EMANUELENGINEERING.COM

Document Transmittal

TO: Attn: Eben Lewis
NHDES Wetlands Bureau
PO Box 95
29 Hazen Drive
Concord, NH 03302-0095

DATE: September 10, 2026

EEI JOB #: 24-1061 – Copley-Gallant-80 Winnicutt Rd

RE: Wetlands Bureau File 2026-01170 RFMI
for Copley Properties, LLC
80 & 80R Winnicutt Road (Site)
Stratham, NH 03885

Copies	***Date***	***Size***	***Description***
email	09-08-26	8.5x11	Response Letter to NHDES
email	09-02-26	8.5x11	Email from Frontier Geoservices LLC (response letter comment #5)
email	09-10-26	8.5x11	Revised Stream Crossing Worksheets for Impacts 'E" and "H"
email	08-28-26	8.5x11	Revised Wetland Functional Assessment
email	09-08-26	8.5x11	Wetland Impact Photo Log & Map
email	09-09-26	8.5x11	Revised Request for Alternate Designs
email	Varies	8.5x11	Riprap Sizing Calculations
email	Varies	8.5x11	HydroCAD Report for Impacts F-H
email	05-05-26	8.5x11	Revised Stormwater Calculations Report (AOT)
email	Varies	22x34	Revised 80 & 80R Winnicutt Road Plan Set *V1-V7 – Subdivision Plan (by James Verra & Associates, Inc.)* *VT1-VT6 – Topographic Plan (by JVA)* *CC1 – Conservation Commission Plan* *E1 – Preliminary Easement Plans* *C1 – Existing Conditions* *C2 – Soils & Topography Plan* *C5-C7 – Proposed Road Plans and Profiles* *C7.1 – Proposed Sediment Forebay and Bioretention Pond B2 Plan* *C7.2 – Erosion & Sediment Control Plan* *C8 – Wetland Impact Plan* *C8.1 – Wetland Impact Plan and Cross Sections* *C8.2 – Wetland Impact Details* *C8.3 – Topography Wetland Impact Plan* *C8.4 – Topography Wetland Impact Plan: Vernal Pools 1-3* *C8.5 – Topography Wetland Impact Plan: Vernal Pool 4* *D3 – Details*

Thank you,

Bruce Scamman, P.E.

Copy to: Helen E. Gallant Revocable Trust (email only),
Copley Properties LLC (email only),

EMANUELENGINEERING.COM

Stratham Conservation Commission (email only),
U.S. Army Corps of Engineers, New England District (email only),
Hoefle, Phoenix, Gormley & Roberts, PLLC (email only),
Hurley Environmental & Land Planning, LLC (email only),
James Verra & Associates (email only), and File

EMANUELENGINEERING.COM

September 8, 2026

Eben Lewis
Southeast Region Supervisor, Wetlands Bureau
Land Resources Management, Water Division
29 Hazen Drive
Concord, NH 03302

RE: Wetlands Bureau File 2026-01170
Copley-Gallant Subdivision
80 & 80R Winnicutt Road - Stratham
Tax Map 14 Lots 56 & 57

Mr. Lewis,

This letter addresses the review comments outlined in your Request for More Information dated June 26, 2026, for the Copley Properties LLC Standard Dredge and Fill Wetlands Permit Application at 80 & 80R Winnicutt Road, Stratham, NH 03885. Our responses are provided in ***bold italic*** text following each comment.

APPLICATION:

1. On June 11, 2026, NHDES received an email with comments from the Stratham Conservation Commission (SCC) recommending denial of the Application. Pursuant to Env-Wt 311.06(h), please address the comments from the SCC (attached).

Our office has considered all comments from the SCC. Each comment has been summarized to a bullet point with our response to each comment below.

- Multiple Wetland Crossings

The location and number of wetlands was carefully considered to minimize the proposed impacts. The proposed development has been limited to the central portion of the 103-acre lot to minimize the number of required crossings and crossings were chosen at the narrowest points of the wetlands. Additionally, retaining walls are proposed at Impacts "A-E" to reduce the required re-grading within the wetlands and buffers. Stone fords have also been proposed at Impacts "F-H" since they are less impacting than installing a culvert. Sheet D3 has been included in this submission to show that the proposed limits of disturbance will be less than 30% of the total site.

- Large Wetland Crossing Serving Limited Development

In addition to accessing Lots 26 and Lot 27, Impact "E" will be used to access multiple large community leach fields in the uplands near the southeastern portion of the lot. These leach fields will serve 27 of the proposed dwellings, therefore this impact provides more public

benefit than there originally appears. Additionally, most of this impact consists of outlet protection riprap that was sized in accordance with the 2025 New Hampshire Stormwater Manual. To further reduce the proposed impact, the applicant has agreed to install a 4-foot tall by 8-foot wide open bottom box culvert. This will reduce the proposed impact by approximately 1,885 square feet than what was originally proposed.

- Residential Lots Encumbered by Wetlands and Buffer Areas

  A preliminary plan (Sheet CC1: Conservation Commission Plan) has been included with this response. This plan was presented to the SCC in February and May 2025 to show the proposed dwellings will be outside of the town's wetland setbacks at the time application was originally submitted to the town. Also, any future proposed impacts will need to be considered by the town's Zoning Board of Adjustment, Planning Board, Conservation Commission and/or other applicable board or department on an individual basis. Finally, wetland boundary markers will be installed along areas of development, so homeowners can easily see the location of the wetland buffer.
- Potential Impacts to Endangered and Protected Species

  Our office coordinated with NHDES Ecological Review as required for this application. The recommended conservation measures can be found on Sheet C8.1.
- Impact to Vernal Pools

  See Sections 5.3 & 5.6 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)
- Increased Traffic and Wildlife impacts

  Driveway Permit # DOT-DRI-001367 has already been obtained for this project. Also, the two proposed roads will have a reduced speed limit of 25 miles per hour to lower the potential wildlife mortality.
- Potential Impacts to the Great Bay Estuary

  NHDES Alteration of Terrain Bureau has already issued a permit for this project (AoT-3060). Potential impacts to off-site receiving waters have already been reviewed as part of that approval.
- Potential Impacts to Groundwater resources and Aquifers

  Please refer to comment #5 for a response from Frontier Geoservices LLC.

2. In accordance with Env-Wt 311.07(a), the applicant shall submit with the application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable, as required by Env-Wt 313.03. In a larger, holistic context the functional assessment does not speak of the impact of the project to Mill Brook. By in large, the property is the headwaters of Mill Brook. The wetlands associated with the property are within the watershed of Mill Brook, a tributary of the Squamscott River. Constructing 47 homes within a 33-lot subdivision and installing six shared septic systems with a total of 38 drilled drinking water wells maximizes development and would be deleterious to Mill Brook, the Squamscott River, and Great Bay. In accordance with Env-Wt 313.01(c)(3)a., the project

would cause and contribute to the significant degradation of waters of the state and is not consistent with RSA 482-A:1.

See Section 5.6 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)

3. Please Note a previous rule reference: The functional assessment submitted with the Application pursuant to Env-Wt 311.10 by James Verra & Associates, Inc. dated April 13th, 2026 does not reference the correct rule(s) in Section 5.0 AVOIDANCE & MINIMIZATION, "In accordance with Env-Wt 302.04, the applicant demonstrated that impacts have been avoided where practicable, unavoidable impacts have been minimized, and this alternative represents the least environmentally damaging practicable alternative (see below for justification)." As of December 24, 2019, Env- Wt 302.04 is no longer in use.

   See Section 3.0 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)

4. NHDES does not agree with the response to Env-Wt 313.03(b)(1), provided in the Application. Although the "Yield Plan (Sheet 3)" was not included with the Application, NHDES finds the plans by Emmanuel Engineering revised through May 4, 2026 (the "Plans") depict a main access road through the property providing access for the project with minimal impacts for the 25 dwellings with combined temporary and permanent impacts of 465 square feet of jurisdictional area. Two dwellings on lots 26 and 27 are proposed to be accessed by a shared driveway off of the cul- de-sac of the main access road with impacts totaling almost 10 times more wetlands impact as the impacts proposed for the main access road for the single-family dwellings. Furthermore, the shared driveway fragments the areas and contradicts Env-Wt 311.07(b)(3), Env-Wt 524.02(b), and is not consistent with RSA 482-A:1.

   See Section 5.3 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)

5. Please provide a more thorough response to Env-Wt 313.03(b)(8), relative to the project not impacting groundwater with the installation of 38 drilled drinking water wells. Please address Env-Wt 524.04(c), the project provides setbacks and water quality protection measures sufficient to protect private and public drinking water supplies, source water protection areas, and fisheries. Supporting information was not provided with the Application corroborating statements made in this response to comply with RSA 482-A:1.

   The Applicant has evaluated potential impacts to groundwater resources and drinking water supplies in accordance with Env-Wt 313.03(b)(8) and Env-Wt 524.04(c). The proposed subdivision includes 48 residential homes, 13 shared wastewater disposal systems, and 37 new drilled drinking water wells, one existing. All 37 proposed drinking water wells are located outside the applicable nitrate setbacks associated with the shared leach field systems. Each proposed well is also shown with a 75-foot well-radius setback on the project plans. The use of six shared wastewater disposal systems consolidates wastewater infrastructure and reduces the amount and distribution of septic fields, reserve areas, clearing, grading, and associated disturbance across the property.

   Also, Frontier Geoservices LLC has been retained to analyze the proposed effects to the groundwater and have provided the following response:

The proposed subdivision will be served by 38 drilled bedrock drinking water wells. The proposed wells represent relatively low-volume, distributed residential groundwater withdrawals rather than a concentrated withdrawal from a single production well or well field. Groundwater withdrawals will therefore be distributed throughout the development and will occur intermittently based on individual household water demand. The proposed subdivision has been designed to provide appropriate separation between drinking water wells and wastewater disposal infrastructure. A minimum 75-foot separation is maintained between proposed water supply wells and wastewater disposal areas. Where applicable, a reduced minimum separation of 50 feet is provided between a water supply well and septic tank in accordance with Env-Wq 1008.04(c), including the applicable tank and piping construction requirements. No public water supply wells or associated source water protection areas are located in the project vicinity. Existing water supplies in the surrounding area consist of individual domestic wells. Given the distributed and relatively low-volume nature of the proposed residential withdrawals, significant impacts to these existing domestic wells are not anticipated. Groundwater withdrawn by the proposed residential wells will also largely be returned to the local groundwater system following residential use through the proposed subsurface wastewater disposal systems. Therefore, residential water use does not represent an equivalent net consumptive withdrawal from the local groundwater system. Based on the distributed and intermittent nature of the proposed residential groundwater withdrawals, separation between drinking water wells and wastewater disposal infrastructure, and return of a substantial portion of residential water use to the local groundwater system through subsurface disposal, the proposed wells are not anticipated to result in significant adverse impacts to groundwater levels or groundwater quality. The withdrawals are also not anticipated to significantly alter groundwater discharge to adjacent wetlands or surface waters and, therefore, are not anticipated to adversely affect fisheries or aquatic resources. Accordingly, the project is not anticipated to result in significant adverse impacts to private or public drinking water supplies, source water protection areas, groundwater resources, wetlands, surface waters, or fisheries, consistent with Env-Wt 524.04(c) and RSA 482-A:1.

In addition, the project incorporates stormwater management, pretreatment, erosion and sediment controls, wetland protection measures, and a proposed 55,175-square-foot no-cut/no-disturb easement directly adjacent to Mill Brook. Collectively, these measures demonstrate that groundwater and drinking water resources have been considered in the project design and that potential impacts have been avoided and minimized to the maximum extent practicable, consistent with Env-Wt 313.03(b)(8), while the proposed well locations, wastewater disposal configuration, required separations, and water-quality protection measures provide protection for private drinking water supplies and groundwater resources consistent with Env-Wt 524.04(c).

6. The cluster development off of the main access road and the two larger dwellings proposed fragments valuable habitat between the vernal pools. Pursuant to Env-Wt 313.03(b)(4), the project does not avoid and minimize impacts to wetlands and other areas of jurisdiction

under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, or any combination thereof. Although the datacheck provided with the Application from NHDES' Ecological Review Section did not identify Blanding's Turtle (*Emydoidea blandingii)* in the vicinity of the project, several comments on the Application have been received by NHDES stating Blanding's Turtles are present. Blanding's Turtles forage in vernal pools and use slow rivers and streams as mechanisms for dispersal between wetlands. Blanding's extensively use terrestrial habitats for nesting and travel among wetlands.

See Sections 5.3 & 5.6 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)

7. The Application did not provide a response to Env-Wt 524.03(1)b., if the project includes components that are subject to multiple project-specific requirements in this chapter, a narrative statement and plan that describes how the project as a whole impacts jurisdictional areas.

   See Section 5 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)

8. Vernal pools on the property will be fragmented by the development and proposed crossings. Pursuant to Env-Wt 524.04(f), the project does not maintain existing wetland-dependent wildlife habitat and its associated migratory pathways, reproductive sites, and associated wetland complex or wetland community systems.

   See Sections 5.3 & 5.6 of the Wetland Functional Assessment | Project Constraint | Alternative Analysis Report (Revised August 28th, 2026)

9. Please provide the hydrocad analysis by Emanuel Engineering, Inc per Env-Wt 904.10(d)(3), for wetland impacts "F" and "G" in accordance with Env-Wt 904.10, Alternative Designs.

   The HydroCAD analysis for impacts "F" and "G" has been included with this letter to show that proposed stone fords have been sized appropriately. Additionally, HydroCAD analysis for new impact "H" has also been included for the same reason. The stormwater management calculations that were submitted as part of the AoT approval have also been submitted as a separate file.

PLANS:

10. Revise the plans to depict the vernal pools on the proposed development Plans overlaid with proposed lot lines, grading, vegetation clearing, and structure location in accordance with Env-Wt 311.05(a)(13), the location of jurisdictional areas delineated in accordance with Env-Wt 406.

    The vernal pools, proposed lot lines, proposed tree line, and proposed structures are shown on Sheet C8. Existing and proposed contours are not shown on Sheet C8 due to the amount of information that is already on that sheet, but are shown on the blown-up impacts on Sheet C8.1. Sheets C8.3, C8.4, and C8.5 have been added to this submission to show the existing and proposed contours of the overall site and near the two vernal pool locations respectively.

11. The use of riprap outlets for the crossings associated with wetland impacts "B", "C", and "D" on the Plans are not the least impacting alternative per Env-Wt 313.03(b)(4). No supporting information was provided to justify the need for the outlets with the Application.

    As mentioned in response #1 the amount of riprap required for impact "E" has been reduced by approximately 1,885 square feet by providing a box culvert. Riprap sizing calculations have been provided for impacts "B", "D", and "E" to show that they have been sized in accordance with the 2025 New Hampshire Stormwater Manual.

12. In accordance with Env-Wt 311.05(a)(18), the impacts identified on the 'Wetland Impact Plan' (Sheet C8) do not correlate with the 'Proposed Wetland Impact Areas' table on this plan. This table quantifies 8,000 square feet of wetland impact while the separate impact areas on this plan equals 8,020 square feet. Please clarify and confirm the correct impacts amounts. Please confirm the correct application fee has been submitted with the application per Env- Wt 311.03(b)(2), the correct fee, determined as specified in RSA 482-A:3, I(b).

    We apologize for this inconsistency and have confirmed that the impact proposed with the revised plans is 6,680 square-feet which is 1,320 square-feet less than the originally submitted.

13. Provide revised plans in accordance with Env-Wt 524.03(2), for all projects for which land will be subdivided, a plan prepared and stamped by a land surveyor licensed in the state of New Hampshire pursuant to RSA 310-A showing: a. Existing and proposed topography per Env-Wt 311.05(a)(17), if the topography of the subject property is to be permanently altered, existing and proposed final contours at intervals not greater than 2 feet in all areas to be disturbed and within 250 feet thereof on the subject property, and a reference elevation referenced to the North American Datum of 1983 (NAD 83) or its successor.

    Subdivision plans (Sheets V1-V7) and Existing Topographic Plans (Sheets VT1-VT6) by James Verra and Associates have been submitted as part of the revised plan set. Proposed contours have been added to the Wetland Impact Plan (Sheet C8.1 and C8.3).

14. In light of the presence of Blanding's Turtle on the property, NHDES requests the use of over-sized, embedded/open- bottom box culverts instead of closed-bottom round pipe culverts per Env-Wt 904.03(b)(3).

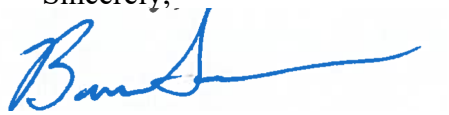
    An over-sized open-bottom box culvert is now proposed at impact "E". A 1-2" layer of AASHTO #67 stone will be installed above the proposed riprap to reduce the voids and aid any potential wildlife.

15. Revise plans to comply with Env-Wt 903.04 (b)(7), for the proposed structure, cross-sections showing the water surface elevation resulting from the applicable design storm, with bed material and backfill zones.

    Cross-sections showing the water surface elevation from the 2, 10, 25, 50, and 100-year storm(s), with bed materials and backfill zones have been added to

Sheets C8.1 and C8.2 of the revised plan set.

Sincerely,



Bruce Scamman, PE

Civil Engineer

From: Joel Banaszak
To: Bruce Scamman
Cc: Nick Bouchard; Morgan Moody (MMOODY@JVASURVEYORS.COM); JJ MacBride
Subject: Re: Stratham NH
Date: Wednesday, September 2, 2026 4:50:56 PM
Attachments: image001.png
image003.png
image004.png

Thank you for the reminder Bruce. I picked this up and put it back down a few times since Nick sent it. Here is what my response is to comment #5. Let me know your thoughts.

The proposed subdivision will be served by 38 drilled bedrock drinking water wells. The proposed wells represent relatively low-volume, distributed residential groundwater withdrawals rather than a concentrated withdrawal from a single production well or well field. Groundwater withdrawals will therefore be distributed throughout the development and will occur intermittently based on individual household water demand.

The proposed subdivision has been designed to provide appropriate separation between drinking water wells and wastewater disposal infrastructure. A minimum 75-foot separation is maintained between proposed water supply wells and wastewater disposal areas. Where applicable, a reduced minimum separation of 50 feet is provided between a water supply well and septic tank in accordance with Env-Wq 1008.04(c), including the applicable tank and piping construction requirements.

No public water supply wells or associated source water protection areas are located in the project vicinity. Existing water supplies in the surrounding area consist of individual domestic wells. Given the distributed and relatively low-volume nature of the proposed residential withdrawals, significant impacts to these existing domestic wells are not anticipated.

Groundwater withdrawn by the proposed residential wells will also largely be returned to the local groundwater system following residential use through the proposed subsurface wastewater disposal systems. Therefore, residential water use does not represent an equivalent net consumptive withdrawal from the local groundwater system.

Based on the distributed and intermittent nature of the proposed residential groundwater withdrawals, separation between drinking water wells and wastewater disposal infrastructure, and return of a substantial portion of residential water use to the local groundwater system through subsurface disposal, the proposed wells are not anticipated to result in significant adverse impacts to groundwater levels or groundwater quality. The withdrawals are also not anticipated to significantly alter groundwater discharge to adjacent wetlands or surface waters and, therefore, are not anticipated to adversely affect fisheries or aquatic resources.

Accordingly, the project is not anticipated to result in significant adverse impacts to private or public drinking water supplies, source water protection areas, groundwater resources, wetlands, surface waters, or fisheries, consistent with Env-Wt 524.04(c) and RSA 482-A:1.

From: Bruce Scamman <bscamman@emanuelengineering.com>
Sent: Wednesday, September 2, 2026 4:31 PM
To: Joel Banaszak <jbanaszak@frontiergeoservices.com>
Cc: Nick Bouchard <nbouchard@emanuelengineering.com>; Morgan Moody (MMOODY@JVASURVEYORS.COM) <MMOODY@JVASURVEYORS.COM>; JJ MacBride <jmacbride@emanuelengineering.com>
Subject: FW: Stratham NH

Joel,

We are trying to wrap this up and get it back to NHDES Wetlands. Could you send a response that we could add to our submission?

Thank you,
Bruce D. Scamman, P.E.
President
(603) 944-2626 (cell)
James Verra & Associates, Inc. & Emanuel Engineering, Inc.
https://jvasurveyors.com/ & https://www.emanuelengineering.com/

We have moved JVA and EEI to our new location!, please send mail and visit us at 100 Griffin Road, Unit C, Portsmouth, NH 03801.

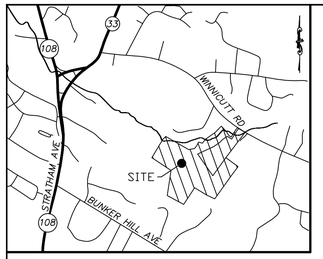
JVA JAMES VERRA & ASSOCIATES, INC.

EEI EMANUELENGINEERING.COM

FVA A DIVISION OF JVA SURVEYORS

From: Nick Bouchard <nbouchard@emanuelengineering.com>
Sent: Thursday, August 13, 2026 4:24 PM
To: Joel Banaszak <jbanaszak@frontiergeoservices.com>
Cc: JJ MacBride <jmacbride@emanuelengineering.com>; Morgan Moody <mmoody@jvasurveyors.com>; Bruce Scamman <bscamman@emanuelengineering.com>
Subject: RE: Stratham NH

Good afternoon Joel,



LOCUS
(N.T.S.)

LEGEND

- GRANITE BOUND FOUND
- IRON ROD FOUND
- BARBED WIRE IN TREE FOUND
- DRILL HOLE SET
- MNMT–FND
- DRILL HOLE FOUND
- GRANITE BOUND SET
- STONEWALL
- LOT XX — TAX MAP & LOT
- VERY POORLY DRAINED SOILS
- WET
- X–XX — WETFLAG
- BOUNDARY ABUTTER LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- 52' — CONTOUR LINE

NHSPC (NAD83)

13–74 | 13–132 | 9–63 | 13–131 | 9–73 | 14–63 | 14–162 | 14–61 | 14–60 | 14–59 | 14–58 | 14–55 | 9–82 | 14–172 | 14–173

SHEET V7/VT6

LOT #34
OPEN SPACE
TO BE NON–BUILDABLE

LOT #24 | LOT #23 | LOT #22 | LOT #25

EXISTING
14–57
3,669,959 S.F. ±
84.251 ACRES ±

LOT #21 | LOT #15 | LOT #14 | LOT #13 | LOT #12 | LOT #8 | LOT #7 | LOT #6 | LOT #5 | LOT #4 | LOT #3 | LOT #2 | LOT #1

SHEET V4/VT3

LOT #34
OPEN SPACE
TO BE NON–BUILDABLE

UTILITY EASEMENT

SHEET V6/VT5

LOT #34
OPEN SPACE
TO BE NON–BUILDABLE

LOT #26 | LOT #28 | LOT #16 | LOT #17 | LOT #18 | LOT #19 | LOT #20 | LOT #27 | LOT #29

SHEET V5/VT4

EXISTING
14–56
855,898 S.F. ±
19.649 ACRES ±

LOT #9 | LOT #10 | LOT #11 | LOT #30 | LOT #33

SHEET V2/VT1

LOT #34
OPEN SPACE
TO BE NON–BUILDABLE

WINNICUTT ROAD

SHEET V3/VT2

FORMER TRACT LINE TO BE ABANDONED (TYPICAL)

OPEN SPACE
TO BE NON–BUILDABLE

LOT #32 | LOT #31

PAPER STREET

GRAPHIC SCALE
150' 0 75' 150' 300' 600'
(IN FEET)
1 inch = 150 ft.

9–63
ELAINE R. SANDERSON
45 BUNKER HILL AVENUE
STRATHAM, NH 03885
BK: 3420 PG: 1610

9–73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

9–82
BELL & FLYNN, LLC
69 BUNKER HILL AVENUE
STRATHAM, NH 03885

13–74
EMANUEL CO., INC
6 PATRIOTS ROAD
STRATHAM, NH 03885
BK: 2341 PG: 1826

13–131
MYRA CITRIN &
ROBERT MILLSTEIN
10 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 3541 PG: 1120

13–132
MYRA CITRIN &
ROBERT MILLSTEIN
10 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 3319 PG: 2351

14–55
BETH A. ADAMS
86 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5583 PG: 2777

14–56
HELEN E. GALLANT REVOC. TRUST 95
HELEN E. GALLANT, TRUSTEE c/o PAUL GALLANT
2642 BOLERO DRIVE – #501
NAPLES, FL 34109
BK: 5504 PG: 0266

14–57
HELEN E. GALLANT REVOC. TRUST 95
HELEN E. GALLANT, TRUSTEE c/o PAUL GALLANT
2642 BOLERO DRIVE – #501
NAPLES, FL 34109
BK: 5598 PG: 0405

14–58
LEVESQUE FAMILY REVOCABLE TRUST 2019
THOMAS P. & MARGUERITE C. LEVESQUE, TRUSTEES
1 HEATHER LANE
HAMPTON, NH 03842
BK: 5990 PG: 0865

14–59
CROW FAMILY REVOCABLE TRUST
JOSHUA D. & CHRISTINE M. CROW, TRUSTEES
74 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 6459 PG: 2235

14–60
LISA M. & JEFFREY A. POWERS
72 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5217 PG: 1675

14–61
CATHERINE & JAMES GERWECK
70 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 6451 PG: 2854

14–63
PAMELA W. BINNIE
NICHOLAS C. HARITOS SR.
7 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 6219 PG: 1615

14–69
NORA D. LITZELMAN
71 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5614 PG: 1114

14–70
BRUCE BENNETT
73 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 2487 PG: 0630

14–71
MATTHEW B.
& MARYBETH H. KUSHNER
70R WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5524 PG: 0150

14–162
MATTHEW B.
& MARYBETH H. KUSHNER
70R WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5524 PG: 0150

14–172
ROBIE FARMS HOMEOWNERS ASSOCIATION
C/O JONES & BEACH ENGINEERS, INC
PO BOX 1144
STRATHAM, NH 03885
BK: 6148 PG: 1725

14–173
MARK LEWIS & KELLY L. PETRARCA
20 TREAT FARM ROAD
STRATHAM, NH 03885
BK: 6283 PG: 0971

NOTES:

1. OWNER OF RECORD: HELEN E. GALLANT REVOCABLE TRUST, C/O PAUL GALLANT
   ADDRESS: 2642 BOLERO DRIVE, UNIT 501, NAPLES, FL 34109
   DEED REFERENCES: BOOK 5598, PAGE 405 AND BOOK 5504, PAGE 266
   PROPERTY: TAX MAP 14, LOT 56 AND TAX MAP 14, LOT 57
   (LOTS 56 AND 57 COMPRISE THE TOTAL AREA)
2. ZONED: RESIDENTIAL/AGRICULTURE DISTRICT (R/A)
   SHORELAND PROTECTION (OVERLAY) 100' FROM STREAMS ON USGS MAP C
   CONVENTIONAL SUBDIVISION REQUIREMENTS
   MINIMUM LOT AREA: 2 ACRES* (30,000 S.F. CONTIGUOUS BUILDABLE)
   FRONT YARD SETBACK: 30' SIDE & REAR YARD SETBACK: 20'
   FRONTAGE: 200' DEPTH: 150'
   BUILDING SPACING 10' OR 20' (30' PROVIDED)
   * SOIL BASED LOT SIZING *
   CLUSTER SUBDIVISION REQUIREMENTS
   SETBACKS FROM EXISTING PROPERTY LINES: 50' SETBACK FROM PAVEMENT: 30'
   STRUCTURAL SETBACK (SINGLE FAMILY): 40' ALL LOT LINES: 10'
   STRUCTURAL SETBACK (MULTI–FAMILY): 50'
   WETLAND VERY POORLY DRAINED: 50' WETLAND POORLY DRAINED: 25'
3. THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE LOTS 14–56 AND 14–57 INTO 33 PARCELS, ONE OF WHICH WILL BE DESIGNATED AS AN OPEN SPACE LOT, RESULTING IN A TOTAL OF 33 BUILDABLE LOTS. THE PLAN CONSISTS OF A 51–SHEET SET, WITH SHEETS V1 THROUGH V7 TO BE RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS, AND THE REMAINING SHEETS TO BE RETAINED ON FILE WITH THE TOWN OF STRATHAM.
4. THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE CATCH BASINS, MANHOLES, WATER GATES ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG–SAFE @ 1–888–DIG–SAFE. (OR 811)
5. HORIZONTAL DATUM: NAD83, VERTICAL DATUM: NAVD88. ESTABLISHED BY SURVEY GRADE GPS OBSERVATION AND PROCESSED BY OPUS.
6. THE PARCEL SHOWN HEREON LIES WITHIN ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS IDENTIFIED ON FLOOD INSURANCE RATE MAP, ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0245F, EFFECTIVE DATE 1/29/2021 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
7. LUKE HURLEY, CWS #232 CONDUCTED THE WETLAND DELINEATION ON 5/9/2024 , UTILIZING THE STANDARDS OF THE CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL1[1] AND THE NH DES WETLANDS BUREAU CODE OF ADMINISTRATIVE RULES2[2], CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES3[3], FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND4[4], NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1)5[5].
8. CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE ESTABLISHMENT OF ANY GRADES OR ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOCIATES, INC.
9. EXISTING AND PROPOSED LOTS ARE TO BE SERVICED BY ON–SITE COMMUNITY SEPTIC SYSTEMS AND ON–SITE COMMUNITY WELLS. NHDES STATE SUBDIVISION APPROVAL #: PENDING.
10. TIE LINES SHOWN ARE TO LOCATE THE PROPOSED OPEN SPACE SUBDIVISION IN RELATIONSHIP TO THE PERIMETER, AND ARE **NOT** BOUNDARY LINES SEPARATING THE OPEN SPACE AREAS.
11. CROSS EASEMENTS FOR WELLS, SEPTICS AND DRIVEWAYS MAY BE NEEDED, AND WILL BE ADDED TO THE PLAN SET AFTER CONDITIONAL APPROVAL, PRIOR TO FINAL SUBMISSION.

REFERENCE PLANS:

1. "LOT LINE ADJUSTMENT FOR HELEN GALLANT IN STRATHAM, N.H." DATED APRIL 8, 1992 AND PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR. R.C.R.D. PLAN #D–21763.
2. "SUBDIVISION PLAN ON 66R WINNICUTT ROAD, STRATHAM, NH FOR ELIZABETH B. VREES." LAST REVISED AUGUST 17, 1998 AND PREPARED BY R.G. MOYNIHAN & EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D–26515.
3. "MEADOWVIEW ESTATES, SUBDIVISION PLAN (TAX MAP 4 LOT 8) LOTS 7–1, 7–2 & 7–3." LAST REVISED DECEMBER 14, 2000 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D–28720.
4. "SUBDIVISION PLAN FOR 70 WINNICUTT ROAD LLC. STRATHAM, TAX MAP 14 LOT 61, 70 WINNICUTT ROAD, STRATHAM, NH 03885." LAST REVISED JULY 10, 2013 AND PREPARED BY EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D–37878.
5. "SUBDIVISION PLAN OVERALL, ROBIE FARMS, TREAT FARM ROAD, STRATHAM, NH 03885, MAP 14, LOT 54." LAST REVISED MAY 18, 2020 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D–42223.
6. "LOT LINE ADJUSTMENT PLAN, 16R & 18R AUTUMN LANE, STRATHAM, NEW HAMPSHIRE, ASSESSOR'S PARCELS 9–73 & 13–130 FOR ROBERT A. & NATALIE H. TILTON." LAST REVISED JUNE 11, 2021 AND PREPARED BY THIS OFFICE. R.C.R.D. PLAN #D–42894.
7. "COMPILATION SKETCH, AND WETLANDS PLAN. DATED JANUARY 3, 2023 AND PREPARED BY THIS OFFICE. JVA JOB #24052.

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON _____ DATE _____

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR
No. 1054
RYAN M. FOWLER
SIGNATURE

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

Ryan Fowler
LICENSED LAND SURVEYOR

4/22/26
DATE

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	1/7/25	EDIT PLAN PER COMMENTS	RMF	RMF
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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OVERALL SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

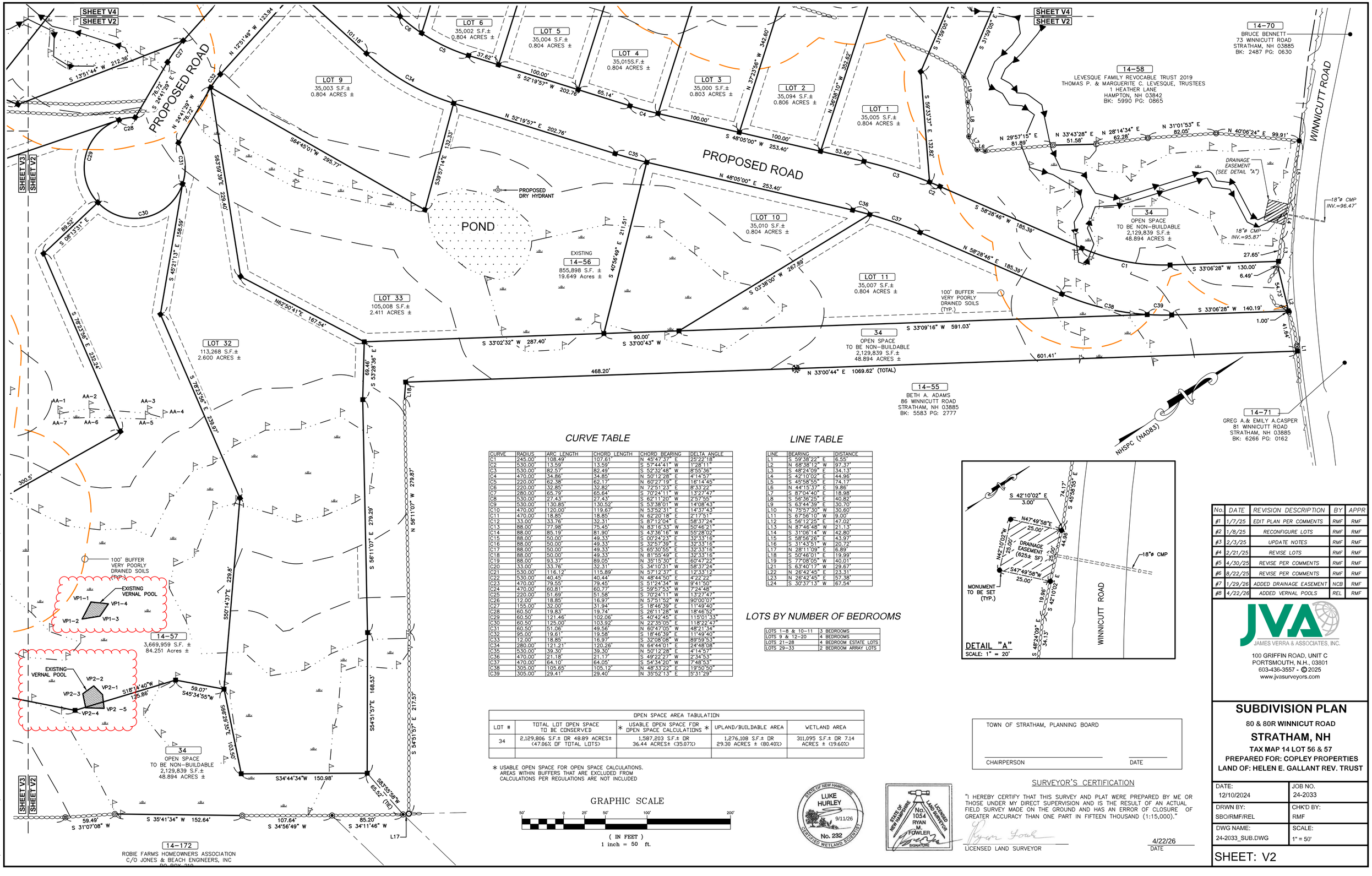
TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/10/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 24-2033_SUB.DWG	SCALE: 1" = 150'

SHEET: V1



CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	245.00'	108.49'	107.61'	N 45°47'37" E	25°22'18"
C2	530.00'	13.59'	13.59'	S 57°44'41" W	1°28'11"
C3	530.00'	82.57'	82.49'	S 52°32'48" W	8°55'36"
C4	470.00'	34.86'	34.85'	N 50°12'28" E	4°14'57"
C5	220.00'	62.38'	62.17'	N 60°27'19" E	16°14'45"
C6	220.00'	32.85'	32.82'	N 72°51'23" E	8°33'22"
C7	280.00'	65.79'	65.64'	S 70°24'11" W	13°27'47"
C8	530.00'	27.43'	27.43'	S 62°11'20" W	2°57'55"
C9	530.00'	130.85'	130.52'	S 53°38'01" W	14°08'43"
C10	470.00'	120.00'	119.67'	N 53°52'31" E	14°37'43"
C11	470.00'	18.85'	18.85'	N 62°20'18" E	2°17'51"
C12	33.00'	33.76'	32.31'	S 87°12'04" E	58°37'24"
C13	88.00'	77.98'	75.45'	N 83°16'33" W	50°46'21"
C14	88.00'	85.19'	81.90'	S 43°36'16" W	55°28'02"
C15	88.00'	50.00'	49.33'	S 00°24'13" E	32°33'16"
C16	88.00'	50.00'	49.33'	S 32°57'39" E	32°33'16"
C17	88.00'	50.00'	49.33'	S 65°30'55" E	32°33'16"
C18	88.00'	50.00'	49.33'	N 81°55'49" E	32°33'16"
C19	88.00'	93.37'	89.05'	N 35°15'30" E	60°47'22"
C20	33.00'	33.76'	32.31'	S 34°10'31" W	58°37'24"
C21	530.00'	116.12'	115.89'	N 5°12'37" E	12°33'12"
C22	530.00'	40.45'	40.44'	N 48°44'50" E	4°22'22"
C23	470.00'	79.55'	79.45'	S 51°54'34" W	9°41'50"
C24	470.00'	60.81'	60.77'	S 59°57'53" W	7°24'48"
C25	220.00'	51.69'	51.58'	S 70°24'11" W	13°27'47"
C26	12.00'	18.85'	16.97'	N 57°51'52" W	90°00'07"
C27	155.00'	32.00'	31.94'	S 18°46'39" E	11°49'40"
C28	60.50'	19.83'	19.74'	S 26°11'28" W	18°46'52"
C29	60.50'	121.46'	102.06'	S 40°42'45" E	115°01'33"
C30	60.50'	125.00'	103.92'	N 22°35'05" E	118°22'47"
C31	60.50'	51.06'	49.56'	N 60°47'05" W	48°21'34"
C32	95.00'	19.61'	19.58'	S 18°46'39" E	11°49'40"
C33	12.00'	18.85'	16.97'	S 32°08'08" W	89°59'53"
C34	280.00'	121.21'	120.26'	N 64°44'01" E	24°48'08"
C35	530.00'	39.30'	39.30'	N 50°12'28" E	4°14'57"
C36	470.00'	21.18'	21.17'	S 49°22'27" W	2°34'53"
C37	470.00'	64.10'	64.05'	S 54°34'20" W	7°48'53"
C38	305.00'	105.65'	105.12'	N 48°33'22" E	19°50'50"
C39	305.00'	29.41'	29.40'	N 35°52'13" E	5°31'29"

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 59°38'22" E	6.55'
L2	N 68°38'12" W	97.37'
L3	S 48°24'09" E	34.13'
L4	S 42°10'02" E	44.96'
L5	S 45°58'55" E	74.17'
L6	N 44°15'37" E	9.86'
L7	S 87°04'40" E	18.98'
L8	S 56°36'25" E	40.82'
L9	S 63°44'39" E	30.70'
L10	N 75°57'30" W	30.60'
L11	S 67°56'10" W	9.00'
L12	S 56°12'25" E	47.02'
L13	N 87°46'48" W	21.13'
L14	S 31°06'14" W	42.80'
L15	S 58°56'26" E	43.97'
L16	S 31°43'51" W	20.72'
L17	N 28°11'09" E	6.89'
L18	S 50°46'01" E	19.99'
L19	S 77°08'05" W	40.01'
L21	S 63°40'17" W	29.67'
L22	N 26°42'45" E	23.31'
L23	N 26°42'45" E	57.38'
L24	S 30°37'13" W	67.54'

LOTS BY NUMBER OF BEDROOMS

LOTS 1-8 & 10-11	3 BEDROOMS
LOTS 9 & 12-20	4 BEDROOMS
LOTS 21-28	4 BEDROOM ESTATE LOTS
LOTS 29-33	2 BEDROOM ARRAY LOTS

DETAIL "A"
SCALE: 1" = 20'

OPEN SPACE AREA TABULATION				
LOT #	TOTAL LOT OPEN SPACE TO BE CONSERVED	* USABLE OPEN SPACE FOR OPEN SPACE CALCULATIONS *	UPLAND/BUILDABLE AREA	WETLAND AREA
34	2,129,806 S.F.± OR 48.89 ACRES± (47.06% OF TOTAL LOTS)	1,587,203 S.F.± OR 36.44 ACRES± (35.07%)	1,276,108 S.F.± OR 29.30 ACRES ± (80.40%)	311,095 S.F.± OR 7.14 ACRES ± (19.60%)

* USABLE OPEN SPACE FOR OPEN SPACE CALCULATIONS.
AREAS WITHIN BUFFERS THAT ARE EXCLUDED FROM
CALCULATIONS PER REGULATIONS ARE NOT INCLUDED

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE
No. 1054
RYAN M. FOWLER
LICENSED LAND SURVEYOR
SIGNATURE

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

Ryan Fowler
LICENSED LAND SURVEYOR

4/22/26
DATE

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	1/7/25	EDIT PLAN PER COMMENTS	RMF	RMF
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57
PREPARED FOR: COPLEY PROPERTIES
LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/10/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 24-2033_SUB.DWG	SCALE: 1" = 50'

SHEET: V2

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\24-2033_SUB.dwg 2026-04-22

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

Ryan Fowler

LICENSED LAND SURVEYOR

4/22/26
DATE

STATE OF NEW HAMPSHIRE — No. 10541 — RYAN M. FOWLER — SIGNATURE — LICENSED LAND SURVEYOR

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/11/26 — No. 232 — CERTIFIED WETLAND SCIENTIST

SHEET V4
SHEET V2
SHEET V5
SHEET V3
SHEET V6
SHEET V3
SHEET V5
SHEET V3
SHEET V2
SHEET V3
SHEET V3
SHEET V2

S 32°46'04" W 127.87' L14

N 51°26'44" W 235.25'

L15

N 65°15'26" W 106.71'

N 74°35'17" W 90.44'

N 67°03'21" W 316.93'

L16

S 36°41'48" W 78.62'

S 32°17'33" W 147.44'

S 36°00'46" W 65.63'

S 33°40'34" W 53.86'

S 33°34'23" W 99.40'

S 34°18'43" W 141.64'

S 37°12'49" W 87.25'

S 31°35'21" W 83.15'

S 34°40'36" W 174.38'

S 31°07'08" W 59.49'

S 35°41'34" W 152.64'

S48°15'26"W 148.73'

S22°36'51"E 257.78'

226.04'

S56°45'49"W 497.07'

119.85'

103.21'

38.89'

S 13°51'44" W 212.36'

S16°09'42"W 475.7'

163.49'

S7°45'39"W 339.90' (TOTAL)

178.40'

61.93'

S56°14'16"W

S46°09'20"W 277.47'

N54°13'43"W 231.86'

S05°37'57"W 300.5'

N28°03'28"W 148.13'

S 12°51'49" E 123.94'

N 12°51'49" W 123.94'

N 77°08'05" E 101.18'

S64°45'01"W 295.77'

S65°59'39"E 229.40'

N62°50'41"E 1

S 78°23'56" E 252.24'

S 78°23'56" E 239.97'

S 08°15'31" E 69.52'

S 45°21'13" E 158.59'

S 18°14'40"W 125.86'

S45°34'55"W 59.07'

N 12°51'49" E 125.94'

S 24°41'29" E 78.72'

N 24°41'29" W 78.72'

PROPOSED ROAD

C27 C32 C28 C29 C31 C30

LOT 9
35,003 S.F.±
0.804 ACRES ±

LOT 30
108,789 S.F.±
2.497 ACRES ±

LOT 32
113,268 S.F.±
2.600 ACRES ±

VERY POORLY DRAINED SOILS (TYP.)

100' BUFFER VERY POORLY DRAINED SOILS (TYP.)

100' BUFFER VERY POORLY DRAINED SOILS (TYP.)

EXISTING VERNAL POOL — VP3-1 VP3-2 VP3-3 VP3-4

EXISTING VERNAL POOL — VP1-1 VP1-2 VP1-3 VP1-4

EXISTING VERNAL POOL — VP2-1 VP2-2 VP2-3 VP2-4 VP2 -5

AA-1 AA-2 AA-3 AA-4 AA-5 AA-6 AA-7

(NAD83)

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

9-82
BELL & FLYNN, LLC
69 BUNKER HILL AVENUE
STRATHAM, NH 03885

34
OPEN SPACE
TO BE NON-BUILDABLE
2,430,103 S.F.±
55.787 ACRES ±

EXISTING
14-57
3,669,959 S.F. ±
84.251 Acres ±

14-57
3,669,959 S.F. ±
84.251 Acres ±

34
OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F.±
48.894 ACRES ±

LEGEND

- GRANITE BOUND FOUND
- IRON ROD FOUND
- BARBED WIRE IN TREE FOUND
- DRILL HOLE SET
- MNMT-FND
- DRILL HOLE FOUND
- GRANITE BOUND SET
- STONEWALL
- LOT XX — TAX MAP & LOT
- VERY POORLY DRAINED SOILS
- WET
- X-XX — WETFLAG
- BOUNDARY ABUTTER LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- 52' — CONTOUR LINE

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	1/17/25	EDIT PLAN PER COMMENTS	RMF	RMF
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/10/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 24-2033_SUB.DWG	SCALE: 1" = 50'

SHEET: V3

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON _____ DATE _____

LEGEND

- GRANITE BOUND FOUND
- IRON ROD FOUND
- BARBED WIRE IN TREE FOUND
- DRILL HOLE SET
- MNMT–FND
- DRILL HOLE FOUND
- GRANITE BOUND SET
- STONEWALL
- LOT XX — TAX MAP & LOT
- VERY POORLY DRAINED SOILS
- WET
- X–XX — WETFLAG
- BOUNDARY ABUTTER LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- 52' — CONTOUR LINE

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

STATE OF NEW HAMPSHIRE — No. 1054 — RYAN M. FOWLER — LICENSED LAND SURVEYOR — SIGNATURE

LICENSED LAND SURVEYOR — 4/22/26 DATE

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/11/26 — No. 232 — CERTIFIED WETLAND SCIENTIST

14–63
PAMELA W. BINNIE
NICHOLAS C. HARITOS SR.
7 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 6219 PG: 1615

14–162
MATTHEW B.
& MARYBETH H. KUSHNER
70R WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5524 PG: 0150

14–61
CATHERINE & JAMES
GERWECK
70 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 6451 PG: 2854

14–60
LISA M. &
JEFFREY A.
POWERS 72
WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5217 PG: 1675

14–59
CROW FAMILY
REVOCABLE TRUST
JOSHUA D. & CHRISTINE
74 WINNICUTT ROAD
STRATHAM, NH 03885

34
OPEN SPACE
TO BE NON–BUILDABLE
2,431,057 S.F.±
55.809 ACRES ±

14–57
3,869,859 S.F. ±
84.251 Acres ±

EXISTING
14–56
855,898 S.F. ±
19.649 Acres ±

LOT 1 — 35,005 S.F.± — 0.804 ACRES ±
LOT 2 — 35,094 S.F.± — 0.806 ACRES ±
LOT 3 — 35,000 S.F.± — 0.803 ACRES ±
LOT 4 — 35,015S.F.± — 0.804 ACRES ±
LOT 5 — 35,004 S.F.± — 0.804 ACRES ±
LOT 6 — 35,002 S.F.± — 0.804 ACRES ±
LOT 7 — 35,009 S.F.± — 0.804 ACRES ±
LOT 8 — 35,006 S.F.± — 0.804 ACRES ±
LOT 9 — 35,003 S.F.± — 0.804 ACRES ±
LOT 10 — 35,010 S.F.± — 0.804 ACRES ±
LOT 12 — 37,325 S.F.± — 0.857 ACRES ±
LOT 13 — 37,559 S.F.± — 0.862 ACRES ±
LOT 14 — 37,208 S.F.± — 0.854 ACRES ±
LOT 15 — 37,218 S.F.± — 0.854 ACRES ±
LOT 17 — 37,212 S.F.± — 0.854 ACRES ±
LOT 18 — 37,201 S.F.± — 0.854 ACRES ±
LOT 19 — 37,201 S.F.± — 0.854 ACRES ±
LOT 20 — 37,202 S.F.± — 0.854 ACRES ±
LOT 21 — 66,887 S.F.± — 1.536 ACRES ±
LOT 30 — 108,789 S.F.± — 2.497 ACRES ±

PROPOSED ROAD
POND
PROPOSED DRY HYDRANT
100' BUFFER VERY POORLY DRAINED SOILS (TYP.)
VERY POORLY DRAINED SOILS (TYP.)
SHEET V5 / SHEET V4 / SHEET V3 / SHEET V2

No.	DATE	REMISSION DESCRIPTION	BY	APPR
#1	1/7/25	EDIT PLAN SET COMMENTS	RMF	RMF
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57
PREPARED FOR: COPLEY PROPERTIES
LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/10/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 24-2033_SUB.DWG	SCALE: 1" = 50'

SHEET: V4

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 1054 RYAN M. FOWLER SIGNATURE

Ryan Fowler
LICENSED LAND SURVEYOR

4/22/26
DATE

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

STATE OF NEW HAMPSHIRE LUKE HURLEY 9/11/26 No. 232 CERTIFIED WETLAND SCIENTIST

NHSPC (NAD83)

VP4-1 VP4-2 VP4-3 VP4-4 EXISTING VERNAL POOL

198.71' (TIE)

34
OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F.±
48.894 ACRES ±

N16°36'17"E 301.49'

SHEET V7
SHEET V5

LOT 25
173,867 S.F.±
3.991 ACRES ±

LOT 24
245,623 S.F.±
5.639 ACRES ±

LOT 23
67,458 S.F.±
1.549 ACRES ±

LOT 22
65,677 S.F.±
1.508 ACRES ±

N 74°28'11" E 422.08'

N43°01'16"W 421'

N 77°32'02" E 205.17'

N 77°32'02" E 254.06' (TOTAL)

182.08'

74.23'

N16°55'50"W 331.86'

L11 N 31°04'51" E 59.98'

N 30°37'11" E 67.52'

N 26°42'45" E 118.97'

L10

64.02' (TIE)

N 24°38'16" W

VERY POORLY DRAINED SOILS (TYP.)

L22 L23 L24

N 30°37'20" E 84.97'

S 76°05'09" E 113.54'

L21

EXISTING

347.09

VERY POORLY DRAINED SOILS (TYP.)

LOT 21
66,887 S.F.±
1.536 ACRES ±

100' BUFFER VERY POORLY DRAINED SOILS (TYP.)

C15 C14 C13 C16 C17 C12 C18 C19 C20 C11 C10 C9 C8 C21 C22 C23 C24

S23°07'32"W 621.52'

527.43' (TOTAL)

N26°41'54"W 298.15'

SHEET V5
SHEET V4

LOT 15
37,218 S.F.±
0.854 ACRES ±

LOT 14
37,208 S.F.±
0.854 ACRES ±

LOT 13
37,559 S.F.±
0.862 ACRES ±

LOT 12
37,325 S.F.±
0.857 ACRES ±

N 21°55'45" W 307.02'

N 26°44'41" W 354.92'

N 29°40'47" W 285.37'

S 63°29'13" W 187.73'

PROPOSED ROAD

N 63°29'13" E 187.73'

61.73'

122.12'

3.88'

S 63°40'17" W 92.57'

N 63°40'17" E 69.28'

N25°33'12"W 180.33'

S 01°56'01" W 154.01'

S 09°58'50" E 310.13'

LOT 26
133,572 S.F.±
3.066 ACRES ±

LOT 28
65,345 S.F.±
1.500 ACRES ±

LOT 16
37,217 S.F.±
0.854 ACRES ±

LOT 17
37,212 S.F.±
0.854 ACRES ±

LOT 18
37,201 S.F.±
0.854 ACRES ±

LOT 19
37,201 S.F.±
0.854 ACRES ±

EXISTING

S22°38'51"E 360.13'

328.39'

S20°24'47"E 316.38'

S21°01'50"E 314.21'

S21°38'01"E 328.84'

S 16°37'53"E 32.86'

S 13°51'44" W 212.36'

S 14°31'25" E 406.91'

VERY POORLY DRAINED SOILS (TYP.)

100' BUFFER VERY POORLY DRAINED SOILS (TYP.)

S64°29'11"W 232.16'

111.60'

31.74'

123.52'

S56°45'49"W 497.07'

119.85'

103.21'

38.89'

VERY POORLY DRAINED SOILS (TYP.)

34
OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F.±
48.894 ACRES ±

287.68'

S65°02'24"W 600.98' (TOTAL)

333.30'

LOT 27
93,520 S.F.±
2.147 ACRES ±

OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F. ±
48.894 ACRES ±

N28°29'09"W 247.56' (TIE)

SHEET V6
SHEET V5

SHEET V5
SHEET V3

S48°15'26"W 9.77'

No.	DATE	REVISION DESCRIPTION	BY	APP'D
#1	1/7/25	EDIT PLAN PER COMMENTS	RMF	RM
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57
PREPARED FOR: COPLEY PROPERTIES
LAND OF: HELEN E. GALLANT REV. TRUST

DATE:	JOB NO.
12/10/2024	24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 24-2033_SUB.DWG	SCALE: 1" = 50'

SHEET: V5

NHSPC (NAD83)

SHEET V7
SHEET V6

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

N 07°08'28" E 486.74'
206.98'
N 03°33'38" E
N 11°21'54" E 176.41'
N 61°46'49" W 246.06'
N 64°12'16" W 137.84'
N 63°52'38" W 150.19'
N 64°57'30" W 106.30'

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

S 32°28'32" W 132.89'
71.56'
S 34°34'27" W
S 31°18'04" W 125.53'
67.47'
S 33°36'31" W
S 30°13'48" W 118.06'
S 32°46'04" W 127.87'
L14

34
OPEN SPACE
TO BE
NON-BUILDABLE
2,129,839 S.F.±
48.894 ACRES ±

N15°

347.09'
527.43' (TOTAL)
N52°33'12"W
180.33'

LOT 25
173,867 S.F.±
3.991 ACRES ±

EXISTING
14-57
3,669,959 S.F. ±
84.251 Acres ±

VERY POORLY
DRAINED SOILS
(TYP.)

S23°07'32"W 621.52'

EXISTING
14-57
3,669,959 S.F. ±
84.251 Acres ±

S 14°31'25" E 406.91'
267.68'
S65°02'24"W
600.98' (TOTAL)

LOT 27
93,520 S.F.±
2.147 ACRES ±

OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F. ±
48.894 ACRES ±

N35°29'09"W 247.58' (TIE)

SHEET V6
SHEET V5

SHEET V5
SHEET V3

LEGEND

- GRANITE BOUND FOUND
- IRON ROD FOUND
- BARBED WIRE IN TREE FOUND
- DRILL HOLE SET
- MNMT-FND
- DRILL HOLE FOUND
- GRANITE BOUND SET
- STONEWALL
- LOT XX — TAX MAP & LOT
- VERY POORLY DRAINED SOILS
- WET
- X-XX — WETFLAG
- BOUNDARY ABUTTER LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- 52' — CONTOUR LINE

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

Ryan Fowler
LICENSED LAND SURVEYOR

4/22/26
DATE

STATE OF NEW HAMPSHIRE
No 10,54
RYAN M. FOWLER
SIGNATURE
LICENSED LAND SURVEYOR

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	1/7/25	EDIT PLAN PER COMMENTS	RMF	RMF
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

DATE:	JOB NO.
12/10/2024	24-2033
DRWN BY:	CHK'D BY:
SBO/RMF/REL	RMF
DWG NAME:	SCALE:
24-2033_SUB.DWG	1" = 50'

SHEET: V6

NHSPC (NAD83)

N75°32'50"E 68.62' (TIE)

N 28°45'18" E 726.27'

112.01' 215.55' 160.97' 237.74'

79.17' (TIE) N10°23'41"W

N28°45'14"E 380.15'

N 43°07'36" E 143.15'

L13

S 62°35'40" E 184.15'

S 60°47'46" E 92.56'

S 61°33'48" E 136.10'

617.91'

N 57°41'00" W 548.34'

N57°41'00"W 311.59'

S36°54'24"W 299.57'

N71°38'20"W 309.80'

S64°15'46"E 1058.98' (TOTAL)

S 81°01'04" E 349.87'

N 57°58'24" W 233.08'

N01°27'27"E 264.21'

198.71' (TIE)

N16°36'17"E 301.49'

441.08'

N43°01'16"W 420.80'

N 43°32'25" E 379.88' (TOTAL)

242.00' 137.88'

N 75°15'32" E 75.17' (TIE)

S 60°15'51" E 198.39'

S 62°29'46" E 81.61'

L12

VERY POORLY DRAINED SOILS (TYP.)

VP4-1 VP4-2 VP4-3 VP4-4 EXISTING VERNAL POOL

SHEET V7

SHEET V5

13-74
EMANUEL CO., INC
6 PATRIOTS ROAD
STRATHAM, NH 03885
BK: 2341 PG: 1826

9-63
ELAINE R. SANDERSON
45 BUNKER HILL AVENUE
STRATHAM, NH 03885
BK: 3420 PG: 1610

14-57
3,669,959 S.F. ±
84.251 Acres ±

34
OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F.±
48.894 ACRES ±

34
OPEN SPACE
TO BE NON-BUILDABLE
2,129,839 S.F.±
48.894 ACRES ±

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

13-132
MYRA CITRIN &
ROBERT MILLSTEIN
10 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 3319 PG: 2351

13-131
MYRA CITRIN &
ROBERT MILLSTEIN
10 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 3319 PG: 2351

LEGEND

- GRANITE BOUND FOUND
- IRON ROD FOUND
- BARBED WIRE IN TREE FOUND
- DRILL HOLE SET
- MNMT–FND
- DRILL HOLE FOUND
- GRANITE BOUND SET
- STONEWALL
- LOT XX — TAX MAP & LOT
- VERY POORLY DRAINED SOILS
- WET
- X–XX — WETFLAG
- BOUNDARY ABUTTER LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- 52' — CONTOUR LINE

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

STATE OF NEW HAMPSHIRE
No. 1054
RYAN M. FOWLER
LICENSED LAND SURVEYOR
SIGNATURE

LICENSED LAND SURVEYOR — 4/22/26 DATE

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON — DATE

CHAIRPERSON — DATE

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	1/7/25	EDIT PLAN PER COMMENTS	RMF	RMF
#2	1/8/25	RECONFIGURE LOTS	RMF	RMF
#3	2/3/25	UPDATE NOTES	RMF	RMF
#4	2/21/25	REVISE LOTS	RMF	RMF
#5	4/30/25	REVISE PER COMMENTS	RMF	RMF
#6	8/22/25	REVISE PER COMMENTS	RMF	RMF
#7	1/29/26	ADDED DRAINAGE EASEMENT	NCB	RMF
#8	4/22/26	ADDED VERNAL POOLS	REL	RMF

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SUBDIVISION PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

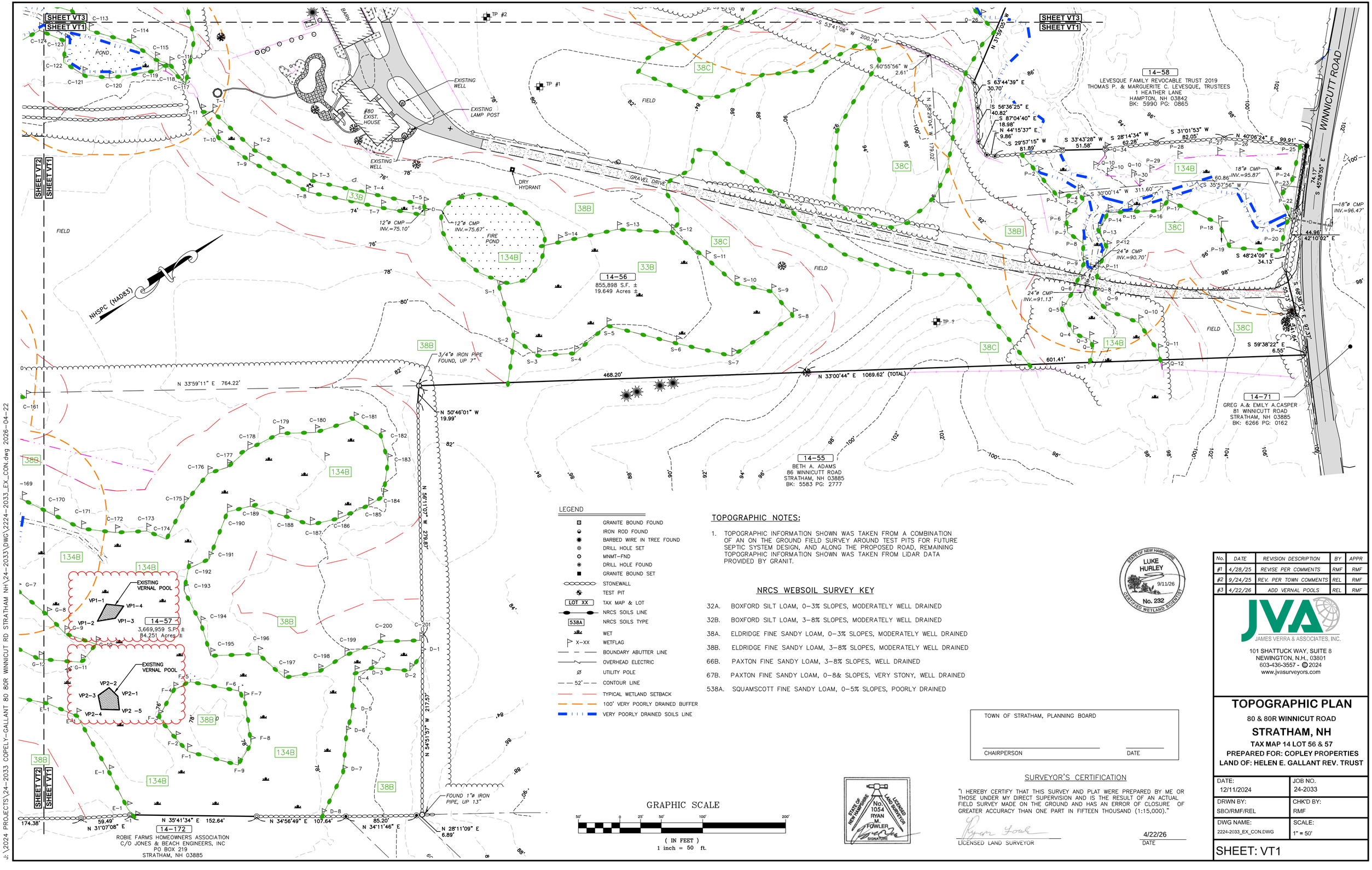
TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

DATE:	JOB NO.
12/10/2024	24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 24-2033_SUB.DWG	SCALE: 1" = 50'

SHEET: V7



LEGEND

- GRANITE BOUND FOUND
- IRON ROD FOUND
- BARBED WIRE IN TREE FOUND
- DRILL HOLE SET
- MNMT–FND
- DRILL HOLE FOUND
- GRANITE BOUND SET
- STONEWALL
- TEST PIT
- LOT XX — TAX MAP & LOT
- NRCS SOILS LINE
- 538A — NRCS SOILS TYPE
- WET
- X–XX — WETFLAG
- BOUNDARY ABUTTER LINE
- OVERHEAD ELECTRIC
- UTILITY POLE
- 52' — CONTOUR LINE
- TYPICAL WETLAND SETBACK
- 100' VERY POORLY DRAINED BUFFER
- VERY POORLY DRAINED SOILS LINE

TOPOGRAPHIC NOTES:

1. TOPOGRAPHIC INFORMATION SHOWN WAS TAKEN FROM A COMBINATION OF AN ON THE GROUND FIELD SURVEY AROUND TEST PITS FOR FUTURE SEPTIC SYSTEM DESIGN, AND ALONG THE PROPOSED ROAD, REMAINING TOPOGRAPHIC INFORMATION SHOWN WAS TAKEN FROM LiDAR DATA PROVIDED BY GRANIT.

NRCS WEBSOIL SURVEY KEY

32A. BOXFORD SILT LOAM, 0–3% SLOPES, MODERATELY WELL DRAINED

32B. BOXFORD SILT LOAM, 3–8% SLOPES, MODERATELY WELL DRAINED

38A. ELDRIDGE FINE SANDY LOAM, 0–3% SLOPES, MODERATELY WELL DRAINED

38B. ELDRIDGE FINE SANDY LOAM, 3–8% SLOPES, MODERATELY WELL DRAINED

66B. PAXTON FINE SANDY LOAM, 3–8% SLOPES, WELL DRAINED

67B. PAXTON FINE SANDY LOAM, 0–8& SLOPES, VERY STONY, WELL DRAINED

538A. SQUAMSCOTT FINE SANDY LOAM, 0–5% SLOPES, POORLY DRAINED

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/11/26 — No. 232 — CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 1054 — RYAN M. FOWLER — SIGNATURE

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON _____ DATE _____

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

Ryan Fowler
LICENSED LAND SURVEYOR

4/22/26
DATE

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	4/28/25	REVISE PER COMMENTS	RMF	RMF
#2	9/24/25	REV. PER TOWN COMMENTS	REL	RMF
#3	4/22/26	ADD VERNAL POOLS	REL	RMF

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TOPOGRAPHIC PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/11/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 2224-2033_EX_CON.DWG	SCALE: 1" = 50'

SHEET: VT1

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\2224-2033_EX_CON.dwg 2026-04-22

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

Ryan Fowler

LICENSED LAND SURVEYOR

4/22/26

DATE

STATE OF NEW HAMPSHIRE — No. 1054 — RYAN M. FOWLER — LICENSED LAND SURVEYOR — SIGNATURE

REFER TO SHEET VT1 FOR LEGEND

SHEET VT3 SHEET VT1 SHEET VT4 SHEET VT2 SHEET VT5 SHEET VT2 SHEET VT2 SHEET VT1 SHEET VT2 SHEET VT1

S 32°46'04" W 127.87'
S 31°06'14" W 42.80'
5/8"ø IRON ROD FOUND FLUSH TO GROUND
FOUND BARBED WIRE IN 8"ø HEMLOCK TREE
S 51°26'44" E 235.25'
FOUND BARBED WIRE IN 16"ø PINE TREE
FOUND BARBED WIRE IN 24"ø HEMLOCK TREE
S 58°56'26" E 43.97'
FOUND BARBED WIRE IN DEAD TREE
S 65°15'26" E 106.71'
FOUND BARBED WIRE IN 14"ø PINE TREE
FOUND BARBED WIRE IN DEAD TREE
S 74°35'17" E 60.44'
FOUND BARBED WIRE IN 24"ø PINE TREE
SPIKE FOUND IN BASE OF 10"ø CEDAR TREE
N 67°03'21" W 316.93'
S 31°43'51" W 20.72'

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

14-57
3,669,959 S.F. ±
84.251 Acres ±

14-172
ROBIE FARMS HOMEOWNERS ASSOCIATION
C/O JONES & BEACH ENGINEERS, INC
PO BOX 219
STRATHAM, NH 03885
BK: 6148 PG: 1725

N 36°41'48" E 78.62'
N 32°17'33" E 147.44'
N 36°00'46" E 65.63'
N 33°40'34" E 53.86'
N 33°34'23" E 99.40'
N 34°18'43" E 141.64'
N 37°12'49" E 87.25'
N 31°35'21" E 83.15'
N 34°40'36" E 174.38'
N 31°07'08" E 59.49'
N 35°41'34" E 152.64'

TBM 'B' TBM 'C' TBM 'D' TBM 'F'

TP #32 TP #30 TP #31 TP #23 TP #29 TP 9 TP #15 TP #22 TP #21 TP #16 TP #17 TP #18 TP #19 TP #20

EXISTING VERNAL POOL VP3-1 VP3-2 VP3-3 VP3-4
EXISTING VERNAL POOL VP1-1 VP1-2 VP1-3 VP1-4
EXISTING VERNAL POOL VP2-1 VP2-2 VP2-3 VP2-4 VP2 -5

POND FIELD #80 EXIST. HOUSE EXISTING WELL

NHSPC (NAD83)

GRAPHIC SCALE
50' 0 25' 50' 100' 200'
(IN FEET)
1 inch = 50 ft.

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/11/26 — No. 232 — CERTIFIED WETLAND SCIENTIST

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	4/28/25	REVISE PER COMMENTS	RMF	RMF
#2	9/24/25	REV. PER TOWN COMMENTS	REL	RMF
#3	4/22/26	ADD VERNAL POOLS	REL	RMF

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NEWINGTON, N.H., 03801
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www.jvasurveyors.com

TOPOGRAPHIC PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/11/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 2224-2033_EX_CON.DWG	SCALE: 1" = 50'

SHEET: VT2

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\2224-2033_EX_CON.dwg 2026-04-22

REFER TO SHEET VT1 FOR LEGEND

NHSPC (NAD83)

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON _____ DATE _____

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

STATE OF NEW HAMPSHIRE — No. 1054 — RYAN M. FOWLER — LICENSED LAND SURVEYOR

LICENSED LAND SURVEYOR

4/22/26
DATE

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/11/26 — No. 232 — CERTIFIED WETLAND SCIENTIST

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

14-63
PAMELA W. BINNIE
NICHOLAS C. HARITOS SR.
7 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 6219 PG: 1615

14-57
3,669,959 S.F. ±
84.251 Acres ±

14-56
855,898 S.F. ±
19.649 Acres ±

14-162
MATTHEW B.
& MARYBETH H. KUSHNER
70R WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5524 PG: 0150

14-61
CATHERINE & JAMES
GERWECK
70 WINNICUTT ROAD
STRATHAM, NH 03885
BK: 6451 PG: 2854

14-60
LISA M. &
JEFFREY A.
POWERS 72
WINNICUTT ROAD
STRATHAM, NH 03885
BK: 5217 PG: 1675

14-59
CROW FAMILY
REVOCABLE TRUST
JOSHUA D. & CHRISTINE
M. CROW, TRUSTEES
74 WINNICUTT ROAD
BK: 6459 PG: 2235

S 77°32'02" W 208.17'
S 67°56'10" W 9.00'
S 31°04'51" W 59.98'
S 30°37'11" W 67.52'
S 25°42'45" W 118.97'
N 75°57'30" W 30.60'
N 75°57'30" W 104.34'
S 37°17'42" W 189.96' (TOTAL)
185.99
3.97'
S 53°31'11" W 394.05'
N 42°47'51" E 298.85'
S 44°06'54" E 122.43'
S 46°11'33" E 144.85'
N 37°39'05" W 152.87'
S 63°44'39" E 30.70'
S 56°36'25" E 40.82'
S 87°04'40" E 18.98'
N 44°15'37" E 9.86'
S 29°57'... 81.89'

MILL BROOK

FIELD

POND

BARN

BASKETBALL COURT (PAVED)

#80 EXIST. HOUSE

EXISTING WELL

EXISTING LAMP POST

DRY HYDRANT

12"ø CMP INV.=75.10'

12"ø CMP INV.=75.67'

FIRE POND

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	4/28/25	REVISE PER COMMENTS	RMF	RMF
#2	9/24/25	REV. PER TOWN COMMENTS	REL	RMF
#3	4/22/26	ADD VERNAL POOLS	REL	RMF

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TOPOGRAPHIC PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57

PREPARED FOR: COPLEY PROPERTIES

LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/11/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 2224-2033_EX_CON.DWG	SCALE: 1" = 50'

SHEET: VT3

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\2224-2033_EX_CON.dwg 2026-04-22

REFER TO SHEET VT1 FOR LEGEND

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

STATE OF NEW HAMPSHIRE — No. 1054 — RYAN M. FOWLER — LICENSED LAND SURVEYOR

Ryan Fowler
LICENSED LAND SURVEYOR

4/22/26
DATE

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

STATE OF NEW HAMPSHIRE — LUKE HURLEY — 9/11/26 — No. 232 — CERTIFIED WETLAND SCIENTIST

FOUND 6" x 6" GRANITE BOUND FOUND

NHSPC (NAD83)

VP4-3 VP4-1 VP4-4 EXISTING VERNAL POOL

MILL BROOK

FIELD

POND

14-57
3,669,959 S.F. ±
84.251 Acres ±

14-56
855,898 S.F. ±
19.649 Acres ±

TP #9 TP #10 TP 11 TP 10 TP ? TP #13 TP #14 TP ? TP #24 TP #25 TP #26 TP #22 TP #8 TP #7 TP #6 TP #4

S 77°32'02" W 205.17'
S 67°56'10" W 9.00'
S 31°04'51" W 59.98'
S 30°37'11" W 67.52'
S 26°42'45" W 118.97'

TBM 'A'

SHEET VT4 SHEET VT6 SHEET VT5 SHEET VT3 SHEET VT2

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	4/28/25	REVISE PER COMMENTS	RMF	RMF
#2	9/24/25	REV. PER TOWN COMMENTS	REL	RMF
#3	4/22/26	ADD VERNAL POOLS	REL	RMF

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TOPOGRAPHIC PLAN

80 & 80R WINNICUT ROAD

STRATHAM, NH

TAX MAP 14 LOT 56 & 57
PREPARED FOR: COPLEY PROPERTIES
LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/11/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 2224-2033_EX_CON.DWG	SCALE: 1" = 50'

SHEET: VT4

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\2224-2033_EX_CON.dwg 2026-04-22

REFER TO SHEET VT1 FOR LEGEND

NHSPC (NAD83)

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

DOUND BARBED WIRE IN 12"ø PINE TREE
DOUND BARBED WIRE IN 18"ø PINE TREE
DOUND BARBED WIRE IN 12"ø PINE TREE
DOUND BARBED WIRE IN 24"ø PINE TREE

S 07°08'28" W 486.74'
208.98'
S 03°33'36" W
S 11°21'54" W 176.41'
S 61°46'49" E 246.06'
N 64°12'16" W 137.84'
N 63°52'28" W 130.19'
N 64°57'30" W 106.30'
S 32°28'32" W 132.89'
71.56'
S 34°34'27" W
S 31°18'04" W 125.53'
67.47'
S 33°36'31" W
S 30°13'48" W 118.06'
S 32°46'04" W 127.87'
S 31°06'14" W 42.80'

FOUND 6" x 6" GRANITE BOUND FOUND UP 1"
1/2"ø IRON ROD FOUND UP 2"
1/2"ø IRON ROD FOUND UP 7"
5/8"ø IRON ROD FOUND FLUSH TO GROUND
225' UTILITY EASEMENT

14-57
3,669,959 S.F. ±
84.251 Acres ±

SHEET VT6
SHEET VT4
SHEET VT5
SHEET VT4
SHEET VT5
SHEET VT4
SHEET VT4
SHEET VT2

TBM 'A'
TBM 'B'
TP #32
TP #301

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

LICENSED LAND SURVEYOR

4/22/26
DATE

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 1054 · RYAN M. FOWLER · SIGNATURE

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	4/28/25	REVISE PER COMMENTS	RMF	RMF
#2	9/24/25	REV. PER TOWN COMMENTS	REL	RMF
#3	4/22/26	ADD VERNAL POOLS	REL	RMF

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603-436-3557 - @2024
www.jvasurveyors.com

STATE OF NEW HAMPSHIRE · LUKE HURLEY · 9/11/26 · No. 232 · CERTIFIED WETLAND SCIENTIST

GRAPHIC SCALE
50' 0 25' 50' 100' 200'
(IN FEET)
1 inch = 50 ft.

TOWN OF STRATHAM, PLANNING BOARD
CHAIRPERSON DATE

TOPOGRAPHIC PLAN

80 & 80R WINNICUT ROAD
STRATHAM, NH
TAX MAP 14 LOT 56 & 57
PREPARED FOR: COPLEY PROPERTIES
LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/11/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 2224-2033_EX_CON.DWG	SCALE: 1" = 50'

SHEET: VT5

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\2224-2033_EX_CON.dwg 2026-04-22

REFER TO SHEET VT1 FOR LEGEND

NHSPC (NAD83)

13-74
EMANUEL CO., INC
6 PATRIOTS ROAD
STRATHAM, NH 03885
BK: 2341 PG: 1826

9-63
ELAINE R. SANDERSON
45 BUNKER HILL AVENUE
STRATHAM, NH 03885
BK: 3420 PG: 1610

9-73
ROBERT A. & NATALIE H. TILTON
16R AUTUMN LANE
STRATHAM, NH 03885
BK: 6246 PG: 0814

13-131
MYRA CITRIN &
ROBERT MILLSTEIN
10 SPRING CREEK LANE
STRATHAM, NH 03885
BK: 3319 PG: 2351

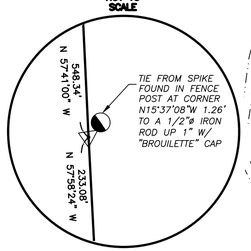
14-57
3,669,959 S.F. ±
84.251 Acres ±

FOUND 5/8"ø IRON ROAD w/CAP, UP 6"
FOUND 5/8"ø IRON ROAD w/CAP, UP 7"
FOUND 5/8"ø IRON ROAD w/CAP, UP 8"
FOUND 5/8"ø IRON ROAD w/CAP, UP 26"
(NOT HELD)
N 28°45'18" E 726.27' (TOTAL)
112.01'
215.55'
160.97'
237.74'
S 43°07'36" W 143.15'
N 87°46'48" W 21.13'
N 62°35'40" W 184.15'
N 60°47'46" W 92.59'
N 61°33'48" W 136.10'
N 61°01'04" W 349.87'
S 62°39'46" E 81.61'
S 56°12'25" E 47.02'
N 57°41'00" W 548.34'
N 57°58'24" W 233.08'
DOUBLE 24"ø PINE TREES
28"ø PINE TREE
FOUND BARB WIRE IN TRIPLE 18"ø PINE TREES
FOUND BARB WIRE IN 36"ø HEMLOCK TREES
FOUND BARB WIRE IN 28"ø HEMLOCK TREES
FOUND BARB WIRE IN DEAD TREE
DRILL HOLE FOUND IN STONEWALL
DRILL HOLE FOUND IN STONEWALL
FOUND BARB WIRE IN 18"ø HEMLOCK TREE
FOUND BARBED WIRE IN 16"ø HEMLOCK TREE
FOUND BARBED WIRE IN DEAD TREE
FOUND BARBED WIRE IN DEAD TREE
SEE DETAIL
FOUND 6" x 6" GRANITE BOUND FOUND
MILL BROOK
VP4-1
VP4-2
VP4-3
VP4-4
EXISTING VERNAL POOL

134B
32C
38B
38D
33B

SHEET VT6
SHEET VT4

DETAIL
NOT TO SCALE



NHSPC (NAD83)

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

(IN FEET)
1 inch = 50 ft.

TOWN OF STRATHAM, PLANNING BOARD

CHAIRPERSON DATE

SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

LICENSED LAND SURVEYOR

4/22/26
DATE

STATE OF NEW HAMPSHIRE
No. 1054
RYAN M. FOWLER
SIGNATURE
LICENSED LAND SURVEYOR

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

No.	DATE	REVISION DESCRIPTION	BY	APPR
#1	4/28/25	REVISE PER COMMENTS	RMF	RMF
#2	9/24/25	REV. PER TOWN COMMENTS	REL	RMF
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TOPOGRAPHIC PLAN

80 & 80R WINNICUT ROAD

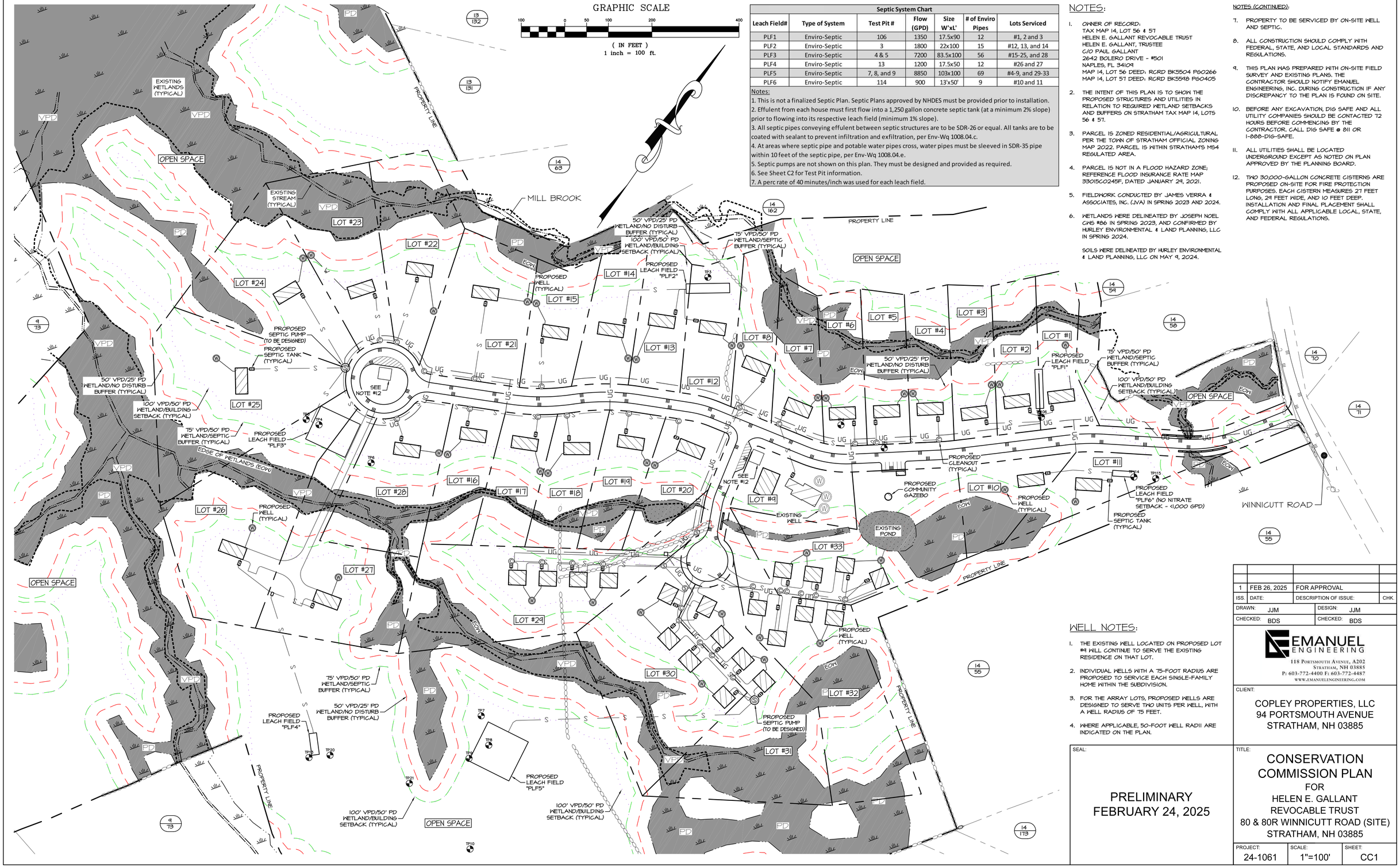
STRATHAM, NH

TAX MAP 14 LOT 56 & 57
PREPARED FOR: COPLEY PROPERTIES
LAND OF: HELEN E. GALLANT REV. TRUST

DATE: 12/11/2024	JOB NO. 24-2033
DRWN BY: SBO/RMF/REL	CHK'D BY: RMF
DWG NAME: 2224-2033_EX_CON.DWG	SCALE: 1" = 50'

SHEET: VT6

J:\2024 PROJECTS\24-2033 COPELY-GALLANT 80 80R WINNICUT RD STRATHAM NH\24-2033\DWG\2224-2033_EX_CON.dwg 2026-04-22



Septic System Chart						
Leach Field#	Type of System	Test Pit #	Flow (GPD)	Size W'xL'	# of Enviro Pipes	Lots Serviced
PLF1	Enviro-Septic	106	1350	17.5x90	12	#1, 2 and 3
PLF2	Enviro-Septic	3	1800	22x100	15	#12, 13, and 14
PLF3	Enviro-Septic	4 & 5	7200	83.5x100	56	#15-25, and 28
PLF4	Enviro-Septic	13	1200	17.5x50	12	#26 and 27
PLF5	Enviro-Septic	7, 8, and 9	8850	103x100	69	#4-9, and 29-33
PLF6	Enviro-Septic	114	900	13'x50'	9	#10 and 11

Notes:
1. This is not a finalized Septic Plan. Septic Plans approved by NHDES must be provided prior to installation.
2. Effluent from each house must first flow into a 1,250 gallon concrete septic tank (at a minimum 2% slope) prior to flowing into its respective leach field (minimum 1% slope).
3. All septic pipes conveying effluent between septic structures are to be SDR-26 or equal. All tanks are to be coated with sealant to prevent infiltration and exfiltration, per Env-Wq 1008.04.c.
4. At areas where septic pipe and potable water pipes cross, water pipes must be sleeved in SDR-35 pipe within 10 feet of the septic pipe, per Env-Wq 1008.04.e.
5. Septic pumps are not shown on this plan. They must be designed and provided as required.
6. See Sheet C2 for Test Pit information.
7. A perc rate of 40 minutes/inch was used for each leach field.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405
2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED STRUCTURES AND UTILITIES IN RELATION TO REQUIRED WETLAND SETBACKS AND BUFFERS ON STRATHAM TAX MAP 14, LOTS 56 & 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.

NOTES (CONTINUED):

7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. TWO 30,000-GALLON CONCRETE CISTERNS ARE PROPOSED ON-SITE FOR FIRE PROTECTION PURPOSES. EACH CISTERN MEASURES 27 FEET LONG, 24 FEET WIDE, AND 10 FEET DEEP. INSTALLATION AND FINAL PLACEMENT SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

WELL NOTES:

1. THE EXISTING WELL LOCATED ON PROPOSED LOT #9 WILL CONTINUE TO SERVE THE EXISTING RESIDENCE ON THAT LOT.
2. INDIVIDUAL WELLS WITH A 75-FOOT RADIUS ARE PROPOSED TO SERVICE EACH SINGLE-FAMILY HOME WITHIN THE SUBDIVISION.
3. FOR THE ARRAY LOTS, PROPOSED WELLS ARE DESIGNED TO SERVE TWO UNITS PER WELL, WITH A WELL RADIUS OF 75 FEET.
4. WHERE APPLICABLE, 50-FOOT WELL RADII ARE INDICATED ON THE PLAN.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK
1	FEB 26, 2025	FOR APPROVAL	

DRAWN: JJM | DESIGN: JJM
CHECKED: BDS | CHECKED: BDS

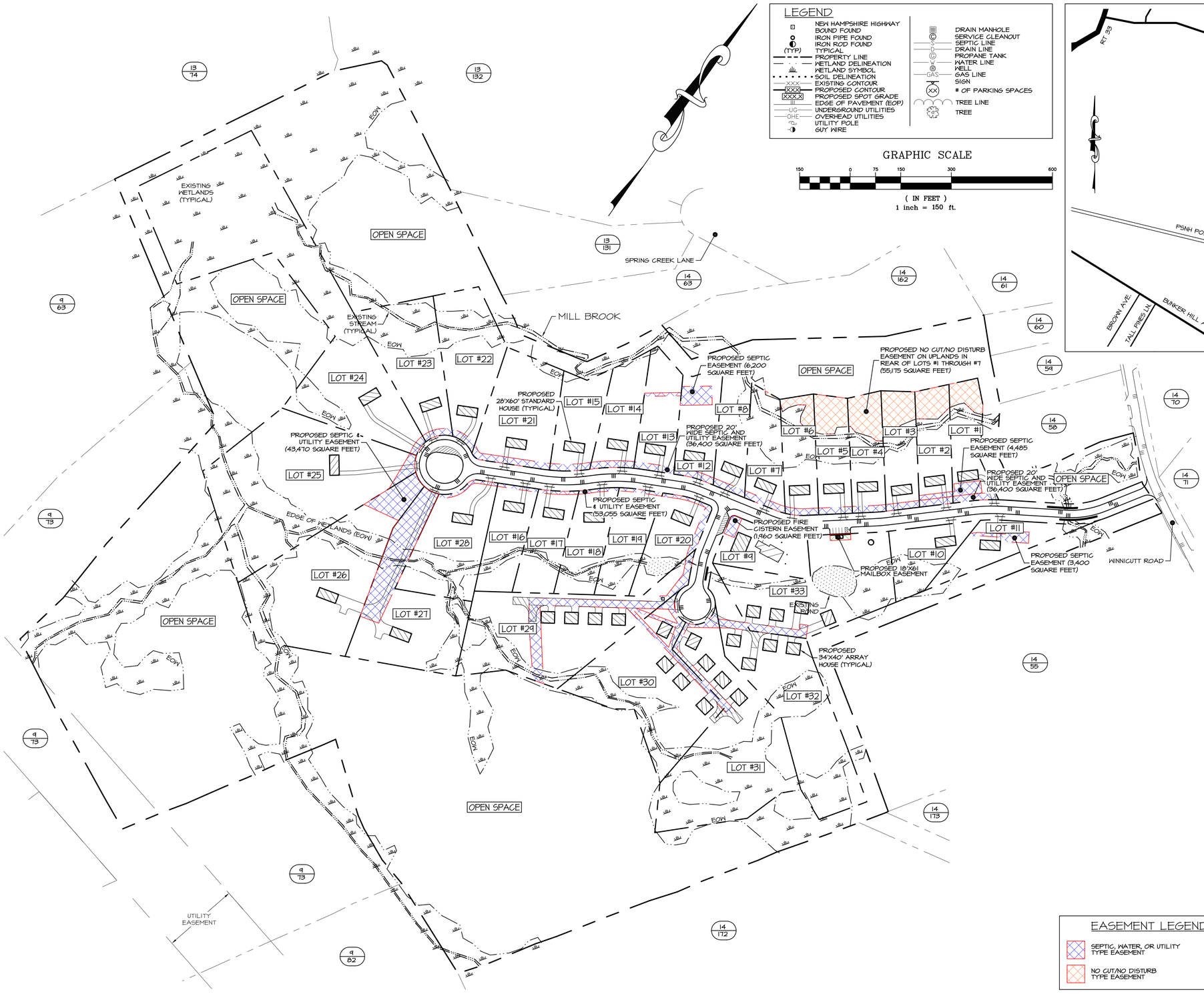
EMANUEL ENGINEERING
118 Portsmouth Avenue, A202
Stratham, NH 03885
P: 603-772-4400 F: 603-772-4487
www.emanuelengineering.com

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
PRELIMINARY
FEBRUARY 24, 2025

TITLE:
CONSERVATION COMMISSION PLAN
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=100'	CC1



NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5948 PG0405
2. THE INTENT OF THIS PLAN IS TO SHOW PRELIMINARY SEPTIC, UTILITY, AND NO CUT/NO DISTURB EASEMENTS FOR THE PROPOSED OPEN SPACE CLUSTER SUBDIVISION PLAN ON STRATHAM TAX MAP 14, LOTS 56 & 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. SEE SHEET E2 FOR EASEMENTS RELATING TO DRAINAGE, WELLS, AND SNOW STORAGE.
13. SEE SHEET OS1 FOR EASEMENTS RELATING TO OPEN SPACE AND DRIVEWAY ACCESS.
14. THE EXISTING BARN AND HOUSE ARE SUBJECT TO A HISTORIC PRESERVATION EASEMENT AND SHALL BE PRESERVED AND MAINTAINED. DEMOLITION OR SIGNIFICANT ALTERATIONS ARE PROHIBITED WITHOUT APPROVAL FROM THE TOWN OF STRATHAM.

REFERENCE PLANS:

1. "LOT LINE ADJUSTMENT FOR HELEN GALLANT IN STRATHAM, N.H." DATED APRIL 8, 1992 AND PREPARED BY BRUCE L. FOHOFER, LAND SURVEYOR. R.C.R.D. PLAN #D-21763.
2. SUBDIVISION PLAN ON 66R WINNICUTT ROAD, STRATHAM, NH FOR ELIZABETH B. VREES." LAST REVISED AUGUST 17, 1998 AND PREPARED BY R.G. MOYNIHAN & EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-26515.
3. "MEADOWVIEW ESTATES, SUBDIVISION PLAN (TAX MAP 4 LOT 8) LOTS 1-1, 1-2 & 1-3." LAST REVISED DECEMBER 14, 2000 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-28720.
4. "SUBDIVISION PLAN FOR 70 WINNICUTT ROAD LLC, STRATHAM, TAX MAP 14 LOT 61, TO WINNICUTT ROAD, STRATHAM, NH 03885." LAST REVISED JULY 10, 2013 AND PREPARED BY EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-31878.
5. "SUBDIVISION PLAN OVERALL, ROBIE FARMS, TREAT FARM ROAD, STRATHAM, NH 03885, MAP 14, LOT 54." LAST REVISED MAY 18, 2020 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-42223.
6. "LOT LINE ADJUSTMENT PLAN, 16R & 18R AUTUMN LANE, STRATHAM, NEW HAMPSHIRE, ASSESSOR'S PARCELS 9-73 & 13-130 FOR ROBERT A. & NATALIE H. TILTON." LAST REVISED JUNE 11, 2021 AND PREPARED BY THIS OFFICE. R.C.R.D. PLAN #D-42844.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
7	MAR 17, 2026	FOR APPROVAL	
6	AUG 20, 2025	FOR APPROVAL	
1	FEB 5, 2025	FOR APPROVAL	

DRAWN: JJM | DESIGN: JJM
CHECKED: BDS | CHECKED: BDS

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

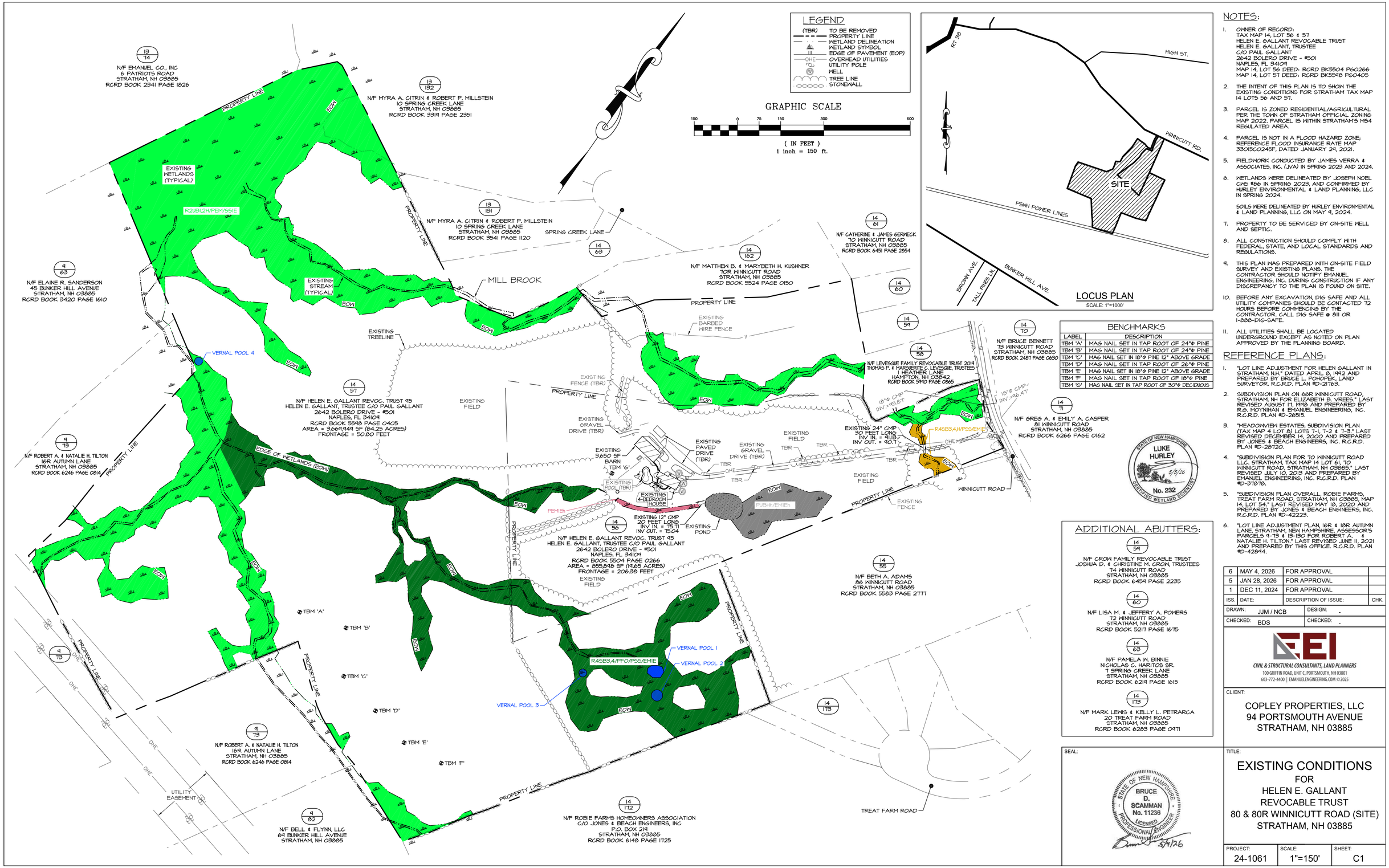
CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:

EASEMENT LEGEND
- SEPTIC, WATER, OR UTILITY TYPE EASEMENT
- NO CUT/NO DISTURB TYPE EASEMENT

TITLE:
PRELIMINARY EASEMENT PLAN
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	E1



NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5598 PG0405
2. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS FOR STRATHAM TAX MAP 14 LOTS 56 AND 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

BENCHMARKS

LABEL	DESCRIPTION
TBM 'A'	MAG NAIL SET IN TAP ROOT OF 24"ø PINE
TBM 'B'	MAG NAIL SET IN TAP ROOT OF 24"ø PINE
TBM 'C'	MAG NAIL SET IN 18"ø PINE 12" ABOVE GRADE
TBM 'D'	MAG NAIL SET IN TAP ROOT OF 26"ø PINE
TBM 'E'	MAG NAIL SET IN 18"ø PINE 12" ABOVE GRADE
TBM 'F'	MAG NAIL SET IN TAP ROOT OF 18"ø PINE
TBM 'G'	MAG NAIL SET IN TAP ROOT OF 30"ø DECIDUOUS

REFERENCE PLANS:

1. "LOT LINE ADJUSTMENT FOR HELEN GALLANT IN STRATHAM, N.H." DATED APRIL 8, 1982 AND PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR. R.C.R.D. PLAN #D-21763.
2. SUBDIVISION PLAN ON 66R WINNICUTT ROAD, STRATHAM, NH FOR ELIZABETH B. VREES." LAST REVISED AUGUST 17, 1998 AND PREPARED BY R.S. MOYNIHAN & EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-26515.
3. "MEADOWVIEW ESTATES, SUBDIVISION PLAN (TAX MAP 4 LOT B) LOTS 7-1, 7-2 & 7-3." LAST REVISED DECEMBER 14, 2000 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-28720.
4. "SUBDIVISION PLAN FOR 70 WINNICUTT ROAD LLC. STRATHAM, TAX MAP 14 LOT 61, 70 WINNICUTT ROAD, STRATHAM, NH 03885." LAST REVISED JULY 10, 2019 AND PREPARED BY EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-37878.
5. "SUBDIVISION PLAN OVERALL, ROBIE FARMS, TREAT FARM ROAD, STRATHAM, NH 03885, MAP 14, LOT 54." LAST REVISED MAY 18, 2020 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-42223.
6. "LOT LINE ADJUSTMENT PLAN, 16R & 18R AUTUMN LANE, STRATHAM, NEW HAMPSHIRE, ASSESSOR'S PARCELS 9-73 & 13-130 FOR ROBERT A. & NATALIE H. TILTON." LAST REVISED JUNE 11, 2021 AND PREPARED BY THIS OFFICE. R.C.R.D. PLAN #D-42844.

ADDITIONAL ABUTTERS:

14/54 N/F CROW FAMILY REVOCABLE TRUST JOSHUA D. & CHRISTINE M. CROW, TRUSTEES 74 WINNICUTT ROAD STRATHAM, NH 03885 RCRD BOOK 6454 PAGE 2235

14/60 N/F LISA M. & JEFFERY A. POWERS 72 WINNICUTT ROAD STRATHAM, NH 03885 RCRD BOOK 5217 PAGE 1675

14/63 N/F PAMELA W. BINNIE NICHOLAS C. HARITOS SR. 7 SPRING CREEK LANE STRATHAM, NH 03885 RCRD BOOK 6219 PAGE 1615

14/173 N/F MARK LEWIS & KELLY L. PETRARCA 20 TREAT FARM ROAD STRATHAM, NH 03885 RCRD BOOK 6283 PAGE 0971

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
6	MAY 4, 2026	FOR APPROVAL	
5	JAN 28, 2026	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

DRAWN: JJM / NCB | DESIGN: -
CHECKED: BDS | CHECKED: -

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
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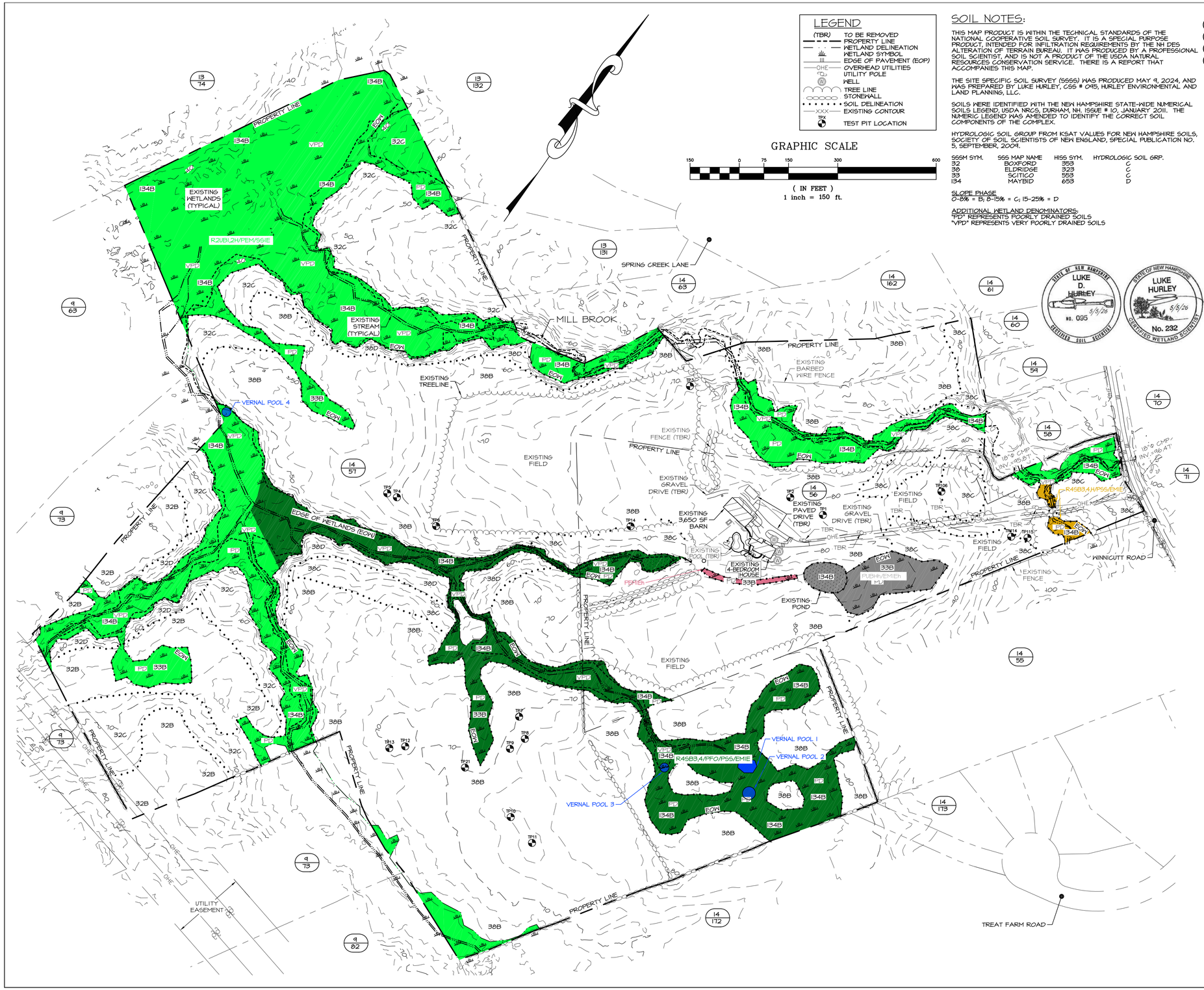
CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
LUKE HURLEY 5/5/26 No. 232 STATE OF NEW HAMPSHIRE CERTIFIED WETLAND SCIENTIST

BRUCE D. SCAMMAN No. 11236 STATE OF NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER 5/4/26

TITLE:
EXISTING CONDITIONS
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	C1



LEGEND

- (TBR) TO BE REMOVED
- PROPERTY LINE
- WETLAND DELINEATION
- WETLAND SYMBOL
- EDGE OF PAVEMENT (EOP)
- OHE OVERHEAD UTILITIES
- UTILITY POLE
- W WELL
- TREE LINE
- STONEWALL
- SOIL DELINEATION
- XXX EXISTING CONTOUR
- TP1 TEST PIT LOCATION

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

SOIL NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL SURVEY (5565) WAS PRODUCED MAY 9, 2024, AND WAS PREPARED BY LUKE HURLEY, CSS # 095, HURLEY ENVIRONMENTAL AND LAND PLANNING, LLC.

SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH. ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPONENTS OF THE COMPLEX.

HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009.

SSSM SYM.	SSS MAP NAME	HISS SYM.	HYDROLOGIC SOIL GRP.
32	BOXFORD	353	C
38	ELDRIDGE	523	C
33	SCITICO	553	C
134	MAYBID	653	D

SLOPE PHASE
0-8% = B; 8-15% = C; 15-25% = D

ADDITIONAL WETLAND DENOMINATORS:
"PF" REPRESENTS POORLY DRAINED SOILS
"VPD" REPRESENTS VERY POORLY DRAINED SOILS

TEST PITS:

TEST PITS #1-14 WERE PERFORMED ON MAY 9, 2024 BY LUKE HURLEY OF HURLEY ENVIRONMENTAL AND LAND PLANNING, LLC, AND WITNESSED BY MIKE CUOMO OF RCCD, AND BRUCE SCAMMAN OF EMANUEL ENGINEERING, INC.

TEST PIT #1
ESHWT 26"; OBSERVED WATER NONE; NO REFUSAL
0-19" 10YR3/2, FSL, GR, FR
19-26" 10YR4/6, FSL, GR, FR
26-55" 2.5Y5/3, SL, BLKY, FI REDOX 15%

TEST PIT #2
ESHWT 26"; OBSERVED WATER NONE; NO REFUSAL
0-12" 10YR3/3, FSL, GR, FR
12-24" 10YR4/4, FSL, GR, FR
24-62" 2.5Y5/3, SL, BLKY, FI REDOX 15%

TEST PIT #3
ESHWT 24", OBSERVED WATER NONE; NO REFUSAL
0-8" 10YR3/3, FSL, GR, FR
8-24" 10YR4/4, FSL, GR, FR
24-60" 2.5Y5/4, SAND/ROCK, BLKY, FI REDOX 15%

TEST PIT #4
ESHWT 34"; OBSERVED WATER NONE; NO REFUSAL
0-8" 10YR3/3, FSL, GR, FR
8-20" 10YR4/4, FSL, GR, FR
20-34" 2.5Y4/4, LS, GR, FR
34-64" 2.5Y5/3, SI/S, BLKY, FI REDOX 15%

TEST PIT #5
ESHWT 36"; OBSERVED WATER NONE; NO REFUSAL
0-8" 10YR3/3, FSL, GR, FR
8-13" 10YR4/4, FSL, GR, FR
13-36" 2.5Y5/4, LS, GR, FR
36-60" 2.5Y5/3, S, OM, FR REDOX 15%

TEST PIT #6
ESHWT 17"; OBSERVED WATER NONE; NO REFUSAL
0-5" 10YR3/3, FSL, GR, FR
5-17" 10YR4/3, FSL, GR, FR
17-60" 2.5Y5/3, SL, BLKY, FI REDOX 20%

TEST PIT #7
ESHWT 24"; OBSERVED WATER 46"; NO REFUSAL
0-6" 10YR3/3, FSL, GR, FR
6-12" 10YR4/3, FSL, GR, FR
12-24" 2.5Y4/4, VFS, GR, FR
24-66" 2.5Y3/3, SL, BLKY, FI REDOX 20%

TEST PIT #8
ESHWT 21"; OBSERVED WATER NONE; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-14" 10YR4/4, FSL, GR, FR
14-21" 2.5Y4/4, VFS, GR, FR
21-36" 2.5Y4/3, SL, BLKY, FI REDOX 20%
36-60" 2.5Y5/3, SL, BLKY, FI REDOX 20%

TEST PIT #9
ESHWT 20"; OBSERVED WATER SEEP 36"; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-12" 10YR4/3, FSL, GR, FR
12-20" 10YR4/6, FSL, GR, FR
20-36" 2.5Y4/4, FS, GR, FR
36-56" 2.5Y5/3, SL, GR, FR REDOX 20%

TEST PIT #10
ESHWT 18"; OBSERVED WATER NONE; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-18" 10YR4/3, FSL, GR, FR
18-30" 2.5Y5/4, SL, BLKY, FI REDOX 20%
30-64" 2.5Y4/4, SL, BLKY, FI REDOX 20%

TEST PIT #11
ESHWT 31"; OBSERVED WATER NONE; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-8" 10YR4/3, FSL, GR, FR
8-31" 2.5Y5/4, FSL, BLKY, FI REDOX 20%
31-60" 2.5Y4/3, SL, BLKY, FI REDOX 20%

TEST PIT #12
ESHWT 32"; OBSERVED WATER NONE; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-16" 10YR4/3, FSL, GR, FR
16-32" 2.5Y5/4, FSL, BLKY, FI REDOX 20%
32-60" 2.5Y4/3, ROCK, BLKY, FI REDOX 20%

TEST PIT #13
ESHWT 25"; OBSERVED WATER NONE; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-25" 10YR4/3, FSL, GR, FR
25-60" 2.5Y5/3, SICL, BLKY, FI REDOX 20%

TEST PIT #14
ESHWT 15"; OBSERVED WATER NONE; NO REFUSAL
0-4" 10YR3/3, FSL, GR, FR
4-8" 10YR4/3, FSL, GR, FR
8-15" 2.5Y5/3, FSL, GR, FR
15-60" 2.5Y5/3, SICL, BLKY, FI REDOX 20%

TEST PITS #106, 114, AND 115 WERE PERFORMED ON JANUARY 4, 2024 BY WAYNE MORRILL OF JONES & BEACH ENGINEERS, INC. SSD #1358, AND WITNESSED BY MIKE CUOMO OF RCCD.

TEST PIT #106
ESHWT 25"; OBSERVED WATER NONE; NO REFUSAL
0-7" TOP SOIL
7-18" 2.5Y 5/4, FSL, GR, FR
18-70" 2.5Y5/3, FSL, MASSIVE, FIRM

TEST PIT #114
ESHWT 18"; OBSERVED WATER NONE; NO REFUSAL
0-5" 10YR3/3, FSL, GR, FR
8-18" 10YR5/6, FSL, BLOCKY, FR
18-28" 2.5Y5/4, FSL, BLOCKY, FR
28-64" 5Y5/6, STONY FSL, BLOCKY, FIRM

TEST PIT #115
ESHWT 18"; OBSERVED WATER NONE; NO REFUSAL
0-8" 10YR3/4, FSL, GR, FR
8-18" 10YR4/3, FSL, BLOCKY, FR
18-66" 2.5Y5/3, FSL, STONY, FIRM

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 P60266
   MAP 14, LOT 57 DEED: RCRD BK5948 P60405
2. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SOILS & TOPOGRAPHY FOR STRATHAM TAX MAP 14 LOTS 56 AND 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

REFERENCE PLANS:

1. "LOT LINE ADJUSTMENT FOR HELEN GALLANT IN STRATHAM, N.H." DATED APRIL 8, 1982 AND PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR. R.C.R.D. PLAN #D-21763.
2. SUBDIVISION PLAN ON 66R WINNICUTT ROAD, STRATHAM, NH FOR ELIZABETH B. VREES." LAST REVISED AUGUST 17, 1988 AND PREPARED BY R.S. MOYNIHAN & EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-26515.
3. "MEADOWVIEW ESTATES, SUBDIVISION PLAN (TAX MAP 4 LOT 8) LOTS 7-1, 7-2 & 7-3." LAST REVISED DECEMBER 14, 2000 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-28120.
4. "SUBDIVISION PLAN FOR 70 WINNICUTT ROAD LLC. STRATHAM, TAX MAP 14 LOT 61, TO WINNICUTT ROAD, STRATHAM, NH 03885." LAST REVISED JULY 10, 2018 AND PREPARED BY EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-31878.
5. "SUBDIVISION PLAN OVERALL, ROBIE FARMS, TREAT FARM ROAD, STRATHAM, NH 03885, MAP 14, LOT 54." LAST REVISED MAY 19, 2020 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-42223.
6. "LOT LINE ADJUSTMENT PLAN, 16R & 18R AUTUMN LANE, STRATHAM, NEW HAMPSHIRE, ASSESSOR'S PARCELS 9-73 & 13-130 FOR ROBERT A. & NATALIE H. TILTON." LAST REVISED JUNE 11, 2021 AND PREPARED BY THIS OFFICE. R.C.R.D. PLAN #D-42844.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
7	MAY 4, 2026	FOR APPROVAL	
6	APR 21, 2026	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

DRAWN: JJM / NCB | DESIGN: -
CHECKED: BDS | CHECKED: -

STATE OF NEW HAMPSHIRE · LUKE D. HURLEY · NO. 095 · 5/5/26 · CERTIFIED SOIL SCIENTIST

STATE OF NEW HAMPSHIRE · LUKE HURLEY · 5/5/26 · No. 232 · CERTIFIED WETLAND SCIENTIST

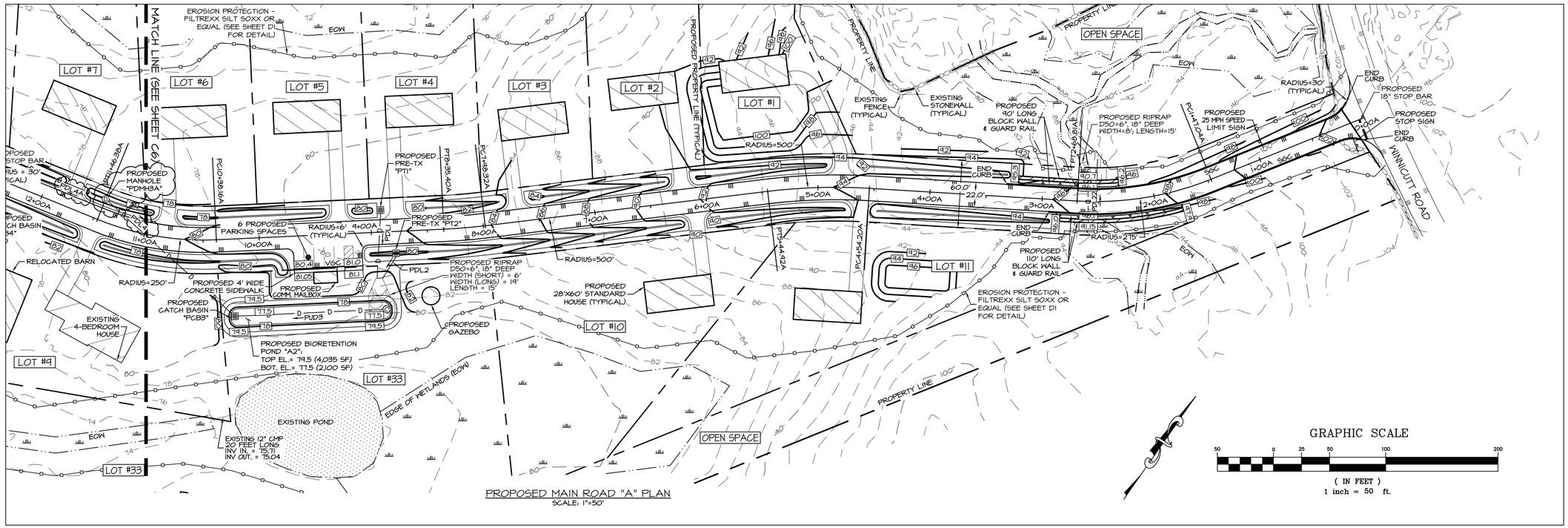
EI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
STATE OF NEW HAMPSHIRE · BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER · 5/4/26

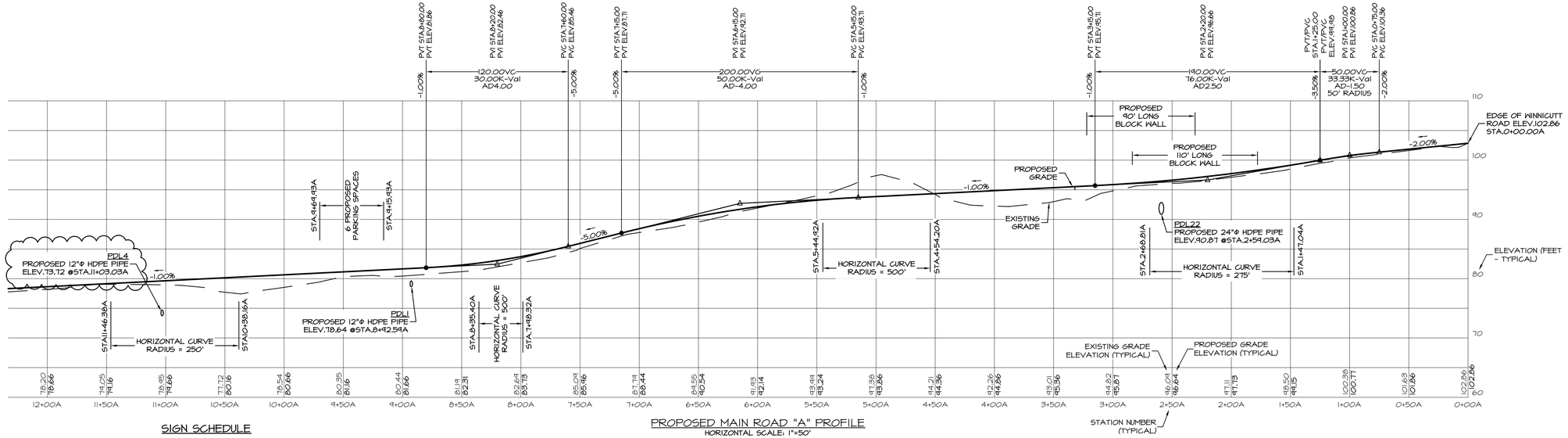
TITLE:
SOILS & TOPOGRAPHY PLAN
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	C2



PROPOSED MAIN ROAD "A" PLAN
SCALE: 1"=50'

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.



PROPOSED MAIN ROAD "A" PROFILE
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'

SIGN SCHEDULE

MANUFACTURE	SIGN NUMBER	SIGN (N.T.S.)	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	DESCRIP.	MOUNT TYPE	MOUNT HEIGHT	REMARKS
WORKSAFE TCI OR EQUAL	R1-1 (TWO LOCATIONS)	STOP	36"	36"	WHITE ON RED	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED
WORKSAFE TCI OR EQUAL	R2-1 (TWO LOCATIONS)	SPEED LIMIT 25	24"	30"	BLACK ON WHITE	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED
WORKSAFE TCI OR EQUAL	R6-1R (ONE LOCATION)	ONE WAY	36"	12"	BLACK ON WHITE	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED

NOTES: 1. ALL SIGNS AND SIGN POSTS IN THE NHDOT RIGHT OF WAY TO MEET 2009 MUTCD STANDARDS WITH REVISION NUMBERS 1 AND 2 INCORPORATED, DATED MAY 2012.
2. ALL MOUNTING HEIGHTS ARE MEASURED FROM THE GROUND TO THE BOTTOM OF THE SIGN.
3. STREET SIGNS ARE TO BE AFFIXED ON TOP OF THE PROPOSED STOP SIGNS.

NOTES:

1. OWNER OF RECORD:
TAX MAP 14, LOT 56 & 57
HELEN E. GALLANT REVOCABLE TRUST
HELEN E. GALLANT, TRUSTEE
C/O PAUL GALLANT
2642 BOLERO DRIVE - #501
NAPLES, FL 34109
MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
MAP 14, LOT 57 DEED: RCRD BK5598 PG0405

2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED HORIZONTAL AND VERTICAL ALIGNMENT OF THE PROPOSED MAIN ROAD "A" ON STRATHAM TAX MAP 14, LOTS 56 & 57. SEE SHEET C7 FOR PROPOSED SECONDARY ROAD "B" PLAN AND PROFILE. BOTH ROADS ARE PROPOSED TO BE PUBLIC ROADS WITH A SPEED LIMIT OF 25 MPH.

3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.

4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.

5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.

6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.

7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.

8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.

9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.

10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.

11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

12. DRIVEWAY LOCATIONS SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE. FINAL DRIVEWAY DESIGN TO BE APPROVED BY A PROFESSIONAL ENGINEER PRIOR TO CONSTRUCTION. EACH DRIVEWAY SHALL INCLUDE A 12" DIAMETER HDPE PIPE FOR STORMWATER FLOW, INSTALLED PER THE DETAIL ON SHEET D3. LOCATIONS OF DRIVEWAY CULVERTS ON SHEET C4 OR SHEETS PLF1-PLF6.

13. REFER TO SHEET C7.1 FOR THE DRAINAGE PIPE LISTING, DRAINAGE STRUCTURE CHART, PRETREATMENT DEVICE CHART, AND DETAILED INFORMATION ON THE PROPOSED SEDIMENT FOREBAY WITHIN THE CUL-DE-SAC AND BIORETENTION POND B2.

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9	MAY 4, 2026	FOR APPROVAL	
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DRAWN: JJM | DESIGN: JJM
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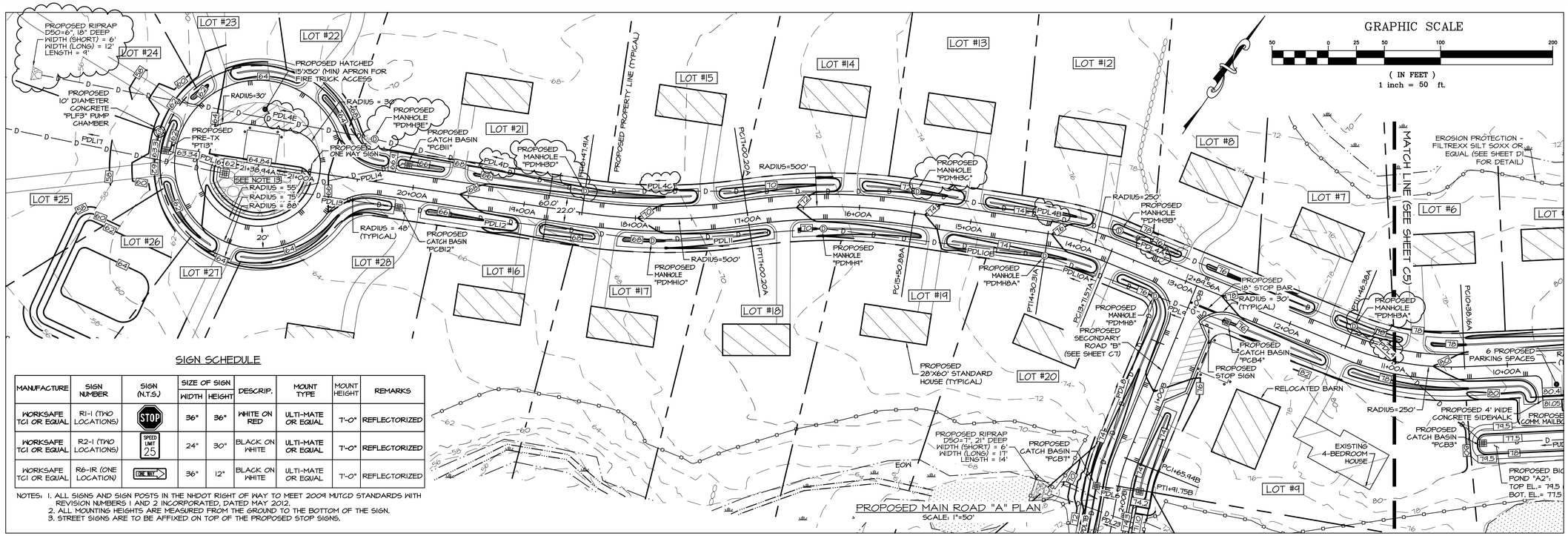
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CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:
PROPOSED MAIN ROAD "A" PLAN & PROFILE
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

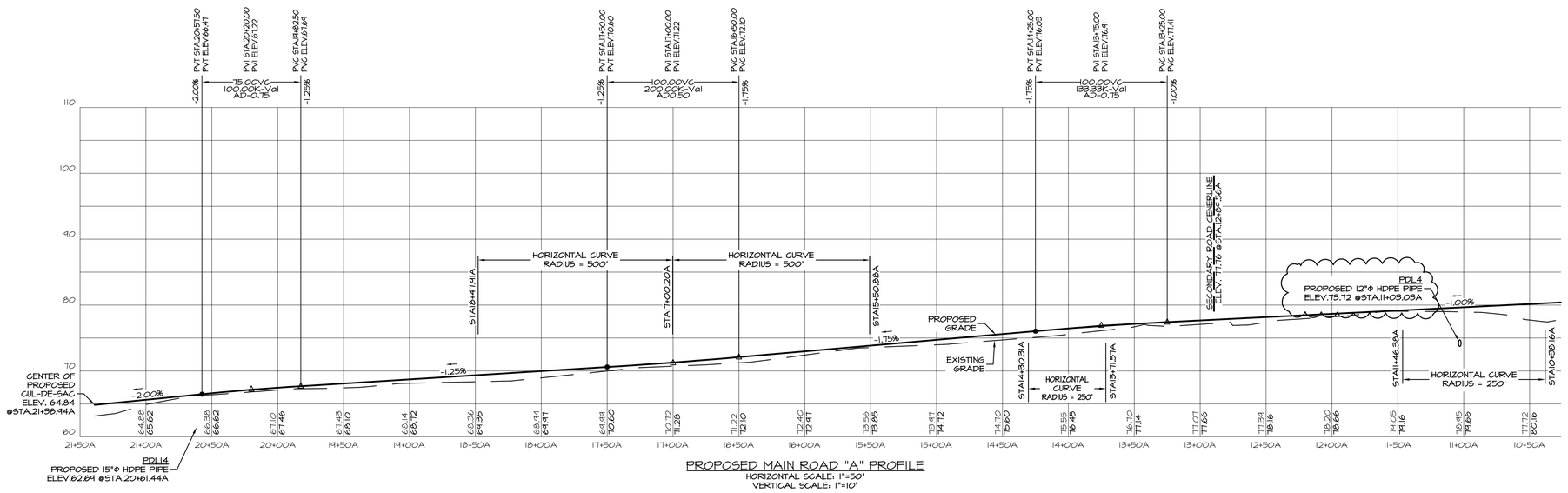
PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	C5



SIGN SCHEDULE

MANUFACTURE	SIGN NUMBER	SIGN (N.T.S.)	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	DESCRIP.	MOUNT TYPE	MOUNT HEIGHT	REMARKS
WORKSAFE TCI OR EQUAL	R1-1 (TWO LOCATIONS)	STOP	36"	36"	WHITE ON RED	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED
WORKSAFE TCI OR EQUAL	R2-1 (TWO LOCATIONS)	SPEED LIMIT 25	24"	30"	BLACK ON WHITE	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED
WORKSAFE TCI OR EQUAL	R6-1R (ONE LOCATION)	ONE WAY	36"	12"	BLACK ON WHITE	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED

NOTES: 1. ALL SIGNS AND SIGN POSTS IN THE NHDOT RIGHT OF WAY TO MEET 2009 MUTCD STANDARDS WITH REVISION NUMBERS 1 AND 2 INCORPORATED, DATED MAY 2012.
2. ALL MOUNTING HEIGHTS ARE MEASURED FROM THE GROUND TO THE BOTTOM OF THE SIGN.
3. STREET SIGNS ARE TO BE AFFIXED ON TOP OF THE PROPOSED STOP SIGNS.



PROPOSED MAIN ROAD "A" PROFILE
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'

NOTES:

1. OWNER OF RECORD:
TAX MAP 14, LOT 56 & 57
HELEN E. GALLANT REVOCABLE TRUST
HELEN E. GALLANT, TRUSTEE
C/O PAUL GALLANT
2642 BOLERO DRIVE - #501
NAPLES, FL 34109
MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
MAP 14, LOT 57 DEED: RCRD BK5598 PG0405

2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED HORIZONTAL AND VERTICAL ALIGNMENT OF THE PROPOSED MAIN ROAD "A" ON STRATHAM TAX MAP 14, LOTS 56 & 57. SEE SHEET C7 FOR PROPOSED SECONDARY ROAD "B" PLAN AND PROFILE. BOTH ROADS ARE PROPOSED TO BE PUBLIC ROADS WITH A SPEED LIMIT OF 25 MPH.

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SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.

7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.

8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.

9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.

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13. REFER TO SHEET C7.1 FOR THE DRAINAGE PIPE LISTING, DRAINAGE STRUCTURE CHART, PRETREATMENT DEVICE CHART, AND DETAILED INFORMATION ON THE PROPOSED SEDIMENT FOREBAY WITHIN THE CUL-DE-SAC AND BIORETENTION POND B2.

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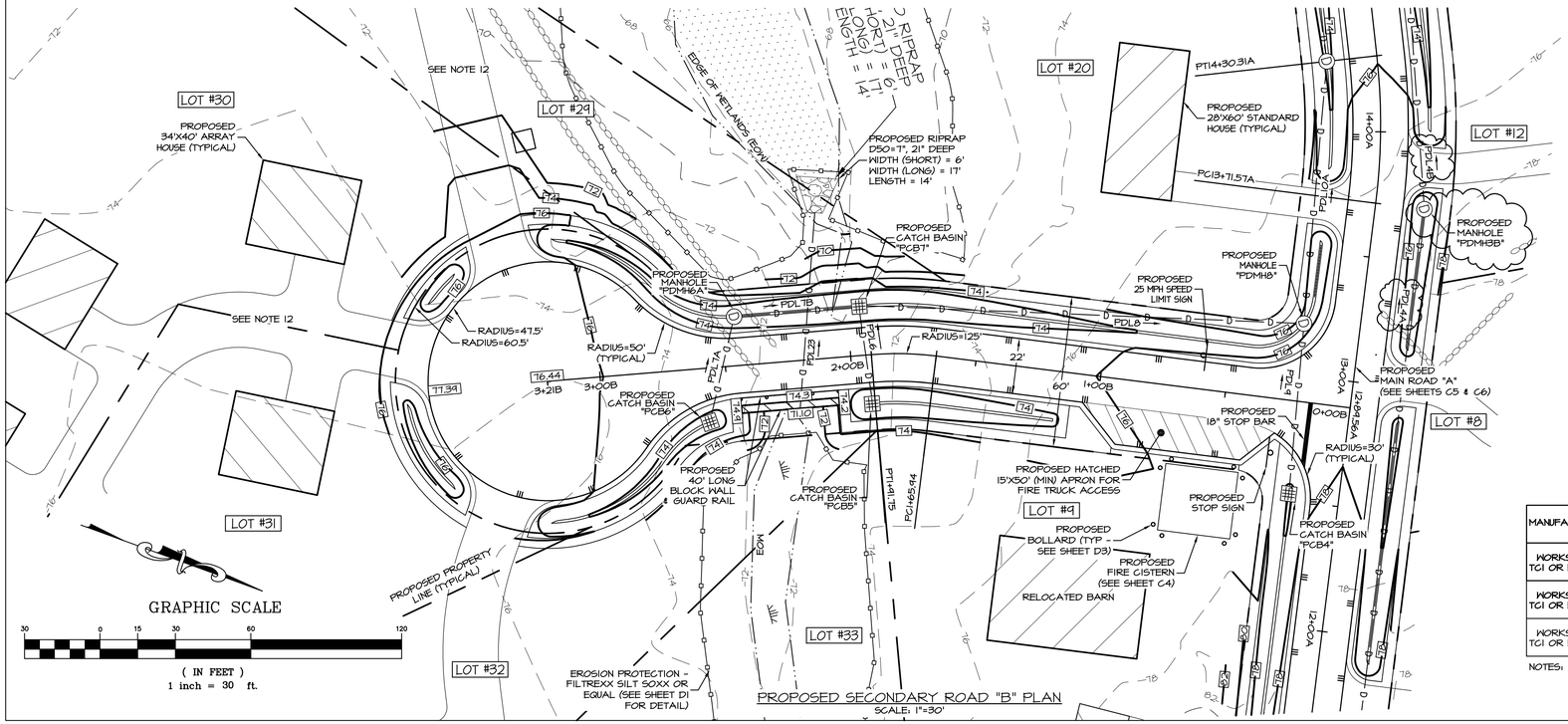
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CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:
PROPOSED MAIN ROAD "A" PLAN & PROFILE
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	C6

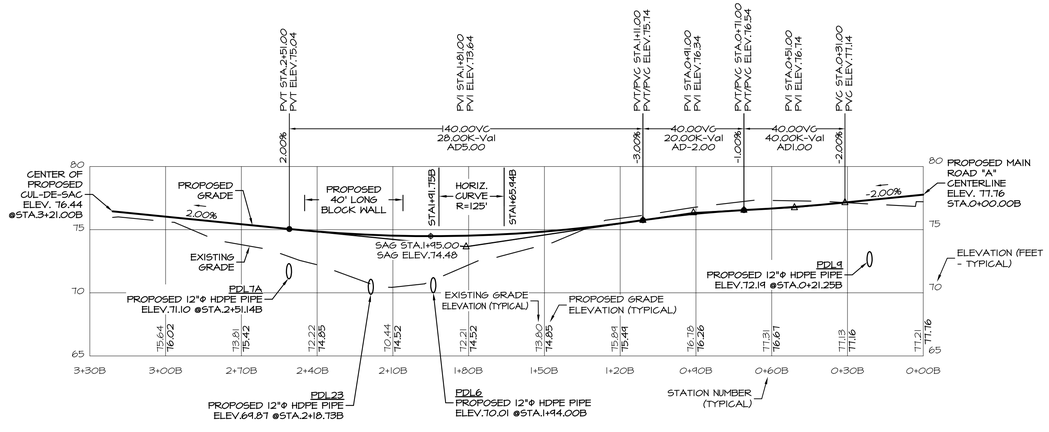


GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.



PROPOSED SECONDARY ROAD "B" PROFILE

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=6'

SIGN SCHEDULE

MANUFACTURE	SIGN NUMBER	SIGN (N.T.S.)	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	DESCRIP.	MOUNT TYPE	MOUNT HEIGHT	REMARKS
WORKSAFE TCI OR EQUAL	R1-1 (TWO LOCATIONS)	STOP	36"	36"	WHITE ON RED	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED
WORKSAFE TCI OR EQUAL	R2-1 (TWO LOCATIONS)	SPEED LIMIT 25	24"	30"	BLACK ON WHITE	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED
WORKSAFE TCI OR EQUAL	R6-1R (ONE LOCATION)	ONE WAY	36"	12"	BLACK ON WHITE	ULTI-MATE OR EQUAL	7'-0"	REFLECTORIZED

NOTES: 1. ALL SIGNS AND SIGN POSTS IN THE NHDOT RIGHT OF WAY TO MEET 2009 MUTCD STANDARDS WITH REVISION NUMBERS 1 AND 2 INCORPORATED, DATED MAY 2012.
2. ALL MOUNTING HEIGHTS ARE MEASURED FROM THE GROUND TO THE BOTTOM OF THE SIGN.
3. STREET SIGNS ARE TO BE AFFIXED ON TOP OF THE PROPOSED STOP SIGNS.

NOTES:

1. OWNER OF RECORD:
TAX MAP 14, LOT 56 & 57
HELEN E. GALLANT REVOCABLE TRUST
HELEN E. GALLANT, TRUSTEE
C/O PAUL GALLANT
2642 BOLERO DRIVE - #501
NAPLES, FL 34109
MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
MAP 14, LOT 57 DEED: RCRD BK5598 PG0405

2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED HORIZONTAL AND VERTICAL ALIGNMENT OF THE PROPOSED SECONDARY ROAD "B" ON STRATHAM TAX MAP 14, LOTS 56 & 57. SEE SHEETS C5 & C6 FOR PROPOSED MAIN ROAD "A" PLAN AND PROFILE. BOTH ROADS ARE TO BE PUBLIC ROADS WITH A SPEED LIMIT OF 25 MPH.

3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.

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SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.

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9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.

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SEAL:

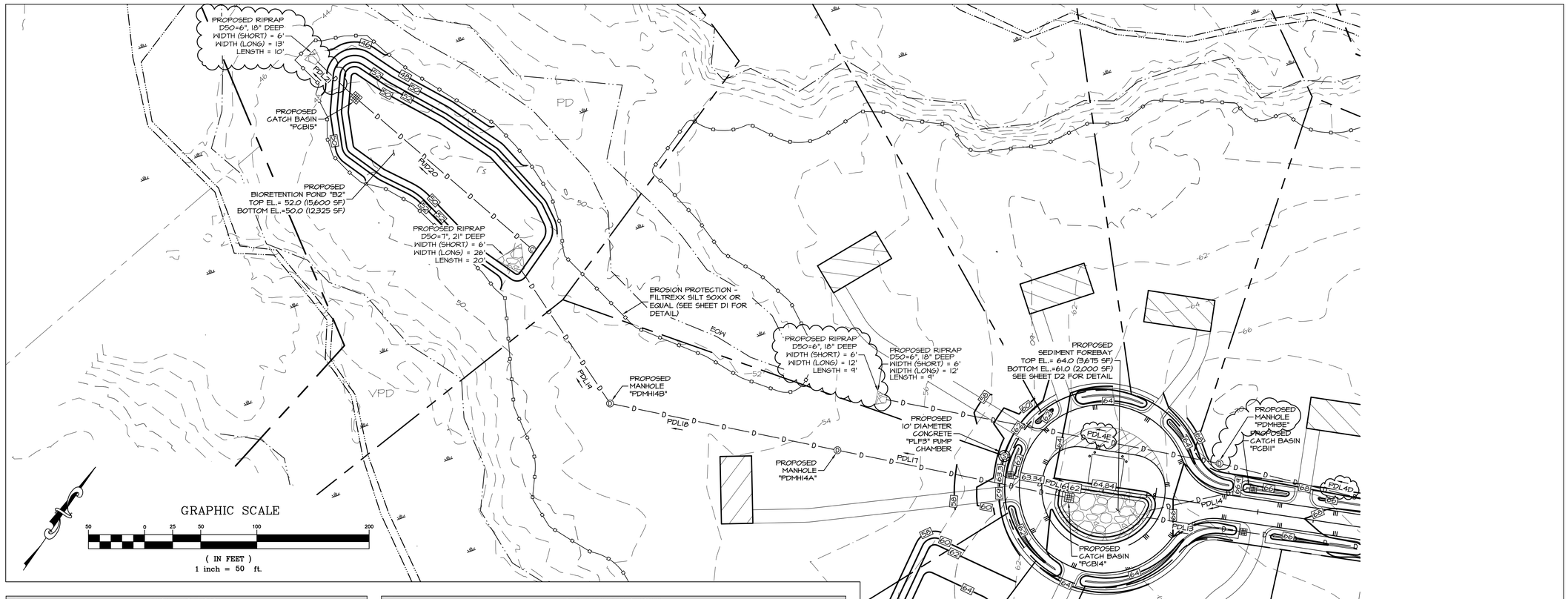
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:

PROPOSED SECONDARY ROAD "B" PLAN & PROFILE

FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=30'	C7



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

PROPOSED SEDIMENT FOREBAY AND BIORETENTION POND B2
SCALE: 1"=50'

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5598 PG0405
2. THE INTENT OF THIS PLAN IS TO SHOW DETAIL FOR THE PROPOSED SEDIMENT FOREBAY AND BIORETENTION BASIN "B2". ADDITIONALLY, THIS PLAN PROVIDES THE PIPE LISTING, DRAINAGE STRUCTURE CHART, AND PRETREATMENT DEVICE CHART.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
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Drainage Pipe Listing

Pipe #	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	Material	Diameter (inches)	Pipe Type
PDL1	78.70	78.50	60	0.003	HDPE	12	Solid
PDL2	79.00	78.50	20	0.025	HDPE	12	Solid
RUD3	74.25	74.25	135	0.000	SDR 35	6	Perforated
PDL4	74.25	73.50	150	0.005	HDPE	12	Solid
PDL4A	73.40	72.00	225	0.006	HDPE	12	Solid
PDL4B	71.90	69.00	180	0.016	HDPE	12	Solid
PDL4C	68.90	64.50	295	0.015	HDPE	12	Solid
PDL4D	64.40	62.00	190	0.013	HDPE	12	Solid
PDL4E	61.90	55.00	300	0.023	HDPE	12	Solid
PDL6	70.20	69.80	35	0.011	HDPE	12	Solid
PDL7A	71.35	70.90	35	0.013	HDPE	12	Solid
PDL7B	70.80	70.50	45	0.007	HDPE	12	Solid
PDL8	69.70	69.20	175	0.003	HDPE	18	Solid
PDL9	73.25	71.00	65	0.035	HDPE	12	Solid
PDL10A	69.10	68.80	105	0.003	HDPE	18	Solid
PDL10B	68.70	67.50	200	0.006	HDPE	18	Solid
PDL11	67.00	65.00	150	0.013	HDPE	18	Solid
PDL12	64.80	63.10	230	0.007	HDPE	18	Solid
PDL13	63.00	62.50	85	0.006	HDPE	18	Solid
PDL14	63.00	62.50	85	0.006	HDPE	15	Solid
PDL16	59.10	58.95	50	0.003	HDPE	12	Solid
PDL17	57.00	51.50	205	0.027	HDPE	24	Solid
PDL18	51.40	50.85	205	0.003	HDPE	24	Solid
PDL19	50.75	50.40	140	0.003	HDPE	24	Solid
RUD20	46.75	46.75	205	0.000	SDR 35	6	Perforated
PDL21	46.75	46.30	45	0.010	HDPE	12	Solid
PDL22	91.15	90.70	40	0.011	HDPE	24	Solid
PDL23	71.10	66.00	80	0.064	HDPE	12	Solid

Notes:
1. See pipe/catch basin detail Sheet D3 for additional information.
2. Pipes PDL1, PDL2, PDL4E, PDL13, PDL14, PDL19, PDL21, and PDL22, and PDL23 to have animal guard grates and flared exit where they daylight. See Sheet D2 for detail. Animal guard grates also to be installed at pipe entrances into PT1 and PCB12.
3. Cleanouts to be provided at ends of pipe or changes in direction, unless drainage structures are already provided. See detail on Sheet D1.
4. Perforated pipes shall have two rows of holes ½" in diameter, 5 inches on center, and spaced 120° apart. Perforations shall be mirrored about the y-axis, and both shall be located on the bottom half of the pipe.
5. Pipe PDL22 is to replace the existing 24" corrugated metal pipe at this location.
6. Proposed driveway culverts are not listed on this chart. See Sheet C4 for locations & D3 for detail.

Pretreatment Device Chart

Structure #	Structure	Size	Lid/Rim	Rim Elevation	Sump	Inlet	Inlet Elevation
PT1	PreTX Drop Inlet	48"x48"	NEENAH #R-1550-A	81.37	See Note #2	12" Solid HDPE	79.00
PT2	PreTX Drop Inlet	48"x48"	NEENAH #R-1550-A	81.17	See Note #2	(4) 4"x12" Knockouts	80.05
PT13	PreTX Drop Inlet	48"x48"	NEENAH #R-3570	61.25	See Note #2	Grate/Rim	61.25

Notes:
1. Proposed pretreatment devices to be by PreTX or equal.
2. See Sheet D5 for additional details about the PreTX Drop Inlet pretreatment device.
3. All concrete structures must be installed in accordance with New Hampshire Department of Transportation Standards and specifications for Road and Bridge Construction.

Drainage Structure Chart

Structure #	Structure	Size	Lid/Rim	Rim Elevation	Sump	Inlet	Inlet Elevation
PCB3	Concrete Catch Basin	4' Diameter	Concrete Cover	80.50	3'	(4) 4"x12" Knockouts	79.00
PDMH3A	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	76.90	3'	See Pipe Listing	See Pipe Listing
PDMH3B	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	74.55	3'	See Pipe Listing	See Pipe Listing
PDMH3C	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	71.50	3'	See Pipe Listing	See Pipe Listing
PDMH3D	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	67.05	3'	See Pipe Listing	See Pipe Listing
PDMH3E	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	68.10	3'	See Pipe Listing	See Pipe Listing
PCB4	Concrete Catch Basin	4' Diameter	Concrete Cover	78.00	3'	(4) 4"x12" Knockouts	76.50
PCB5	Concrete Catch Basin	4' Diameter	Concrete Cover	73.70	3'	(3) 4"x12" Knockouts	72.20
PCB6	Concrete Catch Basin	4' Diameter	Concrete Cover	74.75	3'	(4) 4"x12" Knockouts	73.25
PDMH6A	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	72.50	3'	See Pipe Listing	See Pipe Listing
PCB7	Concrete Catch Basin	4' Diameter	Concrete Cover	74.70	3'	(3) 4"x12" Knockouts	73.20
PDMH8	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	75.30	3'	See Pipe Listing	See Pipe Listing
PDMH8A	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	73.65	3'	See Pipe Listing	See Pipe Listing
PDMH9	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	70.10	3'	See Pipe Listing	See Pipe Listing
PDMH10	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	67.90	3'	See Pipe Listing	See Pipe Listing
PCB11	Concrete Catch Basin	4' Diameter	Concrete Cover	66.95	3'	(4) 4"x12" Knockouts	65.45
PCB12	Concrete Catch Basin	4' Diameter	Concrete Cover	66.90	3'	Driveway Culvert	64.90
PCB14	Concrete Catch Basin	8' Diameter	Concrete Cover	64.50	3'	(8) 4"x12" Knockouts	63.00
PDMH14A	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	54.50	3'	See Pipe Listing	See Pipe Listing
PDMH14B	Concrete Drain Manhole	4' Diameter	NEENAH #R-1550-A	53.35	3'	See Pipe Listing	See Pipe Listing
PCB15	Concrete Catch Basin	4' Diameter	Concrete Cover	53.00	3'	See Note #5	See Note #5

Notes:
1. Proposed concrete catch basins to be by Shea Concrete or equal.
2. See Sheet D2 for knockout details.
3. PCB3, PCB4, PCB5, PCB6, PCB7, PCB11, PCB12, PCB14, and PCB15 to have pipe snouts installed on outlet pipes from the catch
4. All concrete structures must be installed in accordance with New Hampshire Department of Transportation Standards and specifications for Road and Bridge Construction.
5. Provide the inlet for PCB15 as four (4) 4" × 12" knockouts in the side of the catch basin at Elevation 51.50'. In addition, install three (3) 3-inch diameter weep holes in the side of the catch basin at Elevation 50.60'.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
3	MAY 4, 2026	FOR APPROVAL	
2	APR 21, 2026	FOR APPROVAL	
1	MAR 17, 2026	FOR APPROVAL	

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CHECKED: BDS | CHECKED: BDS

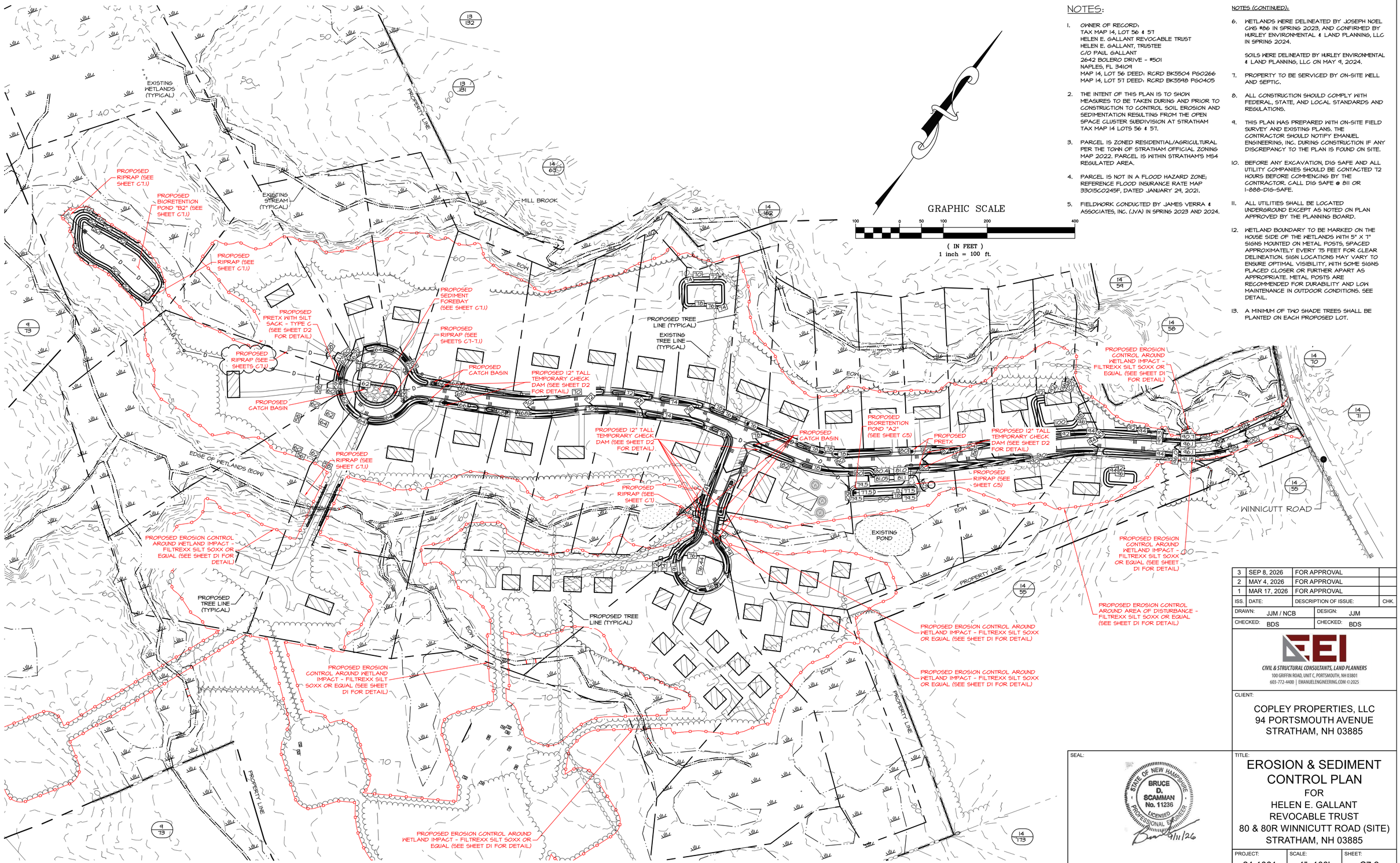
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CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:
PROPOSED SEDIMENT BASIN AND BIORETENTION POND B2 PLAN
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	C7.1



NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405
2. THE INTENT OF THIS PLAN IS TO SHOW MEASURES TO BE TAKEN DURING AND PRIOR TO CONSTRUCTION TO CONTROL SOIL EROSION AND SEDIMENTATION RESULTING FROM THE OPEN SPACE CLUSTER SUBDIVISION AT STRATHAM TAX MAP 14 LOTS 56 & 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.

NOTES (CONTINUED):

6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.
12. WETLAND BOUNDARY TO BE MARKED ON THE HOUSE SIDE OF THE WETLANDS WITH 5" X 7" SIGNS MOUNTED ON METAL POSTS, SPACED APPROXIMATELY EVERY 75 FEET FOR CLEAR DELINEATION. SIGN LOCATIONS MAY VARY TO ENSURE OPTIMAL VISIBILITY, WITH SOME SIGNS PLACED CLOSER OR FURTHER APART AS APPROPRIATE. METAL POSTS ARE RECOMMENDED FOR DURABILITY AND LOW MAINTENANCE IN OUTDOOR CONDITIONS. SEE DETAIL.
13. A MINIMUM OF TWO SHADE TREES SHALL BE PLANTED ON EACH PROPOSED LOT.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
3	SEP 8, 2026	FOR APPROVAL	
2	MAY 4, 2026	FOR APPROVAL	
1	MAR 17, 2026	FOR APPROVAL	

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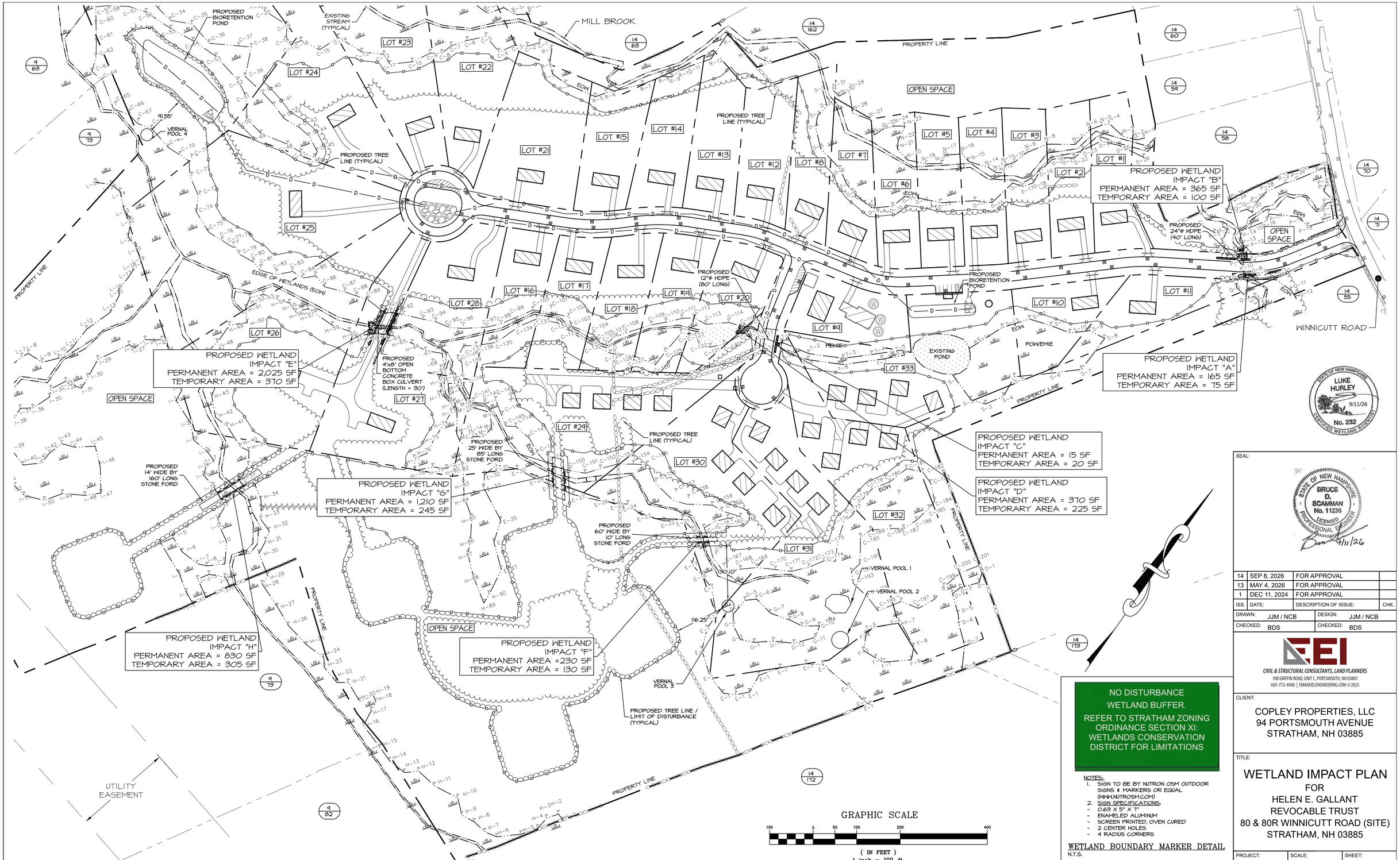
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CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:
STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
9/11/26

TITLE:
EROSION & SEDIMENT CONTROL PLAN
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=100'	C7.2



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

NO DISTURBANCE
WETLAND BUFFER.
REFER TO STRATHAM ZONING ORDINANCE SECTION XI: WETLANDS CONSERVATION DISTRICT FOR LIMITATIONS

NOTES:
1. SIGN TO BE BY NUTRON OSM OUTDOOR SIGNS & MARKERS OR EQUAL (WWW.NUTROSM.COM)
2. SIGN SPECIFICATIONS:
- 0.63 X 5" X 7"
- ENAMELED ALUMINUM
- SCREEN PRINTED, OVEN CURED
- 2 CENTER HOLES
- 4 RADIUS CORNERS

WETLAND BOUNDARY MARKER DETAIL
N.T.S.

LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST
STATE OF NEW HAMPSHIRE

SEAL:

BRUCE D. SCAMMAN
No. 11236
LICENSED
PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
9/11/26

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
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13	MAY 4, 2026	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

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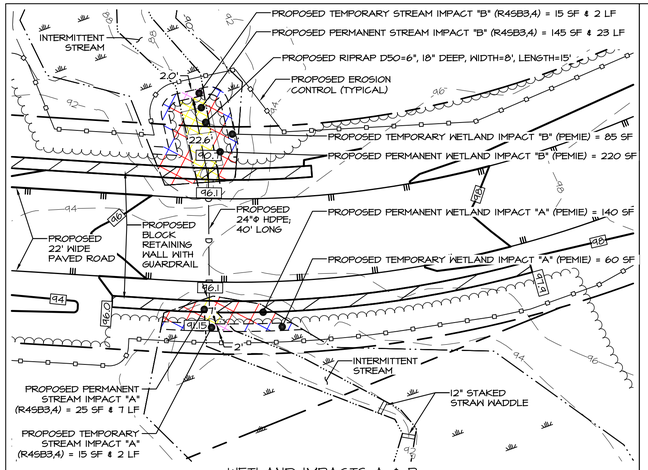
CLIENT:

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94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

TITLE:

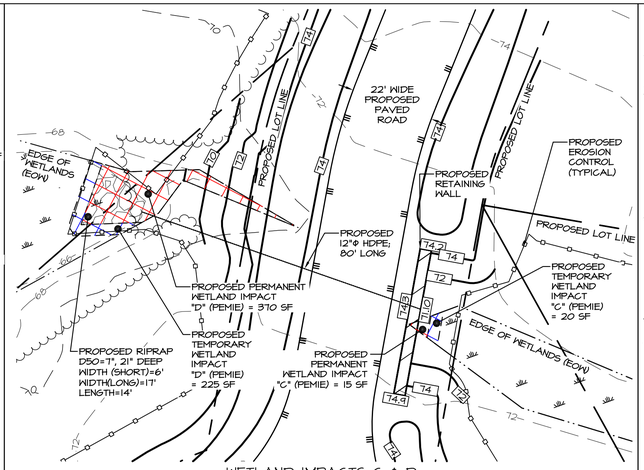
WETLAND IMPACT PLAN
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=100'	C8



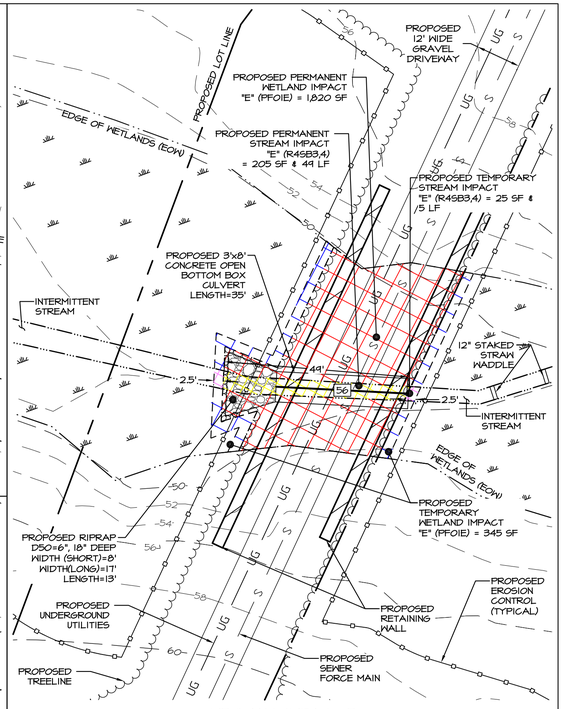
WETLAND IMPACTS A & B

SCALE: 1" = 20'



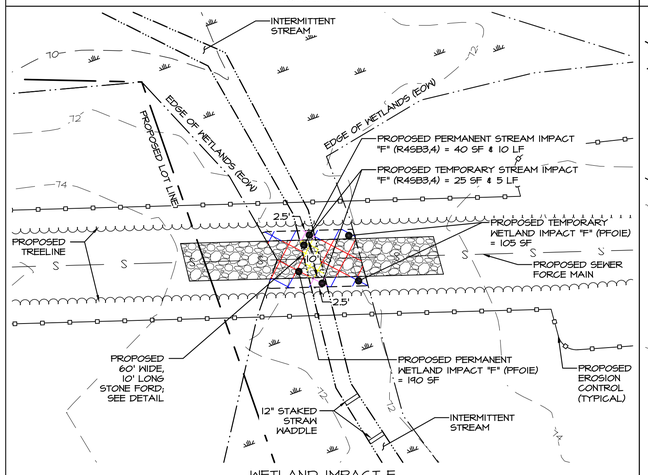
WETLAND IMPACTS C & D

SCALE: 1" = 20'



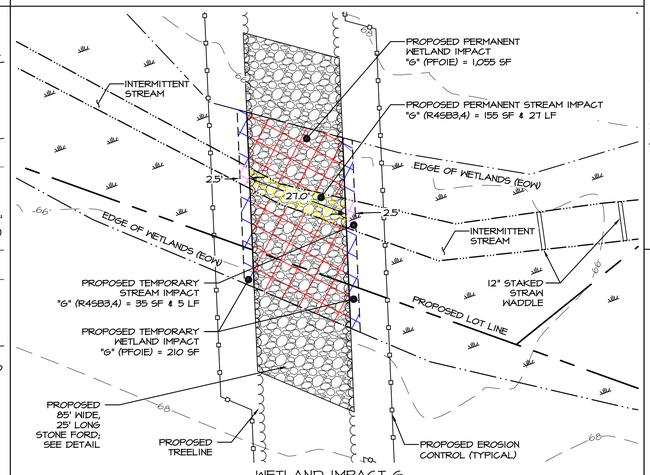
WETLAND IMPACT E

SCALE: 1" = 20'



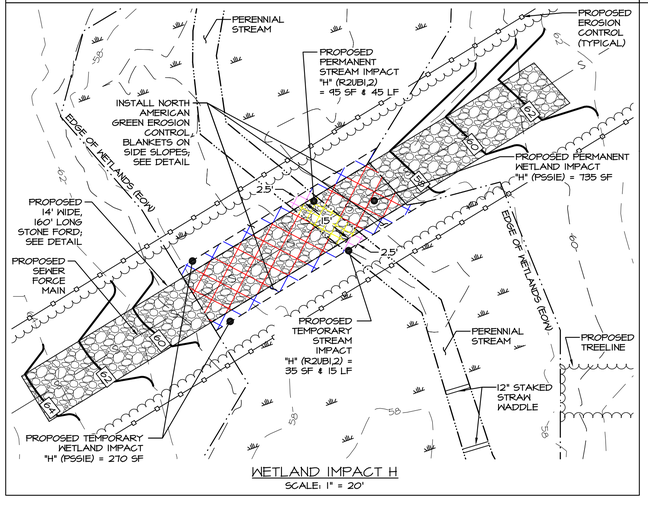
WETLAND IMPACT F

SCALE: 1" = 20'



WETLAND IMPACT G

SCALE: 1" = 20'



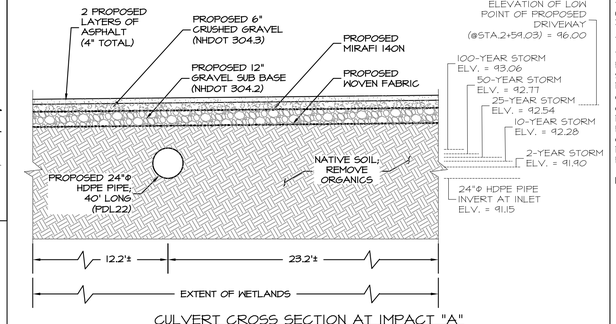
WETLAND IMPACT H

SCALE: 1" = 20'

NHDES STANDARD DREDGE AND FILL WETLANDS APPLICATION TABLE

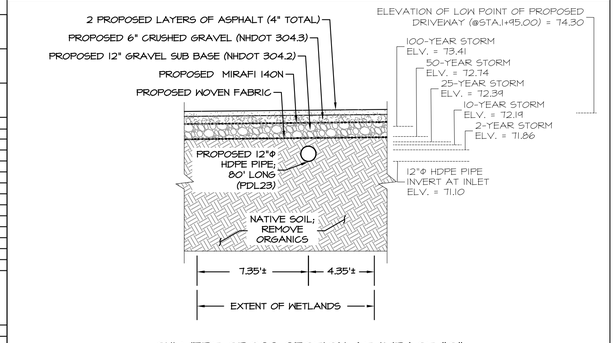
		TEMPORARY IMPACT			PERMANENT IMPACT		
AREA LABEL	WETLAND CLASSIFICATION	STREAM IMPACT (LINEAR FEET)	AREA (SQUARE FEET)	AREA (ACRES)	STREAM IMPACT (LINEAR FEET)	AREA (SQUARE FEET)	AREA (ACRES)
A	R4SB3,4	2	15	0.000	7	25	0.001
	PEMIE	N/A	60	0.001	N/A	140	0.003
B	R4SB3,4	2	15	0.000	23	145	0.003
	PEMIE	N/A	85	0.002	N/A	220	0.005
C	PEMIE	N/A	20	0.000	N/A	15	0.000
D	PEMIE	N/A	225	0.005	N/A	370	0.008
E	R4SB3,4	5	25	0.001	44	205	0.005
	PFOIE	N/A	345	0.008	N/A	1,820	0.042
F	R4SB3,4	5	25	0.001	10	40	0.001
	PFOIE	N/A	105	0.002	N/A	190	0.004
G	R4SB3,4	5	35	0.001	27	155	0.004
	PFOIE	N/A	210	0.005	N/A	1,055	0.024
H	R2UB1,2	15*	35	0.001	45*	95	0.002
	PSSIE	N/A	270	0.006	0	735	0.017
TOTAL	R4SB3,4	19	115	0.003	116	570	0.013
	R2UB1,2	15	35	0.001	45	95	0.002
	PEMIE	N/A	340	0.009	N/A	745	0.017
	PFOIE	N/A	660	0.015	N/A	3,065	0.070
	PSSIE	N/A	270	0.006	N/A	735	0.017
TOTAL (ALL)		34	1,470	0.034	161	5,210	0.120

*THE PERMANENT AND TEMPORARY IMPACTS AT "H" ARE CALCULATED TO INCLUDE BOTH BANKS AND THE STREAMBED WITHIN THE IMPACT AREA. TEMPORARY BANK IMPACTS MAKE UP 10 OF THE 15 LF. PERMANENT BANK IMPACTS MAKE UP 30 OF THE 45 LF.



