approval block located on the lower left corner of each sheet, with the require language and signature lines [**§ 276-11.1.B.(4)**]
12.	☐	☐	☐	☐	- Owner's printed name and address and signature [**§ 276-11.1.B.(6)**]
13.	☑	☐	☐	☐	- Name and address of all abutting property owners [**§ 276-11.1.B.(7)**]
14.	☑	☐	☐	☐	- A locus plan at one inch equals 1,000 feet (1" = 1,000') [**§ 276-11.1.B.(8)**]
15.	☑	☐	☐	☐	-Boundary of the entire parcel held in single ownership with boundary dimensions and bearings [**§ 276-11.1.B.(9)**]
16.	☑	☐	☐	☐	- Error of closure shown and certified by a licensed land surveyor
17.	☑	☐	☐	☐	- North point arrow

Notes

18. ☑ ☐ ☐ ☐ - Zoning classification note of the tract and location of the zoning district boundaries if the property is located in two or more zoning district [**§ 276-11.1.B.(10)**]
19. ☑ ☐ ☐ ☐ - The location of all building setback lines as required by Chapter 334, Zoning, or as listed under **§ 276-11.1.B.(12)**, whichever is more stringent [**§ 276-11.1.B.(12)**].
20. ☑ ☐ ☐ ☐ - The location size and character of all signs or a note* stating "All signs are subject to approval by the Hudson Zoning Administrator prior to installation thereof." [**§ 276-11.1.B.(13)**] *The discrepancy on the note language is correct – reference to the Planning Board in the regulations is outdated.
21. ☑ ☐ ☐ ☐ - The location, detail and character of all exterior lighting or a note stating: "There will be no exterior lighting." [**§ 276-11.1.B.(14)**]
22. ☑ ☐ ☐ ☐ - The location of all buildings within 50 feet of the tract [**§ 276-11.1.B.(15)**]
23. ☑ ☐ ☐ ☐ - The location of roadways, driveways, travel areas or parking areas within 200 feet of the tract, with the use of an additional sheet, aerial photography, or Town topographic mapping as necessary [**§ 276-11.1.B.(16)**]
24. ☑ ☐ ☐ ☐ - Existing topography at two-foot contour intervals of that portion of the tract being proposed for development from a topographic survey and contours on the remainder of the tract from a reliable plan source [**§ 276-11.1.B.(17)**]
25. ☑ ☐ ☐ ☐ - Proposed topography at two-foot contour intervals [**§ 276-11.1.B.(18)**]
26. ☑ ☐ ☐ ☐ - A note identifying the Tax Map and Lot Number of the tract [**§ 276-11.1.B.(19)**]
27. ☑ ☐ ☐ ☐ - The location of all existing buildings (including size and height), driveways, sidewalks, parking spaces, loading area, open spaces, large trees, open drainage courses, signs, exterior lighting, service areas, easements landscaping and other pertinent items. [**§ 276-11.1.B.(20)**]

	Y	P	W	NA		Notes
28.	☑	☐	☐	☐	- The location of all proposed construction, buildings, structures, pavement, etc. [**§ 276-11.1.B.(21)**]	
29.	☑	☐	☐	☐	- A green area shown between the right-of-way line and any pavement, gravel or structure meeting the required minimum width [**§ 276-11.1.B.(22)**]	
30.	☑	☐	☐	☐	- Highway protects listed on the transportation improvement program adopted by the Nashua Regional Planning Commission, shown in the Hudson Master Plan, or listed in the Corridor Study adopted by the Hudson Planning Board [**§ 276-11.1.B.(23)**]	
31.	☑	☐	☐	☐	- Required open space, including the calculation showing the requirement is met [**§ 276-11.1.B.(24)**]	

§§ 275-8 – 275-9 Site Plan Requirements

(If this checklist is for a subdivision plan application, skip to the next section on page 5)

	Y	P	W	NA		Notes
33.	☐	☐	☐	☐	- Parking space calculation showing and a statement stating the required parking spaces are provided [**§ 275-8.C.(2) & (3)**]	
34.	☐	☐	☐	☐	- Required dimensions for parking space [**§ 275-8.C.(4)]**	
35.	☐	☐	☐	☐	- Required dimensions for aisle/access drive [**§ 275-8.C.(5)]**	
36.	☐	☐	☐	☐	- Required off-street loading spaces, including calculation showing the required loading spaces are provided [**§ 275-8.C.(6)]**	
37.	☐	☐	☐	☐	- Required landscaping for the parking lot, including calculation shown the planting requirement is met [**§ 275-8.C.(7)]**	
38.	☐	☐	☐	☐	- Required screening for visual separation of incompatible uses [**§ 275-8.C.(8)]**	

	Y	*P*	*W*	*NA*		*Notes*
39.	☐	☐	☐	☐	- Handicap accessibility provided in accordance with the latest ADA Regulations **[§ 275-8.C.(11)]**	
40.	☐	☐	☐	☐	- Stormwater Management Plan **[§ 275-9.A]**	
41.	☐	☐	☐	☐	- Traffic Study, if required **[§ 275-9.B]**	
42.	☐	☐	☐	☐	- Noise Study, if required **[§ 275-9.C]**	
43.	☐	☐	☐	☐	- Fiscal Impact Study, if required **[§ 275-9.D]**	
44.	☐	☐	☐	☐	- Utility Study **[§ 275-9.E]**	
45.	☐	☐	☐	☐	- Copies of any proposed or existing easements, covenants, deed restrictions or any other similar document pertinent to the Site Plan **[§ 275-9.F]**	
45.	☐	☐	☐	☐	- A copy of all applicable Town, state, county or federal approvals or permits **[§ 275-9.G]**	
46.	☐	☐	☐	☐	- Chapter 270, Sewers	
47.	☐	☐	☐	☐	- Floodplain permit	
48.	☐	☐	☐	☐	- Special exception to the Wetland Ordinance	
49.	☐	☐	☐	☐	- Septic system construction approval from the New Hampshire Water Supply and Pollution Control Commission	
50.	☐	☐	☐	☐	- Approval of the New Hampshire Wetland Bureau for relocation, filling, dredging or rechanneling	
51.	☐	☐	☐	☐	- Approval of the New Hampshire Department of Public Works and Highways for any required driveway permits or curb cuts	
52.	☐	☐	☐	☐	- NH RSA 149:9-a Permit	
53.	☐	☐	☐	☐	- Environmental Impact Study, if required **[§ 275-9.I]**	

(End here if this checklist is for a site plan application).

TOWN OF HUDSON
SUBDIVISION PLAN REVIEW CHECKLIST

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request NA=Not Applicable

§§ 289-26 – 289-27 Subdivision Plan Requirements
(Not applicable if this checklist is for a site plan application)

	Y	*P*	*W*	*NA*		*Notes*
54.	☑	☐	☐	☐	- Proposed subdivision name [**§ 289-26.B.(1)]**	
55.	☑	☐	☐	☐	- Abutting subdivision names, streets, easements, setbacks, alleys, parks and public open spaces and similar facts regarding abutting property [**§ 289-26.B.(2)]**	

Attachment "A"

CONDITIONAL USE PERMIT APPLICATION

Date of Application: 3/3/26 Tax Map #: 147 Lot #: 6

Site Address: 12 LECLAIR DR, Hudson NH

Name of Project: LeClair Drive Extension

Zoning District: r2 General CUP#: _____
(For Town Use Only)

Z.B.A. Action: _____

PROPERTY OWNER:	DEVELOPER:
Name: LECLAIR, RONALD O., TR.	MR Lacassee Homes, LLC, C/O Mike Lacasse
Address: 12, LeClair Dr	9 Scenic Rd
Address: HUDSON, NH 03051	HUDSON, NH 03051
Telephone # 603-438-5611	603-321-8374
Email: onl70@outlook.com	michelrlacasse@gmail.com
PROJECT ENGINEER or SURVEYOR:	**CERTIFIED WETLANDS SCIENTIST:**
Name: Sam Foisie, P.E., Meridian Land Services, Inc	Sam Ingram, LLS., Meridian Land Services, Inc
Address: 31 Old Nashua RD	31 Old Nashua RD
Address: Amherst, NH 03055	Amherst, NH 03055
Telephone # 603-673-1441	603-673-1441
Email: SRFoisie@meridianlandservices.com	SDIngram@meridianlandservices.com

PURPOSE OF PLAN:

The purpose of the plan is to show the site improvements to extend LeClair Dr

(For Town Use Only)

Routing Date: _____ Deadline Date: _____ Meeting Date: _____

_____ I have no comments _____ I have comments (attach to form)

_____ Title: _____ Date: _____
(Initials)

Department:

Zoning: ___ Engineering: ___ Assessor: ___ Police: ___Fire: ___ DPW: ___ Consultant: ___

Attachment "A"

SITE DATA SHEET

PLAN NAME: LeClair Drive Extension

PLAN TYPE: (Site Plan, Subdivision, or other) Subdivision

LEGAL DESCRIPTION: MAP 147 LOT 6

DATE: 3/3/26

Location by Street: 12 LeClair Dr

Zoning: R-2

Proposed Land Use: Residential

Existing Use: Single Family Home

Total Site Area: S.F.: 545,137 Acres: 12.5146

Total Wetland Area (SF): 27,347 sf

Permanent Wetland Impact Area (SF): 235+/-

Permanent Wetland Buffer Impact Area (SF): 5,999+/-

Temporary Wetland Impact Area (SF): 200 +/-

Temporary Wetland Buffer Impact Area (SF): 3,454 +/-

Flood Zone Reference: Zone X with portion in zone AE, found on flood panel 33011C0512D

Proposed Mitigation:

Minimzation of buffer impact, temparay impacts as needed, and removal of invasve species within remaining wetlands and buffer

(For Town Use Only)

Data Sheets Checked By: _____ Date: _____

CONDITIONAL USE PERMIT APPLICATION AUTHORIZATION

I hereby apply for *Conditional Use Permit* and acknowledge I will comply with all of the Ordinances of the Town of Hudson, New Hampshire State Laws, as well as any stipulations of the Planning Board, in development and construction of this project. I understand that if any of the items listed under the *Conditional Use Permit* specifications or application form are incomplete, the application will be considered rejected.

Pursuant to RSA 674:1-IV, the owner(s) by the filing of this application as indicated above, hereby given permission for any member of the Hudson Planning Board, the Hudson Conservation Commission, the Town Planner, the Town Engineer, and such agents or employees of the Town or other persons as the Planning Board may authorize, to enter upon the property which is the subject of this application at all reasonable times for the purpose of such examinations, surveys, tests and inspections as may be appropriate. The owner(s) release(s) any claim to or right he/she (they) may now or hereafter possess against any of the above individuals as a result of any examinations, surveys, tests and/or inspections conducted on his/her (their) property in connection with this applications.

Signature of Owner: _____ Date:_____

Print Name of Owner:_____

- If other than an individual, indicate name of organization and its principal owner, partners, or corporate officers.

Signature of Developer: _____ Date:_____

Print Name of Developer:_____

- The developer/individual in charge must have control over all project work and be available to the Code Enforcement Officer/Building Inspector during the construction phase of the project. The individual in charge of the project must notify the Code Enforcement Officer/Building Inspector within two (2) working days of any change.

Attachment "A"

SCHEDULE OF FEES

(Fee covers both Conservation Commission & Planning Board)

A. REVIEW FEES:

1. Conditional Use Permit
   $100 Flat Fee $_100.00____

LEGAL FEE:

The applicant shall be charged attorney costs billed to the Town for the Town's attorney review of any application plan set documents.

B. POSTAGE:

_____ Direct Abutters Applicant, Professionals, etc. as required by RSA 676:4.1.d @$5.58 **(or Current Certified Mail Rate)** $_____

_____ Indirect Abutters (property owners within 200 feet) @$0.73 **(or Current First Class Rate)** $_____

TOTAL $See attached fee clac_____

(For Town Use)			
AMOUNT RECEIVED: $_____		DATE RECEIVED:	_____
RECEIPT NO.:	_____	RECEIVED BY:	_____

WETLAND CONDITIONAL USE PERMIT CHECKLIST

Yes	No	NA	QUESTIONS/INFORMATION NEEDED	HCC Comments
			NARRATIVE REPORT	
			Existing Conditions	
○	☑	○	Has a DES Dredge and Fill Permit been issued for any part of this site? If yes, provide number, date, and description.	
☑	○	○	Is there evidence of altered wetlands or surface waters on site?	
○	☑	○	All prime and other wetlands in the vicinity, plus any wetlands/watersheds past the immediate vicinity affected by this project	
☑	○	○	• Description of each wetland and associated values	
☑	○	○	Wetland mapping results – Including the flagging date and technique plus the name, company and qualifications of the wetland scientist	
☑	○	○	Was property surveyed? If yes, the date of survey. (Please attach the survey plan)	
			National Wetland Inventory	
☑	○	○	• Vegetative cover types	
○	☑	○	• Existence of vernal pools and associated habitat	
○	☑	○	• Unique geological and cultural features	
☑	○	○	• NH Natural Heritage inventory – For list of rare and endangered species, contact the NH Division of Forests and Lands (603)271-3623	
○	○	☑	• Wildlife and fauna species, including estimated number and locations (large projects)	
☑	○	○	• Public or private wells located within the vicinity	
○	○	☑	• Monitoring well(s) located on site	
☑	○	○	• Current land use and zoning district	
☑	○	○	Photos of existing area (please use color photos)	
			Proposed Project Description	
☑	○	○	Entire project and associated activities	
○	○	☑	Time table of project and anticipated phasing	
☑	○	○	Land use	
☑	○	○	Grading plan	
			Impact to Wetlands and/or Buffers	
○	☑	○	• Depending on size and proposed impacts, a report from a biologist may be appropriate	
☑	○	○	Removing, filling, dredging, or altering (Area square ft. and locations)	
○	☑	○	Intercepting or diverging of ground or surface water (Locations and size)	
○	☑	○	• Change in run-off characteristics	
☑	○	○	Delineation of drainage area contributing to each discharge point	

Yes	No	NA	Questions/Information Needed	HCC COMMENTS
✓	○	○	○	Estimated water quality characteristics of runoff at each point of discharge for both pre- and post-development	
✓	○	○	○	Erosion control practices	
✓	○	○	○	• If using rip-rap, attach documentation explaining why other erosion control methods are not feasible	
✓	○	○	○	• How storm water runoff will be handled	
✓	○	○	○	If backyards or lots include a buffer area, buffer restriction wording shall be included in each deed (A physical marker may be requested to designate buffer boundaries at site)	
				Mitigation	
✓	○	○	○	Square footage of mitigation – wetland and upland areas	
	○	✓	○	Wetland or upland plants identified to replace any losses	
	○	✓	○	• Restoration plan for planting and vegetation	
	○	✓	○	Conservation easements, including location and aesthetic, wildlife and vegetative values	
	○	○	✓	• If easement is on or added to the site(s), a copy of the legal document shall be given to the HCC (HCC conservation easement markers may also be required along the easement)	

CONCEPTUAL SITE PLAN/DRAWING

	✓	○	○	Locus map depicting project site and vicinity within approximately ½ mile and also on a larger scale	
	✓	○	○	All prime and other wetlands in the vicinity	
	✓	○	○	Wetland(s) impacted (identified as prime or other) and the wetland boundaries with 50', buffer areas highlighted in color	
	✓	○	○	Assessor's sheet(s), lot(s), and property account number(s)	
	✓	○	○	Existing and proposed structures	
	✓	○	○	Square footage listed for temporary and permanent impact	
	✓	○	○	Erosion control plan (Suggested: Biodegradable silt fences so area won't be disturbed again and no hay to avoid invasive species)	
	✓	○	○	Topographical map with contours	
	○	✓	○	Storm water treatment swales and basins highlighted in color if in buffer area	
	✓	○	○	Conservation and utility easements	
	✓	○	○	Grading plan	
	✓	○	○	Culvert, arch, bridge - sizes, material, etc.	
	✓	○	○	Vegetative cover types	
	○	✓	○	Vernal pools	
✓	○	○	○	Existing and proposed stone walls, tree lines, and unusually large, rare or beautiful trees, and other notable site features	

QUESTIONS TO CONSIDER BEFORE SUBMITTING

- Will the increased discharge cause erosion and channelization?
- Is there potential for off-site flooding?
- Does the decreased infiltration in the drainage area cause vegetation stress due to reduced or increased ground water or surface water discharge into wetland?
- Will the nutrients in the runoff increase eutrophication potential in downstream water bodies?
- Do you own any adjacent parcels or easements for roadways across adjacent parcels which could be used for access to avoid a wetland crossing
- Does a wetland crossing occur where it will result in the least amount of alteration to a wetland?
- Is preservation of upland areas adjacent to the impacted wetland a priority?
- Can using an alternative crossing design such as a bridge, retaining wall, etc. decrease the width or area of wetland alteration?
- Does a proposed road crossing of a wetland exceed the minimum width acceptable to the Planning Board and can this be negotiated downwards?
- Have you established that no reasonable alternative access from a public way to an upland is possible?
- Can the parking lot spaces be decreased?
- Is the roadway designed in such a way that does not restrict the flow of water?
- Is additional information needed to assess water quality impacts due to runoff?
- Is there an increase in other pollutants (e.g., heavy metals, turbidity, coli form) from streets and parking lots?
- Is there a need to restrict or prohibit the use of pesticides and fertilizers?
- Is there a need to restrict the use of roadway salting?

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Attachment "A"

Re: **LeClair Drive Extension** **March 3, 2026**
12 LeClair Dr, Tax Map 147 - Lot 6
Lot 228-7
Hudson, NH

Conditional Use Permit Application: Wetland Conservation Overlay District – Checklist Questions

1. Will the increased discharge cause erosion and channelization?

   No, the stormwater management system controls the stormwater to meet predevelopment rates. Additionally the site is situated immediately adjacent to the Merrimack River, the river has the capacity to handle large amounts of runoff.

2. Is there potential for off-site flooding?

   No, the stormwater management system controls the stormwater to meet predevelopment rates. It also slowly releases the runoff over a longer period of time and infiltrates the groundwater recharge volume (GRV). Additionally the site is situated immediately adjacent to the Merrimack River, the river has the capacity to handle large amounts of runoff.

3. Does the decreased infiltration in the drainage area cause vegetation stress due to reduced or increased ground water or surface water discharge into wetland?

   No, the stormwater management system is an infiltration basin. The basin has been designed to meet NHDES Alteration of Terrain's GRV, thereby not decreasing the amount of surface waters being infiltrated into the ground.

4. Will the nutrients in the runoff increase eutrophication potential in downstream water bodies?

   No, the stormwater management system has been designed to comply with nutrient removal requirements established within the town of Hudson's stormwater regulations.

5. Do you own any adjacent parcels or easements for roadways across adjacent parcels which could be used for access to avoid a wetland crossing?

   No easements have been identified during the deed research for the creation and certification of the boundary plan by this office. The proposed wetland crossing is in the location that will cause minimal impacts to the wetlands and the associated buffers.

6. Does a wetland crossing occur where it will result in the least amount of alteration to a wetland?

   Yes. The proposed wetland crossing is in the location of the existing driveway crossing. A waive from the roadway geometry has been requested to allow for a reduction in curvature radius cross the wetland at the existing crossing. Without this waiver the road would cross the wetland in another location creating a new and larger impact area.

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7. Is preservation of upland areas adjacent to the impacted wetland a priority?

   Yes, The majority of the disturbances to the wetland buffer area is the for the roadway crossing.

8. Can using an alternative crossing design such as a bridge, retaining wall, etc. decrease the width or area of wetland alteration?

   The proposed crossing is in a location that has already been impacted. From review of historic aerials the crossing has existed since before 1947.

9. Does a proposed road crossing of a wetland exceed the minimum width acceptable to the Planning Board and can this be negotiated downwards?

   The roadway is at the minimum width allowed by the town engineering standards.

10. Have you established that no reasonable alternative access from a public way to an upland is possible?

    Yes. See responses above to #8. Additionally, the wetland bisects the property. To reach the other side a crossing is required.

11. Can the parking lot spaces be decreased?

    N/A. Parking areas are limited to driveways.

12. Is the roadway designed in such a way that does not restrict the flow of water?

    Yes. The culvert has been designed to allow runoff to flow freely through the system.

13. Is additional information needed to assess water quality impacts due to runoff?

    No.

14. Is there an increase in other pollutants (e.g., heavy metals, turbidity, coli form) from streets and parking lots?

    No, the stormwater management system mitigates increases in pollutants.

15. Is there a need to restrict or prohibit the use of pesticides and fertilizers?

    No. There are no known issues in this area that would require the restriction of either pesticides and/or fertilizers.

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16. Is there a need to restrict the use of roadway salting?

No. The road is intended to be turned over to the town. If the town wants to restrict the use of salt they are free to do so.

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Attachment "A"

LeClair Dr Extension
12 LeClair Dr
Lot 147-6
Hudson, NH

Planning Board Application - Fee Calculation

Site Plan

Description	Fee Calculation		Units	Amount
Review Fee	$ 170.00	per proposed lot	7	$ 1,190.00
Notice to Direct Abutters	$ 6.08	per abutter and Owner, applicant & consultants	15	$ 91.20
Notice to Indirect Abutters	$ 0.78	per abutter	1	$ 0.78
Tax map Update fee	$ 30.00	2 to 7 lots (# of lots x $30.00) + $25.00 (min. $85.00) 8 lots or more (min. $325.00)	7	$ 210.00
			Subtotal	**$ 1,491.98**

WETLAND CONSERVATION OVERLAY DISTRICT Conditional Use Permits (CUP)

Description	Fee Calculation		Units	Amount
Base Fee	$ 100.00	Per Application	1	$ 100.00
Notice to Direct Abutters		**NOTICES INCLUDED FOR SITE PLAN FEE**		$ -
Notice to Indirect Abutters		**NOTICES INCLUDED FOR SITE PLAN FEE**		$ -
			Subtotal	**$ 100.00**

Total Permitting Fees Made Payable to the Town of Hudson =	**$ 1,591.98**

CONSULTANT REVIEW FEE:	$ 600.00	$600 per acre or $1,250 whichever is greater	12.51	**$ 7,506.00**
Made Payable to the town of Hudson				

NOTES

1

3/2/2026

Attachment "A"

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LIST OF ABUTTERS

Tax Map 147 Lot 6
12 Leclaire Drive
Hudson, NH

March 2nd, 2026
#12916-01

Meridian Land Services, Inc.
PO Box 118
Milford, NH 03055
Attn: Sam Foisie

Map 147 Lot 1-1
TURNER, JUSTIN M., TR.
TURNER, JENNIFER B., TR.
3 SHORELINE DR.
HUDSON, NH 03051

Map 147 Lot 6
LECLAIR, RONALD O., TR
LECLAIR REVOCABLE TRUST
12 LECLAIR DR
HUDSON, NH 03051

Map 147 Lot 7
RAFFERTY, LINDA E
RAFFERTY, GARY D
220 WEBSTER STREET
HUDSON, NH 03051

Map 147 Lot 5
GAGNE, EMILY
FITCH, JAMES
216 WEBSTER STREET
HUDSON, NH 03051

Map 147 Lot 4
BROMLEY, MICHAEL K.
BROMLEY, ROBERTA M
214 WEBSTER STREET
HUDSON, NH 03051

Map 147 Lot 3
DAVILA, LUIS
ROJAS-MARIN, LUZ ADRIANA
212 WEBSTER ST
HUDSON, NH 03051

Map 147 Lot 2
HAMEL, ERIC J.
633 VIA LINDA
NEWBURY PARK, CA 91320

Map 147 Lot 1-2
KAUFFMAN, RONALD A
5 SHORELINE DRIVE
HUDSON, NH 03051

Map 147 Lot 1-3
PUOPOLO, STEPHEN T., TR
PUOPOLO, KIMBERLY M., TR.
9 SHORELINE DRIVE
HUDSON, NH 03051

Map 147 Lot 1-4
MANDEVILLE, DOMINICK L.
MANDEVILLE, CAROLA F.
11 SHORELINE DRIVE
HUDSON, NH 03051

Map 147 Lot 1-5
ASHFORD, CHRISTINE J., TR.
ASHFORD REVOCABLE TRUST
13 SHORELINE DR.
HUDSON, NH 03051

Map 147 Lot 1-6
MILLER, LISA
MILLER, JOSEPH
15 SHORELINE DR.
HUDSON, NH 03051

Map 147 Lot 1-7
MONCHAMP, DOUGLAS J., TR
MONCHAMP, KAREN L., TR
17 SHORELINE DR.
HUDSON, NH 03051

MR LACASSE HOMES, LLC
9 SCENIC WAY
HUDSON, NH 03051

WAIVER REQUEST FORM

Name of Subdivision/Site Plan: LeClair Drive Extension

Street Address: 12 LeClair Dr, Hudson NH

I Sam Foisie, P.E., Meridian Land Services, Inc hereby request that the Planning Board waive the requirements of item 289-18 C.(1) Horizontal and vertical curves. of the Hudson Land Use Regulations in reference to a plan presented by Sam Foisie, P.E., Meridian Land Services, Inc _____ (name of surveyor and engineer) dated March 3, 2026 for property tax map(s) 147 and lot(s) 6 in the Town of Hudson, NH.

As the aforementioned applicant, I, herein, acknowledge that this waiver is requested in accordance with the provisions set forth in RSA 674:36, II (n), i.e., without the Planning Board granting said waiver, it would pose an unnecessary hardship upon me (the applicant), and the granting of this waiver would not be contrary to the spirit and intent of the Land Use Regulations.

Hardship reason(s) for granting this waiver (if additional space is needed please attach the appropriate documentation hereto):

Subdivision of Land Regulations Section 289-18 C. Horizontal and vertical curves. (1) No horizontal curve shall have a center line radius of less than 150 feet except on a cul-de-sac.

To allow the horizontal curvature of 100' to better fit into the existing topography of the site.

The subject property one point of access via the existing road stubbed to the property, LeClair Drive. The property is bisected by a wetland that runs from the east property line to the west property line (Merrimack River). This wetland is in a small revine that gets deeper the closer to the Merrimack River. There is an existing wetland crossing that is the most appropriate location to cross the wetland with the road extension.

Reason(s) for granting this waiver, relative to not being contrary to the spirit and intent of the Land Use Regulations: (if additional space is needed please attach the appropriate documentation hereto):

See Attached

Signed: _____

Applicant or Authorized Agent

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Attachment "A"

Re: LeClair Drive Extension
12 LeClair Dr, Tax Map 147 - Lot 6
Lot 228-7
Hudson, NH

Waiver Request Form – Attachment

Reason(s) for granting this waiver, relative to not being contrary to the spirit and intent of the Land Use Regulations: (if additional space is needed please attach the appropriate documentation hereto):

The granting of this waiver is to create a better roadway design while meeting the spirit and intent of the regulations while simultaneously achieving the objectives of other sections of the Town of Hudsons zoning ordinance, ARTICLE IX Wetland Conservation District.

The extension of LeClair drive is to serve 7 lots on a dead-end roadway, making it a low volume road. The road is situated off a residential neighborhood. Vehicles turning onto LeClair Drive are starting at a slow rate of speed due to a 90-degree turning condition. With the road length of only 1,000 ft it is not expected for drivers to accelerate at a frequency to reach the speed limit of the roadway. Additionally, most of the traffic being local traffic with LeClair Drive being the destination, except for a few drivers traveling down LeClair drive due to a wrong turn or "sightseeing". The reduced curves act as a traffic calming device by forcing vehicles to drive at a slower speed than roads with a larger horizontal curve. This will make the neighborhood a safer community for the future residents.

The last purpose of the design curves is to align the roadway with the existing wetland crossing that has been in existence since before 1947. The purpose and objective of the Wetland Conservation District is protecting the wetlands.

> *B. The purpose of the Wetland Conservation District is to protect the health, safety and general welfare of the public by promoting both the most appropriate use of land and by protecting wetland and surface water ecosystems and water quality in accordance with the goals and objectives of Hudson's Master Plan.*

Part of the criteria for the conditional use permit is to seek the least impactful location for a wetland crossing. By designing the roadway to use the existing crossing the impacts to the wetlands and associated buffers are minimized.

By granting this waiver the spirit and intent of the Land Use Regulations is maintained by creating a safe roadway and the purposes of the Wetland Conservation District are achieved.

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Attachment "A"

Re: **LeClair Drive Extension** **March 3, 2026**
12 LeClair Dr, Tax Map 147 - Lot 6
Lot 228-7
Hudson, NH

Subdivision Application
Conditional Use Permit Application: Wetland Conservation Overlay District

Existing Site Photos

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Most Recent Google Aerial

Google Street View June 2025

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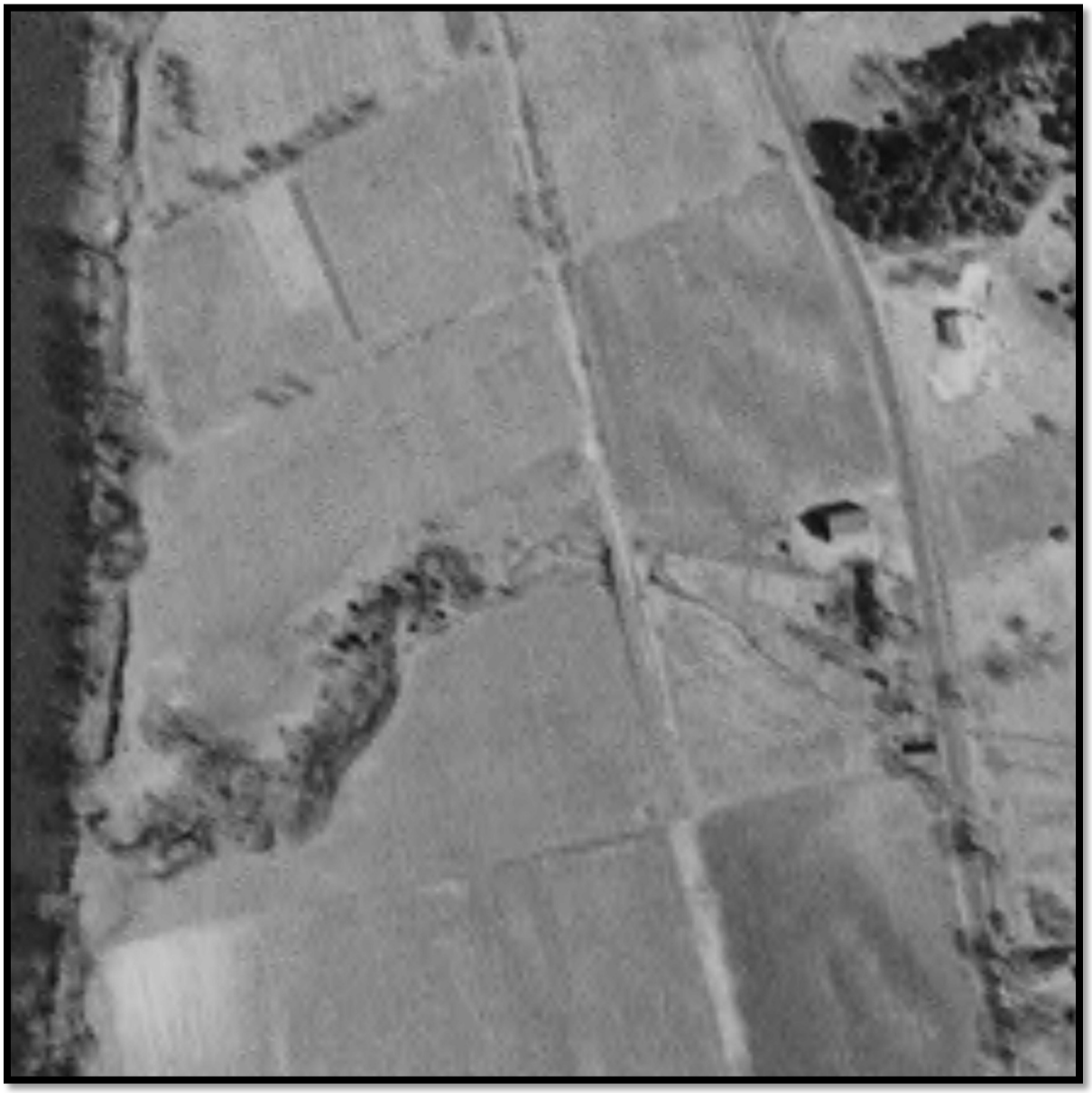
Attachment "A"

Re: **LeClair Drive Extension** **March 3, 2026**
12 LeClair Dr, Tax Map 147 - Lot 6
Lot 228-7
Hudson, NH

Subdivision Application
Conditional Use Permit Application: Wetland Conservation Overlay District

Aerial Historic Photos



Year: 1947

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Year:1998

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Year: 2010

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Attachment "B"

Re: **LeClair Drive Extension** **March 3, 2026**
12 LeClair Dr, Tax Map 147 - Lot 6
Lot 228-7
Hudson, NH

Subdivision Application
Conditional Use Permit Application: Wetland Conservation Overlay District

Project Narrative

I) INTRODUCTION

The applicant, MR Lacasse Homes, LLC, has requested to be heard at the Hudson Planning Board for a review of a Subdivision Application and a Conditional Use Permit Application: Wetland Conservation Overlay District at Tax Map 147 - Lot 6. The project involves constructing approximately 800 LF +/- of roadway, utilities, and associated drainage improvements to support a 7 lot subdivision (6 new lots + 1 remaining lot).

II) EXISTING USE

The property is currently a 12.5-acre parcel with one single family home situated along the Merrimack River.

III) SUBDIVISION

The proposed application is to subdivide the parcel into 7 lot subdivision (6 new lots + 1 remaining lot). These lots comply with the underlaying zoning, R-2 zoning. The lots have a minimum lot size of 43,560, exclusive of wetlands, flood plain, and steep slopes. The lots are proposed with a minimum frontage of 120 LF.

IV) STORMWATER MANAGEMENT

The proposed disturbance is about 70,000 sf therefore not triggering a NHDES Alteration of Terrian stormwater permit; however, the site's stormwater has been designed to Env-Wq 1500: Alteration of Terrain and the stormwater ordinance outlined in Chapter 290 of the Town of Hudson Part 1: Administrative Legislation. T

V) ROADWAY

The roadway has been designed to the Town of Hudson's subdivision regulations and engineering standards with the exception of the horizontal radius. The request for a reduction in roadway curvature is to utilize the existing wetland cross while still maintaining acceptable traffic safety. LeClair Drive is proposed to be extended to total length of 1,000 LF measured from the intersection of Shoreline Drive to the end of the proposed Cul-de-Sac. Per conversations with the Town Engineer, the roadway longitudinal grades have been increased to 2.0%, instead of the minimum allowed 1% to allow for better stormwater conveyance and increased tolerances during construction.

VI) UTILTIES

The proposed lots are to be served by municipal water and sewer. Three of the proposed lots will have private low-pressure force main to covey the sanitary sewer beyond the wetland crossing into the extended gravity sewer. The remaining lot will remain on the existing well and septic system. The proposed lots will be served by underground power and cable.

VII) LANDSCAPING

No landscaping is proposed.

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VIII) SITE LIGHTING
No roadway lighting is proposed.

Attachment "C"

Planning Board Sign-off

Project Name	SB# 01-26 LeClair Subdivision	Map/Lot:	147-006-000
Site Address:	12 LeClair Drive	Zone:	Residential - 2
		Due by:	3/9/26

Project Status		**Ready for Approval**	**Awaiting Revisions**	**Approval with Stipulations**
DEPARTMENT	**INITIAL**			
FUSS & O'NEILL:	DK			✔
ZONING:	CS	✔		
ASSESSING:	JM	✔		
ENGINEERING:	EZD		✔	
PUBLIC WORKS:	JT		✔	
FIRE:	DRH	✔		
POLICE:	PMM	✔		

Comments:

ZONING:
ASSESSING:
ENGINEERING:
PUBLIC WORKS:Public Works has no additional comments over what engineering has stated.
FIRE:Revised plans do show apparatus turning plan and the additional fire hydrants. Acceptable 4-13-2026
POLICE:

Attachment "C"

Planning Board Sign-off

Project Name	SB# 01-26 LeClair Subdivision	Map/Lot:	147-006-000
Site Address:	12 LeClair Drive	Zone:	Residential - 2
		Due by:	3/9/26

Extended Comments:

F&O:
Did the current submittal to Planning include the following waiver requests?

Phasing of subdivision construction waiver?
Sidewalk waiver?
Waiver for horizontal curve minimum?

Comments ff. and hh. of Section 4 were not addressed.

Engineering:
Item 6. Sidewalk waiver request
I did not see the waiver request and Engineering Department does not recommend the sidewalk relief waiver.

Item 10.
The applicant needs confirmation form Public Works , in writing , that its not an issue , or J can piggy back on this email and state he is all set

DPW REPLY: No waiver, no relief. DPW does not recommend the sidewalk waiver. We should not even entertain the idea if we aren't getting something in return.

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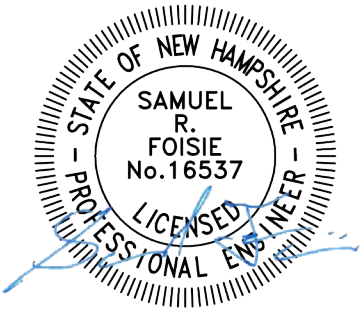
PROJECT STORMWATER MANAGEMENT REPORT

SUBDIVISION OF TAX MAP 147 LOT 6

Leclair Drive
Tax Map 147 Lot 6
Hudson, New Hampshire 03051

Prepared for:
MR Lacasse Homes, LLC
9 Scenic Lane
Hudson, New Hampshire 03051

Owner of Record:
Ronald O. Leclair Revocable Trust
C/O Ron Leclair
12 Leclair Drive
Hudson, New Hampshire 03051



April 8, 2026

Prepared by: Noah C. Greene, EIT
Reviewed by: Samuel R. Foisie, PE

MLS Project No. 12916.00

Index

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Storm Water Management Report
Subdivision of Tax Map 147 Lot 6
Map 147 Lot 6
12 Leclair Drive
Hudson, New Hampshire 03051

I. Introduction

These drainage calculations have been prepared in support of the above referenced development project located on Tax Map 147 Lot 6 in Hudson, New Hampshire. The development will subdivide the parcel into six (6) additional lots, seven (7) lots total. The development of the lot includes extending Leclair Drive to be 1,000 FT and all site improvements required to support the development of the lot.

II. Site Description

The subject parcel is located east of the Merrimack River with Webster Street to the west and Shoreline Drive to the south. The site exists as a single-family residential lot that is accessed via a gravel driveway. The topography of the site generally slopes towards the Merrimack River with a tier 1 stream splitting the site.

The rainfall data utilized in calculations have been determined by the Northeast Regional Climate Center Extreme Precipitation Data Tables as follows: 2-Year=2.93 Inches, 10-Year=4.42 Inches, 25-Year=5.58 Inches, and 50-Year=6.66 Inches. See attached Precipitation Tables.

The soils onsite are depicted via the Natural Resources Conservation Service (NRCS) Web Soil Survey and are identified as Occum fine sandy loam, high bottom (HSG B) and Windsor Loamy Sand (HSG A). See attached NRCS Soil Map.

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III. Drainage Design

To meet the requirements of the Town of Hudson, stormwater generated by the site is conveyed to the infiltration basins shown on the plans via a combination of sheet flow and closed drainage. The infiltration basins utilize a sediment forebay for pretreatment. The site was analyzed for the 2-, 10-, 25- and 50-year storm events. The ponds utilize infiltration and an outlet control riser structure to attenuate peak flows. The basin was designed to be as low impact as possible by utilizing the natural slope of the site and location the stormwater basins in a natural location. To accommodate for frozen ground conditions the 50-year storm was analyzed in HydroCAD with an AMC factor of 4. During this event the stormwater systems can safely mitigate the generated runoff.

Three (3) observation points have been modeled to compare the peak flows from the pre-development and post-development conditions. Observation Point 1 (OP1) is located at the edge of the Merrimack River. Observation Point 2 (OP2) is a low spot in the topography located north of the existing house adjacent to the abutting lot. Observation Point (OP3) is the southernmost lot line and represents the portion of the site that flows to the abutting lots. The results of the analysis are denoted in the “Summary” section of this report.

The infiltration rate utilized in the attached calculations have been determined utilizing the methods required per ENV-wq 1504.14.e(2). The tests were conducted in the locations of both infiltration basins with the test at Basin 1 yielding an average design rate of 0.55 inches per hour. The test at basin 2 yielded an average design rate of 1.65 inches per hour.

IV. Methodology

The quantity of runoff and the conveyance of that flow through the site are determined using the software package HydroCAD 10.20-8a by HydroCAD Software Solutions, LLC. HydroCAD is a computer aided design program for modeling storm water hydrology based on the Soil Conservation Service (SCS) TR-55 method combined with standard hydraulics calculations.

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V. Summary

The proposed drainage design effectively mitigates runoff during the analyzed storm events. Runoff from the proposed development is effectively collected, treated, recharged and discharged. The peak volume of stormwater generated is reduced and in accordance with the NHDES AoT groundwater recharge requirements. Summary tables comparing pre- and post-development peak runoff rates and volumes are shown below. At observation point OP3 the increase in outflow from the predevelopment conditions is being generated in the area of the road that will flow to the existing drainage along Leclair Drive, as such the increased rate will be properly captured and conveyed to the existing stormwater system.

Table 1: Peak Rate of Stormwater Discharge Summary

Location	Q2 (CFS)			Q10 (CFS)			Q25 (CFS)			Q50 (CFS)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
OP1	0.86	0.84	-0.02	4.63	4.55	-0.08	8.95	8.50	-0.45	13.93	12.87	-1.06
OP2	0.18	0.18	0.00	0.98	0.96	-0.02	1.82	1.79	-0.03	2.71	2.68	-0.03
OP3	0.28	0.42	0.14	1.37	1.63	0.26	2.50	2.81	0.31	3.67	4.03	0.36

Table 2: Peak Volume of Stormwater Discharge Summary

Location	Q2 (CFS)			Q10 (CFS)			Q25 (CFS)			Q50 (CFS)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
OP1	0.161	0.145	-0.016	0.597	0.500	-0.097	1.117	0.950	-0.167	1.709	1.544	-0.165
OP2	0.032	0.032	0.000	0.102	0.100	-0.002	0.172	0.169	-0.003	0.246	0.242	-0.004
OP3	0.046	0.063	0.017	0.141	0.169	0.028	0.236	0.272	0.036	0.336	0.378	0.042

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Metadata for Point	
Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	42.786 degrees North
Longitude	71.453 degrees West
Elevation	30 feet
Date/Time	Wed Feb 25 2026 13:36:36 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.27	0.42	0.52	0.68	0.85	1.07	**1yr**	0.73	1.01	1.24	1.55	1.95	2.47	2.71	**1yr**	2.18	2.61	3.03	3.71	4.32	**1yr**
2yr	0.33	0.51	0.64	0.84	1.05	1.32	**2yr**	0.91	1.21	1.52	1.90	2.36	2.93	3.26	**2yr**	2.60	3.14	3.64	4.36	4.95	**2yr**
5yr	0.39	0.61	0.77	1.03	1.31	1.66	**5yr**	1.13	1.51	1.93	2.40	2.99	3.70	4.15	**5yr**	3.28	3.99	4.61	5.47	6.18	**5yr**
10yr	0.44	0.69	0.88	1.19	1.55	1.98	**10yr**	1.34	1.79	2.31	2.88	3.58	4.42	4.98	**10yr**	3.91	4.79	5.53	6.50	7.31	**10yr**
25yr	0.52	0.83	1.06	1.46	1.94	2.50	**25yr**	1.67	2.24	2.91	3.66	4.54	5.58	6.34	**25yr**	4.94	6.10	7.02	8.17	9.13	**25yr**
50yr	0.59	0.95	1.21	1.70	2.30	3.00	**50yr**	1.98	2.65	3.51	4.40	5.44	6.66	7.61	**50yr**	5.90	7.32	8.42	9.71	10.81	**50yr**
100yr	0.68	1.10	1.41	2.00	2.72	3.57	**100yr**	2.35	3.15	4.19	5.26	6.50	7.96	9.15	**100yr**	7.04	8.80	10.09	11.54	12.80	**100yr**
200yr	0.77	1.26	1.63	2.34	3.23	4.27	**200yr**	2.79	3.73	5.01	6.31	7.79	9.51	11.01	**200yr**	8.42	10.58	12.10	13.73	15.17	**200yr**
500yr	0.93	1.53	1.99	2.89	4.06	5.39	**500yr**	3.50	4.68	6.36	8.00	9.89	12.05	14.05	**500yr**	10.67	13.51	15.40	17.29	18.99	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.22	0.34	0.42	0.56	0.69	0.80	**1yr**	0.60	0.78	1.06	1.32	1.67	2.32	2.56	**1yr**	2.06	2.46	2.76	3.30	3.92	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.20	**2yr**	0.86	1.17	1.37	1.78	2.29	2.87	3.19	**2yr**	2.54	3.07	3.56	4.25	4.85	**2yr**
5yr	0.36	0.55	0.68	0.94	1.19	1.41	**5yr**	1.03	1.38	1.62	2.10	2.68	3.48	3.90	**5yr**	3.08	3.75	4.32	5.14	5.81	**5yr**
10yr	0.39	0.60	0.75	1.05	1.35	1.60	**10yr**	1.17	1.56	1.81	2.38	3.03	4.02	4.53	**10yr**	3.55	4.36	5.01	5.92	6.64	**10yr**
25yr	0.45	0.68	0.84	1.21	1.59	1.87	**25yr**	1.37	1.83	2.13	2.80	3.53	4.85	5.50	**25yr**	4.30	5.29	6.12	7.16	7.88	**25yr**
50yr	0.48	0.74	0.92	1.32	1.78	2.12	**50yr**	1.53	2.07	2.41	3.18	3.97	5.62	6.39	**50yr**	4.97	6.14	7.11	8.26	8.99	**50yr**
100yr	0.53	0.80	1.00	1.45	1.99	2.39	**100yr**	1.71	2.34	2.72	3.49	4.47	6.43	7.43	**100yr**	5.69	7.14	8.27	9.54	10.23	**100yr**
200yr	0.58	0.87	1.11	1.60	2.23	2.71	**200yr**	1.93	2.65	3.06	3.95	5.07	7.42	8.63	**200yr**	6.57	8.30	9.64	11.02	11.64	**200yr**
500yr	0.66	0.98	1.26	1.83	2.60	3.21	**500yr**	2.24	3.14	3.61	4.67	5.99	8.96	10.57	**500yr**	7.93	10.16	11.81	13.37	13.79	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.48	0.58	0.78	0.96	1.12	**1yr**	0.83	1.10	1.27	1.65	2.09	2.61	2.86	**1yr**	2.31	2.75	3.31	4.09	4.65	**1yr**
2yr	0.35	0.54	0.67	0.91	1.12	1.31	**2yr**	0.96	1.28	1.48	1.92	2.46	3.02	3.36	**2yr**	2.67	3.23	3.74	4.46	5.11	**2yr**
5yr	0.44	0.67	0.83	1.14	1.45	1.66	**5yr**	1.25	1.63	1.89	2.42	3.03	3.98	4.43	**5yr**	3.52	4.26	4.90	5.79	6.52	**5yr**
10yr	0.52	0.81	1.00	1.39	1.80	2.03	**10yr**	1.56	1.98	2.29	2.88	3.59	4.91	5.46	**10yr**	4.34	5.25	6.04	7.07	7.89	**10yr**
25yr	0.68	1.03	1.28	1.83	2.40	2.63	**25yr**	2.07	2.57	2.96	3.65	4.47	6.49	7.21	**25yr**	5.74	6.93	7.96	9.19	10.18	**25yr**
50yr	0.82	1.24	1.55	2.23	3.00	3.21	**50yr**	2.59	3.14	3.59	4.36	5.28	8.02	8.91	**50yr**	7.10	8.57	9.81	11.20	12.36	**50yr**
100yr	1.00	1.51	1.89	2.73	3.74	3.91	**100yr**	3.23	3.83	4.37	5.38	6.25	9.84	11.01	**100yr**	8.70	10.59	12.08	13.67	15.01	**100yr**
200yr	1.21	1.82	2.31	3.35	4.67	4.77	**200yr**	4.03	4.66	5.29	6.45	7.39	12.15	13.61	**200yr**	10.75	13.09	14.87	16.68	18.25	**200yr**
500yr	1.58	2.36	3.03	4.40	6.26	6.19	**500yr**	5.40	6.05	6.85	8.23	9.23	16.09	18.00	**500yr**	14.24	17.30	19.58	21.71	23.64	**500yr**

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Map Scale: 1:4,530 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Hillsborough County, New Hampshire, Eastern Part
Survey Area Data: Version 28, Sep 9, 2025

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AgA	Agawam fine sandy loam, 0 to 3 percent slopes	B	0.0	0.0%
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	A	0.2	0.3%
Om	Occum fine sandy loam, high bottom	B	27.0	30.3%
So	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	A/D	2.4	2.6%
Su	Suncook loamy fine sand	A	0.9	1.0%
W	Water (less than 40 acres)		15.0	16.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	A	14.0	15.7%
WdB	Windsor loamy sand, 3 to 8 percent slopes	A	14.4	16.1%
WdC	Windsor loamy sand, 8 to 15 percent slopes	A	6.3	7.1%
WdD	Windsor loamy sand, 15 to 35 percent slopes	A	8.9	10.0%
Totals for Area of Interest			**89.1**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

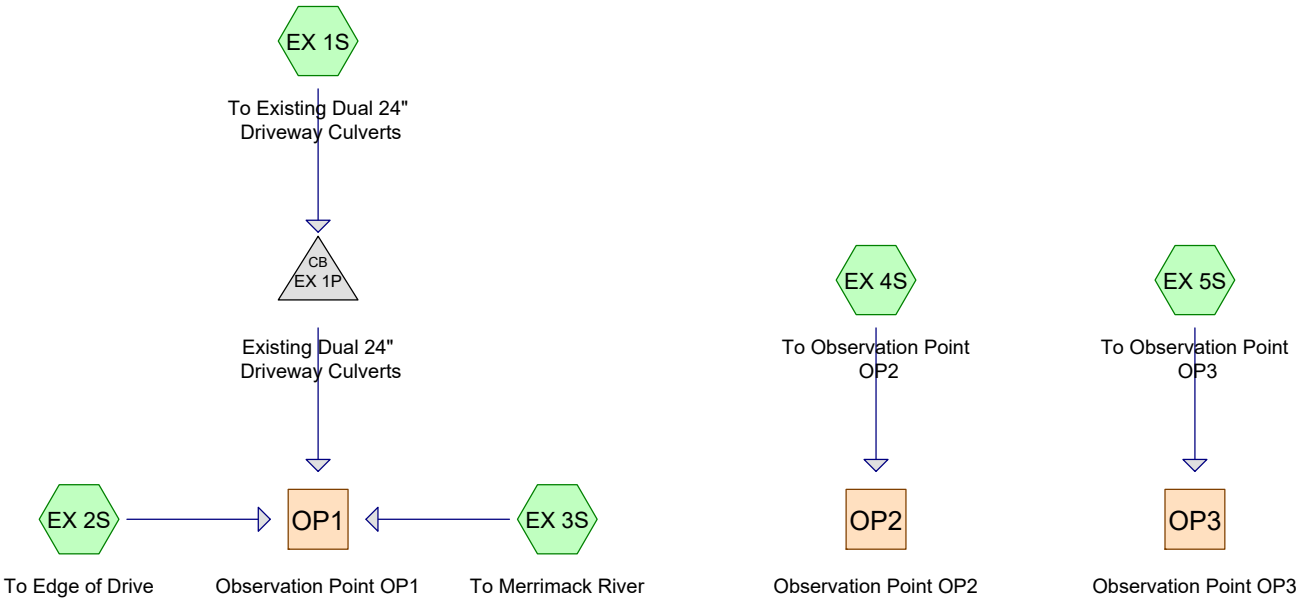
Tie-break Rule: Higher

Section 1.1: Existing Conditions

Routing Diagram

Area and Soils Listings

2-, 10-, 25- and 50-year Storm Nodes



Subcat Reach Pond Link

Routing Diagram for 12916EX01A
Prepared by Meridian Land Services Inc, Printed 4/7/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.044	39	>75% Grass cover, Good HSG A (EX 1S, EX 2S)
6.718	61	>75% Grass cover, Good HSG B (EX 1S, EX 2S, EX 3S, EX 4S, EX 5S)
0.006	76	Gravel roads HSG A (EX 3S)
0.325	85	Gravel roads HSG B (EX 1S, EX 3S, EX 5S)
0.003	98	Paved parking HSG B (EX 3S)
0.064	98	Roofs HSG B (EX 3S)
1.464	30	Woods, Good HSG A (EX 1S, EX 2S)
2.983	55	Woods, Good HSG B (EX 1S, EX 2S, EX 3S, EX 4S)
0.204	77	Woods, Good HSG D (EX 3S)
16.812	**51**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
6.515	HSG A	EX 1S, EX 2S, EX 3S
10.093	HSG B	EX 1S, EX 2S, EX 3S, EX 4S, EX 5S
0.000	HSG C	
0.204	HSG D	EX 3S
0.000	Other	
16.812		**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX 1S: To Existing Dual 24" Runoff Area=199,853 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=445' Slope=0.0603 '/' Tc=21.4 min CN=37 Runoff=0.00 cfs 0.000 af