CULVERT CROSS SECTION AT IMPACT "A"

NOT TO SCALE



CULVERT CROSS SECTION AT IMPACT "C"

NOT TO SCALE

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34104
   MAP 14, LOT 56 DEED: RCRD BK5504 P60266
   MAP 14, LOT 57 DEED: RCRD BK5598 P60405
2. THE INTENT OF THIS PLAN IS TO SHOW THE PROPOSED WETLANDS IMPACTS DUE TO SITE IMPROVEMENTS ON STRATHAM TAX MAP 14, LOTS 56 & 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024. SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

(NOTES CONTINUED)

12. WETLAND BOUNDARY TO BE MARKED ON THE HOUSE SIDE OF THE WETLANDS WITH 5" X 7" SIGNS MOUNTED ON METAL POSTS, SPACED APPROXIMATELY EVERY 75 FEET FOR CLEAR DELINEATION. SIGN LOCATIONS MAY VARY TO ENSURE OPTIMAL VISIBILITY, WITH SOME SIGNS PLACED CLOSER OR FURTHER APART AS APPROPRIATE. METAL POSTS ARE RECOMMENDED FOR DURABILITY AND LOW MAINTENANCE IN OUTDOOR CONDITIONS. SEE DETAIL.
13. A MINIMUM OF TWO SHADE TREES SHALL BE PLANTED ON EACH PROPOSED LOT.
14. THIS PROJECT INCLUDES IMPACTS TO JURISDICTIONAL WETLANDS. A WETLANDS PERMIT UNDER RSA 482-A WILL BE OBTAINED FROM NHDES PRIOR TO CONSTRUCTION. NO WETLAND IMPACTS SHALL OCCUR UNTIL THE PERMIT HAS BEEN ISSUED. NO ARTIFICIAL DETENTION BASINS ARE LOCATED WITHIN WETLANDS; ALL STORMWATER DETENTION AND TREATMENT PRACTICES ARE LOCATED OUTSIDE OF JURISDICTIONAL WETLANDS.
15. A 1-2" LAYER OF AASHTO #67 STONE IS TO BE INSTALLED OVER ALL PROPOSED RIPRAP REDUCE POTENTIAL VOIDS AND AID ANY POTENTIAL WILDLIFE.

ECOLOGICAL REVIEW RECOMMENDED CONSERVATION MEASURES:

THE FOLLOWING CONSERVATION MEASURES ARE RECOMMENDED BY THE ECOLOGICAL REVIEW SECTION TO COMPLY WITH RSA 21I:7-A AND ARE NOT REQUIRED FOR NHDES PERMITTING. GREATER FRINGED-GENTIAN (GENTIANOPSIS CRINITA) MAY OCCUR ON SITE HOWEVER IT IS NOT EXPECTED TO OCCUR IN ANY WETLANDS PROPOSED TO BE IMPACTED AND CONSERVATION MEASURES FOR PLANTS ARE NOT REQUIRED FOR ALTERATION OF TERRAIN PERMITTING.

I. GREATER FRINGED-GENTIAN MAY BE PRESENT IN ANY OPEN FIELD AREAS THAT ARE MOIST/SEEPY, ALONG THE EDGE OF ANY WETLANDS IN THE FIELD, AND ALONG SLOPES AND DITCHES IN THE FIELD. IF THE FIELD IS ROUTINELY MOWED LATE IN THE SUMMER INTO EARLY FALL (APPROXIMATELY BETWEEN AUGUST AND OCTOBER) HOWEVER, THIS PLANT IS UNLIKELY TO OCCUR ON SITE BECAUSE IT WOULD BE UNABLE TO FLOWER AND SPREAD SEED.
   A. IF SUITABLE HABITAT FOR GREATER FRINGED-GENTIAN IS PROPOSED TO BE IMPACTED AND IS NOT REGULARLY MOWED BETWEEN AUGUST AND OCTOBER, SURVEYS ARE RECOMMENDED. SURVEYS SHOULD OCCUR BETWEEN EARLY SEPTEMBER AND MID-OCTOBER AND IF OBSERVED A RARE PLANT REPORTING FORM SHOULD BE COMPLETED AND SENT TO THE ECOLOGICAL REVIEW SECTION.

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
9/11/26

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CLIENT:

COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

TITLE:

WETLAND IMPACT PLAN AND CROSS SECTIONS

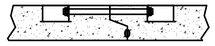
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	AS NOTED	C8.1

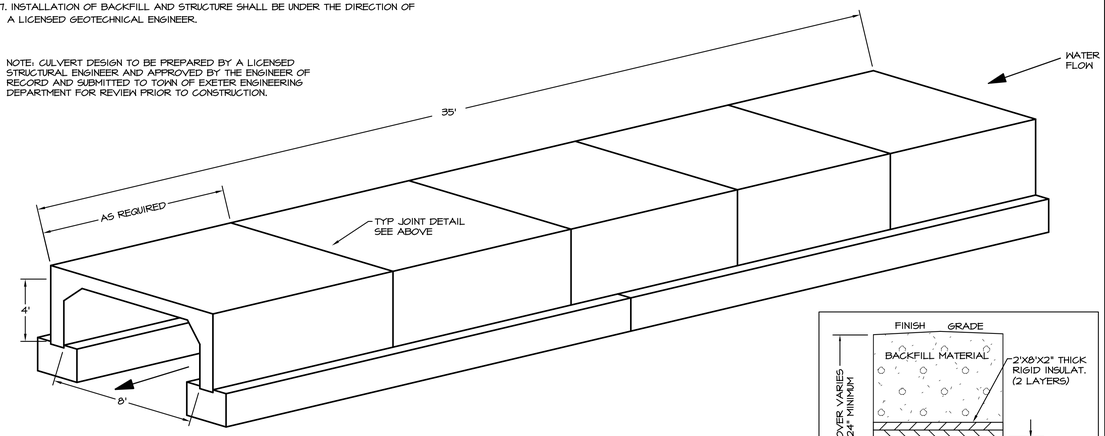
DESIGN NOTES:

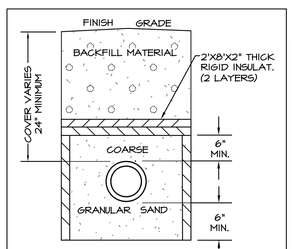
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN PER ASTM C1504 SPECIFICATION FOR 3-SIDED CULVERT.
3. ALL REINFORCEMENT PER ASTM A-615-75
4. DESIGN FOR AASHTO H-20 LOADING (FOR VEHICULAR AND TRUCK TRAFFIC). COVER OVER TOP OF BOX CULVERT WILL BE BETWEEN 8 TO 10 FEET. A CONCRETE BLOCK RETAINING WALL WILL BE AT EACH END OF THE CULVERT.
5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
6. BORINGS TO DETERMINE BEARING CAPACITY AND SOIL SUITABILITY SHALL BE CONDUCTED BY A GEOTECHNICAL ENGINEER PRIOR TO DESIGN.
7. INSTALLATION OF BACKFILL AND STRUCTURE SHALL BE UNDER THE DIRECTION OF A LICENSED GEOTECHNICAL ENGINEER.

NOTE: CULVERT DESIGN TO BE PREPARED BY A LICENSED STRUCTURAL ENGINEER AND APPROVED BY THE ENGINEER OF RECORD AND SUBMITTED TO TOWN OF EXETER ENGINEERING DEPARTMENT FOR REVIEW PRIOR TO CONSTRUCTION.



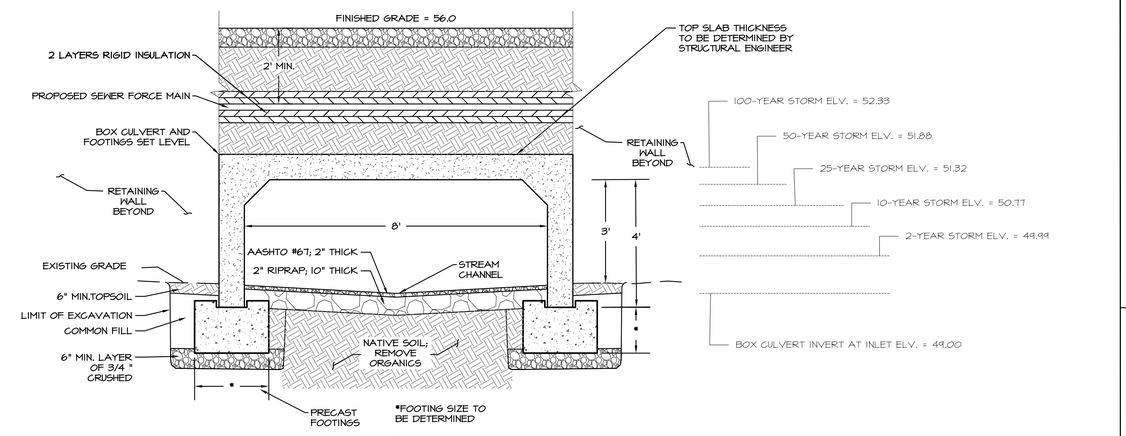
BOX CULVERT 3-SIDED





NOTES:
1. INSULATE SEWER OR FORCE MAIN WHERE PIPE WILL BE LESS THAN 6' BELOW PLOWED AREAS OR LESS THAN 4'-6" BELOW AREAS RUNNING CROSS COUNTRY.
2. GAPS BETWEEN SECTIONS OF INSULATION TO BE COVERED WITH 2'x2'x2" PIECE OF INSULATION CENTERED OVER GAP.

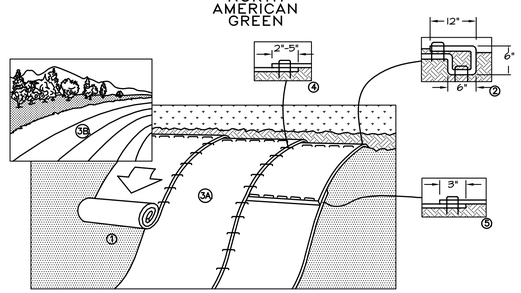
SEWER PIPE INSTALLATION DETAIL
N.T.S.



CULVERT CROSS SECTION AT IMPACT "E"
NOT TO SCALE

BOX CULVERT
NOT TO SCALE

NORTH AMERICAN GREEN



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

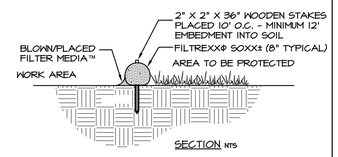
NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

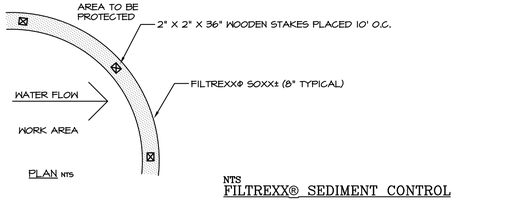
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENTHS IN EXCESS OF 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
www.nagreen.com

NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
4. ADDITIONAL INFO AVAILABLE AT HTTP://WWW.FILTREXX.COM

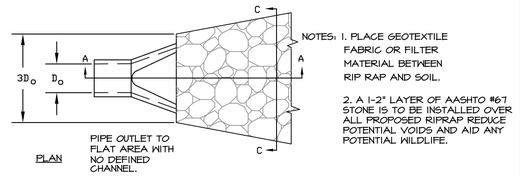


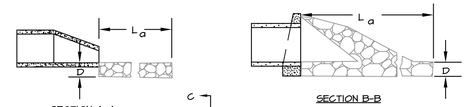
SECTION NTS

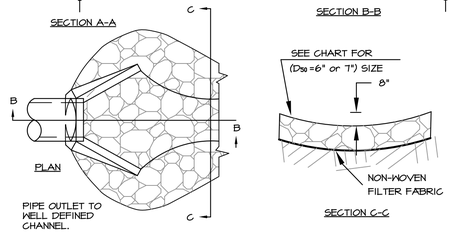


PLAN NTS

NTS
FILTREXX® SEDIMENT CONTROL







RIP RAP (D50=6") SIZE CHART

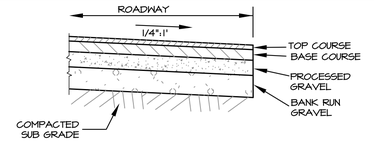
% OF WT. SMALLER THAN GIVEN SIZE	SIZE INCHES
100	9.0-12.0
85	7.8-10.8
50	6.0-9.0
15	1.8-3.0

RIP RAP (D50=7") SIZE CHART

% OF WT. SMALLER THAN GIVEN SIZE	SIZE INCHES
100	10.5-14.0
85	9.1-12.6
50	7.0-10.5
15	2.1-3.5

CONSTRUCTION SPECIFICATIONS:
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OF GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIPRAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

PIPE OUTLET PROTECTION
N.T.S.

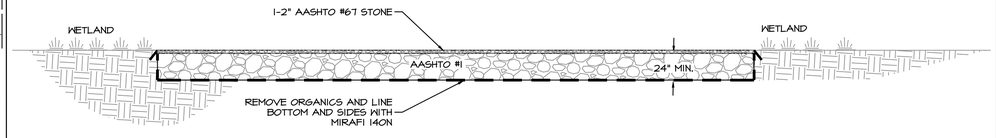


PAVEMENT COMPONENTS:
ALL MATERIALS AND PLACEMENT METHODS SHALL CONFORM TO CURRENT NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) SPECIFICATIONS. SUBGRADE PREPARATION SHALL INCLUDE THE REMOVAL OF ALL LOAM AND ORGANIC MATERIAL AND BE GRADED TO THE LINES AND GRADES SHOWN ON THE PLANS. ROUGH GRADING SHALL ENSURE PROPER CROSS SLOPE AND DRAINAGE PATTERNS. SUBGRADE AND BASE MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY PER MODIFIED PROCTOR (ASTM D1557). PAVING SHALL OCCUR BETWEEN MAY 1ST AND OCTOBER 15TH UNLESS OTHERWISE APPROVED, AND ONLY UNDER SUITABLE WEATHER CONDITIONS TO ENSURE PROPER CURING AND COMPACTION OF THE ASPHALT.

DRIVEWAY & PARKING AREA:
1-1/2" ASPHALT WEARING SURFACE, NHDOT ½" NOMINAL MAXIMUM AGGREGATE SIZE
0.35 GALLONS PER SQUARE YARD OF RS-1 TACK COAT EMULSION
2-1/2" ASPHALT BASE, NHDOT ¾" NOMINAL MAXIMUM AGGREGATE SIZE
6" CRUSHED GRAVEL BASE, NHDOT TYPE 304.3
12" GRAVEL SUB BASE, NHDOT TYPE 304.2

PAVED ROADWAY SECTION
N.T.S.

NOTE:
STONE FORD TO EXTEND A MINIMUM OF 20' INTO UPLANDS ON BOTH SIDES AT IMPACTS "F" AND "G" AND A MINIMUM OF 50' INTO UPLANDS ON BOTH SIDES AT IMPACT "H".



STONE FORD DETAIL
NOT TO SCALE

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
9/11/26

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100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

TITLE:
WETLAND IMPACT DETAILS
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	AS NOTED	C8.2

PROPOSED WETLAND
IMPACT "E"
PERMANENT AREA = 2,025 SF
TEMPORARY AREA = 370 SF

PROPOSED WETLAND
IMPACT "G"
PERMANENT AREA = 1,210 SF
TEMPORARY AREA = 245 SF

PROPOSED WETLAND
IMPACT "H"
PERMANENT AREA = 830 SF
TEMPORARY AREA = 305 SF

PROPOSED WETLAND
IMPACT "F"
PERMANENT AREA =230 SF
TEMPORARY AREA = 130 SF

PROPOSED WETLAND
IMPACT "B"
PERMANENT AREA = 365 SF
TEMPORARY AREA = 100 SF

PROPOSED WETLAND
IMPACT "A"
PERMANENT AREA = 165 SF
TEMPORARY AREA = 75 SF

PROPOSED WETLAND
IMPACT "C"
PERMANENT AREA = 15 SF
TEMPORARY AREA = 20 SF

PROPOSED WETLAND
IMPACT "D"
PERMANENT AREA = 370 SF
TEMPORARY AREA = 225 SF

PROPOSED BIORETENTION POND

PROPOSED BIORETENTION POND

PROPOSED 12"ø HDPE (80' LONG)

PROPOSED 24"ø HDPE (40' LONG)

PROPOSED 4'x8' OPEN BOTTOM CONCRETE BOX CULVERT (LENGTH = 30')

PROPOSED 25' WIDE BY 85' LONG STONE FORD

PROPOSED 14' WIDE BY 160' LONG STONE FORD

PROPOSED 60' WIDE BY 10' LONG STONE FORD

PROPOSED TREE LINE (TYPICAL)

PROPOSED TREE LINE / LIMIT OF DISTURBANCE (TYPICAL)

EXISTING STREAM (TYPICAL)

MILL BROOK

EXISTING POND

VERNAL POOL 1

VERNAL POOL 2

VERNAL POOL 3

EDGE OF WETLANDS (EOW)

EOW

PREMIER

POWERMI

OPEN SPACE

OPEN SPACE

OPEN SPACE

PROPERTY LINE

PROPERTY LINE

PROPERTY LINE

PROPERTY LINE

UTILITY EASEMENT

WINNICUTT ROAD

LOT #1
LOT #2
LOT #3
LOT #4
LOT #5
LOT #6
LOT #7
LOT #8
LOT #10
LOT #11
LOT #12
LOT #13
LOT #14
LOT #15
LOT #16
LOT #17
LOT #18
LOT #19
LOT #20
LOT #21
LOT #22
LOT #23
LOT #24
LOT #25
LOT #26
LOT #27
LOT #28
LOT #29
LOT #30
LOT #31
LOT #32
LOT #33

SEE SHEET C8.4

SEE SHEET C8.4

91.55'

130.10'

116.25'

9/63
9/13
9/73
9/82
14/68
14/162
14/60
14/59
14/58
14/70
14/71
14/55
14/173
14/172

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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CLIENT:

COPLEY PROPERTIES, LLC
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STRATHAM, NH 03885

STATE OF NEW HAMPSHIRE
LUKE HURLEY
9/11/26
No. 232
CERTIFIED WETLAND SCIENTIST

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
9/11/26

TITLE:

TOPOGRAPHY WETLAND IMPACT PLAN

FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=100'	C8.3

LOT #29

LOT #30

LOT #31

LOT #32

PROPOSED TREE LINE (TYPICAL)

PROPOSED 25' WIDE BY 85' LONG STONE FORD

PROPOSED 60' WIDE BY 10' LONG STONE FORD

PROPOSED TREE LINE / LIMIT OF DISTURBANCE (TYPICAL)

PROPOSED WETLAND IMPACT "C"
PERMANENT AREA = 15 SF
TEMPORARY AREA = 20 SF

PROPOSED WETLAND IMPACT "D"
PERMANENT AREA = 370 SF
TEMPORARY AREA = 225 SF

PROPOSED WETLAND IMPACT "F"
PERMANENT AREA =230 SF
TEMPORARY AREA = 130 SF

VERNAL POOL 1

VERNAL POOL 2

VERNAL POOL 3

130.10'

128.18'

116.25'

PROPERTY LINE

EOW

SPACE

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
9/11/26

TITLE:
TOPOGRAPHY WETLAND IMPACT PLAN: VERNAL POOLS 1-3
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	C8.4

PROPOSED BIORETENTION POND

EXISTING STREAM (TYPICAL)

LOT #23

LOT #22

LOT #24

LOT #25

LOT #26

PROPOSED TREE LINE / LIMIT OF DISTURBANCE (TYPICAL)

91.55'

VERNAL POOL 4

PROPOSED TREE LINE (TYPICAL)

PROPERTY LINE

EDGE OF WETLANDS (EOW)

PROPOSED WETLAND IMPACT "E"
PERMANENT AREA = 2,025 SF
TEMPORARY AREA = 370 SF

PROF
4'x8'
BOTT
CONC
BOX
(LENG

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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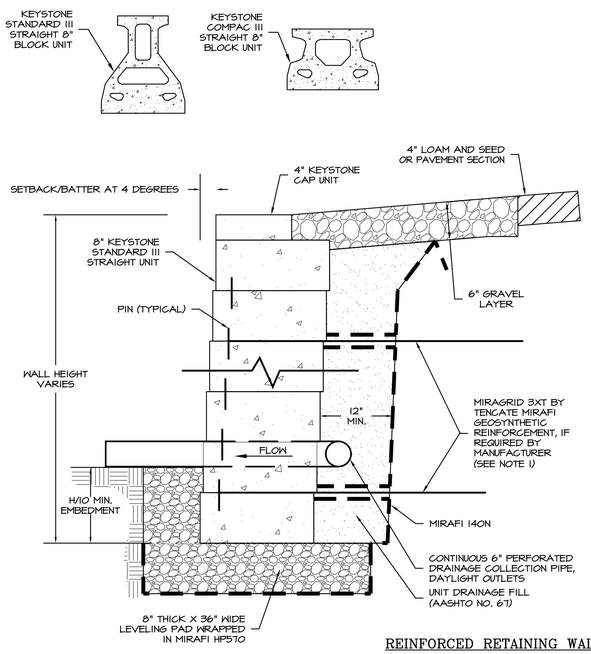
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STRATHAM, NH 03885

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STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
9/11/26

TITLE:
TOPOGRAPHY WETLAND IMPACT PLAN: VERNAL POOL 4
FOR
HELEN E. GALLANT REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	C8.5



NOTES:

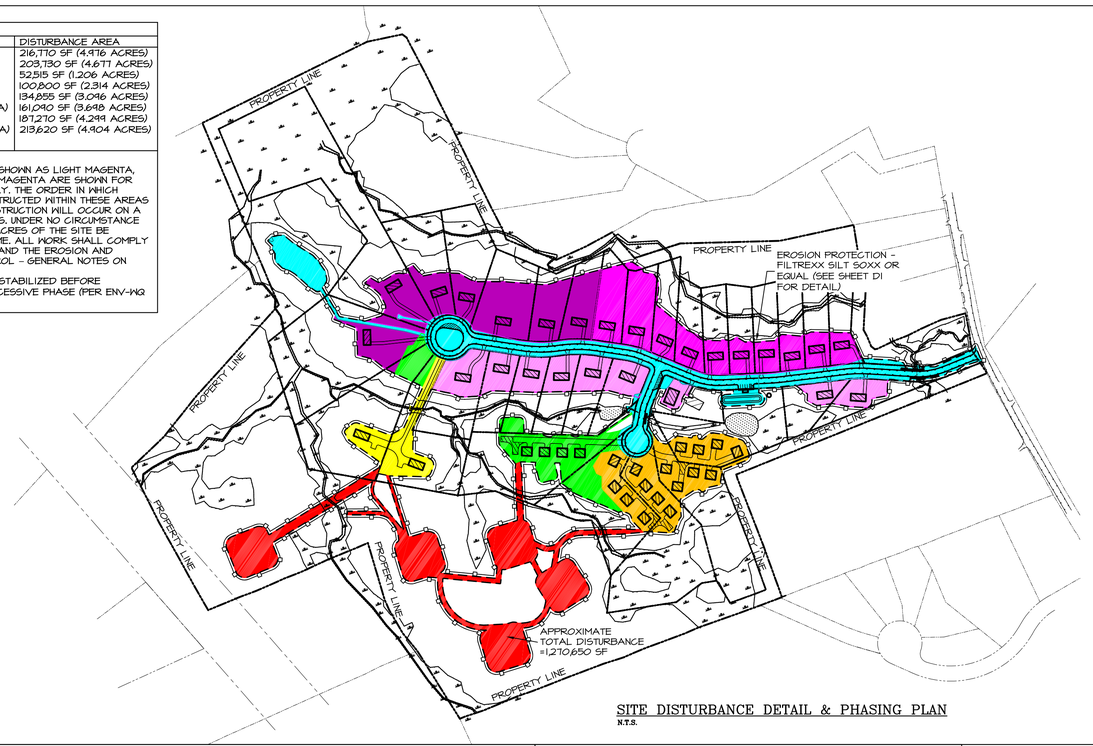
1. RETAINING WALL DESIGN BY OTHER. COORDINATE WITH MANUFACTURER ON USE AND LOCATION OF REINFORCEMENT.
2. WALL HEIGHT (H) IS THE TOTAL HEIGHT FROM TOP OF LEVELING PAD TO TOP OF WALL.
3. MINIMUM WALL EMBEDMENT IS 12 INCHES FROM TOP OF LEVELING PAD.
4. SUBSURFACE SOILS MUST BE CAPABLE OF SUPPORTING WALL SYSTEM.
5. UNIT DRAINAGE FILL IS ¾ INCH CLEAN WASHED CRUSHED STONE. FILL ALL OPEN SPACES BETWEEN UNITS AND OPEN CAVITIES/CORES WITH SAME UNIT DRAINAGE MATERIALS EXCEPT WHERE FENCE POSTS ARE PRESENT. VOIDS IN BLOCKS HOLDING FENCE POSTS SHALL BE FILLED WITH NON-SHRINK GROUT, AND LOCATIONS SHALL BE VERIFIED WITH THE FENCE COMPANY.
6. LEVELING PAD IS CRUSHED STONE BASE MATERIAL.
7. ALL BACKFILL MATERIALS ARE COMPACTED IN 8" LIFTS TO 95% STANDARD PROCTOR DENSITY OR 92% MODIFIED PROCTOR DENSITY.
8. GEOGRIDS MUST BE OF APPROPRIATE TYPE AND LENGTH PER DESIGN.
9. FINISHED GRADE MUST PROVIDE POSITIVE DRAINAGE.
10. STEP THE LEVELING PAD IN 8" INCREMENTS AT THE APPROPRIATE ELEVATION CHANGE IN THE FOUNDATION.
11. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR ADDITIONAL DETAILS INCLUDING CORNERS AND CURVES.
12. REFER TO TENCATE MIRAFI INSTALLATION GUIDELINES FOR ORIENTATION OF GEOGRID AND CONNECTION OF PANELS.
13. THE RETAINING WALL DESIGN SHALL BE STAMPED BY A LICENSED STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.

REINFORCED RETAINING WALL SCHEMATIC
N.T.S.

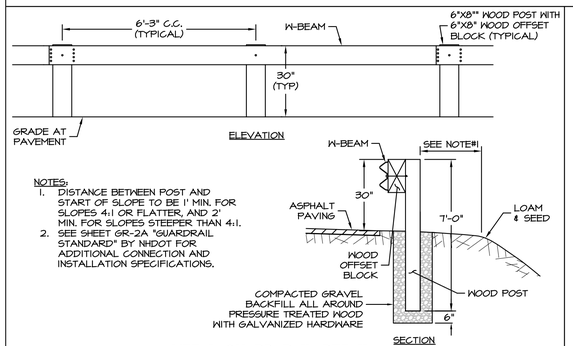
PHASING CHART		
PHASE	COLOR	DISTURBANCE AREA
PHASE 1	(CYAN)	216,770 SF (4.976 ACRES)
PHASE 2	(RED)	203,730 SF (4.677 ACRES)
PHASE 3	(YELLOW)	52,515 SF (1.206 ACRES)
PHASE 4	(GREEN)	100,800 SF (2.314 ACRES)
PHASE 5	(ORANGE)	134,855 SF (3.096 ACRES)
PHASE 6A	(LIGHT MAGENTA)	161,040 SF (3.698 ACRES)
PHASE 6B	(MAGENTA)	187,210 SF (4.299 ACRES)
PHASE 6C	(DARK MAGENTA)	213,620 SF (4.904 ACRES)

NOTES:

1. THE MAGENTA AREAS SHOWN AS LIGHT MAGENTA, MAGENTA, AND DARK MAGENTA ARE SHOWN FOR GRAPHIC CLARITY ONLY. THE ORDER IN WHICH HOUSES WILL BE CONSTRUCTED WITHIN THESE AREAS IS UNKNOWN, AND CONSTRUCTION WILL OCCUR ON A HOUSE-BY-HOUSE BASIS. UNDER NO CIRCUMSTANCE SHALL MORE THAN 5 ACRES OF THE SITE BE DISTURBED AT ONE TIME. ALL WORK SHALL COMPLY WITH ENV-WQ 1505.03 AND THE EROSION AND SEDIMENTATION CONTROL – GENERAL NOTES ON SHEET D1.
2. EACH PHASE MUST BE STABILIZED BEFORE ADVANCING TO A SUCCESSIVE PHASE (PER ENV-WQ 1505.03).



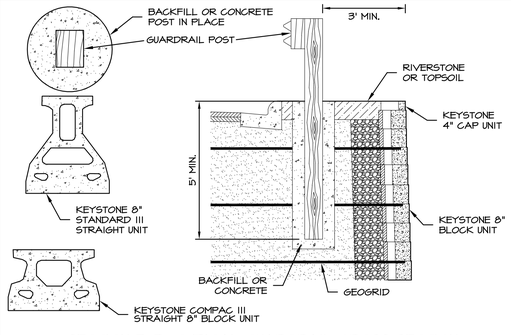
SITE DISTURBANCE DETAIL & PHASING PLAN
N.T.S.



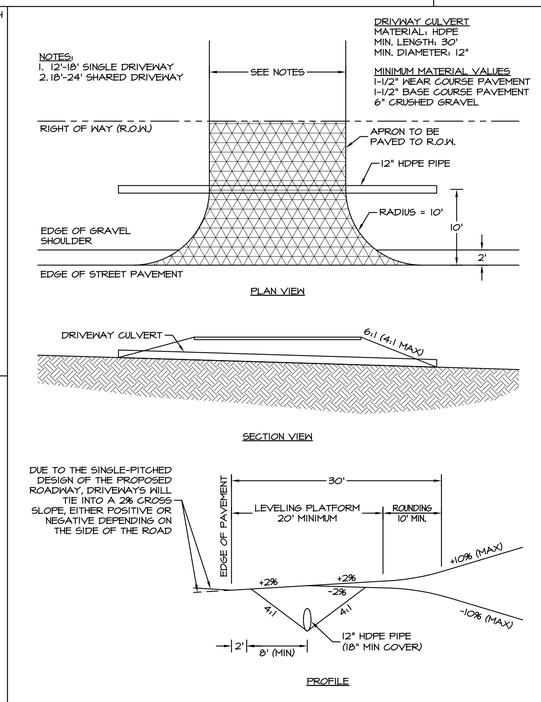
NOTES:

1. DISTANCE BETWEEN POST AND START OF SLOPE TO BE 1' MIN. FOR SLOPES 4:1 OR FLATTER, AND 2' MIN. FOR SLOPES STEEPER THAN 4:1.
2. SEE SHEET GR-2A "GUARDRAIL STANDARD" BY NHDOT FOR ADDITIONAL CONNECTION AND INSTALLATION SPECIFICATIONS.

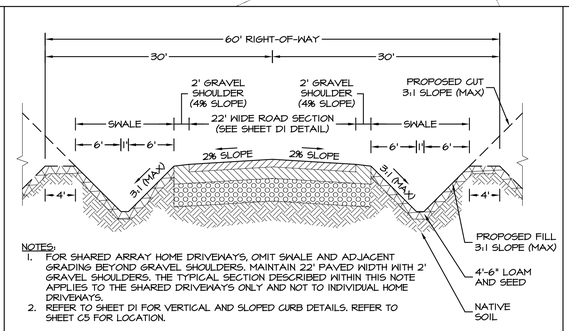
METAL GUARD RAIL DETAIL
N.T.S.



SECTION B-B: TYPICAL GUARDRAIL CROSS SECTION
NOT TO SCALE



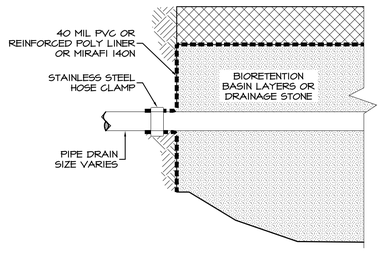
TYPICAL DRIVEWAY DETAILS
NOT TO SCALE



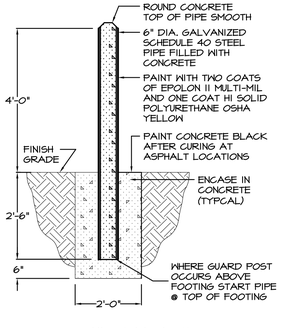
NOTES:

1. FOR SHARED ARRAY HOME DRIVEWAYS, OMIT SWALE AND ADJACENT GRADING BEYOND GRAVEL SHOULDERS. MAINTAIN 22' PAVED WIDTH WITH 2' GRAVEL SHOULDERS. THE TYPICAL SECTION DESCRIBED WITHIN THIS NOTE APPLIES TO THE SHARED DRIVEWAYS ONLY AND NOT TO INDIVIDUAL HOME DRIVEWAYS.
2. REFER TO SHEET D1 FOR VERTICAL AND SLOPED CURB DETAILS. REFER TO SHEET C5 FOR LOCATION.

TYPICAL ROAD SECTION
NOT TO SCALE



GEOTEXTILE PENETRATION TYPICAL DETAIL
N.T.S.



BOLLARD DETAIL
N.T.S.

SEAL

LUKE HURLEY — 9/11/26 — No. 232 — STATE OF NEW HAMPSHIRE — CERTIFIED WETLAND SCIENTIST

BRUCE D. SCAMMAN — No. 11236 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW HAMPSHIRE — 9/11/26

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1	DEC 11, 2024	FOR APPROVAL	

DRAWN:	JJM	DESIGN:	JJM
CHECKED:	BDS	CHECKED:	BDS

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

TITLE:

DETAILS
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	AS SHOWN	D3

Impact E

NHDES-W-06-071

WETLANDS PERMIT APPLICATION
STREAM CROSSING WORKSHEET
Water Division/Land Resources Management
Wetlands Bureau

RSA/Rule RSA 482-A/ Env-Wt-900

This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

SECTION 1 - TIER CLASSIFICATIONS

Determine the contributing watershed size at USGS StreamStats.

Note: Plans for tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location: 96.5 acres

☒ **Tier 1**: A tier 1 stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres.

☐ **Tier 2**: A tier 2 stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres.

☐ **Tier 3**: A tier 3 stream crossing is a crossing that meets **any** of the following criteria:

- ☐ On a watercourse where the contributing watershed is more than 640 acres.
- ☐ Within a designated river corridor unless:
  a. The crossing would be a tier 1 stream based on contributing watershed size, or
  b. The structure does not create a direct surface water connection to the designated river as depicted on the national hydrography dataset as found on GRANIT.
- ☐ Within a 100-year floodplain (see Section 2 below).
- ☐ In a jurisdictional area having any protected species or habitat (NHB DataCheck).
- ☐ In a prime wetland or within a duly-established 100-foot buffer, unless a waiver has been granted pursuant to RSA 482-A:11, IV(b) and Env-Wt 706. Review the Wetlands Permit Planning Tool (WPPT) for town prime wetland and prime wetland buffer maps to determine if your project is within these areas.

☐ **Tier 4**: A tier 4 stream crossing is a crossing located on a tidal watercourse.

SECTION 2 - 100-YEAR FLOODPLAIN

Use the FEMA Map Service Center to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

☒ **No**: The proposed stream crossing *is not* within the FEMA 100-year floodplain.

☐ **Yes**: The proposed project *is* within the FEMA 100-year floodplain. Zone = _____

Elevation of the 100-year floodplain at the inlet: _____ feet (FEMA El. or Modeled El.)

SECTION 3 - CALCULATING PEAK DISCHARGE

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 114 CFS	Calculation method: HydroCAD SCS TR-20
Estimated bankfull discharge at the crossing location: 24 CFS	Calculation method: Mannings

Note: If tier 1, then skip to Section 10

SECTION 4 - PREDICTED CHANNEL GEOMETRY BASED ON REGIONAL HYDRAULIC CURVES *For **tier 2**, **tier 3** and **tier 4** crossings only.*	
Bankfull Width: feet	Mean Bankfull Depth: feet
Bankfull Cross Sectional Area: square feet (SF)	

SECTION 5 - CROSS SECTIONAL CHANNEL GEOMETRY: MEASUREMENTS OF THE EXISTING STREAM WITHIN A REFERENCE REACH *For **tier 2**, **tier 3** and **tier 4** crossings only.*
Describe the reference reach location:
Reference reach watershed size: acres

Parameter	**Cross Section 1** Describe bed form (*e.g. pool, riffle, glide*)	**Cross Section 2** Describe bed form (*e.g. pool, riffle, glide*)	**Cross Section 3** Describe bed form (*e.g. pool, riffle, glide*)	**Range**
Bankfull Width	feet	feet	feet	feet
Bankfull Cross Sectional Area	SF	SF	SF	SF
Mean Bankfull Depth	feet	feet	feet	feet
Width to Depth Ratio				
Max Bankfull Depth	feet	feet	feet	feet
Flood Prone Width	feet	feet	feet	feet
Entrenchment Ratio				

*Use **Figure 1** below to determine the measurements of the Reference Reach Attributes*

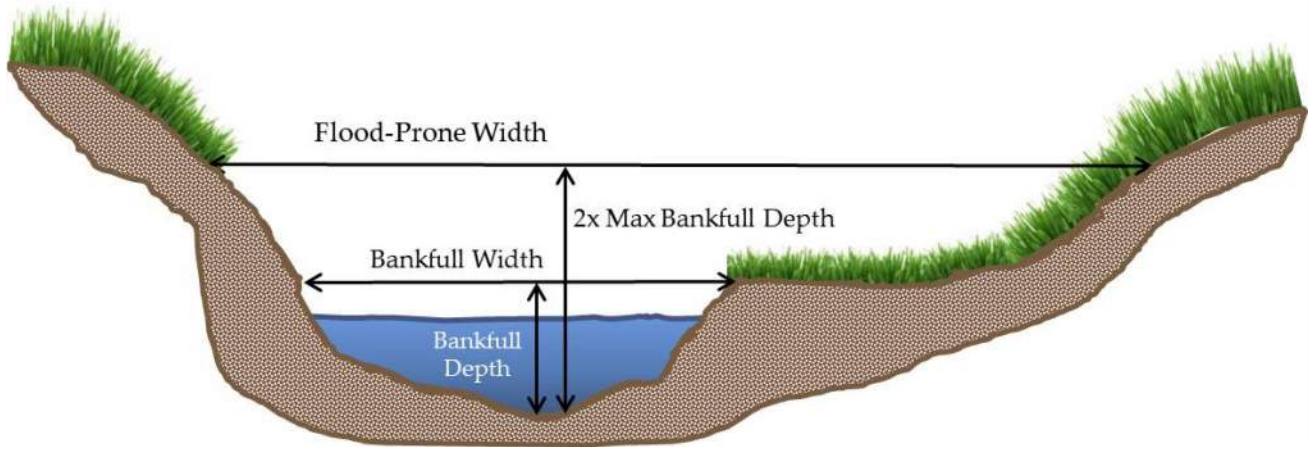


Figure 1: Determining the Reference Reach Attributes.

SECTION 6 - LONGITUDINAL PARAMETERS OF THE REFERENCE REACH AND CROSSING LOCATION *For **tier 2**, **tier 3** and **tier 4** crossings only.*
Average Channel Slope of the Reference Reach:
Average Channel Slope at the Crossing Location:

SECTION 7 - PLAN VIEW GEOMETRY Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths. *For **tier 2**, **tier 3** and **tier 4** crossings only.*
Sinuosity of the Reference Reach:
Sinuosity of the Crossing Location:

SECTION 8 - SUBSTRATE CLASSIFICATION BASED ON FIELD OBSERVATIONS *For **tier 2, tier 3** and **tier 4** crossings only.*	
% of reach that is bedrock:	%
% of reach that is boulder:	%
% of reach that is cobble:	%
% of reach that is gravel:	%
% of reach that is sand:	%
% of reach that is silt:	%
SECTION 9 - STREAM TYPE OF REFERENCE REACH *For **tier 2, tier 3** and **tier 4** crossings only.*	
Stream Type of Reference Reach:	

*Refer to Rosgen Classification Chart (**Figure 2**) below:*

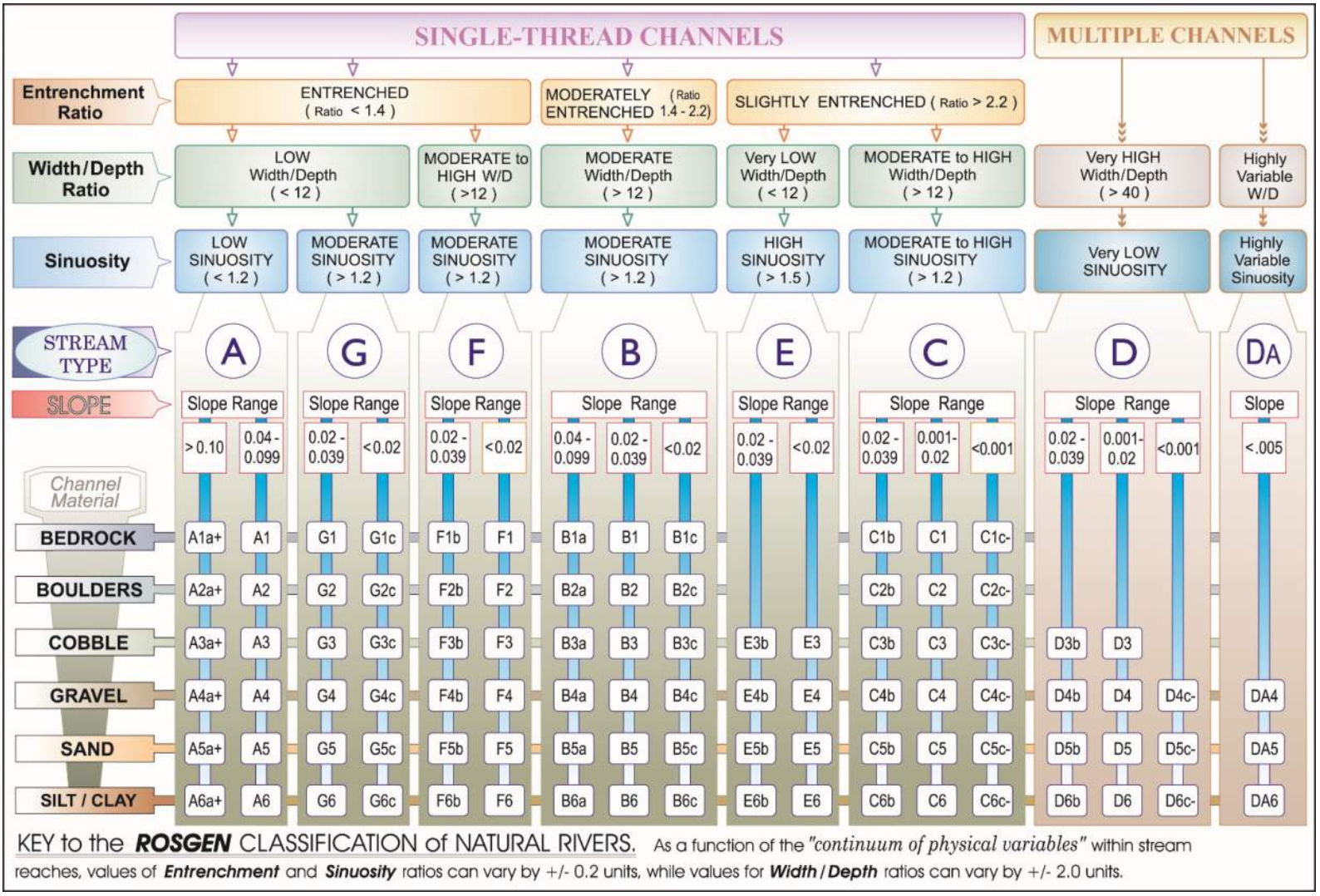


Figure 2: Reference from Applied River Morphology, Rosgen, 1996.

SECTION 10 - CROSSING STRUCTURE METRICS

Existing Conditions

Existing Structure Type:

- ☐ Bridge span
- ☐ Pipe arch
- ☐ Open-bottom culvert
- ☐ Closed-bottom culvert
- ☐ Closed-bottom culvert with stream simulation
- ☒ Other: None

Existing Crossing Span: *(perpendicular to flow)* ____ feet	**Culvert Diameter:** ____ feet **Inlet Elevation:** El. ____ feet
Existing Crossing Length: *(parallel to flow)* ____ feet	**Outlet Elevation:** El. ____ feet **Culvert Slope:** ____

Proposed Conditions

Proposed Structure Type:	**Tier 1**	**Tier 2**	**Tier 3**	**Alternative Design**
Bridge Span	☐	☐	☐	☐
Pipe Arch	☐	☐		☐
Closed-bottom Culvert	☐	☐		☐
Open-bottom Culvert	☒	☐	☐	☐
Closed-bottom Culvert with stream simulation	☐	☐	☐	☐

Proposed Structure Span: 8' feet *(perpendicular to flow)*	**Culvert Diameter:** 4' feet **Inlet Elevation:** El. 49.0 feet
Proposed Structure Length: 35' feet *(parallel to flow)*	**Outlet Elevation:** El. 48.65 feet **Culvert Slope:** 0.01

Proposed Entrenchment Ratio:* ____

*For **Tier 2**, **Tier 3** and **Tier 4** Crossings Only. To accommodate the entrenchment ratio, floodplain drainage structures may be utilized.*

** Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.10.*

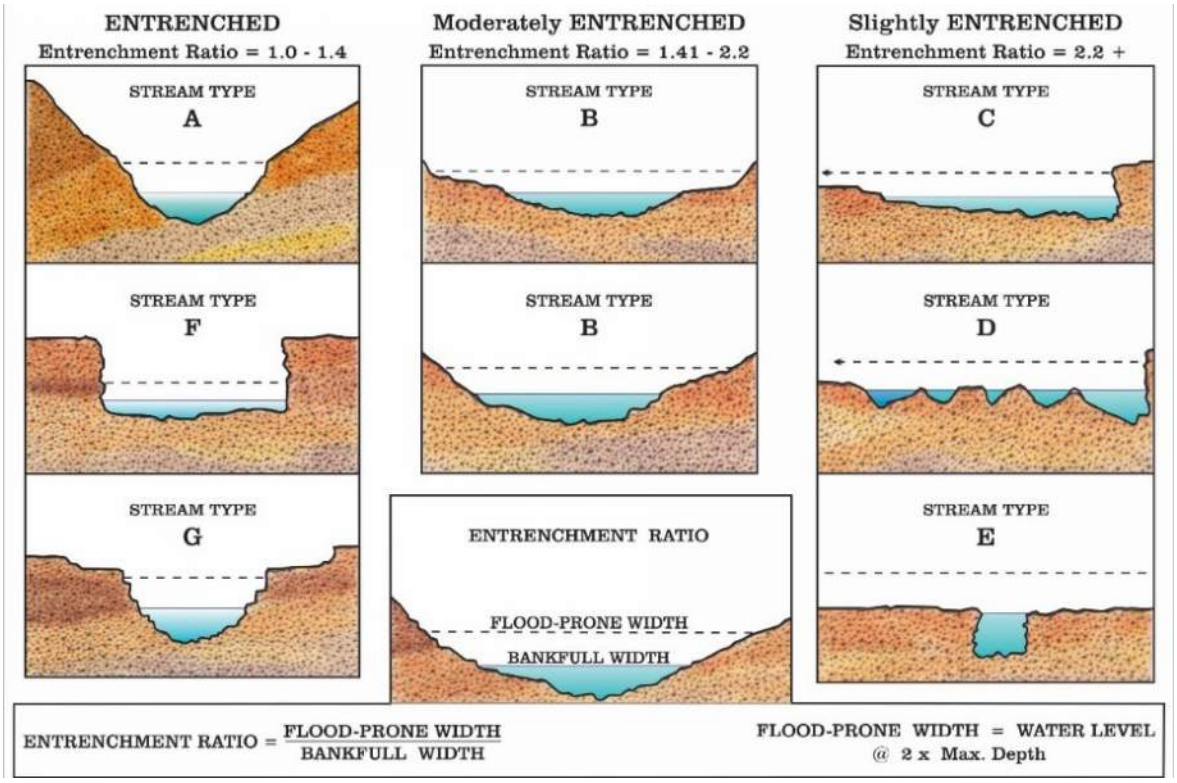


Figure 3: Reference from Applied River Morphology, Rosgen, 1996.

SECTION 11 - CROSSING STRUCTURE HYDRAULICS		
	Existing	**Proposed**
100 year flood stage elevation at inlet:	47.97	52.33
Flow velocity at outlet in feet per second (FPS):	4.86	5.67
Calculated 100 year peak discharge (Q) for the *proposed* structure in CFS:		113
Calculated 50 year peak discharge (Q) for the *proposed* structure in CFS:		87

SECTION 12 - CROSSING STRUCTURE OPENNESS RATIO

*For **tier 2**, **tier 3** and **tier 4** crossings only.*

Crossing Structure Openness Ratio* =

* Openness box culvert = (height x width)/length
  Openness round culvert = (3.14 x radius^2)/length

SECTION 13 - GENERAL DESIGN CONSIDERATIONS

Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.

All stream crossings shall be designed and constructed so as to:

- [X] Not be a barrier to sediment transport.
- [X] Prevent the restriction of high flows and maintain existing low flows.
- [X] Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
- [X] Not cause an increase in the frequency of flooding or overtopping of banks.
- [X] Maintain or enhance geomorphic compatibility by:
  a. Minimizing the potential for inlet obstruction by sediment, wood, or debris, and
  b. Preserving the natural alignment of the stream channel.
- [X] Preserve watercourse connectivity where it currently exists.
- [X] Restore watercourse connectivity where:
  a. Connectivity previously was disrupted as a result of human activity(ies), and
  b. Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
- [X] Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
- [X] Not cause water quality degradation.

SECTION 14 - TIER-SPECIFIC DESIGN CRITERIA

Stream crossings must be designed in accordance with the tier specific design criteria listed in Part Env-Wt 904.

- [X] The proposed project meets the tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

SECTION 15 - ALTERNATIVE DESIGN

NOTE: If the proposed crossing does not meet all of the general design considerations, the tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in **Figure 3**, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.10.

- [ ] I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.10.

Impact H

NHDES-W-06-071

WETLANDS PERMIT APPLICATION
STREAM CROSSING WORKSHEET
Water Division/Land Resources Management
Wetlands Bureau

RSA/Rule RSA 482-A/ Env-Wt-900

This worksheet can be used to accompany Wetlands Permit Applications when proposing stream crossings.

SECTION 1 - TIER CLASSIFICATIONS

Determine the contributing watershed size at USGS StreamStats.

Note: Plans for tier 2 and 3 crossings shall be designed and stamped by a professional engineer who is licensed under RSA 310-A to practice in New Hampshire.

Size of contributing watershed at the crossing location: 320 acres

☐ **Tier 1**: A tier 1 stream crossing is a crossing located on a watercourse where the contributing watershed size is less than or equal to 200 acres.

☒ **Tier 2**: A tier 2 stream crossing is a crossing located on a watercourse where the contributing watershed size is greater than 200 acres and less than 640 acres.

☐ **Tier 3**: A tier 3 stream crossing is a crossing that meets **any** of the following criteria:

- ☐ On a watercourse where the contributing watershed is more than 640 acres.
- ☐ Within a designated river corridor unless:
  - a. The crossing would be a tier 1 stream based on contributing watershed size, or
  - b. The structure does not create a direct surface water connection to the designated river as depicted on the national hydrography dataset as found on GRANIT.
- ☐ Within a 100-year floodplain (see Section 2 below).
- ☐ In a jurisdictional area having any protected species or habitat (NHB DataCheck).
- ☐ In a prime wetland or within a duly-established 100-foot buffer, unless a waiver has been granted pursuant to RSA 482-A:11, IV(b) and Env-Wt 706. Review the Wetlands Permit Planning Tool (WPPT) for town prime wetland and prime wetland buffer maps to determine if your project is within these areas.

☐ **Tier 4**: A tier 4 stream crossing is a crossing located on a tidal watercourse.

SECTION 2 - 100-YEAR FLOODPLAIN

Use the FEMA Map Service Center to determine if the crossing is located within a 100-year floodplain. Please answer the questions below:

☒ **No**: The proposed stream crossing *is not* within the FEMA 100-year floodplain.

☐ **Yes**: The proposed project *is* within the FEMA 100-year floodplain. Zone = _____

Elevation of the 100-year floodplain at the inlet: _____ feet (FEMA El. or Modeled El.)

SECTION 3 - CALCULATING PEAK DISCHARGE

Existing 100-year peak discharge (Q) calculated in cubic feet per second (CFS): 246 CFS	Calculation method: HydroCAD SCS TR-20
Estimated bankfull discharge at the crossing location: 42 CFS	Calculation method: Mannings

→ ***Note: If tier 1, then skip to Section 10*** ←

SECTION 4 - PREDICTED CHANNEL GEOMETRY BASED ON REGIONAL HYDRAULIC CURVES *For **tier 2**, **tier 3** and **tier 4** crossings only.*	
Bankfull Width: 12.65 feet	Mean Bankfull Depth: 0.72 feet
Bankfull Cross Sectional Area: 9.1 square feet (SF)	

SECTION 5 - CROSS SECTIONAL CHANNEL GEOMETRY: MEASUREMENTS OF THE EXISTING STREAM WITHIN A REFERENCE REACH *For **tier 2**, **tier 3** and **tier 4** crossings only.*
Describe the reference reach location: 100' upstream
Reference reach watershed size: 320 acres

Parameter	**Cross Section 1** Describe bed form riffle (*e.g. pool, riffle, glide*)	**Cross Section 2** Describe bed form riffle (*e.g. pool, riffle, glide*)	**Cross Section 3** Describe bed form riffle (*e.g. pool, riffle, glide*)	**Range**
Bankfull Width	12.65 feet	11.1 feet	10.2 feet	2.45 feet
Bankfull Cross Sectional Area	9.1 SF	5.6 SF	9.7 SF	4.1 SF
Mean Bankfull Depth	0.72 feet	0.50 feet	0.95 feet	0.45 feet
Width to Depth Ratio	17.6	22.2	10.7	11.5
Max Bankfull Depth	1.44 feet	1.0 feet	1.9 feet	0.9 feet
Flood Prone Width	28.7 feet	34.6 feet	39.7 feet	11 feet
Entrenchment Ratio	2.3	3.1	3.9	1.6

*Use **Figure 1** below to determine the measurements of the Reference Reach Attributes*

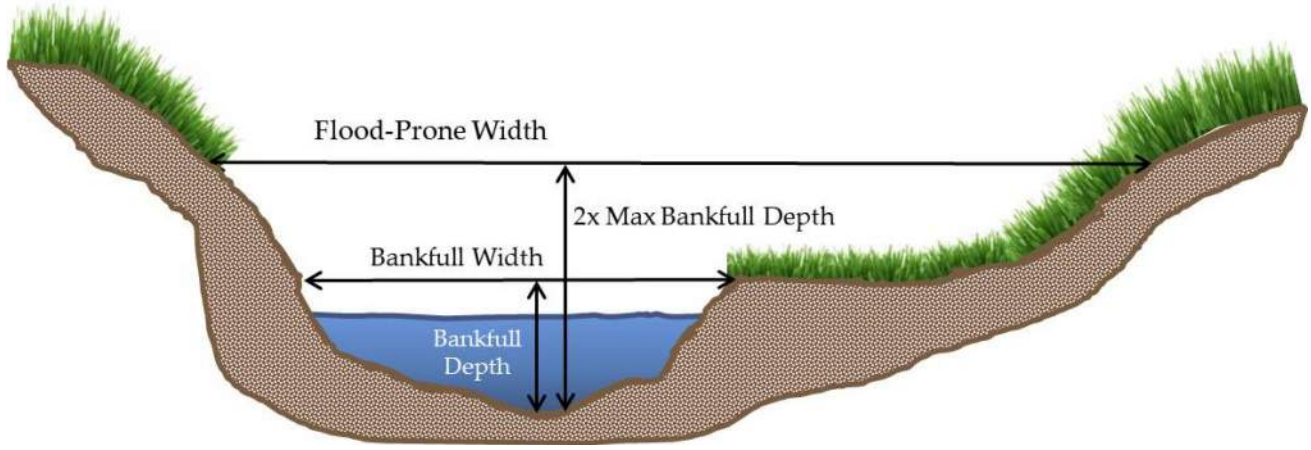


Figure 1: Determining the Reference Reach Attributes.

SECTION 6 - LONGITUDINAL PARAMETERS OF THE REFERENCE REACH AND CROSSING LOCATION *For **tier 2**, **tier 3** and **tier 4** crossings only.*
Average Channel Slope of the Reference Reach: 0.008
Average Channel Slope at the Crossing Location: 0.02

SECTION 7 - PLAN VIEW GEOMETRY Note: Sinuosity is measured a distance of at least 20 times bankfull width, or 2 meander belt widths. *For **tier 2**, **tier 3** and **tier 4** crossings only.*
Sinuosity of the Reference Reach: 1.0
Sinuosity of the Crossing Location: 1.0

SECTION 8 - SUBSTRATE CLASSIFICATION BASED ON FIELD OBSERVATIONS *For **tier 2, tier 3** and **tier 4** crossings only.*	
% of reach that is bedrock:	%
% of reach that is boulder:	%
% of reach that is cobble:	10 %
% of reach that is gravel:	50 %
% of reach that is sand:	35 %
% of reach that is silt:	5 %
SECTION 9 - STREAM TYPE OF REFERENCE REACH *For **tier 2, tier 3** and **tier 4** crossings only.*	
Stream Type of Reference Reach:	C

*Refer to Rosgen Classification Chart (**Figure 2**) below:*

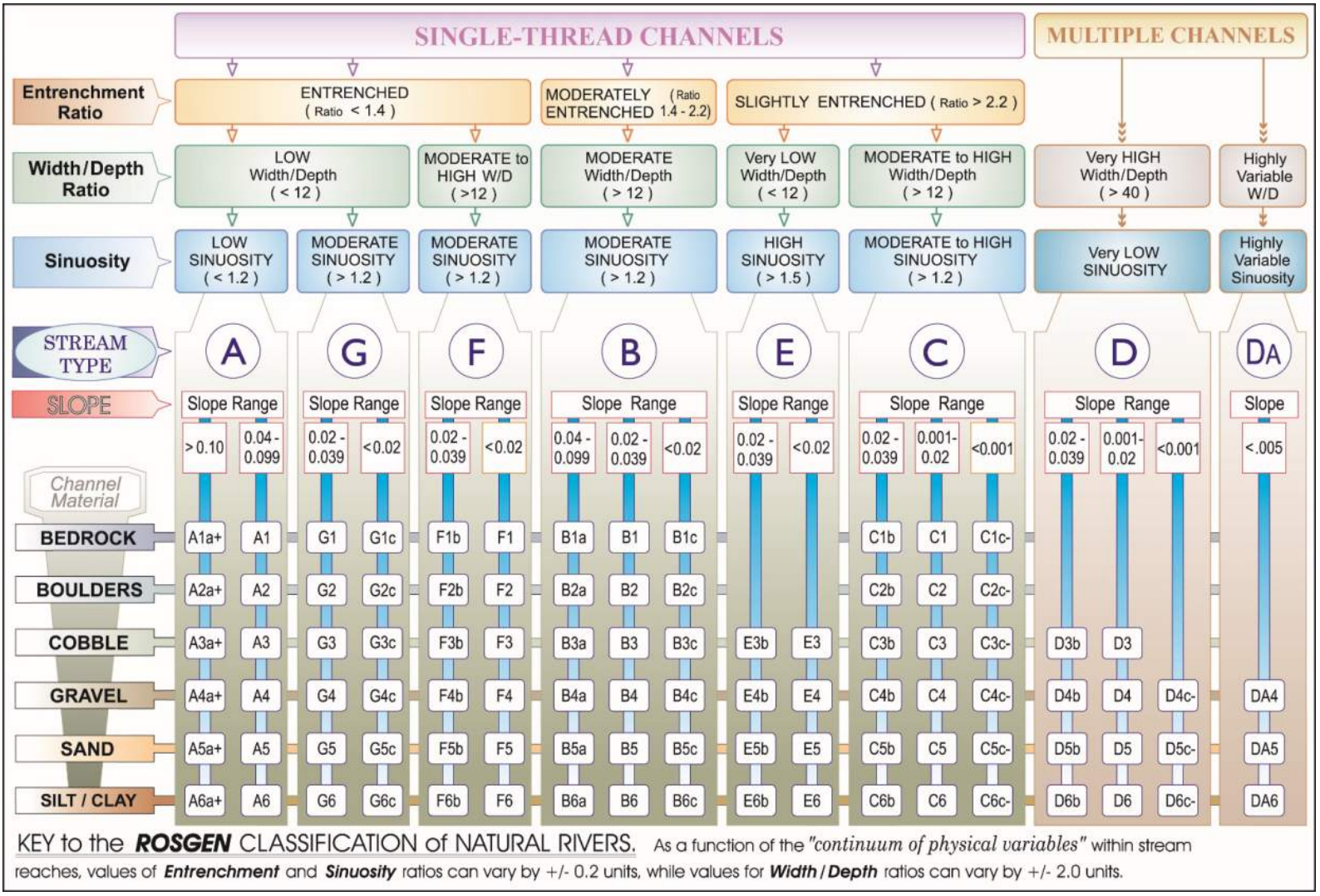


Figure 2: Reference from Applied River Morphology, Rosgen, 1996.

SECTION 10 - CROSSING STRUCTURE METRICS

Existing Conditions

Existing Structure Type:
- ☐ Bridge span
- ☐ Pipe arch
- ☐ Open-bottom culvert
- ☐ Closed-bottom culvert
- ☐ Closed-bottom culvert with stream simulation
- ☒ Other: Stone Ford

Existing Crossing Span: *(perpendicular to flow)* ____ feet	**Culvert Diameter:** ____ feet **Inlet Elevation:** El. ____ feet
Existing Crossing Length: *(parallel to flow)* ____ feet	**Outlet Elevation:** El. ____ feet **Culvert Slope:** ____

Proposed Conditions

Proposed Structure Type:	**Tier 1**	**Tier 2**	**Tier 3**	**Alternative Design**
Bridge Span	☐	☐	☐	☐
Pipe Arch	☐	☐		☐
Closed-bottom Culvert	☐	☐		☐
Open-bottom Culvert	☐	☐	☐	☐
Closed-bottom Culvert with stream simulation	☐	☐	☐	☐

Proposed Structure Span: 60' feet *(perpendicular to flow)*	**Culvert Diameter:** ____ feet **Inlet Elevation:** El. ____ feet
Proposed Structure Length: 14' feet *(parallel to flow)*	**Outlet Elevation:** El. ____ feet **Culvert Slope:** ____

Proposed Entrenchment Ratio:* 2.3 - to match existing

*For **Tier 2**, **Tier 3** and **Tier 4** Crossings Only. To accommodate the entrenchment ratio, floodplain drainage structures may be utilized.*

** Note: Proposed Entrenchment Ratio must meet the minimum ratio for each stream type listed in **Figure 3**, otherwise the applicant must address the Alternative Design criteria listed in Env-Wt 904.10.*

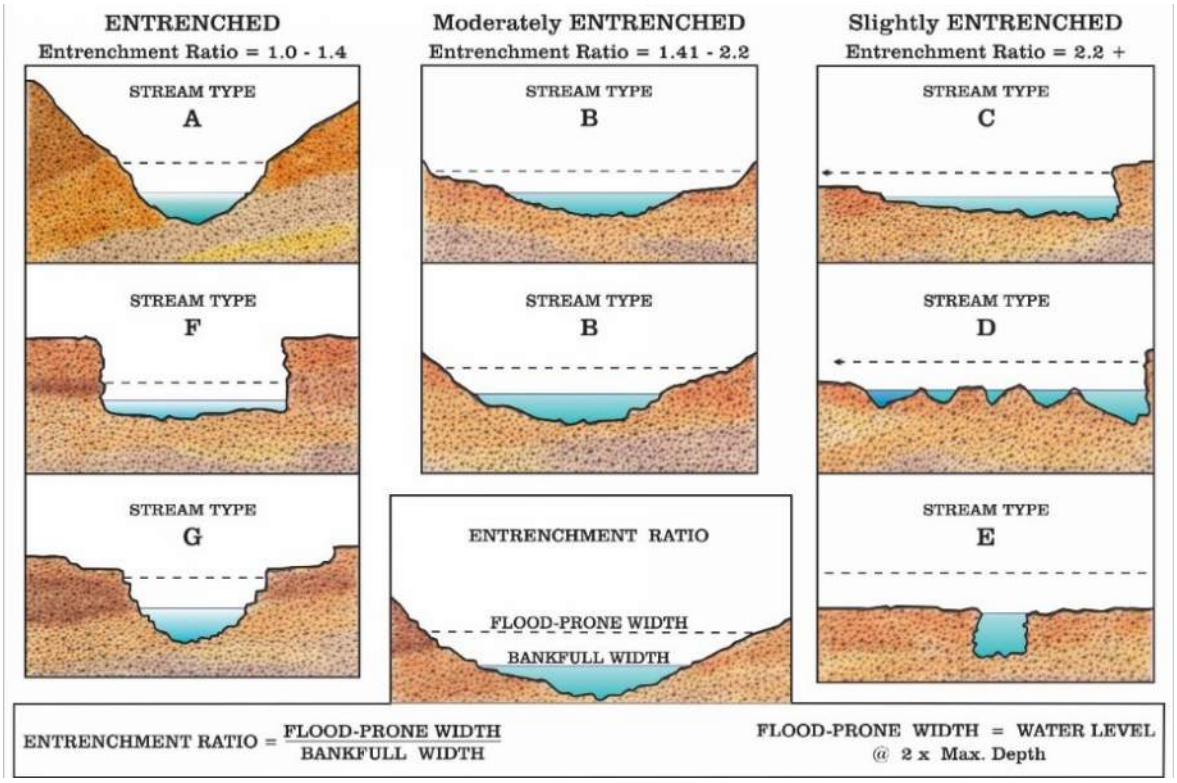


Figure 3: Reference from Applied River Morphology, Rosgen, 1996.

SECTION 11 - CROSSING STRUCTURE HYDRAULICS		
	Existing	**Proposed**
100 year flood stage elevation at inlet:	56.89	56.34
Flow velocity at outlet in feet per second (FPS):	4.48	3.06
Calculated 100 year peak discharge (Q) for the *proposed* structure in CFS:		246
Calculated 50 year peak discharge (Q) for the *proposed* structure in CFS:		165

SECTION 12 - CROSSING STRUCTURE OPENNESS RATIO

*For **tier 2**, **tier 3** and **tier 4** crossings only.*

Crossing Structure Openness Ratio* = N/A: Open at grade with no constriction

* Openness box culvert = (height x width)/length
Openness round culvert = (3.14 x radius^2)/length

SECTION 13 - GENERAL DESIGN CONSIDERATIONS

Env-Wt 904.01 requires all stream crossings to be designed and constructed according to the following requirements. Check each box if the project meets these general design considerations.

All stream crossings shall be designed and constructed so as to:

- [X] Not be a barrier to sediment transport.
- [X] Prevent the restriction of high flows and maintain existing low flows.
- [X] Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
- [X] Not cause an increase in the frequency of flooding or overtopping of banks.
- [X] Maintain or enhance geomorphic compatibility by:
  a. Minimizing the potential for inlet obstruction by sediment, wood, or debris, and
  b. Preserving the natural alignment of the stream channel.
- [X] Preserve watercourse connectivity where it currently exists.
- [X] Restore watercourse connectivity where:
  a. Connectivity previously was disrupted as a result of human activity(ies), and
  b. Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both.
- [X] Not cause erosion, aggradation, or scouring upstream or downstream of the crossing.
- [X] Not cause water quality degradation.

SECTION 14 - TIER-SPECIFIC DESIGN CRITERIA

Stream crossings must be designed in accordance with the tier specific design criteria listed in Part Env-Wt 904.

- [X] The proposed project meets the tier specific design criteria listed in Part Env-Wt 904 and each requirement has been addressed in the plans and as part of the wetland application.

SECTION 15 - ALTERNATIVE DESIGN

NOTE: If the proposed crossing does not meet all of the general design considerations, the tier specific design criteria, or the minimum entrenchment ratio for each given stream type listed in **Figure 3**, then an alternative design plan and associated requirements must be addressed pursuant to Env-Wt 904.10.

- [X] I have submitted an alternative design and addressed each requirement listed in Env-Wt 904.10.

JAMES VERRA & ASSOCIATES, INC.

Wetland Impact Photo Log & Map

80 & 80R Winnicutt Road Stratham, NH

Photos Taken on September 8th, 2026

By: Morgan Moody, CWS

*Impact areas C & D not included in this photo log

Wetland Impact A:



Photo #1: Looking north at proposed Wetland Impact "A" for culvert upgrade.

Wetland Impact B:



Photo #2: Looking north at proposed Wetland Impact "B" for culvert upgrade (same culvert at "A").

Wetland Impact E:



Photo #3: Looking north at proposed Wetland Impact "E" to be box culvert.



Photo #4: Looking east at same impact area.



Photo #5: Looking south at same impact area.



Photo #6: Looking west at same impact area.

Wetland Impact F:



Photo #7: Looking north at proposed Wetland Impact "F" to be stone ford.



Photo #8: Looking east at same impact area.



Photo #9: Looking southwest at same impact area.

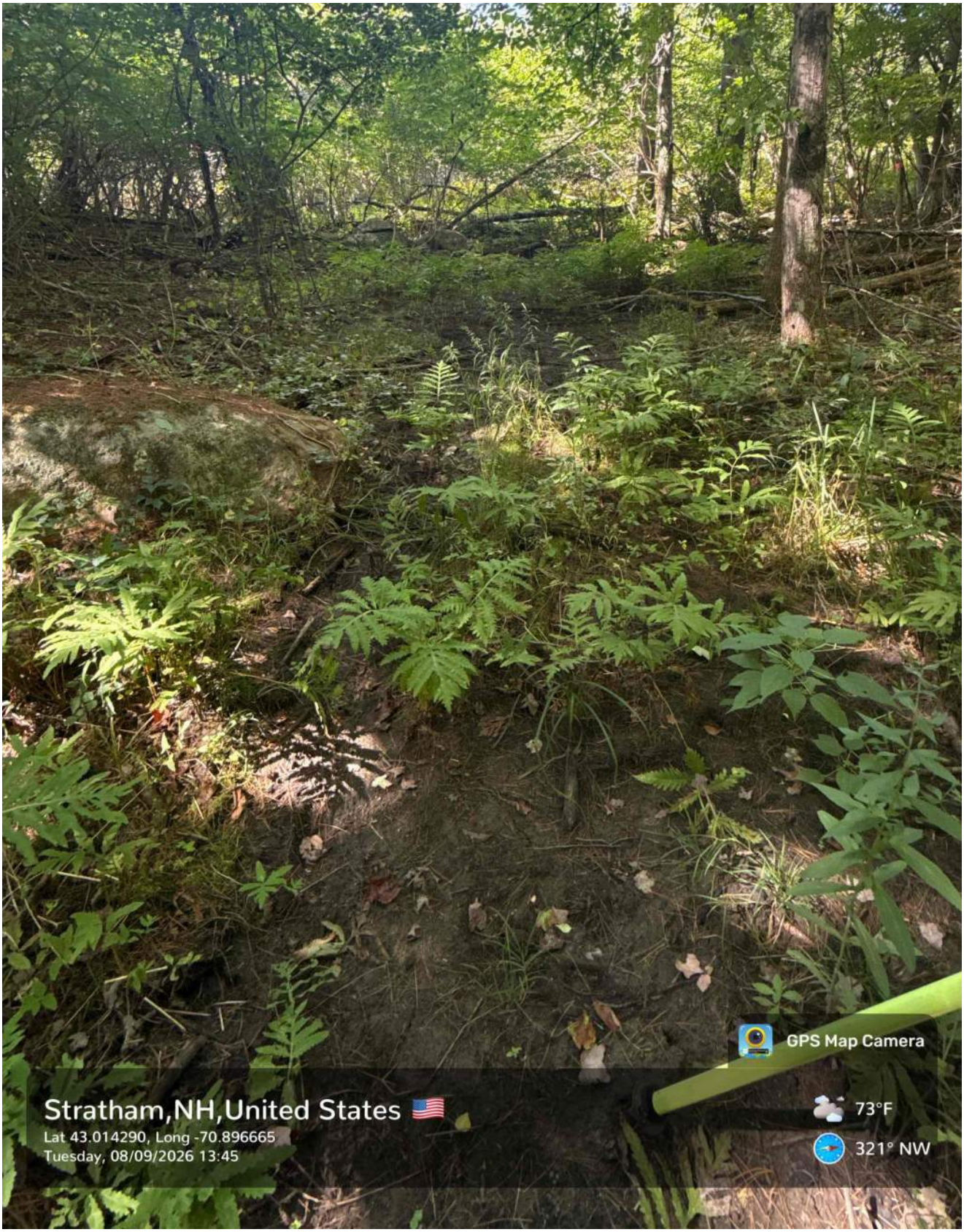


Photo #10: Looking northwest at same impact area.

Wetland Impact G:

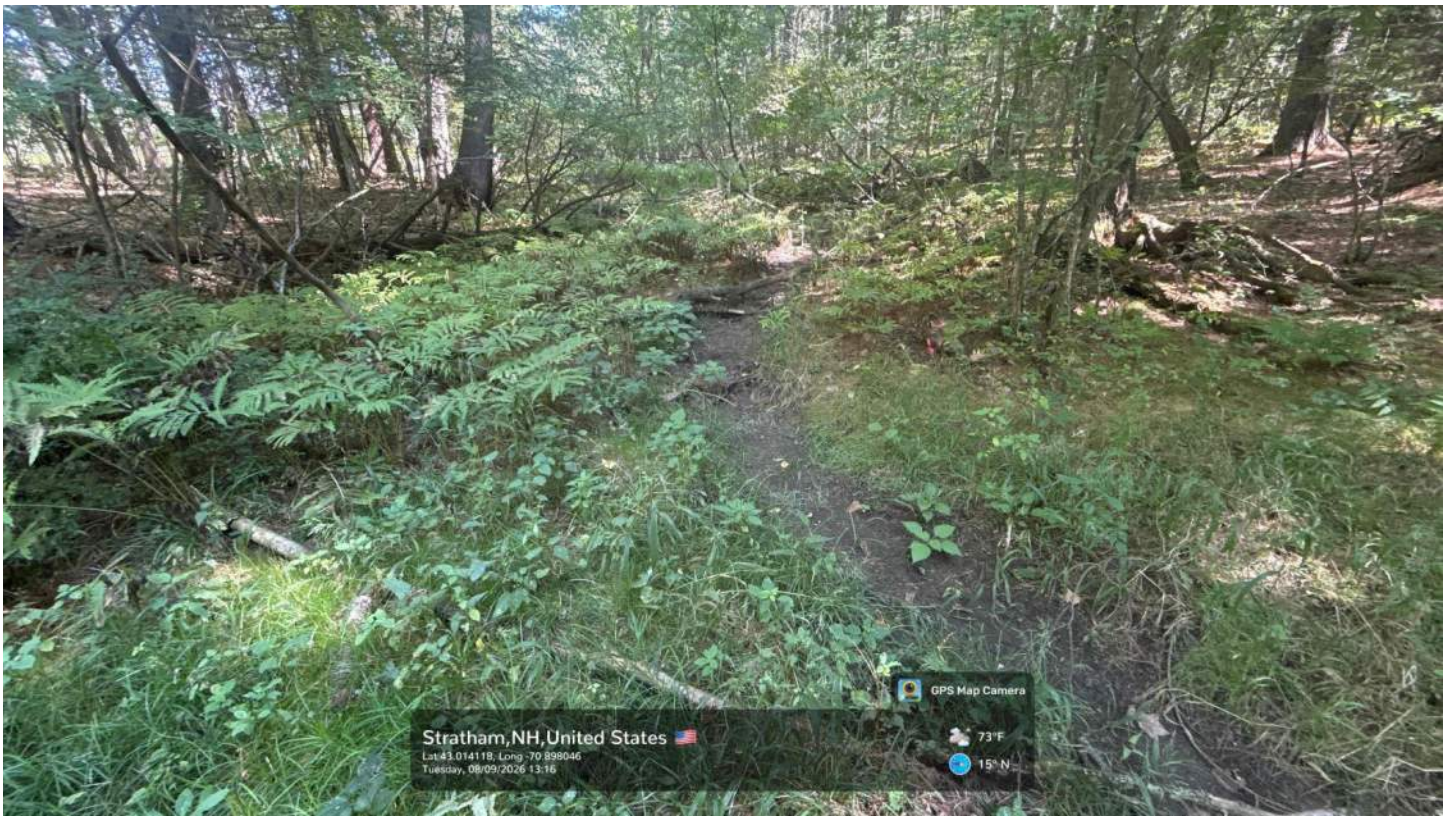


Photo #11: Looking east at proposed Wetland Impact "G".

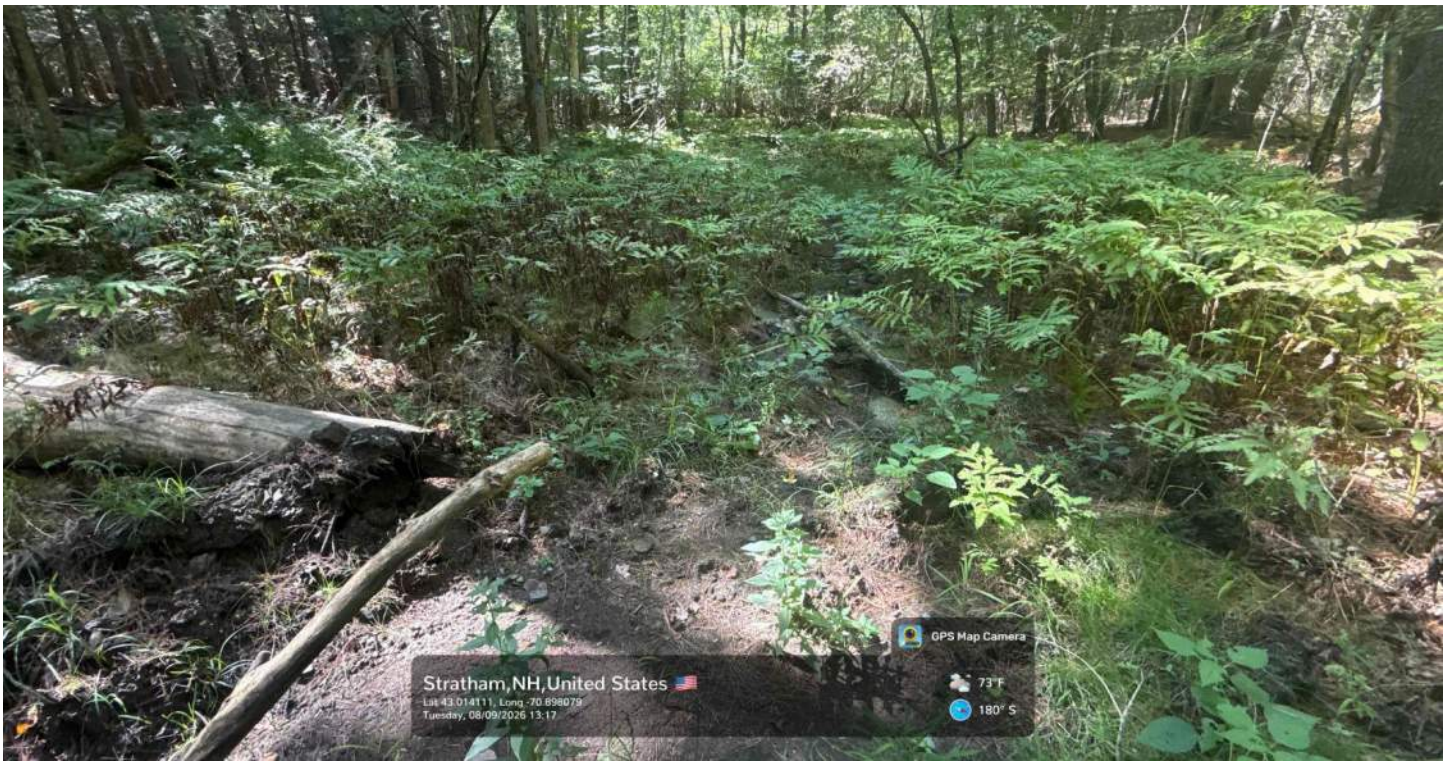


Photo #12: Looking west at same impact area.

Wetland Impact H:



Photo #13: Looking north at proposed Wetland Impact "H" to be stone ford.



Photo #14: Looking southeast at same impact area.



Photo #15: Looking west at same impact area.



Photo #16: Looking east at same impact area.

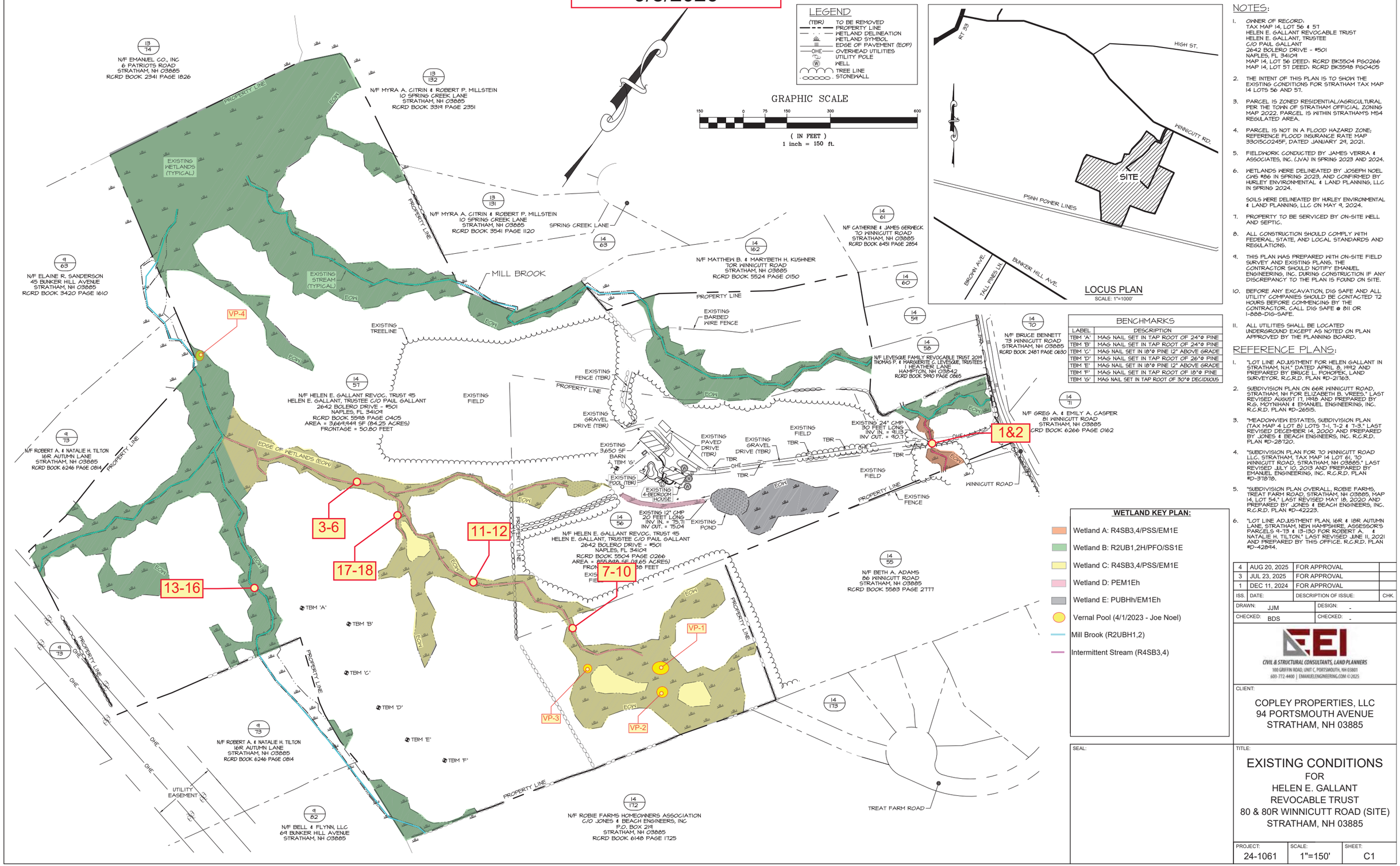


Photo #17: Looking northeast near wetland flag H-72 at intermittent stream.



Photo #18: Looking southwest near wetland flag H-72 at intermittent stream.

Impact Photo Key
9/8/2026



BENCHMARKS

LABEL	DESCRIPTION
TBM 'A'	MAG NAIL SET IN TAP ROOT OF 24"Ø PINE
TBM 'B'	MAG NAIL SET IN TAP ROOT OF 24"Ø PINE
TBM 'C'	MAG NAIL SET IN 18"Ø PINE 12" ABOVE GRADE
TBM 'D'	MAG NAIL SET IN TAP ROOT OF 26"Ø PINE
TBM 'E'	MAG NAIL SET IN 18"Ø PINE 12" ABOVE GRADE
TBM 'F'	MAG NAIL SET IN TAP ROOT OF 18"Ø PINE
TBM 'G'	MAG NAIL SET IN TAP ROOT OF 30"Ø DECIDUOUS

WETLAND KEY PLAN:

- Wetland A: R4SB3,4/PSS/EM1E
- Wetland B: R2UB1,2H/PFO/SS1E
- Wetland C: R4SB3,4/PSS/EM1E
- Wetland D: PEM1Eh
- Wetland E: PUBHh/EM1Eh
- Vernal Pool (4/1/2023 - Joe Noel)
- Mill Brook (R2UBH1,2)
- Intermittent Stream (R4SB3,4)

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 P60266
   MAP 14, LOT 57 DEED: RCRD BK5598 P60405
2. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS FOR STRATHAM TAX MAP 14 LOTS 56 AND 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

REFERENCE PLANS:

1. "LOT LINE ADJUSTMENT FOR HELEN GALLANT IN STRATHAM, N.H." DATED APRIL 8, 1982 AND PREPARED BY BRUCE L. POHOPEK, LAND SURVEYOR. R.C.R.D. PLAN #D-21763.
2. SUBDIVISION PLAN ON 66R WINNICUTT ROAD, STRATHAM, NH FOR ELIZABETH B. VREES." LAST REVISED AUGUST 17, 1998 AND PREPARED BY R.S. MOYNIHAN & EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-26515.
3. "MEADOWVIEW ESTATES, SUBDIVISION PLAN (TAX MAP 4 LOT B) LOTS 7-1, 7-2 & 7-3." LAST REVISED DECEMBER 14, 2000 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-28720.
4. "SUBDIVISION PLAN FOR 70 WINNICUTT ROAD LLC. STRATHAM, TAX MAP 14 LOT 61, 70 WINNICUTT ROAD, STRATHAM, NH 03885." LAST REVISED JULY 10, 2019 AND PREPARED BY EMANUEL ENGINEERING, INC. R.C.R.D. PLAN #D-37878.
5. "SUBDIVISION PLAN OVERALL, ROBIE FARMS, TREAT FARM ROAD, STRATHAM, NH 03885, MAP 14, LOT 54." LAST REVISED MAY 18, 2020 AND PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-42223.
6. "LOT LINE ADJUSTMENT PLAN, 16R & 18R AUTUMN LANE, STRATHAM, NEW HAMPSHIRE, ASSESSOR'S PARCELS 9-73 & 13-130 FOR ROBERT A. & NATALIE H. TILTON." LAST REVISED JUNE 11, 2021 AND PREPARED BY THIS OFFICE. R.C.R.D. PLAN #D-42844.

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
4	AUG 20, 2025	FOR APPROVAL	
3	JUL 23, 2025	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

DRAWN: JJM | DESIGN: -
CHECKED: BDS | CHECKED: -

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

SEAL:

TITLE:
EXISTING CONDITIONS
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	C1

~~May 5, 2026~~
Revised September 9, 2026

New Hampshire Department of Environmental Services
Wetlands Bureau, Land Resources Management
Water Division
NH Department of Environmental Services
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

RE: Request for Alternative Design – "At-Grade Stone Fords"
Standard Wetland Dredge and Fill Application
Copley-Gallant Subdivision
80 & 80R Winnicutt Road – Stratham
Tax Map 14 Lots 56 & 57

Dear Reviewer,

James Verra & Associates, Inc. and Emanuel Engineering, Inc. are requesting an alternative design associated with proposed stream crossings related to wetland impacts F, G, and H in accordance with Env-Wt 904.10 Alternative Designs. The proposed alternative designs are three (3) stone ford crossings to be installed "at grade". Crossing F and G are only for intermittent, low-frequency maintenance access to the shared leach fields. Crossing H is proposed for the perennial Tier II stream for the same purpose; for access to the shared leach field only. There will be no regular vehicular traffic, no daily use, and no development access. Installing a culvert or bridge would require significant grading and approach work, wider disturbance, and greater permanent and stream impacts. Site constraints include narrow, intermittent channels with limited defined banks and shallow hydrology that does not support traditional spanning structures.

The proposed at-grade stone ford crossings are appropriate for these Tier 1 and Tier II streams because they maintain the existing channel geometry and do not introduce constrictions to flow, as can occur with undersized or improperly installed culverts. By remaining at grade, the design minimizes the overall disturbance footprint and avoids the need for extensive excavation, grading, or alteration of the stream banks. This approach also eliminates the potential for perched outlets and maintains continuity of the streambed, which supports aquatic organism passage even in lower-order systems. Given the limited, infrequent use of these crossings for maintenance access only, the stone fords further reduce long-term environmental impacts by avoiding the installation of embedded pipes or permanent structures that may clog, fail, or require ongoing maintenance, thereby minimizing the potential for future disturbance within the stream channel and adjacent wetland resources.

Sincerely,

Morgan Moody, CWS
Certified Wetland Scientist

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL22 (Node PP50)

Civil & Structural Consultants, Land Planners
100 Griffin Road, Suite C, Portsmouth, NH 03801
P: 603-772-4400 | www.emanuelengineering.com ©2025

PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM/NCB	CHECKED BY :	BDS
DATE :	5/5/2026	DATE :	5/5/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	2.0	cfs
Channel Bottom Width =	8.0	Feet
Hydraulic Gradient =	0.01130	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	0.720	Feet
Manning's "n" =	0.0130	
Area =	7.32	Square Feet
Wetted Perimeter =	12.55	Feet
Hydraulic Radius =	0.58	Feet
Top Width =	12.32	Feet
Velocity =	8.48	Feet/Second
Peak Discharge Determined =	62.0	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	24.0	Inches
Tail Water Depth (TW)* =	0.40	Feet
Length of Apron (La) =	15	Feet
Width of Apron @ D.S End (W) =	21	Feet
Width of D.S. Apron if Channel (W) =	8.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.06 Feet or 0.75 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=6", 18" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	1.1	to	1.5
85	1.0	to	1.4
50	0.8	to	1.1
15	0.2	to	0.4

Minimum Rock Riprap Blanket Thickness = 6.0 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL23 (Node PP59)

Civil & Structural Consultants, Land Planners
100 Griffin Road, Suite C, Portsmouth, NH 03801
P: 603-772-4400 | www.emanuelengineering.com ©2025

PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM	CHECKED BY :	BDS
DATE :	5/5/2026	DATE :	5/5/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	3.4	cfs
Channel Bottom Width =	6.0	Feet
Hydraulic Gradient =	0.06380	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	1.000	Feet
Manning's "n" =	0.0130	
Area =	9.00	Square Feet
Wetted Perimeter =	12.32	Feet
Hydraulic Radius =	0.73	Feet
Top Width =	12.00	Feet
Velocity =	23.41	Feet/Second
Peak Discharge Determined =	210.7	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	12.0	Inches
Tail Water Depth (TW)* =	0.20	Feet
Length of Apron (La) =	13	Feet
Width of Apron @ D.S End (W) =	16	Feet
Width of D.S. Apron if Channel (W) =	6.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.50 Feet or 6.02 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=7", 21" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	9.0	to	12.0
85	7.8	to	10.8
50	6.0	to	9.0
15	1.8	to	3.0

Minimum Rock Riprap Blanket Thickness = 18.0 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Civil & Structural Consultants, Land Planners
100 Griffin Road, Suite C, Portsmouth, NH 03801
P: 603-772-4400 | www.emanuelengineering.com ©2025

Box Culvert

PROJECT NAME :	**Copley-Gallant 80 Winnicutt Road**		
PROJECT # :	**24-1061**		
BY :	**JJM/NCB**	CHECKED BY :	**BDS**
DATE :	**8/14/26**	DATE :	**8/14/26**

Preliminary calculation — for engineer review. Structure: 8 ft (span) × 4 ft (rise) open-bottom box culvert. Location: New Hampshire (NHDES / AoT).

1. Design inputs (from HydroCAD outlet, peak condition)

Barrel span, B	**8.0 ft**	Box width (open-bottom, three-sided)
Barrel rise, D	**4.0 ft**	Vertical opening
Outlet velocity, V	**4.72 ft/s**	Read from HydroCAD culvert device at peak
Flow depth, y	**1.73 ft**	Partial-full depth in barrel at outlet
Stone specific gravity, Ss	**2.65**	Typical quarried rock (assumed)
g	**32.2 ft/s²**	Gravitational acceleration

Derived: flow area A = y × B = 1.73 × 8.0 = **13.84 ft²** → check discharge Q = V × A = 4.72 × 13.84 ≈ **65 cfs** at peak.

2. Composite Manning's n (open-bottom box, Horton–Einstein)

Wetted perimeter is part concrete (2 walls + soffit) and part natural earth bed. Weight each surface by its share of perimeter:

$$n_c = [\ (\Sigma\ P_i \cdot n_i^{1.5})\ /\ P\ ]^{2/3}$$

Concrete (n = 0.013)	P = 2D + B = 2(4) + 8 = 16 ft
Natural earth bed (n = 0.022)	P = B = 8 ft
Total wetted perimeter (full)	P = 24 ft

$$\mathbf{n_c = [\ (16 \cdot 0.013^{1.5} + 8 \cdot 0.022^{1.5})\ /\ 24\ ]^{2/3} \approx 0.016 \quad \text{(flowing full)}}$$

Note: composite n rises toward the bed value (~0.020–0.022) at shallow partial-full depths, since the earth bottom then dominates the wetted perimeter. Confirm the value used in the routing model against the design depth.

3. Outlet energy check (Froude number)

$$Fr = V / \sqrt{(g \cdot y)} = 4.72 / \sqrt{(32.2 \times 1.73)}$$

Fr ≈ 0.63 (subcritical, Fr < 1 → low-energy outlet)

A subcritical, low-Froude outlet is a benign scour condition — the wide 8 ft span spreads flow thin and keeps velocity moderate. This is why the required stone comes out small.

4. Median stone size, D50 (Isbash / velocity method)

$$D_{50} = V^2 / [\, C^2 \cdot 2g \cdot (S_s - 1)\,]$$

High-turbulence, C = 0.86 (conservative)	D50 = 22.28 / [0.86² · 64.4 · 1.65] = 0.28 ft ≈ 3.4 in
Less turbulent, C = 1.20	D50 = 22.28 / [1.20² · 64.4 · 1.65] = 0.15 ft ≈ 1.8 in

Computed range D50 ≈ 2–4 in. Recommend nominal 6 in D50 for design (round up; cheap insurance at a box outlet). Replace with the matching NHDES / NHDOT stone class and gradation before submittal.

5. Apron geometry (per HEC-14 / standard practice)

Apron length, La	**~ 13 ft**	≈ 3 × rise, or ~7–8 × flow depth; low Fr supports shorter end
Width at throat	**8.0 ft**	Full box span at headwall
Flare	**1 : 3 (lat:long)**	Each side, tied into channel banks
Width at downstream end	**~ 17 ft**	Flared out to receiving channel
Stone thickness	**~ 12 in**	1.5–2 × D50, 12 in practical minimum
Bedding	**Filter fabric / granular**	Full stone footprint; prevents native soil piping
Set	**Flush with streambed**	No lip at toe; transition smoothly out of natural bed

6. Items for engineer to confirm

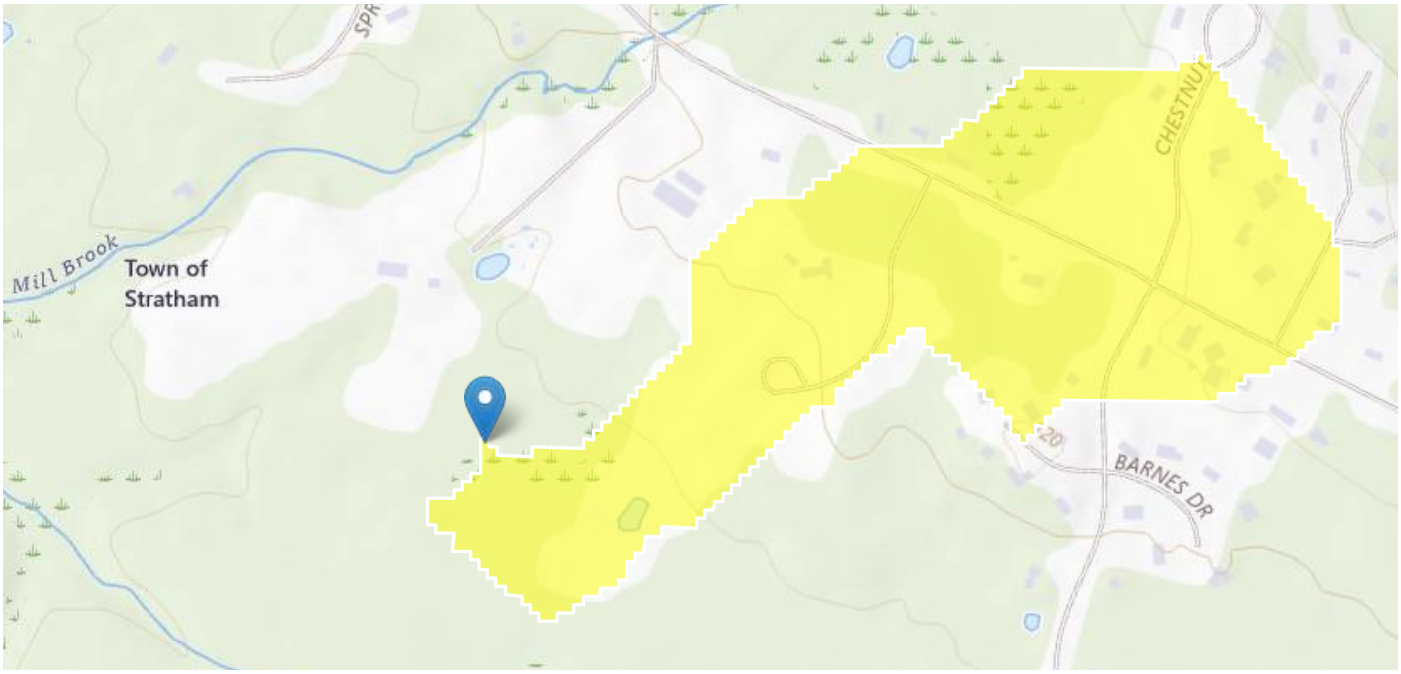
- Replace preliminary D50 with the correct NHDES / NHDOT riprap class and gradation.
- Confirm tailwater depth — shallow TW supports the plain apron as sized; deep TW may allow trimming, or a basin/dissipator may be needed if TW is very shallow.
- Verify whether AoT submittal requires the outlet-velocity / scour computation to be shown.
- Confirm inlet type / Ke and that the composite n used in routing matches the design depth.
- Check apron ties into channel banks and that stone is carried up side slopes to design flow depth + freeboard.

Basis: Isbash velocity method for stone sizing; FHWA HEC-14 and standard practice for apron geometry. Prepared as a preliminary check for professional review and stamping — not a final design. Values to be verified against site-specific data and the governing NHDES / NHDOT standards.

Impact F & G

StreamStats Report

Region ID: NH
Clicked Point (Latitude, Longitude): 43.01459, -70.89596
Time: 2026-05-01 13:40:09 -0400



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
APRAVPRE	Mean April Precipitation	4.31	inches
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	83.26	feet per mi
DRNAREA	Area that drains to a point on a stream	0.09	square miles

Parameter Code	Parameter Description	Value	Unit
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	5.436	percent
WETLAND	Percentage of Wetlands	4.235	percent

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Flow Statewide SIR2008 5206]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
APRAVPRE	Mean April Precipitation	4.31	inches	2.79	6.23
CSL10_85	Stream Slope 10 and 85 Method	83.26	feet per mi	5.43	543
DRNAREA	Drainage Area	0.09	square miles	0.7	1290
WETLAND	Percent Wetlands	4.235	percent	0	21.8

Peak-Flow Statistics Disclaimers [Peak Flow Statewide SIR2008 5206]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Peak Flow Statewide SIR2008 5206]

Statistic	Value	Unit
50-percent AEP flood	4.52	ft^3/s
20-percent AEP flood	8.65	ft^3/s
10-percent AEP flood	12.5	ft^3/s
4-percent AEP flood	18.3	ft^3/s
2-percent AEP flood	23.4	ft^3/s
1-percent AEP flood	29.9	ft^3/s
0.2-percent AEP flood	47.4	ft^3/s

Peak-Flow Statistics Citations

Olson, S.A.,2009, Estimation of flood discharges at selected recurrence intervals for streams in New Hampshire: U.S.Geological Survey Scientific Investigations Report 2008-5206, 57 p. (http://pubs.usgs.gov/sir/2008/5206/)

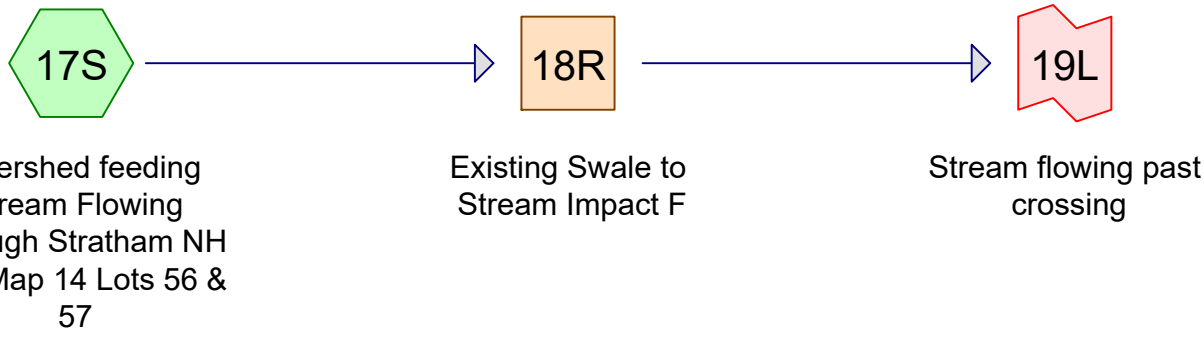
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Application Version: 4.32.0
SSHydro Services Version: 1.2.1
SSDelineate Services Version: 1.1.0
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.1



Subcat Reach Pond Link

Routing Diagram for Stream Crossing Analysis 07-16-26
Prepared by Emanuel Engineering, Printed 9/4/2026
HydroCAD® 10.20-9a s/n 01104 © 2026 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.23	
2	10-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	4.91	
3	25-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	25-yr	Default	24.00	1	6.24	
4	50-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	50-yr	Default	24.00	1	7.48	
5	100-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	100-yr	Default	24.00	1	8.98	

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
52.030	74	>75% Grass cover, Good, HSG C (17S)
2.400	80	>75% Grass cover, Good, HSG D (17S)
3.087	98	Paved parking, HSG C (17S)
0.044	98	Paved parking, HSG D (17S)
57.561	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
55.117	HSG C	17S
2.444	HSG D	17S
0.000	Other	
57.561		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	52.030	2.400	0.000	54.430	>75% Grass cover, Good	17S
0.000	0.000	3.087	0.044	0.000	3.131	Paved parking	17S
0.000	**0.000**	**55.117**	**2.444**	**0.000**	**57.561**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 17S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=1.17"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=17.96 cfs 5.626 af

Reach 18R: Existing Swale to Stream Avg. Flow Depth=0.68' Max Vel=3.27 fps Inflow=17.96 cfs 5.626 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=17.94 cfs 5.626 af

Link 19L: Stream flowing past crossing Inflow=17.94 cfs 5.626 af
Primary=17.94 cfs 5.626 af

Total Runoff Area = 57.561 ac Runoff Volume = 5.626 af Average Runoff Depth = 1.17"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

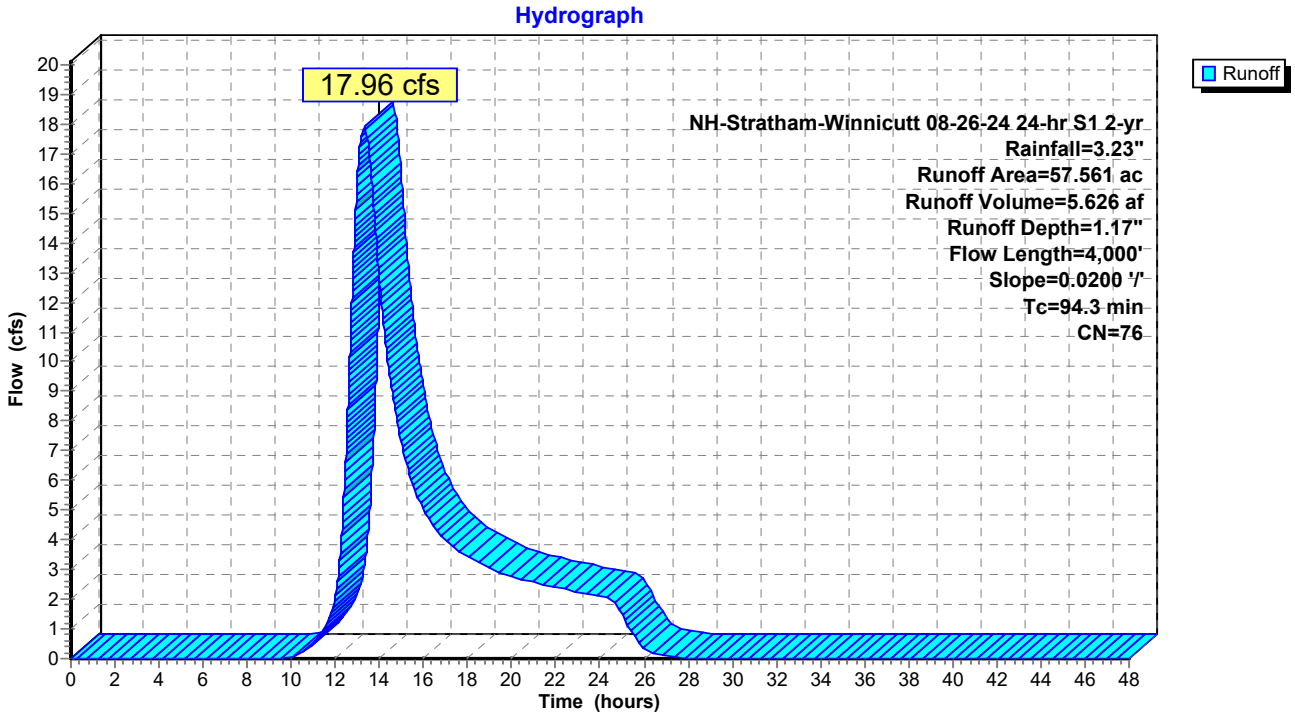
Runoff = 17.96 cfs @ 13.31 hrs, Volume= 5.626 af, Depth= 1.17"
Routed to Reach 18R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr Rainfall=3.23"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



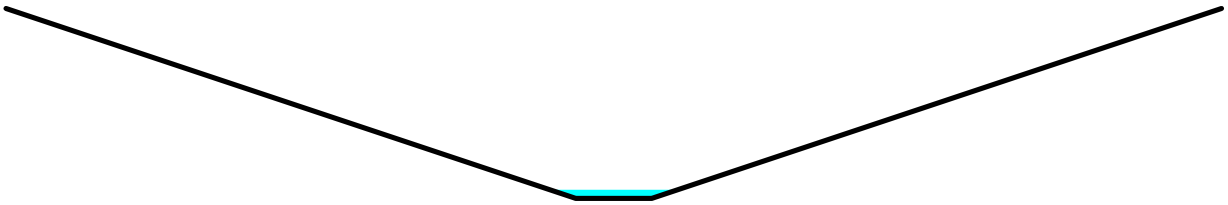
Summary for Reach 18R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.96 cfs @ 13.31 hrs, Volume= 5.626 af
Outflow = 17.94 cfs @ 13.32 hrs, Volume= 5.626 af, Atten= 0%, Lag= 0.7 min
Routed to Link 19L : Stream flowing past crossing

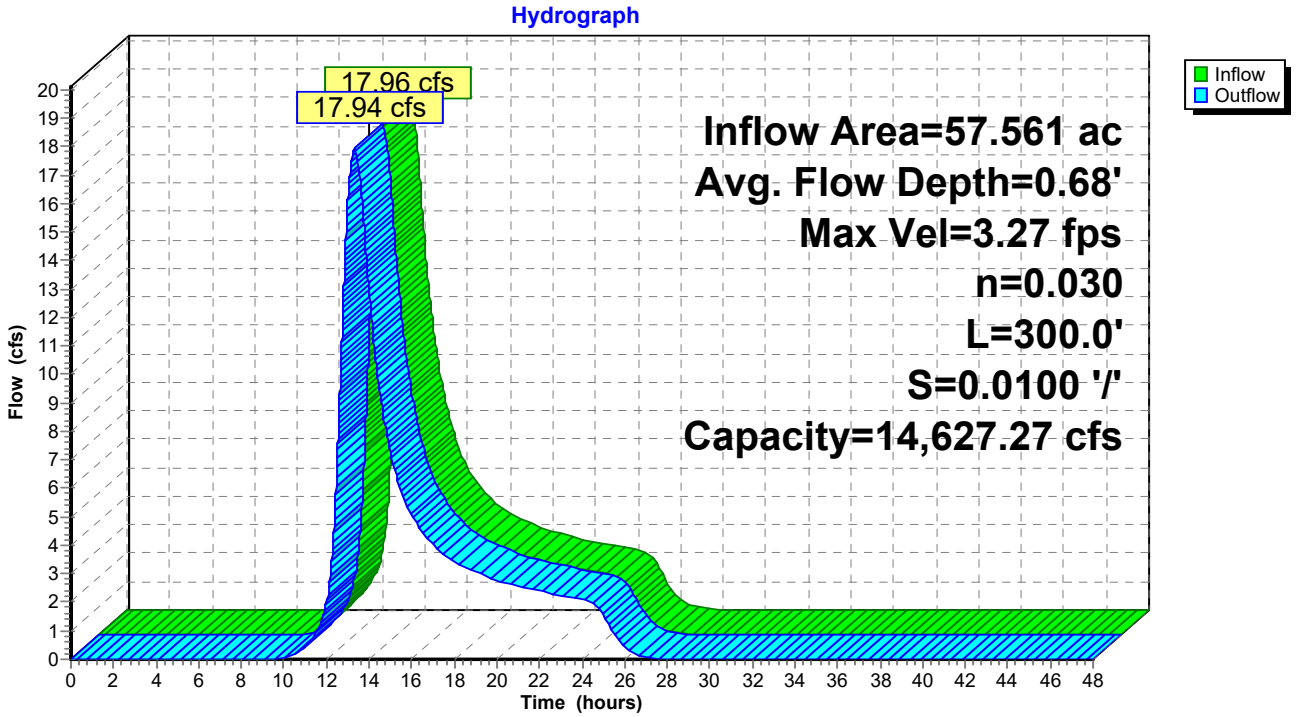
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.27 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 2.8 min

Peak Storage= 1,646 cf @ 13.32 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 10.08'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 18R: Existing Swale to Stream Impact F

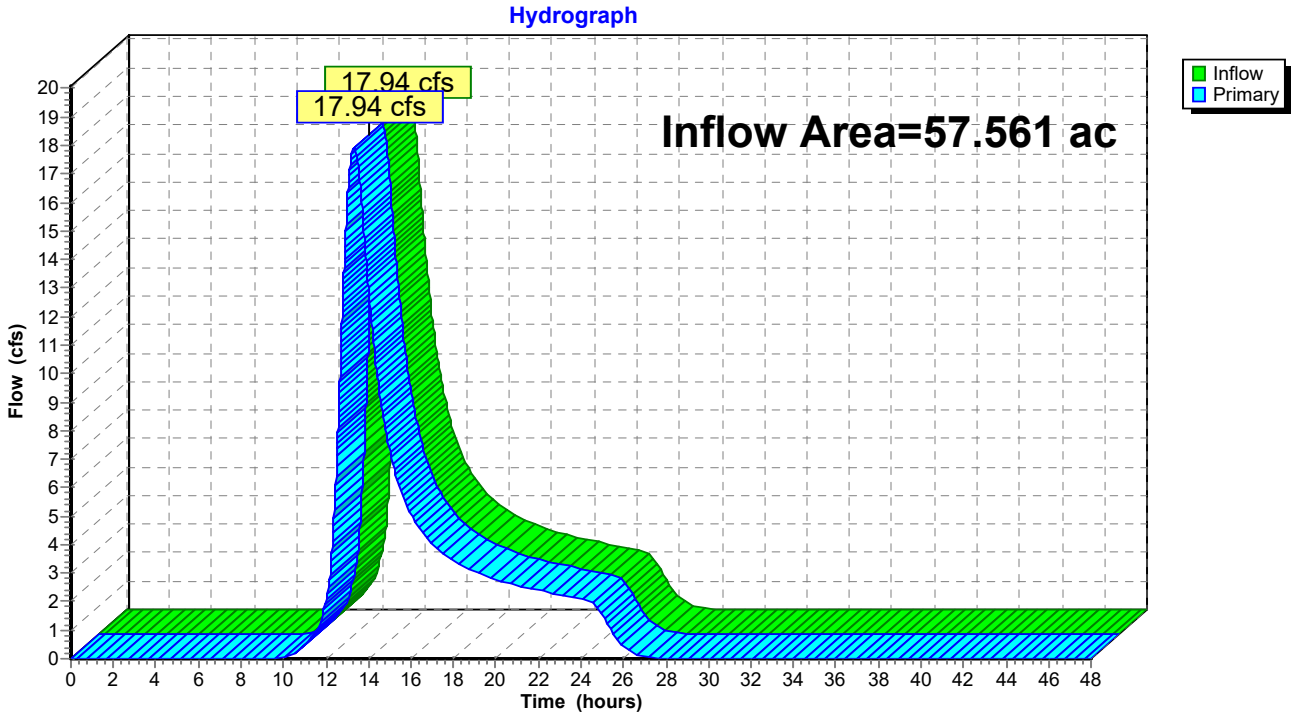


Summary for Link 19L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.94 cfs @ 13.32 hrs, Volume= 5.626 af
Primary = 17.94 cfs @ 13.32 hrs, Volume= 5.626 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 19L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 17S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=2.46"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=36.93 cfs 11.807 af

Reach 18R: Existing Swale to Stream Avg. Flow Depth=1.01' Max Vel=4.05 fps Inflow=36.93 cfs 11.807 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=36.92 cfs 11.807 af

Link 19L: Stream flowing past crossing Inflow=36.92 cfs 11.807 af
Primary=36.92 cfs 11.807 af

Total Runoff Area = 57.561 ac Runoff Volume = 11.807 af Average Runoff Depth = 2.46"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

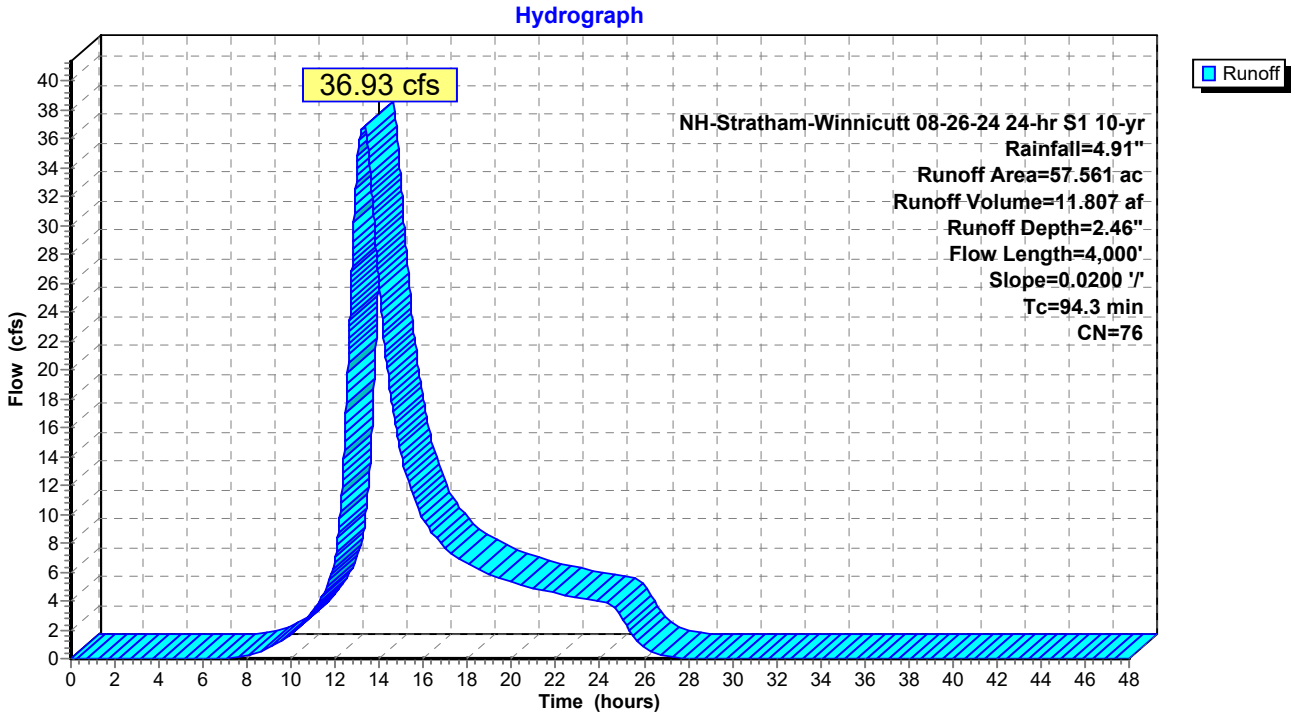
Runoff = 36.93 cfs @ 13.30 hrs, Volume= 11.807 af, Depth= 2.46"
Routed to Reach 18R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr Rainfall=4.91"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



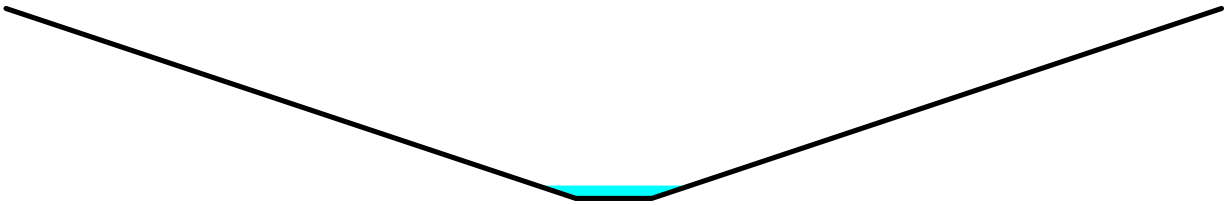
Summary for Reach 18R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 36.93 cfs @ 13.30 hrs, Volume= 11.807 af
Outflow = 36.92 cfs @ 13.31 hrs, Volume= 11.807 af, Atten= 0%, Lag= 0.5 min
Routed to Link 19L : Stream flowing past crossing

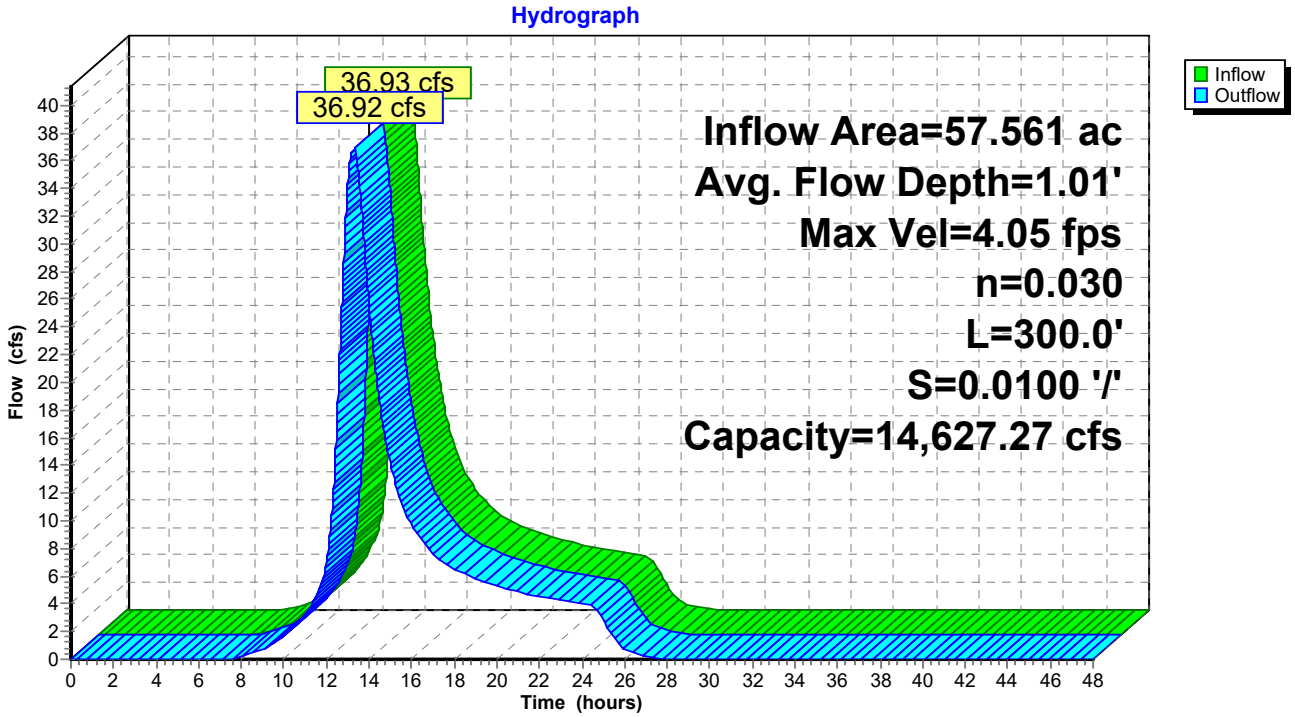
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.05 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 2.10 fps, Avg. Travel Time= 2.4 min

Peak Storage= 2,737 cf @ 13.31 hrs
Average Depth at Peak Storage= 1.01' , Surface Width= 12.05'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 18R: Existing Swale to Stream Impact F

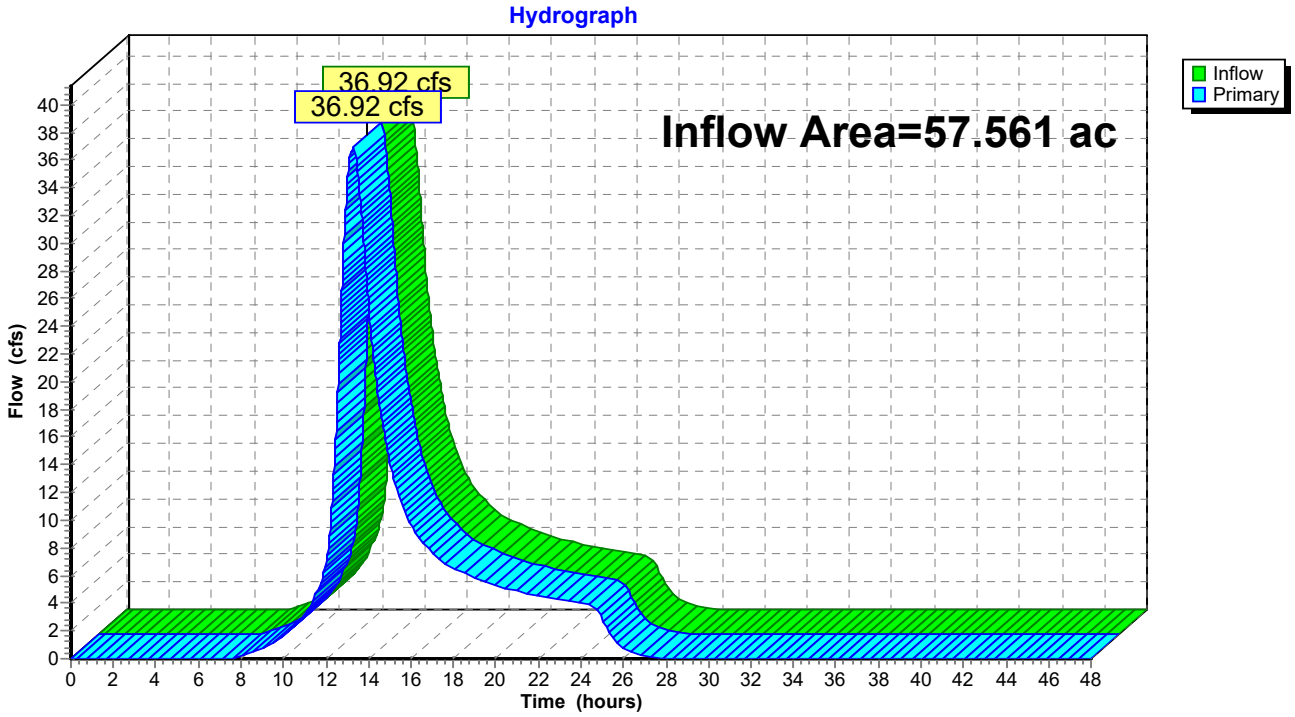


Summary for Link 19L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 36.92 cfs @ 13.31 hrs, Volume= 11.807 af
Primary = 36.92 cfs @ 13.31 hrs, Volume= 11.807 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 19L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 17S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=3.59"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=52.47 cfs 17.211 af

Reach 18R: Existing Swale to Stream Avg. Flow Depth=1.22' Max Vel=4.47 fps Inflow=52.47 cfs 17.211 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=52.46 cfs 17.211 af

Link 19L: Stream flowing past crossing Inflow=52.46 cfs 17.211 af
Primary=52.46 cfs 17.211 af

Total Runoff Area = 57.561 ac Runoff Volume = 17.211 af Average Runoff Depth = 3.59"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

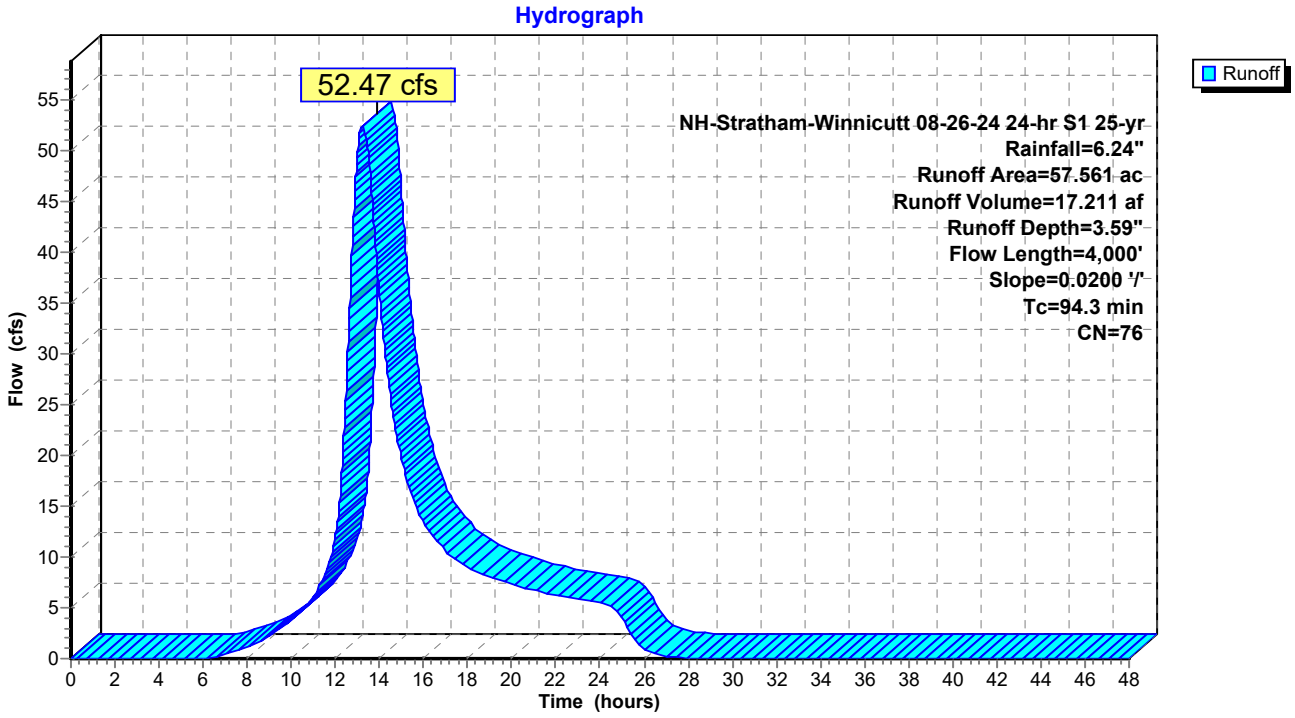
Runoff = 52.47 cfs @ 13.21 hrs, Volume= 17.211 af, Depth= 3.59"
Routed to Reach 18R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 25-yr Rainfall=6.24"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



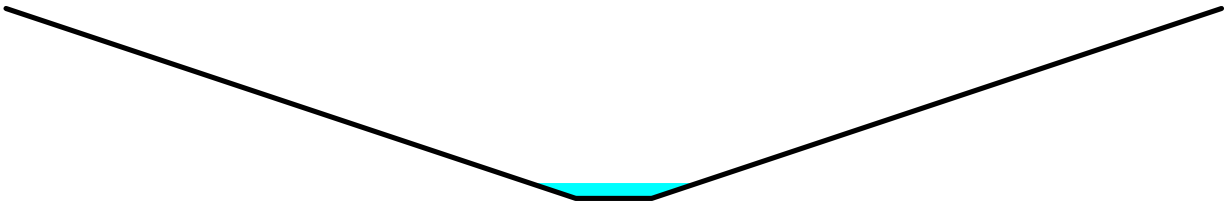
Summary for Reach 18R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 52.47 cfs @ 13.21 hrs, Volume= 17.211 af
Outflow = 52.46 cfs @ 13.25 hrs, Volume= 17.211 af, Atten= 0%, Lag= 2.1 min
Routed to Link 19L : Stream flowing past crossing

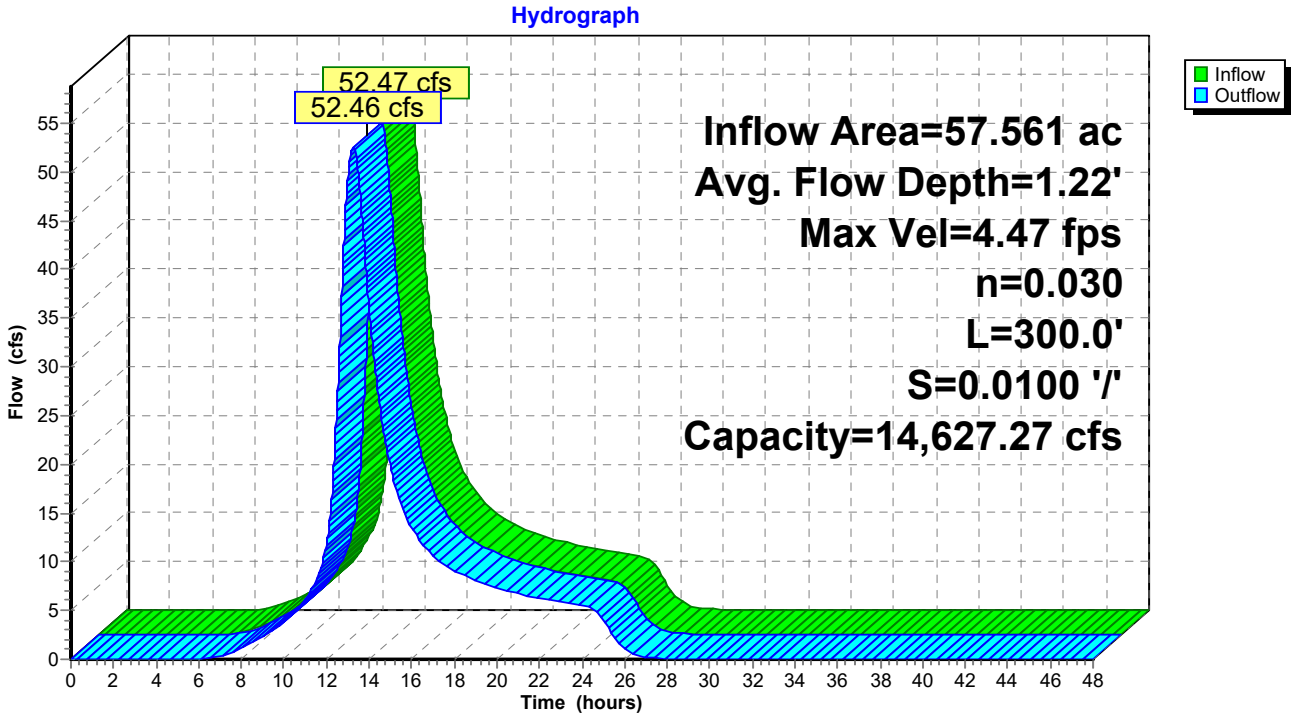
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.47 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 2.29 fps, Avg. Travel Time= 2.2 min

Peak Storage= 3,520 cf @ 13.25 hrs
Average Depth at Peak Storage= 1.22' , Surface Width= 13.29'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 18R: Existing Swale to Stream Impact F

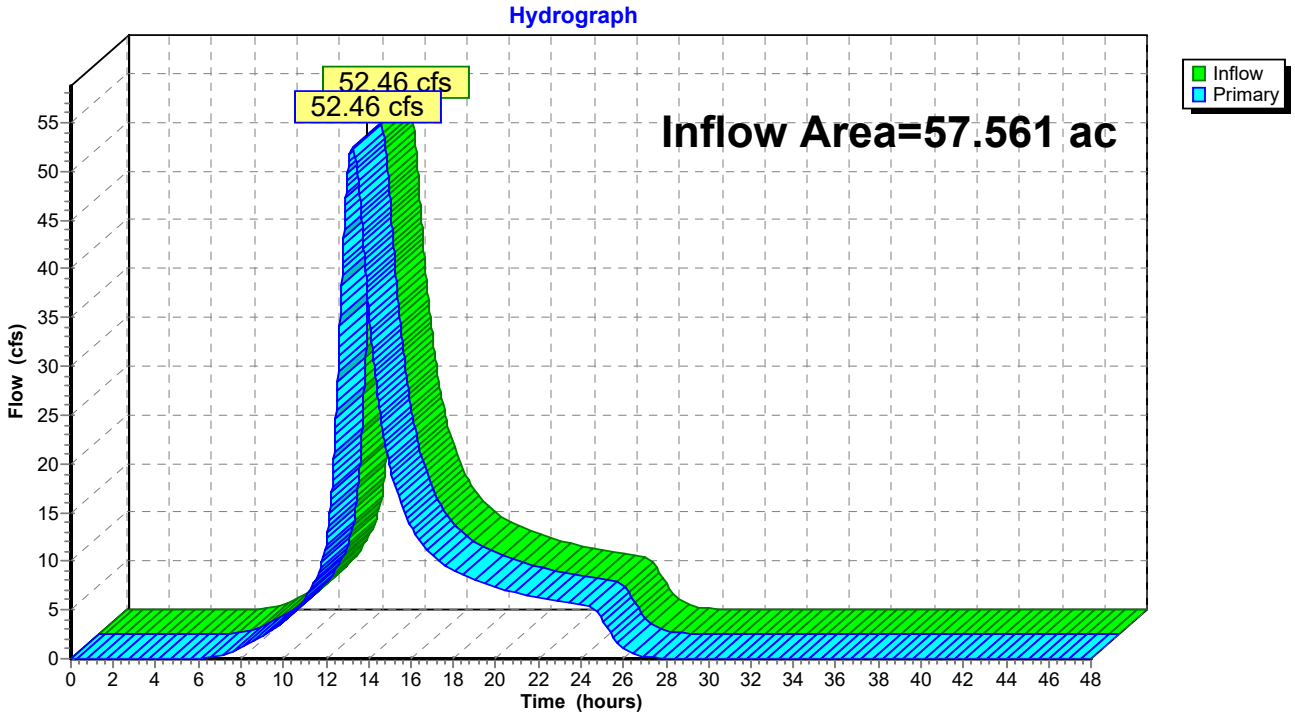


Summary for Link 19L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 52.46 cfs @ 13.25 hrs, Volume= 17.211 af
Primary = 52.46 cfs @ 13.25 hrs, Volume= 17.211 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 19L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 17S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=4.69"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=66.76 cfs 22.483 af

Reach 18R: Existing Swale to Stream Avg. Flow Depth=1.38' Max Vel=4.79 fps Inflow=66.76 cfs 22.483 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=66.74 cfs 22.483 af

Link 19L: Stream flowing past crossing Inflow=66.74 cfs 22.483 af
Primary=66.74 cfs 22.483 af

Total Runoff Area = 57.561 ac Runoff Volume = 22.483 af Average Runoff Depth = 4.69"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

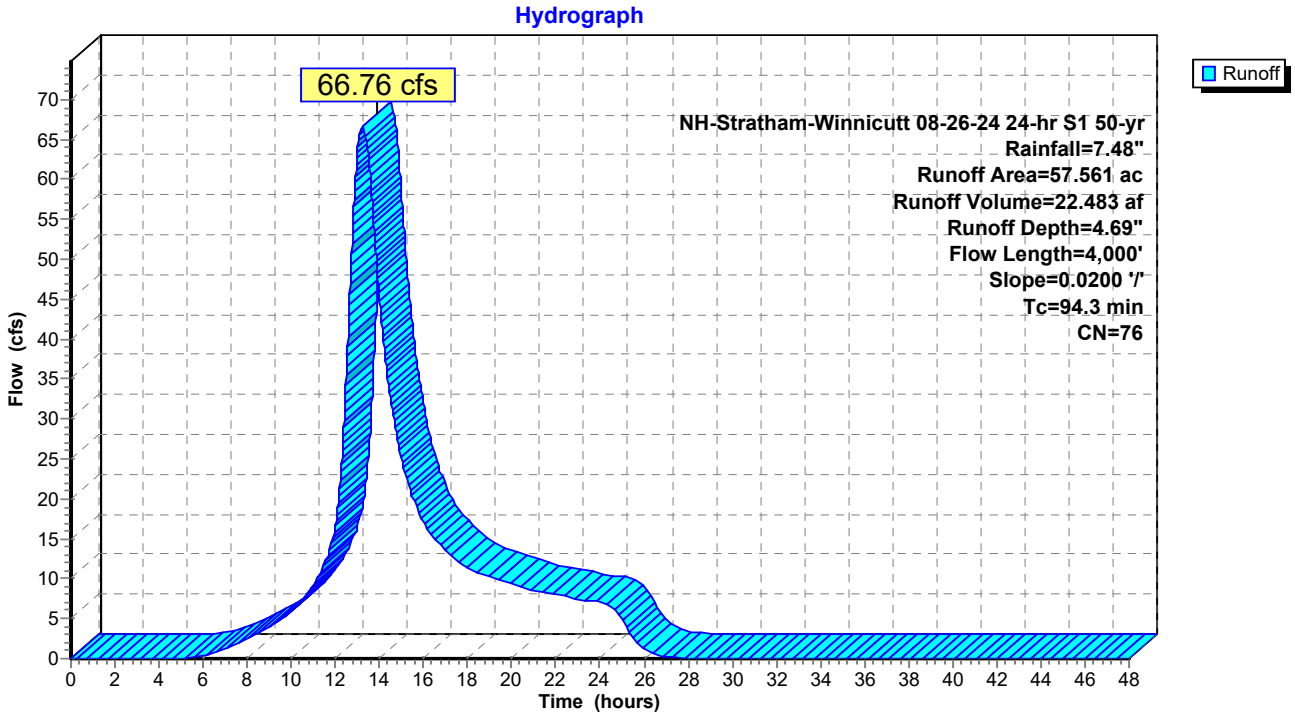
Runoff = 66.76 cfs @ 13.21 hrs, Volume= 22.483 af, Depth= 4.69"
Routed to Reach 18R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 50-yr Rainfall=7.48"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



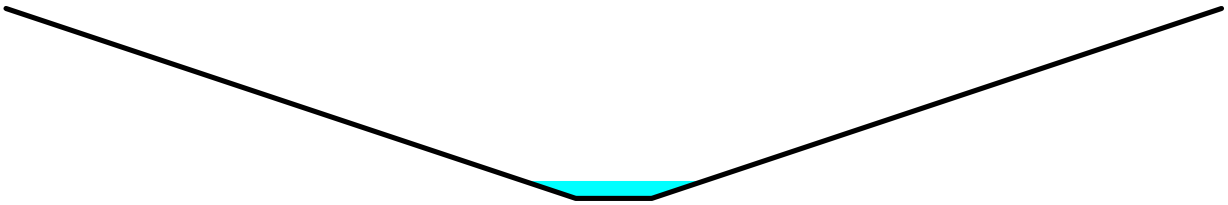
Summary for Reach 18R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 66.76 cfs @ 13.21 hrs, Volume= 22.483 af
Outflow = 66.74 cfs @ 13.22 hrs, Volume= 22.483 af, Atten= 0%, Lag= 1.0 min
Routed to Link 19L : Stream flowing past crossing

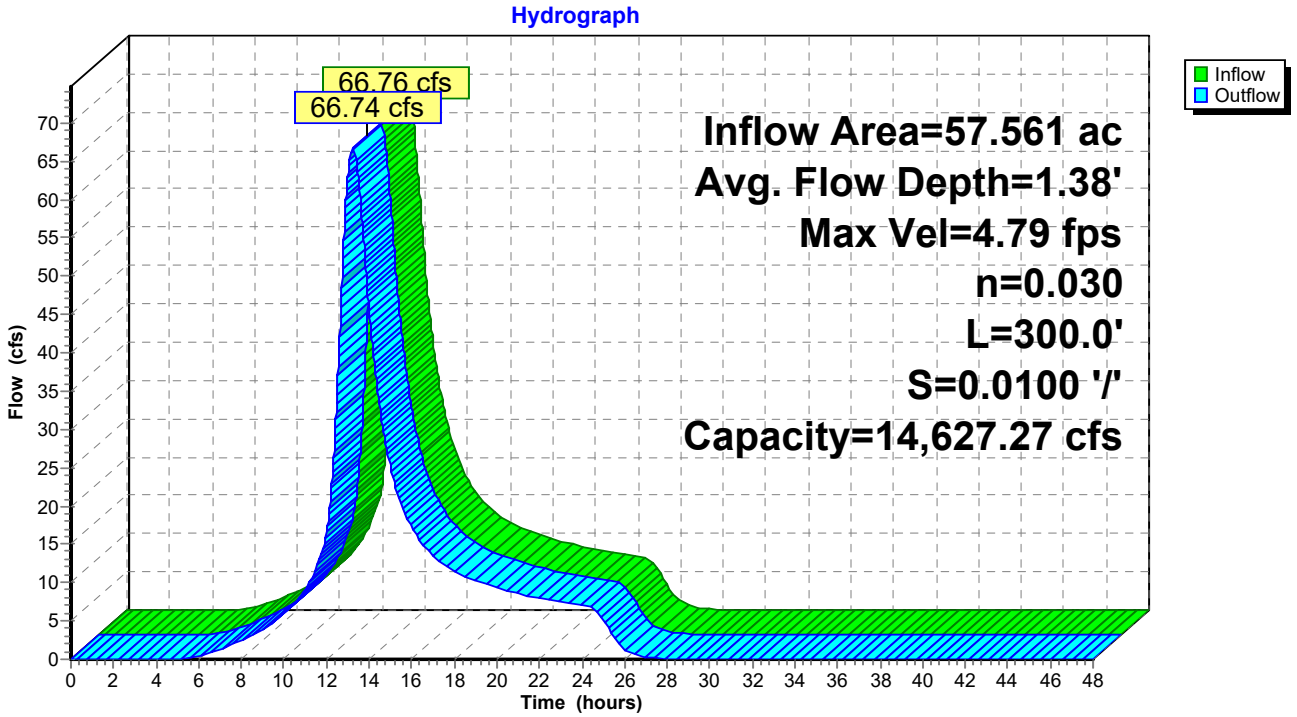
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.79 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 2.44 fps, Avg. Travel Time= 2.0 min

Peak Storage= 4,184 cf @ 13.22 hrs
Average Depth at Peak Storage= 1.38' , Surface Width= 14.26'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 18R: Existing Swale to Stream Impact F

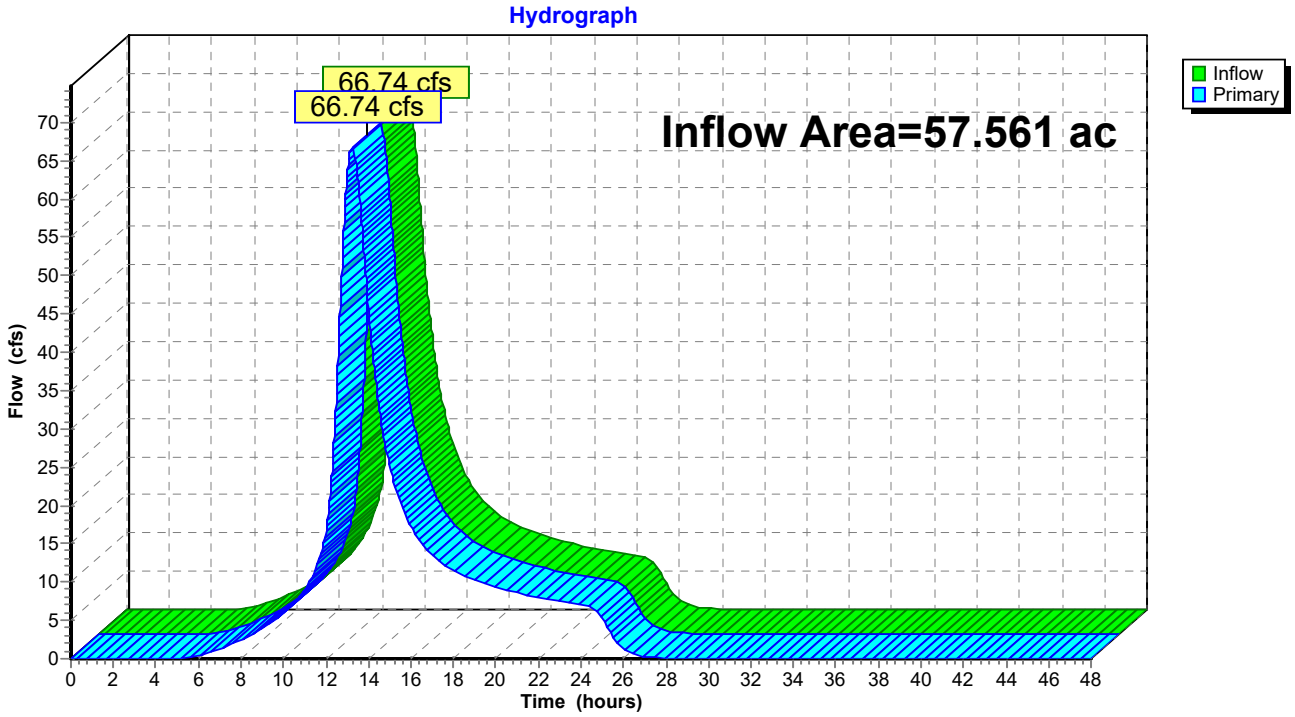


Summary for Link 19L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 66.74 cfs @ 13.22 hrs, Volume= 22.483 af
Primary = 66.74 cfs @ 13.22 hrs, Volume= 22.483 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 19L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 17S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=6.06"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=83.98 cfs 29.055 af

Reach 18R: Existing Swale to Stream Avg. Flow Depth=1.55' Max Vel=5.10 fps Inflow=83.98 cfs 29.055 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=83.94 cfs 29.055 af

Link 19L: Stream flowing past crossing Inflow=83.94 cfs 29.055 af
Primary=83.94 cfs 29.055 af

Total Runoff Area = 57.561 ac Runoff Volume = 29.055 af Average Runoff Depth = 6.06"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

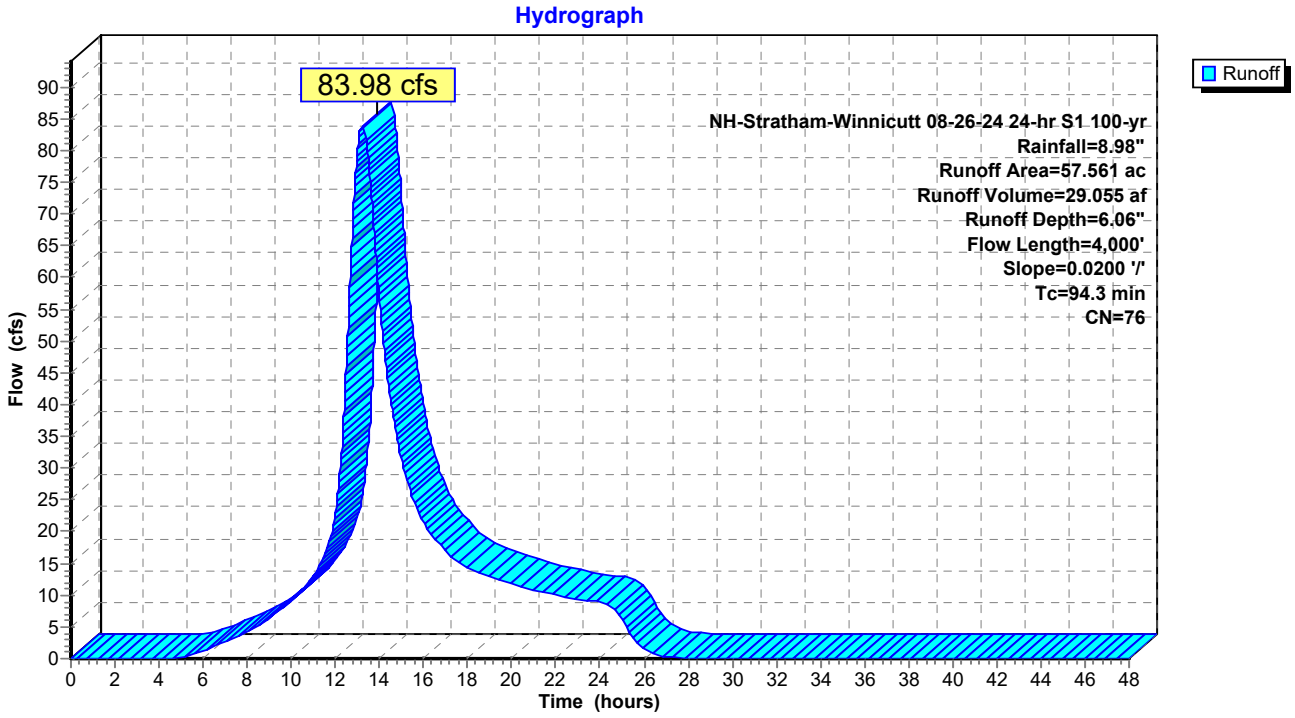
Runoff = 83.98 cfs @ 13.20 hrs, Volume= 29.055 af, Depth= 6.06"
Routed to Reach 18R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 100-yr Rainfall=8.98"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 17S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



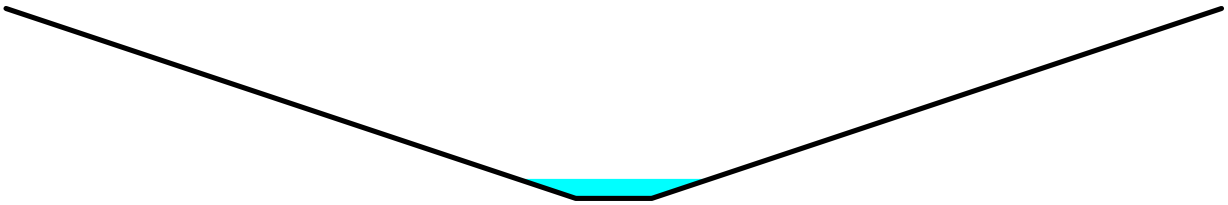
Summary for Reach 18R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 83.98 cfs @ 13.20 hrs, Volume= 29.055 af
Outflow = 83.94 cfs @ 13.22 hrs, Volume= 29.055 af, Atten= 0%, Lag= 0.8 min
Routed to Link 19L : Stream flowing past crossing

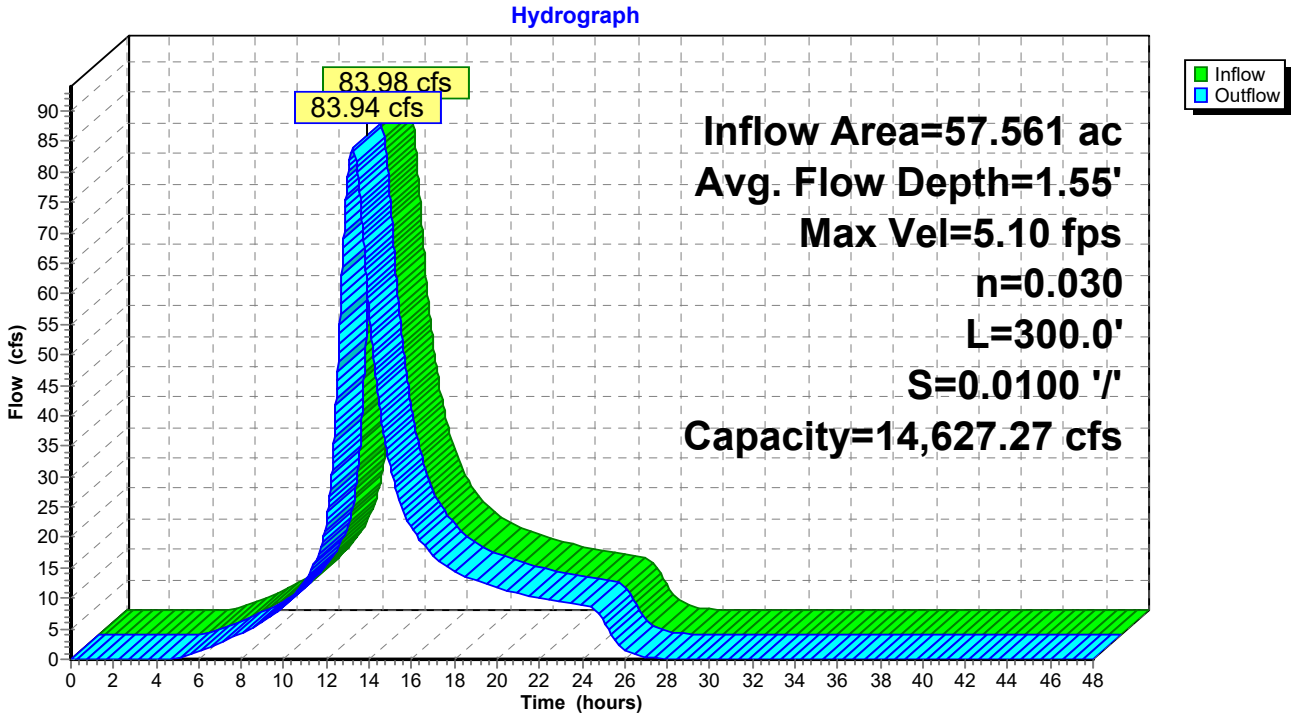
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.10 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 2.60 fps, Avg. Travel Time= 1.9 min

Peak Storage= 4,939 cf @ 13.22 hrs
Average Depth at Peak Storage= 1.55' , Surface Width= 15.28'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 18R: Existing Swale to Stream Impact F

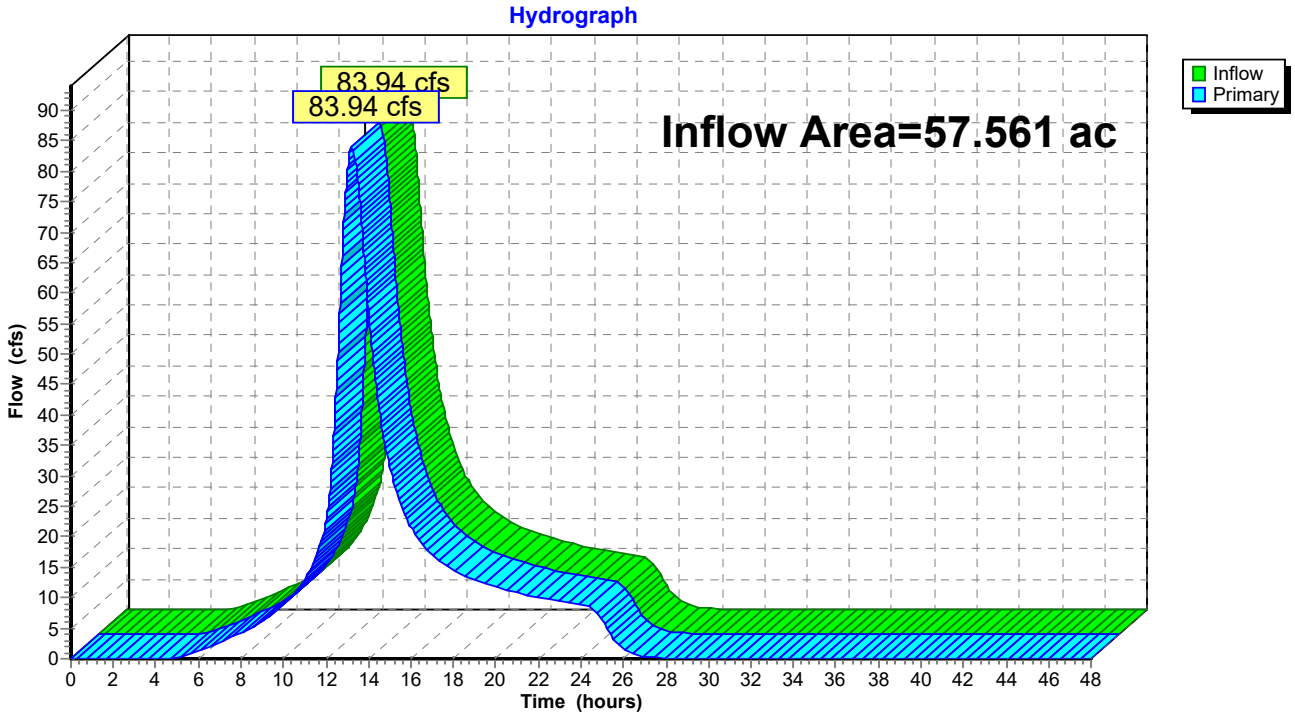


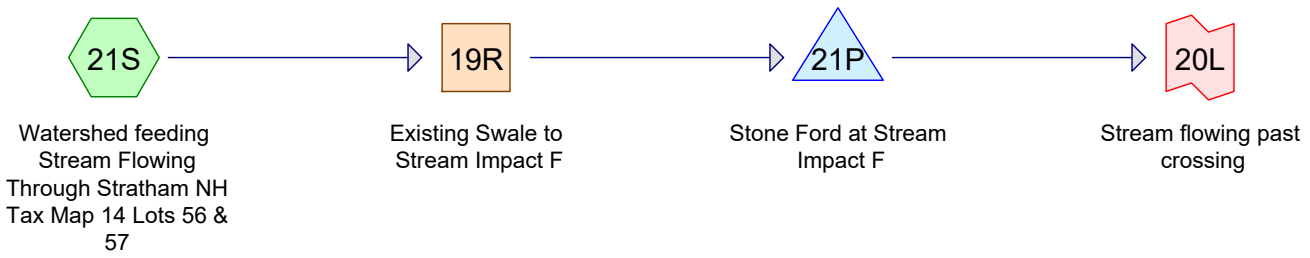
Summary for Link 19L: Stream flowing past crossing

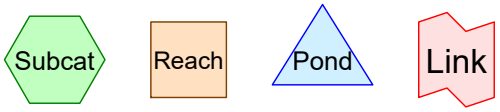
Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 83.94 cfs @ 13.22 hrs, Volume= 29.055 af
Primary = 83.94 cfs @ 13.22 hrs, Volume= 29.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 19L: Stream flowing past crossing







Routing Diagram for Stream Crossing Analysis 07-16-26
Prepared by Emanuel Engineering, Printed 9/4/2026
HydroCAD® 10.20-9a s/n 01104 © 2026 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.23	
2	10-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	4.91	
3	25-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	25-yr	Default	24.00	1	6.24	
4	50-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	50-yr	Default	24.00	1	7.48	
5	100-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	100-yr	Default	24.00	1	8.98	

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
52.030	74	>75% Grass cover, Good, HSG C (21S)
2.400	80	>75% Grass cover, Good, HSG D (21S)
3.087	98	Paved parking, HSG C (21S)
0.044	98	Paved parking, HSG D (21S)
57.561	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
55.117	HSG C	21S
2.444	HSG D	21S
0.000	Other	
57.561		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	52.030	2.400	0.000	54.430	>75% Grass cover, Good	21S
0.000	0.000	3.087	0.044	0.000	3.131	Paved parking	21S
0.000	**0.000**	**55.117**	**2.444**	**0.000**	**57.561**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 21S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=1.17"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=17.96 cfs 5.626 af

Reach 19R: Existing Swale to Stream Avg. Flow Depth=0.68' Max Vel=3.27 fps Inflow=17.96 cfs 5.626 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=17.94 cfs 5.626 af

Pond 21P: Stone Ford at Stream Impact F Peak Elev=71.21' Storage=742 cf Inflow=17.94 cfs 5.626 af
Outflow=17.94 cfs 5.614 af

Link 20L: Stream flowing past crossing Inflow=17.94 cfs 5.614 af
Primary=17.94 cfs 5.614 af

Total Runoff Area = 57.561 ac Runoff Volume = 5.626 af Average Runoff Depth = 1.17"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

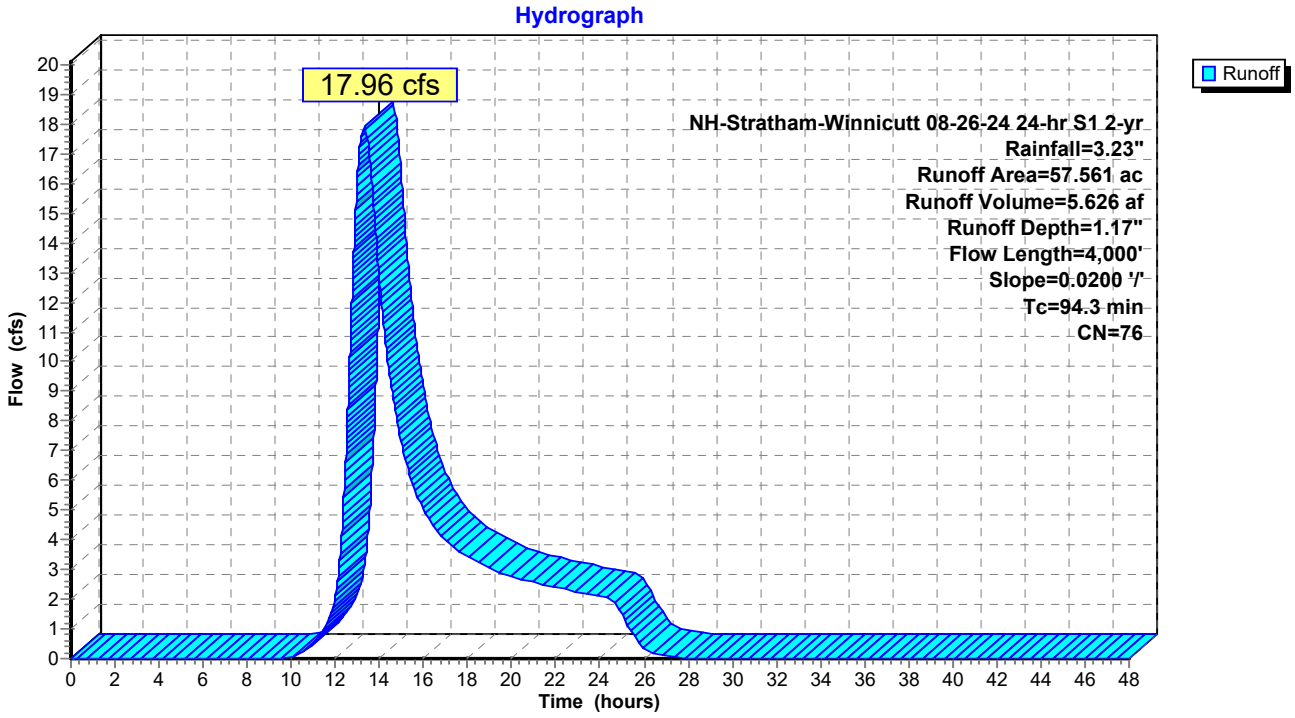
Runoff = 17.96 cfs @ 13.31 hrs, Volume= 5.626 af, Depth= 1.17"
Routed to Reach 19R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr Rainfall=3.23"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



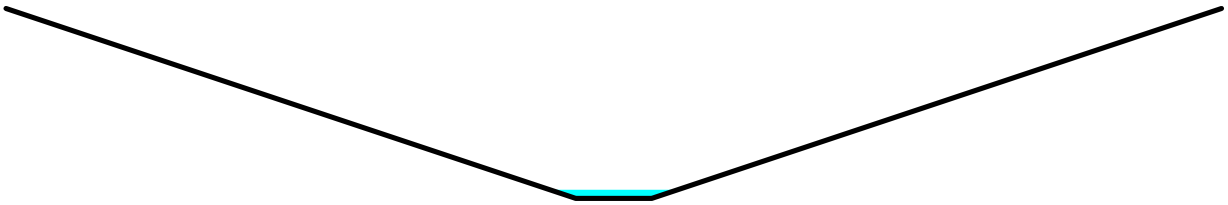
Summary for Reach 19R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.96 cfs @ 13.31 hrs, Volume= 5.626 af
Outflow = 17.94 cfs @ 13.32 hrs, Volume= 5.626 af, Atten= 0%, Lag= 0.7 min
Routed to Pond 21P : Stone Ford at Stream Impact F

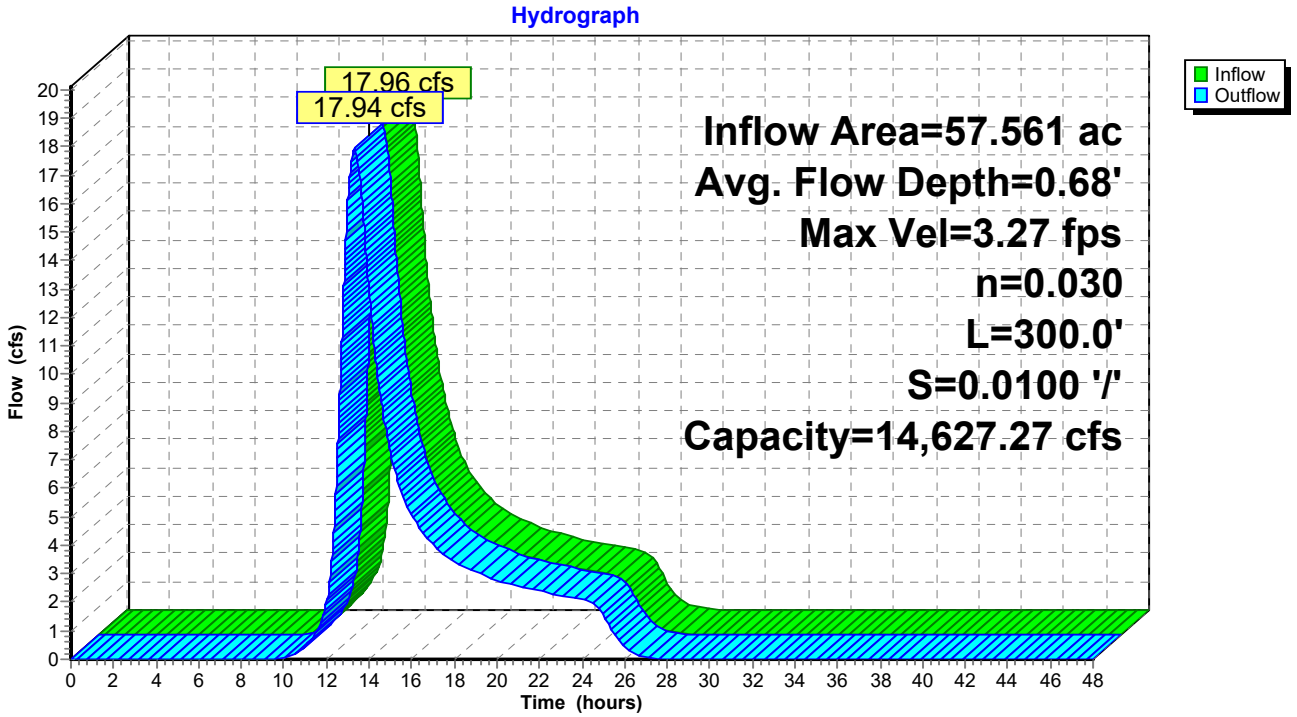
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.27 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 2.8 min

Peak Storage= 1,646 cf @ 13.32 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 10.08'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 19R: Existing Swale to Stream Impact F



Summary for Pond 21P: Stone Ford at Stream Impact F

[61] Hint: Exceeded Reach 19R outlet invert by 0.21' @ 13.32 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.94 cfs @ 13.32 hrs, Volume= 5.626 af
Outflow = 17.94 cfs @ 13.32 hrs, Volume= 5.614 af, Atten= 0%, Lag= 0.2 min
Primary = 17.94 cfs @ 13.32 hrs, Volume= 5.614 af
Routed to Link 20L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.21' @ 13.32 hrs Surf.Area= 1,410 sf Storage= 742 cf

Plug-Flow detention time= 2.3 min calculated for 5.614 af (100% of inflow)
Center-of-Mass det. time= 1.0 min (978.6 - 977.6)

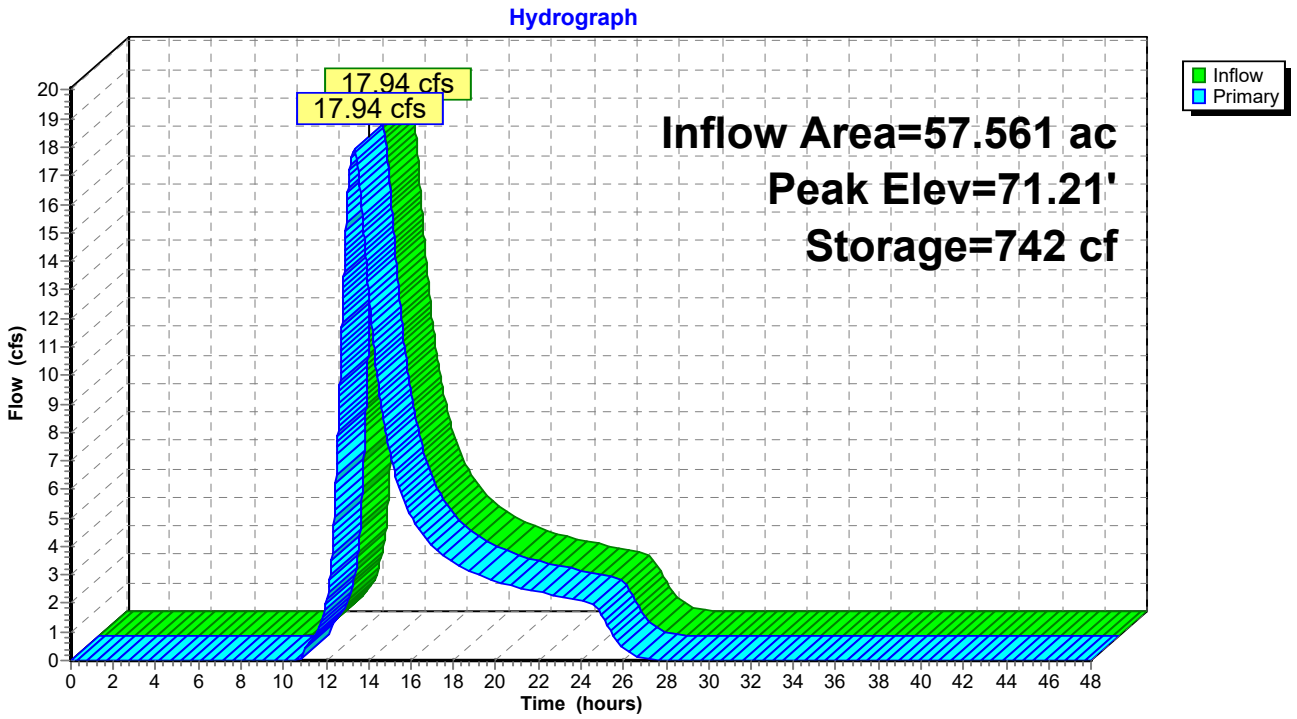
Volume	Invert	Avail.Storage	Storage Description
#1	68.99'	2,946 cf	**24" Deep Stone Ford (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.99	1	0.0	0	0
69.00	650	40.0	1	1
71.00	650	40.0	520	521
72.00	4,200	100.0	2,425	2,946

Device	Routing	Invert	Outlet Devices
#1	Primary	70.99'	**63.0' long x 50.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=17.94 cfs @ 13.32 hrs HW=71.21' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 17.94 cfs @ 1.27 fps)

Pond 21P: Stone Ford at Stream Impact F

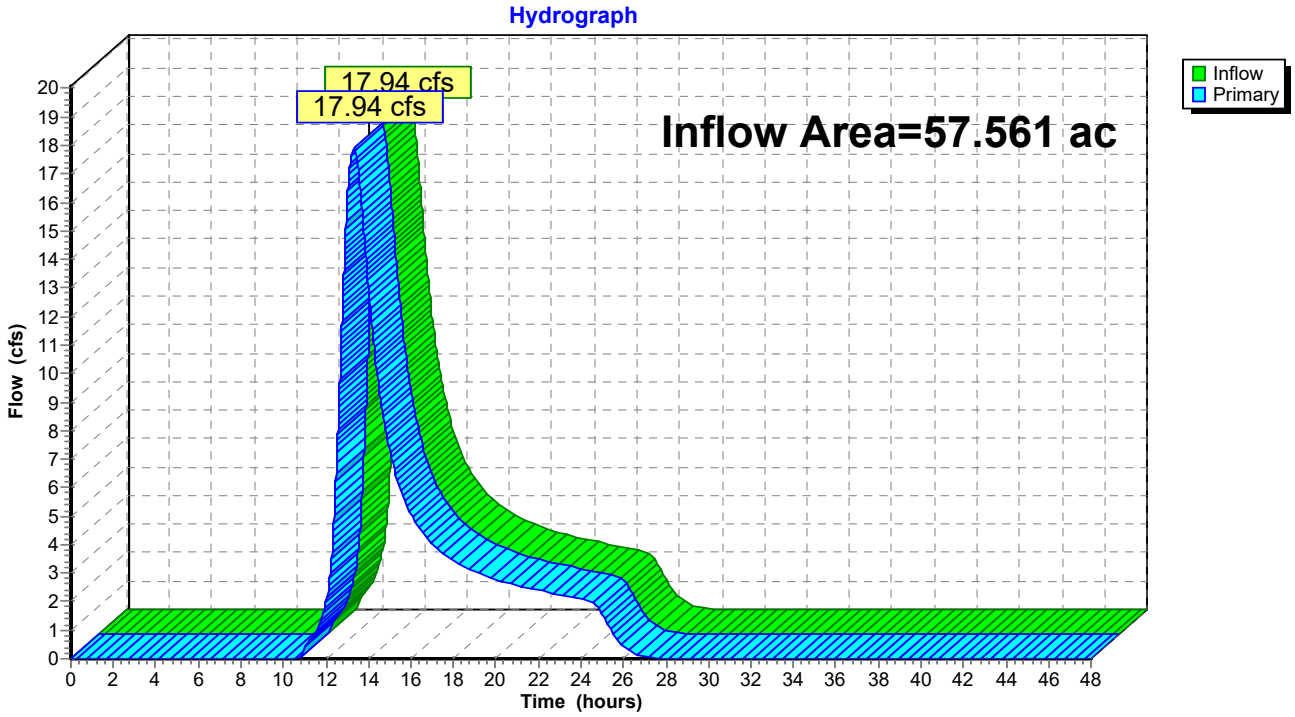


Summary for Link 20L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.94 cfs @ 13.32 hrs, Volume= 5.614 af
Primary = 17.94 cfs @ 13.32 hrs, Volume= 5.614 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 20L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 21S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=2.46"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=36.93 cfs 11.807 af

Reach 19R: Existing Swale to Stream Avg. Flow Depth=1.01' Max Vel=4.05 fps Inflow=36.93 cfs 11.807 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=36.92 cfs 11.807 af

Pond 21P: Stone Ford at Stream Impact F Peak Elev=71.35' Storage=969 cf Inflow=36.92 cfs 11.807 af
Outflow=36.92 cfs 11.796 af

Link 20L: Stream flowing past crossing Inflow=36.92 cfs 11.796 af
Primary=36.92 cfs 11.796 af

Total Runoff Area = 57.561 ac Runoff Volume = 11.807 af Average Runoff Depth = 2.46"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

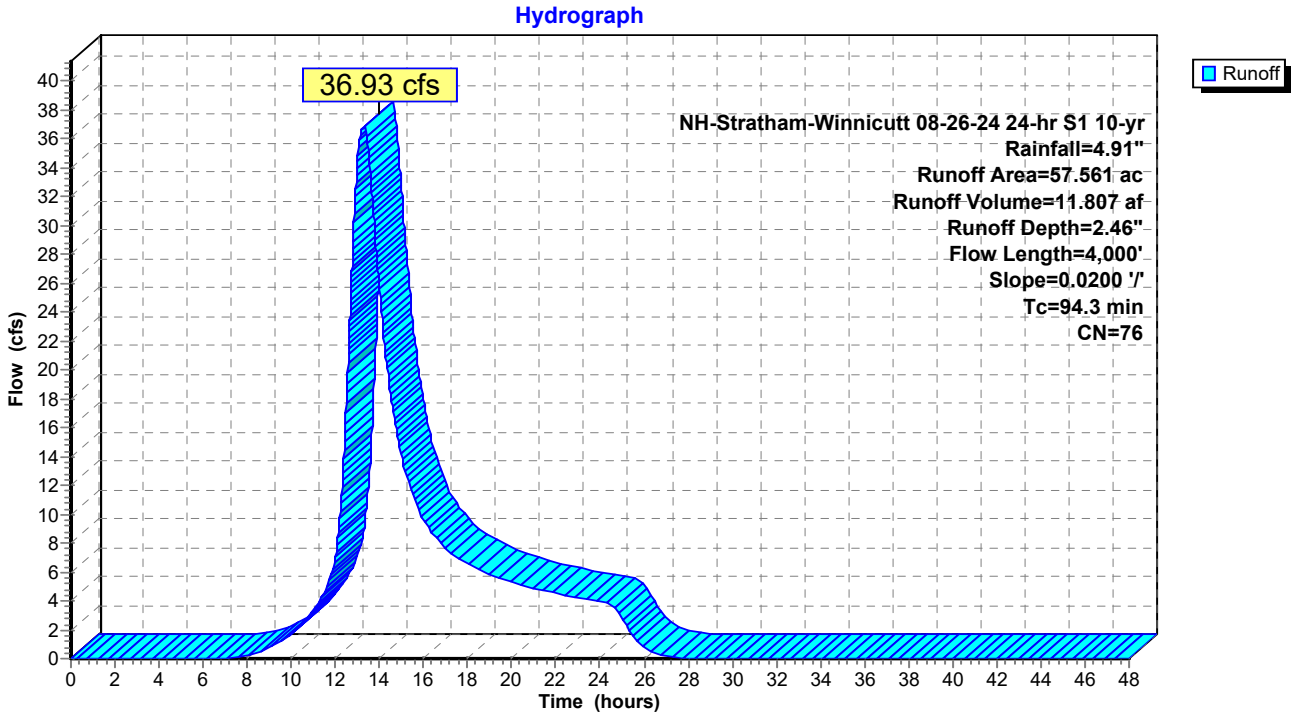
Runoff = 36.93 cfs @ 13.30 hrs, Volume= 11.807 af, Depth= 2.46"
Routed to Reach 19R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr Rainfall=4.91"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



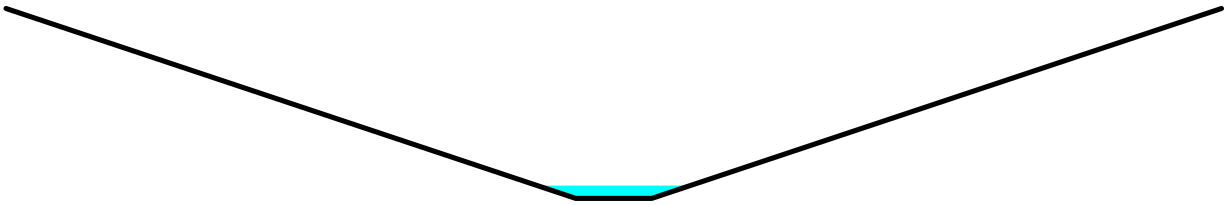
Summary for Reach 19R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 36.93 cfs @ 13.30 hrs, Volume= 11.807 af
Outflow = 36.92 cfs @ 13.31 hrs, Volume= 11.807 af, Atten= 0%, Lag= 0.5 min
Routed to Pond 21P : Stone Ford at Stream Impact F

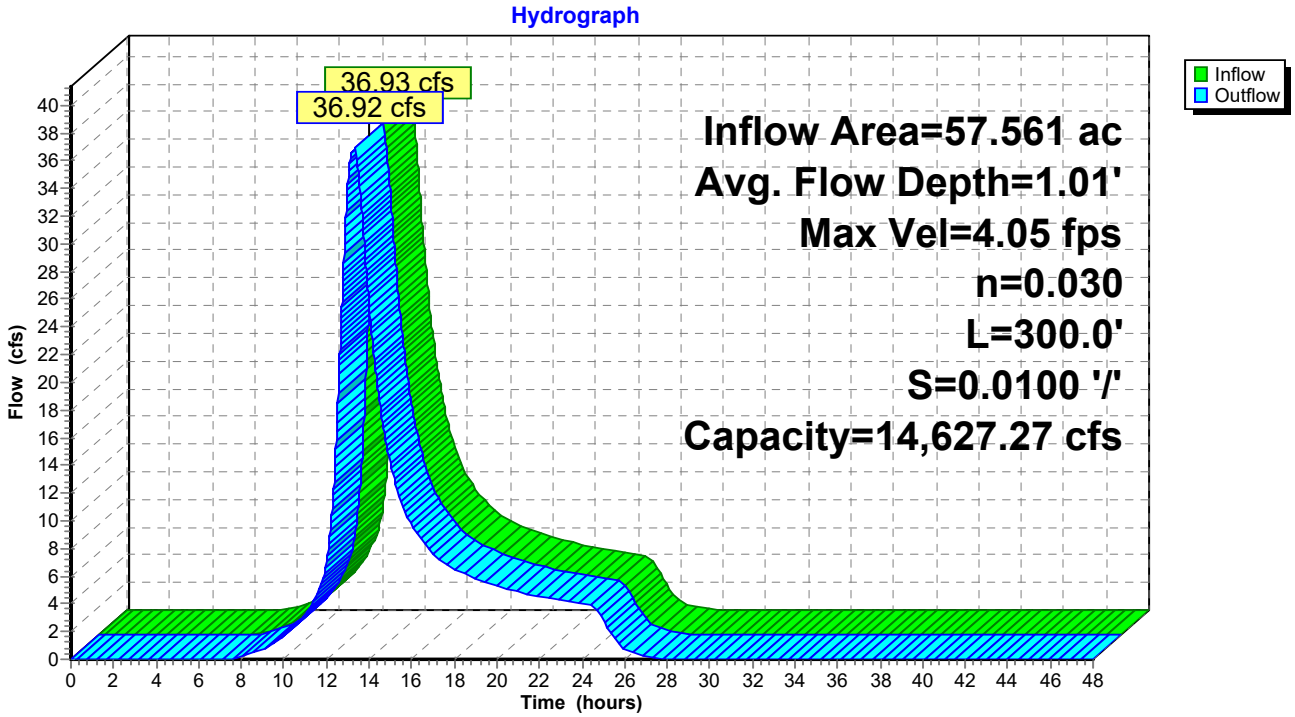
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.05 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 2.10 fps, Avg. Travel Time= 2.4 min

Peak Storage= 2,737 cf @ 13.31 hrs
Average Depth at Peak Storage= 1.01' , Surface Width= 12.05'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 19R: Existing Swale to Stream Impact F



Summary for Pond 21P: Stone Ford at Stream Impact F

[61] Hint: Exceeded Reach 19R outlet invert by 0.35' @ 13.31 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 36.92 cfs @ 13.31 hrs, Volume= 11.807 af
Outflow = 36.92 cfs @ 13.31 hrs, Volume= 11.796 af, Atten= 0%, Lag= 0.1 min
Primary = 36.92 cfs @ 13.31 hrs, Volume= 11.796 af
Routed to Link 20L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.35' @ 13.31 hrs Surf.Area= 1,898 sf Storage= 969 cf

Plug-Flow detention time= 1.4 min calculated for 11.796 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (952.9 - 952.2)

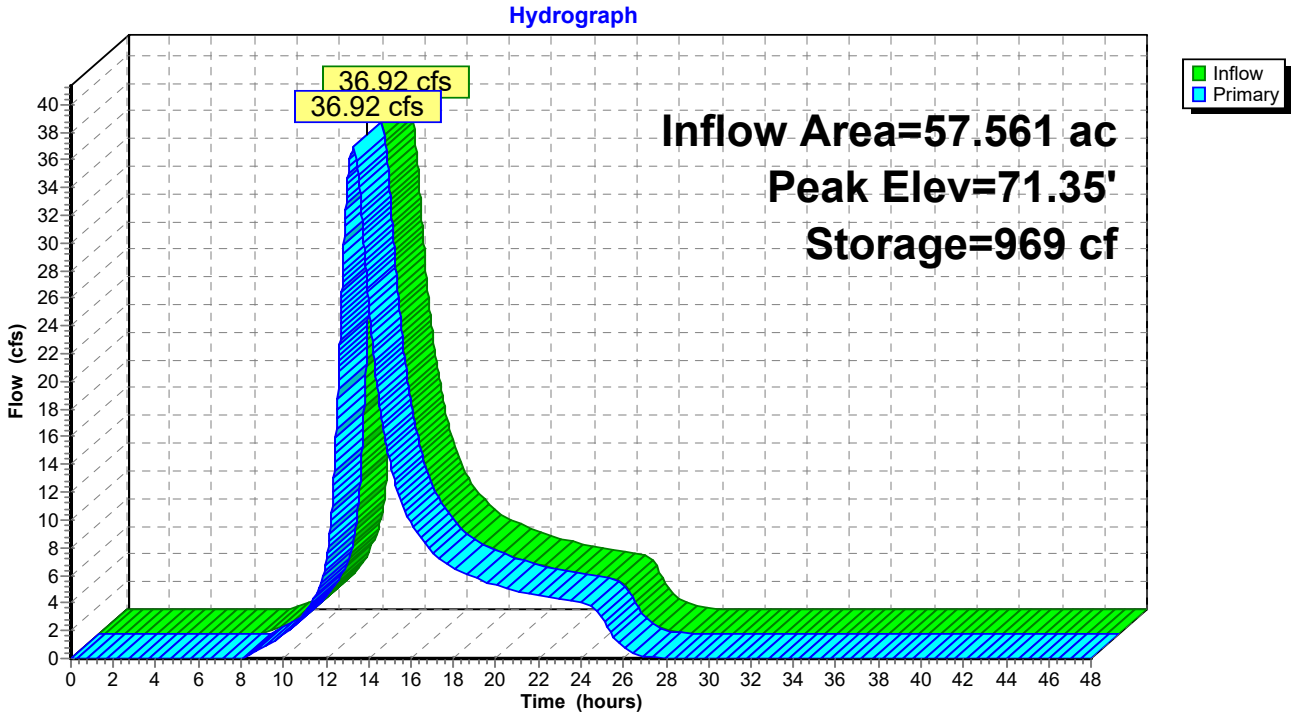
Volume	Invert	Avail.Storage	Storage Description
#1	68.99'	2,946 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.99	1	0.0	0	0
69.00	650	40.0	1	1
71.00	650	40.0	520	521
72.00	4,200	100.0	2,425	2,946

Device	Routing	Invert	Outlet Devices
#1	Primary	70.99'	**63.0' long x 50.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=36.92 cfs @ 13.31 hrs HW=71.35' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 36.92 cfs @ 1.62 fps)

Pond 21P: Stone Ford at Stream Impact F

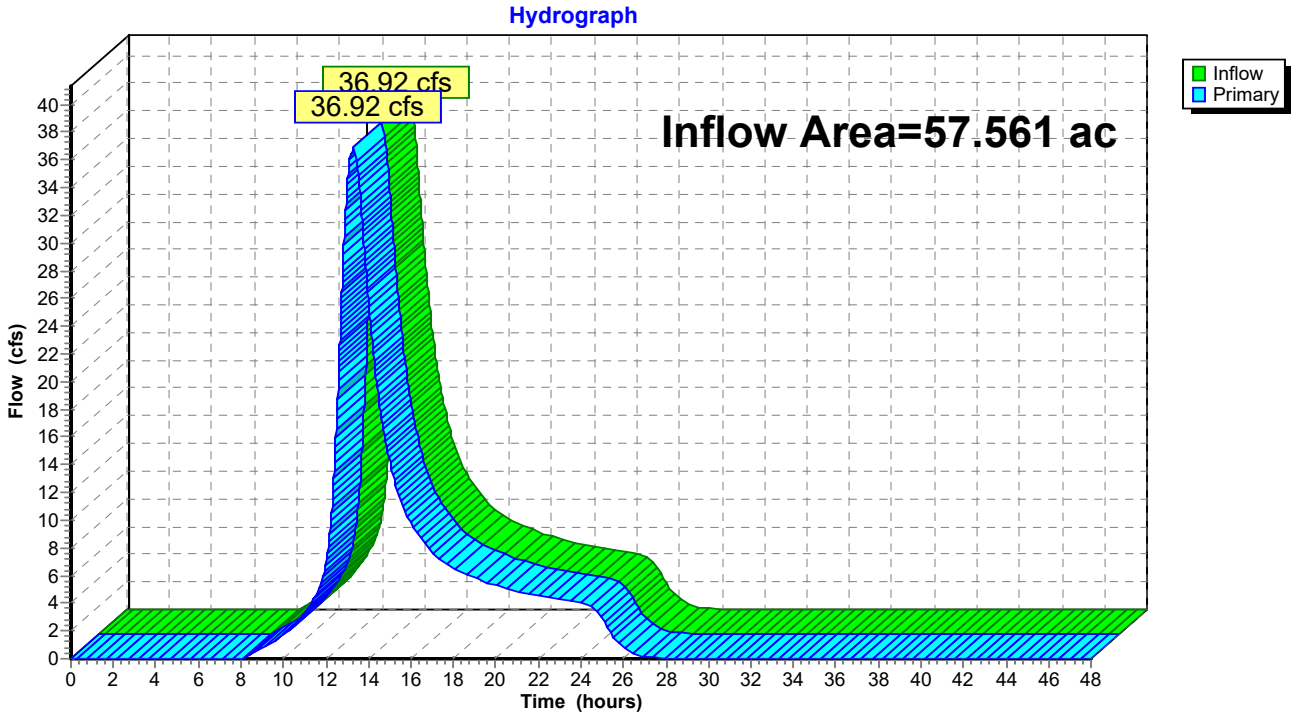


Summary for Link 20L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 36.92 cfs @ 13.31 hrs, Volume= 11.796 af
Primary = 36.92 cfs @ 13.31 hrs, Volume= 11.796 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 20L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 21S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=3.59"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=52.47 cfs 17.211 af

Reach 19R: Existing Swale to Stream Avg. Flow Depth=1.22' Max Vel=4.47 fps Inflow=52.47 cfs 17.211 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=52.46 cfs 17.211 af

Pond 21P: Stone Ford at Stream Impact F Peak Elev=71.45' Storage=1,165 cf Inflow=52.46 cfs 17.211 af
Outflow=52.46 cfs 17.199 af

Link 20L: Stream flowing past crossing Inflow=52.46 cfs 17.199 af
Primary=52.46 cfs 17.199 af

Total Runoff Area = 57.561 ac Runoff Volume = 17.211 af Average Runoff Depth = 3.59"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

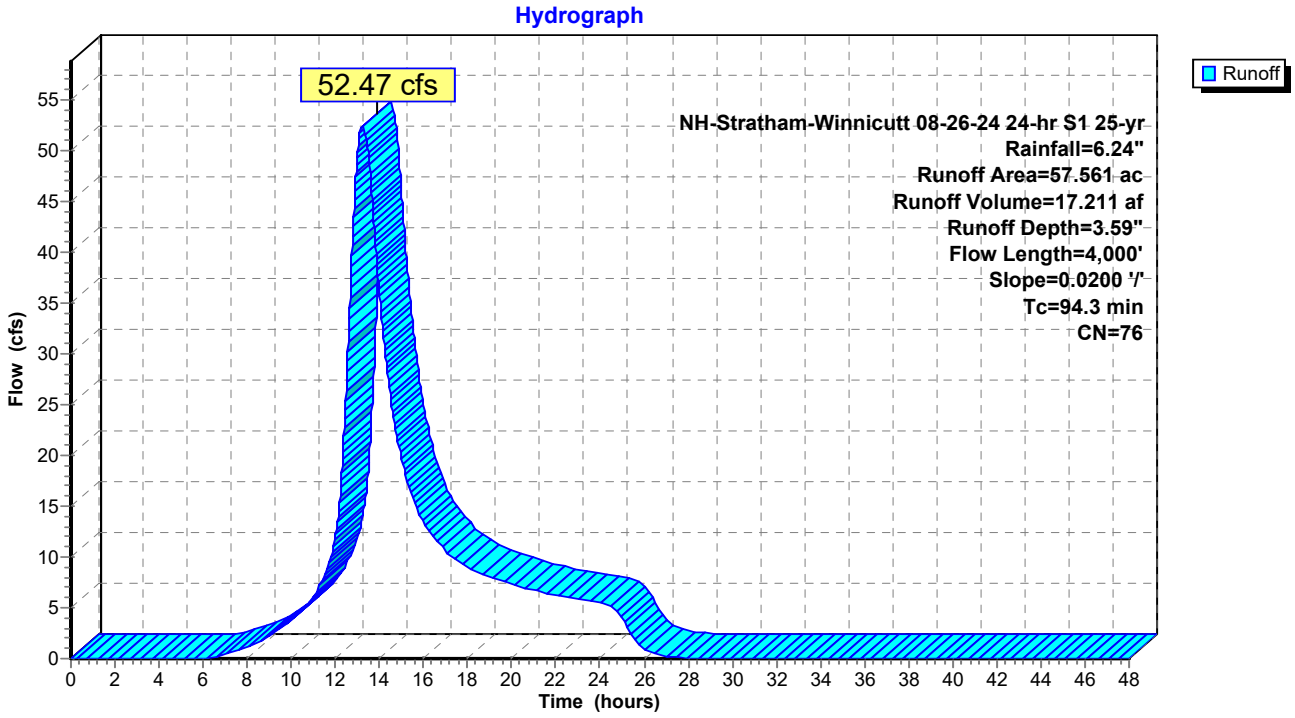
Runoff = 52.47 cfs @ 13.21 hrs, Volume= 17.211 af, Depth= 3.59"
Routed to Reach 19R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 25-yr Rainfall=6.24"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



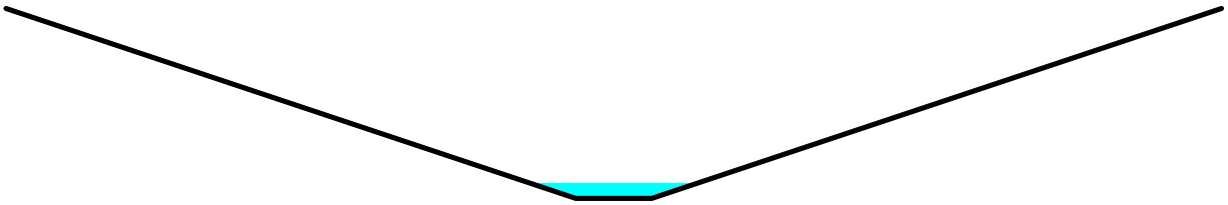
Summary for Reach 19R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 52.47 cfs @ 13.21 hrs, Volume= 17.211 af
Outflow = 52.46 cfs @ 13.25 hrs, Volume= 17.211 af, Atten= 0%, Lag= 2.1 min
Routed to Pond 21P : Stone Ford at Stream Impact F

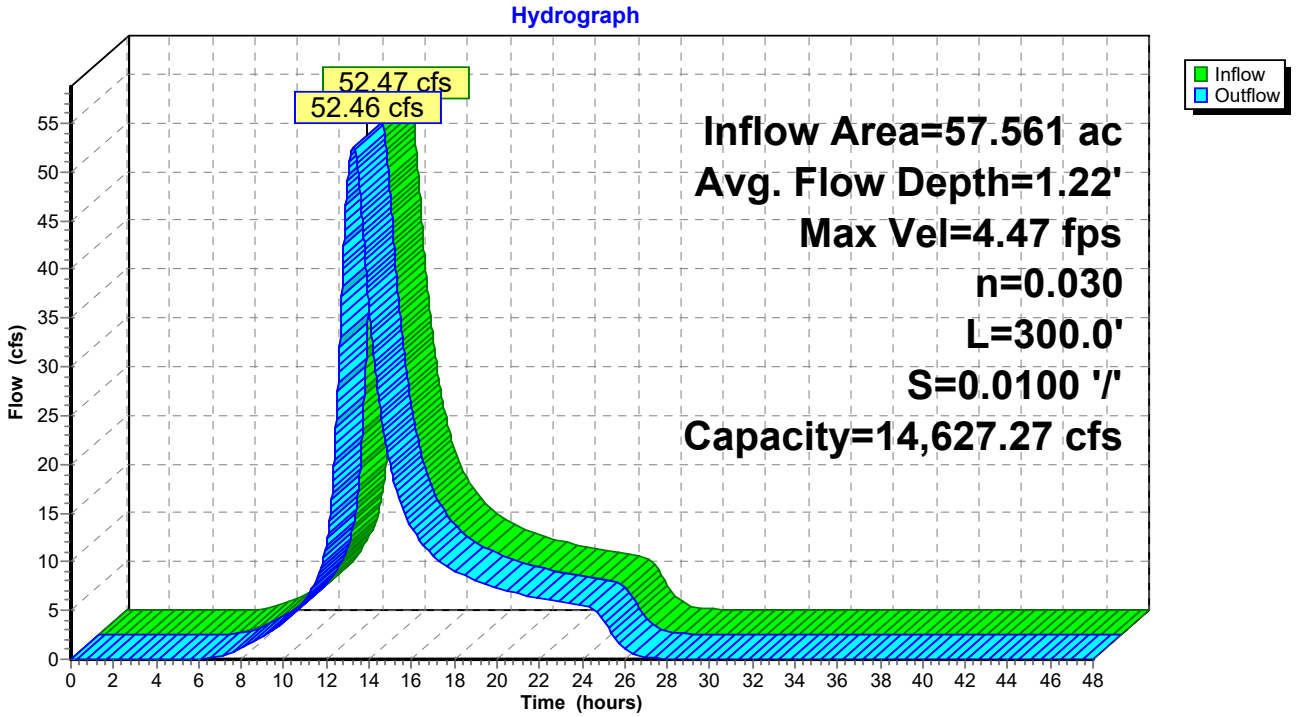
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.47 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 2.29 fps, Avg. Travel Time= 2.2 min

Peak Storage= 3,520 cf @ 13.25 hrs
Average Depth at Peak Storage= 1.22' , Surface Width= 13.29'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 19R: Existing Swale to Stream Impact F



Summary for Pond 21P: Stone Ford at Stream Impact F

[61] Hint: Exceeded Reach 19R outlet invert by 0.45' @ 13.25 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 52.46 cfs @ 13.25 hrs, Volume= 17.211 af
Outflow = 52.46 cfs @ 13.25 hrs, Volume= 17.199 af, Atten= 0%, Lag= 0.2 min
Primary = 52.46 cfs @ 13.25 hrs, Volume= 17.199 af
Routed to Link 20L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.45' @ 13.25 hrs Surf.Area= 2,235 sf Storage= 1,165 cf

Plug-Flow detention time= 1.1 min calculated for 17.196 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (938.8 - 938.2)

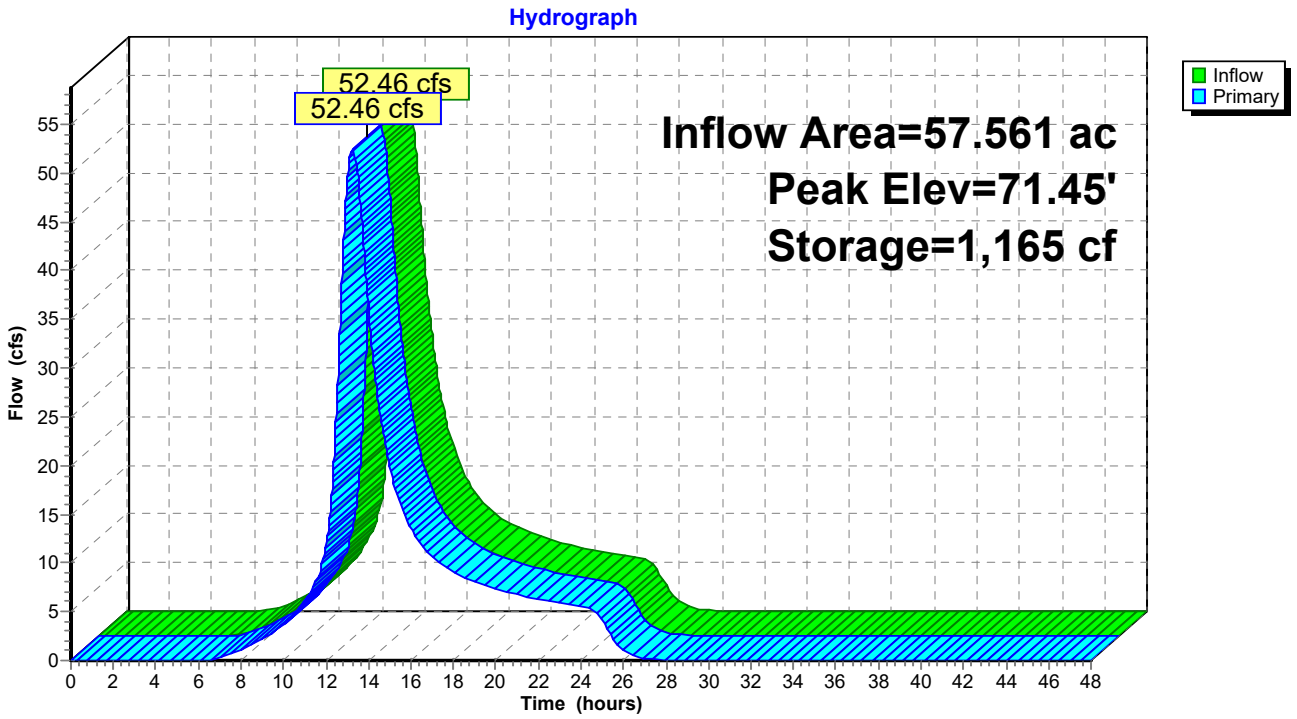
Volume	Invert	Avail.Storage	Storage Description
#1	68.99'	2,946 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.99	1	0.0	0	0
69.00	650	40.0	1	1
71.00	650	40.0	520	521
72.00	4,200	100.0	2,425	2,946

Device	Routing	Invert	Outlet Devices
#1	Primary	70.99'	**63.0' long x 50.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=52.46 cfs @ 13.25 hrs HW=71.45' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 52.46 cfs @ 1.82 fps)

Pond 21P: Stone Ford at Stream Impact F

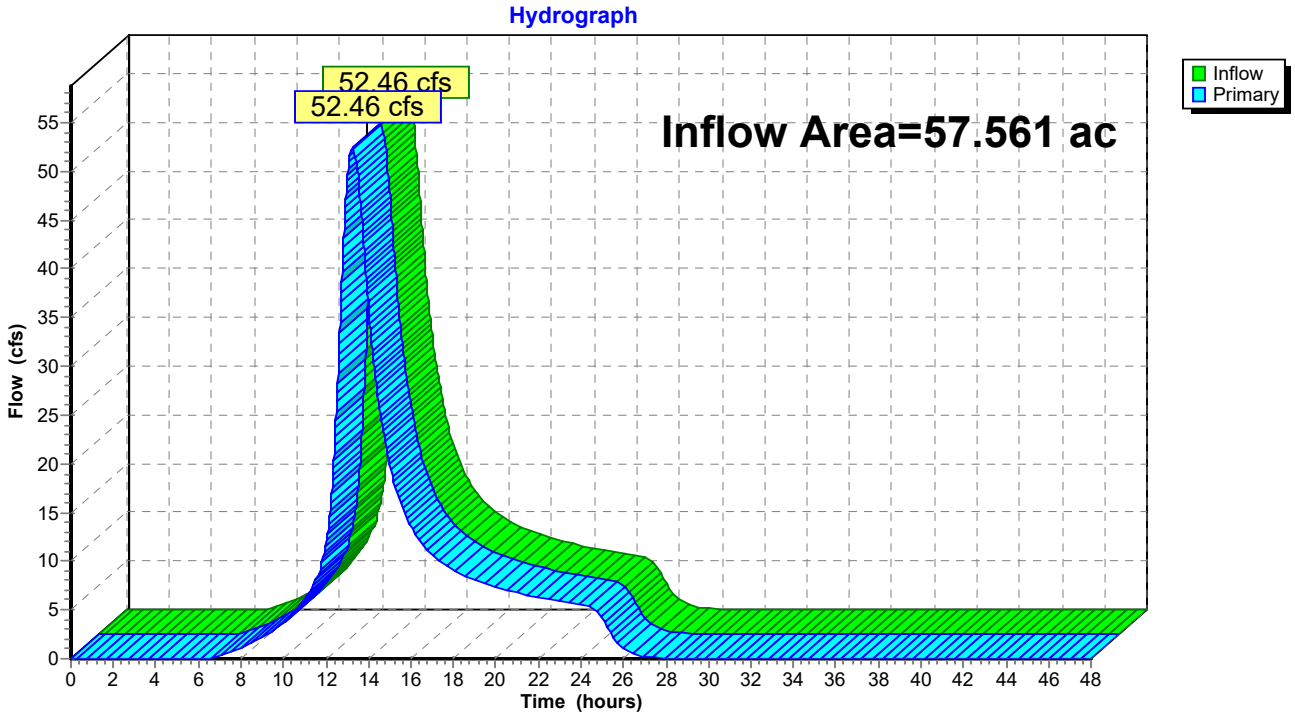


Summary for Link 20L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 52.46 cfs @ 13.25 hrs, Volume= 17.199 af
Primary = 52.46 cfs @ 13.25 hrs, Volume= 17.199 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 20L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 21S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=4.69"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=66.76 cfs 22.483 af

Reach 19R: Existing Swale to Stream Avg. Flow Depth=1.38' Max Vel=4.79 fps Inflow=66.76 cfs 22.483 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=66.74 cfs 22.483 af

Pond 21P: Stone Ford at Stream Impact F Peak Elev=71.53' Storage=1,354 cf Inflow=66.74 cfs 22.483 af
Outflow=66.73 cfs 22.471 af

Link 20L: Stream flowing past crossing Inflow=66.73 cfs 22.471 af
Primary=66.73 cfs 22.471 af

Total Runoff Area = 57.561 ac Runoff Volume = 22.483 af Average Runoff Depth = 4.69"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

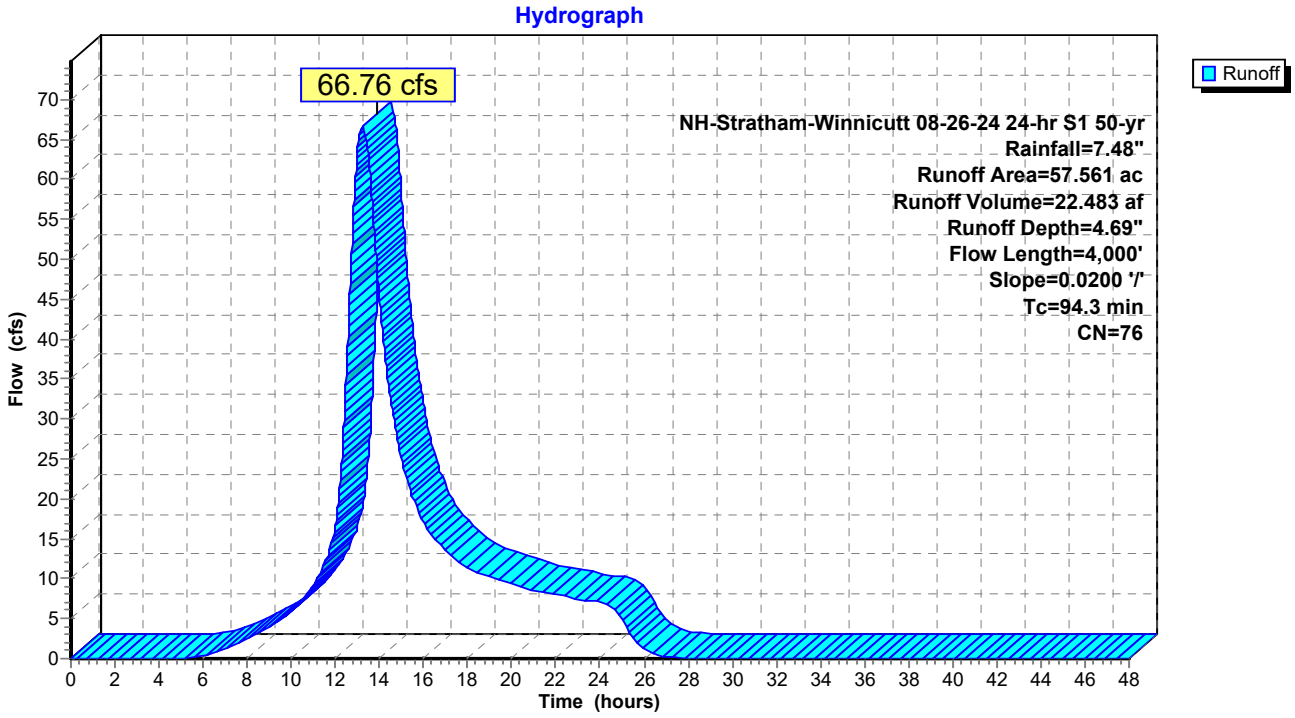
Runoff = 66.76 cfs @ 13.21 hrs, Volume= 22.483 af, Depth= 4.69"
Routed to Reach 19R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 50-yr Rainfall=7.48"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



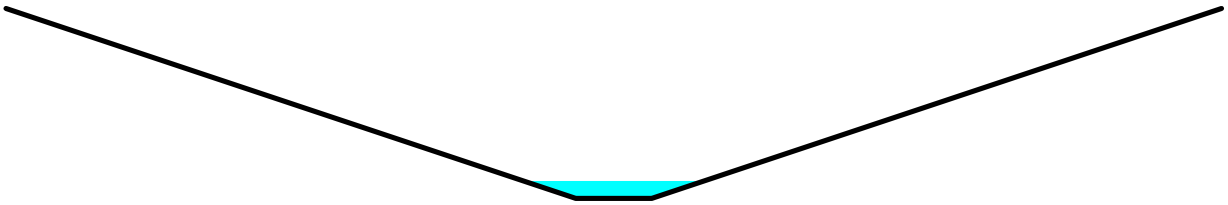
Summary for Reach 19R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 66.76 cfs @ 13.21 hrs, Volume= 22.483 af
Outflow = 66.74 cfs @ 13.22 hrs, Volume= 22.483 af, Atten= 0%, Lag= 1.0 min
Routed to Pond 21P : Stone Ford at Stream Impact F

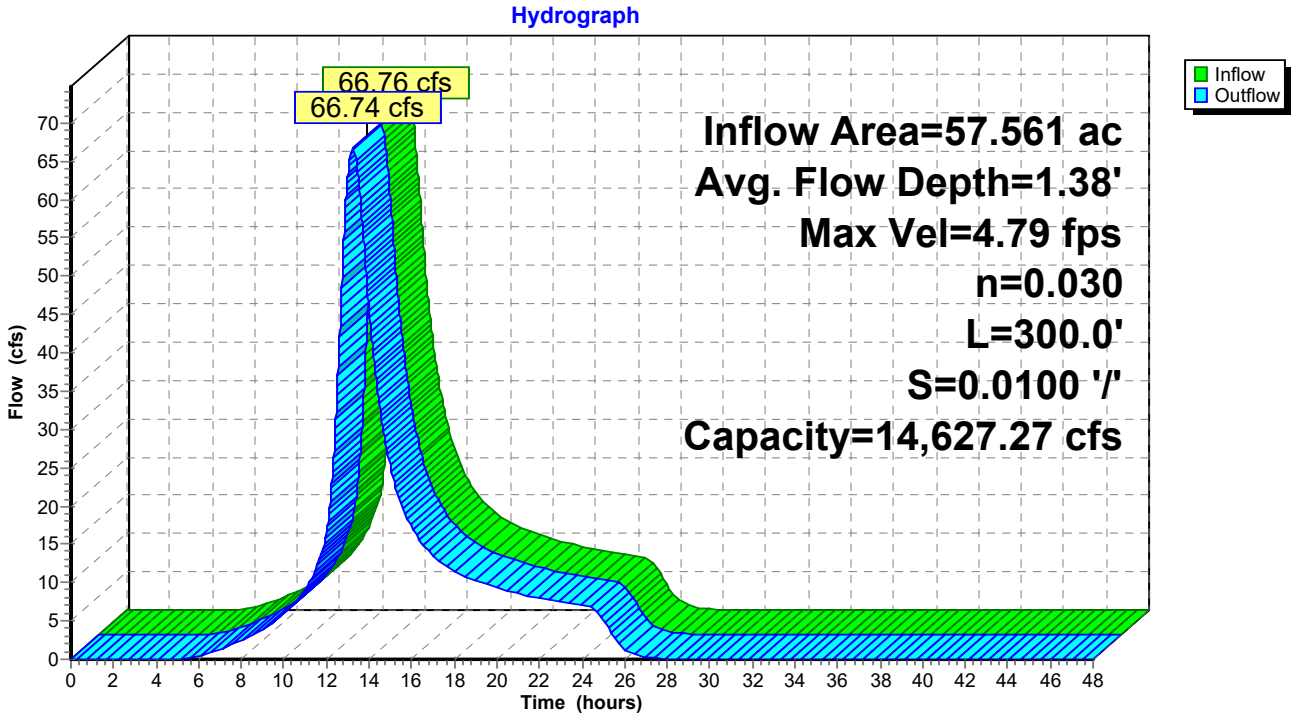
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.79 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 2.44 fps, Avg. Travel Time= 2.0 min

Peak Storage= 4,184 cf @ 13.22 hrs
Average Depth at Peak Storage= 1.38' , Surface Width= 14.26'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 19R: Existing Swale to Stream Impact F



Summary for Pond 21P: Stone Ford at Stream Impact F

[61] Hint: Exceeded Reach 19R outlet invert by 0.53' @ 13.23 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 66.74 cfs @ 13.22 hrs, Volume= 22.483 af
Outflow = 66.73 cfs @ 13.23 hrs, Volume= 22.471 af, Atten= 0%, Lag= 0.3 min
Primary = 66.73 cfs @ 13.23 hrs, Volume= 22.471 af
Routed to Link 20L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.53' @ 13.23 hrs Surf.Area= 2,517 sf Storage= 1,354 cf

Plug-Flow detention time= 0.9 min calculated for 22.466 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (928.7 - 928.2)

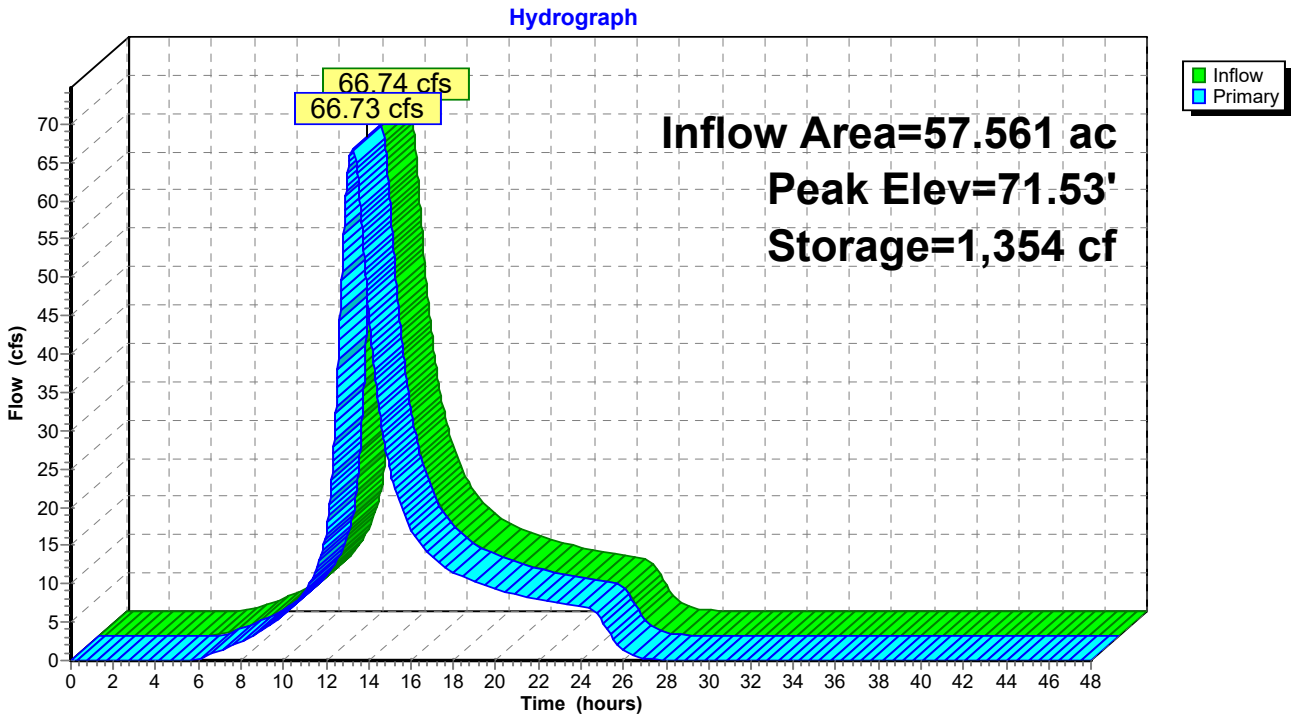
Volume	Invert	Avail.Storage	Storage Description
#1	68.99'	2,946 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.99	1	0.0	0	0
69.00	650	40.0	1	1
71.00	650	40.0	520	521
72.00	4,200	100.0	2,425	2,946

Device	Routing	Invert	Outlet Devices
#1	Primary	70.99'	**63.0' long x 50.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=66.73 cfs @ 13.23 hrs HW=71.53' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 66.73 cfs @ 1.98 fps)

Pond 21P: Stone Ford at Stream Impact F

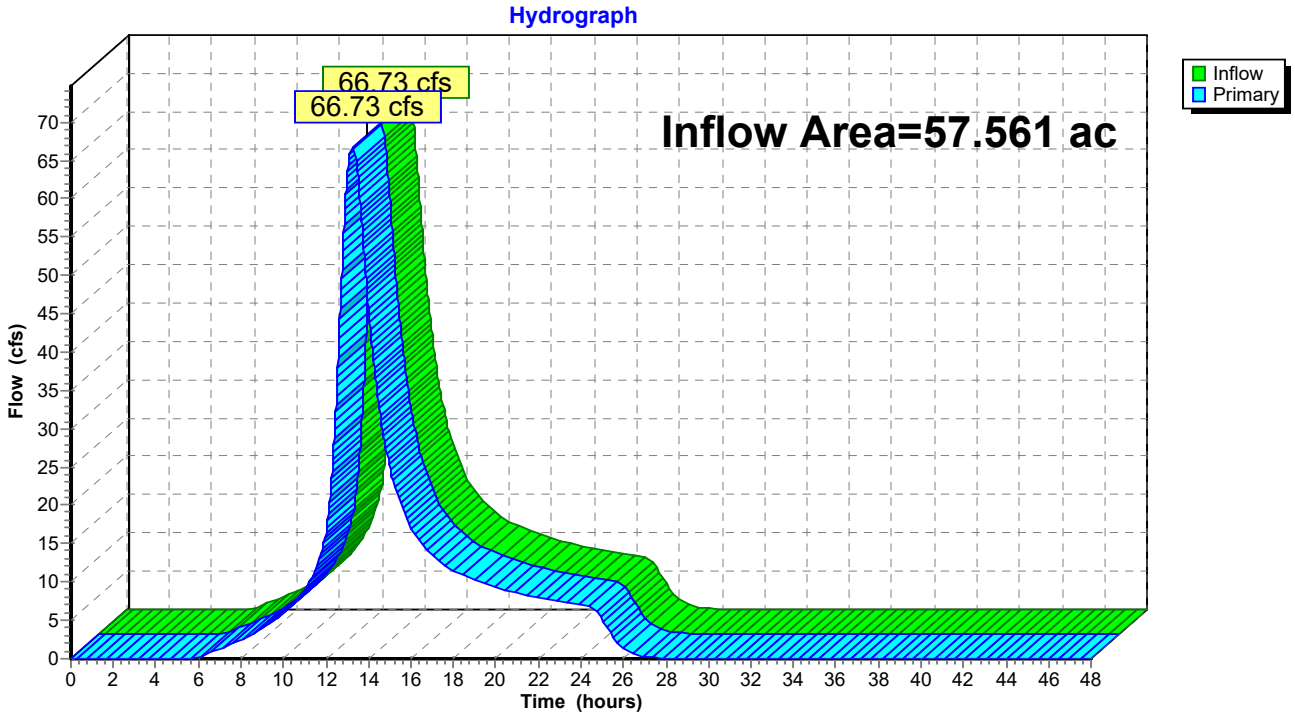


Summary for Link 20L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.68" for 50-yr event
Inflow = 66.73 cfs @ 13.23 hrs, Volume= 22.471 af
Primary = 66.73 cfs @ 13.23 hrs, Volume= 22.471 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 20L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 21S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=6.06"
Flow Length=4,000' Slope=0.0200 '/' Tc=94.3 min CN=76 Runoff=83.98 cfs 29.055 af

Reach 19R: Existing Swale to Stream Avg. Flow Depth=1.55' Max Vel=5.10 fps Inflow=83.98 cfs 29.055 af
n=0.030 L=300.0' S=0.0100 '/' Capacity=14,627.27 cfs Outflow=83.94 cfs 29.055 af

Pond 21P: Stone Ford at Stream Impact F Peak Elev=71.62' Storage=1,594 cf Inflow=83.94 cfs 29.055 af
Outflow=83.94 cfs 29.043 af

Link 20L: Stream flowing past crossing Inflow=83.94 cfs 29.043 af
Primary=83.94 cfs 29.043 af

Total Runoff Area = 57.561 ac Runoff Volume = 29.055 af Average Runoff Depth = 6.06"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

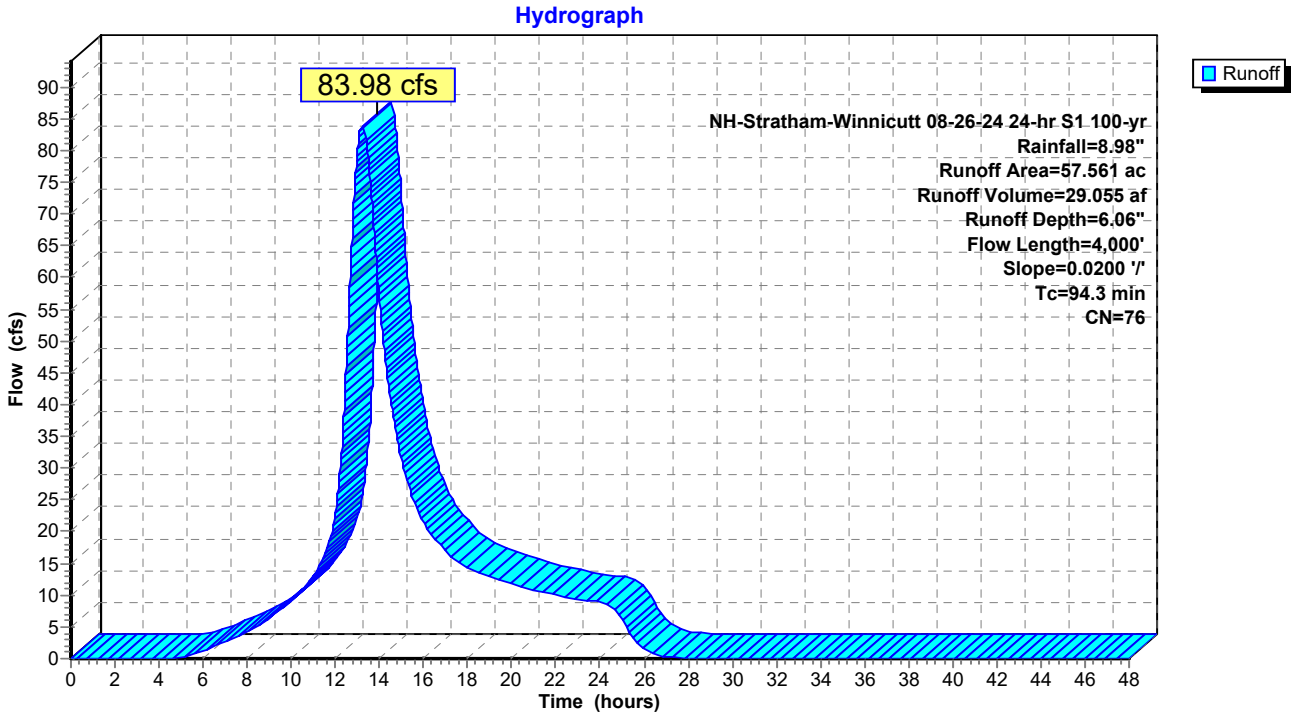
Runoff = 83.98 cfs @ 13.20 hrs, Volume= 29.055 af, Depth= 6.06"
Routed to Reach 19R : Existing Swale to Stream Impact F

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 100-yr Rainfall=8.98"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
94.3	4,000	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 21S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



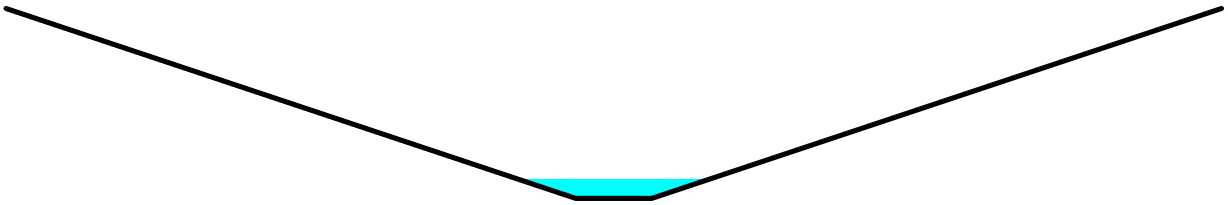
Summary for Reach 19R: Existing Swale to Stream Impact F

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 83.98 cfs @ 13.20 hrs, Volume= 29.055 af
Outflow = 83.94 cfs @ 13.22 hrs, Volume= 29.055 af, Atten= 0%, Lag= 0.8 min
Routed to Pond 21P : Stone Ford at Stream Impact F

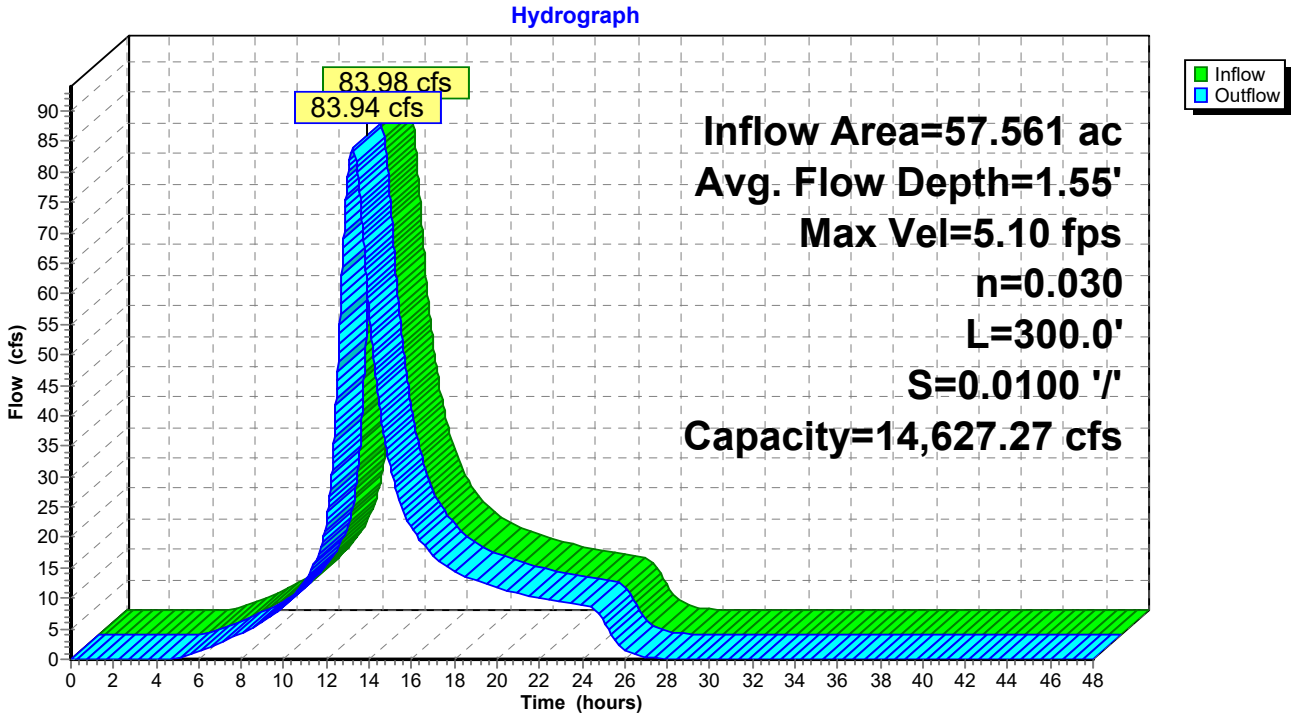
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.10 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 2.60 fps, Avg. Travel Time= 1.9 min

Peak Storage= 4,939 cf @ 13.22 hrs
Average Depth at Peak Storage= 1.55' , Surface Width= 15.28'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 14,627.27 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 300.0' Slope= 0.0100 '/'
Inlet Invert= 74.00', Outlet Invert= 71.00'



Reach 19R: Existing Swale to Stream Impact F



Summary for Pond 21P: Stone Ford at Stream Impact F

[61] Hint: Exceeded Reach 19R outlet invert by 0.62' @ 13.22 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 83.94 cfs @ 13.22 hrs, Volume= 29.055 af
Outflow = 83.94 cfs @ 13.22 hrs, Volume= 29.043 af, Atten= 0%, Lag= 0.3 min
Primary = 83.94 cfs @ 13.22 hrs, Volume= 29.043 af
Routed to Link 20L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 71.62' @ 13.22 hrs Surf.Area= 2,836 sf Storage= 1,594 cf

Plug-Flow detention time= 0.8 min calculated for 29.043 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (918.7 - 918.2)

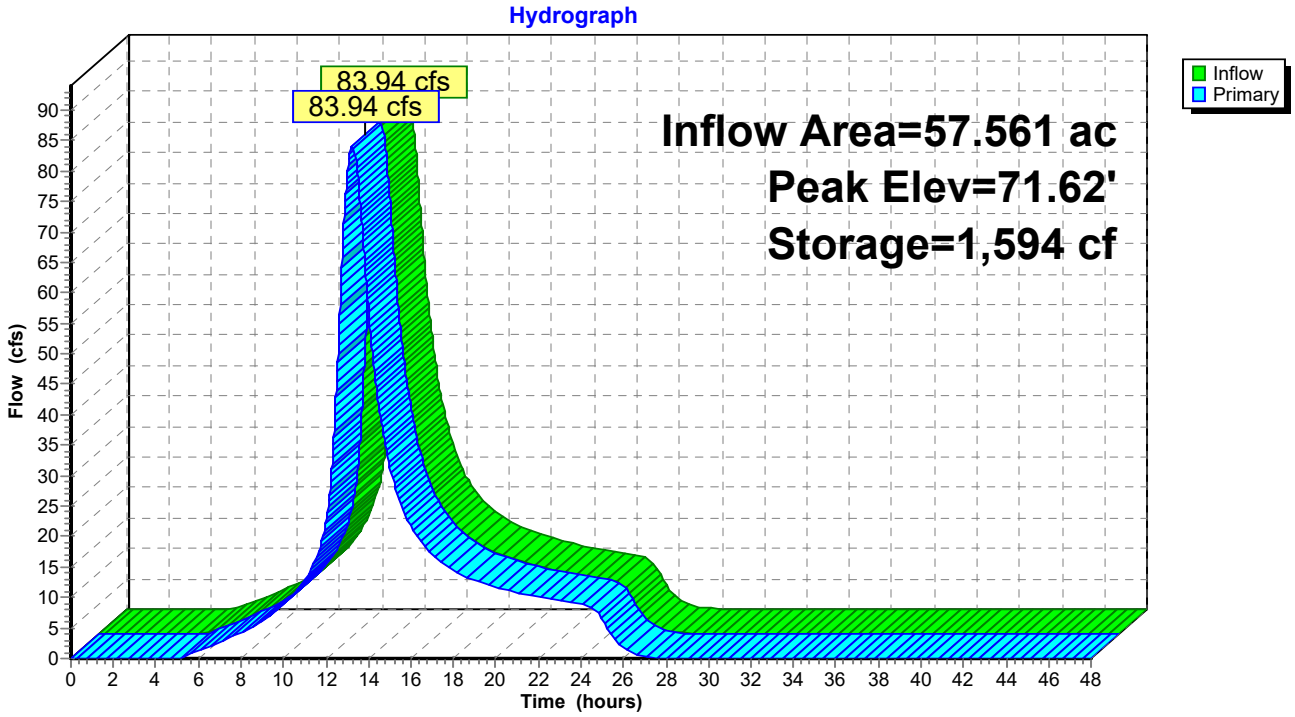
Volume	Invert	Avail.Storage	Storage Description
#1	68.99'	2,946 cf	**24" Deep Stone Ford (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.99	1	0.0	0	0
69.00	650	40.0	1	1
71.00	650	40.0	520	521
72.00	4,200	100.0	2,425	2,946

Device	Routing	Invert	Outlet Devices
#1	Primary	70.99'	**63.0' long x 50.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=83.94 cfs @ 13.22 hrs HW=71.62' TW=0.00' (Dynamic Tailwater)
↑**1=Overtopping** (Weir Controls 83.94 cfs @ 2.13 fps)

Pond 21P: Stone Ford at Stream Impact F

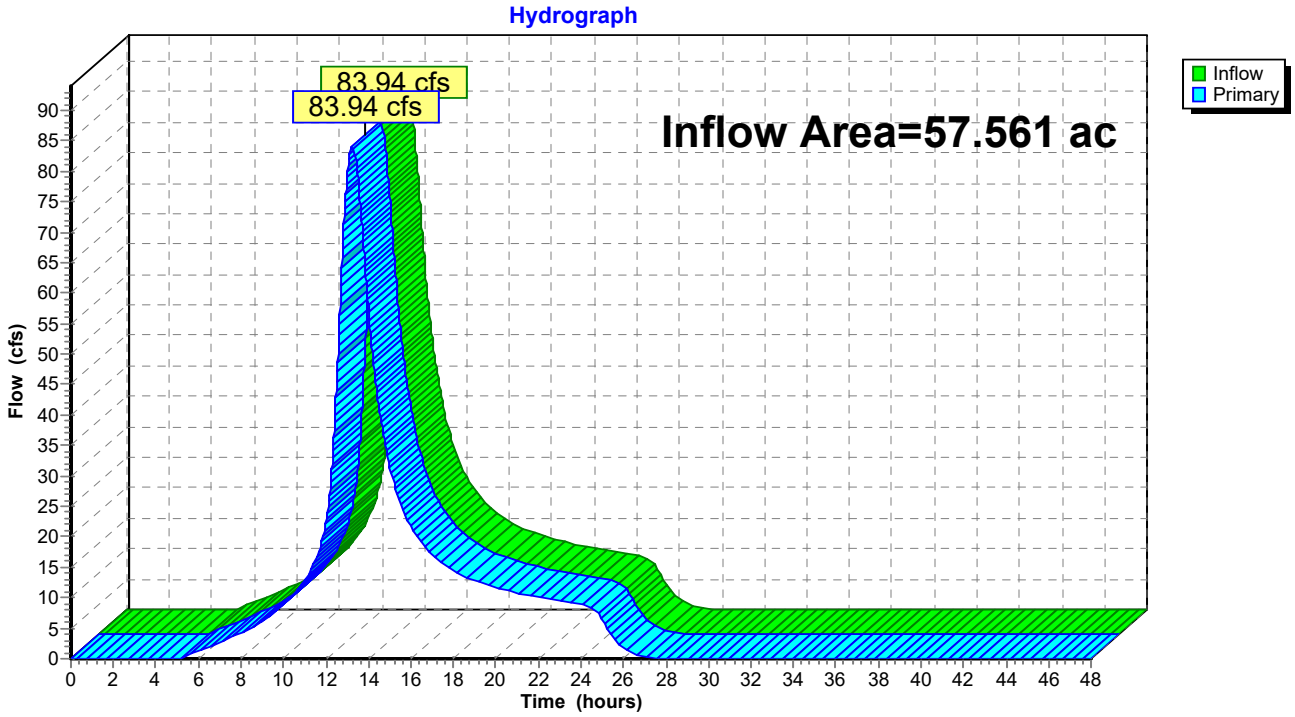


Summary for Link 20L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.05" for 100-yr event
Inflow = 83.94 cfs @ 13.22 hrs, Volume= 29.043 af
Primary = 83.94 cfs @ 13.22 hrs, Volume= 29.043 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

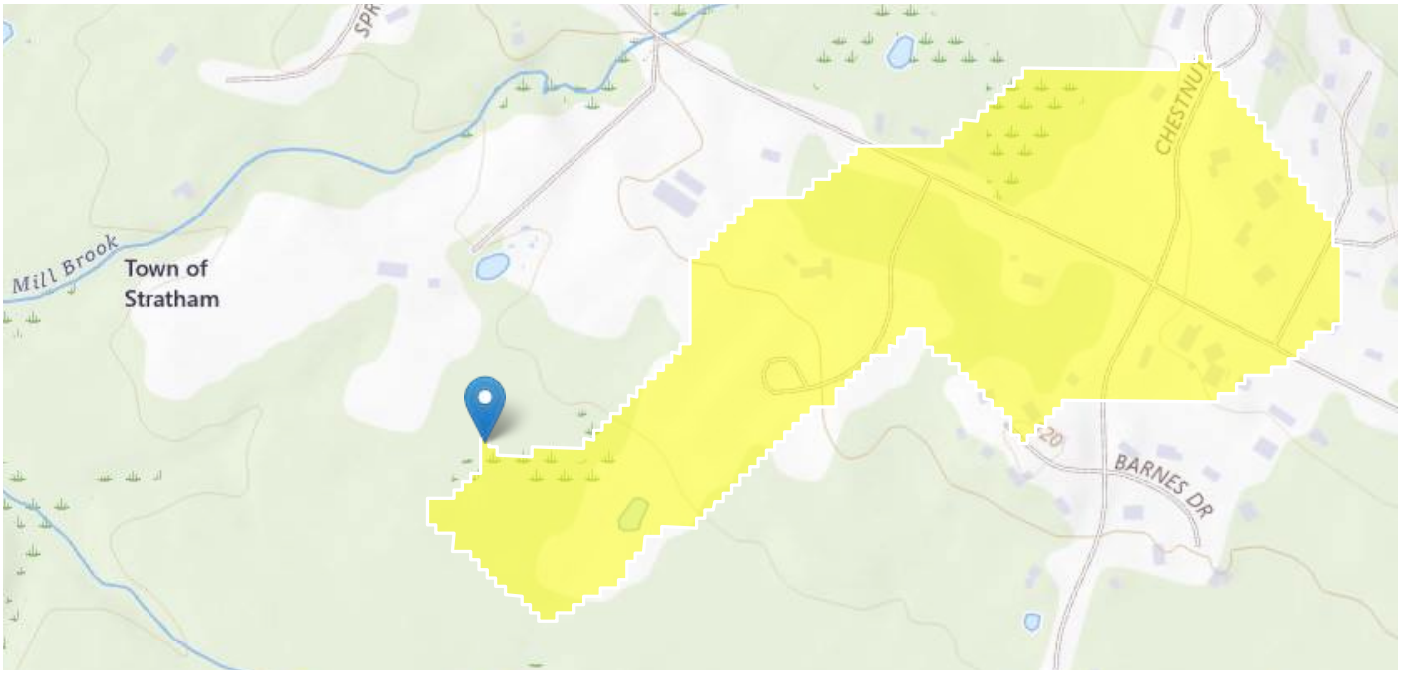
Link 20L: Stream flowing past crossing



Impact F & G

StreamStats Report

Region ID: NH
Clicked Point (Latitude, Longitude): 43.01459, -70.89596
Time: 2026-05-01 13:40:09 -0400



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
APRAVPRE	Mean April Precipitation	4.31	inches
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	83.26	feet per mi
DRNAREA	Area that drains to a point on a stream	0.09	square miles

Parameter Code	Parameter Description	Value	Unit
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	5.436	percent
WETLAND	Percentage of Wetlands	4.235	percent

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Flow Statewide SIR2008 5206]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
APRAVPRE	Mean April Precipitation	4.31	inches	2.79	6.23
CSL10_85	Stream Slope 10 and 85 Method	83.26	feet per mi	5.43	543
DRNAREA	Drainage Area	0.09	square miles	0.7	1290
WETLAND	Percent Wetlands	4.235	percent	0	21.8

Peak-Flow Statistics Disclaimers [Peak Flow Statewide SIR2008 5206]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Peak Flow Statewide SIR2008 5206]

Statistic	Value	Unit
50-percent AEP flood	4.52	ft^3/s
20-percent AEP flood	8.65	ft^3/s
10-percent AEP flood	12.5	ft^3/s
4-percent AEP flood	18.3	ft^3/s
2-percent AEP flood	23.4	ft^3/s
1-percent AEP flood	29.9	ft^3/s
0.2-percent AEP flood	47.4	ft^3/s

Peak-Flow Statistics Citations

Olson, S.A.,2009, Estimation of flood discharges at selected recurrence intervals for streams in New Hampshire: U.S.Geological Survey Scientific Investigations Report 2008-5206, 57 p. (http://pubs.usgs.gov/sir/2008/5206/)

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Application Version: 4.32.0
SSHydro Services Version: 1.2.1
SSDelineate Services Version: 1.1.0
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.1

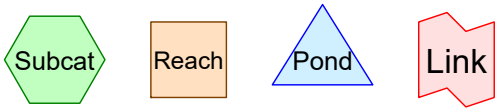
Existing Conditions at
Impact G



Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 57

Existing Swale to Stream Impact G

Stream flowing past crossing



Routing Diagram for Stream Crossing Analysis 07-16-26
Prepared by Emanuel Engineering, Printed 9/4/2026
HydroCAD® 10.20-9a s/n 01104 © 2026 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.23	
2	10-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	4.91	
3	25-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	25-yr	Default	24.00	1	6.24	
4	50-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	50-yr	Default	24.00	1	7.48	
5	100-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	100-yr	Default	24.00	1	8.98	

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
52.030	74	>75% Grass cover, Good, HSG C (23S)
2.400	80	>75% Grass cover, Good, HSG D (23S)
3.087	98	Paved parking, HSG C (23S)
0.044	98	Paved parking, HSG D (23S)
57.561	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
55.117	HSG C	23S
2.444	HSG D	23S
0.000	Other	
57.561		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	52.030	2.400	0.000	54.430	>75% Grass cover, Good	23S
0.000	0.000	3.087	0.044	0.000	3.131	Paved parking	23S
0.000	**0.000**	**55.117**	**2.444**	**0.000**	**57.561**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 23S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=1.17"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=17.00 cfs 5.626 af

Reach 22R: Existing Swale to Stream Avg. Flow Depth=0.59' Max Vel=3.67 fps Inflow=17.00 cfs 5.626 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=16.98 cfs 5.626 af

Link 26L: Stream flowing past crossing Inflow=16.98 cfs 5.626 af
Primary=16.98 cfs 5.626 af

Total Runoff Area = 57.561 ac Runoff Volume = 5.626 af Average Runoff Depth = 1.17"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

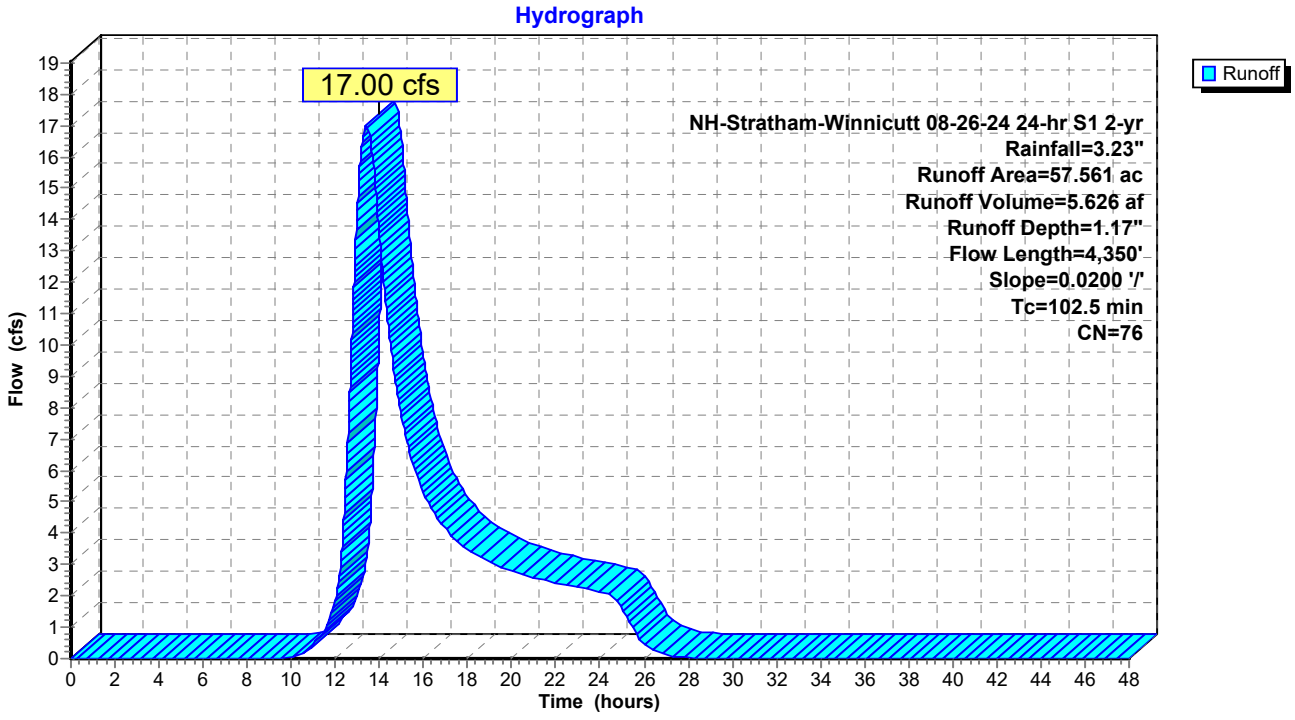
Runoff = 17.00 cfs @ 13.33 hrs, Volume= 5.626 af, Depth= 1.17"
Routed to Reach 22R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr Rainfall=3.23"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



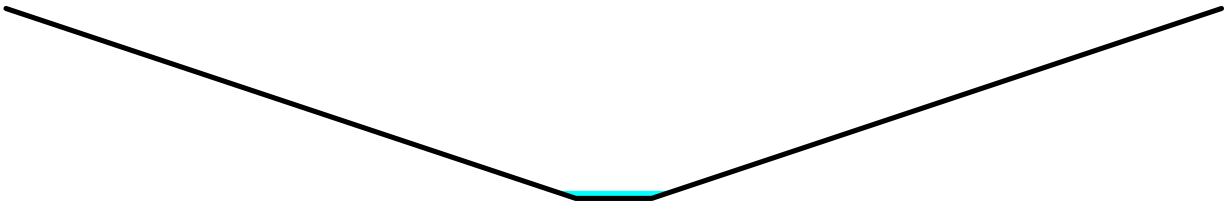
Summary for Reach 22R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.00 cfs @ 13.33 hrs, Volume= 5.626 af
Outflow = 16.98 cfs @ 13.43 hrs, Volume= 5.626 af, Atten= 0%, Lag= 6.0 min
Routed to Link 26L : Stream flowing past crossing

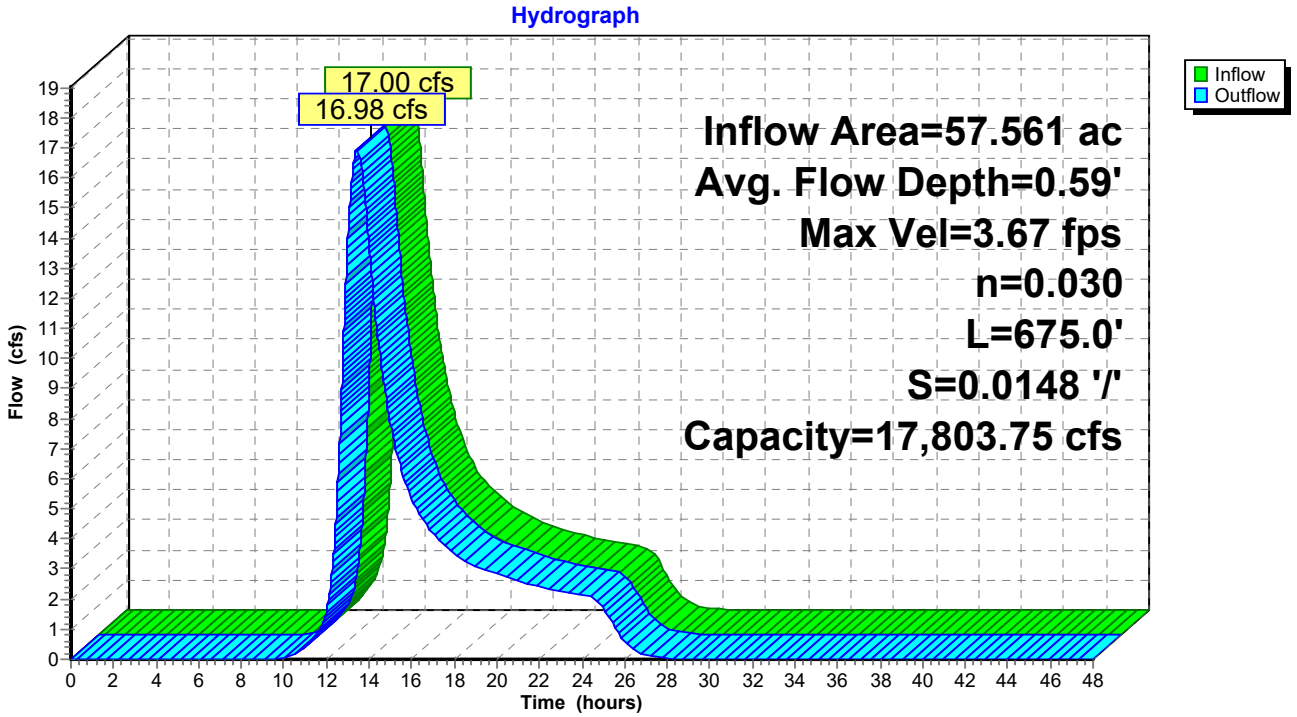
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.67 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 2.09 fps, Avg. Travel Time= 5.4 min

Peak Storage= 3,123 cf @ 13.43 hrs
Average Depth at Peak Storage= 0.59' , Surface Width= 9.56'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 22R: Existing Swale to Stream Impact G

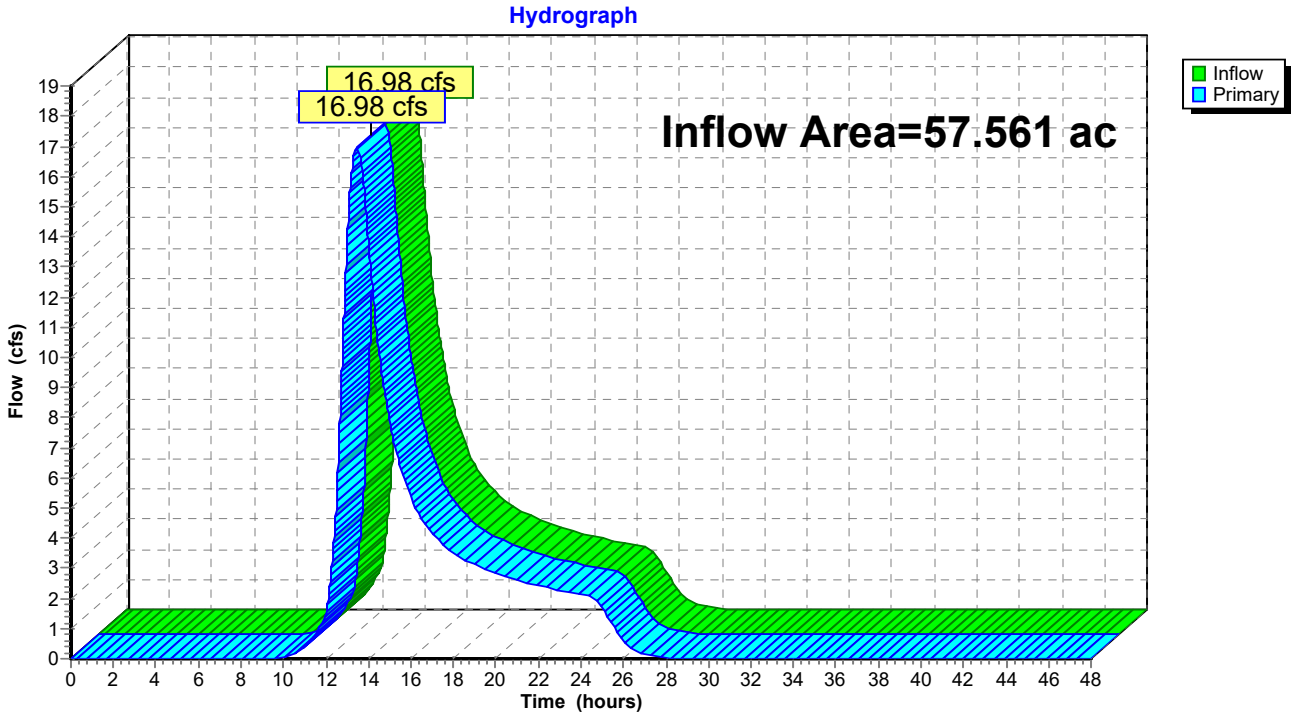


Summary for Link 26L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 16.98 cfs @ 13.43 hrs, Volume= 5.626 af
Primary = 16.98 cfs @ 13.43 hrs, Volume= 5.626 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 26L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 23S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=2.46"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=35.30 cfs 11.807 af

Reach 22R: Existing Swale to Stream Avg. Flow Depth=0.89' Max Vel=4.58 fps Inflow=35.30 cfs 11.807 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=35.20 cfs 11.807 af

Link 26L: Stream flowing past crossing Inflow=35.20 cfs 11.807 af
Primary=35.20 cfs 11.807 af

Total Runoff Area = 57.561 ac Runoff Volume = 11.807 af Average Runoff Depth = 2.46"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

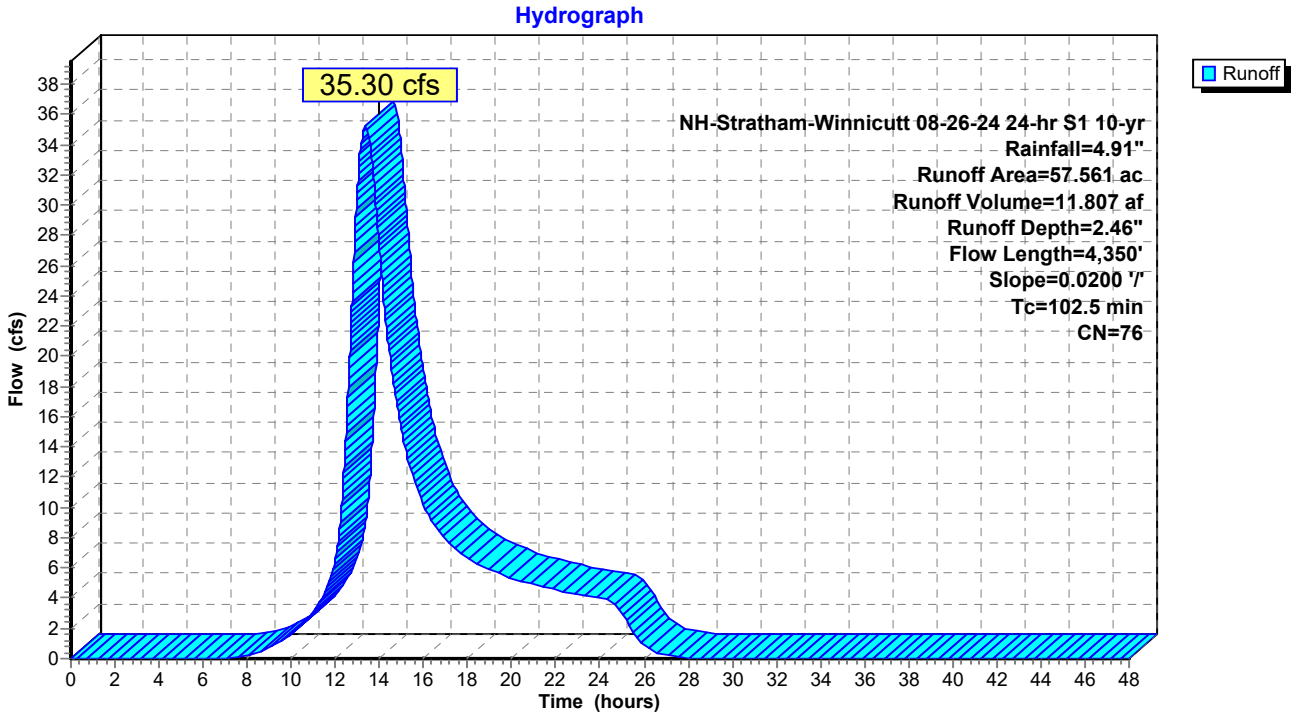
Runoff = 35.30 cfs @ 13.33 hrs, Volume= 11.807 af, Depth= 2.46"
Routed to Reach 22R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr Rainfall=4.91"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



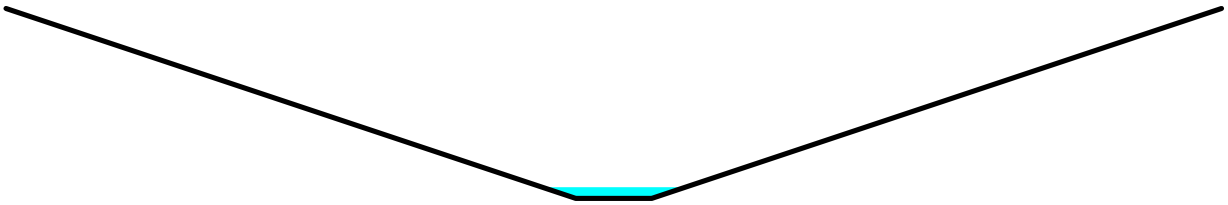
Summary for Reach 22R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 35.30 cfs @ 13.33 hrs, Volume= 11.807 af
Outflow = 35.20 cfs @ 13.36 hrs, Volume= 11.807 af, Atten= 0%, Lag= 1.9 min
Routed to Link 26L : Stream flowing past crossing

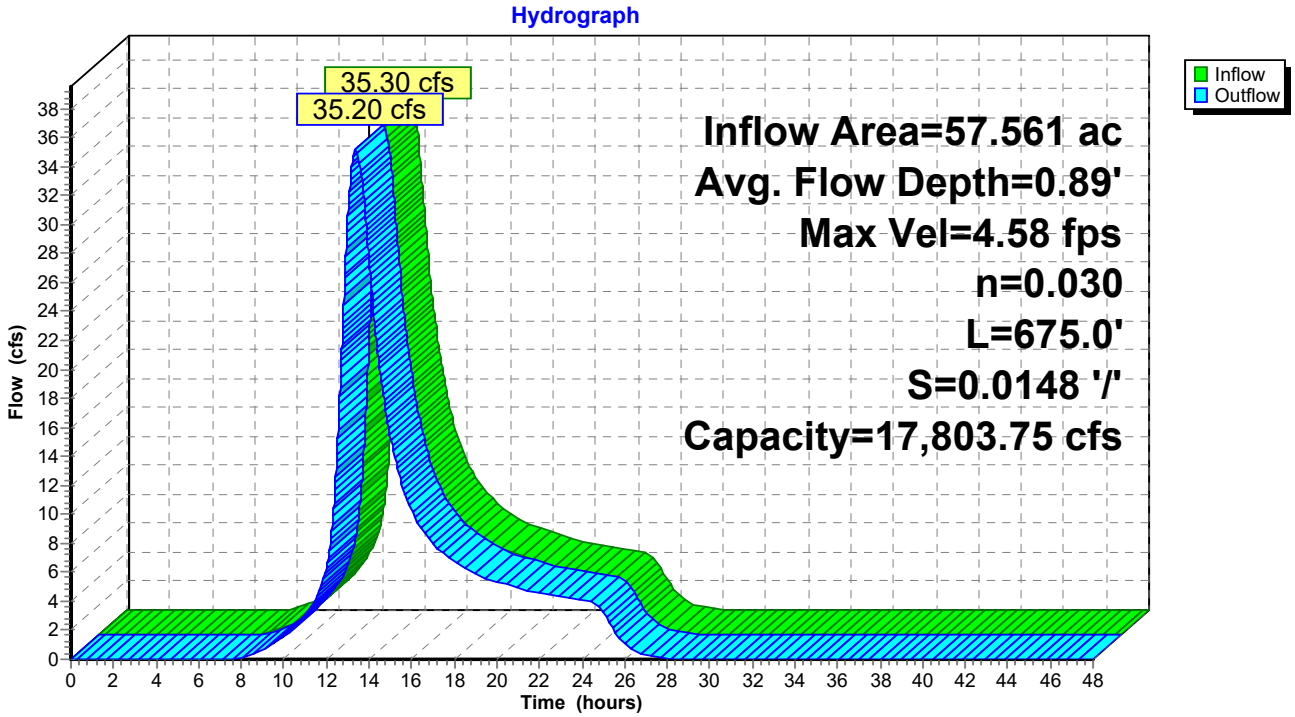
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.58 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 2.41 fps, Avg. Travel Time= 4.7 min

Peak Storage= 5,185 cf @ 13.36 hrs
Average Depth at Peak Storage= 0.89' , Surface Width= 11.32'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 22R: Existing Swale to Stream Impact G

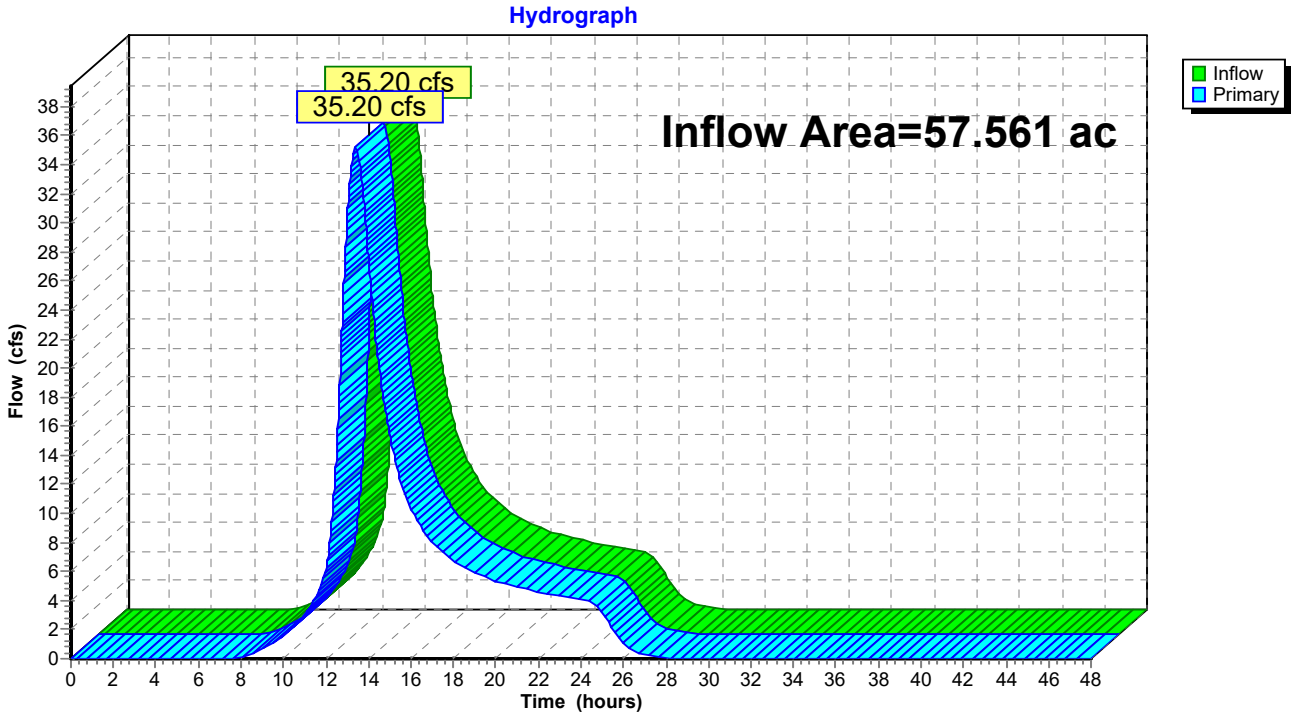


Summary for Link 26L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 35.20 cfs @ 13.36 hrs, Volume= 11.807 af
Primary = 35.20 cfs @ 13.36 hrs, Volume= 11.807 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 26L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 23S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=3.59"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=50.31 cfs 17.211 af

Reach 22R: Existing Swale to Stream Avg. Flow Depth=1.07' Max Vel=5.08 fps Inflow=50.31 cfs 17.211 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=50.21 cfs 17.211 af

Link 26L: Stream flowing past crossing Inflow=50.21 cfs 17.211 af
Primary=50.21 cfs 17.211 af

Total Runoff Area = 57.561 ac Runoff Volume = 17.211 af Average Runoff Depth = 3.59"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

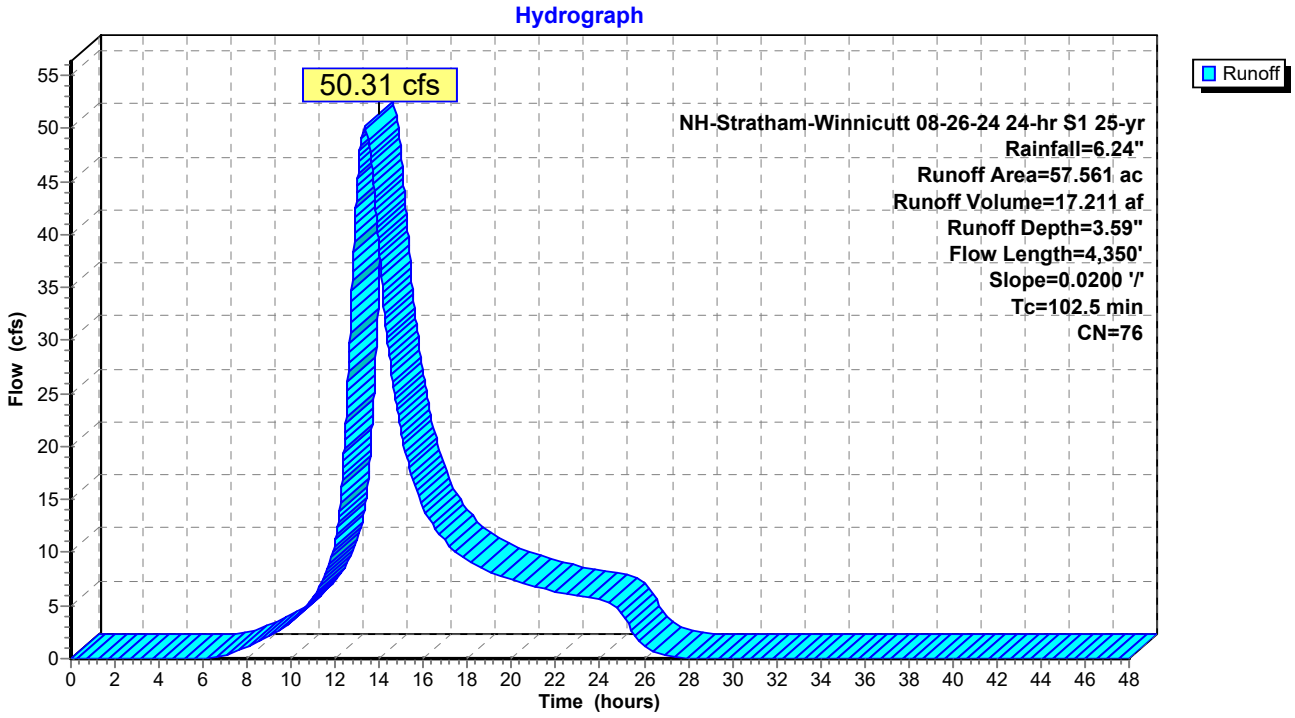
Runoff = 50.31 cfs @ 13.33 hrs, Volume= 17.211 af, Depth= 3.59"
Routed to Reach 22R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 25-yr Rainfall=6.24"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



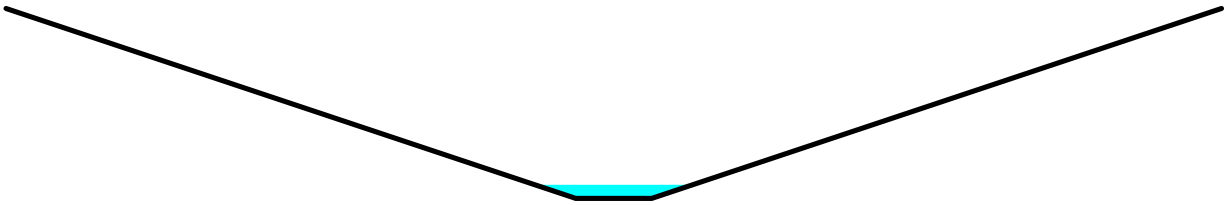
Summary for Reach 22R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 50.31 cfs @ 13.33 hrs, Volume= 17.211 af
Outflow = 50.21 cfs @ 13.35 hrs, Volume= 17.211 af, Atten= 0%, Lag= 1.3 min
Routed to Link 26L : Stream flowing past crossing

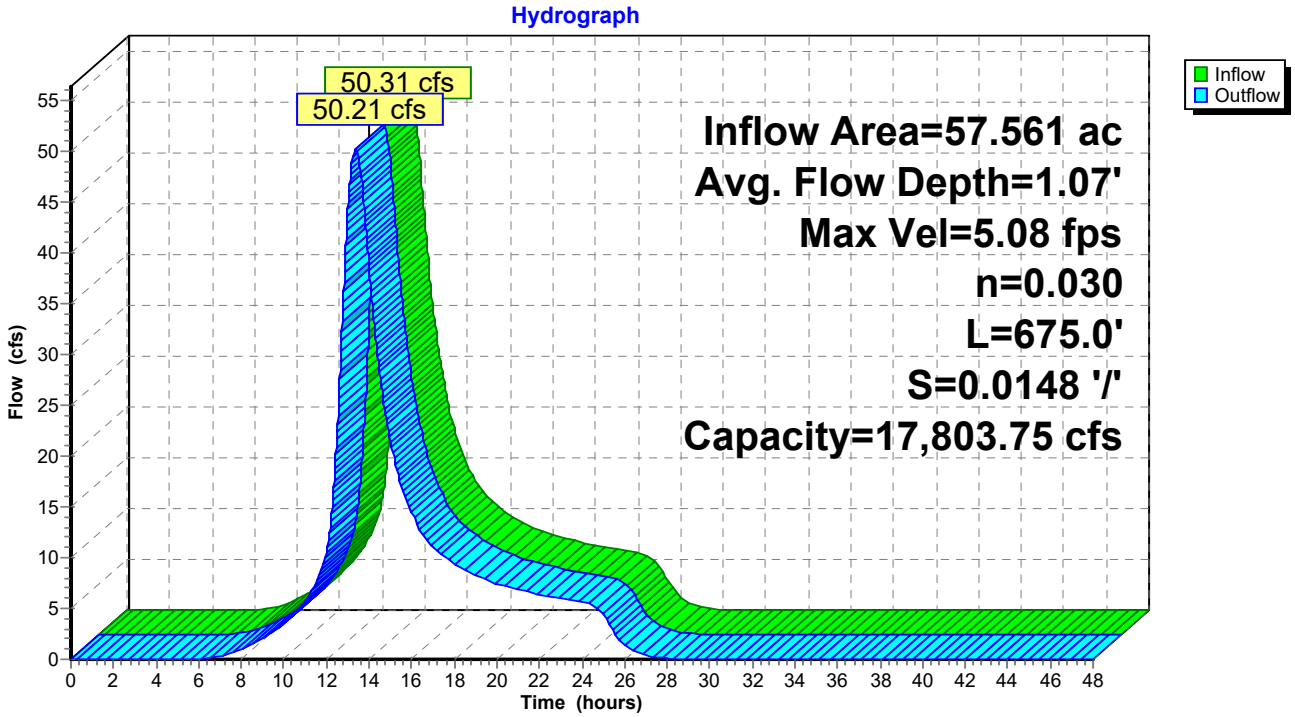
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.08 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 2.62 fps, Avg. Travel Time= 4.3 min

Peak Storage= 6,667 cf @ 13.35 hrs
Average Depth at Peak Storage= 1.07' , Surface Width= 12.43'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 22R: Existing Swale to Stream Impact G

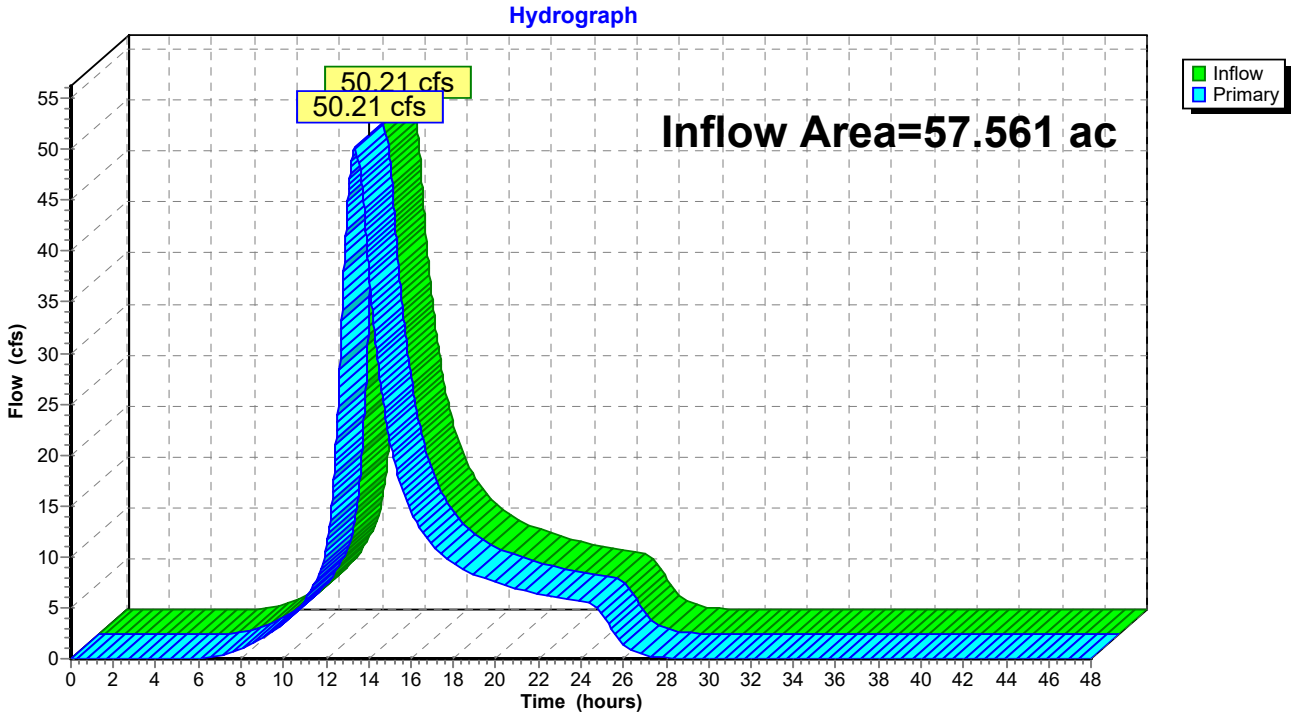


Summary for Link 26L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 50.21 cfs @ 13.35 hrs, Volume= 17.211 af
Primary = 50.21 cfs @ 13.35 hrs, Volume= 17.211 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 26L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 23S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=4.69"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=64.05 cfs 22.483 af

Reach 22R: Existing Swale to Stream Avg. Flow Depth=1.22' Max Vel=5.44 fps Inflow=64.05 cfs 22.483 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=63.94 cfs 22.483 af

Link 26L: Stream flowing past crossing Inflow=63.94 cfs 22.483 af
Primary=63.94 cfs 22.483 af

Total Runoff Area = 57.561 ac Runoff Volume = 22.483 af Average Runoff Depth = 4.69"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

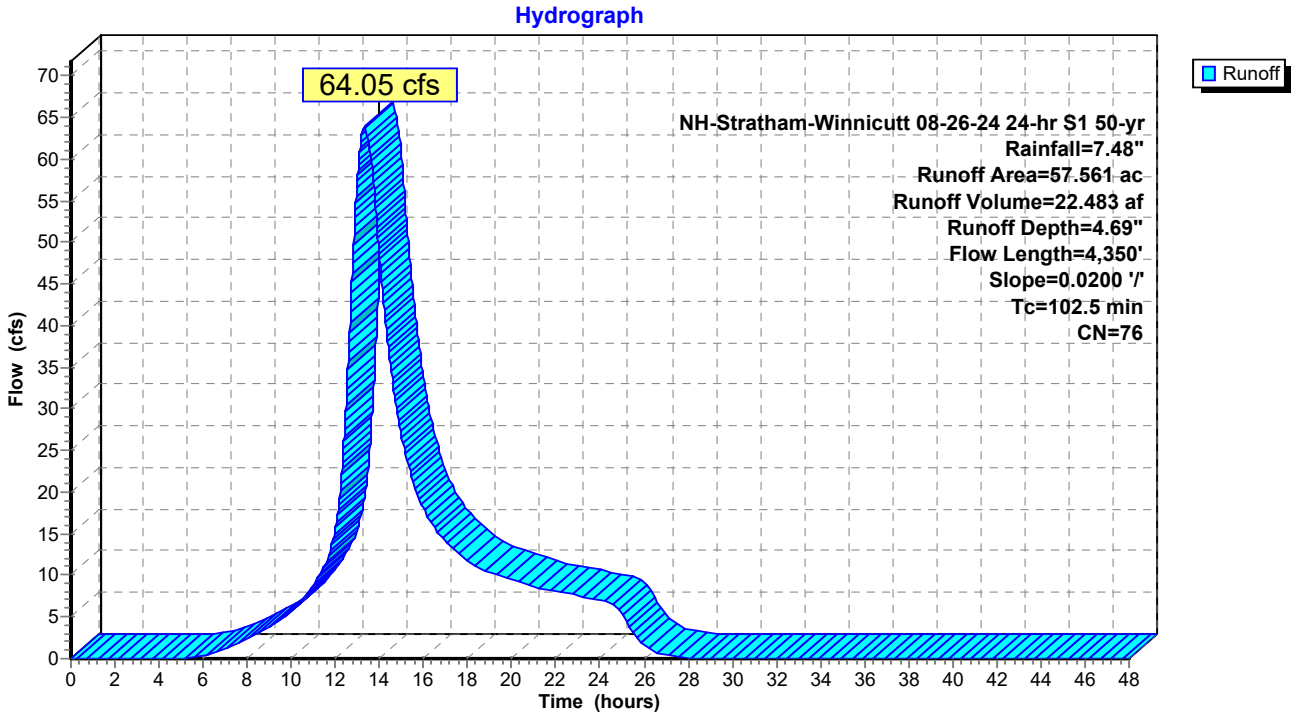
Runoff = 64.05 cfs @ 13.33 hrs, Volume= 22.483 af, Depth= 4.69"
Routed to Reach 22R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 50-yr Rainfall=7.48"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



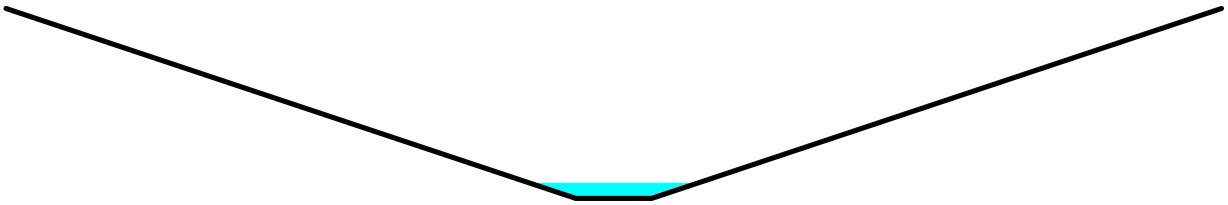
Summary for Reach 22R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 64.05 cfs @ 13.33 hrs, Volume= 22.483 af
Outflow = 63.94 cfs @ 13.34 hrs, Volume= 22.483 af, Atten= 0%, Lag= 1.1 min
Routed to Link 26L : Stream flowing past crossing

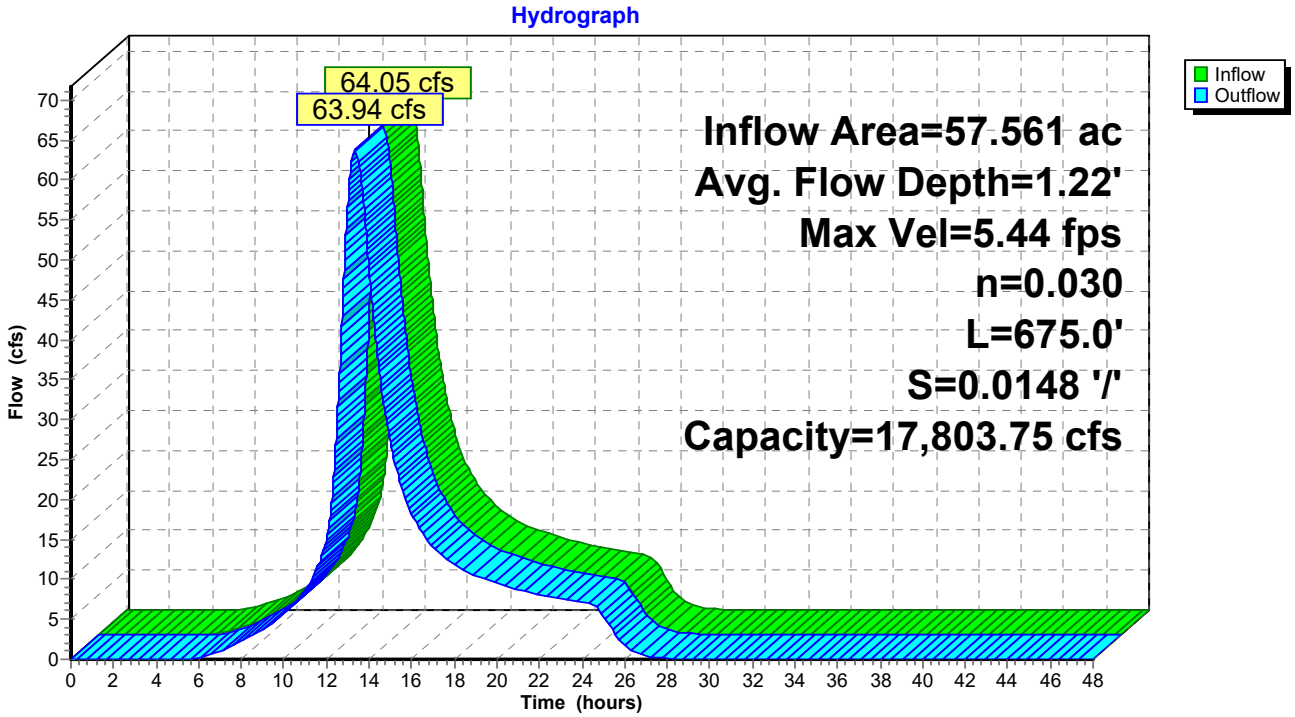
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.44 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 2.79 fps, Avg. Travel Time= 4.0 min

Peak Storage= 7,926 cf @ 13.34 hrs
Average Depth at Peak Storage= 1.22' , Surface Width= 13.30'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 22R: Existing Swale to Stream Impact G

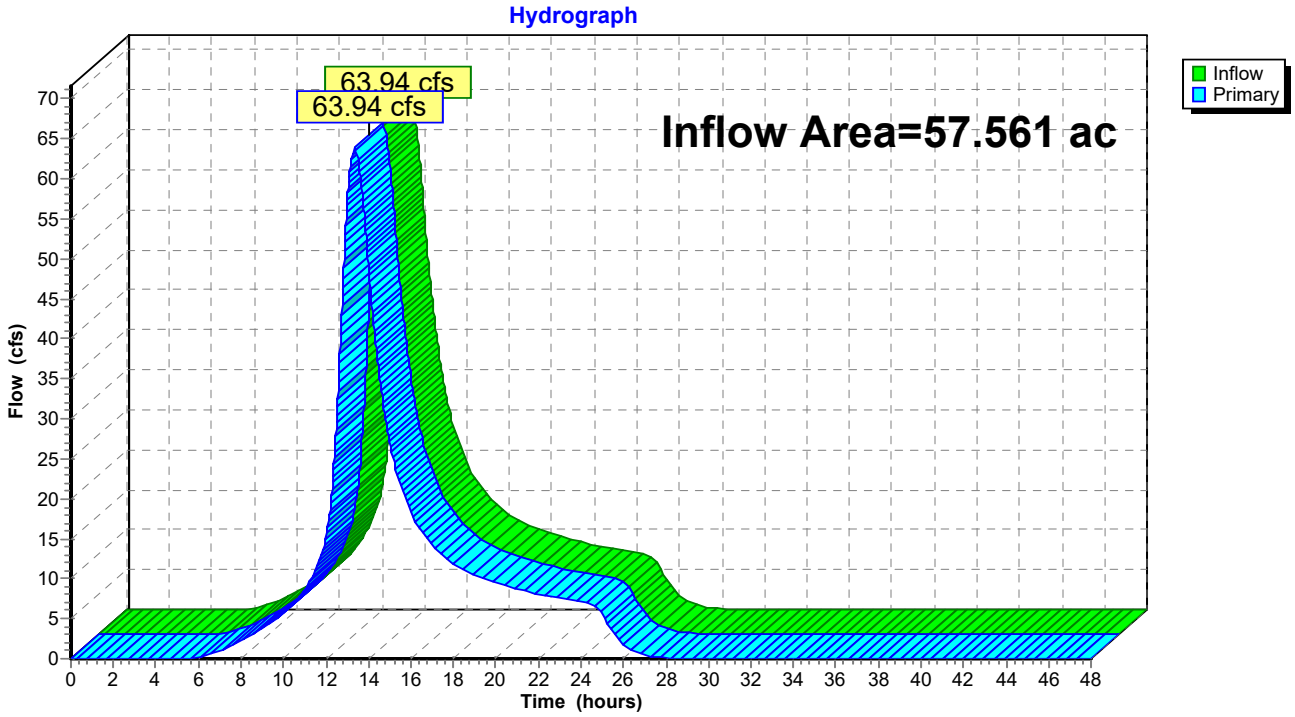


Summary for Link 26L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 63.94 cfs @ 13.34 hrs, Volume= 22.483 af
Primary = 63.94 cfs @ 13.34 hrs, Volume= 22.483 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 26L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 23S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=6.06"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=80.61 cfs 29.055 af

Reach 22R: Existing Swale to Stream Avg. Flow Depth=1.37' Max Vel=5.81 fps Inflow=80.61 cfs 29.055 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=80.49 cfs 29.055 af

Link 26L: Stream flowing past crossing Inflow=80.49 cfs 29.055 af
Primary=80.49 cfs 29.055 af

Total Runoff Area = 57.561 ac Runoff Volume = 29.055 af Average Runoff Depth = 6.06"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

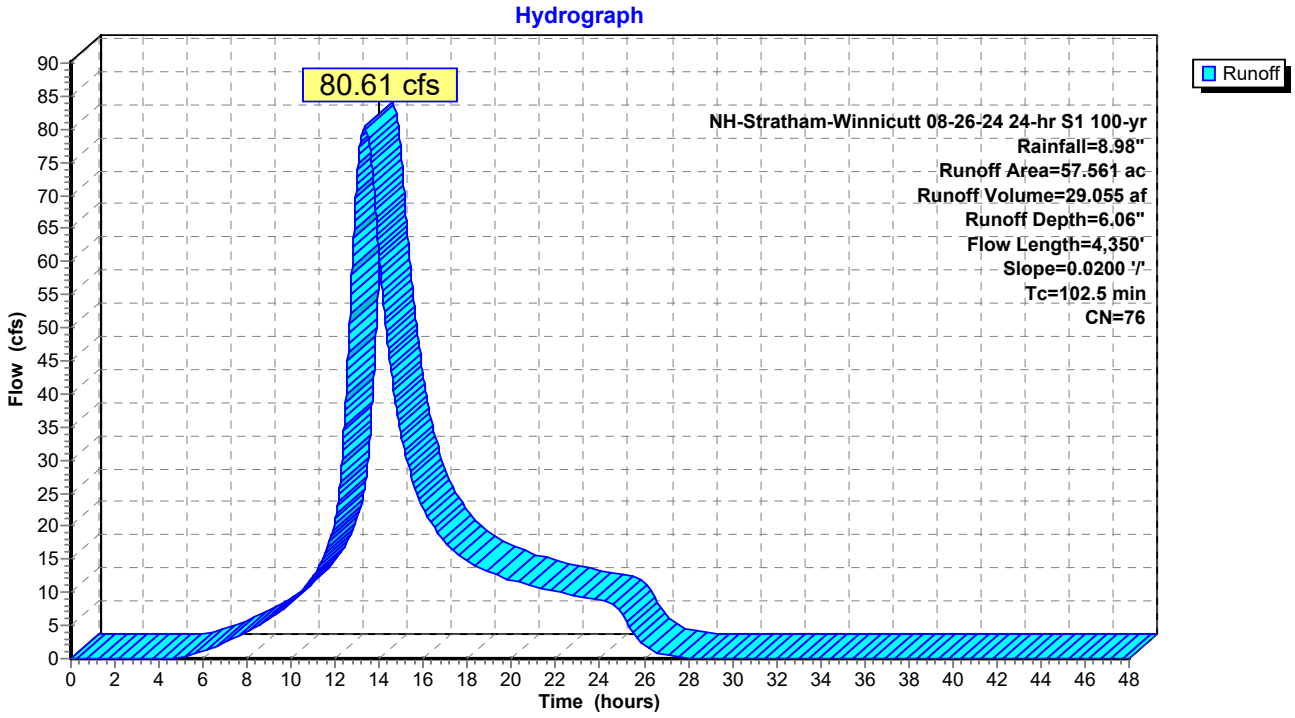
Runoff = 80.61 cfs @ 13.32 hrs, Volume= 29.055 af, Depth= 6.06"
Routed to Reach 22R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 100-yr Rainfall=8.98"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 23S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



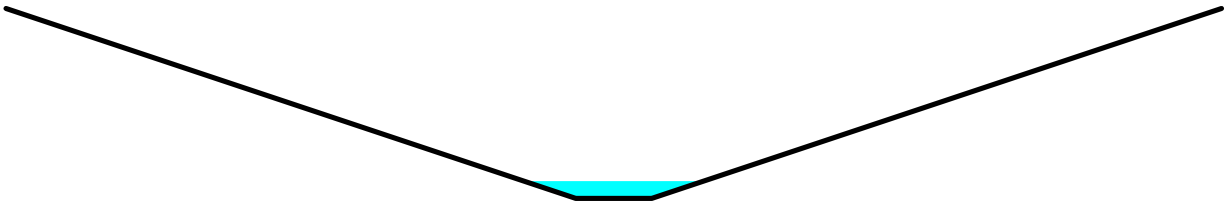
Summary for Reach 22R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 80.61 cfs @ 13.32 hrs, Volume= 29.055 af
Outflow = 80.49 cfs @ 13.34 hrs, Volume= 29.055 af, Atten= 0%, Lag= 1.0 min
Routed to Link 26L : Stream flowing past crossing

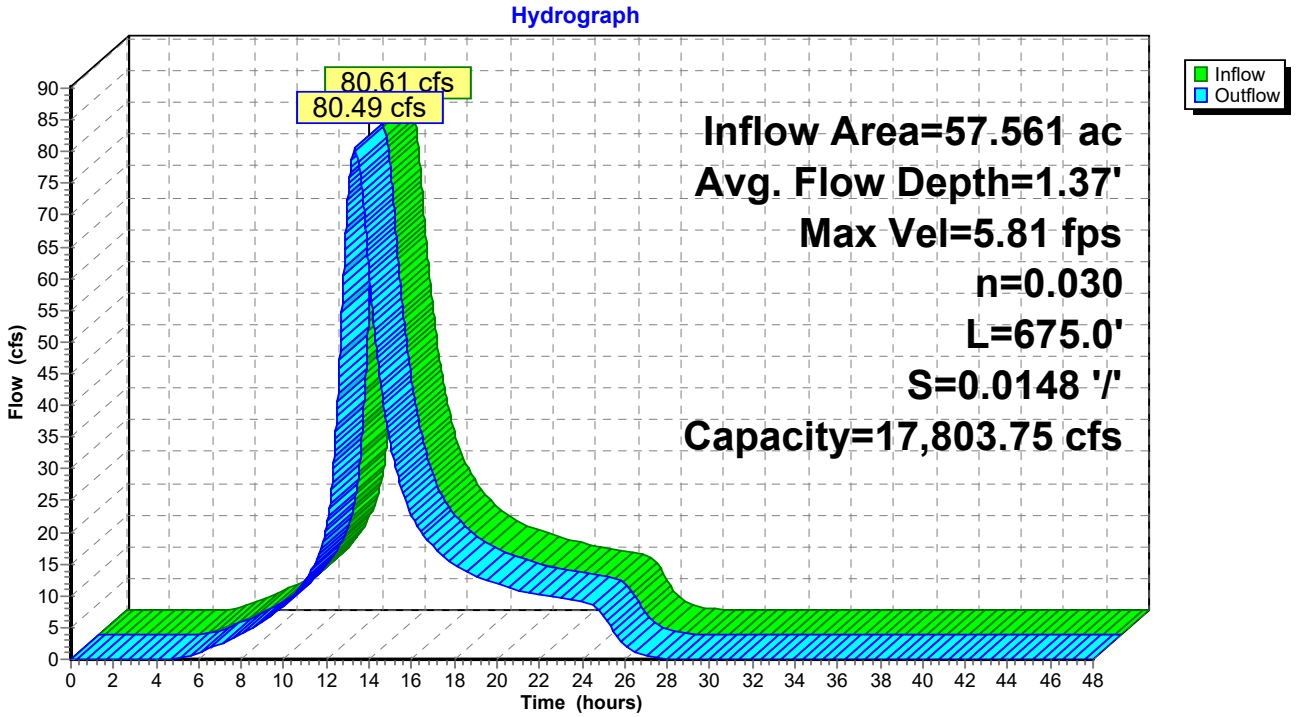
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.81 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 2.97 fps, Avg. Travel Time= 3.8 min

Peak Storage= 9,353 cf @ 13.34 hrs
Average Depth at Peak Storage= 1.37' , Surface Width= 14.22'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 22R: Existing Swale to Stream Impact G

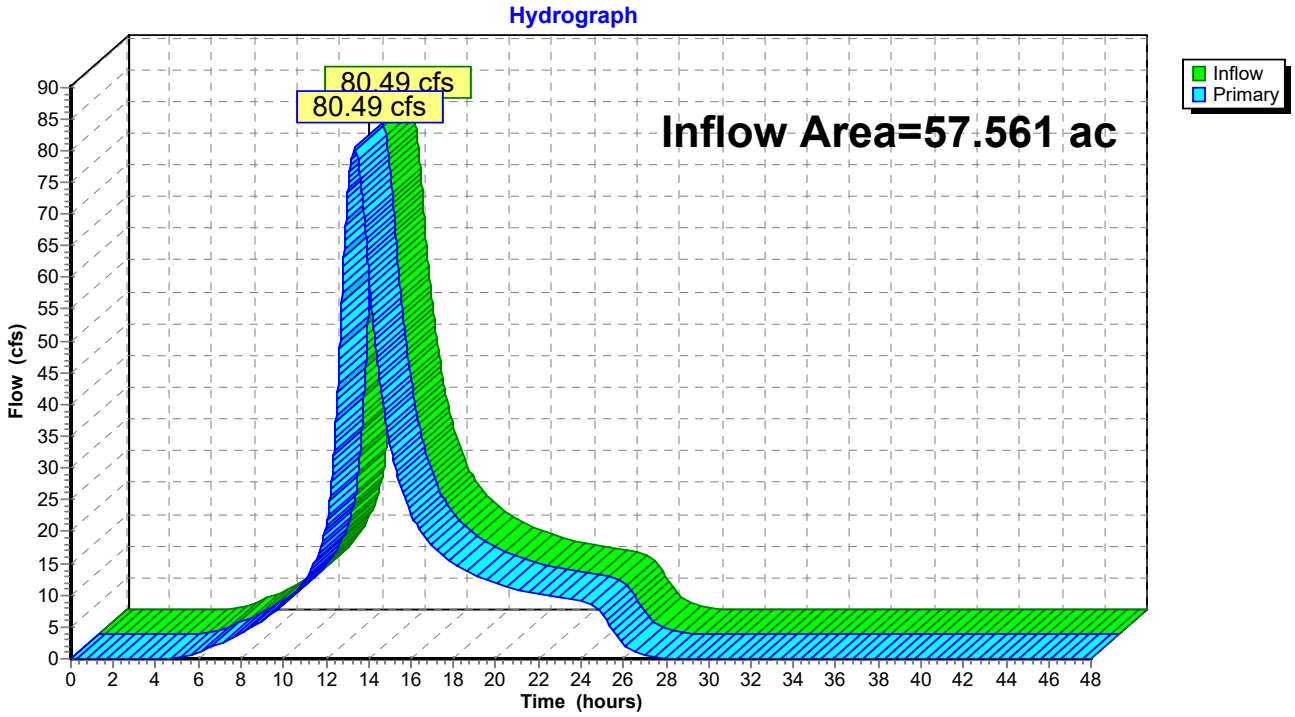


Summary for Link 26L: Stream flowing past crossing

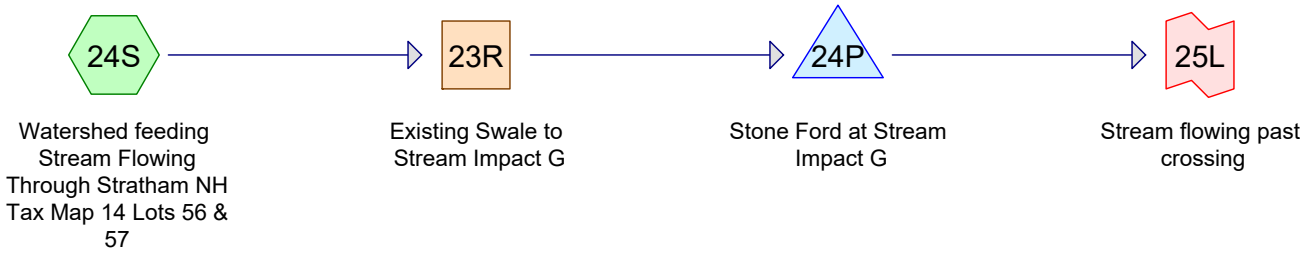
Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 80.49 cfs @ 13.34 hrs, Volume= 29.055 af
Primary = 80.49 cfs @ 13.34 hrs, Volume= 29.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 26L: Stream flowing past crossing



Proposed Conditions at Impact G

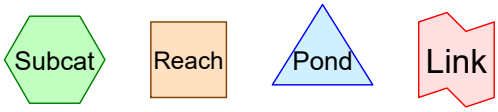


Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 57

Existing Swale to Stream Impact G

Stone Ford at Stream Impact G

Stream flowing past crossing



Routing Diagram for Stream Crossing Analysis 07-16-26
Prepared by Emanuel Engineering, Printed 9/4/2026
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Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.23	
2	10-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	4.91	
3	25-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	25-yr	Default	24.00	1	6.24	
4	50-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	50-yr	Default	24.00	1	7.48	
5	100-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	100-yr	Default	24.00	1	8.98	

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
52.030	74	>75% Grass cover, Good, HSG C (24S)
2.400	80	>75% Grass cover, Good, HSG D (24S)
3.087	98	Paved parking, HSG C (24S)
0.044	98	Paved parking, HSG D (24S)
57.561	**76**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
55.117	HSG C	24S
2.444	HSG D	24S
0.000	Other	
57.561		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	52.030	2.400	0.000	54.430	>75% Grass cover, Good	24S
0.000	0.000	3.087	0.044	0.000	3.131	Paved parking	24S
0.000	**0.000**	**55.117**	**2.444**	**0.000**	**57.561**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 24S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=1.17"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=17.00 cfs 5.626 af

Reach 23R: Existing Swale to Stream Avg. Flow Depth=0.59' Max Vel=3.67 fps Inflow=17.00 cfs 5.626 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=16.98 cfs 5.626 af

Pond 24P: Stone Ford at Stream Impact G Peak Elev=64.17' Storage=2,273 cf Inflow=16.98 cfs 5.626 af
Outflow=16.97 cfs 5.584 af

Link 25L: Stream flowing past crossing Inflow=16.97 cfs 5.584 af
Primary=16.97 cfs 5.584 af

Total Runoff Area = 57.561 ac Runoff Volume = 5.626 af Average Runoff Depth = 1.17"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

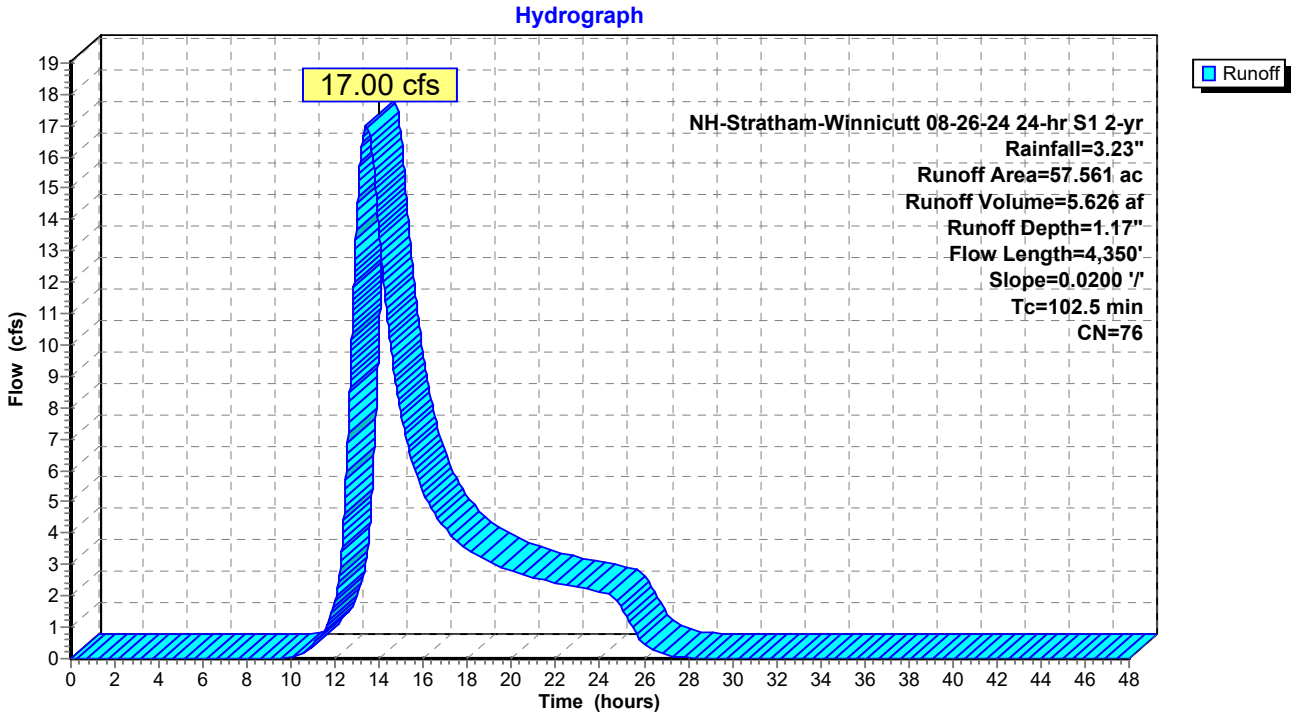
Runoff = 17.00 cfs @ 13.33 hrs, Volume= 5.626 af, Depth= 1.17"
Routed to Reach 23R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr Rainfall=3.23"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



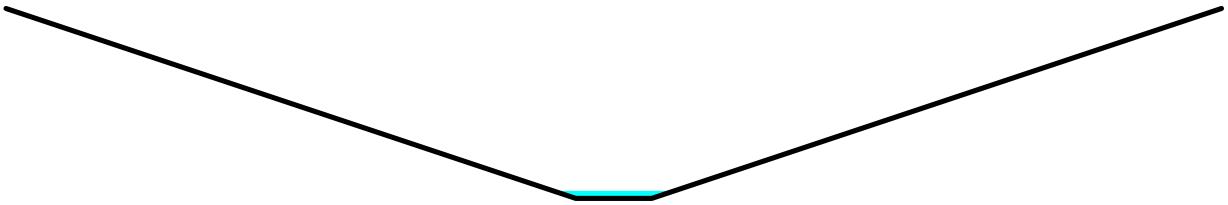
Summary for Reach 23R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 17.00 cfs @ 13.33 hrs, Volume= 5.626 af
Outflow = 16.98 cfs @ 13.43 hrs, Volume= 5.626 af, Atten= 0%, Lag= 6.0 min
Routed to Pond 24P : Stone Ford at Stream Impact G

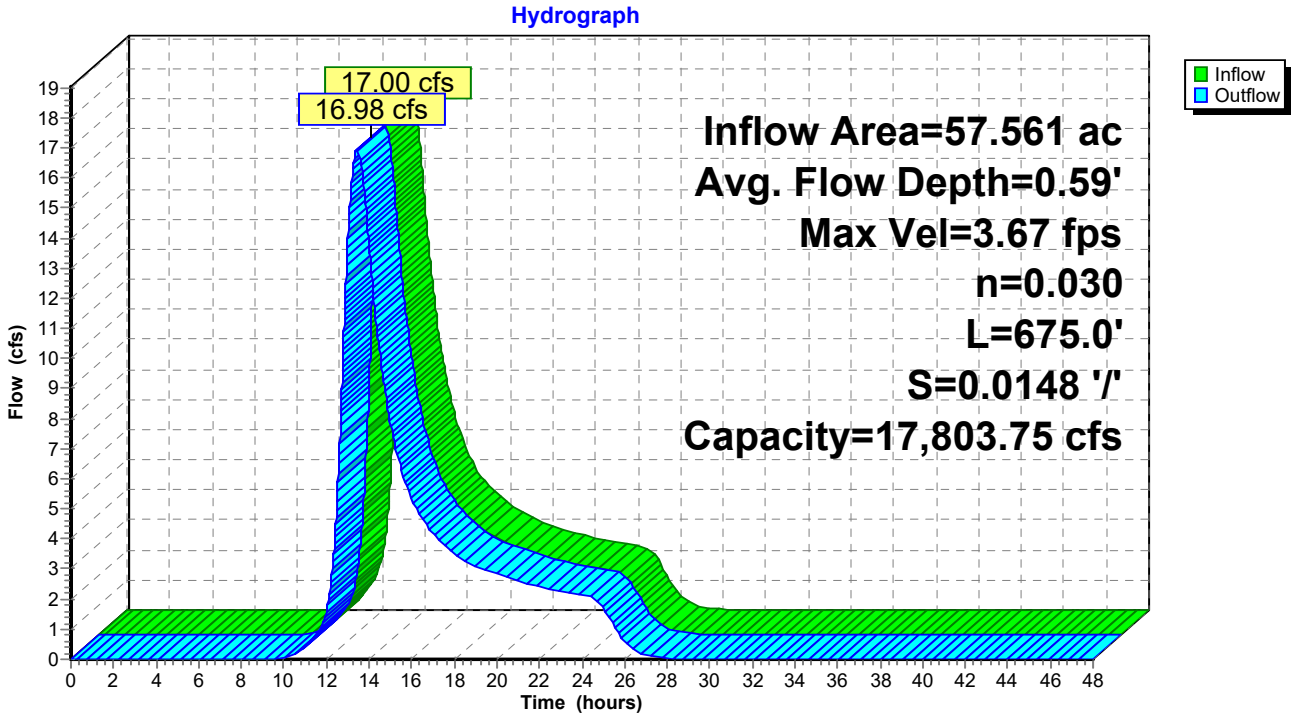
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.67 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 2.09 fps, Avg. Travel Time= 5.4 min

Peak Storage= 3,123 cf @ 13.43 hrs
Average Depth at Peak Storage= 0.59' , Surface Width= 9.56'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 23R: Existing Swale to Stream Impact G



Summary for Pond 24P: Stone Ford at Stream Impact G

[61] Hint: Exceeded Reach 23R outlet invert by 0.17' @ 13.44 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.17" for 2-yr event
Inflow = 16.98 cfs @ 13.43 hrs, Volume= 5.626 af
Outflow = 16.97 cfs @ 13.44 hrs, Volume= 5.584 af, Atten= 0%, Lag= 0.2 min
Primary = 16.97 cfs @ 13.44 hrs, Volume= 5.584 af
Routed to Link 25L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 64.17' @ 13.44 hrs Surf.Area= 2,878 sf Storage= 2,273 cf

Plug-Flow detention time= 7.5 min calculated for 5.584 af (99% of inflow)
Center-of-Mass det. time= 3.0 min (990.3 - 987.3)

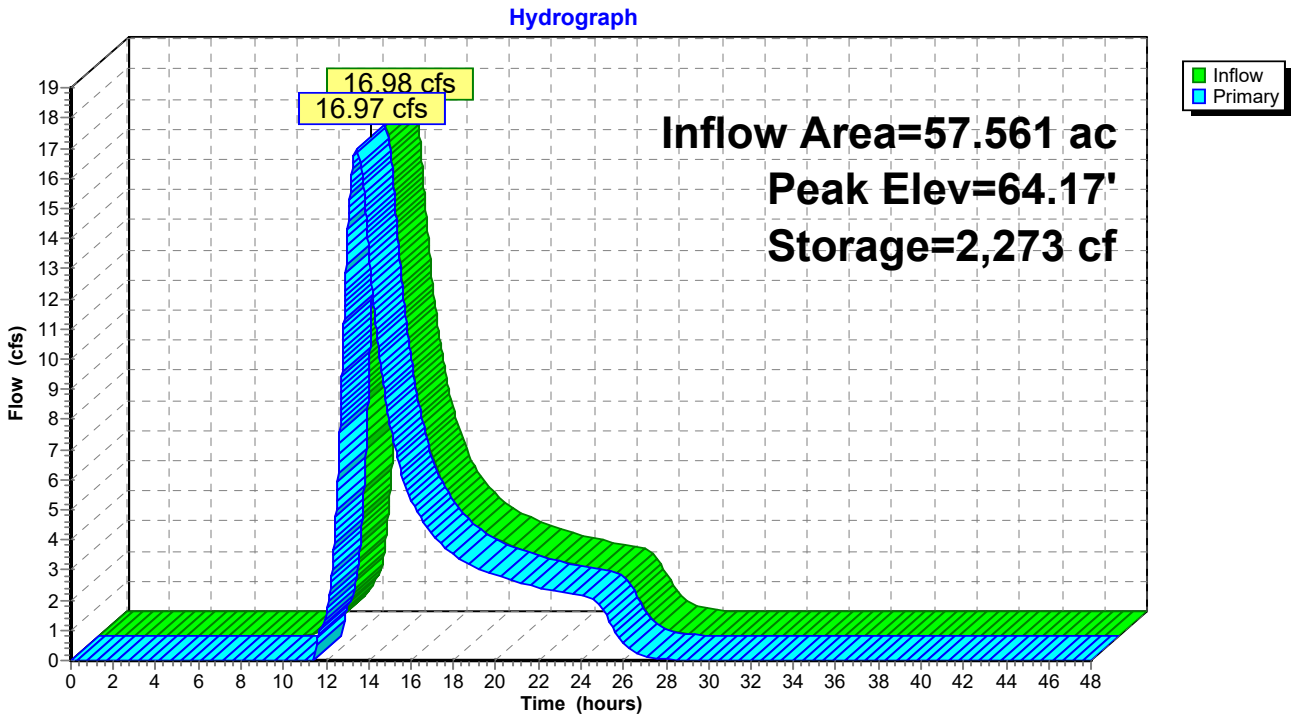
Volume	Invert	Avail.Storage	Storage Description
#1	61.99'	13,363 cf	**24" Deep Stone Ford (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.99	1	0.0	0	0
62.00	2,285	40.0	5	5
64.00	2,285	40.0	1,828	1,833
66.00	9,245	100.0	11,530	13,363

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**90.0' long x 80.0' breadth Overtopping**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=16.97 cfs @ 13.44 hrs HW=64.17' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 16.97 cfs @ 1.11 fps)

Pond 24P: Stone Ford at Stream Impact G

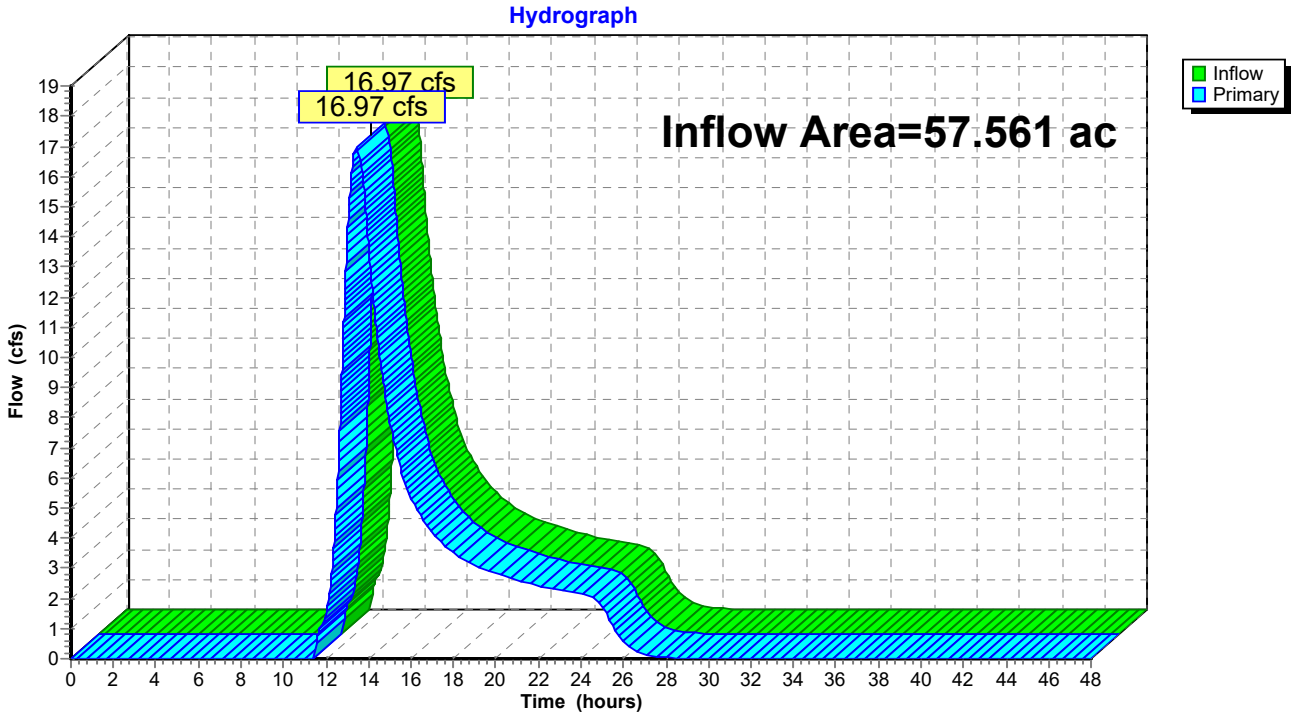


Summary for Link 25L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 1.16" for 2-yr event
Inflow = 16.97 cfs @ 13.44 hrs, Volume= 5.584 af
Primary = 16.97 cfs @ 13.44 hrs, Volume= 5.584 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 25L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 24S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=2.46"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=35.30 cfs 11.807 af

Reach 23R: Existing Swale to Stream Avg. Flow Depth=0.89' Max Vel=4.58 fps Inflow=35.30 cfs 11.807 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=35.20 cfs 11.807 af

Pond 24P: Stone Ford at Stream Impact G Peak Elev=64.28' Storage=2,598 cf Inflow=35.20 cfs 11.807 af
Outflow=35.20 cfs 11.765 af

Link 25L: Stream flowing past crossing Inflow=35.20 cfs 11.765 af
Primary=35.20 cfs 11.765 af

Total Runoff Area = 57.561 ac Runoff Volume = 11.807 af Average Runoff Depth = 2.46"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

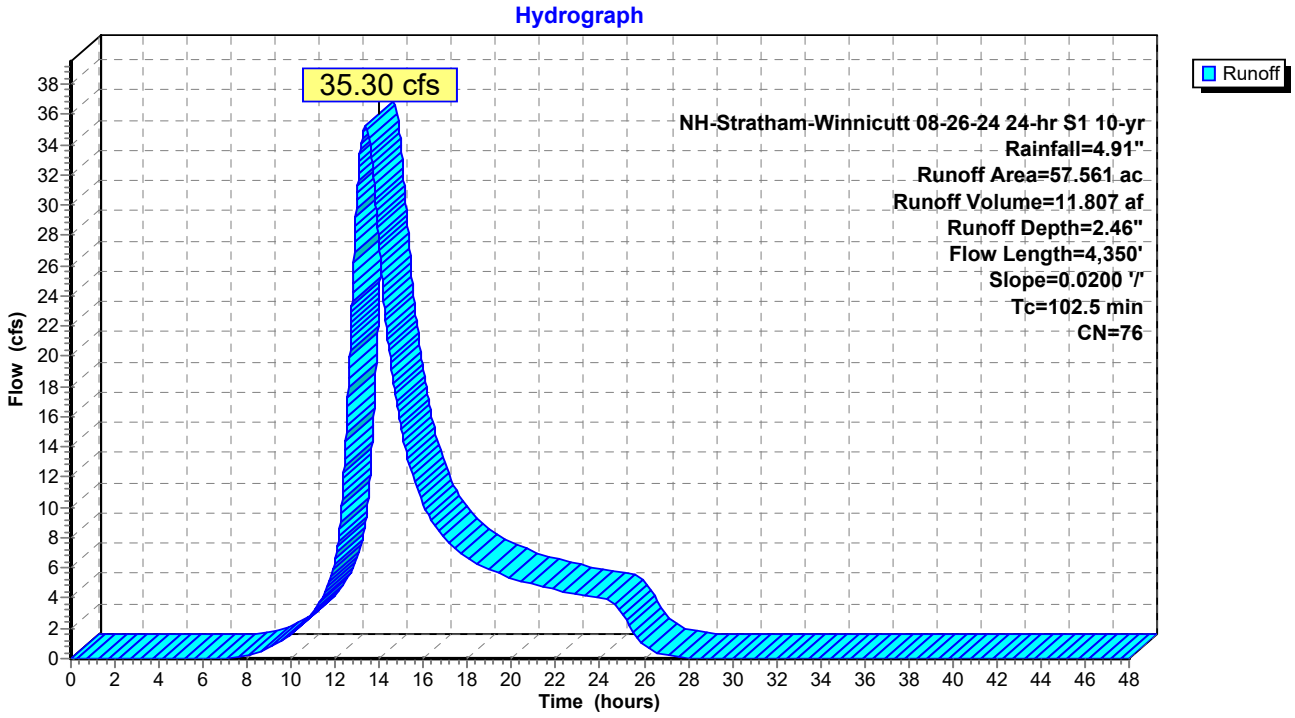
Runoff = 35.30 cfs @ 13.33 hrs, Volume= 11.807 af, Depth= 2.46"
Routed to Reach 23R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr Rainfall=4.91"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



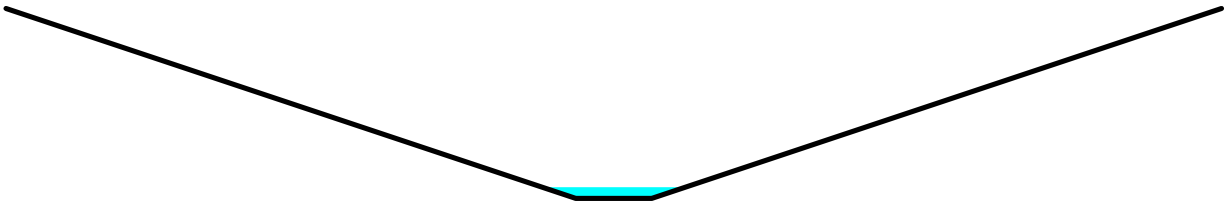
Summary for Reach 23R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 35.30 cfs @ 13.33 hrs, Volume= 11.807 af
Outflow = 35.20 cfs @ 13.36 hrs, Volume= 11.807 af, Atten= 0%, Lag= 1.9 min
Routed to Pond 24P : Stone Ford at Stream Impact G

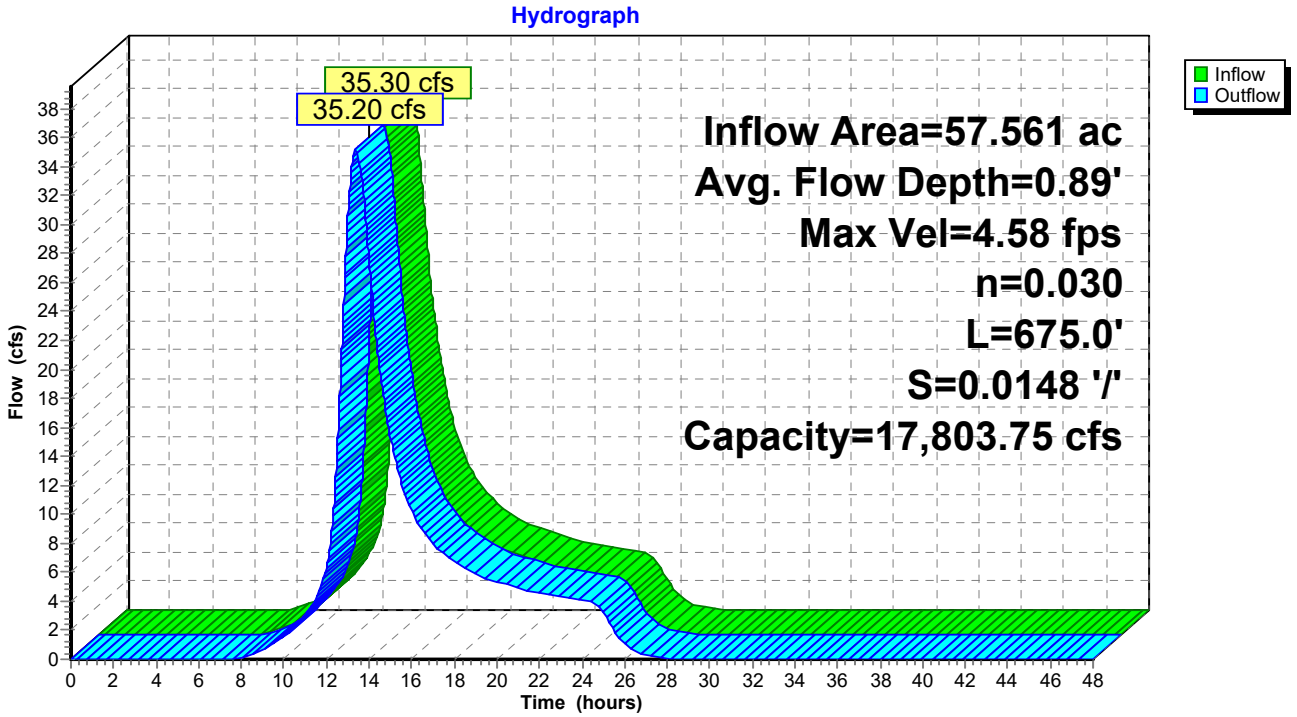
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.58 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 2.41 fps, Avg. Travel Time= 4.7 min

Peak Storage= 5,185 cf @ 13.36 hrs
Average Depth at Peak Storage= 0.89' , Surface Width= 11.32'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 23R: Existing Swale to Stream Impact G



Summary for Pond 24P: Stone Ford at Stream Impact G

[61] Hint: Exceeded Reach 23R outlet invert by 0.28' @ 13.37 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.46" for 10-yr event
Inflow = 35.20 cfs @ 13.36 hrs, Volume= 11.807 af
Outflow = 35.20 cfs @ 13.37 hrs, Volume= 11.765 af, Atten= 0%, Lag= 0.3 min
Primary = 35.20 cfs @ 13.37 hrs, Volume= 11.765 af
Routed to Link 25L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 64.28' @ 13.37 hrs Surf.Area= 3,248 sf Storage= 2,598 cf

Plug-Flow detention time= 4.4 min calculated for 11.765 af (100% of inflow)
Center-of-Mass det. time= 2.1 min (963.6 - 961.5)