Subcatchment EX 2S: To Edge of Drive Runoff Area=153,830 sf 0.00% Impervious Runoff Depth=0.04"
Flow Length=548' Slope=0.0358 '/' Tc=25.0 min CN=47 Runoff=0.02 cfs 0.011 af

Subcatchment EX 3S: To Merrimack River Runoff Area=253,002 sf 1.15% Impervious Runoff Depth=0.31"
Flow Length=983' Slope=0.2154 '/' Tc=11.7 min CN=60 Runoff=0.86 cfs 0.149 af

Subcatchment EX 4S: To Observation Point Runoff Area=54,314 sf 0.00% Impervious Runoff Depth=0.31"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=0.18 cfs 0.032 af

Subcatchment EX 5S: To Observation Point Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=0.34"
Flow Length=206' Slope=0.0146 '/' Tc=12.6 min CN=61 Runoff=0.28 cfs 0.046 af

Reach OP1: Observation Point OP1 Inflow=0.86 cfs 0.161 af
Outflow=0.86 cfs 0.161 af

Reach OP2: Observation Point OP2 Inflow=0.18 cfs 0.032 af
Outflow=0.18 cfs 0.032 af

Reach OP3: Observation Point OP3 Inflow=0.28 cfs 0.046 af
Outflow=0.28 cfs 0.046 af

Pond EX 1P: Existing Dual 24" Driveway Culverts Peak Elev=113.52' Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 16.812 ac Runoff Volume = 0.239 af Average Runoff Depth = 0.17"
99.60% Pervious = 16.745 ac 0.40% Impervious = 0.067 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX 1S: To Existing Dual 24" Runoff Area=199,853 sf 0.00% Impervious Runoff Depth=0.06"
Flow Length=445' Slope=0.0603 '/' Tc=21.4 min CN=37 Runoff=0.03 cfs 0.022 af

Subcatchment EX 2S: To Edge of Drive Runoff Area=153,830 sf 0.00% Impervious Runoff Depth=0.35"
Flow Length=548' Slope=0.0358 '/' Tc=25.0 min CN=47 Runoff=0.40 cfs 0.103 af

Subcatchment EX 3S: To Merrimack River Runoff Area=253,002 sf 1.15% Impervious Runoff Depth=0.98"
Flow Length=983' Slope=0.2154 '/' Tc=11.7 min CN=60 Runoff=4.60 cfs 0.473 af

Subcatchment EX 4S: To Observation Point Runoff Area=54,314 sf 0.00% Impervious Runoff Depth=0.98"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=0.98 cfs 0.102 af

Subcatchment EX 5S: To Observation Point Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=1.03"
Flow Length=206' Slope=0.0146 '/' Tc=12.6 min CN=61 Runoff=1.37 cfs 0.141 af

Reach OP1: Observation Point OP1 Inflow=4.63 cfs 0.597 af
Outflow=4.63 cfs 0.597 af

Reach OP2: Observation Point OP2 Inflow=0.98 cfs 0.102 af
Outflow=0.98 cfs 0.102 af

Reach OP3: Observation Point OP3 Inflow=1.37 cfs 0.141 af
Outflow=1.37 cfs 0.141 af

Pond EX 1P: Existing Dual 24" Driveway Culverts Peak Elev=113.66' Inflow=0.03 cfs 0.022 af
Outflow=0.03 cfs 0.022 af

Total Runoff Area = 16.812 ac Runoff Volume = 0.840 af Average Runoff Depth = 0.60"
99.60% Pervious = 16.745 ac 0.40% Impervious = 0.067 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX 1S: To Existing Dual 24" Runoff Area=199,853 sf 0.00% Impervious Runoff Depth=0.25"
Flow Length=445' Slope=0.0603 '/' Tc=21.4 min CN=37 Runoff=0.19 cfs 0.094 af

Subcatchment EX 2S: To Edge of Drive Runoff Area=153,830 sf 0.00% Impervious Runoff Depth=0.76"
Flow Length=548' Slope=0.0358 '/' Tc=25.0 min CN=47 Runoff=1.28 cfs 0.223 af

Subcatchment EX 3S: To Merrimack River Runoff Area=253,002 sf 1.15% Impervious Runoff Depth=1.65"
Flow Length=983' Slope=0.2154 '/' Tc=11.7 min CN=60 Runoff=8.60 cfs 0.800 af

Subcatchment EX 4S: To Observation Point Runoff Area=54,314 sf 0.00% Impervious Runoff Depth=1.65"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=1.82 cfs 0.172 af

Subcatchment EX 5S: To Observation Point Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=1.73"
Flow Length=206' Slope=0.0146 '/' Tc=12.6 min CN=61 Runoff=2.50 cfs 0.236 af

Reach OP1: Observation Point OP1 Inflow=8.95 cfs 1.117 af
Outflow=8.95 cfs 1.117 af

Reach OP2: Observation Point OP2 Inflow=1.82 cfs 0.172 af
Outflow=1.82 cfs 0.172 af

Reach OP3: Observation Point OP3 Inflow=2.50 cfs 0.236 af
Outflow=2.50 cfs 0.236 af

Pond EX 1P: Existing Dual 24" Driveway Culverts Peak Elev=113.81' Inflow=0.19 cfs 0.094 af
Outflow=0.19 cfs 0.094 af

Total Runoff Area = 16.812 ac Runoff Volume = 1.525 af Average Runoff Depth = 1.09"
99.60% Pervious = 16.745 ac 0.40% Impervious = 0.067 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX 1S: To Existing Dual 24" Runoff Area=199,853 sf 0.00% Impervious Runoff Depth=0.52"
Flow Length=445' Slope=0.0603 '/' Tc=21.4 min CN=37 Runoff=0.82 cfs 0.200 af

Subcatchment EX 2S: To Edge of Drive Runoff Area=153,830 sf 0.00% Impervious Runoff Depth=1.24"
Flow Length=548' Slope=0.0358 '/' Tc=25.0 min CN=47 Runoff=2.47 cfs 0.364 af

Subcatchment EX 3S: To Merrimack River Runoff Area=253,002 sf 1.15% Impervious Runoff Depth=2.37"
Flow Length=983' Slope=0.2154 '/' Tc=11.7 min CN=60 Runoff=12.79 cfs 1.145 af

Subcatchment EX 4S: To Observation Point Runoff Area=54,314 sf 0.00% Impervious Runoff Depth=2.37"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=2.71 cfs 0.246 af

Subcatchment EX 5S: To Observation Point Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=206' Slope=0.0146 '/' Tc=12.6 min CN=61 Runoff=3.67 cfs 0.336 af

Reach OP1: Observation Point OP1 Inflow=13.93 cfs 1.709 af
Outflow=13.93 cfs 1.709 af

Reach OP2: Observation Point OP2 Inflow=2.71 cfs 0.246 af
Outflow=2.71 cfs 0.246 af

Reach OP3: Observation Point OP3 Inflow=3.67 cfs 0.336 af
Outflow=3.67 cfs 0.336 af

Pond EX 1P: Existing Dual 24" Driveway Culverts Peak Elev=114.03' Inflow=0.82 cfs 0.200 af
Outflow=0.82 cfs 0.200 af

Total Runoff Area = 16.812 ac Runoff Volume = 2.290 af Average Runoff Depth = 1.63"
99.60% Pervious = 16.745 ac 0.40% Impervious = 0.067 ac

Section 1.2: Existing Conditions

25- and 50-year Storm Full Summary

Summary for Subcatchment EX 1S: To Existing Dual 24" Driveway Culverts

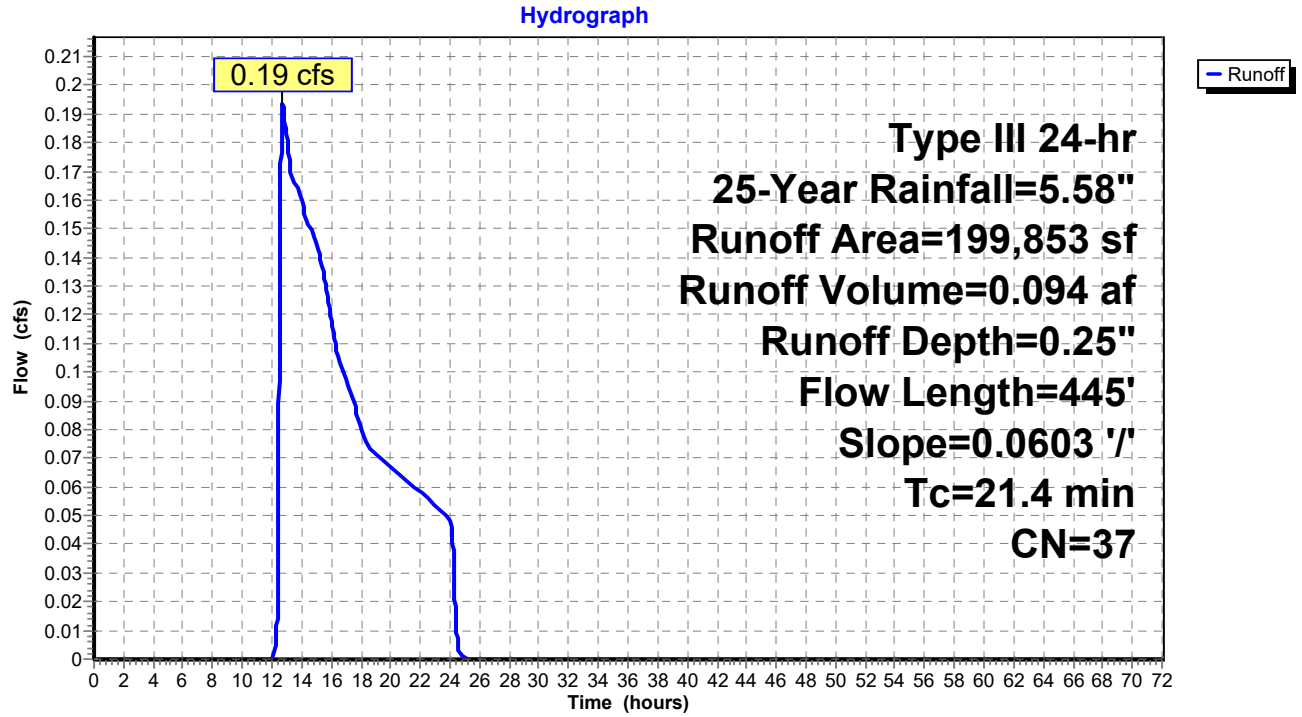
Runoff = 0.19 cfs @ 12.72 hrs, Volume= 0.094 af, Depth= 0.25"
Routed to Pond EX 1P : Existing Dual 24" Driveway Culverts

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
48	55	Woods, Good HSG B
49,970	30	Woods, Good HSG A
118	85	Gravel roads HSG B
143,438	39	>75% Grass cover, Good HSG A
6,279	61	>75% Grass cover, Good HSG B
199,853	37	Weighted Average
199,853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.4	445	0.0603	0.35		**Lag/CN Method,**

Subcatchment EX 1S: To Existing Dual 24" Driveway Culverts



Summary for Subcatchment EX 2S: To Edge of Drive

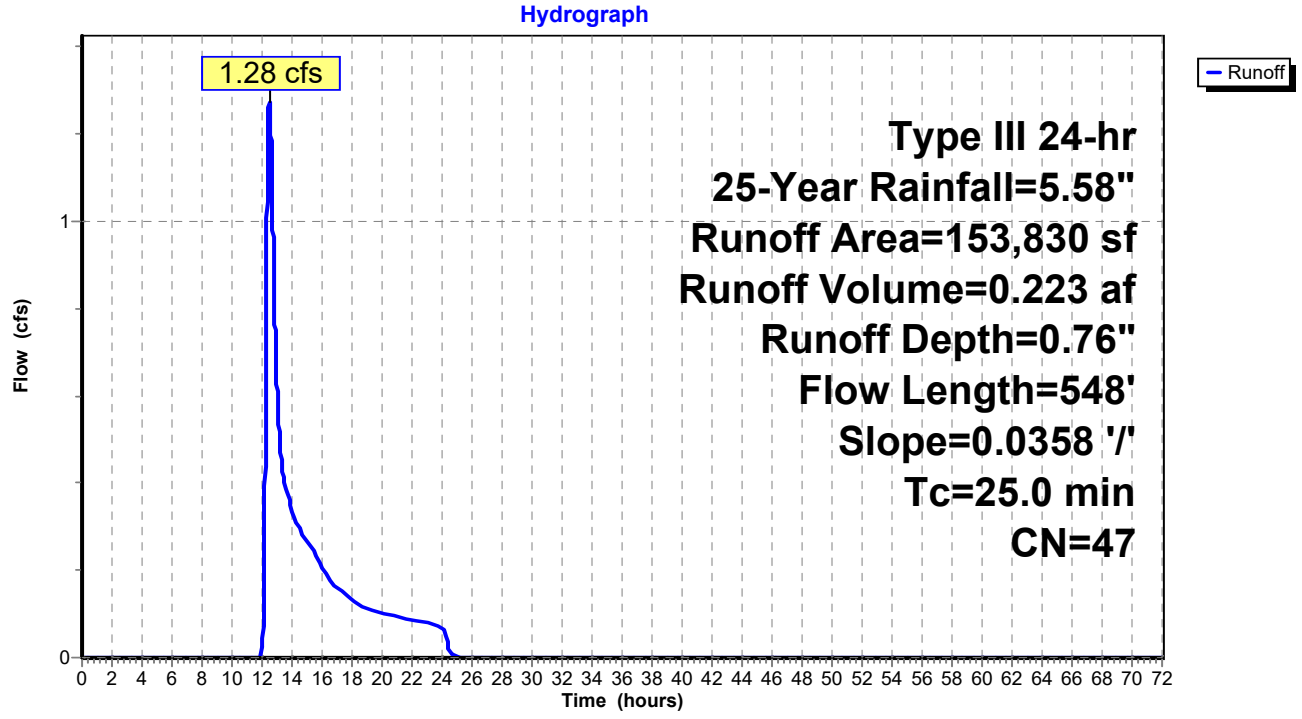
Runoff = 1.28 cfs @ 12.48 hrs, Volume= 0.223 af, Depth= 0.76"
Routed to Reach OP1 : Observation Point OP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
2,496	55	Woods, Good HSG B
13,808	30	Woods, Good HSG A
76,291	39	>75% Grass cover, Good HSG A
61,235	61	>75% Grass cover, Good HSG B
153,830	47	Weighted Average
153,830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0	548	0.0358	0.37		**Lag/CN Method,**

Subcatchment EX 2S: To Edge of Drive



Summary for Subcatchment EX 3S: To Merrimack River

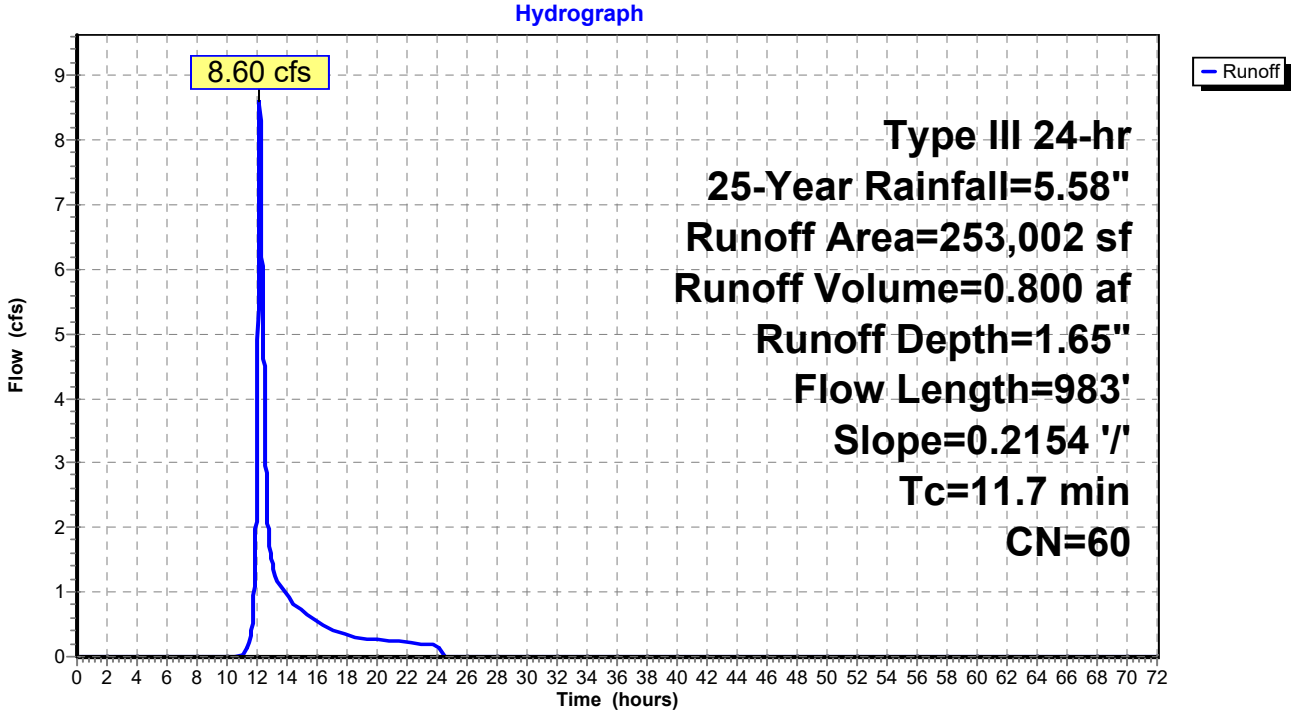
Runoff = 8.60 cfs @ 12.18 hrs, Volume= 0.800 af, Depth= 1.65"
Routed to Reach OP1 : Observation Point OP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
271	76	Gravel roads HSG A
8,907	77	Woods, Good HSG D
122,589	55	Woods, Good HSG B
111	98	Paved parking HSG B
12,553	85	Gravel roads HSG B
2,802	98	Roofs HSG B
105,769	61	>75% Grass cover, Good HSG B
253,002	60	Weighted Average
250,089		98.85% Pervious Area
2,913		1.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	983	0.2154	1.40		**Lag/CN Method,**

Subcatchment EX 3S: To Merrimack River



Summary for Subcatchment EX 4S: To Observation Point OP2

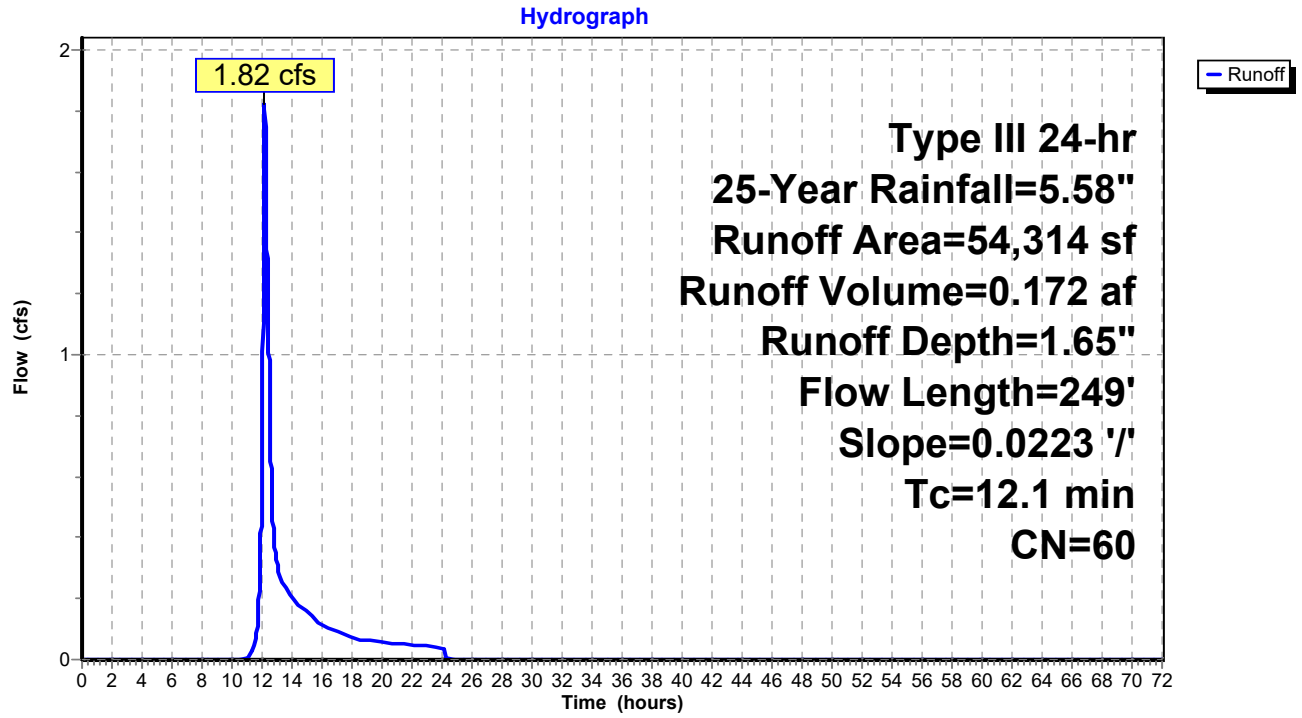
Runoff = 1.82 cfs @ 12.18 hrs, Volume= 0.172 af, Depth= 1.65"
Routed to Reach OP2 : Observation Point OP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
4,801	55	Woods, Good HSG B
49,513	61	>75% Grass cover, Good HSG B
54,314	60	Weighted Average
54,314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	249	0.0223	0.34		**Lag/CN Method,**

Subcatchment EX 4S: To Observation Point OP2



Summary for Subcatchment EX 5S: To Observation Point OP3

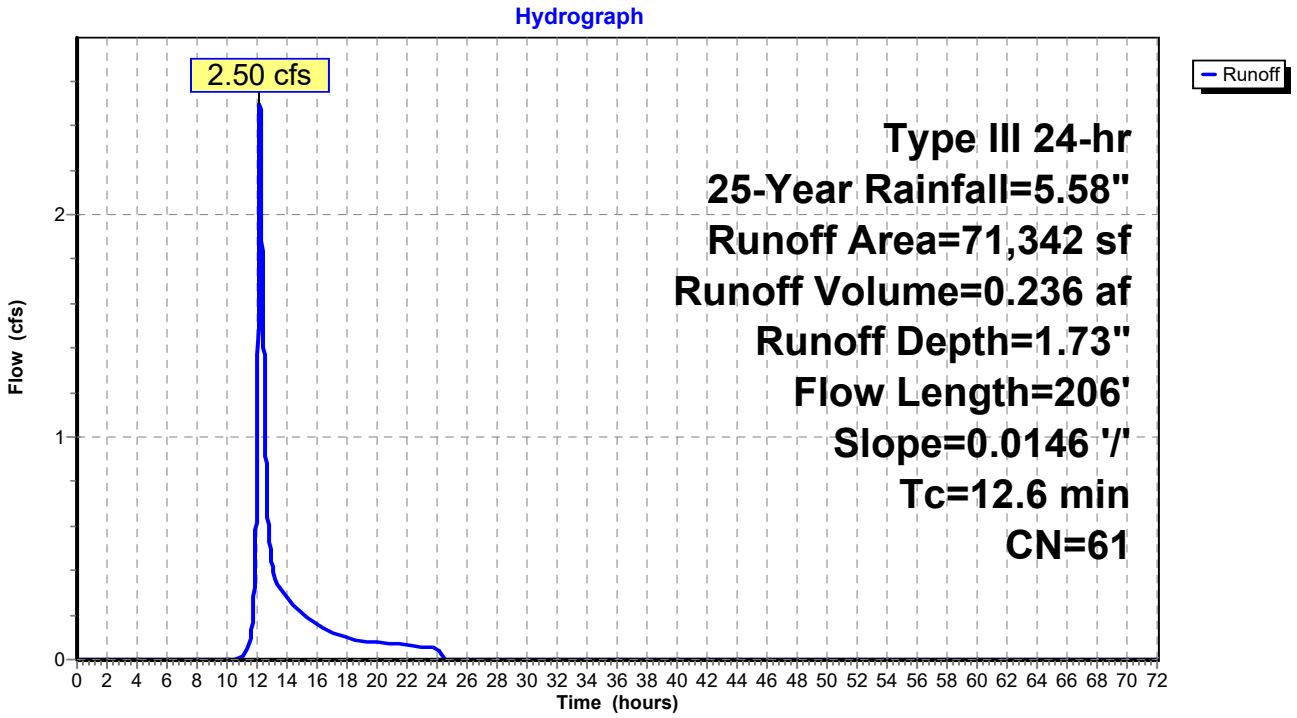
Runoff = 2.50 cfs @ 12.19 hrs, Volume= 0.236 af, Depth= 1.73"
Routed to Reach OP3 : Observation Point OP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
1,481	85	Gravel roads HSG B
69,861	61	>75% Grass cover, Good HSG B
71,342	61	Weighted Average
71,342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	206	0.0146	0.27		**Lag/CN Method,**

Subcatchment EX 5S: To Observation Point OP3

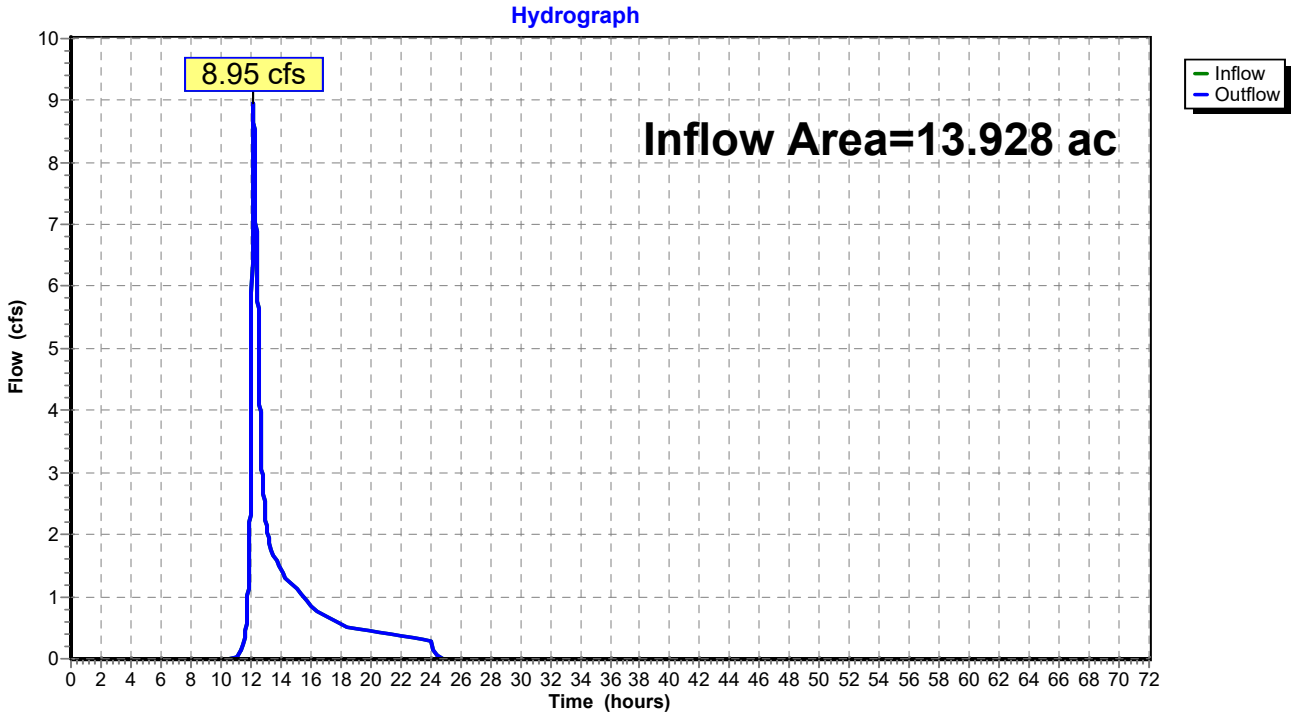


Summary for Reach OP1: Observation Point OP1

Inflow Area = 13.928 ac, 0.48% Impervious, Inflow Depth = 0.96" for 25-Year event
Inflow = 8.95 cfs @ 12.18 hrs, Volume= 1.117 af
Outflow = 8.95 cfs @ 12.18 hrs, Volume= 1.117 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP1: Observation Point OP1

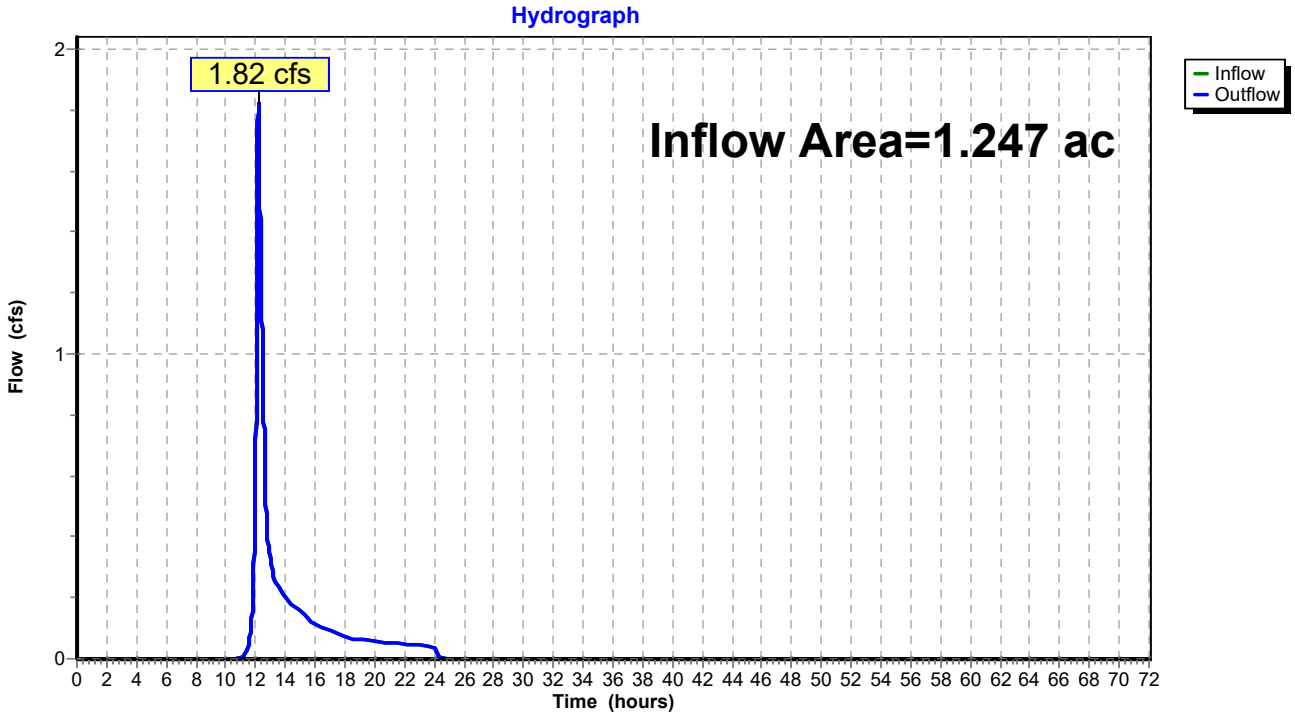


Summary for Reach OP2: Observation Point OP2

Inflow Area = 1.247 ac, 0.00% Impervious, Inflow Depth = 1.65" for 25-Year event
Inflow = 1.82 cfs @ 12.18 hrs, Volume= 0.172 af
Outflow = 1.82 cfs @ 12.18 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP2: Observation Point OP2

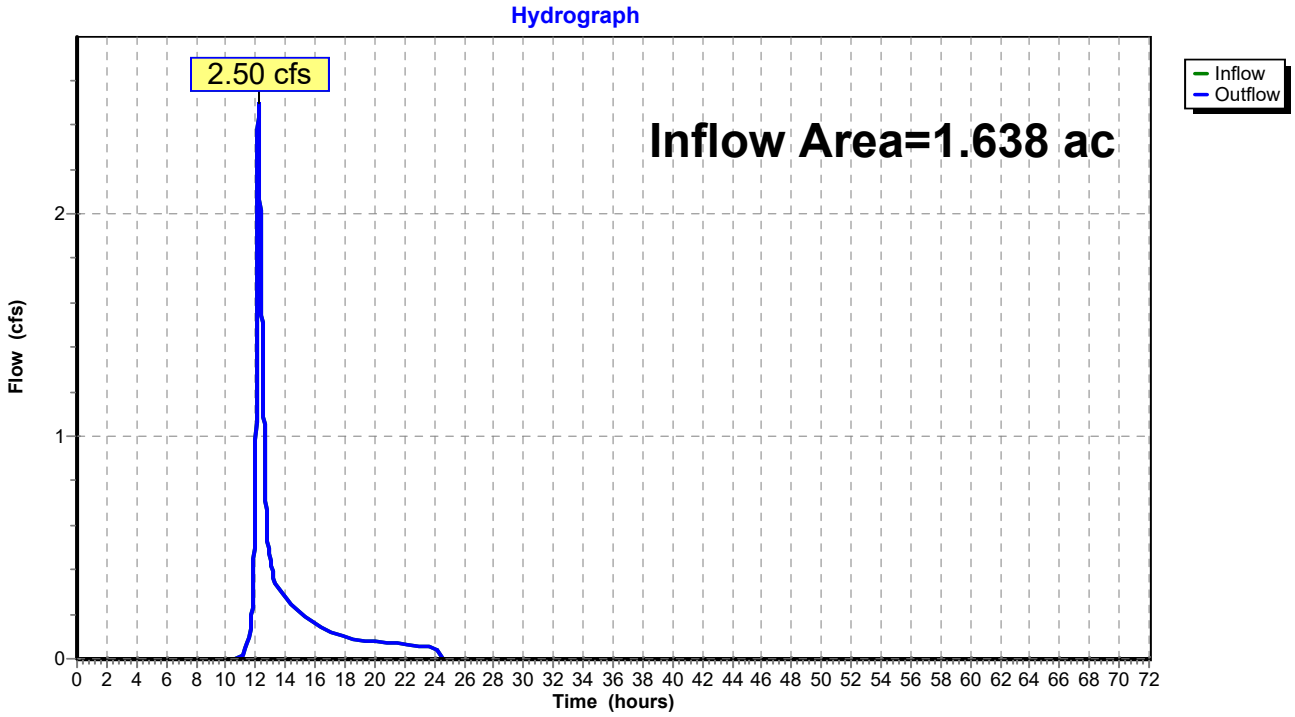


Summary for Reach OP3: Observation Point OP3

Inflow Area = 1.638 ac, 0.00% Impervious, Inflow Depth = 1.73" for 25-Year event
Inflow = 2.50 cfs @ 12.19 hrs, Volume= 0.236 af
Outflow = 2.50 cfs @ 12.19 hrs, Volume= 0.236 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP3: Observation Point OP3



Summary for Pond EX 1P: Existing Dual 24" Driveway Culverts

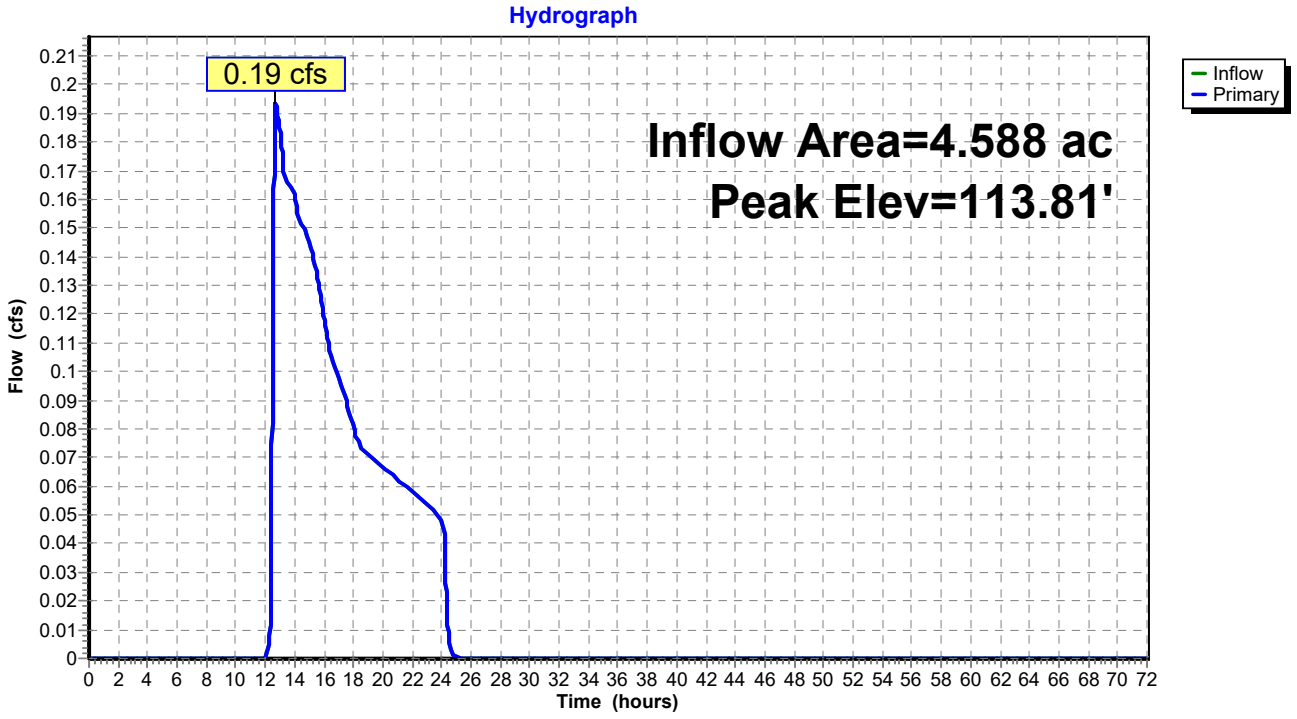
Inflow Area = 4.588 ac, 0.00% Impervious, Inflow Depth = 0.25" for 25-Year event
Inflow = 0.19 cfs @ 12.72 hrs, Volume= 0.094 af
Outflow = 0.19 cfs @ 12.72 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.72 hrs, Volume= 0.094 af
Routed to Reach OP1 : Observation Point OP1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 113.81' @ 12.72 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	113.73'	**24.0" Round 24" CMP Driveway Culvert (North)** L= 55.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.73' / 113.49' S= 0.0043 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf
#2	Primary	113.52'	**24.0" Round 24" CMP Driveway Culvert (South)** L= 55.5' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.52' / 113.37' S= 0.0027 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=0.19 cfs @ 12.72 hrs HW=113.81' TW=0.00' (Dynamic Tailwater)
1=24" CMP Driveway Culvert (North) (Barrel Controls 0.01 cfs @ 0.48 fps)
2=24" CMP Driveway Culvert (South) (Barrel Controls 0.18 cfs @ 0.95 fps)

Pond EX 1P: Existing Dual 24" Driveway Culverts



Summary for Subcatchment EX 1S: To Existing Dual 24" Driveway Culverts

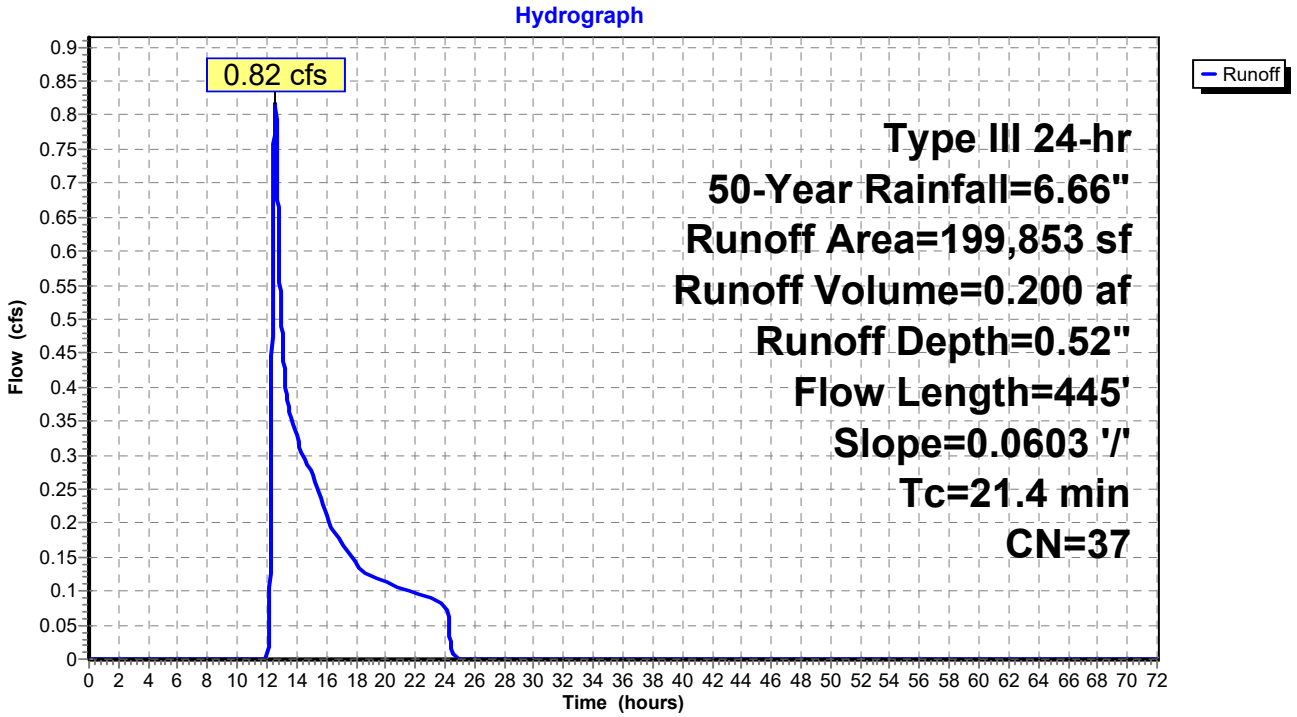
Runoff = 0.82 cfs @ 12.57 hrs, Volume= 0.200 af, Depth= 0.52"
Routed to Pond EX 1P : Existing Dual 24" Driveway Culverts

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
48	55	Woods, Good HSG B
49,970	30	Woods, Good HSG A
118	85	Gravel roads HSG B
143,438	39	>75% Grass cover, Good HSG A
6,279	61	>75% Grass cover, Good HSG B
199,853	37	Weighted Average
199,853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.4	445	0.0603	0.35		**Lag/CN Method,**

Subcatchment EX 1S: To Existing Dual 24" Driveway Culverts



Summary for Subcatchment EX 2S: To Edge of Drive

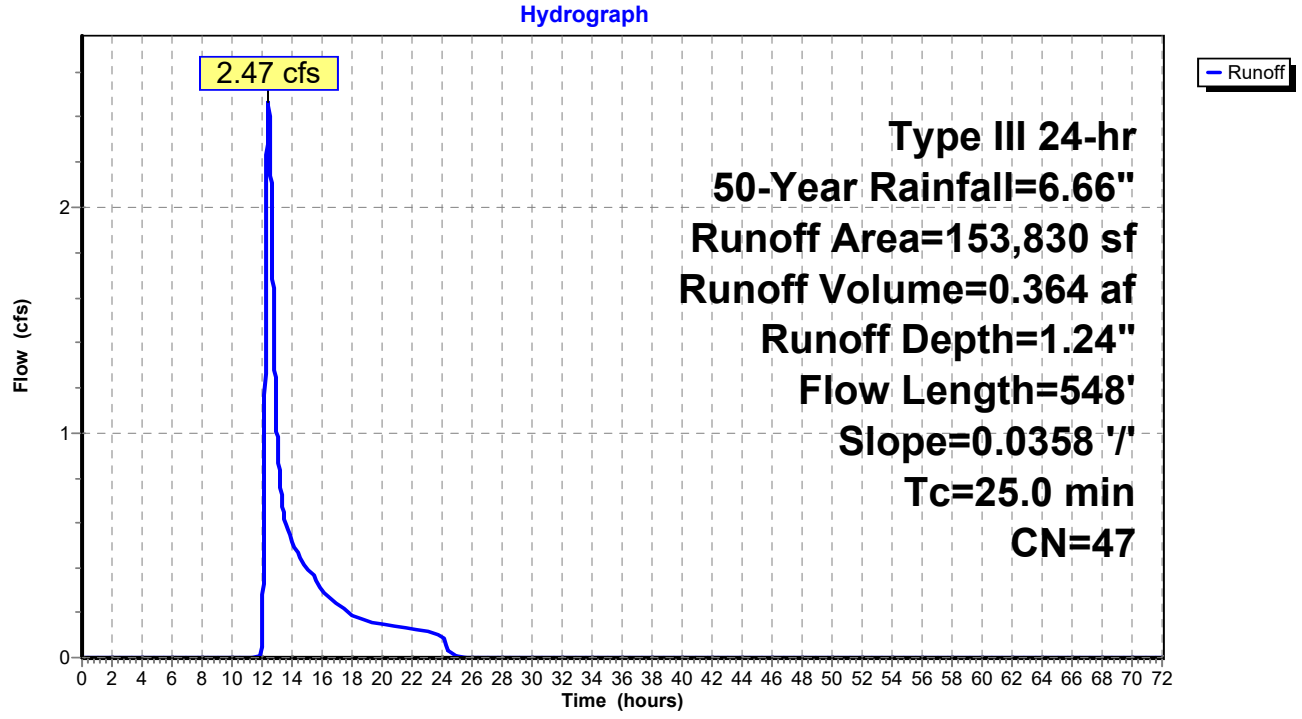
Runoff = 2.47 cfs @ 12.42 hrs, Volume= 0.364 af, Depth= 1.24"
Routed to Reach OP1 : Observation Point OP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
2,496	55	Woods, Good HSG B
13,808	30	Woods, Good HSG A
76,291	39	>75% Grass cover, Good HSG A
61,235	61	>75% Grass cover, Good HSG B
153,830	47	Weighted Average
153,830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0	548	0.0358	0.37		**Lag/CN Method,**

Subcatchment EX 2S: To Edge of Drive



Summary for Subcatchment EX 3S: To Merrimack River

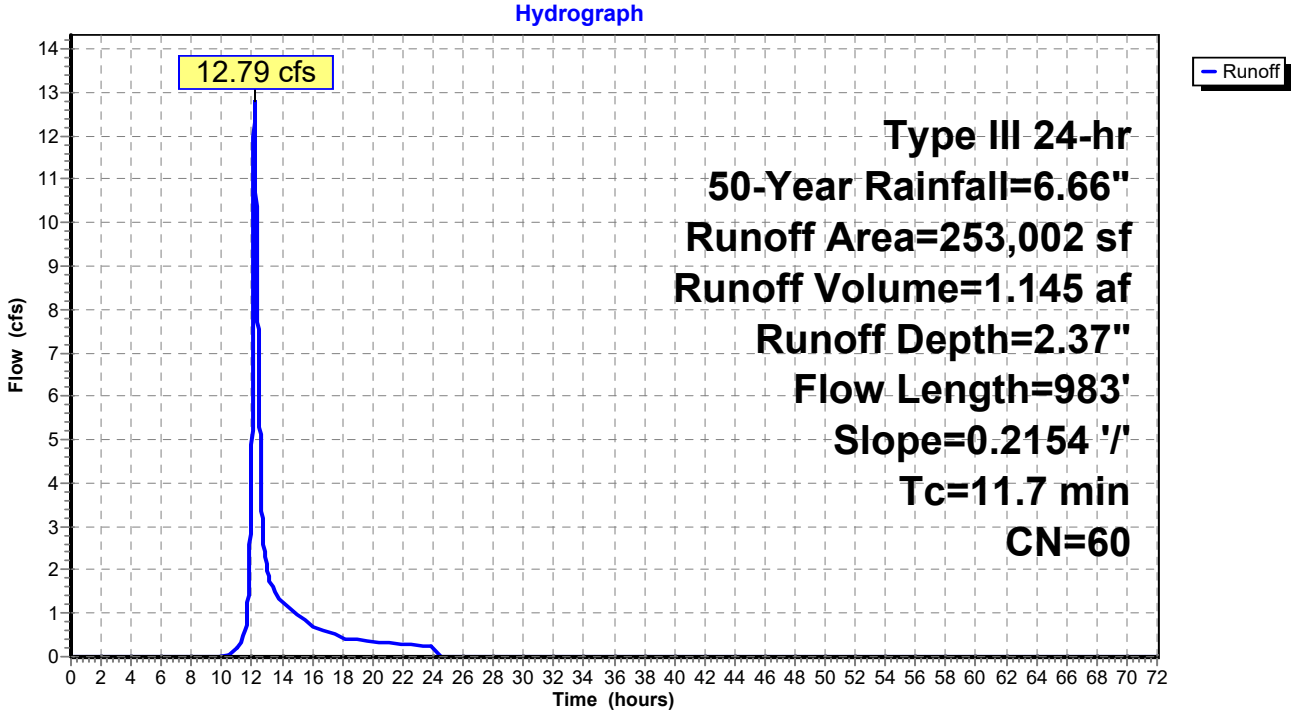
Runoff = 12.79 cfs @ 12.17 hrs, Volume= 1.145 af, Depth= 2.37"
Routed to Reach OP1 : Observation Point OP1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
271	76	Gravel roads HSG A
8,907	77	Woods, Good HSG D
122,589	55	Woods, Good HSG B
111	98	Paved parking HSG B
12,553	85	Gravel roads HSG B
2,802	98	Roofs HSG B
105,769	61	>75% Grass cover, Good HSG B
253,002	60	Weighted Average
250,089		98.85% Pervious Area
2,913		1.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	983	0.2154	1.40		**Lag/CN Method,**

Subcatchment EX 3S: To Merrimack River



Summary for Subcatchment EX 4S: To Observation Point OP2

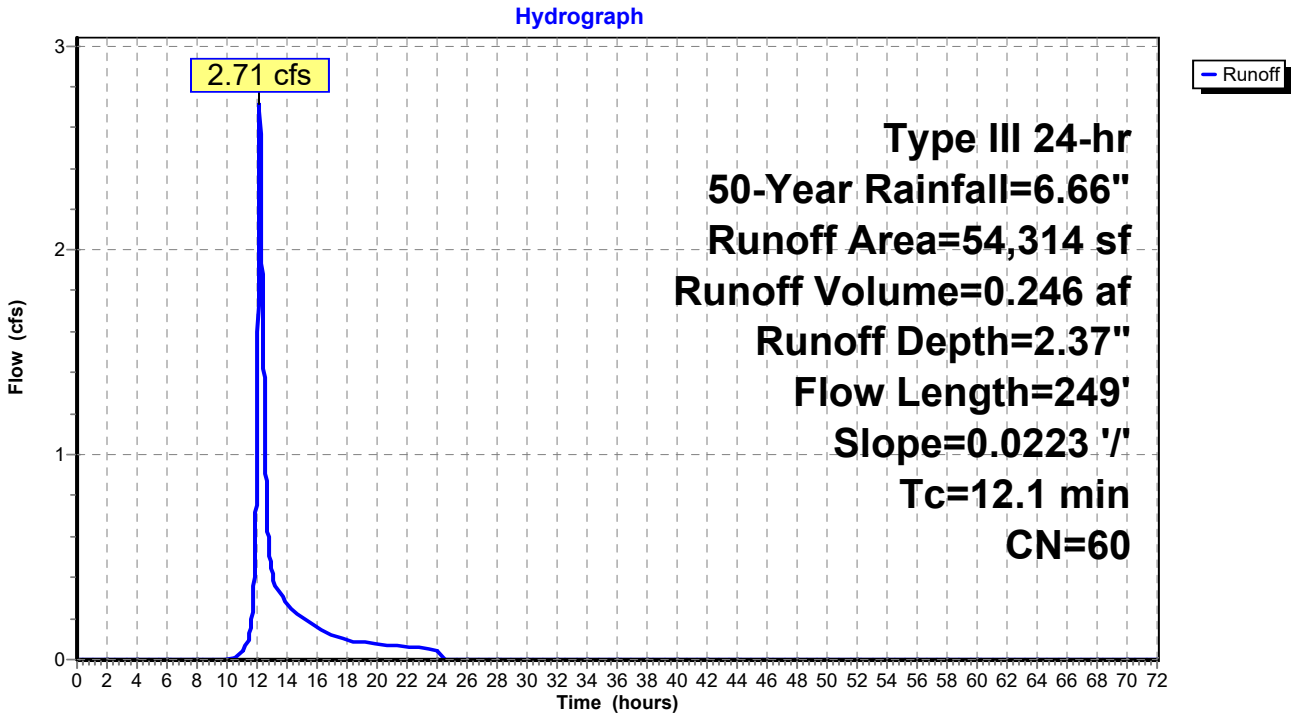
Runoff = 2.71 cfs @ 12.17 hrs, Volume= 0.246 af, Depth= 2.37"
Routed to Reach OP2 : Observation Point OP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
4,801	55	Woods, Good HSG B
49,513	61	>75% Grass cover, Good HSG B
54,314	60	Weighted Average
54,314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	249	0.0223	0.34		**Lag/CN Method,**

Subcatchment EX 4S: To Observation Point OP2



Summary for Subcatchment EX 5S: To Observation Point OP3

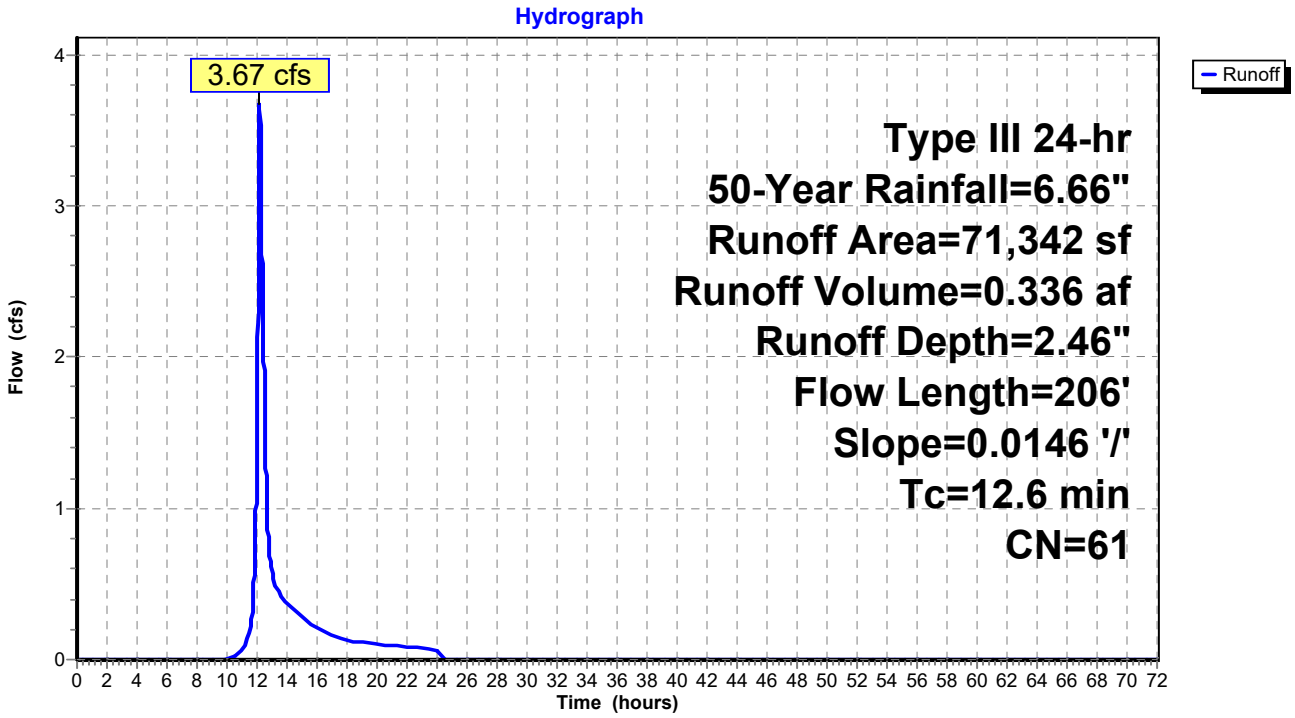
Runoff = 3.67 cfs @ 12.18 hrs, Volume= 0.336 af, Depth= 2.46"
Routed to Reach OP3 : Observation Point OP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
1,481	85	Gravel roads HSG B
69,861	61	>75% Grass cover, Good HSG B
71,342	61	Weighted Average
71,342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	206	0.0146	0.27		**Lag/CN Method,**

Subcatchment EX 5S: To Observation Point OP3

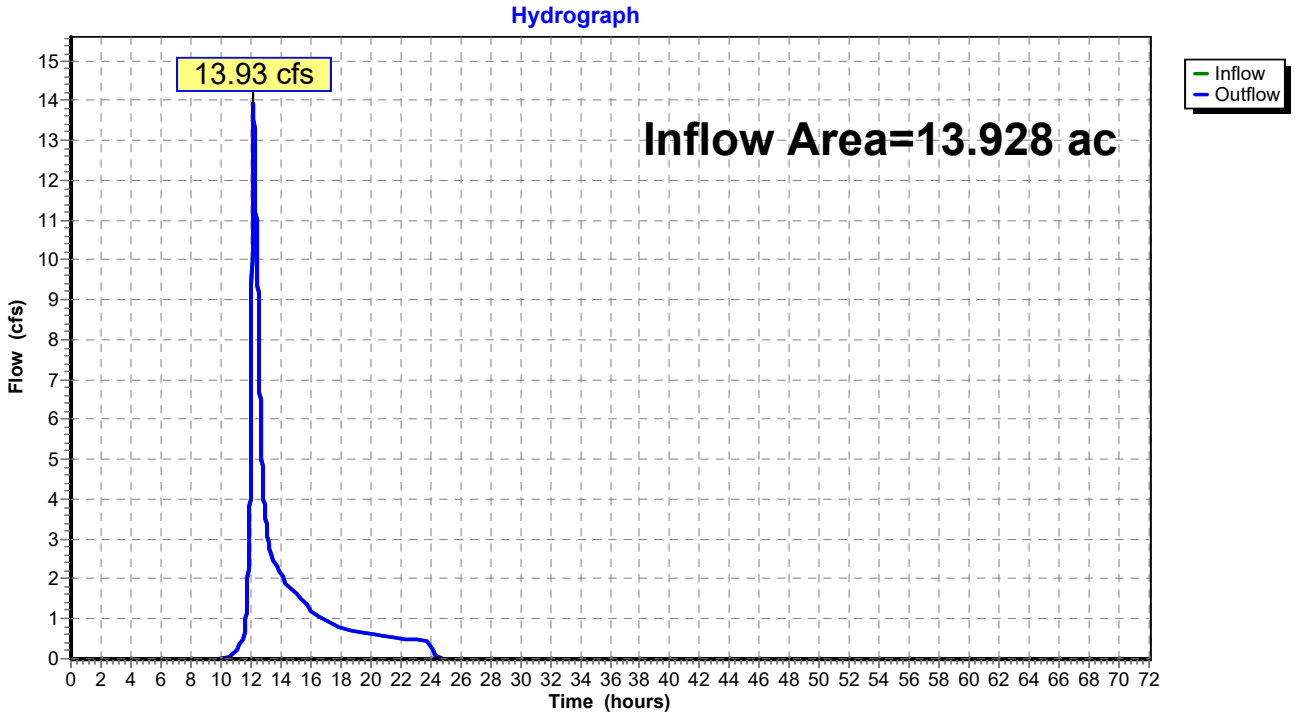


Summary for Reach OP1: Observation Point OP1

Inflow Area = 13.928 ac, 0.48% Impervious, Inflow Depth = 1.47" for 50-Year event
Inflow = 13.93 cfs @ 12.18 hrs, Volume= 1.709 af
Outflow = 13.93 cfs @ 12.18 hrs, Volume= 1.709 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP1: Observation Point OP1

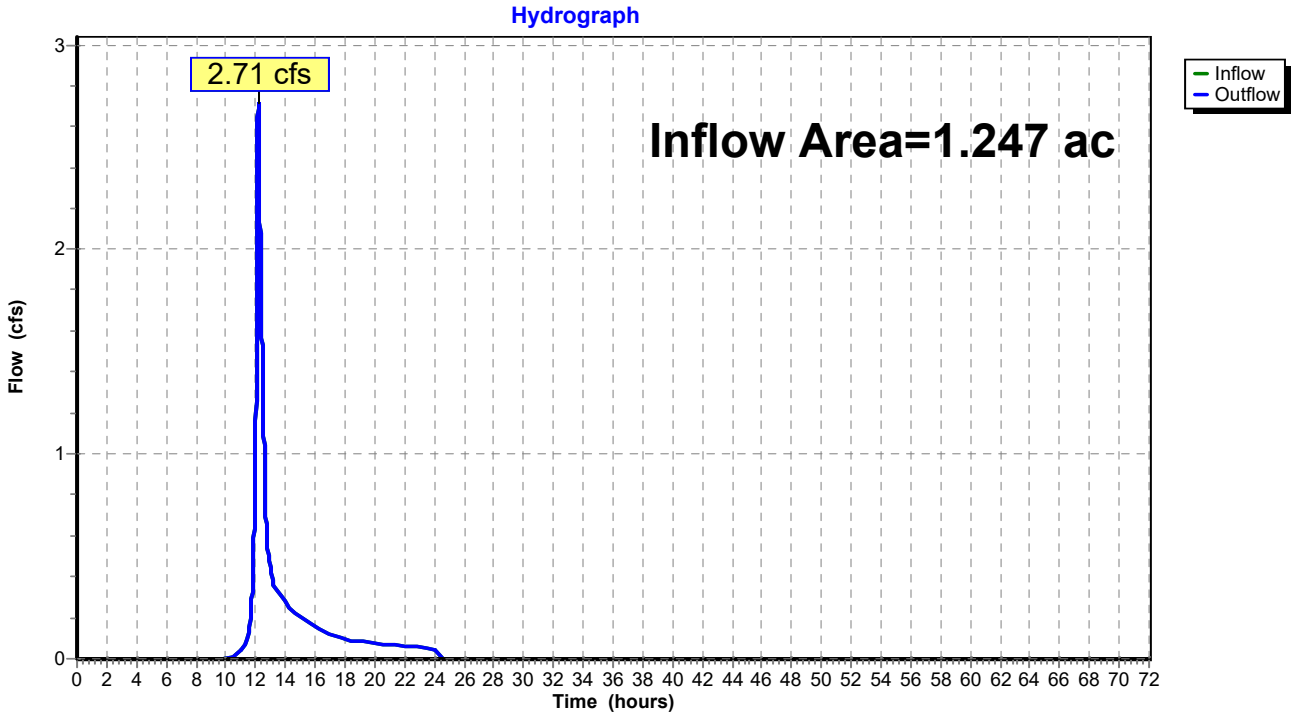


Summary for Reach OP2: Observation Point OP2

Inflow Area = 1.247 ac, 0.00% Impervious, Inflow Depth = 2.37" for 50-Year event
Inflow = 2.71 cfs @ 12.17 hrs, Volume= 0.246 af
Outflow = 2.71 cfs @ 12.17 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP2: Observation Point OP2

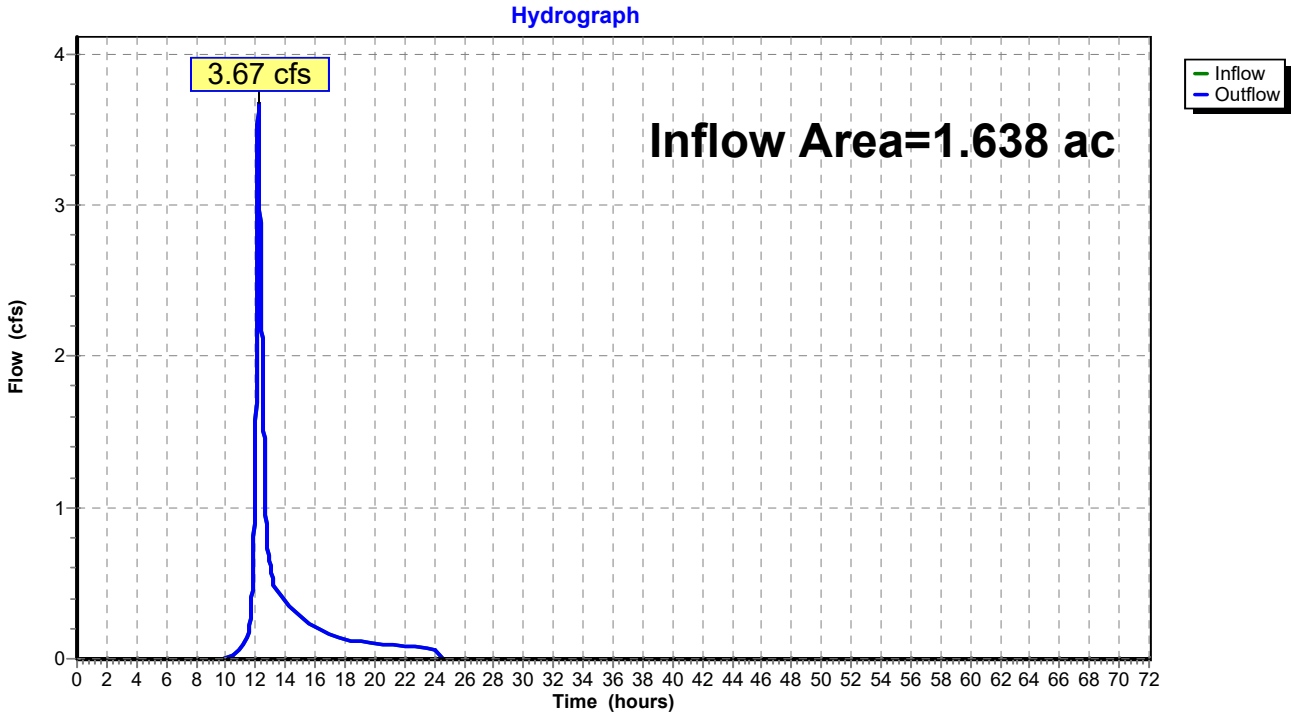


Summary for Reach OP3: Observation Point OP3

Inflow Area = 1.638 ac, 0.00% Impervious, Inflow Depth = 2.46" for 50-Year event
Inflow = 3.67 cfs @ 12.18 hrs, Volume= 0.336 af
Outflow = 3.67 cfs @ 12.18 hrs, Volume= 0.336 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP3: Observation Point OP3



Summary for Pond EX 1P: Existing Dual 24" Driveway Culverts

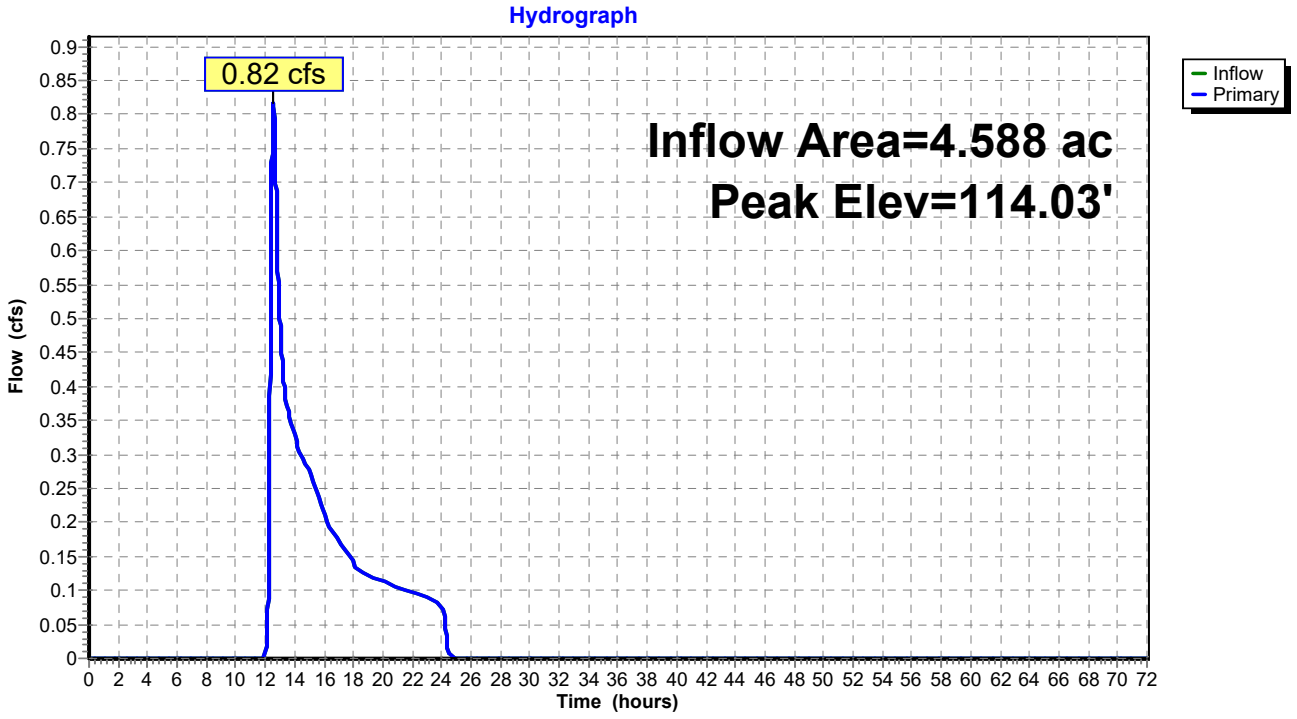
Inflow Area = 4.588 ac, 0.00% Impervious, Inflow Depth = 0.52" for 50-Year event
Inflow = 0.82 cfs @ 12.57 hrs, Volume= 0.200 af
Outflow = 0.82 cfs @ 12.57 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.57 hrs, Volume= 0.200 af
Routed to Reach OP1 : Observation Point OP1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 114.03' @ 12.57 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	113.73'	**24.0" Round 24" CMP Driveway Culvert (North)** L= 55.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.73' / 113.49' S= 0.0043 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf
#2	Primary	113.52'	**24.0" Round 24" CMP Driveway Culvert (South)** L= 55.5' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.52' / 113.37' S= 0.0027 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=0.82 cfs @ 12.57 hrs HW=114.03' TW=0.00' (Dynamic Tailwater)
1=24" CMP Driveway Culvert (North) (Barrel Controls 0.22 cfs @ 1.14 fps)
2=24" CMP Driveway Culvert (South) (Barrel Controls 0.59 cfs @ 1.42 fps)

Pond EX 1P: Existing Dual 24" Driveway Culverts



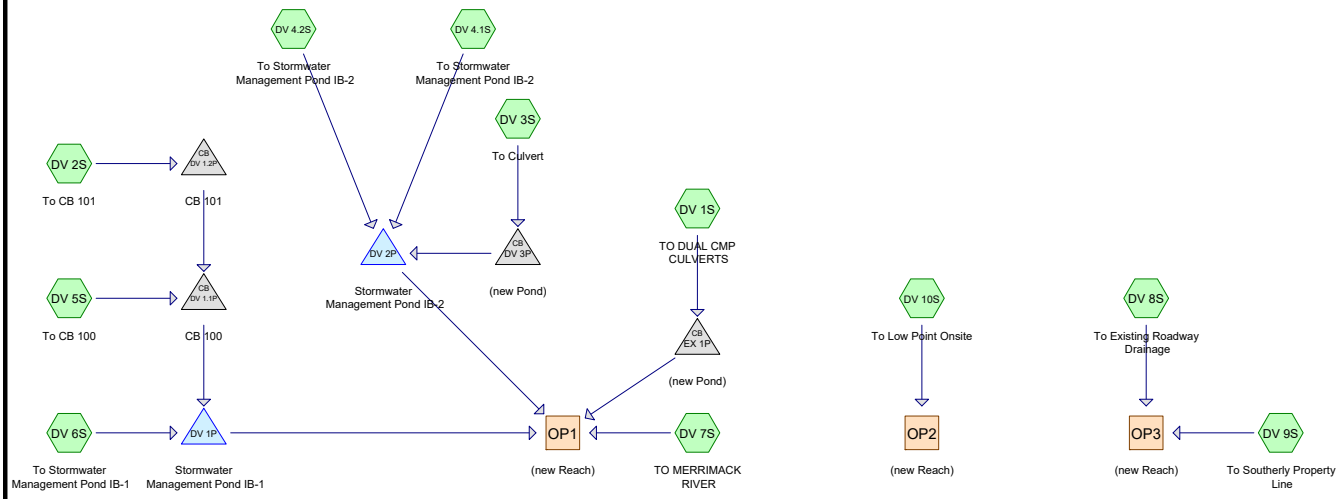
Section 2.1: Developed Conditions

Routing Diagram

Area and Soils Listings

2-, 10-, 25- and 50-year Storm Nodes

50-Year Frozen Ground Conditions



Subcat Reach Pond Link

Routing Diagram for 12916DV01A

Prepared by Meridian Land Services Inc, Printed 4/7/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.038	39	>75% Grass cover, Good HSG A (DV 1S, DV 2S, DV 3S)
6.441	61	>75% Grass cover, Good HSG B (DV 10S, DV 1S, DV 2S, DV 3S, DV 4.1S, DV 4.2S, DV 5S, DV 6S, DV 7S, DV 8S, DV 9S)
0.031	98	Paved parking HSG A (DV 2S, DV 5S)
0.630	98	Paved parking HSG B (DV 2S, DV 4.1S, DV 4.2S, DV 5S, DV 7S, DV 8S)
0.058	98	Roofs HSG B (DV 7S)
1.446	30	Woods, Good HSG A (DV 1S, DV 2S, DV 3S)
2.965	55	Woods, Good HSG B (DV 10S, DV 1S, DV 3S, DV 5S, DV 7S)
0.204	77	Woods, Good HSG D (DV 7S)
16.812	**52**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
6.515	HSG A	DV 1S, DV 2S, DV 3S, DV 5S
10.093	HSG B	DV 10S, DV 1S, DV 2S, DV 3S, DV 4.1S, DV 4.2S, DV 5S, DV 6S, DV 7S, DV 8S, DV 9S
0.000	HSG C	
0.204	HSG D	DV 7S
0.000	Other	
16.812		**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DV 10S: To Low Point Onsite Runoff Area=53,526 sf 0.00% Impervious Runoff Depth=0.31"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=0.18 cfs 0.032 af

Subcatchment DV 1S: TO DUAL CMP Runoff Area=210,529 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=442' Slope=0.0580 '/' Tc=20.5 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment DV 2S: To CB 101 Runoff Area=77,511 sf 5.06% Impervious Runoff Depth=0.00"
Flow Length=620' Slope=0.0409 '/' Tc=30.2 min CN=41 Runoff=0.00 cfs 0.000 af

Subcatchment DV 3S: To Culvert Runoff Area=40,352 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=297' Slope=0.0339 '/' Tc=14.2 min CN=51 Runoff=0.01 cfs 0.007 af

Subcatchment DV 4.1S: To Stormwater Runoff Area=10,360 sf 45.22% Impervious Runoff Depth=1.08"
Flow Length=129' Slope=0.0296 '/' Tc=6.0 min CN=78 Runoff=0.29 cfs 0.021 af

Subcatchment DV 4.2S: To Stormwater Runoff Area=10,056 sf 46.93% Impervious Runoff Depth=1.08"
Flow Length=117' Slope=0.0383 '/' Tc=6.0 min CN=78 Runoff=0.28 cfs 0.021 af

Subcatchment DV 5S: To CB 100 Runoff Area=7,305 sf 51.43% Impervious Runoff Depth=1.20"
Flow Length=198' Slope=0.0825 '/' Tc=6.0 min CN=80 Runoff=0.23 cfs 0.017 af

Subcatchment DV 6S: To Stormwater Runoff Area=3,657 sf 0.00% Impervious Runoff Depth=0.34"
Slope=0.0092 '/' Tc=0.0 min CN=61 Runoff=0.02 cfs 0.002 af

Subcatchment DV 7S: TO MERRIMACK Runoff Area=246,411 sf 3.75% Impervious Runoff Depth=0.31"
Flow Length=943' Slope=0.2190 '/' Tc=11.2 min CN=60 Runoff=0.84 cfs 0.145 af

Subcatchment DV 8S: To Existing Roadway Runoff Area=9,851 sf 50.90% Impervious Runoff Depth=1.20"
Flow Length=186' Slope=0.0164 '/' Tc=6.5 min CN=80 Runoff=0.31 cfs 0.023 af

Subcatchment DV 9S: To Southerly Runoff Area=62,781 sf 0.00% Impervious Runoff Depth=0.34"
Flow Length=206' Slope=0.0140 '/' Tc=12.8 min CN=61 Runoff=0.25 cfs 0.041 af

Reach OP1: (new Reach) Inflow=0.84 cfs 0.145 af
Outflow=0.84 cfs 0.145 af

Reach OP2: (new Reach) Inflow=0.18 cfs 0.032 af
Outflow=0.18 cfs 0.032 af

Reach OP3: (new Reach) Inflow=0.42 cfs 0.063 af
Outflow=0.42 cfs 0.063 af

Pond DV 1.1P: CB 100 Peak Elev=119.70' Inflow=0.23 cfs 0.017 af
15.0" Round Culvert n=0.013 L=84.0' S=0.0054 '/' Outflow=0.23 cfs 0.017 af

Pond DV 1.2P: CB 101 Peak Elev=119.70' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.013 L=18.5' S=0.0054 '/' Outflow=0.00 cfs 0.000 af

Pond DV 1P: Stormwater Management Pond Peak Elev=119.40' Storage=405 cf Inflow=0.25 cfs 0.019 af
Discarded=0.01 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.019 af

Pond DV 2P: Stormwater Management Pond Peak Elev=121.83' Storage=424 cf Inflow=0.57 cfs 0.050 af
Discarded=0.13 cfs 0.050 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.050 af

Pond DV 3P: (new Pond) Peak Elev=121.97' Inflow=0.01 cfs 0.007 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=0.01 cfs 0.007 af

Pond EX 1P: (new Pond) Peak Elev=113.52' Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 16.812 ac Runoff Volume = 0.309 af Average Runoff Depth = 0.22"
95.72% Pervious = 16.093 ac 4.28% Impervious = 0.719 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DV 10S: To Low Point Onsite Runoff Area=53,526 sf 0.00% Impervious Runoff Depth=0.98"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=0.96 cfs 0.100 af

Subcatchment DV 1S: TO DUAL CMP Runoff Area=210,529 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=442' Slope=0.0580 '/' Tc=20.5 min CN=39 Runoff=0.06 cfs 0.040 af

Subcatchment DV 2S: To CB 101 Runoff Area=77,511 sf 5.06% Impervious Runoff Depth=0.15"
Flow Length=620' Slope=0.0409 '/' Tc=30.2 min CN=41 Runoff=0.04 cfs 0.022 af

Subcatchment DV 3S: To Culvert Runoff Area=40,352 sf 0.00% Impervious Runoff Depth=0.52"
Flow Length=297' Slope=0.0339 '/' Tc=14.2 min CN=51 Runoff=0.24 cfs 0.040 af

Subcatchment DV 4.1S: To Stormwater Runoff Area=10,360 sf 45.22% Impervious Runoff Depth=2.23"
Flow Length=129' Slope=0.0296 '/' Tc=6.0 min CN=78 Runoff=0.62 cfs 0.044 af

Subcatchment DV 4.2S: To Stormwater Runoff Area=10,056 sf 46.93% Impervious Runoff Depth=2.23"
Flow Length=117' Slope=0.0383 '/' Tc=6.0 min CN=78 Runoff=0.60 cfs 0.043 af

Subcatchment DV 5S: To CB 100 Runoff Area=7,305 sf 51.43% Impervious Runoff Depth=2.39"
Flow Length=198' Slope=0.0825 '/' Tc=6.0 min CN=80 Runoff=0.47 cfs 0.033 af

Subcatchment DV 6S: To Stormwater Runoff Area=3,657 sf 0.00% Impervious Runoff Depth=1.03"
Slope=0.0092 '/' Tc=0.0 min CN=61 Runoff=0.11 cfs 0.007 af

Subcatchment DV 7S: TO MERRIMACK Runoff Area=246,411 sf 3.75% Impervious Runoff Depth=0.98"
Flow Length=943' Slope=0.2190 '/' Tc=11.2 min CN=60 Runoff=4.55 cfs 0.460 af

Subcatchment DV 8S: To Existing Roadway Runoff Area=9,851 sf 50.90% Impervious Runoff Depth=2.39"
Flow Length=186' Slope=0.0164 '/' Tc=6.5 min CN=80 Runoff=0.62 cfs 0.045 af

Subcatchment DV 9S: To Southerly Runoff Area=62,781 sf 0.00% Impervious Runoff Depth=1.03"
Flow Length=206' Slope=0.0140 '/' Tc=12.8 min CN=61 Runoff=1.20 cfs 0.124 af

Reach OP1: (new Reach) Inflow=4.55 cfs 0.500 af
Outflow=4.55 cfs 0.500 af

Reach OP2: (new Reach) Inflow=0.96 cfs 0.100 af
Outflow=0.96 cfs 0.100 af

Reach OP3: (new Reach) Inflow=1.63 cfs 0.169 af
Outflow=1.63 cfs 0.169 af

Pond DV 1.1P: CB 100 Peak Elev=120.43' Inflow=0.47 cfs 0.056 af
15.0" Round Culvert n=0.013 L=84.0' S=0.0054 '/' Outflow=0.47 cfs 0.056 af

Pond DV 1.2P: CB 101 Peak Elev=120.43' Inflow=0.04 cfs 0.022 af
15.0" Round Culvert n=0.013 L=18.5' S=0.0054 '/' Outflow=0.04 cfs 0.022 af

Pond DV 1P: Stormwater Management Pond Peak Elev=120.43' Storage=1,788 cf Inflow=0.54 cfs 0.063 af
Discarded=0.02 cfs 0.063 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.063 af

Pond DV 2P: Stormwater Management Pond Peak Elev=122.28' Storage=1,984 cf Inflow=1.27 cfs 0.127 af
Discarded=0.14 cfs 0.127 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.127 af

Pond DV 3P: (new Pond) Peak Elev=122.29' Inflow=0.24 cfs 0.040 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=0.24 cfs 0.040 af

Pond EX 1P: (new Pond) Peak Elev=113.70' Inflow=0.06 cfs 0.040 af
Outflow=0.06 cfs 0.040 af

Total Runoff Area = 16.812 ac Runoff Volume = 0.959 af Average Runoff Depth = 0.68"
95.72% Pervious = 16.093 ac 4.28% Impervious = 0.719 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DV 10S: To Low Point Onsite Runoff Area=53,526 sf 0.00% Impervious Runoff Depth=1.65"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=1.79 cfs 0.169 af

Subcatchment DV 1S: TO DUAL CMP Runoff Area=210,529 sf 0.00% Impervious Runoff Depth=0.33"
Flow Length=442' Slope=0.0580 '/' Tc=20.5 min CN=39 Runoff=0.42 cfs 0.134 af

Subcatchment DV 2S: To CB 101 Runoff Area=77,511 sf 5.06% Impervious Runoff Depth=0.43"
Flow Length=620' Slope=0.0409 '/' Tc=30.2 min CN=41 Runoff=0.22 cfs 0.063 af

Subcatchment DV 3S: To Culvert Runoff Area=40,352 sf 0.00% Impervious Runoff Depth=1.01"
Flow Length=297' Slope=0.0339 '/' Tc=14.2 min CN=51 Runoff=0.64 cfs 0.078 af

Subcatchment DV 4.1S: To Stormwater Runoff Area=10,360 sf 45.22% Impervious Runoff Depth=3.21"
Flow Length=129' Slope=0.0296 '/' Tc=6.0 min CN=78 Runoff=0.90 cfs 0.064 af

Subcatchment DV 4.2S: To Stormwater Runoff Area=10,056 sf 46.93% Impervious Runoff Depth=3.21"
Flow Length=117' Slope=0.0383 '/' Tc=6.0 min CN=78 Runoff=0.87 cfs 0.062 af

Subcatchment DV 5S: To CB 100 Runoff Area=7,305 sf 51.43% Impervious Runoff Depth=3.40"
Flow Length=198' Slope=0.0825 '/' Tc=6.0 min CN=80 Runoff=0.67 cfs 0.048 af

Subcatchment DV 6S: To Stormwater Runoff Area=3,657 sf 0.00% Impervious Runoff Depth=1.73"
Slope=0.0092 '/' Tc=0.0 min CN=61 Runoff=0.20 cfs 0.012 af

Subcatchment DV 7S: TO MERRIMACK Runoff Area=246,411 sf 3.75% Impervious Runoff Depth=1.65"
Flow Length=943' Slope=0.2190 '/' Tc=11.2 min CN=60 Runoff=8.50 cfs 0.779 af

Subcatchment DV 8S: To Existing Roadway Runoff Area=9,851 sf 50.90% Impervious Runoff Depth=3.40"
Flow Length=186' Slope=0.0164 '/' Tc=6.5 min CN=80 Runoff=0.89 cfs 0.064 af

Subcatchment DV 9S: To Southerly Runoff Area=62,781 sf 0.00% Impervious Runoff Depth=1.73"
Flow Length=206' Slope=0.0140 '/' Tc=12.8 min CN=61 Runoff=2.19 cfs 0.208 af

Reach OP1: (new Reach) Inflow=8.50 cfs 0.950 af
Outflow=8.50 cfs 0.950 af

Reach OP2: (new Reach) Inflow=1.79 cfs 0.169 af
Outflow=1.79 cfs 0.169 af

Reach OP3: (new Reach) Inflow=2.81 cfs 0.272 af
Outflow=2.81 cfs 0.272 af

Pond DV 1.1P: CB 100 Peak Elev=121.51' Inflow=0.67 cfs 0.111 af
15.0" Round Culvert n=0.013 L=84.0' S=0.0054 '/' Outflow=0.67 cfs 0.111 af

Pond DV 1.2P: CB 101 Peak Elev=121.51' Inflow=0.22 cfs 0.063 af
15.0" Round Culvert n=0.013 L=18.5' S=0.0054 '/' Outflow=0.22 cfs 0.063 af

Pond DV 1P: Stormwater Management Pond Peak Elev=121.51' Storage=3,811 cf Inflow=0.79 cfs 0.123 af
Discarded=0.03 cfs 0.110 af Primary=0.02 cfs 0.006 af Outflow=0.05 cfs 0.116 af

Pond DV 2P: Stormwater Management Pond Peak Elev=122.55' Storage=2,974 cf Inflow=2.08 cfs 0.203 af
Discarded=0.14 cfs 0.172 af Primary=0.45 cfs 0.031 af Outflow=0.59 cfs 0.203 af

Pond DV 3P: (new Pond) Peak Elev=122.57' Inflow=0.64 cfs 0.078 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=0.64 cfs 0.078 af

Pond EX 1P: (new Pond) Peak Elev=113.92' Inflow=0.42 cfs 0.134 af
Outflow=0.42 cfs 0.134 af

Total Runoff Area = 16.812 ac Runoff Volume = 1.680 af Average Runoff Depth = 1.20"
95.72% Pervious = 16.093 ac 4.28% Impervious = 0.719 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DV 10S: To Low Point Onsite Runoff Area=53,526 sf 0.00% Impervious Runoff Depth=2.37"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min CN=60 Runoff=2.68 cfs 0.242 af

Subcatchment DV 1S: TO DUAL CMP Runoff Area=210,529 sf 0.00% Impervious Runoff Depth=0.65"
Flow Length=442' Slope=0.0580 '/' Tc=20.5 min CN=39 Runoff=1.29 cfs 0.262 af

Subcatchment DV 2S: To CB 101 Runoff Area=77,511 sf 5.06% Impervious Runoff Depth=0.79"
Flow Length=620' Slope=0.0409 '/' Tc=30.2 min CN=41 Runoff=0.57 cfs 0.117 af

Subcatchment DV 3S: To Culvert Runoff Area=40,352 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=297' Slope=0.0339 '/' Tc=14.2 min CN=51 Runoff=1.12 cfs 0.121 af

Subcatchment DV 4.1S: To Stormwater Runoff Area=10,360 sf 45.22% Impervious Runoff Depth=4.17"
Flow Length=129' Slope=0.0296 '/' Tc=6.0 min CN=78 Runoff=1.16 cfs 0.083 af

Subcatchment DV 4.2S: To Stormwater Runoff Area=10,056 sf 46.93% Impervious Runoff Depth=4.17"
Flow Length=117' Slope=0.0383 '/' Tc=6.0 min CN=78 Runoff=1.12 cfs 0.080 af

Subcatchment DV 5S: To CB 100 Runoff Area=7,305 sf 51.43% Impervious Runoff Depth=4.38"
Flow Length=198' Slope=0.0825 '/' Tc=6.0 min CN=80 Runoff=0.86 cfs 0.061 af

Subcatchment DV 6S: To Stormwater Runoff Area=3,657 sf 0.00% Impervious Runoff Depth=2.46"
Slope=0.0092 '/' Tc=0.0 min CN=61 Runoff=0.29 cfs 0.017 af

Subcatchment DV 7S: TO MERRIMACK Runoff Area=246,411 sf 3.75% Impervious Runoff Depth=2.37"
Flow Length=943' Slope=0.2190 '/' Tc=11.2 min CN=60 Runoff=12.66 cfs 1.115 af

Subcatchment DV 8S: To Existing Roadway Runoff Area=9,851 sf 50.90% Impervious Runoff Depth=4.38"
Flow Length=186' Slope=0.0164 '/' Tc=6.5 min CN=80 Runoff=1.13 cfs 0.083 af

Subcatchment DV 9S: To Southerly Runoff Area=62,781 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=206' Slope=0.0140 '/' Tc=12.8 min CN=61 Runoff=3.22 cfs 0.295 af

Reach OP1: (new Reach) Inflow=12.87 cfs 1.544 af
Outflow=12.87 cfs 1.544 af

Reach OP2: (new Reach) Inflow=2.68 cfs 0.242 af
Outflow=2.68 cfs 0.242 af

Reach OP3: (new Reach) Inflow=4.03 cfs 0.378 af
Outflow=4.03 cfs 0.378 af

Pond DV 1.1P: CB 100 Peak Elev=121.54' Inflow=0.87 cfs 0.178 af
15.0" Round Culvert n=0.013 L=84.0' S=0.0054 '/' Outflow=0.87 cfs 0.178 af

Pond DV 1.2P: CB 101 Peak Elev=121.54' Inflow=0.57 cfs 0.117 af
15.0" Round Culvert n=0.013 L=18.5' S=0.0054 '/' Outflow=0.57 cfs 0.117 af

Pond DV 1P: Stormwater Management Pond Peak Elev=121.53' Storage=3,869 cf Inflow=1.03 cfs 0.195 af
Discarded=0.03 cfs 0.112 af Primary=0.25 cfs 0.075 af Outflow=0.28 cfs 0.188 af

Pond DV 2P: Stormwater Management Pond Peak Elev=122.61' Storage=3,223 cf Inflow=2.95 cfs 0.284 af
Discarded=0.15 cfs 0.192 af Primary=1.60 cfs 0.091 af Outflow=1.74 cfs 0.284 af

Pond DV 3P: (new Pond) Peak Elev=122.71' Inflow=1.12 cfs 0.121 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=1.12 cfs 0.121 af

Pond EX 1P: (new Pond) Peak Elev=114.13' Inflow=1.29 cfs 0.262 af
Outflow=1.29 cfs 0.262 af

Total Runoff Area = 16.812 ac Runoff Volume = 2.476 af Average Runoff Depth = 1.77"
95.72% Pervious = 16.093 ac 4.28% Impervious = 0.719 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DV 10S: To Low Point Onsite Runoff Area=53,526 sf 0.00% Impervious Runoff Depth=7.72"
Flow Length=249' Slope=0.0223 '/' Tc=12.1 min AMC Adjusted CN=98 Runoff=7.92 cfs 0.791 af

Subcatchment DV 1S: TO DUAL CMP Runoff Area=210,529 sf 0.00% Impervious Runoff Depth=7.72"
Flow Length=442' Slope=0.0580 '/' Tc=20.5 min AMC Adjusted CN=98 Runoff=25.53 cfs 3.109 af

Subcatchment DV 2S: To CB 101 Runoff Area=77,511 sf 5.06% Impervious Runoff Depth=7.72"
Flow Length=620' Slope=0.0409 '/' Tc=30.2 min AMC Adjusted CN=98 Runoff=7.97 cfs 1.145 af

Subcatchment DV 3S: To Culvert Runoff Area=40,352 sf 0.00% Impervious Runoff Depth=7.72"
Flow Length=297' Slope=0.0339 '/' Tc=14.2 min AMC Adjusted CN=98 Runoff=5.65 cfs 0.596 af

Subcatchment DV 4.1S: To Stormwater Runoff Area=10,360 sf 45.22% Impervious Runoff Depth=7.72"
Flow Length=129' Slope=0.0296 '/' Tc=6.0 min AMC Adjusted CN=98 Runoff=1.86 cfs 0.153 af

Subcatchment DV 4.2S: To Stormwater Runoff Area=10,056 sf 46.93% Impervious Runoff Depth=7.72"
Flow Length=117' Slope=0.0383 '/' Tc=6.0 min AMC Adjusted CN=98 Runoff=1.80 cfs 0.149 af

Subcatchment DV 5S: To CB 100 Runoff Area=7,305 sf 51.43% Impervious Runoff Depth=7.72"
Flow Length=198' Slope=0.0825 '/' Tc=6.0 min AMC Adjusted CN=98 Runoff=1.31 cfs 0.108 af

Subcatchment DV 6S: To Stormwater Runoff Area=3,657 sf 0.00% Impervious Runoff Depth=7.72"
Slope=0.0092 '/' Tc=0.0 min AMC Adjusted CN=98 Runoff=0.80 cfs 0.054 af

Subcatchment DV 7S: TO MERRIMACK Runoff Area=246,411 sf 3.75% Impervious Runoff Depth=7.72"
Flow Length=943' Slope=0.2190 '/' Tc=11.2 min AMC Adjusted CN=98 Runoff=37.43 cfs 3.639 af

Subcatchment DV 8S: To Existing Roadway Runoff Area=9,851 sf 50.90% Impervious Runoff Depth=7.72"
Flow Length=186' Slope=0.0164 '/' Tc=6.5 min AMC Adjusted CN=98 Runoff=1.74 cfs 0.145 af

Subcatchment DV 9S: To Southerly Runoff Area=62,781 sf 0.00% Impervious Runoff Depth=7.72"
Flow Length=206' Slope=0.0140 '/' Tc=12.8 min AMC Adjusted CN=98 Runoff=9.12 cfs 0.927 af

Reach OP1: (new Reach) Inflow=72.96 cfs 8.507 af
Outflow=72.96 cfs 8.507 af

Reach OP2: (new Reach) Inflow=7.92 cfs 0.791 af
Outflow=7.92 cfs 0.791 af

Reach OP3: (new Reach) Inflow=10.43 cfs 1.073 af
Outflow=10.43 cfs 1.073 af

Pond DV 1.1P: CB 100 Peak Elev=124.35' Inflow=8.37 cfs 1.253 af
15.0" Round Culvert n=0.013 L=84.0' S=0.0054 '/' Outflow=8.37 cfs 1.253 af

Pond DV 1.2P: CB 101 Peak Elev=126.16' Inflow=7.97 cfs 1.145 af
15.0" Round Culvert n=0.013 L=18.5' S=0.0054 '/' Outflow=7.97 cfs 1.145 af

Pond DV 1P: Stormwater Management Pond Peak Elev=121.85' Storage=4,596 cf Inflow=8.52 cfs 1.307 af
Discarded=0.03 cfs 0.130 af Primary=8.46 cfs 1.169 af Outflow=8.49 cfs 1.299 af

Pond DV 2P: Stormwater Management Pond Peak Elev=122.83' Storage=4,083 cf Inflow=8.32 cfs 0.898 af
Discarded=0.15 cfs 0.308 af Primary=7.96 cfs 0.589 af Outflow=8.11 cfs 0.898 af

Pond DV 3P: (new Pond) Peak Elev=123.75' Inflow=5.65 cfs 0.596 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0050 '/' Outflow=5.65 cfs 0.596 af

Pond EX 1P: (new Pond) Peak Elev=116.52' Inflow=25.53 cfs 3.109 af
Outflow=25.53 cfs 3.109 af

Total Runoff Area = 16.812 ac Runoff Volume = 10.816 af Average Runoff Depth = 7.72"
95.72% Pervious = 16.093 ac 4.28% Impervious = 0.719 ac

Summary for Subcatchment DV 10S: To Low Point Onsite

CarlsonPlanXYPos|0.0000|0.0000|

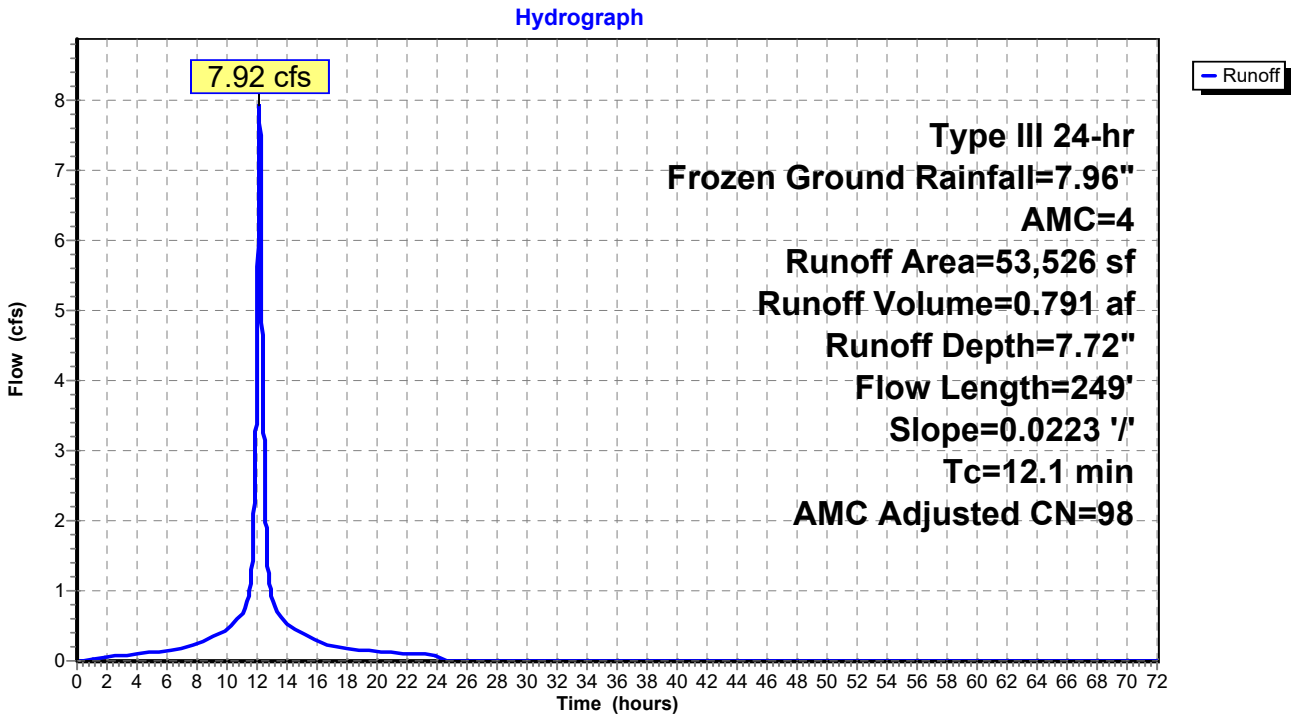
Runoff = 7.92 cfs @ 12.16 hrs, Volume= 0.791 af, Depth= 7.72"
Routed to Reach OP2 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
4,801	55		Woods, Good HSG B
48,725	61		>75% Grass cover, Good HSG B
53,526	60	98	Weighted Average, AMC Adjusted
53,526			100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	249	0.0223	0.34		**Lag/CN Method,**

Subcatchment DV 10S: To Low Point Onsite



Summary for Subcatchment DV 1S: TO DUAL CMP CULVERTS

CarlsonPlanXYPos|0.0000|0.0000|

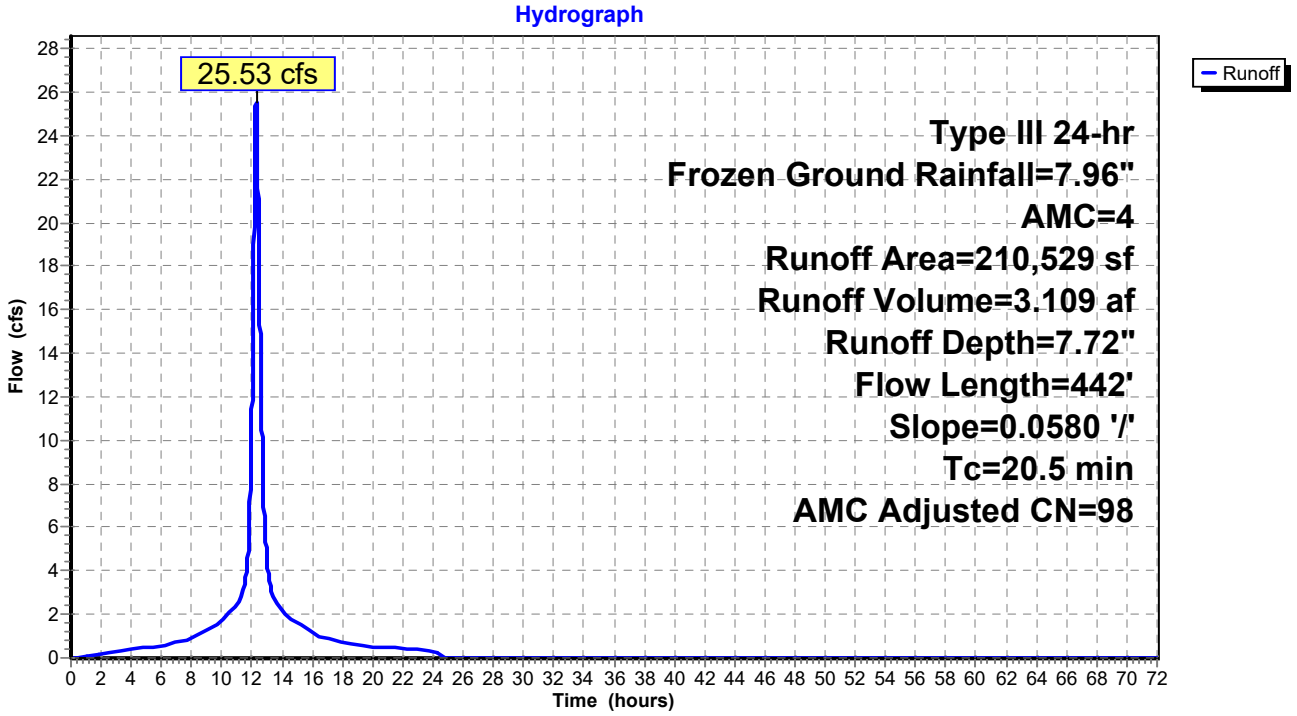
Runoff = 25.53 cfs @ 12.27 hrs, Volume= 3.109 af, Depth= 7.72"
Routed to Pond EX 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
48	55		Woods, Good HSG B
49,416	30		Woods, Good HSG A
143,858	39		>75% Grass cover, Good HSG A
17,206	61		>75% Grass cover, Good HSG B
210,529	39	98	Weighted Average, AMC Adjusted
210,529			100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	442	0.0580	0.36		**Lag/CN Method,**