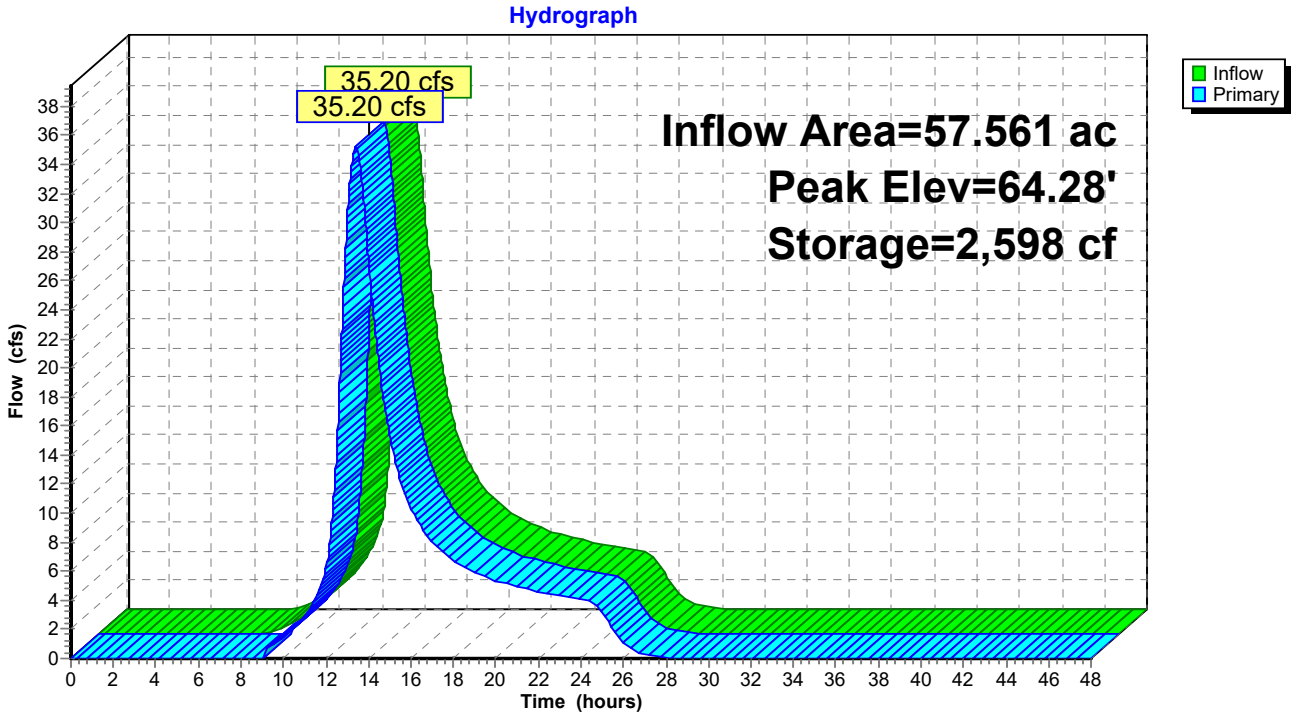
Volume	Invert	Avail.Storage	Storage Description
#1	61.99'	13,363 cf	**24" Deep Stone Ford (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.99	1	0.0	0	0
62.00	2,285	40.0	5	5
64.00	2,285	40.0	1,828	1,833
66.00	9,245	100.0	11,530	13,363

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**90.0' long x 80.0' breadth Overtopping**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=35.20 cfs @ 13.37 hrs HW=64.28' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 35.20 cfs @ 1.41 fps)

Pond 24P: Stone Ford at Stream Impact G

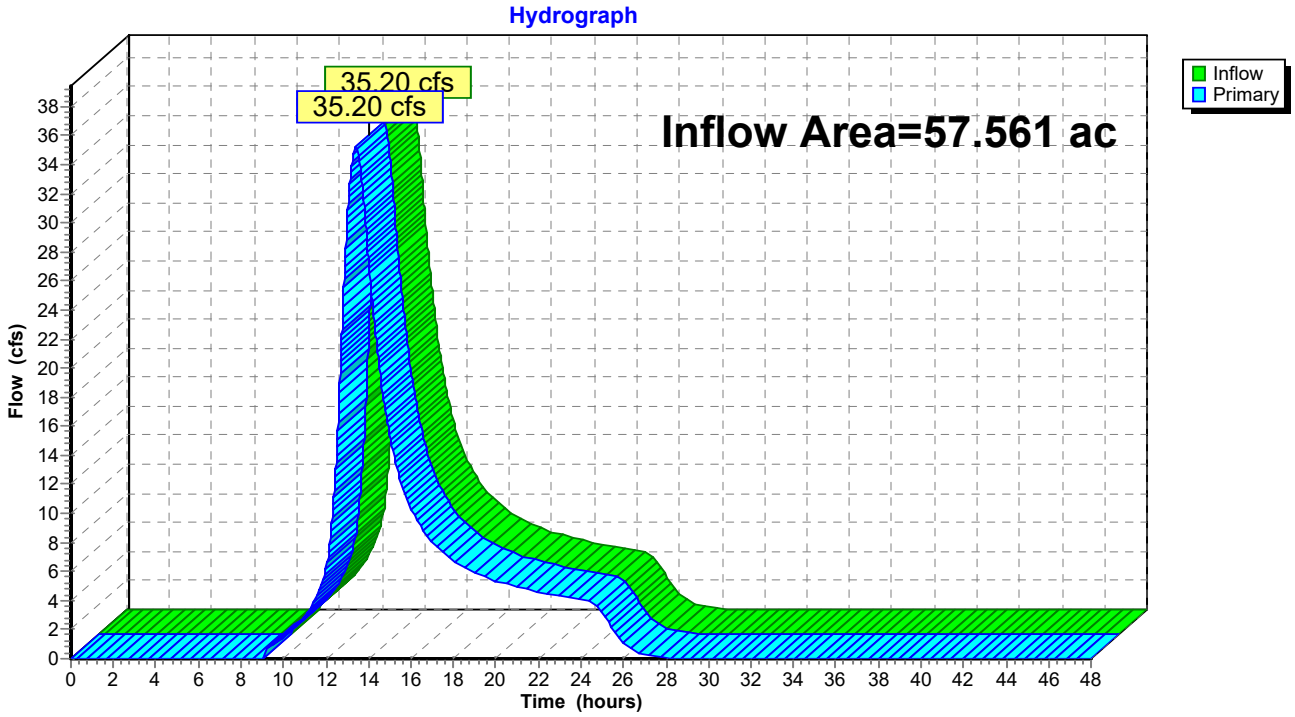


Summary for Link 25L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 2.45" for 10-yr event
Inflow = 35.20 cfs @ 13.37 hrs, Volume= 11.765 af
Primary = 35.20 cfs @ 13.37 hrs, Volume= 11.765 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 25L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 24S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=3.59"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=50.31 cfs 17.211 af

Reach 23R: Existing Swale to Stream Avg. Flow Depth=1.07' Max Vel=5.08 fps Inflow=50.31 cfs 17.211 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=50.21 cfs 17.211 af

Pond 24P: Stone Ford at Stream Impact G Peak Elev=64.35' Storage=2,845 cf Inflow=50.21 cfs 17.211 af
Outflow=50.21 cfs 17.169 af

Link 25L: Stream flowing past crossing Inflow=50.21 cfs 17.169 af
Primary=50.21 cfs 17.169 af

Total Runoff Area = 57.561 ac Runoff Volume = 17.211 af Average Runoff Depth = 3.59"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

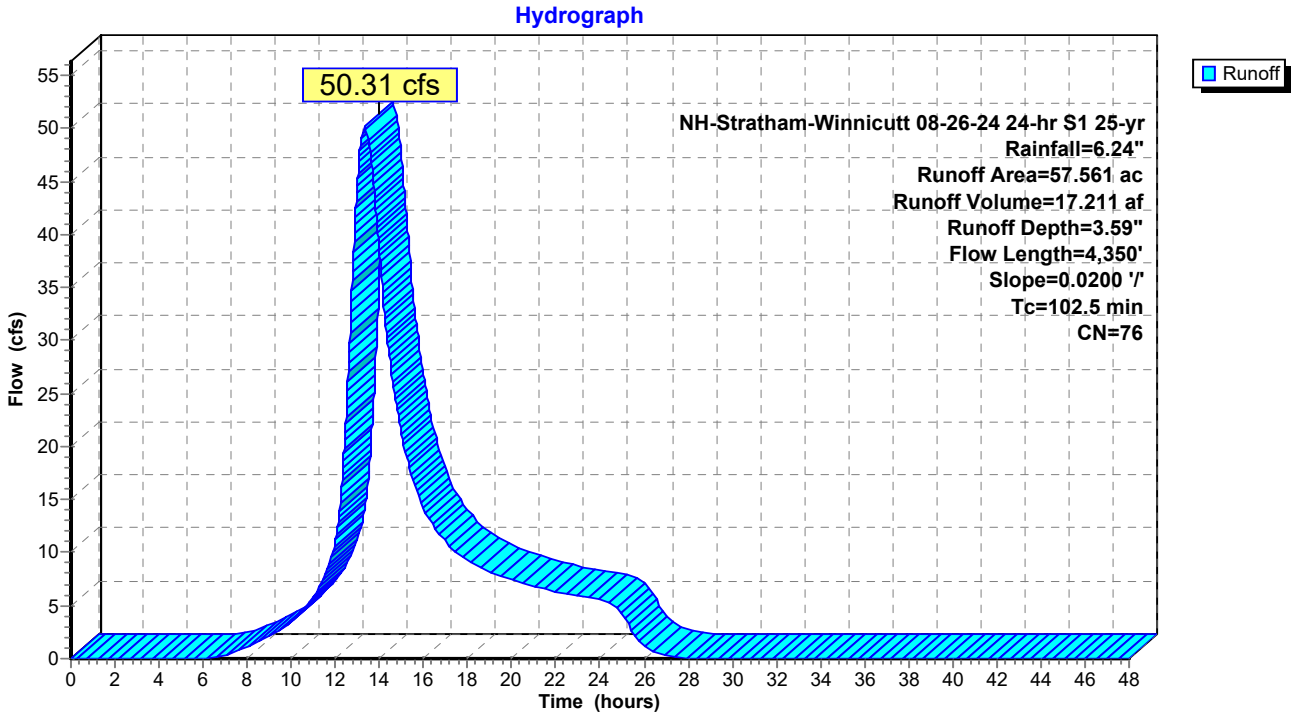
Runoff = 50.31 cfs @ 13.33 hrs, Volume= 17.211 af, Depth= 3.59"
Routed to Reach 23R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 25-yr Rainfall=6.24"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



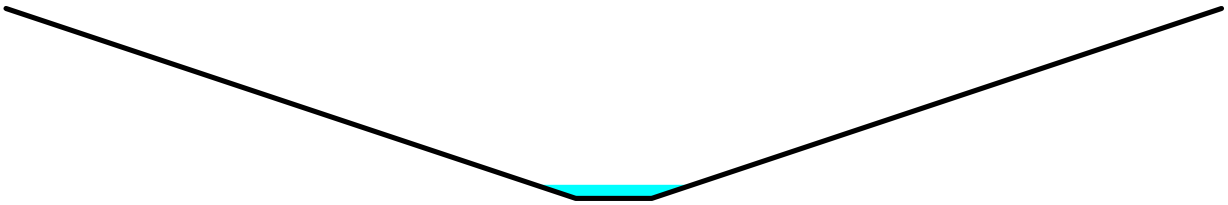
Summary for Reach 23R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 50.31 cfs @ 13.33 hrs, Volume= 17.211 af
Outflow = 50.21 cfs @ 13.35 hrs, Volume= 17.211 af, Atten= 0%, Lag= 1.3 min
Routed to Pond 24P : Stone Ford at Stream Impact G

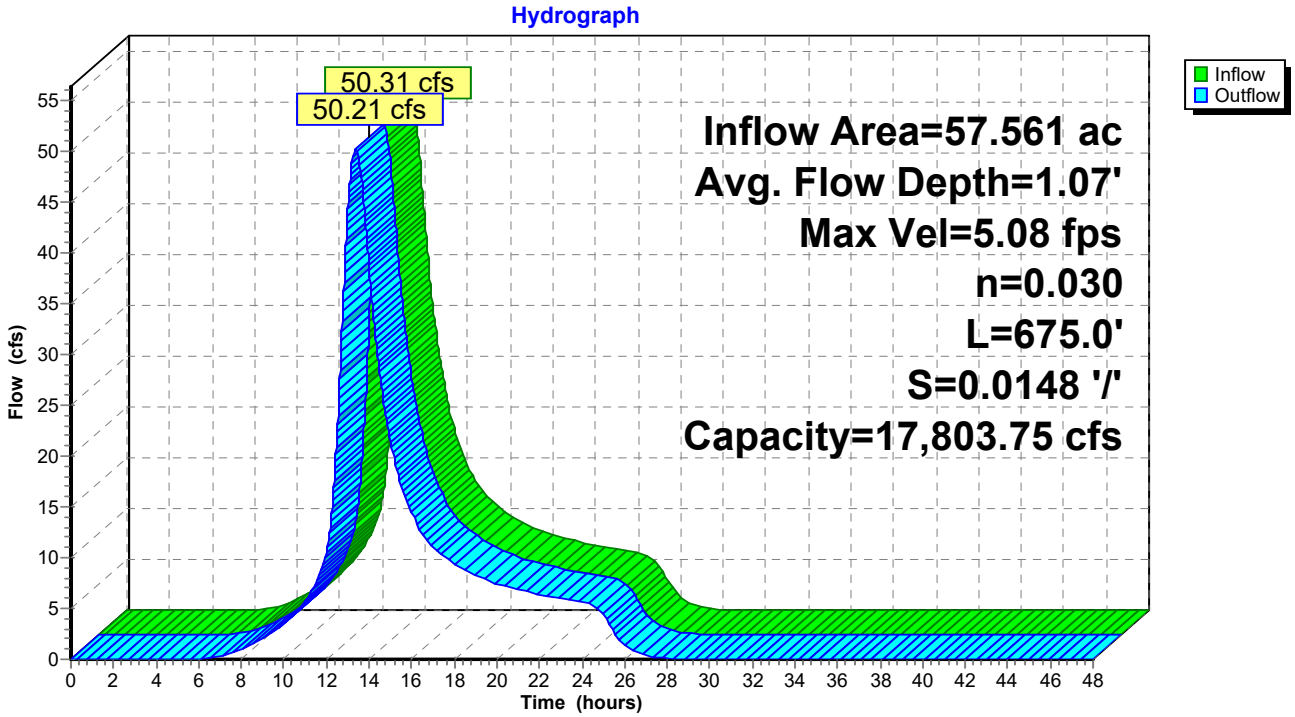
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.08 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 2.62 fps, Avg. Travel Time= 4.3 min

Peak Storage= 6,667 cf @ 13.35 hrs
Average Depth at Peak Storage= 1.07' , Surface Width= 12.43'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 23R: Existing Swale to Stream Impact G



Summary for Pond 24P: Stone Ford at Stream Impact G

[61] Hint: Exceeded Reach 23R outlet invert by 0.35' @ 13.35 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.59" for 25-yr event
Inflow = 50.21 cfs @ 13.35 hrs, Volume= 17.211 af
Outflow = 50.21 cfs @ 13.35 hrs, Volume= 17.169 af, Atten= 0%, Lag= 0.3 min
Primary = 50.21 cfs @ 13.35 hrs, Volume= 17.169 af
Routed to Link 25L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 64.35' @ 13.35 hrs Surf.Area= 3,503 sf Storage= 2,845 cf

Plug-Flow detention time= 3.4 min calculated for 17.169 af (100% of inflow)
Center-of-Mass det. time= 1.7 min (949.1 - 947.4)

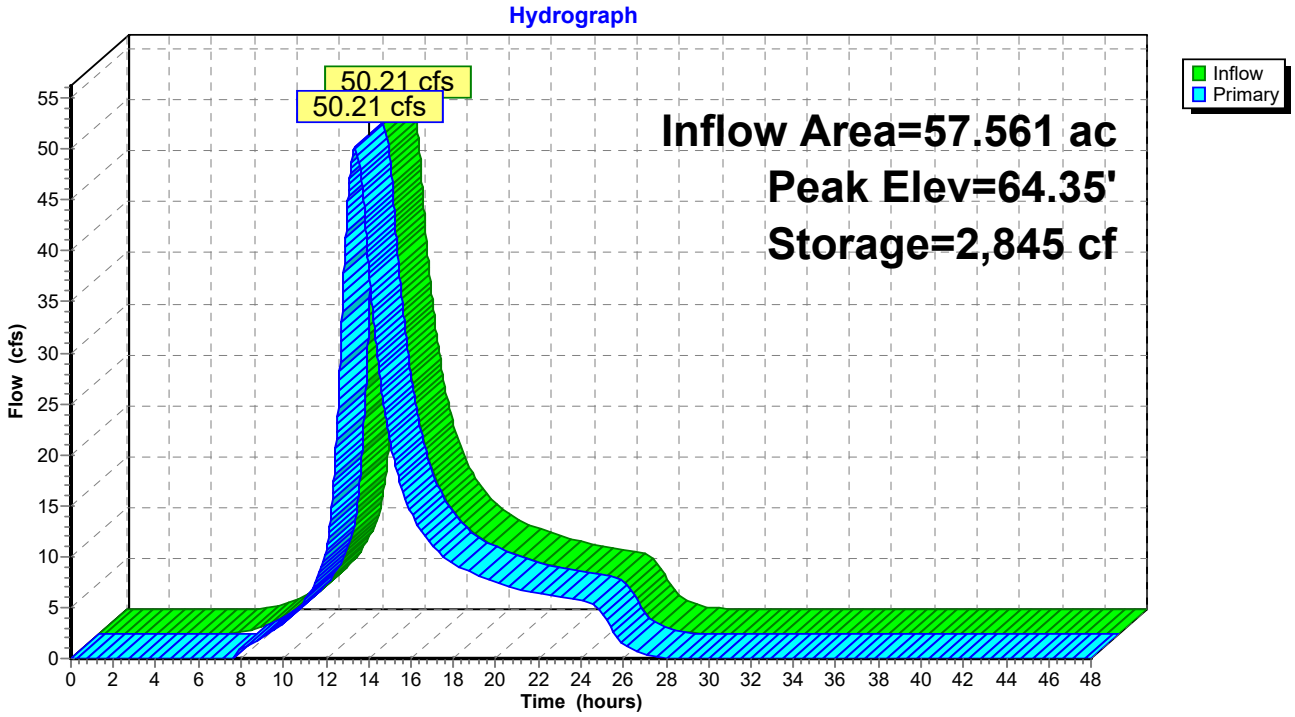
Volume	Invert	Avail.Storage	Storage Description
#1	61.99'	13,363 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.99	1	0.0	0	0
62.00	2,285	40.0	5	5
64.00	2,285	40.0	1,828	1,833
66.00	9,245	100.0	11,530	13,363

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**90.0' long x 80.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=50.20 cfs @ 13.35 hrs HW=64.35' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 50.20 cfs @ 1.59 fps)

Pond 24P: Stone Ford at Stream Impact G

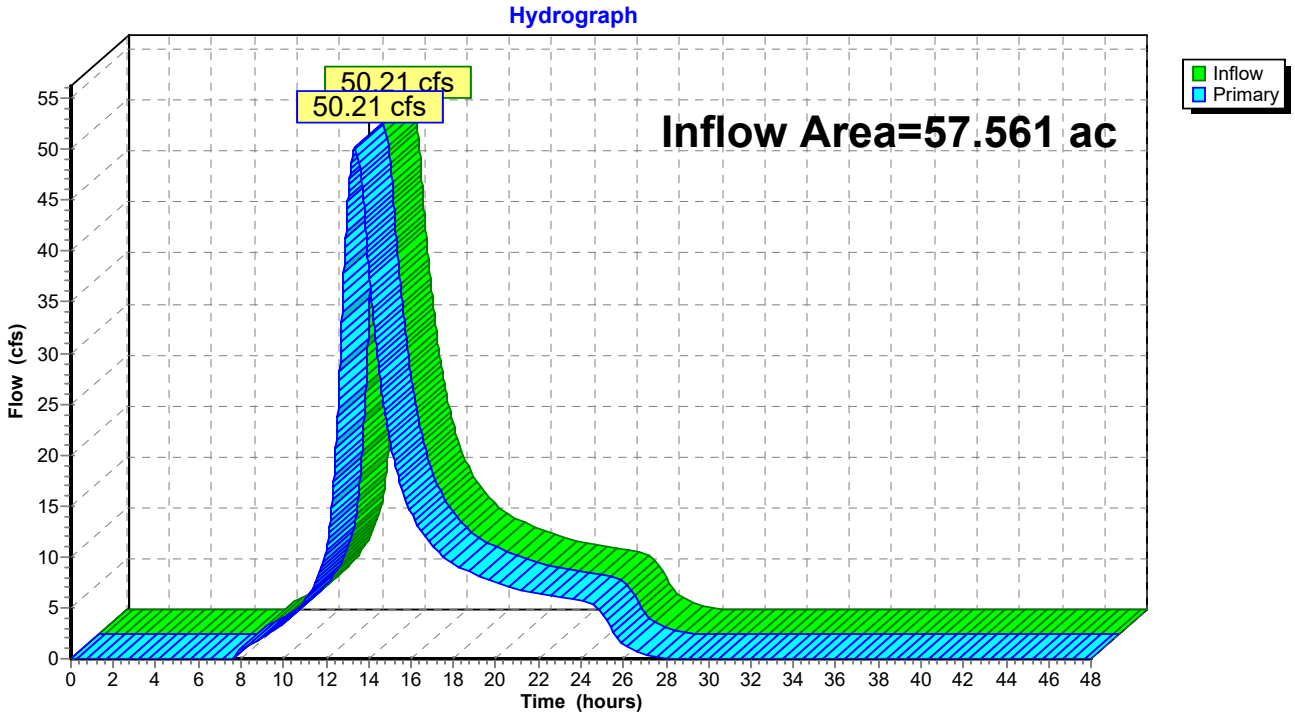


Summary for Link 25L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 3.58" for 25-yr event
Inflow = 50.21 cfs @ 13.35 hrs, Volume= 17.169 af
Primary = 50.21 cfs @ 13.35 hrs, Volume= 17.169 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 25L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 24S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=4.69"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=64.05 cfs 22.483 af

Reach 23R: Existing Swale to Stream Avg. Flow Depth=1.22' Max Vel=5.44 fps Inflow=64.05 cfs 22.483 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=63.94 cfs 22.483 af

Pond 24P: Stone Ford at Stream Impact G Peak Elev=64.41' Storage=3,064 cf Inflow=63.94 cfs 22.483 af
Outflow=63.93 cfs 22.441 af

Link 25L: Stream flowing past crossing Inflow=63.93 cfs 22.441 af
Primary=63.93 cfs 22.441 af

Total Runoff Area = 57.561 ac Runoff Volume = 22.483 af Average Runoff Depth = 4.69"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

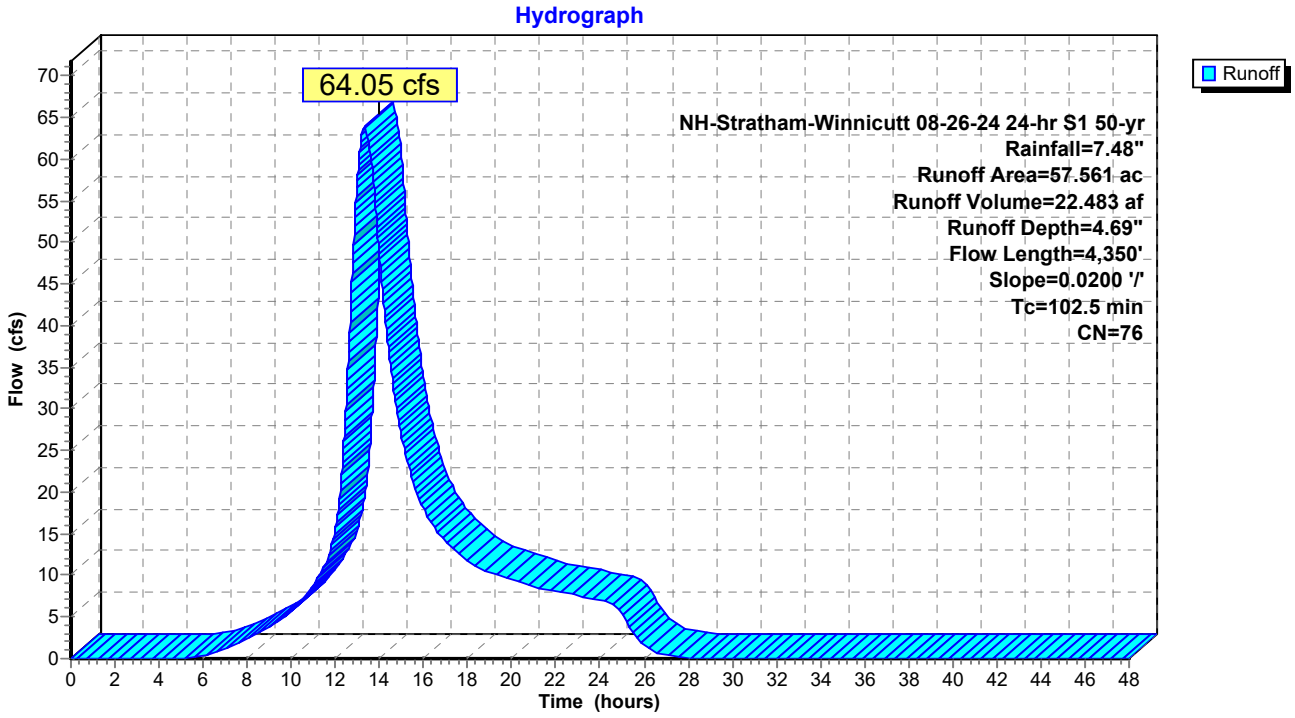
Runoff = 64.05 cfs @ 13.33 hrs, Volume= 22.483 af, Depth= 4.69"
Routed to Reach 23R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 50-yr Rainfall=7.48"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



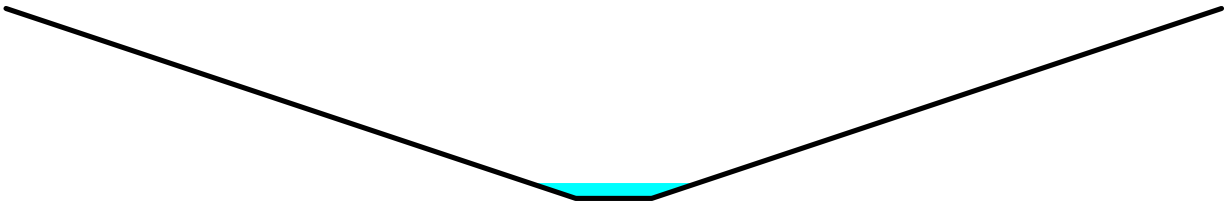
Summary for Reach 23R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 64.05 cfs @ 13.33 hrs, Volume= 22.483 af
Outflow = 63.94 cfs @ 13.34 hrs, Volume= 22.483 af, Atten= 0%, Lag= 1.1 min
Routed to Pond 24P : Stone Ford at Stream Impact G

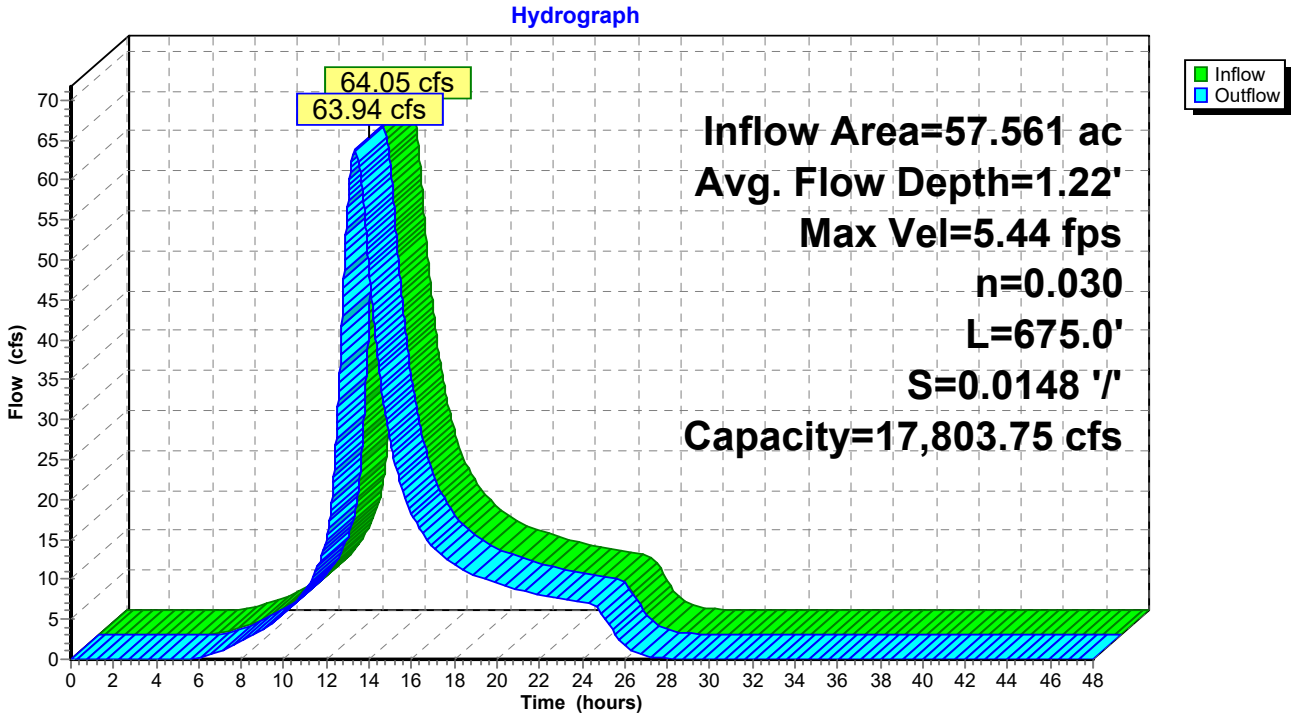
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.44 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 2.79 fps, Avg. Travel Time= 4.0 min

Peak Storage= 7,926 cf @ 13.34 hrs
Average Depth at Peak Storage= 1.22' , Surface Width= 13.30'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 23R: Existing Swale to Stream Impact G



Summary for Pond 24P: Stone Ford at Stream Impact G

[61] Hint: Exceeded Reach 23R outlet invert by 0.41' @ 13.35 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.69" for 50-yr event
Inflow = 63.94 cfs @ 13.34 hrs, Volume= 22.483 af
Outflow = 63.93 cfs @ 13.35 hrs, Volume= 22.441 af, Atten= 0%, Lag= 0.3 min
Primary = 63.93 cfs @ 13.35 hrs, Volume= 22.441 af
Routed to Link 25L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 64.41' @ 13.35 hrs Surf.Area= 3,714 sf Storage= 3,064 cf

Plug-Flow detention time= 2.8 min calculated for 22.441 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (938.8 - 937.3)

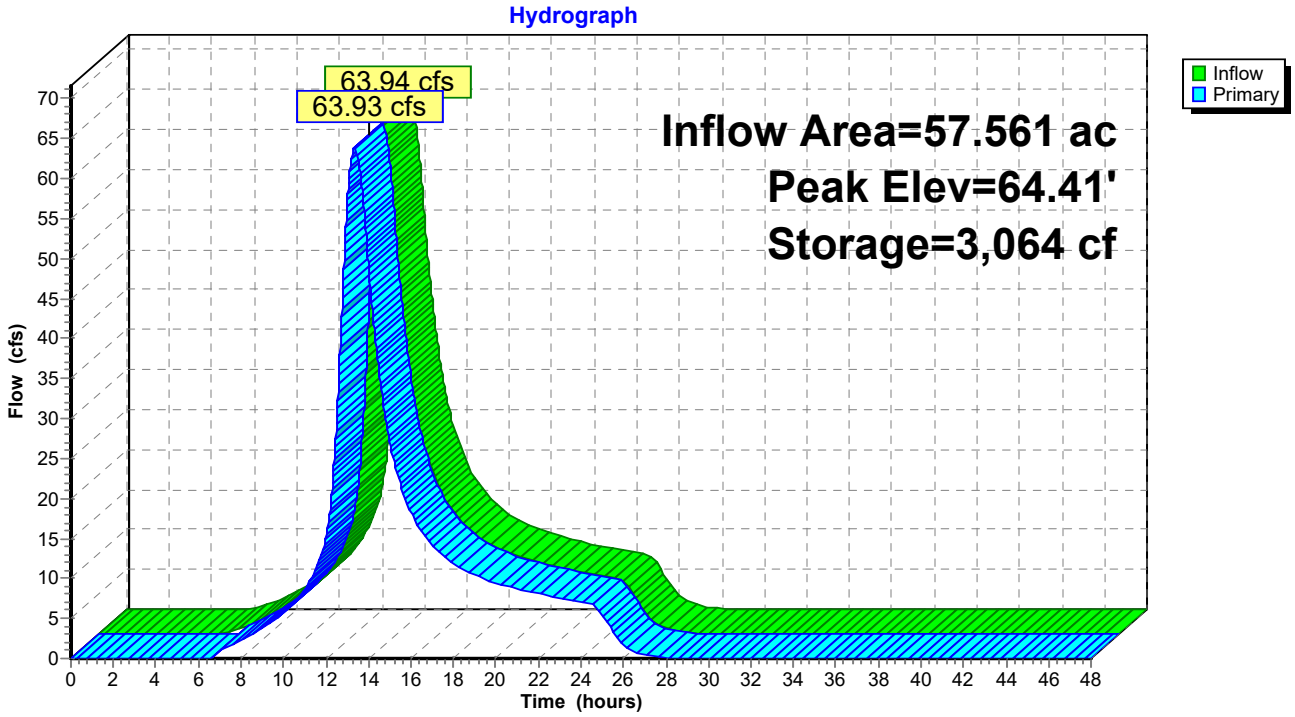
Volume	Invert	Avail.Storage	Storage Description
#1	61.99'	13,363 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.99	1	0.0	0	0
62.00	2,285	40.0	5	5
64.00	2,285	40.0	1,828	1,833
66.00	9,245	100.0	11,530	13,363

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**90.0' long x 80.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=63.93 cfs @ 13.35 hrs HW=64.41' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 63.93 cfs @ 1.73 fps)

Pond 24P: Stone Ford at Stream Impact G

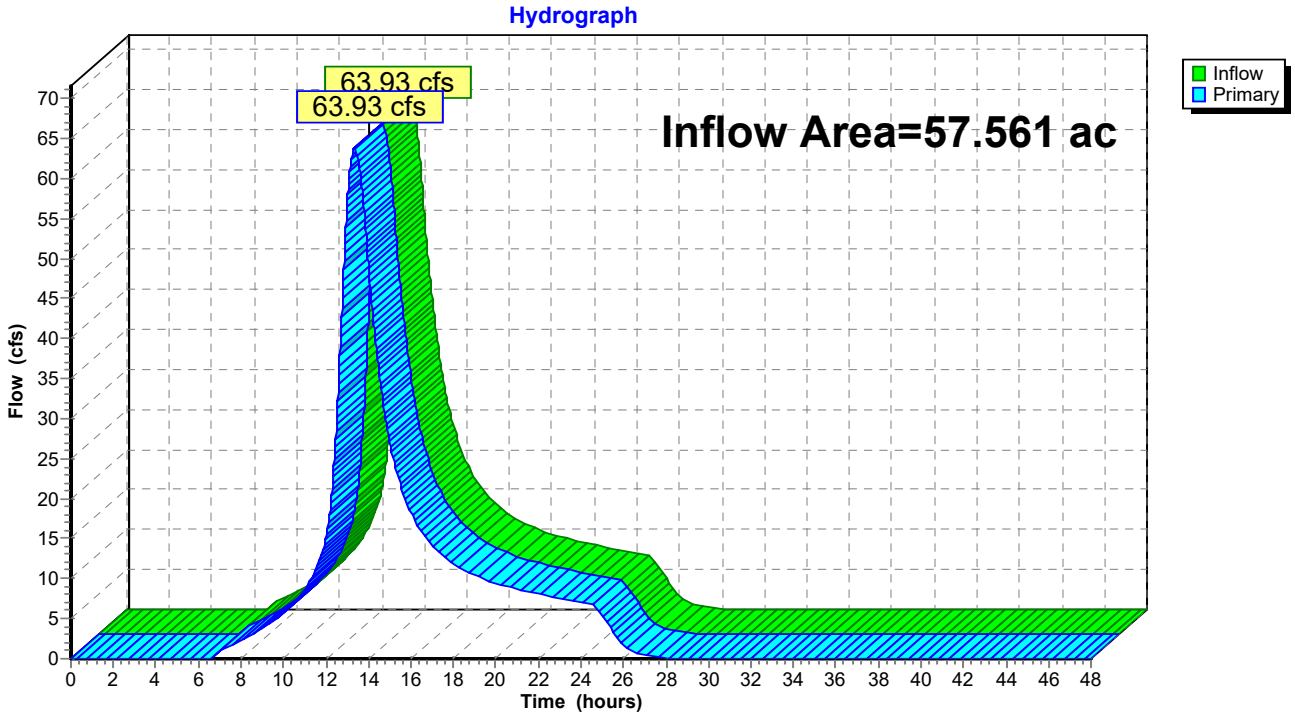


Summary for Link 25L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 4.68" for 50-yr event
Inflow = 63.93 cfs @ 13.35 hrs, Volume= 22.441 af
Primary = 63.93 cfs @ 13.35 hrs, Volume= 22.441 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 25L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 24S: Watershed feeding Runoff Area=57.561 ac 5.44% Impervious Runoff Depth=6.06"
Flow Length=4,350' Slope=0.0200 '/' Tc=102.5 min CN=76 Runoff=80.61 cfs 29.055 af

Reach 23R: Existing Swale to Stream Avg. Flow Depth=1.37' Max Vel=5.81 fps Inflow=80.61 cfs 29.055 af
n=0.030 L=675.0' S=0.0148 '/' Capacity=17,803.75 cfs Outflow=80.49 cfs 29.055 af

Pond 24P: Stone Ford at Stream Impact G Peak Elev=64.48' Storage=3,325 cf Inflow=80.49 cfs 29.055 af
Outflow=80.48 cfs 29.013 af

Link 25L: Stream flowing past crossing Inflow=80.48 cfs 29.013 af
Primary=80.48 cfs 29.013 af

Total Runoff Area = 57.561 ac Runoff Volume = 29.055 af Average Runoff Depth = 6.06"
94.56% Pervious = 54.430 ac 5.44% Impervious = 3.131 ac

mary for Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

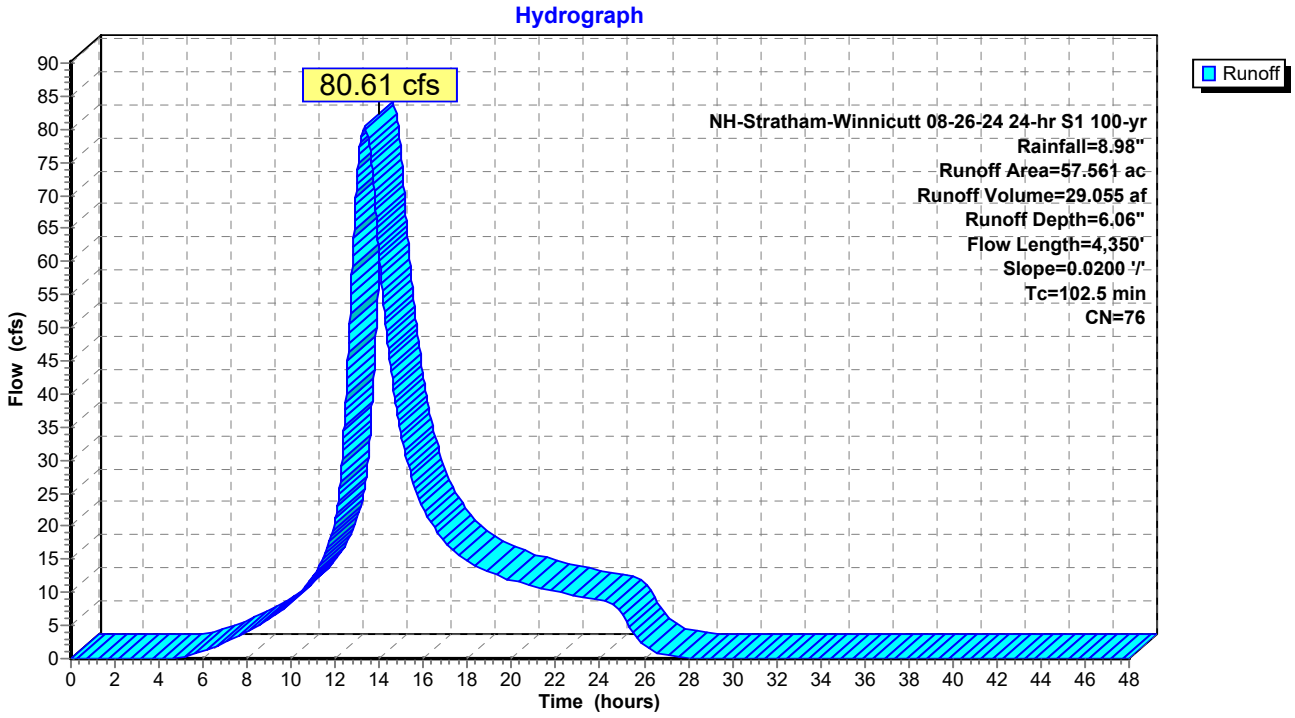
Runoff = 80.61 cfs @ 13.32 hrs, Volume= 29.055 af, Depth= 6.06"
Routed to Reach 23R : Existing Swale to Stream Impact G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 100-yr Rainfall=8.98"

Area (ac)	CN	Description
3.087	98	Paved parking, HSG C
0.044	98	Paved parking, HSG D
52.030	74	>75% Grass cover, Good, HSG C
2.400	80	>75% Grass cover, Good, HSG D
57.561	76	Weighted Average
54.430		94.56% Pervious Area
3.131		5.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
102.5	4,350	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 24S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



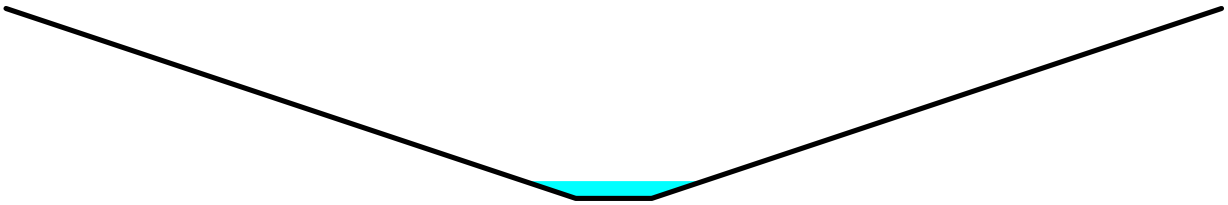
Summary for Reach 23R: Existing Swale to Stream Impact G

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 80.61 cfs @ 13.32 hrs, Volume= 29.055 af
Outflow = 80.49 cfs @ 13.34 hrs, Volume= 29.055 af, Atten= 0%, Lag= 1.0 min
Routed to Pond 24P : Stone Ford at Stream Impact G

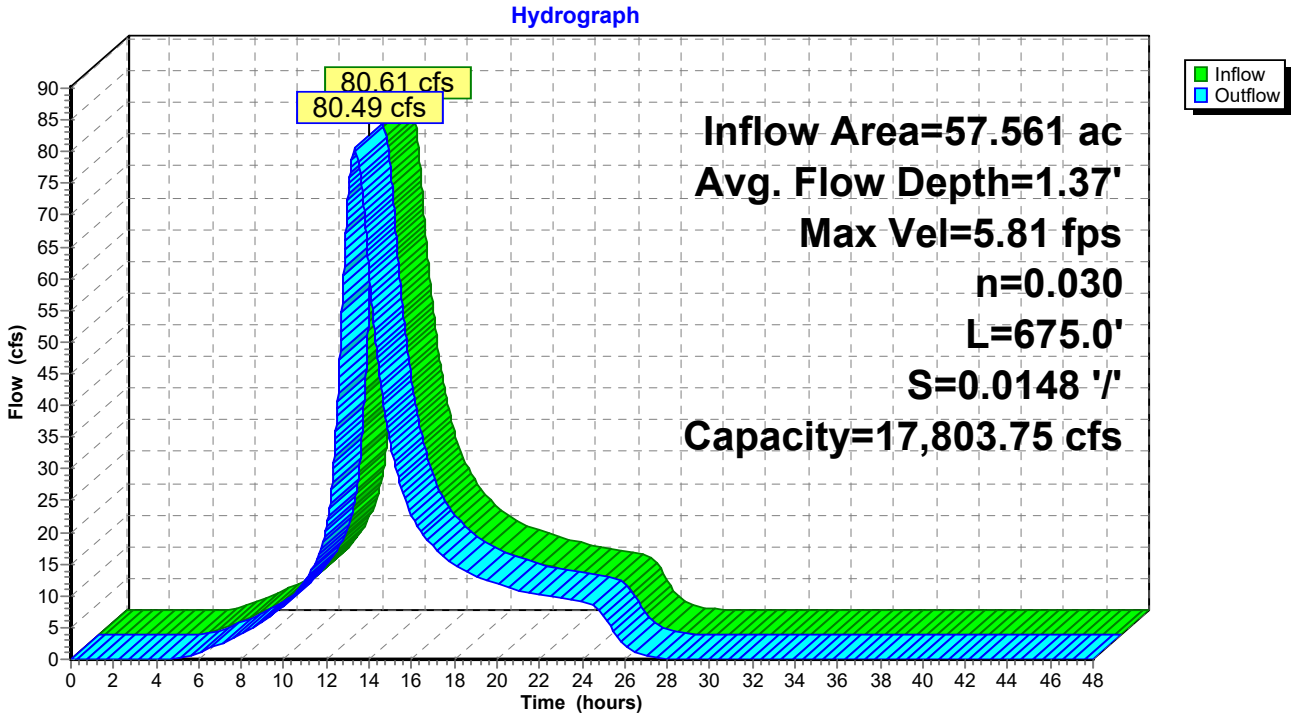
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.81 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 2.97 fps, Avg. Travel Time= 3.8 min

Peak Storage= 9,353 cf @ 13.34 hrs
Average Depth at Peak Storage= 1.37' , Surface Width= 14.22'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 17,803.75 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 675.0' Slope= 0.0148 '/'
Inlet Invert= 74.00', Outlet Invert= 64.00'



Reach 23R: Existing Swale to Stream Impact G



Summary for Pond 24P: Stone Ford at Stream Impact G

[61] Hint: Exceeded Reach 23R outlet invert by 0.48' @ 13.34 hrs

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.06" for 100-yr event
Inflow = 80.49 cfs @ 13.34 hrs, Volume= 29.055 af
Outflow = 80.48 cfs @ 13.34 hrs, Volume= 29.013 af, Atten= 0%, Lag= 0.3 min
Primary = 80.48 cfs @ 13.34 hrs, Volume= 29.013 af
Routed to Link 25L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 64.48' @ 13.34 hrs Surf.Area= 3,951 sf Storage= 3,325 cf

Plug-Flow detention time= 2.3 min calculated for 29.013 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (928.4 - 927.2)

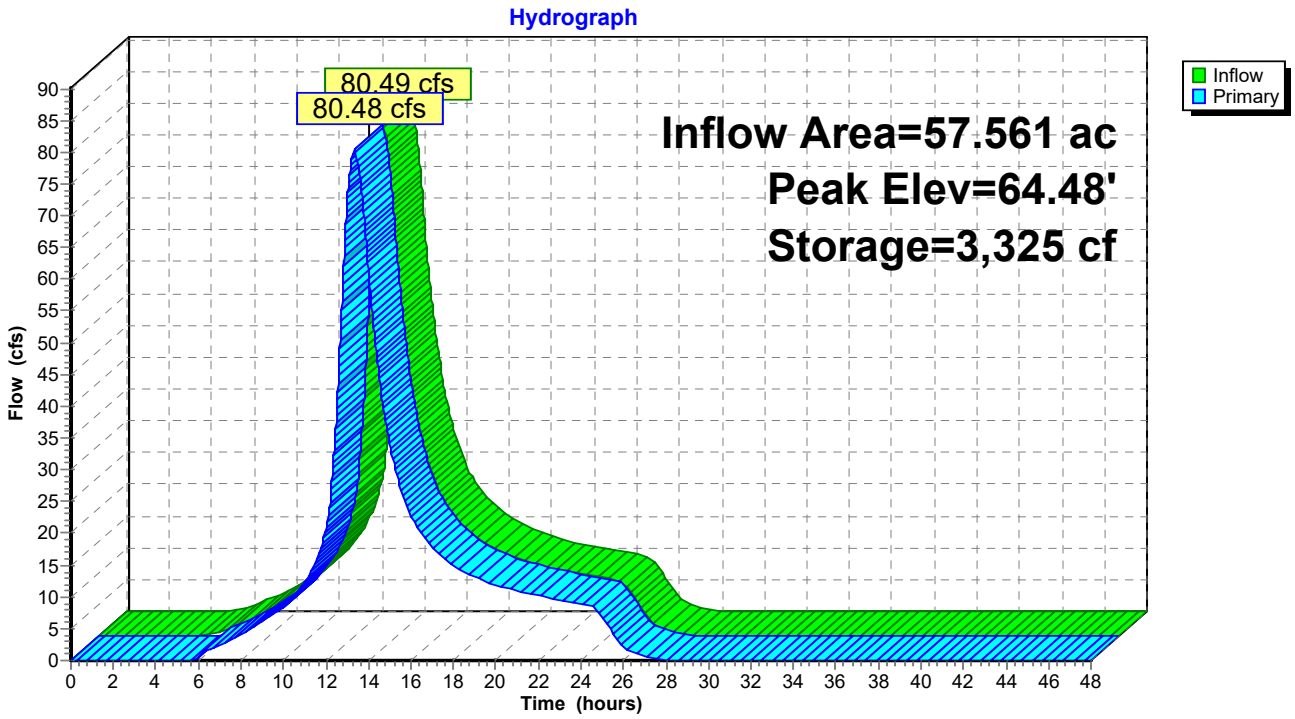
Volume	Invert	Avail.Storage	Storage Description
#1	61.99'	13,363 cf	**24" Deep Stone Ford (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.99	1	0.0	0	0
62.00	2,285	40.0	5	5
64.00	2,285	40.0	1,828	1,833
66.00	9,245	100.0	11,530	13,363

Device	Routing	Invert	Outlet Devices
#1	Primary	64.00'	**90.0' long x 80.0' breadth Overtopping**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=80.48 cfs @ 13.34 hrs HW=64.48' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 80.48 cfs @ 1.87 fps)

Pond 24P: Stone Ford at Stream Impact G

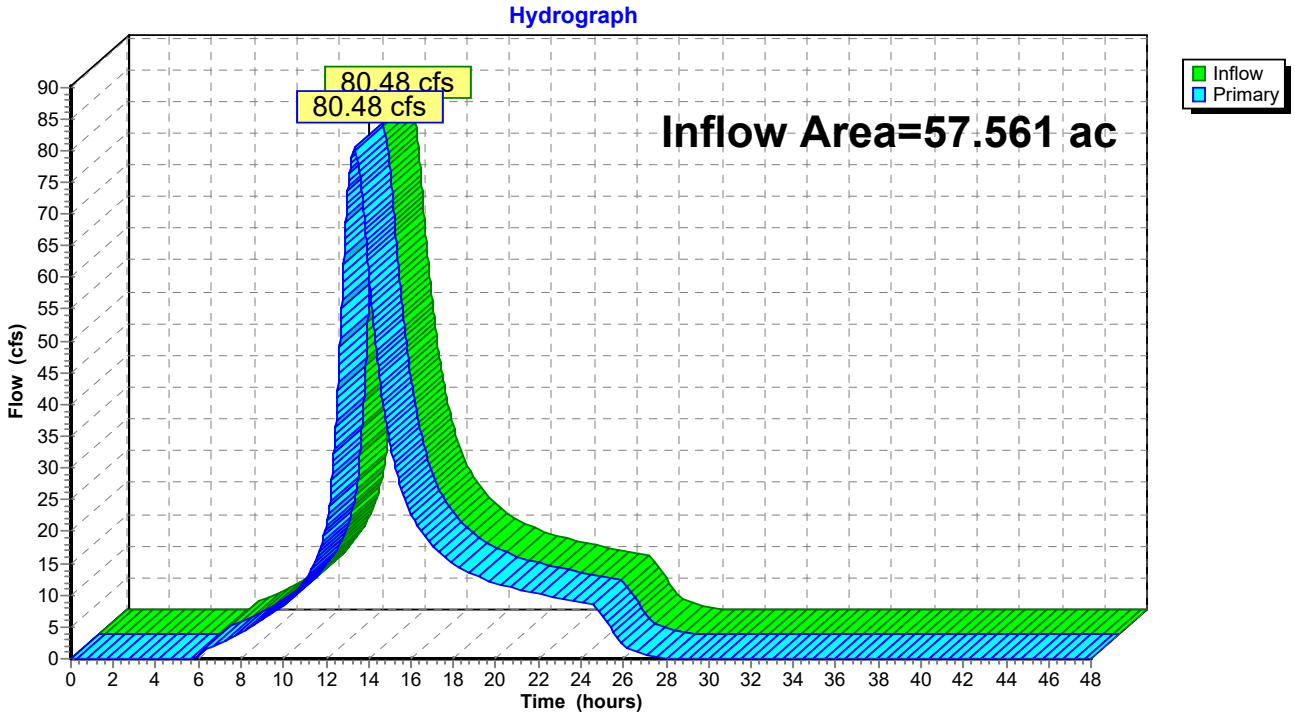


Summary for Link 25L: Stream flowing past crossing

Inflow Area = 57.561 ac, 5.44% Impervious, Inflow Depth = 6.05" for 100-yr event
Inflow = 80.48 cfs @ 13.34 hrs, Volume= 29.013 af
Primary = 80.48 cfs @ 13.34 hrs, Volume= 29.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

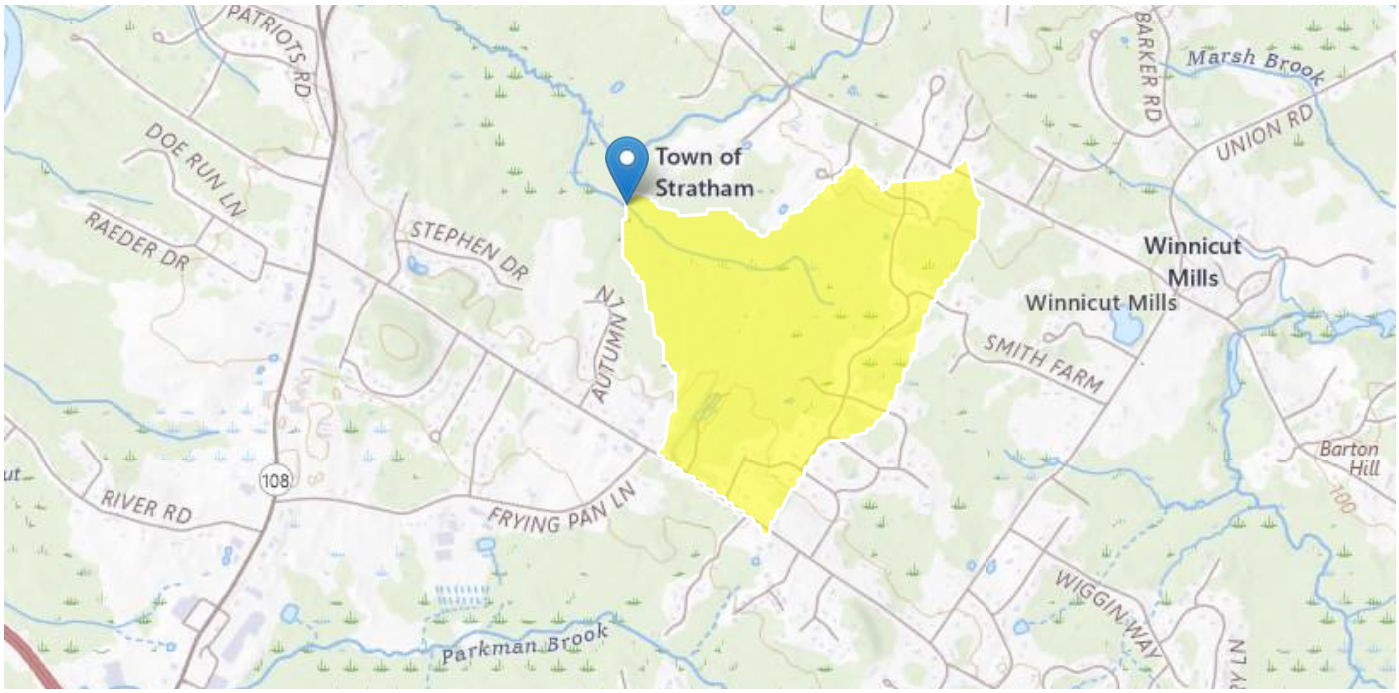
Link 25L: Stream flowing past crossing



Impact H

StreamStats Report

Region ID: NH
Delineation Point (Latitude, Longitude): 43.01402, -70.90188
Time: 2026-09-05 10:53:13 -0400



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
APRAVPRE	Mean April Precipitation	4.31	inches
DRNAREA	Area that drains to a point on a stream	0.5	square miles
ELEVMAX	Maximum basin elevation	147.331	feet

Parameter Code	Parameter Description	Value	Unit
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	15.403	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	2.825	percent
WETLAND	Percentage of Wetlands	8.48	percent

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Application Version: 4.37.1
SSHydro Services Version: 1.4.0
SSDelineate Services Version: 1.2.0
NSS Services Version: 2.5.0
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.2
Batch Processor Version: 1.6.2

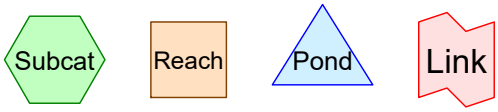
Existing Conditions at
Impact H



Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 57

Existing Swale to Stream Impact H

Stream flowing past crossing



Routing Diagram for Stream Crossing Analysis 07-16-26
Prepared by Emanuel Engineering, Printed 9/10/2026
HydroCAD® 10.20-9a s/n 01104 © 2026 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.23	
2	10-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	4.91	
3	25-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	25-yr	Default	24.00	1	6.24	
4	50-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	50-yr	Default	24.00	1	7.48	
5	100-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	100-yr	Default	24.00	1	8.98	

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
209.280	39	>75% Grass cover, Good, HSG A (38S)
75.315	74	>75% Grass cover, Good, HSG C (38S)
26.370	80	>75% Grass cover, Good, HSG D (38S)
6.080	98	Paved parking, HSG A (38S)
2.189	98	Paved parking, HSG C (38S)
0.766	98	Paved parking, HSG D (38S)
320.000	**52**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
215.360	HSG A	38S
0.000	HSG B	
77.504	HSG C	38S
27.136	HSG D	38S
0.000	Other	
320.000		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
209.280	0.000	75.315	26.370	0.000	310.965	>75% Grass cover, Good	38S
6.080	0.000	2.189	0.766	0.000	9.035	Paved parking	38S
215.360	**0.000**	**77.504**	**27.136**	**0.000**	**320.000**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 38S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=0.18"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=6.02 cfs 4.811 af

Reach 40R: Existing Swale to Stream Avg. Flow Depth=0.25' Max Vel=1.55 fps Inflow=6.02 cfs 4.811 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=6.01 cfs 4.811 af

Link 44L: Stream flowing past crossing Inflow=6.01 cfs 4.811 af
Primary=6.01 cfs 4.811 af

Total Runoff Area = 320.000 ac Runoff Volume = 4.811 af Average Runoff Depth = 0.18"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

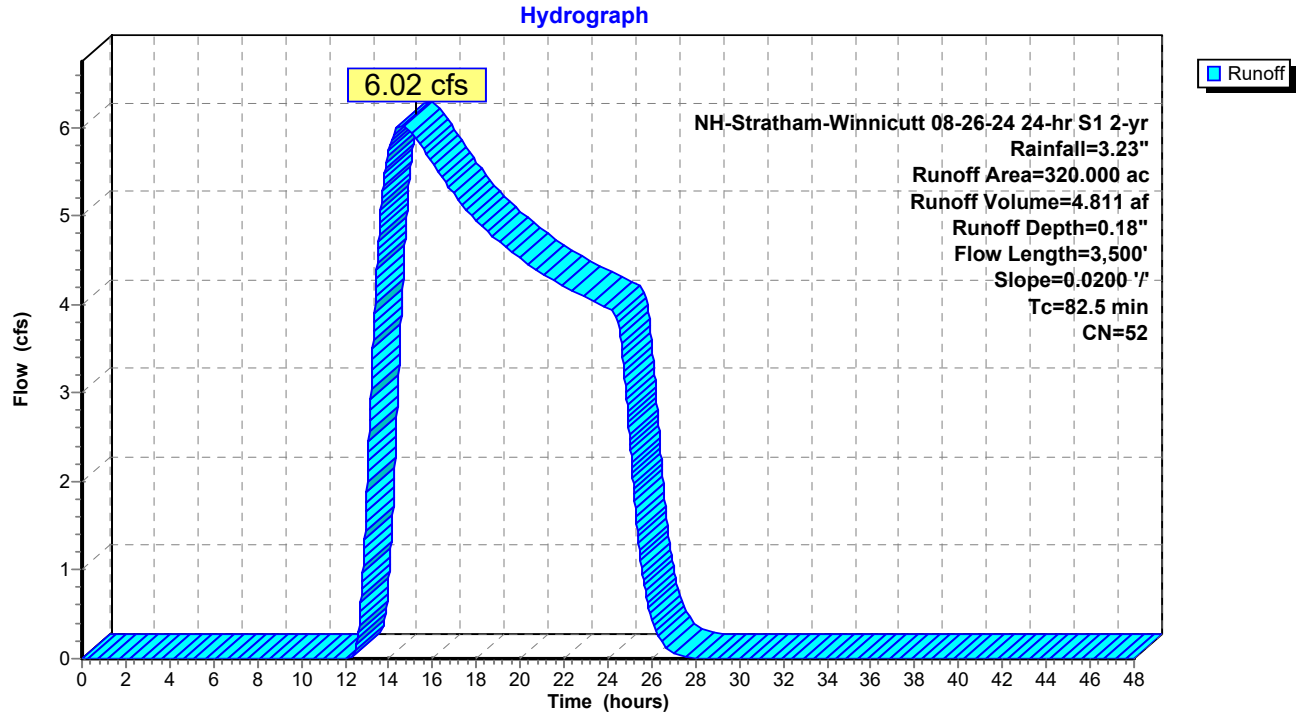
Runoff = 6.02 cfs @ 14.57 hrs, Volume= 4.811 af, Depth= 0.18"
Routed to Reach 40R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr Rainfall=3.23"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 40R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.18" for 2-yr event
Inflow = 6.02 cfs @ 14.57 hrs, Volume= 4.811 af
Outflow = 6.01 cfs @ 14.76 hrs, Volume= 4.811 af, Atten= 0%, Lag= 11.2 min
Routed to Link 44L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.55 fps, Min. Travel Time= 12.1 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 18.9 min

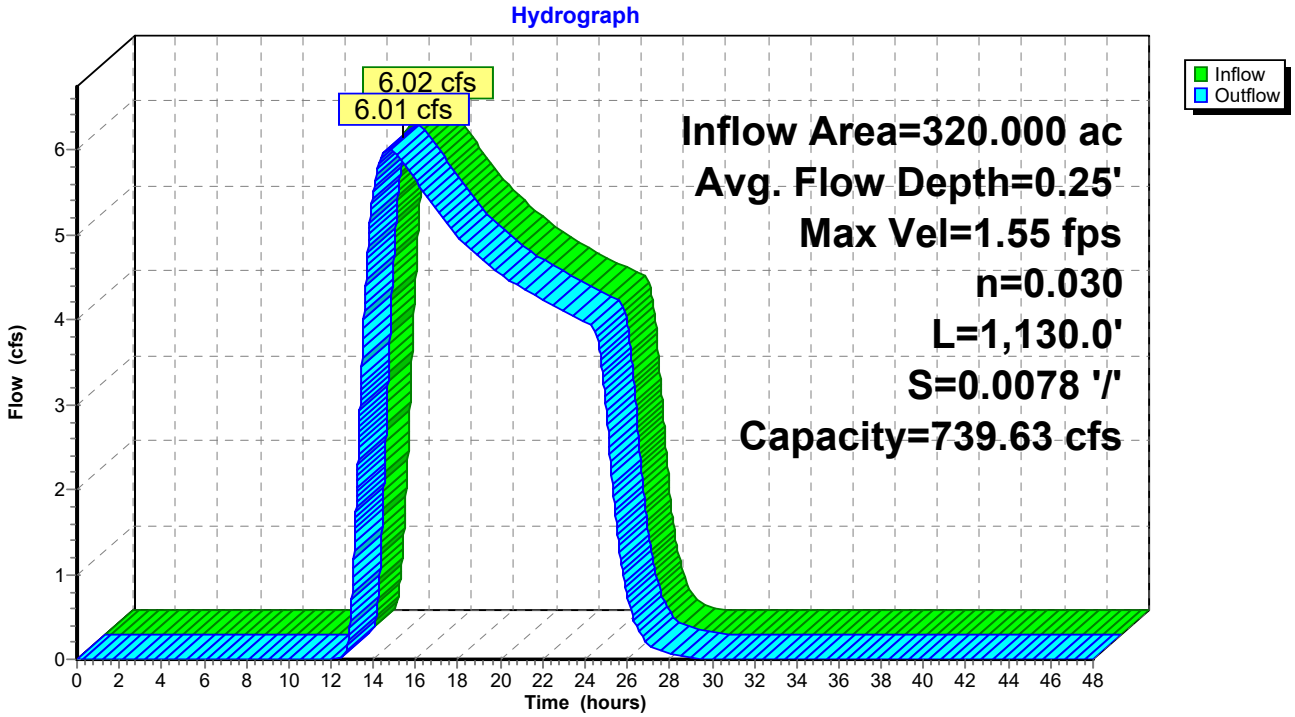
Peak Storage= 4,376 cf @ 14.76 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 18.33'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

Reach 40R: Existing Swale to Stream Impact H

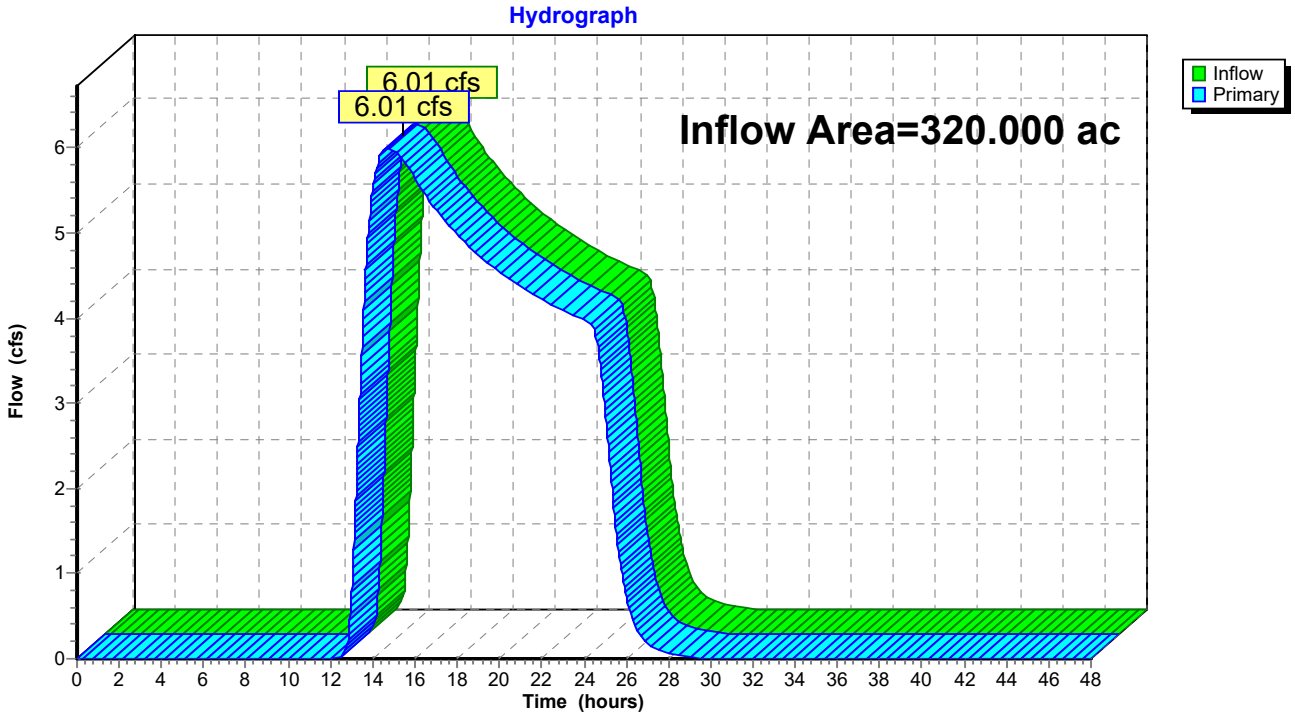


Summary for Link 44L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.18" for 2-yr event
Inflow = 6.01 cfs @ 14.76 hrs, Volume= 4.811 af
Primary = 6.01 cfs @ 14.76 hrs, Volume= 4.811 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 44L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 38S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=0.76"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=47.90 cfs 20.360 af

Reach 40R: Existing Swale to Stream Avg. Flow Depth=0.77' Max Vel=2.89 fps Inflow=47.90 cfs 20.360 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=47.57 cfs 20.360 af

Link 44L: Stream flowing past crossing Inflow=47.57 cfs 20.360 af
Primary=47.57 cfs 20.360 af

Total Runoff Area = 320.000 ac Runoff Volume = 20.360 af Average Runoff Depth = 0.76"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

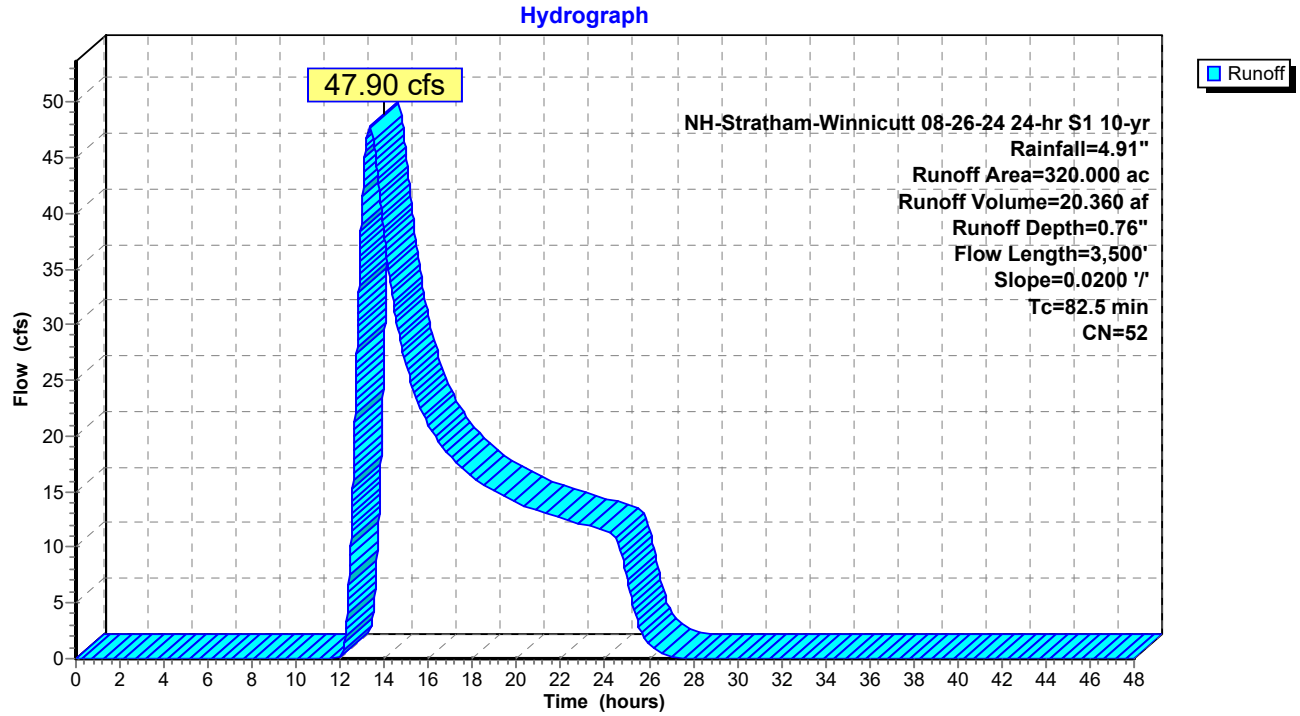
Runoff = 47.90 cfs @ 13.30 hrs, Volume= 20.360 af, Depth= 0.76"
Routed to Reach 40R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr Rainfall=4.91"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 40R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.76" for 10-yr event
Inflow = 47.90 cfs @ 13.30 hrs, Volume= 20.360 af
Outflow = 47.57 cfs @ 13.42 hrs, Volume= 20.360 af, Atten= 1%, Lag= 7.0 min
Routed to Link 44L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.89 fps, Min. Travel Time= 6.5 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 13.0 min

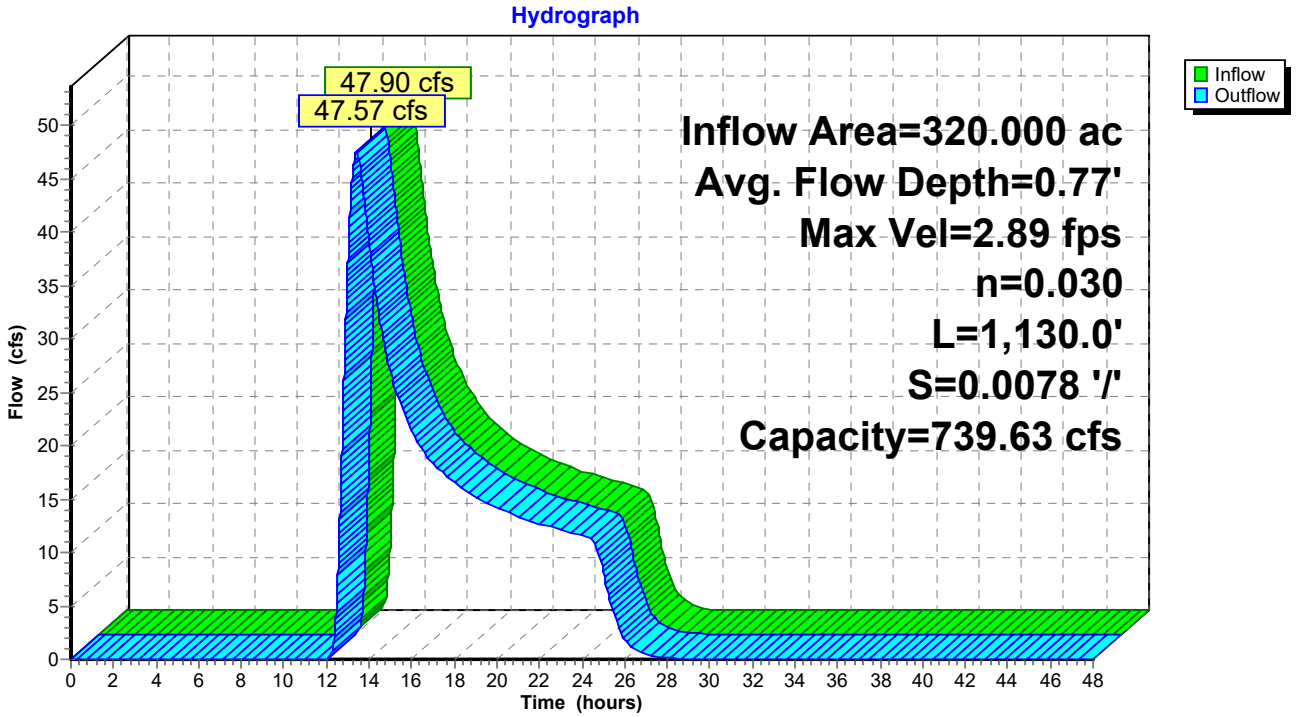
Peak Storage= 18,629 cf @ 13.42 hrs
Average Depth at Peak Storage= 0.77' , Surface Width= 30.68'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

Reach 40R: Existing Swale to Stream Impact H

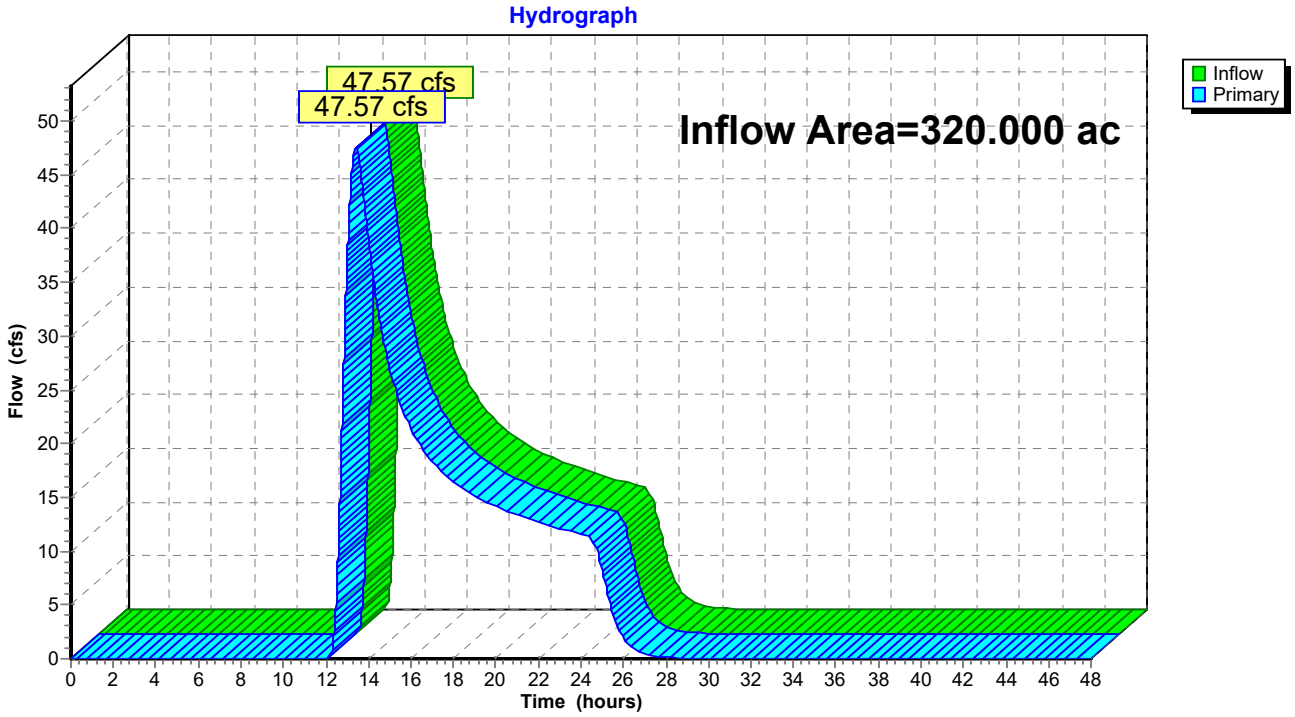


Summary for Link 44L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.76" for 10-yr event
Inflow = 47.57 cfs @ 13.42 hrs, Volume= 20.360 af
Primary = 47.57 cfs @ 13.42 hrs, Volume= 20.360 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 44L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 38S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=1.42"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=104.41 cfs 37.786 af

Reach 40R: Existing Swale to Stream Avg. Flow Depth=1.13' Max Vel=3.57 fps Inflow=104.41 cfs 37.786 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=103.95 cfs 37.786 af

Link 44L: Stream flowing past crossing Inflow=103.95 cfs 37.786 af
Primary=103.95 cfs 37.786 af

Total Runoff Area = 320.000 ac Runoff Volume = 37.786 af Average Runoff Depth = 1.42"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

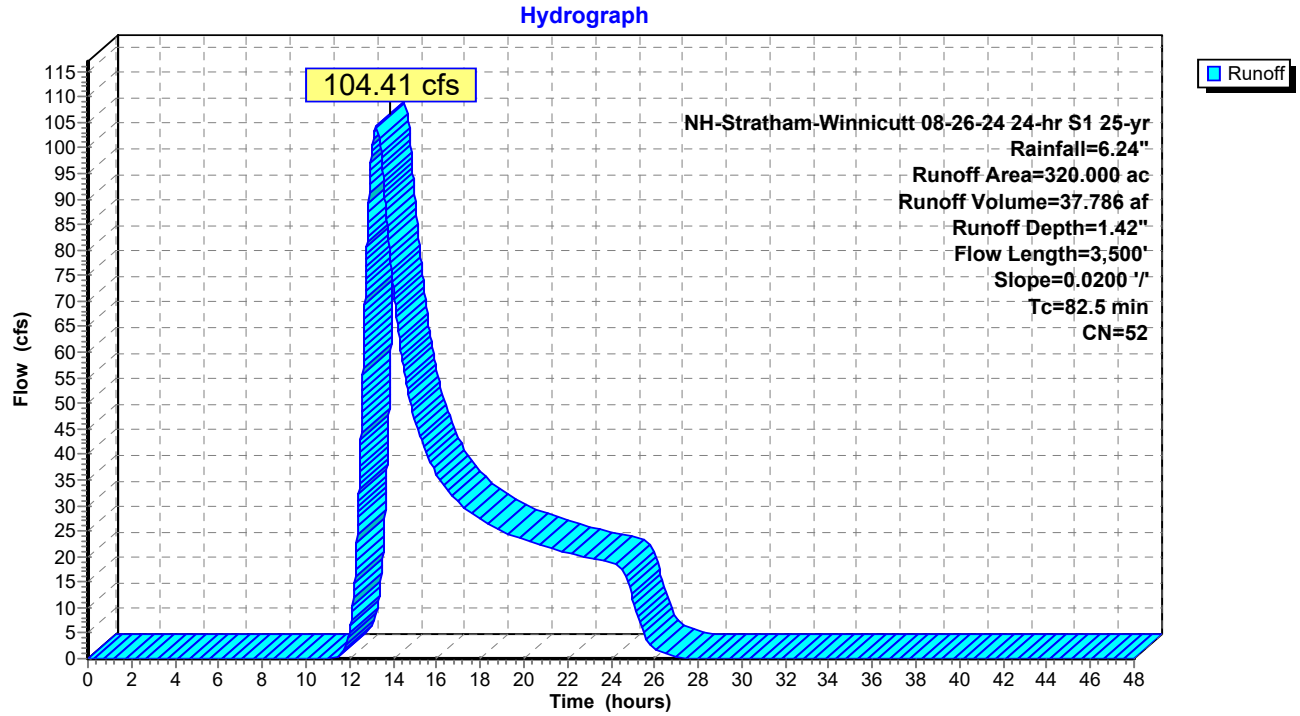
Runoff = 104.41 cfs @ 13.20 hrs, Volume= 37.786 af, Depth= 1.42"
Routed to Reach 40R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 25-yr Rainfall=6.24"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 40R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 1.42" for 25-yr event
Inflow = 104.41 cfs @ 13.20 hrs, Volume= 37.786 af
Outflow = 103.95 cfs @ 13.30 hrs, Volume= 37.786 af, Atten= 0%, Lag= 5.7 min
Routed to Link 44L : Stream flowing past crossing

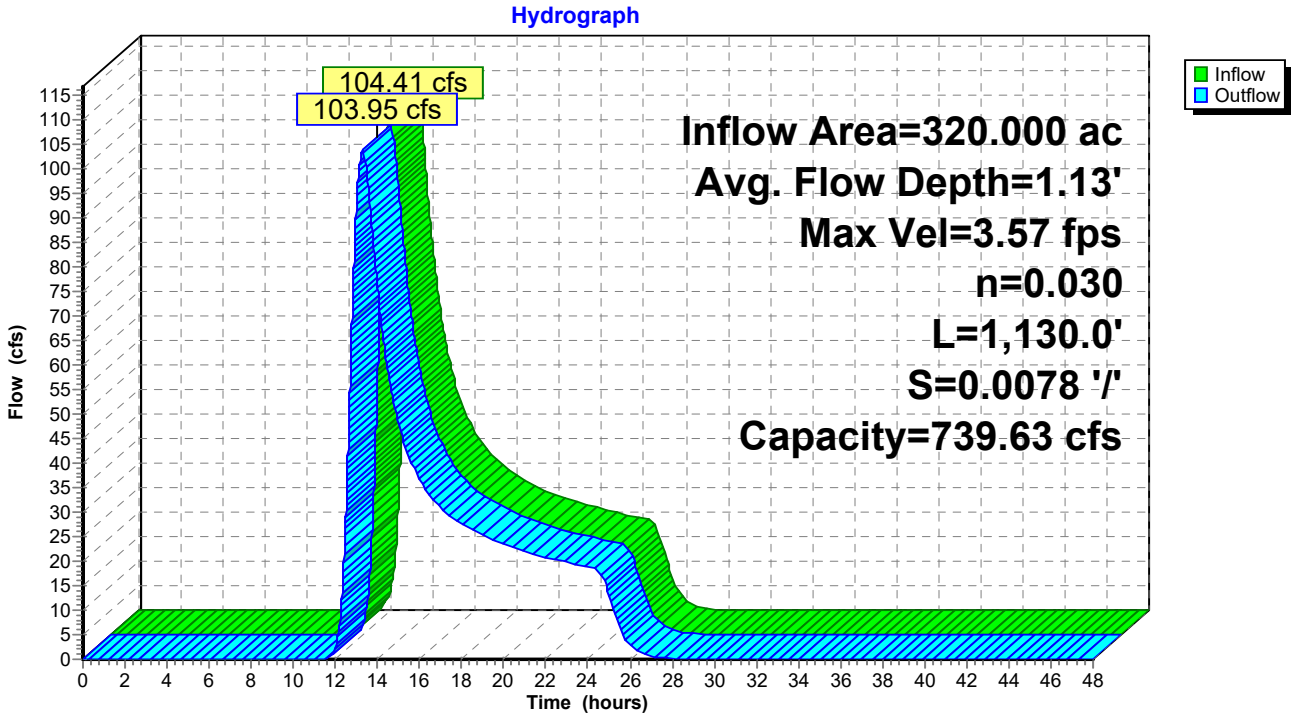
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.57 fps, Min. Travel Time= 5.3 min
Avg. Velocity = 1.66 fps, Avg. Travel Time= 11.4 min

Peak Storage= 32,896 cf @ 13.30 hrs
Average Depth at Peak Storage= 1.13' , Surface Width= 39.34'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

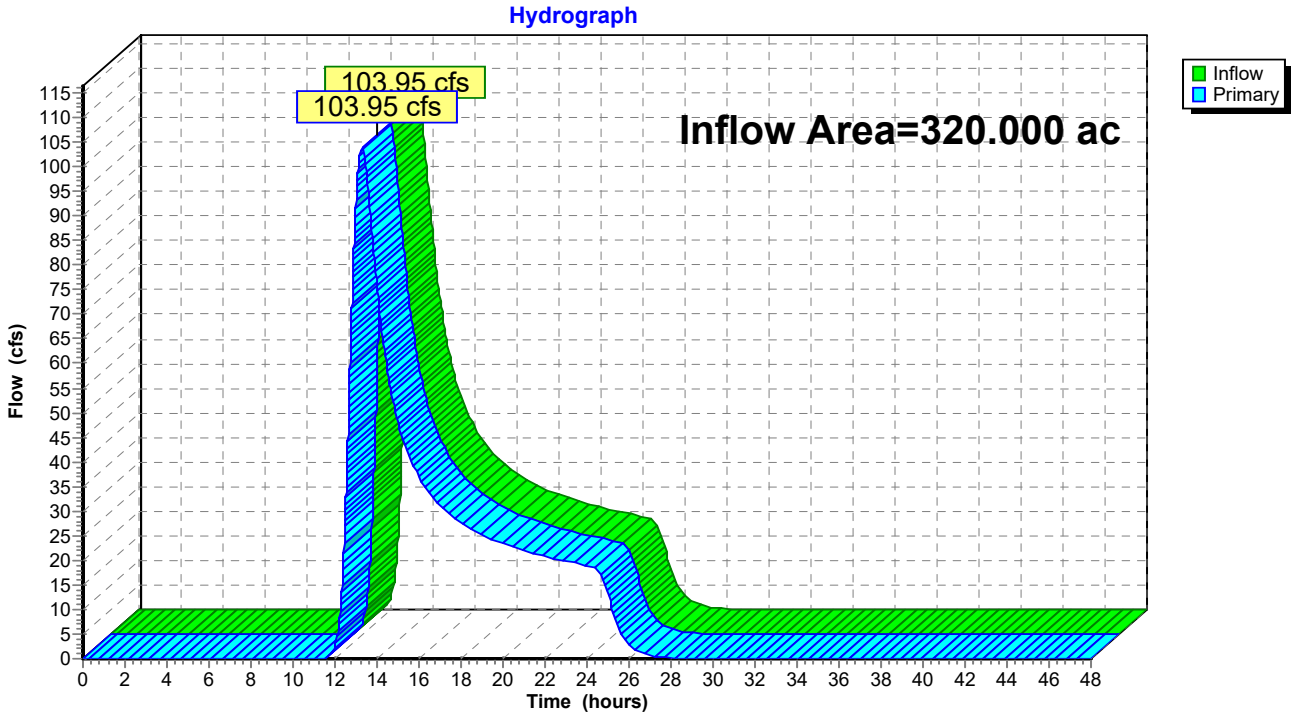


Summary for Link 44L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 1.42" for 25-yr event
Inflow = 103.95 cfs @ 13.30 hrs, Volume= 37.786 af
Primary = 103.95 cfs @ 13.30 hrs, Volume= 37.786 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 44L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 38S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=2.14"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=165.54 cfs 56.941 af

Reach 40R: Existing Swale to Stream Avg. Flow Depth=1.40' Max Vel=4.04 fps Inflow=165.54 cfs 56.941 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=164.97 cfs 56.941 af

Link 44L: Stream flowing past crossing Inflow=164.97 cfs 56.941 af
Primary=164.97 cfs 56.941 af

Total Runoff Area = 320.000 ac Runoff Volume = 56.941 af Average Runoff Depth = 2.14"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

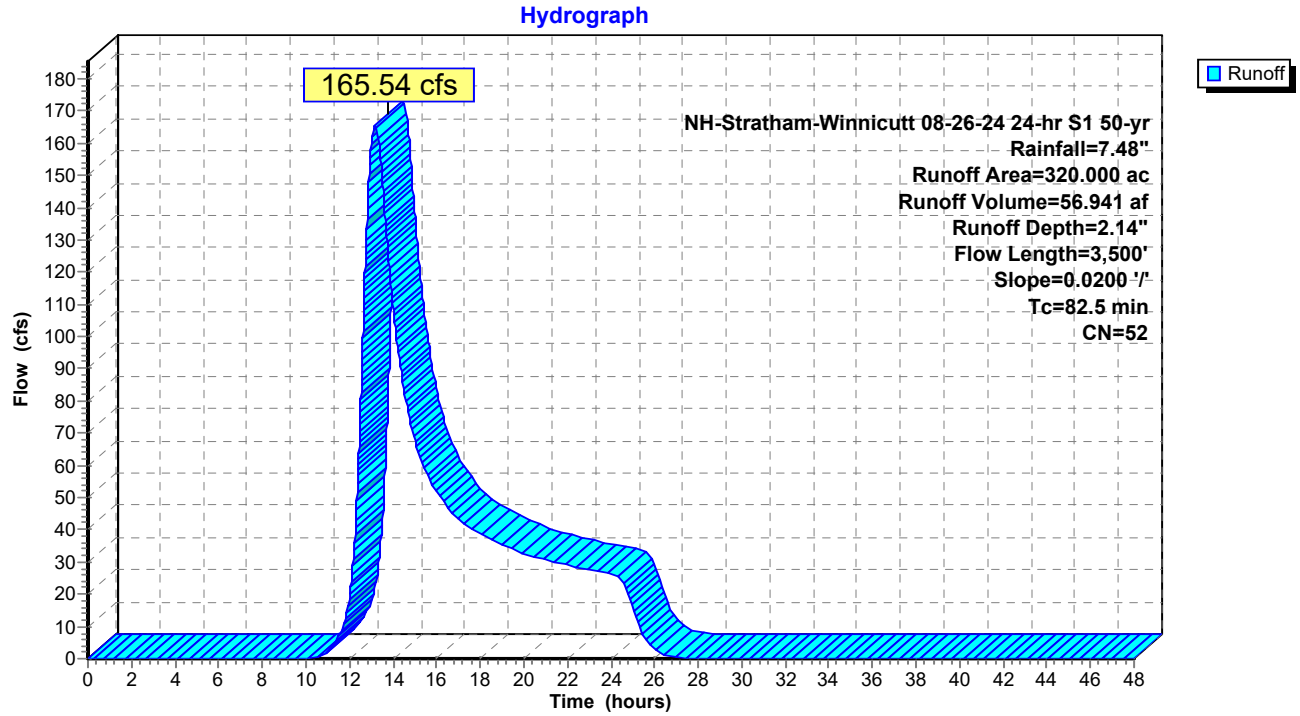
Runoff = 165.54 cfs @ 13.12 hrs, Volume= 56.941 af, Depth= 2.14"
Routed to Reach 40R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 50-yr Rainfall=7.48"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 40R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 2.14" for 50-yr event
Inflow = 165.54 cfs @ 13.12 hrs, Volume= 56.941 af
Outflow = 164.97 cfs @ 13.23 hrs, Volume= 56.941 af, Atten= 0%, Lag= 6.4 min
Routed to Link 44L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.04 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 10.4 min

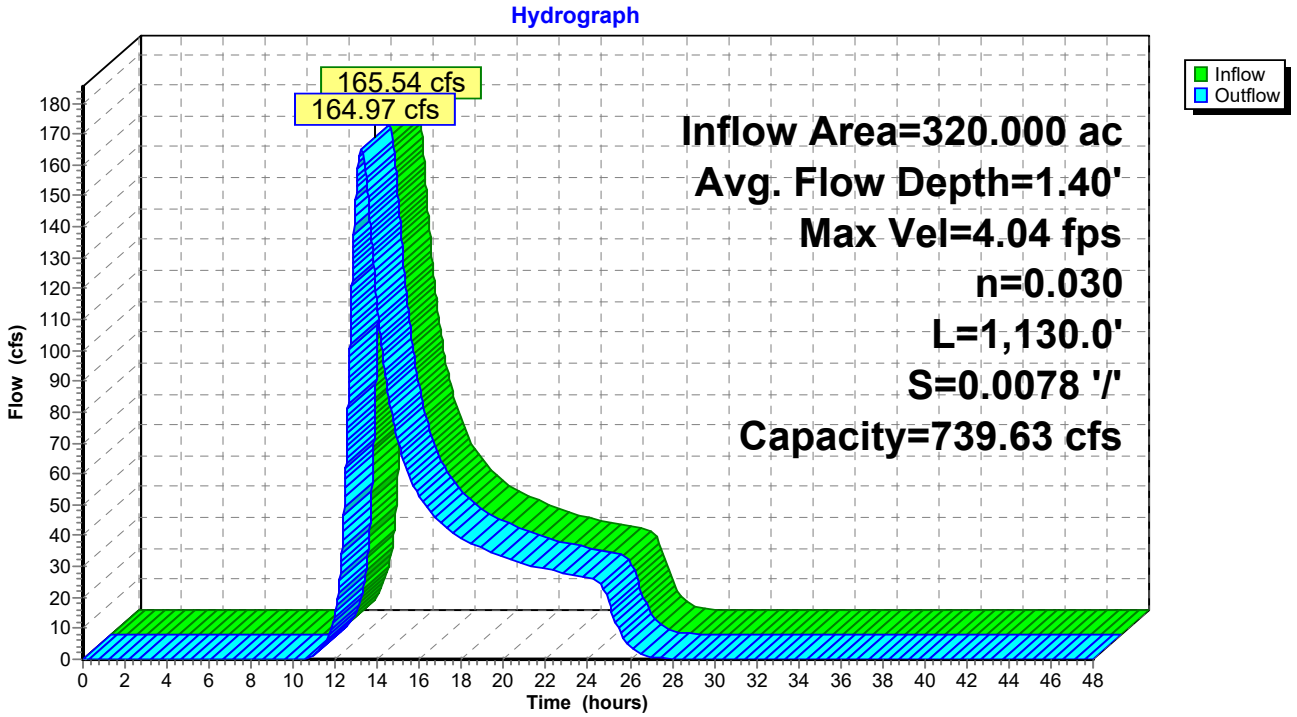
Peak Storage= 46,188 cf @ 13.23 hrs
Average Depth at Peak Storage= 1.40' , Surface Width= 45.96'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

Reach 40R: Existing Swale to Stream Impact H

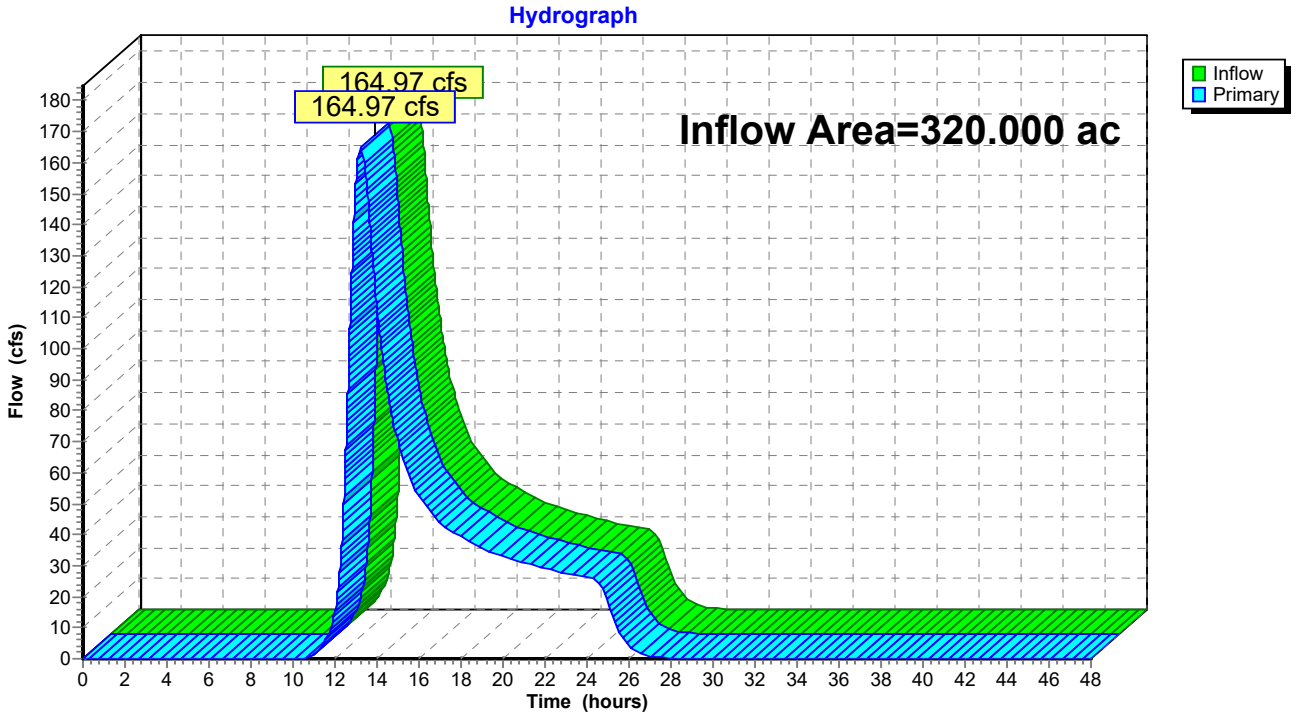


Summary for Link 44L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 2.14" for 50-yr event
Inflow = 164.97 cfs @ 13.23 hrs, Volume= 56.941 af
Primary = 164.97 cfs @ 13.23 hrs, Volume= 56.941 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 44L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 38S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=3.11"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=247.34 cfs 82.930 af

Reach 40R: Existing Swale to Stream Avg. Flow Depth=1.69' Max Vel=4.48 fps Inflow=247.34 cfs 82.930 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=245.94 cfs 82.930 af

Link 44L: Stream flowing past crossing Inflow=245.94 cfs 82.930 af
Primary=245.94 cfs 82.930 af

Total Runoff Area = 320.000 ac Runoff Volume = 82.930 af Average Runoff Depth = 3.11"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

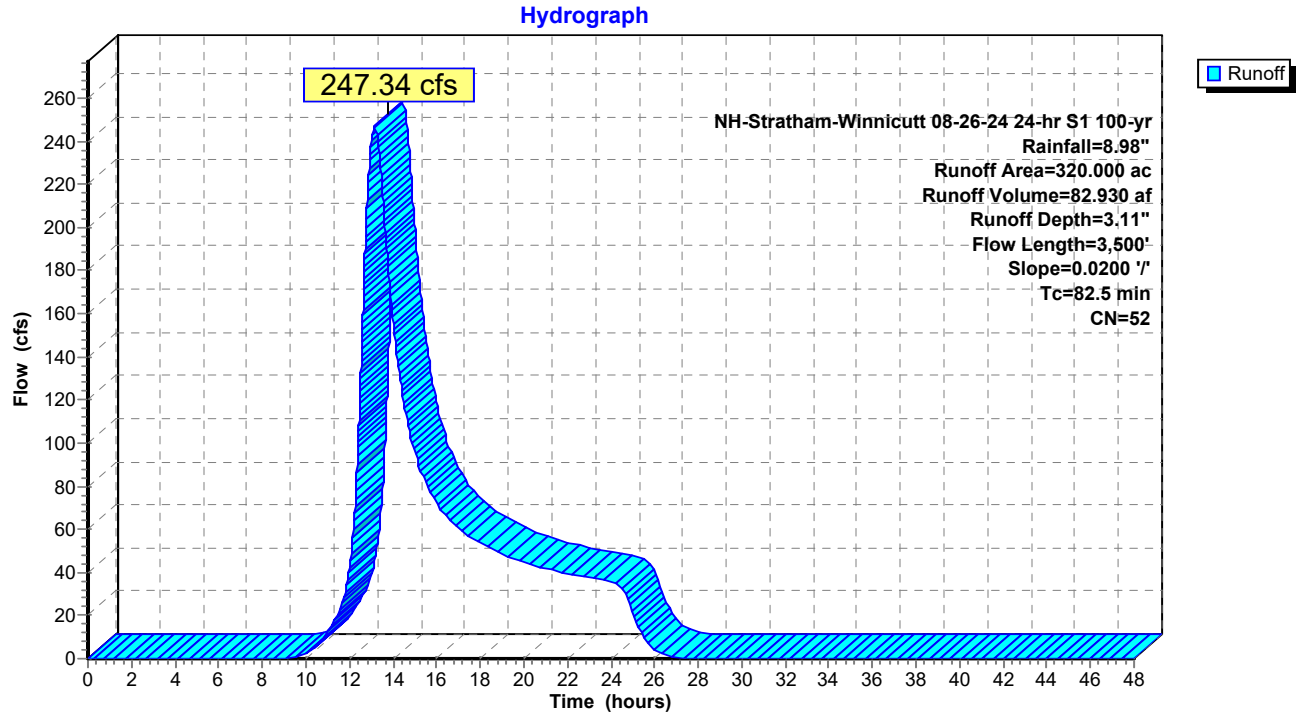
Runoff = 247.34 cfs @ 13.11 hrs, Volume= 82.930 af, Depth= 3.11"
Routed to Reach 40R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 100-yr Rainfall=8.98"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 38S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 40R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 3.11" for 100-yr event
Inflow = 247.34 cfs @ 13.11 hrs, Volume= 82.930 af
Outflow = 245.94 cfs @ 13.19 hrs, Volume= 82.930 af, Atten= 1%, Lag= 4.7 min
Routed to Link 44L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.48 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 1.97 fps, Avg. Travel Time= 9.5 min

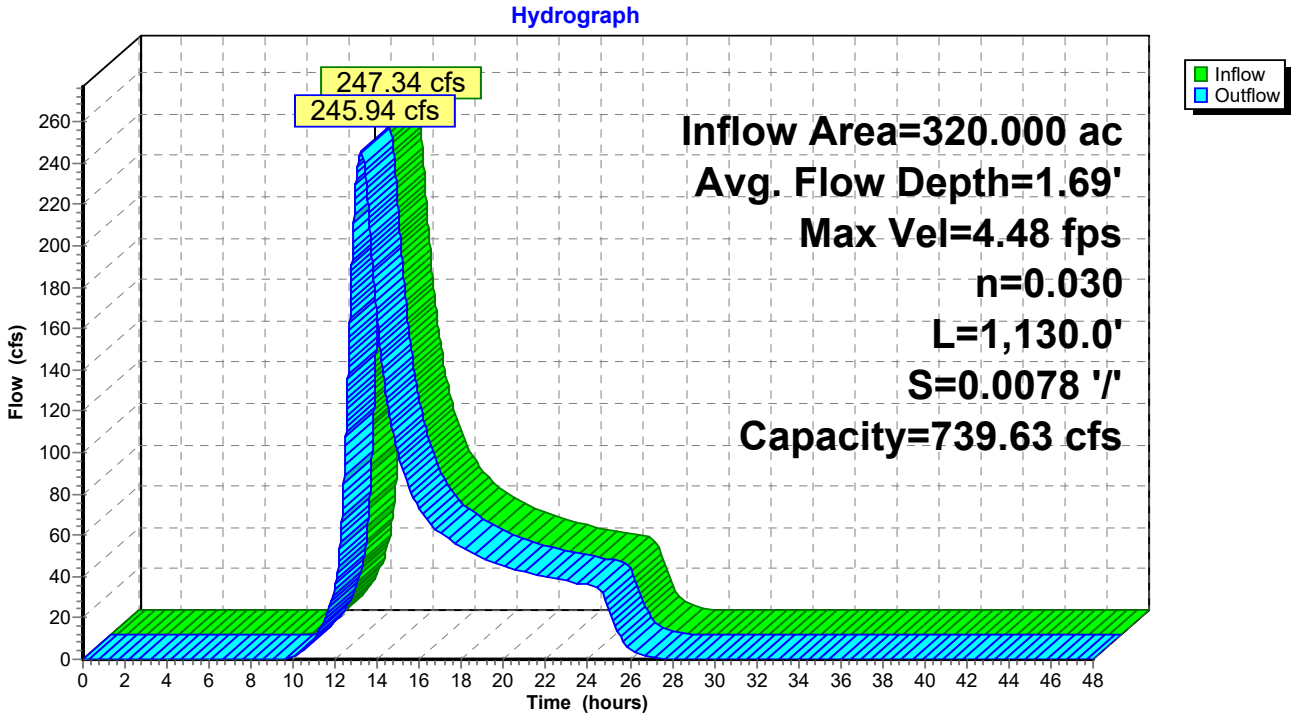
Peak Storage= 62,036 cf @ 13.19 hrs
Average Depth at Peak Storage= 1.69' , Surface Width= 52.77'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

Reach 40R: Existing Swale to Stream Impact H

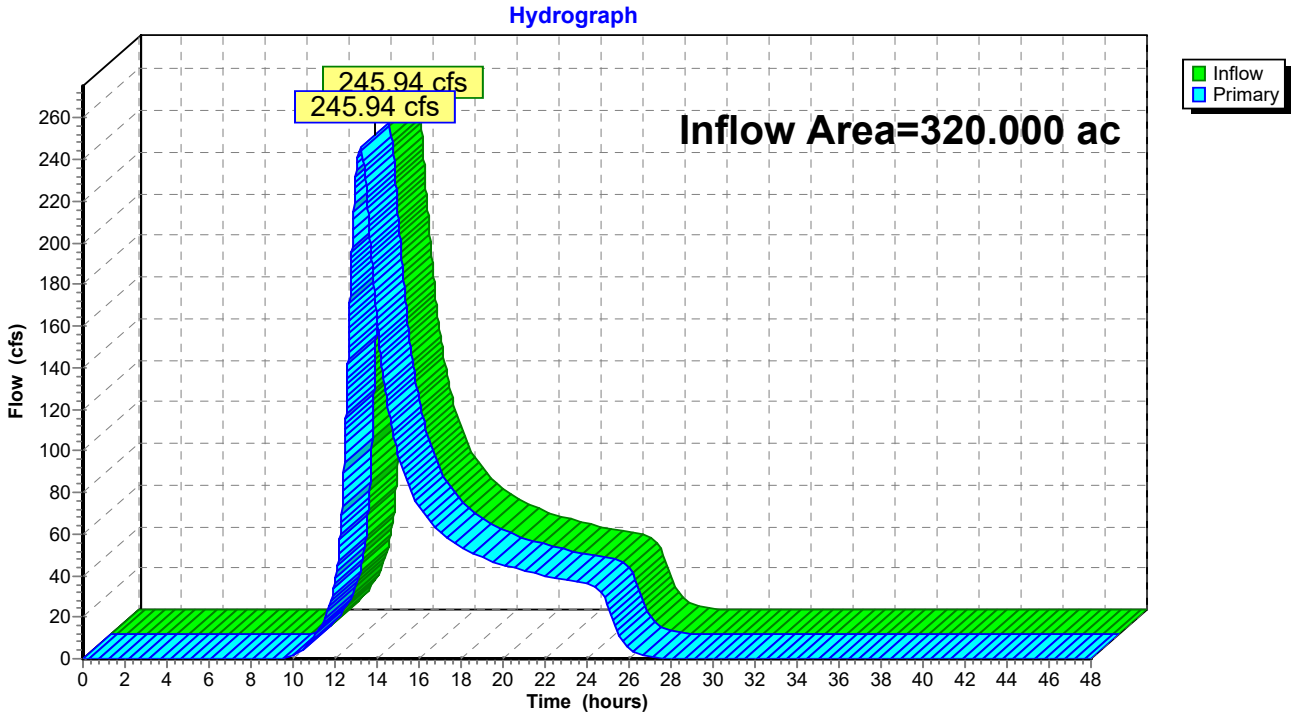


Summary for Link 44L: Stream flowing past crossing

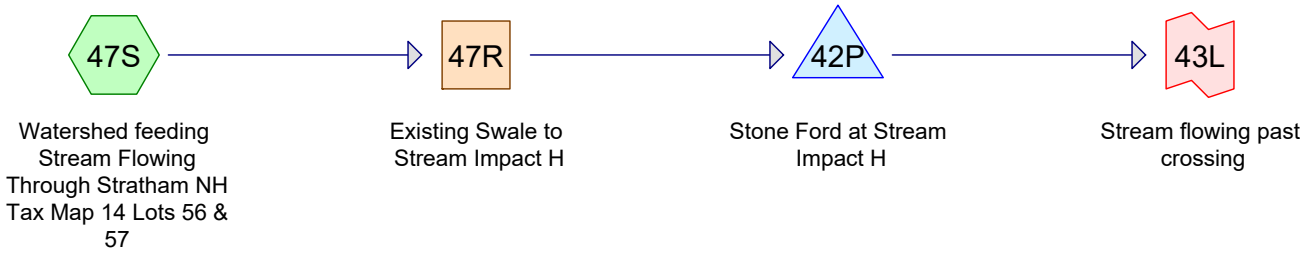
Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 3.11" for 100-yr event
Inflow = 245.94 cfs @ 13.19 hrs, Volume= 82.930 af
Primary = 245.94 cfs @ 13.19 hrs, Volume= 82.930 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 44L: Stream flowing past crossing



Proposed Conditions at Impact H

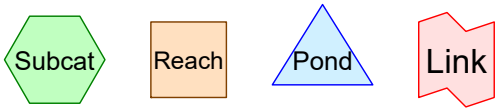


Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 57

Existing Swale to Stream Impact H

Stone Ford at Stream Impact H

Stream flowing past crossing



Routing Diagram for Stream Crossing Analysis 07-16-26
Prepared by Emanuel Engineering, Printed 9/10/2026
HydroCAD® 10.20-9a s/n 01104 © 2026 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.23	
2	10-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	4.91	
3	25-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	25-yr	Default	24.00	1	6.24	
4	50-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	50-yr	Default	24.00	1	7.48	
5	100-yr	NH-Stratham-Winnicutt 08-26-24 24-hr S1	100-yr	Default	24.00	1	8.98	

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
209.280	39	>75% Grass cover, Good, HSG A (47S)
75.315	74	>75% Grass cover, Good, HSG C (47S)
26.370	80	>75% Grass cover, Good, HSG D (47S)
6.080	98	Paved parking, HSG A (47S)
2.189	98	Paved parking, HSG C (47S)
0.766	98	Paved parking, HSG D (47S)
320.000	**52**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
215.360	HSG A	47S
0.000	HSG B	
77.504	HSG C	47S
27.136	HSG D	47S
0.000	Other	
320.000		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
209.280	0.000	75.315	26.370	0.000	310.965	>75% Grass cover, Good	47S
6.080	0.000	2.189	0.766	0.000	9.035	Paved parking	47S
215.360	**0.000**	**77.504**	**27.136**	**0.000**	**320.000**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 47S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=0.18"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=6.02 cfs 4.811 af

Reach 47R: Existing Swale to Stream Avg. Flow Depth=0.25' Max Vel=1.55 fps Inflow=6.02 cfs 4.811 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=6.01 cfs 4.811 af

Pond 42P: Stone Ford at Stream Impact H Peak Elev=55.11' Storage=2,050 cf Inflow=6.01 cfs 4.811 af
Outflow=6.01 cfs 4.770 af

Link 43L: Stream flowing past crossing Inflow=6.01 cfs 4.770 af
Primary=6.01 cfs 4.770 af

Total Runoff Area = 320.000 ac Runoff Volume = 4.811 af Average Runoff Depth = 0.18"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

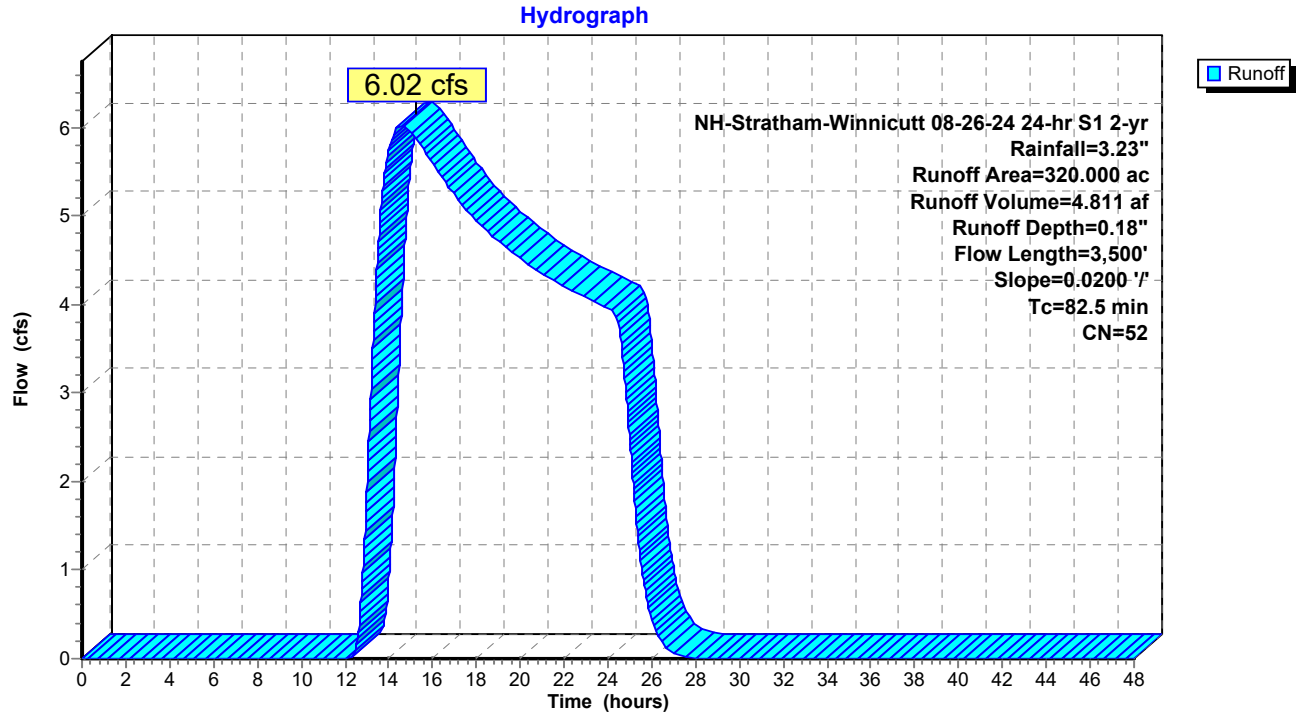
Runoff = 6.02 cfs @ 14.57 hrs, Volume= 4.811 af, Depth= 0.18"
Routed to Reach 47R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr Rainfall=3.23"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 47R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.18" for 2-yr event
Inflow = 6.02 cfs @ 14.57 hrs, Volume= 4.811 af
Outflow = 6.01 cfs @ 14.76 hrs, Volume= 4.811 af, Atten= 0%, Lag= 11.2 min
Routed to Pond 42P : Stone Ford at Stream Impact H

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.55 fps, Min. Travel Time= 12.1 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 18.9 min

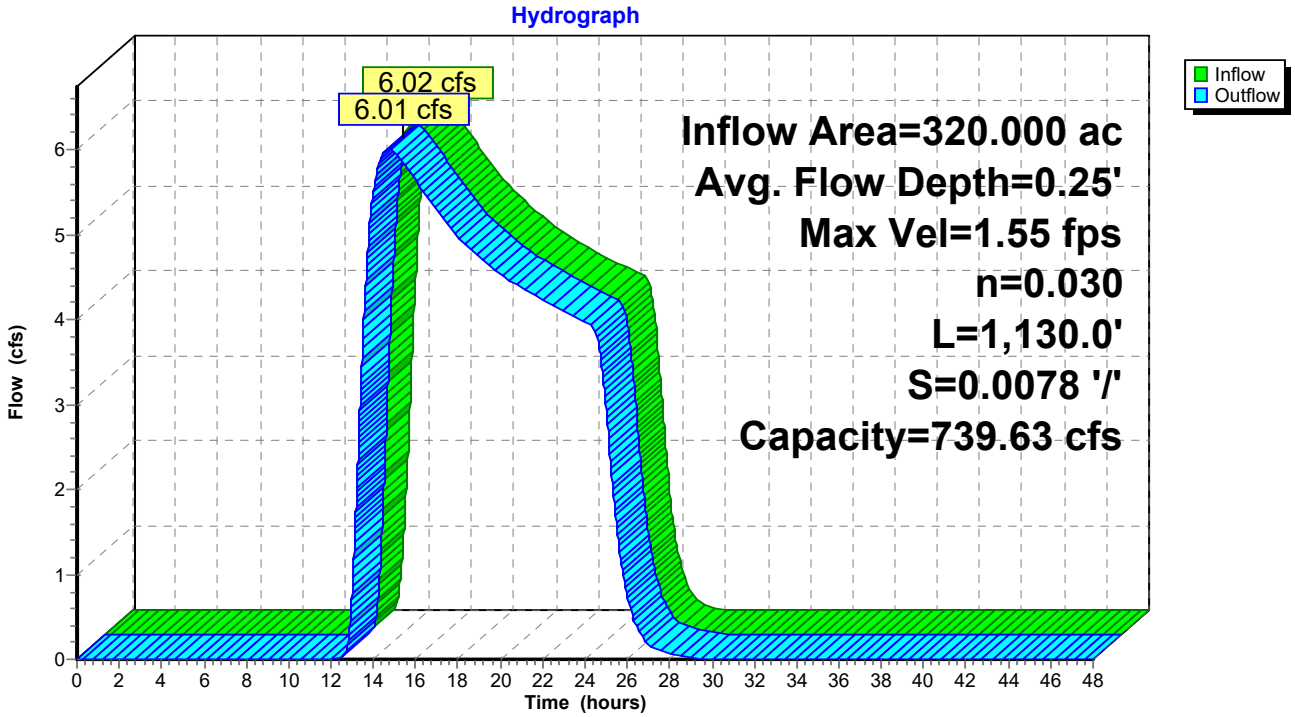
Peak Storage= 4,376 cf @ 14.76 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 18.33'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



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Reach 47R: Existing Swale to Stream Impact H



Summary for Pond 42P: Stone Ford at Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.18" for 2-yr event
Inflow = 6.01 cfs @ 14.76 hrs, Volume= 4.811 af
Outflow = 6.01 cfs @ 14.77 hrs, Volume= 4.770 af, Atten= 0%, Lag= 0.4 min
Primary = 6.01 cfs @ 14.77 hrs, Volume= 4.770 af
Routed to Link 43L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 55.11' @ 14.77 hrs Surf.Area= 2,298 sf Storage= 2,050 cf

Plug-Flow detention time= 7.9 min calculated for 4.769 af (99% of inflow)
Center-of-Mass det. time= 3.8 min (1,141.3 - 1,137.4)

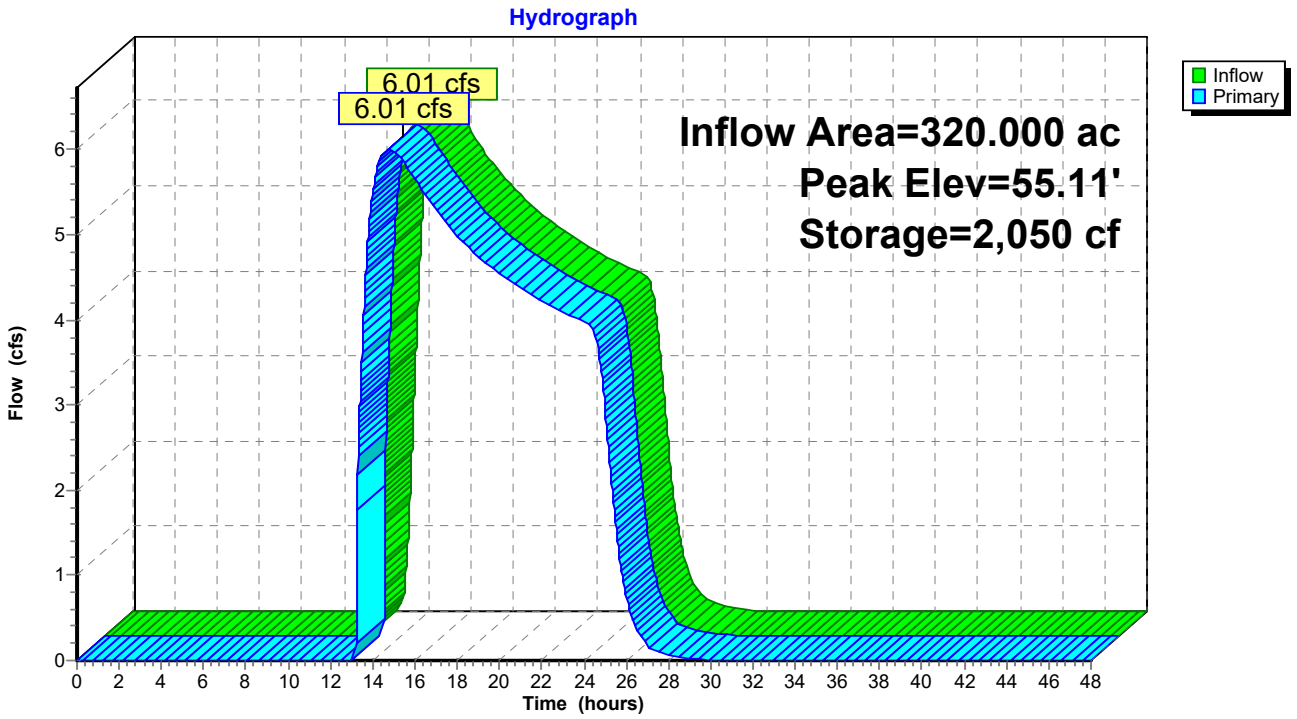
Volume	Invert	Avail.Storage	Storage Description
#1	52.99'	15,684 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.99	1	0.0	0	0
53.00	2,240	40.0	4	4
55.00	2,240	40.0	1,792	1,796
56.00	2,755	100.0	2,498	4,294
58.00	8,635	100.0	11,390	15,684

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	**60.0' long x 40.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.01 cfs @ 14.77 hrs HW=55.11' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 6.01 cfs @ 0.90 fps)

Pond 42P: Stone Ford at Stream Impact H

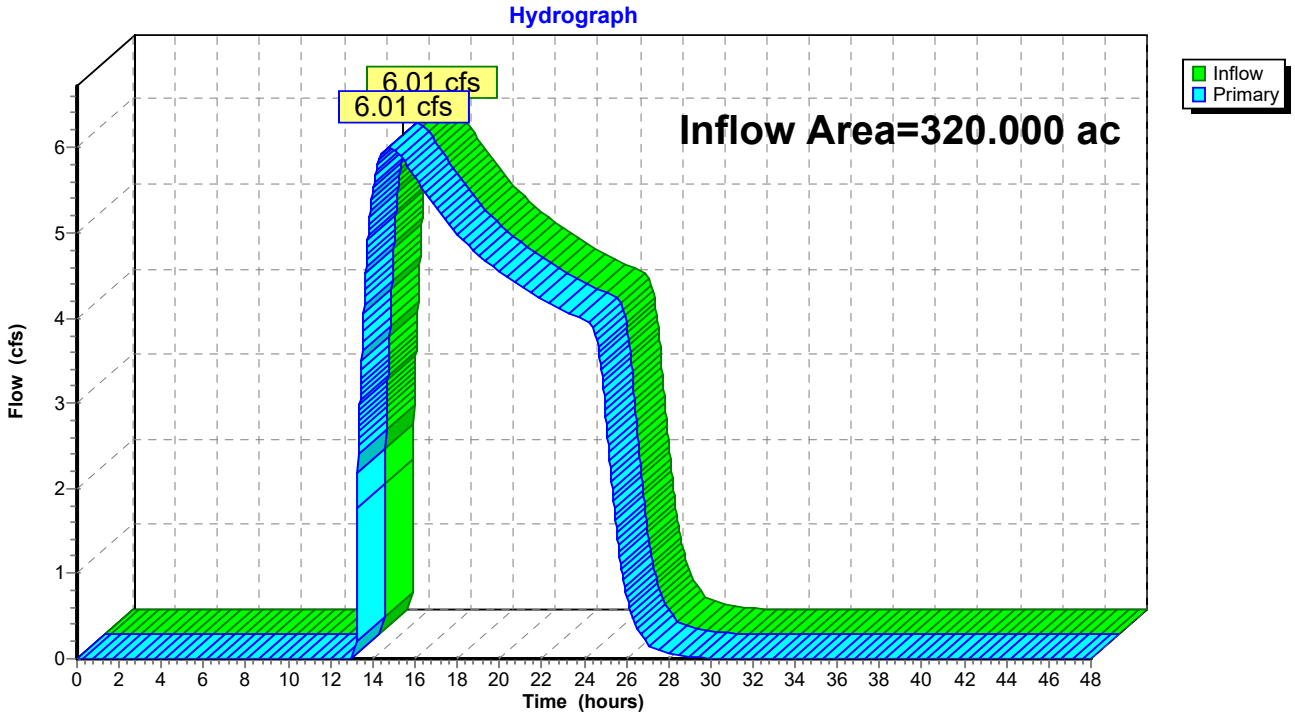


Summary for Link 43L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.18" for 2-yr event
Inflow = 6.01 cfs @ 14.77 hrs, Volume= 4.770 af
Primary = 6.01 cfs @ 14.77 hrs, Volume= 4.770 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 43L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 47S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=0.76"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=47.90 cfs 20.360 af

Reach 47R: Existing Swale to Stream Avg. Flow Depth=0.77' Max Vel=2.89 fps Inflow=47.90 cfs 20.360 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=47.57 cfs 20.360 af

Pond 42P: Stone Ford at Stream Impact H Peak Elev=55.44' Storage=2,836 cf Inflow=47.57 cfs 20.360 af
Outflow=47.56 cfs 20.319 af

Link 43L: Stream flowing past crossing Inflow=47.56 cfs 20.319 af
Primary=47.56 cfs 20.319 af

Total Runoff Area = 320.000 ac Runoff Volume = 20.360 af Average Runoff Depth = 0.76"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

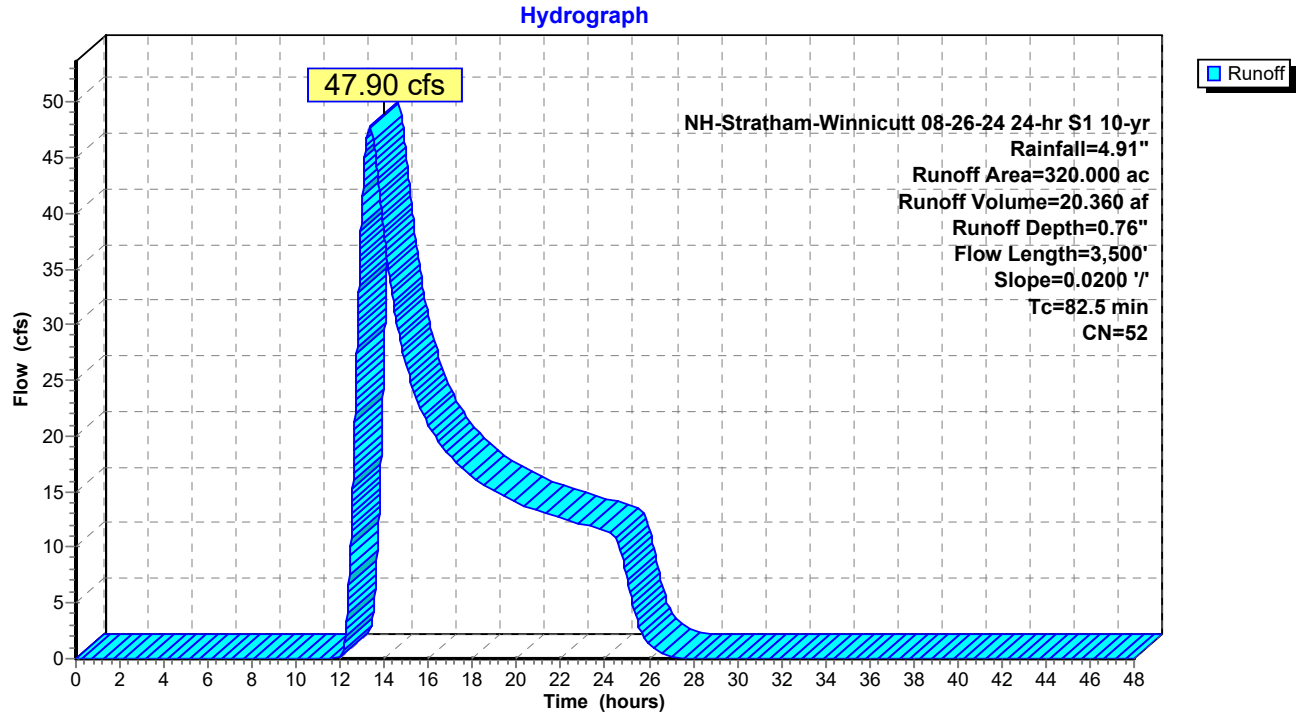
Runoff = 47.90 cfs @ 13.30 hrs, Volume= 20.360 af, Depth= 0.76"
Routed to Reach 47R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr Rainfall=4.91"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 47R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.76" for 10-yr event
Inflow = 47.90 cfs @ 13.30 hrs, Volume= 20.360 af
Outflow = 47.57 cfs @ 13.42 hrs, Volume= 20.360 af, Atten= 1%, Lag= 7.0 min
Routed to Pond 42P : Stone Ford at Stream Impact H

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.89 fps, Min. Travel Time= 6.5 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 13.0 min

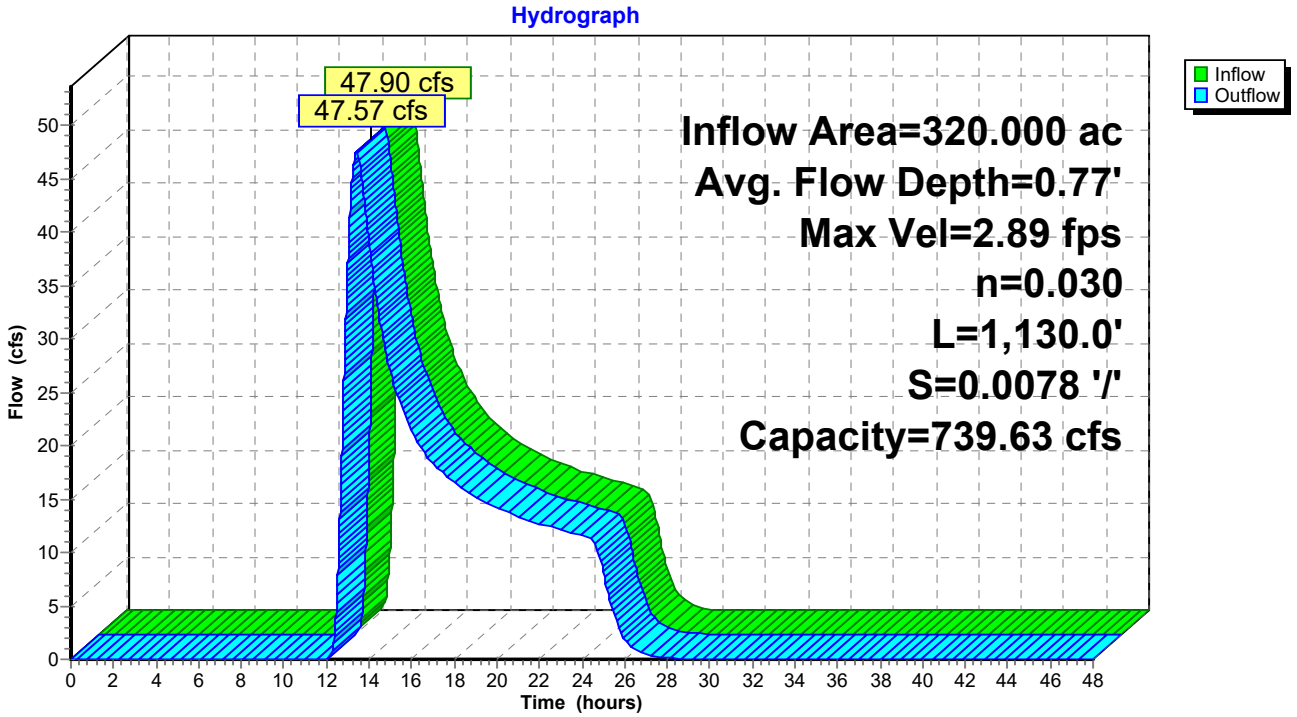
Peak Storage= 18,629 cf @ 13.42 hrs
Average Depth at Peak Storage= 0.77' , Surface Width= 30.68'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



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Reach 47R: Existing Swale to Stream Impact H



Summary for Pond 42P: Stone Ford at Stream Impact H

[61] Hint: Exceeded Reach 47R outlet invert by 0.24' @ 13.42 hrs

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.76" for 10-yr event
Inflow = 47.57 cfs @ 13.42 hrs, Volume= 20.360 af
Outflow = 47.56 cfs @ 13.42 hrs, Volume= 20.319 af, Atten= 0%, Lag= 0.3 min
Primary = 47.56 cfs @ 13.42 hrs, Volume= 20.319 af
Routed to Link 43L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 55.44' @ 13.42 hrs Surf.Area= 2,468 sf Storage= 2,836 cf

Plug-Flow detention time= 2.3 min calculated for 20.315 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (1,050.4 - 1,049.3)

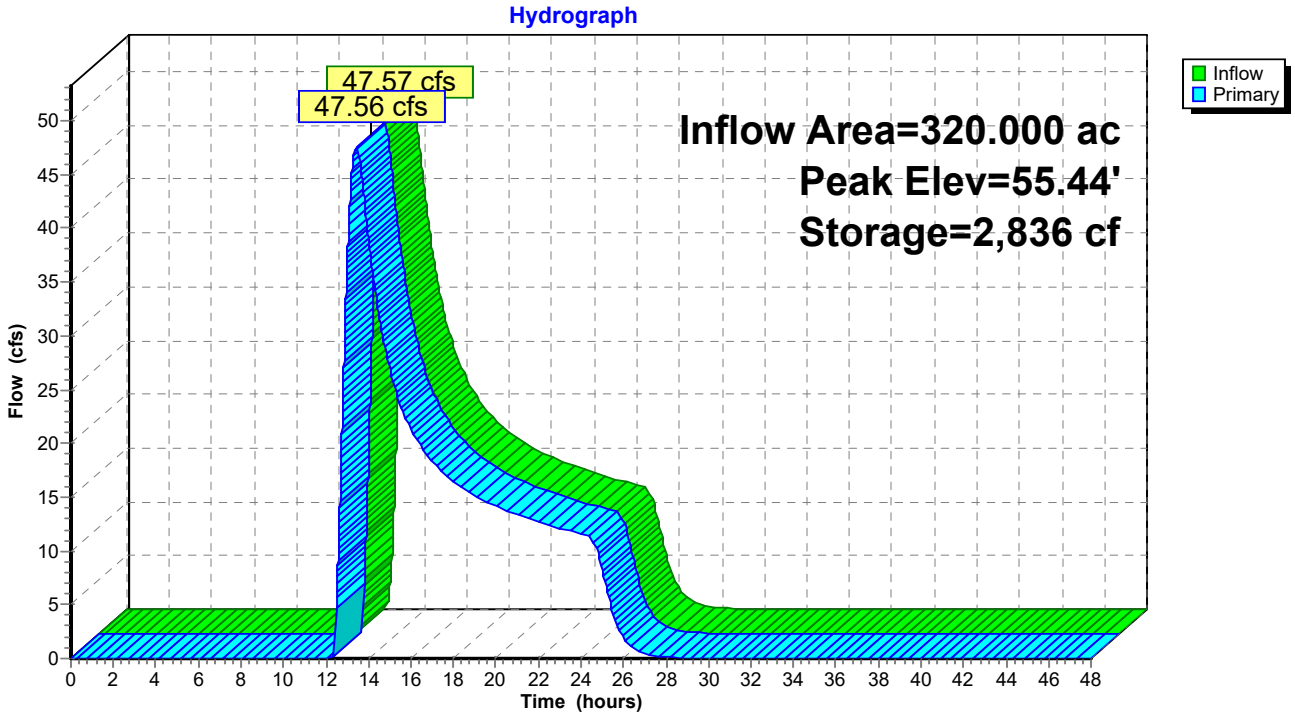
Volume	Invert	Avail.Storage	Storage Description
#1	52.99'	15,684 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.99	1	0.0	0	0
53.00	2,240	40.0	4	4
55.00	2,240	40.0	1,792	1,796
56.00	2,755	100.0	2,498	4,294
58.00	8,635	100.0	11,390	15,684

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	**60.0' long x 40.0' breadth Overtopping**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=47.56 cfs @ 13.42 hrs HW=55.44' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 47.56 cfs @ 1.79 fps)

Pond 42P: Stone Ford at Stream Impact H

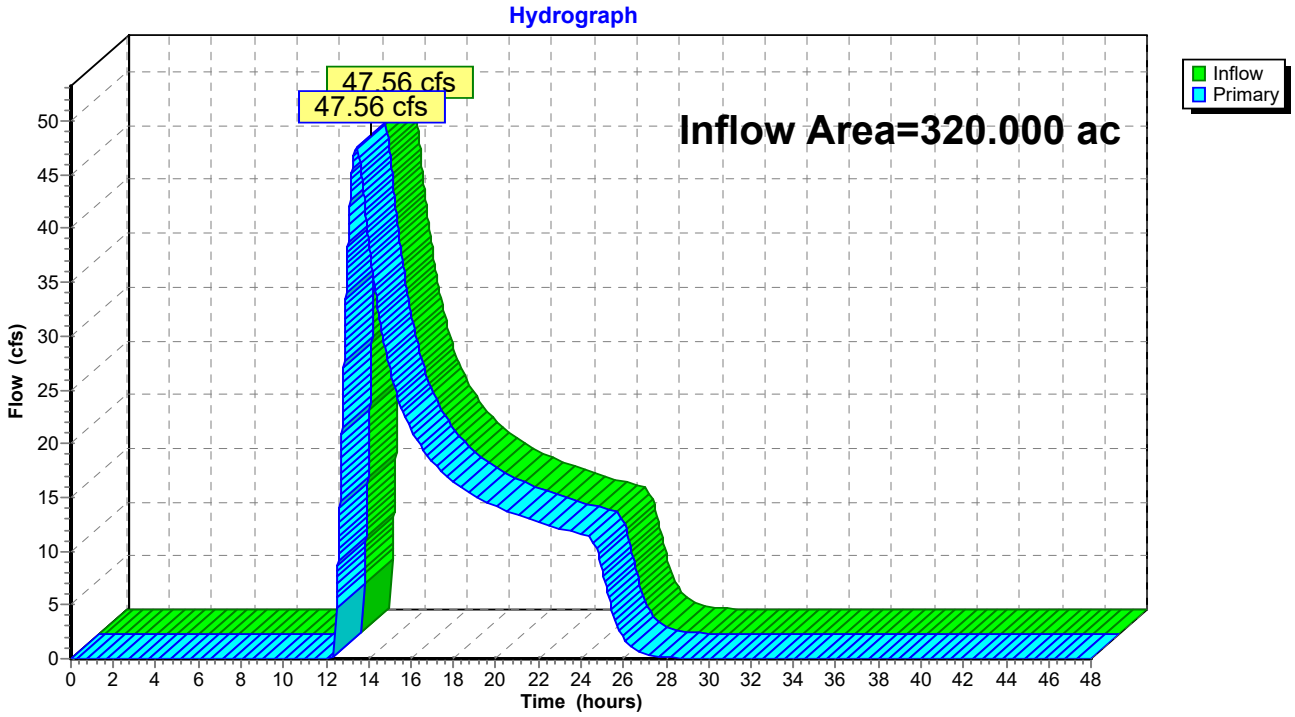


Summary for Link 43L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 0.76" for 10-yr event
Inflow = 47.56 cfs @ 13.42 hrs, Volume= 20.319 af
Primary = 47.56 cfs @ 13.42 hrs, Volume= 20.319 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 43L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 47S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=1.42"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=104.41 cfs 37.786 af

Reach 47R: Existing Swale to Stream Avg. Flow Depth=1.13' Max Vel=3.57 fps Inflow=104.41 cfs 37.786 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=103.95 cfs 37.786 af

Pond 42P: Stone Ford at Stream Impact H Peak Elev=55.75' Storage=3,628 cf Inflow=103.95 cfs 37.786 af
Outflow=103.95 cfs 37.745 af

Link 43L: Stream flowing past crossing Inflow=103.95 cfs 37.745 af
Primary=103.95 cfs 37.745 af

Total Runoff Area = 320.000 ac Runoff Volume = 37.786 af Average Runoff Depth = 1.42"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

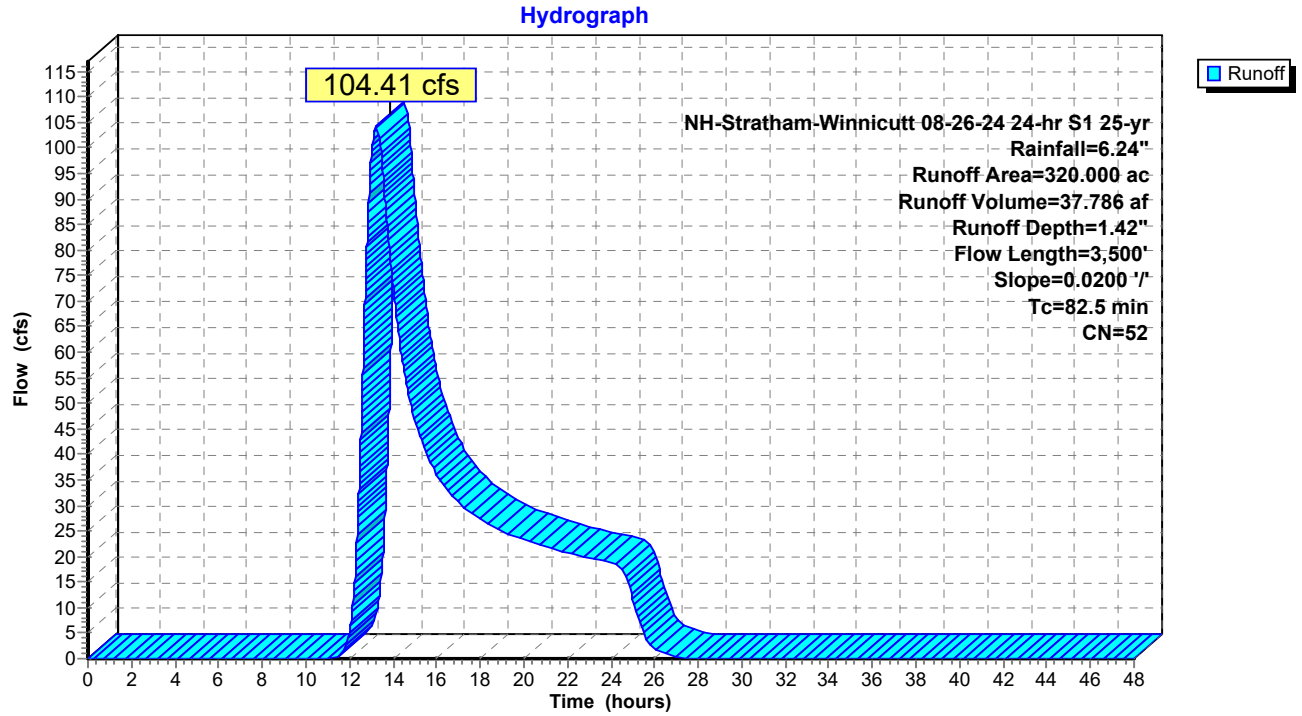
Runoff = 104.41 cfs @ 13.20 hrs, Volume= 37.786 af, Depth= 1.42"
Routed to Reach 47R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 25-yr Rainfall=6.24"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 47R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 1.42" for 25-yr event
Inflow = 104.41 cfs @ 13.20 hrs, Volume= 37.786 af
Outflow = 103.95 cfs @ 13.30 hrs, Volume= 37.786 af, Atten= 0%, Lag= 5.7 min
Routed to Pond 42P : Stone Ford at Stream Impact H

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.57 fps, Min. Travel Time= 5.3 min
Avg. Velocity = 1.66 fps, Avg. Travel Time= 11.4 min

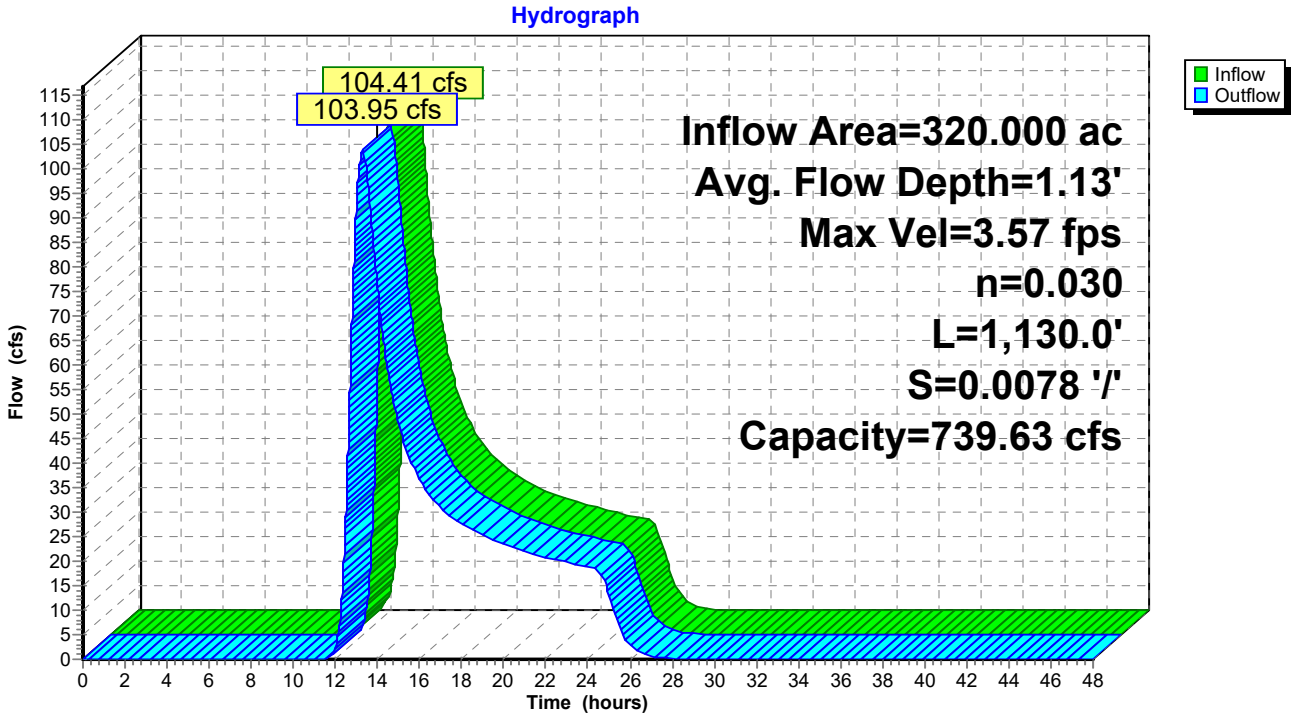
Peak Storage= 32,896 cf @ 13.30 hrs
Average Depth at Peak Storage= 1.13' , Surface Width= 39.34'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



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Reach 47R: Existing Swale to Stream Impact H



Summary for Pond 42P: Stone Ford at Stream Impact H

[61] Hint: Exceeded Reach 47R outlet invert by 0.55' @ 13.30 hrs

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 1.42" for 25-yr event
Inflow = 103.95 cfs @ 13.30 hrs, Volume= 37.786 af
Outflow = 103.95 cfs @ 13.30 hrs, Volume= 37.745 af, Atten= 0%, Lag= 0.2 min
Primary = 103.95 cfs @ 13.30 hrs, Volume= 37.745 af
Routed to Link 43L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 55.75' @ 13.30 hrs Surf.Area= 2,628 sf Storage= 3,628 cf

Plug-Flow detention time= 1.4 min calculated for 37.737 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (1,021.5 - 1,020.8)

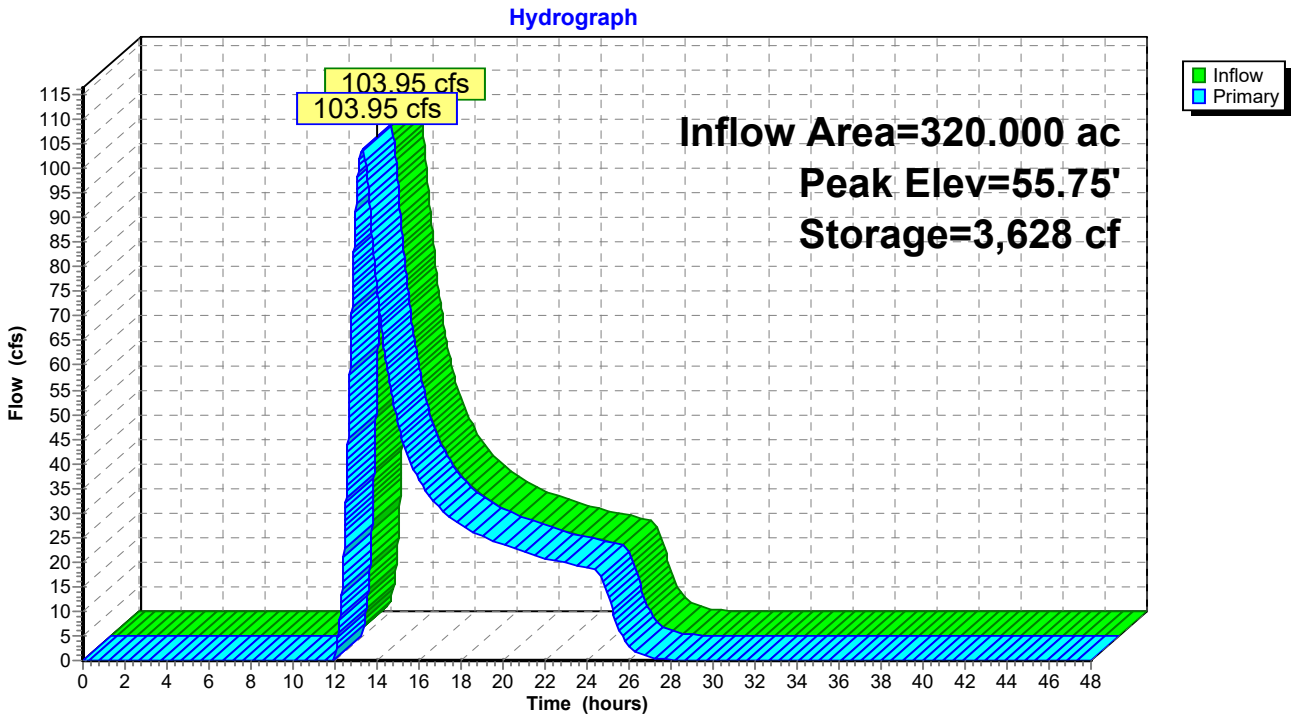
Volume	Invert	Avail.Storage	Storage Description
#1	52.99'	15,684 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.99	1	0.0	0	0
53.00	2,240	40.0	4	4
55.00	2,240	40.0	1,792	1,796
56.00	2,755	100.0	2,498	4,294
58.00	8,635	100.0	11,390	15,684

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	**60.0' long x 40.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=103.94 cfs @ 13.30 hrs HW=55.75' TW=0.00' (Dynamic Tailwater)
↑—**1=Overtopping** (Weir Controls 103.94 cfs @ 2.30 fps)

Pond 42P: Stone Ford at Stream Impact H

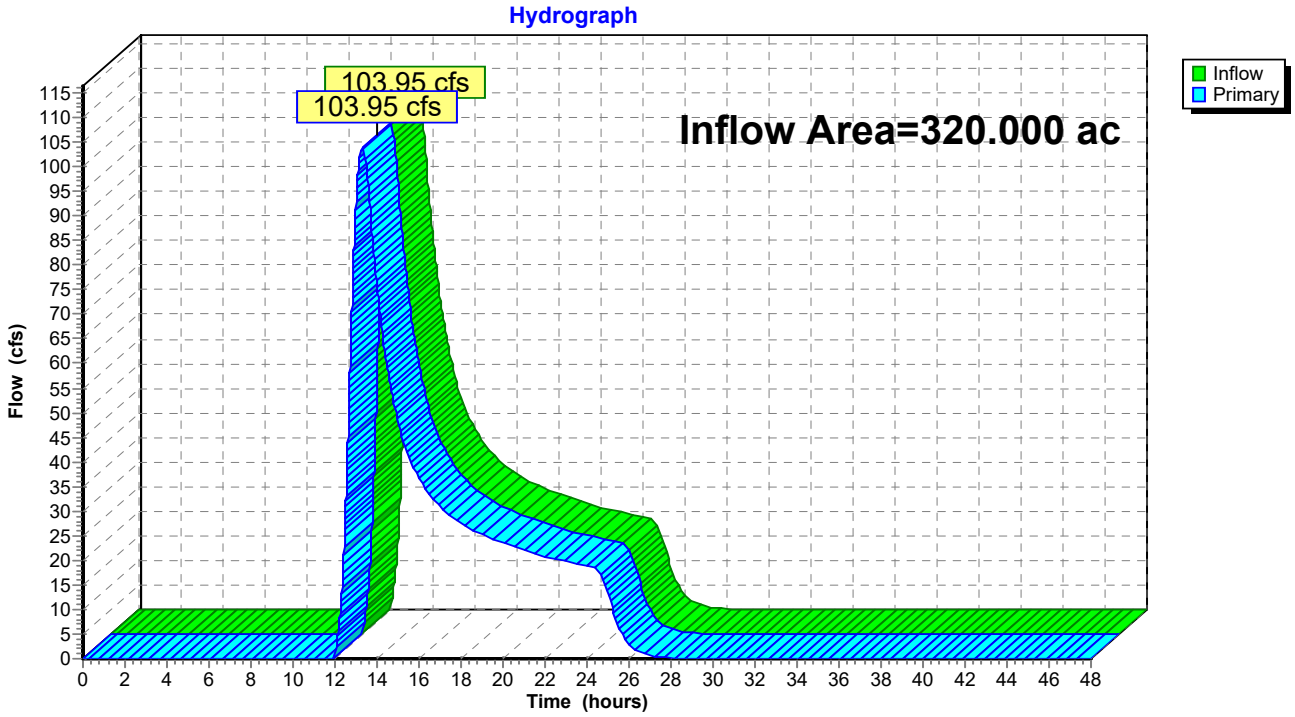


Summary for Link 43L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 1.42" for 25-yr event
Inflow = 103.95 cfs @ 13.30 hrs, Volume= 37.745 af
Primary = 103.95 cfs @ 13.30 hrs, Volume= 37.745 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 43L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 47S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=2.14"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=165.54 cfs 56.941 af

Reach 47R: Existing Swale to Stream Avg. Flow Depth=1.40' Max Vel=4.04 fps Inflow=165.54 cfs 56.941 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=164.97 cfs 56.941 af

Pond 42P: Stone Ford at Stream Impact H Peak Elev=56.03' Storage=4,377 cf Inflow=164.97 cfs 56.941 af
Outflow=164.96 cfs 56.900 af

Link 43L: Stream flowing past crossing Inflow=164.96 cfs 56.900 af
Primary=164.96 cfs 56.900 af

Total Runoff Area = 320.000 ac Runoff Volume = 56.941 af Average Runoff Depth = 2.14"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

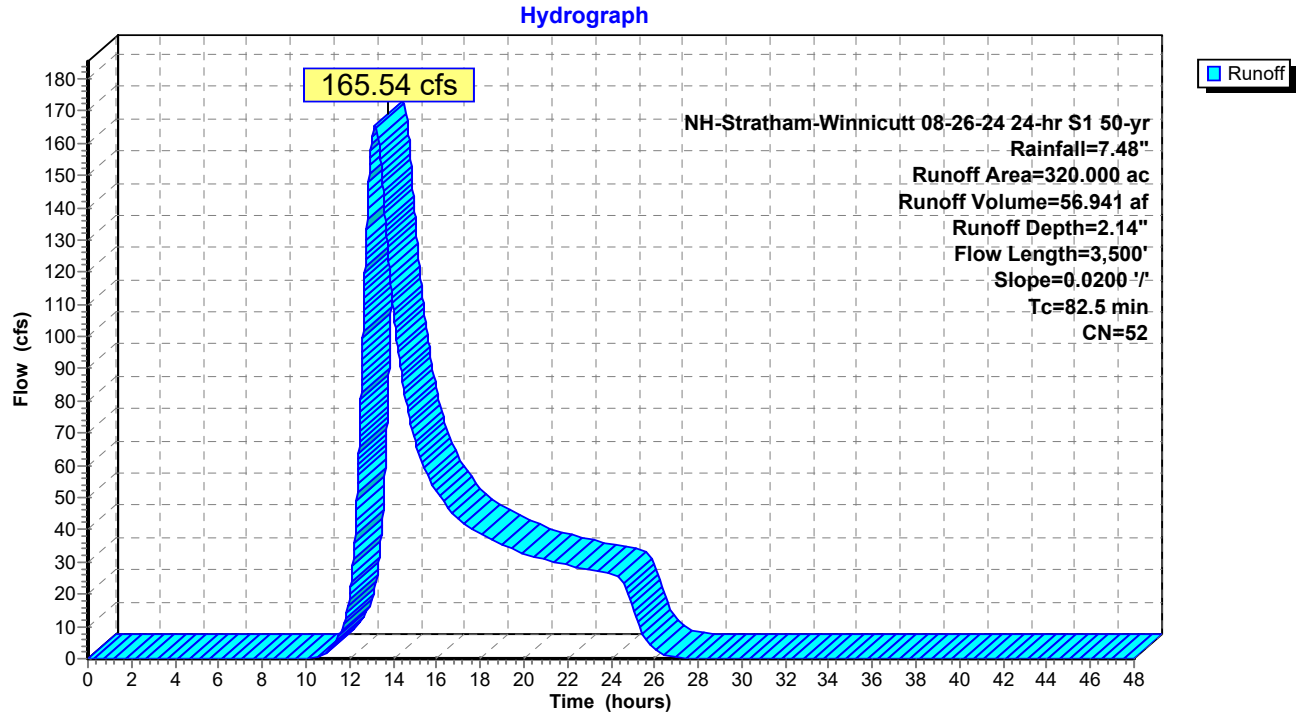
Runoff = 165.54 cfs @ 13.12 hrs, Volume= 56.941 af, Depth= 2.14"
Routed to Reach 47R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 50-yr Rainfall=7.48"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 47R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 2.14" for 50-yr event
Inflow = 165.54 cfs @ 13.12 hrs, Volume= 56.941 af
Outflow = 164.97 cfs @ 13.23 hrs, Volume= 56.941 af, Atten= 0%, Lag= 6.4 min
Routed to Pond 42P : Stone Ford at Stream Impact H

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.04 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 10.4 min

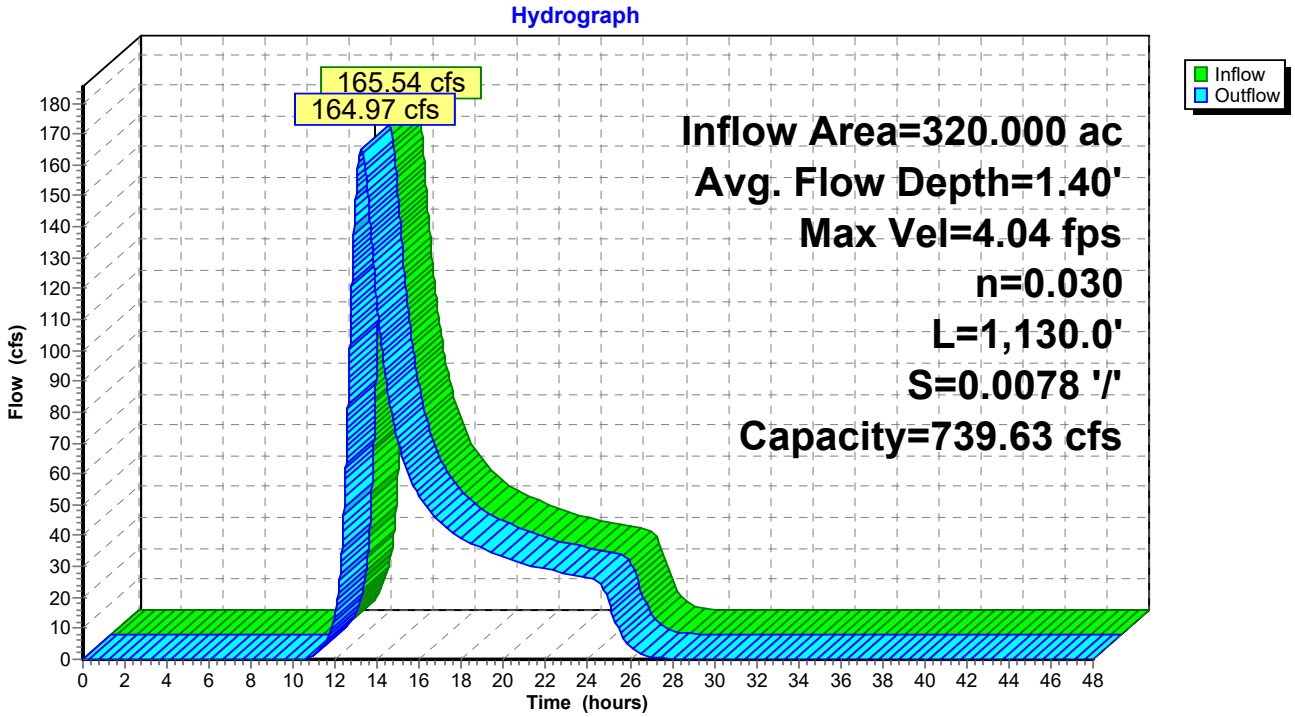
Peak Storage= 46,188 cf @ 13.23 hrs
Average Depth at Peak Storage= 1.40' , Surface Width= 45.96'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

Reach 47R: Existing Swale to Stream Impact H



Summary for Pond 42P: Stone Ford at Stream Impact H

[61] Hint: Exceeded Reach 47R outlet invert by 0.83' @ 13.23 hrs

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 2.14" for 50-yr event
Inflow = 164.97 cfs @ 13.23 hrs, Volume= 56.941 af
Outflow = 164.96 cfs @ 13.23 hrs, Volume= 56.900 af, Atten= 0%, Lag= 0.2 min
Primary = 164.96 cfs @ 13.23 hrs, Volume= 56.900 af
Routed to Link 43L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 56.03' @ 13.23 hrs Surf.Area= 2,842 sf Storage= 4,377 cf

Plug-Flow detention time= 1.1 min calculated for 56.888 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (1,004.6 - 1,004.0)

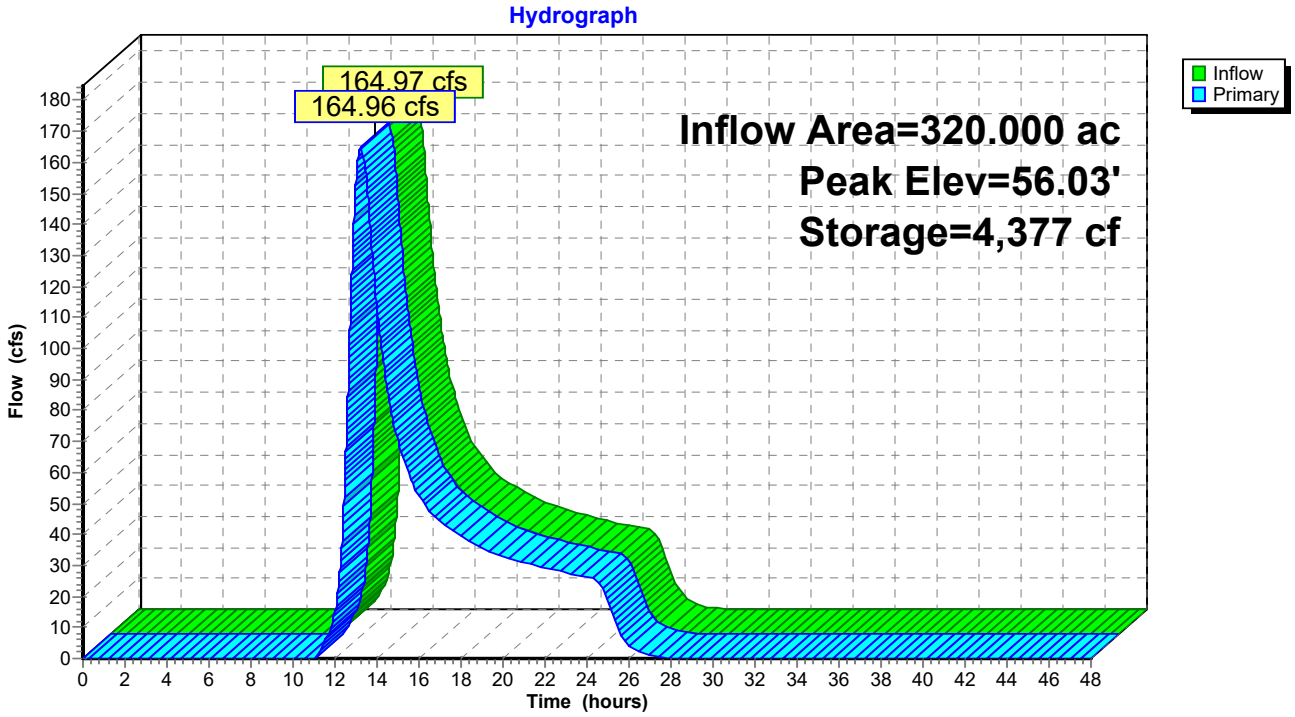
Volume	Invert	Avail.Storage	Storage Description
#1	52.99'	15,684 cf	**24" Deep Stone Ford (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.99	1	0.0	0	0
53.00	2,240	40.0	4	4
55.00	2,240	40.0	1,792	1,796
56.00	2,755	100.0	2,498	4,294
58.00	8,635	100.0	11,390	15,684

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	**60.0' long x 40.0' breadth Overtopping** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=164.96 cfs @ 13.23 hrs HW=56.03' TW=0.00' (Dynamic Tailwater)
↑—**1=Overtopping** (Weir Controls 164.96 cfs @ 2.67 fps)

Pond 42P: Stone Ford at Stream Impact H

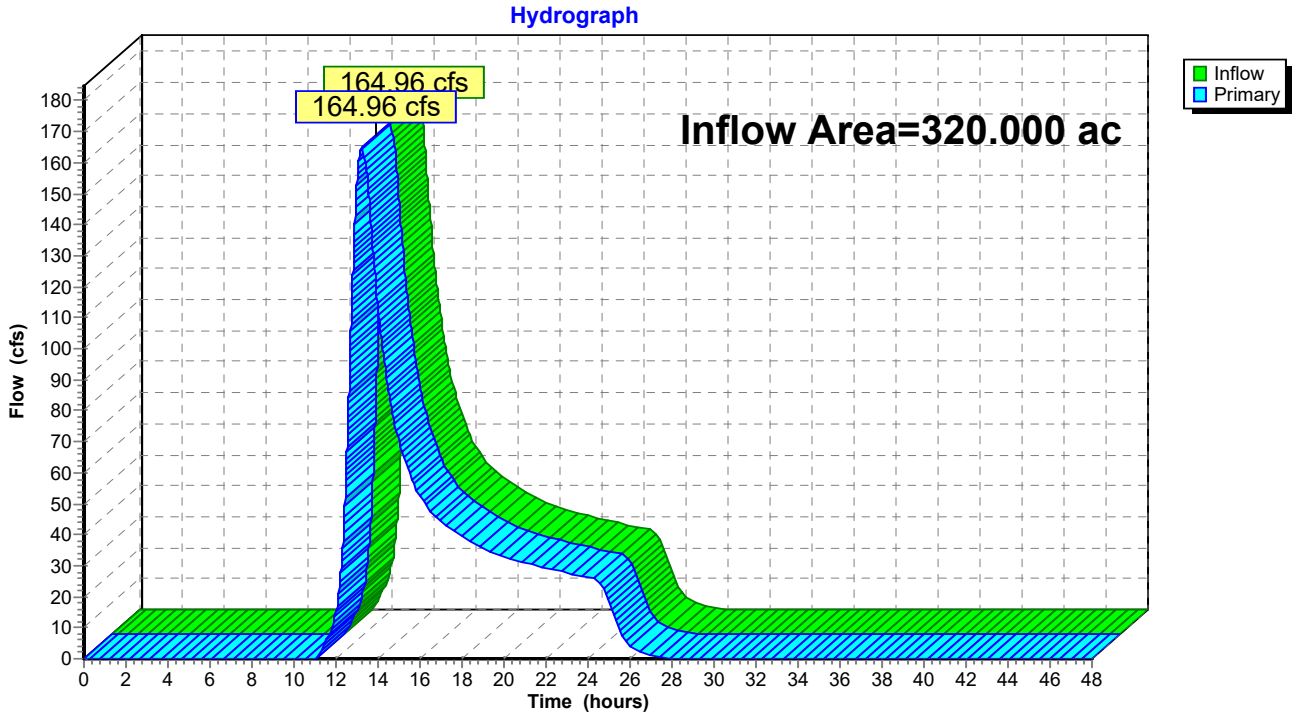


Summary for Link 43L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 2.13" for 50-yr event
Inflow = 164.96 cfs @ 13.23 hrs, Volume= 56.900 af
Primary = 164.96 cfs @ 13.23 hrs, Volume= 56.900 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 43L: Stream flowing past crossing



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 47S: Watershed feeding Runoff Area=320.000 ac 2.82% Impervious Runoff Depth=3.11"
Flow Length=3,500' Slope=0.0200 '/' Tc=82.5 min CN=52 Runoff=247.34 cfs 82.930 af

Reach 47R: Existing Swale to Stream Avg. Flow Depth=1.69' Max Vel=4.48 fps Inflow=247.34 cfs 82.930 af
n=0.030 L=1,130.0' S=0.0078 '/' Capacity=739.63 cfs Outflow=245.94 cfs 82.930 af

Pond 42P: Stone Ford at Stream Impact H Peak Elev=56.34' Storage=5,404 cf Inflow=245.94 cfs 82.930 af
Outflow=245.94 cfs 82.889 af

Link 43L: Stream flowing past crossing Inflow=245.94 cfs 82.889 af
Primary=245.94 cfs 82.889 af

Total Runoff Area = 320.000 ac Runoff Volume = 82.930 af Average Runoff Depth = 3.11"
97.18% Pervious = 310.965 ac 2.82% Impervious = 9.035 ac

mary for Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots

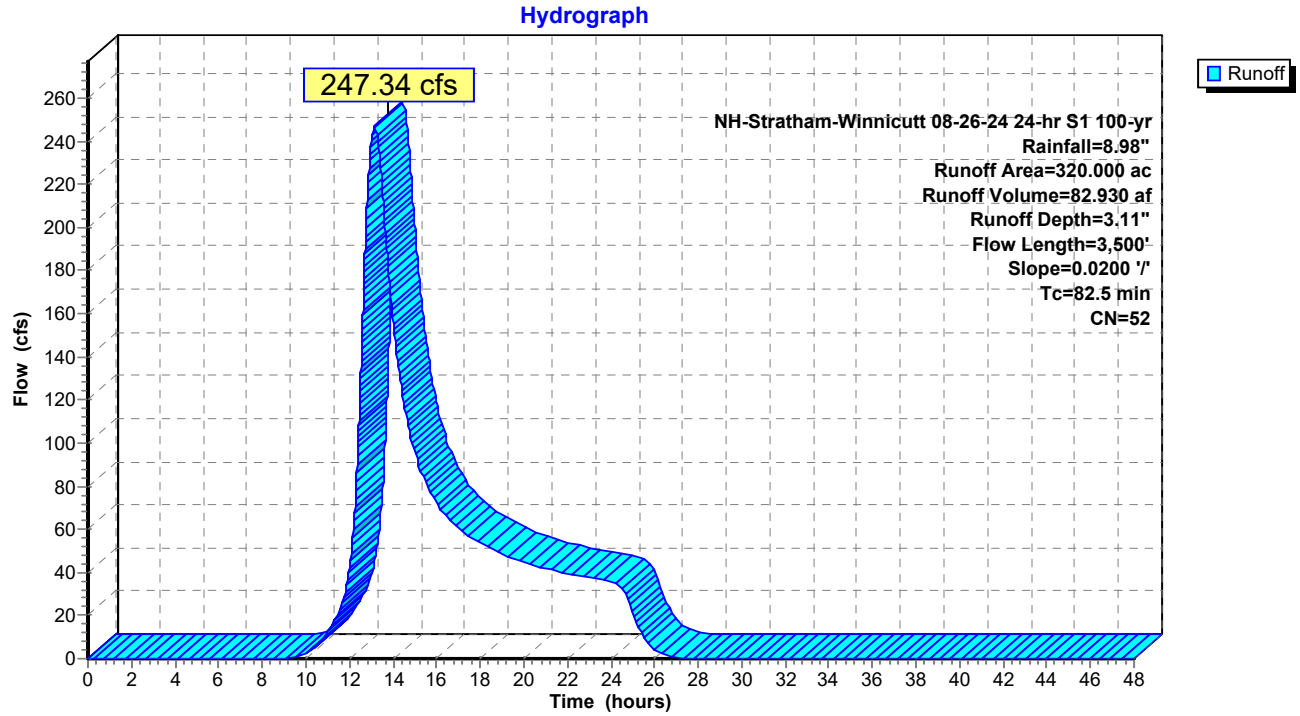
Runoff = 247.34 cfs @ 13.11 hrs, Volume= 82.930 af, Depth= 3.11"
Routed to Reach 47R : Existing Swale to Stream Impact H

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 100-yr Rainfall=8.98"

Area (ac)	CN	Description
209.280	39	>75% Grass cover, Good, HSG A
6.080	98	Paved parking, HSG A
75.315	74	>75% Grass cover, Good, HSG C
2.189	98	Paved parking, HSG C
26.370	80	>75% Grass cover, Good, HSG D
0.766	98	Paved parking, HSG D
320.000	52	Weighted Average
310.965		97.18% Pervious Area
9.035		2.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.5	3,500	0.0200	0.71		**Shallow Concentrated Flow, Surface Flow** Woodland Kv= 5.0 fps

Subcatchment 47S: Watershed feeding Stream Flowing Through Stratham NH Tax Map 14 Lots 56 & 5



Summary for Reach 47R: Existing Swale to Stream Impact H

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 3.11" for 100-yr event
Inflow = 247.34 cfs @ 13.11 hrs, Volume= 82.930 af
Outflow = 245.94 cfs @ 13.19 hrs, Volume= 82.930 af, Atten= 1%, Lag= 4.7 min
Routed to Pond 42P : Stone Ford at Stream Impact H

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.48 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 1.97 fps, Avg. Travel Time= 9.5 min

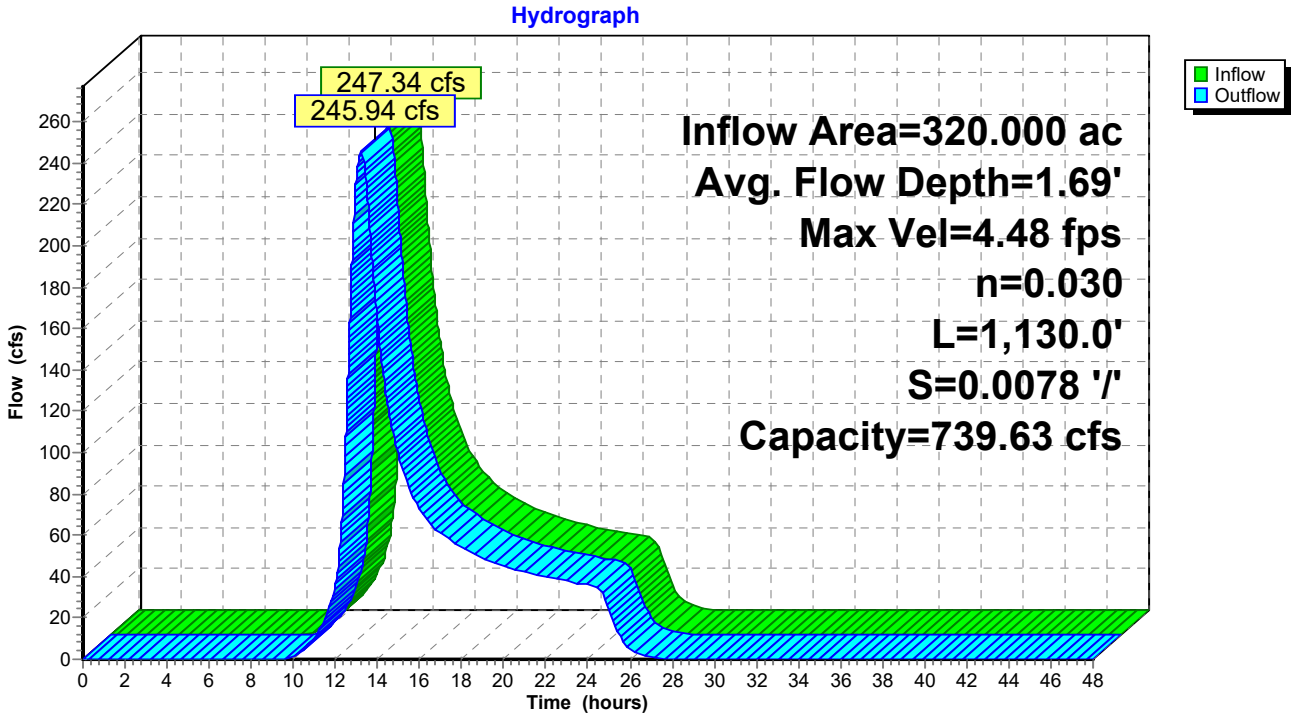
Peak Storage= 62,036 cf @ 13.19 hrs
Average Depth at Peak Storage= 1.69' , Surface Width= 52.77'
Bank-Full Depth= 2.75' Flow Area= 124.4 sf, Capacity= 739.63 cfs

12.25' x 2.75' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 78.25'
Length= 1,130.0' Slope= 0.0078 '/'
Inlet Invert= 64.00', Outlet Invert= 55.20'



‡

Reach 47R: Existing Swale to Stream Impact H



Summary for Pond 42P: Stone Ford at Stream Impact H

[61] Hint: Exceeded Reach 47R outlet invert by 1.14' @ 13.20 hrs

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 3.11" for 100-yr event
Inflow = 245.94 cfs @ 13.19 hrs, Volume= 82.930 af
Outflow = 245.94 cfs @ 13.20 hrs, Volume= 82.889 af, Atten= 0%, Lag= 0.2 min
Primary = 245.94 cfs @ 13.20 hrs, Volume= 82.889 af
Routed to Link 43L : Stream flowing past crossing

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 56.34' @ 13.20 hrs Surf.Area= 3,757 sf Storage= 5,404 cf

Plug-Flow detention time= 0.8 min calculated for 82.871 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (989.3 - 988.8)

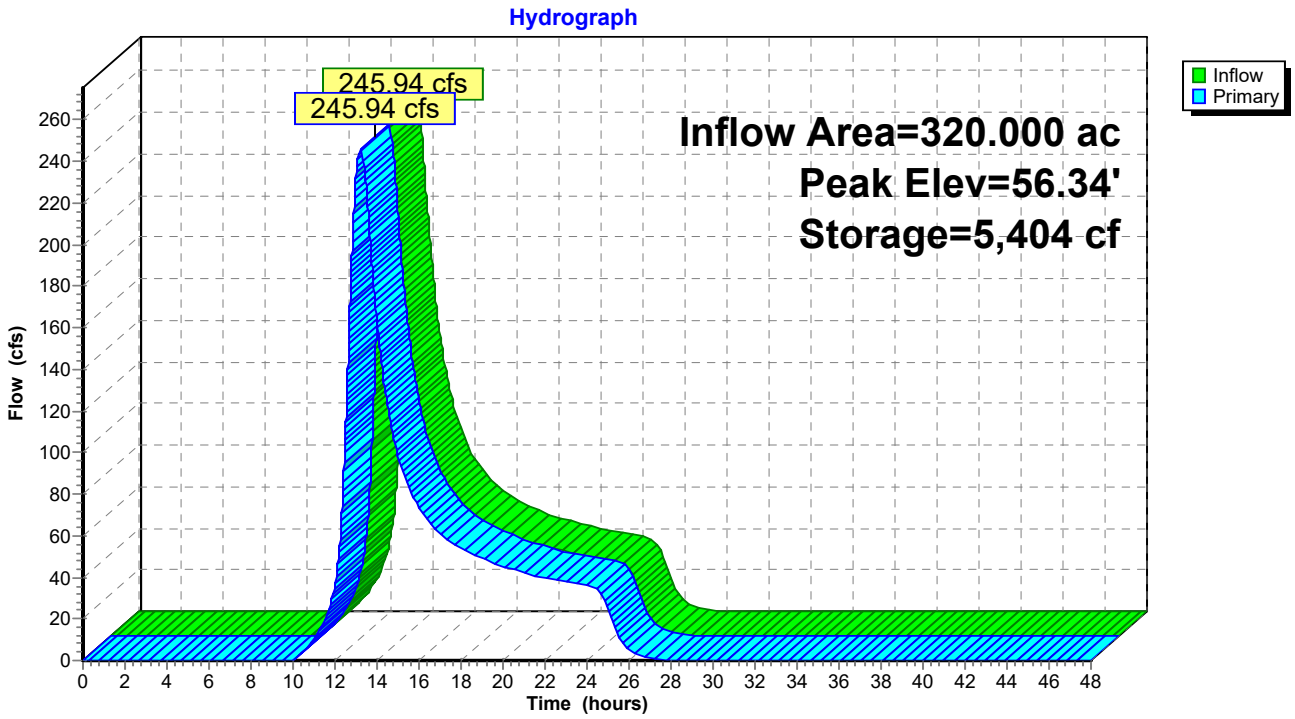
Volume	Invert	Avail.Storage	Storage Description
#1	52.99'	15,684 cf	**24" Deep Stone Ford (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
52.99	1	0.0	0	0
53.00	2,240	40.0	4	4
55.00	2,240	40.0	1,792	1,796
56.00	2,755	100.0	2,498	4,294
58.00	8,635	100.0	11,390	15,684

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	**60.0' long x 40.0' breadth Overtopping**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=245.94 cfs @ 13.20 hrs HW=56.34' TW=0.00' (Dynamic Tailwater)
1=Overtopping (Weir Controls 245.94 cfs @ 3.06 fps)

Pond 42P: Stone Ford at Stream Impact H

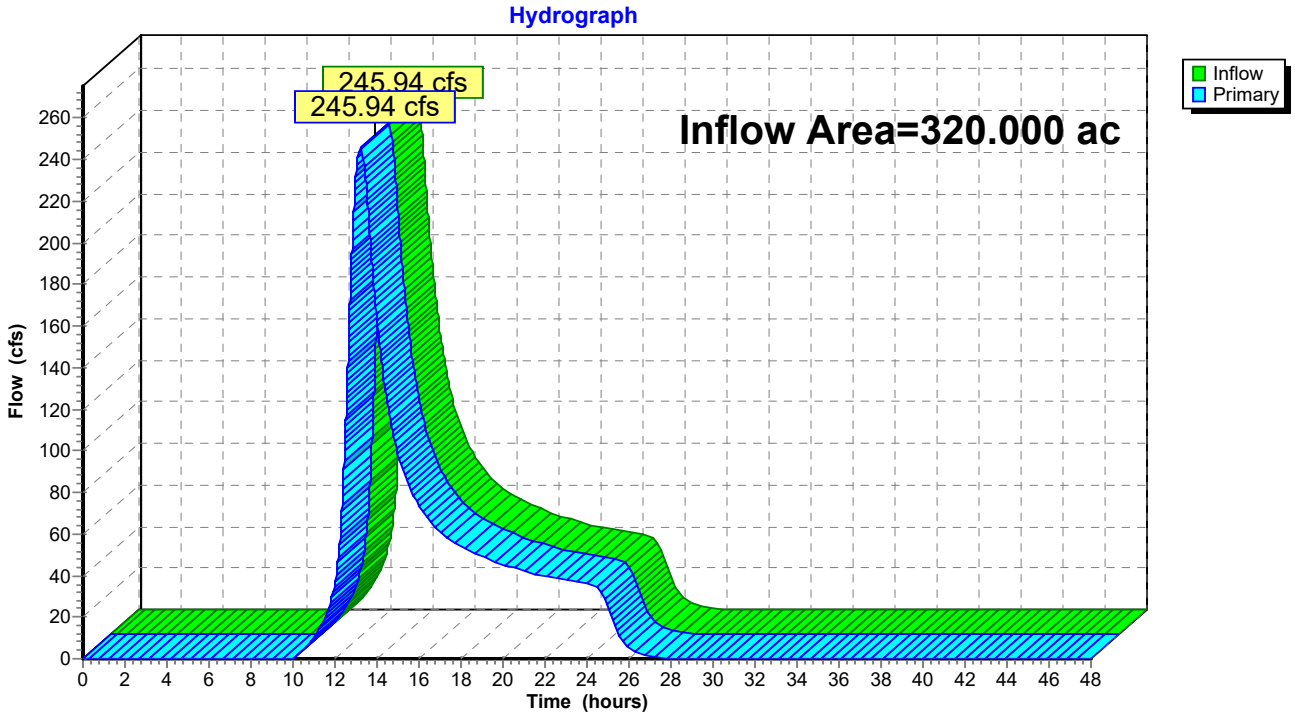


Summary for Link 43L: Stream flowing past crossing

Inflow Area = 320.000 ac, 2.82% Impervious, Inflow Depth = 3.11" for 100-yr event
Inflow = 245.94 cfs @ 13.20 hrs, Volume= 82.889 af
Primary = 245.94 cfs @ 13.20 hrs, Volume= 82.889 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 43L: Stream flowing past crossing



EMANUELENGINEERING.COM

NHDES Alteration of Terrain (AoT) Application, Stormwater Management Plan, & Drainage Calculations Summary

Copley Properties, LLC

80 & 80R Winnicutt Road (Site)

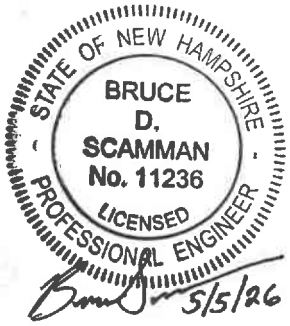
Stratham, NH 03885

September 25, 2025

Revised: May 5, 2026

Prepared For: Copley Properties, LLC
94 Portsmouth Avenue
Stratham, NH 03885

Prepared By: Emanuel Engineering, Inc.
100 Griffin Road, Unit C
Portsmouth, NH 03801
EEI Project # 24-1061



Bruce Scamman, PE
Emanuel Engineering

EMANUELENGINEERING.COM

NOTE: BLUE HIGHLIGHTED ITEMS HAVE BEEN REVISED

Table of Contents

1. Copy of the signed application form & application checklist
2. Copy of the check
3. USGS map with the property boundaries outlined (1" = 2,000' scale)
4. Stormwater Narrative
5. Extreme precipitation tables
6. Summary table of the peak discharge rates & volumes
7. NHDES OneStop Mapper with the "Surface Water Impairments" layer turned on
8. NHDES Onestop Mapper with the AoT screening layers turned on
9. DataCheck tool results letter
10. USDA Web Soil Survey Map with project's watershed outlined
11. Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
12. Photographs representative of the site
13. BMP Worksheets (one worksheet for each treatment system)
14. SW1 – Predevelopment Subcatchments
15. Pre-development drainage analysis
    a. Drainage diagram
    b. Project Notes & Rainfall Events Listing
    c. Area Listing and Soil Listing
    d. Ground Cover and Pipe Listing
    e. Node Listing
    f. Full summary of the 10-year storm event
    g. 2-year,
    h. 10-year,
    i. 25-year, and
    j. 50-year
16. SW2-2.6 – Postdevelopment Subcatchments
17. Post-development drainage analysis
    a. Drainage diagram
    b. Project Notes & Rainfall Events Listing
    c. Area Listing and Soil Listing
    d. Ground Cover and Pipe Listing
    e. Node Listing
    f. Full summary of the 10-year storm event
    g. 2-year,
    h. 10-year,
    i. 25-year, and
    j. 50-year
18. Riprap apron calculations
19. Site Specific Soil Survey report
20. Stormwater Management, Maintenance, Inspection, & Source Control Plan
21. Appendix A - Channel Protection

ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division / Alteration of Terrain Bureau
Land Resources Management Program
Check the status of your application

RSA / Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)		
Applicant Name: Copley Properties, LLC	Contact Name: Drew Goddard	
Email: drew@copleyproperties.com	Daytime Telephone: (781) 706-1531	
Mailing Address: 94 Portsmouth Avenue		
Town or City: Stratham	State: NH	ZIP: 03885
2. APPLICANT'S AGENT INFORMATION *If none, check box:* ☐		
Agent's Name:	Contact Name:	
Email:	Daytime Telephone:	
Address:		
Town or City:	State:	ZIP:
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT) *If more than one, check box:* ☐ *Attach additional sheets as necessary.*		
Owner's Name: Helen E. Gallant Revocable Trust 95	Contact Name: Paul Gallant	
Email: pgallantcpa@comcast.net	Daytime Telephone: (603) 396-4148	
Mailing Address: 2642 Bolero Drive - #501		
Town or City: Naples	State: FL	ZIP: 34109
4. PROPERTY OWNER'S AGENT INFORMATION *If none, check box:* ☐		
Business Name:	Contact Name:	
Email:	Daytime Telephone:	
Address:		
Town or City:	State:	ZIP:
5. CONSULTANT INFORMATION *If none, check box:* ☐		
Engineering Firm: Emanuel Engineering, Inc.	Contact Name:	
Email: jmacbride@emanuelengineering.com	Daytime Telephone: (603) 772-4400	
Address: 100 Griffin Road, Unit C		
Town or City:	State: NH	ZIP: 03801

6. PROJECT TYPE					
☐ Excavation Only	■ Residential	☐ Commercial	☐ Golf Course	☐ School	☐ Municipal
☐ Agricultural	☐ Land Conversion	☐ Other:			

7. PROJECT LOCATION INFORMATION			
Project Name: Copley-Gallant Subdivision			
Street or Road Address: 80 & 80R Winnicutt Road			
Town or City: Stratham		County: Rockingham	
Tax Map: 14	Block: -	Lot Number: 56 & 57	Unit: -

Post-development, will the proposed project withdraw from or directly discharge to any of the following?
If yes, identify the purpose.

Stream or Wetland?	■ Yes ☐ No	☐ Withdrawal ■ Discharge
Purpose:		
Artificial pond created by impounding a stream or wetland?	☐ Yes ■ No	☐ Withdrawal ☐ Discharge
Purpose:		
Unlined pond dug into the water table?	☐ Yes ■ No	☐ Withdrawal ☐ Discharge
Purpose:		

Post-development, will the proposed project discharge to:

- Within one-quarter mile of a surface water impaired for phosphorus and/or nitrogen? ■ No ☐ Yes
- Within one-quarter mile of a Class A surface water or within the watershed area of an Outstanding Resource Water? ■ No ☐ Yes
- Within one-quarter mile of a lake or pond not covered previously? ■ No ☐ Yes

Is the project a high load area? ☐ Yes ■ No

If yes, specify the type of high load land use or activity: N/A

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ■ No

Is the project within a Groundwater Protection Area (GPA)? ■ Yes ☐ No

Will the well setbacks identified in Env-Wq 1508.02 be met? ■ Yes ☐ No

Is any part of the property within the 100-year floodplain? ☐ Yes ■ No

If yes, cut volume, in cubic feet, within the 100-year floodplain: N/A

Fill volume, in cubic feet, within the 100-year floodplain: N/A

☐ Project *is* within ¼ mile of a designated river	Name of River: N/A

■ Project *is not* within ¼ mile of a designated river.

■ Project *is* within a Coastal/Great Bay Region community.

☐ Project *is not* within a Coastal/Great Bay Region community.

8. BRIEF PROJECT DESCRIPTION *(Please do not reply "see attached")*

The existing use for Tax Map 14 Lots 56 & 57 is residential and farmland. Lot 56 currently has a 4-bedroom house and a barn on site. The house is to remain in place, and the barn is to be preserved and relocated on site (to stay on same parcel as existing house).

The proposed use of Tax Map 14 Lots 56 & 57 is to be an Open Space Cluster Subdivision, which will convert the two existing lots into 33 new lots (48 houses) and the required open space. Approximately 2,460 linear feet of road is proposed. Drainage will be improved on site with drip edges at each proposed house, and two bioretention ponds for the proposed road.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT.

None

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality, as required by Env-Wq 1503.05(e) (Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed).

☒ Proof of delivery is attached	Date:

B. Date a copy of the application was sent to the local river advisory committee, if required by Env-Wq 1503.05(e) (Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river).

☐ Proof of delivery is attached N/A	Date: N/A

C. Type of plan required:

☐ Land Conversion ☒ Detailed Development ☐ Excavation, Grading and Reclamation ☐ Steep Slope

D. Additional plans required:

☒ Stormwater Drainage and Hydrologic Soil Groups ☐ Source Control ☐ Chloride Management

E. Total area of disturbance in square feet: 1,016,890

F. Additional impervious cover as a result of the project, in square feet (*use "-"to indicate a net reduction in impervious coverage):* 199,395

Total final impervious cover, in square feet: 228,060

G. Total undisturbed cover, in square feet: 3,508,970

H. Number of lots proposed: 33 house lots (1 open space/common lot)

I. Total length of roadway, in linear feet: 2,459.94

J. Name(s) of receiving water(s): Mill Brook

K. Identify all other NHDES permits required for the project. For each, indicate whether an application has been filed and is pending. If the required approval has been issued, provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Pending?	If Issued
1. Water Supply Approval	☐ Yes ☐ No ■ N/A	☐	Permit number:
2. Wetlands Permit	☐ Yes ■ No ☐ N/A	☐	Permit number:
3. Shoreland Permit	☐ Yes ☐ No ■ N/A	☐	Registration date:
4. UIC Registration	☐ Yes ☐ No ■ N/A	☐	Approval letter date:
5. Large/Small Community Well Approval	☐ Yes ☐ No ■ N/A	☐	Permit number:
6. Large Groundwater Withdrawal Permit	☐ Yes ☐ No ■ N/A	☐	Permit number:
7. Other: NHDES ISDS & Subdivision	☐ Yes ■ No		

L. List all species identified as threatened or endangered or of concern: greater fringed-genetian

M. Using the NHDES OneStop Data Mapper, with the "surface water impairment" layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter "N/A."

N/A

N. Did the applicant or applicant's agent have a pre-application meeting with Alteration of Terrain Bureau staff?

☐ Yes ■ No | If yes, name of staff member: N/A

O. Will blasting of bedrock be required? ☐ Yes ■ No

If yes, estimated quantity of blast rock, in cubic yards: N/A

If yes, standard blasting best management practices notes must be placed on the plans.

NOTE: *If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact Alteration of Terrain Bureau staff for additional detail.*

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY *(Submit with application in the order listed below)*

LOOSE:

- ■ Signed application form, with attached proof(s) of delivery.
- ■ Check for the application fee, calculated using the fee schedule available on the NHDES land development page.
- ■ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale).
- ■ If the applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BOUND, IN A REPORT, IN THE FOLLOWING ORDER:

- ■ Copy of the signed application form and application checklist.
- ■ Copy of the check.
- ■ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale).
- ■ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points.
- ■ Printout of NHDES OneStop Mapper with "Surface Water Impairments" layer turned on.
- ■ Printout of NHDES OneStop Mapper with Alteration of Terrain screening layers turned on.
- ■ Printout of the DataCheck Tool results letter and any relevant correspondence with New Hampshire Fish and Game.
- ■ United States Department of Agriculture (USDA) Web Soil Survey Map with project's watershed outlined.
- ■ Aerial photograph (1" = 2,000' scale with the site boundaries outlined).
- ■ Photographs representative of the site.
- Waiver ☐ Groundwater recharge volume calculations (include one Alteration of Terrain Permitting Best Management Practices Worksheet per permit application).
- ■ Drainage analysis, stamped by a professional engineer (see "Application Checklist" at the end of this document).
- ■ Riprap apron or other energy dissipation or stability calculations.
- ■ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards of the Society of Soil Scientists of Northern New England.
- N/A ☐ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)].
- N/A ☐ Registration and Notification Form for Stormwater Infiltration to Groundwater (Underground Injection Control Registration-for underground systems only, including drywells and trenches).
- ■ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)].
- N/A ☐ Source control plan.

PLANS:

- ■ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details).
- ■ Pre- and post-development color-coded soil plans on 11" x 17" (see Application Checklist for details).
- ■ Pre- and post-construction drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details).

100-YEAR FLOODPLAIN REPORT:

- N/A ☐ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☐ See Application Checklist (Attachment A) for details.
- ☐ Review application for completeness. Confirm information listed on the application is included with submittal.

12. REQUIRED SIGNATURES

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641:3.

■ **APPLICANT** ☐ **APPLICANT'S AGENT:**	
Signature:	Date: 9/24/25
Name (print or type): Andrew Goddard	Title: member
■ **PROPERTY OWNER** ☐ **PROPERTY OWNER'S AGENT:**	
Signature:	Date: 9/24/25
Name (print or type): HELEN E. GALLANT JR. TR	Title: TRUSTEE

REVISED BY JJM
OF EEI 4/21/2026

ALTERATION OF TERRAIN ATTACHMENT A: PERMIT APPLICATION CHECKLIST

Check each box to indicate the item has been provided or indicate why it does not apply.

DESIGN PLANS

- ☒ Plans printed on 34 - 36” by 22 - 24” white paper.
- ☒ Professional Engineer stamp.
- ☒ Wetland delineation.
- ☒ Temporary erosion control measures.
- ☒ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and nonresidential roof runoff. Guidance on treatment BMPs can be found in the New Hampshire Stormwater Management Manual.
- ☒ Pre-existing 2-foot contours.
- ☒ Proposed 2-foot contours.
- ☒ Drainage easements protecting the drainage/treatment structures.
- ☒ Compliance with state statute governing fill and dredge in wetlands, RSA 482- A. Note that artificial detention in wetlands is prohibited.
- N/A ☐ Compliance with the New Hampshire Shoreland Protection Act, RSA 483-B.
- N/A ☐ Benching – needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- ☒ Check to see if any proposed ponds require state dam permits.

DETAILS

- ☒ Typical roadway x-section.
- ☒ Detention basin with inverts noted on the outlet structure.
- N/A ☐ Stone berm level spreader.
- ☒ Outlet protection – riprap aprons.
- ☒ A general installation detail for an erosion control blanket.
- ☒ Silt fences or mulch berm.
- ☒ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- N/A ☐ Hay bale barriers.
- N/A ☐ Stone check dams.
- ☒ Gravel construction exit.
- ☒ Temporary sediment trap.
- ☒ The treatment BMPs proposed.
- ☒ Any innovative BMPs proposed.

CONSTRUCTION SEQUENCE / EROSION CONTROL

☐ Note that the project must be managed to meet the requirements and intent of RSA 430:53 and Agr 3800 relative to invasive species.

☐ Note that perimeter controls shall be installed prior to earth moving operations.

☐ Note that temporary water diversion (swales, basins, etc.) must be used as necessary until areas are stabilized.

☐ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).

☐ Note that all ditches and swales shall be stabilized prior to directing runoff to them.

☐ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.

☐ Note that all cut and fill slopes shall be seeded or loamed within 72 hours of achieving finished grade

☐ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.

☐ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

☐ Note the definition of the word “stable.”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

☐ Note the limit of time an area may be exposed.

Example note: All areas shall be stabilized within 45 days of initial disturbance.

☐ Provide temporary and permanent seeding specifications. Note that although reed canary grass is listed in the Green Book; it is a problematic species according to the Wetlands Bureau and therefore should not be specified.

☐ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
- All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After October 15, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

☐ Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

Please provide double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

☐ Professional Engineer stamp.

☐ Rainfall amount obtained from the Northeast Regional Climate Center. Include extreme precipitation table as obtained from this source.

☐ Drainage analyses, in the following order:

- Pre-development analysis: Drainage diagram.
- Pre-development analysis: Area Listing and Soil Listing.
- Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
- Pre-development analysis: Full summary of the 10-year storm.
- Post-development analysis: Drainage diagram.
- Post-development analysis: Area Listing and Soil Listing.
- Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
- Post-development analysis: Full summary of the 10-year storm.

☐ Review the Area Listing and Soil Listing reports

- Hydrologic Soil Groups (HSG) match the HSGs on the soil maps provided.
- There is the same or less HSG A soil area after development (check for each HSG).
- There is the same or less "woods" cover in the post-development.
- Undeveloped land was assumed to be in "good" condition.
- The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre-analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses or units proposed. Do these numbers make sense?

☐ Check the storage input used to model the ponds.

☐ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.

☐ Check the outlet structure proposed and make sure it matches that modeled.

☐ Check to see if the total areas in the pre and post analyses are same.

☐ Confirm the correct NRCS storm type was modeled (Coos, Carroll and Grafton counties are Type II, all others Type III).

PRE- AND POST-CONSTRUCTION DRAINAGE AREA PLANS

☐ Plans printed on 34 - 36" by 22 - 24" on white paper.

☐ Submit these plans separate from the soil plans.

☐ A north arrow.

☐ A scale.

☐ Labeled subcatchments, reaches and ponds.

- [x] Tc lines.
- [x] A clear delineation of the subcatchment boundaries.
- [x] Roadway station numbers.
- [x] Culverts and other conveyance structures.

PRE- AND POST-CONSTRUCTION COLOR-CODED SOIL PLANS

- [x] 11” × 17” sheets suitable, as long as it is readable.
- [x] Submit these plans separate from the drainage area plans.
- [x] A north arrow.
- [x] A scale.
- [x] Name of the soil scientist who performed the survey and date the soil survey took place.
- [x] 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- [x] Delineation of the soil boundaries and wetland boundaries.
- [x] Delineation of the subcatchment boundaries.
- [x] Soil series symbols (e.g., 26).
- [x] A key or legend identifying each soil series symbol and its associated soil series name (for example: 26 = Windsor).
- [x] The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, and Impervious = gray).

N/A

Please note that excavation projects (including gravel pits) have similar requirements to those above, with the following common exceptions or additions:

- [ ] Drainage report is not needed if site does not have off-site flow.
- [ ] 5-foot contours are allowed rather than 2-foot.
- [ ] No Professional Engineer stamp is needed on the plans.
- [ ] Add a note to the plans that the applicant must provide NHDES a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- [ ] Add reclamation notes.
- [ ] A description of the subsurface conditions to the planned depth of excavation, including the elevation of the location of the Seasonal High Water Table (SHWT), as observed and described by a certified soil scientist, or an individual holding a valid permit as a permitted designer as issued by the department’s Subsurface Systems Bureau.

For more resources, refer to the Natural Resources Conservation Service Vegetating New Hampshire Sand and Gravel Pits publication.

⑈002197⑈ ⑆211321250⑆ 1196025487⑈

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Memo AoT Application Gallant Farm

Newburyport Five Cents
Savings Bk

Dollars

Twenty-six thousand, two hundred fifty and 00/100

PAY TO THE ORDER OF Treasurer, State of New Hampshire

$ 26,250.00

Date 09/24/2025

Void after 90 days

VV2197

Copley Properties
94 Portsmouth Ave
Stratham, NH 03885

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Step 1 **Print the check**	Step 2 **Validate it printed correctly**	Step 3 **Deposit like normal**
✔ **Any printer works** ✔ **Black or color ink** ✔ **Basic white paper**	✔ **Correct if bank numbers are:** Centered in white space Parallel to edge of the page Clearly printed in dark black ink ✘ **Reprint if bank numbers are:** Cut off, skewed, or off-center Smudged or wrinkled Too light to read	1. **Cut on the dotted line above** 2. **Endorse the back** 3. **Deposit like normal:** In-person at a bank or credit union Using an ATM Via smartphone mobile deposit With an office check scanner

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For your records

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Check number: VV2197
From: Copley Properties
Amount: $26250.00
Payable to: Treasurer, State of New H...
Delivery email: jmacbride@emanuelengineering.com
Memo: AoT Application Gallant Farm
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NEWMARKET QUADRANGLE
NEW HAMPSHIRE
7.5-MINUTE TOPO

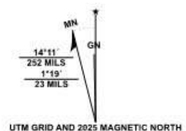


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UTM GRID AND 2025 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
CH
Grid Zone Designation
19T

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium



QUADRANGLE LOCATION

Barrington	Dover West	Dover East
Epping	Newmarket	Portsmouth
Kingston	Exeter	Hampton

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

NEWMARKET, NH
2025

EXISTING CONDITIONS

The Copley Properties, LLC site is shown on Stratham Tax Map 14 Lots 56 & 57, and is located on the south side of Winnicutt Road in Stratham, New Hampshire. The existing lots have a combined area of 103.90 acres.

The subject parcel has one gravel driveway (pavement near the existing house), an existing 4-bedroom house, a 3,780 square foot barn, a pool and associated patio, a pond, grass fields, and a large amount of woodlands, which contain wetlands and streams. The intent of this project is to preserve the existing house and barn on site, but to replace the existing driveway with a paved road, creating a 33-lot subdivision (5 lots of which are to be "array lots" containing 4 houses on each of those lots). The septic system on site will be managed through six separate leach fields, each designed to serve between two and twenty-six houses. Water supply for the houses will be provided by 37 new wells (one existing well is to remain), with each single-family lot having its own well. Each array lot will have two wells, with each well serving two houses. To accommodate increased runoff from the additional impervious area, additional drainage structures are proposed, including bioretention basins and drip edges. The parcel is bounded northerly by Winnicutt Road, easterly by residential lots and conservation, southerly by residential lots, conservation land and power lines, and westerly by residential lots.

Approximately 82.74 acres (79.64%) of the analyzed area consists of undisturbed woodlands. The impervious cover within the analyzed area is approximately 0.66 acres (0.63%).

The existing combined site has one main point of discharge for stormwater, which is the wetlands on the west portion of the analyzed area. The high point is generally located at Winnicutt Road on the northern portion of the property where stormwater generally flows to the west through a series of wetlands and streams, ultimately into the wetlands on the western portion of the site.

Site specific soils were delineated on site by Luke Hurley, CSS # 095, Hurley Environmental and Land Planning, LLC. on May 9, 2024. Wetlands were delineated by Joseph Noel CWS #86 in Spring 2023, and confirmed by Luke Hurley of Hurley Environmental & Land Planning, LLC in Spring 2024.

PROPOSED DEVELOPMENT

Proposed improvements for Tax Map 14 Lots 56 & 57 include replacing the existing driveway with +/- 2,460 linear feet of a paved road, construction of 47 new houses for the 33-lot subdivision, the slight relocation of the existing barn on site, six separate new shared septic systems and thirty-eight wells (total) for the proposed subdivision, stone storage areas/drip edges at each proposed house and driveway for lot-level stormwater management, associated power and utilities, conveyance swales along the proposed roadways, a stormwater forebay, three prefabricated pretreatment devices, and two bioretention basins. The proposed site impervious area is 5.04% of the analyzed area (228,060 square feet).

DRAINAGE ANALYSIS AND DESIGN

The purpose of the drainage analysis is two-fold:

- The first is to analyze the pre-development runoff flows through the site.
- The second purpose is to evaluate the impact of the proposed development on drainage patterns and flows.

The goal of the drainage design is to:

- Design a storm-water and treatment system to adequately handle the post-development runoff peak and volume.
- Minimize or eliminate erosion and sedimentation during construction and after development.

METHOD

The storm-water runoff analysis for the site was based on the Town of Stratham's regulations which require a 2-year, 10-year, and 25-year 24-hour storm events to be modeled. Additionally, the 50-year 24-hour storm event was also monitored per the requirements of NHDES Alteration of Terrain. Per Env-Wq 1503.08(l), Rainfall data has been increased by 15%. The analysis was performed as required by the State of New Hampshire Department of Environmental Services using the U.S. Soil Conservation Service's TR-20 runoff procedure from which the TR-55 method was developed. As described in the TR-55 manual, it is a "...procedure to calculate storm runoff, peak rate of discharge, hydrographs and storage volumes required for floodwater reservoirs. The model begins with a rainfall amount uniformly imposed on the watershed over a specified time distribution. Mass rainfall is converted to mass runoff using a

runoff curve number (CN). CN is based on soils, plant cover, impervious area, interception, and surface storage. Runoff is then transformed into a hydrograph (a graph showing the properties of runoff flow with respect to time) by using the unit hydrograph theory (a given one-day rainfall produces a 1-inch depth of runoff over the given drainage area) and routing procedures that depend on runoff travel time through segments of the watershed" (subcatchments). Modeling calculations were performed with a HydroCAD software package.

PRE-DEVELOPMENT RUNOFF

The pre-development site was modeled as a 103.90-acre area, with stormwater modeling and calculations for Stratham Tax Map 14 Lots 56 & 57 performed as described above. The subject area was divided into eleven separate subcatchment areas to model the storm-water flows most accurately, and is shown on Sheet SW1 included in this report.

Subcatchment ES1 represents the wetlands on the western portion of the site. This area is comprised of grass and woods cover.

Subcatchment ES1 flows west along the surface directly into the large wetland area on the western portion of the site and eventually off-site (Link L101).

Subcatchment ES2 represents the area along the northernmost wetland finger on site, spanning from the east to the west part of the site. This area is comprised of grass, woods, gravel, roof, and pavement cover.

Subcatchment ES2 flows directly to Link L101, discharging into the large wetland area on the western portion of the site and eventually off-site.

Subcatchment ES3 represents the area on the northeast corner of the lot, along Winnicutt Road and east of the existing gravel driveway. This area is comprised of grass, woods, and gravel cover.

Subcatchment ES3 flows into the wetlands east of the existing driveway (Pond EP50), entering the site in the northeast corner. From there, stormwater flows through a 24-inch corrugated metal pipe into the northernmost stream on site (Reach ER75) and then to the west into the large wetland area on the western portion of the site, eventually off-site (Link L101).

Subcatchment ES4 represents the area east of the driveway, adjacent to the existing pond. This area is comprised of grass, woods, gravel, and pavement cover.

Subcatchment ES4 flows into the existing pond (Pond EP51), east of the gravel driveway. From there, stormwater flows through a 12-inch CMP into the existing swale in the rear of the existing house (Reach ER82), which flows into the stream running through the central portion of the site (in order, Reach ER81, Reach ER80, and Reach ER79), ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment ES5 represents the area south of the existing house. This area is comprised of grass, woods, roof, and pavement cover.

Subcatchment ES5 flows directly into the East Portion of the Existing Central Swale (Reach ER81), which continues through Reach ER80 and Reach ER79, ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment ES6 represents the eastern portion of the site along the wetland finger in that area. This area is comprised of grass and woods cover.

Subcatchment ES6 flows directly into the West Portion of the Existing Central Swale (Reach ER80), where it continues through Reach ER79, ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment ES7 represents the southeastern portion of the site, along the wetland finger in that area. This area is comprised of woods cover.

Subcatchment ES7 flows directly into the southern swale connecting to the western wetlands (Reach ER79), ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment ES8 represents the southern portion of the site, along the wetland finger. This area is comprised of woods cover.

Subcatchment ES8 flows directly into the southern swale connecting to the western wetlands (Reach ER79), ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment ES9 represents the southwestern portion of the site, along the wetland finger. This area is comprised of woods cover.

Subcatchment ES9 flows directly into the large wetland area on the western portion of the site and eventually off-site (Link L101).

Subcatchment ES10 represents the west-central portion of the site, along the wetland finger. This area is comprised of grass and woods cover.

Subcatchment ES10 flows directly into the southern swale connecting to the western wetlands (Reach ER79), ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment ES11 represents the east-central portion of the site, along the wetland finger. This area is comprised of grass, woods, gravel, roof, and pavement cover.

Subcatchment ES11 flows directly into the West Portion of the Existing Central Swale (Reach ER80), where it continues through Reach ER79, ultimately flowing west into the wetlands on the western portion of the site (Link L101).

The storm-water calculations were modeled with good grass cover, good woodlands, gravel areas, roof cover, and impervious asphalt cover. Wetland areas were modeled with their respective Site Specific Soil Survey and cover type. Per Env-Wq 1503.08(l), rainfall data within the model has been increased by 15%. The attached HydroCAD worksheets outline specific details on the flows, volumes, times, and flow conditions.

POST-DEVELOPMENT RUNOFF

The post-development site was also modeled as a 103.90 acre site which has been divided into seventy-eight subcatchment areas, and are shown on sheets SW2-2.6 – Post development Drainage Plans included in this report.

Subcatchment PS1 represents the wetlands on the western portion of the site. This area is comprised of grass, woods, and pavement cover.

Subcatchment PS1 flows west along the surface into the large wetland area on the western portion of the site and eventually off-site (Link L101).

Subcatchment PS2 represents the area along the northernmost wetland finger on site, spanning from the east to the west part of the site. This area is comprised of grass, woods, and pavement cover.

Subcatchment PS2 flows directly to Link L101, discharging into the large wetland area on the western portion of the site and eventually off-site.

Subcatchment PS3 flows generally southwest along the road surface into Pond PP52A (Swale Along West Side of Main Road), then through a 12-inch culvert to Pre-Treatment Structure PT1, a prefabricated NHDES-approved flow-through pretreatment device. From PT1, stormwater flows into Bioretention Basin "A2" (Pond PP54). Stormwater passes through the

engineered filter media and is temporarily stored in the stone reservoir layer beneath, which is drained by a 6-inch diameter perforated underdrain pipe. The underdrain discharges into a catching basin within the basin that has a 12-inch HDPE outlet pipe that conveys flow approximately 150 feet to a separate catch basin, Proposed Manhole 3A (Pond PDMH3A), located across the proposed road. In larger storm events, in addition to passing through the filter media, stormwater backs up within the open storage area and overflows through one of the four 4"x12" knockouts within the catch basin and outlets directly into the same 12-inch HDPE outlet pipe, with some of the stormwater therefore bypassing the filter media. The subsurface section of the basin is lined with a 40 mil PVC liner, preventing infiltration to groundwater and groundwater intrusion into the basin. From Proposed Manhole 3A (Pond PDMH3A), stormwater is conveyed through a series of proposed drainage manholes — Proposed Manhole 3B (Pond PDMH3B), Proposed Manhole 3C (Pond PDMH3C), Proposed Manhole 3D (Pond PDMH3D), and Proposed Manhole 3E (Pond PDMH3E) — via 12-inch HDPE piping, ultimately discharging into the large wetland on the western portion of the site (Link L101).

Subcatchment PS4 represents the eastern portion of the proposed main road entrance. This area is comprised of grass and pavement cover.

Subcatchment PS4 flows generally southwest along the road surface into Pond PP53A (Swale Along East Side of Main Road), then through Pre-Treatment Structure PT2, a prefabricated NHDES-approved flow-through pretreatment device. From PT2, stormwater flows into Bioretention Basin “A2” (Pond PP54), and follows the same routing as described for Subcatchment PS3 above, ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS4A represents the area of Bioretention Basin “A2” and adjacent grass at the main road entrance. This area is comprised of grass and minimal impervious roof cover. Subcatchment PS4A flows directly into Bioretention Basin “A2” (Pond PP54), and follows the same routing as described for Subcatchment PS3 above, ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS5 represents the area on the northeast corner of the lot, along Winnicutt Road and east of the proposed main road. This area is comprised of grass and woods cover. Subcatchment PS5 flows into Pond PP50 (Wetlands East of Existing Driveway), entering the site in the northeast corner. Stormwater then flows through a 24-inch corrugated metal pipe into

Reach ER75 (Northernmost Stream on Site), and continues to the west into the large wetland area on the western portion of the site, eventually off-site (Link L101).

Subcatchment PS6 represents the area east of the proposed main road, adjacent to the existing pond. This area is comprised of grass, woods, pavement, and minimal roof cover. Subcatchment PS6 flows into the existing pond (Pond EP51), east of the gravel driveway. From there, stormwater flows through a 12-inch CMP into the existing transference swale at the rear of the existing house (Pond PP59), which then flows into the stream running through the central portion of the site (in order, Reach PR81, Reach ER80, and Reach ER79), ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).

Subcatchments PS7A and PS7B represent the proposed shared driveway areas for Lots 32 and 33. PS7A represents the Lot 33 driveway portion and consists of grass and pavement cover. PS7B represents the Lot 32 driveway portion and associated area, and consists of grass, woods, and pavement cover. The individual houses for Lots 32 and 33 are represented by Subcatchments PS7C through PS7J (Houses A-D of Lots 33 and 32 respectively), each consisting of roof and grass cover.

Subcatchment PS7A flows into the existing transference swale at the rear of the existing house (Pond PP59), which then flows into the stream running through the central portion of the site (in order, Reach PR81, Reach ER80, and Reach ER79), ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).Subcatchment PS7B flows directly to the existing swale from the east portion of the site (Reach ER76), which subsequently follows the routing described in Subcatchment PS7A. Each individual house subcatchment (PS7C–PS7J) flows into dedicated stone storage areas (Ponds PP91–PP98 respectively), each 4 feet wide by 4 feet deep. Stormwater flows out via a 4” diameter pipe. Stormwater from the Lot 33 stone storage areas ultimately drain to the existing transference swale noted for Subcatchment PS7A, and subsequently follows the routing described. Stormwater from Lot 32 stone storage areas ultimately drain to the existing swale from the east portion of the site (Reach ER76), which subsequently follows the routing described in Subcatchment PS7A.

Subcatchment PS8 represents the eastern portion of the site along the wetland finger. This area is comprised of grass and woods cover.

Subcatchment PS8 flows into Reach ER80 (western portion of existing central swale), where it continues through the stream (through Reach ER79), ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS9 represents the southeastern portion of the site, along the wetland finger in that area. This area is comprised of grass and woods cover.

Subcatchment PS9 flows into the southern swale connecting to the western wetlands (Reach ER79), ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS10 represents the southern portion of the site, along the wetland finger. This area is comprised of woods cover.

Subcatchment PS10 flows into the southern swale connecting to the western wetlands (Reach ER79), ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS11 represents the southwestern portion of the site, along the wetland finger. This area is comprised of woods and minimal grass cover.

Subcatchment PS11 flows directly into the large wetland area on the western portion of the site and eventually off-site (Link L101).

Subcatchment PS12 represents the west-central portion of the site, along the wetland finger. This area is comprised of grass, woods, and pavement cover.

Subcatchment PS12 flows into the southern swale connecting to the western wetlands (Reach ER79), ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS13W represents the west portion of the proposed main road along Winnicutt Road. This area is comprised of grass and pavement cover.

Subcatchment PS13W flows generally southwest along the road surface into Pond PP151 (Swale Along West Portion of Proposed Main Road). Stormwater is conveyed through four 4"x12" knockouts to Proposed Catch Basin 11 (Pond PCB11), then through a 15-inch culvert to the proposed sediment forebay (Pond PP154). The sediment forebay serves as the pretreatment structure for Bioretention Basin "B2" and is sized to hold no less than 25% of the Water Quality Volume (WQV) in accordance with NHDES Stormwater Manual requirements. Stormwater fills the forebay and flows through one of eight 4"x12" knockouts within the catch basin (Pond

PCB14) located in the sediment forebay, then is routed through two Proposed Manholes (PDMH14A and PDMH14B) before reaching Bioretention Basin "B2" (Pond PP155) via a 24" HDPE pipe. PDMH14A and PDMH14B were added only to ensure that no run of the 24" HDPE pipe exceeds 300 feet. Stormwater passes through the engineered filter media and is temporarily stored in the stone reservoir layer, which is hydraulically connected to the catch basin within the basin via a 6-inch diameter perforated underdrain pipe. In moderate storm events, before water levels reach the knockout invert, stormwater that has backed up within the open storage area is conveyed through one of three 3-inch diameter weep holes directly into the catch basin, providing a low-flow bypass around the filter media. In larger storm events, once the open-storage elevation rises further, stormwater overflows through one of four 4"x12" knockouts directly into the catch basin for additional bypass capacity. The basin is lined with a 40 mil PVC liner, preventing infiltration to groundwater and groundwater intrusion into the basin. From the catch basin, stormwater discharges directly to the large wetland on the western portion of the site via a 12" HDPE pipe (Link L101).

Subcatchment PS13E represents the east portion of the proposed main road. This area is comprised of grass and pavement cover.

Subcatchment PS13E flows into Pond PP152 (Swale Along East Portion of Proposed Main Road), which conveys stormwater through a 12-inch culvert to Proposed Catch Basin 12 (Pond PCB12). From PCB12, stormwater is conveyed through an 18-inch culvert to the proposed sediment forebay (Pond PP154), and then follows the same routing through Proposed Catch Basin 14 and Bioretention Basin “B2” as described for Subcatchment PS13W above, ultimately discharging off-site (Link L101).

Subcatchment PS13S represents the south portion of the proposed main road and cul-de-sac. This area is comprised of grass and pavement cover.

Subcatchment PS13S flows into Pond PP153 (Swale Along End of Cul-de-sac and Proposed Main Road). Stormwater enters a PreTX pretreatment Structure PT13 (Pond PT13) via an inlet grate, which conveys stormwater directly to Proposed Catch Basin 14 (Pond PCB14), bypassing the proposed sediment forebay. From PCB14, stormwater follows the same routing to Bioretention Basin “B2” system as described for Subcatchment PS13W above, ultimately discharging off-site (Link L101).

Subcatchment PS13B represents the area of Bioretention Basin “B2” and adjacent grass. This area is comprised entirely of grass cover.

Subcatchment PS13B flows directly into Bioretention Basin “B2” (Pond PP155), following the same treatment process described for Subcatchment PS13W above.
Subcatchment PS13SF represents the area of the sediment forebay and adjacent grass. This area is comprised entirely of grass cover.

Subcatchment PS13SF flows directly into the proposed sediment forebay (Pond PP154), following the same routing through Bioretention Basin “B2” as described for Subcatchment PS13W above.

Subcatchment PS14 represents the middle-east portion of the proposed main road. This area is comprised of grass, building, and pavement cover.
Subcatchment PS14 flows into Pond PP58 (Swale Along Middle-East Portion of Proposed Main Road). Stormwater is conveyed from PP58 through Proposed Catch Basin 4 (Pond PCB4), then through Proposed Manhole 8 (Pond PDMH8), Proposed Manhole 8A (PDMH8A), Proposed Manhole 9 (Pond PDMH9), and Proposed Manhole 10 (Pond PDMH10), and is ultimately conveyed to Proposed Catch Basin 12 (Pond PCB12). From PCB12, stormwater follows the same routing through the proposed sediment forebay and Bioretention Basin “B2” system as described for Subcatchment PS13E above, ultimately discharging off-site (Link L101).

Subcatchment PS15 represents the north portion of the proposed secondary road, including the fire truck pull-off area. This area is comprised of pavement and grass cover.
Subcatchment PS15 flows into Pond PP55 (Swale Along North Portion of Proposed Secondary Road), which conveys stormwater through Proposed Catch Basin 5 (Pond PCB5) to Proposed Catch Basin 7 (Pond PCB7). From PCB7, stormwater follows the same routing through Proposed Manhole 8, Proposed Manhole 8A, Manhole 9, Manhole 10, and Proposed Catch Basin 12 as described for Subcatchment PS14 above, then through the Sediment Forebay and Bioretention Basin “B2” system, ultimately discharging off-site (Link L101).

Subcatchment PS16 represents the area south of the existing house and adjacent to the transferance swale. This area is comprised entirely of grass cover.
Subcatchment PS16 flows into the existing transferance swale (Pond PP59). From there, stormwater is conveyed through a proposed 12-inch diameter HDPE pipe under the proposed secondary road into Reach PR81 (East Portion of Existing Central Swale). It continues

downstream through Reach ER80 and Reach ER79 before ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS17 represents the north portion of the proposed secondary cul-de-sac. This area is comprised of pavement and grass cover.

Subcatchment PS17 flows into Pond PP56 (Swale Along North Portion of Proposed Secondary Cul-de-sac). From PP56, stormwater is conveyed through Proposed Catch Basin 6 (Pond PCB6) to Proposed Manhole 6A (PDMH6A) to Proposed Catch Basin 7 (Pond PCB7). From PCB7, stormwater follows the same routing through Proposed Manhole 8, Manhole 8A, Manhole 9, Manhole 10, and Proposed Catch Basin 12 as described for Subcatchment PS14 above, then through the Sediment Forebay and Bioretention Basin "B2" system, ultimately discharging off-site (Link L101).

Subcatchment PS18A represents the proposed shared driveway for Lots 30 and 31. This area is comprised of grass and pavement cover. The individual houses for Lots 30 and 31 are represented by Subcatchments PS18B through PS18I (Houses A-D of Lots 31 and 30 respectively), each consisting of roof and grass cover.

Subcatchment PS18A flows directly into Reach ER76 (Existing Swale from East Portion of Site), which continues through Reach ER80 and Reach ER79, ultimately flowing west into the wetlands on the western portion of the site (Link L101). Each individual house subcatchment (PS18B–PS18I) flows into dedicated stone storage areas (Ponds PP99–PP106 respectively), each 4 feet wide by 4 feet deep. Stormwater flows out via a 4" diameter pipe. Stormwater from these stone storage areas ultimately routes into Reach ER76, and continues downstream to Link L101.

Subcatchment PS19A represents the west half of the proposed driveway for Lot 29 and consists of only pavement. Subcatchment PS19B represents the east half of the proposed driveway for Lot 29 and consists of grass and pavement cover. The individual houses for Lot 29 are represented by Subcatchments PS19C through PS19F (Houses A-D of Lot 29), each consisting of roof and grass cover.

Subcatchments PS19A and PS19B flow directly into Reach ER80 (West Portion of Existing Central Swale), which continues through Reach ER79, ultimately flowing west into the wetlands on the western portion of the site (Link L101). Each individual house subcatchment (PS19C–PS19F) flows into dedicated stone storage areas (Ponds PP107–PP110 respectively), each 4 feet

wide by 4 feet deep. Stormwater flows out via a 4” diameter pipe into Reach ER80, continuing downstream to Link L101.

Subcatchment PS20 represents the south portion of the proposed secondary road. This area is comprised of grass and pavement cover.

Subcatchment PS20 flows into Pond PP57 (Swale Along South Side of Secondary Road). From PP57, stormwater is conveyed through Proposed Catch Basin 7 (Pond PCB7). From PCB7, stormwater follows the same routing through Proposed Manhole 8, Manhole 8A, Manhole 9, Manhole 10, and Proposed Catch Basin 12 as described for Subcatchment PS14 above, then through the Sediment Forebay and Bioretention Basin “B2” system, ultimately discharging off-site (Link L101).

Subcatchment PS21 represents the east-central portion of the site along the wetland finger, south of the proposed main road and southwest of the proposed secondary road. This area is comprised of grass, woods, and pavement cover.

Subcatchment PS21 flows into Reach ER80 (West Portion of Existing Central Swale), where it continues through Reach ER79, ultimately flowing to the west into the wetlands on the western portion of the site (Link L101).

Subcatchments PS22A, PS22B, and PS22C represent the proposed shared driveway and houses for Lots 26 and 27. PS22A represents the shared driveway and consists of grass and pavement cover. PS22B represents the house for Lot 26 and PS22C represents the house for Lot 27, both with grass and roof cover.

Subcatchment PS22A flows directly into Reach ER79 (Southern Swale Connecting to Western Wetlands), which ultimately flows west into the wetlands on the western portion of the site (Link L101). Subcatchments PS22B and PS22C flow into dedicated stone storage areas, Ponds PP111 and PP112 respectively, each 4 feet wide by 4 feet deep. Stormwater flows out via a 4” diameter pipe. PP111 flows directly into Reach ER79 and PP112 flows into Reach ER80, continuing downstream through Reach ER79 to Link L101.

Subcatchments PS23 through PS28 represent the proposed single-family houses and driveways on Lots 20, 19, 18, 17, 16, and 28, respectively. These areas consist of grass and building cover.

Each subcatchment flows into a dedicated 4-foot wide by 4-foot deep stone storage area (Ponds PP64 through PP69 respectively). Stormwater flows out via a 4” diameter pipe into

Reach ER80 (West Portion of Existing Central Swale). It continues downstream through Reach ER79 before ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchments PS29 through PS45 represent the proposed single-family houses and associated driveways on Lots 25, 24, 23, 22, 21, 15, 14, 13, 12, 8, 7, 6, 5, 4, 3, 2, and 1, respectively. These areas consist of building and grass cover.

Stormwater from each subcatchment is directed into a dedicated 4-foot wide by 4-foot deep stone storage area (Ponds PP70 through PP86 respectively). Stormwater flows out via a 4" diameter pipe into to the large wetland on the western portion of the site, eventually flowing off-site (Link L101).

Subcatchments PS46 and PS47 represent the proposed single-family houses and associated driveways on Lots 11 and 10, respectively. These areas consist of building and grass cover.

Stormwater is directed into 4-foot wide by 4-foot deep stone storage areas (Ponds PP87 and PP88 respectively). Stormwater flows out via a 4" diameter pipe into the existing pond (Pond EP51) east of the gravel driveway. From there, stormwater is conveyed through a 12-inch CMP into the existing transferance swale at the rear of the existing house (Pond PP59), which then flows into the stream running through the central portion of the site (in order, Reach PR81, Reach ER80, and Reach ER79), ultimately flowing west into the wetlands on the western portion of the site (Link L101).

Subcatchment PS48 represents the eastern half of the existing house. This area consists of building and grass cover.

Stormwater is directed into a 4-foot wide by 4-foot deep stone storage area (Pond PP89). Stormwater flows out via a 4" diameter pipe into the existing transferance swale (Pond PP59), following the same routing as Subcatchments PS46 and PS47 above through Reach PR81, Reach ER80, and Reach ER79 to Link L101.

Subcatchment PS49 represents the relocated barn on Lot 9. This area consists of building and grass cover.

Stormwater is directed into a 4-foot wide by 4-foot deep stone storage area (Pond PP90). Stormwater flows out via a 4" diameter pipe into the existing transferance swale (Pond PP59), following the same routing as Subcatchment PS48 above.

The storm-water calculations for the proposed site were modeled with good grass, good woodlands, roof, and pavement cover. Wetland areas were modeled with their respective Site Specific Soil Survey and cover type. The HydroCAD worksheets outline specific details on the flows and flow conditions.

Infiltration through the engineered bioretention media was modeled using a rate of 10 inches per hour. Bioretention Basins “A2” and “B2” are each constructed with a 40 mil PVC liner installed beneath the filter and reservoir layers, preventing infiltration of stormwater into the underlying groundwater and protecting the basins from groundwater intrusion, ensuring controlled stormwater treatment and flow as designed. Therefore, infiltration to groundwater is not included in the HydroCAD model.

The proposed development on the site increased the impervious area by +/-199,395 square feet from predevelopment.

The 2-year, 10-year, 25-year, and 50-year twenty four-hour storm events have been modeled to verify the operability of the storm-water management system, to meet state and local regulations, and to ensure adequate freeboard on the storm-water management structures. Per Env-Wq 1503.08(l), Rainfall data has been increased by 15%.

The post-development HydroCAD analysis presented in this report models a single point of discharge (Link L101), at which the post-development peak flows are reduced compared to pre-development conditions for the 2-year, 10-year, 25-year, and 50-year 24-hour storm events. The project therefore meets the Peak Runoff Control Requirements of Env-Wq 1507.06.

To demonstrate compliance with the Channel Protection Requirements of Env-Wq 1507.05, a separate, supplementary drainage analysis was prepared at the recommendation of the NHDES Alteration of Terrain. That supplementary analysis evaluates only the portions of the site being developed or disturbed, rather than the full 103.90-acre tract, and was modeled for the 2-year, 24-hour storm event only. Within the supplementary model, discharge is divided into three separate analysis points — Links L101A, L101B, and L101C — each representing a distinct conveyance pathway to the western wetlands: L101A discharges to the northern swale entrance, L101B discharges to the central wetland finger, and L101C discharges to the southern swale entrance.

Compliance with Env-Wq 1507.05 at each of those three analysis points is summarized as follows. Link L101A demonstrates a reduction in peak flow for the 2-year, 24-hour storm

event with no increase in runoff volume exceeding 0.1 acre-feet (pre- and post-development volumes of 0.715 acre-feet), meeting Env-Wq 1507.05(b)(1)(a). Link L101B demonstrates a reduction in peak flow for the 2-year, 24-hour storm event with a post-development peak flow less than 2.0 cfs, meeting Env-Wq 1507.05(b)(1)(b); this link conveys runoff from all of the proposed roadway improvements. Link L101C demonstrates a reduction in peak flow for the 2-year, 24-hour storm event with a slight increase in runoff volume from 1.432 acre-feet to 1.486 acre-feet (an increase of 0.054 acre-feet), which does not exceed the 0.1 acre-foot threshold established in Env-Wq 1507.05(b)(1)(a).

The project therefore complies with both the Peak Runoff Control Requirements of Env-Wq 1507.06 (demonstrated through the main HydroCAD analysis at Link L101) and the Channel Protection Requirements of Env-Wq 1507.05 (demonstrated through the supplementary disturbed-area analysis at Links L101A, L101B, and L101C). The full HydroCAD outputs, routing diagrams, and supporting calculations for the supplementary Channel Protection analysis are included in Appendix A of this stormwater report package.

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	No
State	
Location	
Latitude	43.016 degrees North
Longitude	70.896 degrees West
Elevation	20 feet
Date/Time	Mon Aug 26 2024 15:54:18 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.41	0.50	0.67	0.82	1.01	**1yr**	0.71	0.99	1.14	1.57	2.01	2.68	2.92	**1yr**	2.37	2.81	3.22	3.94	4.56	**1yr**
2yr	0.32	0.50	0.61	0.83	1.02	1.21	**2yr**	0.88	1.18	1.40	1.86	2.40	3.23	3.58	**2yr**	2.86	3.44	3.95	4.69	5.34	**2yr**
5yr	0.37	0.58	0.72	0.98	1.25	1.50	**5yr**	1.08	1.46	1.73	2.31	2.94	4.10	4.60	**5yr**	3.63	4.42	5.06	5.97	6.75	**5yr**
10yr	0.42	0.65	0.80	1.12	1.45	1.76	**10yr**	1.25	1.72	2.04	2.71	3.44	4.91	5.56	**10yr**	4.35	5.35	6.11	7.17	8.05	**10yr**
25yr	0.50	0.76	0.94	1.35	1.78	2.19	**25yr**	1.53	2.14	2.53	3.37	4.23	6.24	7.15	**25yr**	5.52	6.88	7.83	9.13	10.18	**25yr**
50yr	0.57	0.86	1.07	1.54	2.07	2.58	**50yr**	1.79	2.52	2.98	3.97	4.95	7.48	8.66	**50yr**	6.62	8.33	9.46	10.98	12.16	**50yr**
100yr	0.65	0.98	1.22	1.77	2.42	3.05	**100yr**	2.09	2.98	3.51	4.68	5.79	8.98	10.48	**100yr**	7.94	10.08	11.42	13.20	14.53	**100yr**
200yr	0.74	1.11	1.40	2.03	2.83	3.60	**200yr**	2.44	3.52	4.14	5.52	6.78	10.77	12.69	**200yr**	9.53	12.21	13.80	15.87	17.38	**200yr**
500yr	0.88	1.31	1.69	2.45	3.49	4.48	**500yr**	3.01	4.38	5.15	6.86	8.35	13.71	16.36	**500yr**	12.14	15.73	17.73	20.27	22.02	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.36	0.44	0.60	0.73	0.89	**1yr**	0.63	0.87	0.93	1.29	1.59	2.23	2.59	**1yr**	1.97	2.49	2.89	3.27	3.94	**1yr**
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.87	1.16	1.37	1.82	2.34	3.09	3.50	**2yr**	2.73	3.37	3.86	4.59	5.10	**2yr**
5yr	0.35	0.55	0.68	0.93	1.18	1.41	**5yr**	1.02	1.38	1.62	2.13	2.74	3.84	4.29	**5yr**	3.40	4.13	4.75	5.63	6.35	**5yr**
10yr	0.39	0.60	0.74	1.04	1.34	1.62	**10yr**	1.16	1.58	1.82	2.41	3.08	4.44	5.01	**10yr**	3.93	4.82	5.56	6.54	7.34	**10yr**
25yr	0.45	0.68	0.85	1.21	1.60	1.93	**25yr**	1.38	1.89	2.11	2.79	3.58	4.78	6.13	**25yr**	4.23	5.89	6.83	7.98	8.90	**25yr**
50yr	0.50	0.76	0.94	1.35	1.82	2.21	**50yr**	1.57	2.16	2.36	3.12	4.00	5.40	7.13	**50yr**	4.78	6.85	7.99	9.28	10.28	**50yr**
100yr	0.56	0.84	1.05	1.52	2.09	2.53	**100yr**	1.80	2.47	2.64	3.47	4.46	6.07	8.28	**100yr**	5.37	7.97	9.35	10.79	11.86	**100yr**
200yr	0.62	0.93	1.18	1.71	2.39	2.90	**200yr**	2.06	2.83	2.95	3.86	4.96	6.80	9.64	**200yr**	6.02	9.27	10.96	12.53	13.71	**200yr**
500yr	0.73	1.08	1.39	2.02	2.88	3.49	**500yr**	2.48	3.41	3.43	4.44	5.72	7.90	11.76	**500yr**	6.99	11.31	13.51	15.27	16.56	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.73	2.19	3.00	3.10	**1yr**	2.66	2.98	3.61	4.35	5.07	**1yr**
2yr	0.33	0.51	0.63	0.86	1.06	1.26	**2yr**	0.91	1.23	1.48	1.95	2.50	3.44	3.67	**2yr**	3.04	3.53	4.05	4.83	5.67	**2yr**
5yr	0.40	0.62	0.76	1.05	1.33	1.61	**5yr**	1.15	1.57	1.87	2.50	3.20	4.36	4.90	**5yr**	3.86	4.71	5.38	6.34	7.13	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.96	**10yr**	1.39	1.92	2.26	3.05	3.86	5.39	6.11	**10yr**	4.77	5.88	6.69	7.82	8.72	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.55	**25yr**	1.77	2.49	2.92	3.98	4.97	7.79	8.19	**25yr**	6.90	7.88	8.92	10.35	11.42	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.09	**50yr**	2.12	3.03	3.55	4.86	6.05	9.76	10.24	**50yr**	8.64	9.85	11.10	12.81	13.99	**50yr**
100yr	0.79	1.19	1.49	2.15	2.95	3.76	**100yr**	2.55	3.68	4.31	5.96	7.37	12.23	12.80	**100yr**	10.82	12.31	13.79	15.87	17.16	**100yr**
200yr	0.92	1.38	1.75	2.54	3.54	4.58	**200yr**	3.06	4.48	5.26	7.31	8.97	15.36	16.02	**200yr**	13.60	15.41	17.16	19.65	21.08	**200yr**
500yr	1.14	1.69	2.18	3.16	4.50	5.93	**500yr**	3.88	5.80	6.81	9.60	11.65	20.79	21.56	**500yr**	18.40	20.73	22.90	26.11	27.68	**500yr**

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STORMWATER ANALYSIS AREA WORKSHEET (FULL LOT)

EMANUEL ENGINEERING INC.

JOB: 24-1061 Copley-Gallant-80 Winnicutt Road
DATE: 5/4/2026
ENGINEER: JJM

PRE DEVELOPMENT DRAINAGE AREAS:

SOIL TYPE	*SOIL GROUP*	*CN#*	***SUBCAT ES1*** *Area (SF)*	***SUBCAT ES2*** *Area (SF)*	***SUBCAT ES3*** *Area (SF)*	***SUBCAT ES4*** *Area (SF)*	***SUBCAT ES5*** *Area (SF)*
Grass	C	74	22,600	256,630	12,175	163,385	100,670
Grass	D	80	0	0	0	9,670	0
Woods	C	70	306,715	508,080	7,030	2,120	1,915
Woods	D	77	301,775	234,215	5,670	0	0
Gravel	C	96	0	4,465	1,730	5,765	0
Building	C	98	0	885	0	0	3,670
Pavement	C	98	0	3,560	0	155	3,690
Total Area (SF)			**631,090**	**1,007,835**	**26,605**	**181,095**	**109,945**
Area (Acres)			**14.49**	**23.14**	**0.61**	**4.16**	**2.52**
Total Impervious (SF)			**0**	**8,910**	**1,730**	**5,920**	**7,360**
Impervious (Acres)			**0.00**	**0.20**	**0.04**	**0.14**	**0.17**

SUBCAT ES6 *Area (SF)*	***SUBCAT ES7*** *Area (SF)*	***SUBCAT ES8*** *Area (SF)*	***SUBCAT ES9*** *Area (SF)*	***SUBCAT ES10*** *Area (SF)*	***SUBCAT ES11*** *Area (SF)*	***TOTAL AREA*** *(SF)*
64,915	0	0	0	6,660	256,150	**883,185**
0	0	0	0	0	0	**9,670**
592,040	550,470	271,440	78,780	132,750	126,640	**2,577,980**
200,145	94,595	69,220	42,395	50,200	28,145	**1,026,360**
0	0	0	0	0	1,305	**13,265**
0	0	0	0	0	1,825	**6,380**
0	0	0	0	0	1,615	**9,020**
857,100	**645,065**	**340,660**	**121,175**	**189,610**	**415,680**	**4,525,860**
19.68	**14.81**	**7.82**	**2.78**	**4.35**	**9.54**	**103.90**
0	**0**	**0**	**0**	**0**	**4,745**	**28,665**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.66**

STORMWATER ANALYSIS AREA WORKSHEET (FULL LOT)

EMANUEL ENGINEERING INC.

JOB: 24-1061 Copley-Gallant-80 Winnicutt Road
DATE: 5/5/2026
ENGINEER: JJM

POST DEVELOPMENT DRAINAGE AREAS:

SOIL TYPE	*SOIL GROUP*	*CN#*	***SUBCAT PS1*** *Area (SF)*	***SUBCAT PS2*** *Area (SF)*	***SUBCAT PS3*** *Area (SF)*	***SUBCAT PS4*** *Area (SF)*	***SUBCAT PS4A*** *Area (SF)*	***SUBCAT PS5*** *Area (SF)*	***SUBCAT PS6*** *Area (SF)*	***SUBCAT PS7A*** *Area (SF)*	***SUBCAT PS7B*** *Area (SF)*	***SUBCAT PS7C*** *Area (SF)*	***SUBCAT PS7D*** *Area (SF)*
Grass	C	74	50,145	233,240	18,910	10,315	6,515	12,120	133,030	5,185	10,355	560	560
Grass	D	80	0	80	0	0	0	70	9,670	0	0	0	0
Woods	C	70	201,780	468,815	0	0	0	5,585	1,595	0	1,045	0	0
Woods	D	77	301,775	234,135	0	0	0	5,600	0	0	0	0	0
Building	C	98	0	0	0	0	210	0	200	0	0	1,360	1,360
Pavement	C	98	2,455	2,095	11,955	10,200	0	0	1,195	5,425	6,835	0	0
Pavement	D	98	0	0	0	0	0	0	0	0	0	0	0
Total Area (SF)			**556,155**	**938,365**	**30,865**	**20,515**	**6,725**	**23,375**	**145,690**	**10,610**	**18,235**	**1,920**	**1,920**
Area (Acres)			**12.77**	**21.54**	**0.71**	**0.47**	**0.15**	**0.54**	**3.34**	**0.24**	**0.42**	**0.04**	**0.04**
Total Impervious (SF)			**2,455**	**2,095**	**11,955**	**10,200**	**210**	**0**	**1,395**	**5,425**	**6,835**	**1,360**	**1,360**
Impervious (Acres)			**0.06**	**0.05**	**0.27**	**0.23**	**0.00**	**0.00**	**0.03**	**0.12**	**0.16**	**0.03**	**0.03**

SUBCAT PS7E *Area (SF)*	***SUBCAT PS7F*** *Area (SF)*	***SUBCAT PS7G*** *Area (SF)*	***SUBCAT PS7H*** *Area (SF)*	***SUBCAT PS7I*** *Area (SF)*	***SUBCAT PS7J*** *Area (SF)*	***SUBCAT PS8*** *Area (SF)*	***SUBCAT PS9*** *Area (SF)*	***SUBCAT PS10*** *Area (SF)*	***SUBCAT PS11*** *Area (SF)*	***SUBCAT PS12*** *Area (SF)*	***SUBCAT PS13B*** *Area (SF)*	***SUBCAT PS13E*** *Area (SF)*	***SUBCAT PS13W*** *Area (SF)*
560	560	560	560	560	560	91,985	17,020	0	12,820	53,220	15,600	11,550	69,870
0	0	0	0	0	0	0	0	0	0	530	0	0	0
0	0	0	0	0	0	514,175	532,480	271,440	66,705	84,510	0	0	0
0	0	0	0	0	0	200,145	94,595	69,220	42,395	49,025	0	0	0
1,360	1,360	1,360	1,360	1,360	1,360	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	5,040	0	9,570	20,450
0	0	0	0	0	0	0	0	0	0	645	0	0	0
1,920	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**	**806,305**	**644,095**	**340,660**	**121,920**	**192,970**	**15,600**	**21,120**	**90,320**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**18.51**	**14.79**	**7.82**	**2.80**	**4.43**	**0.36**	**0.48**	**2.07**
1,360	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**	**0**	**0**	**0**	**0**	**5,685**	**0**	**9,570**	**20,450**
0.03	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.13**	**0.00**	**0.22**	**0.47**

SUBCAT PS13S *Area (SF)*	***SUBCAT PS13SF*** *Area (SF)*	***SUBCAT PS14*** *Area (SF)*	***SUBCAT PS15*** *Area (SF)*	***SUBCAT PS16*** *Area (SF)*	***SUBCAT PS17*** *Area (SF)*	***SUBCAT PS18A*** *Area (SF)*	***SUBCAT PS18B*** *Area (SF)*	***SUBCAT PS18C*** *Area (SF)*	***SUBCAT PS18D*** *Area (SF)*	***SUBCAT PS18E*** *Area (SF)*	***SUBCAT PS18F*** *Area (SF)*	***SUBCAT PS18G*** *Area (SF)*
13,815	8,085	16,055	4,630	51,745	4,545	22,340	560	560	560	560	560	560
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1,250	0	0	0	0	1,360	1,360	1,360	1,360	1,360	1,360
12,695	0	6,340	4,010	0	4,425	12,530	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
26,510	**8,085**	**23,645**	**8,640**	**51,745**	**8,970**	**34,870**	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**
0.61	**0.19**	**0.54**	**0.20**	**1.19**	**0.21**	**0.80**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**

12,695	**0**	**7,590**	**4,010**	**0**	**4,425**	**12,530**	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**
0.29	**0.00**	**0.17**	**0.09**	**0.00**	**0.10**	**0.29**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**

SUBCAT PS18H *Area (SF)*	***SUBCAT PS18I*** *Area (SF)*	***SUBCAT PS19A*** *Area (SF)*	***SUBCAT PS19B*** *Area (SF)*	***SUBCAT PS19C*** *Area (SF)*	***SUBCAT PS19D*** *Area (SF)*	***SUBCAT PS19E*** *Area (SF)*	***SUBCAT PS19F*** *Area (SF)*	***SUBCAT PS20*** *Area (SF)*	***SUBCAT PS21*** *Area (SF)*	***SUBCAT PS22A*** *Area (SF)*	***SUBCAT PS22B*** *Area (SF)*	***SUBCAT PS22C*** *Area (SF)*	***SUBCAT PS23*** *Area (SF)*
560	560	0	13,775	560	560	560	560	6,545	94,585	2,685	625	625	705
0	0	0	0	0	0	0	0	70	0	0	0	0	0
0	0	0	0	0	0	0	0	0	91,915	0	0	0	0
0	0	0	0	0	0	0	0	0	28,075	0	0	0	0
1,360	1,360	0	0	1,360	1,360	1,360	1,360	0	0	0	1,680	1,680	1,680
0	0	5,205	8,120	0	0	0	0	7,660	4,785	8,310	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,920	**1,920**	**5,205**	**21,895**	**1,920**	**1,920**	**1,920**	**1,920**	**14,275**	**219,360**	**10,995**	**2,305**	**2,305**	**2,385**
0.04	**0.04**	**0.12**	**0.50**	**0.04**	**0.04**	**0.04**	**0.04**	**0.33**	**5.04**	**0.25**	**0.05**	**0.05**	**0.05**

1,360	**1,360**	**5,205**	**8,120**	**1,360**	**1,360**	**1,360**	**1,360**	**7,660**	**4,785**	**8,310**	**1,680**	**1,680**	**1,680**
0.03	**0.03**	**0.12**	**0.19**	**0.03**	**0.03**	**0.03**	**0.03**	**0.18**	**0.11**	**0.19**	**0.04**	**0.04**	**0.04**

SUBCAT PS24 *Area (SF)*	***SUBCAT PS25*** *Area (SF)*	***SUBCAT PS26*** *Area (SF)*	***SUBCAT PS27*** *Area (SF)*	***SUBCAT PS28*** *Area (SF)*	***SUBCAT PS29*** *Area (SF)*	***SUBCAT PS30*** *Area (SF)*	***SUBCAT PS31*** *Area (SF)*	***SUBCAT PS32*** *Area (SF)*	***SUBCAT PS33*** *Area (SF)*	***SUBCAT PS34*** *Area (SF)*	***SUBCAT PS35*** *Area (SF)*	***SUBCAT PS36*** *Area (SF)*	***SUBCAT PS37*** *Area (SF)*
705	705	705	705	705	720	705	705	770	705	720	720	720	705
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,385	**2,385**	**2,385**	**2,385**	**2,385**	**2,400**	**2,385**	**2,385**	**2,450**	**2,385**	**2,400**	**2,400**	**2,400**	**2,385**
0.05	**0.05**	**0.05**	**0.05**	**0.05**	**0.06**	**0.05**	**0.05**	**0.06**	**0.05**	**0.06**	**0.06**	**0.06**	**0.05**

1,680	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**

SUBCAT PS38 *Area (SF)*	***SUBCAT PS39*** *Area (SF)*	***SUBCAT PS40*** *Area (SF)*	***SUBCAT PS41*** *Area (SF)*	***SUBCAT PS42*** *Area (SF)*	***SUBCAT PS43*** *Area (SF)*	***SUBCAT PS44*** *Area (SF)*	***SUBCAT PS45*** *Area (SF)*	***SUBCAT PS46*** *Area (SF)*	***SUBCAT PS47*** *Area (SF)*	***SUBCAT PS48*** *Area (SF)*	***SUBCAT PS49*** *Area (SF)*	***TOTAL AREA*** *(SF)*
705	720	720	720	720	720	720	705	705	705	515	880	**1,022,370**
0	0	0	0	0	0	0	0	0	0	0	0	**10,420**
0	0	0	0	0	0	0	0	0	0	0	0	**2,240,045**
0	0	0	0	0	0	0	0	0	0	0	0	**1,024,965**
1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,375	2,520	**78,115**
0	0	0	0	0	0	0	0	0	0	0	0	**149,300**
0	0	0	0	0	0	0	0	0	0	0	0	**645**
2,385	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,385**	**2,385**	**2,385**	**1,890**	**3,400**	**4,525,860**
0.05	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.05**	**0.05**	**0.05**	**0.04**	**0.08**	**103.90**

1,680	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,375**	**2,520**	**228,060**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.03**	**0.06**	**5.24**

STORMWATER/DRAINAGE SUMMARY (FULL LOT)

EMANUEL ENGINEERING, INC.

JOB: 24-1061 Copley-Gallant-80 Winnicutt Road
DATE: 5/6/2026
ENGINEER: JJM

PEAK FLOWS FROM HYDROCAD

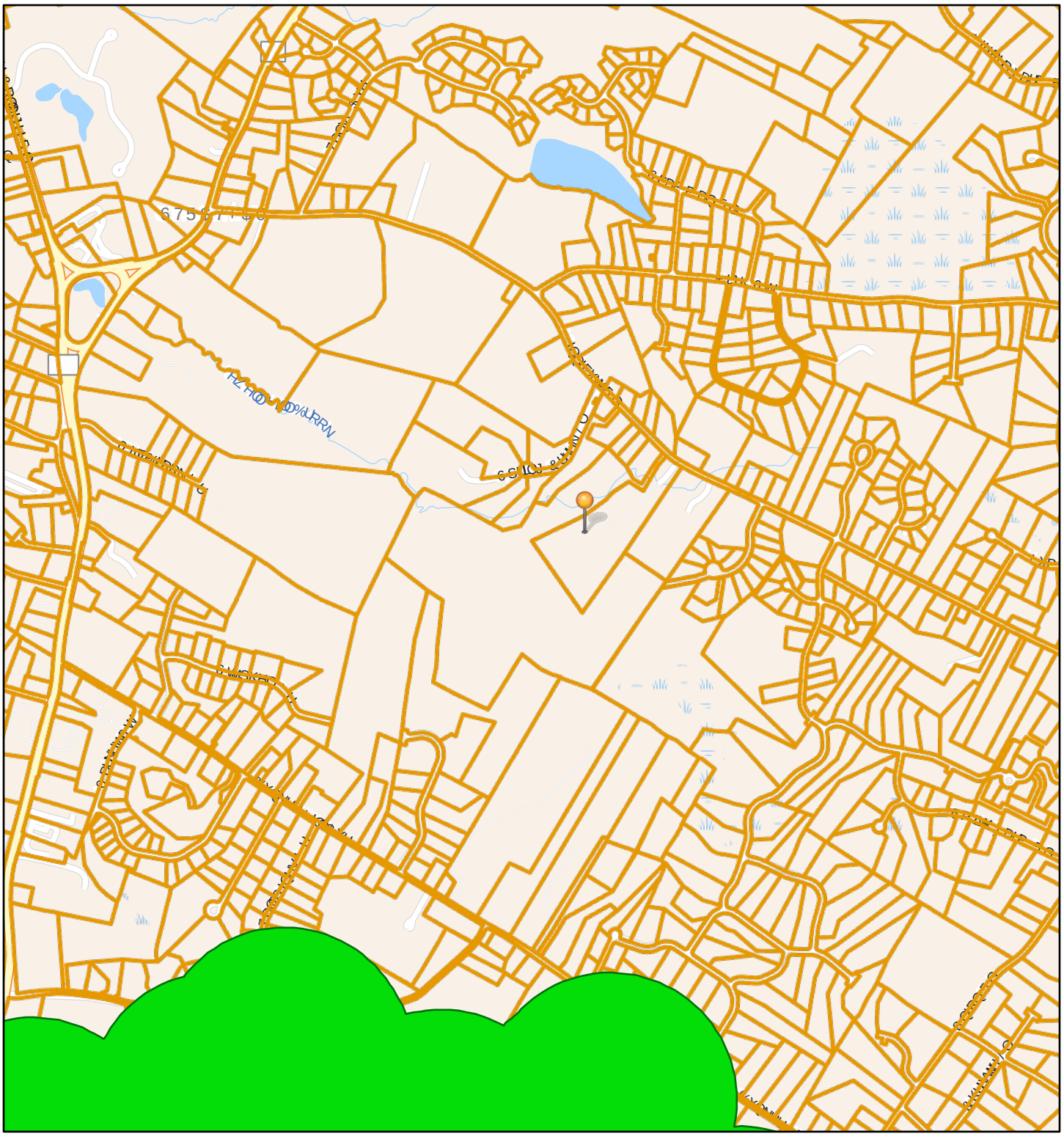
Subcatchment Area	2-Year Storm 3.71"		10-Year Storm 5.65"		25-Year Storm 7.18"		50-Year Storm 8.60"	
	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)	Pre (CFS)	Post (CFS)
POINTS OF DISCHARGE								
LINK L101	62.07	61.90	130.13	126.19	185.37	177.23	236.51	222.65
FLOW TOTALS (CFS)	**62.07**	**61.90**	**130.13**	**126.19**	**185.37**	**177.23**	**236.51**	**222.65**
Net Increase/(Decrease) (CFS)		**(0.17)**		**(3.94)**		**(8.14)**		**(13.86)**

VOLUMES FROM HYDROCAD

Subcatchment Area	2-Year Storm 3.71"		10-Year Storm 5.65"		25-Year Storm 7.18"		50-Year Storm 8.60"	
	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)	Pre (AF)	Post (AF)
POINTS OF DISCHARGE								
LINK L101	10.683	11.382	23.342	24.275	34.434	35.527	45.234	46.442
Voume TOTALS (AF)	**10.683**	**11.382**	**23.342**	**24.275**	**34.434**	**35.527**	**45.234**	**46.442**
Net Increase/(Decrease) (AF)		**0.699**		**0.933**		**1.093**		**1.208**

Notes:
1. Per Env-Wq 1503.08(l), Rainfall data has been increased by 15%.
2. This summary reflects the full site pre- and post-development analysis. To demonstrate compliance with the channel protection standards of Env-Wq 1507.05 (NHDES Alteration of Terrain regulations), a separate analysis modeling only the proposed disturbed areas has been performed per NHDES reviewer agreement and is summarized in the accompanying Stormwater/Drainage Summary (Channel Protection), as seen in Appendix A.

NHDES OneStop Mapper with Surface Impairment Layers 0 D S S



$ 0

$UF*,6 :RUOG *HRFRGLQJ 6HUYLFH

6XUIDFH :DWHU ,PSDLUPHQW ZLWK D 4WU 0LOH %XIIHU 7RWDO 3KRVSKRUXV 7RWDO 1LWURJHQ &K

3DUFHOV

PL

NP

6RXUFHV (VUL 7RP7RP *DUPLQ)$2 12$$ 86*6 F
FRQWULEXWRUV DQG WKH *,6 8VHU &RPPXQLW\ 1+'5$

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

To: Morgan Moody, James Verra & Associates
100 Griffin Road Unit C
Portsmouth, NH 03801
mmoody@jvasurveyors.com

From: Ecological Review Section
New Hampshire Department of Environmental Services
cc:
Date: 02/09/2026 (valid until 02/09/2027)
Re: DataCheck Review by NHDES Ecological Review Section
Permits: MUNICIPAL POR - STRATHAM, NHDES - Alteration of Terrain Permit, NHDES - Wetlands Standard Dredge & Fill, USACE - General Permit

DCT ID: DCT26-0300

Town: Stratham
Location: 80 & 80R Winnicut Road

Project Description: Proposing to subdivide the two lots into 33 buildable lots, one of which will be open space. Proposed is ~9,500 SF and ~190 LF of wetland impact associated with 5 stream crossings.

Next Steps for Applicants:

The New Hampshire Department of Environmental Services (NHDES) Ecological Review Section has reviewed the provided mapped project area against available records of protected species, Exemplary Natural Communities (ENCs), and critical habitat. Based on the project mapping and submitted information, protected species may be impacted by the proposed work activities. Please carefully read the comments and instructions below for next steps to avoid and minimize impacts.

Plant and Exemplary Natural Community Comments: I was unable to find any coordination for this project under NHB24-2849. Please send any coordination that exists. If no coordination has occurred or if it is not considered applicable to this submittal, then an ecological review is required specifically for the wetlands permit, for AoT it would only be recommended. This means no $500 ecological review fee is required.

Wildlife and Critical Habitat Comments: No ecological review needed based on provided information.

Ecological Review Instructions

Pursuant to Env-C 804.01, ecological reviews are either required by rule or recommended to comply with RSA 212-A and 217-A. Pursuant to Env-C 804.02, required ecological reviews that meet certain criteria must pay a $500 fee to request an ecological review.

Instructions regarding how to request an ecological review for plants and/or wildlife are provided below:

When is an Ecological Review for Plants and Exemplary Natural Communities Needed

If this letter includes records of protected plants and/or exemplary natural communities, you may request an Ecological Review from NHDES (see further instructions below).

If no plant or exemplary natural communities are included on this letter, no further plant review is needed.

When is an Ecological Review for Wildlife and Critical Habitat Needed

If this letter includes records of protected wildlife and/or critical habitat, please refer to one of the following next steps:

a. If your project requires an NHDES permit, authorization, or approval you may request an Ecological Review from NHDES (see further instructions below).
b. If your project **does not** need an NHDES permit, authorization, or approval, then no ecological review with NHDES is needed. Instead, you can request a review from the New Hampshire Fish and Game (NHFG) Nongame and Endangered species program. Contact NHFGreview@wildlife.nh.gov or 603-271-2461 to request a review with NHFG.

If no wildlife species or critical habitat are included on this letter, then no further wildlife review is needed.

How to Request an Ecological Review from NHDES

To request an ecological review, access and complete the Ecological Review Request form found at onlineforms.nh.gov.

Submit the completed form and all required attachments by email, mail, or hand delivery to:

New Hampshire Department of Environmental Services
Attn: Ecological Review Section
P.O. Box 95
29 Hazen Drive
Concord, NH 03302-0095
EcologicalReviews@des.nh.gov

For questions about requesting an ecological review, call 603-271-7972.

Federal Compliance

This letter does not constitute compliance with the federal Endangered Species Act (ESA). There may be federally listed species in New Hampshire that are impacted by your activity not included in this letter For ESA compliance, please visit the US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (iPaC) website for an official list of federally listed species that may be present in your project area. If a federal agency is involved in your project through funding, permit or other authorization, coordinate your IPaC results with your point of contact at the agency for further ESA review. If there is no federal agency nexus to your project, and you determine through IPaC, habitat evaluations etc. that a project may cause take of a federally listed species, we recommend coordinating with the USFWS' New England Field Office (newengland@fws.gov or 603-223-2541).

Ecological Review Database records:

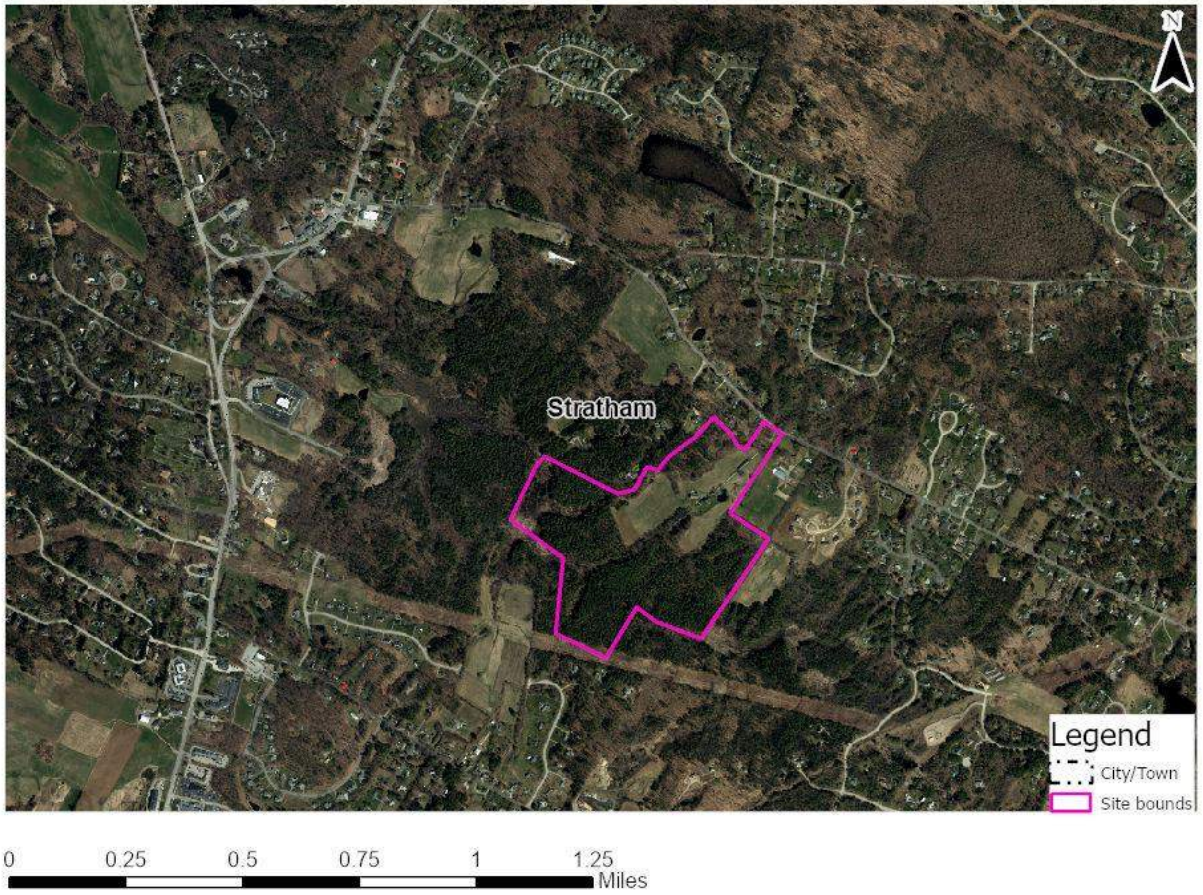
The following species and habitats may be impacted by the proposed work activities. Please refer to this list when coordinating.

Plant species	State[1]	Federal	Notes
greater fringed-gentian (*Gentianopsis crinita*)	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).

[1]Codes: "E" = Endangered, "T" = Threatened, “SC” = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.

Disclaimer:
DataCheck Tool screening only includes occurrences of protected species and exemplary natural communities that have been documented and verified by state biologists and ecologists. This letter does not guarantee these are the only protected species and habitat present at this location, only that their presence has not been documented and verified by state biologists and ecologists. As many areas have never been surveyed, or have only been surveyed for certain species, on site surveys are the best way to determine the resources present on your site.

DCT26-0300


N
Stratham
Legend
City/Town
Site bounds
0
0.25
0.5
0.75
1
1.25
Miles

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



May 21, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:8,250 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 26, Aug 22, 2023

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

Date(s) aerial images were photographed: Jun 19, 2020—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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
32A	Boxford silt loam, 0 to 3 percent slopes	20.7	10.4%
32B	Boxford silt loam, 3 to 8 percent slopes	4.4	2.2%
38A	Eldridge fine sandy loam, 0 to 3 percent slopes	61.5	30.9%
38B	Eldridge fine sandy loam, 3 to 8 percent slopes	35.1	17.6%
66B	Paxton fine sandy loam, 3 to 8 percent slopes	7.1	3.6%
67B	Paxton fine sandy loam, 0 to 8 percent slopes, very stony	7.1	3.6%
538A	Squamscott fine sandy loam, 0 to 5 percent slopes	62.8	31.6%
Totals for Area of Interest		**198.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit

descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

32A—Boxford silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9cn3
Elevation: 0 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Boxford and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boxford

Setting

Parent material: Glaciomarine

Typical profile

H1 - 0 to 2 inches: silt loam
H2 - 2 to 13 inches: silt loam
H3 - 13 to 23 inches: silty clay loam
H4 - 23 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F144AY018NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Scitico

Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

Eldridge

Percent of map unit: 5 percent

Hydric soil rating: No

Squamscott

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

32B—Boxford silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9cn4
Elevation: 0 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Boxford and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boxford

Setting

Parent material: Glaciomarine

Typical profile

H1 - 0 to 2 inches: silt loam
H2 - 2 to 13 inches: silt loam
H3 - 13 to 23 inches: silty clay loam
H4 - 23 to 60 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F144AY018NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Eldridge
Percent of map unit: 10 percent
Hydric soil rating: No

Scitico
Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

38A—Eldridge fine sandy loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 9cn9
Elevation: 90 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Eldridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eldridge

Setting
Parent material: Outwash over glaciolacustrine

Typical profile
H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 23 inches: loamy fine sand
H3 - 23 to 62 inches: loamy very fine sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Squamscott
Percent of map unit: 10 percent
Landform: Marine terraces
Hydric soil rating: Yes

Well drained inclusion
Percent of map unit: 5 percent
Hydric soil rating: No

Scitico
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

38B—Eldridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9cnb
Elevation: 90 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Eldridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eldridge

Setting
Parent material: Outwash over glaciolacustrine

Typical profile
H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 23 inches: loamy fine sand
H3 - 23 to 62 inches: loamy very fine sand

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Boxford

Percent of map unit: 5 percent
Hydric soil rating: No

Well drained inclusion

Percent of map unit: 5 percent
Hydric soil rating: No

Squamscott

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scitico

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

66B—Paxton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t2qp
Elevation: 0 to 1,570 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Paxton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Crest, nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 39 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge

Percent of map unit: 9 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury

Percent of map unit: 6 percent
Landform: Drainageways, hills, ground moraines, depressions
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: No

67B—Paxton fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w673
Elevation: 0 to 1,340 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Paxton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony
Percent of map unit: 8 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, very stony
Percent of map unit: 4 percent
Landform: Ground moraines, hills, depressions, drainageways, drumlins
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton, very stony
Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

538A—Squamscott fine sandy loam, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: 9cp9
Elevation: 0 to 1,000 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 180 days
Farmland classification: Farmland of local importance

Map Unit Composition
Squamscott and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Squamscott

Setting

Landform: Marine terraces

Typical profile

H1 - 0 to 4 inches: fine sandy loam
H2 - 4 to 12 inches: loamy sand
H3 - 12 to 19 inches: fine sand
H4 - 19 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: F144AY019NH - Wet Lake Plain
Hydric soil rating: Yes

Minor Components

Maybid

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scitico

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Eldridge

Percent of map unit: 5 percent
Hydric soil rating: No

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Photographs Representative of the Site









Photographs Representative of the Site









Photographs Representative of the Site









Photographs Representative of the Site









Photographs Representative of the Site









FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.08)

Type/Node Name: **Bioretention Basin "A2" (Node PP54)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.08(a).	
1.33	ac	A = Area draining to the practice	
0.51	ac	A_I = Impervious area draining to the practice	
0.38	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.40	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.53	ac-in	WQV= 1" x Rv x A	
1,920	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
480	cf	25% x WQV (check calc for sediment forebay volume)	
1,440	cf	75% x WQV (check calc for surface sand filter volume)	
Pre-Tx		Method of Pretreatment? (not required for clean or roof runoff)	
N/A	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
76.84	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.79	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
1.35	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
75.25	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
74.25	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
*Liner	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
*Liner	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
#VALUE!	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
#VALUE!	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
79.09	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
79.50	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
4,130	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
24.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	D2	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D2	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

*An impermeable liner is proposed for the bioretention. As a result, the elevation of the seasonal high water table (SHWT) and bedrock are not limiting factors for infiltration design.

E(WQV) Calculation:

Bottom of Filter Media Elv. = 75.25

Interpolated Storage Below 75.25 = 2,562 CF

WQV = 1,920 CF

Storage at E(WQV) = 2,562 CF + 1,920 CF = 4,482 CF

E(WQV)= 76.84 (4,491 CF)

Stage-Area-Storage for Pond PP54: Proposed Bioretention Basin "A2"

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
73.66	4,035	0
73.76	4,058	161
73.86	4,080	323
73.96	4,103	484
74.06	4,125	646
74.16	4,148	807
74.26	4,170	968
74.36	4,193	1,130
74.46	4,215	1,291
74.56	4,238	1,453
74.66	4,260	1,614
74.76	4,283	1,775
74.86	4,305	1,937
74.96	4,328	2,098
75.06	4,350	2,260
75.16	4,373	2,421
75.26	4,395	2,578
75.36	4,418	2,699
75.46	4,440	2,820
75.56	4,463	2,942
75.66	4,485	3,063
75.76	4,508	3,184
75.86	4,530	3,305
75.96	4,553	3,426
76.06	4,575	3,547
76.16	4,598	3,668
76.26	4,620	3,789
76.36	4,643	3,910
76.46	4,665	4,031
76.56	4,688	4,152
76.66	4,711	4,273
76.76	4,733	4,394
76.86	4,756	4,515
76.96	4,778	4,636
77.06	4,801	4,757
77.16	4,823	4,878
77.26	4,846	4,999
77.36	4,868	5,120
77.46	**4,891**	5,241
77.56	**4,900**	5,417
77.66	4,900	5,636
77.76	4,900	5,864
77.86	4,900	6,100
77.96	4,900	6,344
78.06	4,900	6,598
78.16	4,900	6,860
78.26	4,900	7,132
78.36	4,900	7,412
78.46	4,900	7,703
78.56	4,900	8,003
78.66	4,900	8,312
78.76	4,900	8,632
78.86	4,900	8,961
78.96	4,900	9,301
79.06	4,900	9,652
79.16	4,900	10,013
79.26	4,900	10,384
79.36	4,900	10,767
79.46	4,900	**11,160**

Interpolated Volume at CB Knockouts (ELV. 79.00) = 9,441 CF

Interpolated Volume at Bottom of Filter Course (ELV. 75.25) = 2,562 CF

Interpolated Volume E(WQV) (ELV. 76.84) = 4,491 CF

Interpolated Volume at Bottom of Basin (ELV. 77.50) = 5,311 CF

Volume between CB Knockouts and Bottom of Basin
= 9,411 CF - 5,311 CF = 4,130 CF

Stage-Discharge for Pond PP54: Proposed Bioretention Basin "A2"

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
73.66	0.00	76.26	0.68	78.86	1.11
73.71	0.00	76.31	0.69	78.91	1.12
73.76	0.00	76.36	0.70	78.96	1.13
73.81	0.00	76.41	0.71	79.01	1.15
73.86	0.00	76.46	0.72	79.06	1.32
73.91	0.00	76.51	0.73	79.11	1.60
73.96	0.00	76.56	0.74	79.16	1.96
74.01	0.00	76.61	0.75	79.21	2.37
74.06	0.00	76.66	0.76	79.26	2.84
74.11	0.00	76.71	0.77	79.31	3.35
74.16	0.00	76.76	0.78	79.36	3.85
74.21	0.00	76.81	0.79	79.41	4.23
74.26	0.00	76.86	0.80	79.46	**4.56**
74.31	0.00	76.91	0.81		
74.36	0.01	76.96	0.82		
74.41	0.01	77.01	0.83		
74.46	0.03	77.06	0.84		
74.51	0.05	77.11	0.84		
74.56	0.07	77.16	0.85		
74.61	0.09	77.21	0.86		
74.66	0.12	77.26	0.87		
74.71	0.15	77.31	0.88		
74.76	0.18	77.36	0.89		
74.81	0.20	77.41	0.90		
74.86	0.22	77.46	0.90		
74.91	0.23	77.51	0.91		
74.96	0.25	77.56	0.92		
75.01	0.28	77.61	0.93		
75.06	0.31	77.66	0.94		
75.11	0.33	77.71	0.95		
75.16	0.35	77.76	0.95		
75.21	0.37	77.81	0.96		
75.26	0.39	77.86	0.97		
75.31	0.41	77.91	0.98		
75.36	0.43	77.96	0.98		
75.41	0.45	78.01	0.99		
75.46	0.46	78.06	1.00		
75.51	0.48	78.11	1.01		
75.56	0.49	78.16	1.01		
75.61	0.51	78.21	1.02		
75.66	0.52	78.26	1.03		
75.71	0.54	78.31	1.04		
75.76	0.55	78.36	1.04		
75.81	0.57	78.41	1.05		
75.86	0.58	78.46	1.06		
75.91	0.59	78.51	1.07		
75.96	0.60	78.56	1.07		
76.01	0.62	78.61	1.08		
76.06	0.63	78.66	1.09		
76.11	0.64	78.71	1.09		
76.16	0.65	78.76	1.10		
76.21	0.66	78.81	1.11		

Interpolated Q(WQV) = 0.79 cfs

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.08)

Type/Node Name: **Bioretention Basin "B2" (Node PP155)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.08(a).	
4.99	ac	A = Area draining to the practice	
1.52	ac	A_I = Impervious area draining to the practice	
0.31	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.33	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.62	ac-in	WQV= 1" x Rv x A	
5,885	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
1,471	cf	25% x WQV (check calc for sediment forebay volume)	
4,414	cf	75% x WQV (check calc for surface sand filter volume)	
*Sediment Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
8,925	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
49.01	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.62	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
5.27	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
47.75	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
46.75	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
**Liner	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
**Liner	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
#VALUE!	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
#VALUE!	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
51.87	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
52.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
7,493	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
24.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	D2	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D2	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

*A PreTX Drop Inlet pretreatment device is also utilized before flowing into Bioretention Basin "B2".

**An impermeable liner is proposed for the bioretention. As a result, the elevation of the seasonal high water table (SHWT) and bedrock are not limiting factors for infiltration design.

E(WQV) Calculation:

Bottom of Filter Media Elv. = 47.75

Interpolated Storage Below 47.75 = 9,907 CF

WQV = 5,885 CF

Storage at E(WQV) = 9,907 CF + 5,885 CF = 15,792 CF

E(WQV)= 49.01 (15,818 CF)

Stage-Area-Storage for Pond PP155: Proposed Bioretention Basin "B2"

Elevation (feet)	Wetted (sq-ft)	Storage (cubic-feet)
46.16	15,600	0
46.26	15,644	624
46.36	15,689	1,248
46.46	15,733	1,872
46.56	15,777	2,496
46.66	15,821	3,120
46.76	15,866	3,744
46.86	15,910	4,368
46.96	15,954	4,992
47.06	15,998	5,616
47.16	16,043	6,240
47.26	16,087	6,864
47.36	16,131	7,488
47.46	16,176	8,112
47.56	16,220	8,736
47.66	16,264	9,360
47.76	16,308	9,968
47.86	16,353	10,436
47.96	16,397	10,904
48.06	16,441	11,372
48.16	16,486	11,840
48.26	16,530	12,308
48.36	16,574	12,776
48.46	16,618	13,244
48.56	16,663	13,712
48.66	16,707	14,180
48.76	16,751	14,648
48.86	16,795	15,116
48.96	16,840	15,584
49.06	16,884	16,052
49.16	16,928	16,520
49.26	16,973	16,988
49.36	17,017	17,456
49.46	17,061	17,924
49.56	17,105	18,392
49.66	17,150	18,860
49.76	17,194	19,328
49.86	17,238	19,796
49.96	**17,282**	20,264
50.06	**17,300**	21,194
50.16	17,300	22,443
50.26	17,300	23,708
50.36	17,300	24,989
50.46	17,300	26,286
50.56	17,300	27,598
50.66	17,300	28,926
50.76	17,300	30,271
50.86	17,300	31,631
50.96	17,300	33,008
51.06	17,300	34,401
51.16	17,300	35,811
51.26	17,300	37,237
51.36	17,300	38,679
51.46	17,300	40,139
51.56	17,300	41,615
51.66	17,300	43,108
51.76	17,300	44,618
51.86	17,300	46,145
51.96	17,300	**47,690**

Interpolated Volume at Bottom of Filter Course (ELV. 47.75) = 9,907 CF

Interpolated Volume E(WQV) (ELV. 49.01) = 15,818 CF

Interpolated Volume at Bottom of Basin (ELV. 50.00) = 20,636 CF

Interpolated Volume at 3" Dia. Weep Holes (ELV. 50.60) = 28,129 CF

Volume between 3" Dia. Weep Holes and Bottom of Basin = 28,129 CF - 20,636 CF = 7,493 CF

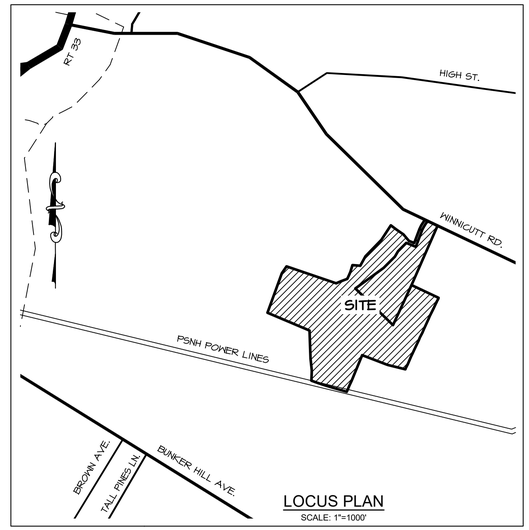
Stage-Discharge for Pond PP155: Proposed Bioretention Basin "B2"

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.16	0.00	48.76	0.57	51.36	1.51
46.21	0.00	48.81	0.58	51.41	1.53
46.26	0.00	48.86	0.59	51.46	1.56
46.31	0.00	48.91	0.60	51.51	1.60
46.36	0.00	48.96	0.61	51.56	1.80
46.41	0.00	49.01	0.62	51.61	2.11
46.46	0.00	49.06	0.63	51.66	2.48
46.51	0.00	49.11	0.63	51.71	2.92
46.56	0.00	49.16	0.64	51.76	3.41
46.61	0.00	49.21	0.65	51.81	3.95
46.66	0.00	49.26	0.66	51.86	4.47
46.71	0.00	49.31	0.67	51.91	4.87
46.76	0.00	49.36	0.68	51.96	**5.22**
46.81	0.00	49.41	0.68		
46.86	0.00	49.46	0.69		
46.91	0.01	49.51	0.70		
46.96	0.02	49.56	0.71		
47.01	0.04	49.61	0.71		
47.06	0.06	49.66	0.72		
47.11	0.08	49.71	0.73		
47.16	0.10	49.76	0.74		
47.21	0.13	49.81	0.74		
47.26	0.15	49.86	0.75		
47.31	0.17	49.91	0.76		
47.36	0.19	49.96	0.77		
47.41	0.20	50.01	0.77		
47.46	0.21	50.06	0.78		
47.51	0.24	50.11	0.79		
47.56	0.26	50.16	0.79		
47.61	0.28	50.21	0.80		
47.66	0.30	50.26	0.81		
47.71	0.32	50.31	0.81		
47.76	0.33	50.36	0.82		
47.81	0.35	50.41	0.83		
47.86	0.36	50.46	0.83		
47.91	0.38	50.51	0.84		
47.96	0.39	50.56	0.85		
48.01	0.41	50.61	0.85		
48.06	0.42	50.66	0.88		
48.11	0.43	50.71	0.93		
48.16	0.44	50.76	1.01		
48.21	0.46	50.81	1.08		
48.26	0.47	50.86	1.14		
48.31	0.48	50.91	1.19		
48.36	0.49	50.96	1.24		
48.41	0.50	51.01	1.28		
48.46	0.51	51.06	1.32		
48.51	0.52	51.11	1.35		
48.56	0.53	51.16	1.39		
48.61	0.54	51.21	1.42		
48.66	0.55	51.26	1.45		
48.71	0.56	51.31	1.48		

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.



LOCUS PLAN
SCALE: 1"=1000'

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405

2. THE INTENT OF THIS PLAN IS TO CALCULATE PRE-DEVEOPLMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR MODELING VARIOUS STORM EVENTS IN PREPARATION FOR SITE IMPROVEMENTS.

3. PRE-DEVELOPMENT DRAINAGE AREA CALCS:

   DRAINAGE ANALYSIS TOTAL AREA = 4,525,860 SF
   DRAINAGE ANALYSIS IMPERVIOUS = 28,665 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 0.63%
   DRAINAGE ANALYSIS UNDISTURBED = 3,604,340 SF
   DRAINAGE ANALYSIS % UNDISTURBED = 79.6%

LEGEND

- INDICATES FLOW PATH
- INDICATES SUBCATCHMENT BOUNDARIES
- XX — INDICATES SUBCATCHMENT AREA LABEL
- XX — INDICATES POND LABEL
- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
9	MAY 4, 2026	FOR APPROVAL	
8	MAR 17, 2026	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

DRAWN:	JJM	DESIGN:	-
CHECKED:	BDS	CHECKED:	-

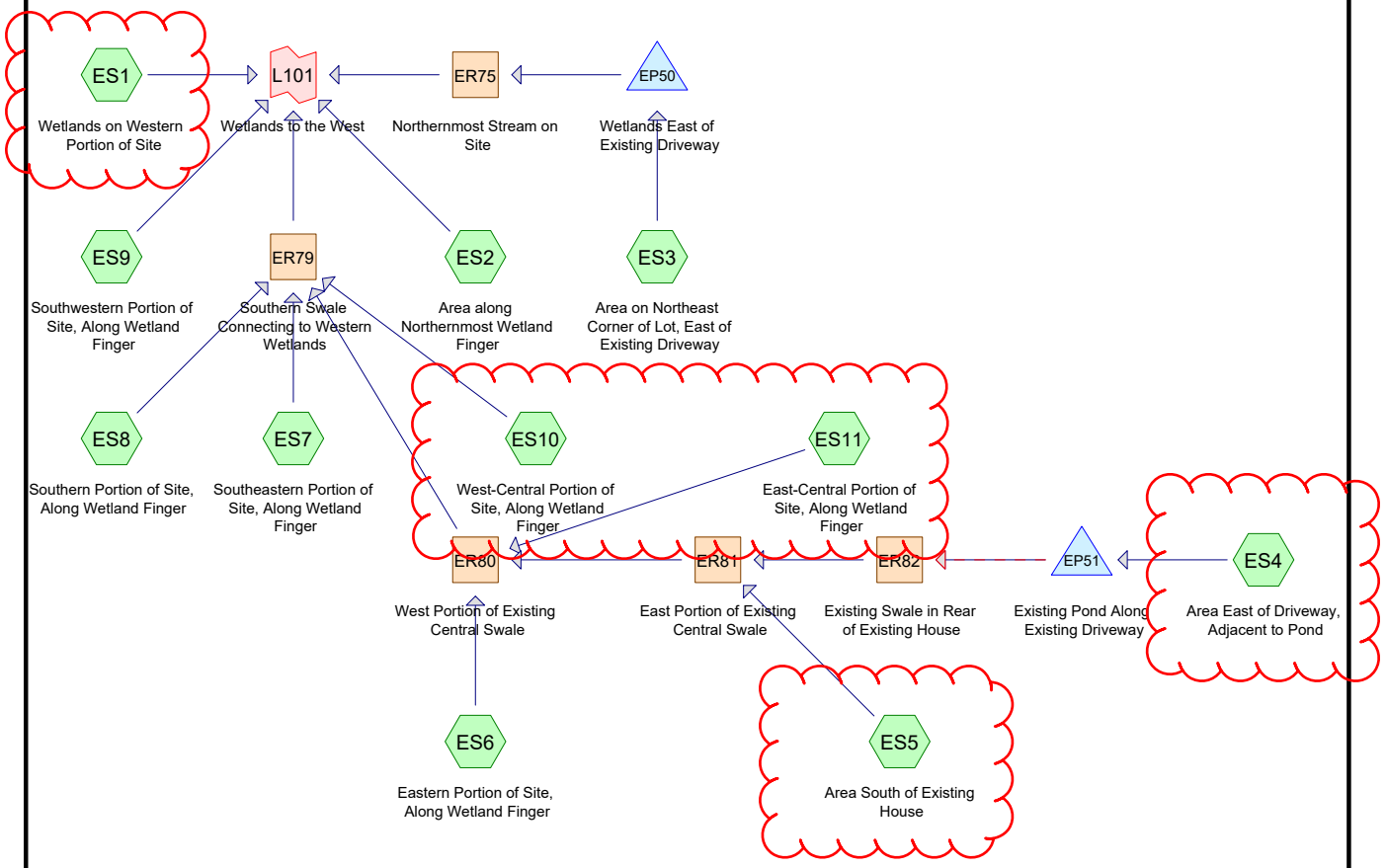
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:
PRE-DEVELOPMENT DRAINAGE PLAN
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	SW1



Subcat Reach Pond Link

Routing Diagram for Predevelopment HydroCAD (FULL LOT) 04-30-26
Prepared by Emanuel Engineering, Printed 5/5/2026
HydroCAD® 10.20-8a s/n 01104 © 2025 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AM
1	10-yr (+15%)	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	5.65	

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
20.275	74	>75% Grass cover, Good, HSG C (ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6)
0.222	80	>75% Grass cover, Good, HSG D (ES4)
0.305	96	Gravel surface, HSG C (ES11, ES2, ES3, ES4)
0.207	98	Paved parking, HSG C (ES11, ES2, ES4, ES5)
0.146	98	Roofs, HSG C (ES11, ES2, ES5)
59.182	70	Woods, Good, HSG C (ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6, ES7, ES8, ES9)
23.562	77	Woods, Good, HSG D (ES1, ES10, ES11, ES2, ES3, ES6, ES7, ES8, ES9)
103.899	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
80.115	HSG C	ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6, ES7, ES8, ES9
23.784	HSG D	ES1, ES10, ES11, ES2, ES3, ES4, ES6, ES7, ES8, ES9
0.000	Other	
103.899		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	20.275	0.222	0.000	20.497	>75% Grass cover, Good	ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6
0.000	0.000	0.305	0.000	0.000	0.305	Gravel surface	ES11, ES2, ES3, ES4
0.000	0.000	0.207	0.000	0.000	0.207	Paved parking	ES11, ES2, ES4, ES5
0.000	0.000	0.146	0.000	0.000	0.146	Roofs	ES11, ES2, ES5
0.000	0.000	59.182	23.562	0.000	82.744	Woods, Good	ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6, ES7, ES8, ES9
0.000	**0.000**	**80.115**	**23.784**	**0.000**	**103.899**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	EP50	91.13	90.70	30.0	0.0143	0.025	0.0	24.0	0.0	
2	EP51	75.71	75.04	20.0	0.0335	0.025	0.0	12.0	0.0	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES1: Wetlands on Western Runoff Area=631,090 sf 0.00% Impervious Runoff Depth=2.80"
Flow Length=495' Tc=19.4 min CN=73 Runoff=24.39 cfs 3.381 af

SubcatchmentES10: West-Central Portion Runoff Area=189,610 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=625' Tc=9.9 min CN=72 Runoff=9.49 cfs 0.983 af

SubcatchmentES11: East-Central Portion Runoff Area=415,680 sf 0.83% Impervious Runoff Depth=2.80"
Flow Length=870' Tc=15.7 min CN=73 Runoff=17.71 cfs 2.227 af

SubcatchmentES2: Area along Runoff Area=1,007,835 sf 0.44% Impervious Runoff Depth=2.80"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=37.21 cfs 5.400 af

SubcatchmentES3: Area on Northeast Runoff Area=26,605 sf 0.00% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=75 Runoff=1.77 cfs 0.152 af

SubcatchmentES4: Area East of Runoff Area=181,095 sf 0.09% Impervious Runoff Depth=2.99"
Flow Length=410' Tc=7.4 min CN=75 Runoff=11.25 cfs 1.034 af

SubcatchmentES5: Area South of Existing Runoff Area=109,945 sf 6.69% Impervious Runoff Depth=3.08"
Flow Length=395' Tc=8.4 min CN=76 Runoff=6.74 cfs 0.648 af

SubcatchmentES6: Eastern Portion of Runoff Area=857,100 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=23.79 cfs 4.443 af

SubcatchmentES7: Southeastern Portion Runoff Area=645,065 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=17.24 cfs 3.232 af

SubcatchmentES8: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=11.66 cfs 1.707 af

SubcatchmentES9: Southwestern Portion Runoff Area=121,175 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=765' Tc=17.6 min CN=72 Runoff=4.71 cfs 0.628 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.07' Max Vel=1.13 fps Inflow=1.71 cfs 0.151 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.58 cfs 0.151 af

Reach ER79: Southern Swale Avg. Flow Depth=1.62' Max Vel=3.08 fps Inflow=68.21 cfs 13.782 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=67.44 cfs 13.782 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.72' Max Vel=3.35 fps Inflow=37.93 cfs 7.860 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=37.55 cfs 7.860 af

Reach ER81: East Portion of Existing Avg. Flow Depth=0.26' Max Vel=2.80 fps Inflow=6.74 cfs 1.190 af
n=0.030 L=800.0' S=0.0231 '/' Capacity=147.54 cfs Outflow=5.81 cfs 1.190 af

Reach ER82: Existing Swale in Rear of Avg. Flow Depth=0.05' Max Vel=1.02 fps Inflow=0.75 cfs 0.542 af
n=0.022 L=300.0' S=0.0137 '/' Capacity=482.56 cfs Outflow=0.75 cfs 0.542 af

Pond EP50: Wetlands East of Existing Driveway Peak Elev=91.78' Storage=226 cf Inflow=1.77 cfs 0.152 af
24.0" Round Culvert n=0.025 L=30.0' S=0.0143 '/' Outflow=1.71 cfs 0.151 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.18' Storage=25,887 cf Inflow=11.25 cfs 1.034 af
Primary=0.75 cfs 0.542 af Secondary=0.00 cfs 0.000 af Outflow=0.75 cfs 0.542 af

Link L101: Wetlands to the West Inflow=130.13 cfs 23.342 af
Primary=130.13 cfs 23.342 af

Total Runoff Area = 103.899 ac Runoff Volume = 23.836 af Average Runoff Depth = 2.75"
99.66% Pervious = 103.546 ac 0.34% Impervious = 0.354 ac

Summary for Subcatchment ES1: Wetlands on Western Portion of Site

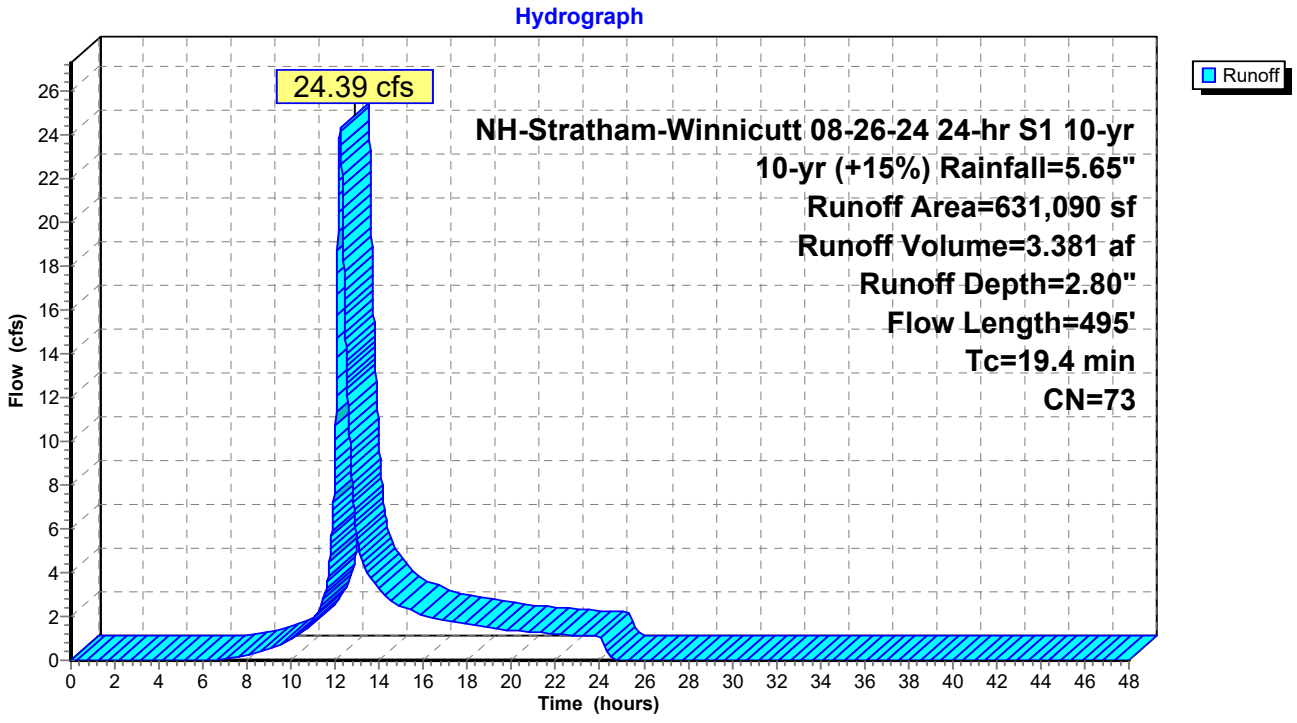
Runoff = 24.39 cfs @ 12.22 hrs, Volume= 3.381 af, Depth= 2.80"
Routed to Link L101 : Wetlands to the West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
22,600	74	>75% Grass cover, Good, HSG C
306,715	70	Woods, Good, HSG C
301,775	77	Woods, Good, HSG D
631,090	73	Weighted Average
631,090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
7.9	445	0.0350	0.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
19.4	495	Total			

Subcatchment ES1: Wetlands on Western Portion of Site



Summary for Subcatchment ES10: West-Central Portion of Site, Along Wetland Finger

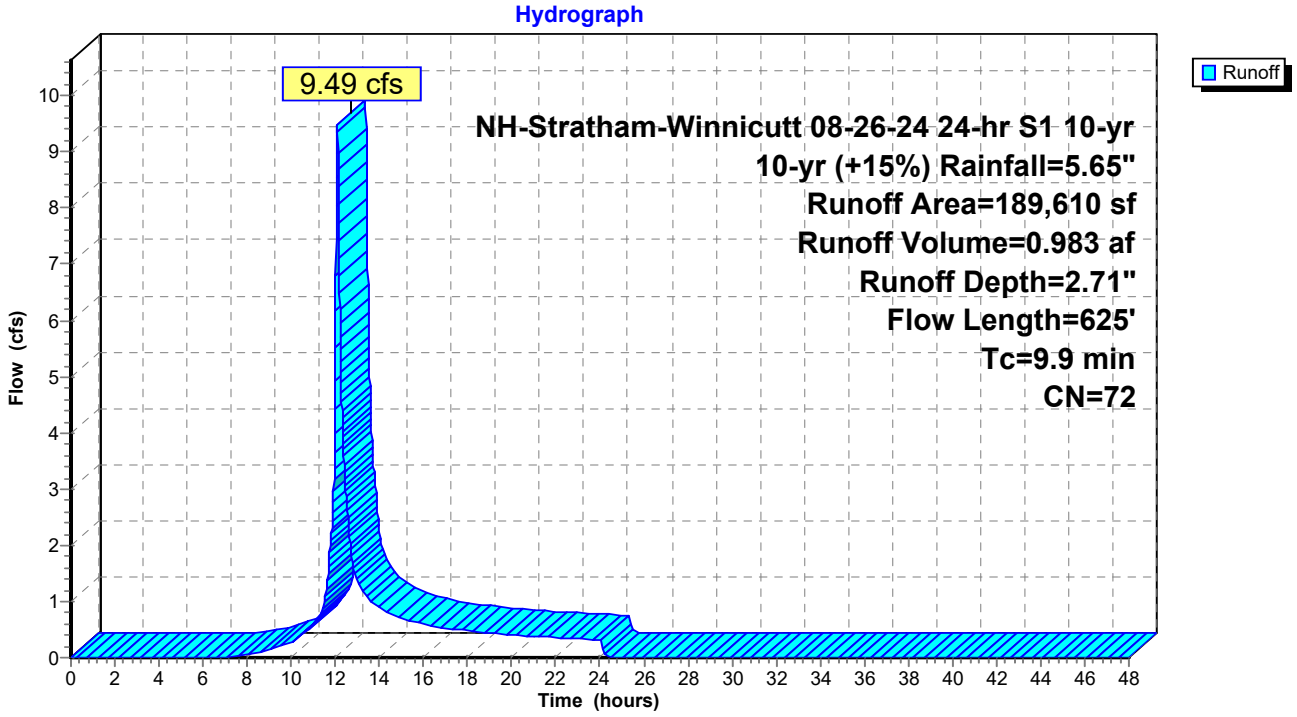
Runoff = 9.49 cfs @ 12.09 hrs, Volume= 0.983 af, Depth= 2.71"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
6,660	74	>75% Grass cover, Good, HSG C
132,750	70	Woods, Good, HSG C
50,200	77	Woods, Good, HSG D
189,610	72	Weighted Average
189,610		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0800	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
1.7	150	0.0900	1.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	425	0.0100	4.52	169.55	**Channel Flow, West Portion of Existing Central Swale** Area= 37.5 sf Perim= 43.0' r= 0.87' n= 0.030 Earth, grassed & winding
9.9	625	Total			

Subcatchment ES10: West-Central Portion of Site, Along Wetland Finger



Summary for Subcatchment ES11: East-Central Portion of Site, Along Wetland Finger

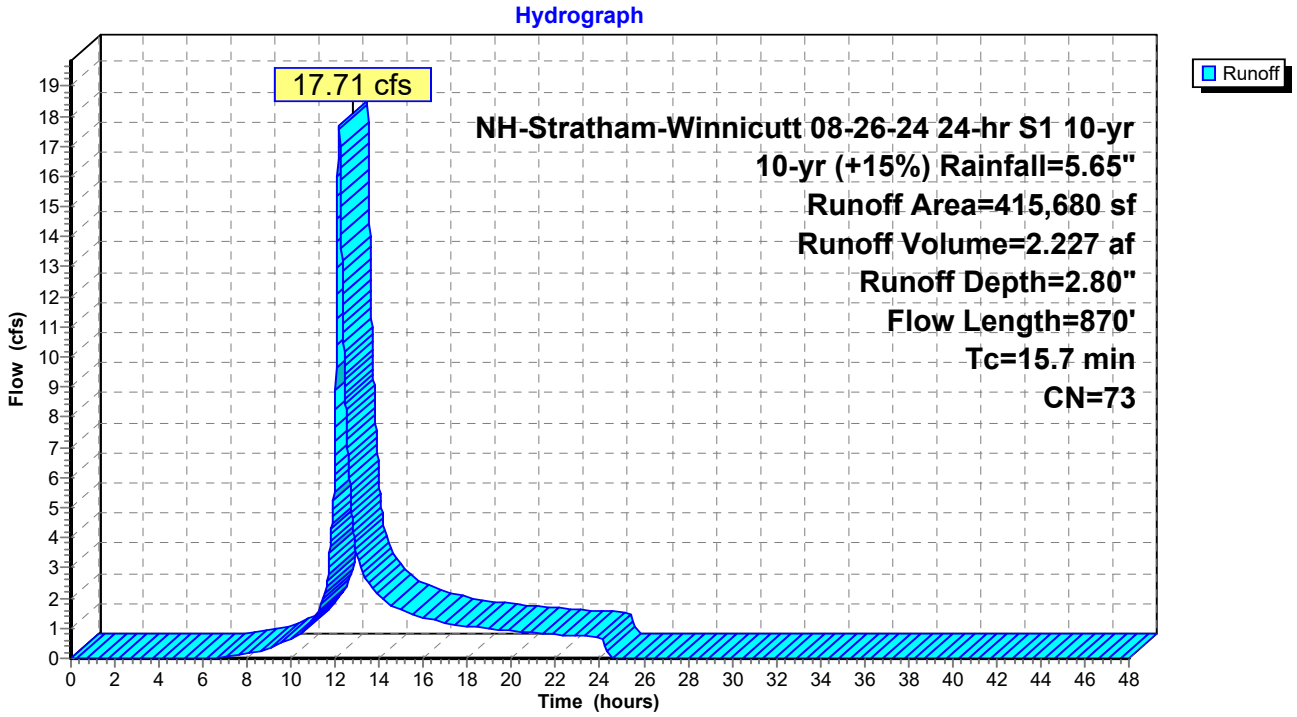
Runoff = 17.71 cfs @ 12.16 hrs, Volume= 2.227 af, Depth= 2.80"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
256,150	74	>75% Grass cover, Good, HSG C
126,640	70	Woods, Good, HSG C
28,145	77	Woods, Good, HSG D
1,305	96	Gravel surface, HSG C
1,825	98	Roofs, HSG C
1,615	98	Paved parking, HSG C
415,680	73	Weighted Average
412,240		99.17% Pervious Area
3,440		0.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0150	0.14		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
8.9	530	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.1500	1.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.6	260	0.0250	7.83	152.72	**Channel Flow, East Portion of Existing Central Swale** Area= 19.5 sf Perim= 19.5' r= 1.00' n= 0.030 Earth, grassed & winding
15.7	870	Total			

Subcatchment ES11: East-Central Portion of Site, Along Wetland Finger



Summary for Subcatchment ES2: Area along Northernmost Wetland Finger

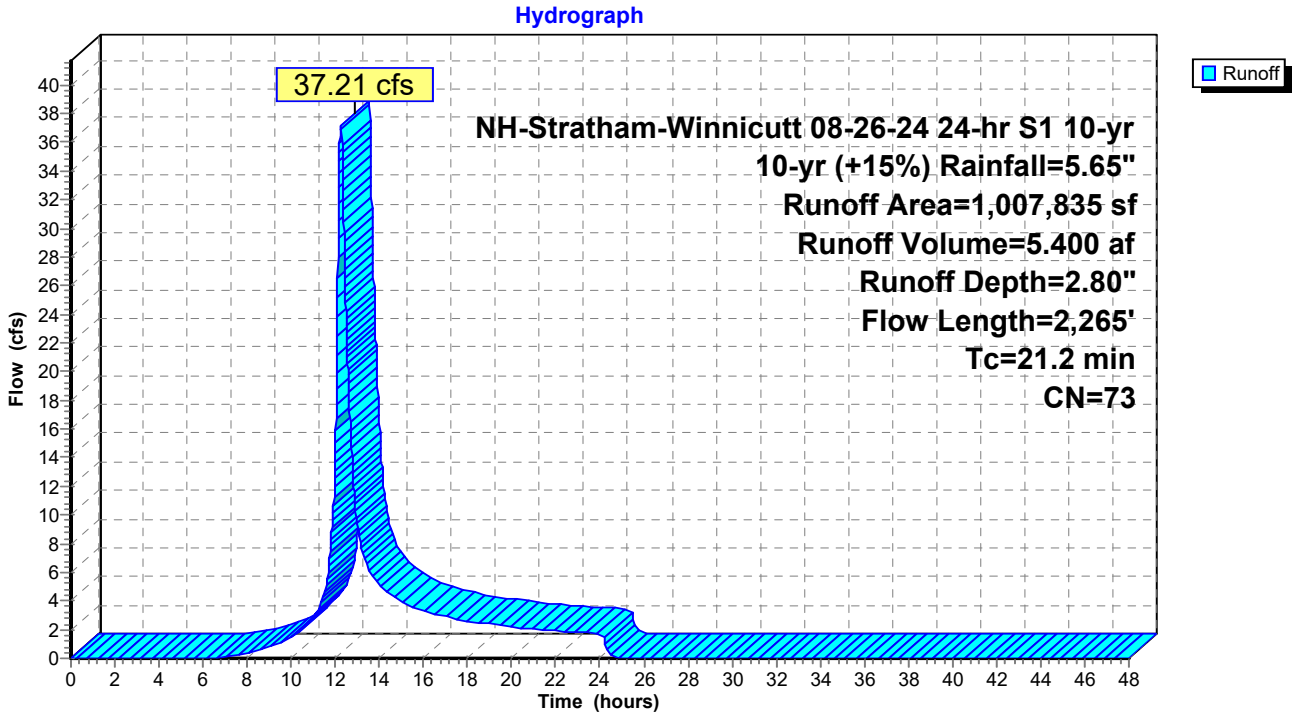
Runoff = 37.21 cfs @ 12.25 hrs, Volume= 5.400 af, Depth= 2.80"
Routed to Link L101 : Wetlands to the West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
256,630	74	>75% Grass cover, Good, HSG C
508,080	70	Woods, Good, HSG C
234,215	77	Woods, Good, HSG D
4,465	96	Gravel surface, HSG C
885	98	Roofs, HSG C
3,560	98	Paved parking, HSG C
1,007,835	73	Weighted Average
1,003,390		99.56% Pervious Area
4,445		0.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
6.4	385	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
3.3	1,830	0.0150	9.13	438.22	**Channel Flow, Mill Brook** Area= 48.0 sf Perim= 26.0' r= 1.85' n= 0.030 Earth, grassed & winding
21.2	2,265	Total			

Subcatchment ES2: Area along Northernmost Wetland Finger



Summary for Subcatchment ES3: Area on Northeast Corner of Lot, East of Existing Driveway

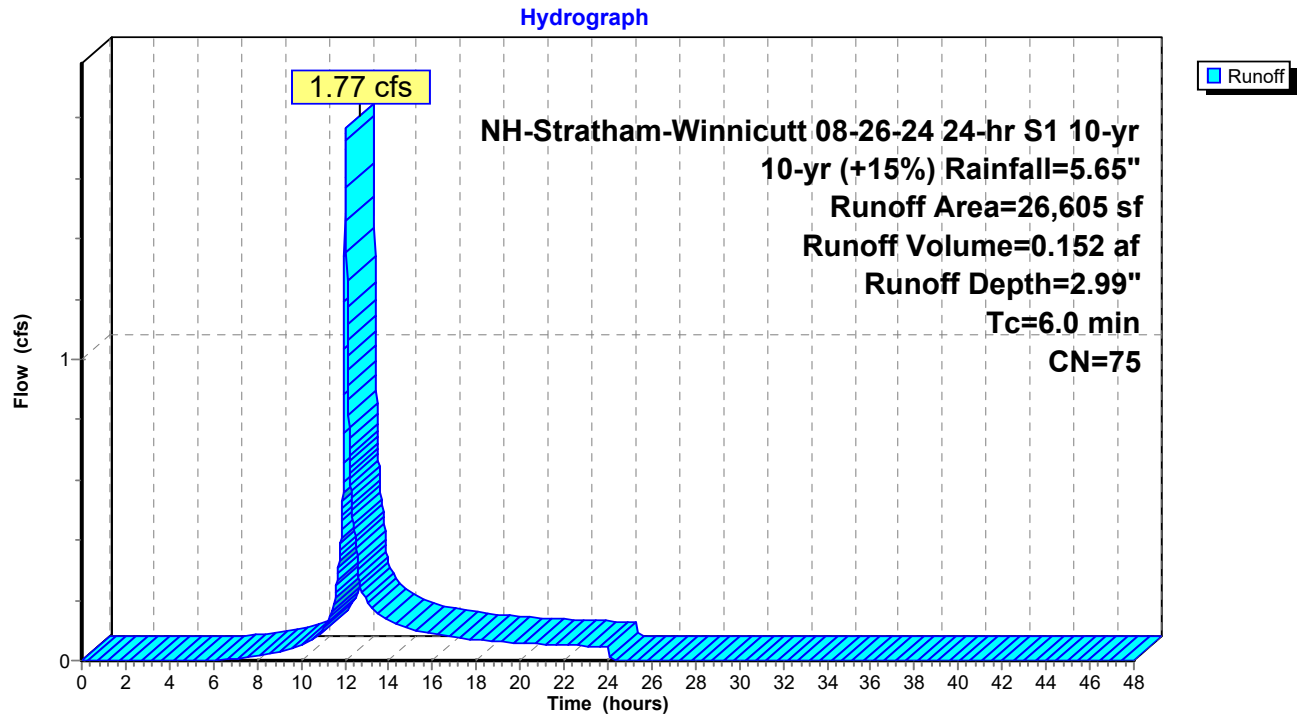
Runoff = 1.77 cfs @ 12.04 hrs, Volume= 0.152 af, Depth= 2.99"
Routed to Pond EP50 : Wetlands East of Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
12,175	74	>75% Grass cover, Good, HSG C
7,030	70	Woods, Good, HSG C
5,670	77	Woods, Good, HSG D
1,730	96	Gravel surface, HSG C
26,605	75	Weighted Average
26,605		100.00% Pervious Area

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

Subcatchment ES3: Area on Northeast Corner of Lot, East of Existing Driveway



Summary for Subcatchment ES4: Area East of Driveway, Adjacent to Pond

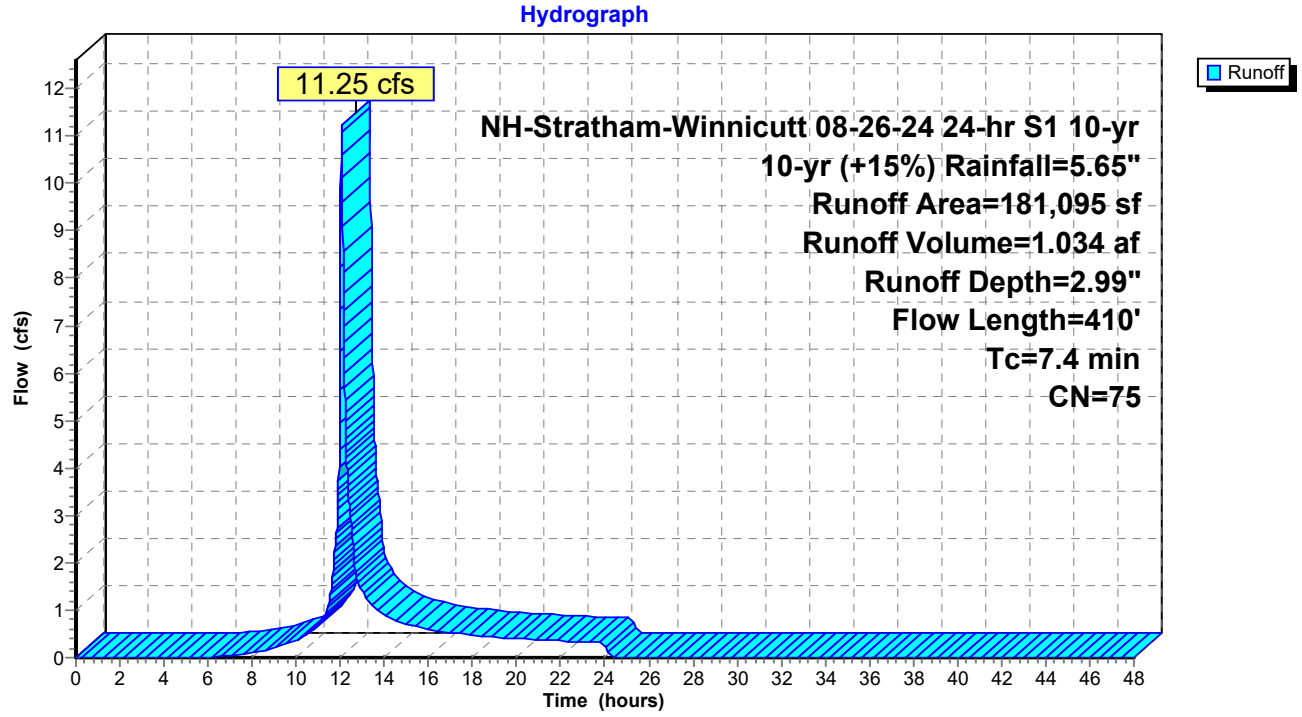
Runoff = 11.25 cfs @ 12.05 hrs, Volume= 1.034 af, Depth= 2.99"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
163,385	74	>75% Grass cover, Good, HSG C
9,670	80	>75% Grass cover, Good, HSG D
2,120	70	Woods, Good, HSG C
5,765	96	Gravel surface, HSG C
155	98	Paved parking, HSG C
181,095	75	Weighted Average
180,940		99.91% Pervious Area
155		0.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0600	0.25		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
4.0	360	0.0450	1.48		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
7.4	410	Total			

Subcatchment ES4: Area East of Driveway, Adjacent to Pond



Summary for Subcatchment ES5: Area South of Existing House

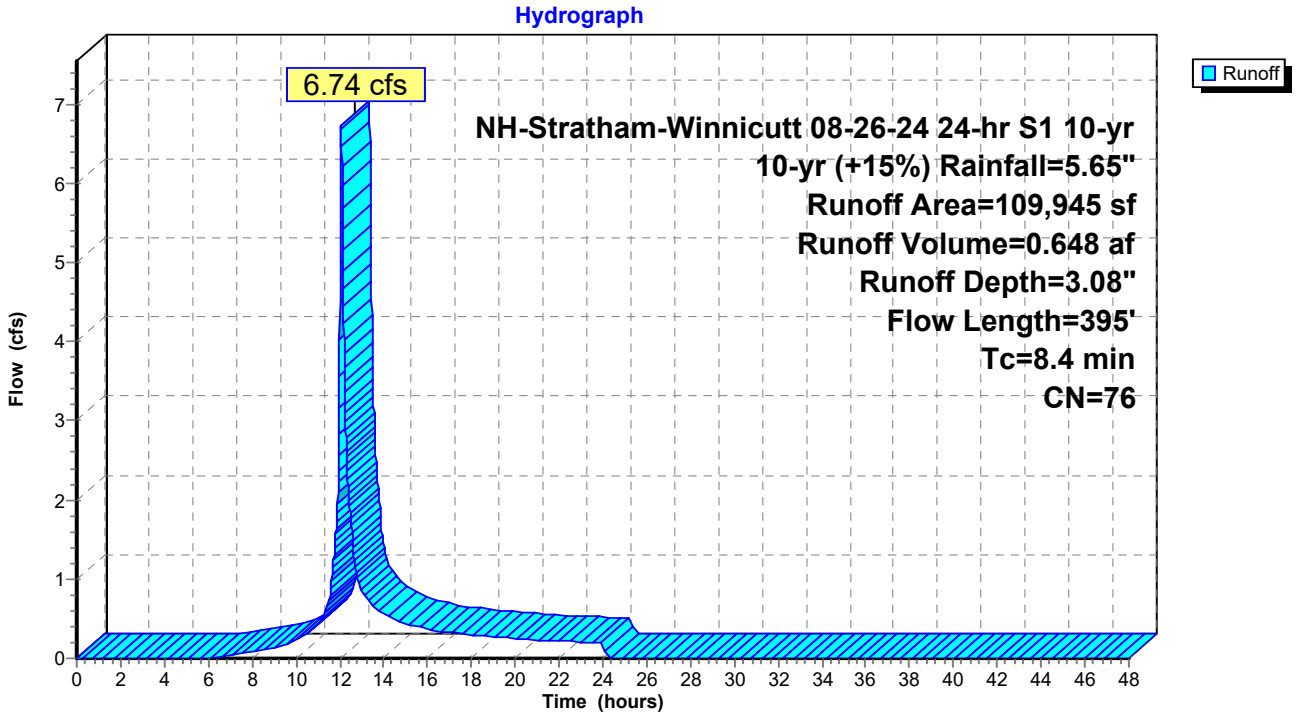
Runoff = 6.74 cfs @ 12.07 hrs, Volume= 0.648 af, Depth= 3.08"
Routed to Reach ER81 : East Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
100,670	74	>75% Grass cover, Good, HSG C
1,915	70	Woods, Good, HSG C
3,670	98	Roofs, HSG C
3,690	98	Paved parking, HSG C
109,945	76	Weighted Average
102,585		93.31% Pervious Area
7,360		6.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0150	0.14		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.5	135	0.0450	1.48		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.0	210	0.0100	3.66	128.26	**Channel Flow, Existing Swale in Rear of Existing House** Area= 35.0 sf Perim= 55.0' r= 0.64' n= 0.030 Earth, grassed & winding
8.4	395	Total			

Subcatchment ES5: Area South of Existing House



Summary for Subcatchment ES6: Eastern Portion of Site, Along Wetland Finger

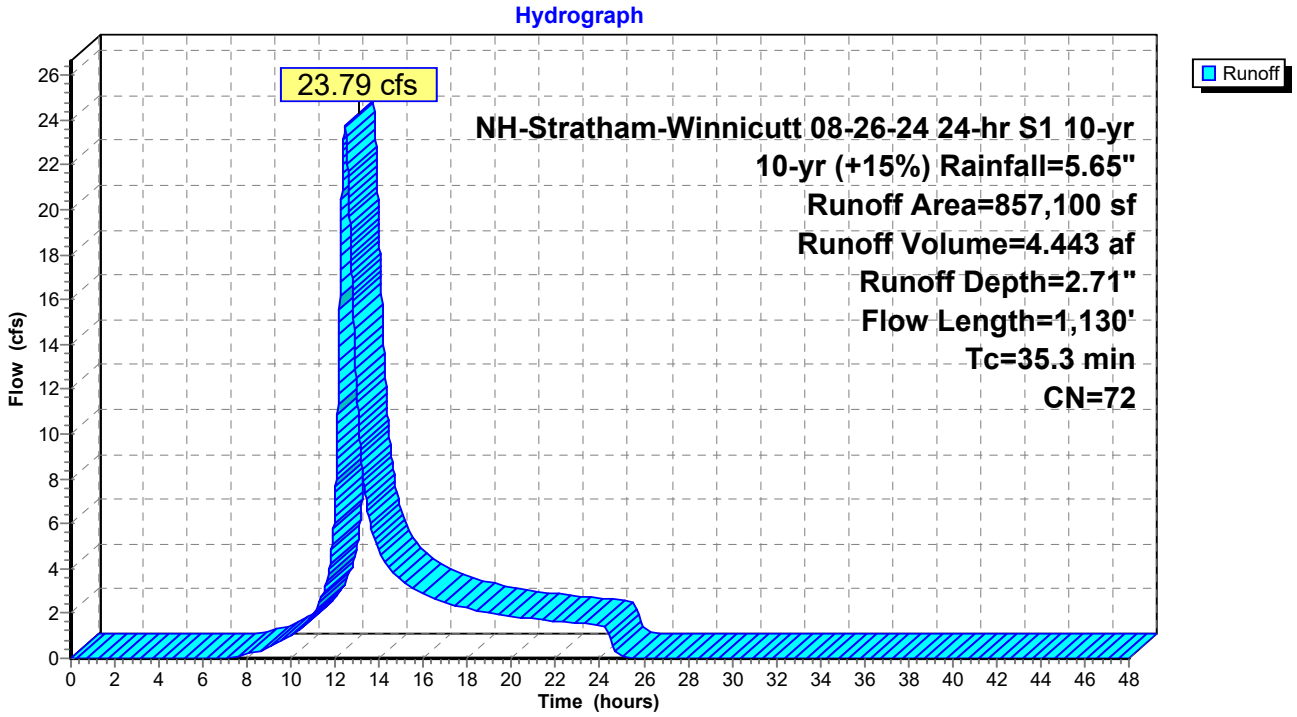
Runoff = 23.79 cfs @ 12.43 hrs, Volume= 4.443 af, Depth= 2.71"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
64,915	74	>75% Grass cover, Good, HSG C
592,040	70	Woods, Good, HSG C
200,145	77	Woods, Good, HSG D
857,100	72	Weighted Average
857,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0100	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
10.6	390	0.0150	0.61		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
9.4	380	0.0180	0.67		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
0.2	310	0.0380	21.06	3,054.41	**Channel Flow, Existing Swale from East Portion of Site** Area= 145.0 sf Perim= 45.0' r= 3.22' n= 0.030 Earth, grassed & winding
35.3	1,130	Total			

Subcatchment ES6: Eastern Portion of Site, Along Wetland Finger



Summary for Subcatchment ES7: Southeastern Portion of Site, Along Wetland Finger

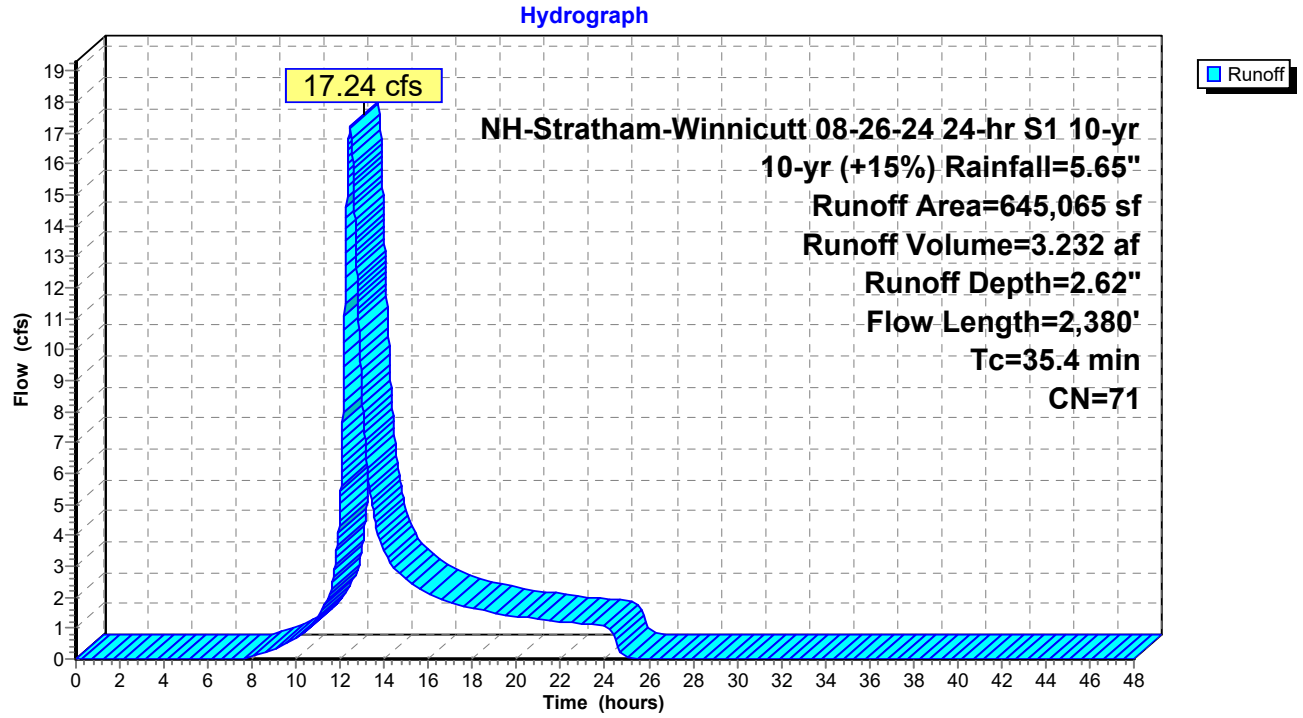
Runoff = 17.24 cfs @ 12.46 hrs, Volume= 3.232 af, Depth= 2.62"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
550,470	70	Woods, Good, HSG C
94,595	77	Woods, Good, HSG D
645,065	71	Weighted Average
645,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0100	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
10.1	400	0.0175	0.66		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
4.7	200	0.0200	0.71		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
5.5	1,730	0.0113	5.27	168.49	**Channel Flow, Existing Swale from Southeastern Portion of Site** Area= 32.0 sf Perim= 32.0' r= 1.00' n= 0.030 Earth, grassed & winding
35.4	2,380	Total			

Subcatchment ES7: Southeastern Portion of Site, Along Wetland Finger



Summary for Subcatchment ES8: Southern Portion of Site, Along Wetland Finger

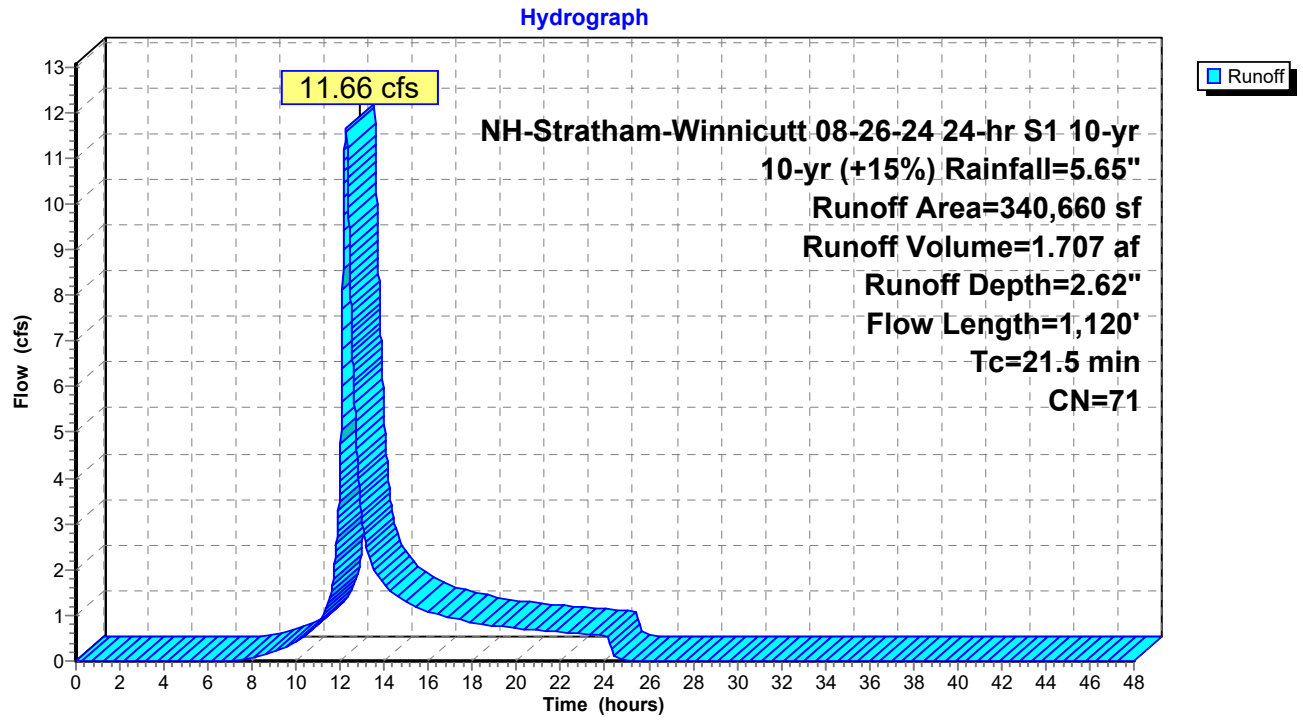
Runoff = 11.66 cfs @ 12.25 hrs, Volume= 1.707 af, Depth= 2.62"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
271,440	70	Woods, Good, HSG C
69,220	77	Woods, Good, HSG D
340,660	71	Weighted Average
340,660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
6.3	420	0.0500	1.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.3	85	0.0500	1.12		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
2.4	565	0.0100	3.88	34.89	**Channel Flow, Existing Swale from Southern Potion of Site** Area= 9.0 sf Perim= 13.0' r= 0.69' n= 0.030 Earth, grassed & winding
21.5	1,120	Total			