Subcatchment DV 1S: TO DUAL CMP CULVERTS



Summary for Subcatchment DV 2S: To CB 101

CarlsonPlanXYPos|0.0000|0.0000|

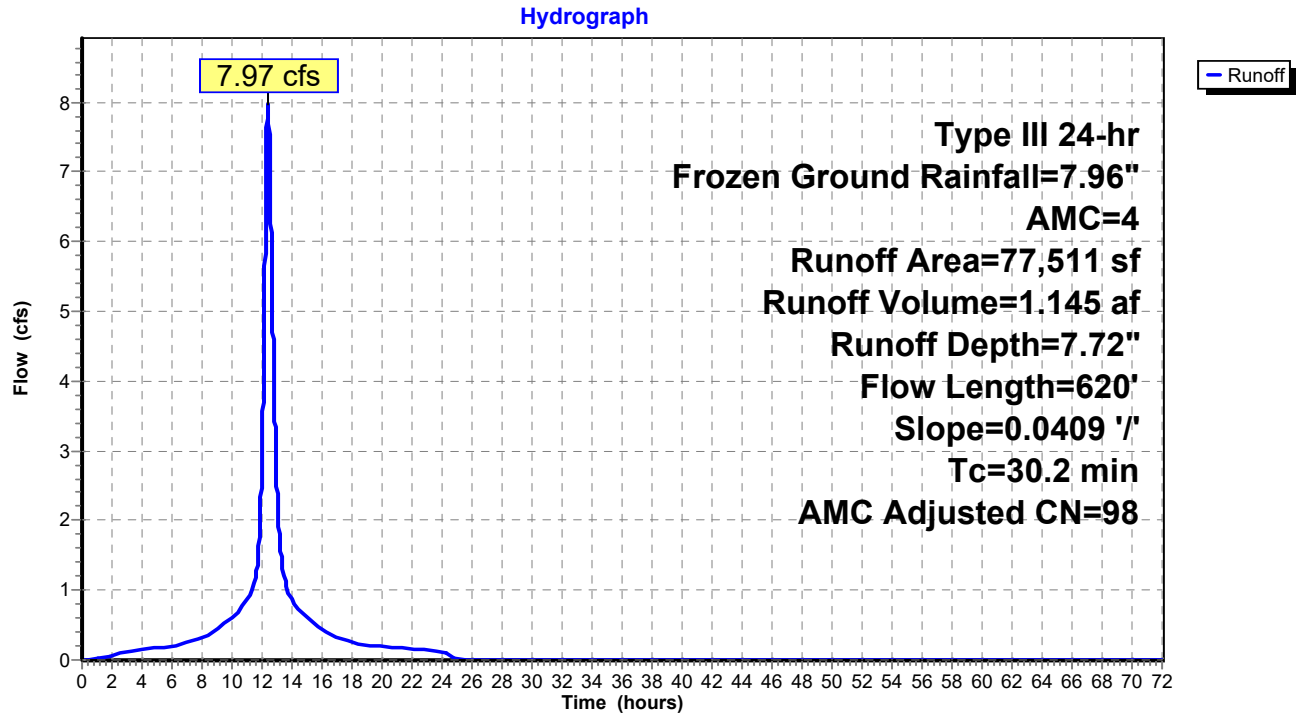
Runoff = 7.97 cfs @ 12.38 hrs, Volume= 1.145 af, Depth= 7.72"
Routed to Pond DV 1.2P : CB 101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
1,196	98		Paved parking HSG A
2,723	98		Paved parking HSG B
12,398	30		Woods, Good HSG A
58,940	39		>75% Grass cover, Good HSG A
2,254	61		>75% Grass cover, Good HSG B
77,511	41	98	Weighted Average, AMC Adjusted
73,592			94.94% Pervious Area
3,919			5.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	620	0.0409	0.34		**Lag/CN Method,**

Subcatchment DV 2S: To CB 101



Summary for Subcatchment DV 3S: To Culvert

CarlsonPlanXYPos|0.0000|0.0000|

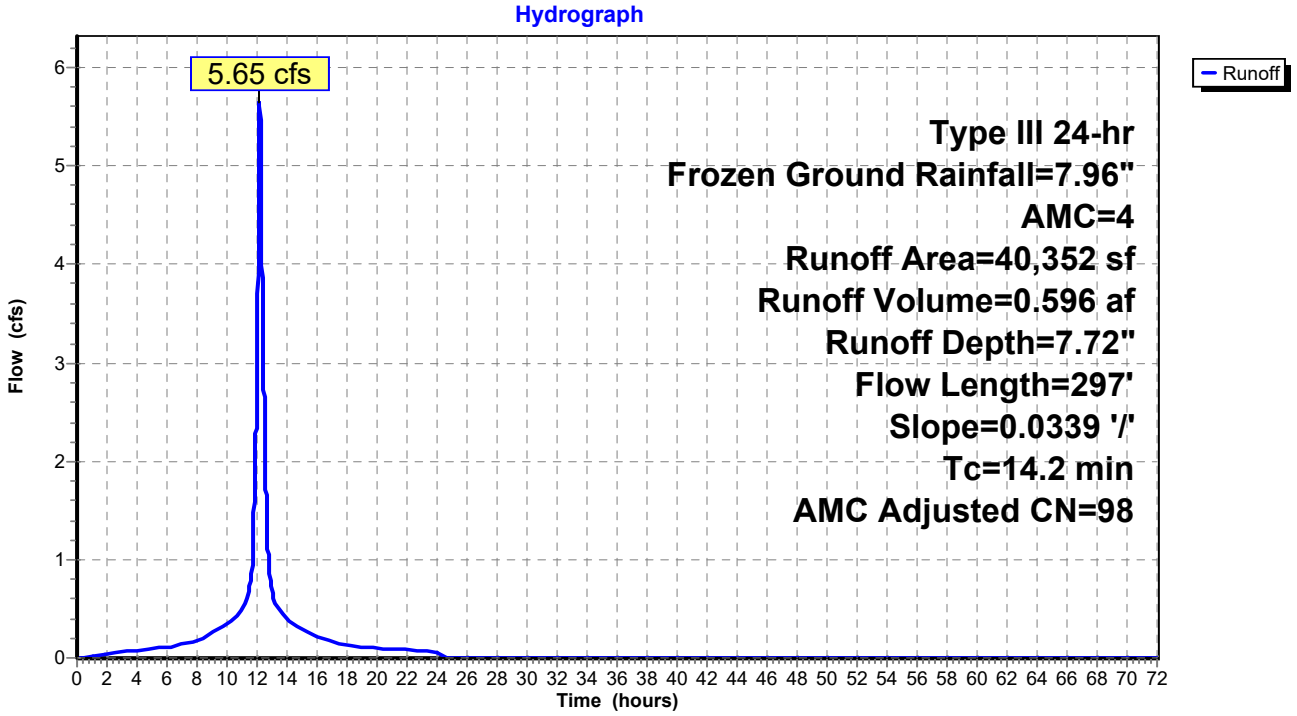
Runoff = 5.65 cfs @ 12.19 hrs, Volume= 0.596 af, Depth= 7.72"
Routed to Pond DV 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
1,155	30		Woods, Good HSG A
2,496	55		Woods, Good HSG B
16,638	39		>75% Grass cover, Good HSG A
20,063	61		>75% Grass cover, Good HSG B
40,352	51	98	Weighted Average, AMC Adjusted
40,352			100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	297	0.0339	0.35		**Lag/CN Method,**

Subcatchment DV 3S: To Culvert



Summary for Subcatchment DV 4.1S: To Stormwater Management Pond IB-2

CarlsonPlanXYPos|0.0000|0.0000|

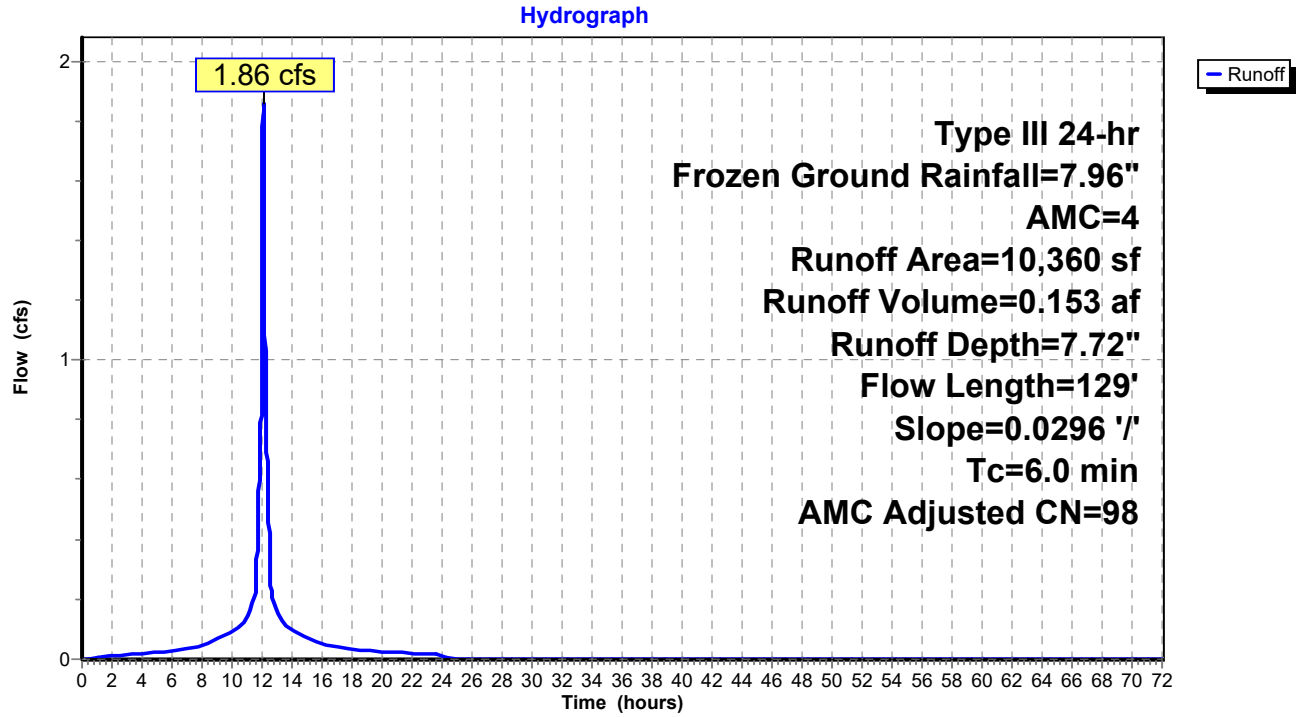
Runoff = 1.86 cfs @ 12.08 hrs, Volume= 0.153 af, Depth= 7.72"
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
4,685	98		Paved parking HSG B
5,675	61		>75% Grass cover, Good HSG B
10,360	78	98	Weighted Average, AMC Adjusted
5,675			54.78% Pervious Area
4,685			45.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	129	0.0296	0.56		**Lag/CN Method,**
3.8	129	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 4.1S: To Stormwater Management Pond IB-2



Summary for Subcatchment DV 4.2S: To Stormwater Management Pond IB-2

CarlsonPlanXYPos|0.0000|0.0000|

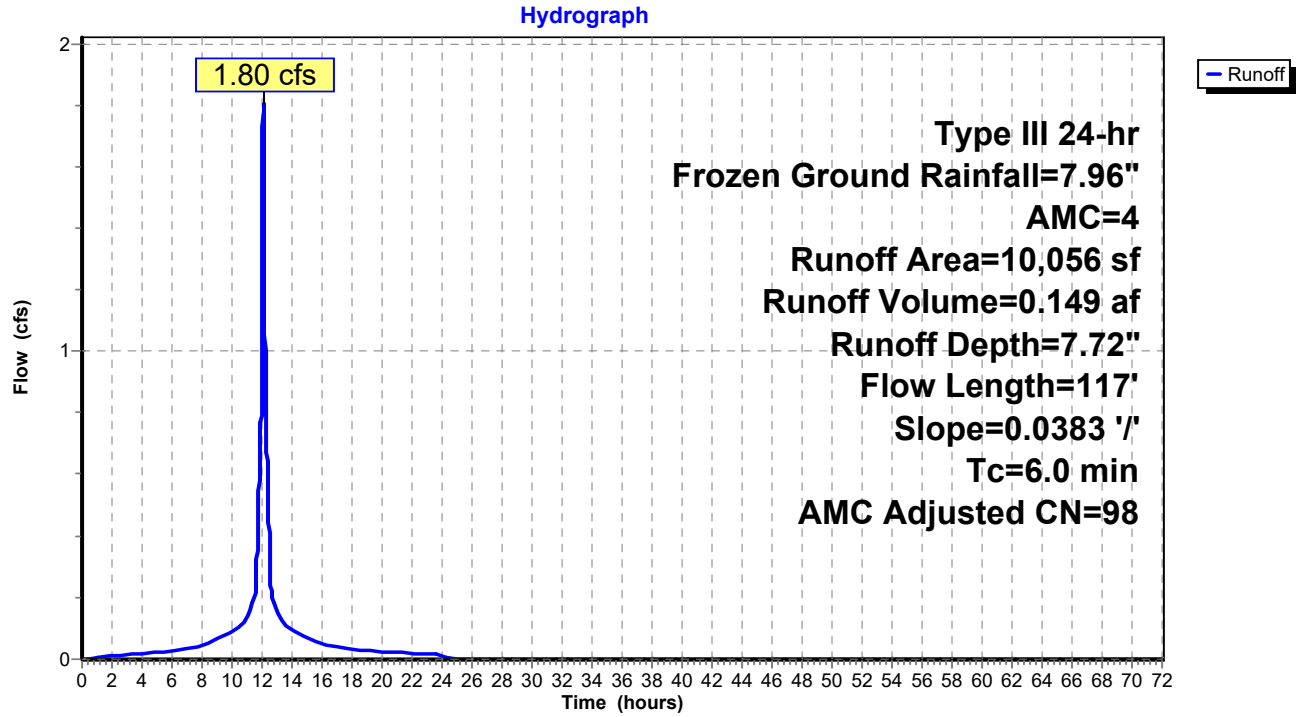
Runoff = 1.80 cfs @ 12.08 hrs, Volume= 0.149 af, Depth= 7.72"
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
4,719	98		Paved parking HSG B
5,337	61		>75% Grass cover, Good HSG B
10,056	78	98	Weighted Average, AMC Adjusted
5,337			53.07% Pervious Area
4,719			46.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	117	0.0383	0.63		**Lag/CN Method,**
3.1	117	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 4.2S: To Stormwater Management Pond IB-2



Summary for Subcatchment DV 5S: To CB 100

CarlsonPlanXYPos|0.0000|0.0000|

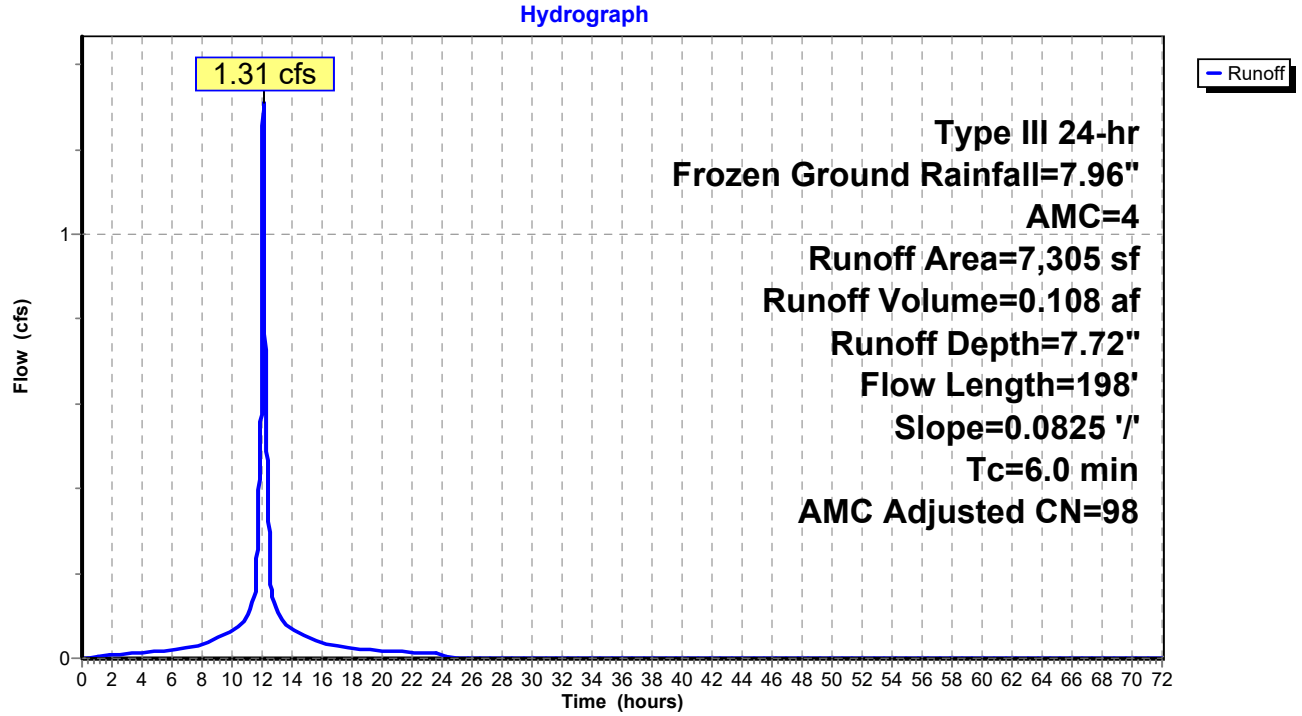
Runoff = 1.31 cfs @ 12.08 hrs, Volume= 0.108 af, Depth= 7.72"
Routed to Pond DV 1.1P : CB 100

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
174	98		Paved parking HSG A
3,583	98		Paved parking HSG B
11	55		Woods, Good HSG B
3,537	61		>75% Grass cover, Good HSG B
7,305	80	98	Weighted Average, AMC Adjusted
3,548			48.57% Pervious Area
3,757			51.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	198	0.0825	1.09		**Lag/CN Method,**
3.0	198	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 5S: To CB 100



Summary for Subcatchment DV 6S: To Stormwater Management Pond IB-1

CarlsonPlanXYPos|0.0000|0.0000|

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

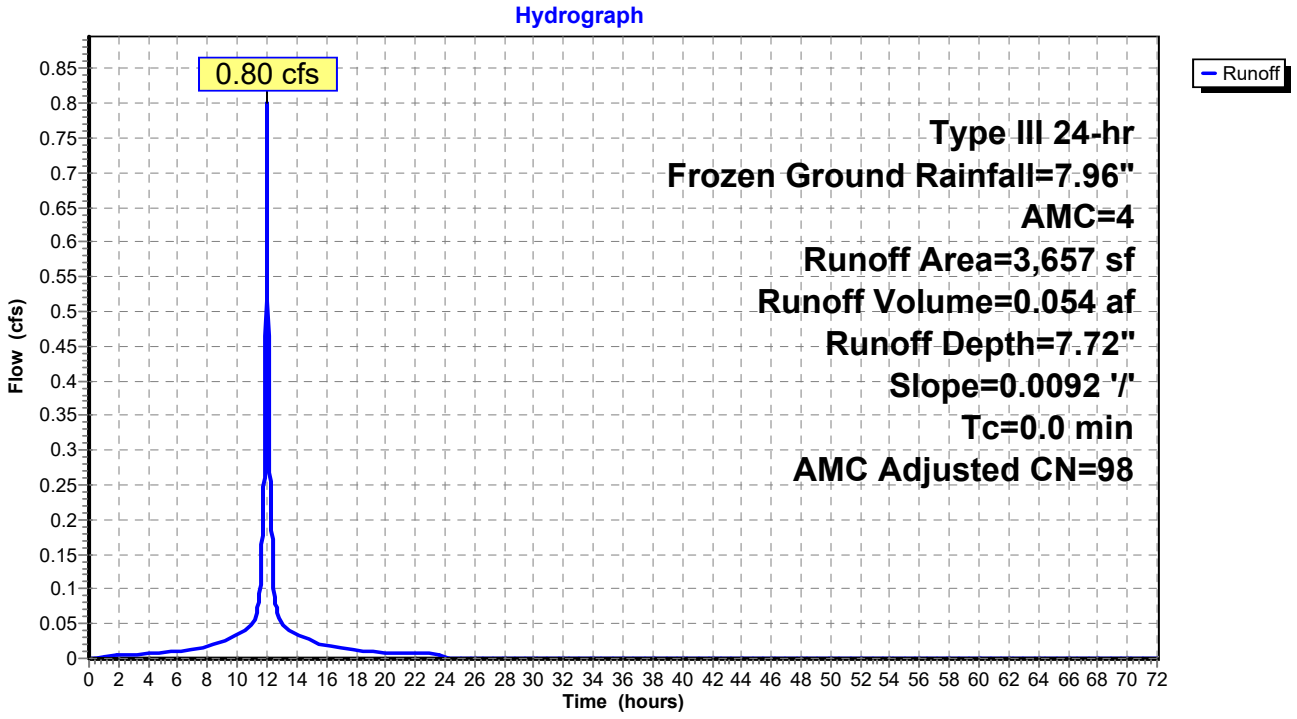
Runoff = 0.80 cfs @ 12.00 hrs, Volume= 0.054 af, Depth= 7.72"
Routed to Pond DV 1P : Stormwater Management Pond IB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
3,657	61		>75% Grass cover, Good HSG B
3,657	61	98	Weighted Average, AMC Adjusted
3,657			100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0		0.0092			**Lag/CN Method,**

Subcatchment DV 6S: To Stormwater Management Pond IB-1



Summary for Subcatchment DV 7S: TO MERRIMACK RIVER

CarlsonPlanXYPos|0.0000|0.0000|

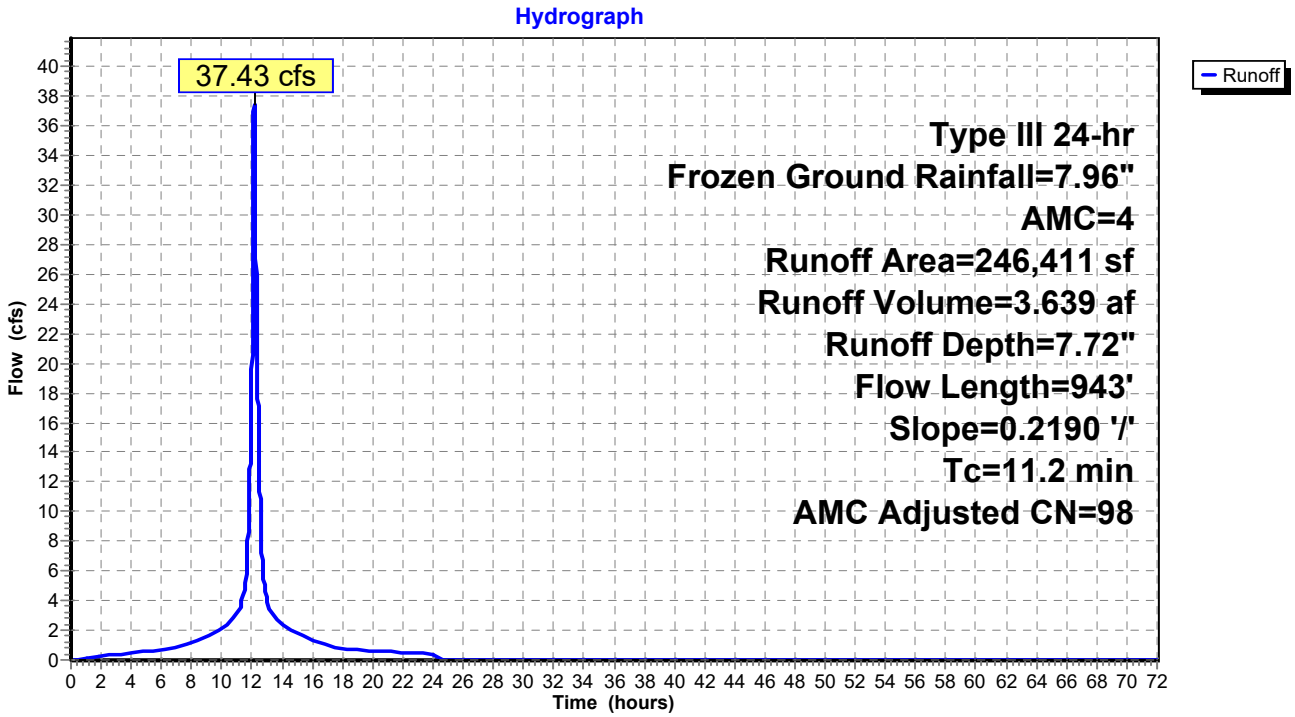
Runoff = 37.43 cfs @ 12.15 hrs, Volume= 3.639 af, Depth= 7.72"
Routed to Reach OP1 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
8,907	77		Woods, Good HSG D
6,702	98		Paved parking HSG B
2,533	98		Roofs HSG B
121,783	55		Woods, Good HSG B
106,486	61		>75% Grass cover, Good HSG B
246,411	60	98	Weighted Average, AMC Adjusted
237,176			96.25% Pervious Area
9,235			3.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	943	0.2190	1.40		**Lag/CN Method,**

Subcatchment DV 7S: TO MERRIMACK RIVER



Summary for Subcatchment DV 8S: To Existing Roadway Drainage

CarlsonPlanXYPos|0.0000|0.0000|

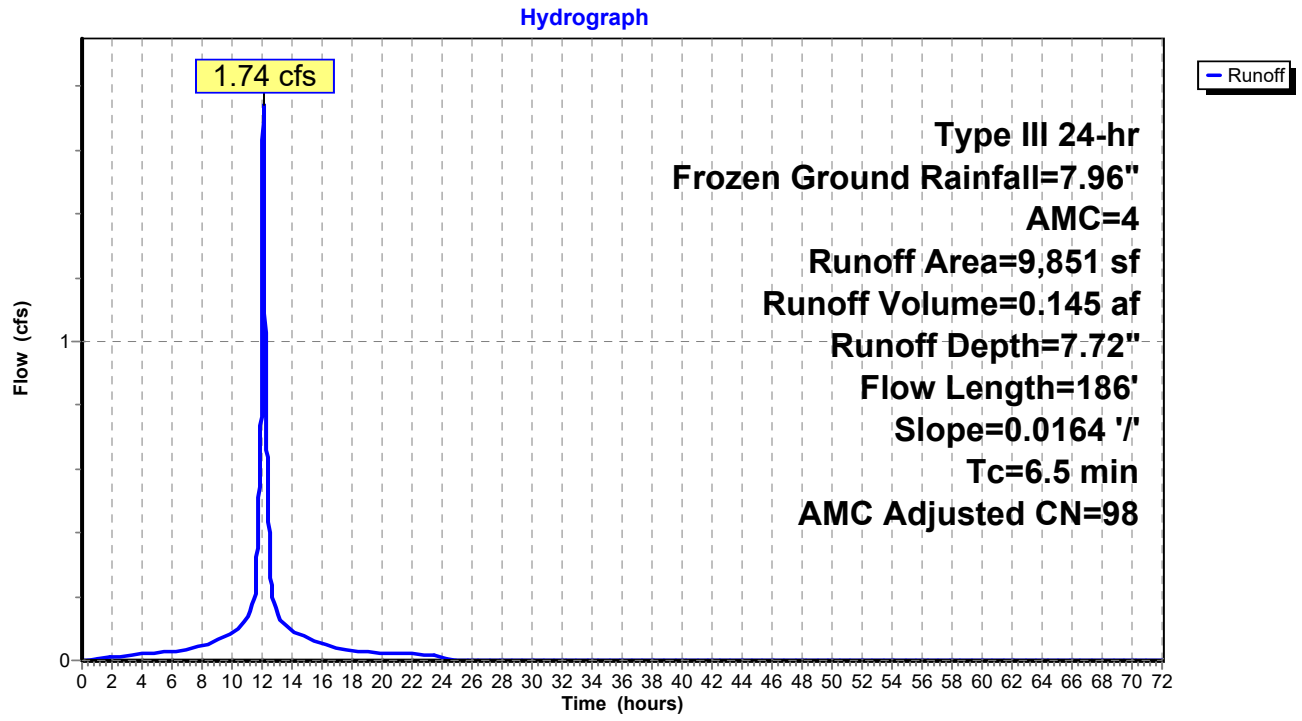
Runoff = 1.74 cfs @ 12.09 hrs, Volume= 0.145 af, Depth= 7.72"
Routed to Reach OP3 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
5,014	98		Paved parking HSG B
4,837	61		>75% Grass cover, Good HSG B
9,851	80	98	Weighted Average, AMC Adjusted
4,837			49.10% Pervious Area
5,014			50.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	186	0.0164	0.48		**Lag/CN Method,**

Subcatchment DV 8S: To Existing Roadway Drainage



Summary for Subcatchment DV 9S: To Southerly Property Line

CarlsonPlanXYPos|0.0000|0.0000|

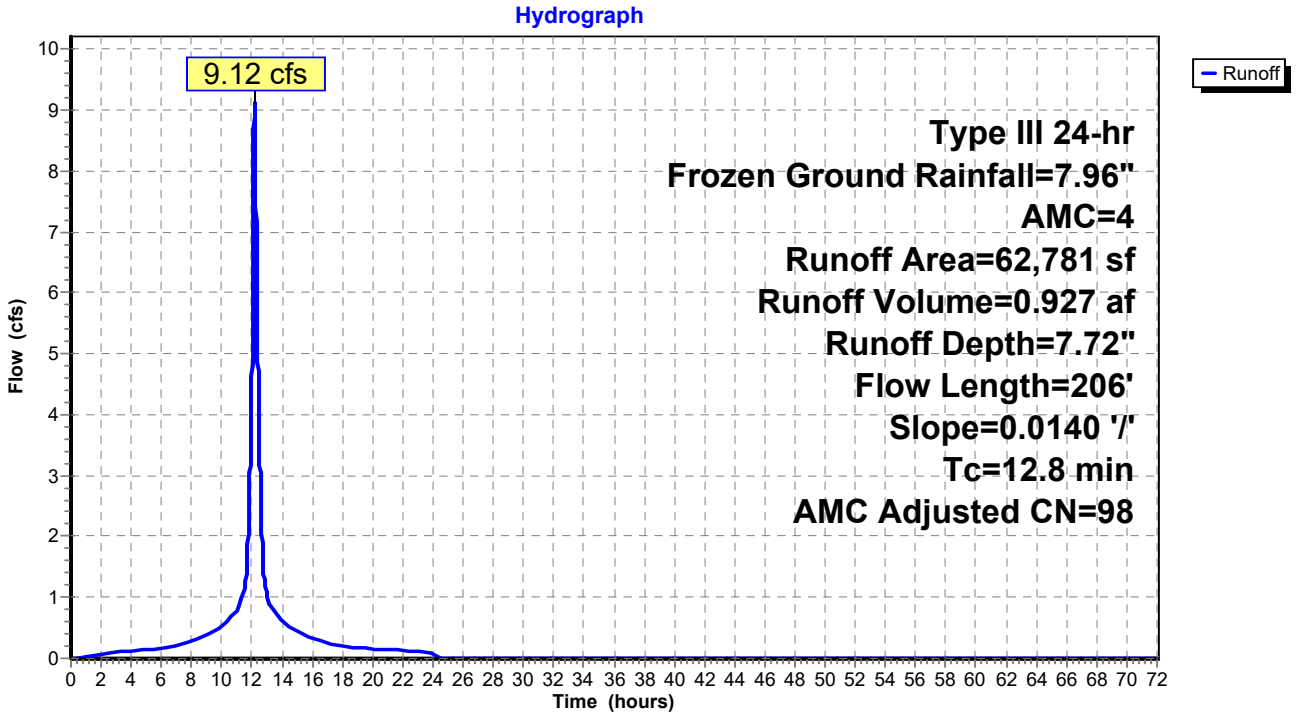
Runoff = 9.12 cfs @ 12.17 hrs, Volume= 0.927 af, Depth= 7.72"
Routed to Reach OP3 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr Frozen Ground Rainfall=7.96", AMC=4

Area (sf)	CN	Adj	Description
62,781	61		>75% Grass cover, Good HSG B
62,781	61	98	Weighted Average, AMC Adjusted
62,781			100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	206	0.0140	0.27		**Lag/CN Method,**

Subcatchment DV 9S: To Southerly Property Line



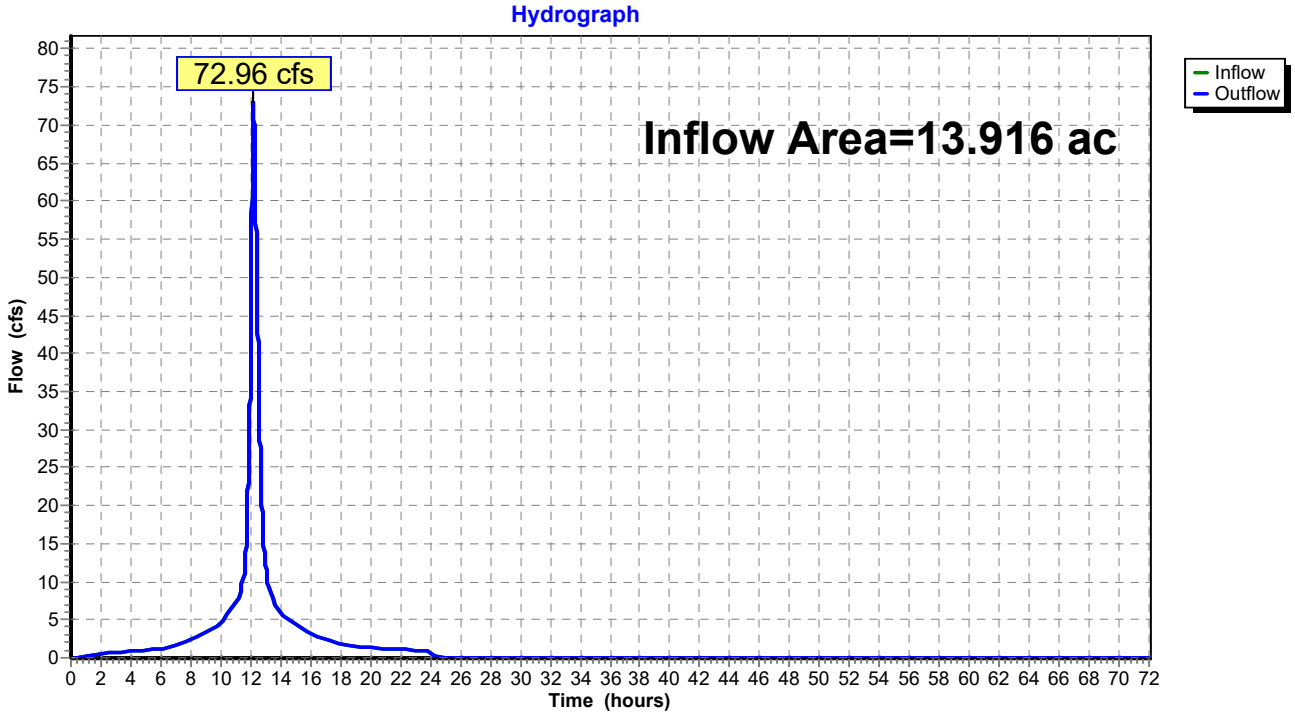
Summary for Reach OP1: (new Reach)

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

Inflow Area = 13.916 ac, 4.34% Impervious, Inflow Depth = 7.34" for Frozen Ground event
Inflow = 72.96 cfs @ 12.18 hrs, Volume= 8.507 af
Outflow = 72.96 cfs @ 12.18 hrs, Volume= 8.507 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP1: (new Reach)



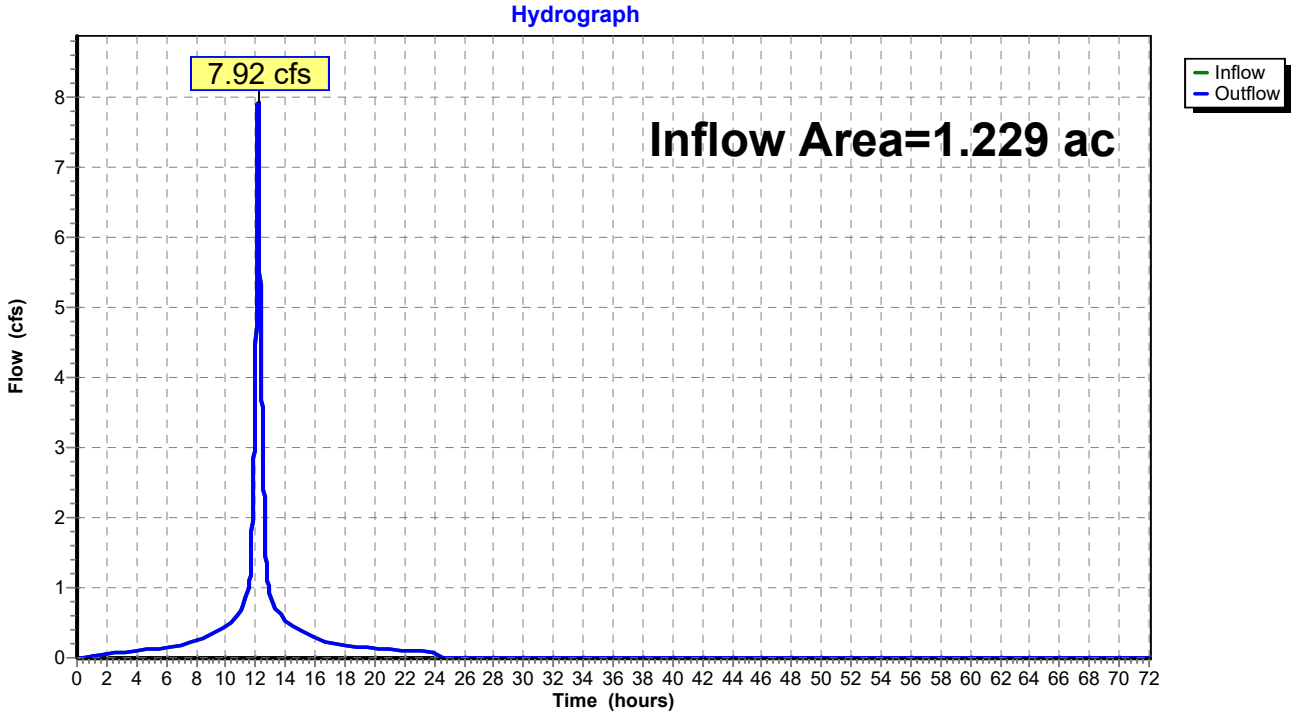
Summary for Reach OP2: (new Reach)

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

Inflow Area = 1.229 ac, 0.00% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 7.92 cfs @ 12.16 hrs, Volume= 0.791 af
Outflow = 7.92 cfs @ 12.16 hrs, Volume= 0.791 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP2: (new Reach)



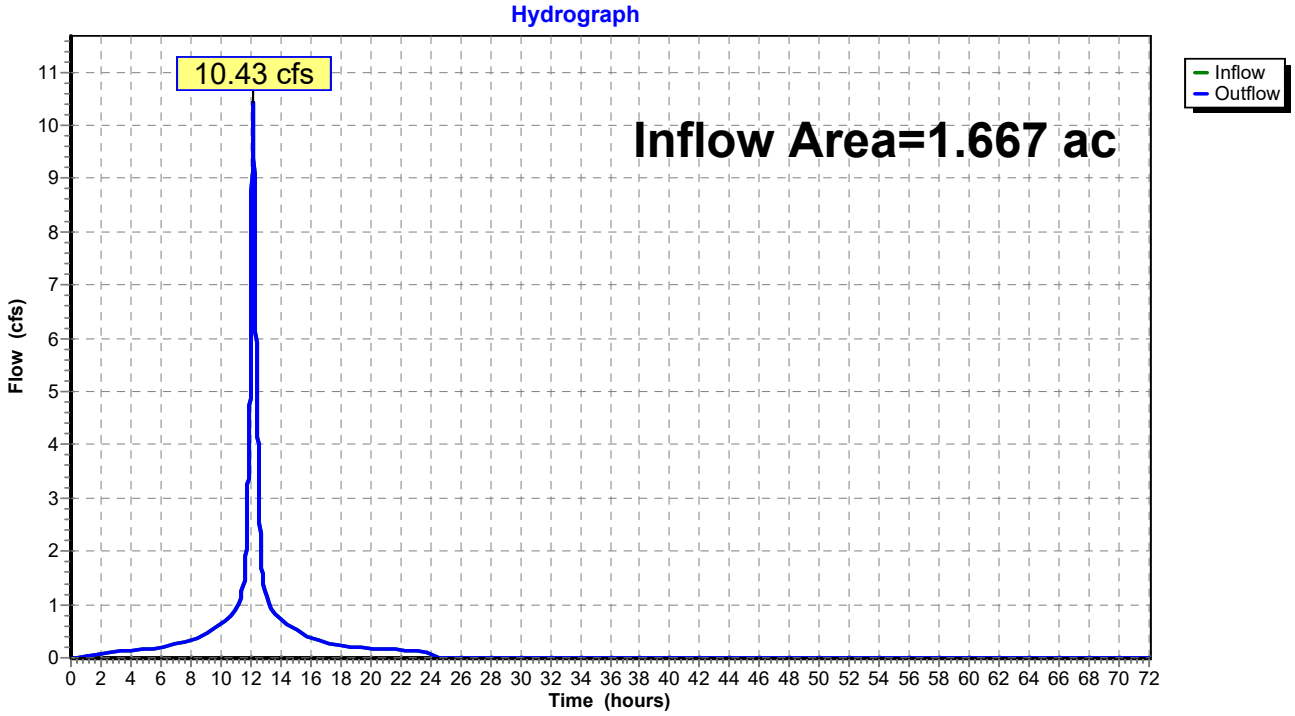
Summary for Reach OP3: (new Reach)

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

Inflow Area = 1.667 ac, 6.90% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 10.43 cfs @ 12.16 hrs, Volume= 1.073 af
Outflow = 10.43 cfs @ 12.16 hrs, Volume= 1.073 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP3: (new Reach)



Summary for Pond DV 1.1P: CB 100

[57] Hint: Peaked at 124.35' (Flood elevation advised)
[80] Warning: Exceeded Pond DV 1.2P by 1.80' @ 25.72 hrs (5.71 cfs 2.209 af)

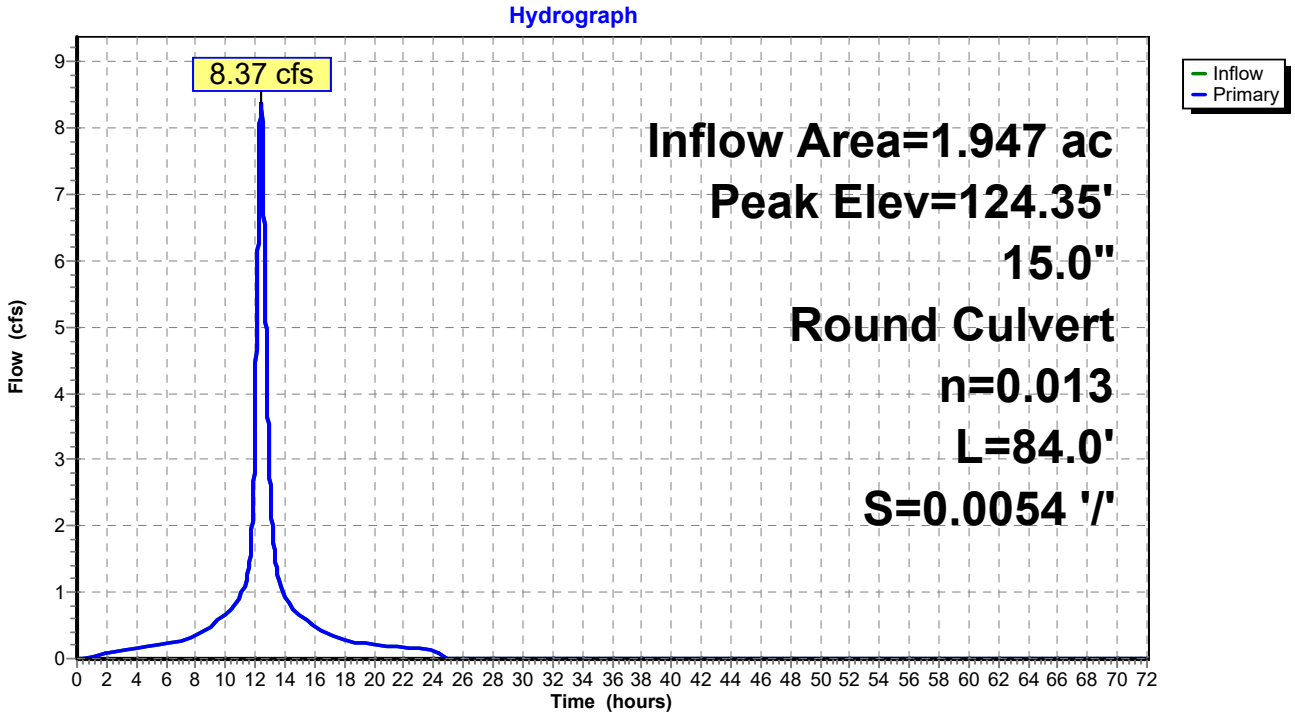
Inflow Area = 1.947 ac, 9.05% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 8.37 cfs @ 12.38 hrs, Volume= 1.253 af
Outflow = 8.37 cfs @ 12.38 hrs, Volume= 1.253 af, Atten= 0%, Lag= 0.0 min
Primary = 8.37 cfs @ 12.38 hrs, Volume= 1.253 af
Routed to Pond DV 1P : Stormwater Management Pond IB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 124.35' @ 12.38 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	119.45'	**15.0" Round Culvert** L= 84.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.45' / 119.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=8.37 cfs @ 12.38 hrs HW=124.35' TW=121.85' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 8.37 cfs @ 6.82 fps)

Pond DV 1.1P: CB 100



Summary for Pond DV 1.2P: CB 101

[57] Hint: Peaked at 126.16' (Flood elevation advised)

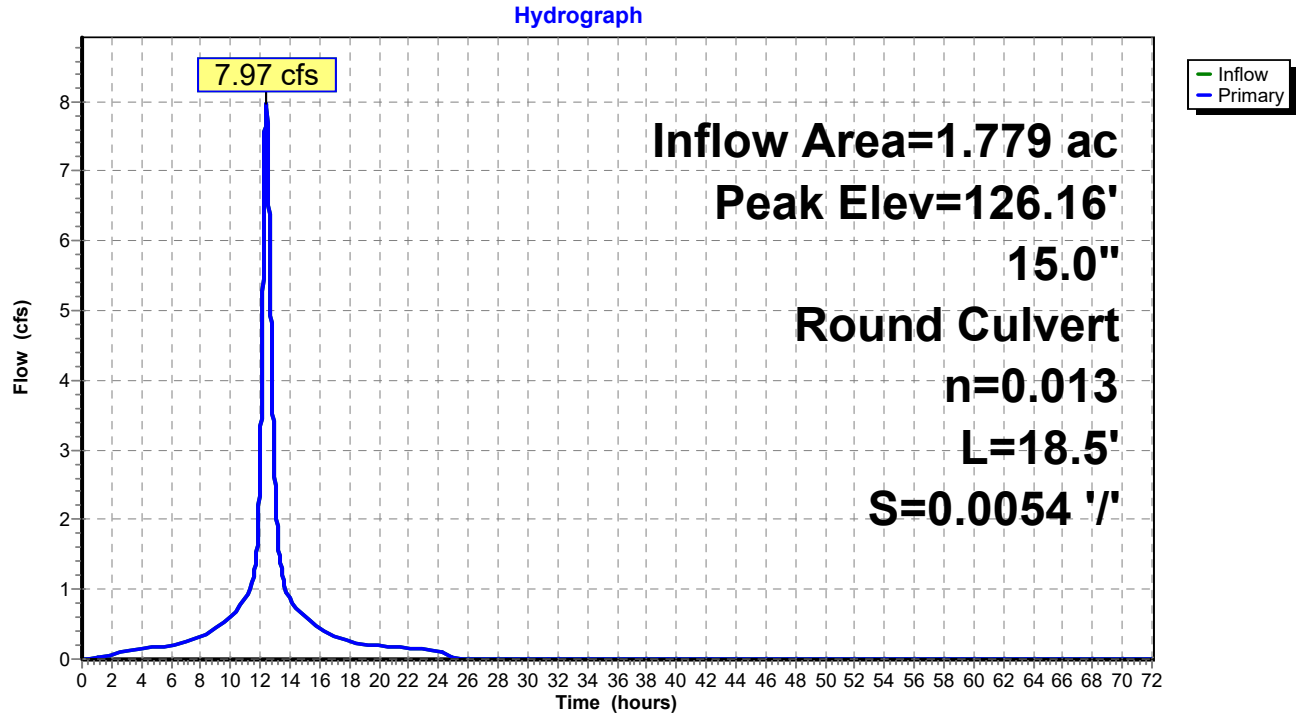
Inflow Area = 1.779 ac, 5.06% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 7.97 cfs @ 12.38 hrs, Volume= 1.145 af
Outflow = 7.97 cfs @ 12.38 hrs, Volume= 1.145 af, Atten= 0%, Lag= 0.0 min
Primary = 7.97 cfs @ 12.38 hrs, Volume= 1.145 af
Routed to Pond DV 1.1P : CB 100

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 126.16' @ 12.39 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	119.65'	**15.0" Round Culvert** L= 18.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.65' / 119.55' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.95 cfs @ 12.38 hrs HW=126.16' TW=124.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.95 cfs @ 6.48 fps)

Pond DV 1.2P: CB 101



Summary for Pond DV 1P: Stormwater Management Pond IB-1

[80] Warning: Exceeded Pond DV 1.1P by 2.01' @ 25.71 hrs (5.83 cfs 1.525 af)

Inflow Area = 2.031 ac, 8.68% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 8.52 cfs @ 12.38 hrs, Volume= 1.307 af
Outflow = 8.49 cfs @ 12.39 hrs, Volume= 1.299 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.03 cfs @ 12.39 hrs, Volume= 0.130 af
Primary = 8.46 cfs @ 12.39 hrs, Volume= 1.169 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.85' @ 12.39 hrs Surf.Area= 2,404 sf Storage= 4,596 cf

Plug-Flow detention time= 156.9 min calculated for 1.299 af (99% of inflow)
Center-of-Mass det. time= 153.1 min (913.8 - 760.7)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,967 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

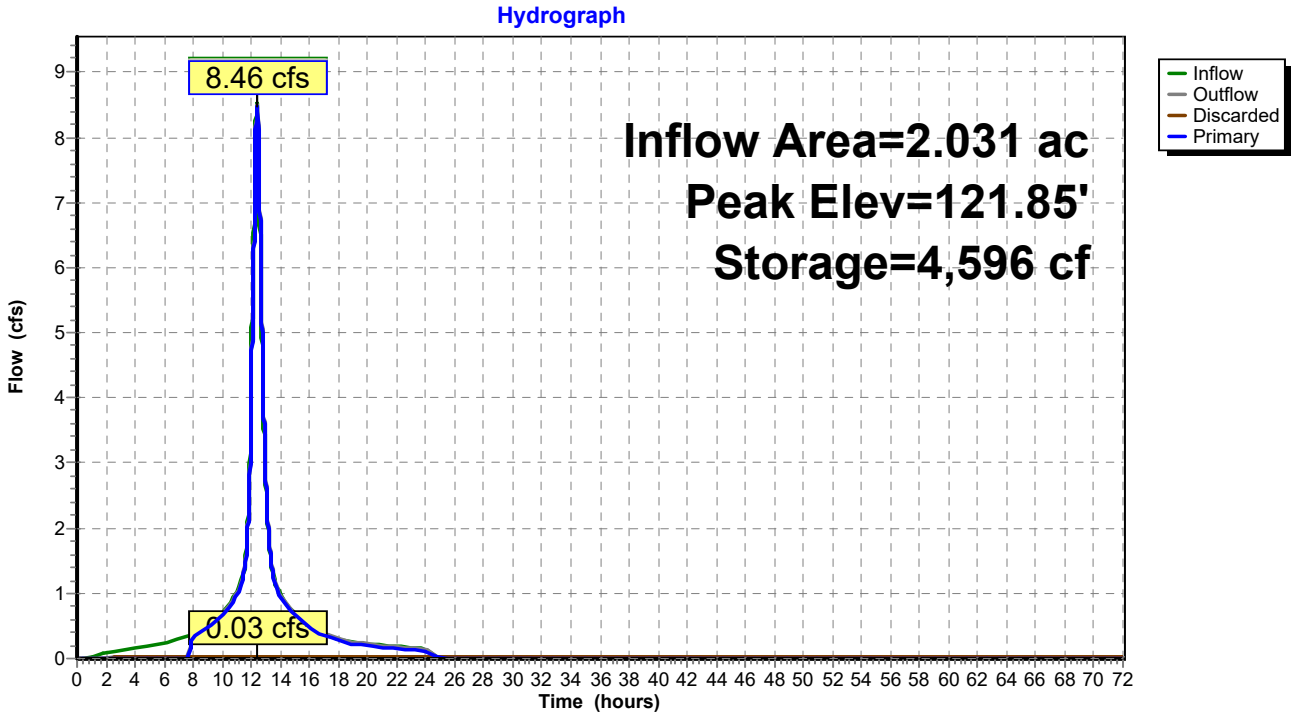
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
119.00	936	145.6	0	0	936
122.00	2,501	202.2	4,967	4,967	2,587

Device	Routing	Invert	Outlet Devices
#1	Discarded	119.00'	**0.550 in/hr Exfiltration per field test results over Surface area**
#2	Device 3	121.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	119.00'	**15.0" Round Culvert** L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.00' / 118.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=0.03 cfs @ 12.39 hrs HW=121.85' (Free Discharge)
↑└**1=Exfiltration per field test results** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=8.46 cfs @ 12.39 hrs HW=121.85' TW=0.00' (Dynamic Tailwater)
↑└**3=Culvert** (Passes 8.46 cfs of 8.81 cfs potential flow)
↑└**2=Orifice/Grate** (Weir Controls 8.46 cfs @ 1.93 fps)

Pond DV 1P: Stormwater Management Pond IB-1



Summary for Pond DV 2P: Stormwater Management Pond IB-2

[80] Warning: Exceeded Pond DV 3P by 0.44' @ 24.69 hrs (0.65 cfs 0.020 af)

Inflow Area = 1.395 ac, 15.48% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 8.32 cfs @ 12.13 hrs, Volume= 0.898 af
Outflow = 8.11 cfs @ 12.16 hrs, Volume= 0.898 af, Atten= 2%, Lag= 2.1 min
Discarded = 0.15 cfs @ 12.16 hrs, Volume= 0.308 af
Primary = 7.96 cfs @ 12.16 hrs, Volume= 0.589 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 122.83' @ 12.16 hrs Surf.Area= 3,982 sf Storage= 4,083 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 78.7 min (825.0 - 746.3)

Volume	Invert	Avail.Storage	Storage Description
#1	121.70'	4,751 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

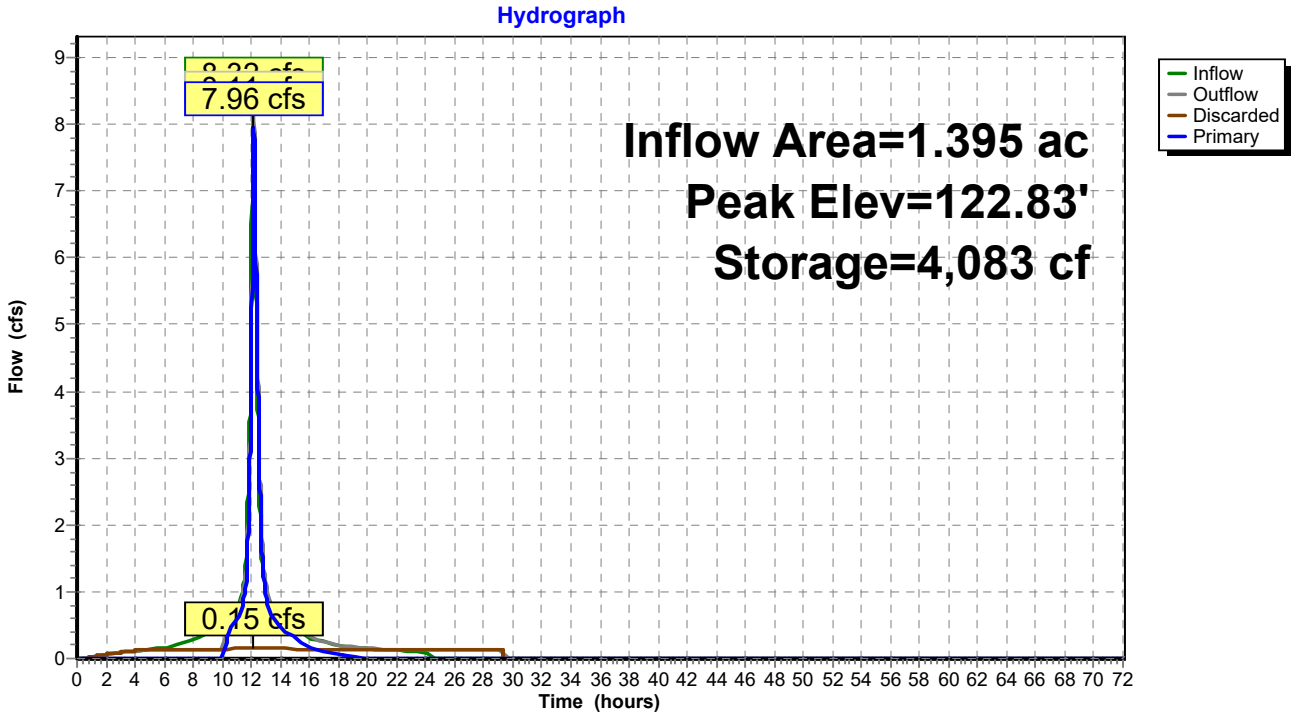
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
121.70	3,227	209.7	0	0	3,227
123.00	4,099	236.9	4,751	4,751	4,236

Device	Routing	Invert	Outlet Devices
#1	Discarded	121.70'	**1.650 in/hr Exfiltration per field test results over Surface area**
#2	Primary	118.70'	**15.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 118.70' / 118.20' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	122.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.15 cfs @ 12.16 hrs HW=122.83' (Free Discharge)
↑**1=Exfiltration per field test results** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=7.96 cfs @ 12.16 hrs HW=122.83' TW=0.00' (Dynamic Tailwater)
↑**2=Culvert** (Passes 7.96 cfs of 11.07 cfs potential flow)
↑**3=Orifice/Grate** (Weir Controls 7.96 cfs @ 1.89 fps)

Pond DV 2P: Stormwater Management Pond IB-2



Summary for Pond DV 3P: (new Pond)

[57] Hint: Peaked at 123.75' (Flood elevation advised)

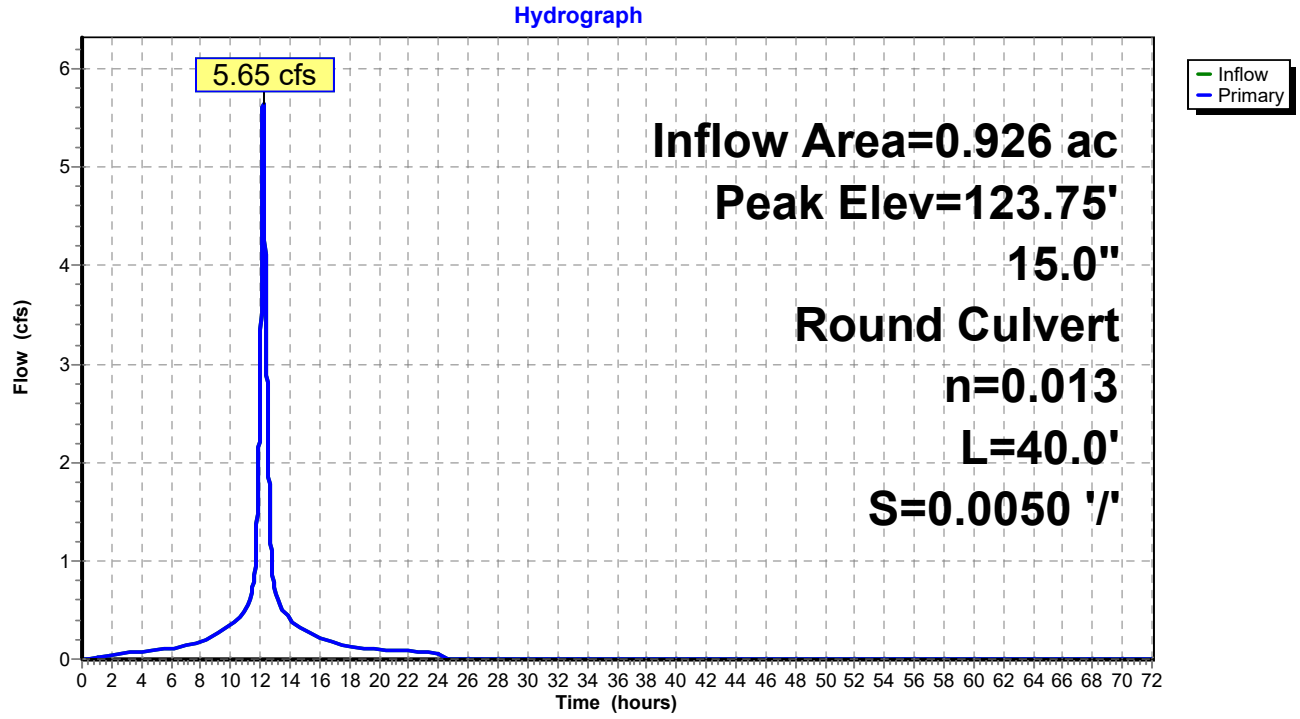
Inflow Area = 0.926 ac, 0.00% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 5.65 cfs @ 12.19 hrs, Volume= 0.596 af
Outflow = 5.65 cfs @ 12.19 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min
Primary = 5.65 cfs @ 12.19 hrs, Volume= 0.596 af
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 123.75' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	121.90'	**15.0" Round Culvert** L= 40.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.90' / 121.70' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.64 cfs @ 12.19 hrs HW=123.75' TW=122.83' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 5.64 cfs @ 4.60 fps)

Pond DV 3P: (new Pond)



Summary for Pond EX 1P: (new Pond)

Dual 24" CMP Driveway culverts located at existing wetland crossing.

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[57] Hint: Peaked at 116.52' (Flood elevation advised)

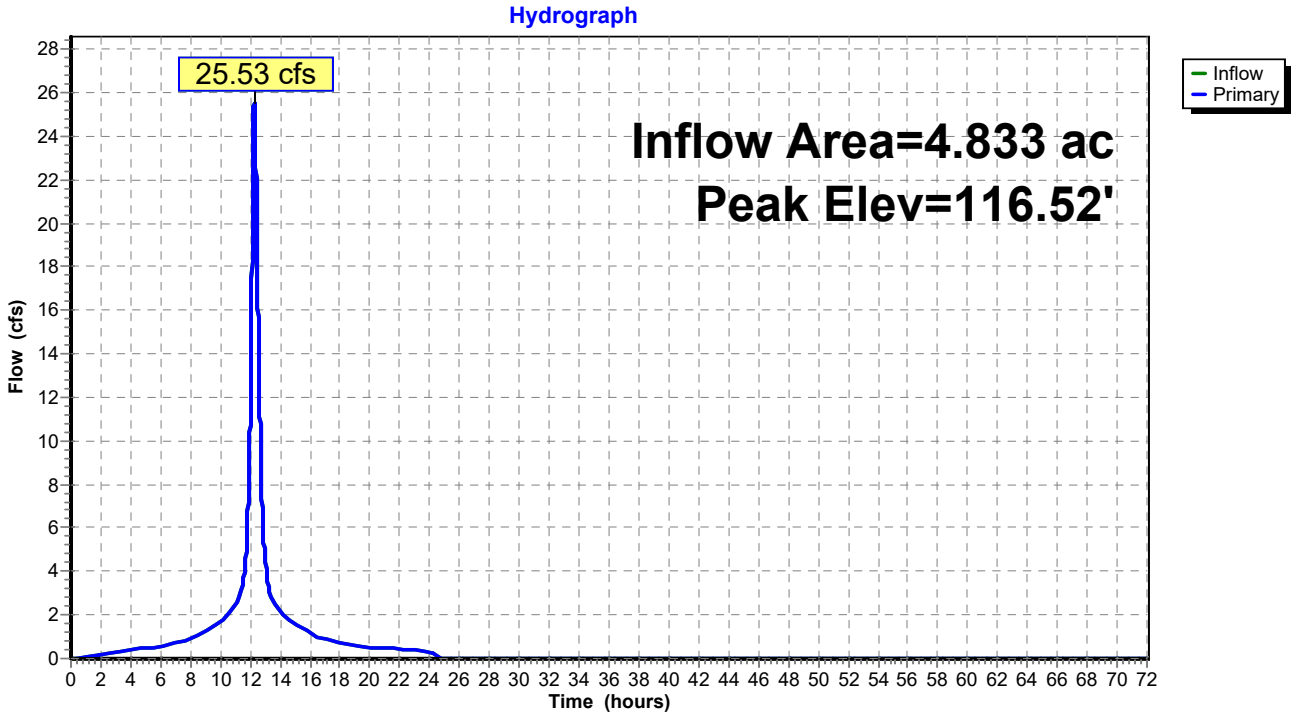
Inflow Area = 4.833 ac, 0.00% Impervious, Inflow Depth = 7.72" for Frozen Ground event
Inflow = 25.53 cfs @ 12.27 hrs, Volume= 3.109 af
Outflow = 25.53 cfs @ 12.27 hrs, Volume= 3.109 af, Atten= 0%, Lag= 0.0 min
Primary = 25.53 cfs @ 12.27 hrs, Volume= 3.109 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 116.52' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	113.73'	**24.0" Round 24" CMP Driveway Culvert (North)** L= 55.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.73' / 113.49' S= 0.0043 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf
#2	Primary	113.52'	**24.0" Round 24" CMP Driveway Culvert (South)** L= 55.5' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.52' / 113.37' S= 0.0027 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=25.53 cfs @ 12.27 hrs HW=116.52' TW=0.00' (Dynamic Tailwater)
1=24" CMP Driveway Culvert (North) (Barrel Controls 12.41 cfs @ 3.95 fps)
2=24" CMP Driveway Culvert (South) (Barrel Controls 13.12 cfs @ 4.18 fps)

Pond EX 1P: (new Pond)



Section 2.2: Developed Conditions

25- and 50-year Storm Full Summary

Summary for Subcatchment DV 10S: To Low Point Onsite

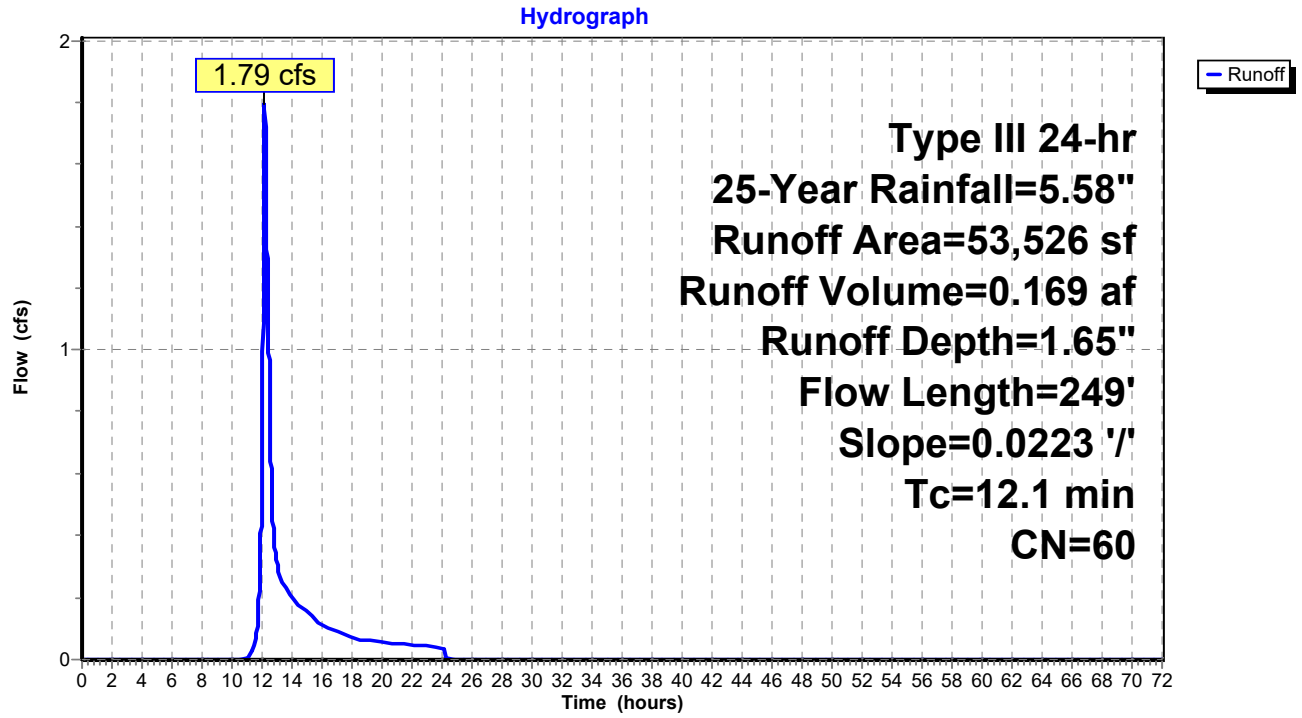
Runoff = 1.79 cfs @ 12.18 hrs, Volume= 0.169 af, Depth= 1.65"
Routed to Reach OP2 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
4,801	55	Woods, Good HSG B
48,725	61	>75% Grass cover, Good HSG B
53,526	60	Weighted Average
53,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	249	0.0223	0.34		**Lag/CN Method,**

Subcatchment DV 10S: To Low Point Onsite



Summary for Subcatchment DV 1S: TO DUAL CMP CULVERTS

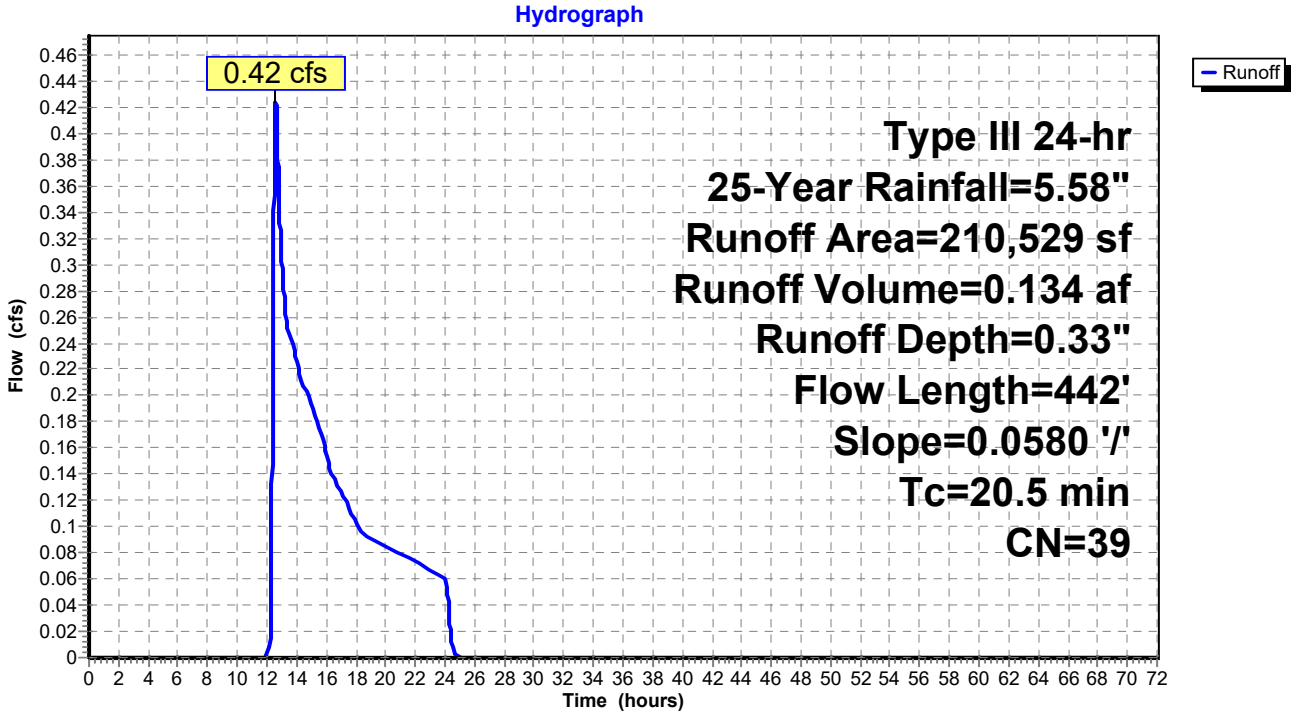
Runoff = 0.42 cfs @ 12.60 hrs, Volume= 0.134 af, Depth= 0.33"
Routed to Pond EX 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
48	55	Woods, Good HSG B
49,416	30	Woods, Good HSG A
143,858	39	>75% Grass cover, Good HSG A
17,206	61	>75% Grass cover, Good HSG B
210,529	39	Weighted Average
210,529		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	442	0.0580	0.36		**Lag/CN Method,**

Subcatchment DV 1S: TO DUAL CMP CULVERTS



Summary for Subcatchment DV 2S: To CB 101

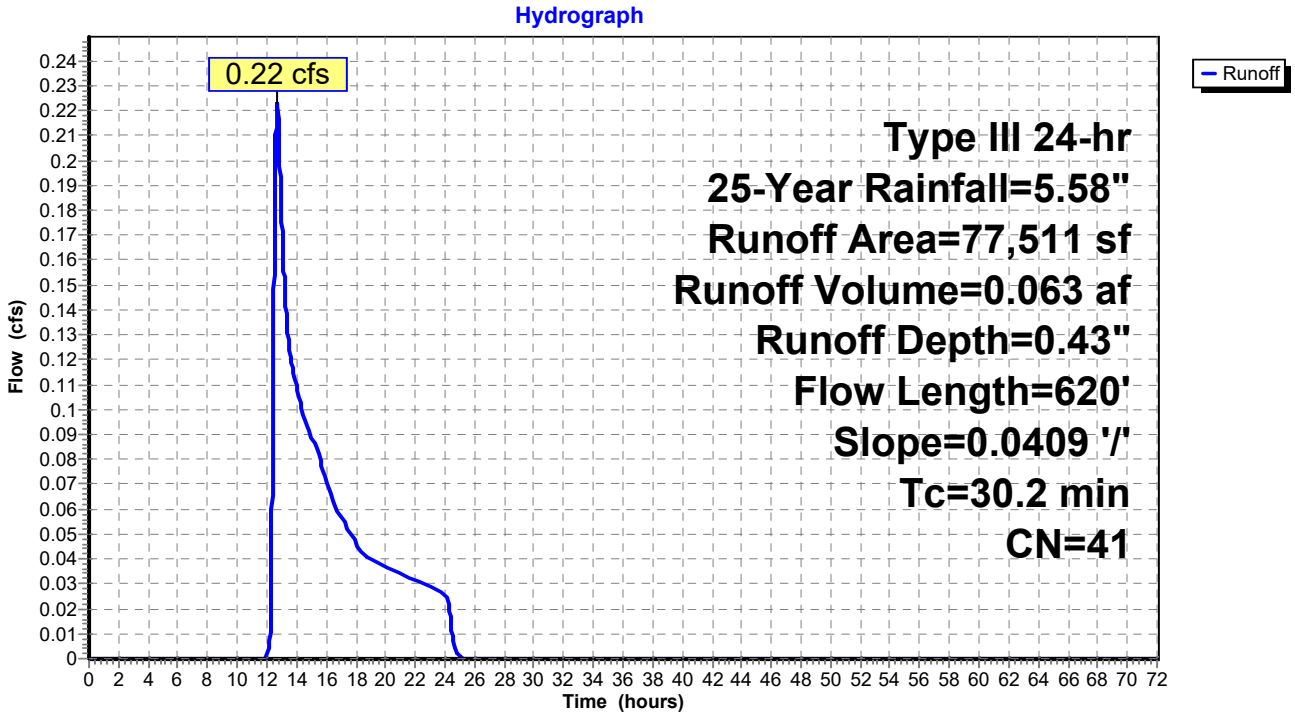
Runoff = 0.22 cfs @ 12.69 hrs, Volume= 0.063 af, Depth= 0.43"
Routed to Pond DV 1.2P : CB 101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
1,196	98	Paved parking HSG A
2,723	98	Paved parking HSG B
12,398	30	Woods, Good HSG A
58,940	39	>75% Grass cover, Good HSG A
2,254	61	>75% Grass cover, Good HSG B
77,511	41	Weighted Average
73,592		94.94% Pervious Area
3,919		5.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	620	0.0409	0.34		**Lag/CN Method,**

Subcatchment DV 2S: To CB 101



Summary for Subcatchment DV 3S: To Culvert

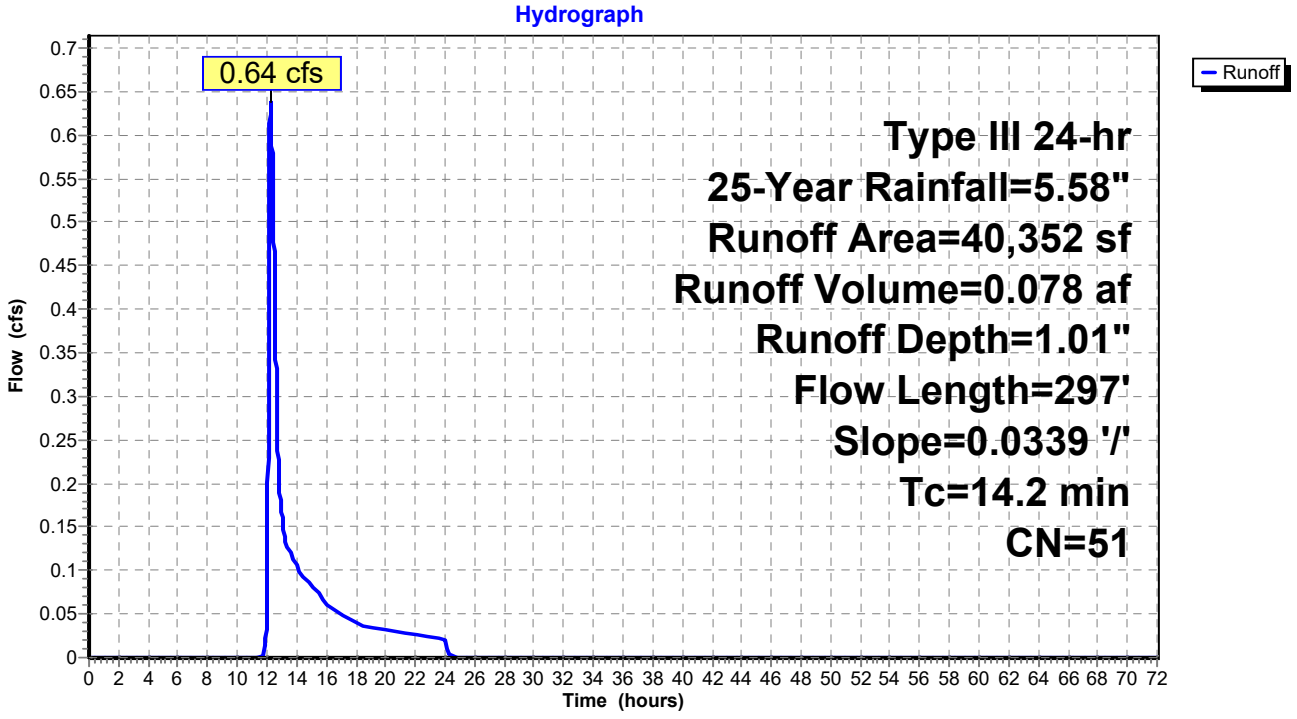
Runoff = 0.64 cfs @ 12.24 hrs, Volume= 0.078 af, Depth= 1.01"
Routed to Pond DV 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
1,155	30	Woods, Good HSG A
2,496	55	Woods, Good HSG B
16,638	39	>75% Grass cover, Good HSG A
20,063	61	>75% Grass cover, Good HSG B
40,352	51	Weighted Average
40,352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	297	0.0339	0.35		**Lag/CN Method,**

Subcatchment DV 3S: To Culvert



Summary for Subcatchment DV 4.1S: To Stormwater Management Pond IB-2

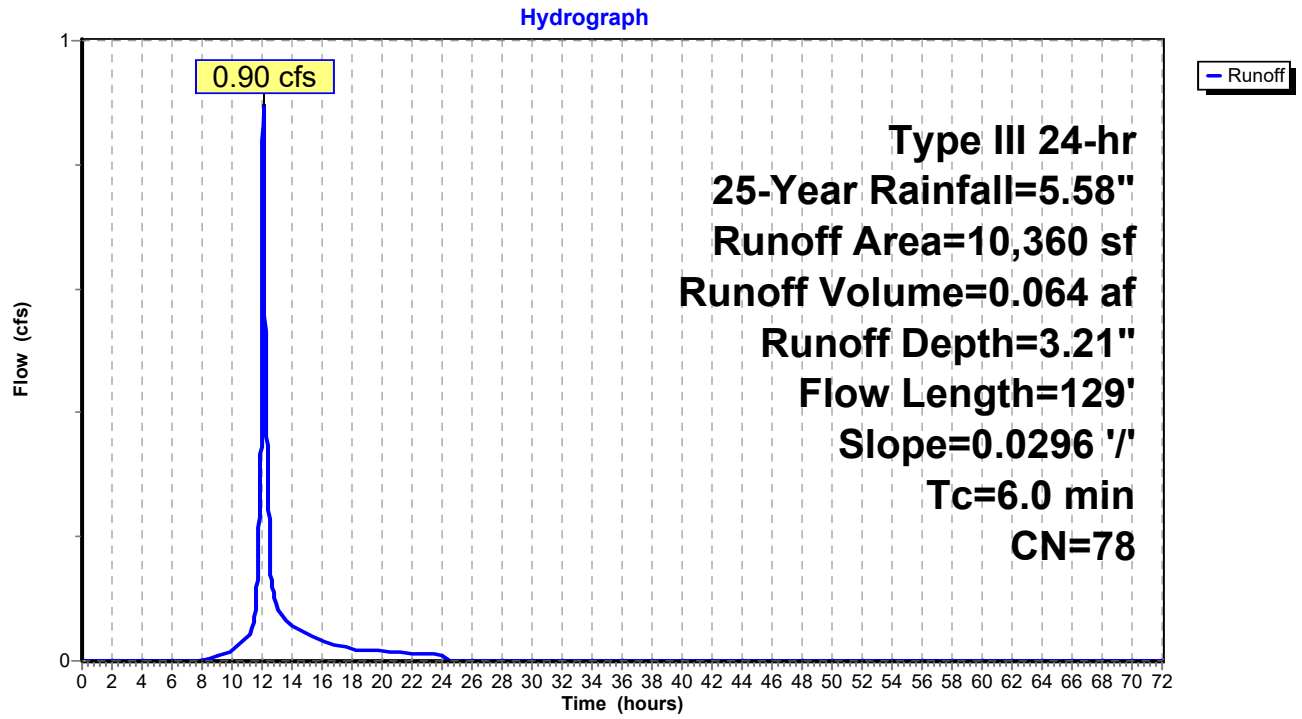
Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.064 af, Depth= 3.21"
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
4,685	98	Paved parking HSG B
5,675	61	>75% Grass cover, Good HSG B
10,360	78	Weighted Average
5,675		54.78% Pervious Area
4,685		45.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	129	0.0296	0.56		**Lag/CN Method,**
3.8	129	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 4.1S: To Stormwater Management Pond IB-2



Summary for Subcatchment DV 4.2S: To Stormwater Management Pond IB-2

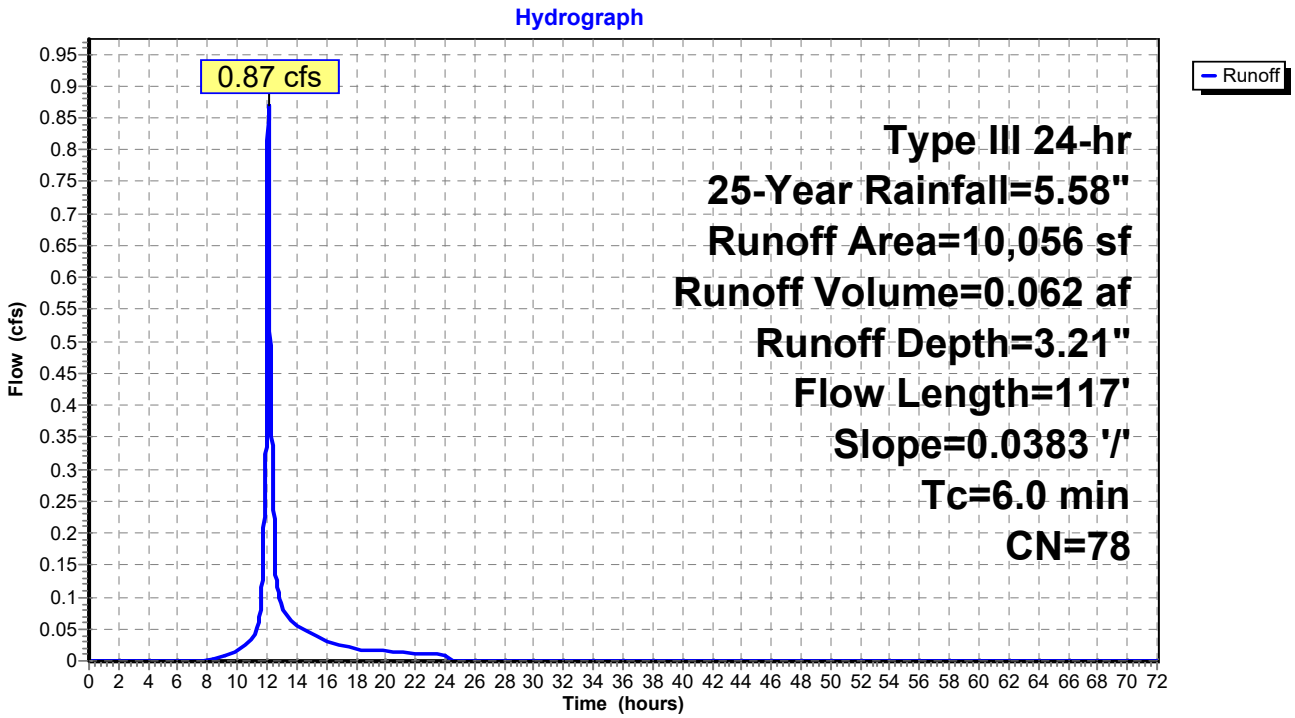
Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.062 af, Depth= 3.21"
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
4,719	98	Paved parking HSG B
5,337	61	>75% Grass cover, Good HSG B
10,056	78	Weighted Average
5,337		53.07% Pervious Area
4,719		46.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	117	0.0383	0.63		**Lag/CN Method,**
3.1	117	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 4.2S: To Stormwater Management Pond IB-2



Summary for Subcatchment DV 5S: To CB 100

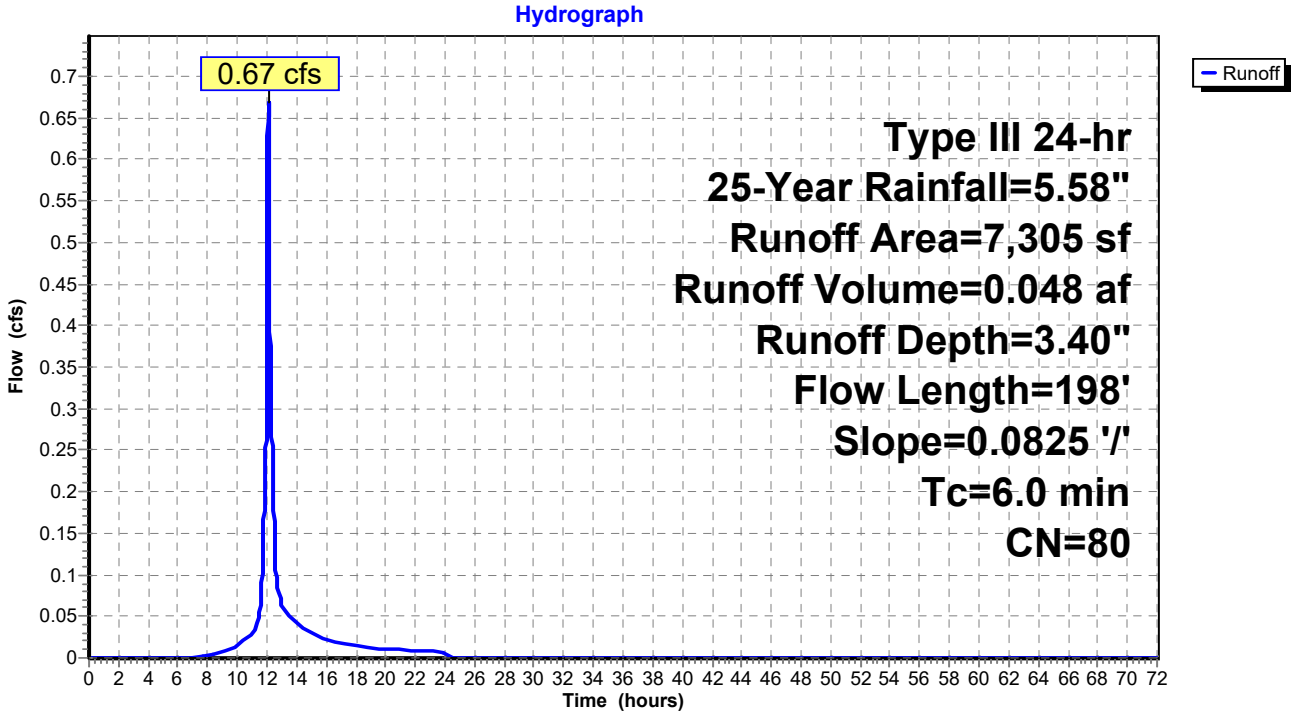
Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.048 af, Depth= 3.40"
Routed to Pond DV 1.1P : CB 100

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
174	98	Paved parking HSG A
3,583	98	Paved parking HSG B
11	55	Woods, Good HSG B
3,537	61	>75% Grass cover, Good HSG B
7,305	80	Weighted Average
3,548		48.57% Pervious Area
3,757		51.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	198	0.0825	1.09		**Lag/CN Method,**
3.0	198	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 5S: To CB 100



Summary for Subcatchment DV 6S: To Stormwater Management Pond IB-1

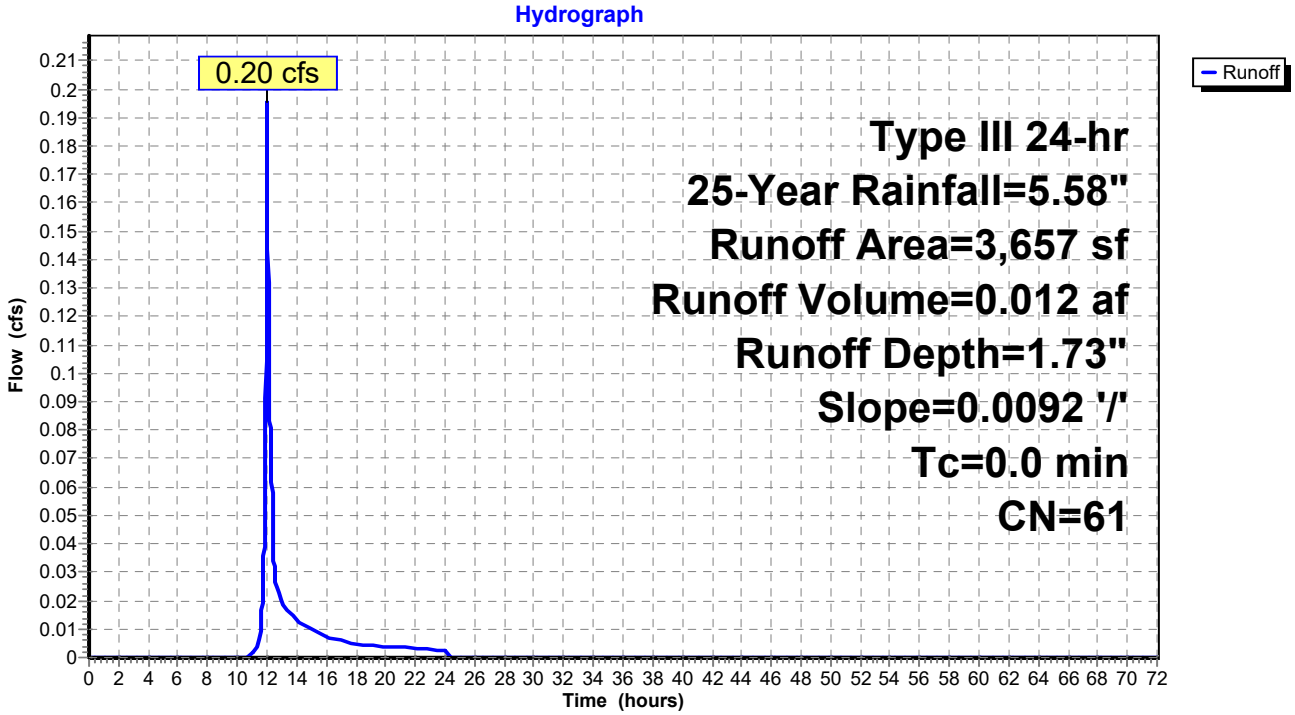
Runoff = 0.20 cfs @ 12.00 hrs, Volume= 0.012 af, Depth= 1.73"
Routed to Pond DV 1P : Stormwater Management Pond IB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
3,657	61	>75% Grass cover, Good HSG B
3,657		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0		0.0092			**Lag/CN Method,**

Subcatchment DV 6S: To Stormwater Management Pond IB-1



Summary for Subcatchment DV 7S: TO MERRIMACK RIVER

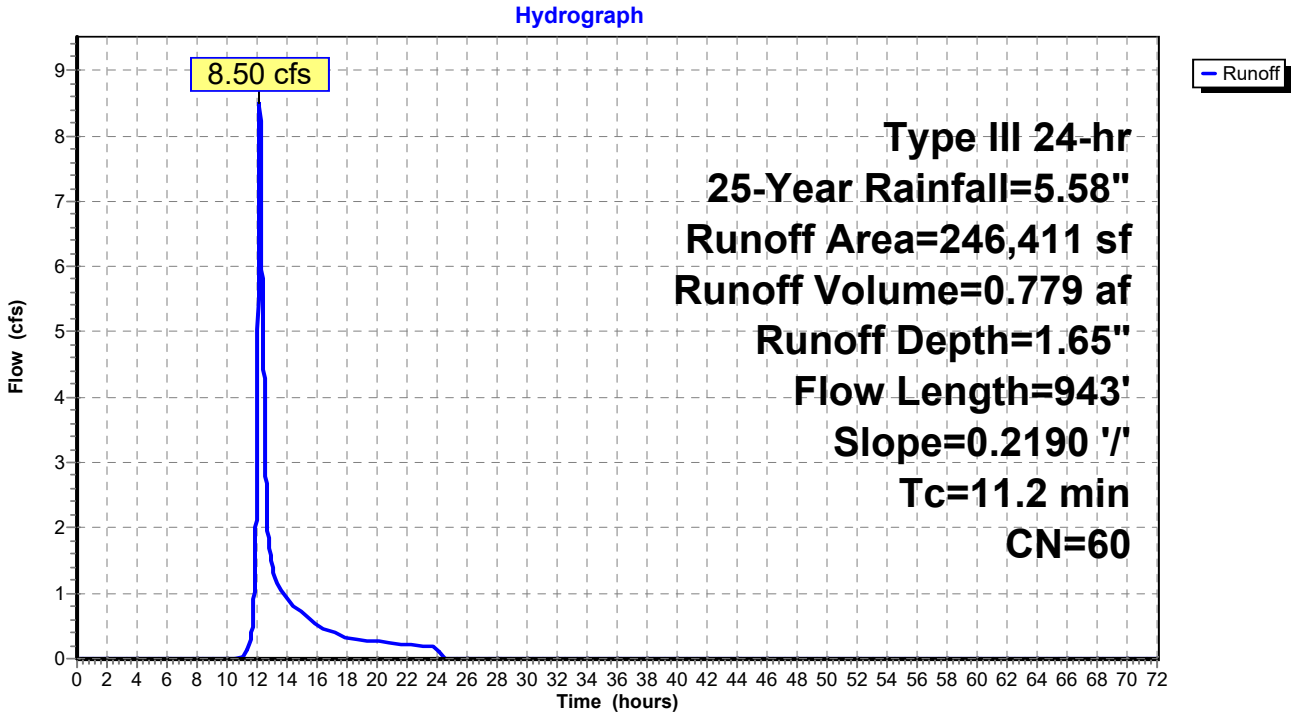
Runoff = 8.50 cfs @ 12.17 hrs, Volume= 0.779 af, Depth= 1.65"
Routed to Reach OP1 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
8,907	77	Woods, Good HSG D
6,702	98	Paved parking HSG B
2,533	98	Roofs HSG B
121,783	55	Woods, Good HSG B
106,486	61	>75% Grass cover, Good HSG B
246,411	60	Weighted Average
237,176		96.25% Pervious Area
9,235		3.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	943	0.2190	1.40		**Lag/CN Method,**

Subcatchment DV 7S: TO MERRIMACK RIVER



Summary for Subcatchment DV 8S: To Existing Roadway Drainage

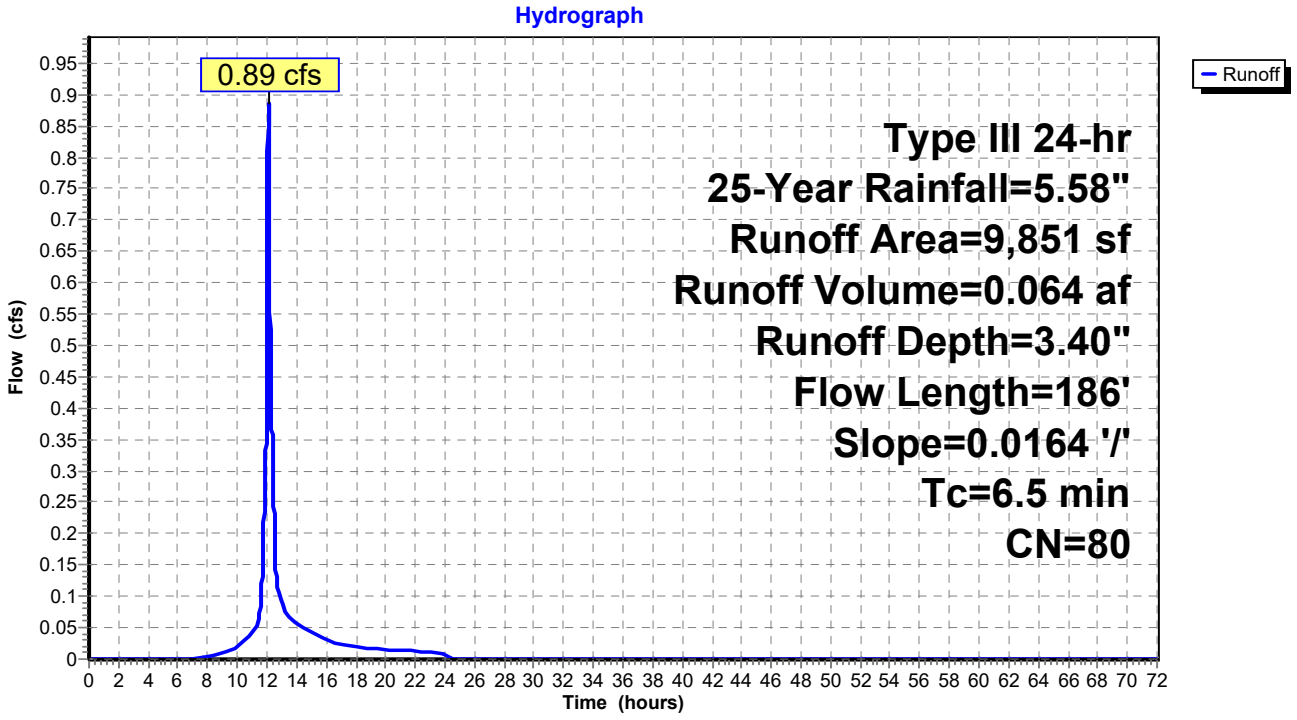
Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.064 af, Depth= 3.40"
Routed to Reach OP3 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
5,014	98	Paved parking HSG B
4,837	61	>75% Grass cover, Good HSG B
9,851	80	Weighted Average
4,837		49.10% Pervious Area
5,014		50.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	186	0.0164	0.48		**Lag/CN Method,**

Subcatchment DV 8S: To Existing Roadway Drainage



Summary for Subcatchment DV 9S: To Southerly Property Line

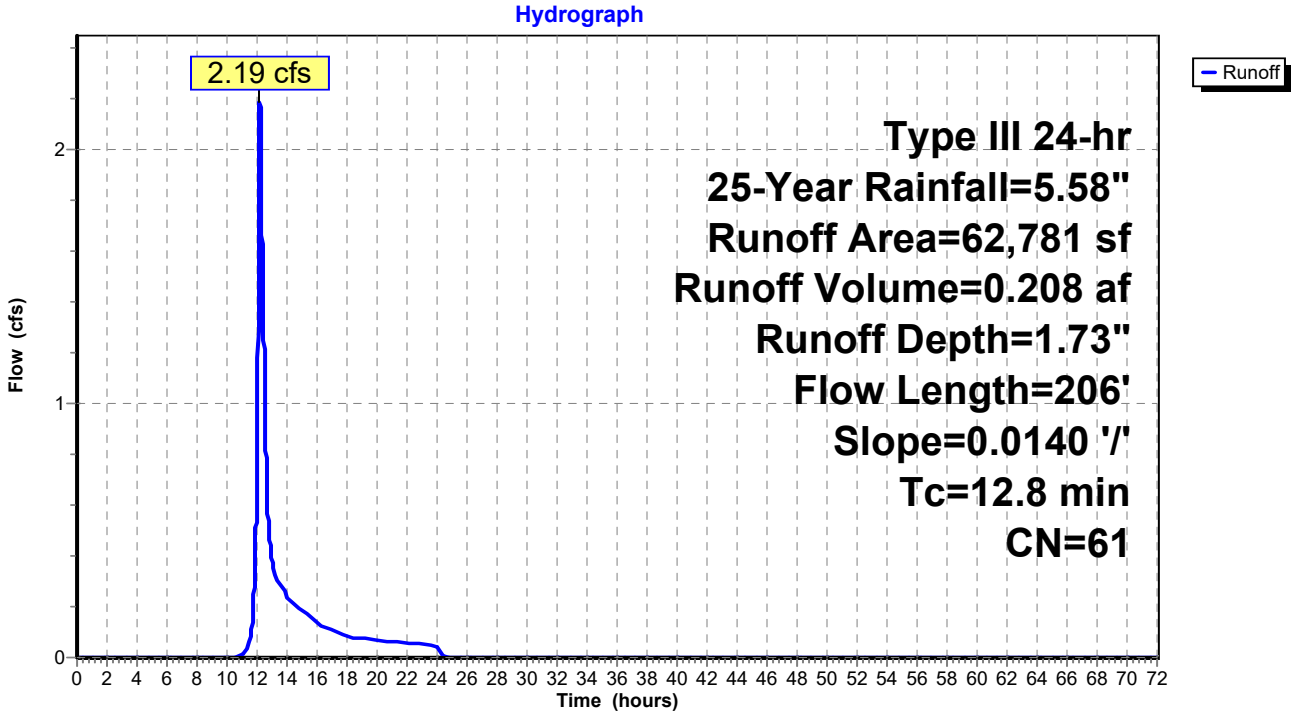
Runoff = 2.19 cfs @ 12.19 hrs, Volume= 0.208 af, Depth= 1.73"
Routed to Reach OP3 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.58"

Area (sf)	CN	Description
62,781	61	>75% Grass cover, Good HSG B
62,781		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	206	0.0140	0.27		**Lag/CN Method,**