Subcatchment ES8: Southern Portion of Site, Along Wetland Finger



Summary for Subcatchment ES9: Southwestern Portion of Site, Along Wetland Finger

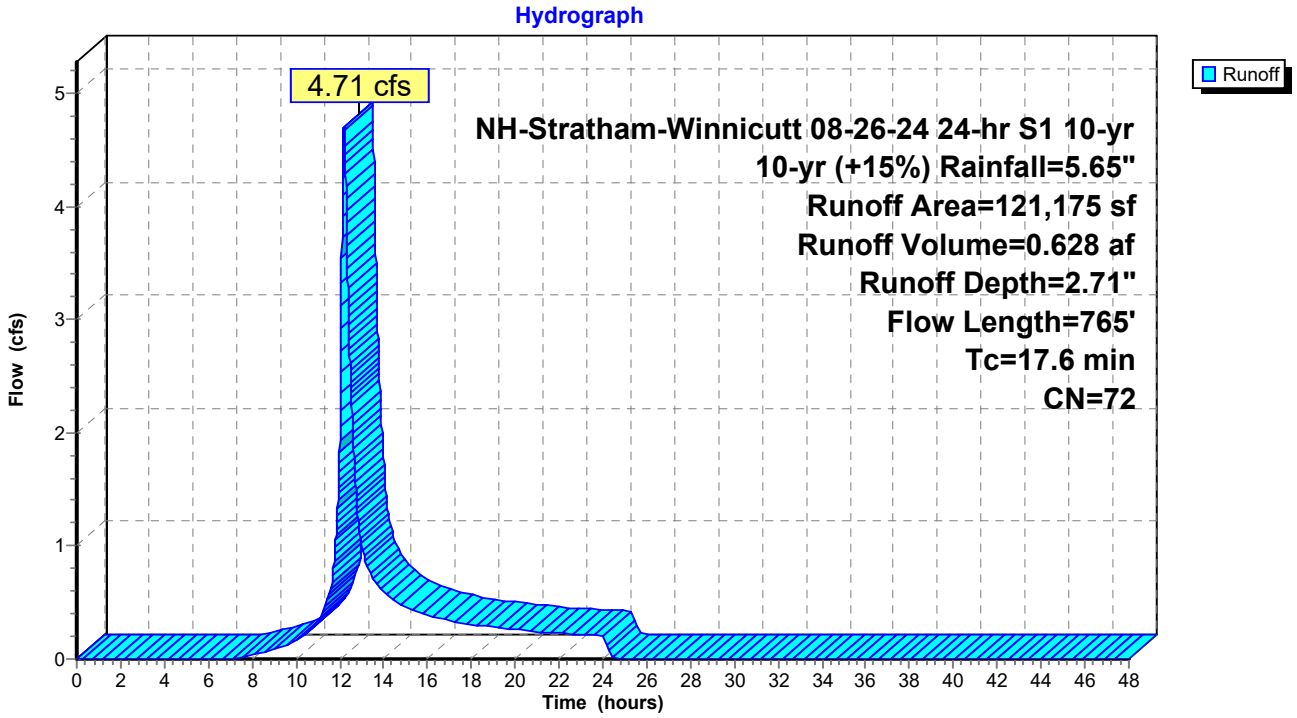
Runoff = 4.71 cfs @ 12.19 hrs, Volume= 0.628 af, Depth= 2.71"
Routed to Link L101 : Wetlands to the West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
78,780	70	Woods, Good, HSG C
42,395	77	Woods, Good, HSG D
121,175	72	Weighted Average
121,175		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0150	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
1.5	120	0.0750	1.37		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
2.7	110	0.0180	0.67		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
0.5	485	0.0300	14.95	1,375.30	**Channel Flow, Southern Swale Connecting to Western Wetlands** Area= 92.0 sf Perim= 40.0' r= 2.30' n= 0.030 Earth, grassed & winding
17.6	765	Total			

Subcatchment ES9: Southwestern Portion of Site, Along Wetland Finger



Summary for Reach ER75: Northernmost Stream on Site

Inflow Area = 0.611 ac, 0.00% Impervious, Inflow Depth = 2.96" for 10-yr (+15%) event
Inflow = 1.71 cfs @ 12.06 hrs, Volume= 0.151 af
Outflow = 0.58 cfs @ 12.30 hrs, Volume= 0.151 af, Atten= 66%, Lag= 14.5 min
Routed to Link L101 : Wetlands to the West

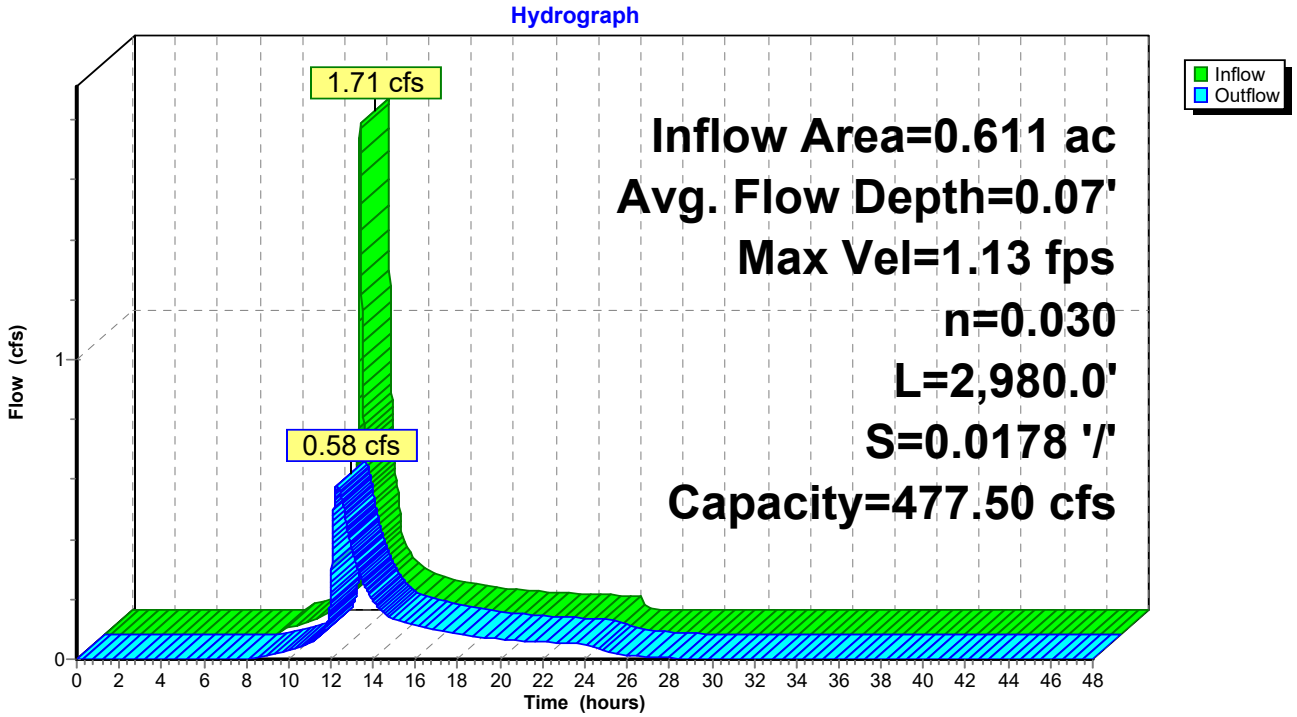
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.13 fps, Min. Travel Time= 43.9 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 75.3 min

Peak Storage= 1,527 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.07' , Surface Width= 7.43'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 477.50 cfs

7.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 25.00'
Length= 2,980.0' Slope= 0.0178 '/'
Inlet Invert= 90.70', Outlet Invert= 37.70'



Reach ER75: Northernmost Stream on Site



Summary for Reach ER79: Southern Swale Connecting to Western Wetlands

[62] Hint: Exceeded Reach ER80 OUTLET depth by 0.91' @ 12.39 hrs
[64] Warning: Exceeded Reach ER80 outlet bank by 0.12' @ 12.36 hrs

Inflow Area = 62.882 ac, 0.40% Impervious, Inflow Depth = 2.63" for 10-yr (+15%) event
Inflow = 68.21 cfs @ 12.31 hrs, Volume= 13.782 af
Outflow = 67.44 cfs @ 12.36 hrs, Volume= 13.782 af, Atten= 1%, Lag= 3.3 min
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 3.08 fps, Min. Travel Time= 3.8 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 13.8 min

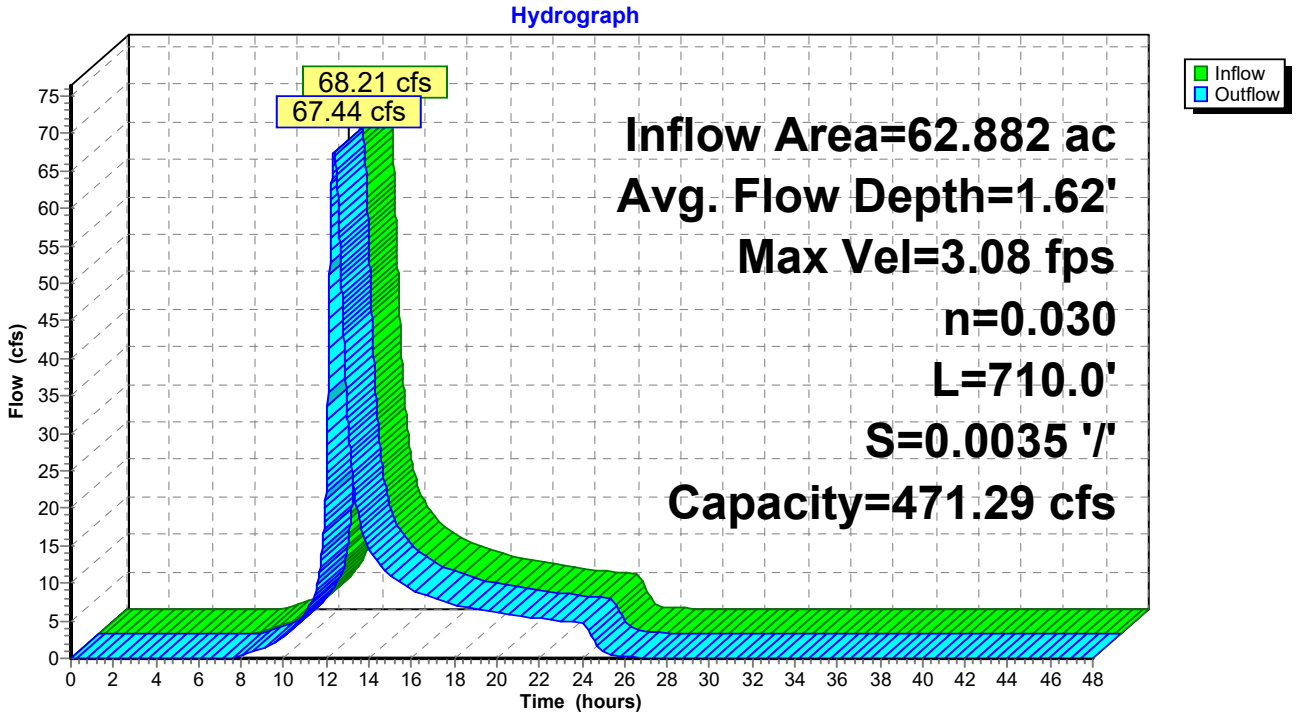
Peak Storage= 15,534 cf @ 12.36 hrs
Average Depth at Peak Storage= 1.62' , Surface Width= 19.98'
Bank-Full Depth= 4.00' Flow Area= 92.0 sf, Capacity= 471.29 cfs

7.00' x 4.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 39.00'
Length= 710.0' Slope= 0.0035 '/'
Inlet Invert= 42.50', Outlet Invert= 40.00'



‡

Reach ER79: Southern Swale Connecting to Western Wetlands



Summary for Reach ER80: West Portion of Existing Central Swale

[62] Hint: Exceeded Reach ER81 OUTLET depth by 0.55' @ 12.44 hrs

Inflow Area = 35.900 ac, 0.70% Impervious, Inflow Depth = 2.63" for 10-yr (+15%) event
Inflow = 37.93 cfs @ 12.23 hrs, Volume= 7.860 af
Outflow = 37.55 cfs @ 12.29 hrs, Volume= 7.860 af, Atten= 1%, Lag= 3.3 min
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 3.35 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.95 fps, Avg. Travel Time= 11.0 min

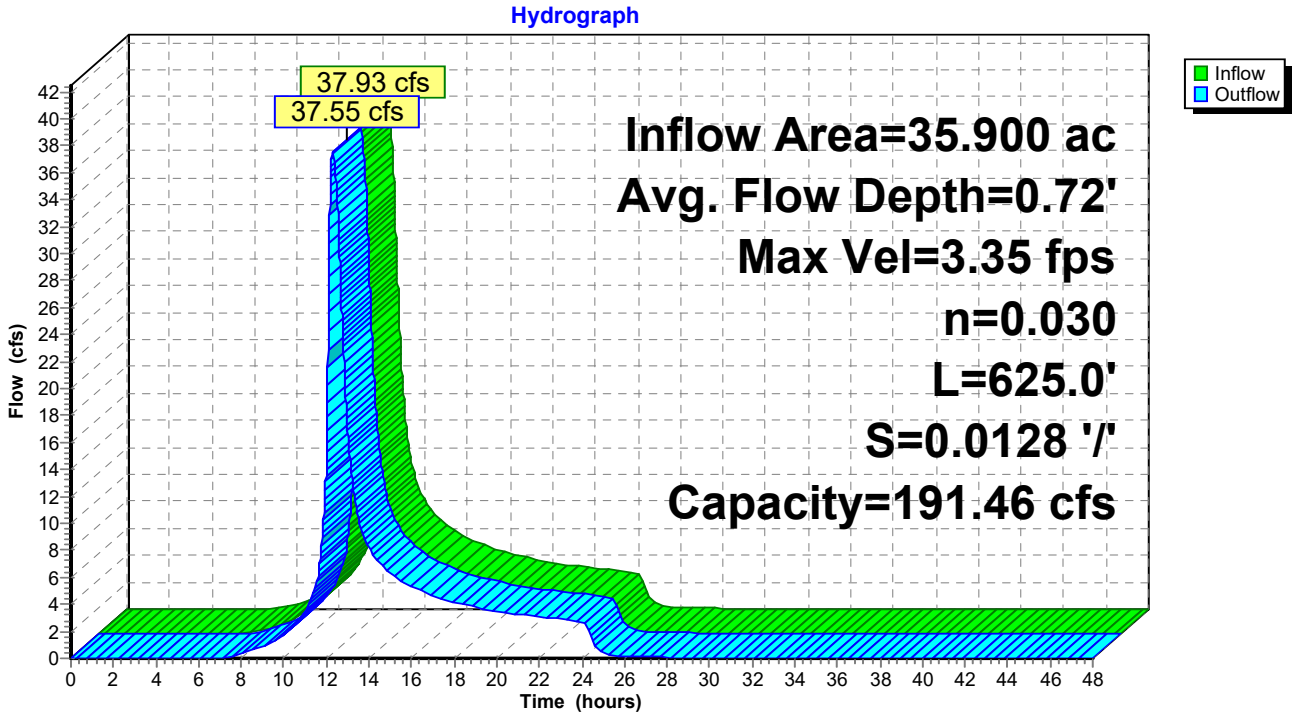
Peak Storage= 7,011 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.72' , Surface Width= 24.24'
Bank-Full Depth= 1.50' Flow Area= 37.5 sf, Capacity= 191.46 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 43.00'
Length= 625.0' Slope= 0.0128 '/'
Inlet Invert= 50.50', Outlet Invert= 42.50'



‡

Reach ER80: West Portion of Existing Central Swale



Summary for Reach ER81: East Portion of Existing Central Swale

Inflow Area = 6.681 ac, 2.58% Impervious, Inflow Depth > 2.14" for 10-yr (+15%) event
Inflow = 6.74 cfs @ 12.07 hrs, Volume= 1.190 af
Outflow = 5.81 cfs @ 12.12 hrs, Volume= 1.190 af, Atten= 14%, Lag= 2.9 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.80 fps, Min. Travel Time= 4.8 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 16.6 min

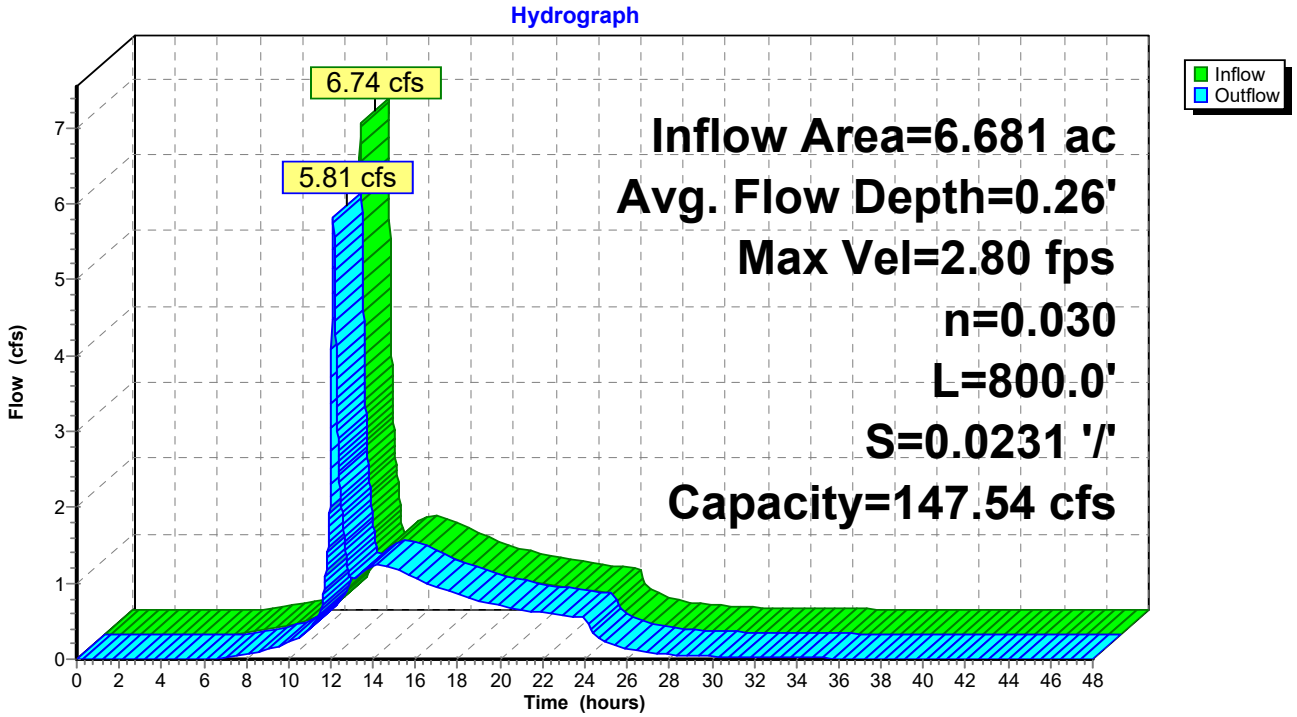
Peak Storage= 1,657 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.26' , Surface Width= 9.06'
Bank-Full Depth= 1.50' Flow Area= 19.5 sf, Capacity= 147.54 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 19.00'
Length= 800.0' Slope= 0.0231 '/'
Inlet Invert= 69.00', Outlet Invert= 50.50'



‡

Reach ER81: East Portion of Existing Central Swale



Summary for Reach ER82: Existing Swale in Rear of Existing House

Inflow Area = 4.157 ac, 0.09% Impervious, Inflow Depth > 1.57" for 10-yr (+15%) event
Inflow = 0.75 cfs @ 14.70 hrs, Volume= 0.542 af
Outflow = 0.75 cfs @ 14.76 hrs, Volume= 0.542 af, Atten= 0%, Lag= 3.2 min
Routed to Reach ER81 : East Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.02 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 8.2 min

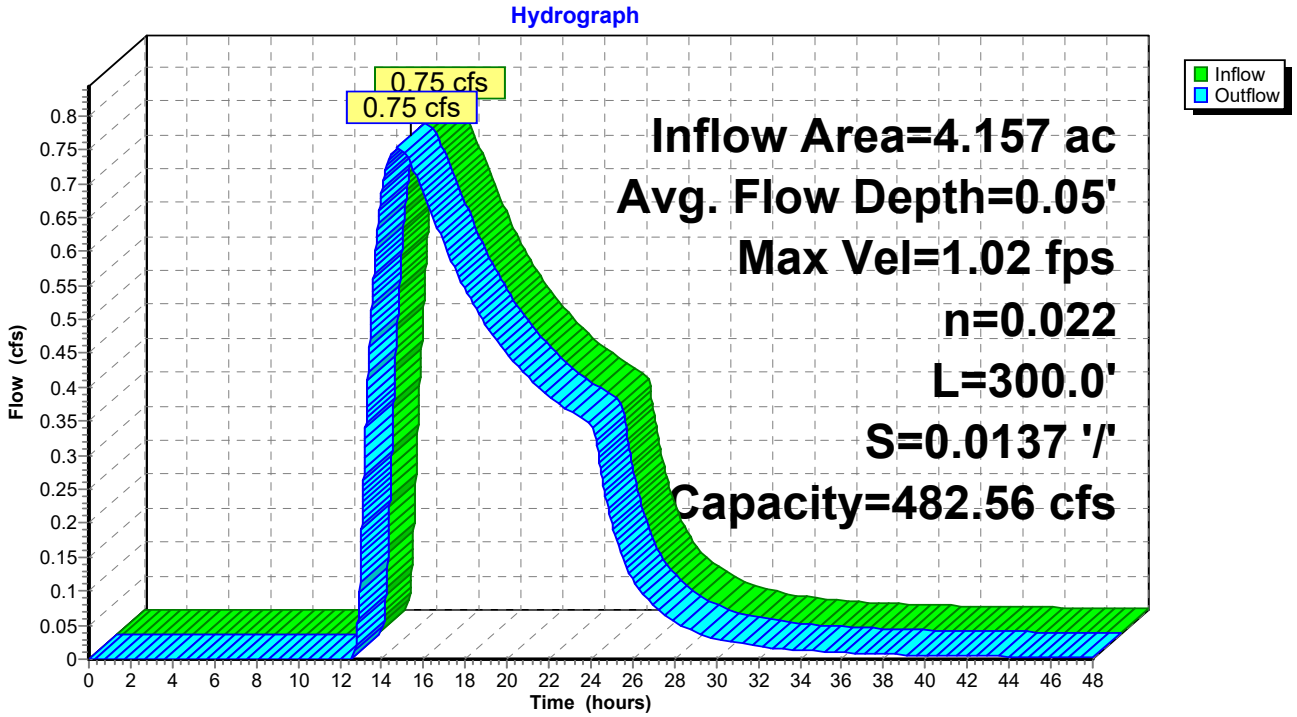
Peak Storage= 221 cf @ 14.76 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 15.96'
Bank-Full Depth= 1.50' Flow Area= 66.0 sf, Capacity= 482.56 cfs

14.00' x 1.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 20.0 '/' Top Width= 74.00'
Length= 300.0' Slope= 0.0137 '/'
Inlet Invert= 75.00', Outlet Invert= 70.90'



‡

Reach ER82: Existing Swale in Rear of Existing House



Summary for Pond EP50: Wetlands East of Existing Driveway

Inflow Area = 0.611 ac, 0.00% Impervious, Inflow Depth = 2.99" for 10-yr (+15%) event
Inflow = 1.77 cfs @ 12.04 hrs, Volume= 0.152 af
Outflow = 1.71 cfs @ 12.06 hrs, Volume= 0.151 af, Atten= 4%, Lag= 1.1 min
Primary = 1.71 cfs @ 12.06 hrs, Volume= 0.151 af
Routed to Reach ER75 : Northernmost Stream on Site

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.78' @ 12.06 hrs Surf.Area= 343 sf Storage= 226 cf
Flood Elev= 95.00' Surf.Area= 16,000 sf Storage= 19,508 cf

Plug-Flow detention time= 13.2 min calculated for 0.151 af (99% of inflow)
Center-of-Mass det. time= 8.2 min (870.8 - 862.6)

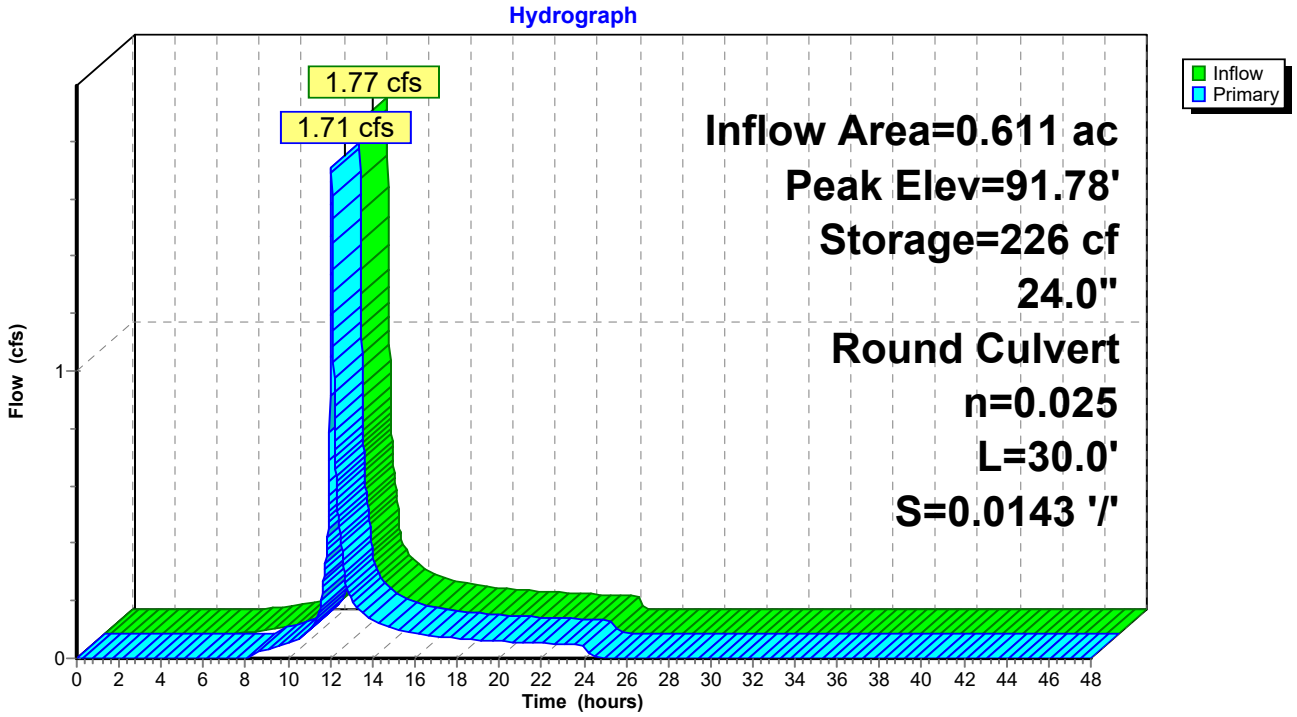
Volume	Invert	Avail.Storage	Storage Description
#1	90.50'	19,508 cf	**Wetlands East of Existing Driveway (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	10	0	0
92.00	400	308	308
94.00	7,200	7,600	7,908
95.00	16,000	11,600	19,508

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**24.0" Round 24" CMP** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 91.13' / 90.70' S= 0.0143 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=1.70 cfs @ 12.06 hrs HW=91.78' TW=90.75' (Dynamic Tailwater)
↑—**1=24" CMP** (Barrel Controls 1.70 cfs @ 2.88 fps)

Pond EP50: Wetlands East of Existing Driveway



Summary for Pond EP51: Existing Pond Along Existing Driveway

Inflow Area = 4.157 ac, 0.09% Impervious, Inflow Depth = 2.99" for 10-yr (+15%) event
Inflow = 11.25 cfs @ 12.05 hrs, Volume= 1.034 af
Outflow = 0.75 cfs @ 14.70 hrs, Volume= 0.542 af, Atten= 93%, Lag= 158.9 min
Primary = 0.75 cfs @ 14.70 hrs, Volume= 0.542 af
Routed to Reach ER82 : Existing Swale in Rear of Existing House
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach ER82 : Existing Swale in Rear of Existing House

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.18' @ 14.70 hrs Surf.Area= 10,728 sf Storage= 25,887 cf
Flood Elev= 77.50' Surf.Area= 16,000 sf Storage= 43,500 cf

Plug-Flow detention time= 437.2 min calculated for 0.542 af (52% of inflow)
Center-of-Mass det. time= 277.6 min (1,141.5 - 863.9)

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	43,500 cf	**Existing Pond (Prismatic)**Listed below (Recalc)

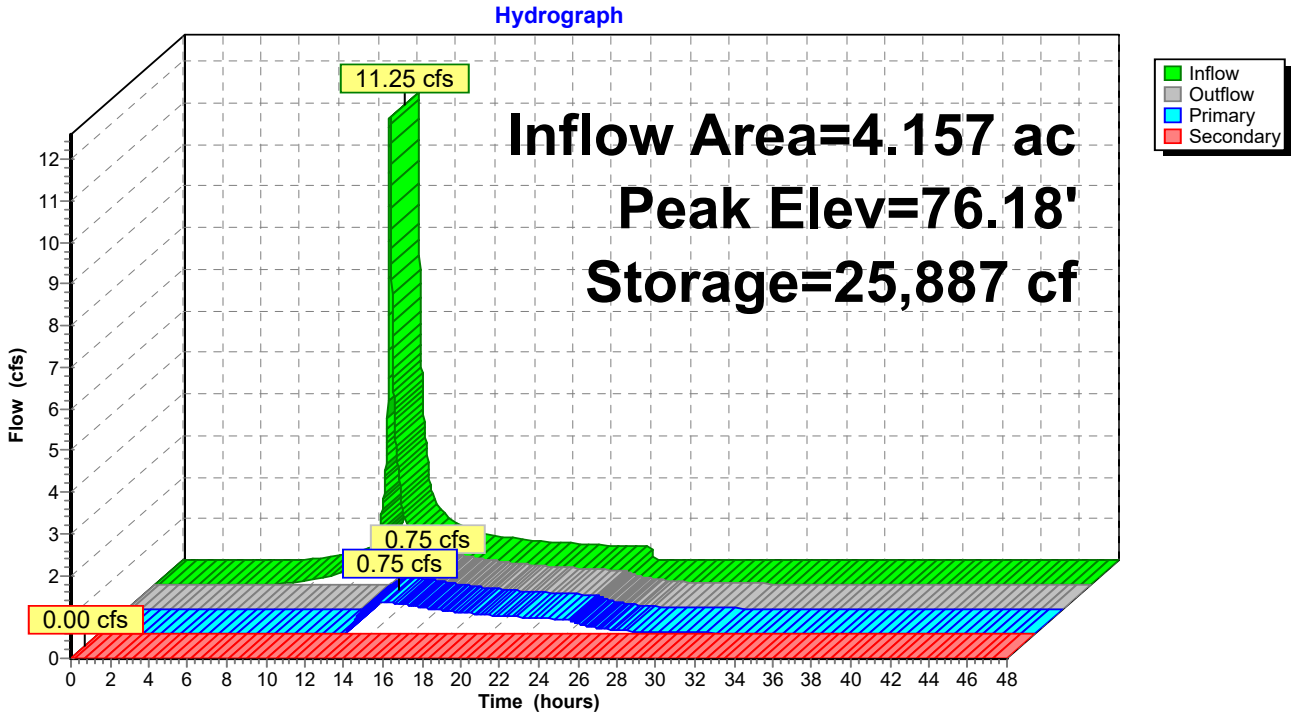
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	6,000	0	0
76.00	10,000	24,000	24,000
77.50	16,000	19,500	43,500

Device	Routing	Invert	Outlet Devices
#1	Primary	75.71'	**12.0" Round 12" CMP** L= 20.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 75.71' / 75.04' S= 0.0335 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	77.00'	**20.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.75 cfs @ 14.70 hrs HW=76.18' TW=75.05' (Dynamic Tailwater)
↑—**1=12" CMP** (Inlet Controls 0.75 cfs @ 2.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=75.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond EP51: Existing Pond Along Existing Driveway

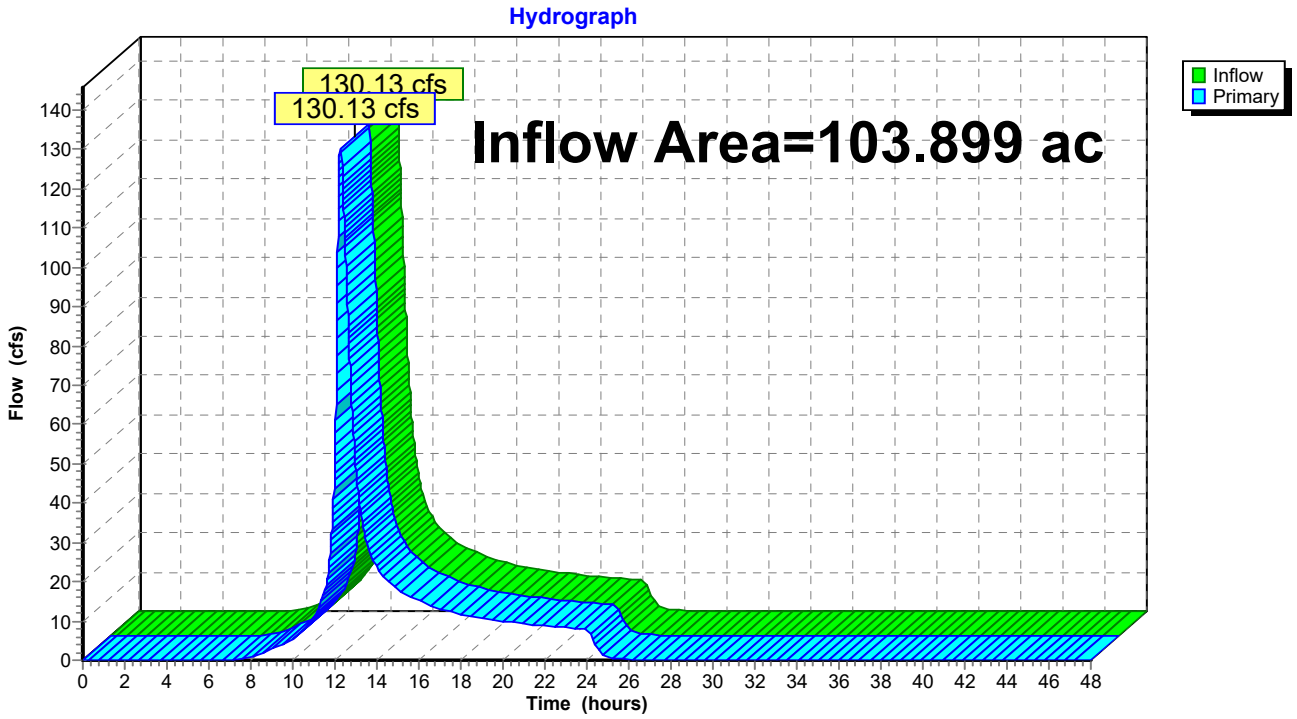


Summary for Link L101: Wetlands to the West

Inflow Area = 103.899 ac, 0.34% Impervious, Inflow Depth = 2.70" for 10-yr (+15%) event
Inflow = 130.13 cfs @ 12.27 hrs, Volume= 23.342 af
Primary = 130.13 cfs @ 12.27 hrs, Volume= 23.342 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link L101: Wetlands to the West



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES1: Wetlands on Western Runoff Area=631,090 sf 0.00% Impervious Runoff Depth=1.32"
Flow Length=495' Tc=19.4 min CN=73 Runoff=12.20 cfs 1.597 af

SubcatchmentES10: West-Central Portion Runoff Area=189,610 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=625' Tc=9.9 min CN=72 Runoff=4.72 cfs 0.457 af

SubcatchmentES11: East-Central Portion Runoff Area=415,680 sf 0.83% Impervious Runoff Depth=1.32"
Flow Length=870' Tc=15.7 min CN=73 Runoff=8.90 cfs 1.052 af

SubcatchmentES2: Area along Runoff Area=1,007,835 sf 0.44% Impervious Runoff Depth=1.32"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=18.59 cfs 2.551 af

SubcatchmentES3: Area on Northeast Runoff Area=26,605 sf 0.00% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=75 Runoff=0.96 cfs 0.074 af

SubcatchmentES4: Area East of Runoff Area=181,095 sf 0.09% Impervious Runoff Depth=1.45"
Flow Length=410' Tc=7.4 min CN=75 Runoff=6.03 cfs 0.503 af

SubcatchmentES5: Area South of Existing Runoff Area=109,945 sf 6.69% Impervious Runoff Depth=1.52"
Flow Length=395' Tc=8.4 min CN=76 Runoff=3.67 cfs 0.320 af

SubcatchmentES6: Eastern Portion of Runoff Area=857,100 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=11.42 cfs 2.067 af

SubcatchmentES7: Southeastern Portion Runoff Area=645,065 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=8.12 cfs 1.480 af

SubcatchmentES8: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=5.55 cfs 0.782 af

SubcatchmentES9: Southwestern Portion Runoff Area=121,175 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=765' Tc=17.6 min CN=72 Runoff=2.31 cfs 0.292 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.04' Max Vel=0.79 fps Inflow=0.90 cfs 0.073 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.22 cfs 0.073 af

Reach ER79: Southern Swale Avg. Flow Depth=1.11' Max Vel=2.51 fps Inflow=32.54 cfs 6.170 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=32.02 cfs 6.170 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.50' Max Vel=2.75 fps Inflow=18.39 cfs 3.451 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=18.15 cfs 3.451 af

Reach ER81: East Portion of Existing Avg. Flow Depth=0.17' Max Vel=2.21 fps Inflow=3.67 cfs 0.332 af
n=0.030 L=800.0' S=0.0231 '/' Capacity=147.54 cfs Outflow=2.97 cfs 0.332 af

Reach ER82: Existing Swale in Rear of Avg. Flow Depth=0.00' Max Vel=0.47 fps Inflow=0.02 cfs 0.012 af
n=0.022 L=300.0' S=0.0137 '/' Capacity=482.56 cfs Outflow=0.02 cfs 0.012 af

Pond EP50: Wetlands East of Existing Driveway Peak Elev=91.60' Storage=168 cf Inflow=0.96 cfs 0.074 af
24.0" Round Culvert n=0.025 L=30.0' S=0.0143 '/' Outflow=0.90 cfs 0.073 af

Pond EP51: Existing Pond Along Existing Peak Elev=75.78' Storage=21,880 cf Inflow=6.03 cfs 0.503 af
Primary=0.02 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.012 af

Link L101: Wetlands to the West Inflow=62.07 cfs 10.683 af
Primary=62.07 cfs 10.683 af

Total Runoff Area = 103.899 ac Runoff Volume = 11.175 af Average Runoff Depth = 1.29"
99.66% Pervious = 103.546 ac 0.34% Impervious = 0.354 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES1: Wetlands on Western Runoff Area=631,090 sf 0.00% Impervious Runoff Depth=2.80"
Flow Length=495' Tc=19.4 min CN=73 Runoff=24.39 cfs 3.381 af

SubcatchmentES10: West-Central Portion Runoff Area=189,610 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=625' Tc=9.9 min CN=72 Runoff=9.49 cfs 0.983 af

SubcatchmentES11: East-Central Portion Runoff Area=415,680 sf 0.83% Impervious Runoff Depth=2.80"
Flow Length=870' Tc=15.7 min CN=73 Runoff=17.71 cfs 2.227 af

SubcatchmentES2: Area along Runoff Area=1,007,835 sf 0.44% Impervious Runoff Depth=2.80"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=37.21 cfs 5.400 af

SubcatchmentES3: Area on Northeast Runoff Area=26,605 sf 0.00% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=75 Runoff=1.77 cfs 0.152 af

SubcatchmentES4: Area East of Runoff Area=181,095 sf 0.09% Impervious Runoff Depth=2.99"
Flow Length=410' Tc=7.4 min CN=75 Runoff=11.25 cfs 1.034 af

SubcatchmentES5: Area South of Existing Runoff Area=109,945 sf 6.69% Impervious Runoff Depth=3.08"
Flow Length=395' Tc=8.4 min CN=76 Runoff=6.74 cfs 0.648 af

SubcatchmentES6: Eastern Portion of Runoff Area=857,100 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=23.79 cfs 4.443 af

SubcatchmentES7: Southeastern Portion Runoff Area=645,065 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=17.24 cfs 3.232 af

SubcatchmentES8: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=11.66 cfs 1.707 af

SubcatchmentES9: Southwestern Portion Runoff Area=121,175 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=765' Tc=17.6 min CN=72 Runoff=4.71 cfs 0.628 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.07' Max Vel=1.13 fps Inflow=1.71 cfs 0.151 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.58 cfs 0.151 af

Reach ER79: Southern Swale Avg. Flow Depth=1.62' Max Vel=3.08 fps Inflow=68.21 cfs 13.782 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=67.44 cfs 13.782 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.72' Max Vel=3.35 fps Inflow=37.93 cfs 7.860 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=37.55 cfs 7.860 af

Reach ER81: East Portion of Existing Avg. Flow Depth=0.26' Max Vel=2.80 fps Inflow=6.74 cfs 1.190 af
n=0.030 L=800.0' S=0.0231 '/' Capacity=147.54 cfs Outflow=5.81 cfs 1.190 af

Reach ER82: Existing Swale in Rear of Avg. Flow Depth=0.05' Max Vel=1.02 fps Inflow=0.75 cfs 0.542 af
n=0.022 L=300.0' S=0.0137 '/' Capacity=482.56 cfs Outflow=0.75 cfs 0.542 af

Pond EP50: Wetlands East of Existing Driveway Peak Elev=91.78' Storage=226 cf Inflow=1.77 cfs 0.152 af
24.0" Round Culvert n=0.025 L=30.0' S=0.0143 '/' Outflow=1.71 cfs 0.151 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.18' Storage=25,887 cf Inflow=11.25 cfs 1.034 af
Primary=0.75 cfs 0.542 af Secondary=0.00 cfs 0.000 af Outflow=0.75 cfs 0.542 af

Link L101: Wetlands to the West Inflow=130.13 cfs 23.342 af
Primary=130.13 cfs 23.342 af

Total Runoff Area = 103.899 ac Runoff Volume = 23.836 af Average Runoff Depth = 2.75"
99.66% Pervious = 103.546 ac 0.34% Impervious = 0.354 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES1: Wetlands on Western Runoff Area=631,090 sf 0.00% Impervious Runoff Depth=4.09"
Flow Length=495' Tc=19.4 min CN=73 Runoff=34.13 cfs 4.939 af

SubcatchmentES10: West-Central Portion Runoff Area=189,610 sf 0.00% Impervious Runoff Depth=3.98"
Flow Length=625' Tc=9.9 min CN=72 Runoff=13.31 cfs 1.445 af

SubcatchmentES11: East-Central Portion Runoff Area=415,680 sf 0.83% Impervious Runoff Depth=4.09"
Flow Length=870' Tc=15.7 min CN=73 Runoff=24.74 cfs 3.253 af

SubcatchmentES2: Area along Runoff Area=1,007,835 sf 0.44% Impervious Runoff Depth=4.09"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=52.13 cfs 7.887 af

SubcatchmentES3: Area on Northeast Runoff Area=26,605 sf 0.00% Impervious Runoff Depth=4.31"
Tc=6.0 min CN=75 Runoff=2.42 cfs 0.219 af

SubcatchmentES4: Area East of Runoff Area=181,095 sf 0.09% Impervious Runoff Depth=4.31"
Flow Length=410' Tc=7.4 min CN=75 Runoff=15.34 cfs 1.493 af

SubcatchmentES5: Area South of Existing Runoff Area=109,945 sf 6.69% Impervious Runoff Depth=4.42"
Flow Length=395' Tc=8.4 min CN=76 Runoff=9.13 cfs 0.929 af

SubcatchmentES6: Eastern Portion of Runoff Area=857,100 sf 0.00% Impervious Runoff Depth=3.98"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=33.83 cfs 6.531 af

SubcatchmentES7: Southeastern Portion Runoff Area=645,065 sf 0.00% Impervious Runoff Depth=3.88"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=24.70 cfs 4.782 af

SubcatchmentES8: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=3.88"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=16.62 cfs 2.526 af

SubcatchmentES9: Southwestern Portion Runoff Area=121,175 sf 0.00% Impervious Runoff Depth=3.98"
Flow Length=765' Tc=17.6 min CN=72 Runoff=6.65 cfs 0.923 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.09' Max Vel=1.33 fps Inflow=2.33 cfs 0.218 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.91 cfs 0.218 af

Reach ER79: Southern Swale Avg. Flow Depth=1.93' Max Vel=3.40 fps Inflow=97.54 cfs 20.466 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=96.71 cfs 20.466 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.85' Max Vel=3.68 fps Inflow=53.89 cfs 11.713 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=53.54 cfs 11.713 af

Reach ER81: East Portion of Existing Avg. Flow Depth=0.31' Max Vel=3.13 fps Inflow=9.13 cfs 1.930 af
n=0.030 L=800.0' S=0.0231 '/' Capacity=147.54 cfs Outflow=8.05 cfs 1.930 af

Reach ER82: Existing Swale in Rear of Avg. Flow Depth=0.09' Max Vel=1.46 fps Inflow=2.04 cfs 1.000 af
n=0.022 L=300.0' S=0.0137 '/' Capacity=482.56 cfs Outflow=2.03 cfs 1.000 af

Pond EP50: Wetlands East of Existing Driveway Peak Elev=91.90' Storage=267 cf Inflow=2.42 cfs 0.219 af
24.0" Round Culvert n=0.025 L=30.0' S=0.0143 '/' Outflow=2.33 cfs 0.218 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.58' Storage=30,486 cf Inflow=15.34 cfs 1.493 af
Primary=2.04 cfs 1.000 af Secondary=0.00 cfs 0.000 af Outflow=2.04 cfs 1.000 af

Link L101: Wetlands to the West Inflow=185.37 cfs 34.434 af
Primary=185.37 cfs 34.434 af

Total Runoff Area = 103.899 ac Runoff Volume = 34.928 af Average Runoff Depth = 4.03"
99.66% Pervious = 103.546 ac 0.34% Impervious = 0.354 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
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 ES1: Wetlands on Western Runoff Area=631,090 sf 0.00% Impervious Runoff Depth=5.35"
Flow Length=495' Tc=19.4 min CN=73 Runoff=42.83 cfs 6.453 af

Subcatchment ES10: West-Central Portion Runoff Area=189,610 sf 0.00% Impervious Runoff Depth=5.22"
Flow Length=625' Tc=9.9 min CN=72 Runoff=16.71 cfs 1.895 af

Subcatchment ES11: East-Central Portion Runoff Area=415,680 sf 0.83% Impervious Runoff Depth=5.35"
Flow Length=870' Tc=15.7 min CN=73 Runoff=31.01 cfs 4.251 af

Subcatchment ES2: Area along Runoff Area=1,007,835 sf 0.44% Impervious Runoff Depth=5.35"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=65.47 cfs 10.306 af

Subcatchment ES3: Area on Northeast Runoff Area=26,605 sf 0.00% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=75 Runoff=2.98 cfs 0.284 af

Subcatchment ES4: Area East of Runoff Area=181,095 sf 0.09% Impervious Runoff Depth=5.59"
Flow Length=410' Tc=7.4 min CN=75 Runoff=18.93 cfs 1.935 af

Subcatchment ES5: Area South of Existing Runoff Area=109,945 sf 6.69% Impervious Runoff Depth=5.71"
Flow Length=395' Tc=8.4 min CN=76 Runoff=11.22 cfs 1.200 af

Subcatchment ES6: Eastern Portion of Runoff Area=857,100 sf 0.00% Impervious Runoff Depth=5.22"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=42.89 cfs 8.567 af

Subcatchment ES7: Southeastern Portion Runoff Area=645,065 sf 0.00% Impervious Runoff Depth=5.10"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=31.49 cfs 6.299 af

Subcatchment ES8: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=5.10"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=21.10 cfs 3.327 af

Subcatchment ES9: Southwestern Portion Runoff Area=121,175 sf 0.00% Impervious Runoff Depth=5.22"
Flow Length=765' Tc=17.6 min CN=72 Runoff=8.38 cfs 1.211 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.11' Max Vel=1.50 fps Inflow=2.88 cfs 0.283 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=1.23 cfs 0.283 af

Reach ER79: Southern Swale Avg. Flow Depth=2.18' Max Vel=3.63 fps Inflow=125.64 cfs 26.981 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=124.66 cfs 26.981 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.96' Max Vel=3.94 fps Inflow=70.03 cfs 15.461 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=69.60 cfs 15.461 af

Reach ER81: East Portion of Existing Avg. Flow Depth=0.37' Max Vel=3.44 fps Inflow=11.68 cfs 2.643 af
n=0.030 L=800.0' S=0.0231 '/' Capacity=147.54 cfs Outflow=10.67 cfs 2.643 af

Reach ER82: Existing Swale in Rear of Avg. Flow Depth=0.13' Max Vel=1.86 fps Inflow=4.11 cfs 1.443 af
n=0.022 L=300.0' S=0.0137 '/' Capacity=482.56 cfs Outflow=4.08 cfs 1.443 af

Pond EP50: Wetlands East of Existing Driveway Peak Elev=91.99' Storage=303 cf Inflow=2.98 cfs 0.284 af
24.0" Round Culvert n=0.025 L=30.0' S=0.0143 '/' Outflow=2.88 cfs 0.283 af

Pond EP51: Existing Pond Along Existing Peak Elev=77.07' Storage=37,005 cf Inflow=18.93 cfs 1.935 af
Primary=3.10 cfs 1.415 af Secondary=1.02 cfs 0.028 af Outflow=4.11 cfs 1.443 af

Link L101: Wetlands to the West Inflow=236.51 cfs 45.234 af
Primary=236.51 cfs 45.234 af

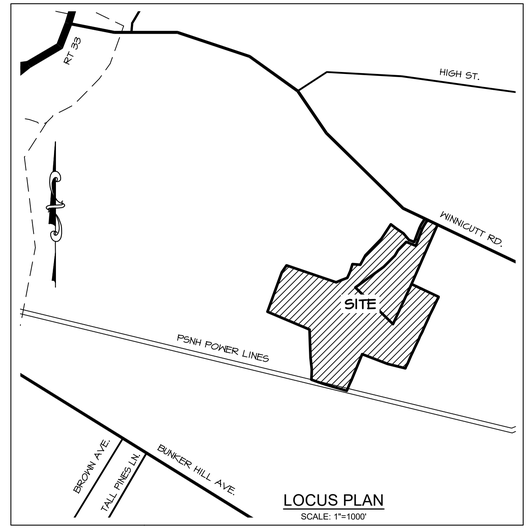
Total Runoff Area = 103.899 ac Runoff Volume = 45.728 af Average Runoff Depth = 5.28"
99.66% Pervious = 103.546 ac 0.34% Impervious = 0.354 ac

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)

1 inch = 150 ft.



LOCUS PLAN

SCALE: 1"=1000'

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405

2. THE INTENT OF THIS PLAN IS TO CALCULATE POST-DEVEOPLMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR MODELING VARIOUS STORM EVENTS IN PREPARATION FOR SITE IMPROVEMENTS.

3. POST-DEVELOPMENT DRAINAGE AREA CALCS:

   DRAINAGE ANALYSIS TOTAL AREA = 4,525,860 SF

   DRAINAGE ANALYSIS IMPERVIOUS = 228,060 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 5.04%

   DRAINAGE ANALYSIS UNDISTURBED = 3,265,010 SF
   DRAINAGE ANALYSIS % UNDISTURBED = 72.14%

4. CALLOUT IDENTIFIES EXISTING 12" CORRUGATED METAL PIPE (CMP), 20 FEET IN LENGTH, WITH INVERT IN = 15.71 AND INVERT OUT = 15.04.

5. MINIMUM TC = 6 MINUTES FOR ALL SUBCATCHMENTS. TC FLOW PATHS MAY NOT BE SHOWN FOR VERY SMALL DRAINAGE AREAS; HOWEVER, A TC OF 6 MINUTES HAS BEEN APPLIED IN THE HYDROLOGIC CALCULATIONS.

LEGEND

- INDICATES FLOW PATH
- INDICATES SUBCATCHMENT BOUNDARIES
- XX — INDICATES SUBCATCHMENT AREA LABEL
- XX — INDICATES POND LABEL
- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
9	MAY 4, 2026	FOR APPROVAL	
8	MAR 17, 2026	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

DRAWN: JJM | DESIGN: JJM

CHECKED: BDS | CHECKED: BDS

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:

POST-DEVELOPMENT DRAINAGE PLAN (FULL LOT)

FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	SW2

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

L101

PROPERTY LINE

EXISTING WETLANDS (TYPICAL)

EOW

EXISTING STREAM (TYPICAL)

134B 32C 38B

PS1 PS2 PS11

ER75

MATCH LINE (SEE SHEET SW2.1)
MATCH LINE (SEE SHEET SW2.2)

MATCH LINE (SEE SHEET SW2.1)
MATCH LINE (SEE SHEET SW2.3)

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405

2. THE INTENT OF THIS PLAN IS TO CALCULATE POST-DEVEOPLMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR MODELING VARIOUS STORM EVENTS IN PREPARATION FOR SITE IMPROVEMENTS.

3. POST-DEVELOPMENT DRAINAGE AREA CALCS:

   DRAINAGE ANALYSIS TOTAL AREA = 4,525,860 SF

   DRAINAGE ANALYSIS IMPERVIOUS = 228,060 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 5.04%

   DRAINAGE ANALYSIS UNDISTURBED = 3,265,010 SF
   DRAINAGE ANALYSIS % UNDISTURBED = 72.14%

MINIMUM TC = 6 MINUTES FOR ALL SUBCATCHMENTS. TC FLOW PATHS MAY NOT BE SHOWN FOR VERY SMALL DRAINAGE AREAS; HOWEVER, A TC OF 6 MINUTES HAS BEEN APPLIED IN THE HYDROLOGIC CALCULATIONS.

LEGEND

- INDICATES FLOW PATH
- INDICATES SUBCATCHMENT BOUNDARIES
- XX — INDICATES SUBCATCHMENT AREA LABEL
- XX — INDICATES POND LABEL
- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAY 4, 2026	FOR APPROVAL	
1	MAR 17, 2026	FOR APPROVAL	

DRAWN:	JJM	DESIGN:	JJM
CHECKED:	BDS	CHECKED:	BDS

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

TITLE:

POST-DEVELOPMENT DRAINAGE PLAN (FULL LOT)

FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.1

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft.



NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405

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   DRAINAGE ANALYSIS TOTAL AREA = 4,525,860 SF

   DRAINAGE ANALYSIS IMPERVIOUS = 228,060 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 5.04%

   DRAINAGE ANALYSIS UNDISTURBED = 3,265,010 SF
   DRAINAGE ANALYSIS % UNDISTURBED = 72.14%

MINIMUM TC = 6 MINUTES FOR ALL SUBCATCHMENTS. TC FLOW PATHS MAY NOT BE SHOWN FOR VERY SMALL DRAINAGE AREAS; HOWEVER, A TC OF 6 MINUTES HAS BEEN APPLIED IN THE HYDROLOGIC CALCULATIONS.

LEGEND

- INDICATES FLOW PATH
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TITLE:

POST-DEVELOPMENT DRAINAGE PLAN (FULL LOT)

FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.2

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

MATCH LINE (SEE SHEET SW2.1)
MATCH LINE (SEE SHEET SW2.3)

MATCH LINE (SEE SHEET SW2.3)
MATCH LINE (SEE SHEET SW2.4)

MATCH LINE (SEE SHEET SW2.2)
MATCH LINE (SEE SHEET SW2.3)

MATCH LINE (SEE SHEET SW2.3)
MATCH LINE (SEE SHEET SW2.5)

MATCH LINE (SEE SHEET SW2.3)
MATCH LINE (SEE SHEET SW2.6)

MILL BROOK

EDGE OF WETLANDS (EOW)

EXISTING STREAM (TYPICAL)

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405

2. THE INTENT OF THIS PLAN IS TO CALCULATE POST-DEVEOPLMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR MODELING VARIOUS STORM EVENTS IN PREPARATION FOR SITE IMPROVEMENTS.

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   DRAINAGE ANALYSIS TOTAL AREA = 4,525,860 SF

   DRAINAGE ANALYSIS IMPERVIOUS = 228,060 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 5.04%

   DRAINAGE ANALYSIS UNDISTURBED = 3,265,010 SF
   DRAINAGE ANALYSIS % UNDISTURBED = 72.14%

MINIMUM TC = 6 MINUTES FOR ALL SUBCATCHMENTS. TC FLOW PATHS MAY NOT BE SHOWN FOR VERY SMALL DRAINAGE AREAS; HOWEVER, A TC OF 6 MINUTES HAS BEEN APPLIED IN THE HYDROLOGIC CALCULATIONS.

LEGEND

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- INDICATES SUBCATCHMENT BOUNDARIES
- XX — INDICATES SUBCATCHMENT AREA LABEL
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- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
5/4/26

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2	MAY 4, 2026	FOR APPROVAL	
1	MAR 17, 2026	FOR APPROVAL	

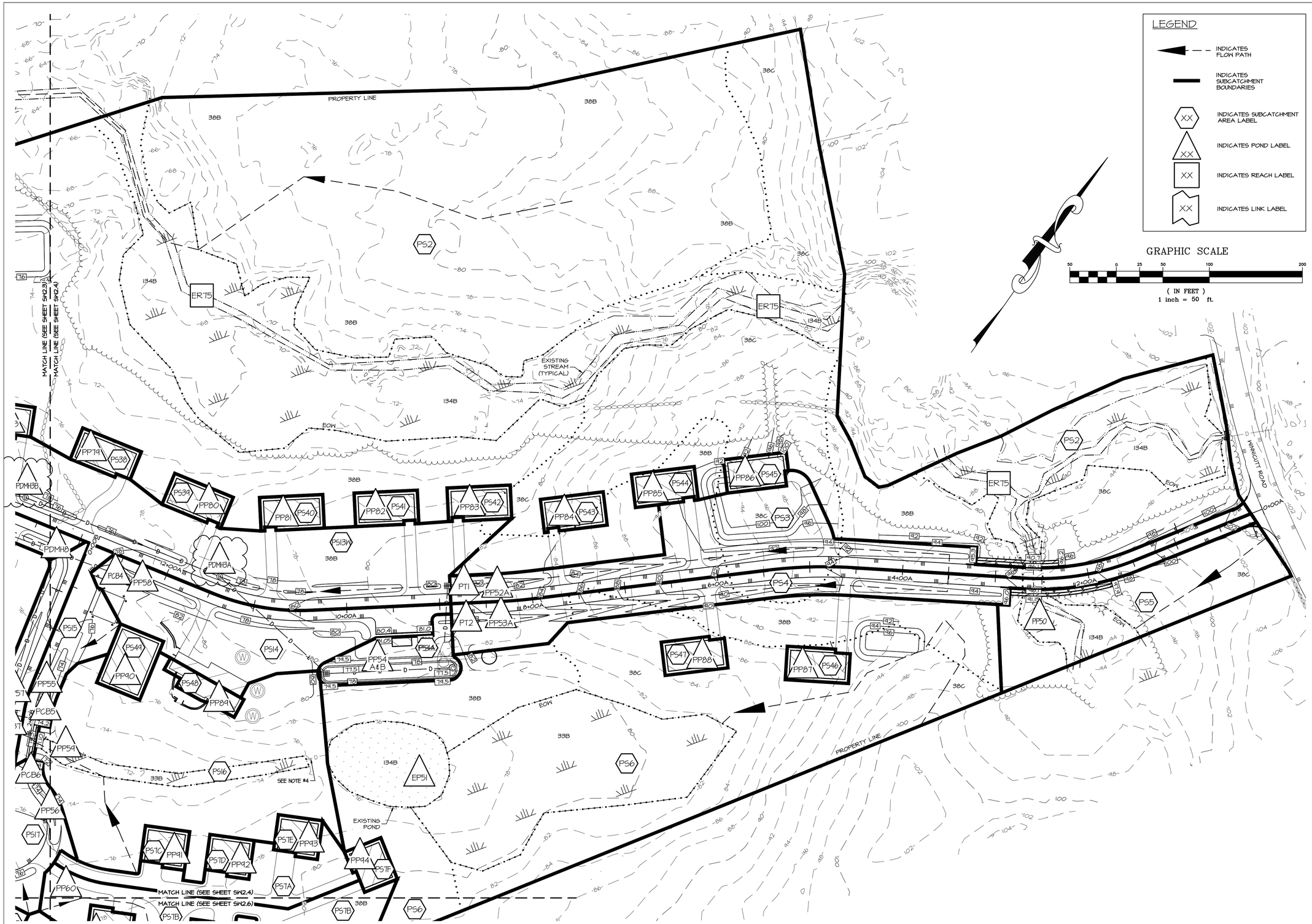
DRAWN: JJM | DESIGN: JJM
CHECKED: BDS | CHECKED: BDS

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STRATHAM, NH 03885

TITLE:
POST-DEVELOPMENT DRAINAGE PLAN (FULL LOT)
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.3



LEGEND

- INDICATES FLOW PATH
- INDICATES SUBCATCHMENT BOUNDARIES
- XX — INDICATES SUBCATCHMENT AREA LABEL
- XX — INDICATES POND LABEL
- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405
2. THE INTENT OF THIS PLAN IS TO CALCULATE POST-DEVEOPLMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR MODELING VARIOUS STORM EVENTS IN PREPARATION FOR SITE IMPROVEMENTS.
3. POST-DEVELOPMENT DRAINAGE AREA CALCS:

   DRAINAGE ANALYSIS TOTAL AREA = 4,525,860 SF

   DRAINAGE ANALYSIS IMPERVIOUS = 228,060 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 5.04%

   DRAINAGE ANALYSIS UNDISTURBED = 3,265,010 SF
   DRAINAGE ANALYSIS % UNDISTURBED = 72.14%
4. CALLOUT IDENTIFIES EXISTING 12" CORRUGATED METAL PIPE (CMP), 20 FEET IN LENGTH, WITH INVERT IN = 75.71 AND INVERT OUT = 75.04.
5. MINIMUM TC = 6 MINUTES FOR ALL SUBCATCHMENTS. TC FLOW PATHS MAY NOT BE SHOWN FOR VERY SMALL DRAINAGE AREAS; HOWEVER, A TC OF 6 MINUTES HAS BEEN APPLIED IN THE HYDROLOGIC CALCULATIONS.

SEAL:

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
2	MAY 4, 2026	FOR APPROVAL	
1	MAR 17, 2026	FOR APPROVAL	

DRAWN: JJM | DESIGN: JJM
CHECKED: BDS | CHECKED: BDS

EEI
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

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POST-DEVELOPMENT DRAINAGE PLAN (FULL LOT)
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STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.4

MATCH LINE (SEE SHEET SW2.2)
MATCH LINE (SEE SHEET SW2.5)
MATCH LINE (SEE SHEET SW2.3)
MATCH LINE (SEE SHEET SW2.5)
MATCH LINE (SEE SHEET SW2.5)
MATCH LINE (SEE SHEET SW2.6)

PROPERTY LINE
PROPERTY LINE

EOM
EOM

EXISTING STREAM (TYPICAL)

P510
P59
P58
P5120
PP112
P12
P10

32B
32C
32D
33B
134B
38B

NOTES:

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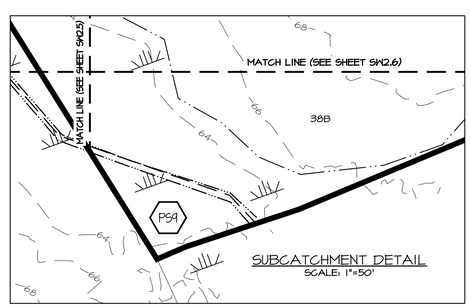
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- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



SUBCATCHMENT DETAIL
SCALE: 1"=50'

SEAL:

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No. 11236
LICENSED PROFESSIONAL ENGINEER
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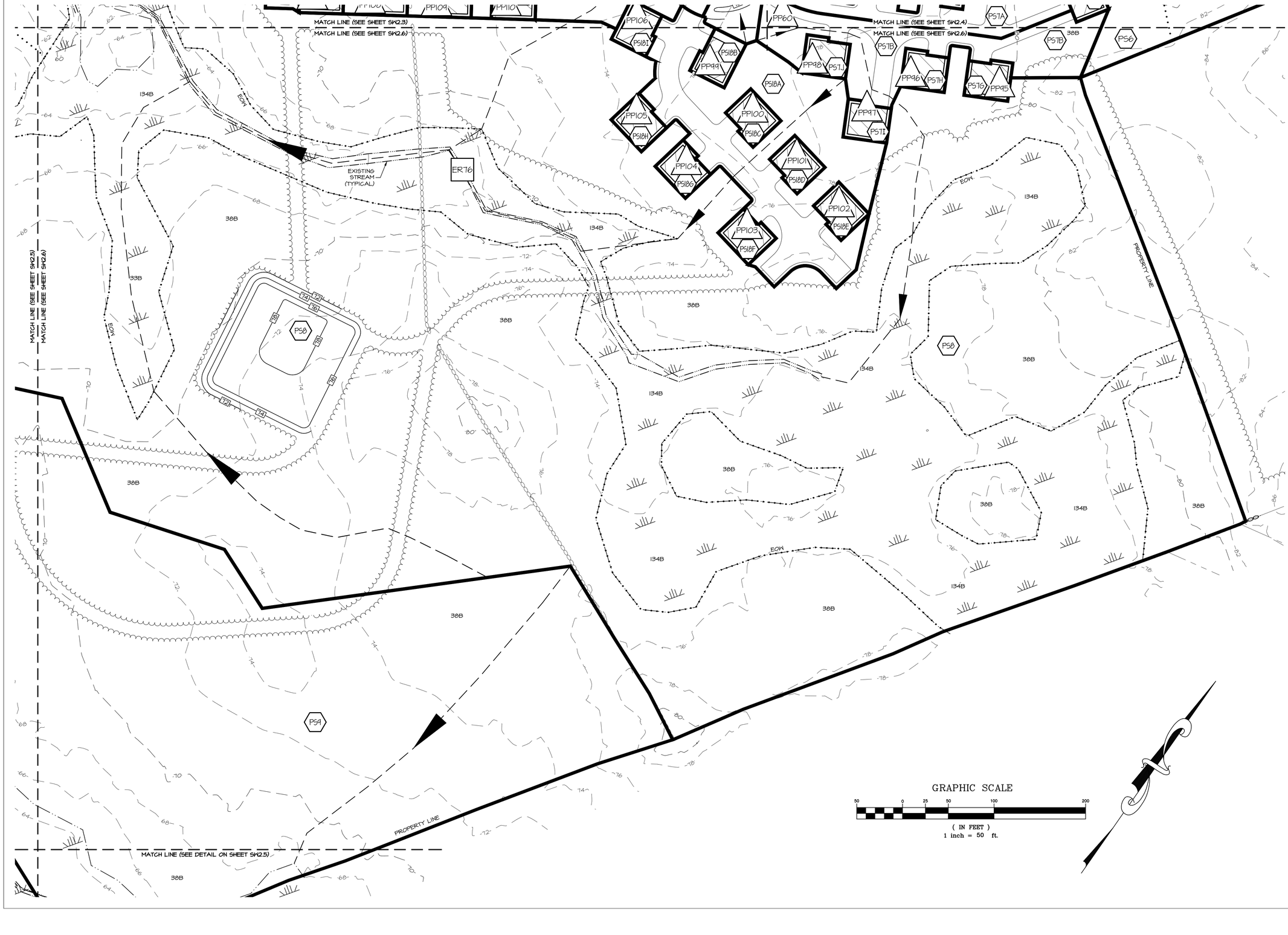
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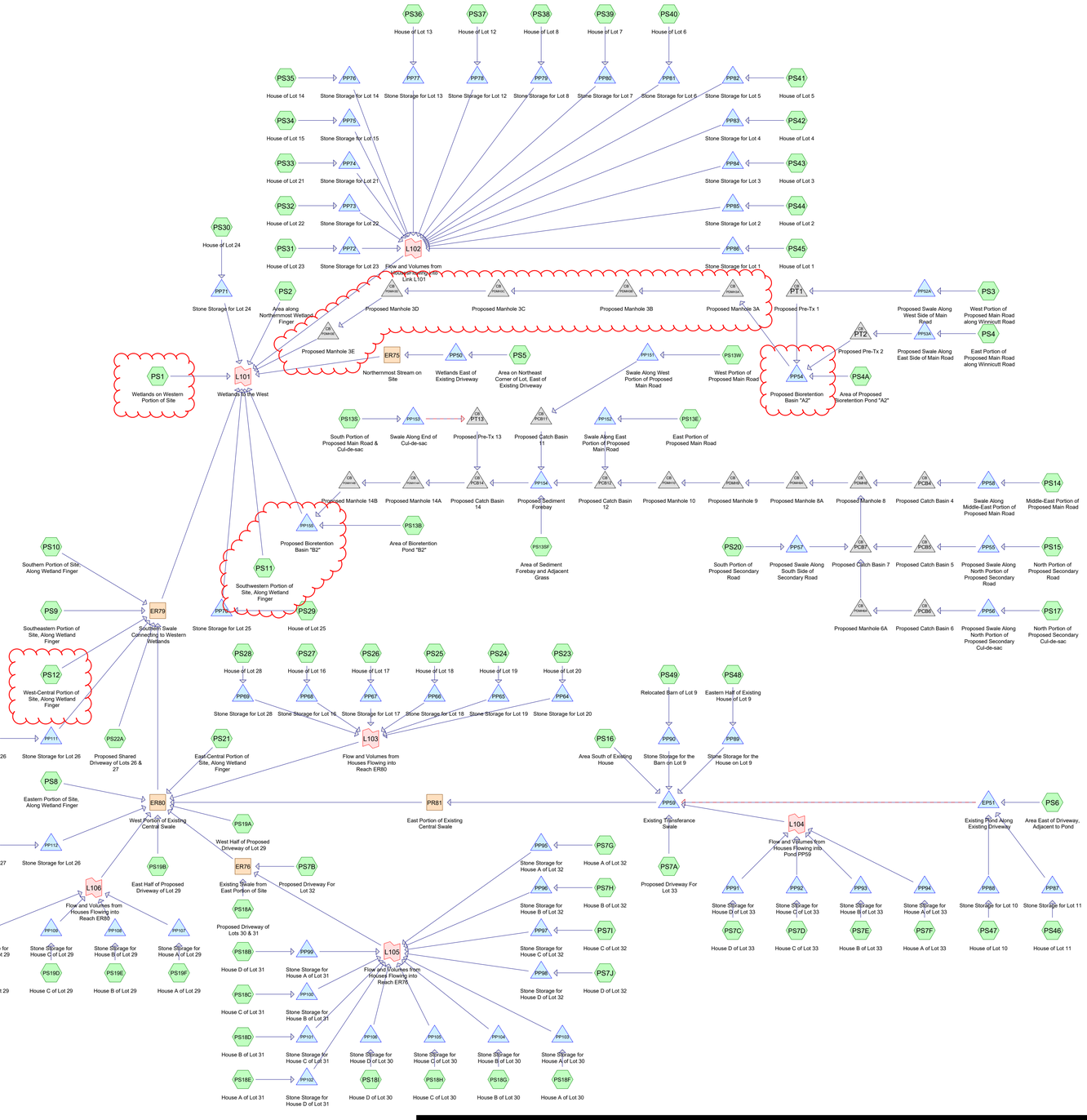
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PROJECT:	SCALE:	SHEET:
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PS36
House of Lot 13
PS37
House of Lot 12
PS38
House of Lot 8
PS39
House of Lot 7
PS40
House of Lot 6
PS35
House of Lot 14
PP76
Stone Storage for Lot 14
PP77
Stone Storage for Lot 13
PP78
Stone Storage for Lot 12
PP79
Stone Storage for Lot 8
PP80
Stone Storage for Lot 7
PP81
Stone Storage for Lot 6
PP82
Stone Storage for Lot 5
PS41
House of Lot 5
PS34
House of Lot 15
PP75
Stone Storage for Lot 15
PP83
Stone Storage for Lot 4
PS42
House of Lot 4
PS33
House of Lot 21
PP74
Stone Storage for Lot 21
PP84
Stone Storage for Lot 3
PS43
House of Lot 3
PS32
House of Lot 22
PP73
Stone Storage for Lot 22
PP85
Stone Storage for Lot 2
PS44
House of Lot 2
PS30
House of Lot 24
PS31
House of Lot 23
PP72
Stone Storage for Lot 23
L102
Flow and Volumes from Reach ER80 and Link L101
PP86
Stone Storage for Lot 1
PS45
House of Lot 1
PP71
Stone Storage for Lot 24
PS2
Area along Northernmost Wetland Finger
CB P1MH10
Proposed Manhole 3D
CB P1MH11
Proposed Manhole 3C
CB P1MH12
Proposed Manhole 3B
CB P1MH13
Proposed Manhole 3A
PT11
Proposed Pre-Tx 1
PP52A
Proposed Swale Along West Side of Main Road
PS3
West Portion of Proposed Main Road along Winnicutt Road
CB P1MH9
Proposed Manhole 3E
PT2
Proposed Pre-Tx 2
PP53A
Proposed Swale Along East Side of Main Road
PS4
East Portion of Proposed Main Road along Winnicutt Road
ER75
Northernmost Stream on Site
PP50
Wetlands East of Existing Driveway
PS5
Area on Northeast Corner of Lot, East of Existing Driveway
PS1
Wetlands on Western Portion of Site
L101
Wetlands to the West
PP151
Swale Along West Portion of Proposed Main Road
PS13W
West Portion of Proposed Main Road
PP54
Proposed Bioretention Basin "A2"
PS4A
Area of Proposed Bioretention Pond "A2"
PS13S
South Portion of Proposed Main Road & Cul-de-sac
PP153
Swale Along End of Cul-de-sac
CB PT13
Proposed Pre-Tx 13
CB PCB11
Proposed Catch Basin 11
PP152
Swale Along East Portion of Proposed Main Road
PS13E
East Portion of Proposed Main Road
CB P1MH14
Proposed Manhole 14B
CB P1MH15
Proposed Manhole 14A
CB PCB14
Proposed Catch Basin 14
PP154
Proposed Sediment Forebay
CB PCB12
Proposed Catch Basin 12
CB P1MH16
Proposed Manhole 10
CB P1MH17
Proposed Manhole 9
CB P1MH18
Proposed Manhole 8A
CB PCB13
Proposed Manhole 8
CB PCB4
Proposed Catch Basin 4
PP58
Swale Along Middle-East Portion of Proposed Main Road
PS14
Middle-East Portion of Proposed Main Road
PP155
Proposed Bioretention Basin "B2"
PS13B
Area of Bioretention Pond "B2"
PS13SF
Area of Sediment Forebay and Adjacent Grass
PS10
Southern Portion of Site, Along Wetland Finger
PS11
Southwestern Portion of Site, Along Wetland Finger
PS20
South Portion of Proposed Secondary Road
PP57
Proposed Swale Along South Side of Secondary Road
CB PCB7
Proposed Catch Basin 7
CB PCB5
Proposed Catch Basin 5
PP55
Proposed Swale Along North Portion of Proposed Secondary Road
PS15
North Portion of Proposed Secondary Road
PS9
Southeastern Portion of Site, Along Wetland Finger
ER79
Southern Swale Connecting to Western Wetlands
PP156
Stone Storage for Lot 25
PS29
House of Lot 25
CB P1MH19
Proposed Manhole 6A
CB PCB6
Proposed Catch Basin 6
PP56
Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac
PS17
North Portion of Proposed Secondary Cul-de-sac
PS12
West-Central Portion of Site, Along Wetland Finger
PS28
House of Lot 28
PS27
House of Lot 16
PS26
House of Lot 17
PS25
House of Lot 18
PS24
House of Lot 19
PS23
House of Lot 20
PP68
Stone Storage for Lot 28
PP69
Stone Storage for Lot 16
PP67
Stone Storage for Lot 17
PP66
Stone Storage for Lot 18
PP65
Stone Storage for Lot 19
PP64
Stone Storage for Lot 20
PS49
Relocated Barn of Lot 9
PS48
Eastern Half of Existing House of Lot 9
PS22B
House of Lot 26
PP111
Stone Storage for Lot 26
PS22A
Proposed Shared Driveway of Lots 26 & 27
PS21
East-Central Portion of Site, Along Wetland Finger
L103
Flow and Volumes from Houses Flowing into Reach ER80
PS16
Area South of Existing House
PP90
Stone Storage for the Barn on Lot 9
PP89
Stone Storage for the House on Lot 9
PS8
Eastern Portion of Site, Along Wetland Finger
ER80
West Portion of Existing Central Swale
PR81
East Portion of Existing Central Swale
PP59
Existing Transferance Swale
EP51
Existing Pond Along Existing Driveway
PS6
Area East of Driveway, Adjacent to Pond
PS22C
House of Lot 27
PP112
Stone Storage for Lot 26
PS19A
West Half of Proposed Driveway of Lot 29
L104
Flow and Volumes from Houses Flowing into Pond PP59
PS19B
East Half of Proposed Driveway of Lot 29
ER76
Existing Swale from East Portion of Site
PS7B
Proposed Driveway For Lot 32
PS7A
Proposed Driveway For Lot 33
PP91
Stone Storage for House D of Lot 33
PP92
Stone Storage for House C of Lot 33
PP93
Stone Storage for House B of Lot 33
PP94
Stone Storage for House A of Lot 33
PP88
Stone Storage for Lot 10
PP87
Stone Storage for Lot 11
L106
Flow and Volumes from Houses Flowing into Reach ER80
PS18A
Proposed Driveway of Lots 30 & 31
PS7C
House D of Lot 33
PS7D
House C of Lot 33
PS7E
House B of Lot 33
PS7F
House A of Lot 33
PS47
House of Lot 10
PS46
House of Lot 11
PP110
Stone Storage for House C of Lot 29
PP109
Stone Storage for House C of Lot 29
PP108
Stone Storage for House B of Lot 29
PP107
Stone Storage for House A of Lot 29
PS19C
House D of Lot 29
PS19D
House C of Lot 29
PS19E
House B of Lot 29
PS19F
House A of Lot 29
PS18B
House D of Lot 31
PP99
Stone Storage for House A of Lot 31
PS18C
House C of Lot 31
PP100
Stone Storage for House B of Lot 31
PS18D
House B of Lot 31
PP101
Stone Storage for House C of Lot 31
PS18E
House A of Lot 31
PP102
Stone Storage for House D of Lot 31
L105
Flow and Volumes from Houses Flowing into Reach ER76
PP95
Stone Storage for House A of Lot 32
PS7G
House A of Lot 32
PP96
Stone Storage for House B of Lot 32
PS7H
House B of Lot 32
PP97
Stone Storage for House C of Lot 32
PS7I
House C of Lot 32
PP98
Stone Storage for House D of Lot 32
PS7J
House D of Lot 32
PP105
Stone Storage for House D of Lot 30
PS18I
House D of Lot 30
PP106
Stone Storage for House C of Lot 30
PS18H
House C of Lot 30
PP104
Stone Storage for House B of Lot 30
PS18G
House B of Lot 30
PP103
Stone Storage for House A of Lot 30
PS18F
House A of Lot 30
Subcat
Reach
Pond
Link
Routing Diagram for Postdevelopment HydroCAD (FULL LOT) 04-30-26
Prepared by Emanuel Engineering, Printed 5/5/2026
HydroCAD® 10.20-8a s/n 01104 © 2025 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AM
1	10-yr (+15%)	NH-Stratham-Winnicutt 08-26-24 24-hr S1	10-yr	Default	24.00	1	5.65	

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
23.470	74	>75% Grass cover, Good, HSG C (PS1, PS11, PS12, PS13B, PS13E, PS13S, PS13SF, PS13W, PS14, PS15, PS16, PS17, PS18A, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19B, PS19C, PS19D, PS19E, PS19F, PS2, PS20, PS21, PS22A, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS3, PS30, PS31, PS32, PS33, PS34, PS35, PS36, PS37, PS38, PS39, PS4, PS40, PS41, PS42, PS43, PS44, PS45, PS46, PS47, PS48, PS49, PS4A, PS5, PS6, PS7A, PS7B, PS7C, PS7D, PS7E, PS7F, PS7G, PS7H, PS7I, PS7J, PS8, PS9)
0.239	80	>75% Grass cover, Good, HSG D (PS12, PS2, PS20, PS5, PS6)
3.427	98	Paved parking, HSG C (PS1, PS12, PS13E, PS13S, PS13W, PS14, PS15, PS17, PS18A, PS19A, PS19B, PS2, PS20, PS21, PS22A, PS3, PS4, PS6, PS7A, PS7B)
0.015	98	Paved parking, HSG D (PS12)
1.793	98	Roofs, HSG C (PS14, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS30, PS31, PS32, PS33, PS34, PS35, PS36, PS37, PS38, PS39, PS40, PS41, PS42, PS43, PS44, PS45, PS46, PS47, PS48, PS49, PS4A, PS6, PS7C, PS7D, PS7E, PS7F, PS7G, PS7H, PS7I, PS7J)
51.424	70	Woods, Good, HSG C (PS1, PS10, PS11, PS12, PS2, PS21, PS5, PS6, PS7B, PS8, PS9)
23.530	77	Woods, Good, HSG D (PS1, PS10, PS11, PS12, PS2, PS21, PS5, PS8, PS9)
103.899	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
80.115	HSG C	PS1, PS10, PS11, PS12, PS13B, PS13E, PS13S, PS13SF, PS13W, PS14, PS15, PS16, PS17, PS18A, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19A, PS19B, PS19C, PS19D, PS19E, PS19F, PS2, PS20, PS21, PS22A, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS3, PS30, PS31, PS32, PS33, PS34, PS35, PS36, PS37, PS38, PS39, PS4, PS40, PS41, PS42, PS43, PS44, PS45, PS46, PS47, PS48, PS49, PS4A, PS5, PS6, PS7A, PS7B, PS7C, PS7D, PS7E, PS7F, PS7G, PS7H, PS7I, PS7J, PS8, PS9
23.784	HSG D	PS1, PS10, PS11, PS12, PS2, PS20, PS21, PS5, PS6, PS8, PS9
0.000	Other	
103.899		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	23.470	0.239	0.000	23.710	>75% Grass cover, Good	PS1, PS11, PS12, PS13B, PS13E, PS13S, PS13SF, PS13W, PS14, PS15, PS16, PS17, PS18A, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19B, PS19C, PS19D, PS19E, PS19F, PS2, PS20, PS21, PS22A, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS3, PS30, PS31, PS32, PS33, PS34,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	3.427	0.015	0.000	3.442	Paved parking	PS1, PS12, PS13E, PS13S, PS13W, PS14, PS15, PS17, PS18A, PS19A, PS19B, PS2, PS20, PS21, PS22A, PS3, PS4, PS6, PS7A, PS7B
0.000	0.000	1.793	0.000	0.000	1.793	Roofs	PS14, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS30, PS31, PS32, PS33,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	51.424	23.530	0.000	74.954	Woods, Good	PS1, PS10, PS11, PS12, PS2, PS21, PS5, PS6, PS7B, PS8, PS9
0.000	**0.000**	**80.115**	**23.784**	**0.000**	**103.899**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	EP51	75.71	75.04	20.0	0.0335	0.025	0.0	12.0	0.0	
2	PCB11	63.00	62.50	85.0	0.0059	0.013	0.0	15.0	0.0	
3	PCB12	63.00	62.50	85.0	0.0059	0.013	0.0	18.0	0.0	
4	PCB14	57.00	51.50	205.0	0.0268	0.013	0.0	24.0	0.0	
5	PCB4	73.25	71.00	65.0	0.0346	0.013	0.0	12.0	0.0	
6	PCB5	70.20	69.80	35.0	0.0114	0.013	0.0	12.0	0.0	
7	PCB6	71.35	70.90	35.0	0.0129	0.013	0.0	12.0	0.0	
8	PCB7	69.70	69.20	175.0	0.0029	0.013	0.0	18.0	0.0	
9	PDMH10	64.80	63.10	230.0	0.0074	0.013	0.0	18.0	0.0	
10	PDMH14A	51.40	50.85	205.0	0.0027	0.013	0.0	24.0	0.0	
11	PDMH14B	50.75	50.40	140.0	0.0025	0.013	0.0	24.0	0.0	
12	PDMH3A	73.40	72.00	225.0	0.0062	0.013	0.0	12.0	0.0	
13	PDMH3B	71.90	69.00	180.0	0.0161	0.013	0.0	12.0	0.0	
14	PDMH3C	68.90	64.50	295.0	0.0149	0.013	0.0	12.0	0.0	
15	PDMH3D	64.40	62.00	190.0	0.0126	0.013	0.0	12.0	0.0	
16	PDMH3E	61.90	55.00	300.0	0.0230	0.013	0.0	12.0	0.0	
17	PDMH6A	70.80	70.50	45.0	0.0067	0.013	0.0	12.0	0.0	
18	PDMH8	69.10	68.80	105.0	0.0029	0.013	0.0	18.0	0.0	
19	PDMH8A	68.70	67.50	200.0	0.0060	0.013	0.0	18.0	0.0	
20	PDMH9	67.00	65.00	150.0	0.0133	0.013	0.0	18.0	0.0	
21	PP100	73.00	72.55	150.0	0.0030	0.010	0.0	4.0	0.0	
22	PP101	74.00	73.75	75.0	0.0033	0.010	0.0	4.0	0.0	
23	PP102	74.00	73.85	50.0	0.0030	0.010	0.0	4.0	0.0	
24	PP103	71.00	70.85	50.0	0.0030	0.010	0.0	4.0	0.0	
25	PP104	70.50	70.40	30.0	0.0033	0.010	0.0	4.0	0.0	
26	PP105	70.00	69.70	100.0	0.0030	0.010	0.0	4.0	0.0	
27	PP106	71.00	70.55	150.0	0.0030	0.010	0.0	4.0	0.0	
28	PP107	68.00	67.55	150.0	0.0030	0.010	0.0	4.0	0.0	
29	PP108	68.50	68.05	150.0	0.0030	0.010	0.0	4.0	0.0	
30	PP109	66.50	66.05	150.0	0.0030	0.010	0.0	4.0	0.0	
31	PP110	66.00	65.70	100.0	0.0030	0.010	0.0	4.0	0.0	
32	PP111	59.00	58.70	100.0	0.0030	0.010	0.0	4.0	0.0	
33	PP112	61.00	60.70	100.0	0.0030	0.010	0.0	4.0	0.0	
34	PP152	65.40	64.90	30.0	0.0167	0.013	0.0	12.0	0.0	
35	PP155	46.75	46.30	45.0	0.0100	0.013	0.0	12.0	0.0	
36	PP155	46.75	46.75	205.0	0.0000	0.010	0.0	6.0	0.0	
37	PP50	91.15	90.70	40.0	0.0113	0.025	0.0	24.0	0.0	
38	PP52A	79.90	78.75	30.0	0.0383	0.013	0.0	12.0	0.0	
39	PP54	74.25	73.50	150.0	0.0050	0.013	0.0	12.0	0.0	
40	PP54	74.25	74.25	135.0	0.0000	0.010	0.0	6.0	0.0	
41	PP59	71.10	66.00	80.0	0.0637	0.013	0.0	12.0	0.0	

Pipe Listing (all nodes) (continued)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
42	PP64	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
43	PP65	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
44	PP66	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
45	PP67	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
46	PP68	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
47	PP69	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
48	PP70	50.00	49.70	100.0	0.0030	0.010	0.0	4.0	0.0	
49	PP71	50.00	49.70	100.0	0.0030	0.010	0.0	4.0	0.0	
50	PP72	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
51	PP73	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
52	PP74	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
53	PP75	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
54	PP76	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
55	PP77	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
56	PP78	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
57	PP79	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
58	PP80	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
59	PP81	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
60	PP82	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
61	PP83	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
62	PP84	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
63	PP85	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
64	PP86	88.00	87.80	10.0	0.0200	0.010	0.0	4.0	0.0	
65	PP87	76.00	75.70	100.0	0.0030	0.010	0.0	4.0	0.0	
66	PP88	76.00	75.70	100.0	0.0030	0.010	0.0	4.0	0.0	
67	PP89	72.50	72.20	100.0	0.0030	0.010	0.0	4.0	0.0	
68	PP90	72.50	72.20	100.0	0.0030	0.010	0.0	4.0	0.0	
69	PP91	72.00	71.90	30.0	0.0033	0.010	0.0	4.0	0.0	
70	PP92	72.00	71.90	30.0	0.0033	0.010	0.0	4.0	0.0	
71	PP93	72.50	72.40	30.0	0.0033	0.010	0.0	4.0	0.0	
72	PP94	75.00	74.90	30.0	0.0033	0.010	0.0	4.0	0.0	
73	PP95	76.50	76.40	30.0	0.0033	0.010	0.0	4.0	0.0	
74	PP96	75.00	74.90	30.0	0.0033	0.010	0.0	4.0	0.0	
75	PP97	74.00	73.90	30.0	0.0033	0.010	0.0	4.0	0.0	
76	PP98	74.00	73.55	150.0	0.0030	0.010	0.0	4.0	0.0	
77	PP99	72.00	71.45	175.0	0.0031	0.010	0.0	4.0	0.0	
78	PT1	78.70	78.50	60.0	0.0033	0.013	0.0	12.0	0.0	
79	PT13	59.10	58.95	50.0	0.0030	0.013	0.0	12.0	0.0	
80	PT2	79.00	78.50	20.0	0.0250	0.013	0.0	12.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS1: Wetlands on Western Runoff Area=556,155 sf 0.44% Impervious Runoff Depth=2.89"
Flow Length=495' Tc=19.4 min CN=74 Runoff=22.25 cfs 3.078 af

SubcatchmentPS10: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=11.66 cfs 1.707 af

SubcatchmentPS11: Southwestern Runoff Area=121,920 sf 0.00% Impervious Runoff Depth=2.80"
Flow Length=765' Tc=17.6 min CN=73 Runoff=4.91 cfs 0.653 af

SubcatchmentPS12: West-Central Portion Runoff Area=192,970 sf 2.95% Impervious Runoff Depth=2.89"
Flow Length=800' Tc=10.8 min CN=74 Runoff=10.02 cfs 1.068 af

SubcatchmentPS13B: Area of Bioretention Runoff Area=15,600 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=1.01 cfs 0.086 af

SubcatchmentPS13E: East Portion of Runoff Area=21,120 sf 45.31% Impervious Runoff Depth=3.97"
Flow Length=680' Slope=0.0138 '/' Tc=18.9 min CN=85 Runoff=1.17 cfs 0.161 af

SubcatchmentPS13S: South Portion of Runoff Area=26,510 sf 47.89% Impervious Runoff Depth=3.97"
Tc=6.0 min CN=85 Runoff=2.33 cfs 0.202 af

SubcatchmentPS13SF: Area of Sediment Runoff Area=8,085 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=0.52 cfs 0.045 af

SubcatchmentPS13W: West Portion of Runoff Area=90,320 sf 22.64% Impervious Runoff Depth=3.37"
Flow Length=1,125' Slope=0.0124 '/' Tc=29.3 min CN=79 Runoff=3.46 cfs 0.582 af

SubcatchmentPS14: Middle-East Portion Runoff Area=23,645 sf 32.10% Impervious Runoff Depth=3.67"
Tc=6.0 min CN=82 Runoff=1.93 cfs 0.166 af

SubcatchmentPS15: North Portion of Runoff Area=8,640 sf 46.41% Impervious Runoff Depth=3.97"
Tc=6.0 min CN=85 Runoff=0.76 cfs 0.066 af

SubcatchmentPS16: Area South of Runoff Area=51,745 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=3.34 cfs 0.286 af

SubcatchmentPS17: North Portion of Runoff Area=8,970 sf 49.33% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=86 Runoff=0.81 cfs 0.070 af

SubcatchmentPS18A: Proposed Driveway Runoff Area=34,870 sf 35.93% Impervious Runoff Depth=3.77"
Flow Length=257' Slope=0.0200 '/' Tc=8.6 min CN=83 Runoff=2.58 cfs 0.251 af

SubcatchmentPS18B: House D of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18C: House C of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18D: House B of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18E: House A of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18F: House A of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18G: House B of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18H: House C of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18I: House D of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19A: West Half of Runoff Area=5,205 sf 100.00% Impervious Runoff Depth=5.41"
Flow Length=785' Tc=7.3 min CN=98 Runoff=0.52 cfs 0.054 af

SubcatchmentPS19B: East Half of Runoff Area=21,895 sf 37.09% Impervious Runoff Depth=3.77"
Flow Length=945' Tc=11.2 min CN=83 Runoff=1.46 cfs 0.158 af

SubcatchmentPS19C: House D of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19D: House C of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19E: House B of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19F: House A of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS2: Area along Runoff Area=938,365 sf 0.22% Impervious Runoff Depth=2.80"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=34.65 cfs 5.028 af

SubcatchmentPS20: South Portion of Runoff Area=14,275 sf 53.66% Impervious Runoff Depth=4.18"
Tc=6.0 min CN=87 Runoff=1.31 cfs 0.114 af

SubcatchmentPS21: East-Central Portion Runoff Area=219,360 sf 2.18% Impervious Runoff Depth=2.80"
Flow Length=945' Tc=11.7 min CN=73 Runoff=10.58 cfs 1.175 af

SubcatchmentPS22A: Proposed Shared Runoff Area=10,995 sf 75.58% Impervious Runoff Depth=4.73"
Flow Length=705' Tc=10.4 min CN=92 Runoff=0.90 cfs 0.099 af

SubcatchmentPS22B: House of Lot 26 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.020 af

SubcatchmentPS22C: House of Lot 27 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.020 af

SubcatchmentPS23: House of Lot 20 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS24: House of Lot 19 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS25: House of Lot 18 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS26: House of Lot 17 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS27: House of Lot 16 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS28: House of Lot 28 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS29: House of Lot 25 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS3: West Portion of Runoff Area=30,865 sf 38.73% Impervious Runoff Depth=3.77"
Flow Length=570' Tc=10.3 min CN=83 Runoff=2.12 cfs 0.222 af

SubcatchmentPS30: House of Lot 24 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS31: House of Lot 23 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS32: House of Lot 22 Runoff Area=2,450 sf 68.57% Impervious Runoff Depth=4.51"
Tc=6.0 min CN=90 Runoff=0.24 cfs 0.021 af

SubcatchmentPS33: House of Lot 21 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS34: House of Lot 15 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS35: House of Lot 14 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS36: House of Lot 13 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS37: House of Lot 12 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS38: House of Lot 8 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS39: House of Lot 7 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS4: East Portion of Runoff Area=20,515 sf 49.72% Impervious Runoff Depth=4.08"
Flow Length=570' Tc=10.3 min CN=86 Runoff=1.51 cfs 0.160 af

SubcatchmentPS40: House of Lot 6 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS41: House of Lot 5 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS42: House of Lot 4 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS43: House of Lot 3 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS44: House of Lot 2 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS45: House of Lot 1 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS46: House of Lot 11 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS47: House of Lot 10 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS48: Eastern Half of Runoff Area=1,890 sf 72.75% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS49: Relocated Barn of Lot Runoff Area=3,400 sf 74.12% Impervious Runoff Depth=4.73"
Tc=6.0 min CN=92 Runoff=0.34 cfs 0.031 af

SubcatchmentPS4A: Area of Proposed Runoff Area=6,725 sf 3.12% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=75 Runoff=0.45 cfs 0.038 af

SubcatchmentPS5: Area on Northeast Runoff Area=23,375 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=1.51 cfs 0.129 af

SubcatchmentPS6: Area East of Runoff Area=145,690 sf 0.96% Impervious Runoff Depth=2.99"
Flow Length=415' Tc=7.6 min CN=75 Runoff=8.94 cfs 0.832 af

SubcatchmentPS7A: Proposed Driveway Runoff Area=10,610 sf 51.13% Impervious Runoff Depth=4.08"
Flow Length=165' Tc=6.4 min CN=86 Runoff=0.93 cfs 0.083 af

Subcatchment PS7B: Proposed Driveway Runoff Area=18,235 sf 37.48% Impervious Runoff Depth=3.77"
Flow Length=575' Tc=17.7 min CN=83 Runoff=0.99 cfs 0.131 af

Subcatchment PS7C: House D of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7D: House C of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7E: House B of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7F: House A of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7G: House A of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7H: House B of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7I: House C of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7J: House D of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS8: Eastern Portion of Runoff Area=806,305 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=22.38 cfs 4.180 af

Subcatchment PS9: Southeastern Portion Runoff Area=644,095 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=17.22 cfs 3.228 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.06' Max Vel=1.02 fps Inflow=1.44 cfs 0.128 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.46 cfs 0.128 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.23' Max Vel=2.56 fps Inflow=4.80 cfs 0.586 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=4.00 cfs 0.586 af

Reach ER79: Southern Swale Avg. Flow Depth=1.59' Max Vel=3.05 fps Inflow=65.09 cfs 13.358 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=64.55 cfs 13.358 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.68' Max Vel=3.25 fps Inflow=33.73 cfs 7.236 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=33.62 cfs 7.236 af

Reach PR81: East Portion of Existing Avg. Flow Depth=0.17' Max Vel=2.08 fps Inflow=2.90 cfs 0.869 af
n=0.030 L=760.0' S=0.0204 '/' Capacity=138.56 cfs Outflow=2.80 cfs 0.869 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.08' Storage=24,829 cf Inflow=9.21 cfs 0.874 af
Primary=0.49 cfs 0.385 af Secondary=0.00 cfs 0.000 af Outflow=0.49 cfs 0.385 af

Pond PCB11: Proposed Catch Basin 11 Peak Elev=64.13' Inflow=3.44 cfs 0.581 af
15.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=3.44 cfs 0.581 af

Pond PCB12: Proposed Catch Basin 12 Peak Elev=64.28' Inflow=5.20 cfs 0.564 af
18.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=5.20 cfs 0.564 af

Pond PCB14: Proposed Catch Basin 14 Peak Elev=58.26' Inflow=7.96 cfs 1.177 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0268 '/' Outflow=7.96 cfs 1.177 af

Pond PCB4: Proposed Catch Basin 4 Peak Elev=74.02' Inflow=1.92 cfs 0.162 af
12.0" Round Culvert n=0.013 L=65.0' S=0.0346 '/' Outflow=1.92 cfs 0.162 af

Pond PCB5: Proposed Catch Basin 5 Peak Elev=70.96' Inflow=0.76 cfs 0.066 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0114 '/' Outflow=0.76 cfs 0.066 af

Pond PCB6: Proposed Catch Basin 6 Peak Elev=71.82' Inflow=0.80 cfs 0.070 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0129 '/' Outflow=0.80 cfs 0.070 af

Pond PCB7: Proposed Catch Basin 7 Peak Elev=70.86' Inflow=2.65 cfs 0.241 af
18.0" Round Culvert n=0.013 L=175.0' S=0.0029 '/' Outflow=2.65 cfs 0.241 af

Pond PDMH10: Proposed Manhole 10 Peak Elev=65.93' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=230.0' S=0.0074 '/' Outflow=4.57 cfs 0.403 af

Pond PDMH14A: Proposed Manhole 14A Peak Elev=53.13' Inflow=7.96 cfs 1.177 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0027 '/' Outflow=7.96 cfs 1.177 af

Pond PDMH14B: Proposed Manhole 14B Peak Elev=52.36' Inflow=7.96 cfs 1.177 af
24.0" Round Culvert n=0.013 L=140.0' S=0.0025 '/' Outflow=7.96 cfs 1.177 af

Pond PDMH3A: Proposed Manhole 3A Peak Elev=73.95' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=225.0' S=0.0062 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3B: Proposed Manhole 3B Peak Elev=72.41' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=180.0' S=0.0161 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3C: Proposed Manhole 3C Peak Elev=69.41' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=295.0' S=0.0149 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3D: Proposed Manhole 3D Peak Elev=64.91' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=190.0' S=0.0126 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3E: Proposed Manhole 3E Peak Elev=62.41' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=300.0' S=0.0230 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH6A: Proposed Manhole 6A Peak Elev=71.31' Inflow=0.80 cfs 0.070 af
12.0" Round Culvert n=0.013 L=45.0' S=0.0067 '/' Outflow=0.80 cfs 0.070 af

Pond PDMH8: Proposed Manhole 8 Peak Elev=70.45' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=105.0' S=0.0029 '/' Outflow=4.57 cfs 0.403 af

Pond PDMH8A: Proposed Manhole 8A Peak Elev=69.83' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=4.57 cfs 0.403 af

Pond PDMH9: Proposed Manhole 9 Peak Elev=68.04' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=150.0' S=0.0133 '/' Outflow=4.57 cfs 0.403 af

Pond PP100: Stone Storage for House B of Lot Peak Elev=73.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP101: Stone Storage for House C of Lot Peak Elev=74.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=75.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP102: Stone Storage for House D of Lot Peak Elev=74.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP103: Stone Storage for House A of Lot Peak Elev=71.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP104: Stone Storage for House B of Lot Peak Elev=70.83' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP105: Stone Storage for House C of Lot Peak Elev=70.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP106: Stone Storage for House D of Lot Peak Elev=71.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP107: Stone Storage for House A of Lot Peak Elev=68.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP108: Stone Storage for House B of Lot Peak Elev=68.84' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP109: Stone Storage for House C of Lot Peak Elev=66.84' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP110: Stone Storage for House C of Lot Peak Elev=66.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP111: Stone Storage for Lot 26 Peak Elev=59.38' Storage=95 cf Inflow=0.23 cfs 0.020 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.020 af

Pond PP112: Stone Storage for Lot 26 Peak Elev=61.38' Storage=95 cf Inflow=0.23 cfs 0.020 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.020 af

Pond PP151: Swale Along West Portion of Peak Elev=65.91' Storage=148 cf Inflow=3.46 cfs 0.582 af
Outflow=3.44 cfs 0.581 af

Pond PP152: Swale Along East Portion of Peak Elev=65.96' Storage=39 cf Inflow=1.17 cfs 0.161 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0167 '/' Outflow=1.16 cfs 0.161 af

Pond PP153: Swale Along End of Cul-de-sac Peak Elev=61.45' Storage=18 cf Inflow=2.33 cfs 0.202 af
Outflow=2.33 cfs 0.202 af

Pond PP154: Proposed Sediment Forebay Peak Elev=63.42' Storage=10,930 cf Inflow=7.16 cfs 1.190 af
Outflow=6.30 cfs 0.976 af

Pond PP155: Proposed Bioretention Basin Peak Elev=50.72' Storage=29,684 cf Inflow=8.86 cfs 1.264 af
Outflow=0.94 cfs 1.252 af

Pond PP50: Wetlands East of Existing Driveway Peak Elev=91.76' Storage=221 cf Inflow=1.51 cfs 0.129 af
24.0" Round Culvert n=0.025 L=40.0' S=0.0113 '/' Outflow=1.44 cfs 0.128 af

Pond PP52A: Proposed Swale Along West Side Peak Elev=80.71' Storage=103 cf Inflow=2.12 cfs 0.222 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0383 '/' Outflow=2.08 cfs 0.222 af

Pond PP53A: Proposed Swale Along East Side Peak Elev=80.29' Storage=80 cf Inflow=1.51 cfs 0.160 af
Outflow=1.51 cfs 0.159 af

Pond PP54: Proposed Bioretention Basin Peak Elev=77.83' Storage=6,022 cf Inflow=3.90 cfs 0.420 af
Outflow=0.96 cfs 0.419 af

Pond PP55: Proposed Swale Along North Portion Peak Elev=72.38' Storage=6 cf Inflow=0.76 cfs 0.066 af
Outflow=0.76 cfs 0.066 af

Pond PP56: Proposed Swale Along North Peak Elev=73.41' Storage=23 cf Inflow=0.81 cfs 0.070 af
Outflow=0.80 cfs 0.070 af

Pond PP57: Proposed Swale Along South Side Peak Elev=73.44' Storage=599 cf Inflow=1.31 cfs 0.114 af
Outflow=1.15 cfs 0.106 af

Pond PP58: Swale Along Middle-East Portion Peak Elev=76.78' Storage=234 cf Inflow=1.93 cfs 0.166 af
Outflow=1.92 cfs 0.162 af

Pond PP59: Existing Transferance Swale Peak Elev=72.19' Storage=1,778 cf Inflow=4.97 cfs 0.869 af
12.0" Round Culvert n=0.013 L=80.0' S=0.0637 '/' Outflow=2.90 cfs 0.869 af

Pond PP64: Stone Storage for Lot 20 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP65: Stone Storage for Lot 19 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP66: Stone Storage for Lot 18 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP67: Stone Storage for Lot 17 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP68: Stone Storage for Lot 16 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP69: Stone Storage for Lot 28 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP70: Stone Storage for Lot 25 Peak Elev=50.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP71: Stone Storage for Lot 24 Peak Elev=50.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP72: Stone Storage for Lot 23 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP73: Stone Storage for Lot 22 Peak Elev=88.37' Storage=114 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP74: Stone Storage for Lot 21 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP75: Stone Storage for Lot 15 Peak Elev=88.38' Storage=110 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP76: Stone Storage for Lot 14 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP77: Stone Storage for Lot 13 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP78: Stone Storage for Lot 12 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP79: Stone Storage for Lot 8 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP80: Stone Storage for Lot 7 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP81: Stone Storage for Lot 6 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP82: Stone Storage for Lot 5 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP83: Stone Storage for Lot 4 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP84: Stone Storage for Lot 3 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP85: Stone Storage for Lot 2 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP86: Stone Storage for Lot 1 Peak Elev=88.31' Storage=88 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=10.0' S=0.0200 '/' Outflow=0.16 cfs 0.021 af

Pond PP87: Stone Storage for Lot 11 Peak Elev=76.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP88: Stone Storage for Lot 10 Peak Elev=76.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP89: Stone Storage for the House on Lot Peak Elev=72.84' Storage=70 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP90: Stone Storage for the Barn on Lot 9 Peak Elev=73.01' Storage=180 cf Inflow=0.34 cfs 0.031 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.16 cfs 0.031 af

Pond PP91: Stone Storage for House D of Lot 33 Peak Elev=72.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP92: Stone Storage for House C of Lot 33 Peak Elev=72.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP93: Stone Storage for House B of Lot 33 Peak Elev=72.83' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP94: Stone Storage for House A of Lot 33 Peak Elev=75.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP95: Stone Storage for House A of Lot 32 Peak Elev=76.83' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP96: Stone Storage for House B of Lot 32 Peak Elev=75.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP97: Stone Storage for House C of Lot 32 Peak Elev=74.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP98: Stone Storage for House D of Lot 32 Peak Elev=74.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP99: Stone Storage for House A of Lot 31 Peak Elev=72.34' Storage=75 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=175.0' S=0.0031 '/' Outflow=0.13 cfs 0.017 af

Pond PT1: Proposed Pre-Tx 1 Peak Elev=79.74' Inflow=2.08 cfs 0.222 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0033 '/' Outflow=2.08 cfs 0.222 af

Pond PT13: Proposed Pre-Tx 13 Peak Elev=60.25' Inflow=2.33 cfs 0.202 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0030 '/' Outflow=2.33 cfs 0.202 af

Pond PT2: Proposed Pre-Tx 2 Peak Elev=79.66' Inflow=1.51 cfs 0.159 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0250 '/' Outflow=1.51 cfs 0.159 af

Link L101: Wetlands to the West Inflow=126.19 cfs 24.275 af
Primary=126.19 cfs 24.275 af

Link L102: Flow and Volumes from HousesFlowing into Link L101 Inflow=2.17 cfs 0.317 af
Primary=2.17 cfs 0.317 af

Link L103: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.86 cfs 0.126 af
Primary=0.86 cfs 0.126 af

Link L104: Flow and Volumes from Houses Flowing into Pond PP59 Inflow=0.52 cfs 0.068 af
Primary=0.52 cfs 0.068 af

Link L105: Flow and Volumes from Houses Flowing into Reach ER76 Inflow=1.55 cfs 0.203 af
Primary=1.55 cfs 0.203 af

Link L106: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.51 cfs 0.068 af
Primary=0.51 cfs 0.068 af

Total Runoff Area = 103.899 ac Runoff Volume = 25.008 af Average Runoff Depth = 2.89"
94.96% Pervious = 98.664 ac 5.04% Impervious = 5.236 ac

Summary for Subcatchment PS1: Wetlands on Western Portion of Site

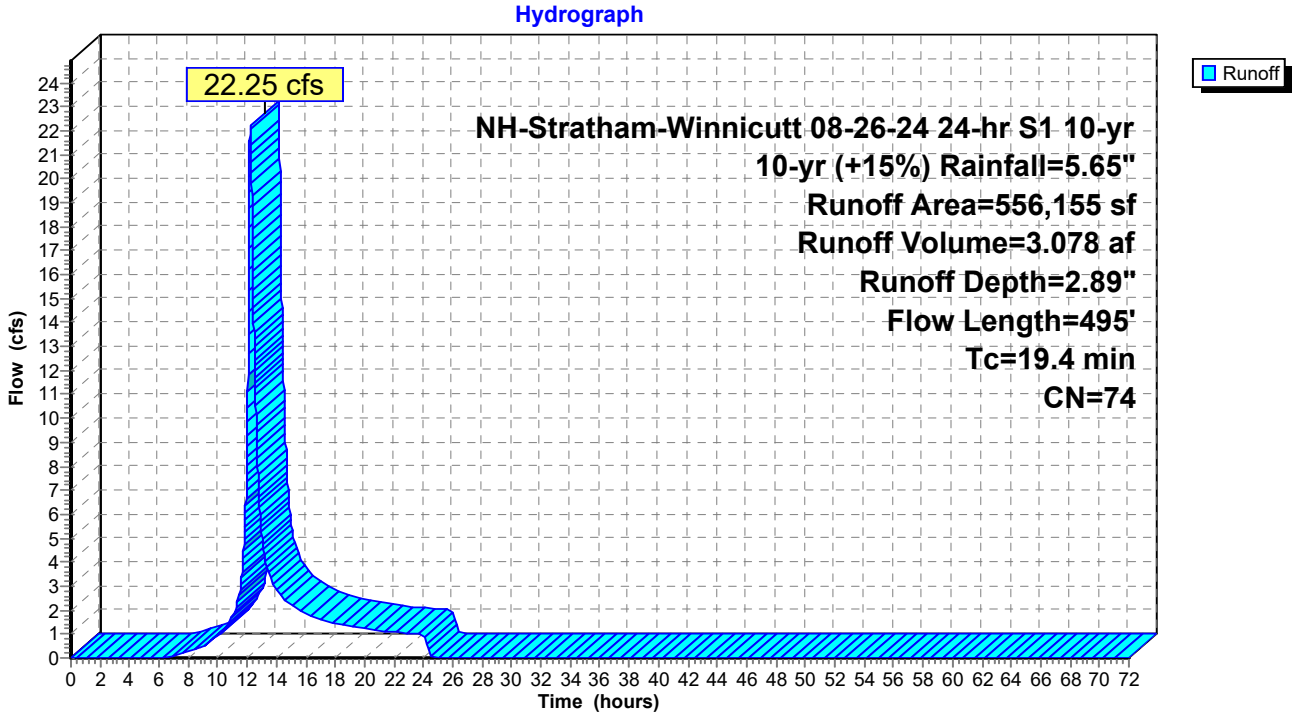
Runoff = 22.25 cfs @ 12.22 hrs, Volume= 3.078 af, Depth= 2.89"
Routed to Link L101 : Wetlands to the West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
50,145	74	>75% Grass cover, Good, HSG C
201,780	70	Woods, Good, HSG C
301,775	77	Woods, Good, HSG D
2,455	98	Paved parking, HSG C
556,155	74	Weighted Average
553,700		99.56% Pervious Area
2,455		0.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
7.9	445	0.0350	0.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
19.4	495	Total			

Subcatchment PS1: Wetlands on Western Portion of Site



Summary for Subcatchment PS10: Southern Portion of Site, Along Wetland Finger

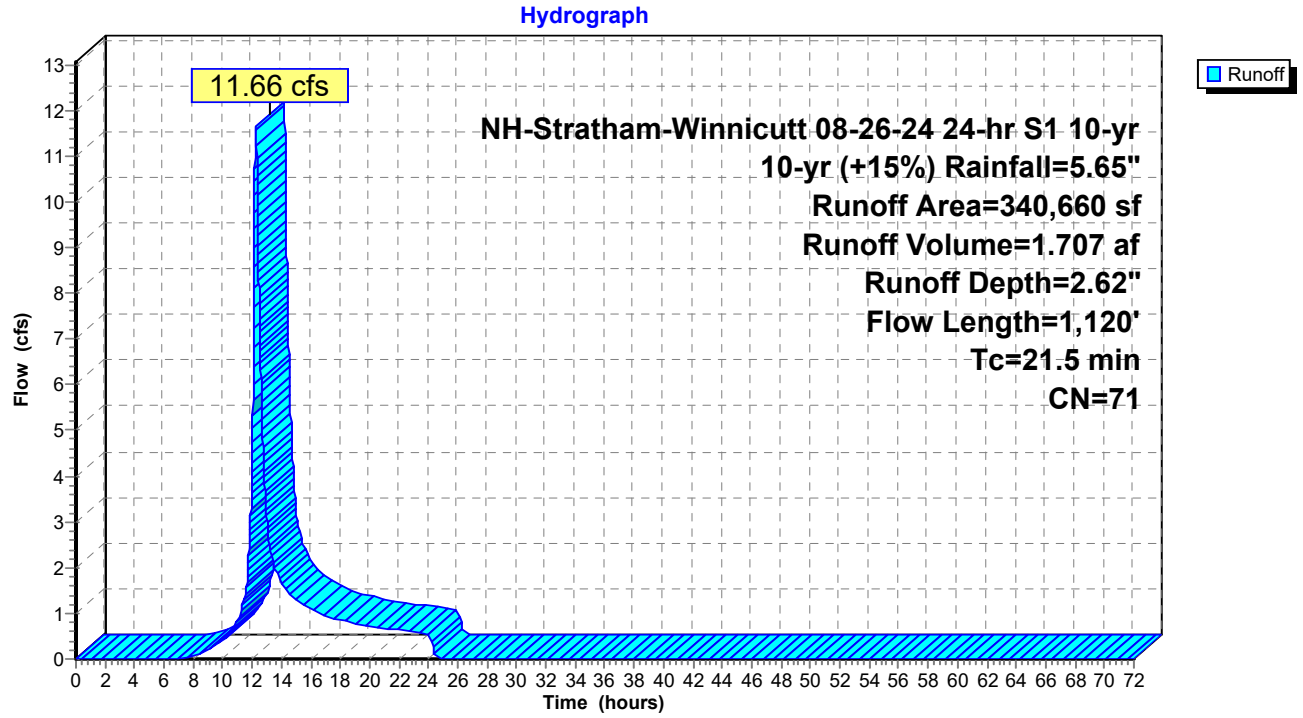
Runoff = 11.66 cfs @ 12.25 hrs, Volume= 1.707 af, Depth= 2.62"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
271,440	70	Woods, Good, HSG C
69,220	77	Woods, Good, HSG D
340,660	71	Weighted Average
340,660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
6.3	420	0.0500	1.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.3	85	0.0500	1.12		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
2.4	565	0.0100	3.88	34.89	**Channel Flow, Existing Swale from Southern Potion of Site** Area= 9.0 sf Perim= 13.0' r= 0.69' n= 0.030 Earth, grassed & winding
21.5	1,120	Total			

Subcatchment PS10: Southern Portion of Site, Along Wetland Finger



Summary for Subcatchment PS11: Southwestern Portion of Site, Along Wetland Finger

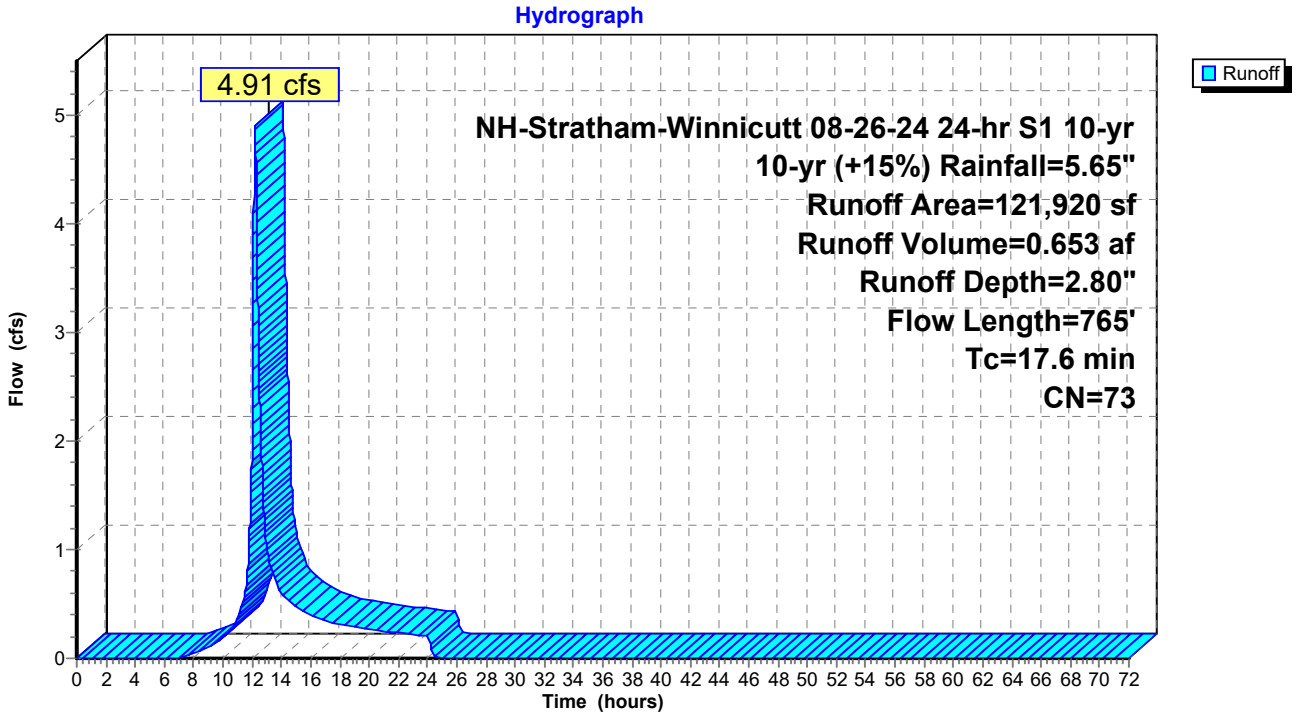
Runoff = 4.91 cfs @ 12.19 hrs, Volume= 0.653 af, Depth= 2.80"
Routed to Link L101 : Wetlands to the West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
12,820	74	>75% Grass cover, Good, HSG C
66,705	70	Woods, Good, HSG C
42,395	77	Woods, Good, HSG D
121,920	73	Weighted Average
121,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0150	0.06		**Sheet Flow, Woods**
					Woods: Light underbrush n= 0.400 P2= 3.71"
1.5	120	0.0750	1.37		**Shallow Concentrated Flow, Woods**
					Woodland Kv= 5.0 fps
2.7	110	0.0180	0.67		**Shallow Concentrated Flow, Wetlands**
					Woodland Kv= 5.0 fps
0.5	485	0.0300	14.95	1,375.30	**Channel Flow, Southern Swale Connecting to Western Wetlands**
					Area= 92.0 sf Perim= 40.0' r= 2.30'
					n= 0.030 Earth, grassed & winding
17.6	765	Total			

Subcatchment PS11: Southwestern Portion of Site, Along Wetland Finger



Summary for Subcatchment PS12: West-Central Portion of Site, Along Wetland Finger

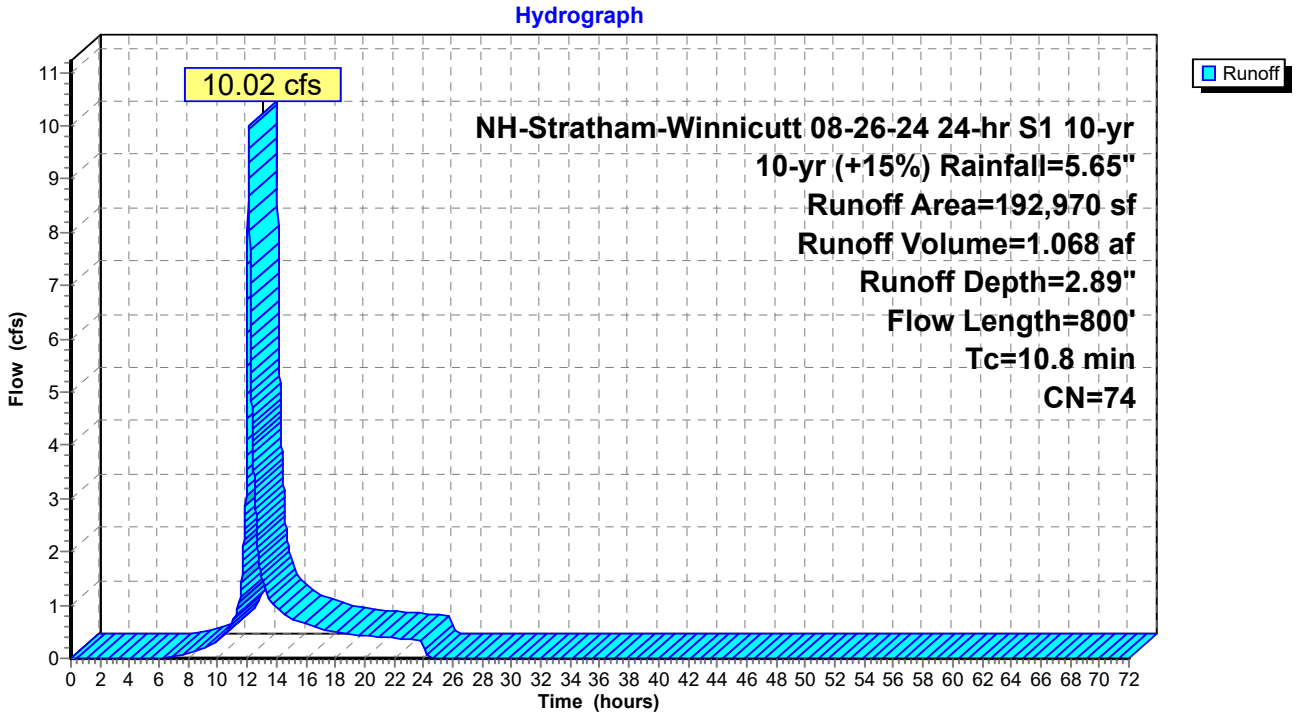
Runoff = 10.02 cfs @ 12.10 hrs, Volume= 1.068 af, Depth= 2.89"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
53,220	74	>75% Grass cover, Good, HSG C
530	80	>75% Grass cover, Good, HSG D
84,510	70	Woods, Good, HSG C
49,025	77	Woods, Good, HSG D
5,040	98	Paved parking, HSG C
645	98	Paved parking, HSG D
192,970	74	Weighted Average
187,285		97.05% Pervious Area
5,685		2.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.1	80	0.0300	1.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.5	50	0.1000	1.58		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
2.3	620	0.0100	4.52	169.55	**Channel Flow, West Portion of Existing Central Swale** Area= 37.5 sf Perim= 43.0' r= 0.87' n= 0.030 Earth, grassed & winding
10.8	800	Total			

Subcatchment PS12: West-Central Portion of Site, Along Wetland Finger



Summary for Subcatchment PS13B: Area of Bioretention Pond "B2"

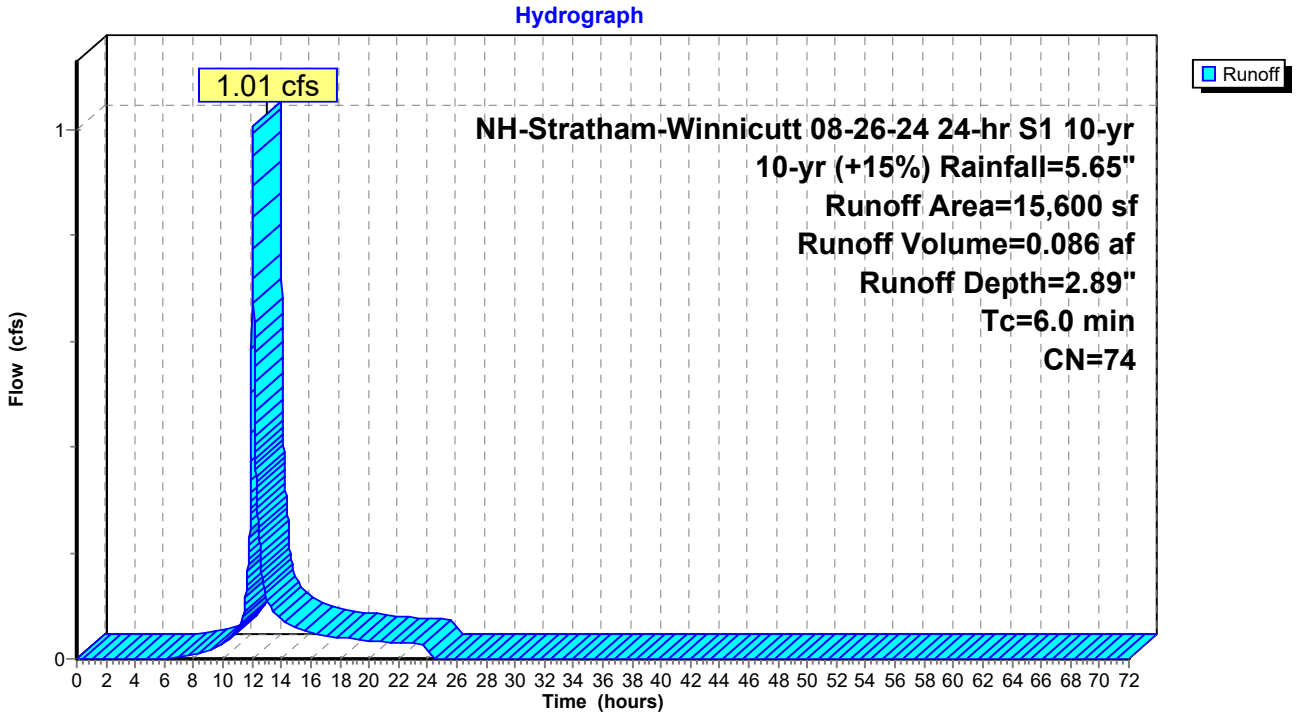
Runoff = 1.01 cfs @ 12.04 hrs, Volume= 0.086 af, Depth= 2.89"
Routed to Pond PP155 : Proposed Bioretention Basin "B2"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
15,600	74	>75% Grass cover, Good, HSG C
15,600		100.00% Pervious Area

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

Subcatchment PS13B: Area of Bioretention Pond "B2"



Summary for Subcatchment PS13E: East Portion of Proposed Main Road

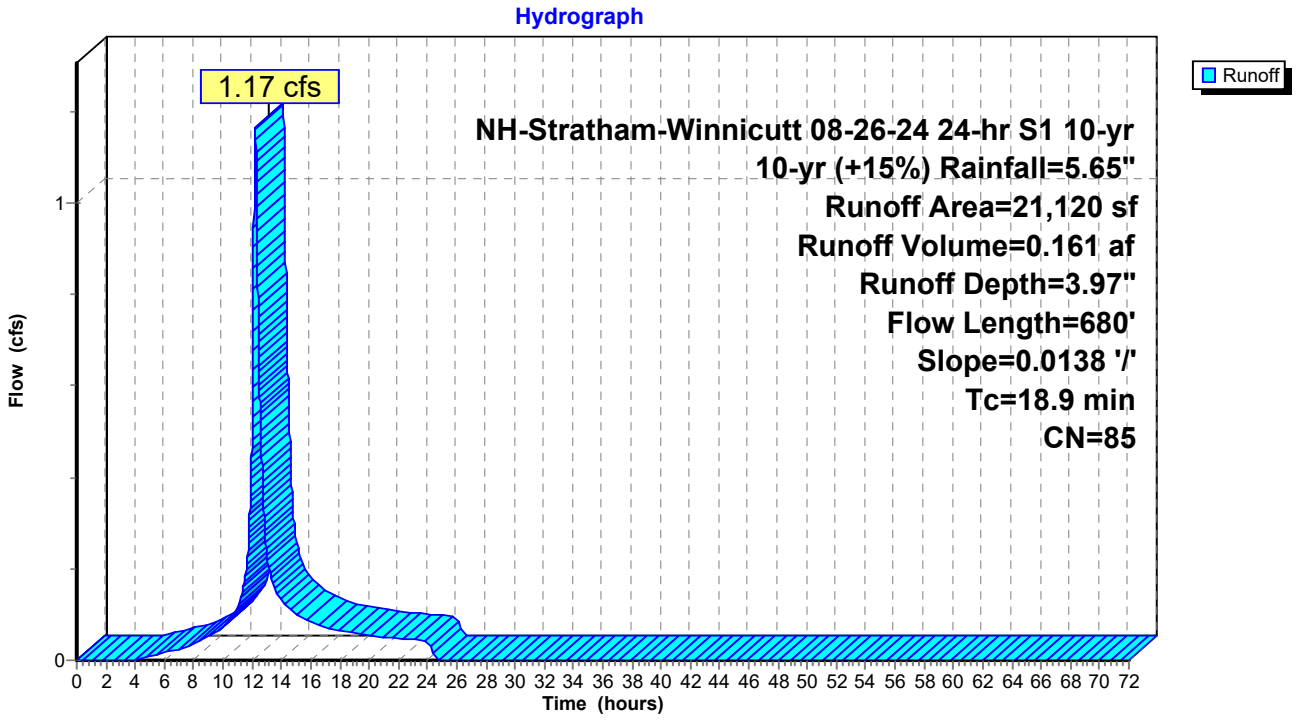
Runoff = 1.17 cfs @ 12.20 hrs, Volume= 0.161 af, Depth= 3.97"
Routed to Pond PP152 : Swale Along East Portion of Proposed Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
11,550	74	>75% Grass cover, Good, HSG C
9,570	98	Paved parking, HSG C
21,120	85	Weighted Average
11,550		54.69% Pervious Area
9,570		45.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0138	0.14		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
12.8	630	0.0138	0.82		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
18.9	680	Total			

Subcatchment PS13E: East Portion of Proposed Main Road



Summary for Subcatchment PS13S: South Portion of Proposed Main Road & Cul-de-sac

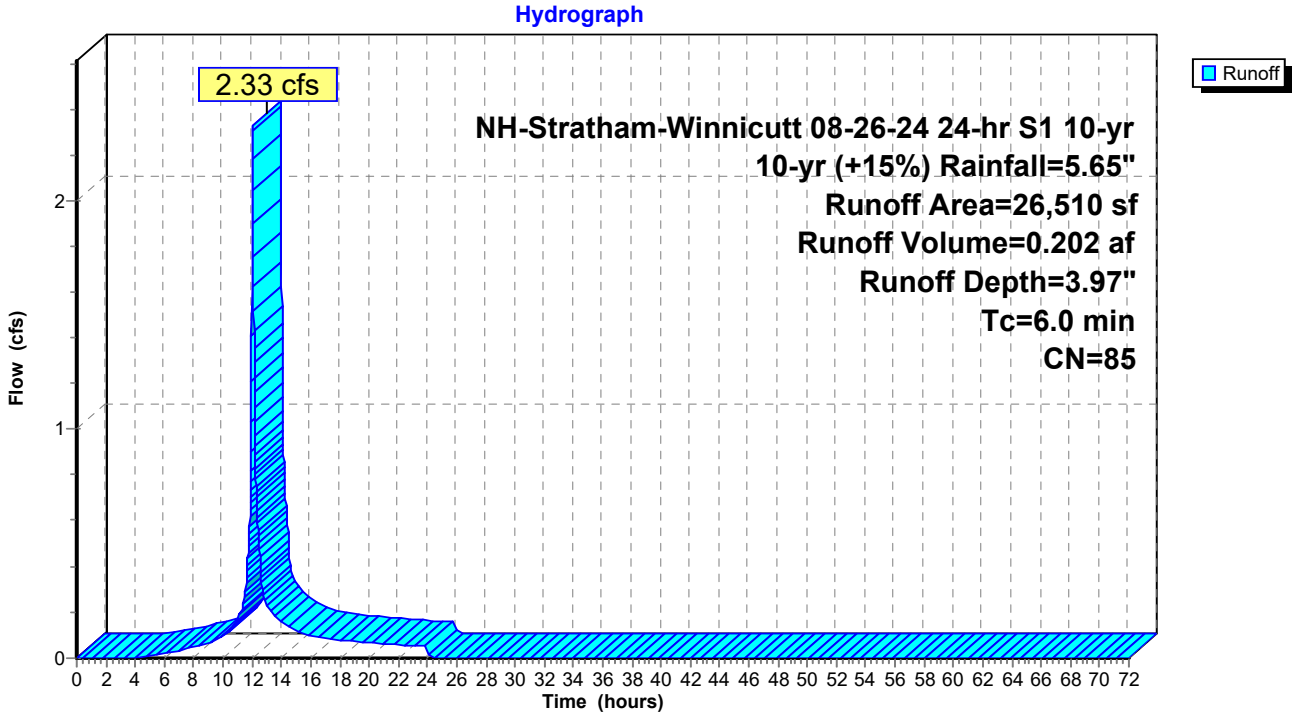
Runoff = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af, Depth= 3.97"
Routed to Pond PP153 : Swale Along End of Cul-de-sac

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
13,815	74	>75% Grass cover, Good, HSG C
12,695	98	Paved parking, HSG C
26,510	85	Weighted Average
13,815		52.11% Pervious Area
12,695		47.89% Impervious Area

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

Subcatchment PS13S: South Portion of Proposed Main Road & Cul-de-sac



Summary for Subcatchment PS13SF: Area of Sediment Forebay and Adjacent Grass

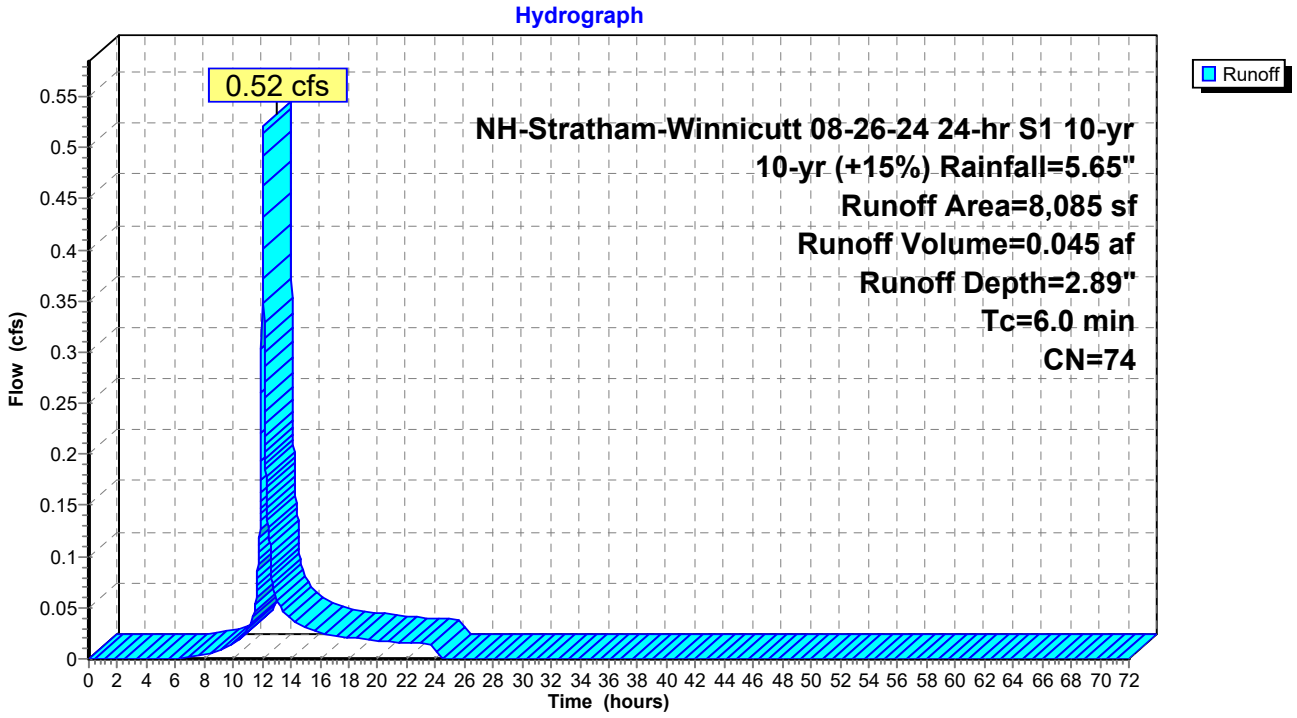
Runoff = 0.52 cfs @ 12.04 hrs, Volume= 0.045 af, Depth= 2.89"
Routed to Pond PP154 : Proposed Sediment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
8,085	74	>75% Grass cover, Good, HSG C
8,085		100.00% Pervious Area

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

Subcatchment PS13SF: Area of Sediment Forebay and Adjacent Grass



Summary for Subcatchment PS13W: West Portion of Proposed Main Road

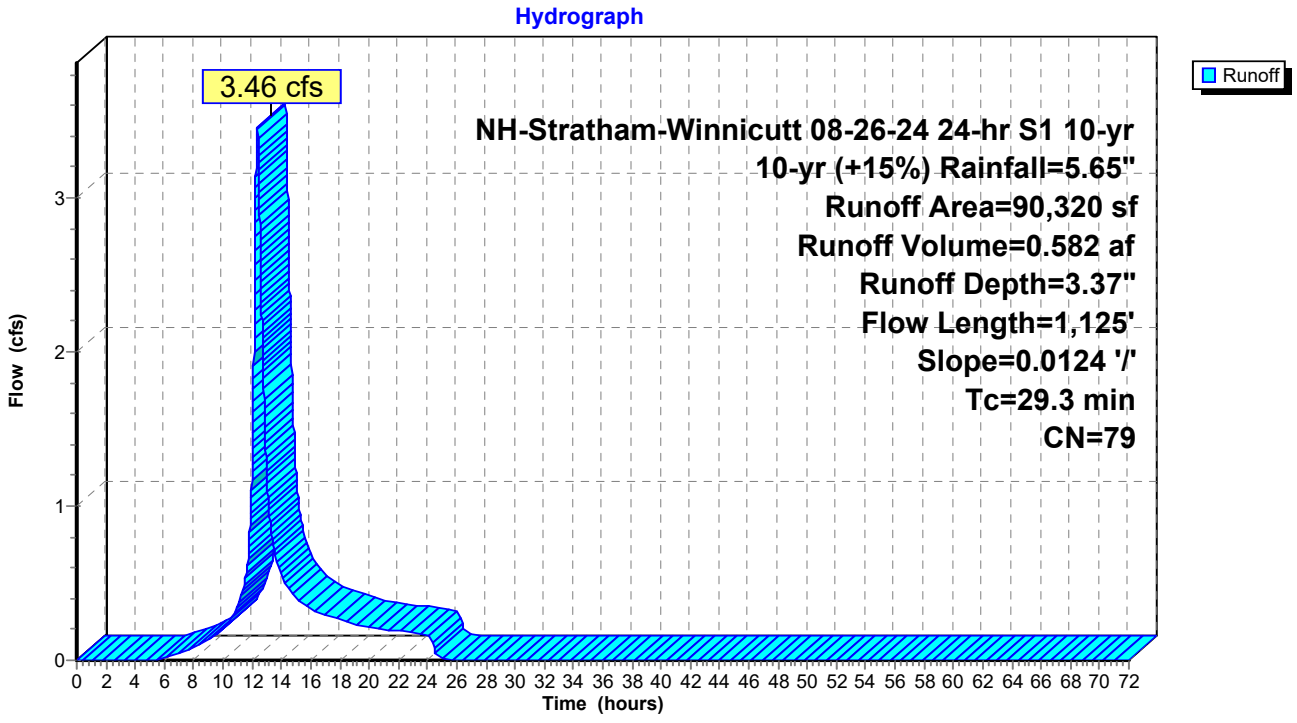
Runoff = 3.46 cfs @ 12.34 hrs, Volume= 0.582 af, Depth= 3.37"
Routed to Pond PP151 : Swale Along West Portion of Proposed Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
69,870	74	>75% Grass cover, Good, HSG C
20,450	98	Paved parking, HSG C
90,320	79	Weighted Average
69,870		77.36% Pervious Area
20,450		22.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0124	0.13		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
23.0	1,075	0.0124	0.78		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
29.3	1,125	Total			

Subcatchment PS13W: West Portion of Proposed Main Road



Summary for Subcatchment PS14: Middle-East Portion of Proposed Main Road

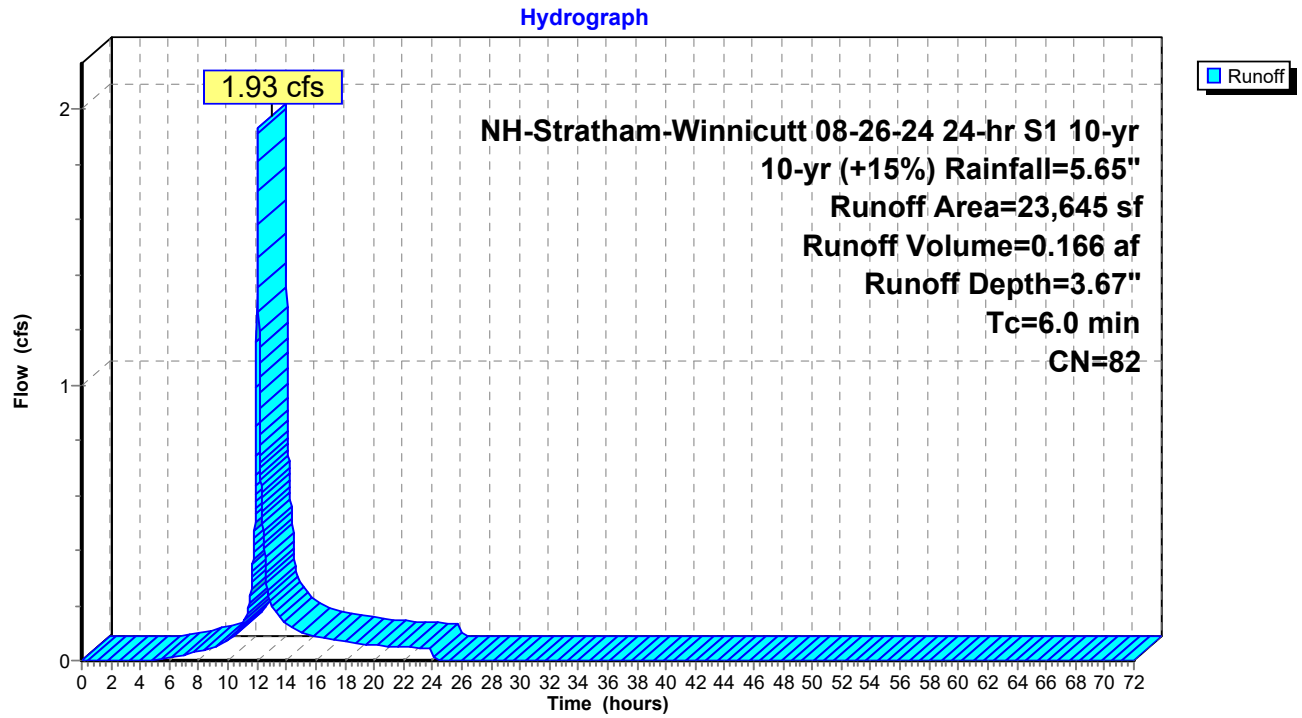
Runoff = 1.93 cfs @ 12.04 hrs, Volume= 0.166 af, Depth= 3.67"
Routed to Pond PP58 : Swale Along Middle-East Portion of Proposed Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
16,055	74	>75% Grass cover, Good, HSG C
1,250	98	Roofs, HSG C
6,340	98	Paved parking, HSG C
23,645	82	Weighted Average
16,055		67.90% Pervious Area
7,590		32.10% Impervious Area

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

Subcatchment PS14: Middle-East Portion of Proposed Main Road



Summary for Subcatchment PS15: North Portion of Proposed Secondary Road

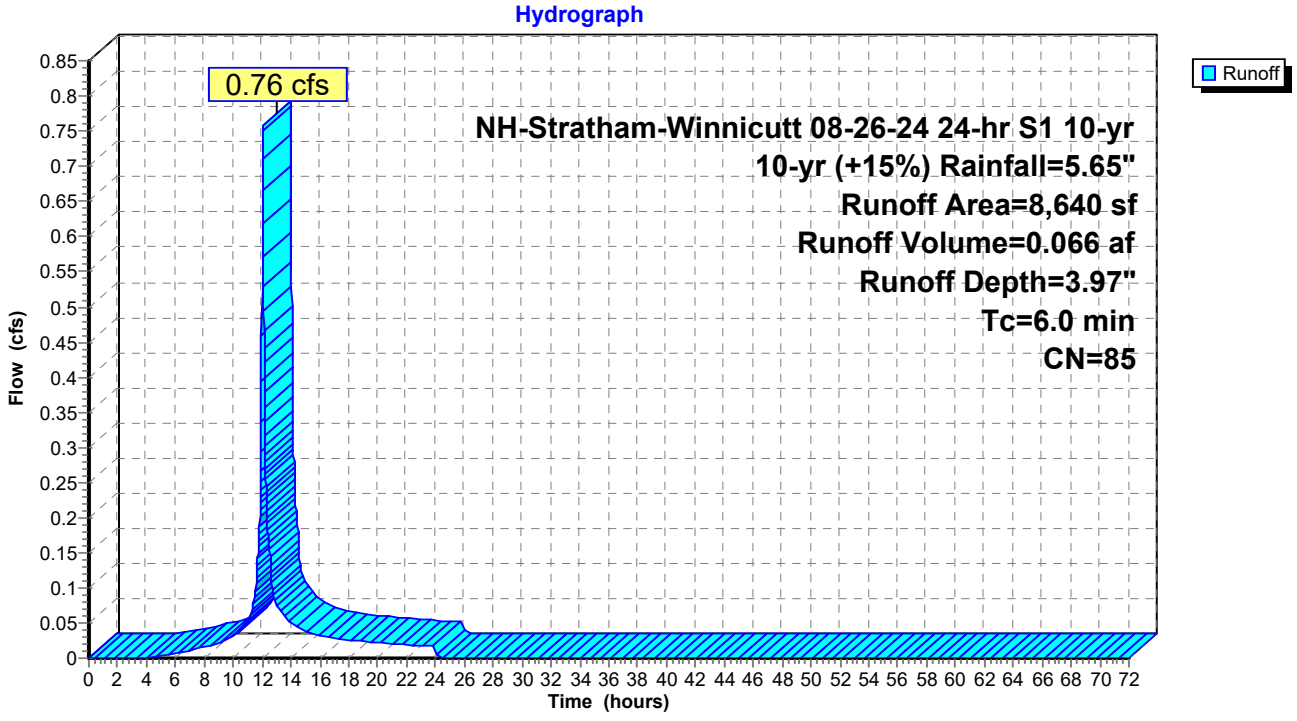
Runoff = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af, Depth= 3.97"
Routed to Pond PP55 : Proposed Swale Along North Portion of Proposed Secondary Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
4,630	74	>75% Grass cover, Good, HSG C
4,010	98	Paved parking, HSG C
8,640	85	Weighted Average
4,630		53.59% Pervious Area
4,010		46.41% Impervious Area

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

Subcatchment PS15: North Portion of Proposed Secondary Road



Summary for Subcatchment PS16: Area South of Existing House

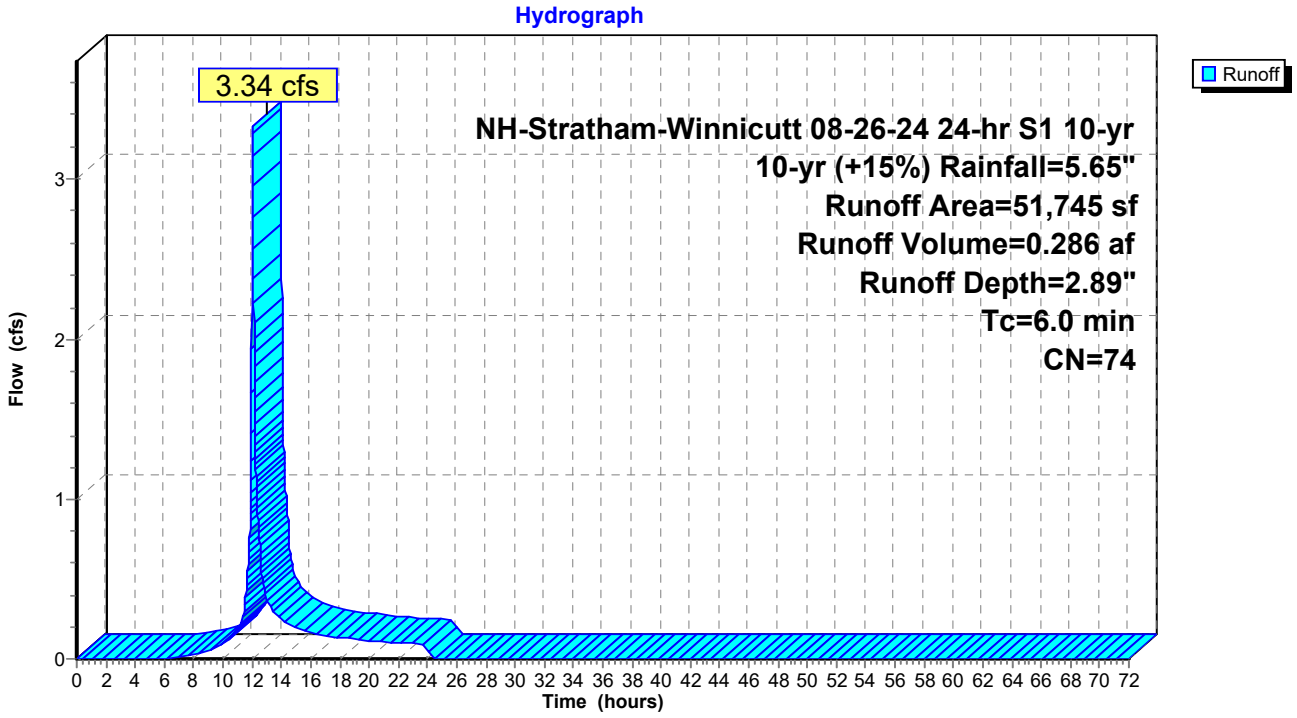
Runoff = 3.34 cfs @ 12.04 hrs, Volume= 0.286 af, Depth= 2.89"
Routed to Pond PP59 : Existing Transferance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
51,745	74	>75% Grass cover, Good, HSG C
51,745		100.00% Pervious Area

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

Subcatchment PS16: Area South of Existing House



Summary for Subcatchment PS17: North Portion of Proposed Secondary Cul-de-sac

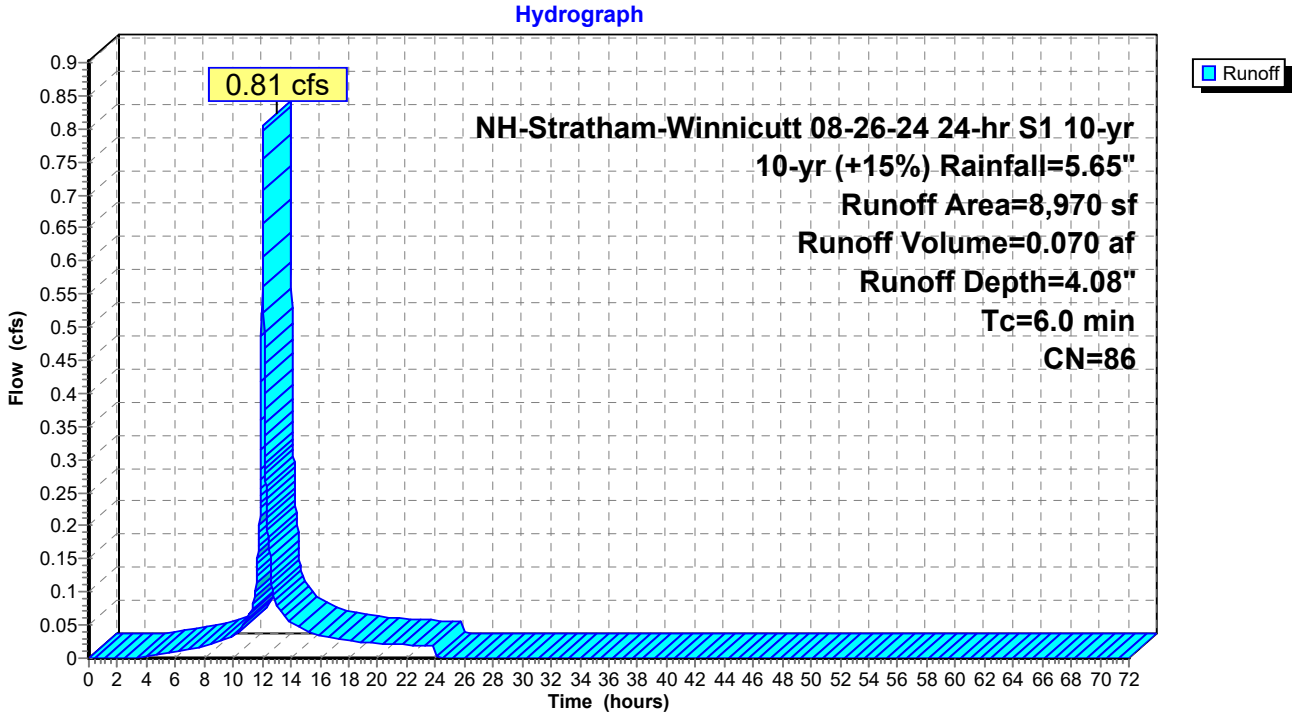
Runoff = 0.81 cfs @ 12.04 hrs, Volume= 0.070 af, Depth= 4.08"
Routed to Pond PP56 : Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
4,545	74	>75% Grass cover, Good, HSG C
4,425	98	Paved parking, HSG C
8,970	86	Weighted Average
4,545		50.67% Pervious Area
4,425		49.33% Impervious Area

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

Subcatchment PS17: North Portion of Proposed Secondary Cul-de-sac



Summary for Subcatchment PS18A: Proposed Driveway of Lots 30 & 31

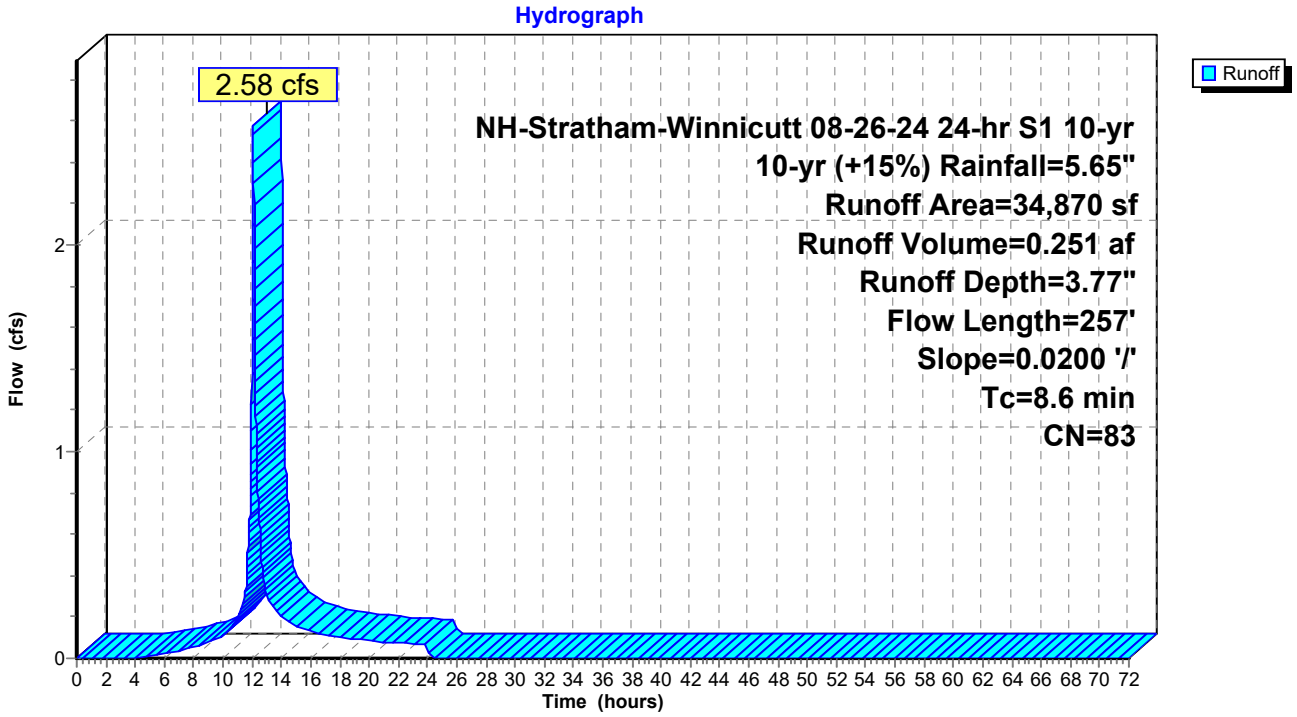
Runoff = 2.58 cfs @ 12.07 hrs, Volume= 0.251 af, Depth= 3.77"
Routed to Reach ER76 : Existing Swale from East Portion of Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
22,340	74	>75% Grass cover, Good, HSG C
12,530	98	Paved parking, HSG C
34,870	83	Weighted Average
22,340		64.07% Pervious Area
12,530		35.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.5	90	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0200	2.87		**Shallow Concentrated Flow, Pavement** Paved Kv= 20.3 fps
1.2	70	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.6	25	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
8.6	257	Total			

Subcatchment PS18A: Proposed Driveway of Lots 30 & 31



Summary for Subcatchment PS18B: House D of Lot 31

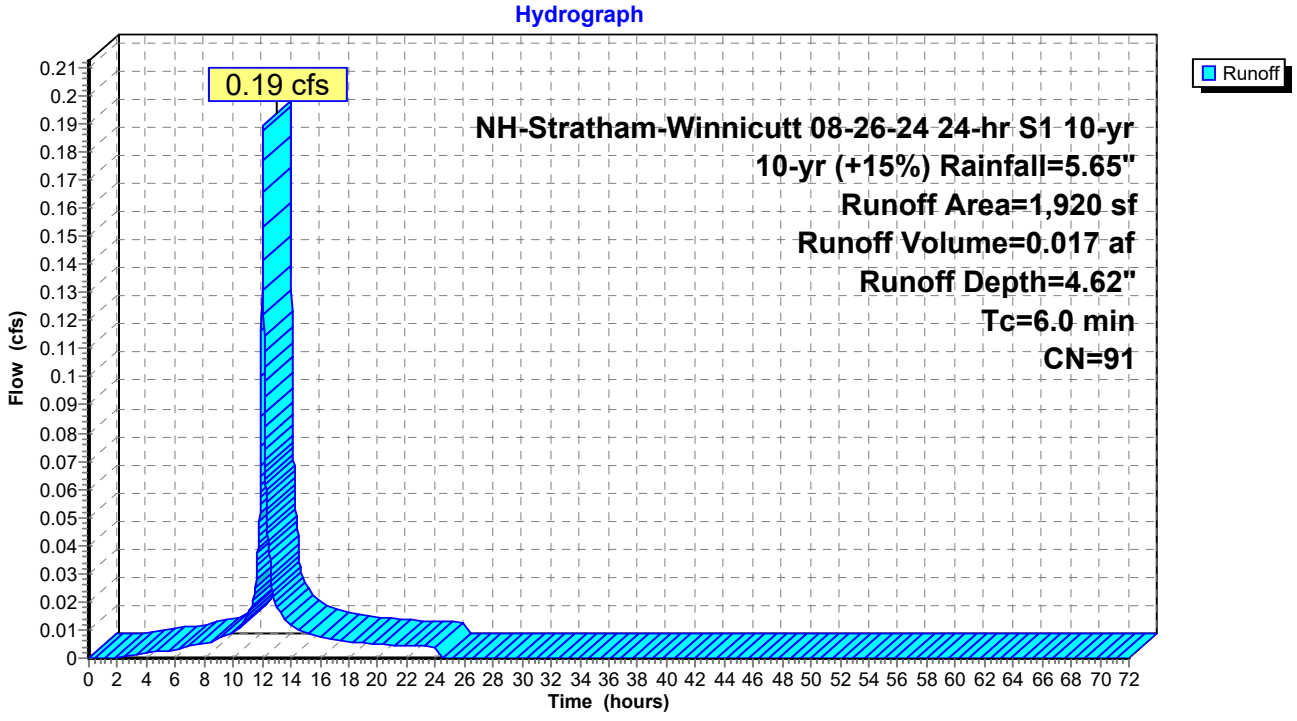
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP99 : Stone Storage for House A of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18B: House D of Lot 31



Summary for Subcatchment PS18C: House C of Lot 31

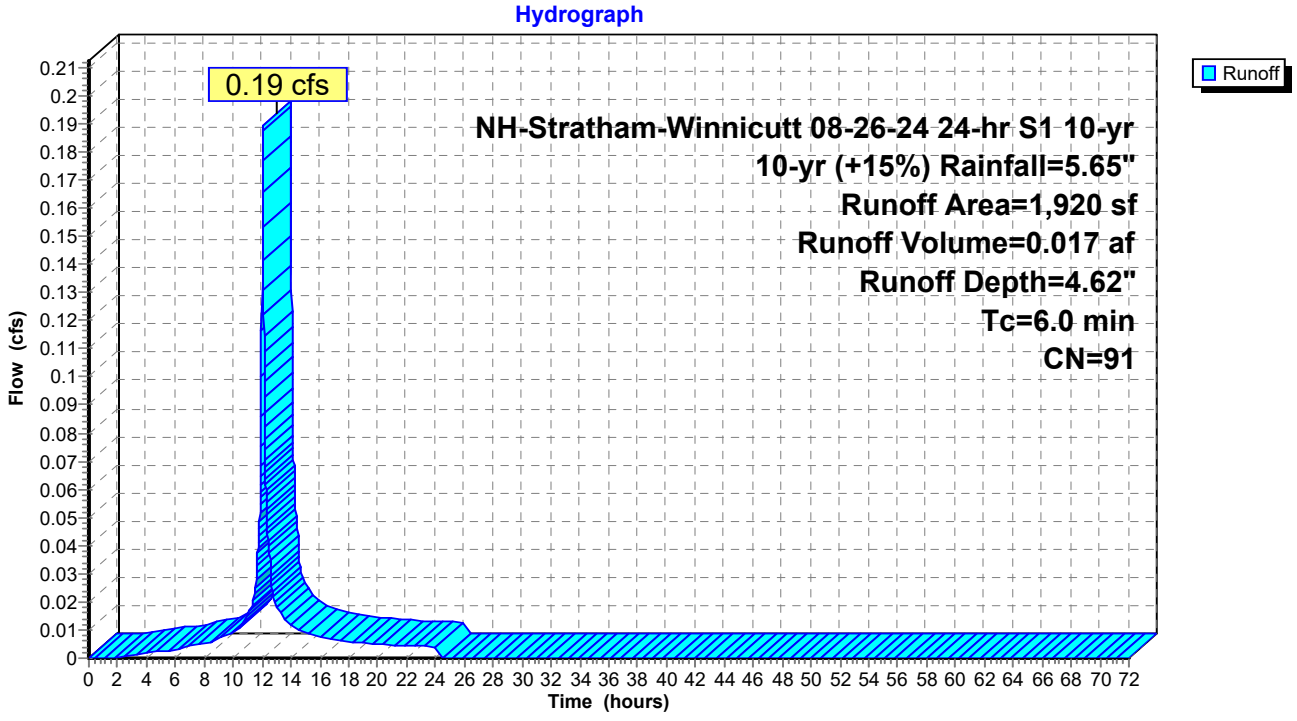
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP100 : Stone Storage for House B of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18C: House C of Lot 31