Subcatchment DV 9S: To Southerly Property Line

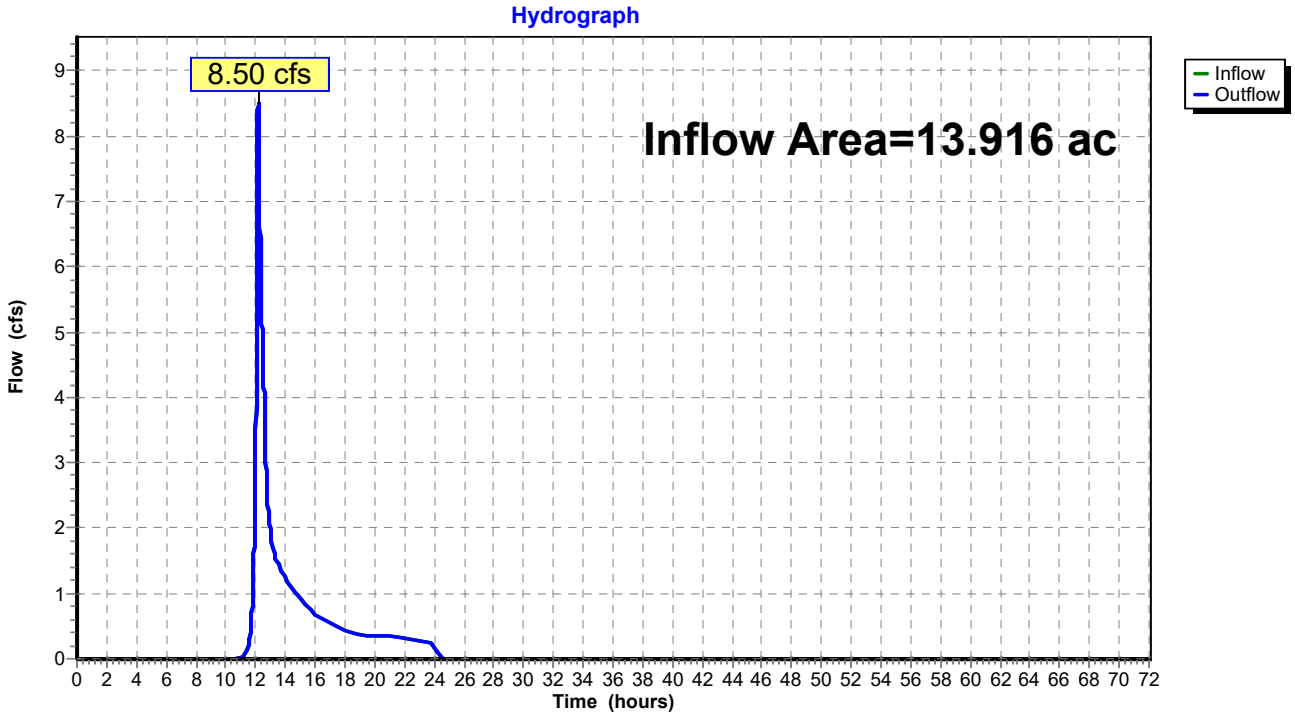


Summary for Reach OP1: (new Reach)

Inflow Area = 13.916 ac, 4.34% Impervious, Inflow Depth = 0.82" for 25-Year event
Inflow = 8.50 cfs @ 12.17 hrs, Volume= 0.950 af
Outflow = 8.50 cfs @ 12.17 hrs, Volume= 0.950 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP1: (new Reach)

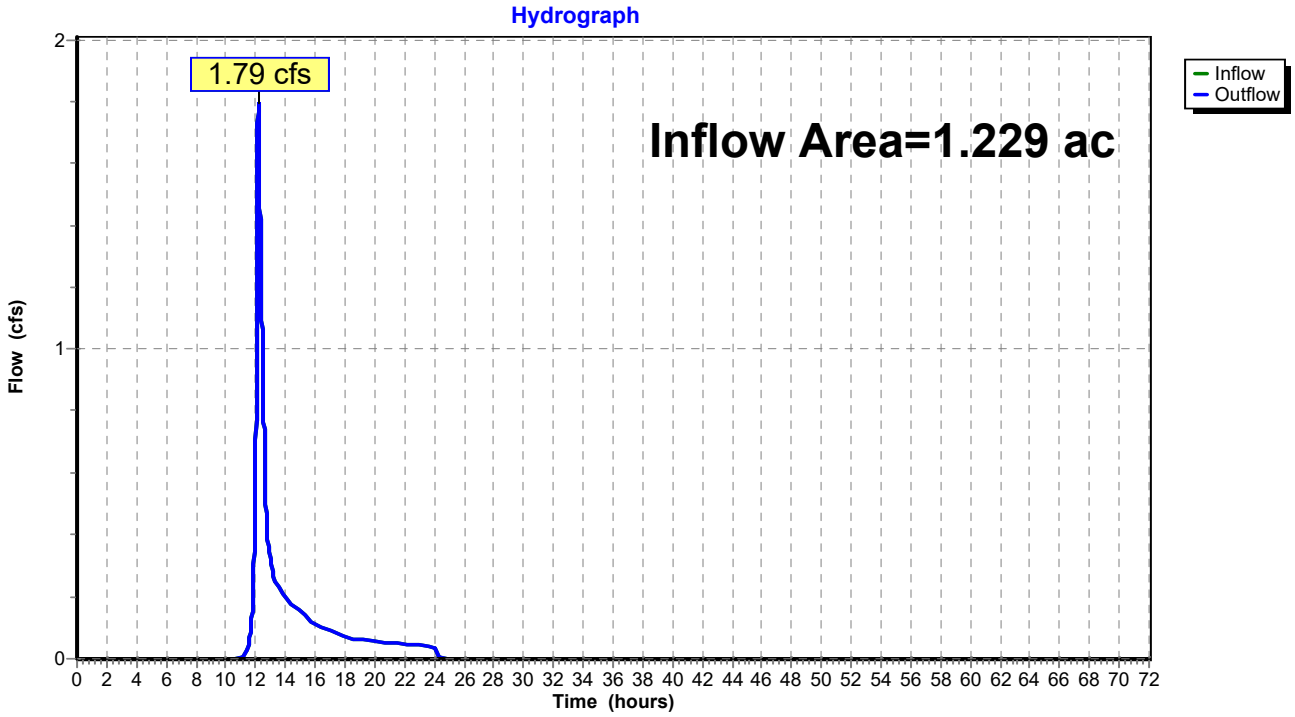


Summary for Reach OP2: (new Reach)

Inflow Area = 1.229 ac, 0.00% Impervious, Inflow Depth = 1.65" for 25-Year event
Inflow = 1.79 cfs @ 12.18 hrs, Volume= 0.169 af
Outflow = 1.79 cfs @ 12.18 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP2: (new Reach)

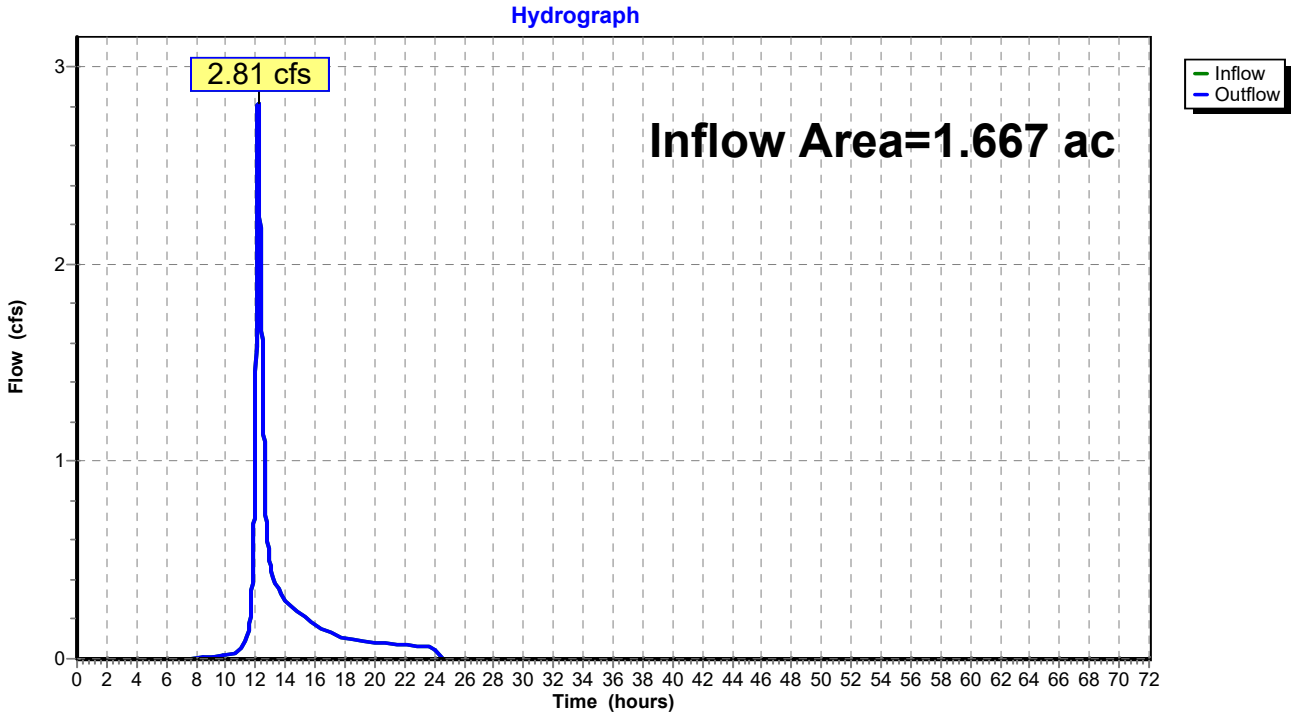


Summary for Reach OP3: (new Reach)

Inflow Area = 1.667 ac, 6.90% Impervious, Inflow Depth = 1.96" for 25-Year event
Inflow = 2.81 cfs @ 12.16 hrs, Volume= 0.272 af
Outflow = 2.81 cfs @ 12.16 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP3: (new Reach)



Summary for Pond DV 1.1P: CB 100

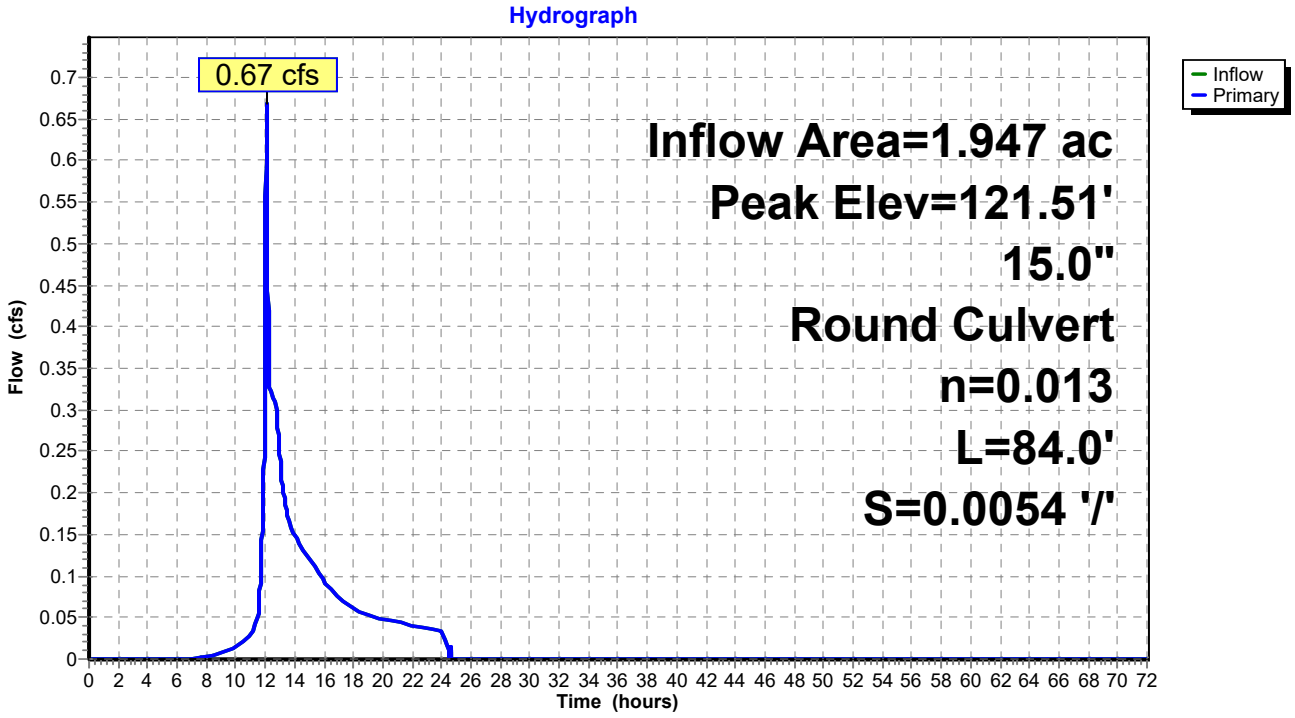
Inflow Area = 1.947 ac, 9.05% Impervious, Inflow Depth = 0.68" for 25-Year event
Inflow = 0.67 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 0.67 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.09 hrs, Volume= 0.111 af
Routed to Pond DV 1P : Stormwater Management Pond IB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.51' @ 20.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	119.45'	**15.0" Round Culvert** L= 84.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.45' / 119.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.65 cfs @ 12.09 hrs HW=119.95' TW=119.61' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.65 cfs @ 2.11 fps)

Pond DV 1.1P: CB 100



Summary for Pond DV 1.2P: CB 101

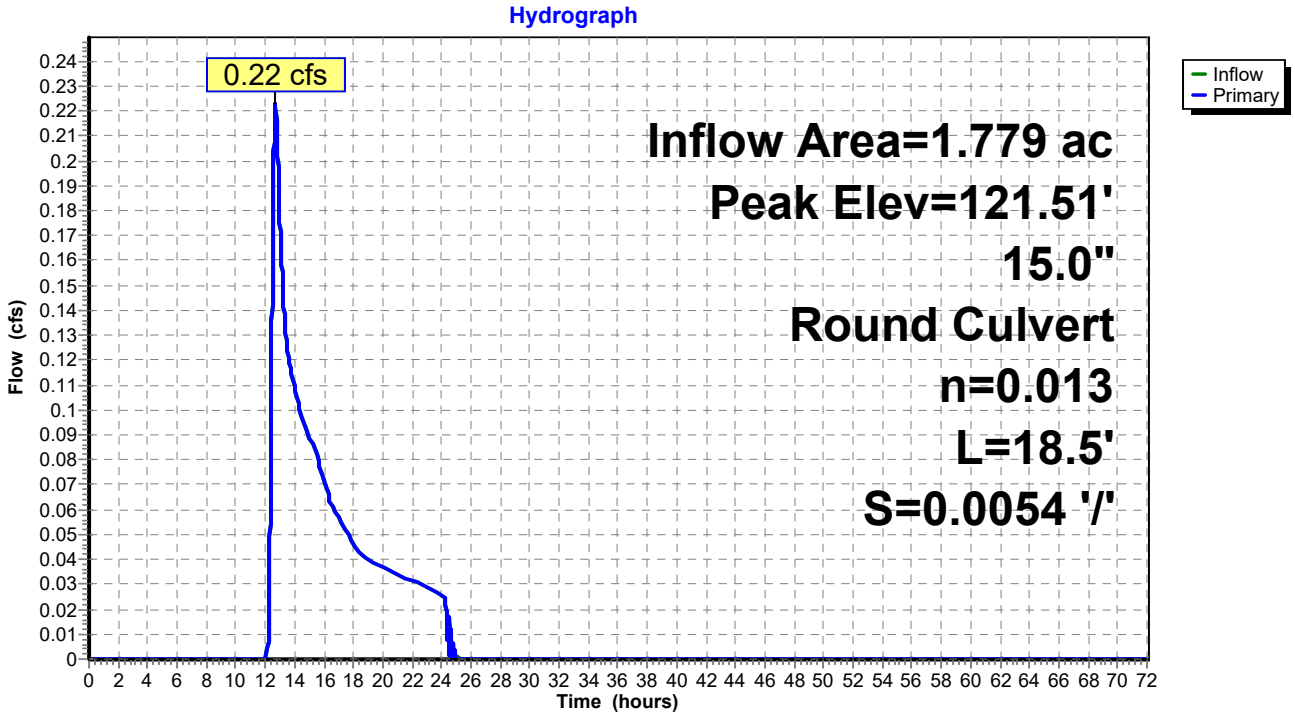
Inflow Area = 1.779 ac, 5.06% Impervious, Inflow Depth = 0.43" for 25-Year event
Inflow = 0.22 cfs @ 12.69 hrs, Volume= 0.063 af
Outflow = 0.22 cfs @ 12.69 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 0.22 cfs @ 12.69 hrs, Volume= 0.063 af
Routed to Pond DV 1.1P : CB 100

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.51' @ 20.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	119.65'	**15.0" Round Culvert** L= 18.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.65' / 119.55' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.10 cfs @ 12.69 hrs HW=120.27' TW=120.27' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.10 cfs @ 0.25 fps)

Pond DV 1.2P: CB 101



Summary for Pond DV 1P: Stormwater Management Pond IB-1

Inflow Area = 2.031 ac, 8.68% Impervious, Inflow Depth = 0.73" for 25-Year event
Inflow = 0.79 cfs @ 12.08 hrs, Volume= 0.123 af
Outflow = 0.05 cfs @ 20.17 hrs, Volume= 0.116 af, Atten= 94%, Lag= 485.4 min
Discarded = 0.03 cfs @ 20.17 hrs, Volume= 0.110 af
Primary = 0.02 cfs @ 20.17 hrs, Volume= 0.006 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.51' @ 20.17 hrs Surf.Area= 2,192 sf Storage= 3,811 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,317.6 min (2,222.5 - 904.9)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,967 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

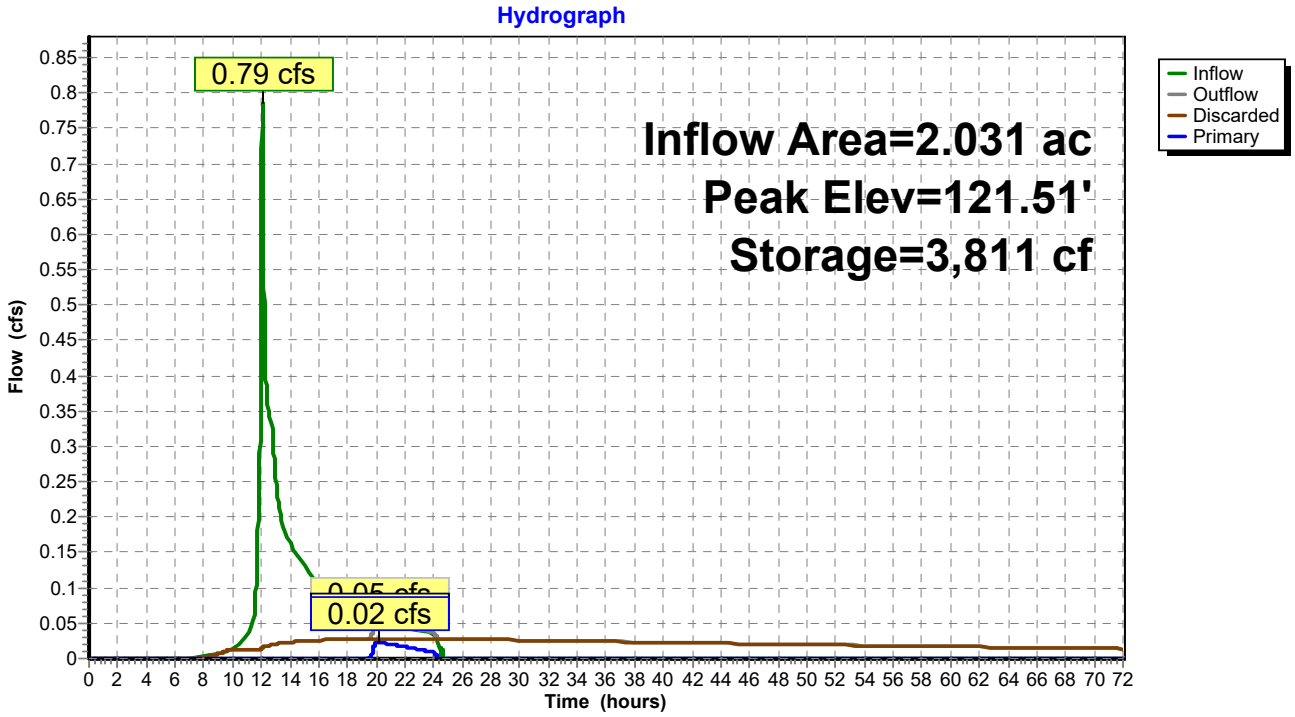
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
119.00	936	145.6	0	0	936
122.00	2,501	202.2	4,967	4,967	2,587

Device	Routing	Invert	Outlet Devices
#1	Discarded	119.00'	**0.550 in/hr Exfiltration per field test results over Surface area**
#2	Device 3	121.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	119.00'	**15.0" Round Culvert** L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.00' / 118.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=0.03 cfs @ 20.17 hrs HW=121.51' (Free Discharge)
└**1=Exfiltration per field test results** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.02 cfs @ 20.17 hrs HW=121.51' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 0.02 cfs of 8.11 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.27 fps)

Pond DV 1P: Stormwater Management Pond IB-1



Summary for Pond DV 2P: Stormwater Management Pond IB-2

Inflow Area = 1.395 ac, 15.48% Impervious, Inflow Depth = 1.75" for 25-Year event
Inflow = 2.08 cfs @ 12.10 hrs, Volume= 0.203 af
Outflow = 0.59 cfs @ 12.61 hrs, Volume= 0.203 af, Atten= 71%, Lag= 30.5 min
Discarded = 0.14 cfs @ 12.61 hrs, Volume= 0.172 af
Primary = 0.45 cfs @ 12.61 hrs, Volume= 0.031 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 122.55' @ 12.61 hrs Surf.Area= 3,785 sf Storage= 2,974 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 182.1 min (1,036.2 - 854.1)

Volume	Invert	Avail.Storage	Storage Description
#1	121.70'	4,751 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

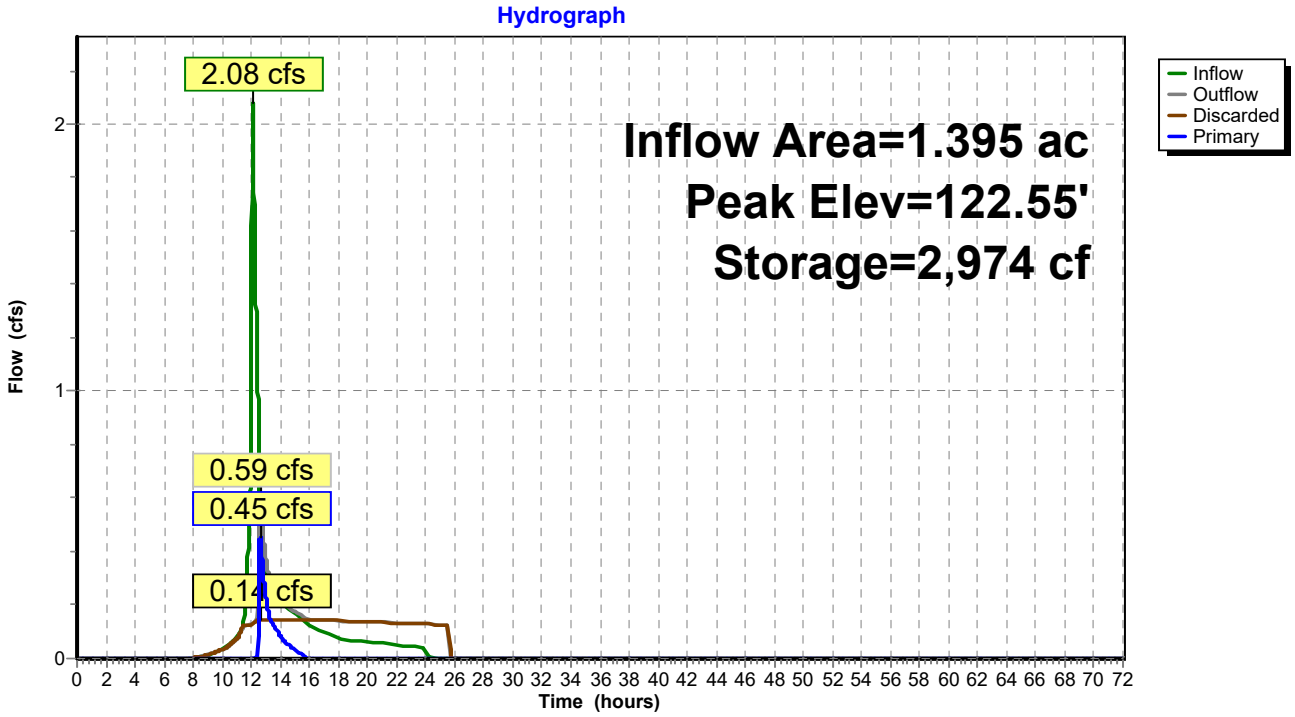
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
121.70	3,227	209.7	0	0	3,227
123.00	4,099	236.9	4,751	4,751	4,236

Device	Routing	Invert	Outlet Devices
#1	Discarded	121.70'	**1.650 in/hr Exfiltration per field test results over Surface area**
#2	Primary	118.70'	**15.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 118.70' / 118.20' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	122.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.14 cfs @ 12.61 hrs HW=122.55' (Free Discharge)
↑**1=Exfiltration per field test results** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.45 cfs @ 12.61 hrs HW=122.55' TW=0.00' (Dynamic Tailwater)
↑**2=Culvert** (Passes 0.45 cfs of 10.61 cfs potential flow)
↑**3=Orifice/Grate** (Weir Controls 0.45 cfs @ 0.73 fps)

Pond DV 2P: Stormwater Management Pond IB-2



Summary for Pond DV 3P: (new Pond)

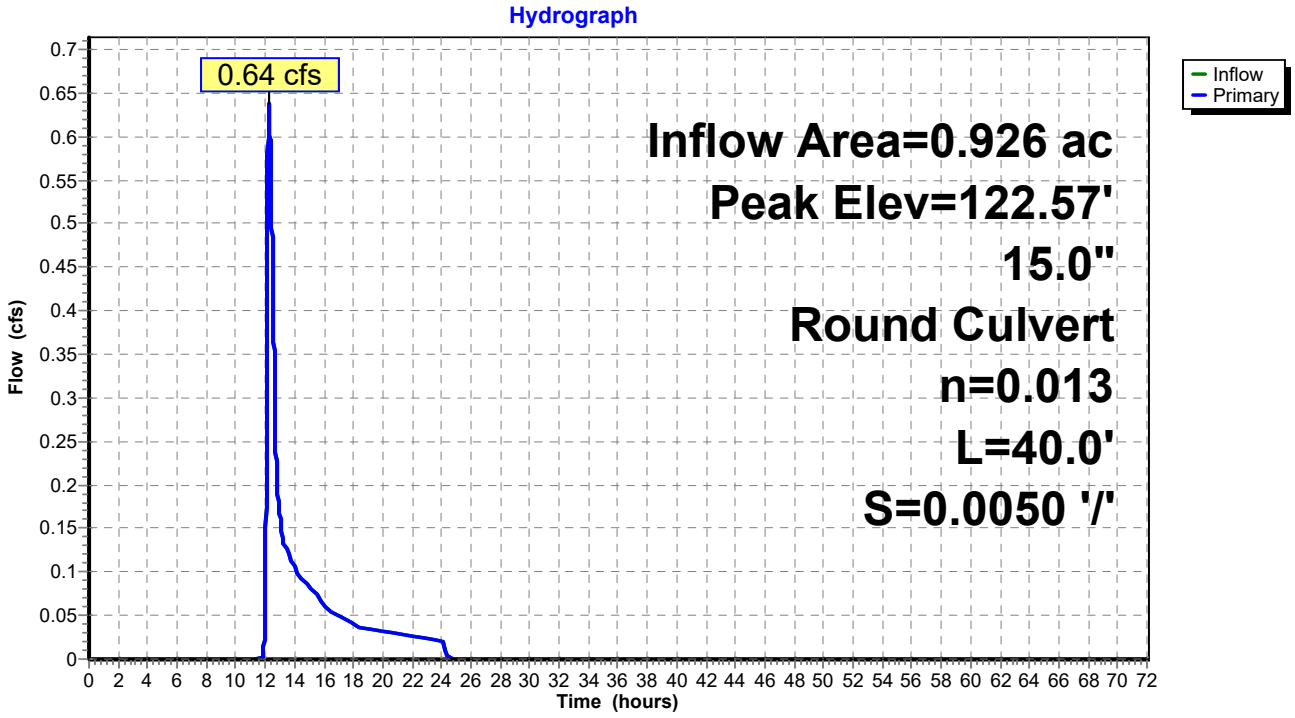
Inflow Area = 0.926 ac, 0.00% Impervious, Inflow Depth = 1.01" for 25-Year event
Inflow = 0.64 cfs @ 12.24 hrs, Volume= 0.078 af
Outflow = 0.64 cfs @ 12.24 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.24 hrs, Volume= 0.078 af
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 122.57' @ 12.57 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	121.90'	**15.0" Round Culvert** L= 40.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.90' / 121.70' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.61 cfs @ 12.24 hrs HW=122.42' TW=122.26' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.61 cfs @ 1.86 fps)

Pond DV 3P: (new Pond)



Summary for Pond EX 1P: (new Pond)

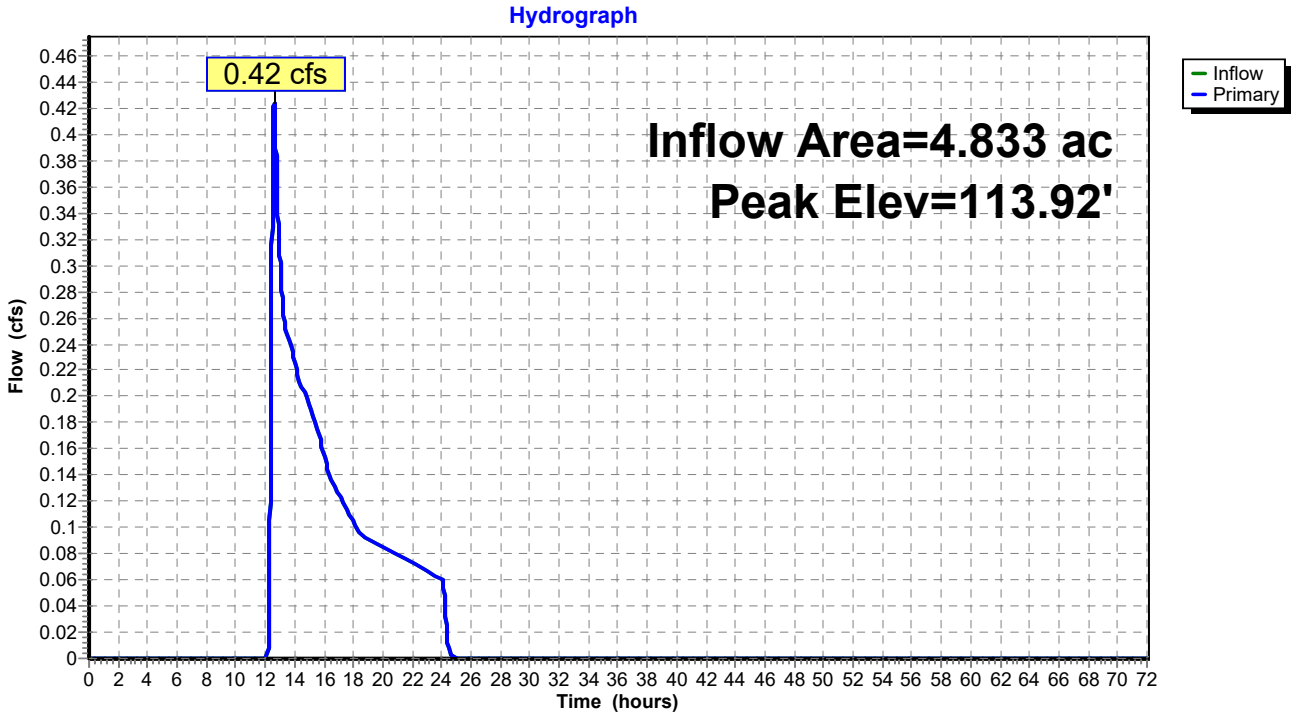
Inflow Area = 4.833 ac, 0.00% Impervious, Inflow Depth = 0.33" for 25-Year event
Inflow = 0.42 cfs @ 12.60 hrs, Volume= 0.134 af
Outflow = 0.42 cfs @ 12.60 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.60 hrs, Volume= 0.134 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 113.92' @ 12.60 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	113.73'	**24.0" Round 24" CMP Driveway Culvert (North)** L= 55.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.73' / 113.49' S= 0.0043 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf
#2	Primary	113.52'	**24.0" Round 24" CMP Driveway Culvert (South)** L= 55.5' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.52' / 113.37' S= 0.0027 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=0.42 cfs @ 12.60 hrs HW=113.92' TW=0.00' (Dynamic Tailwater)
1=24" CMP Driveway Culvert (North) (Barrel Controls 0.08 cfs @ 0.83 fps)
2=24" CMP Driveway Culvert (South) (Barrel Controls 0.34 cfs @ 1.19 fps)

Pond EX 1P: (new Pond)



Summary for Subcatchment DV 10S: To Low Point Onsite

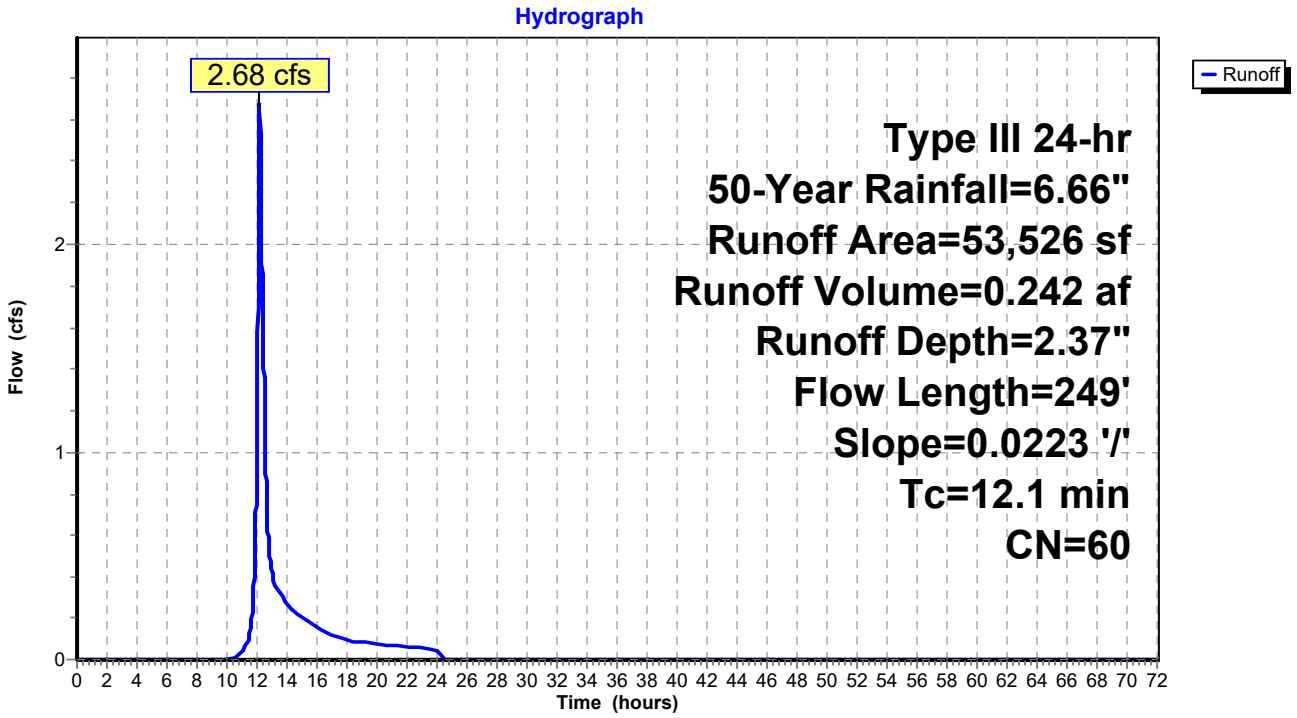
Runoff = 2.68 cfs @ 12.17 hrs, Volume= 0.242 af, Depth= 2.37"
Routed to Reach OP2 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
4,801	55	Woods, Good HSG B
48,725	61	>75% Grass cover, Good HSG B
53,526	60	Weighted Average
53,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	249	0.0223	0.34		**Lag/CN Method,**

Subcatchment DV 10S: To Low Point Onsite



Summary for Subcatchment DV 1S: TO DUAL CMP CULVERTS

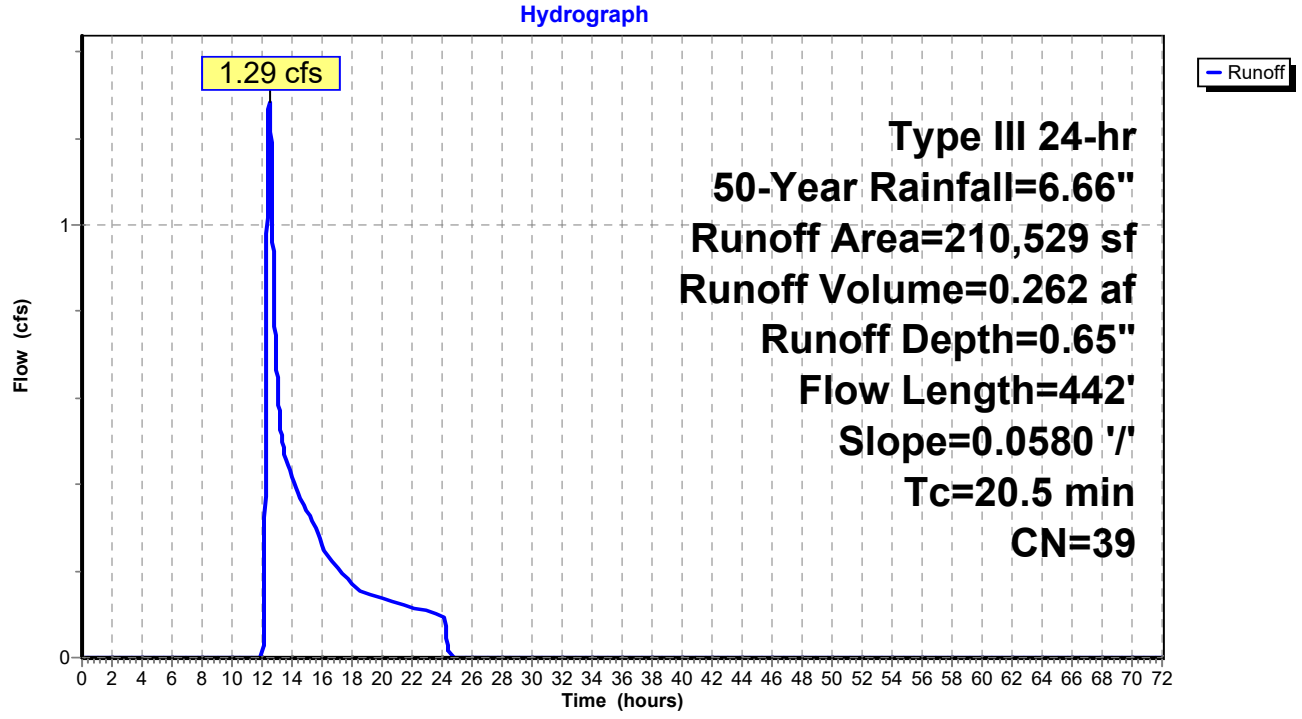
Runoff = 1.29 cfs @ 12.50 hrs, Volume= 0.262 af, Depth= 0.65"
Routed to Pond EX 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
48	55	Woods, Good HSG B
49,416	30	Woods, Good HSG A
143,858	39	>75% Grass cover, Good HSG A
17,206	61	>75% Grass cover, Good HSG B
210,529	39	Weighted Average
210,529		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	442	0.0580	0.36		**Lag/CN Method,**

Subcatchment DV 1S: TO DUAL CMP CULVERTS



Summary for Subcatchment DV 2S: To CB 101

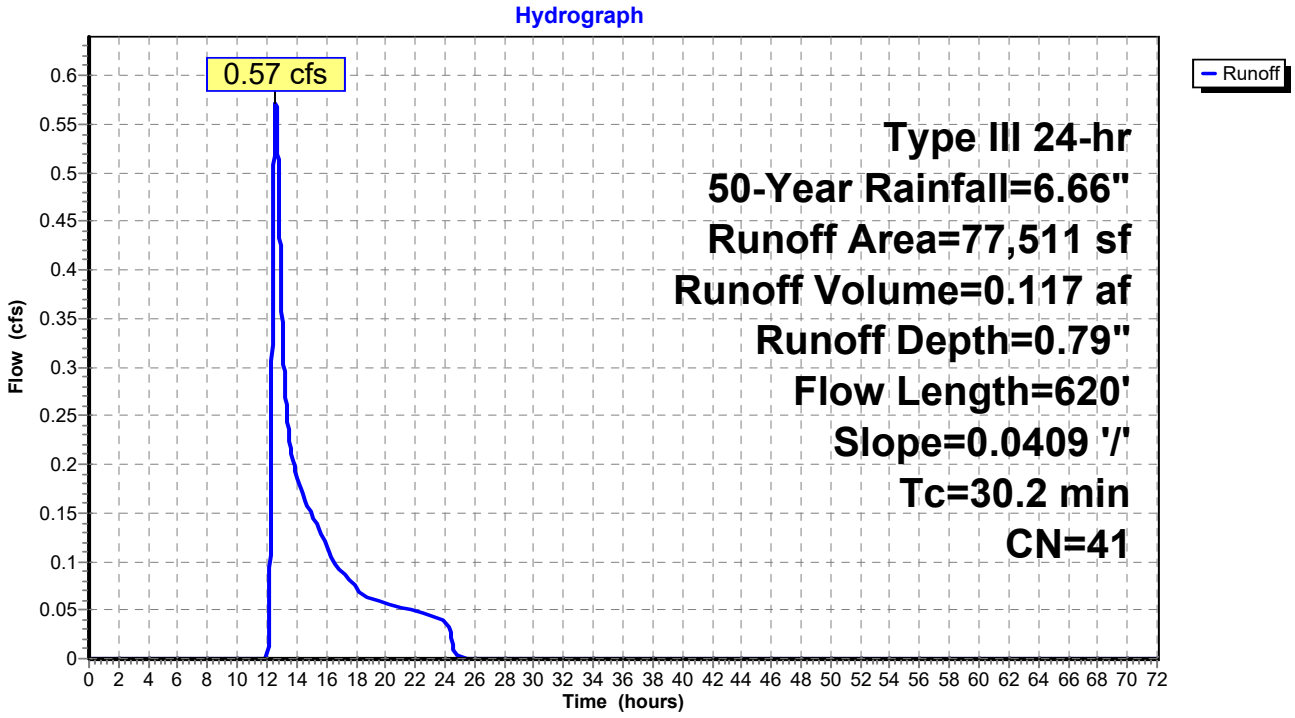
Runoff = 0.57 cfs @ 12.59 hrs, Volume= 0.117 af, Depth= 0.79"
Routed to Pond DV 1.2P : CB 101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
1,196	98	Paved parking HSG A
2,723	98	Paved parking HSG B
12,398	30	Woods, Good HSG A
58,940	39	>75% Grass cover, Good HSG A
2,254	61	>75% Grass cover, Good HSG B
77,511	41	Weighted Average
73,592		94.94% Pervious Area
3,919		5.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	620	0.0409	0.34		**Lag/CN Method,**

Subcatchment DV 2S: To CB 101



Summary for Subcatchment DV 3S: To Culvert

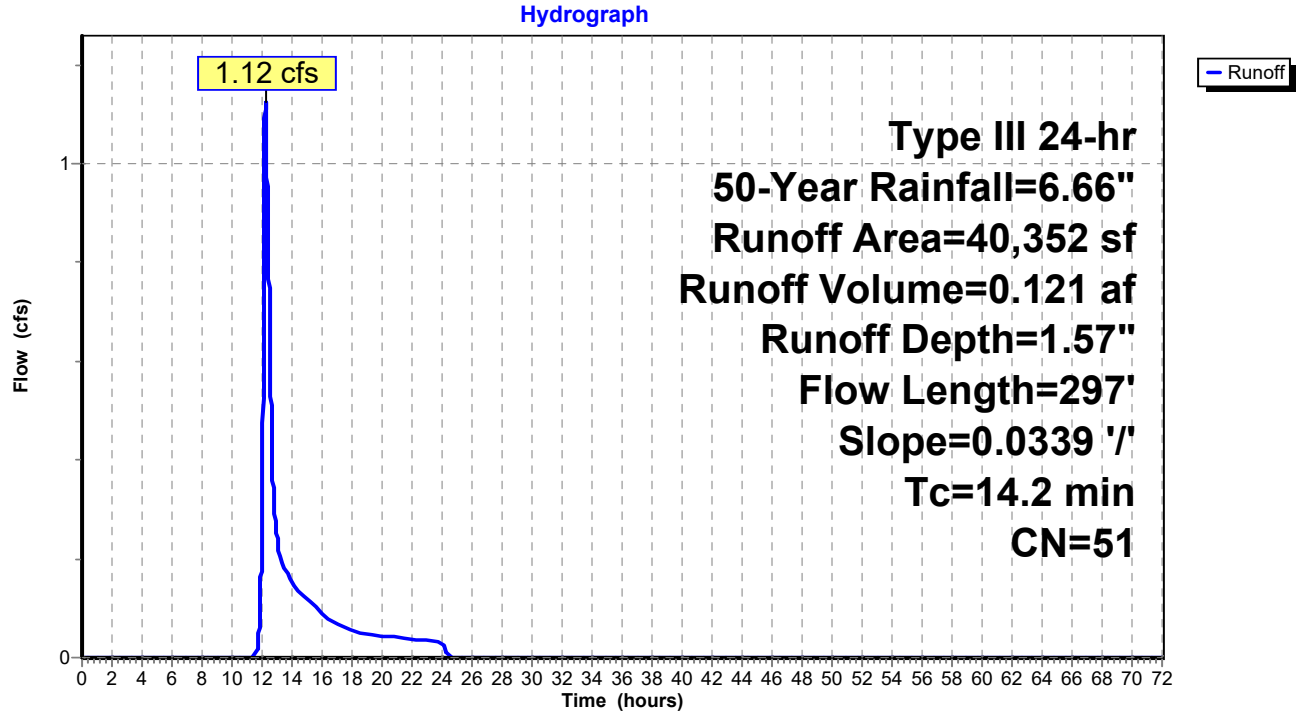
Runoff = 1.12 cfs @ 12.23 hrs, Volume= 0.121 af, Depth= 1.57"
Routed to Pond DV 3P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
1,155	30	Woods, Good HSG A
2,496	55	Woods, Good HSG B
16,638	39	>75% Grass cover, Good HSG A
20,063	61	>75% Grass cover, Good HSG B
40,352	51	Weighted Average
40,352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	297	0.0339	0.35		**Lag/CN Method,**

Subcatchment DV 3S: To Culvert



Summary for Subcatchment DV 4.1S: To Stormwater Management Pond IB-2

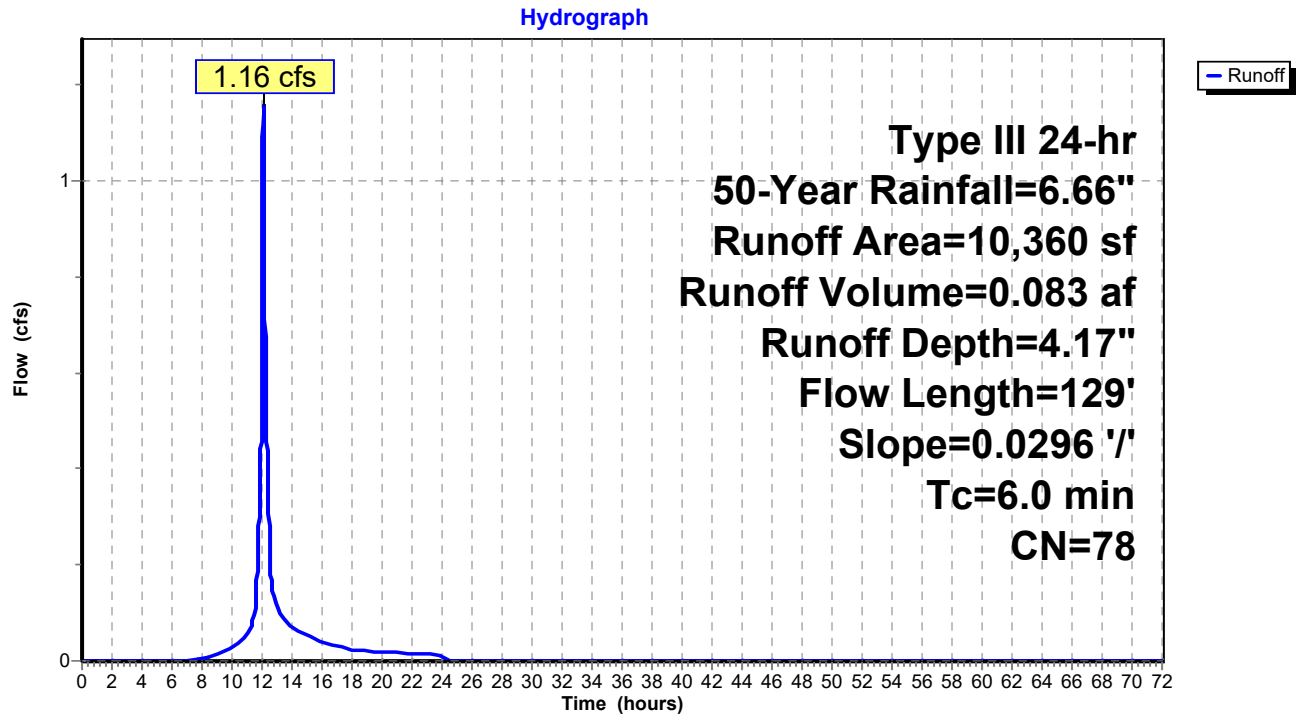
Runoff = 1.16 cfs @ 12.09 hrs, Volume= 0.083 af, Depth= 4.17"
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
4,685	98	Paved parking HSG B
5,675	61	>75% Grass cover, Good HSG B
10,360	78	Weighted Average
5,675		54.78% Pervious Area
4,685		45.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	129	0.0296	0.56		**Lag/CN Method,**
3.8	129	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 4.1S: To Stormwater Management Pond IB-2



Summary for Subcatchment DV 4.2S: To Stormwater Management Pond IB-2

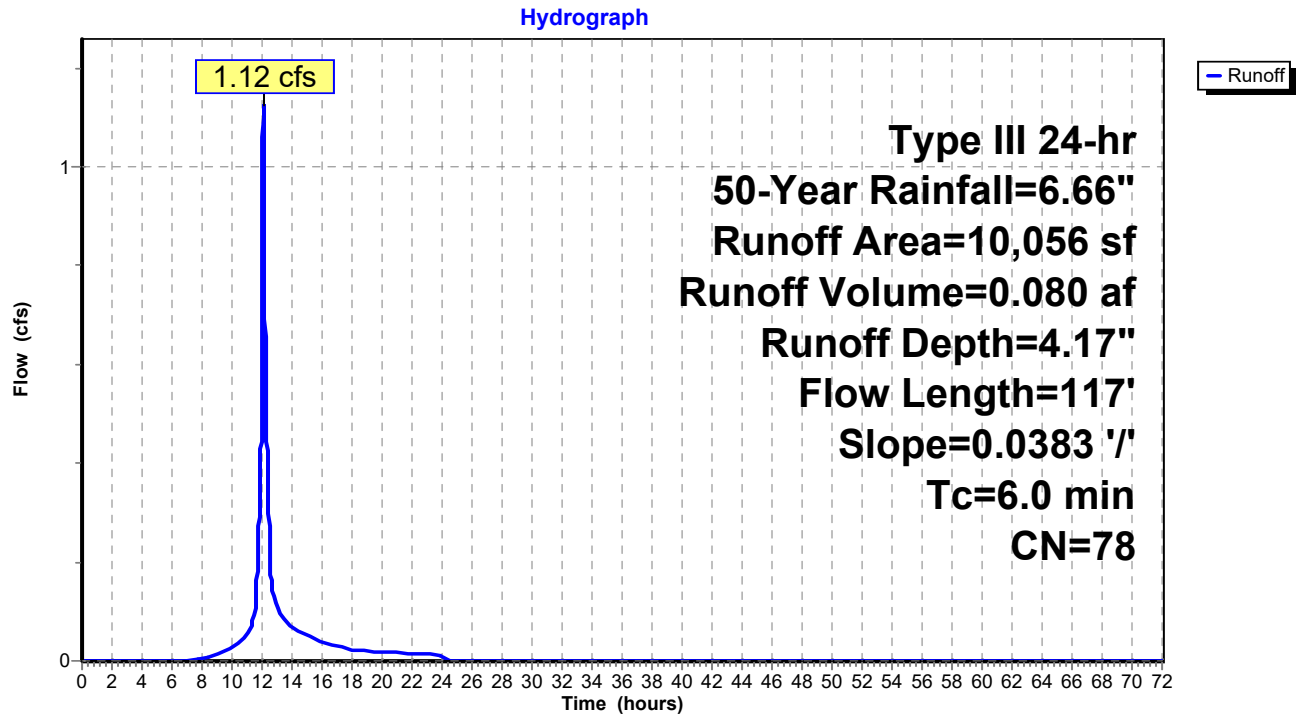
Runoff = 1.12 cfs @ 12.09 hrs, Volume= 0.080 af, Depth= 4.17"
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
4,719	98	Paved parking HSG B
5,337	61	>75% Grass cover, Good HSG B
10,056	78	Weighted Average
5,337		53.07% Pervious Area
4,719		46.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	117	0.0383	0.63		**Lag/CN Method,**
3.1	117	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 4.2S: To Stormwater Management Pond IB-2