Summary for Subcatchment PS18D: House B of Lot 31

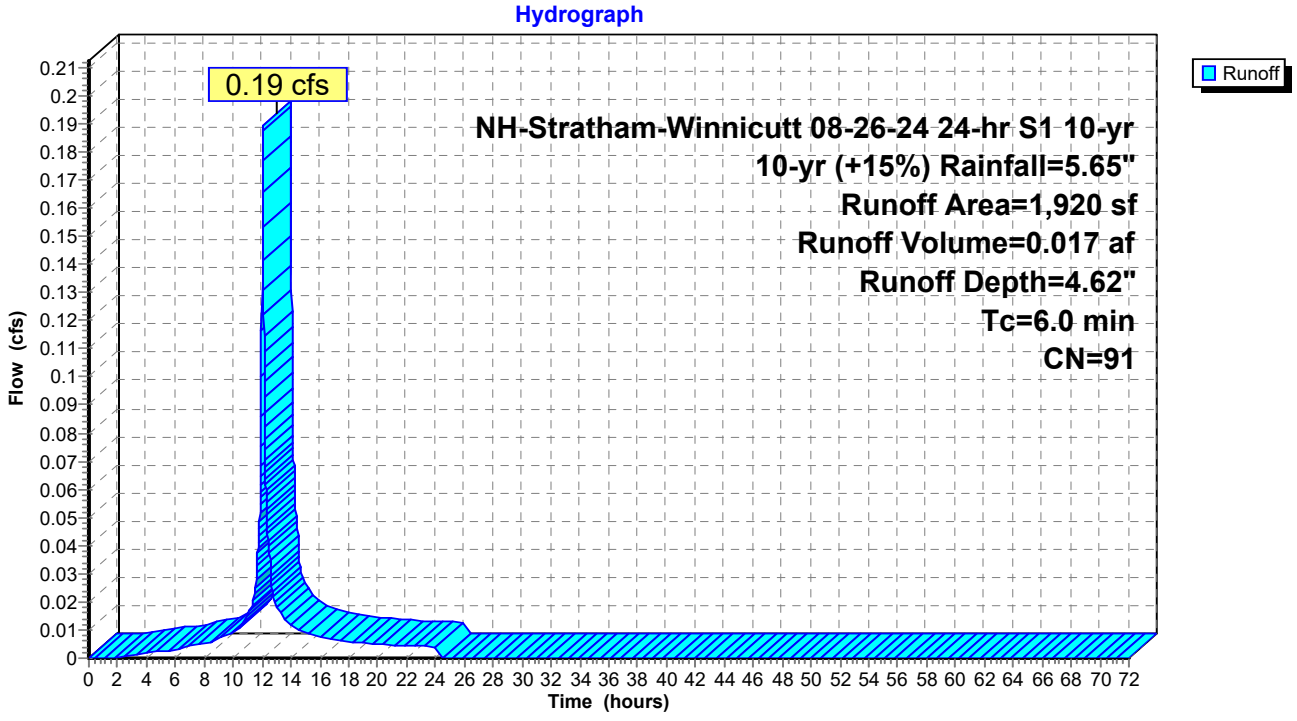
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP101 : Stone Storage for House C of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18D: House B of Lot 31



Summary for Subcatchment PS18E: House A of Lot 31

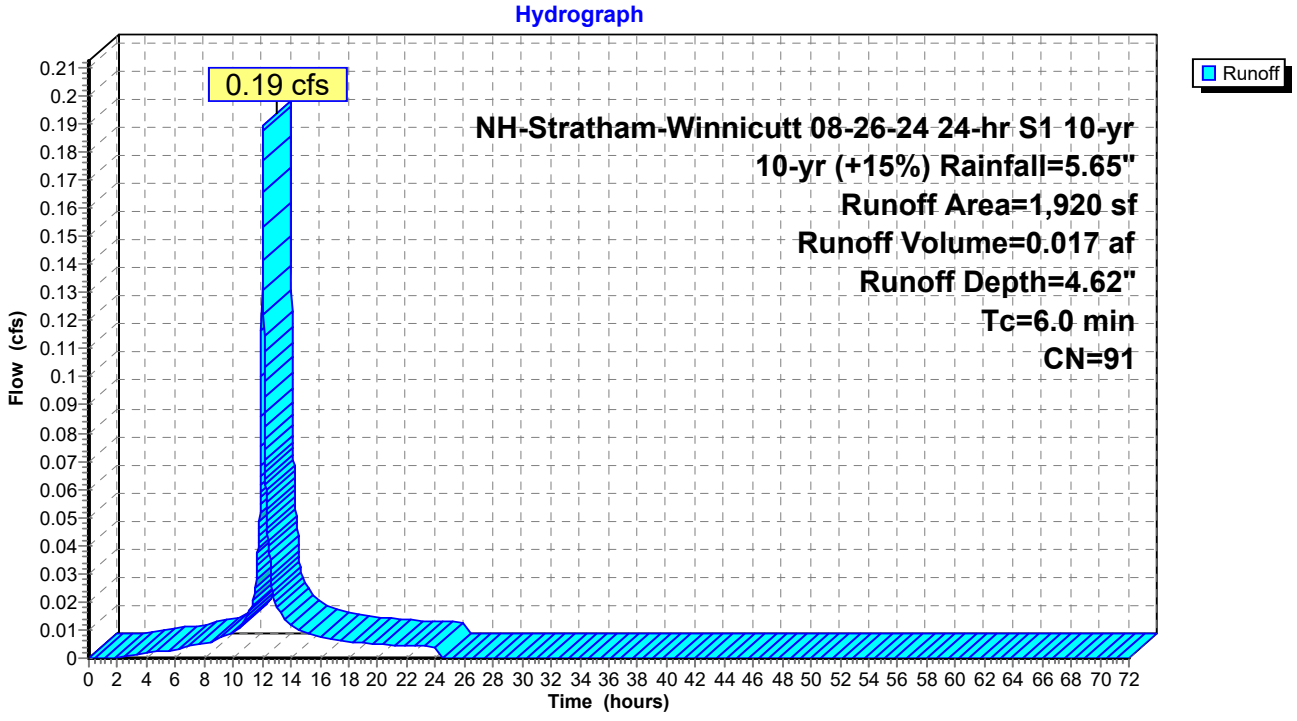
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP102 : Stone Storage for House D of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18E: House A of Lot 31



Summary for Subcatchment PS18F: House A of Lot 30

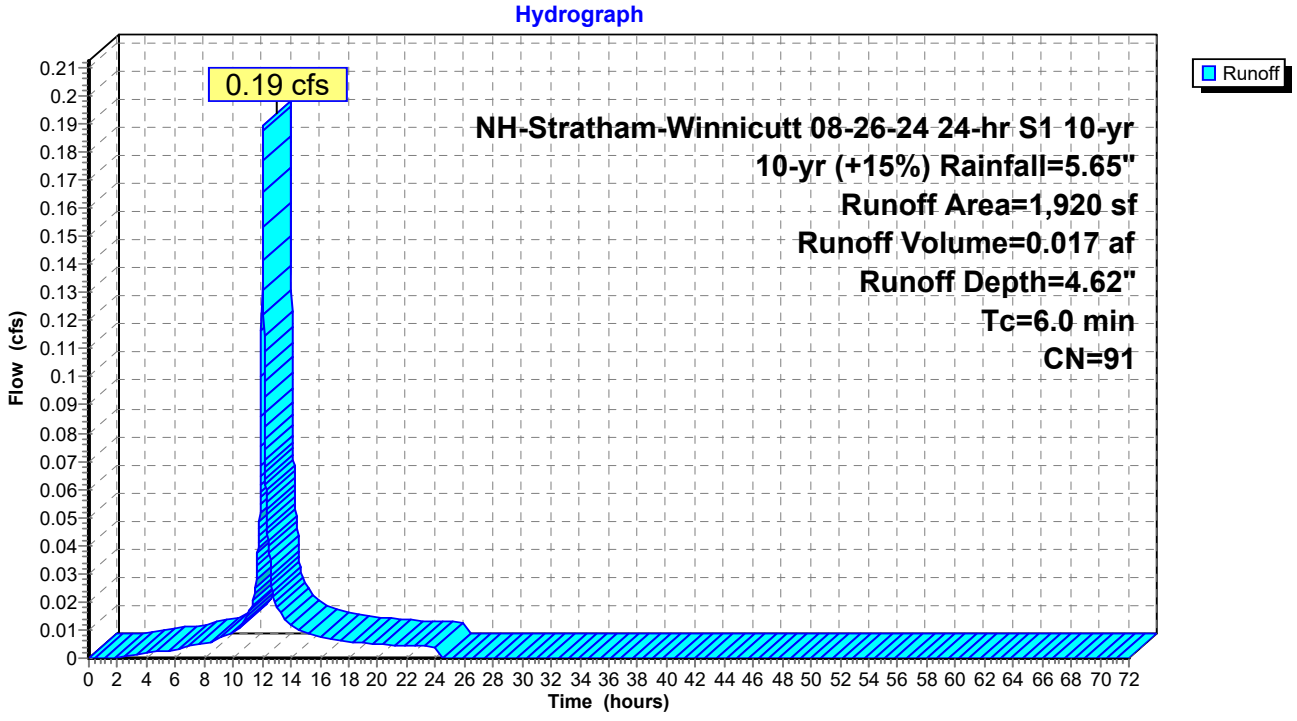
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP103 : Stone Storage for House A of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18F: House A of Lot 30



Summary for Subcatchment PS18G: House B of Lot 30

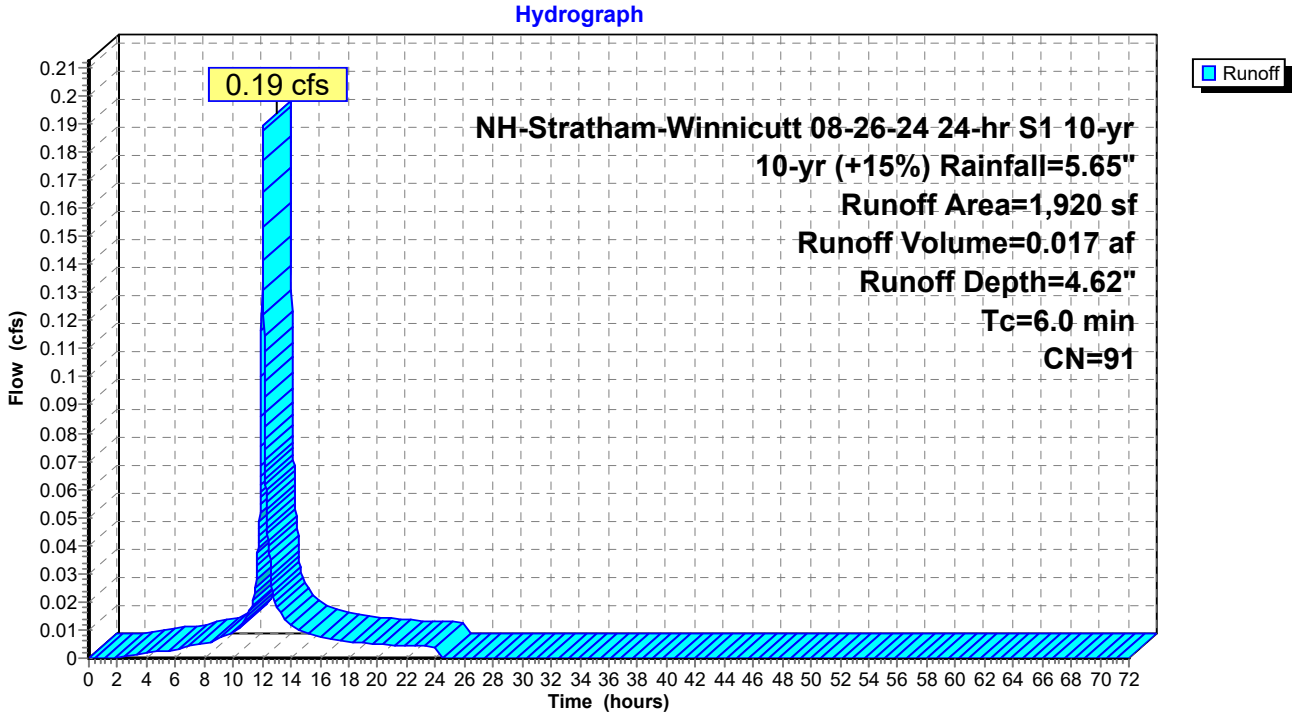
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP104 : Stone Storage for House B of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18G: House B of Lot 30



Summary for Subcatchment PS18H: House C of Lot 30

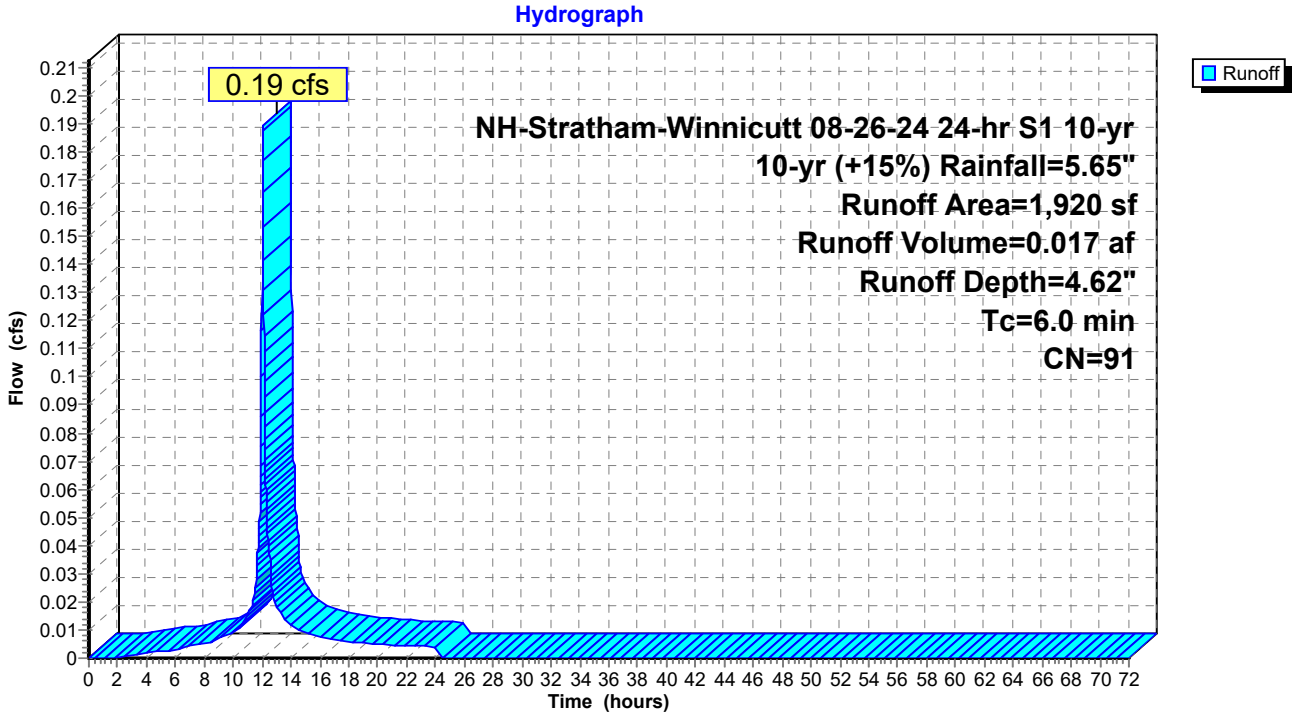
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP105 : Stone Storage for House C of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18H: House C of Lot 30



Summary for Subcatchment PS18I: House D of Lot 30

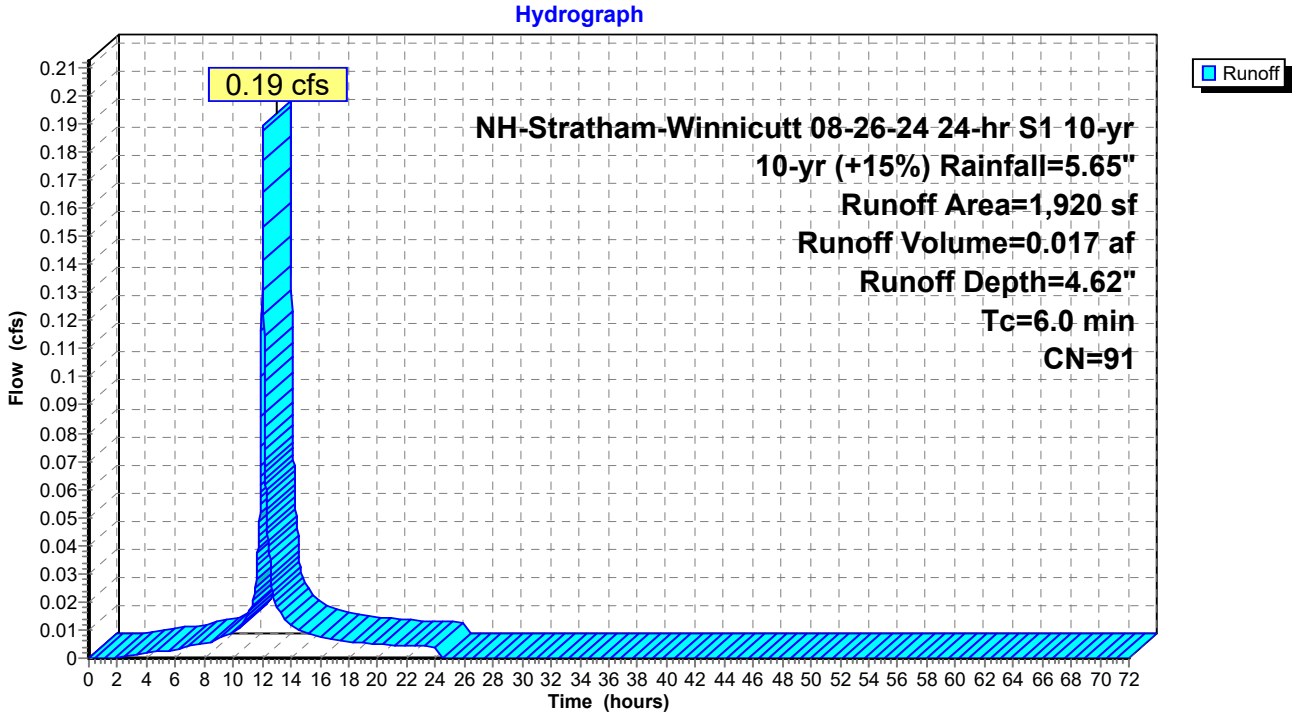
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP106 : Stone Storage for House D of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18I: House D of Lot 30



Summary for Subcatchment PS19A: West Half of Proposed Driveway of Lot 29

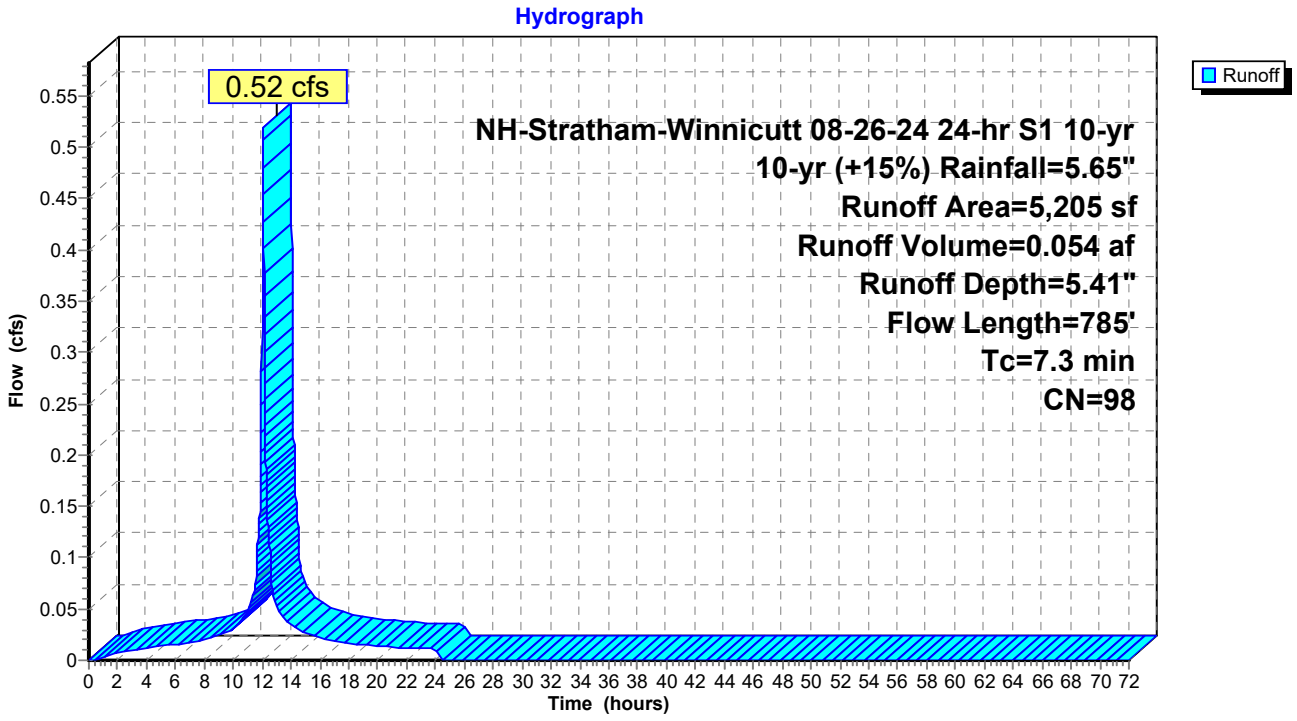
Runoff = 0.52 cfs @ 12.05 hrs, Volume= 0.054 af, Depth= 5.41"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
5,205	98	Paved parking, HSG C
5,205		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
2.0	110	0.0350	0.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.3	625	0.0250	7.83	152.72	**Channel Flow, East Portion of Existing Central Swale** Area= 19.5 sf Perim= 19.5' r= 1.00' n= 0.030 Earth, grassed & winding
7.3	785	Total			

Subcatchment PS19A: West Half of Proposed Driveway of Lot 29



Summary for Subcatchment PS19B: East Half of Proposed Driveway of Lot 29

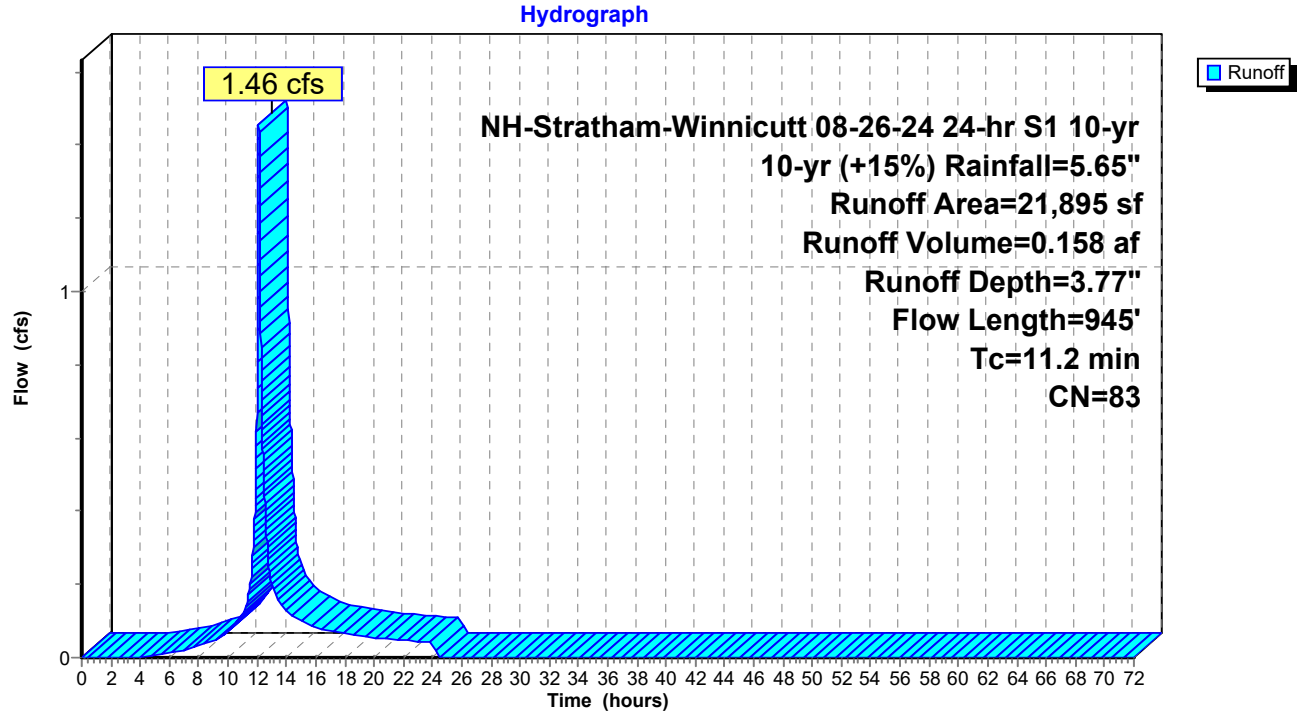
Runoff = 1.46 cfs @ 12.10 hrs, Volume= 0.158 af, Depth= 3.77"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
13,775	74	>75% Grass cover, Good, HSG C
8,120	98	Paved parking, HSG C
21,895	83	Weighted Average
13,775		62.91% Pervious Area
8,120		37.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
5.5	230	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.5	665	0.0380	21.06	3,054.41	**Channel Flow, Existing Swale from East Portion of Site** Area= 145.0 sf Perim= 45.0' r= 3.22' n= 0.030 Earth, grassed & winding
11.2	945	Total			

Subcatchment PS19B: East Half of Proposed Driveway of Lot 29



Summary for Subcatchment PS19C: House D of Lot 29

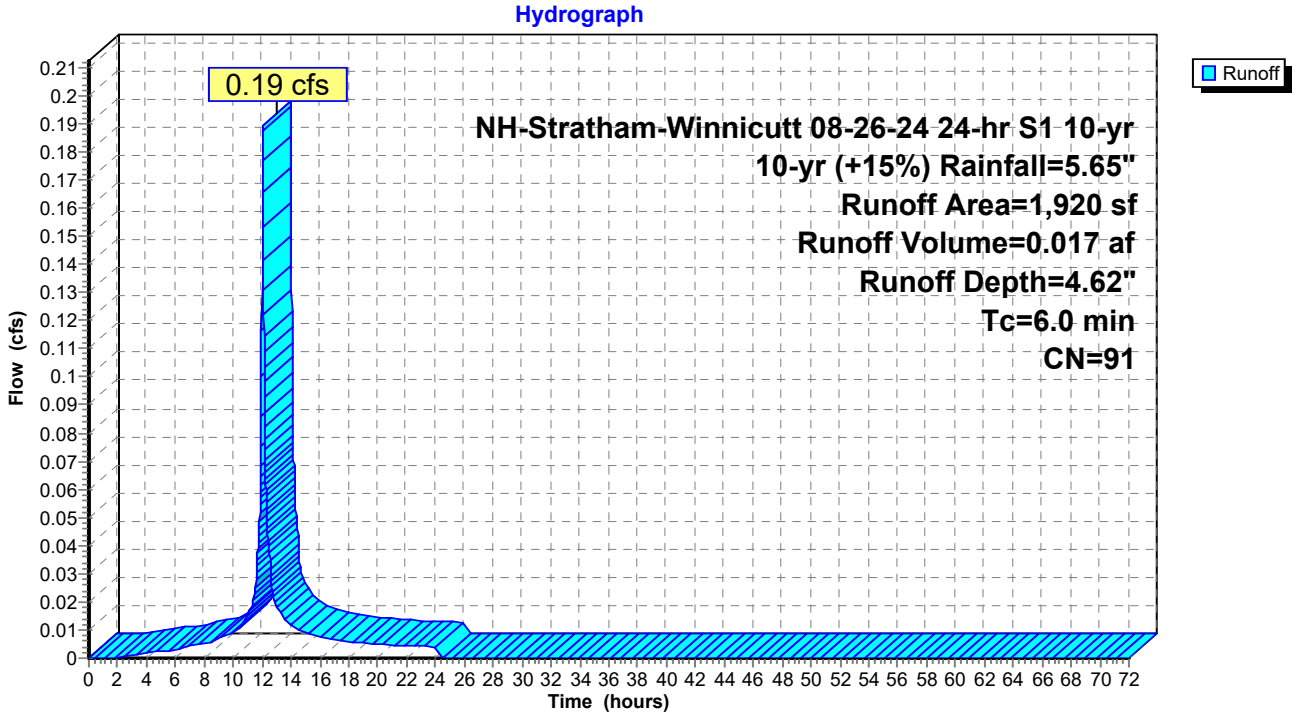
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP110 : Stone Storage for House C of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19C: House D of Lot 29



Summary for Subcatchment PS19D: House C of Lot 29

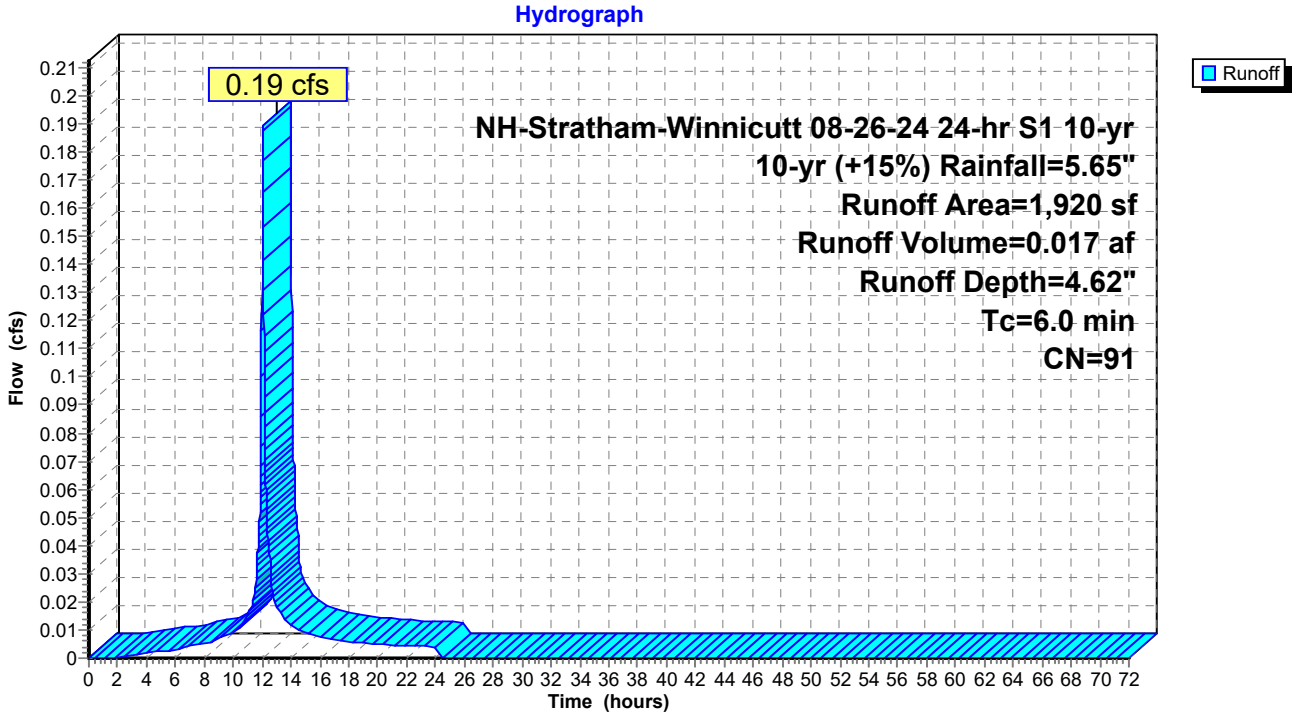
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP109 : Stone Storage for House C of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19D: House C of Lot 29



Summary for Subcatchment PS19E: House B of Lot 29

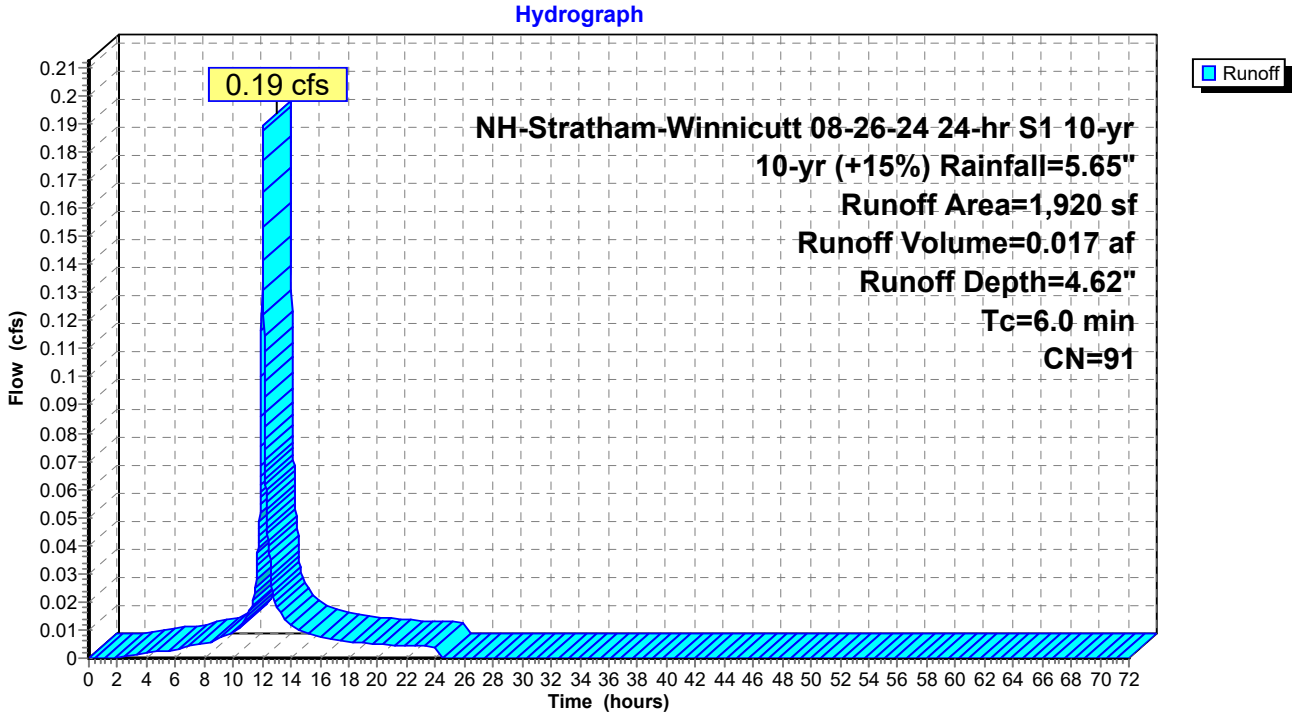
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP108 : Stone Storage for House B of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19E: House B of Lot 29



Summary for Subcatchment PS19F: House A of Lot 29

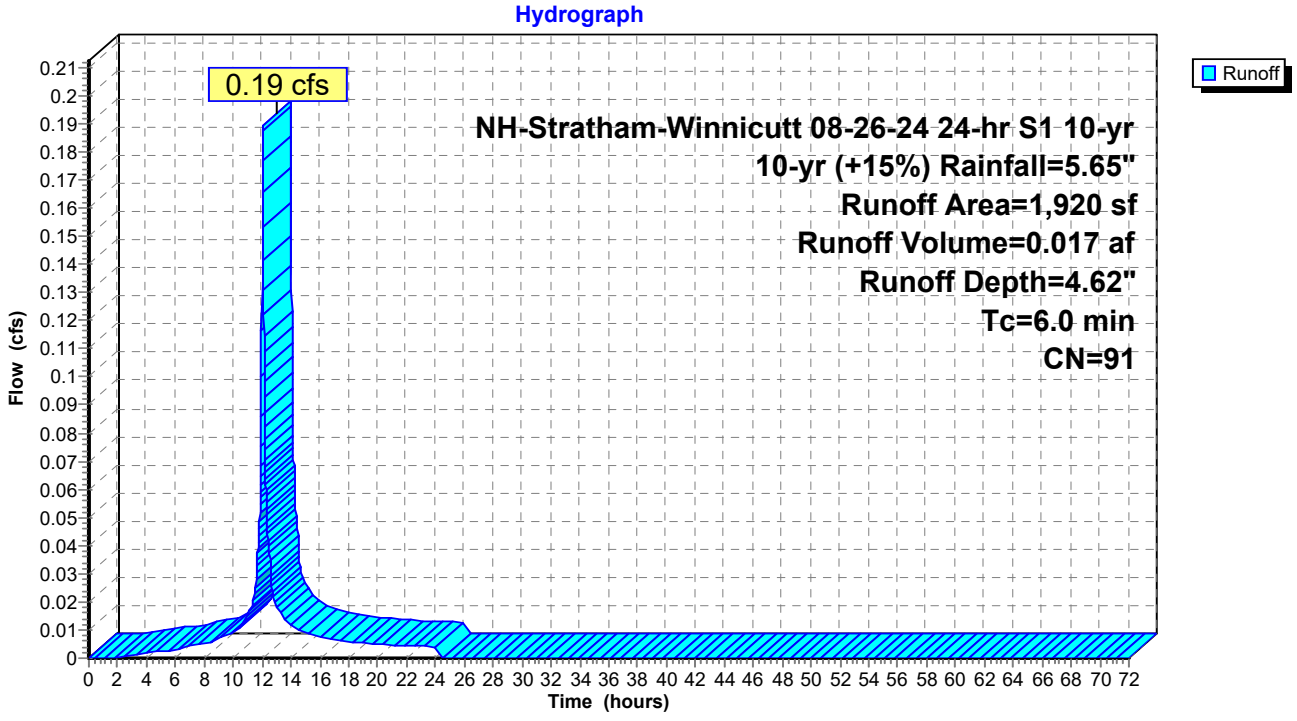
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP107 : Stone Storage for House A of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19F: House A of Lot 29



Summary for Subcatchment PS2: Area along Northernmost Wetland Finger

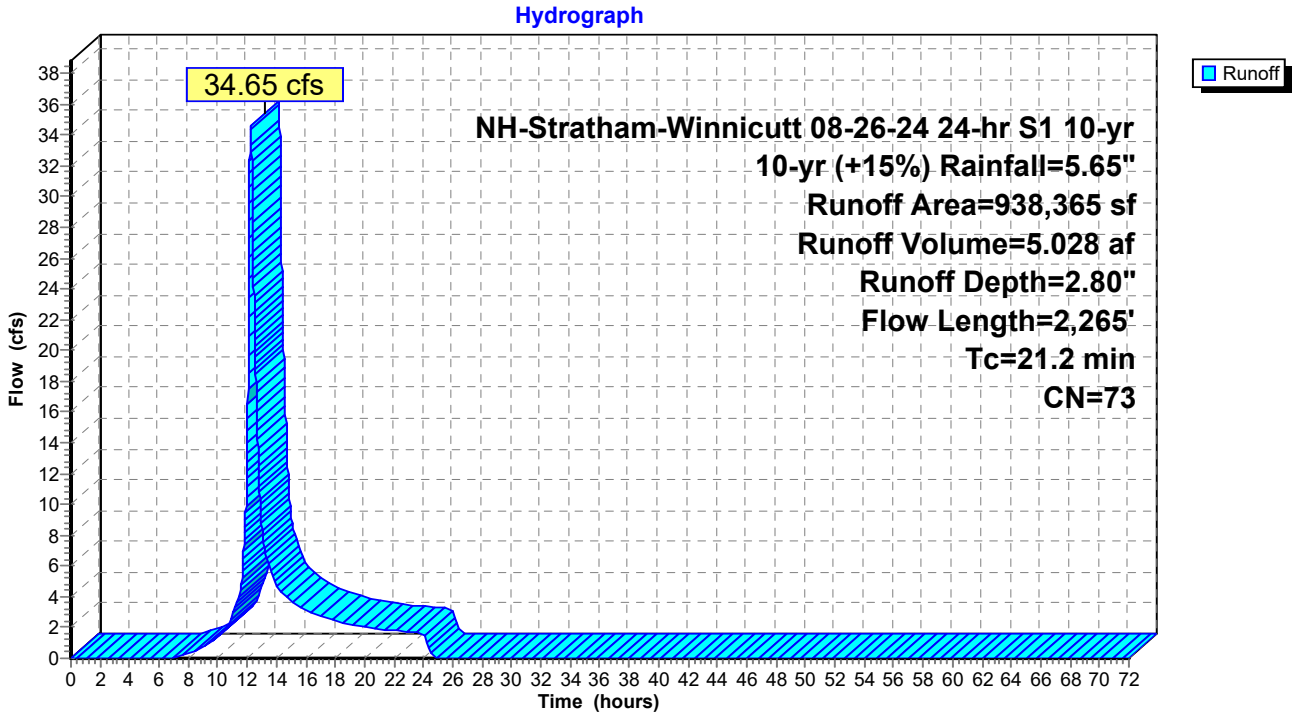
Runoff = 34.65 cfs @ 12.25 hrs, Volume= 5.028 af, Depth= 2.80"
Routed to Link L101 : Wetlands to the West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
233,240	74	>75% Grass cover, Good, HSG C
80	80	>75% Grass cover, Good, HSG D
468,815	70	Woods, Good, HSG C
234,135	77	Woods, Good, HSG D
2,095	98	Paved parking, HSG C
938,365	73	Weighted Average
936,270		99.78% Pervious Area
2,095		0.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
6.4	385	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
3.3	1,830	0.0150	9.13	438.22	**Channel Flow, Mill Brook** Area= 48.0 sf Perim= 26.0' r= 1.85' n= 0.030 Earth, grassed & winding
21.2	2,265	Total			

Subcatchment PS2: Area along Northernmost Wetland Finger



Summary for Subcatchment PS20: South Portion of Proposed Secondary Road

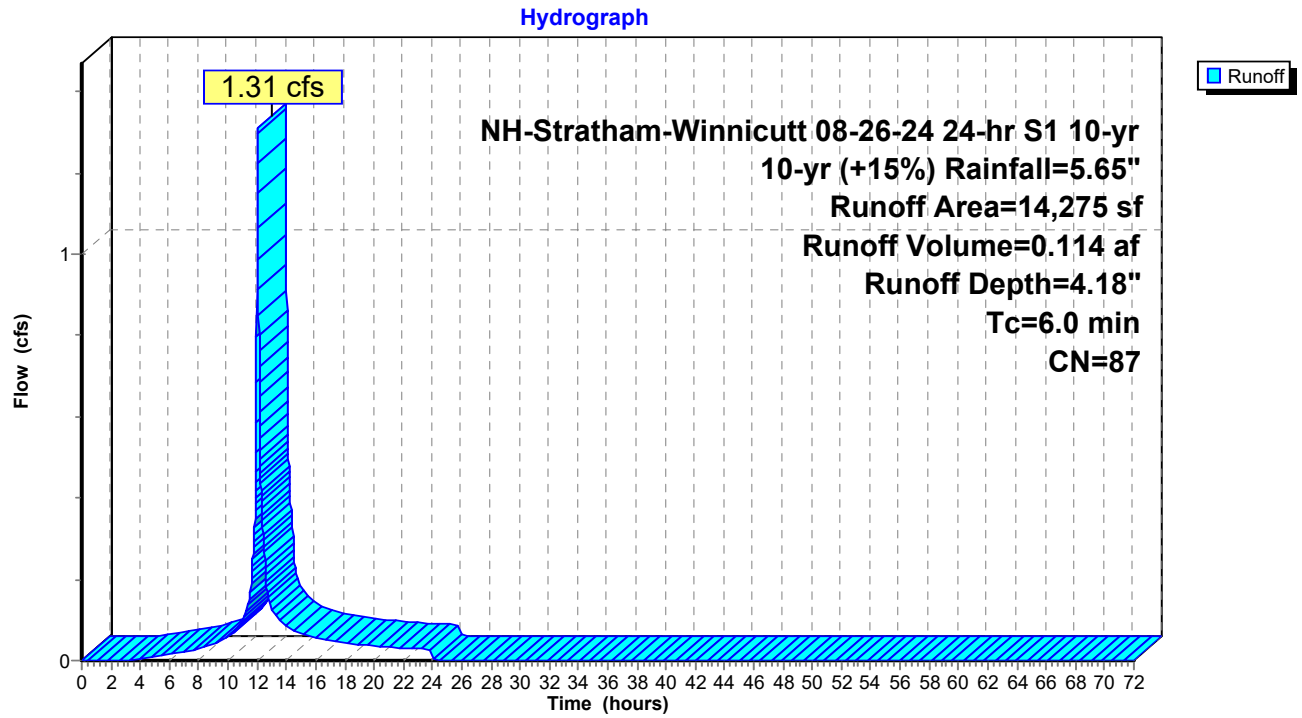
Runoff = 1.31 cfs @ 12.04 hrs, Volume= 0.114 af, Depth= 4.18"
Routed to Pond PP57 : Proposed Swale Along South Side of Secondary Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
6,545	74	>75% Grass cover, Good, HSG C
70	80	>75% Grass cover, Good, HSG D
7,660	98	Paved parking, HSG C
14,275	87	Weighted Average
6,615		46.34% Pervious Area
7,660		53.66% Impervious Area

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

Subcatchment PS20: South Portion of Proposed Secondary Road



Summary for Subcatchment PS21: East-Central Portion of Site, Along Wetland Finger

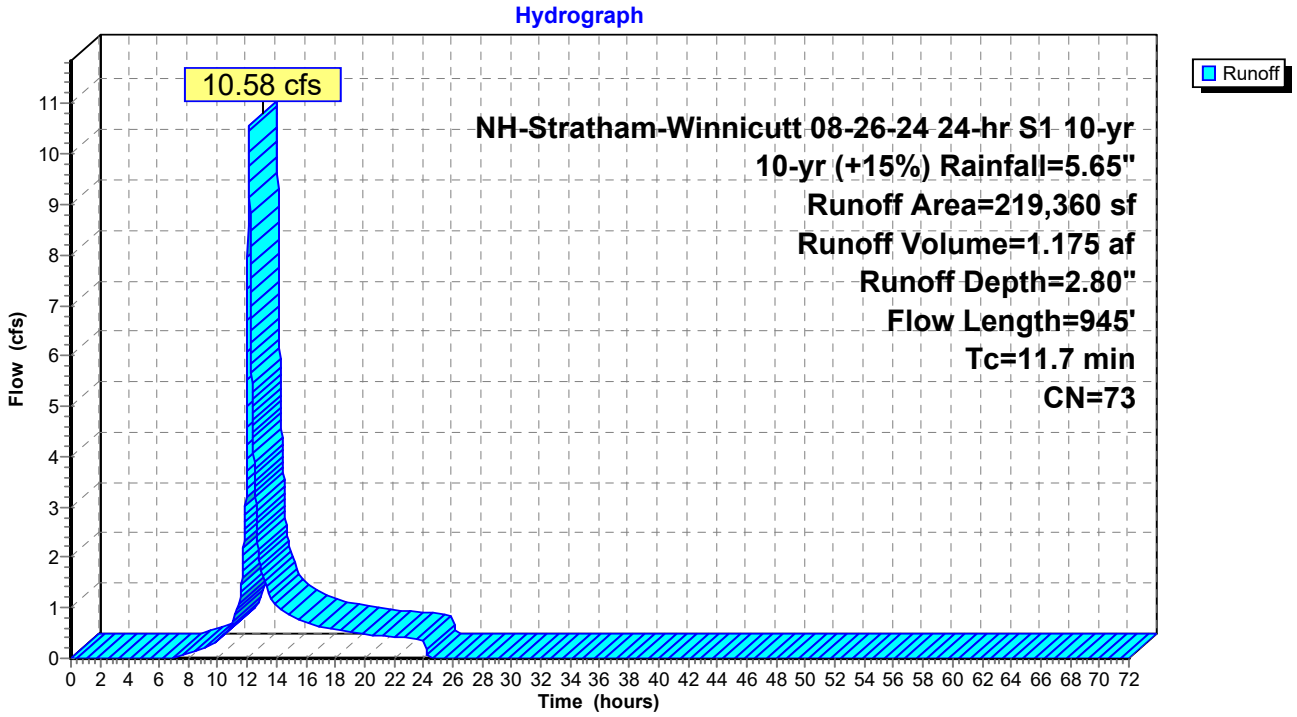
Runoff = 10.58 cfs @ 12.11 hrs, Volume= 1.175 af, Depth= 2.80"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
94,585	74	>75% Grass cover, Good, HSG C
91,915	70	Woods, Good, HSG C
28,075	77	Woods, Good, HSG D
4,785	98	Paved parking, HSG C
219,360	73	Weighted Average
214,575		97.82% Pervious Area
4,785		2.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	60	0.0600	1.22		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.5	685	0.0250	7.83	152.72	**Channel Flow, East Portion of Existing Central Swale** Area= 19.5 sf Perim= 19.5' r= 1.00' n= 0.030 Earth, grassed & winding
11.7	945	Total			

Subcatchment PS21: East-Central Portion of Site, Along Wetland Finger



Summary for Subcatchment PS22A: Proposed Shared Driveway of Lots 26 & 27

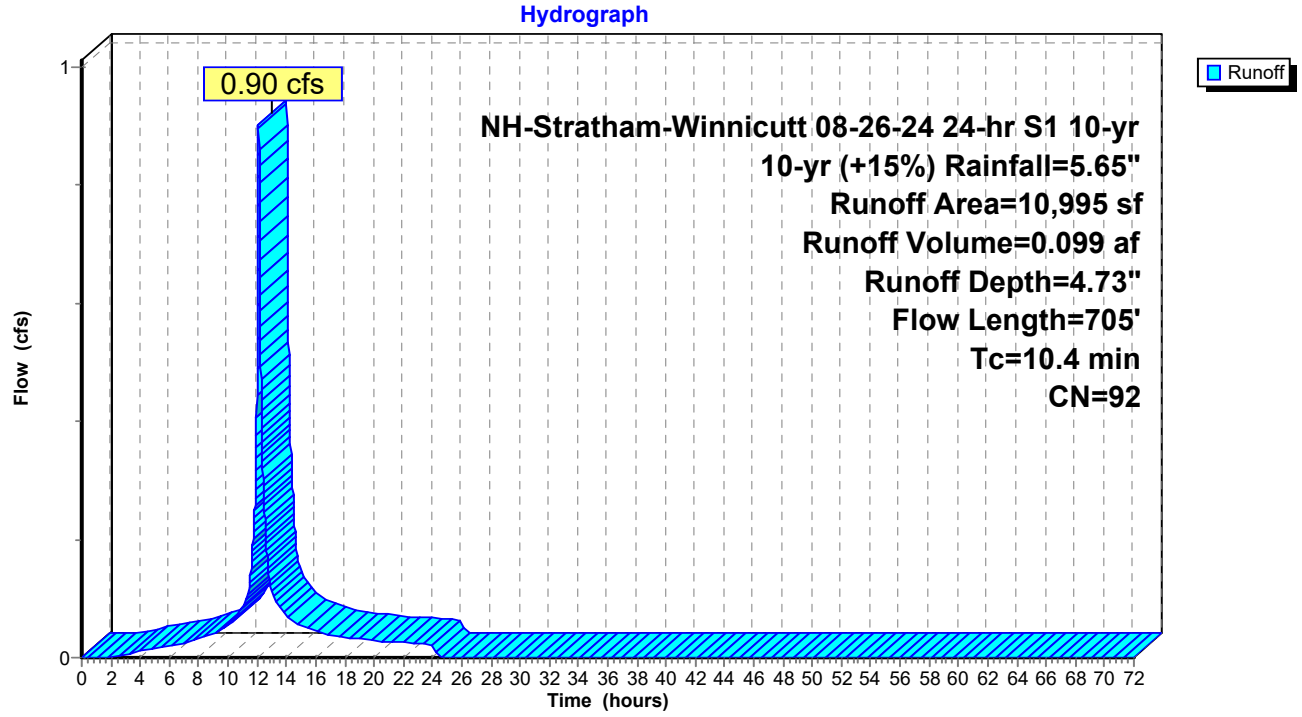
Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.099 af, Depth= 4.73"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
2,685	74	>75% Grass cover, Good, HSG C
8,310	98	Paved parking, HSG C
10,995	92	Weighted Average
2,685		24.42% Pervious Area
8,310		75.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
4.0	270	0.0500	1.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.2	385	0.0113	5.27	168.49	**Channel Flow, Existing Swale from Southeastern Portion of Site** Area= 32.0 sf Perim= 32.0' r= 1.00' n= 0.030 Earth, grassed & winding
10.4	705	Total			

Subcatchment PS22A: Proposed Shared Driveway of Lots 26 & 27



Summary for Subcatchment PS22B: House of Lot 26

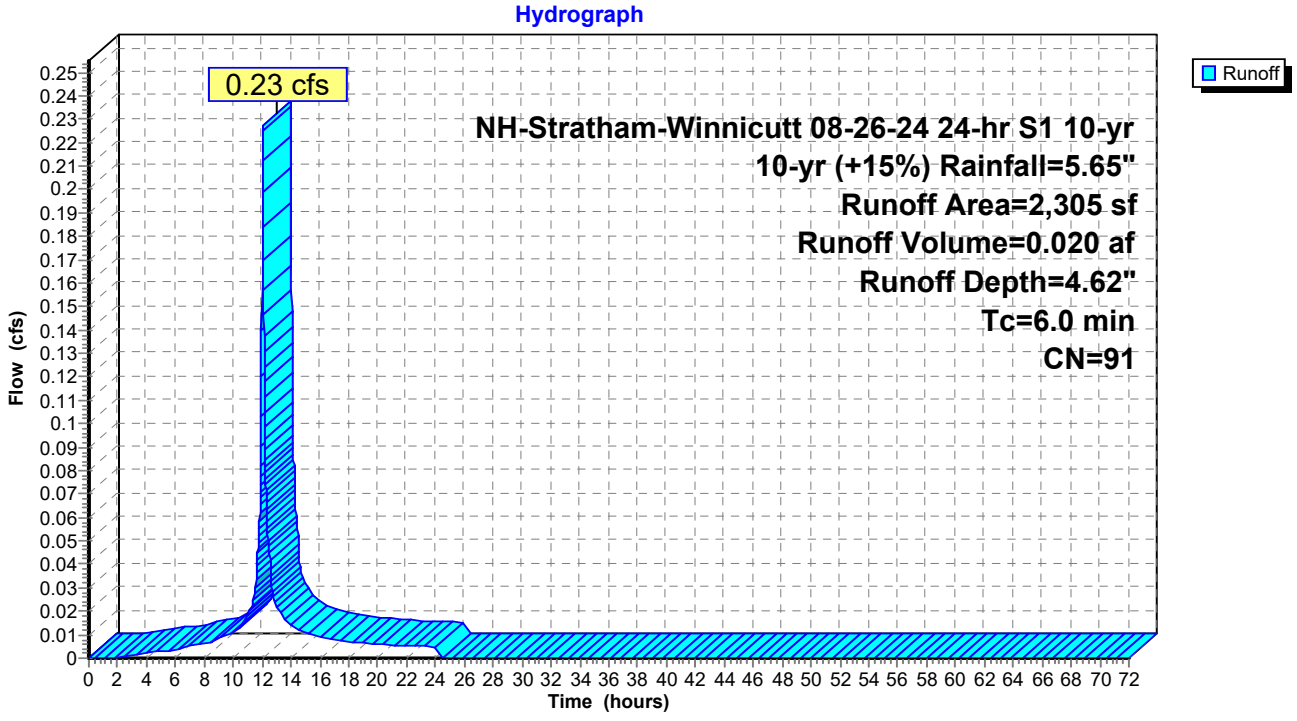
Runoff = 0.23 cfs @ 12.04 hrs, Volume= 0.020 af, Depth= 4.62"
Routed to Pond PP111 : Stone Storage for Lot 26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
625	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,305	91	Weighted Average
625		27.11% Pervious Area
1,680		72.89% Impervious Area

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

Subcatchment PS22B: House of Lot 26



Summary for Subcatchment PS22C: House of Lot 27

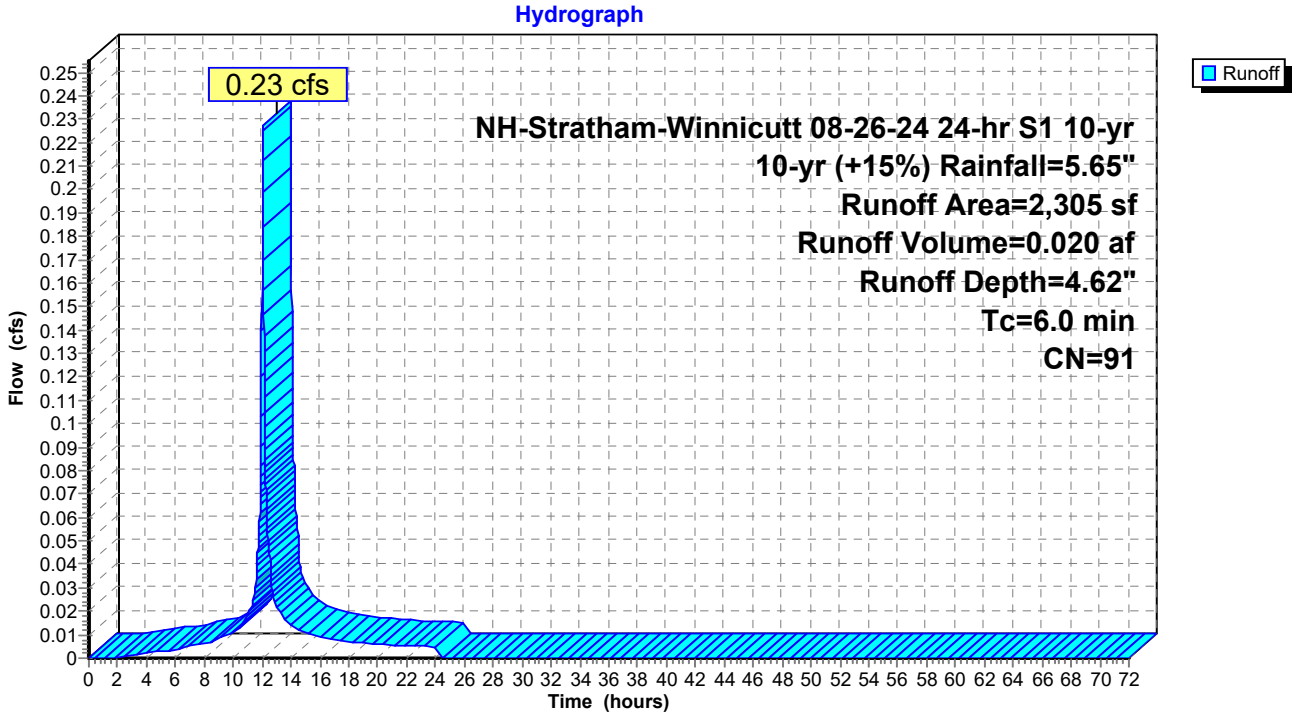
Runoff = 0.23 cfs @ 12.04 hrs, Volume= 0.020 af, Depth= 4.62"
Routed to Pond PP112 : Stone Storage for Lot 26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
625	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,305	91	Weighted Average
625		27.11% Pervious Area
1,680		72.89% Impervious Area

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

Subcatchment PS22C: House of Lot 27



Summary for Subcatchment PS23: House of Lot 20

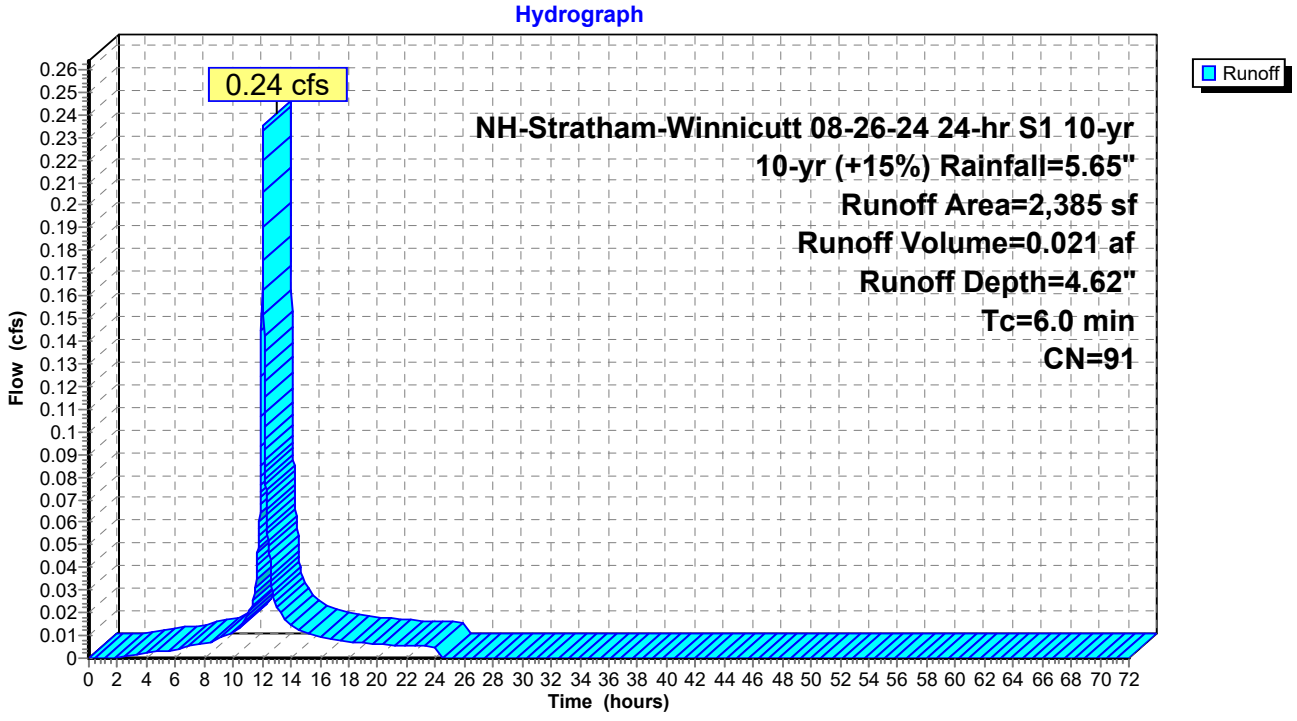
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP64 : Stone Storage for Lot 20

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS23: House of Lot 20



Summary for Subcatchment PS24: House of Lot 19

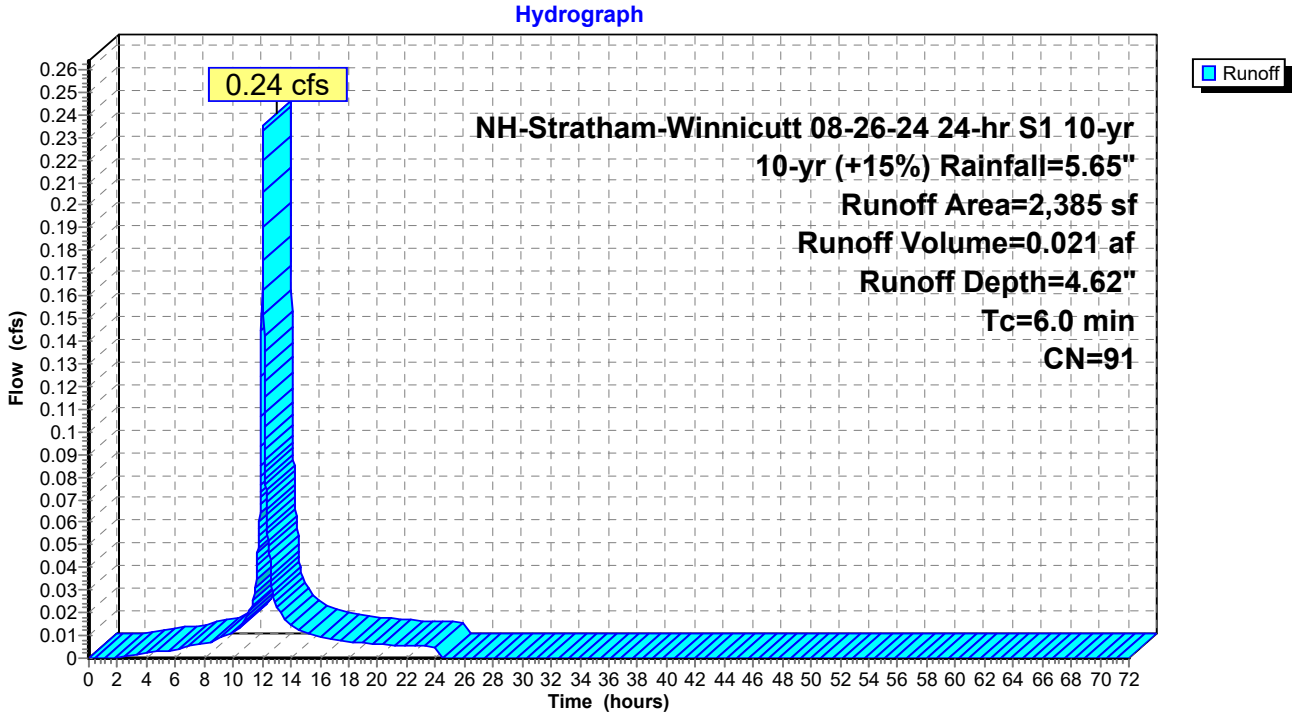
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP65 : Stone Storage for Lot 19

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS24: House of Lot 19



Summary for Subcatchment PS25: House of Lot 18

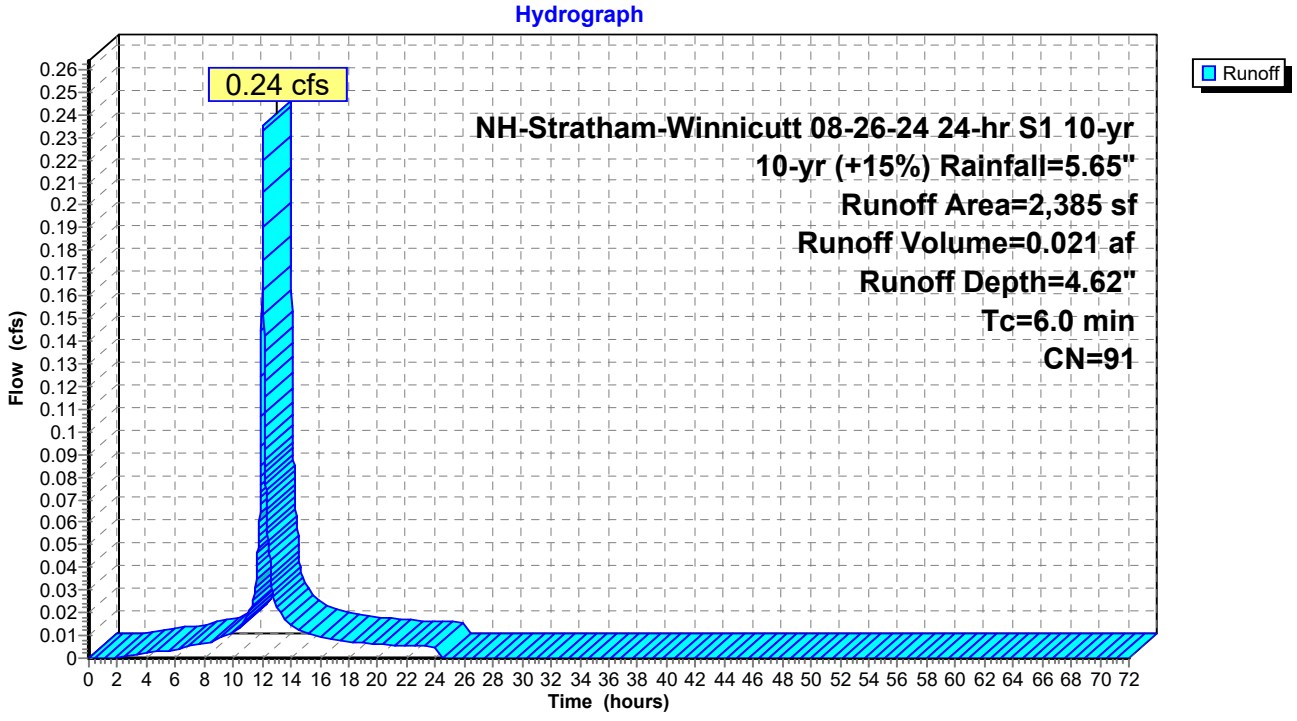
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP66 : Stone Storage for Lot 18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS25: House of Lot 18



Summary for Subcatchment PS26: House of Lot 17

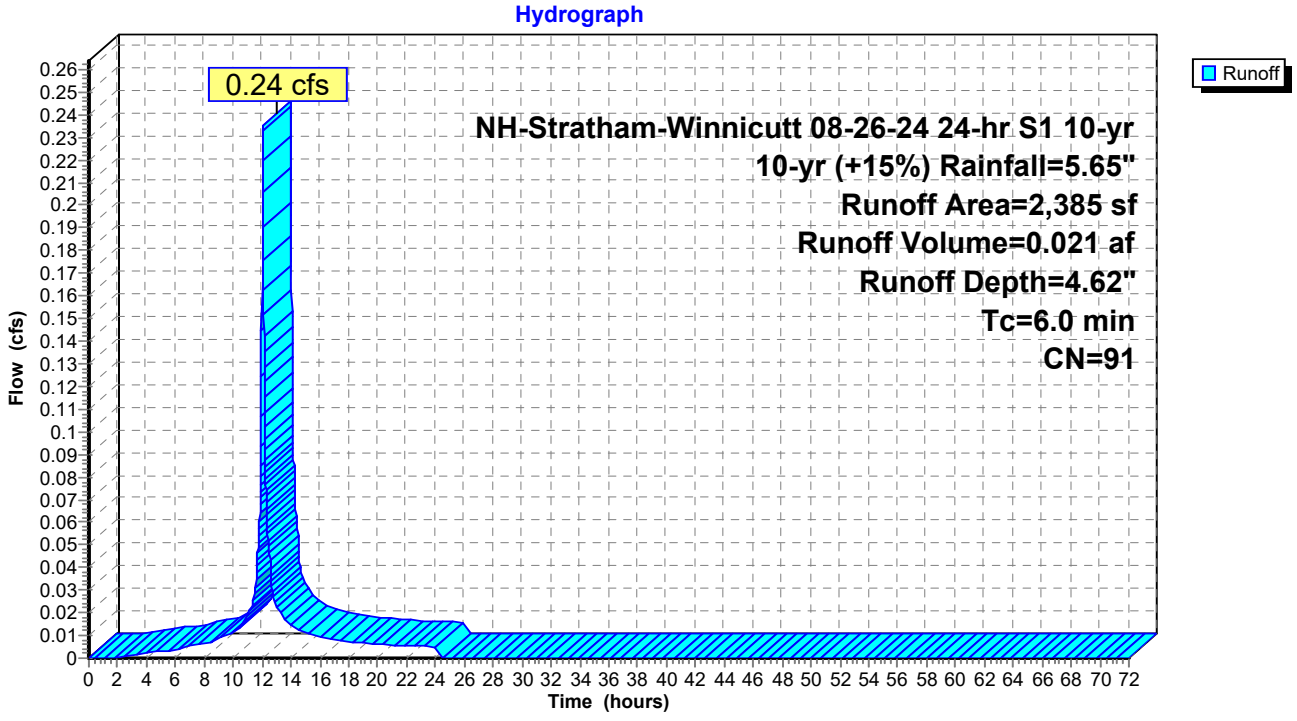
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP67 : Stone Storage for Lot 17

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS26: House of Lot 17



Summary for Subcatchment PS27: House of Lot 16

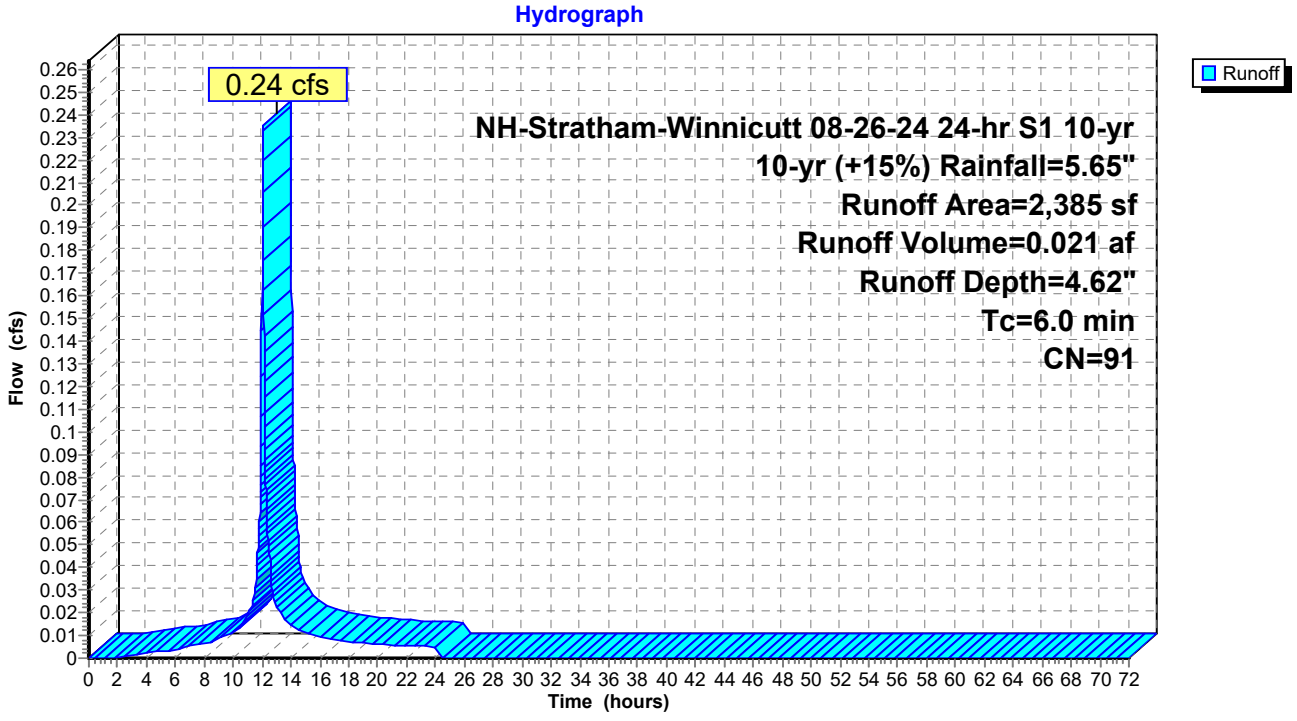
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP68 : Stone Storage for Lot 16

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS27: House of Lot 16



Summary for Subcatchment PS28: House of Lot 28

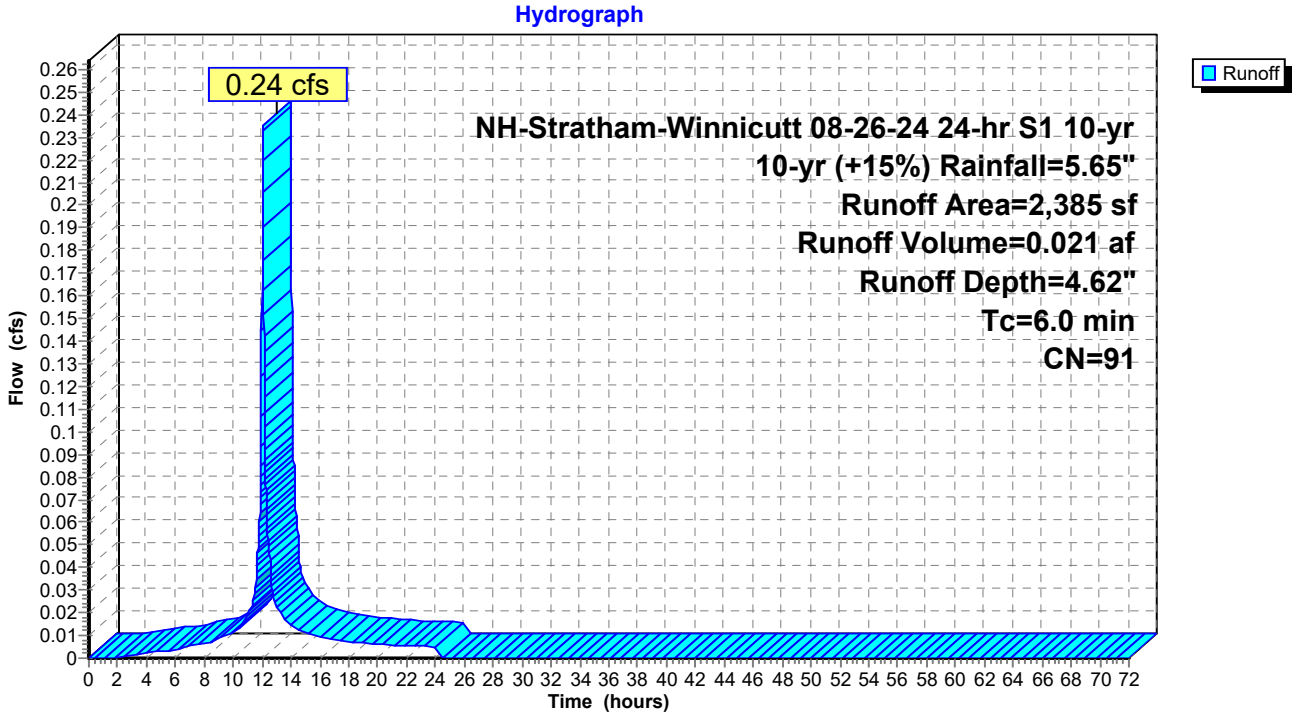
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP69 : Stone Storage for Lot 28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS28: House of Lot 28



Summary for Subcatchment PS29: House of Lot 25

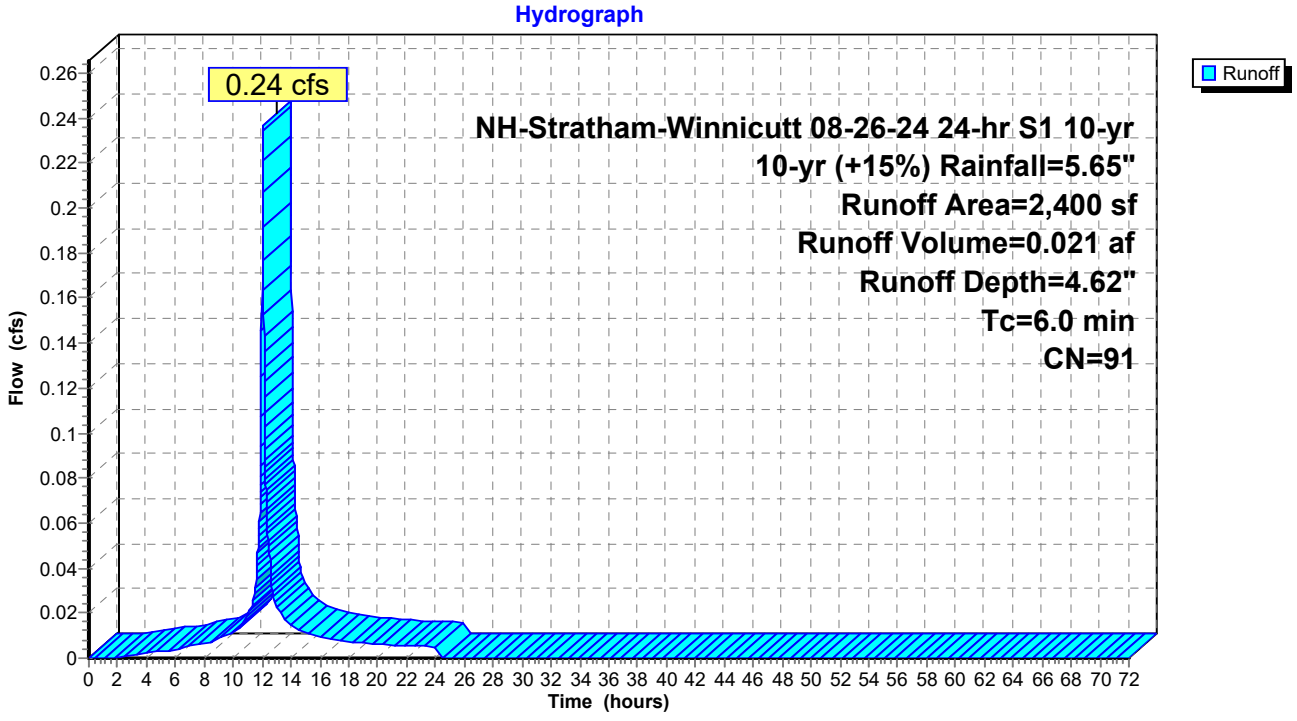
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP70 : Stone Storage for Lot 25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS29: House of Lot 25



Summary for Subcatchment PS3: West Portion of Proposed Main Road along Winnicutt Road

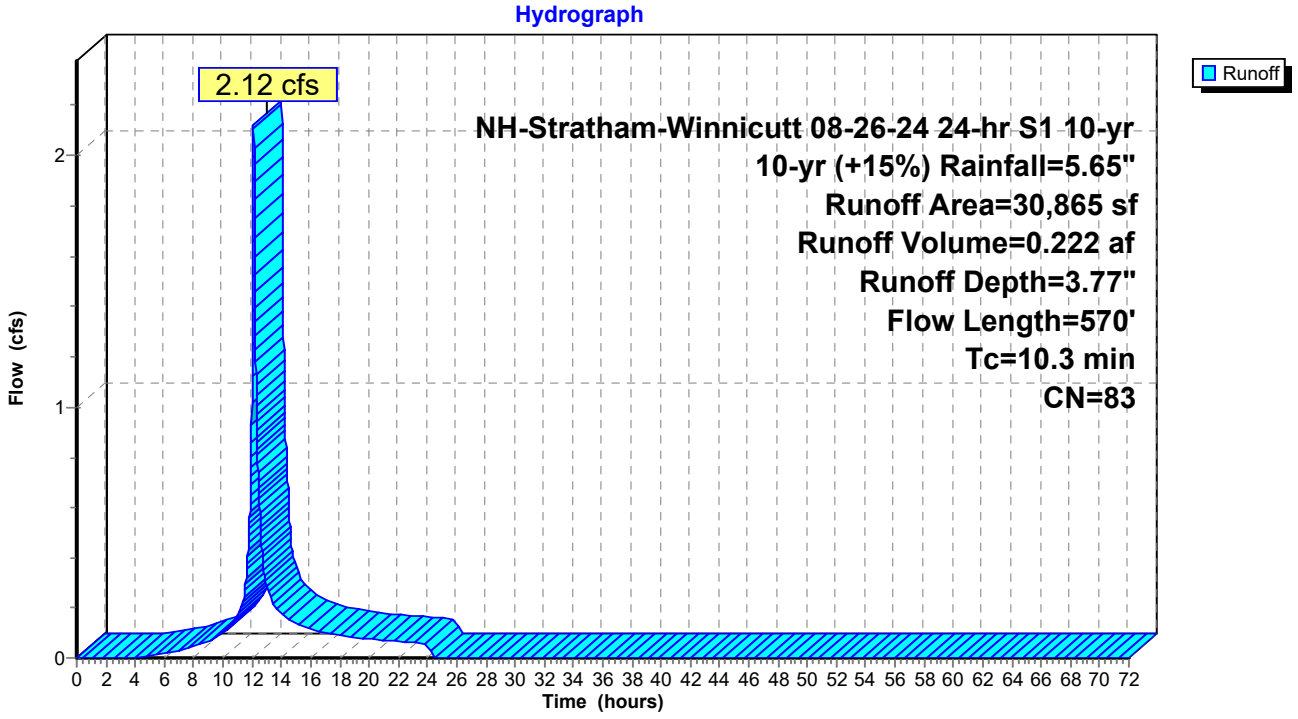
Runoff = 2.12 cfs @ 12.09 hrs, Volume= 0.222 af, Depth= 3.77"
Routed to Pond PP52A : Proposed Swale Along West Side of Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
18,910	74	>75% Grass cover, Good, HSG C
11,955	98	Paved parking, HSG C
30,865	83	Weighted Average
18,910		61.27% Pervious Area
11,955		38.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0200	0.98		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.71"
1.3	37	0.3300	0.46		**Sheet Flow, Grass Swale** Grass: Short n= 0.150 P2= 3.71"
8.8	520	0.0200	0.99		**Shallow Concentrated Flow, Grass Swale** Short Grass Pasture Kv= 7.0 fps
10.3	570	Total			

Subcatchment PS3: West Portion of Proposed Main Road along Winnicutt Road



Summary for Subcatchment PS30: House of Lot 24

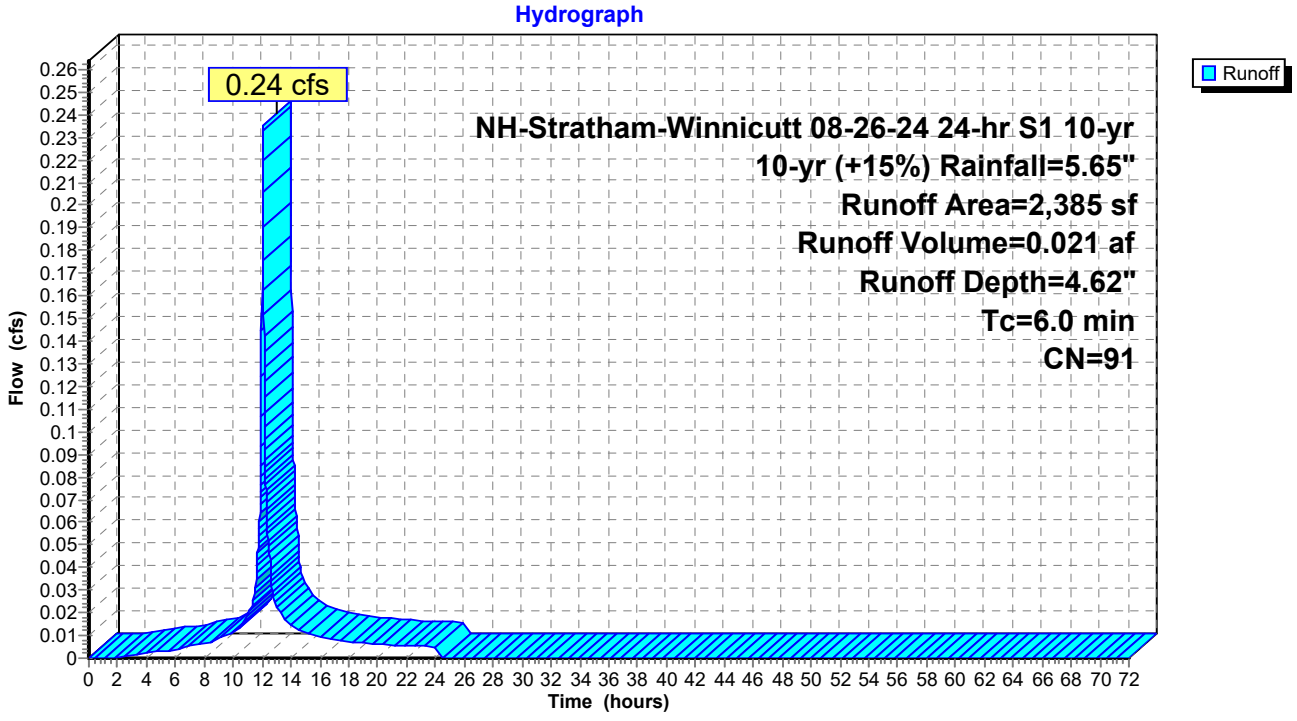
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP71 : Stone Storage for Lot 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS30: House of Lot 24



Summary for Subcatchment PS31: House of Lot 23

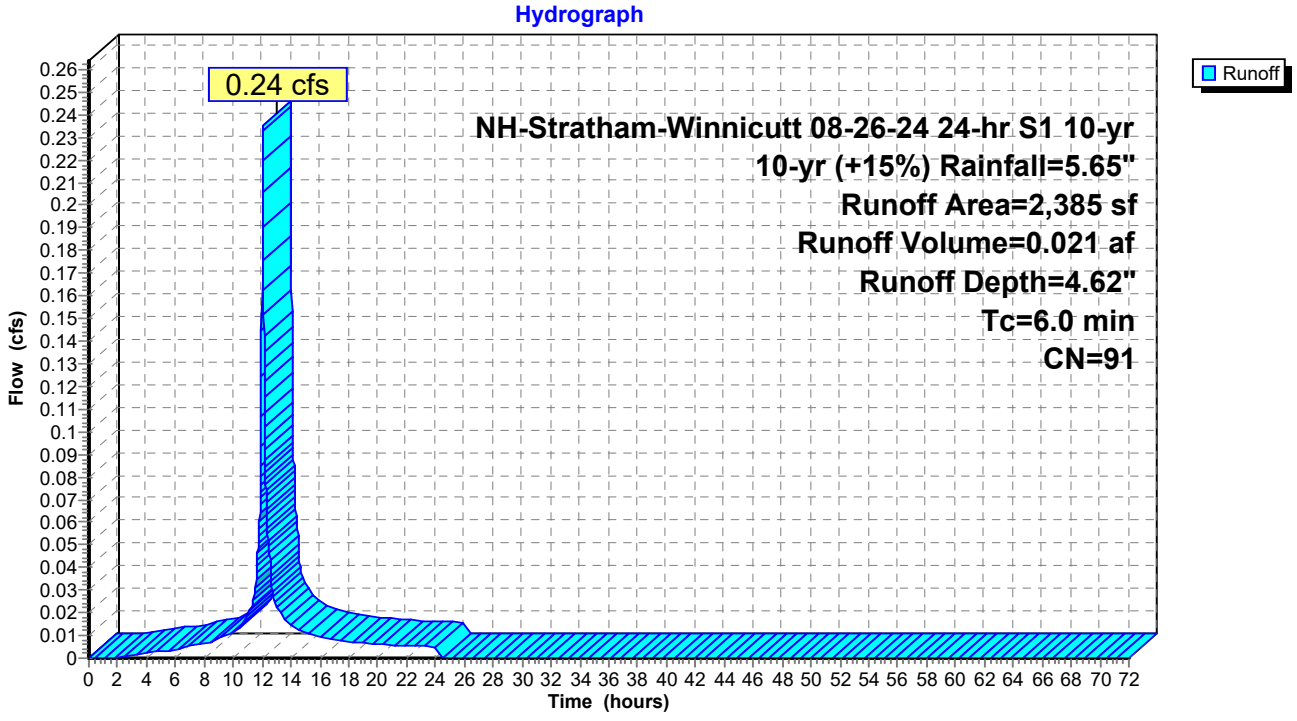
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP72 : Stone Storage for Lot 23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS31: House of Lot 23



Summary for Subcatchment PS32: House of Lot 22

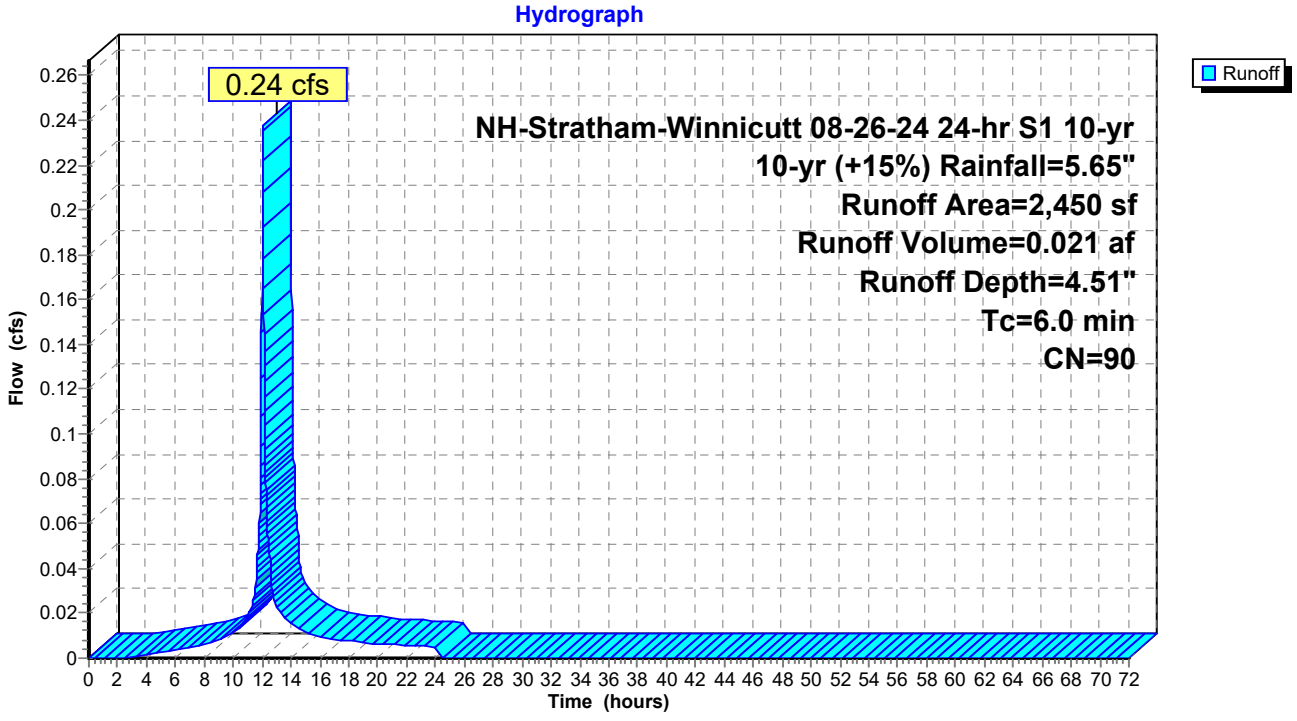
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.51"
Routed to Pond PP73 : Stone Storage for Lot 22

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
770	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,450	90	Weighted Average
770		31.43% Pervious Area
1,680		68.57% Impervious Area

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

Subcatchment PS32: House of Lot 22



Summary for Subcatchment PS33: House of Lot 21

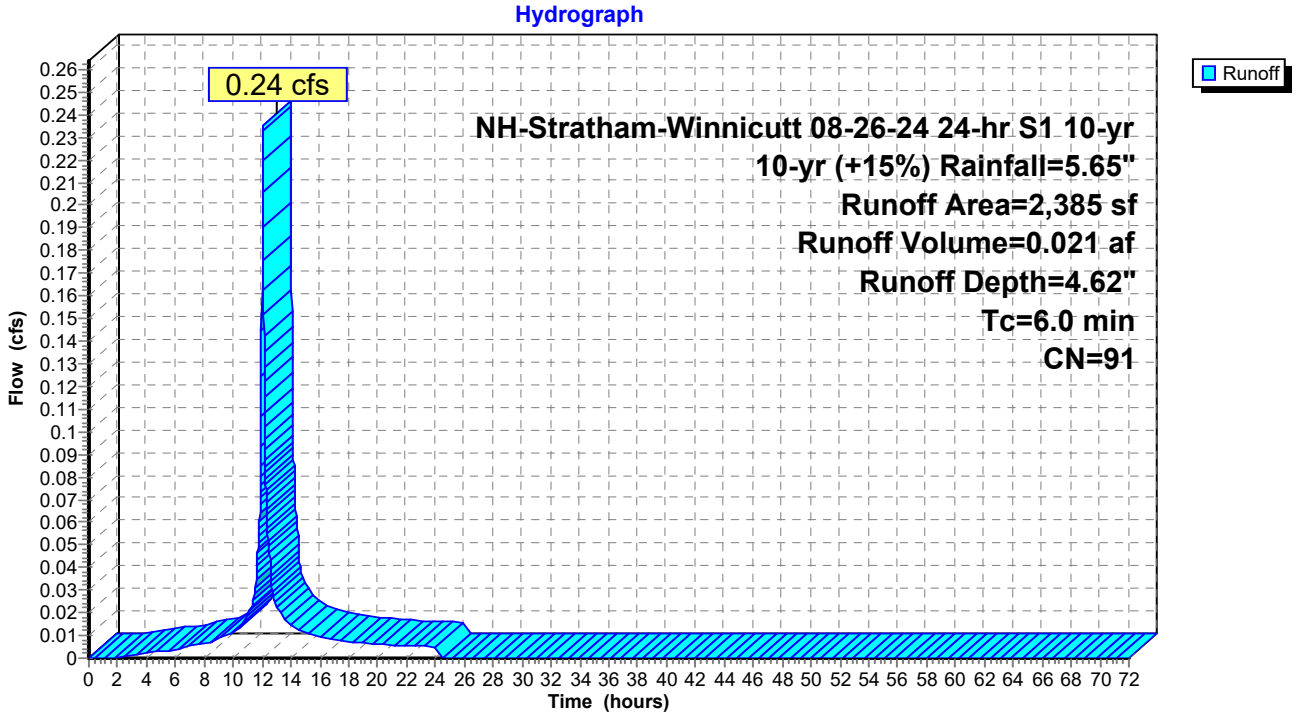
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP74 : Stone Storage for Lot 21

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS33: House of Lot 21



Summary for Subcatchment PS34: House of Lot 15

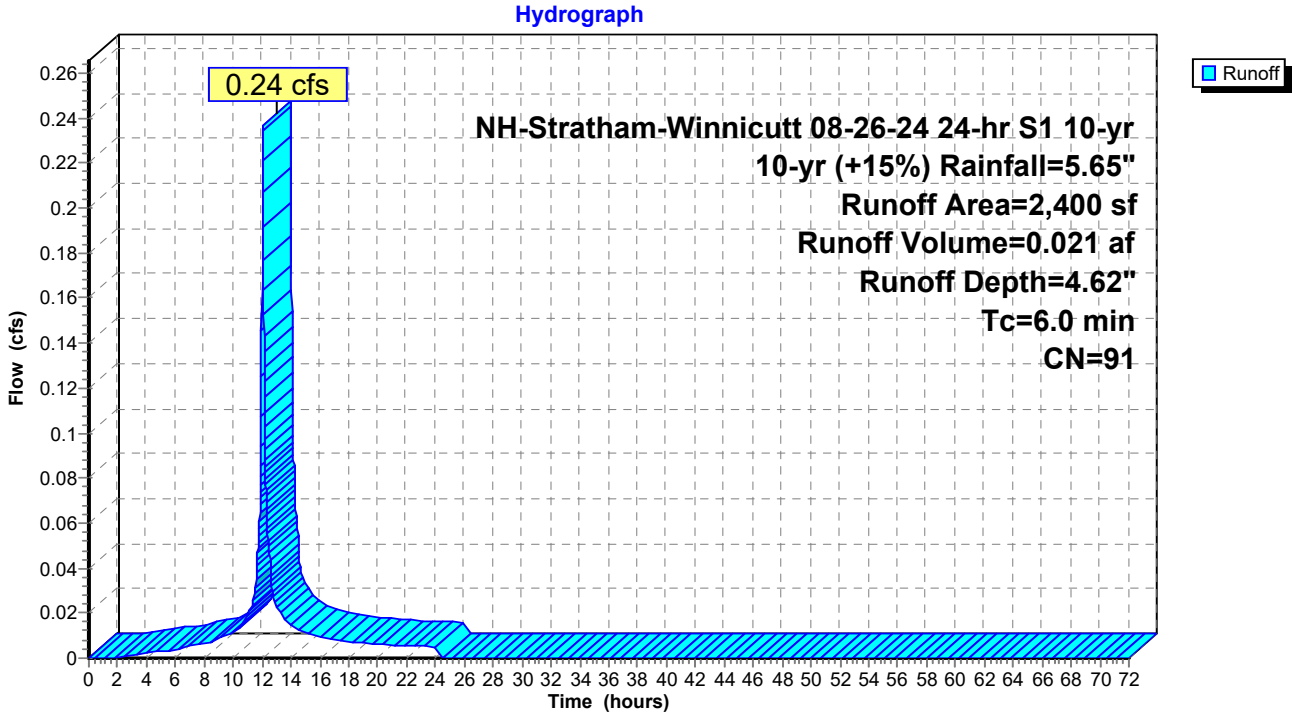
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP75 : Stone Storage for Lot 15

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS34: House of Lot 15



Summary for Subcatchment PS35: House of Lot 14

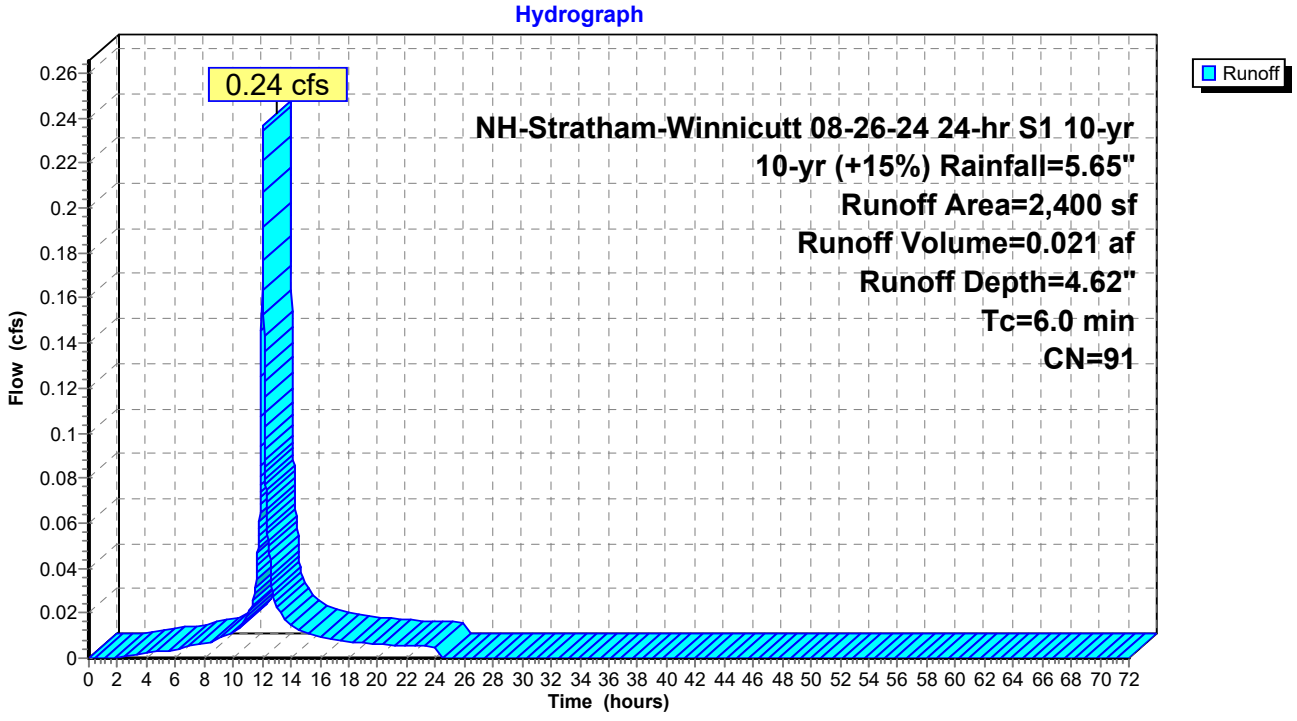
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP76 : Stone Storage for Lot 14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS35: House of Lot 14



Summary for Subcatchment PS36: House of Lot 13

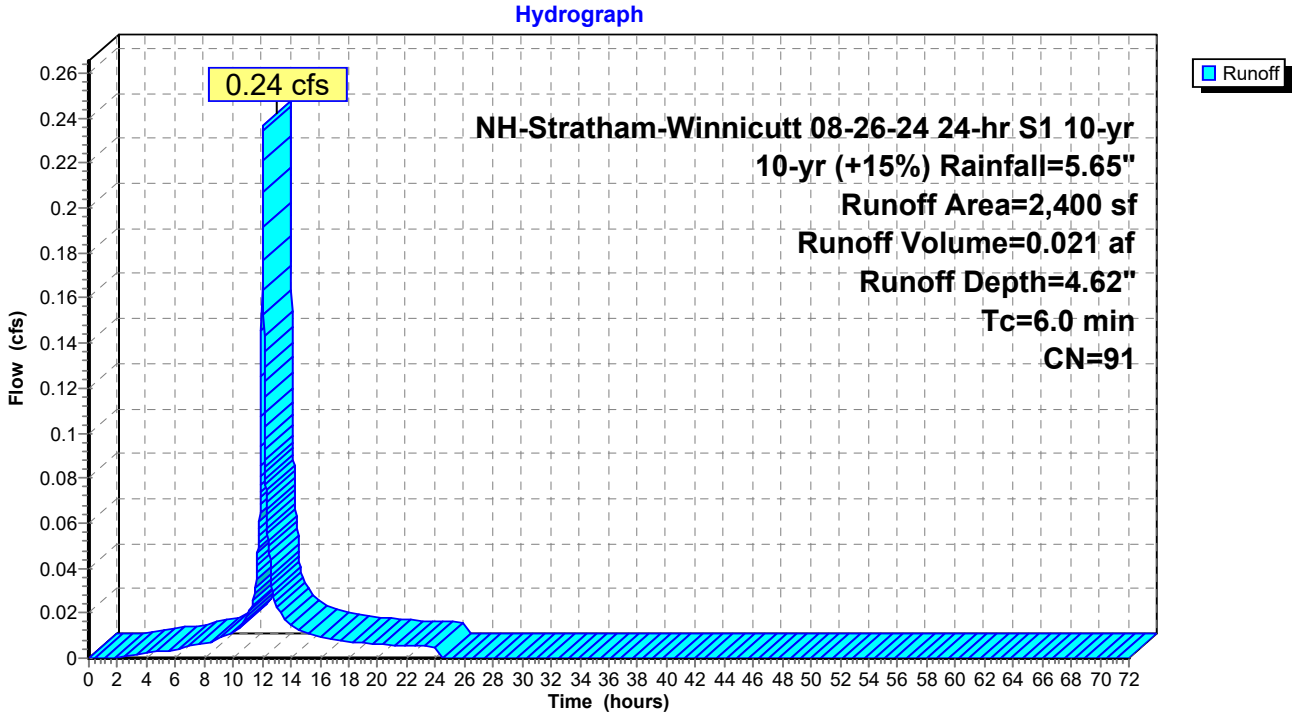
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP77 : Stone Storage for Lot 13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS36: House of Lot 13



Summary for Subcatchment PS37: House of Lot 12

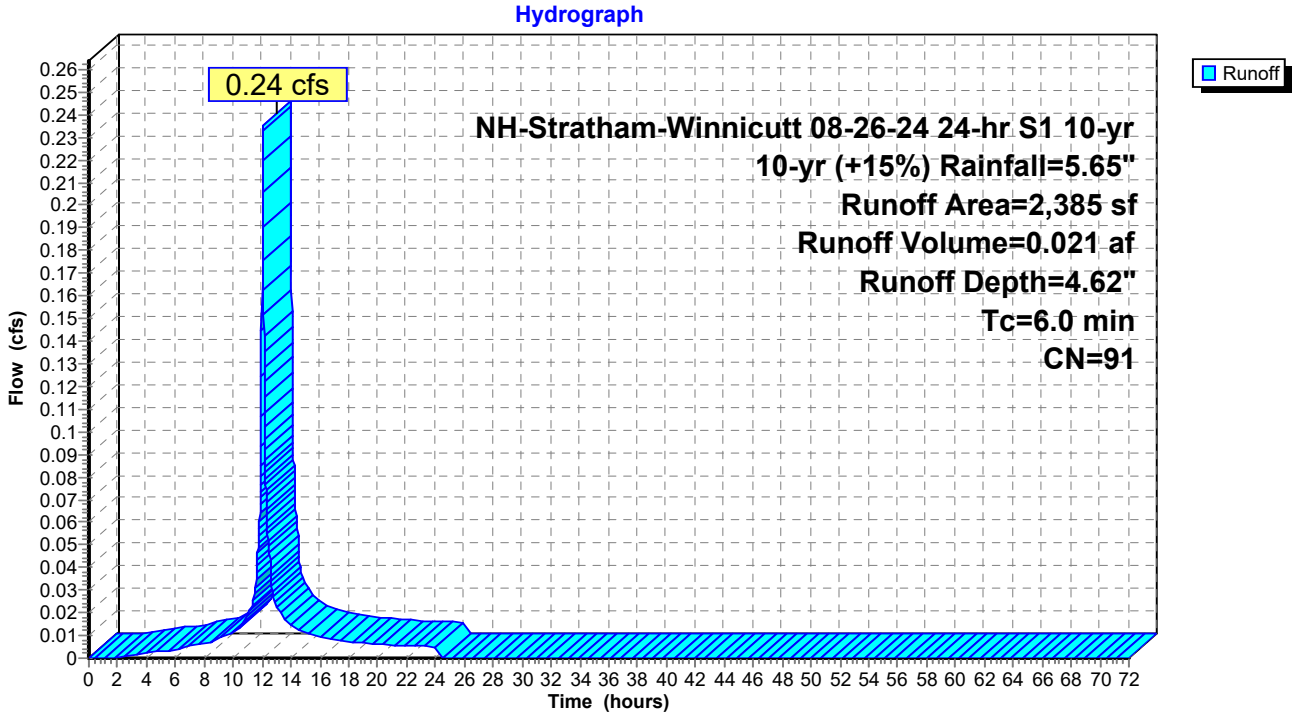
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP78 : Stone Storage for Lot 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS37: House of Lot 12



Summary for Subcatchment PS38: House of Lot 8

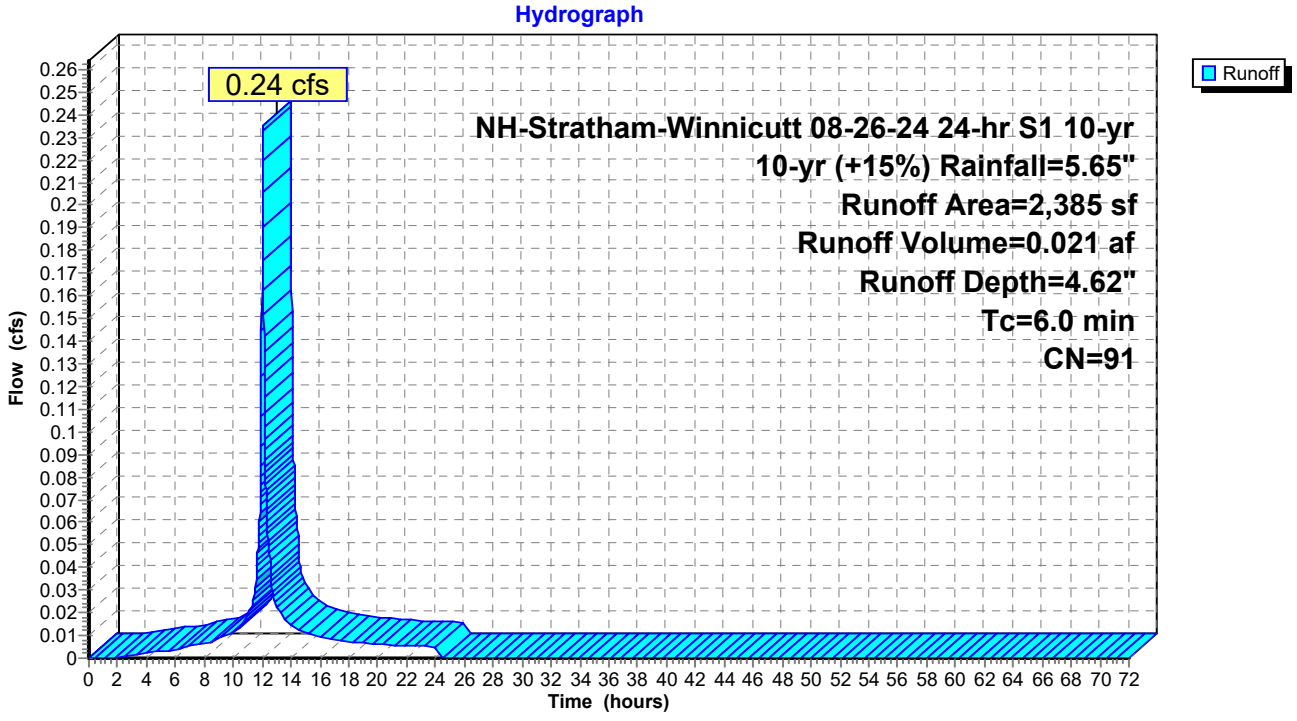
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP79 : Stone Storage for Lot 8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS38: House of Lot 8



Summary for Subcatchment PS39: House of Lot 7

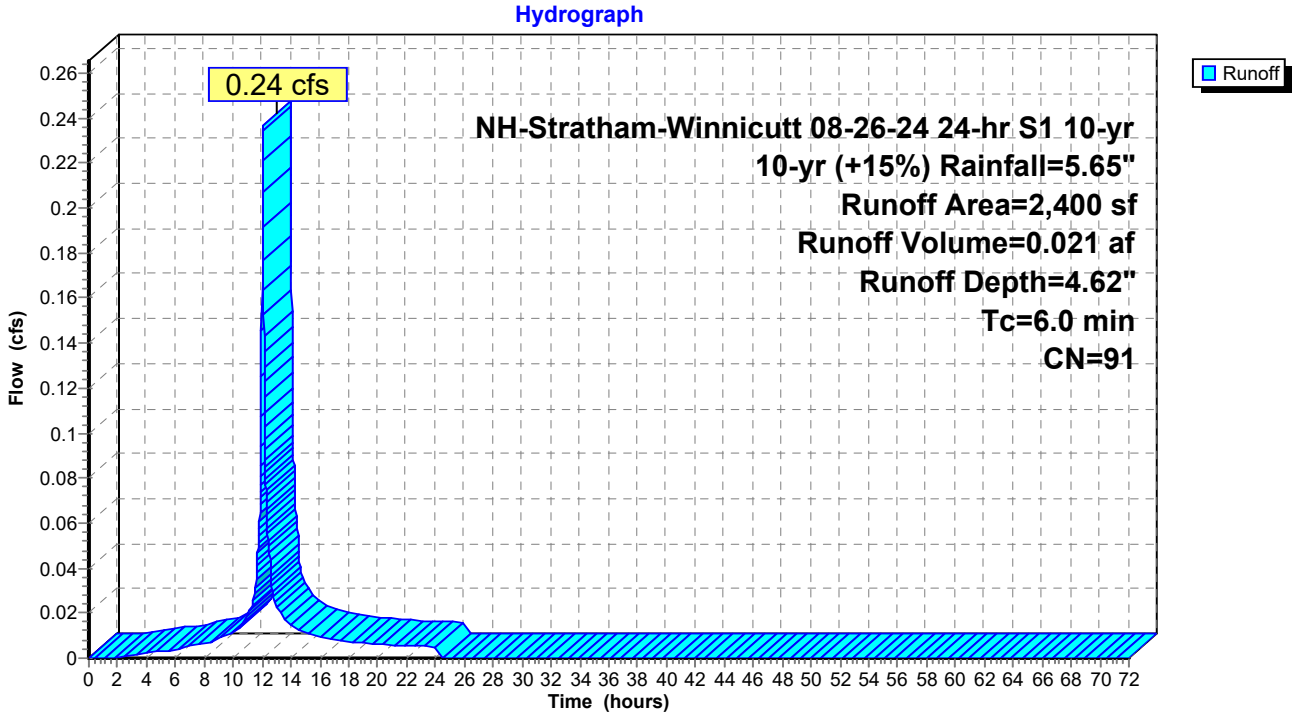
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP80 : Stone Storage for Lot 7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS39: House of Lot 7



Summary for Subcatchment PS4: East Portion of Proposed Main Road along Winnicutt Road

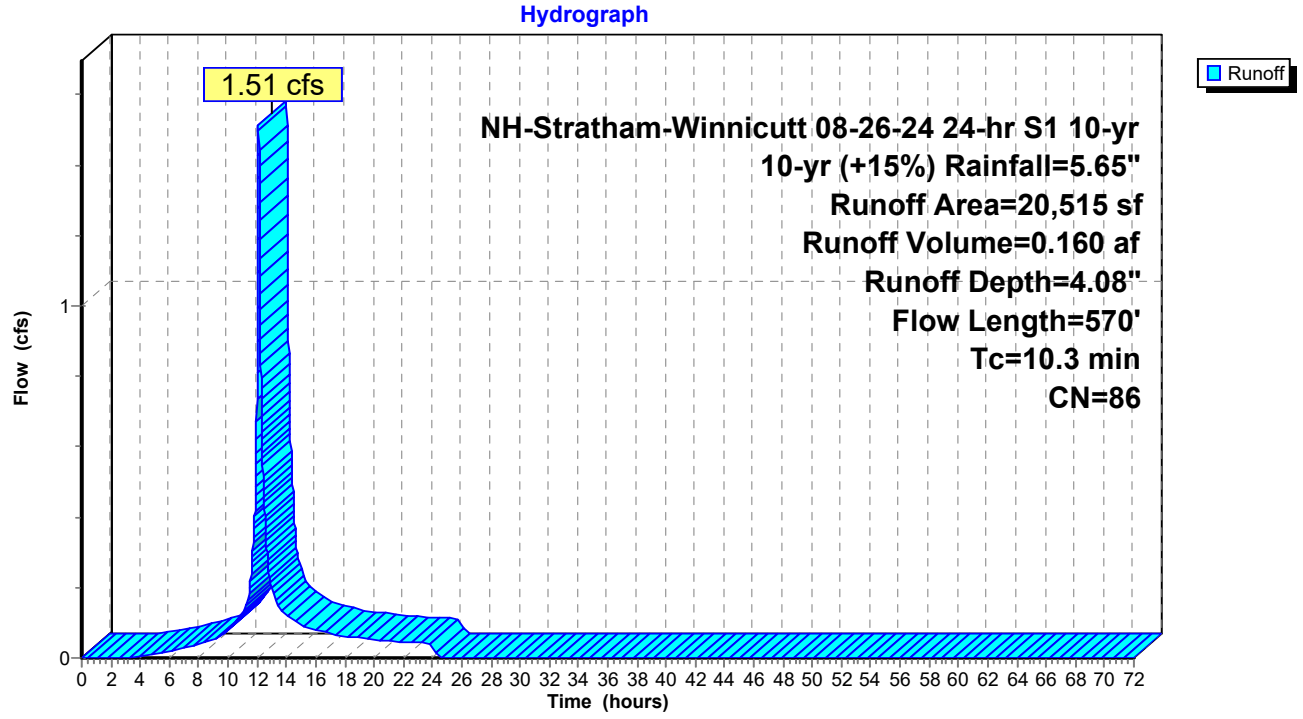
Runoff = 1.51 cfs @ 12.09 hrs, Volume= 0.160 af, Depth= 4.08"
Routed to Pond PP53A : Proposed Swale Along East Side of Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

	Area (sf)	CN	Description
	10,315	74	>75% Grass cover, Good, HSG C
*	10,200	98	Paved parking, HSG C
	20,515	86	Weighted Average
	10,315		50.28% Pervious Area
	10,200		49.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0200	0.98		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.71"
1.3	37	0.3300	0.46		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
8.8	520	0.0200	0.99		**Shallow Concentrated Flow, Grass Swale** Short Grass Pasture Kv= 7.0 fps
10.3	570	Total			

Subcatchment PS4: East Portion of Proposed Main Road along Winnicutt Road



Summary for Subcatchment PS40: House of Lot 6

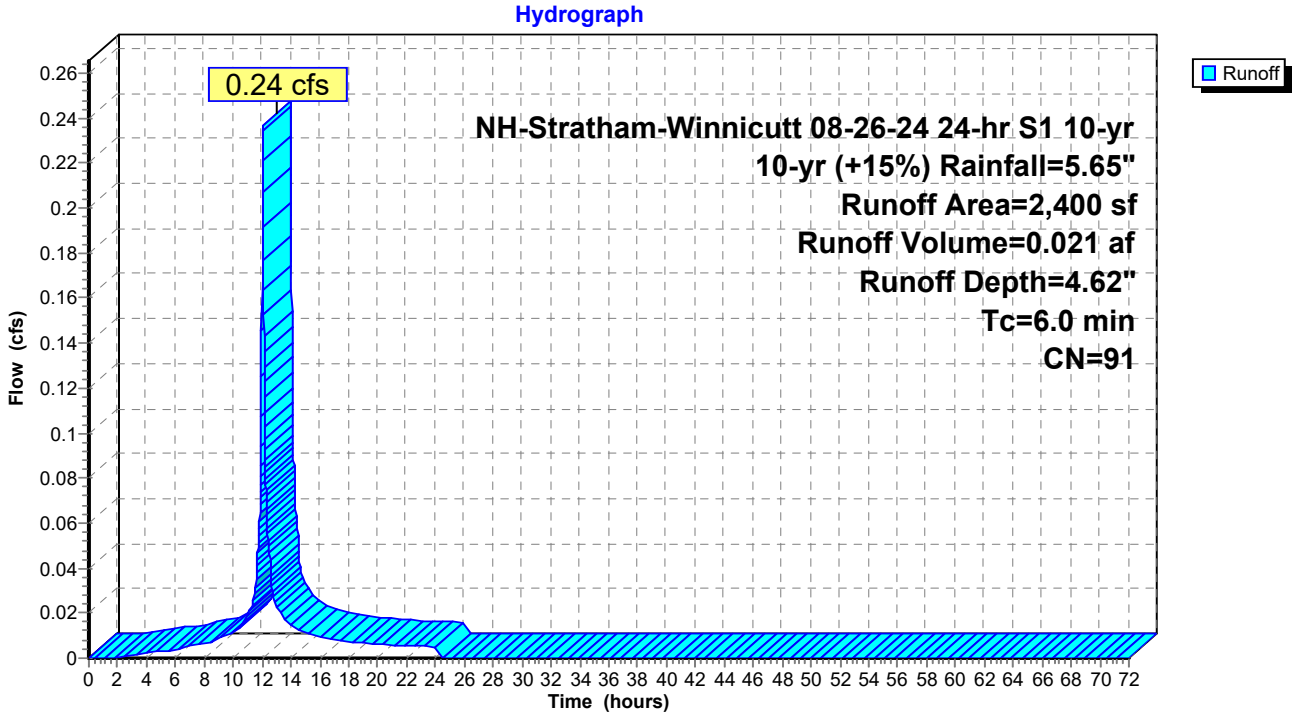
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP81 : Stone Storage for Lot 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS40: House of Lot 6



Summary for Subcatchment PS41: House of Lot 5

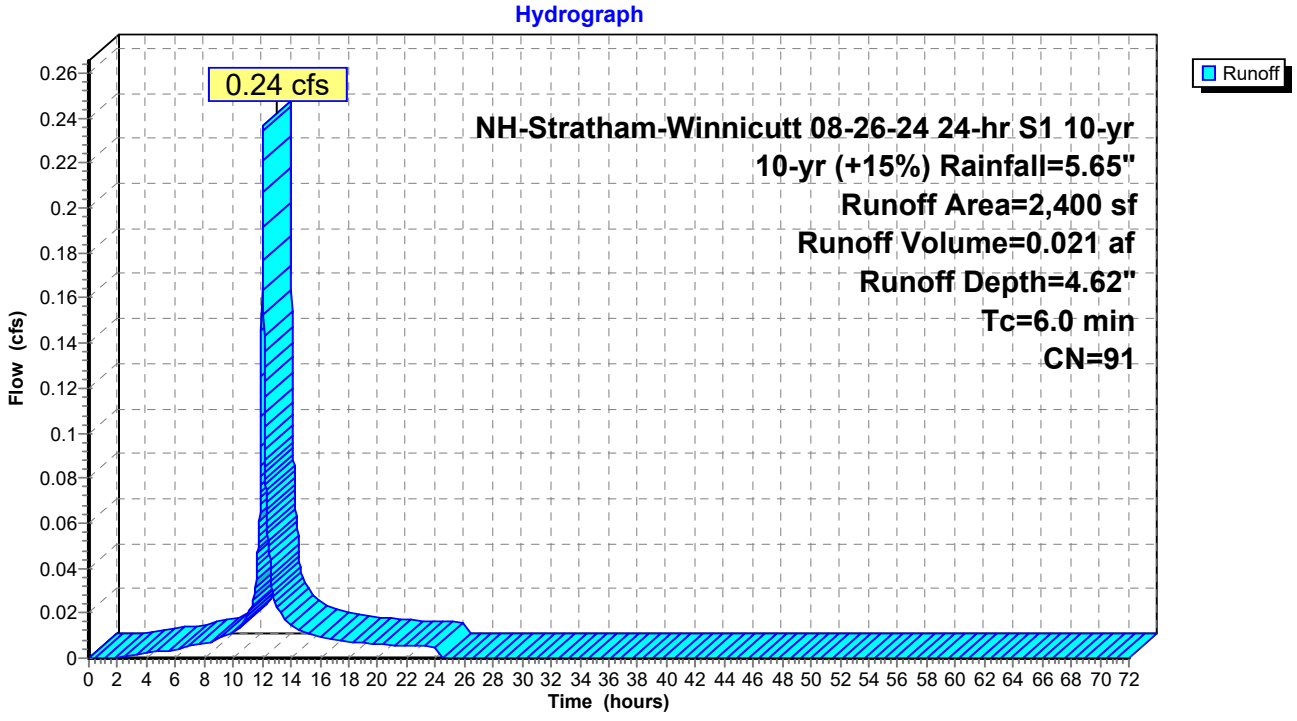
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP82 : Stone Storage for Lot 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS41: House of Lot 5



Summary for Subcatchment PS42: House of Lot 4

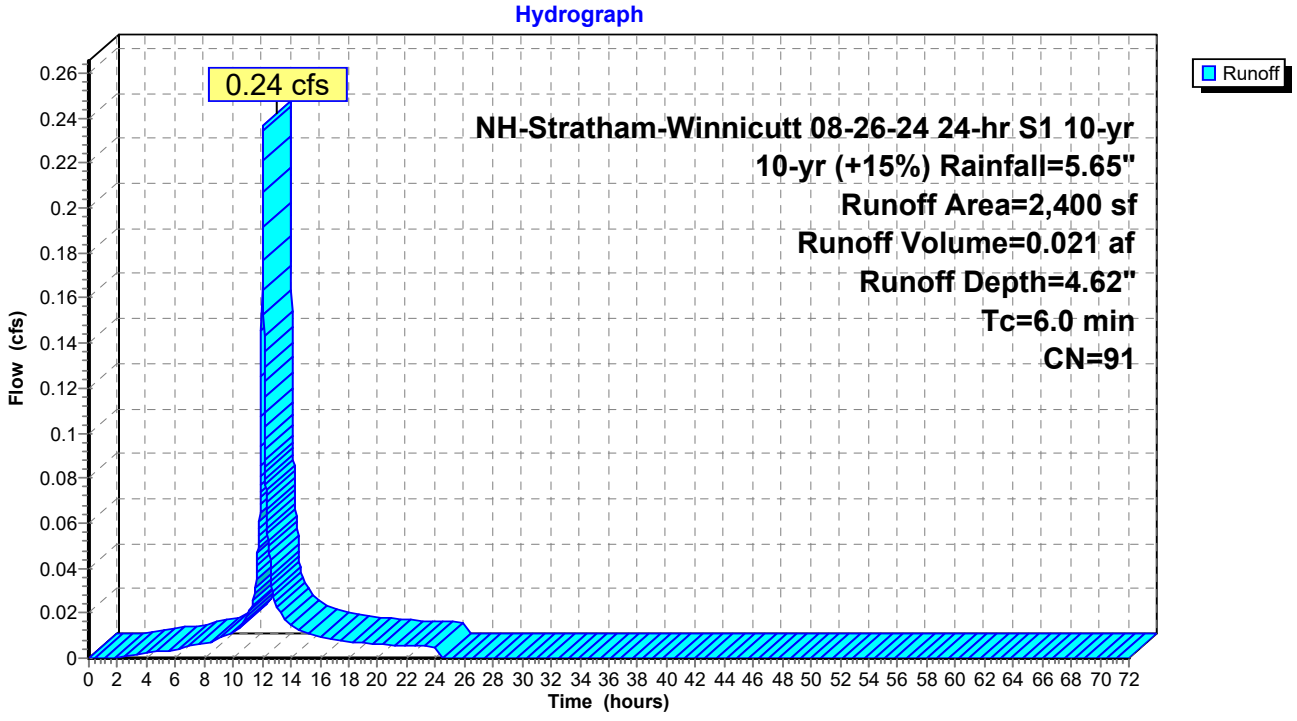
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP83 : Stone Storage for Lot 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS42: House of Lot 4



Summary for Subcatchment PS43: House of Lot 3

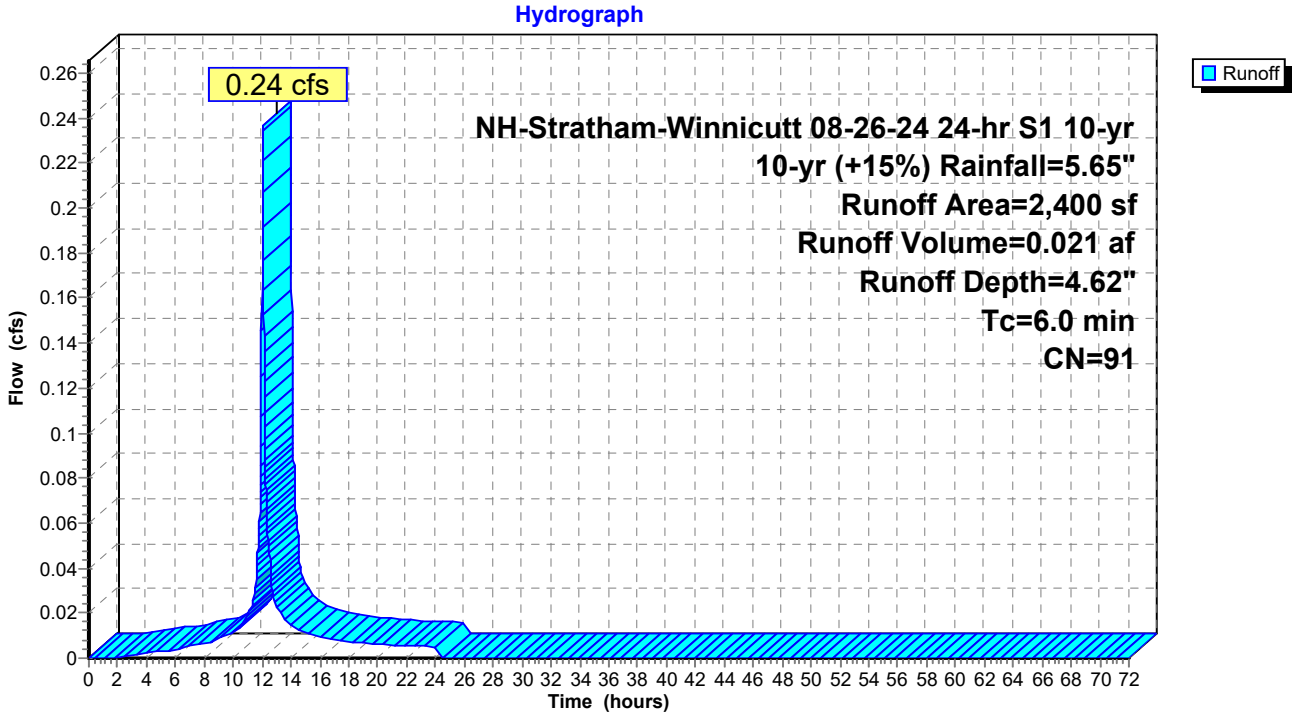
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP84 : Stone Storage for Lot 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS43: House of Lot 3



Summary for Subcatchment PS44: House of Lot 2

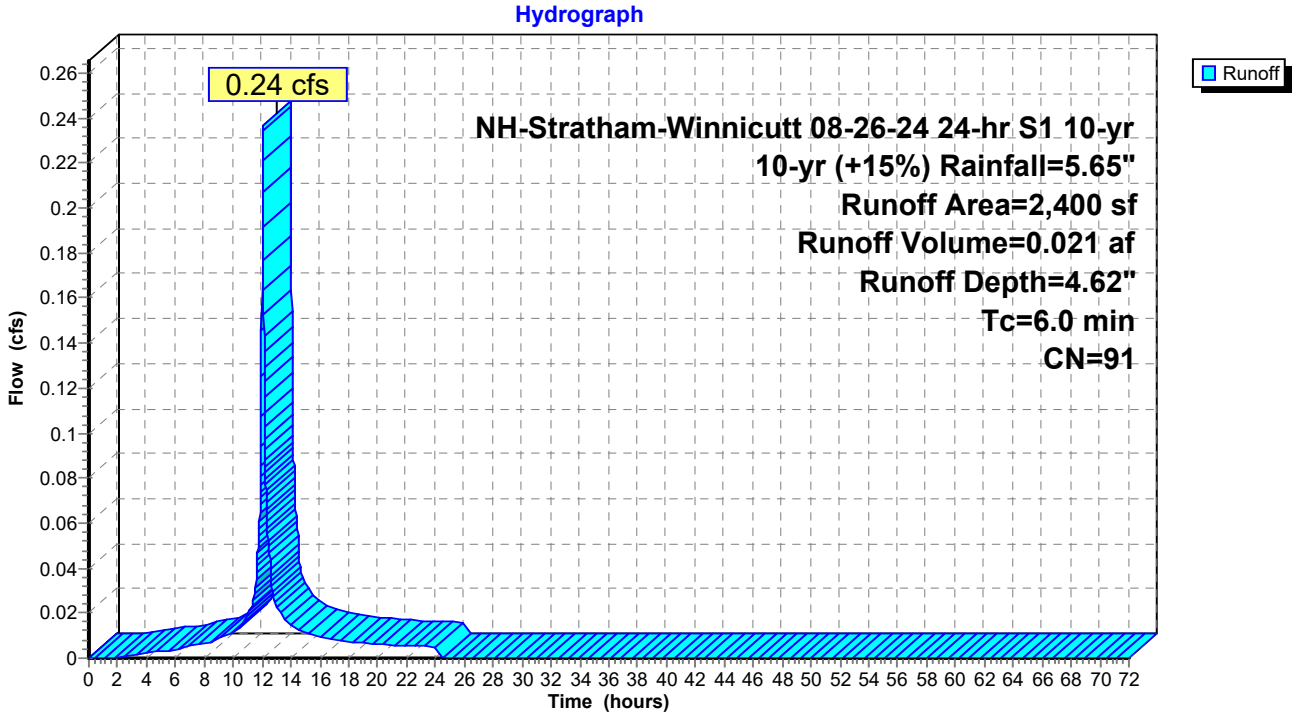
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP85 : Stone Storage for Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS44: House of Lot 2



Summary for Subcatchment PS45: House of Lot 1

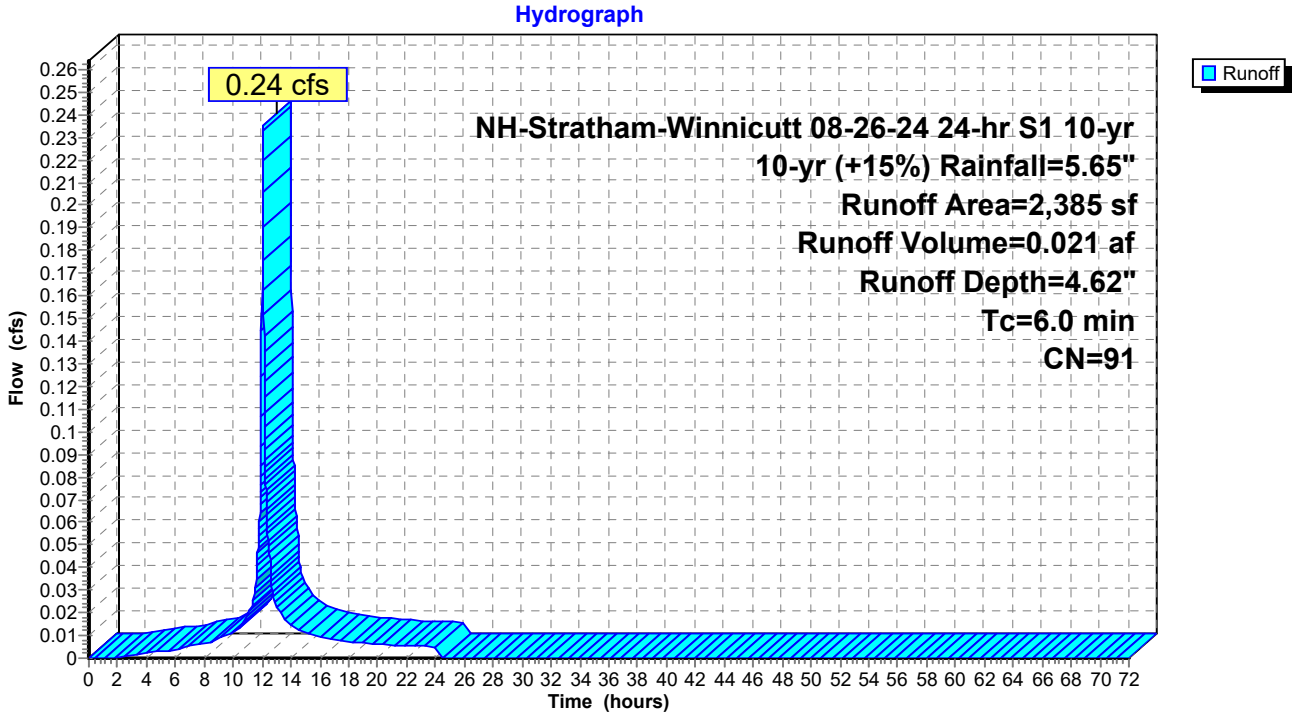
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP86 : Stone Storage for Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS45: House of Lot 1



Summary for Subcatchment PS46: House of Lot 11

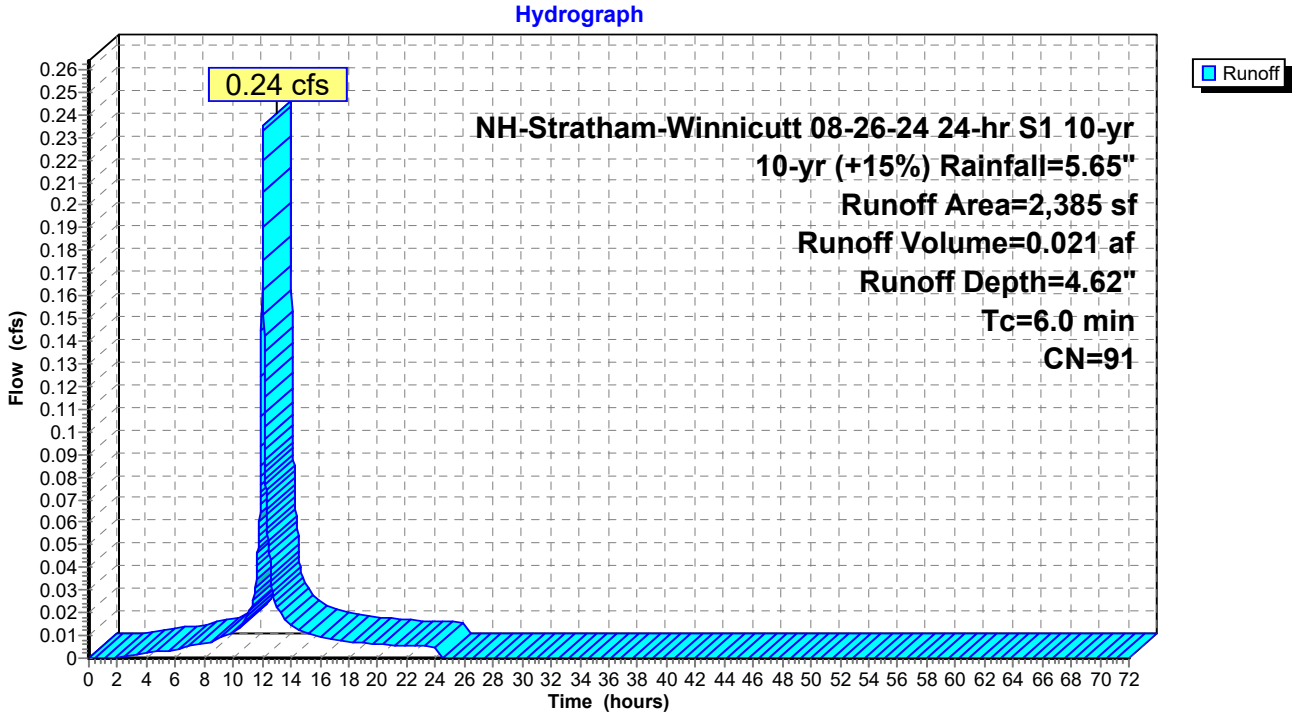
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP87 : Stone Storage for Lot 11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS46: House of Lot 11



Summary for Subcatchment PS47: House of Lot 10

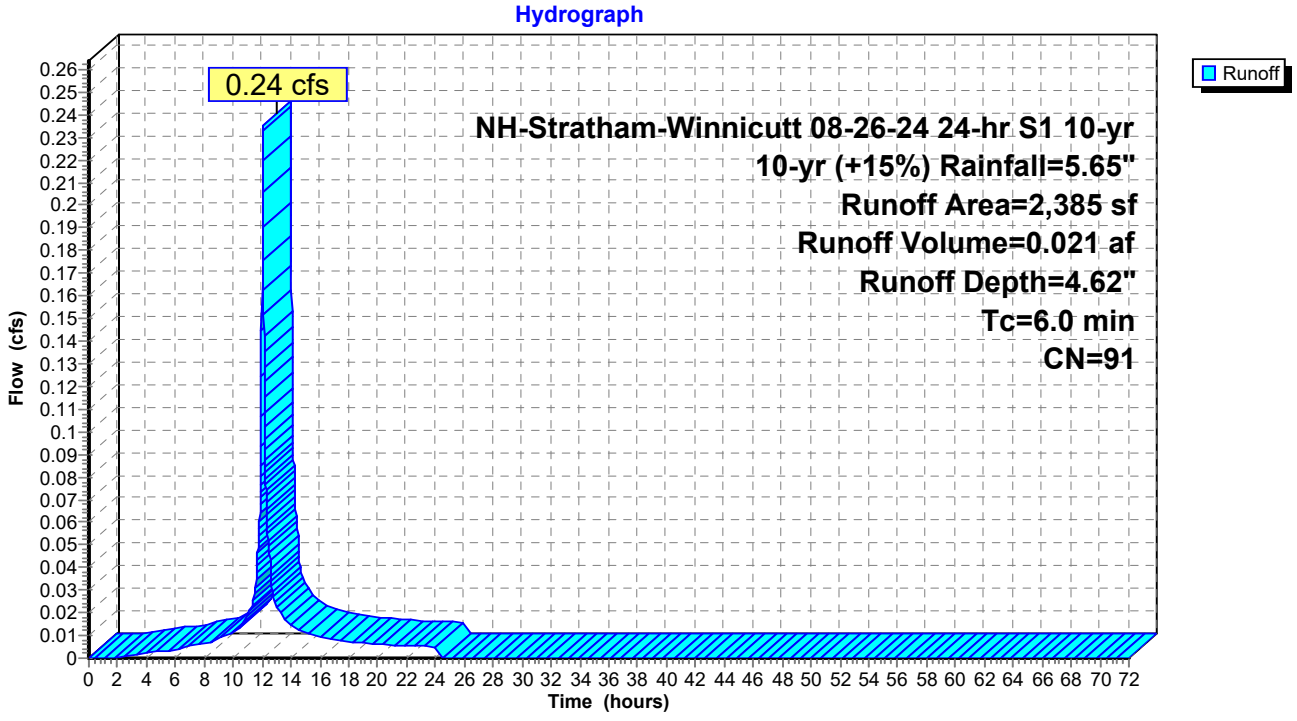
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 4.62"
Routed to Pond PP88 : Stone Storage for Lot 10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS47: House of Lot 10



Summary for Subcatchment PS48: Eastern Half of Existing House of Lot 9

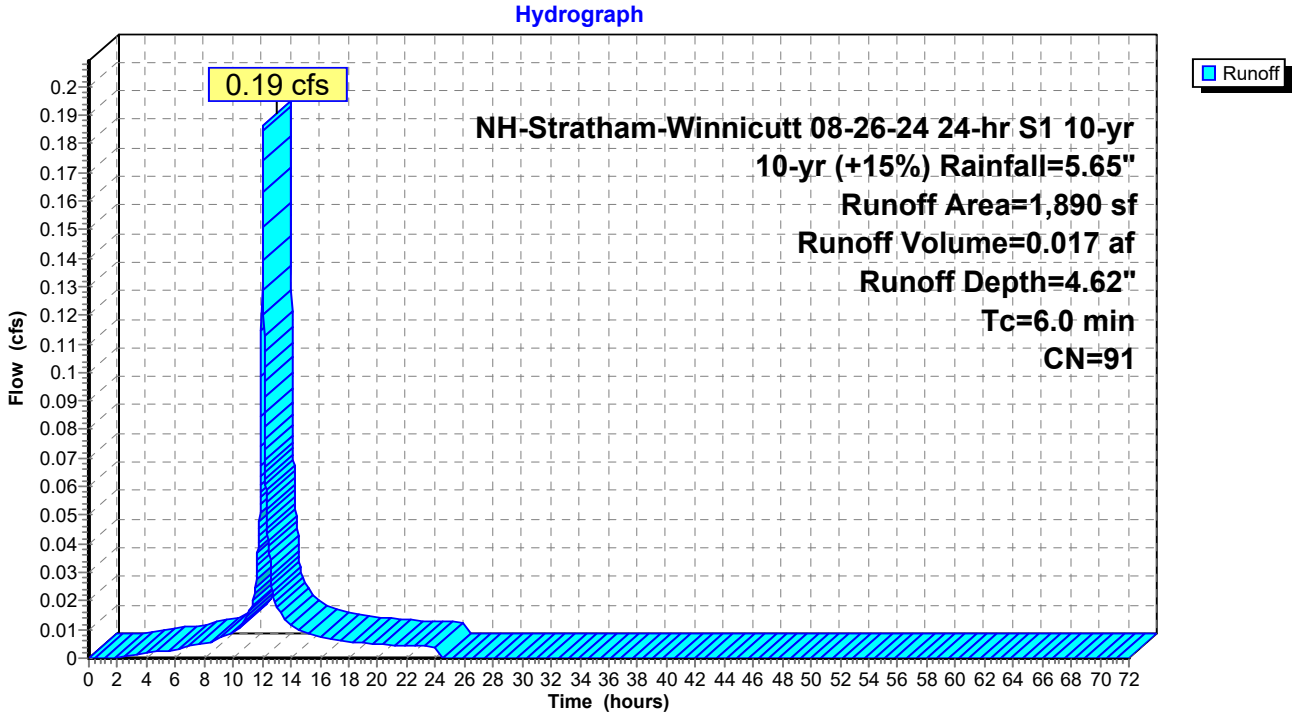
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP89 : Stone Storage for the House on Lot 9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
515	74	>75% Grass cover, Good, HSG C
1,375	98	Roofs, HSG C
1,890	91	Weighted Average
515		27.25% Pervious Area
1,375		72.75% Impervious Area

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

Subcatchment PS48: Eastern Half of Existing House of Lot 9



Summary for Subcatchment PS49: Relocated Barn of Lot 9

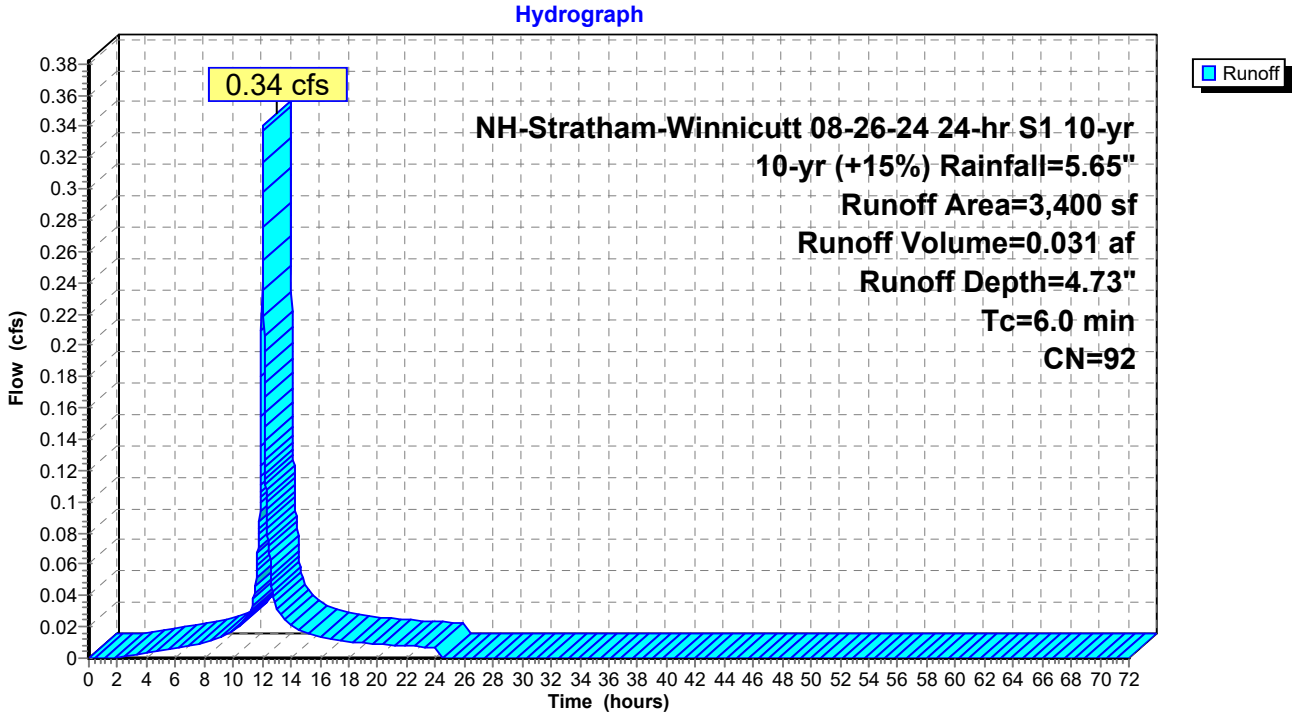
Runoff = 0.34 cfs @ 12.04 hrs, Volume= 0.031 af, Depth= 4.73"
Routed to Pond PP90 : Stone Storage for the Barn on Lot 9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
880	74	>75% Grass cover, Good, HSG C
2,520	98	Roofs, HSG C
3,400	92	Weighted Average
880		25.88% Pervious Area
2,520		74.12% Impervious Area

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

Subcatchment PS49: Relocated Barn of Lot 9



Summary for Subcatchment PS4A: Area of Proposed Bioretention Pond "A2"

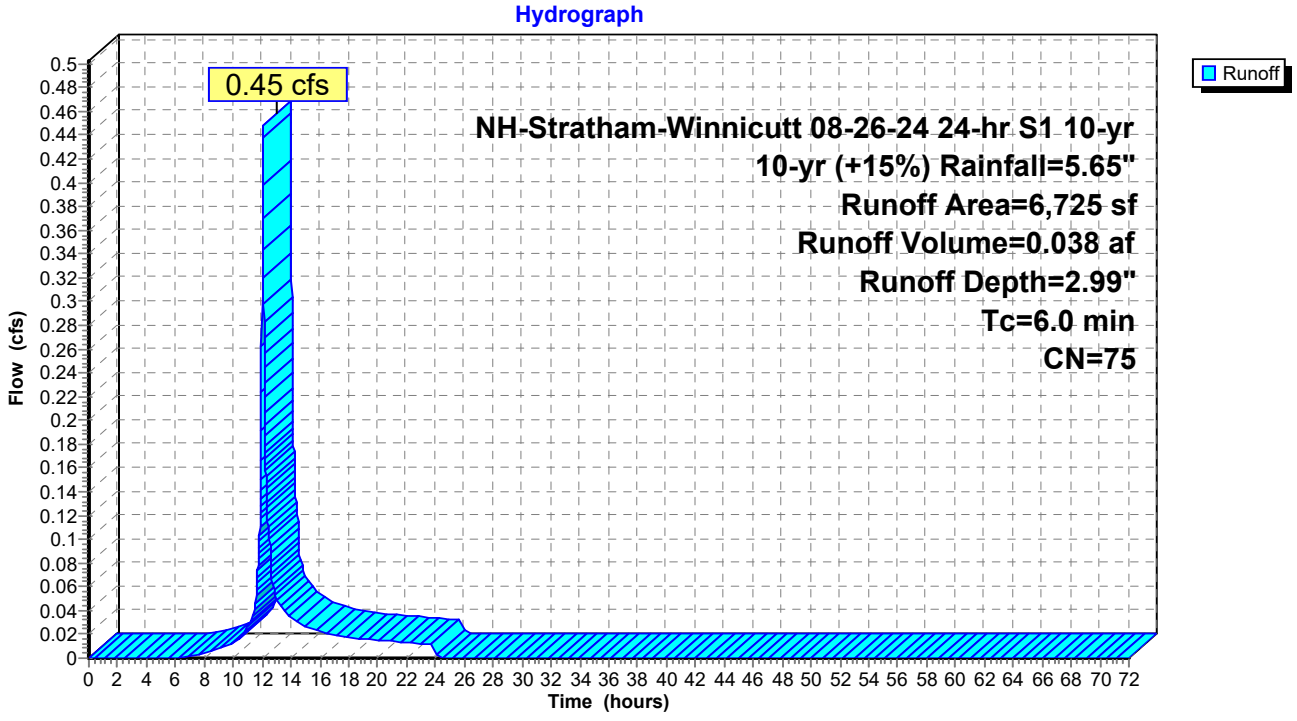
Runoff = 0.45 cfs @ 12.04 hrs, Volume= 0.038 af, Depth= 2.99"
Routed to Pond PP54 : Proposed Bioretention Basin "A2"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
6,515	74	>75% Grass cover, Good, HSG C
210	98	Roofs, HSG C
6,725	75	Weighted Average
6,515		96.88% Pervious Area
210		3.12% Impervious Area

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

Subcatchment PS4A: Area of Proposed Bioretention Pond "A2"



Summary for Subcatchment PS5: Area on Northeast Corner of Lot, East of Existing Driveway

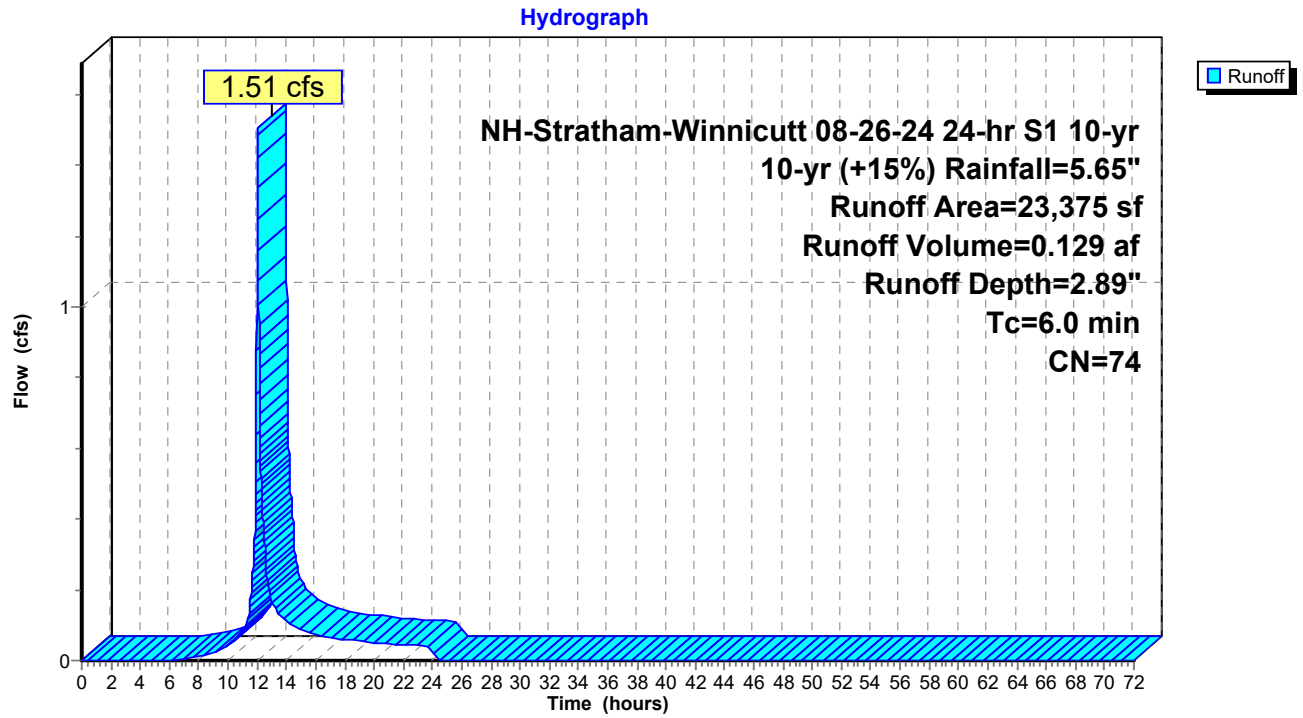
Runoff = 1.51 cfs @ 12.04 hrs, Volume= 0.129 af, Depth= 2.89"
Routed to Pond PP50 : Wetlands East of Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
12,120	74	>75% Grass cover, Good, HSG C
70	80	>75% Grass cover, Good, HSG D
5,585	70	Woods, Good, HSG C
5,600	77	Woods, Good, HSG D
23,375	74	Weighted Average
23,375		100.00% Pervious Area

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

Subcatchment PS5: Area on Northeast Corner of Lot, East of Existing Driveway



Summary for Subcatchment PS6: Area East of Driveway, Adjacent to Pond

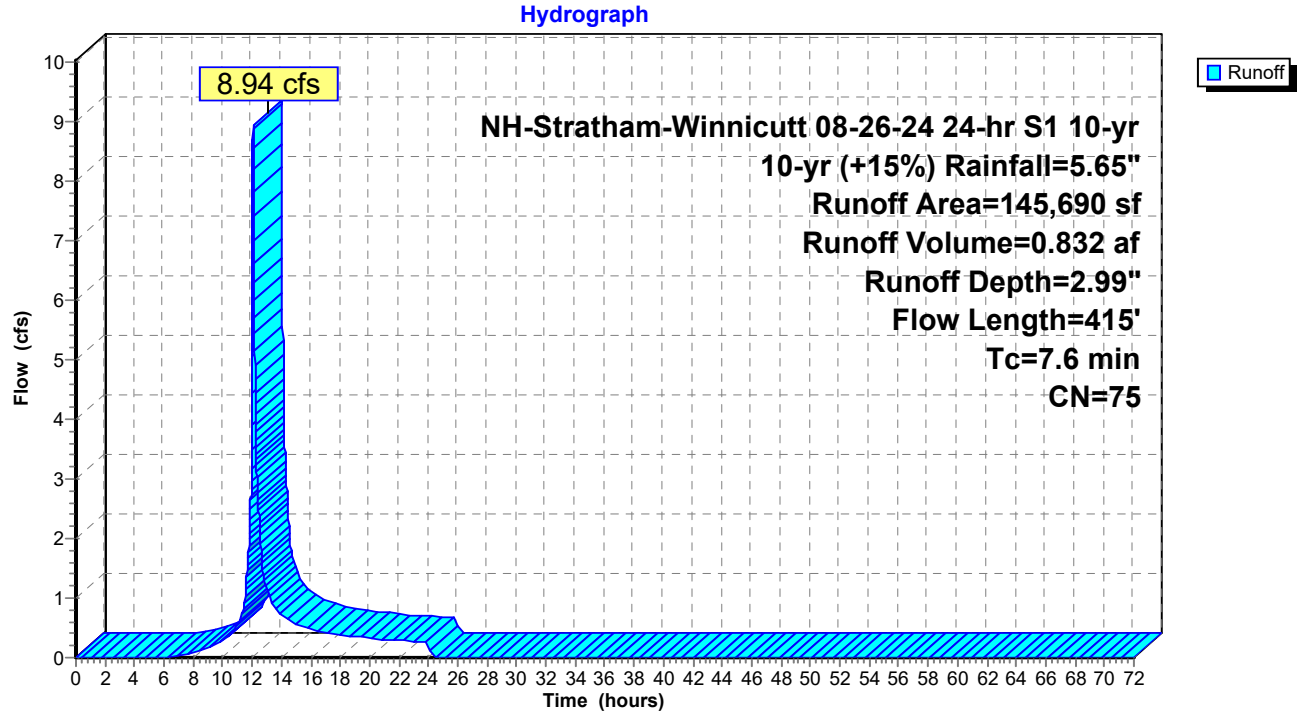
Runoff = 8.94 cfs @ 12.06 hrs, Volume= 0.832 af, Depth= 2.99"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
133,030	74	>75% Grass cover, Good, HSG C
9,670	80	>75% Grass cover, Good, HSG D
1,595	70	Woods, Good, HSG C
200	98	Roofs, HSG C
1,195	98	Paved parking, HSG C
145,690	75	Weighted Average
144,295		99.04% Pervious Area
1,395		0.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0600	0.25		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
4.2	365	0.0430	1.45		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
7.6	415	Total			

Subcatchment PS6: Area East of Driveway, Adjacent to Pond



Summary for Subcatchment PS7A: Proposed Driveway For Lot 33

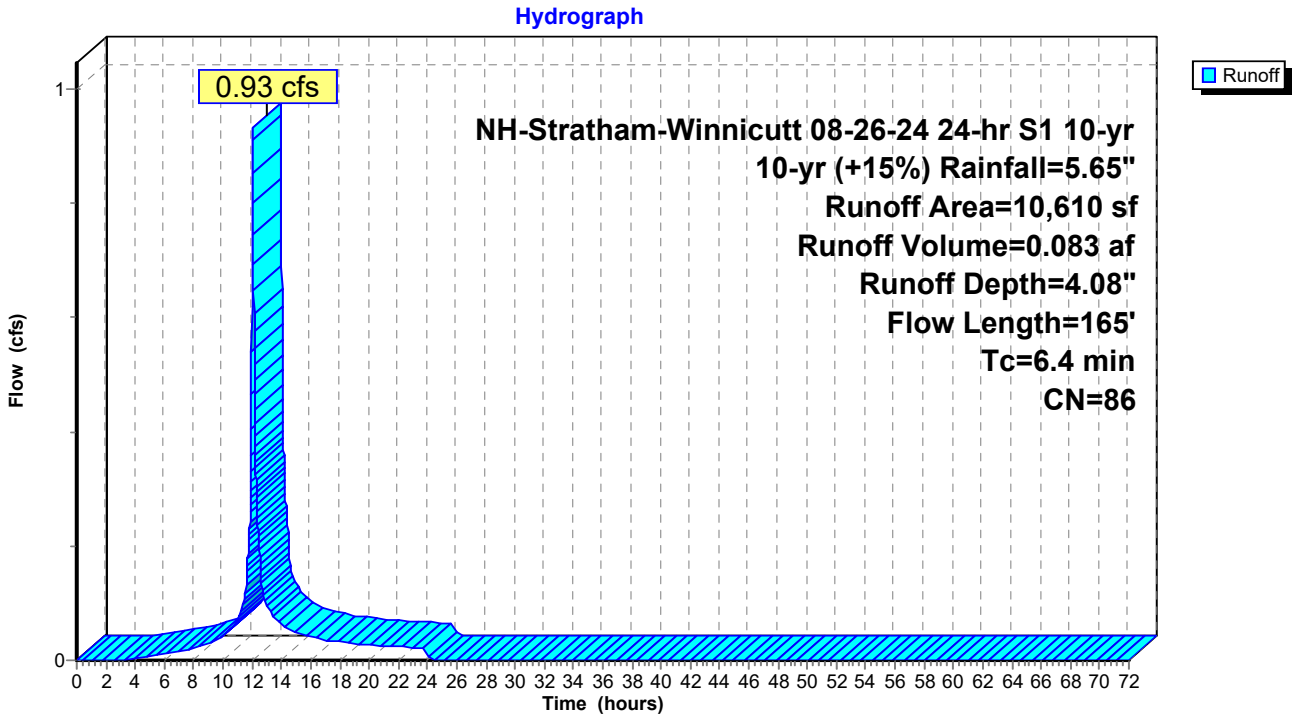
Runoff = 0.93 cfs @ 12.04 hrs, Volume= 0.083 af, Depth= 4.08"
Routed to Pond PP59 : Existing Transferance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
5,185	74	>75% Grass cover, Good, HSG C
5,425	98	Paved parking, HSG C
10,610	86	Weighted Average
5,185		48.87% Pervious Area
5,425		51.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.2	115	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
6.4	165	Total			