Summary for Subcatchment DV 5S: To CB 100

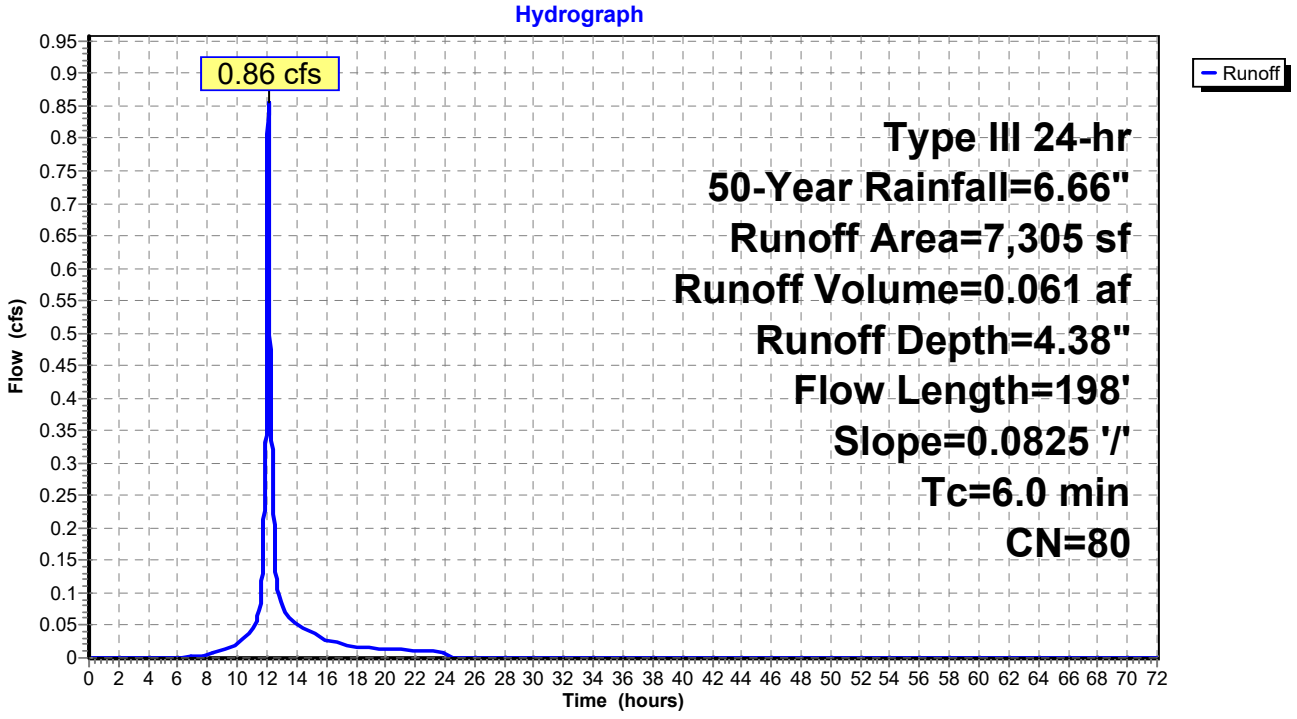
Runoff = 0.86 cfs @ 12.09 hrs, Volume= 0.061 af, Depth= 4.38"
Routed to Pond DV 1.1P : CB 100

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
174	98	Paved parking HSG A
3,583	98	Paved parking HSG B
11	55	Woods, Good HSG B
3,537	61	>75% Grass cover, Good HSG B
7,305	80	Weighted Average
3,548		48.57% Pervious Area
3,757		51.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	198	0.0825	1.09		**Lag/CN Method,**
3.0	198	Total, Increased to minimum Tc = 6.0 min			

Subcatchment DV 5S: To CB 100



Summary for Subcatchment DV 6S: To Stormwater Management Pond IB-1

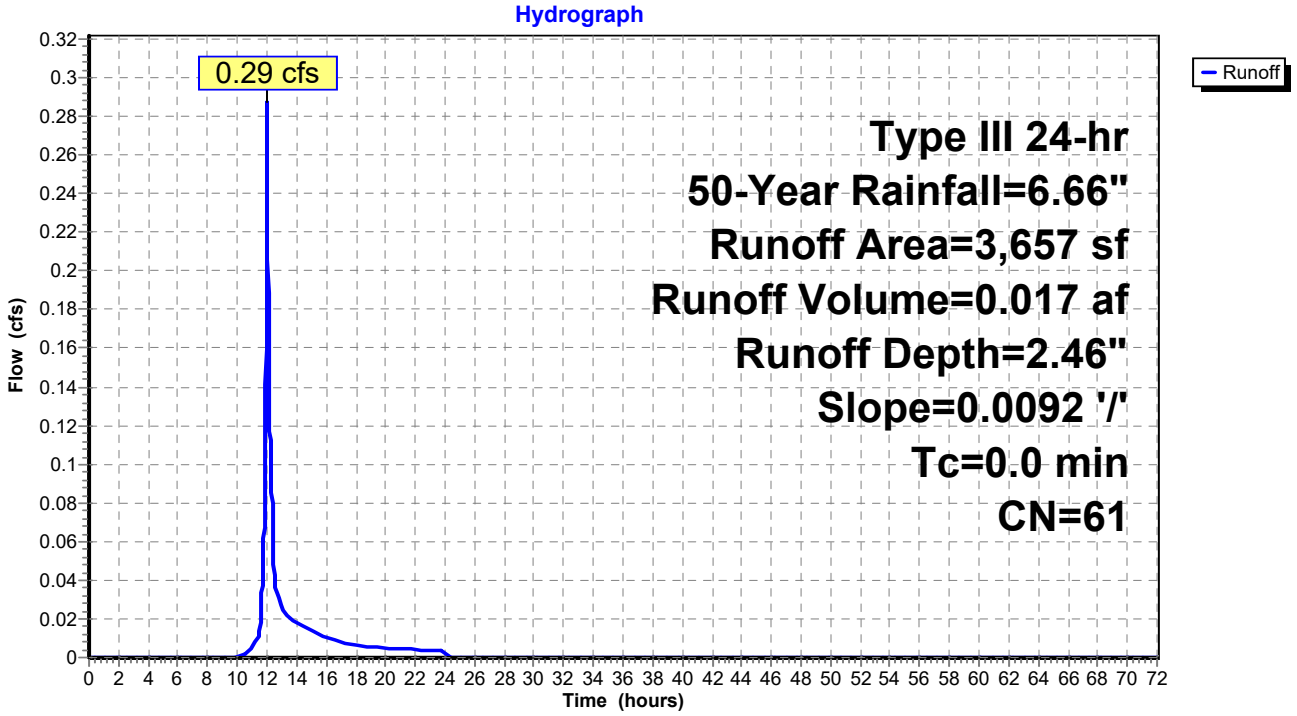
Runoff = 0.29 cfs @ 12.00 hrs, Volume= 0.017 af, Depth= 2.46"
Routed to Pond DV 1P : Stormwater Management Pond IB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
3,657	61	>75% Grass cover, Good HSG B
3,657		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0		0.0092			**Lag/CN Method,**

Subcatchment DV 6S: To Stormwater Management Pond IB-1



Summary for Subcatchment DV 7S: TO MERRIMACK RIVER

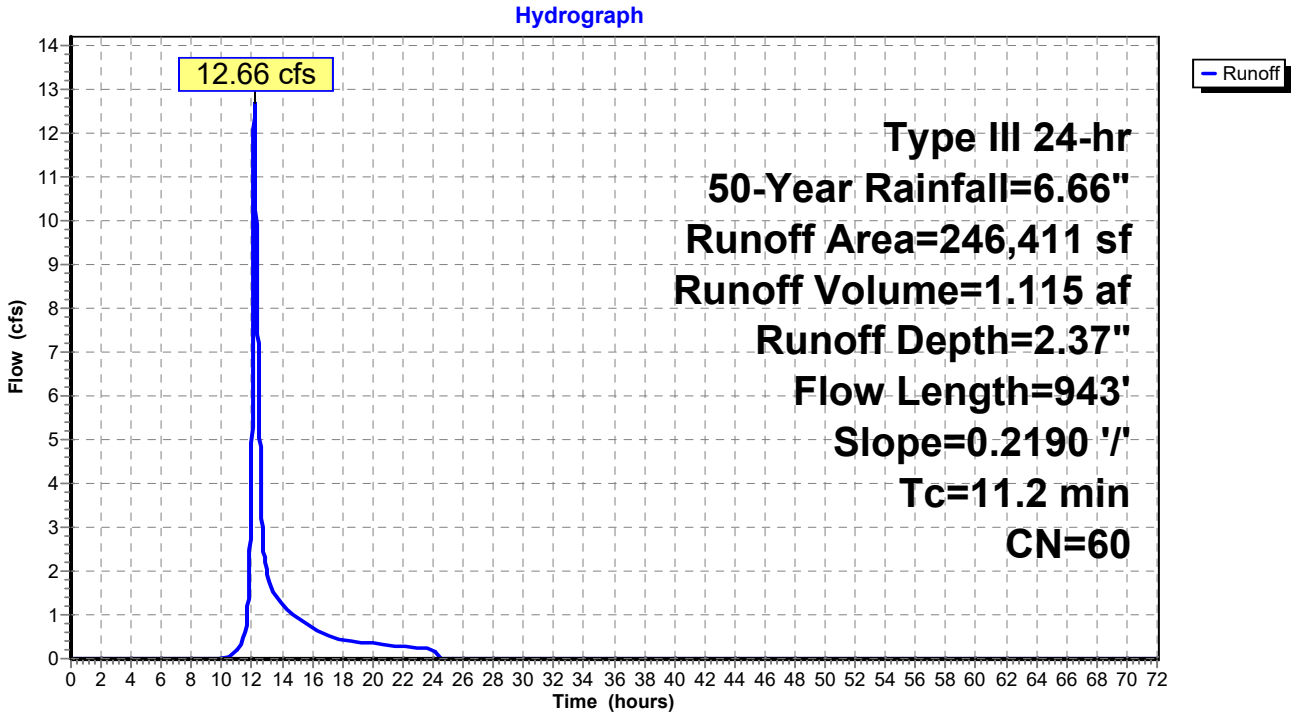
Runoff = 12.66 cfs @ 12.16 hrs, Volume= 1.115 af, Depth= 2.37"
Routed to Reach OP1 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
8,907	77	Woods, Good HSG D
6,702	98	Paved parking HSG B
2,533	98	Roofs HSG B
121,783	55	Woods, Good HSG B
106,486	61	>75% Grass cover, Good HSG B
246,411	60	Weighted Average
237,176		96.25% Pervious Area
9,235		3.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	943	0.2190	1.40		**Lag/CN Method,**

Subcatchment DV 7S: TO MERRIMACK RIVER



Summary for Subcatchment DV 8S: To Existing Roadway Drainage

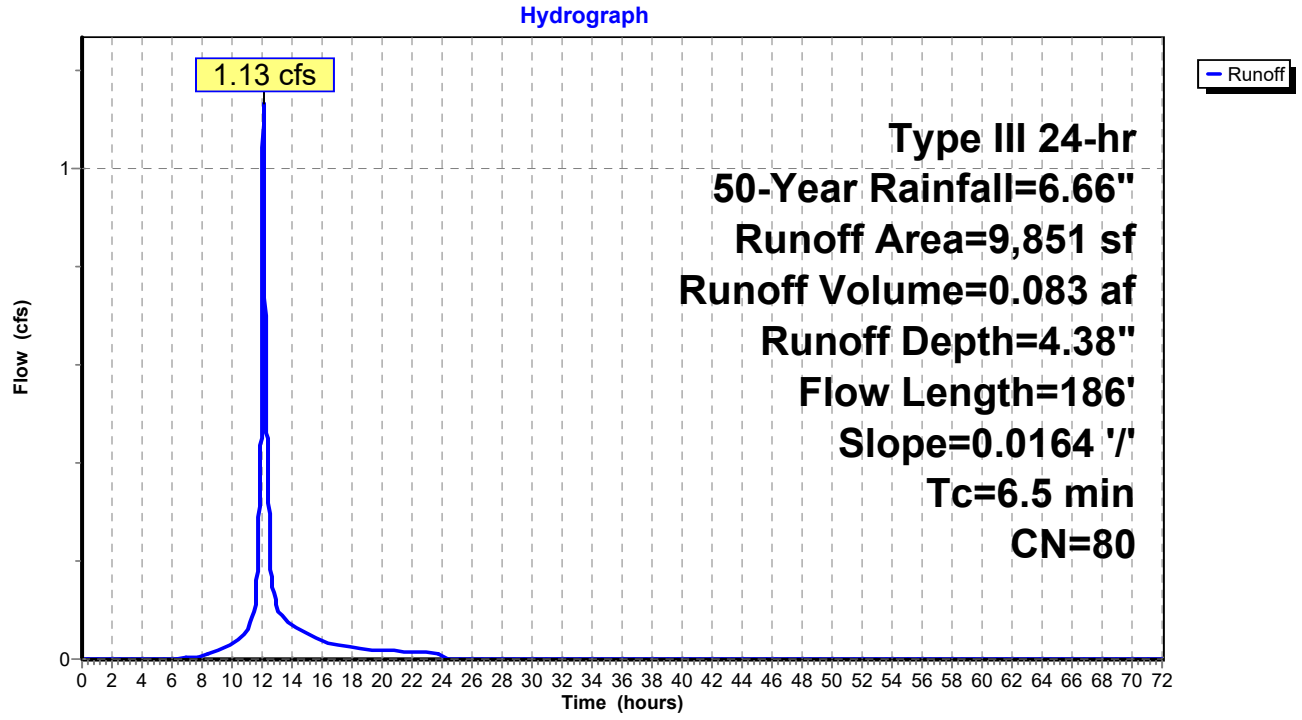
Runoff = 1.13 cfs @ 12.09 hrs, Volume= 0.083 af, Depth= 4.38"
Routed to Reach OP3 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
5,014	98	Paved parking HSG B
4,837	61	>75% Grass cover, Good HSG B
9,851	80	Weighted Average
4,837		49.10% Pervious Area
5,014		50.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	186	0.0164	0.48		**Lag/CN Method,**

Subcatchment DV 8S: To Existing Roadway Drainage



Summary for Subcatchment DV 9S: To Southerly Property Line

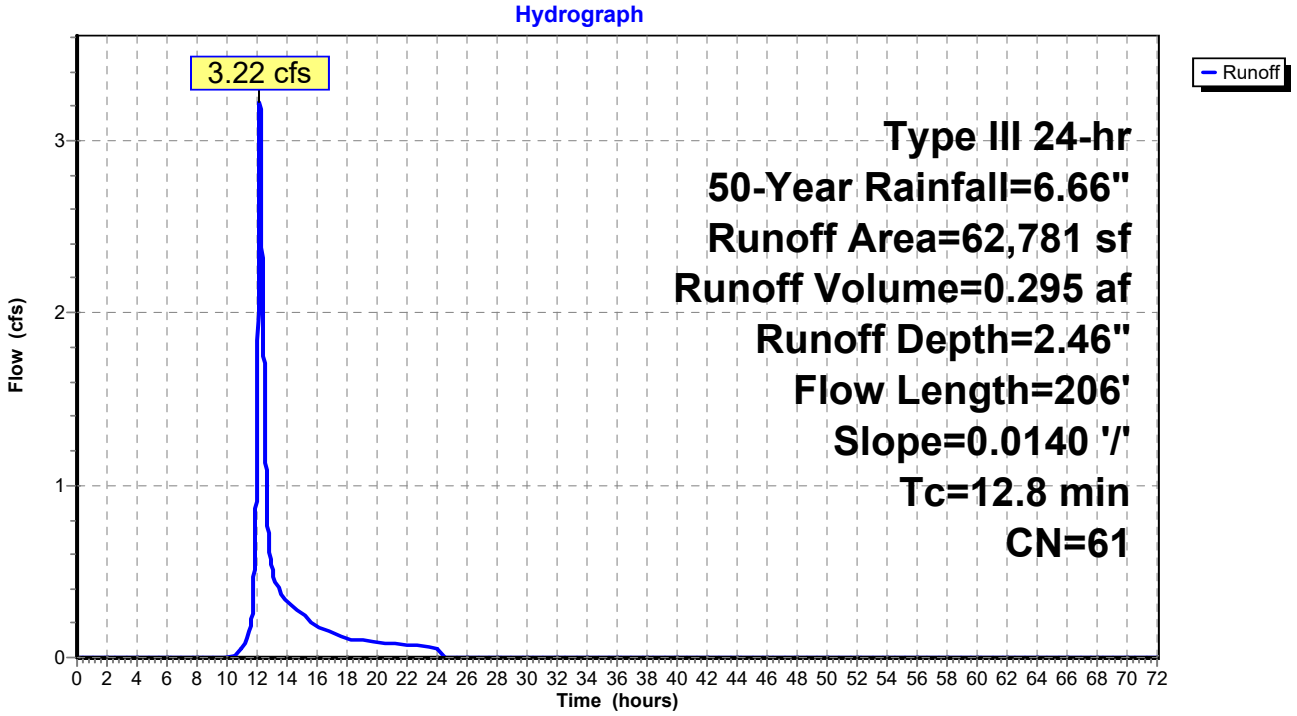
Runoff = 3.22 cfs @ 12.19 hrs, Volume= 0.295 af, Depth= 2.46"
Routed to Reach OP3 : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=6.66"

Area (sf)	CN	Description
62,781	61	>75% Grass cover, Good HSG B
62,781		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	206	0.0140	0.27		**Lag/CN Method,**

Subcatchment DV 9S: To Southerly Property Line

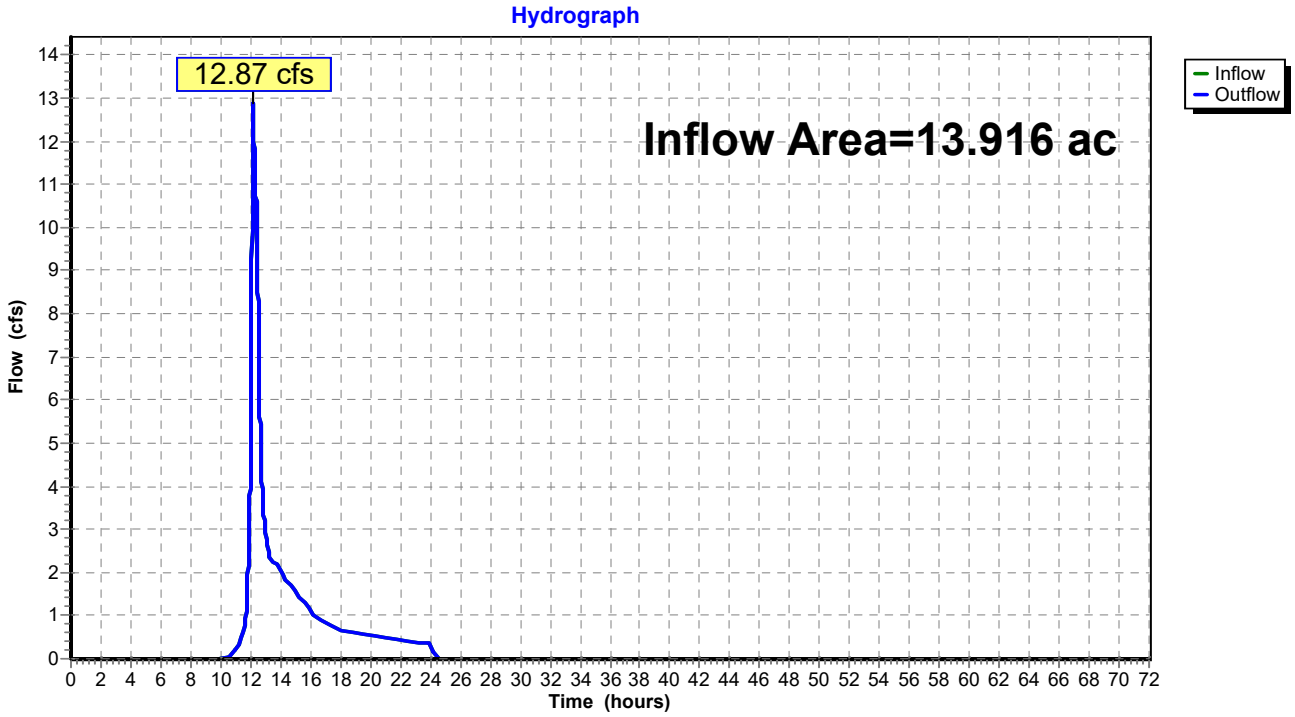


Summary for Reach OP1: (new Reach)

Inflow Area = 13.916 ac, 4.34% Impervious, Inflow Depth = 1.33" for 50-Year event
Inflow = 12.87 cfs @ 12.17 hrs, Volume= 1.544 af
Outflow = 12.87 cfs @ 12.17 hrs, Volume= 1.544 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP1: (new Reach)

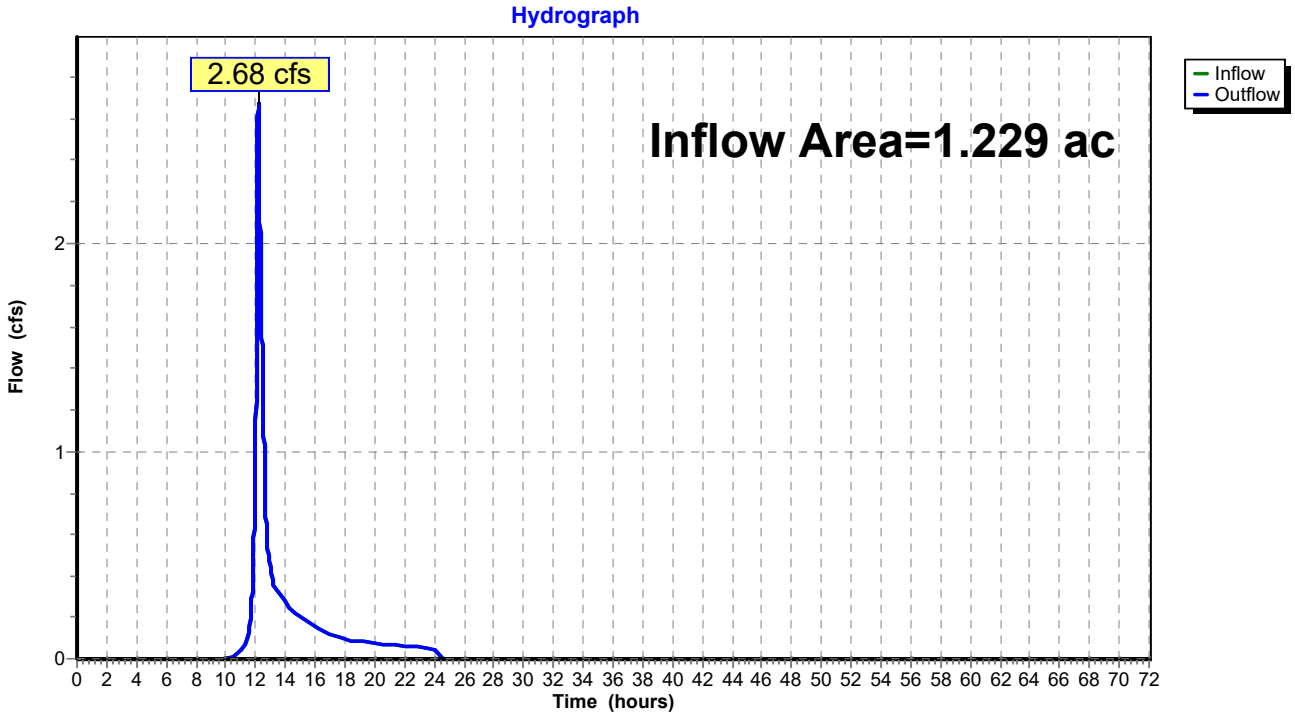


Summary for Reach OP2: (new Reach)

Inflow Area = 1.229 ac, 0.00% Impervious, Inflow Depth = 2.37" for 50-Year event
Inflow = 2.68 cfs @ 12.17 hrs, Volume= 0.242 af
Outflow = 2.68 cfs @ 12.17 hrs, Volume= 0.242 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP2: (new Reach)

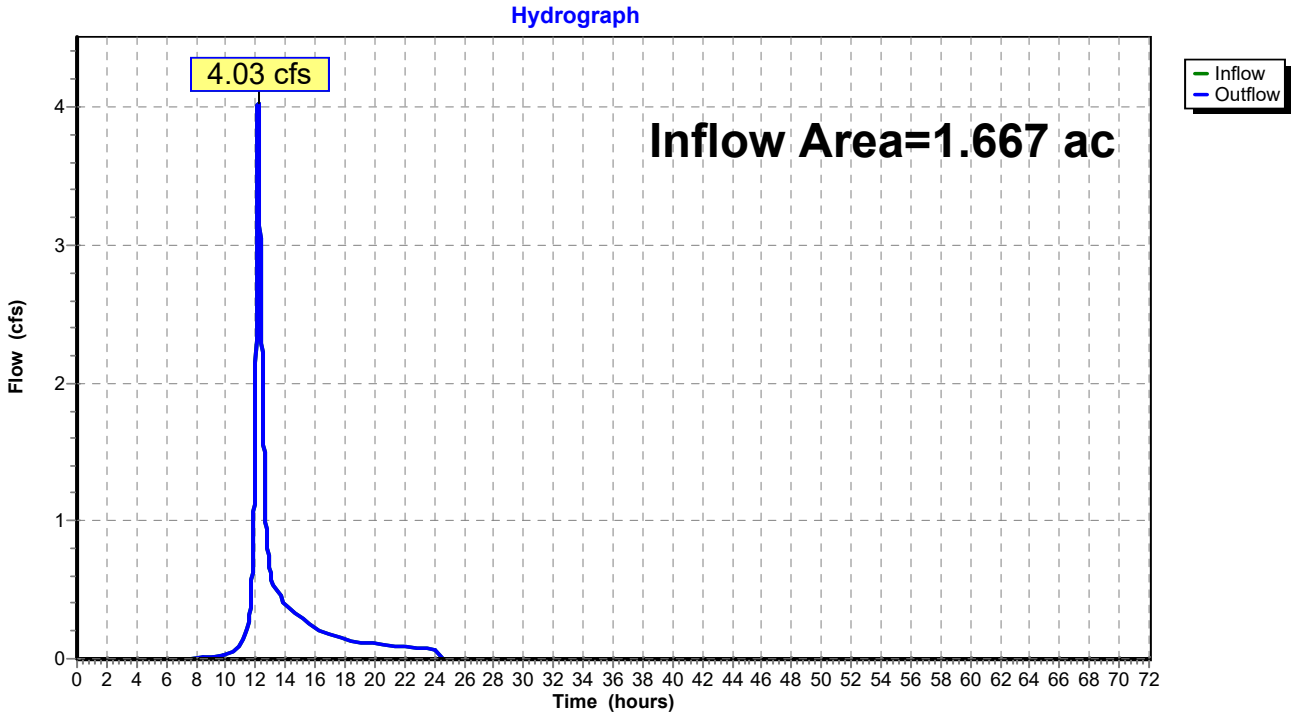


Summary for Reach OP3: (new Reach)

Inflow Area = 1.667 ac, 6.90% Impervious, Inflow Depth = 2.72" for 50-Year event
Inflow = 4.03 cfs @ 12.16 hrs, Volume= 0.378 af
Outflow = 4.03 cfs @ 12.16 hrs, Volume= 0.378 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Reach OP3: (new Reach)



Summary for Pond DV 1.1P: CB 100

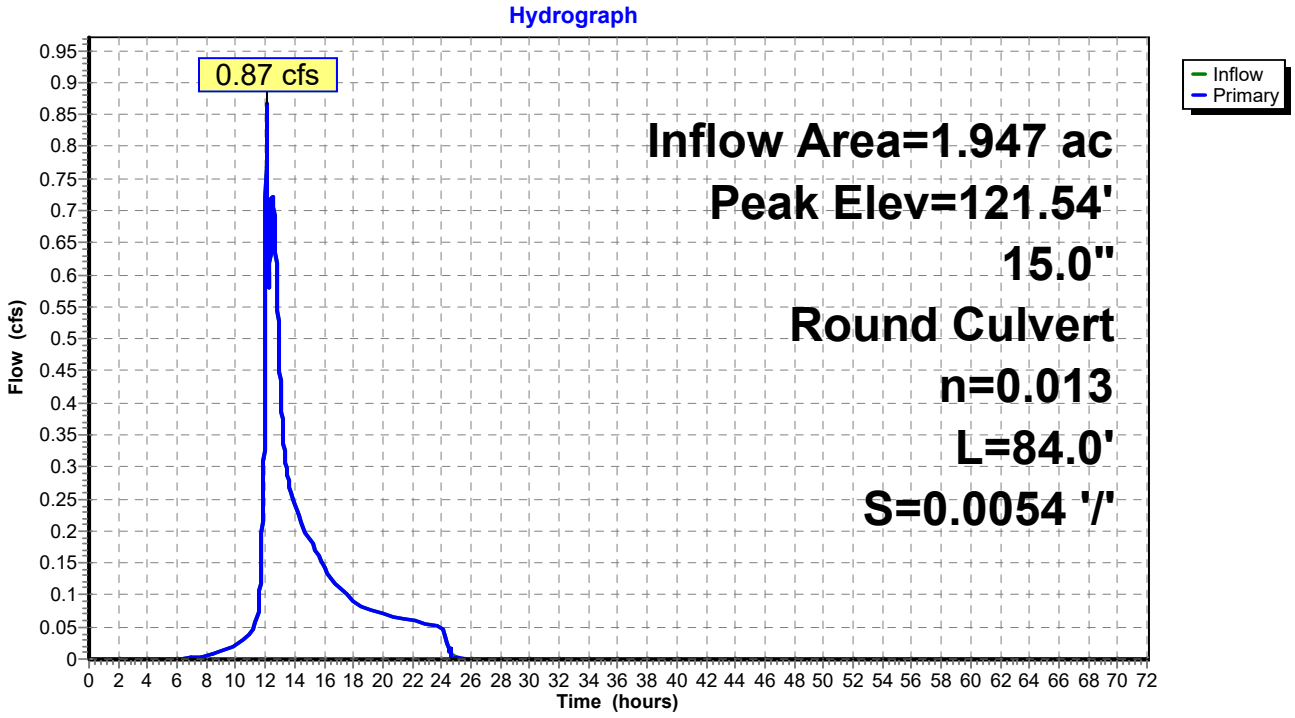
Inflow Area = 1.947 ac, 9.05% Impervious, Inflow Depth = 1.10" for 50-Year event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.178 af
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.09 hrs, Volume= 0.178 af
Routed to Pond DV 1P : Stormwater Management Pond IB-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.54' @ 13.76 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	119.45'	**15.0" Round Culvert** L= 84.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.45' / 119.00' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.82 cfs @ 12.09 hrs HW=120.09' TW=119.86' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.82 cfs @ 1.90 fps)

Pond DV 1.1P: CB 100



Summary for Pond DV 1.2P: CB 101

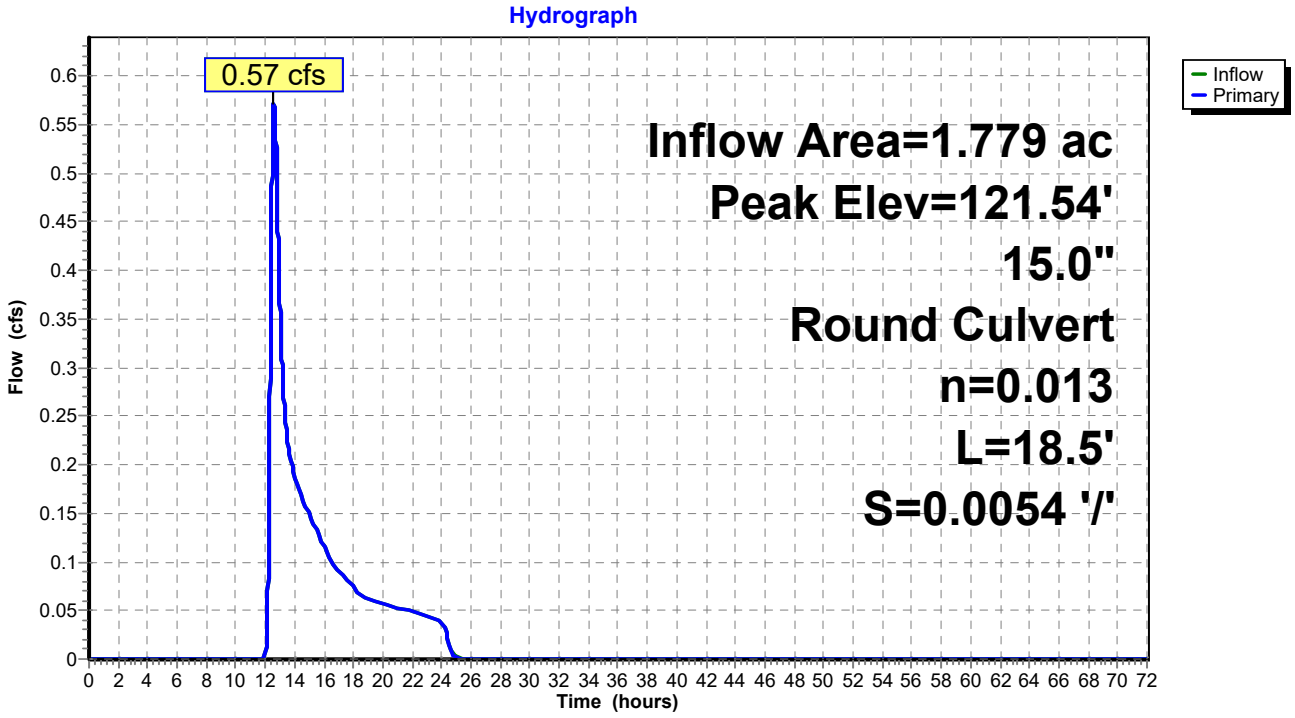
Inflow Area = 1.779 ac, 5.06% Impervious, Inflow Depth = 0.79" for 50-Year event
Inflow = 0.57 cfs @ 12.59 hrs, Volume= 0.117 af
Outflow = 0.57 cfs @ 12.59 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.59 hrs, Volume= 0.117 af
Routed to Pond DV 1.1P : CB 100

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.54' @ 13.77 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	119.65'	**15.0" Round Culvert** L= 18.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.65' / 119.55' S= 0.0054 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.59 hrs HW=120.74' TW=120.74' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DV 1.2P: CB 101



Summary for Pond DV 1P: Stormwater Management Pond IB-1

Inflow Area = 2.031 ac, 8.68% Impervious, Inflow Depth = 1.15" for 50-Year event
Inflow = 1.03 cfs @ 12.07 hrs, Volume= 0.195 af
Outflow = 0.28 cfs @ 13.76 hrs, Volume= 0.188 af, Atten= 73%, Lag= 101.2 min
Discarded = 0.03 cfs @ 13.76 hrs, Volume= 0.112 af
Primary = 0.25 cfs @ 13.76 hrs, Volume= 0.075 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 121.53' @ 13.76 hrs Surf.Area= 2,208 sf Storage= 3,869 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 851.5 min (1,747.5 - 895.9)

Volume	Invert	Avail.Storage	Storage Description
#1	119.00'	4,967 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

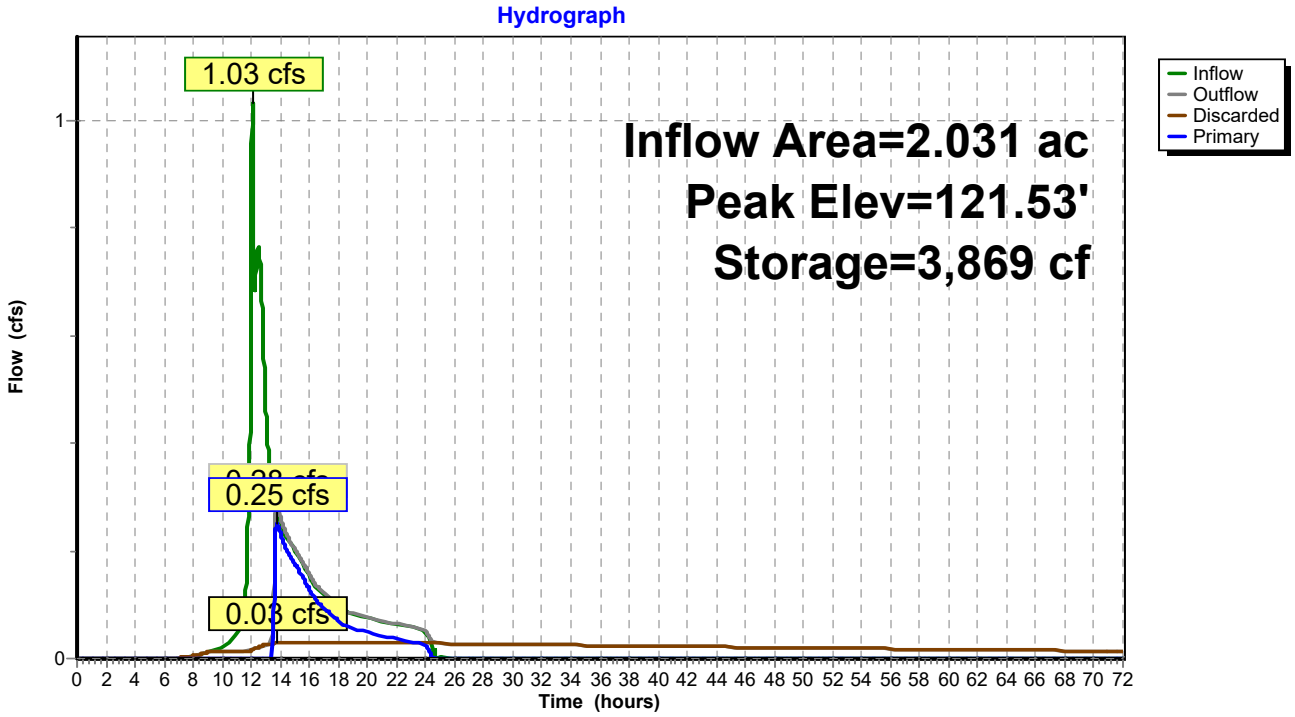
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
119.00	936	145.6	0	0	936
122.00	2,501	202.2	4,967	4,967	2,587

Device	Routing	Invert	Outlet Devices
#1	Discarded	119.00'	**0.550 in/hr Exfiltration per field test results over Surface area**
#2	Device 3	121.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	119.00'	**15.0" Round Culvert** L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 119.00' / 118.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=0.03 cfs @ 13.76 hrs HW=121.53' (Free Discharge)
└**1=Exfiltration per field test results** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.25 cfs @ 13.76 hrs HW=121.53' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 0.25 cfs of 8.16 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.25 cfs @ 0.60 fps)

Pond DV 1P: Stormwater Management Pond IB-1



Summary for Pond DV 2P: Stormwater Management Pond IB-2

Inflow Area = 1.395 ac, 15.48% Impervious, Inflow Depth = 2.44" for 50-Year event
Inflow = 2.95 cfs @ 12.11 hrs, Volume= 0.284 af
Outflow = 1.74 cfs @ 12.36 hrs, Volume= 0.284 af, Atten= 41%, Lag= 15.5 min
Discarded = 0.15 cfs @ 12.36 hrs, Volume= 0.192 af
Primary = 1.60 cfs @ 12.36 hrs, Volume= 0.091 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 122.61' @ 12.36 hrs Surf.Area= 3,830 sf Storage= 3,223 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 152.7 min (999.2 - 846.5)

Volume	Invert	Avail.Storage	Storage Description
#1	121.70'	4,751 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

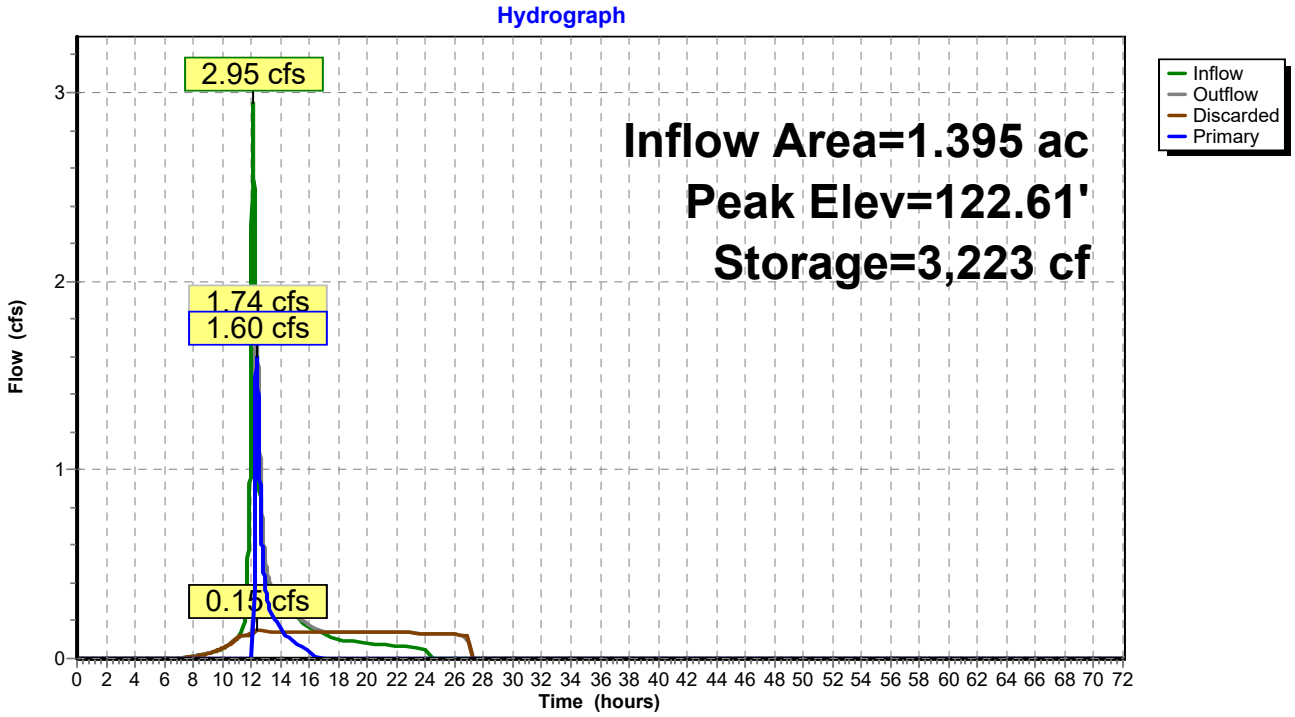
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
121.70	3,227	209.7	0	0	3,227
123.00	4,099	236.9	4,751	4,751	4,236

Device	Routing	Invert	Outlet Devices
#1	Discarded	121.70'	**1.650 in/hr Exfiltration per field test results over Surface area**
#2	Primary	118.70'	**15.0" Round Culvert** L= 50.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 118.70' / 118.20' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	122.50'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.15 cfs @ 12.36 hrs HW=122.61' (Free Discharge)
↑**1=Exfiltration per field test results** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=1.59 cfs @ 12.36 hrs HW=122.61' TW=0.00' (Dynamic Tailwater)
↑**2=Culvert** (Passes 1.59 cfs of 10.72 cfs potential flow)
↑**3=Orifice/Grate** (Weir Controls 1.59 cfs @ 1.11 fps)

Pond DV 2P: Stormwater Management Pond IB-2



Summary for Pond DV 3P: (new Pond)

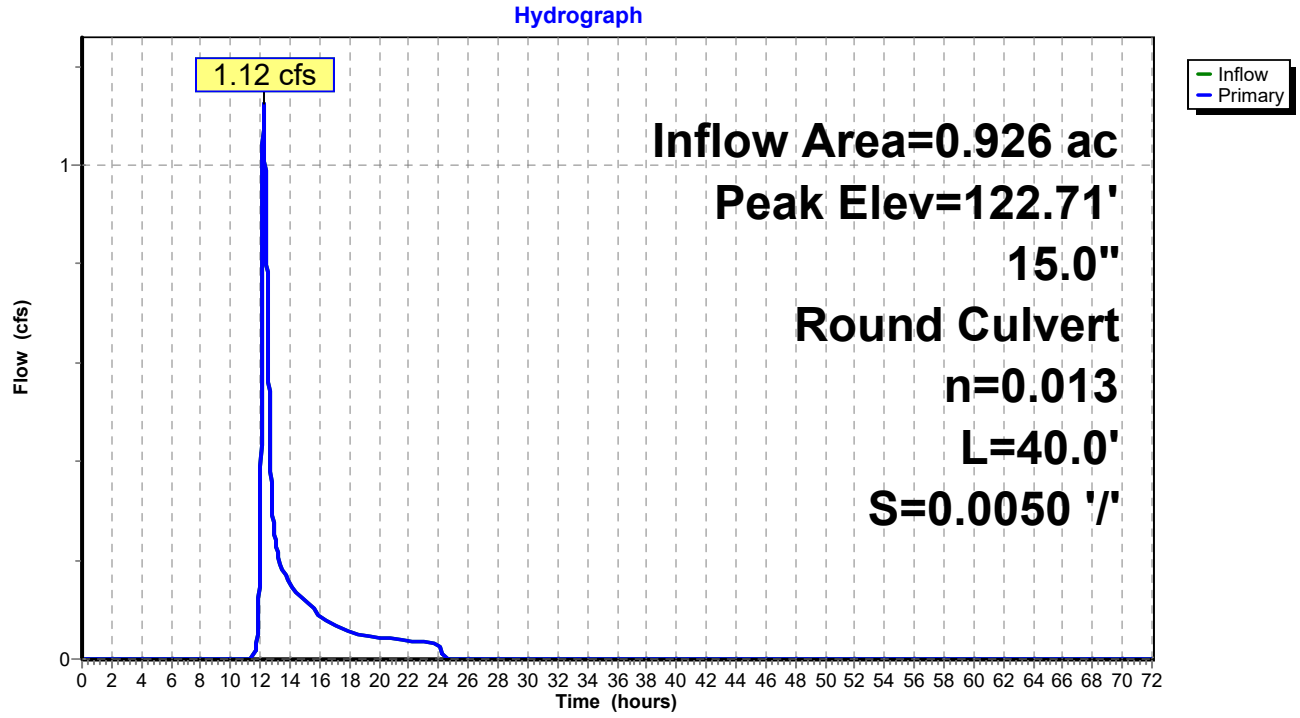
Inflow Area = 0.926 ac, 0.00% Impervious, Inflow Depth = 1.57" for 50-Year event
Inflow = 1.12 cfs @ 12.23 hrs, Volume= 0.121 af
Outflow = 1.12 cfs @ 12.23 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.23 hrs, Volume= 0.121 af
Routed to Pond DV 2P : Stormwater Management Pond IB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 122.71' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	121.90'	**15.0" Round Culvert** L= 40.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 121.90' / 121.70' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.05 cfs @ 12.23 hrs HW=122.66' TW=122.52' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.05 cfs @ 1.93 fps)

Pond DV 3P: (new Pond)



Summary for Pond EX 1P: (new Pond)

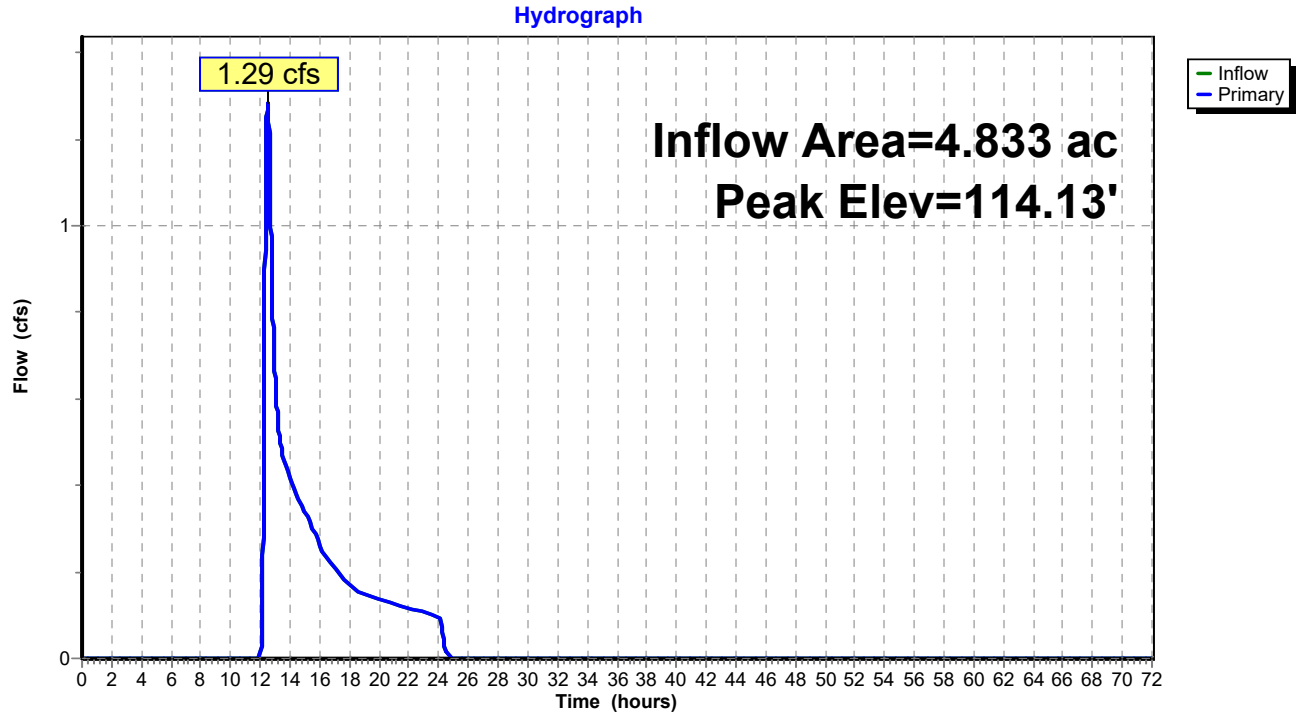
Inflow Area = 4.833 ac, 0.00% Impervious, Inflow Depth = 0.65" for 50-Year event
Inflow = 1.29 cfs @ 12.50 hrs, Volume= 0.262 af
Outflow = 1.29 cfs @ 12.50 hrs, Volume= 0.262 af, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.50 hrs, Volume= 0.262 af
Routed to Reach OP1 : (new Reach)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 114.13' @ 12.50 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	113.73'	**24.0" Round 24" CMP Driveway Culvert (North)** L= 55.7' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.73' / 113.49' S= 0.0043 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf
#2	Primary	113.52'	**24.0" Round 24" CMP Driveway Culvert (South)** L= 55.5' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 113.52' / 113.37' S= 0.0027 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=1.28 cfs @ 12.50 hrs HW=114.13' TW=0.00' (Dynamic Tailwater)
1=24" CMP Driveway Culvert (North) (Barrel Controls 0.41 cfs @ 1.39 fps)
2=24" CMP Driveway Culvert (South) (Barrel Controls 0.87 cfs @ 1.61 fps)

Pond EX 1P: (new Pond)



Section 3.1: Drainage Area Plans

Existing Conditions – Site Design Plan (See attached)

Developed Conditions – Site Design Plan (See attached)

LEGEND, EXISTING CONDITIONS

EX 1R	REACH
EX 1S	SUBCATCHMENT
EX 1P	POND
OP-1	OBSERVATION POINT
	SUB-CATCHMENT DELINEATION
	Tc – TIME OF CONCENTRATION PATH
	EXISTING 2' CONTOUR INTERVAL
	EXISTING 10' CONTOUR INTERVAL
	NRCS SOIL DELINEATION

SOIL LEGEND:

WdA	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES	HSG A
WdB	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES	HSG A
WdC	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES	HSG A
Om	OCCUM FINE SANDY LOAM, HIGH BOTTOM	HSG B

SOURCE: USDA NATURAL RESOURCE CONSERVATION SERVICE WEB SOIL SURVEY

MERIDIAN LAND SERVICES, INC.
ENGINEERING | SURVEYING | PERMITTING
SOIL & WETLAND MAPPING | SEPTIC DESIGN
310 OLD NASHUA ROAD, AMHERST, NH 03031 TEL: 603-673-1441
WWW.MERIDIANLANDSERVICES.COM FAX: 603-673-1465

REV.	DATE	DESCRIPTION
A	---	---
B	---	---
C	---	---
D	---	---
E	---	---
F	---	---
G	---	---
H	---	---
I	---	---

DR
CK

SUBDIVISION OF
TAX MAP 147 LOT 6
EXISTING CONDITIONS
DRAINAGE AREA PLAN

APRIL 8, 2026

RON LECLAIR
12 LECLAIR DRIVE
MAP 147 LOT 6
HUDSON, NEW HAMPSHIRE

SCALE: 1" = 50'

DRN-EX
SHEET

FILE	12916DRN01B.dwg
PROJECT	12916.01
SHEET NO.	1 OF 2

Plotted: 4/7/2026 9:01 PM By: NCG
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LEGEND: DEVELOPED CONDITIONS

DV 1R	REACH
DV 1S	SUBCATCHMENT
DV 1P	POND
OP-1	OBSERVATION POINT
	SUB-CATCHMENT DELINEATION
	Tc - TIME OF CONCENTRATION PATH
	EXISTING 2' CONTOUR INTERVAL
	EXISTING 10' CONTOUR INTERVAL
	PROPOSED 2'/10' CONTOUR INTERVAL
	NRCS SOIL DELINEATION

SOIL LEGEND:

WdA	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES	HSG A
WdB	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES	HSG A
WdC	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES	HSG A
Om	OCCUM FINE SANDY LOAM, HIGH BOTTOM	HSG B

SOURCE: USDA NATURAL RESOURCE CONSERVATION SERVICE WEB SOIL SURVEY

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310 OLD NASHUA ROAD, AMHERST, NH 03031 TEL: 603-673-1441
WEBSITE: MERIDIANLANDSERVICES.COM

REV.	DATE	DESCRIPTION	DR	CK
A	---	---	---	---
B	---	---	---	---
C	---	---	---	---
D	---	---	---	---
E	---	---	---	---
F	---	---	---	---
G	---	---	---	---
H	---	---	---	---
I	---	---	---	---

SUBDIVISION OF
TAX MAP 147 LOT 6
DEVELOPED CONDITIONS
DRAINAGE AREA PLAN

APRIL 8, 2026

RON LECLAIR
12 LECLAIR DRIVE
MAP 147 LOT 6
HUDSON, NEW HAMPSHIRE

SCALE: 1" = 50'

DRN-DV

SHEET

FILE	12916DRN01B.dwg
PROJECT	12916.01
SHEET NO.	2 OF 2

50 0 50 100
SCALE: 1 INCH = 50 FT.

Plotted: 4/7/2026 9:02 PM By: NCG
H:\MLS\12916\12916.01\0_Drawings\ENG\12916DRN01B.dwg

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Stormwater Pond IB-1**

Enter the type of infiltration practice (such as basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.07(a) to ensure that infiltration is allowed?	← **yes**
2.03	ac	A = Area draining to the practice	
0.18	ac	A_I = Impervious area draining to the practice	
0.09	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.13	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.26	ac-in	WQV= 1" x Rv x A	
945	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
236	cf	25% x WQV (check calc for sediment forebay volume)	
Forebay		Method of pretreatment? (not required for clean or roof runoff)	
500	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ **25%WQV**
3,796	cf	V = Volume[1] (attach a stage-storage table)	≥ **WQV**
936	sf	A_{SA} = Surface area of the bottom of the pond	
0.55	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
22.0	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ **72-hrs**
119.00	feet	E_{BTM} = Elevation of the bottom of the basin	
115.90	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
115.90	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
3.10	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
3.1	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
N/A	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ **24"**
N/A	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
N/A	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←**yes**
N/A		If a trench is proposed, does material meet Env-Wq 1508.07(k)(2) requirements.[4]	← **yes**
Yes	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← **yes**
3.0	:1	If a basin is proposed, pond side slopes.	≥**3:1**
120.43	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
121.53	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
122.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← **yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← **yes**

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond DV 1P: Stormwater Management Pond IB-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
119.00	936	0
119.05	956	47
119.10	976	96
119.15	996	145
119.20	1,017	195
119.25	1,038	247
119.30	1,059	299
119.35	1,080	352
119.40	1,101	407
119.45	1,123	463
119.50	1,144	519
119.55	1,166	577
119.60	1,189	636
119.65	1,211	696
119.70	1,234	757
119.75	1,257	819
119.80	1,280	883
119.85	1,303	947
119.90	1,326	1,013
119.95	1,350	1,080
120.00	1,374	1,148
120.05	1,398	1,217
120.10	1,422	1,288
120.15	1,447	1,359
120.20	1,472	1,432
120.25	1,496	1,507
120.30	1,522	1,582
120.35	1,547	1,659
120.40	1,573	1,737
120.45	1,598	1,816
120.50	1,624	1,897
120.55	1,650	1,978
120.60	1,677	2,062
120.65	1,703	2,146
120.70	1,730	2,232
120.75	1,757	2,319
120.80	1,785	2,408
120.85	1,812	2,498
120.90	1,840	2,589
120.95	1,867	2,682
121.00	1,896	2,776
121.05	1,924	2,871
121.10	1,952	2,968
121.15	1,981	3,066
121.20	2,010	3,166
121.25	2,039	3,267
121.30	2,068	3,370
121.35	2,098	3,474
121.40	2,128	3,580
121.45	2,158	3,687
121.50	2,188	3,796
121.55	2,218	3,906
121.60	2,249	4,018
121.65	2,280	4,131
121.70	2,311	4,245
121.75	2,342	4,362
121.80	2,373	4,480
121.85	2,405	4,599
121.90	2,437	4,720
121.95	2,469	4,843
122.00	**2,501**	**4,967**

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Stormwater Pond IB-2**

Enter the type of infiltration practice (such as basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.07(a) to ensure that infiltration is allowed?	← **yes**
1.40	ac	A = Area draining to the practice	
0.22	ac	A_I = Impervious area draining to the practice	
0.15	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.19	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.26	ac-in	WQV= 1" x Rv x A	
959	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
240	cf	25% x WQV (check calc for sediment forebay volume)	
Forebay		Method of pretreatment? (not required for clean or roof runoff)	
245	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ **25%WQV**
2,789	cf	V = Volume[1] (attach a stage-storage table)	≥ **WQV**
3,227	sf	A_{SA} = Surface area of the bottom of the pond	
1.65	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
2.2	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ **72-hrs**
121.70	feet	E_{BTM} = Elevation of the bottom of the basin	
118.67	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
118.67	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
3.03	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
3.0	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
N/A	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ **24"**
N/A	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
N/A	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←**yes**
N/A		If a trench is proposed, does material meet Env-Wq 1508.07(k)(2) requirements.[4]	← **yes**
Yes	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← **yes**
3.0	:1	If a basin is proposed, pond side slopes.	≥**3:1**
122.28	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
122.61	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
123.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← **yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← **yes**

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond DV 2P: Stormwater Management Pond IB-2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
121.70	3,227	0
121.72	3,240	65
121.74	3,252	130
121.76	3,265	195
121.78	3,278	260
121.80	3,290	326
121.82	3,303	392
121.84	3,316	458
121.86	3,329	524
121.88	3,342	591
121.90	3,354	658
121.92	3,367	725
121.94	3,380	793
121.96	3,393	861
121.98	3,406	929
122.00	3,419	997
122.02	3,432	1,065
122.04	3,445	1,134
122.06	3,458	1,203
122.08	3,471	1,272
122.10	3,484	1,342
122.12	3,497	1,412
122.14	3,510	1,482
122.16	3,524	1,552
122.18	3,537	1,623
122.20	3,550	1,694
122.22	3,563	1,765
122.24	3,577	1,836
122.26	3,590	1,908
122.28	3,603	1,980
122.30	3,617	2,052
122.32	3,630	2,124
122.34	3,643	2,197
122.36	3,657	2,270
122.38	3,670	2,343
122.40	3,684	2,417
122.42	3,697	2,491
122.44	3,711	2,565
122.46	3,724	2,639
122.48	3,738	2,714
122.50	3,751	2,789
122.52	3,765	2,864
122.54	3,779	2,939
122.56	3,792	3,015
122.58	3,806	3,091
122.60	3,820	3,167
122.62	3,833	3,244
122.64	3,847	3,321
122.66	3,861	3,398
122.68	3,875	3,475
122.70	3,889	3,553
122.72	3,902	3,631
122.74	3,916	3,709
122.76	3,930	3,787
122.78	3,944	3,866
122.80	3,958	3,945
122.82	3,972	4,024
122.84	3,986	4,104
122.86	4,000	4,184
122.88	4,014	4,264
122.90	4,028	4,344
122.92	4,042	4,425
122.94	4,056	4,506
122.96	4,071	4,587
122.98	4,085	4,669
123.00	**4,099**	**4,751**

GROUNDWATER RECHARGE VOLUME (GRV)
(Env-Wq 1504.12)

0.03	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
0.24	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.26	inches	Rd = Weighted groundwater recharge depth	
0.069	ac-in	GRV = AI * Rd	
250	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
	← Y/N	Is a stage-storage table attached showing that the GRV can be stored below the lowest invert of the outlet structure (if applicable)? Multiple stormwater control measures may be used to meet the GRV requirements.	

Provide calculations/discussion below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Existing Impervious Areas:

0.006 HSG A

0.452 HSG B

Developed Impervious Areas:

0.031 HSG A

0.688 HSG B

Difference Impervious Areas:

0.025 HSG A

0.236 HSG B

Attachment "E"

FUSS & O'NEILL
50 Commercial Street, Suite 2S
Manchester, NH 03101
603.668.8223
www.fando.com

March 26, 2026

Ms. Brooke Dubowik
Town Planner
Town of Hudson
12 School Street
Hudson, NH 03051

RE: Town of Hudson Planning Board Review
LeClair Subdivision Plan, 12 LeClair Drive
Tax Map 147, Lot 6, Acct. #1350-732
Fuss & O'Neill Reference No. 20030249.262

Dear Ms. Dubowik:

Fuss & O'Neill, Inc. has reviewed the first submission of the materials related to the above-referenced project which was received on March 11, 2026. Authorization to proceed was received on March 12, 2026. A list of items reviewed is enclosed. The scope of our review is based on the Subdivision Plan Review Codes, Stormwater Codes, Driveway Review Codes, Sewer Use Ordinance 77, Zoning Regulations, and criteria outlined in the CLD Consulting Engineers Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

We have included a copy of Fuss & O'Neill's evaluation of the checklist for your reference. We note that several items could not be verified by Fuss & O'Neill and require action by the Town.

The project appears to consist of subdividing an existing residential lot and creating a seven-lot subdivision out of the 12.5-acre existing lot. A roadway extension with a cul-de-sac is also proposed as part of the subdivision. The subject lots are proposed to be serviced via Town water and sewer connections.

The following items are noted:

1. **Administrative and Subdivision Review Codes (HR 276 & HR 289)**
    a. Hudson Regulation (HR) 276-11.1.B.(2). The plan set provided is greater than the maximum scale allowed by the Regulations (1"=50'). The applicant has provided scales between 1"=60' and 1"=80' on several sheets.
    b. HR 276-11.1.B.(4). & 289-27.A.(3). The applicant should add the Planning Board approval block to all sheets of the plan set. We note that it is currently not shown on the Existing Conditions Plan and detail sheets.
    c. HR 276-11.1.B.(6). The owner's signature was not provided on the plan set. A location for a future signature has been provided.
    d. HR 276-11.1.B.(13). The applicant has not shown any sign locations or details on the plan set.
    e. HR 276-11.1.B.(14). The applicant has not shown any lighting on the plan set. The applicant should add the required note if lighting is not proposed.

f. HR 276-11.1.B.(16). The applicant should provide the locations of driveways and travel ways within 200 feet of the site or include an aerial photograph at the required scale to meet this requirement.

g. HR 276-11.1.B.(18). The applicant has provided proposed grading of the roadway but has not provided any lot grading information. We recommend that the applicant add preliminary driveway information and grading to be sure that the lots can be accessed. We also recommend that the driveway location and grading be shown for the existing house.

h. HR 276-11.1.B.(20). The applicant should note existing building heights on the plan set.

i. HR 289-4. The applicant should note or detail monument requirements on the plan set. The applicant should also include proposed monumentation symbols in the legend.

j. HR 289-15. & 334-83. The applicant had noted that a portion of the site is located within the flood hazard area along the Merrimack River. We note that the Existing Conditions Plan and Overview Plan show the Flood Hazard Area to end approximately 60 feet to the west of the proposed roadway crossing. The applicant should confirm that grading changes and replacement of the existing stream crossing will not impact or extend the flood hazard area.

k. HR 289-22. The applicant has not proposed any open space as part of this Subdivision plan.

l. HR 289-26.B.(5). The applicant should provide the required information within 200 feet of the tract or provide aerial photography and the required scale to satisfy this requirement.

m. HR 289-27.B.(3). The applicant should provide street cross sections and a typical cross section on the plan.

n. HR 289-27.B.(6). The applicant has not shown the length and bearing of all proposed property lines and right-of-way.

o. HR 289-27.B.(6). The applicant should provide an error of closure on the plan set.

p. HR 289-27.B.(7). The applicant should provide benchmark data on the plan set.

q. HR 289-37.A. The applicant has not provided any information on the phasing of subdivision construction on the plan set. We note that subdivisions with six or more lots must be developed over two years per the Regulation.

2. Driveway Review Codes (HR 193-80)

a. HR 193-8. The applicant has not shown the locations of proposed driveways for each lot on the plan set. The applicant should show the driveway location for the existing home and also provide a typical driveway detail on the plan set.

3. Roadway Design

a. HR 289-18.A. & B.(1). The applicant should label pavement and right-of-way widths on the plan.

b. HR 289-18.B.(3). The applicant should label the cul-de-sac pavement and right-of-way radii on the plan. We note that the proposed radii appear to meet the dimensions in the 289 Attachment 2:1 detail, which is inconsistent with the dimensions in Detail R-2 included in the plans. The applicant should confirm with the Town Engineer the appropriate pavement width and radius dimensions for the cul-de-sac.

c. HR 289-18.B.(5). The applicant should add the required signage to the plan or provide existing information that the signage currently exists.

d. HR 289-18.C.(1). The applicant has requested a waiver for the horizontal curve minimum. The applicant should show the horizontal curve information on the plan.

e. HR 289-18.C.(2). The applicant has not met any of the vertical curve minimum requirements for the roadway. We note that the k values are proposed to be 19 for crests when 30 is required and proposed to be 20 and 37.5 for sags when 40 is required.

f. HR 289-18.D. The applicant should review the roadway side slopes to be sure they are all constructed outside of the right-of-way.

g. HR 289-18.M.(1). The Roadway Plan & Profile does not match the scale required by the Regulations.

h. HR 289-18.R.(1). The applicant has not proposed any sidewalks within the subdivision. We note that sidewalks do not currently exist on LeClair Drive but do exist on the intersecting street Shoreline Drive.

4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)

a. HR 289-18.A.4. The applicant should confirm the proposed basin floor and side slopes material/treatment at the cul-de-sac infiltration basin IB-2, and review with and gain acceptance from the Town for that proposed material/treatment. Plantings and grass mix must be able to be inundated by stormwater for up to 72 hours.

b. HR 289-18.A.4. The cul-de-sac roadway elevation has a low point at the center of roadway of 123.32 per the Roadway Plan and Profile sheet P-5. The plans do not include a typical roadway section, but the Town of Hudson Typical Roadway Cross Section required 3.5" of pavement with 18" of selects. This results in a bottom of roadway box at 121.5±. Peak water elevations for the infiltration basin are 121.94, 122.67, 122.78, and 122.84 for the 2-year, 10-year, 25-year, and 50-year storm events respectively. The applicant should review with the Town Engineer if the implementation of an infiltration basin in the center of the cul-de-sac would be permitted, considering that the peak elevations of the storms are within the roadway selects in these storms.

c. HR 289-20.A.2. The applicant should revise stormwater subcatchment area DVS4, as stormwater is not permitted to sheet flow across a street.

d. HR 289-20.C.1. & 290-5.A.4. The applicant should review with the Town Engineer if a waiver is required to increase the Peak Rate at Observation Point OP3 in all storms analyzed.

e. HR 289-20.C.1. & 290-5.A.4. The applicant should provide a similar comparison table of runoff volumes to ensure no net increase for all storms analyzed.

f. HR 289-20.C.1. & 290-5.A.4. The applicant should review with the Town Engineer if a waiver is required to increase the Peak Volume at Observation Point OP3 in the provided 2-year storm.

g. HR 290-5.A.4. The applicant should provide the GRV BMP worksheet, illustrating required GRV is met.

h. HR 290-5.A.6. The applicant should ensure and note if the design utilizes Extreme Precipitation.

i. HR 290-5.A.7. The applicant should provide additional information regarding downstream properties and how the proposed increase of runoff and volume may be detrimental to those properties.

j. HR 290-5.A.11. The applicant should provide additional information on the proposed form of pre-treatment required prior to the treatment.

k. HR 290-5.A.11. The applicant should keep the Town informed of all communication with NHDES in relation to the required Wetland Permit being requested to ensure NHDES comments/requirement do not alter drainage design/calculations.

l. HR 290-5.A.12. The applicant should coordinate with the Town for an LTMA of the proposed stormwater practices.

m. HR 290-5.A.12. The applicant should provide a detailed BMP location plan in the I&M Manual. This will ensure all proposed drainage features are noted for their proper maintenance, including but not limited to; specific locations of individual catch basins, outlet structures, closed drainage networks, and infiltration basins.

n. HR 290-5.A.12. The applicant should provide project specific information in the I&M document, including but not limited to; procedures, protocols, frequency, roles, reporting, and responsible parties during and after construction.
o. HR 290-5.B.1.b. The applicant should provide support material or calculations showing the required 80% TSS and 50% TP pollutant removals.
p. HR 290-6.A. The applicant should add Observation Points (OPs) to the Existing and Developed Conditions Drainage Area Plans
q. HR 290-6.A.1. The applicant should provide rip rap calculations within the Stormwater Management Report.
r. HR 290-6.A.8. The applicant should ensure the plans note a pre-construction meeting is required with the Town Engineer.
s. HR 290-7.A.5. The applicant should provide the required NHDES BMP worksheets.
t. HR 290-7.A.6. The applicant should provide information regarding how the project design accounts for frozen ground conditions.
u. HR 290-7.A.7. The applicant should review with the Merrimack Local River Advisory Committee (LAC) if additional coordination is required.
v. HR 290-7.B.13. The applicant should provide information on the soils utilized on site.
w. HR 290-7.B.16. The applicant should provide locations upon the plan set for proposed snow storage areas. We note snow storage is not allowed within the treatment bays of stormwater basins, and snow should be directed to forebays for pre-treatment prior to entering the treatment bay.
x. HR 290-7.B.18. The applicant should provide additional information on the use of the 0.3 in/hr infiltration rates utilized. If these rates are a Ksat conversion, please provide a calculation or explanation in the write up portion within the report.
y. HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.
z. HR 290-8.B.5. The applicant should coordinate with the Town if additional documentation is required to establish an HOA for the stormwater Long Term Maintenance and inspection requirements of the proposed road.
aa. HR 290-10.B. The applicant should provide the typical EPA NPDES disturbance note of over 1 acre, to ensure the contractor is aware of the ENOI SWPPP requirement.
ab. Engineering Technical Guidelines and Typical Details (ETGTD) 920.4.1 & 2. The applicant should provide locations of stockpiles and equipment storage upon the erosion and control plan.
ac. ETGTD 920.4.9. The applicant should coordinate the grate elevation on the Outlet Control Structure OCS-1 between the Detail Plan Sheet D-5 and the HydroCAD Pond IB-1.
ad. ETGTD 930. The applicant should provide the drainage design information including but not limited to material, inverts, size, length, slope, cover, and FES/HW.
ae. ETGTD 930. FES-B is not labeled on the Drainage Plan but is included in the table on sheet D-5.
af. ETGTD 930.1 and Detail D-3. Drainage Plan P-3 includes note #6 stating that all drainage pipes require 1 foot of minimum cover. The Town standards and detail require 4 feet of cover in paved areas and 2 feet of cover in off pavement areas. Cover over the drain between CB-1 and CB-2 is less than 4 feet, and invert information is not provided for the pipe out of OCS-2.
ag. ETGTD 930.10. We note the Town Requirement of curb inlet drainage structures at all vertical sags.
ah. ETGTD 930.11. The applicant should review roadway spread calculations at the low point of the unnamed CBs at STA 6+40± and review with the Town Engineer. If calculations warrant additional grate area is necessary for stormwater collection, the applicant should review if a double catch basin is warranted in this particular situation.

ai. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements.

aj. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state or local laws, rules or regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact the review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.

5. Zoning (HR 334)

a. HR 334-20. The site is located in the Residential-Two (R2) District. The applicant has noted the proposed use of the new lots. We note that per the Ordinance lots could be single- or two-family dwellings.

b. HR 334-27. The applicant should list each proposed lot on the plan, in chart form, indicating in square feet/acreage the total lot area, wetland, slope area greater than 25% and total net contiguous useable upland area.

c. HR 334-27.1.D. The applicant should list the frontage of the proposed lots on the plan set.

d. HR 334-35. The applicant has shown the fifty-foot wetlands buffer on the plan set, and has proposed both temporary and permanent development within this buffer.

e. HR 334-36.C. The applicant has included a Conditional Use Permit Application to allow disturbance within the wetland and wetland buffer for the construction of the proposed roadway. We note that the construction of the proposed driveway for the existing home on lot 5 would also impact this area and should be shown on the plan.

6. Sewer/Water Design/Conflicts & Utility Design/Conflicts (HR 276-13.E.)

a. HR 276-13.A. The applicant has shown utility poles and overhead wires along the proposed roadway on the plan, and noted in the narrative that proposed lots will be served by underground power and cable. The Regulation requires all new developments to have underground wiring.

b. HR 276-13.E. The applicant should label the type and size of the water main on the utility plan and the roadway profile.

c. HR 276-13.E. The applicant should label the type and size of the sewer force main and gravity main on the utility plan.

d. HR 276-13.E. The applicant has not provided any information regarding the pump station(s) that will be connected to the private force main on the plan set. Also, the applicant should provide information as to who will be responsible for maintenance of the force main.

e. HR 276-13.E. The applicant should show preliminary water and sewer connection locations for each lot on the plan set including curb stops and sewer cleanouts.

f. HR 276-13.E. The applicant has noted in the narrative that the existing home will remain on the current well and septic system. The applicant should review with the Town whether connecting to the new water and sewer systems is required for this lot/home.

g. HR 276-13.E. The applicant has proposed one fire hydrant within the subdivision at the end of the cul-de-sac of LeClair Drive. The applicant should coordinate with the Hudson Fire Department to verify that they are satisfied with the placement of the fire hydrant and there is adequate fire protection coverage for the proposed lots.

h. HR 276-13.E. The applicant has shown a new water main running the length of LeClair Drive to the intersection with Shoreline Drive, but there is no connection to a water main at Shoreline Drive shown. The applicant should show the location of the proposed connection and valving arrangement.

i. HR 276-13.E. The applicant has shown the proposed water main within LeClair Drive to be immediately adjacent to existing SMH-1 and the existing sewer main to Shoreline Drive. Water is required to have a 10-foot lateral separation from sewer.

j. HR 276-13.E. The applicant has proposed the new water main to have two 90-degree bends at approximate station 3+82 where it crosses the sewer main. The applicant should confirm with the Town that this arrangement is acceptable or provide a revised layout.

k. HR 289-21.A. The applicant has proposed a 10-foot-wide sewer easement for the private force main. The Regulation requires utility easements to be 15-feet-wide. The applicant should also note on the plan who the easement will benefit since the main is proposed to be private.

l. HR 289-26.B.(4). The applicant should provide information on the existing sewer main shown on the plan including type and size.

m. The applicant has provided invert and rim elevation information for only one of the two proposed sewer manholes at station 6+00.

n. The applicant should provide invert information for the existing catch basins at station 1+50 to confirm that the proposed water main does not conflict with the pipe connecting these structures. Also, the proposed water main is shown immediately adjacent to the eastern catch basin. The applicant should review if insulation or other means of protection of the water main at this location will be needed.

o. ETGTD Section 801. The applicant should verify with the Town that the existing water main on Shoreline Drive has adequate flow and pressure to meet both domestic and fire hydrant needs for the project.

p. The applicant should remove the reference to Walmart from the Utility notes on the Utility Plan.

q. Utilities Note 15 on Sheet GN-1 states that all lots are to be served by individual sewage disposal systems and onsite wells. This note should be updated to reflect the proposed utility connections.

7. Erosion Control/Wetland Impacts

a. The Town should reserve the right to require additional erosion control measures.

8. State and Local Permits

a. The applicant has listed the required permits on the plan set. The applicant should also review the need for an NHDES Sewer Connection permit and Wetlands permit.

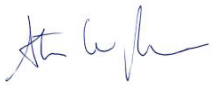
b. Additional local permitting may be required.

9. Other

a. ETGTD Section 565.1.1. The applicant is reminded that the Town of Hudson has specific requirements for the importing of off-site fill materials for use in constructing this project. We recommended that these requirements be stated on the plans for the Contractors attention.

Please feel free to call if you have any questions.

Very truly yours,



Steven W. Reichert, PE

SWR:elc

Enclosure

cc: Town of Hudson Engineering Division – File
Meridian Land Services, Inc. – SRFoisie@meridianlandservices.com

Attachment "F"

MERIDIAN
LAND SERVICES, INC.
Office: 31 Old Nashua Road, Suite 2, Amherst, NH 03031
Mailing: PO Box 118, Milford, NH 03055
Phone: 603-673-1441 * Fax 603-673-1584
www.MeridianLandServices.com
CIVIL ENGINEERING | LAND SURVEYING | PERMITTING | SOIL & WETLAND MAPPING | SEPTIC DESIGN | ENVIRONMENTAL

April 8, 2026

Brooke Dubowik
Associate Planner
Town of Hudson Planning Department
12 School Street
Hudson, NH 03051
Phone: 603-886-6008
Email: bgradert@hudsonnh.gov

Re: LeClair Drive Extension
12 LeClair Dr, Tax Map 147 - Lot 6
Lot 228-7
Hudson, NH

Planning Department Submittal RMI 1

Subdivision Application
Conditional Use Permit Application: Wetland Conservation Overlay District

Brooke:

For review and discussion, please find the following items as they relate to the above-mentioned project:

MERIDIAN
LAND SERVICES, INC.
Office: 31 Old Nashua Road, Suite 2, Amherst, NH 03031
Mailing: PO Box 118, Milford, NH 03055
Phone: 603-673-1441 * Fax 603-673-1584
www.MeridianLandServices.com
CIVIL ENGINEERING | LAND SURVEYING | PERMITTING | SOIL & WETLAND MAPPING | SEPTIC DESIGN | ENVIRONMENTAL

In response to the planning board sign off letter received March 16, 2026, Meridian offers the following responses.

Assessing Comments:

1. Number the proposed lots consistent with the table provided.

   Lot numbers have been updated to reflect Chief Assessor's comments. See sheet 7.

Engineering Comments:

1. Applicant shall revise the water line to be located off the roadway, which will reduce long-term maintenance costs. The proposed layout shall also be revised to show realistic pipe bends rather than smooth curvatures. The water main should be located on one side of the roadway and designed as a closed loop at the cul-de-sac to minimize potential water quality issues.

   See utility plan. See sheet 11

2. Applicant shall provide three hydrants in accordance with Town spacing specifications of 800 feet for low-density residential areas.

   Two hydrants have been proposed. The total roadway length is less than 1,000 feet only needing two hydrants per town spacing. See fire department exhibit.

3. Applicant shall show proposed water curb stop locations for each lot and provide gate valve locations for hydrants on the plans.

   See utility plan. See sheet 11

4. Applicant shall provide sewer clean-outs for each proposed house connection.

   See utility plan. See sheet 11

5. Applicant shall provide a fire apparatus turning movement or wheel pattern plan demonstrating that emergency vehicles can safely maneuver within the roadway and cul-de-sac.

   See attached fire truck turning movement exhibit.

6. Applicant shall show a proposed sidewalk on one side of the roadway.

   See waiver request.

7. Applicant shall replace the proposed overhead wiring and utility poles with underground utilities as required by the Land Use Regulations.

MERIDIAN
LAND SERVICES, INC.
Office: 31 Old Nashua Road, Suite 2, Amherst, NH 03031
Mailing: PO Box 118, Milford, NH 03055
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Overhead utilities have been updated and shown as underground utilities. See sheet 11.

8. Applicant shall provide driveway entrance locations for each lot along with plan and profile sight distance information.

   See plans for potential driveway entrance locations. See driveway sight distance attachment.

9. Applicant shall install wetland buffer markers every 50 feet along the 50-foot conservation buffer.

   Acknowledged. Note added to the plans. See sheet 7.

10. Applicant is requesting a waiver from the vertical and horizontal road curvature requirements. The Engineering Department does not recommend granting this waiver unless the applicant satisfies the following conditions:

    a. The applicant demonstrates that the proposed roadway geometry can accommodate fire apparatus.

       See attached fire department exhibit.

    b. All proposed driveways meet the required driveway sight distance standards.

       See attached driveway sight distance exhibit.

    c. Public Works does not foresee operational issues during winter maintenance.

       Acknowledged.

11. Applicant shall relocate all proposed sewer manholes outside of the pavement area.

    Sewer Manholes have been relocated. See utility plan (sheet 11).

12. Applicant shall provide flared end sections at all drainage pipe outlets.

    Flared end sections have been added to drainage pipes. See sheet 10.

13. Applicant shall update the profile to show the drainage pipe crossing beneath the roadway.

    See roadway plan & profile. See sheet 12.

14. Applicant shall provide a memo related to the proposed traffic and trips related to this project.

    See attached trip memo.

15. Engineering Department reserves the right for further comments.

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Acknowledged.

Fire Comments:

1. Provide a fire apparatus turning plan for the proposed roadway and cul-de-sac. The turning radius looks very tight

   See attached fire department exhibit.

2. Fire hydrants spacing shall not exceed 800 feet between hydrants and the proposed hydrants shall not exceed more than 600 feet from a hydrant to a dwelling per State Adopted Fire Code NFPA 1, chapter 18

   See attached fire department exhibit.

3. Provide a new drawing showing the above

   See attached fire department exhibit.

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Fuss & O'Neill Comments:

1. Administrative and Subdivision Review Codes (HR 276 & HR 289)

   a. Hudson Regulation (HR) 276-11.1.B.(2). The plan set provided is greater than the maximum scale allowed by the Regulations (1"=50'). The applicant has provided scales between 1"=60' and 1"=80' on several sheets.

      Plan sheets have been modified to be no greater than 1"=50'.

   b. HR 276-11.1.B.(4). & 289-27.A.(3). The applicant should add the Planning Board approval block to all sheets of the plan set. We note that it is currently not shown on the Existing Conditions Plan and detail sheets.

      Approval block has been added to all sheets in the plan set.

   c. HR 276-11.1.B.(6). The owner's signature was not provided on the plan set. A location for a future signature has been provided.

      Owner's signature will be added to the plan set at the time of final approval.

   d. HR 276-11.1.B.(13). The applicant has not shown any sign locations or details on the plan set.

      Existing stop sign and stop bar exist at the intersection of LeClair DR and Shoreline Dr. No additional signage necessary.

   e. HR 276-11.1.B.(14). The applicant has not shown any lighting on the plan set. The applicant should add the required note if lighting is not proposed.

      See note 2 on sheet P-4, utility plan (sheet 11) .

   f. HR 276-11.1.B.(16). The applicant should provide the locations of driveways and travel ways within 200 feet of the site or include an aerial photograph at the required scale to meet this requirement.

      See driveway aerial exhibit with property lines and 200-foot buffer depicted.

   g. HR 276-11.1.B.(18). The applicant has provided proposed grading of the roadway but has not provided any lot grading information. We recommend that the applicant add preliminary driveway information and grading to be sure that the lots can be accessed. We also recommend that the driveway location and grading be shown for the existing house.

      Potential driveway locations and grading have been added to the plan set.

   h. HR 276-11.1.B.(20). The applicant should note existing building heights on the plan set.

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Unable to confirm the height of the existing structure due to the tallest point of the roof is a hipped roof. However, the structure is existing and not subject to review of the of the subdivision. New structures on the proposed lots shall comply with all building and zoning code.

i. HR 289-4. The applicant should note or detail monument requirements on the plan set. The applicant should also include proposed monumentation symbols in the legend.

See sheets 4 & 5.

j. HR 289-15. & 334-83. The applicant had noted that a portion of the site is located within the flood hazard area along the Merrimack River. We note that the Existing Conditions Plan and Overview Plan show the Flood Hazard Area to end approximately 60 feet to the west of the proposed roadway crossing. The applicant should confirm that grading changes and replacement of the existing stream crossing will not impact or extend the flood hazard area.

Acknowledged. Grading changes and replacement of the existing stream crossing will not impact the flood hazard area due to the flood hazard area ends prior to the proposed crossing.

k. HR 289-22. The applicant has not proposed any open space as part of this Subdivision plan.

Acknowledged. No open space has been provided.

l. HR 289-26.B.(5). The applicant should provide the required information within 200 feet of the tract or provide aerial photography and the required scale to satisfy this requirement.

See attached exhibit.

m. HR 289-27.B.(3). The applicant should provide street cross sections and a typical cross section on the plan.

Roadway cross sections to be provided with final plans.

n. HR 289-27.B.(6). The applicant has not shown the length and bearing of all proposed property lines and right-of-way.

See subdivision plan. See sheets 3 and 4

o. HR 289-27.B.(6). The applicant should provide an error of closure on the plan set.

See subdivision plan. See sheets 3 and 4

p. HR 289-27.B.(7). The applicant should provide benchmark data on the plan set.

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See Sheet P-3 grading note 5. Benchmarks are to be set prior to construction.

q. HR 289-37.A. The applicant has not provided any information on the phasing of subdivision construction on the plan set. We note that subdivisions with six or more lots must be developed over two years per the Regulation.

See attached waiver request of HR 289-37.A regarding the phasing of subdivision construction.

2. Driveway Review Codes (HR 193-80)
   a. HR 193-8. The applicant has not shown the locations of proposed driveways for each lot on the plan set. The applicant should show the driveway location for the existing home and also provide a typical driveway detail on the plan set.

See layout plan and details. See sheet 10 and 13.

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3. Roadway Design
   a. HR 289-18.A. & B.(1). The applicant should label pavement and right-of-way widths on the plan.

      Pavement width and Right-of-way width have been labeled. See sheet P-3 (sheet 10).

   b. HR 289-18.B.(3). The applicant should label the cul-de-sac pavement and right-of-way radii on the plan. We note that the proposed radii appear to meet the dimensions in the 289 Attachment 2:1 detail, which is inconsistent with the dimensions in Detail R-2 included in the plans. The applicant should confirm with the Town Engineer the appropriate pavement width and radius dimensions for the cul-de-sac.

      As discussed on the phone with the town engineer, layout has been shown per land use code. Per §289-28.B(2) residential streets 1,000 feet in length or less shall be paved 24 feet wide. Per subdivision regulations §289 Attachment 2 Typical Straight Cul-de-sac 289-18B has been used. Detail has been updated to reflect this.

   c. HR 289-18.B.(5). The applicant should add the required signage to the plan or provide existing information that the signage currently exists.

      Existing stop sign and stop bar are located at the intersection of Leclair Drive and Shoreline Drive. No additional signage is necessary.

   d. HR 289-18.C.(1). The applicant has requested a waiver for the horizontal curve minimum. The applicant should show the horizontal curve information on the plan.

      See layout plan (sheet 10).

   e. HR 289-18.C.(2). The applicant has not met any of the vertical curve minimum requirements for the roadway. We note that the k values are proposed to be 19 for crests when 30 is required and proposed to be 20 and 37.5 for sags when 40 is required.

      Vertical curvature has been updated to reflect the town requirements. See sheet 12.

   f. HR 289-18.D. The applicant should review the roadway side slopes to be sure they are all constructed outside of the right-of-way.

      The grading has been modified to have a consistent 2% slope within the ROW and side slopes to be located outside of the ROW.

   g. HR 289-18.M.(1). The Roadway Plan & Profile does not match the scale required by the Regulations.

      Scale has been revised. See sheet 12.

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h. HR 289-18.R.(1). The applicant has not proposed any sidewalks within the subdivision. We note that sidewalks do not currently exist on LeClair Drive but do exist on the intersecting street Shoreline Drive.

See attached waiver request.

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4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)

   a. HR 289-18.A.4. The applicant should confirm the proposed basin floor and side slopes material/treatment at the cul-de-sac infiltration basin IB-2, and review with and gain acceptance from the Town for that proposed material/treatment. Plantings and grass mix must be able to be inundated by stormwater for up to 72 hours.

      To be discussed with the town if plantings are acceptable.

   b. HR 289-18.A.4. The cul-de-sac roadway elevation has a low point at the center of roadway of 123.32 per the Roadway Plan and Profile sheet P-5. The plans do not include a typical roadway section, but the Town of Hudson Typical Roadway Cross Section required 3.5" of pavement with 18" of selects. This results in a bottom of roadway box at 121.5±. Peak water elevations for the infiltration basin are 121.94, 122.67, 122.78, and 122.84 for the 2-year, 10-year, 25-year, and 50-year storm events respectively. The applicant should review with the Town Engineer if the implementation of an infiltration basin in the center of the cul-de-sac would be permitted, considering that the peak elevations of the storms are within the roadway selects in these storms.

      As discussed on the phone with the town engineer, an infiltration basin in the center of the cul-de-sac is permitted.

   c. HR 289-20.A.2. The applicant should revise stormwater subcatchment area DVS4, as stormwater is not permitted to sheet flow across a street.

      See updated plans.

   d. HR 289-20.C.1. & 290-5.A.4. The applicant should review with the Town Engineer if a waiver is required to increase the Peak Rate at Observation Point OP3 in all storms analyzed.

   e. HR 289-20.C.1. & 290-5.A.4. The applicant should provide a similar comparison table of runoff volumes to ensure no net increase for all storms analyzed.

      Table has been added.

   f. HR 289-20.C.1. & 290-5.A.4. The applicant should review with the Town Engineer if a waiver is required to increase the Peak Volume at Observation Point OP3 in the provided 2-year storm.

   g. HR 290-5.A.4. The applicant should provide the GRV BMP worksheet, illustrating required GRV is met.

      See attached BMP worksheet.

   h. HR 290-5.A.6. The applicant should ensure and note if the design utilizes Extreme Precipitation.

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See attached stormwater management report site description and attached Extreme Precipitation Data Tables.

i. HR 290-5.A.7. The applicant should provide additional information regarding downstream properties and how the proposed increase of runoff and volume may be detrimental to those properties.

See stormwater management narrative.

j. HR 290-5.A.11. The applicant should provide additional information on the proposed form of pretreatment required prior to the treatment.

Sediment forebays have been added to the plans.

k. HR 290-5.A.11. The applicant should keep the Town informed of all communication with NHDES in relation to the required Wetland Permit being requested to ensure NHDES comments/requirement do not alter drainage design/calculations.

Acknowledged.

l. HR 290-5.A.12. The applicant should coordinate with the Town for an LTMA of the proposed stormwater practices.

Acknowledged. To be coordinated with the town prior to final approval.

m. HR 290-5.A.12. The applicant should provide a detailed BMP location plan in the I&M Manual. This will ensure all proposed drainage features are noted for their proper maintenance, including but not limited to; specific locations of individual catch basins, outlet structures, closed drainage networks, and infiltration basins.

To be provided after discussion of LTMA.

n. HR 290-5.A.12. The applicant should provide project specific information in the I&M document, including but not limited to; procedures, protocols, frequency, roles, reporting, and responsible parties during and after construction.

To be provided after discussion of LTMA.

o. HR 290-5.B.1.b. The applicant should provide support material or calculations showing the required 80% TSS and 50% TP pollutant removals.

Per the NH Stormwater Manual, infiltration basins located greater than 75 feet from wetlands result in a reduction of 90% TSS and 65% TP.

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p. HR 290-6.A. The applicant should add Observation Points (OPs) to the Existing and Developed Conditions Drainage Area Plans

See drainage area plans for Observation Point Locations.

q. HR 290-6.A.1. The applicant should provide rip rap calculations within the Stormwater Management Report.

r. HR 290-6.A.8. The applicant should ensure the plans note a pre-construction meeting is required with the Town Engineer.

Note has been added to the General Notes sheet as Construction Sequence Notes note 2.a.

s. HR 290-7.A.5. The applicant should provide the required NHDES BMP worksheets.

t. HR 290-7.A.6. The applicant should provide information regarding how the project design accounts for frozen ground conditions.

See drainage analysis for Frozen Ground Condition Calculations.

u. HR 290-7.A.7. The applicant should review with the Merrimack Local River Advisory Committee (LAC) if additional coordination is required.

To be coordinated with the LRAC.

v. HR 290-7.B.13. The applicant should provide information on the soils utilized on site.

See attached stormwater management report site description and attached NRCS Soil Map.

w. HR 290-7.B.16. The applicant should provide locations upon the plan set for proposed snow storage areas. We note snow storage is not allowed within the treatment bays of stormwater basins, and snow should be directed to forebays for pre-treatment prior to entering the treatment bay.

Snow to be stored in grass area adjacent to roadways within the limits of the Right-of-way.

x. HR 290-7.B.18. The applicant should provide additional information on the use of the 0.3 in/hr infiltration rates utilized. If these rates are a Ksat conversion, please provide a calculation or explanation in the write up portion within the report.

This has since been updated to reflect the values calculated from field testing. See attached results and drainage narrative.

y. HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.

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Acknowledged.

z. HR 290-8.B.5. The applicant should coordinate with the Town if additional documentation is required to establish an HOA for the stormwater Long Term Maintenance and inspection requirements of the proposed road.

To be coordinated with the town.

aa. HR 290-10.B. The applicant should provide the typical EPA NPDES disturbance note of over 1 acre, to ensure the contractor is aware of the ENOI SWPPP requirement.

See GN-1, Erosion Control Note 1.

bb. Engineering Technical Guidelines and Typical Details (ETGTD) 920.4.1 & 2. The applicant should provide locations of stockpiles and equipment storage upon the erosion and control plan.

See erosion control plan.

cc. ETGTD 920.4.9. The applicant should coordinate the grate elevation on the Outlet Control Structure OCS-1 between the Detail Plan Sheet D-5 and the HydroCAD Pond IB-1.

This has been revised. See sheet 10.

dd. ETGTD 930. The applicant should provide the drainage design information including but not limited to material, inverts, size, length, slope, cover, and FES/HW.

All drainage pipe is HDPE 15" unless specified otherwise. See sheet 2 Utility note 14.

ee. ETGTD 930. FES-B is not labeled on the Drainage Plan but is included in the table on sheet D-5.

Table has been revised to include FES-A, B and E.

ff. ETGTD 930.1 and Detail D-3. Drainage Plan P-3 includes note #6 stating that all drainage pipes require 1 foot of minimum cover. The Town standards and detail require 4 feet of cover in paved areas and 2 feet of cover in off pavement areas. Cover over the drain between CB-1 and CB-2 is less than 4 feet, and invert information is not provided for the pipe out of OCS-2.

gg. ETGTD 930.10. We note the Town Requirement of curb inlet drainage structures at all vertical sags.

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hh. ETGTD 930.11. The applicant should review roadway spread calculations at the low point of the unnamed CBs at STA 6+40± and review with the Town Engineer. If calculations warrant additional grate area is necessary for stormwater collection, the applicant should review if a double catch basin is warranted in this particular situation.

ii. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements.

Acknowledged.

jj. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state or local laws, rules or regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact the review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.

Acknowledged.

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5. Zoning (HR 334)

   a. HR 334-20. The site is located in the Residential-Two (R2) District. The applicant has noted the proposed use of the new lots. We note that per the Ordinance lots could be single- or two-family dwellings.

      Acknowledged.

   b. HR 334-27. The applicant should list each proposed lot on the plan, in chart form, indicating in square feet/acreage the total lot area, wetland, slope area greater than 25% and total net contiguous useable upland area.

      Lot summary table has been added to the overview plan.

   c. HR 334-27.1.D. The applicant should list the frontage of the proposed lots on the plan set.

      See lot summary table on overview plan.

   d. HR 334-35. The applicant has shown the fifty-foot wetlands buffer on the plan set, and has proposed both temporary and permanent development within this buffer.

      Acknowledged. See conditional use permit application.

   e. HR 334-36.C. The applicant has included a Conditional Use Permit Application to allow disturbance within the wetland and wetland buffer for the construction of the proposed roadway. We note that the construction of the proposed driveway for the existing home on lot 5 would also impact this area and should be shown on the plan.

      Acknowledged. This has been updated.

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6. Sewer/Water Design/Conflicts & Utility Design/Conflicts (HR 276-13.E.)

   a. HR 276-13.A. The applicant has shown utility poles and overhead wires along the proposed roadway on the plan, and noted in the narrative that proposed lots will be served by underground power and cable. The Regulation requires all new developments to have underground wiring.

      Plans have been modified to show the removal of existing overhead utilities and installation of underground electric. See site preparation plan and utility plan.

   b. HR 276-13.E. The applicant should label the type and size of the water main on the utility plan and the roadway profile.

      This has been updated. See utility plan and roadway plan and profile.

   c. HR 276-13.E. The applicant should label the type and size of the sewer force main and gravity main on the utility plan.

      See updated callout on utility plan.

   d. HR 276-13.E. The applicant has not provided any information regarding the pump station(s) that will be connected to the private force main on the plan set. Also, the applicant should provide information as to who will be responsible for maintenance of the force main.

      This will be submitted separately to the review engineer.

   e. HR 276-13.E. The applicant should show preliminary water and sewer connection locations for each lot on the plan set including curb stops and sewer cleanouts.

      See utility plan for potential sewer and water stubs.

   f. HR 276-13.E. The applicant has noted in the narrative that the existing home will remain on the current well and septic system. The applicant should review with the Town whether connecting to the new water and sewer systems is required for this lot/home.

      Acknowledged, to discuss with town.

   g. HR 276-13.E. The applicant has proposed one fire hydrant within the subdivision at the end of the cul-de-sac of LeClair Drive. The applicant should coordinate with the Hudson Fire Department to verify that they are satisfied with the placement of the fire hydrant and there is adequate fire protection coverage for the proposed lots.

      Plan has been updated to show two proposed hydrants. See utility plan and attached fire department exhibit.

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h. HR 276-13.E. The applicant has shown a new water main running the length of LeClair Drive to the intersection with Shoreline Drive, but there is no connection to a water main at Shoreline Drive shown. The applicant should show the location of the proposed connection and valving arrangement.

Existing water main location has been provided by the town engineer and shown on plan.

i. HR 276-13.E. The applicant has shown the proposed water main within LeClair Drive to be immediately adjacent to existing SMH-1 and the existing sewer main to Shoreline Drive. Water is required to have a 10-foot lateral separation from sewer.

Water line and sewer location have been adjusted to maintain a 10-foot separation from sewer.

j. HR 276-13.E. The applicant has proposed the new water main to have two 90-degree bends at approximate station 3+82 where it crosses the sewer main. The applicant should confirm with the Town that this arrangement is acceptable or provide a revised layout.

Water line and sewer location have been adjusted to maintain a 10-foot separation from sewer.

k. HR 289-21.A. The applicant has proposed a 10-foot-wide sewer easement for the private force main. The Regulation requires utility easements to be 15-feet-wide. The applicant should also note on the plan who the easement will benefit since the main is proposed to be private.

Sewer easement has been revised to be a 15-foot easement.

l. HR 289-26.B.(4). The applicant should provide information on the existing sewer main shown on the plan including type and size.

See existing conditions plan and roadway plan and profile for existing sewer information.

m. The applicant has provided invert and rim elevation information for only one of the two proposed sewer manholes at station 6+00.

This has been revised with new layout.

n. The applicant should provide invert information for the existing catch basins at station 1+50 to confirm that the proposed water main does not conflict with the pipe connecting these structures. Also, the proposed water main is shown immediately adjacent to the eastern catch basin. The applicant should review if insulation or other means of protection of the water main at this location will be needed.

This has been revised and adjusted.

o. ETGTD Section 801. The applicant should verify with the Town that the existing water main on Shoreline Drive has adequate flow and pressure to meet both domestic and fire hydrant needs for the project.

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As discussed on the phone with the town engineer, the existing water main on Shoreline Drive has adequate flow and pressure for the use proposed.

p. The applicant should remove the reference to Walmart from the Utility notes on the Utility Plan.

This note has been removed.

q. Utilities Note 15 on Sheet GN-1 states that all lots are to be served by individual sewage disposal systems and onsite wells. This note should be updated to reflect the proposed utility connections.

Note 15 has been modified to state the site is to be serviced by municipal sewer and water.

7. Erosion Control/Wetland Impacts

a. The Town should reserve the right to require additional erosion control measures.

Acknowledged.

8. State and Local Permits
   a. The applicant has listed the required permits on the plan set. The applicant should also review the need for an NHDES Sewer Connection permit and Wetlands permit.

NHDES Sewer and Wetland permits have been added to the cover sheet of the plan set.

b. Additional local permitting may be required.

Acknowledged.

9. Other
   a. ETGTD Section 565.1.1. The applicant is reminded that the Town of Hudson has specific requirements for the importing of off-site fill materials for use in constructing this project. We recommended that these requirements be stated on the plans for the Contractors attention.

See grading notes 3 and 4 and sheet P-3.

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Phone: 603-673-1441 * Fax 603-673-1584
www.MeridianLandServices.com
CIVIL ENGINEERING | LAND SURVEYING | PERMITTING | SOIL & WETLAND MAPPING | SEPTIC DESIGN | ENVIRONMENTAL

If there are any questions or concerns, please do not hesitate to contact Meridian Land Services, Inc.

Sincerely,

Samuel R. Foisie, P.E.
Project Manager
Meridian Land Services, Inc.
srfoisie@MeridianLandServices.com
(603) 673-1441

Project No.: 12916.00
Cc: Mike Lacasse and James Silverthon with attachments

Attachment "G"

TOWN OF HUDSON

Planning Board

Timothy Malley, Chairman

12 School Street · Hudson, New Hampshire 03051 · Tel: 603-886-6008 · Fax: 603-594-1142

CAP FEE WORKSHEET - 2026

Date: 04-13-26 Zone # 1 Map/Lot: 147/006-000
12 Leclair Drive

Project Name: 12 Leclair Drive 7-Lot Subdivision

Proposed ITE Use #1: Single Family Residential Lot

Proposed Building Area (square footage): N/A S.F.

CAP FEES: (ONE CHECK NEEDED)

1.	**(Bank 09) 2070-701**	**Traffic Improvements**	**$ 2,306.00**
2.	**(Bank 09) 2050-182**	**Recreation**	**$ 400.00**
3.	**(Bank 09) 2080-051**	**School**	**$ 3,578.00**
		Total CAP Fee	**$ 6,230.00**

***** This CAP Fee to be paid prior to issuance of a Certificate of Occupancy. *****

Check should be made payable to the Town of Hudson.

Thank you,

Brooke Dubowik

Town Planner