Subcatchment PS7A: Proposed Driveway For Lot 33



Summary for Subcatchment PS7B: Proposed Driveway For Lot 32

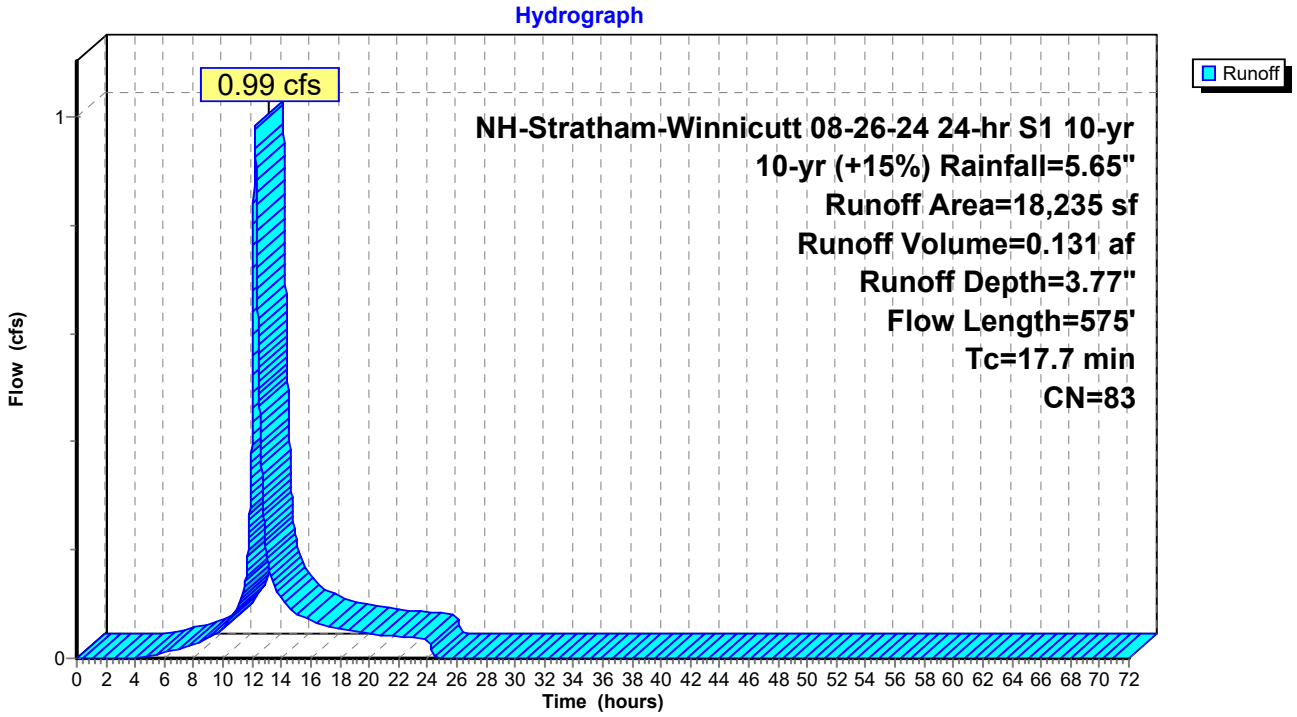
Runoff = 0.99 cfs @ 12.19 hrs, Volume= 0.131 af, Depth= 3.77"
Routed to Reach ER76 : Existing Swale from East Portion of Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
10,355	74	>75% Grass cover, Good, HSG C
1,045	70	Woods, Good, HSG C
6,835	98	Paved parking, HSG C
18,235	83	Weighted Average
11,400		62.52% Pervious Area
6,835		37.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.7	30	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow, Pavement** Paved Kv= 20.3 fps
1.7	70	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow, Pavement** Paved Kv= 20.3 fps
1.0	60	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
2.6	110	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
6.1	215	0.0140	0.59		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
17.7	575	Total			

Subcatchment PS7B: Proposed Driveway For Lot 32



Summary for Subcatchment PS7C: House D of Lot 33

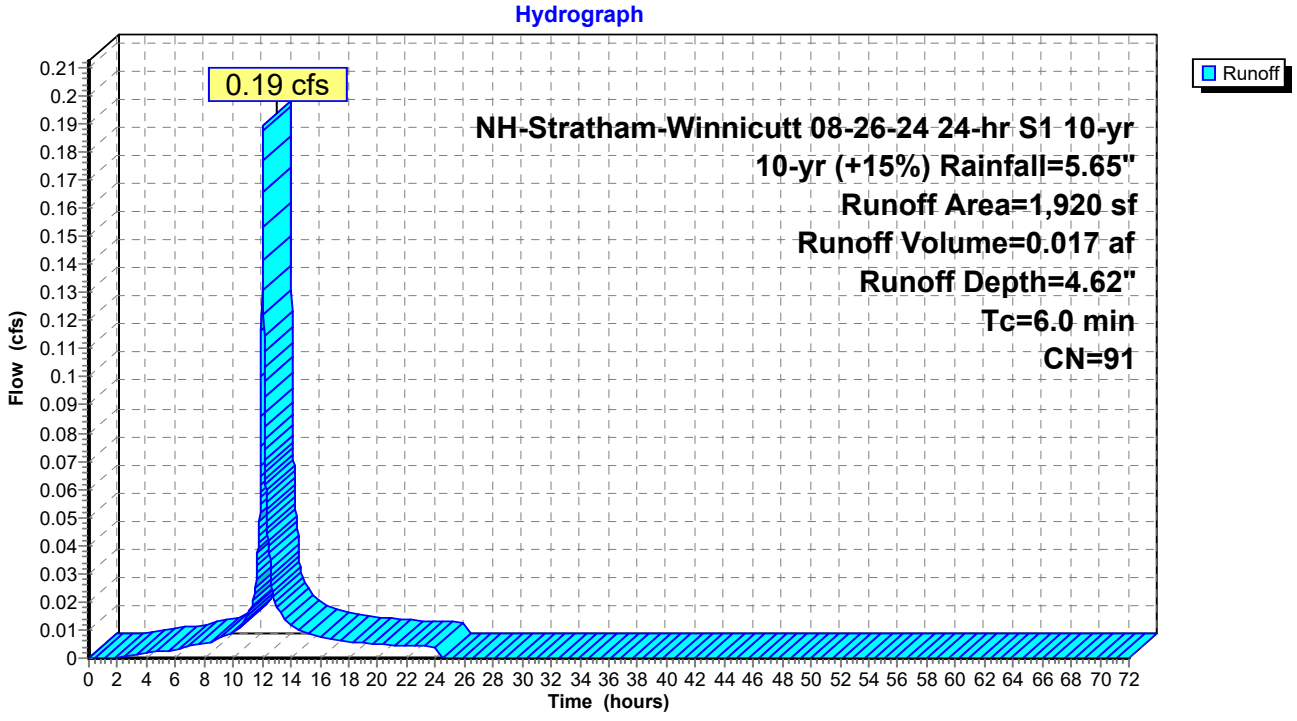
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP91 : Stone Storage for House D of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7C: House D of Lot 33



Summary for Subcatchment PS7D: House C of Lot 33

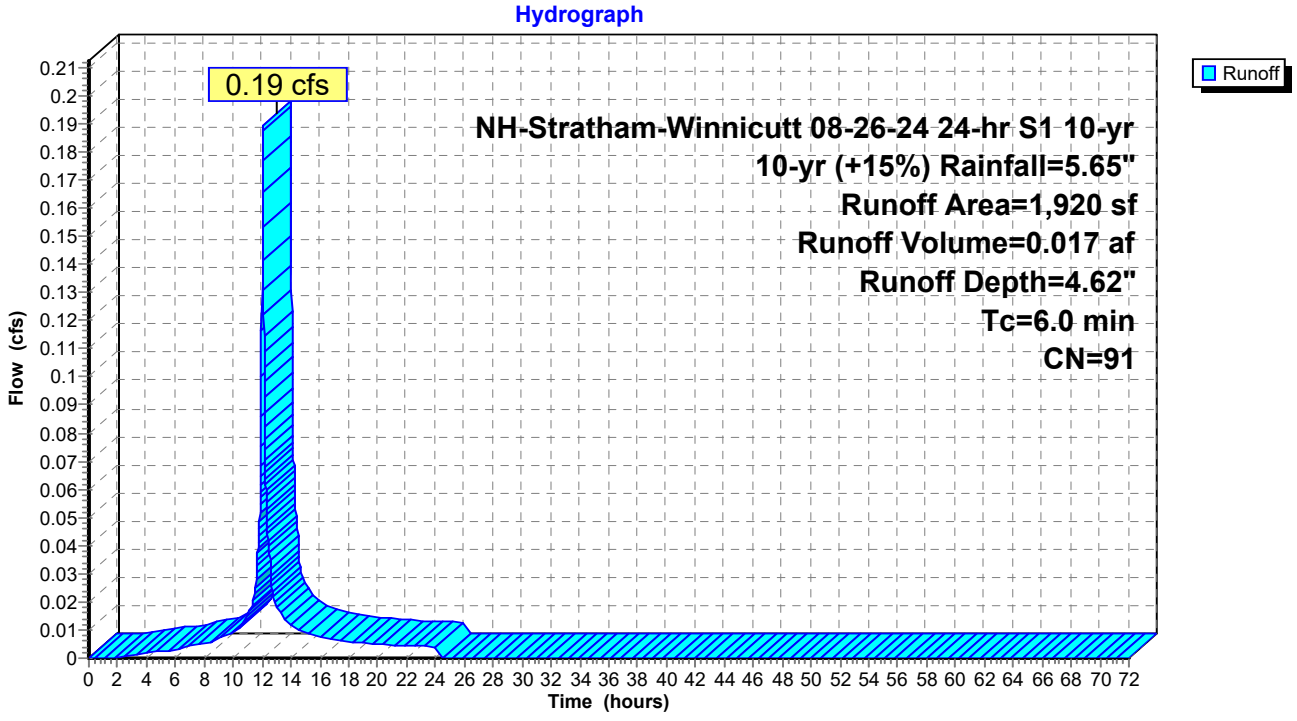
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP92 : Stone Storage for House C of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7D: House C of Lot 33



Summary for Subcatchment PS7E: House B of Lot 33

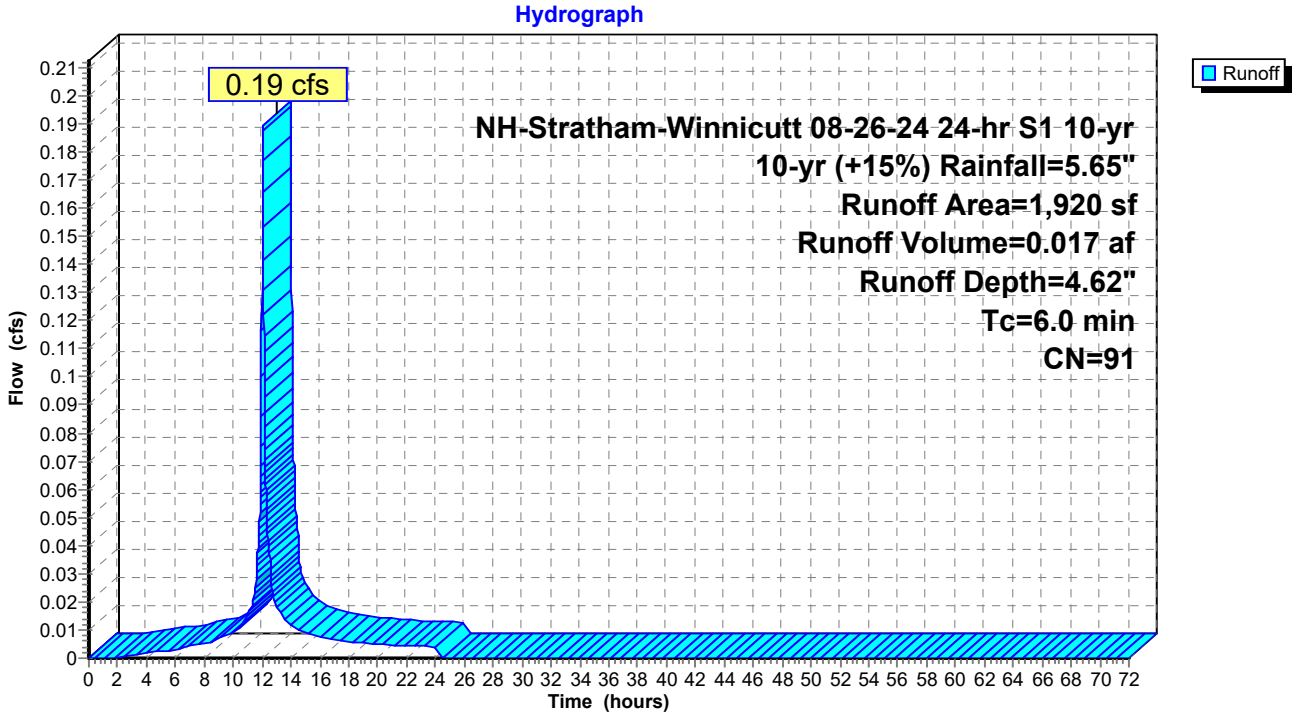
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP93 : Stone Storage for House B of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7E: House B of Lot 33



Summary for Subcatchment PS7F: House A of Lot 33

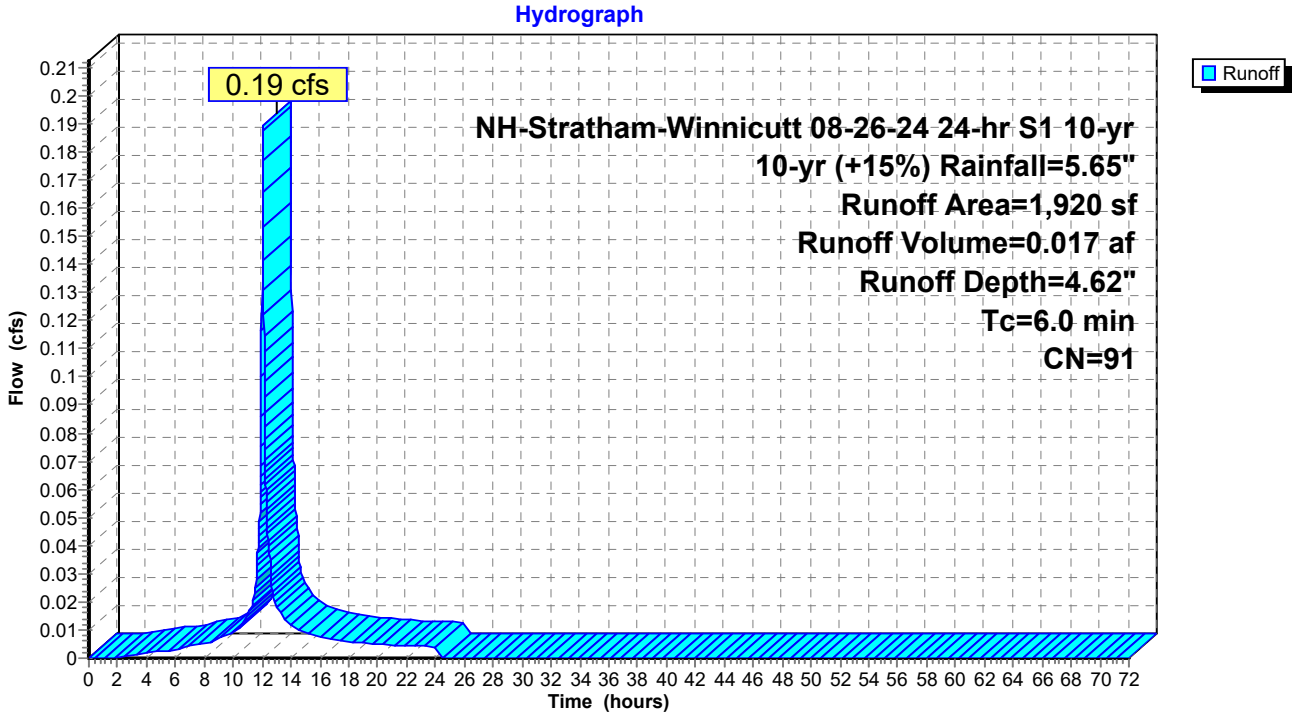
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP94 : Stone Storage for House A of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7F: House A of Lot 33



Summary for Subcatchment PS7G: House A of Lot 32

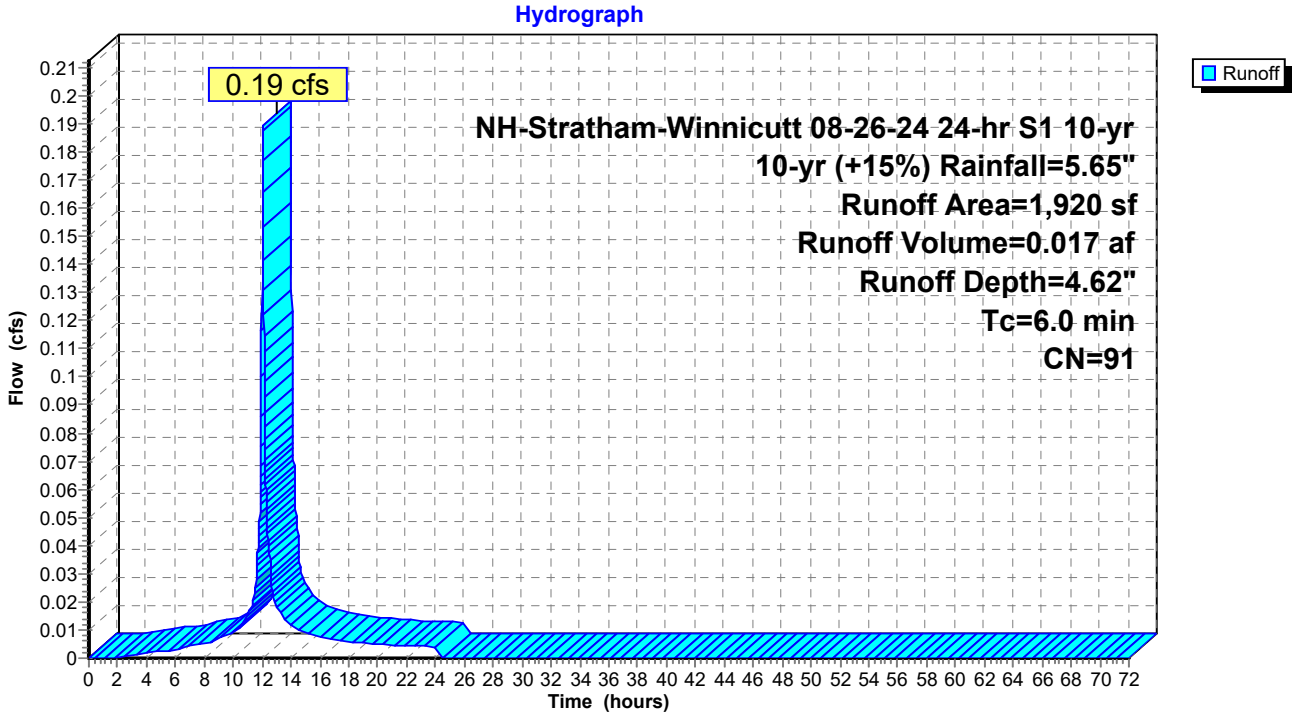
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP95 : Stone Storage for House A of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7G: House A of Lot 32



Summary for Subcatchment PS7H: House B of Lot 32

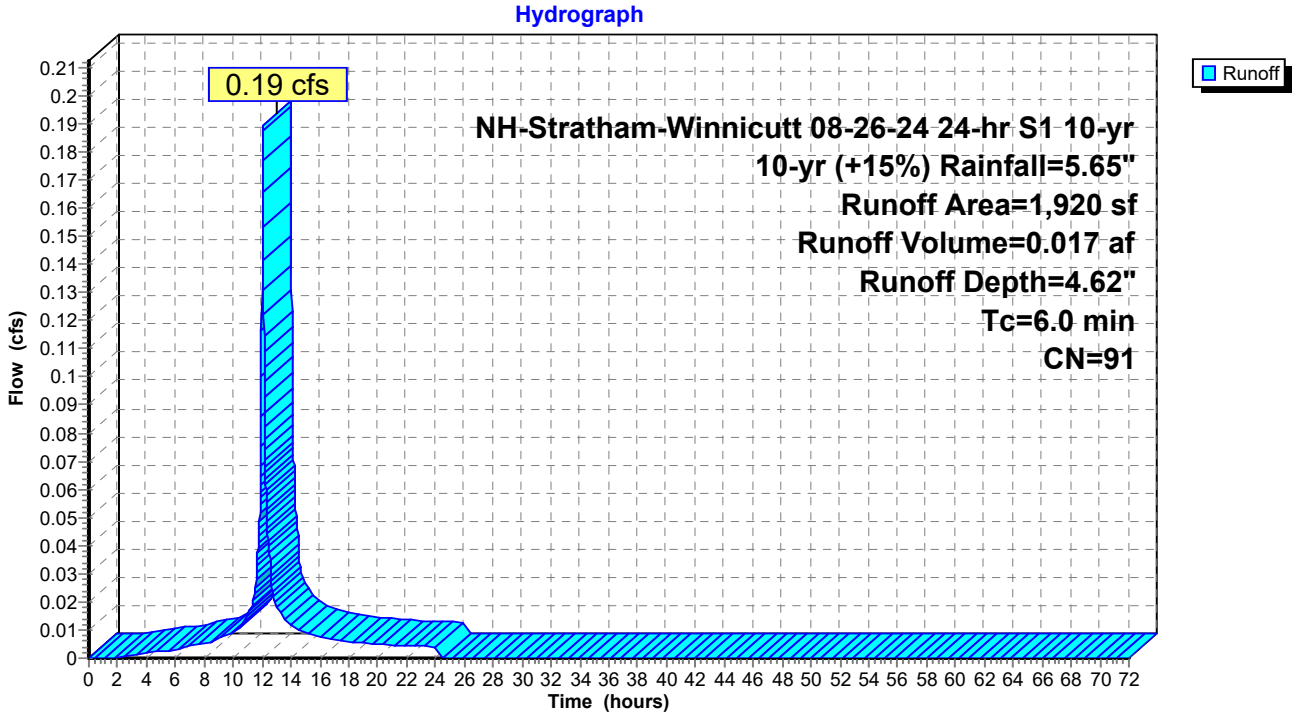
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP96 : Stone Storage for House B of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7H: House B of Lot 32



Summary for Subcatchment PS7I: House C of Lot 32

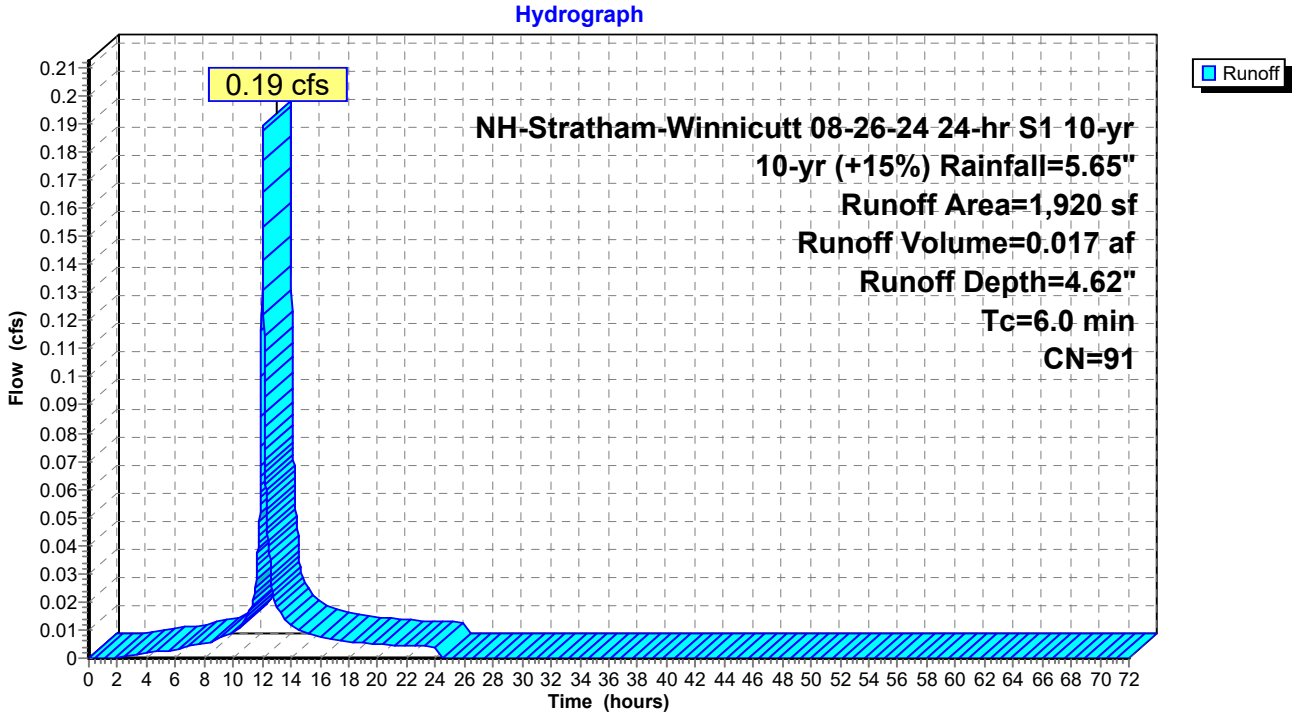
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP97 : Stone Storage for House C of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7I: House C of Lot 32



Summary for Subcatchment PS7J: House D of Lot 32

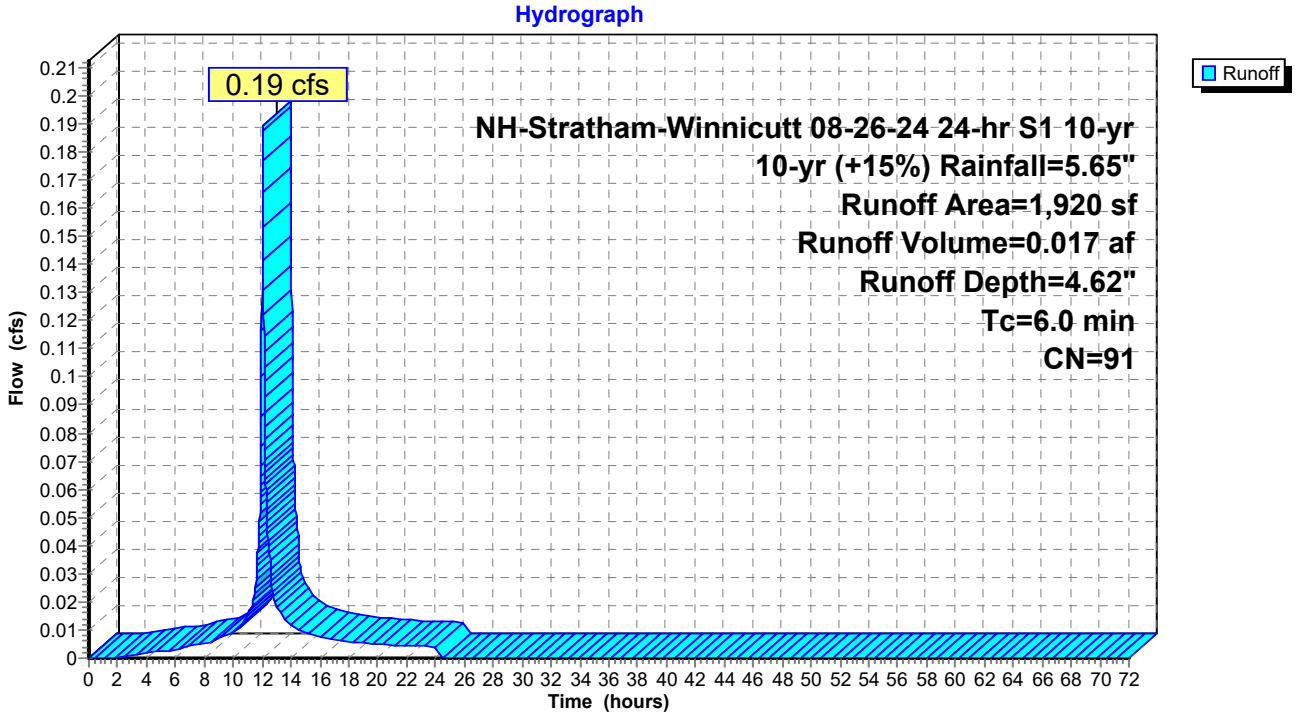
Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.62"
Routed to Pond PP98 : Stone Storage for House D of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7J: House D of Lot 32



Summary for Subcatchment PS8: Eastern Portion of Site, Along Wetland Finger

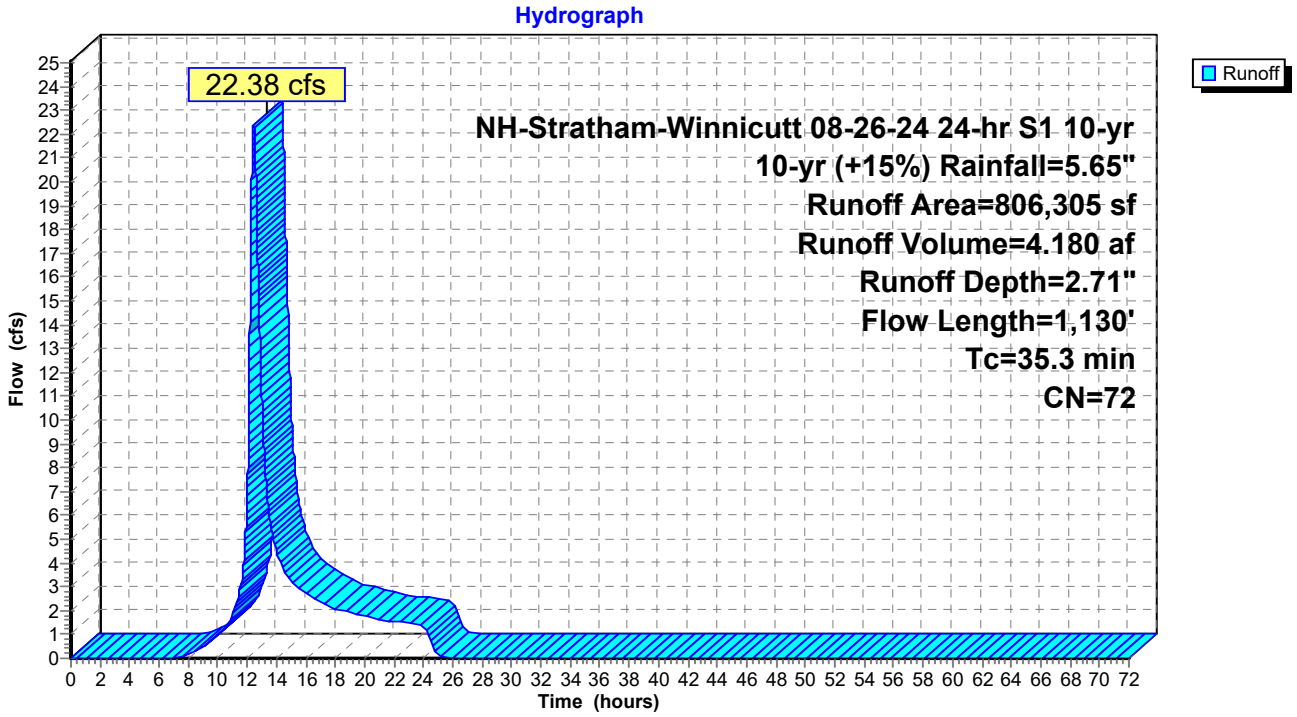
Runoff = 22.38 cfs @ 12.43 hrs, Volume= 4.180 af, Depth= 2.71"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
91,985	74	>75% Grass cover, Good, HSG C
514,175	70	Woods, Good, HSG C
200,145	77	Woods, Good, HSG D
806,305	72	Weighted Average
806,305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0100	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
10.6	390	0.0150	0.61		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
9.4	380	0.0180	0.67		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
0.2	310	0.0380	21.06	3,054.41	**Channel Flow, Existing Swale from East Portion of Site** Area= 145.0 sf Perim= 45.0' r= 3.22' n= 0.030 Earth, grassed & winding
35.3	1,130	Total			

Subcatchment PS8: Eastern Portion of Site, Along Wetland Finger



Summary for Subcatchment PS9: Southeastern Portion of Site, Along Wetland Finger

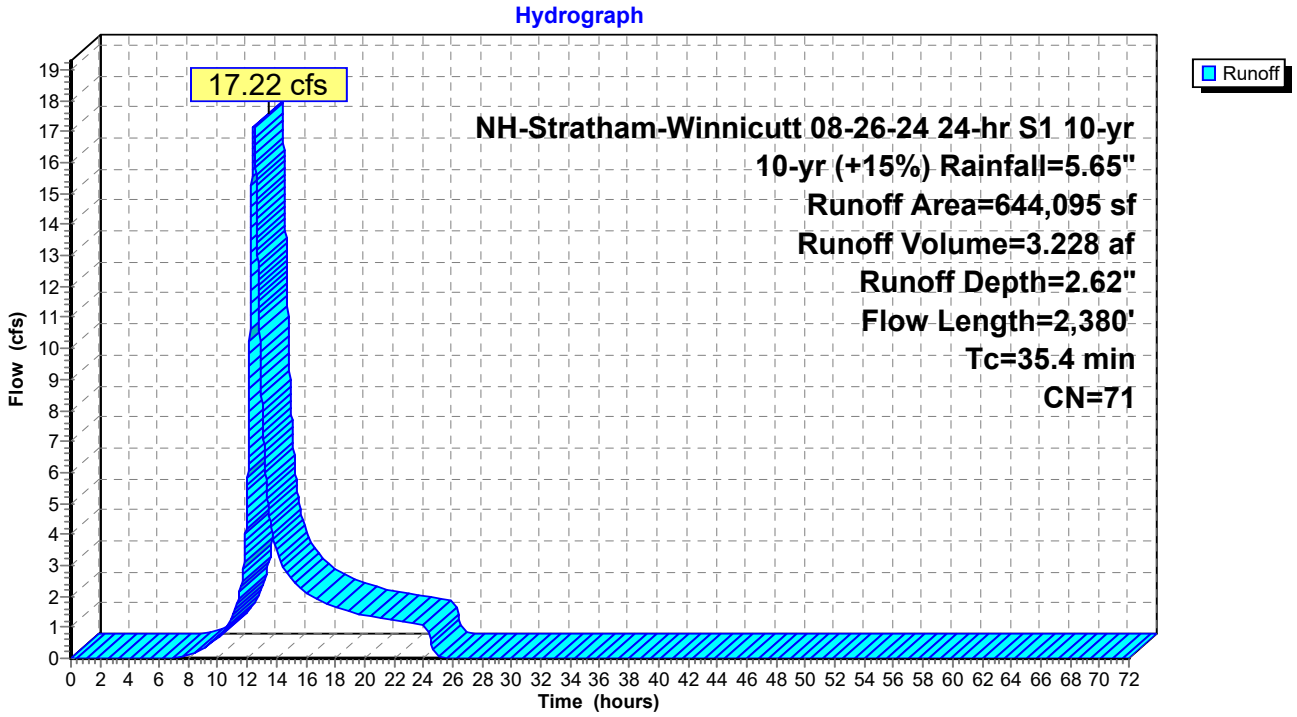
Runoff = 17.22 cfs @ 12.46 hrs, Volume= 3.228 af, Depth= 2.62"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 10-yr 10-yr (+15%) Rainfall=5.65"

Area (sf)	CN	Description
17,020	74	>75% Grass cover, Good, HSG C
532,480	70	Woods, Good, HSG C
94,595	77	Woods, Good, HSG D
644,095	71	Weighted Average
644,095		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0100	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
10.1	400	0.0175	0.66		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
4.7	200	0.0200	0.71		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
5.5	1,730	0.0113	5.27	168.49	**Channel Flow, Existing Swale from Southeastern Portion of Site** Area= 32.0 sf Perim= 32.0' r= 1.00' n= 0.030 Earth, grassed & winding
35.4	2,380	Total			

Subcatchment PS9: Southeastern Portion of Site, Along Wetland Finger



Summary for Reach ER75: Northernmost Stream on Site

Inflow Area = 0.537 ac, 0.00% Impervious, Inflow Depth = 2.86" for 10-yr (+15%) event
Inflow = 1.44 cfs @ 12.06 hrs, Volume= 0.128 af
Outflow = 0.46 cfs @ 12.34 hrs, Volume= 0.128 af, Atten= 68%, Lag= 16.6 min
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.02 fps, Min. Travel Time= 48.5 min
Avg. Velocity = 0.65 fps, Avg. Travel Time= 76.0 min

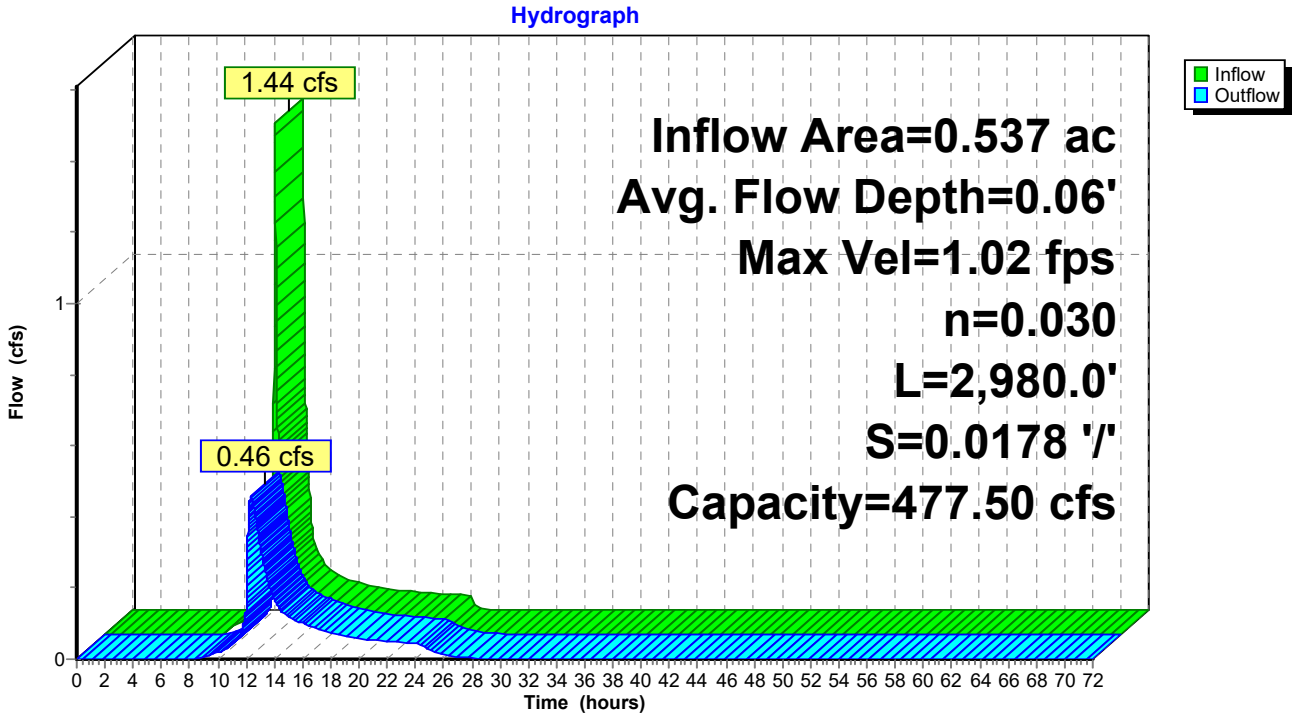
Peak Storage= 1,329 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 7.37'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 477.50 cfs

7.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 25.00'
Length= 2,980.0' Slope= 0.0178 '/'
Inlet Invert= 90.70', Outlet Invert= 37.70'



‡

Reach ER75: Northernmost Stream on Site



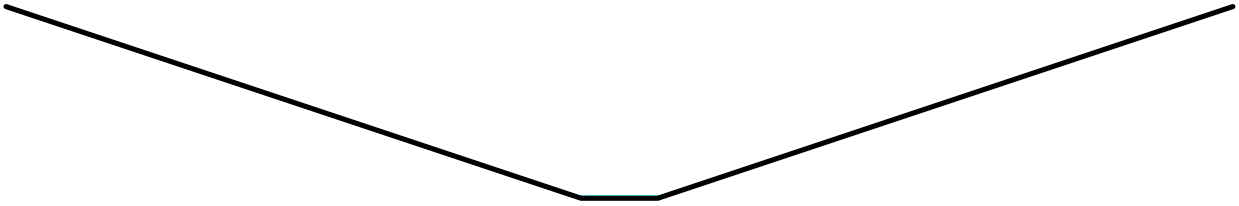
Summary for Reach ER76: Existing Swale from East Portion of Site

Inflow Area = 1.748 ac, 46.86% Impervious, Inflow Depth = 4.02" for 10-yr (+15%) event
Inflow = 4.80 cfs @ 12.08 hrs, Volume= 0.586 af
Outflow = 4.00 cfs @ 12.18 hrs, Volume= 0.586 af, Atten= 17%, Lag= 5.8 min
Routed to Reach ER80 : West Portion of Existing Central Swale

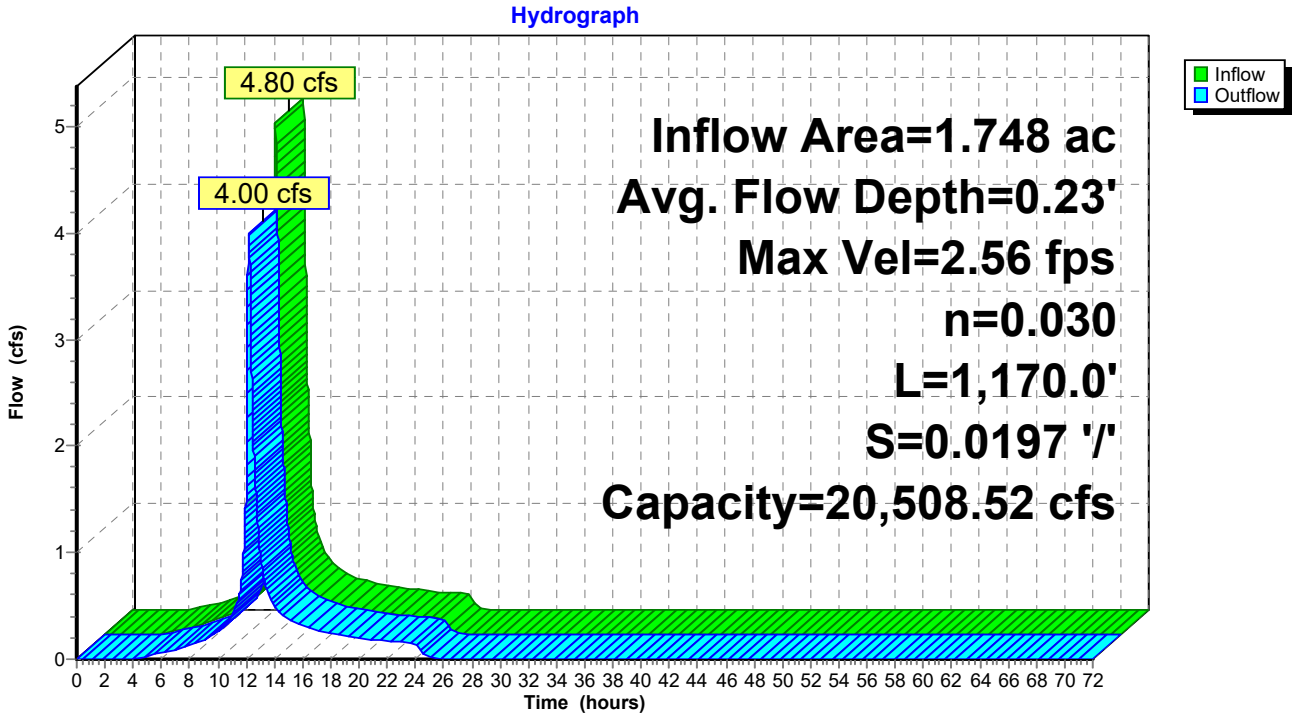
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.56 fps, Min. Travel Time= 7.6 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 10.4 min

Peak Storage= 1,824 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 7.38'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 20,508.52 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 1,170.0' Slope= 0.0197 '/'
Inlet Invert= 74.00', Outlet Invert= 51.00'



Reach ER76: Existing Swale from East Portion of Site



Summary for Reach ER79: Southern Swale Connecting to Western Wetlands

[62] Hint: Exceeded Reach ER80 OUTLET depth by 0.91' @ 12.38 hrs
[64] Warning: Exceeded Reach ER80 outlet bank by 0.09' @ 12.37 hrs

Inflow Area = 58.999 ac, 4.13% Impervious, Inflow Depth = 2.72" for 10-yr (+15%) event
Inflow = 65.09 cfs @ 12.32 hrs, Volume= 13.358 af
Outflow = 64.55 cfs @ 12.37 hrs, Volume= 13.358 af, Atten= 1%, Lag= 3.6 min
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 3.05 fps, Min. Travel Time= 3.9 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 18.4 min

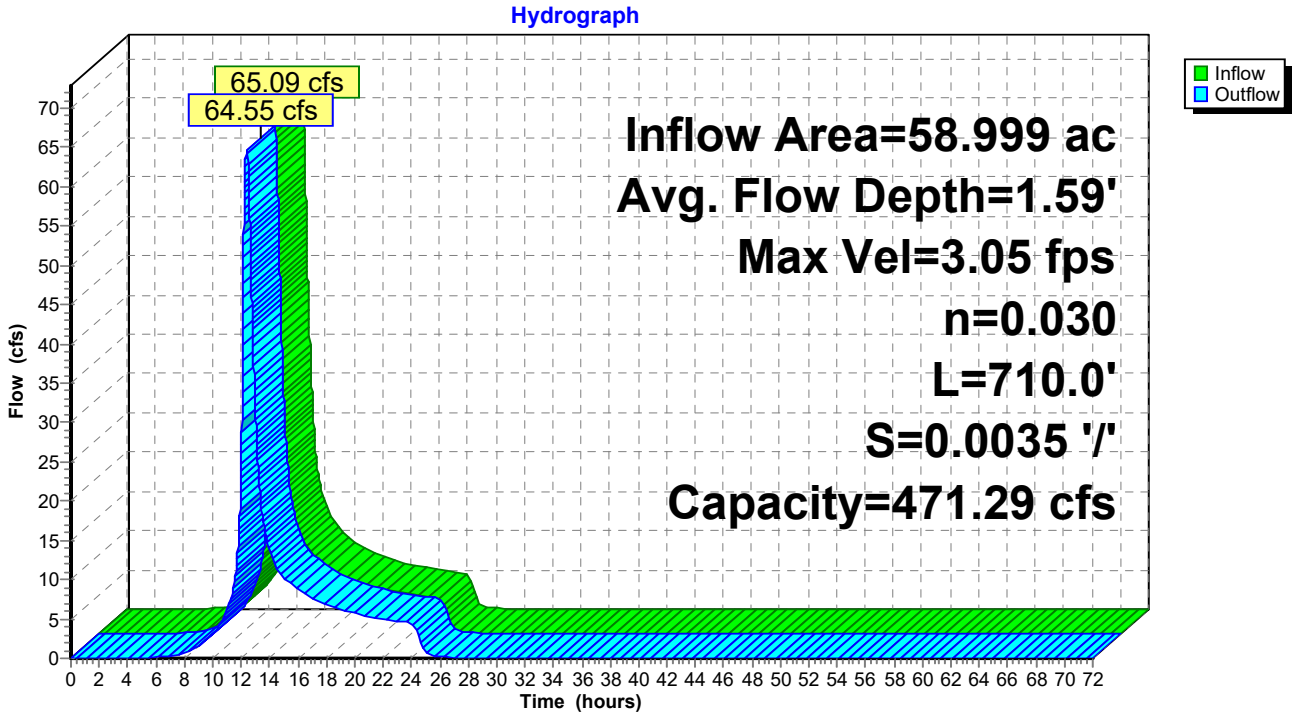
Peak Storage= 15,046 cf @ 12.37 hrs
Average Depth at Peak Storage= 1.59' , Surface Width= 19.70'
Bank-Full Depth= 4.00' Flow Area= 92.0 sf, Capacity= 471.29 cfs

7.00' x 4.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 39.00'
Length= 710.0' Slope= 0.0035 '/'
Inlet Invert= 42.50', Outlet Invert= 40.00'



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Reach ER79: Southern Swale Connecting to Western Wetlands



Summary for Reach ER80: West Portion of Existing Central Swale

[61] Hint: Exceeded Reach ER76 outlet invert by 0.18' @ 12.37 hrs
[62] Hint: Exceeded Reach PR81 OUTLET depth by 0.52' @ 12.45 hrs

Inflow Area = 31.657 ac, 6.56% Impervious, Inflow Depth = 2.74" for 10-yr (+15%) event
Inflow = 33.73 cfs @ 12.35 hrs, Volume= 7.236 af
Outflow = 33.62 cfs @ 12.37 hrs, Volume= 7.236 af, Atten= 0%, Lag= 1.2 min
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 3.25 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 15.0 min

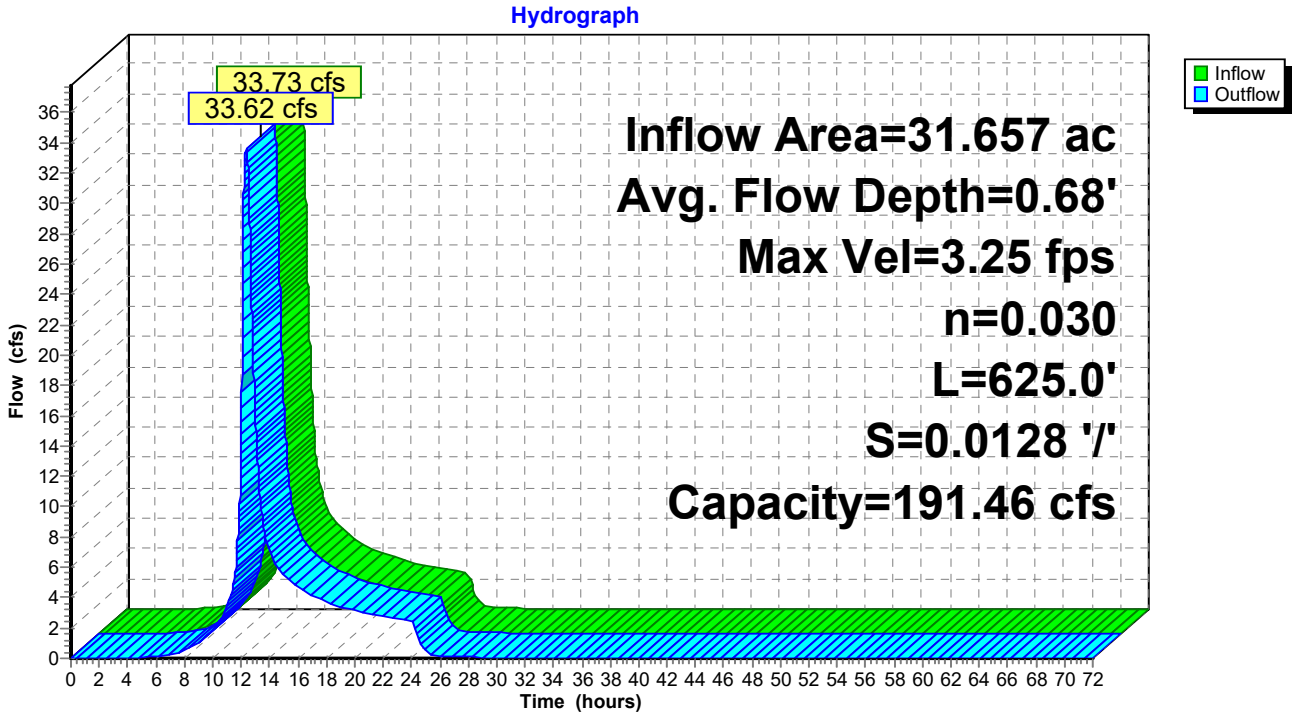
Peak Storage= 6,463 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 23.35'
Bank-Full Depth= 1.50' Flow Area= 37.5 sf, Capacity= 191.46 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 43.00'
Length= 625.0' Slope= 0.0128 '/'
Inlet Invert= 50.50', Outlet Invert= 42.50'



‡

Reach ER80: West Portion of Existing Central Swale



Summary for Reach PR81: East Portion of Existing Central Swale

Inflow Area = 5.183 ac, 8.64% Impervious, Inflow Depth > 2.01" for 10-yr (+15%) event
Inflow = 2.90 cfs @ 12.17 hrs, Volume= 0.869 af
Outflow = 2.80 cfs @ 12.26 hrs, Volume= 0.869 af, Atten= 3%, Lag= 5.4 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.08 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 20.9 min

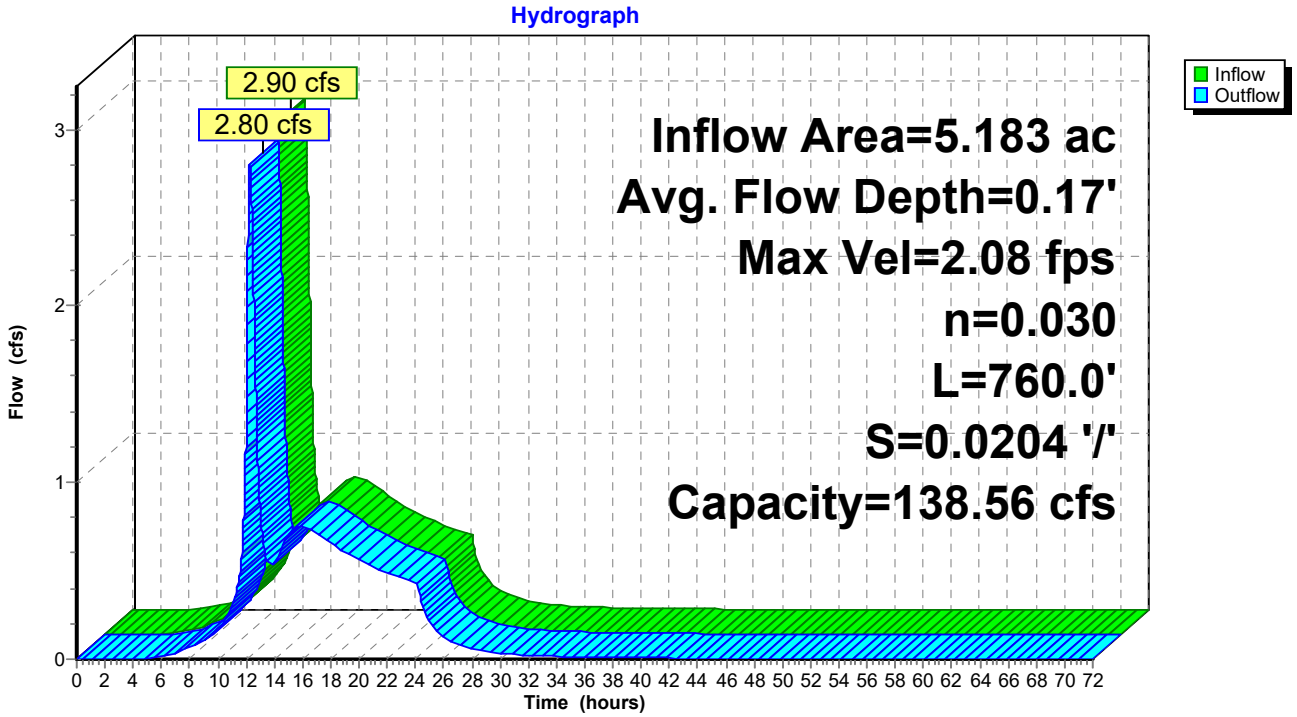
Peak Storage= 1,022 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 8.40'
Bank-Full Depth= 1.50' Flow Area= 19.5 sf, Capacity= 138.56 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 19.00'
Length= 760.0' Slope= 0.0204 '/'
Inlet Invert= 66.00', Outlet Invert= 50.50'



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Reach PR81: East Portion of Existing Central Swale



Summary for Pond EP51: Existing Pond Along Existing Driveway

Inflow Area = 3.454 ac, 3.16% Impervious, Inflow Depth = 3.04" for 10-yr (+15%) event
Inflow = 9.21 cfs @ 12.06 hrs, Volume= 0.874 af
Outflow = 0.49 cfs @ 16.22 hrs, Volume= 0.385 af, Atten= 95%, Lag= 249.8 min
Primary = 0.49 cfs @ 16.22 hrs, Volume= 0.385 af
Routed to Pond PP59 : Existing Transferance Swale
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond PP59 : Existing Transferance Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.08' @ 16.22 hrs Surf.Area= 10,326 sf Storage= 24,829 cf
Flood Elev= 77.50' Surf.Area= 16,000 sf Storage= 43,500 cf

Plug-Flow detention time= 532.9 min calculated for 0.385 af (44% of inflow)
Center-of-Mass det. time= 361.0 min (1,223.8 - 862.8)

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	43,500 cf	**Existing Pond (Prismatic)**Listed below (Recalc)

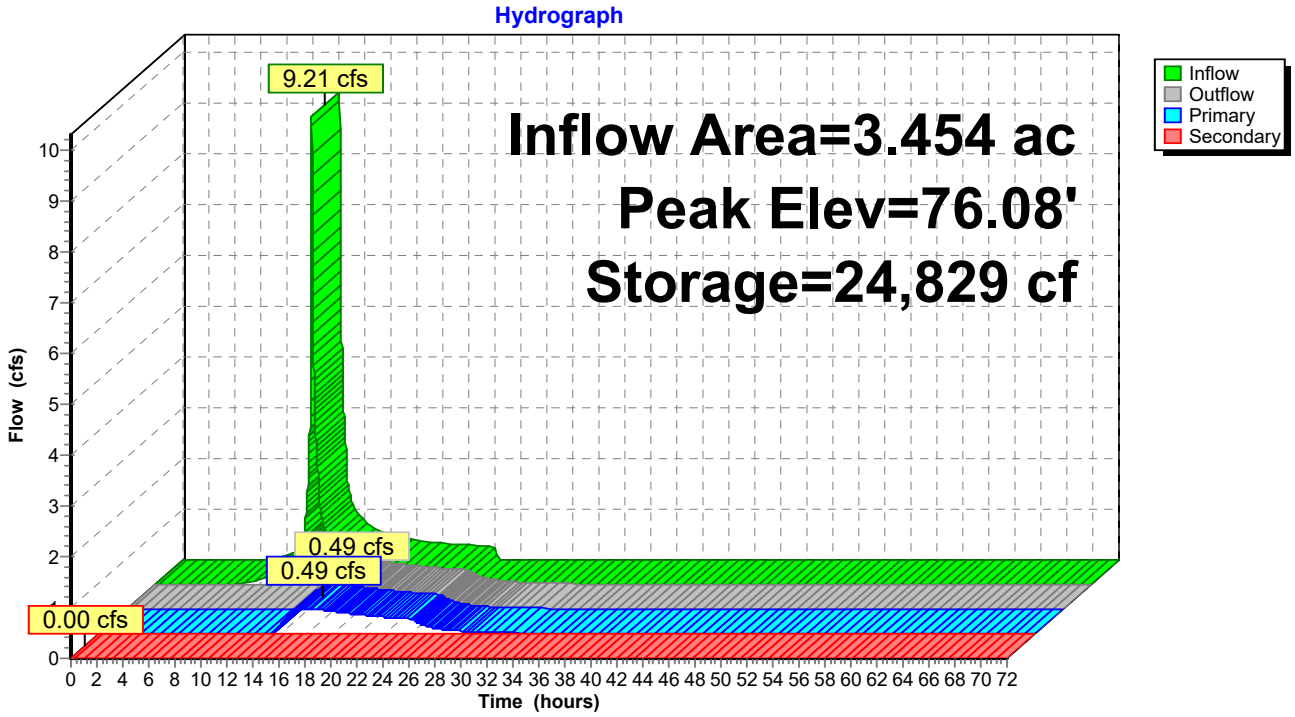
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	6,000	0	0
76.00	10,000	24,000	24,000
77.50	16,000	19,500	43,500

Device	Routing	Invert	Outlet Devices
#1	Primary	75.71'	**12.0" Round 12" CMP** L= 20.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 75.71' / 75.04' S= 0.0335 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	77.00'	**20.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.49 cfs @ 16.22 hrs HW=76.08' TW=71.54' (Dynamic Tailwater)
↑—**1=12" CMP** (Inlet Controls 0.49 cfs @ 1.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=71.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond EP51: Existing Pond Along Existing Driveway



Summary for Pond PCB11: Proposed Catch Basin 11

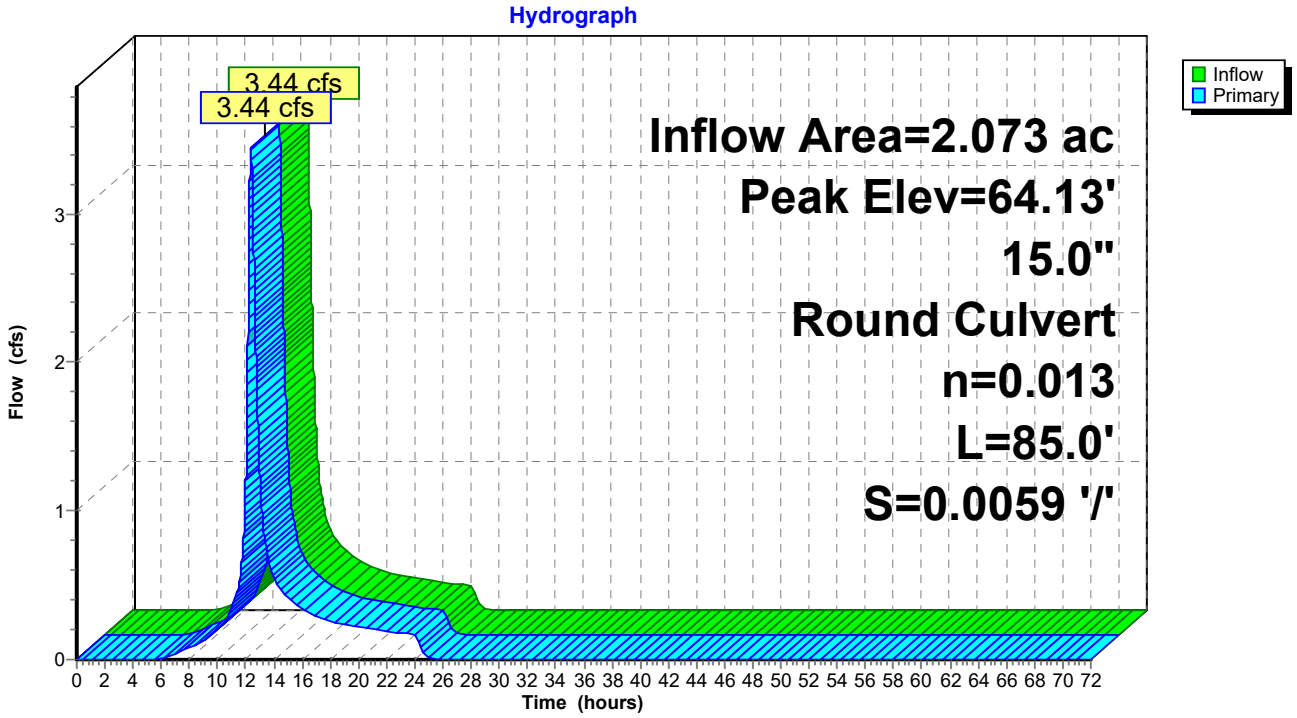
Inflow Area = 2.073 ac, 22.64% Impervious, Inflow Depth = 3.37" for 10-yr (+15%) event
Inflow = 3.44 cfs @ 12.37 hrs, Volume= 0.581 af
Outflow = 3.44 cfs @ 12.37 hrs, Volume= 0.581 af, Atten= 0%, Lag= 0.0 min
Primary = 3.44 cfs @ 12.37 hrs, Volume= 0.581 af
Routed to Pond PP154 : Proposed Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 64.13' @ 12.36 hrs
Flood Elev= 68.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**15.0" Round 15" HDPE (PDL14)** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 63.00' / 62.50' S= 0.0059 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.44 cfs @ 12.37 hrs HW=64.13' TW=63.39' (Dynamic Tailwater)
↑—**1=15" HDPE (PDL14)** (Outlet Controls 3.44 cfs @ 3.90 fps)

Pond PCB11: Proposed Catch Basin 11



Summary for Pond PCB12: Proposed Catch Basin 12

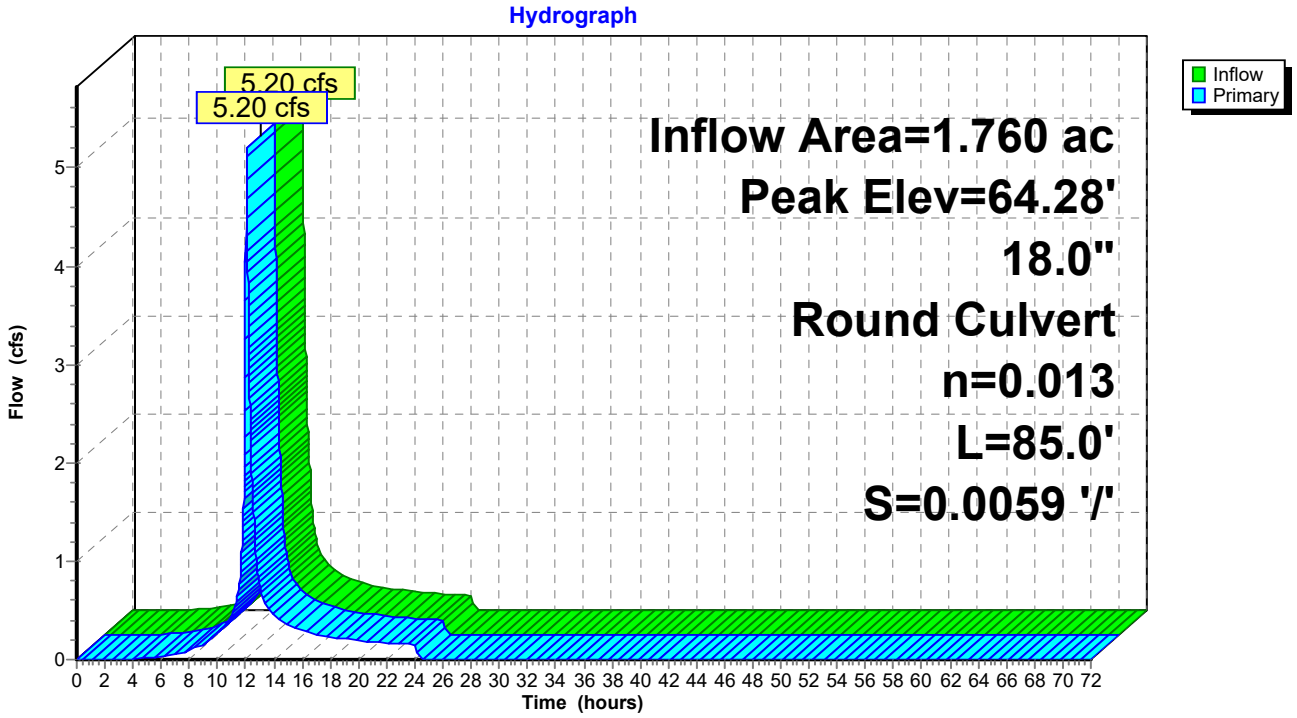
Inflow Area = 1.760 ac, 43.39% Impervious, Inflow Depth = 3.84" for 10-yr (+15%) event
Inflow = 5.20 cfs @ 12.05 hrs, Volume= 0.564 af
Outflow = 5.20 cfs @ 12.05 hrs, Volume= 0.564 af, Atten= 0%, Lag= 0.0 min
Primary = 5.20 cfs @ 12.05 hrs, Volume= 0.564 af
Routed to Pond PP154 : Proposed Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 64.28' @ 12.05 hrs
Flood Elev= 66.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**18.0" Round 18" HDPE (PDL13)** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 63.00' / 62.50' S= 0.0059 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.20 cfs @ 12.05 hrs HW=64.28' TW=63.36' (Dynamic Tailwater)
↑—**1=18" HDPE (PDL13)** (Barrel Controls 5.20 cfs @ 4.35 fps)

Pond PCB12: Proposed Catch Basin 12



Summary for Pond PCB14: Proposed Catch Basin 14

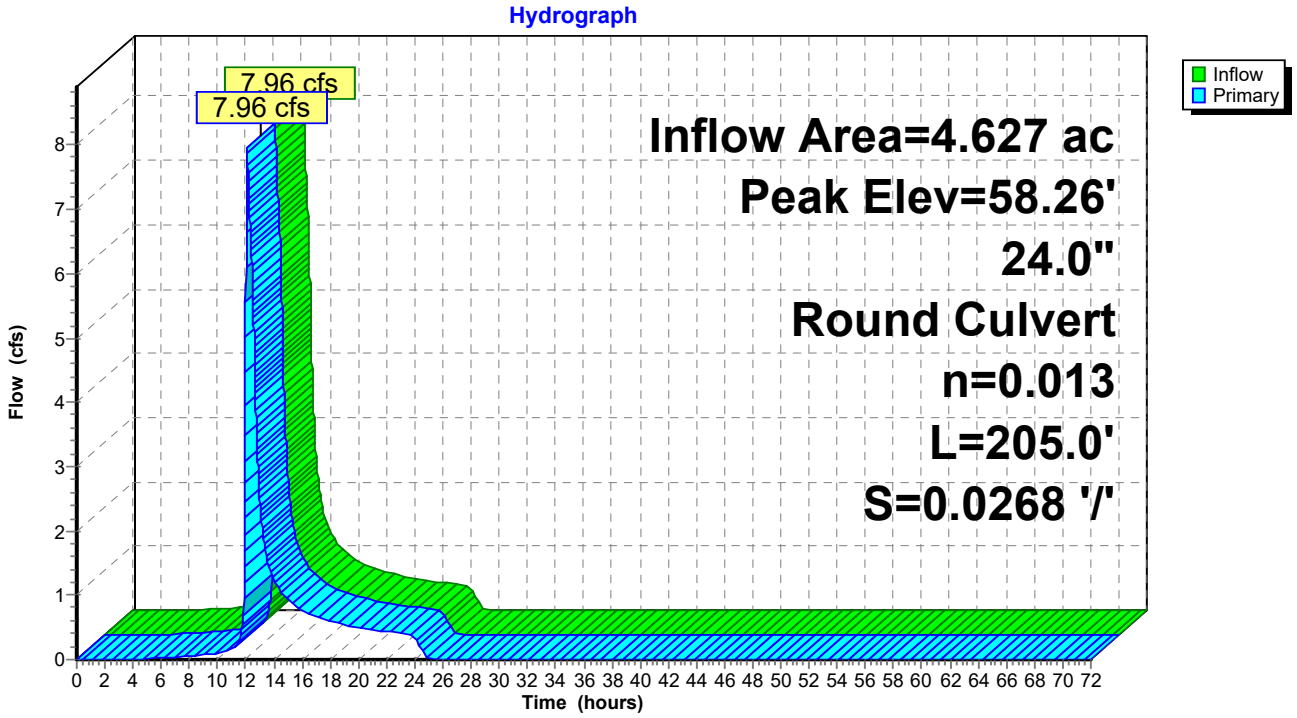
Inflow Area = 4.627 ac, 32.94% Impervious, Inflow Depth = 3.05" for 10-yr (+15%) event
Inflow = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af
Outflow = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af, Atten= 0%, Lag= 0.0 min
Primary = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af
Routed to Pond PDMH14A : Proposed Manhole 14A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 58.26' @ 12.07 hrs
Flood Elev= 64.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**24.0" Round 24" HDPE (PDL17)** L= 205.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 57.00' / 51.50' S= 0.0268 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.95 cfs @ 12.07 hrs HW=58.26' TW=53.13' (Dynamic Tailwater)
1=24" HDPE (PDL17) (Inlet Controls 7.95 cfs @ 3.82 fps)

Pond PCB14: Proposed Catch Basin 14



Summary for Pond PCB4: Proposed Catch Basin 4

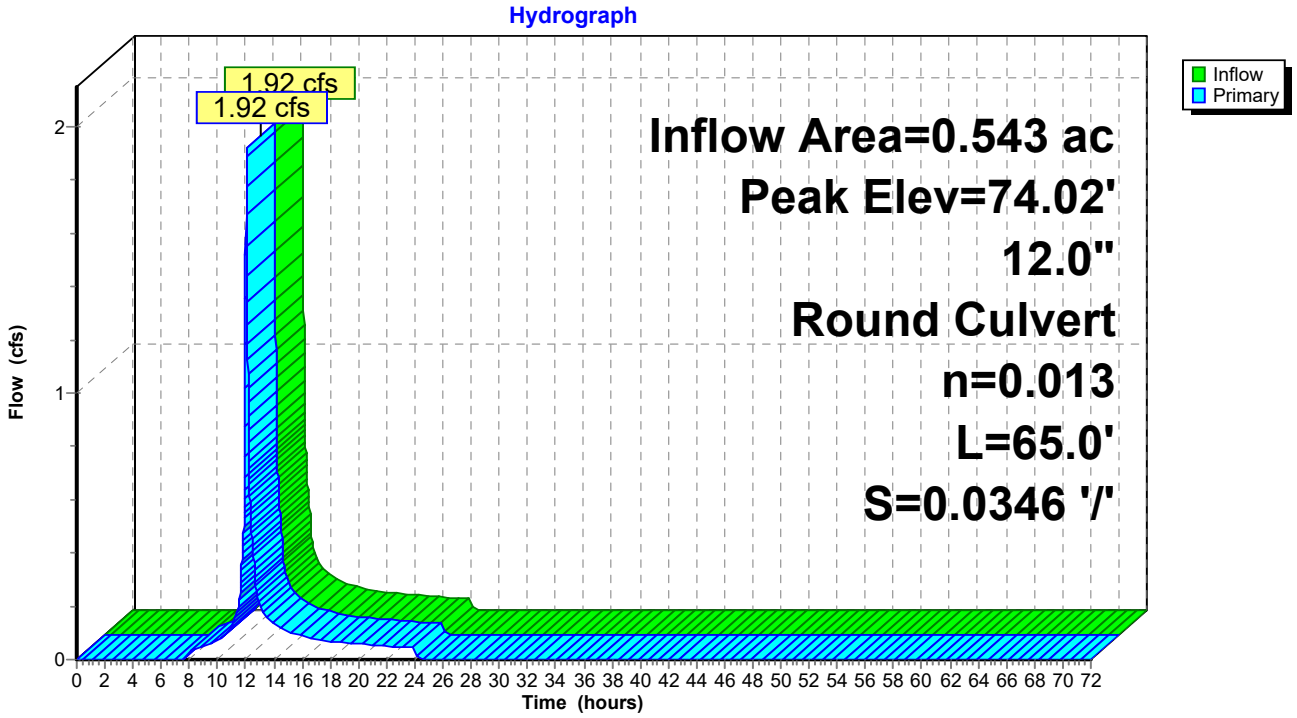
Inflow Area = 0.543 ac, 32.10% Impervious, Inflow Depth = 3.58" for 10-yr (+15%) event
Inflow = 1.92 cfs @ 12.04 hrs, Volume= 0.162 af
Outflow = 1.92 cfs @ 12.04 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Primary = 1.92 cfs @ 12.04 hrs, Volume= 0.162 af
Routed to Pond PDMH8 : Proposed Manhole 8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.02' @ 12.04 hrs
Flood Elev= 77.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.25'	**12.0" Round 12" HDPE (PDL9)** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.25' / 71.00' S= 0.0346 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.91 cfs @ 12.04 hrs HW=74.01' TW=70.44' (Dynamic Tailwater)
↑**1=12" HDPE (PDL9)** (Inlet Controls 1.91 cfs @ 2.98 fps)

Pond PCB4: Proposed Catch Basin 4



Summary for Pond PCB5: Proposed Catch Basin 5

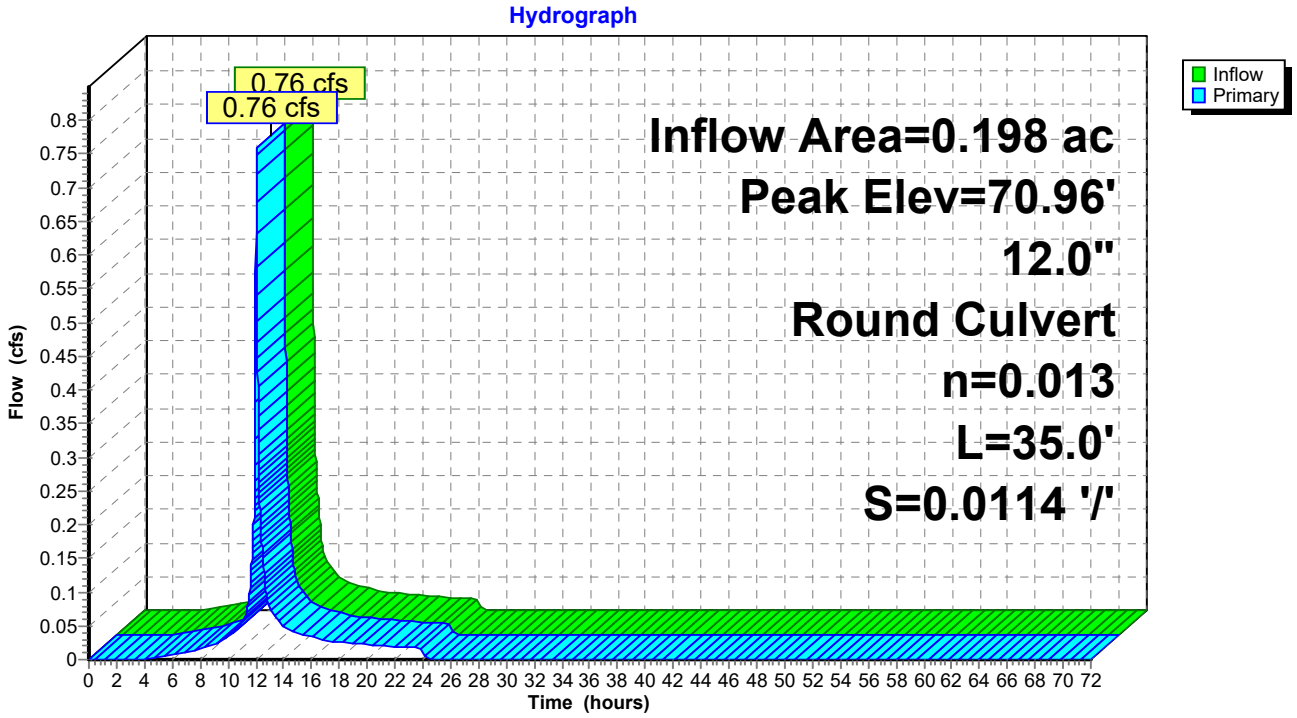
Inflow Area = 0.198 ac, 46.41% Impervious, Inflow Depth = 3.97" for 10-yr (+15%) event
Inflow = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af
Outflow = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af
Routed to Pond PCB7 : Proposed Catch Basin 7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.96' @ 12.05 hrs
Flood Elev= 73.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.20'	**12.0" Round 12" HDPE (PDL6)** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.20' / 69.80' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.73 cfs @ 12.04 hrs HW=70.95' TW=70.85' (Dynamic Tailwater)
1=12" HDPE (PDL6) (Outlet Controls 0.73 cfs @ 1.60 fps)

Pond PCB5: Proposed Catch Basin 5



Summary for Pond PCB6: Proposed Catch Basin 6

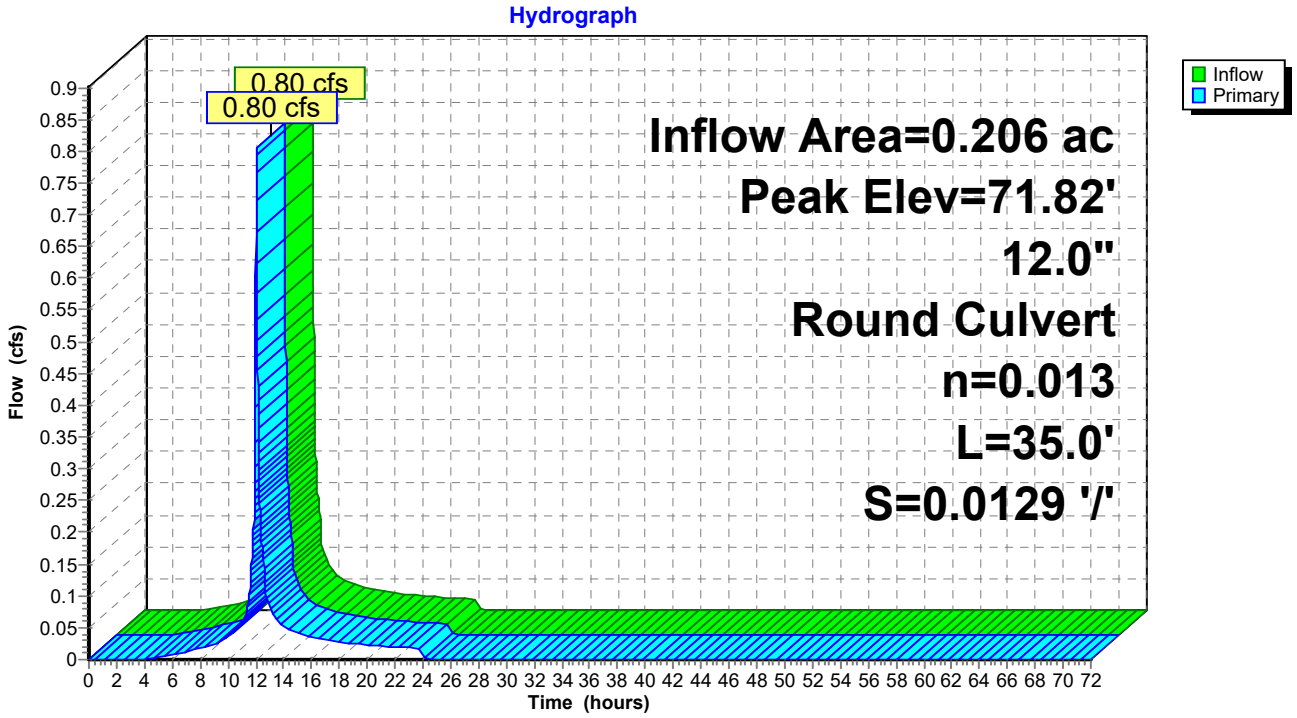
Inflow Area = 0.206 ac, 49.33% Impervious, Inflow Depth = 4.06" for 10-yr (+15%) event
Inflow = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af
Outflow = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af
Routed to Pond PDMH6A : Proposed Manhole 6A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.82' @ 12.04 hrs
Flood Elev= 73.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	71.35'	**12.0" Round 12" HDPE (PDL7A)** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.35' / 70.90' S= 0.0129 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.80 cfs @ 12.04 hrs HW=71.82' TW=71.31' (Dynamic Tailwater)
↑—**1=12" HDPE (PDL7A)** (Outlet Controls 0.80 cfs @ 3.27 fps)

Pond PCB6: Proposed Catch Basin 6



Summary for Pond PCB7: Proposed Catch Basin 7

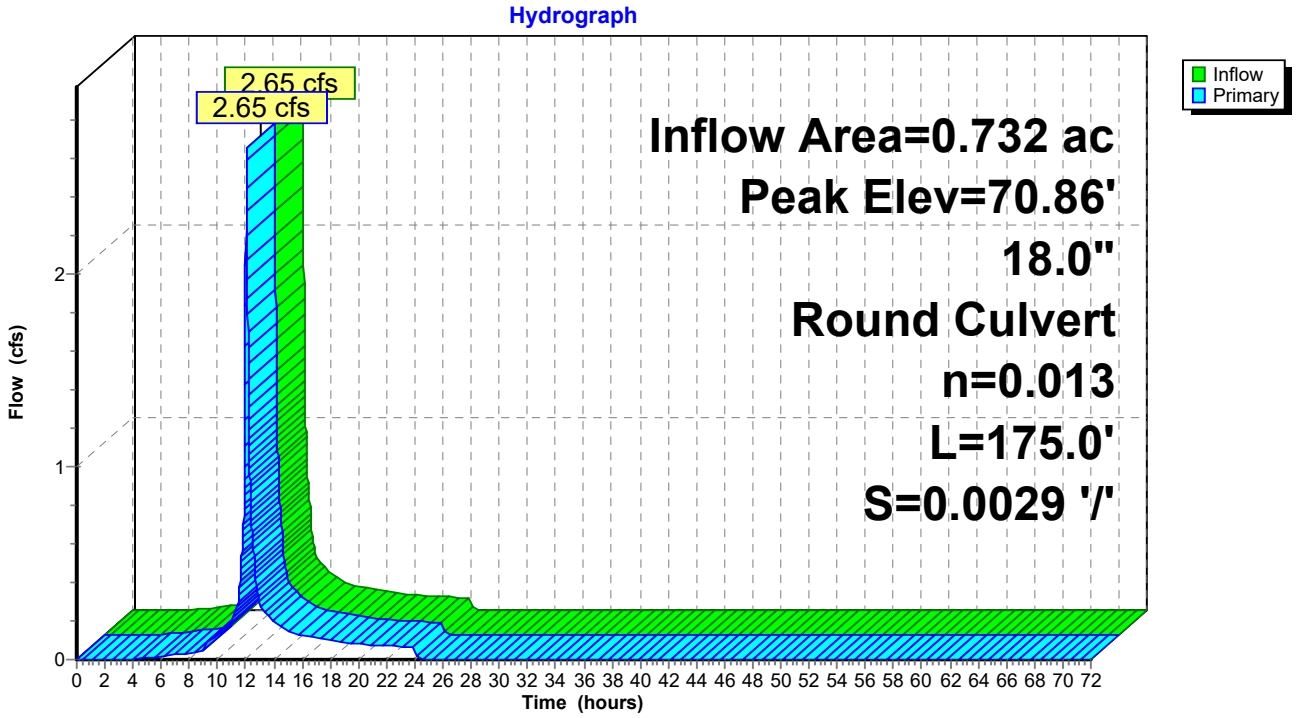
Inflow Area = 0.732 ac, 50.48% Impervious, Inflow Depth = 3.95" for 10-yr (+15%) event
Inflow = 2.65 cfs @ 12.05 hrs, Volume= 0.241 af
Outflow = 2.65 cfs @ 12.05 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min
Primary = 2.65 cfs @ 12.05 hrs, Volume= 0.241 af
Routed to Pond PDMH8 : Proposed Manhole 8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.86' @ 12.05 hrs
Flood Elev= 74.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	69.70'	**18.0" Round 18" HDPE (PDL8)** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 69.70' / 69.20' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.64 cfs @ 12.05 hrs HW=70.86' TW=70.45' (Dynamic Tailwater)
1=18" HDPE (PDL8) (Outlet Controls 2.64 cfs @ 2.48 fps)

Pond PCB7: Proposed Catch Basin 7



Summary for Pond PDMH10: Proposed Manhole 10

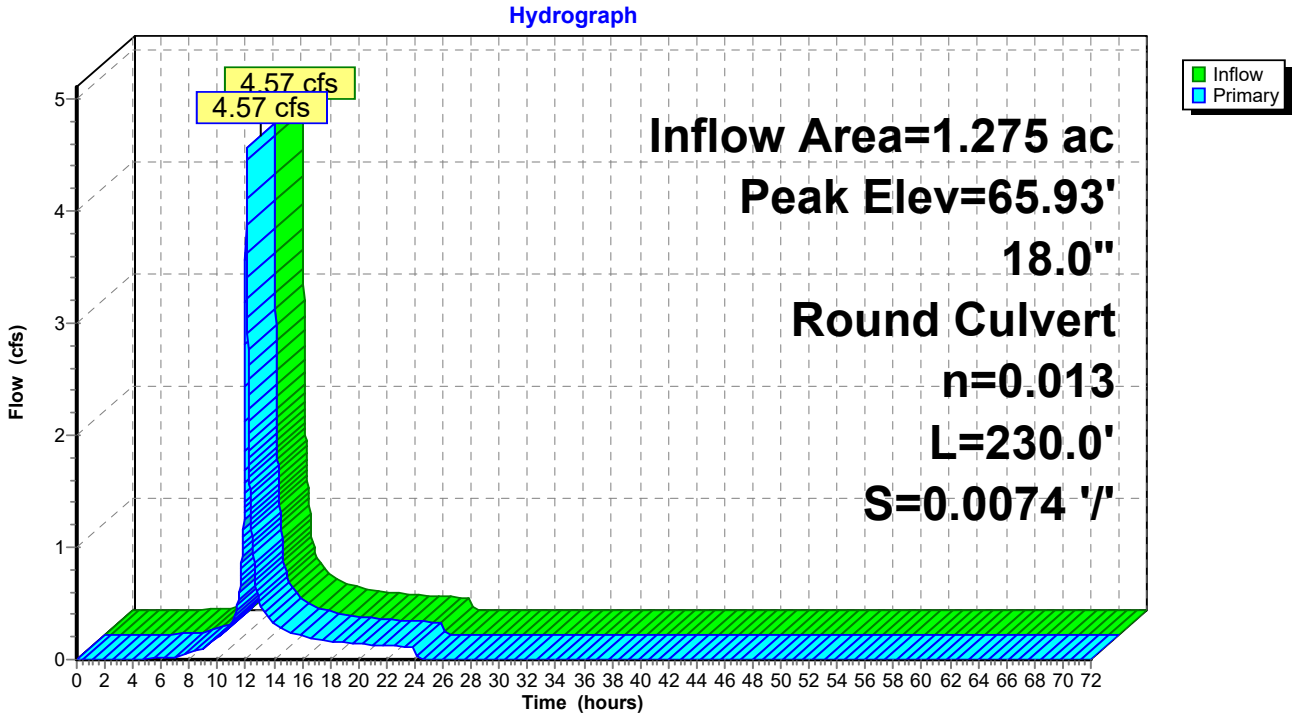
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 3.80" for 10-yr (+15%) event
Inflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Outflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af, Atten= 0%, Lag= 0.0 min
Primary = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Routed to Pond PCB12 : Proposed Catch Basin 12

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.93' @ 12.05 hrs
Flood Elev= 67.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	64.80'	**18.0" Round 18" HDPE (PDL12)** L= 230.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 64.80' / 63.10' S= 0.0074 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.56 cfs @ 12.05 hrs HW=65.92' TW=64.28' (Dynamic Tailwater)
1=18" HDPE (PDL12) (Outlet Controls 4.56 cfs @ 4.46 fps)

Pond PDMH10: Proposed Manhole 10



Summary for Pond PDMH14A: Proposed Manhole 14A

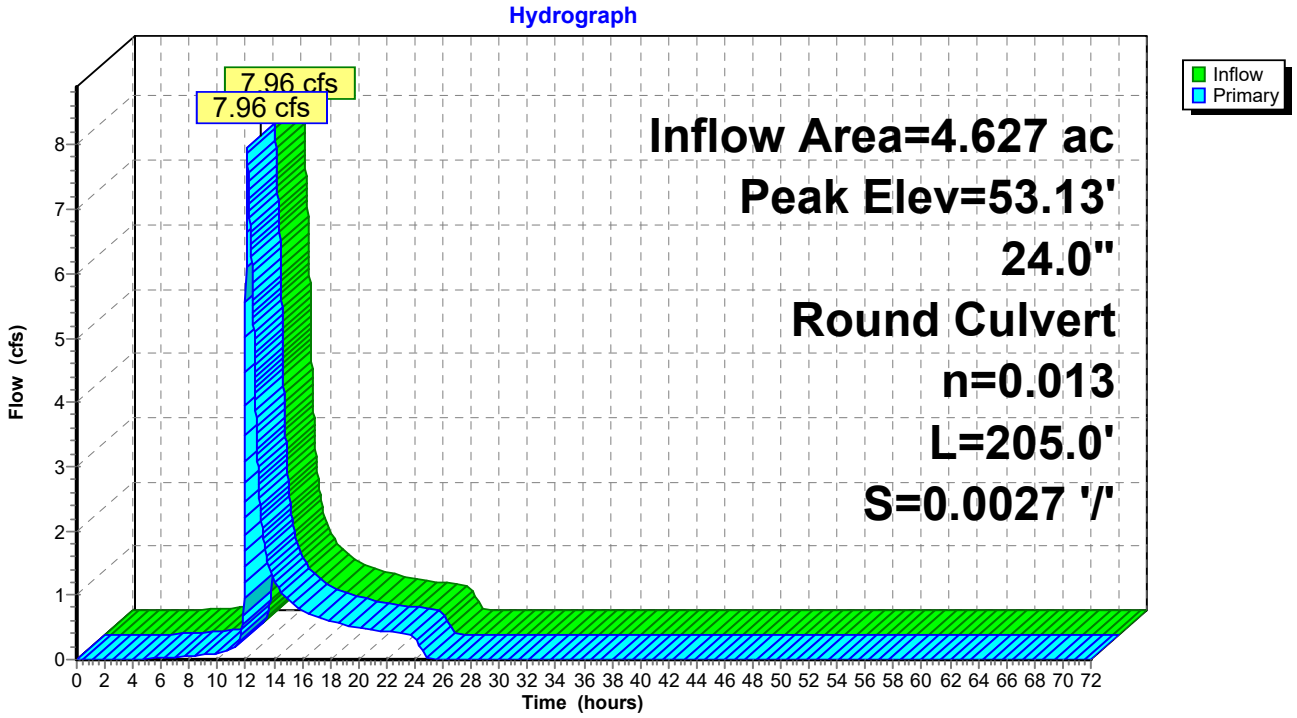
Inflow Area = 4.627 ac, 32.94% Impervious, Inflow Depth = 3.05" for 10-yr (+15%) event
Inflow = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af
Outflow = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af, Atten= 0%, Lag= 0.0 min
Primary = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af
Routed to Pond PDMH14B : Proposed Manhole 14B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 53.13' @ 12.07 hrs
Flood Elev= 64.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.40'	**24.0" Round 24" HDPE (PDL18)** L= 205.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.40' / 50.85' S= 0.0027 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.95 cfs @ 12.07 hrs HW=53.13' TW=52.36' (Dynamic Tailwater)
↑—**1=24" HDPE (PDL18)** (Outlet Controls 7.95 cfs @ 3.69 fps)

Pond PDMH14A: Proposed Manhole 14A



Summary for Pond PDMH14B: Proposed Manhole 14B

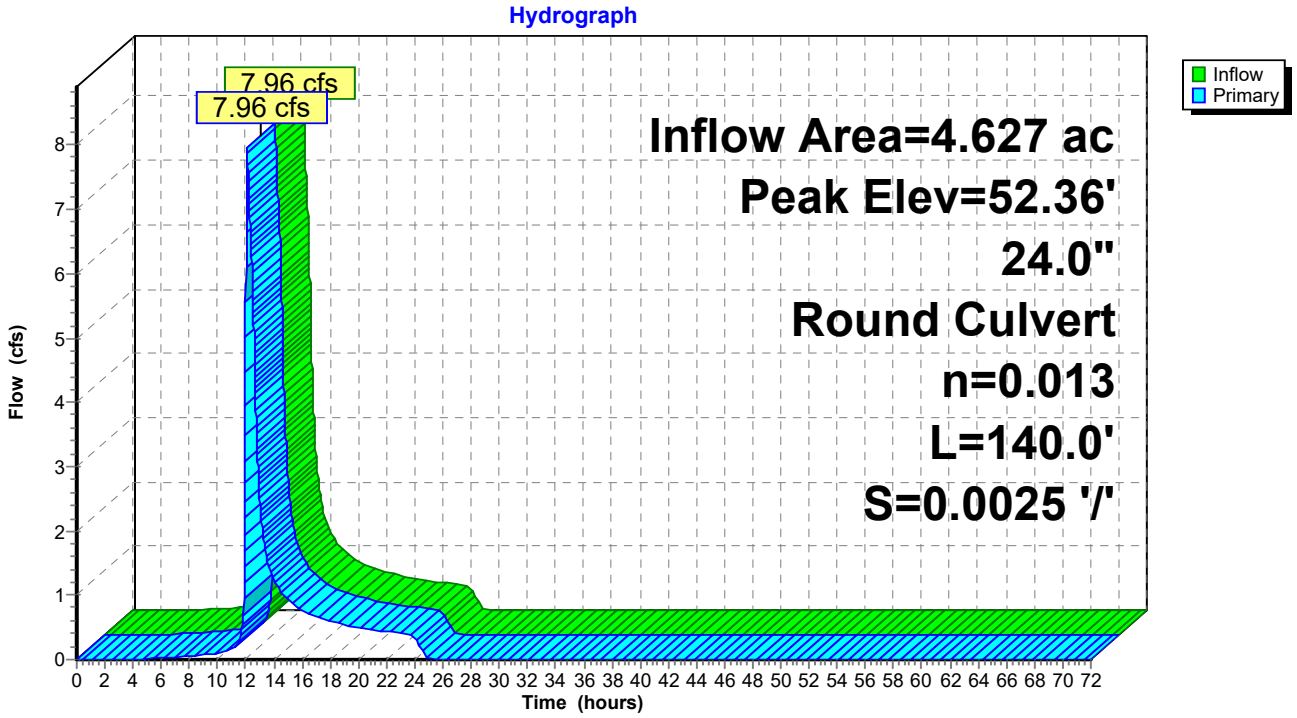
Inflow Area = 4.627 ac, 32.94% Impervious, Inflow Depth = 3.05" for 10-yr (+15%) event
Inflow = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af
Outflow = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af, Atten= 0%, Lag= 0.0 min
Primary = 7.96 cfs @ 12.07 hrs, Volume= 1.177 af
Routed to Pond PP155 : Proposed Bioretention Basin "B2"

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 52.36' @ 12.07 hrs
Flood Elev= 64.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.75'	**24.0" Round 24" HDPE (PDL19)** L= 140.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.75' / 50.40' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.95 cfs @ 12.07 hrs HW=52.36' TW=47.74' (Dynamic Tailwater)
↑—**1=24" HDPE (PDL19)** (Barrel Controls 7.95 cfs @ 4.01 fps)

Pond PDMH14B: Proposed Manhole 14B



Summary for Pond PDMH3A: Proposed Manhole 3A

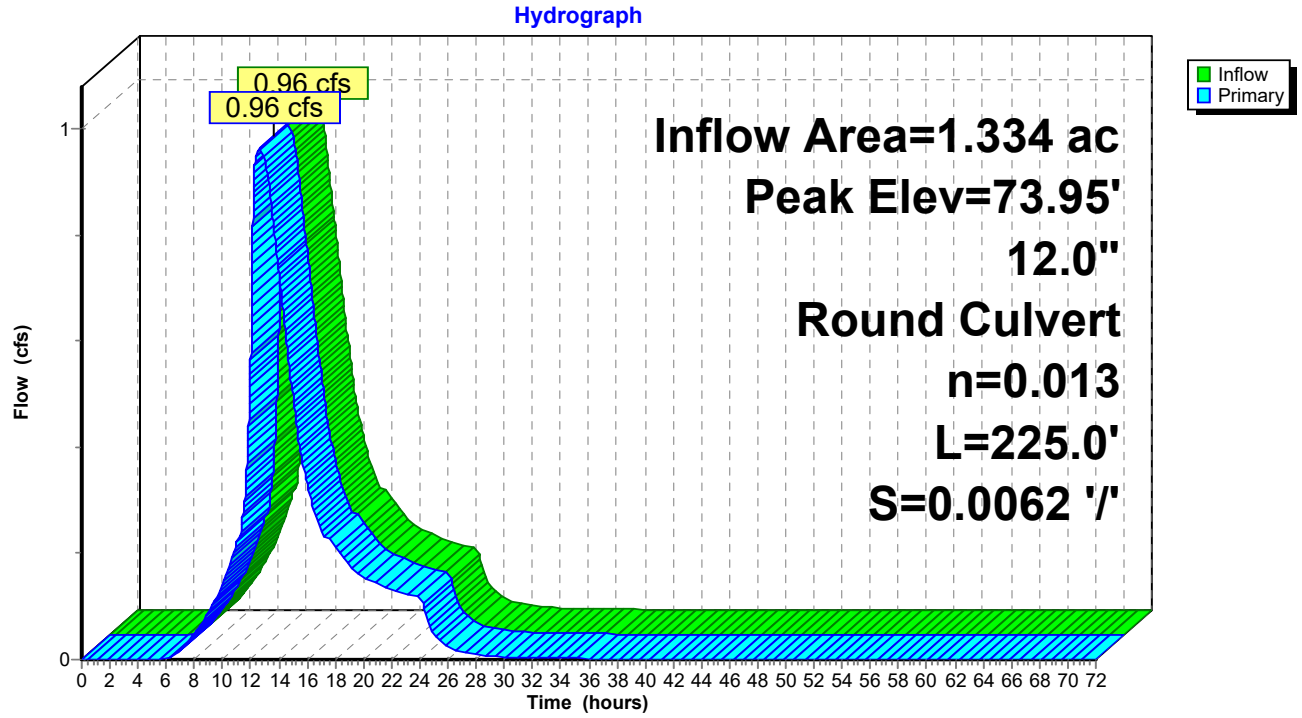
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 3.77" for 10-yr (+15%) event
Inflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Outflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Routed to Pond PDMH3B : Proposed Manhole 3B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.95' @ 12.60 hrs
Flood Elev= 76.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.40'	**12.0" Round 12" HDPE Pipe (PDL4A)** L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.40' / 72.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.60 hrs HW=73.95' TW=72.41' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4A)** (Barrel Controls 0.96 cfs @ 3.16 fps)

Pond PDMH3A: Proposed Manhole 3A



Summary for Pond PDMH3B: Proposed Manhole 3B

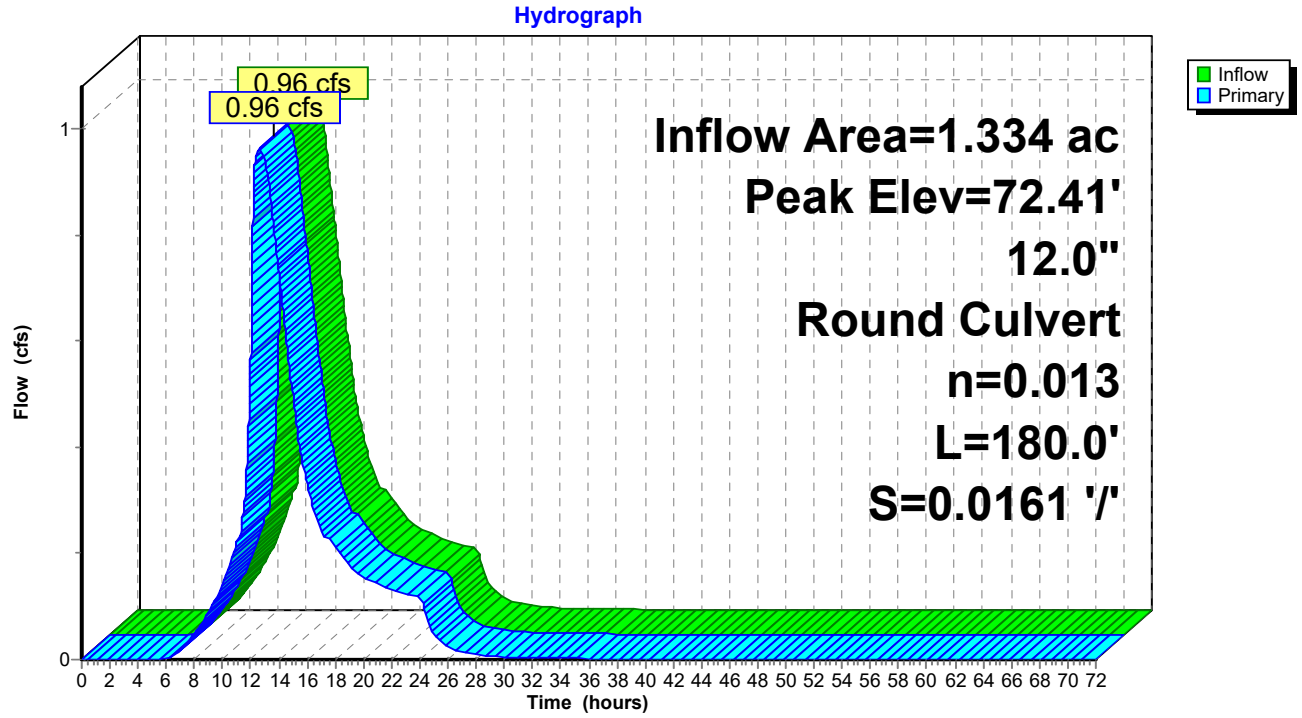
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 3.77" for 10-yr (+15%) event
Inflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Outflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Routed to Pond PDMH3C : Proposed Manhole 3C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.41' @ 12.60 hrs
Flood Elev= 74.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	71.90'	**12.0" Round 12" HDPE Pipe (PDL4B)** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.90' / 69.00' S= 0.0161 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.60 hrs HW=72.41' TW=69.41' (Dynamic Tailwater)
↳**1=12" HDPE Pipe (PDL4B)** (Inlet Controls 0.96 cfs @ 2.42 fps)

Pond PDMH3B: Proposed Manhole 3B



Summary for Pond PDMH3C: Proposed Manhole 3C

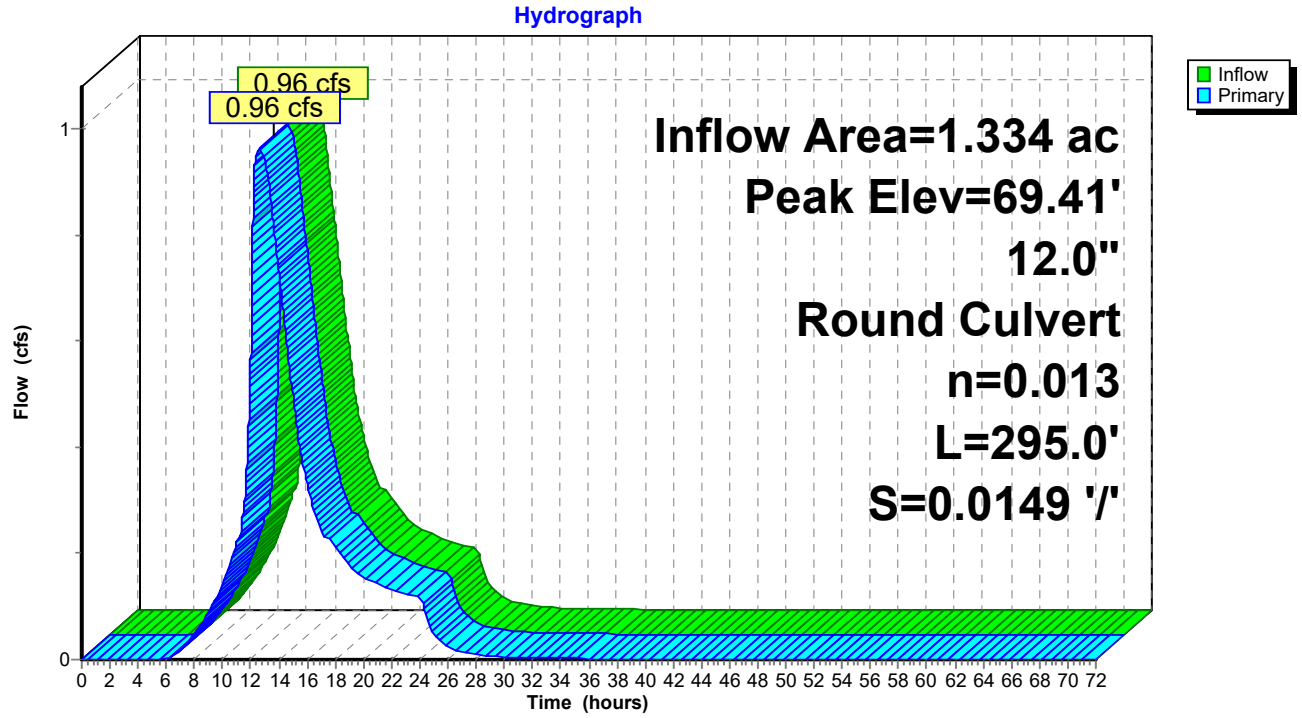
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 3.77" for 10-yr (+15%) event
Inflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Outflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Routed to Pond PDMH3D : Proposed Manhole 3D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 69.41' @ 12.60 hrs
Flood Elev= 71.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	68.90'	**12.0" Round 12" HDPE Pipe (PDL4C)** L= 295.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.90' / 64.50' S= 0.0149 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.60 hrs HW=69.41' TW=64.91' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4C)** (Inlet Controls 0.96 cfs @ 2.42 fps)

Pond PDMH3C: Proposed Manhole 3C



Summary for Pond PDMH3D: Proposed Manhole 3D

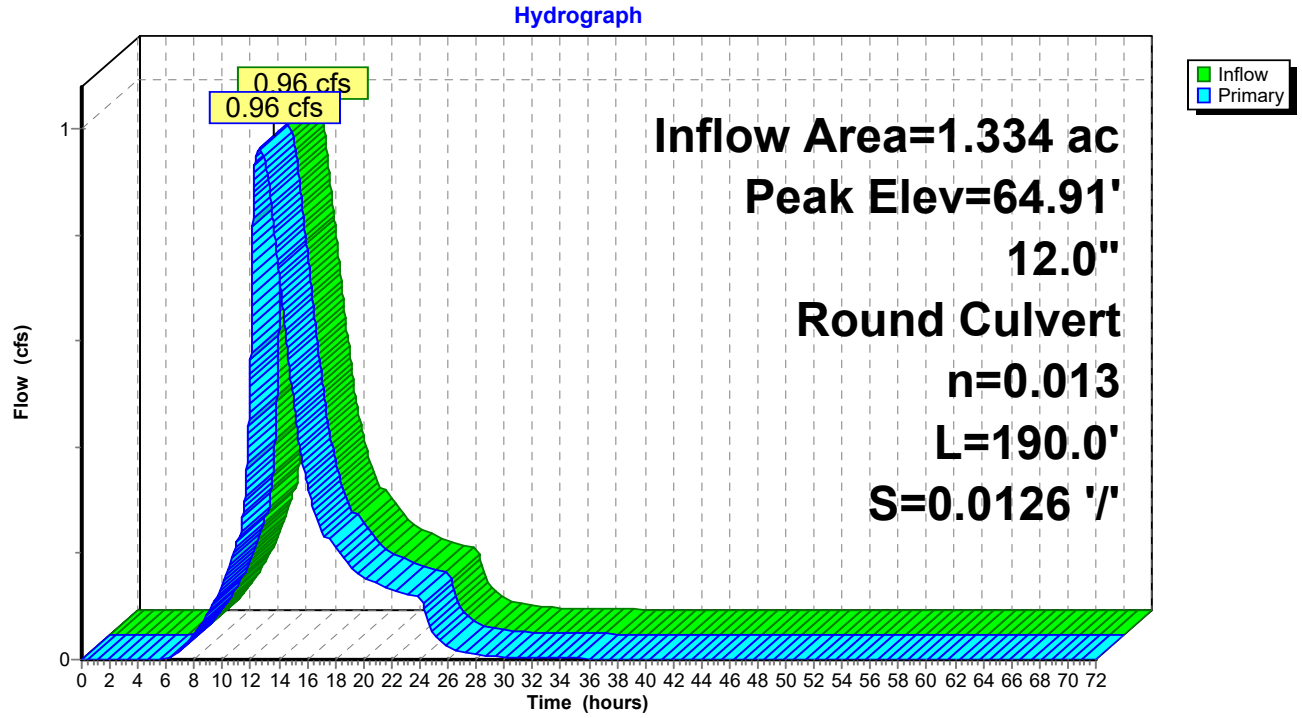
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 3.77" for 10-yr (+15%) event
Inflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Outflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Routed to Pond PDMH3E : Proposed Manhole 3E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 64.91' @ 12.60 hrs
Flood Elev= 67.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	64.40'	**12.0" Round 12" HDPE Pipe (PDL4D)** L= 190.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 64.40' / 62.00' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.60 hrs HW=64.91' TW=62.41' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4D)** (Inlet Controls 0.96 cfs @ 2.42 fps)

Pond PDMH3D: Proposed Manhole 3D



Summary for Pond PDMH3E: Proposed Manhole 3E

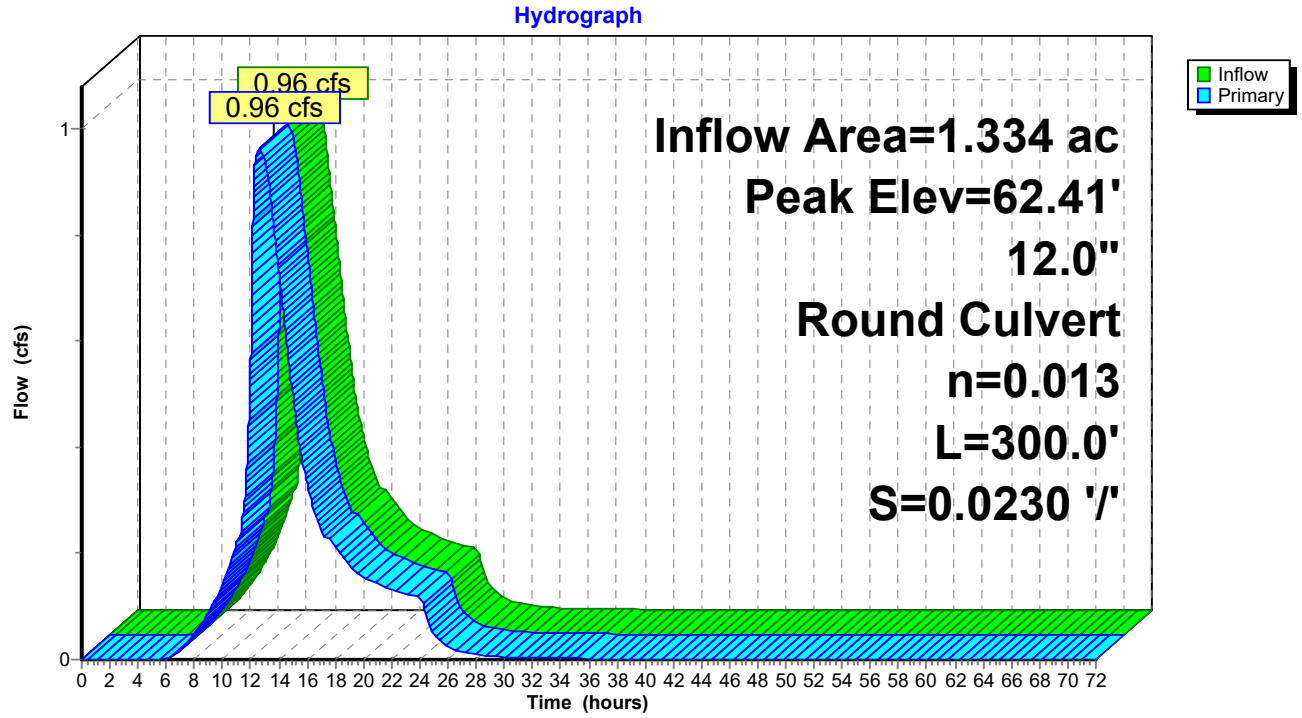
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 3.77" for 10-yr (+15%) event
Inflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Outflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 62.41' @ 12.60 hrs
Flood Elev= 68.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	61.90'	**12.0" Round 12" HDPE Pipe (PDL4E)** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.90' / 55.00' S= 0.0230 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.96 cfs @ 12.60 hrs HW=62.41' TW=0.00' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4E)** (Inlet Controls 0.96 cfs @ 2.42 fps)

Pond PDMH3E: Proposed Manhole 3E



Summary for Pond PDMH6A: Proposed Manhole 6A

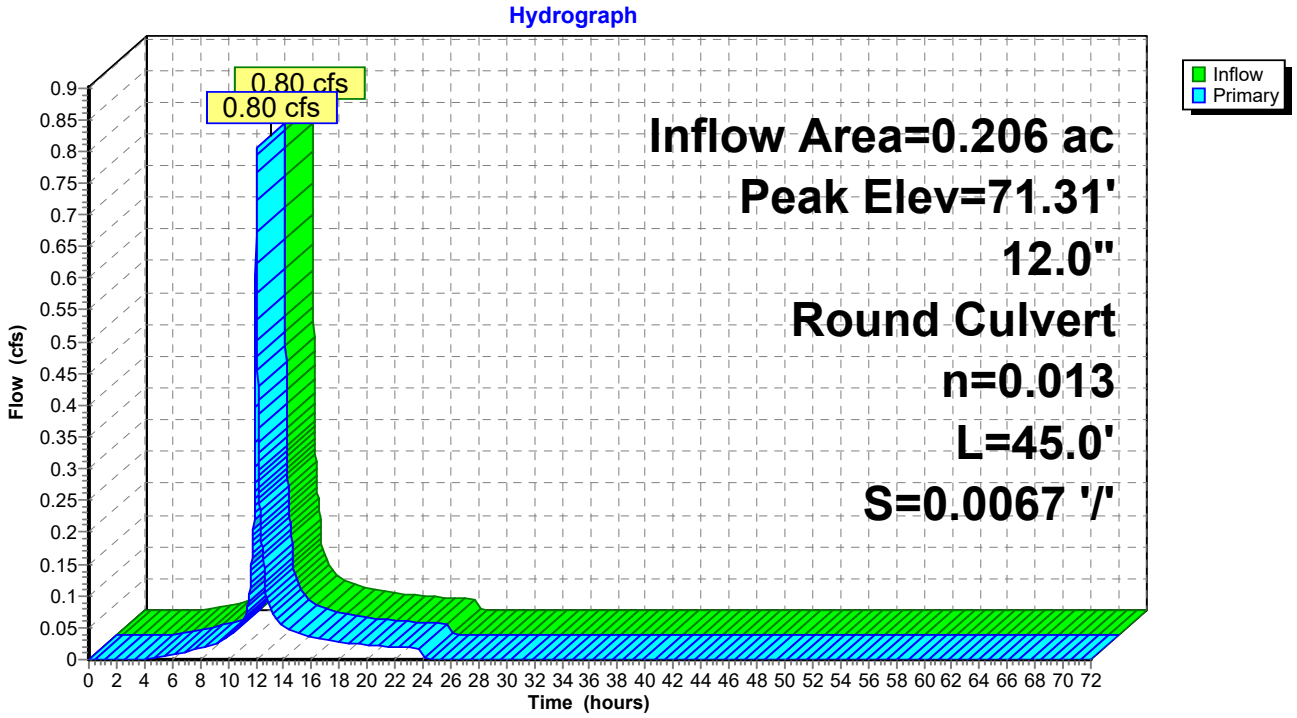
Inflow Area = 0.206 ac, 49.33% Impervious, Inflow Depth = 4.06" for 10-yr (+15%) event
Inflow = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af
Outflow = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af
Routed to Pond PCB7 : Proposed Catch Basin 7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.31' @ 12.04 hrs
Flood Elev= 72.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.80'	**12.0" Round 12" HDPE Pipe (PDL7B)** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.80' / 70.50' S= 0.0067 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.80 cfs @ 12.04 hrs HW=71.31' TW=70.85' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL7B)** (Barrel Controls 0.80 cfs @ 2.89 fps)

Pond PDMH6A: Proposed Manhole 6A



Summary for Pond PDMH8: Proposed Manhole 8

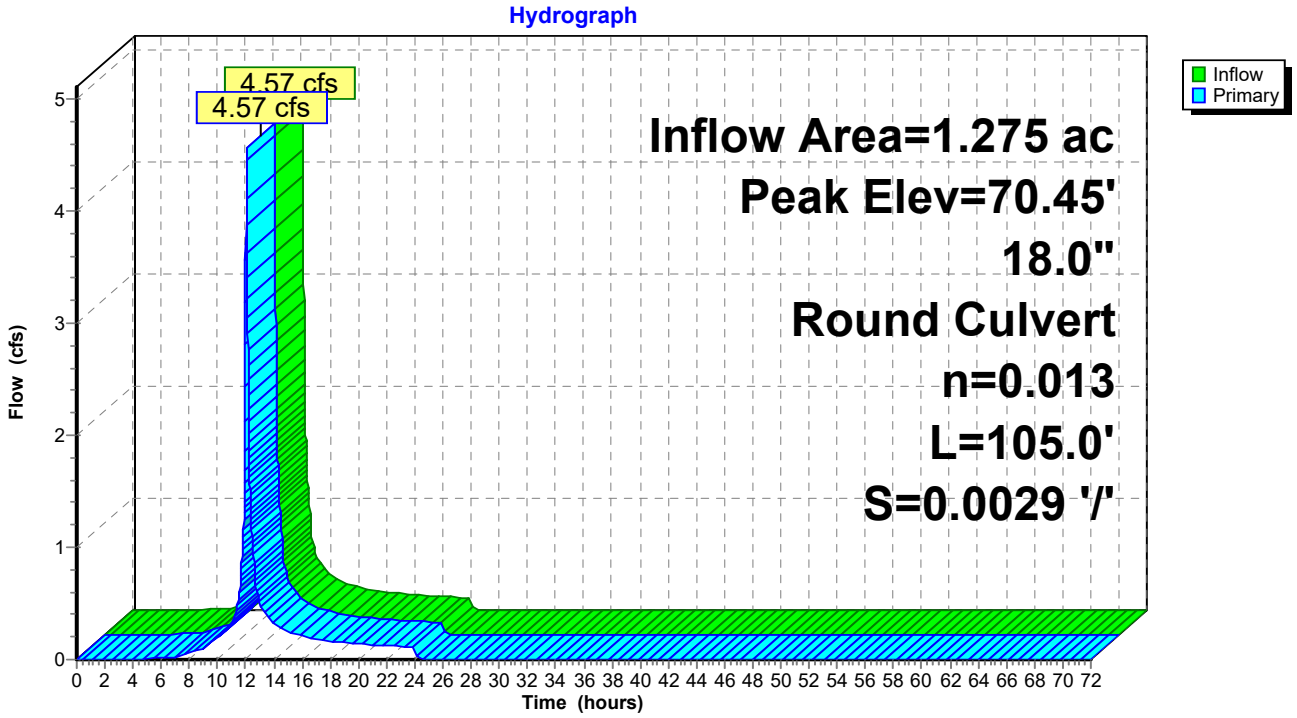
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 3.80" for 10-yr (+15%) event
Inflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Outflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af, Atten= 0%, Lag= 0.0 min
Primary = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Routed to Pond PDMH8A : Proposed Manhole 8A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.45' @ 12.05 hrs
Flood Elev= 75.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	**18.0" Round 18" HDPE (PDL10A)** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 69.10' / 68.80' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.56 cfs @ 12.05 hrs HW=70.44' TW=69.83' (Dynamic Tailwater)
↑—**1=18" HDPE (PDL10A)** (Outlet Controls 4.56 cfs @ 3.61 fps)

Pond PDMH8: Proposed Manhole 8



Summary for Pond PDMH8A: Proposed Manhole 8A

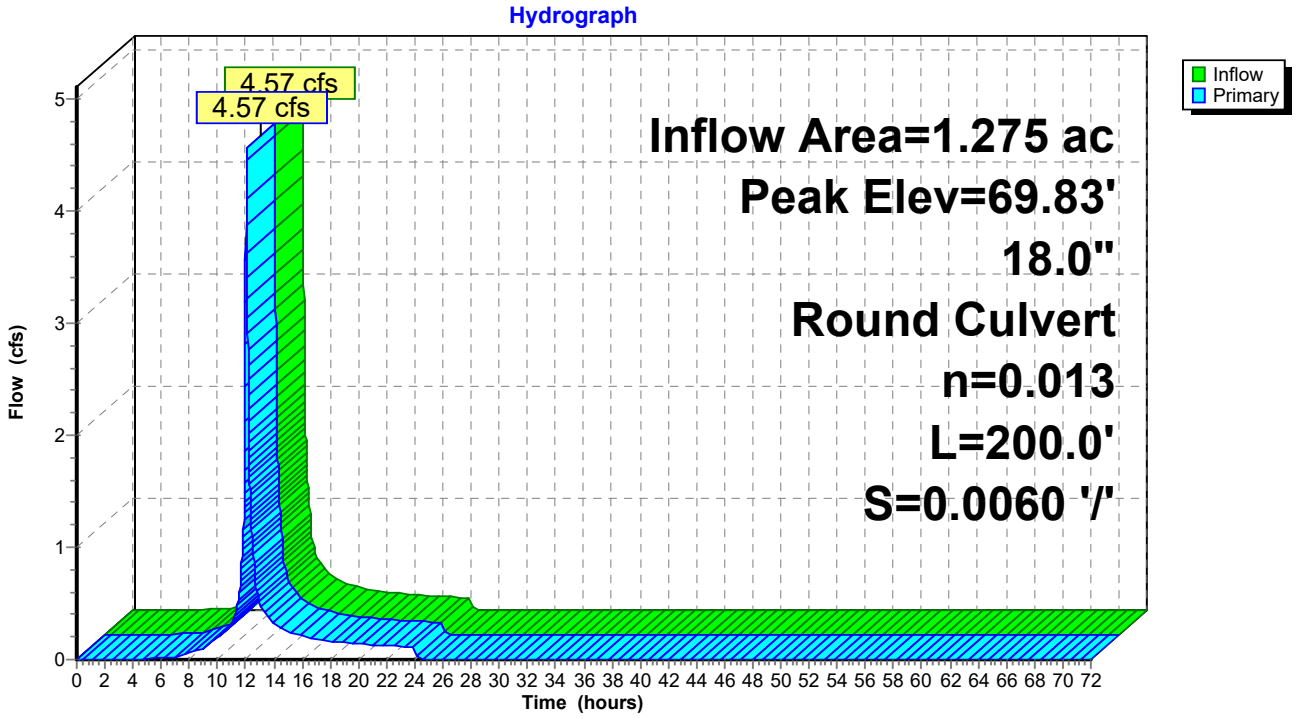
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 3.80" for 10-yr (+15%) event
Inflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Outflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af, Atten= 0%, Lag= 0.0 min
Primary = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Routed to Pond PDMH9 : Proposed Manhole 9

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 69.83' @ 12.05 hrs
Flood Elev= 73.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	68.70'	**18.0" Round 18" HDPE (PDL10B)** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.70' / 67.50' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.56 cfs @ 12.05 hrs HW=69.83' TW=68.04' (Dynamic Tailwater)
1=18" HDPE (PDL10B) (Barrel Controls 4.56 cfs @ 4.45 fps)

Pond PDMH8A: Proposed Manhole 8A



Summary for Pond PDMH9: Proposed Manhole 9

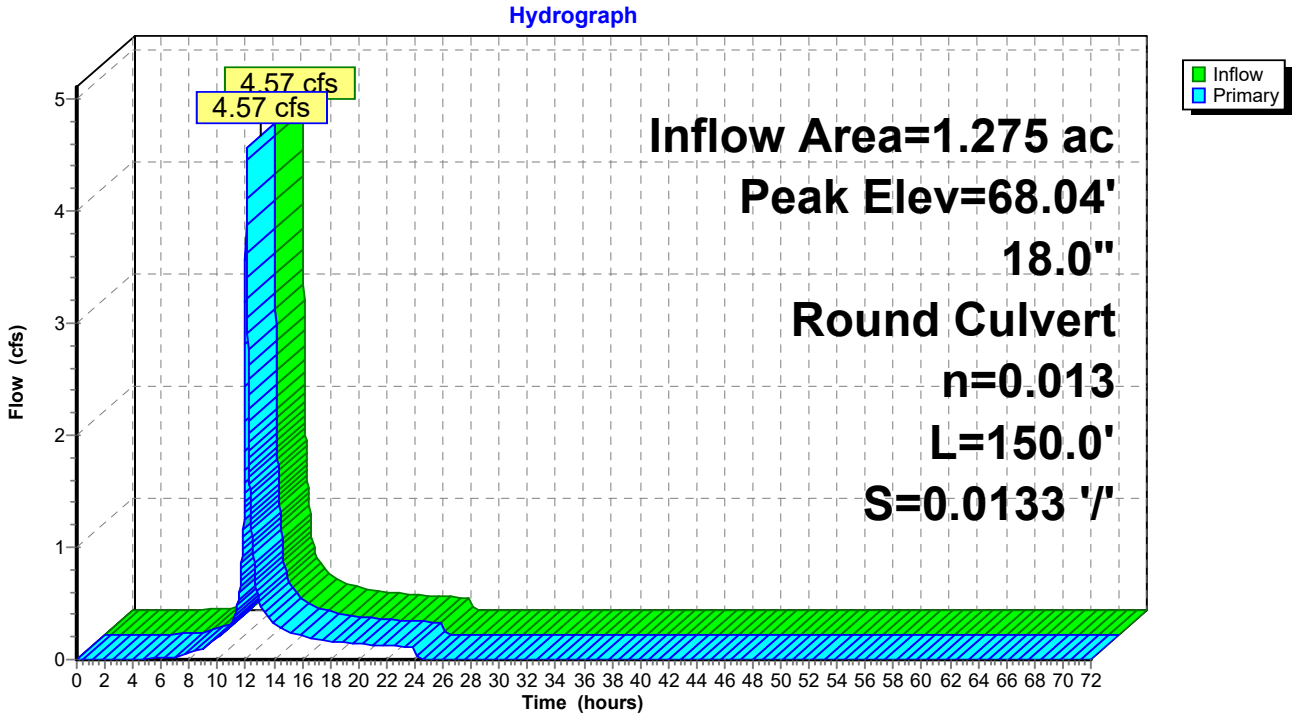
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 3.80" for 10-yr (+15%) event
Inflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Outflow = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af, Atten= 0%, Lag= 0.0 min
Primary = 4.57 cfs @ 12.05 hrs, Volume= 0.403 af
Routed to Pond PDMH10 : Proposed Manhole 10

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 68.04' @ 12.05 hrs
Flood Elev= 70.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**18.0" Round 18" HDPE (PDL11)** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 67.00' / 65.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.56 cfs @ 12.05 hrs HW=68.04' TW=65.92' (Dynamic Tailwater)
1=18" HDPE (PDL11) (Inlet Controls 4.56 cfs @ 3.48 fps)

Pond PDMH9: Proposed Manhole 9



Summary for Pond PP100: Stone Storage for House B of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.1 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

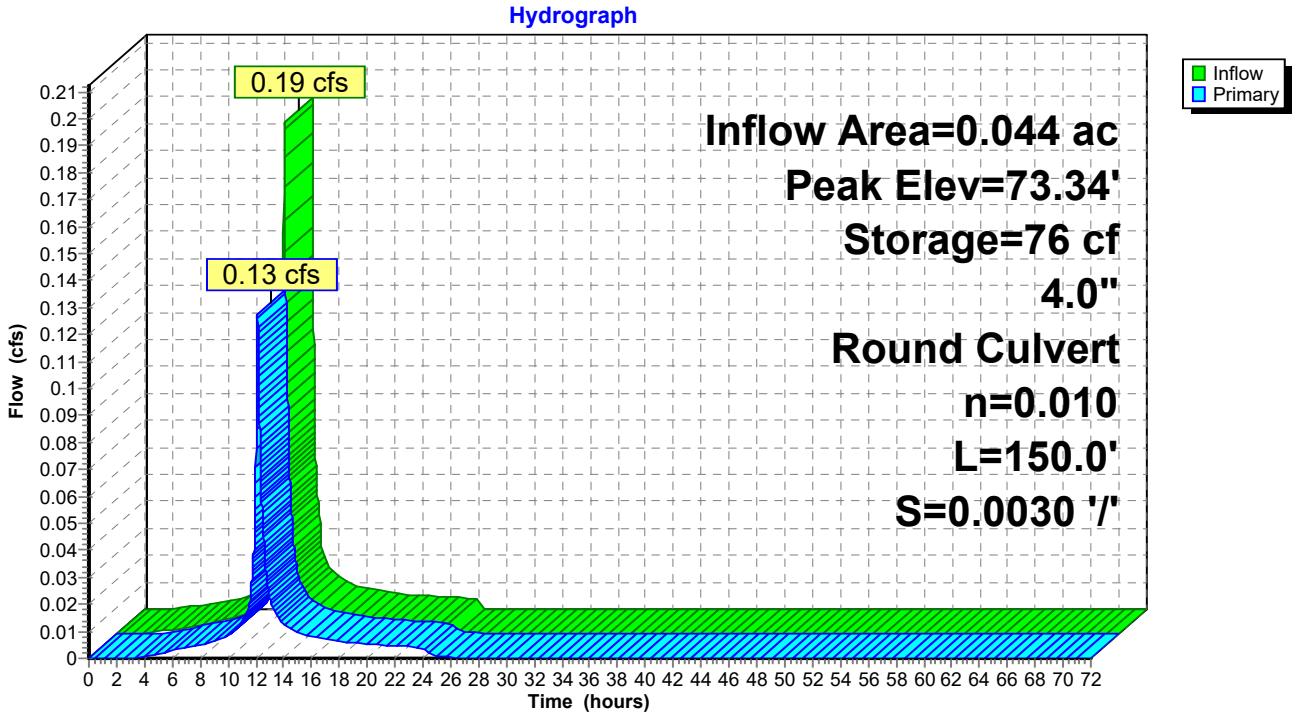
Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.00	560	0	0	560
77.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 72.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=73.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.78 fps)

Pond PP100: Stone Storage for House B of Lot 31



Summary for Pond PP101: Stone Storage for House C of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.33' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 28.6 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

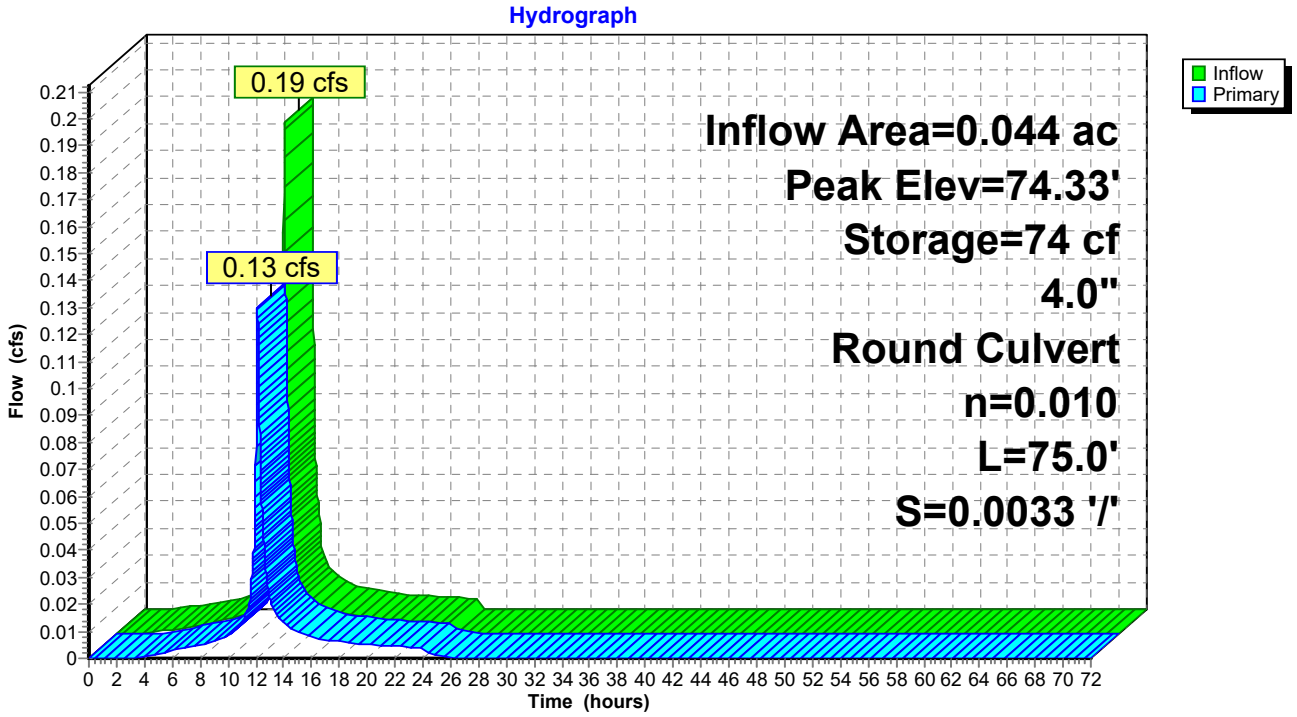
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.75' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=74.33' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.86 fps)

Pond PP101: Stone Storage for House C of Lot 31



Summary for Pond PP102: Stone Storage for House D of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 32%, Lag= 4.0 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.4 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.4 min (825.5 - 796.0)

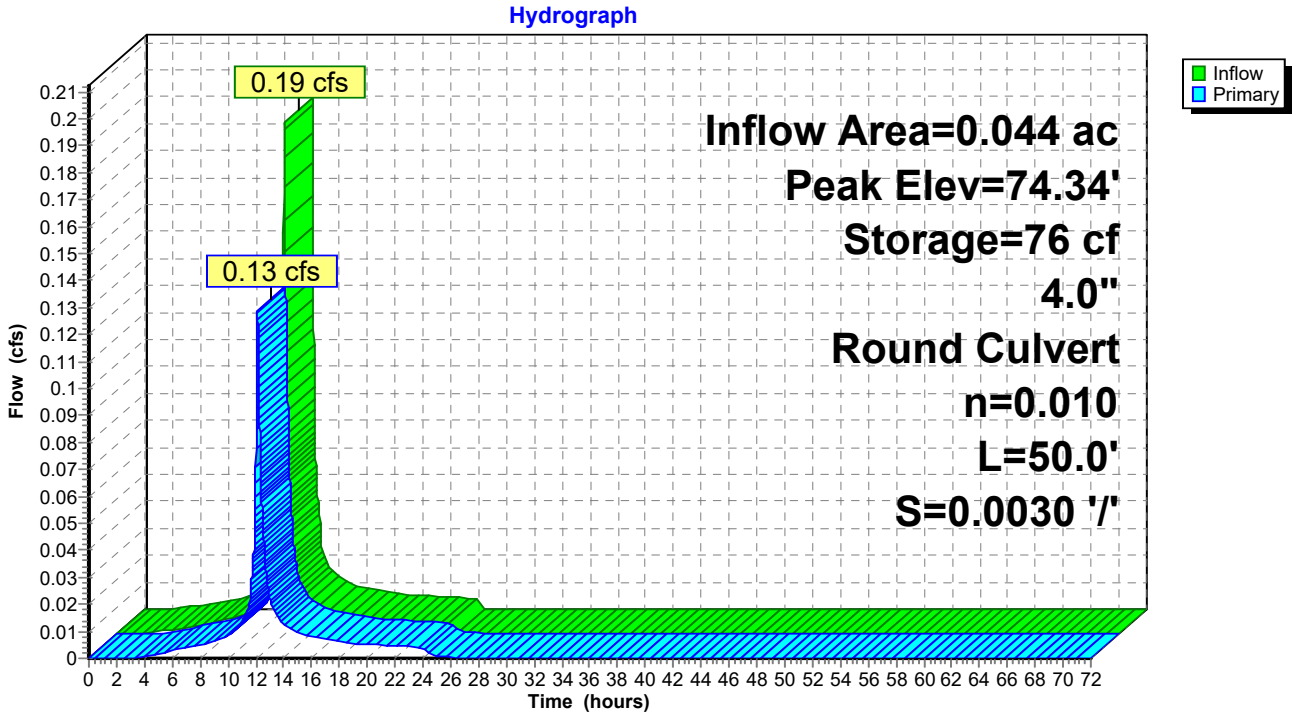
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.85' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=74.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.81 fps)

Pond PP102: Stone Storage for House D of Lot 31



Summary for Pond PP103: Stone Storage for House A of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 32%, Lag= 4.0 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.4 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.4 min (825.5 - 796.0)

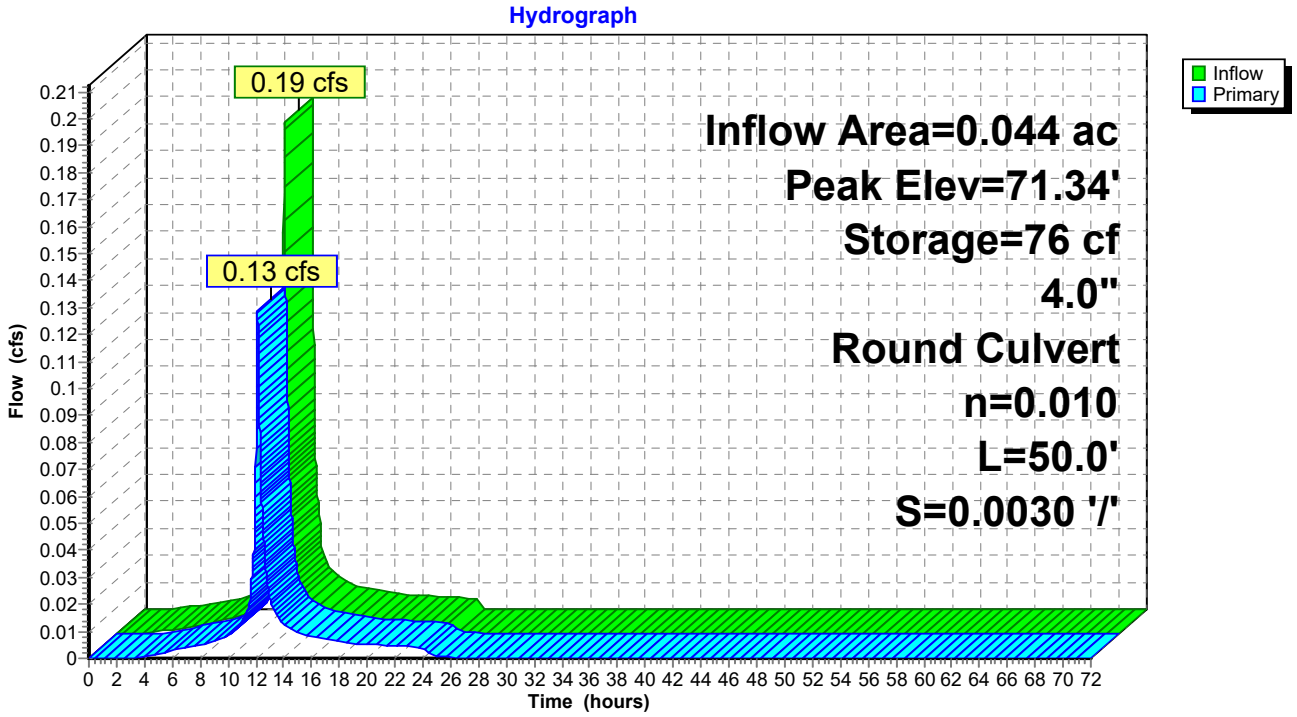
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.00	560	0	0	560
75.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	**4.0" Round 4" PVC** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.00' / 70.85' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=71.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.81 fps)

Pond PP103: Stone Storage for House A of Lot 30



Summary for Pond PP104: Stone Storage for House B of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.83' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

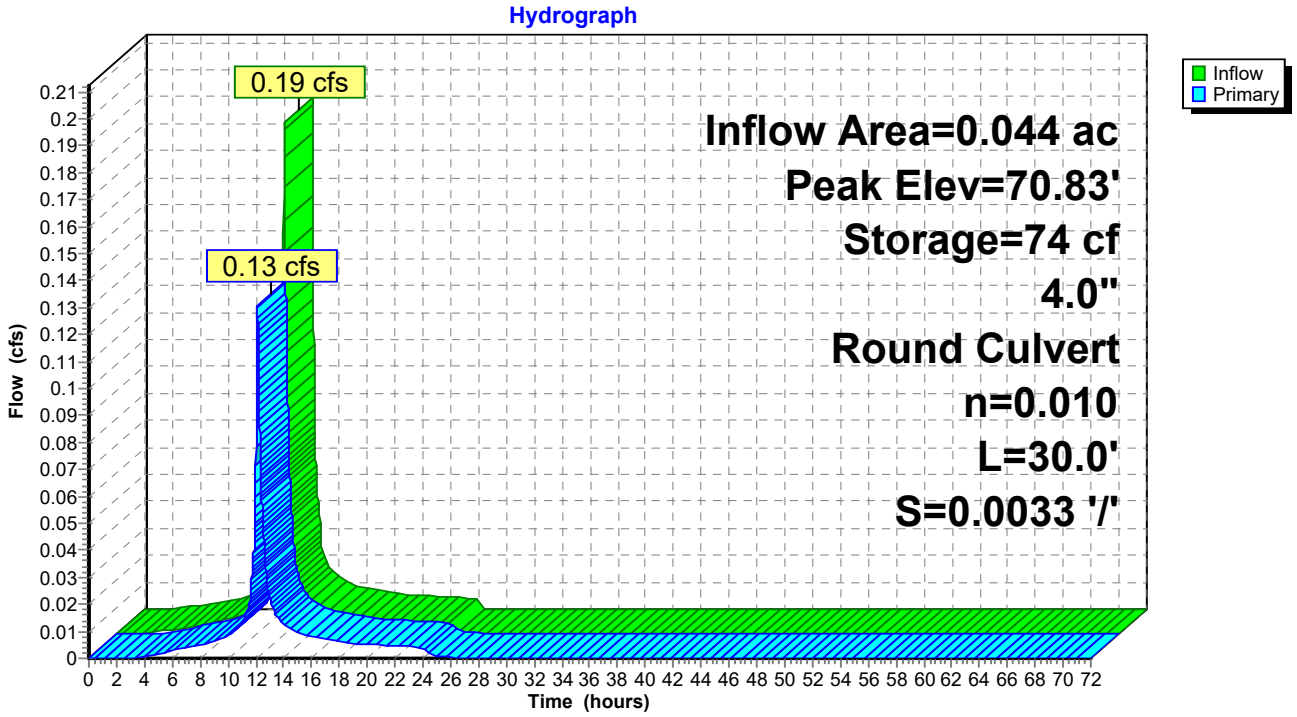
Volume	Invert	Avail.Storage	Storage Description
#1	70.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
70.50	560	0	0	560
74.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	70.50'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.50' / 70.40' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=70.83' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP104: Stone Storage for House B of Lot 30



Summary for Pond PP105: Stone Storage for House C of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.0 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.4 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

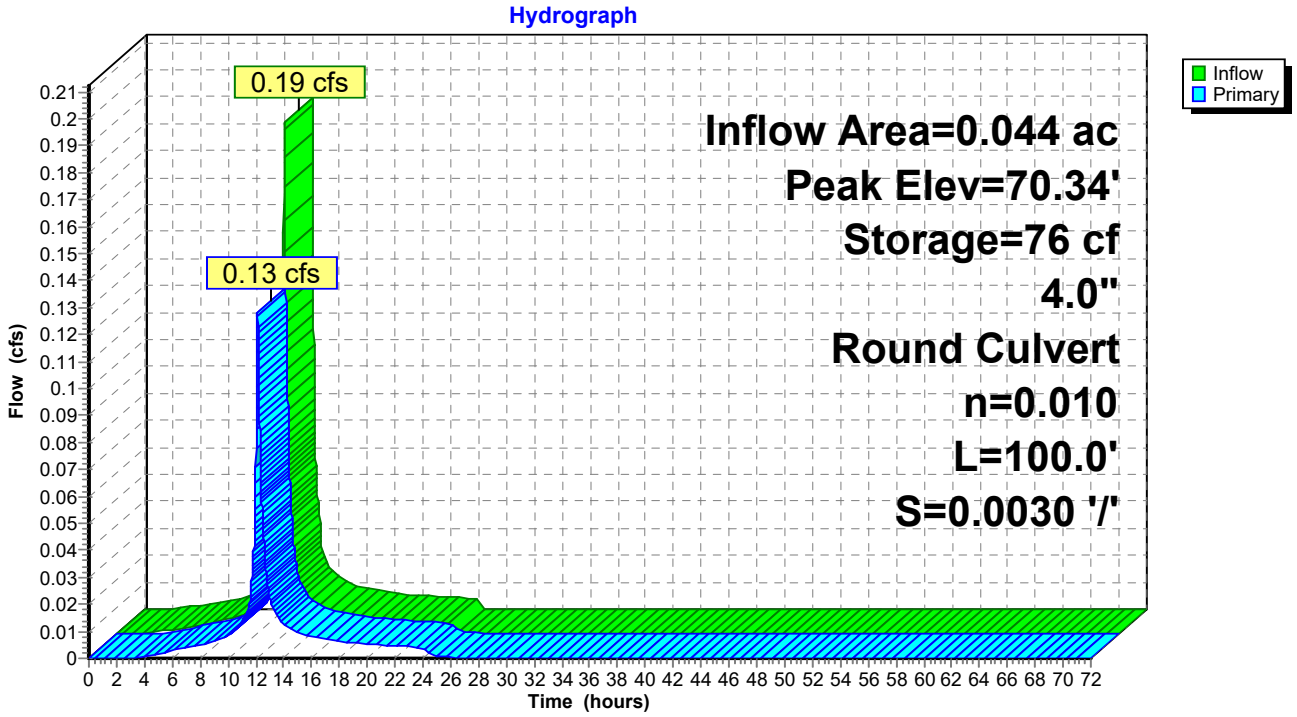
Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
70.00	560	0	0	560
74.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	70.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.00' / 69.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=70.34' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.79 fps)

Pond PP105: Stone Storage for House C of Lot 30



Summary for Pond PP106: Stone Storage for House D of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.1 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

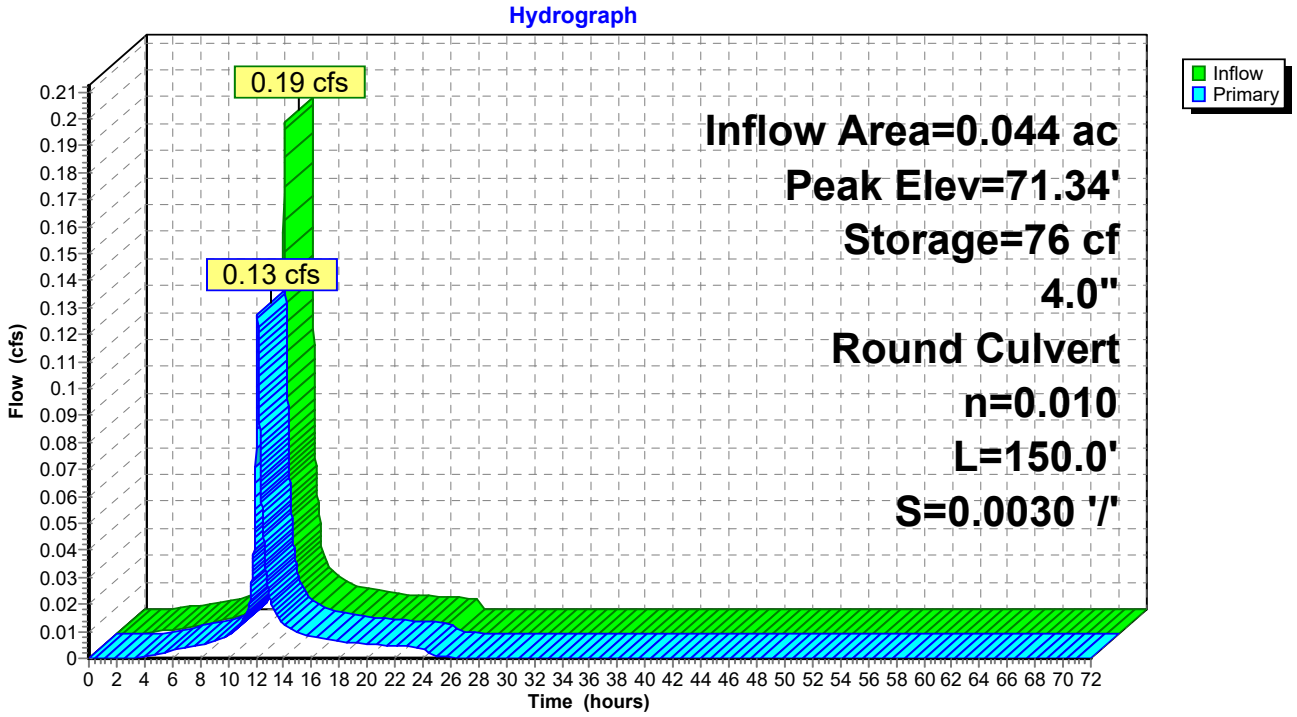
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.00	560	0	0	560
75.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.00' / 70.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=71.34' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.78 fps)

Pond PP106: Stone Storage for House D of Lot 30



Summary for Pond PP107: Stone Storage for House A of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.1 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 68.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

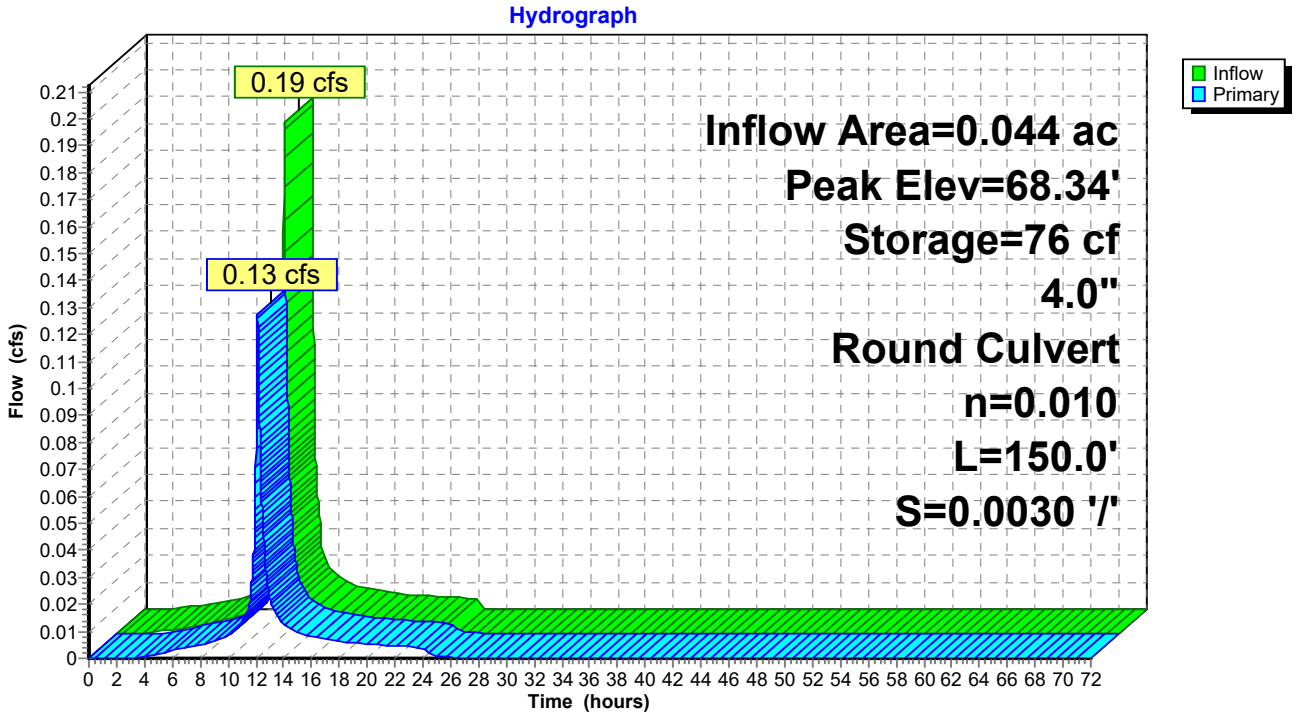
Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	560	0	0	560
72.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	68.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.00' / 67.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=68.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.78 fps)

Pond PP107: Stone Storage for House A of Lot 29



Summary for Pond PP108: Stone Storage for House B of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.1 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 68.84' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

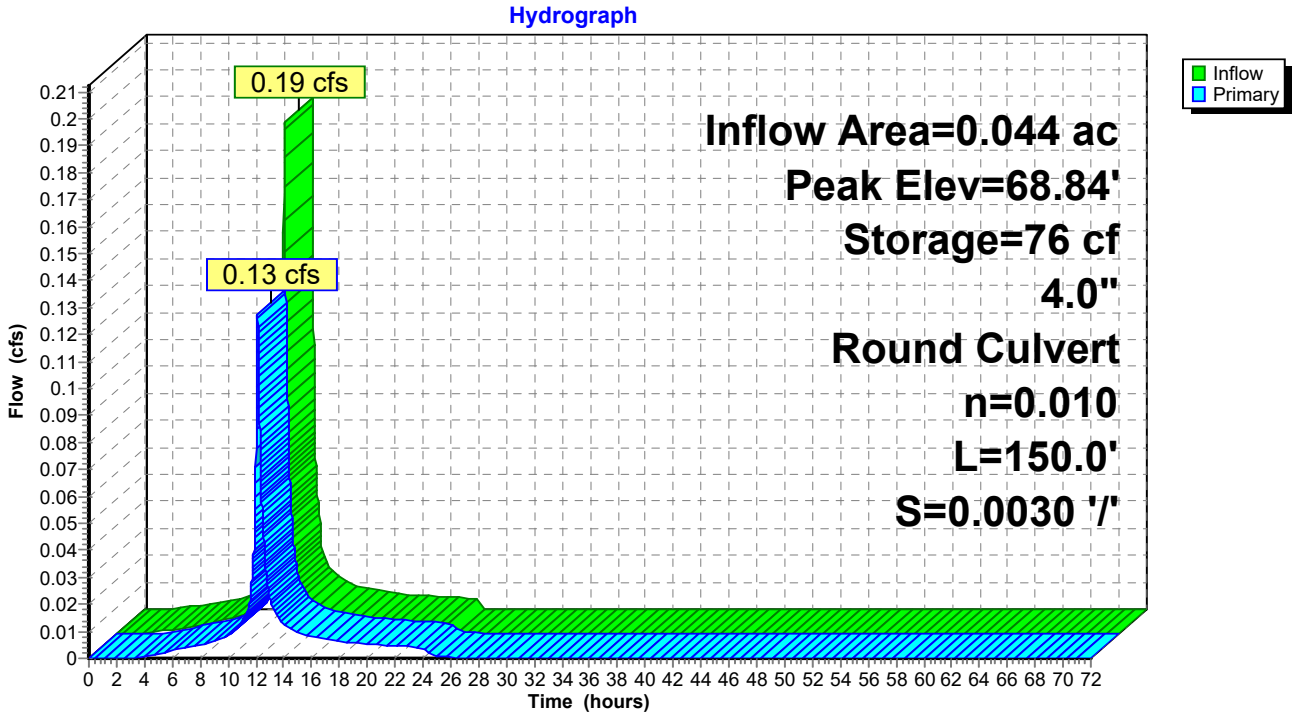
Volume	Invert	Avail.Storage	Storage Description
#1	68.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.50	560	0	0	560
72.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	68.50'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.50' / 68.05' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=68.84' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.78 fps)

Pond PP108: Stone Storage for House B of Lot 29



Summary for Pond PP109: Stone Storage for House C of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.1 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 66.84' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

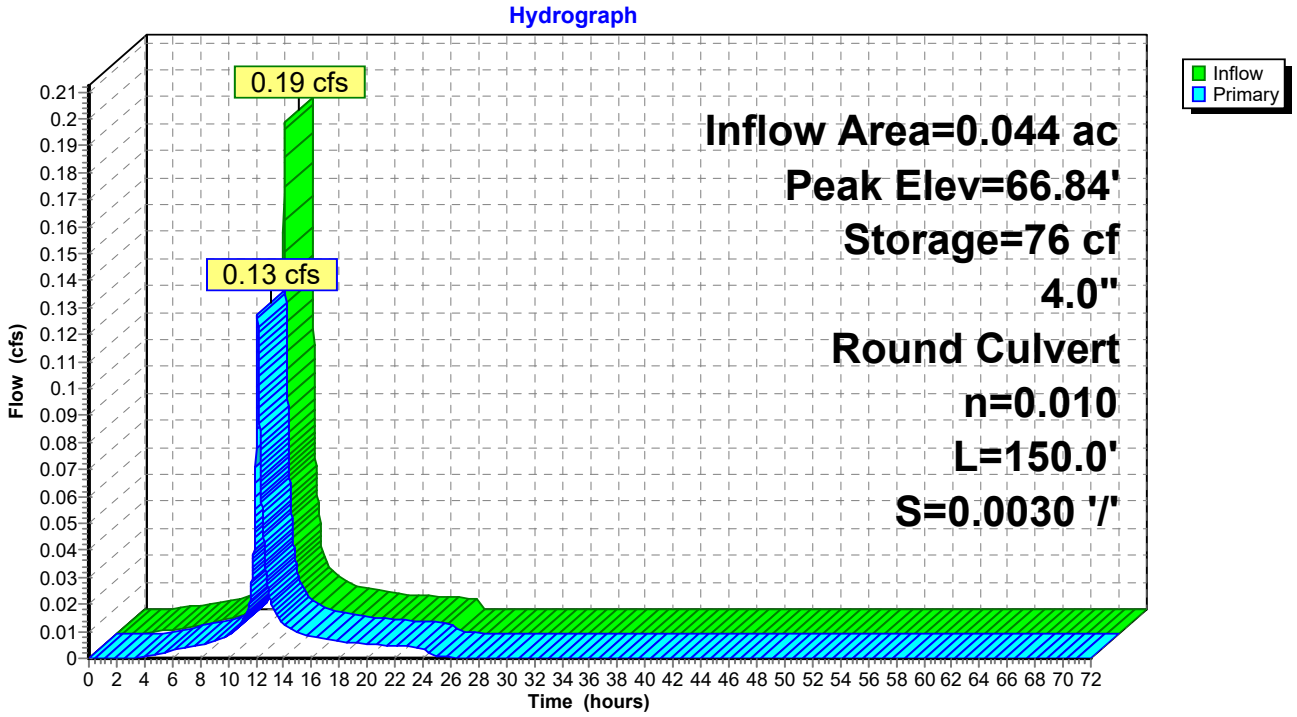
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
66.50	560	0	0	560
70.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	66.50'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 66.50' / 66.05' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=66.84' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.78 fps)

Pond PP109: Stone Storage for House C of Lot 29



Summary for Pond PP110: Stone Storage for House C of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.0 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 66.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.4 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

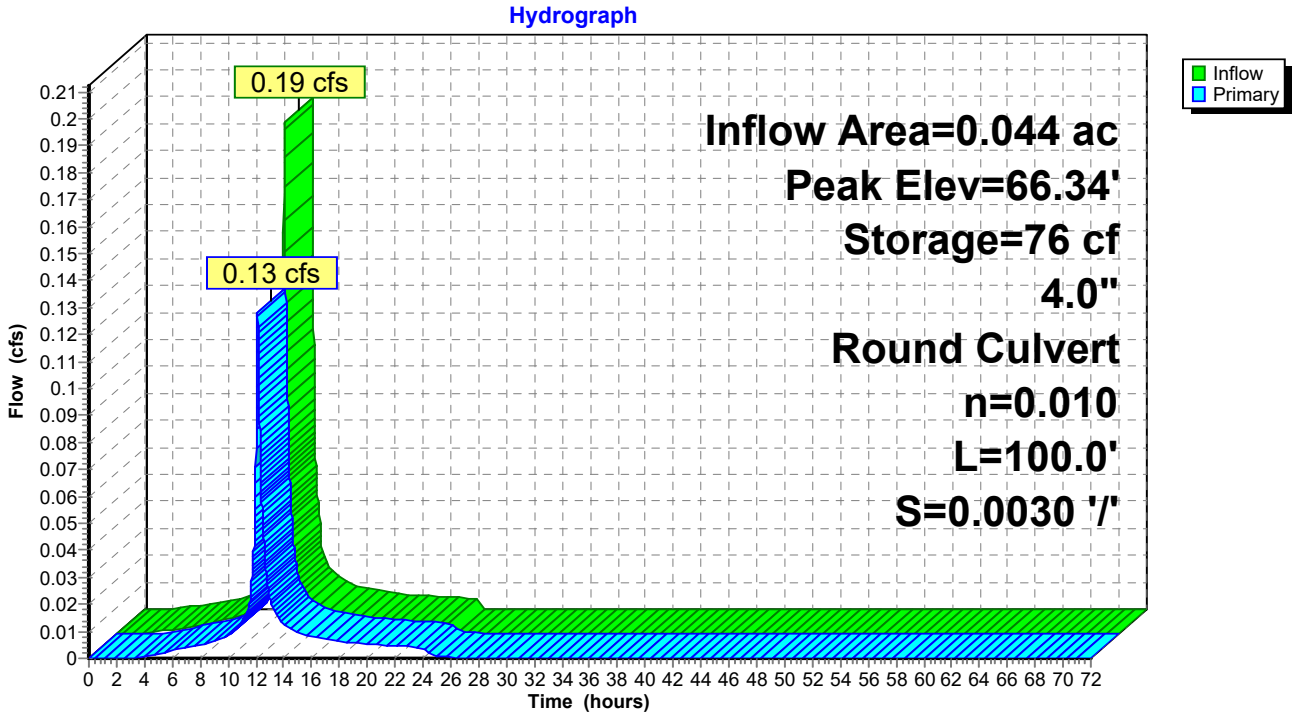
Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
66.00	560	0	0	560
70.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	66.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 66.00' / 65.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=66.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.79 fps)

Pond PP110: Stone Storage for House C of Lot 29



Summary for Pond PP111: Stone Storage for Lot 26

Inflow Area = 0.053 ac, 72.89% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.23 cfs @ 12.04 hrs, Volume= 0.020 af
Outflow = 0.14 cfs @ 12.11 hrs, Volume= 0.020 af, Atten= 36%, Lag= 4.6 min
Primary = 0.14 cfs @ 12.11 hrs, Volume= 0.020 af
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 59.38' @ 12.11 hrs Surf.Area= 625 sf Storage= 95 cf

Plug-Flow detention time= 30.0 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 30.1 min (826.1 - 796.0)

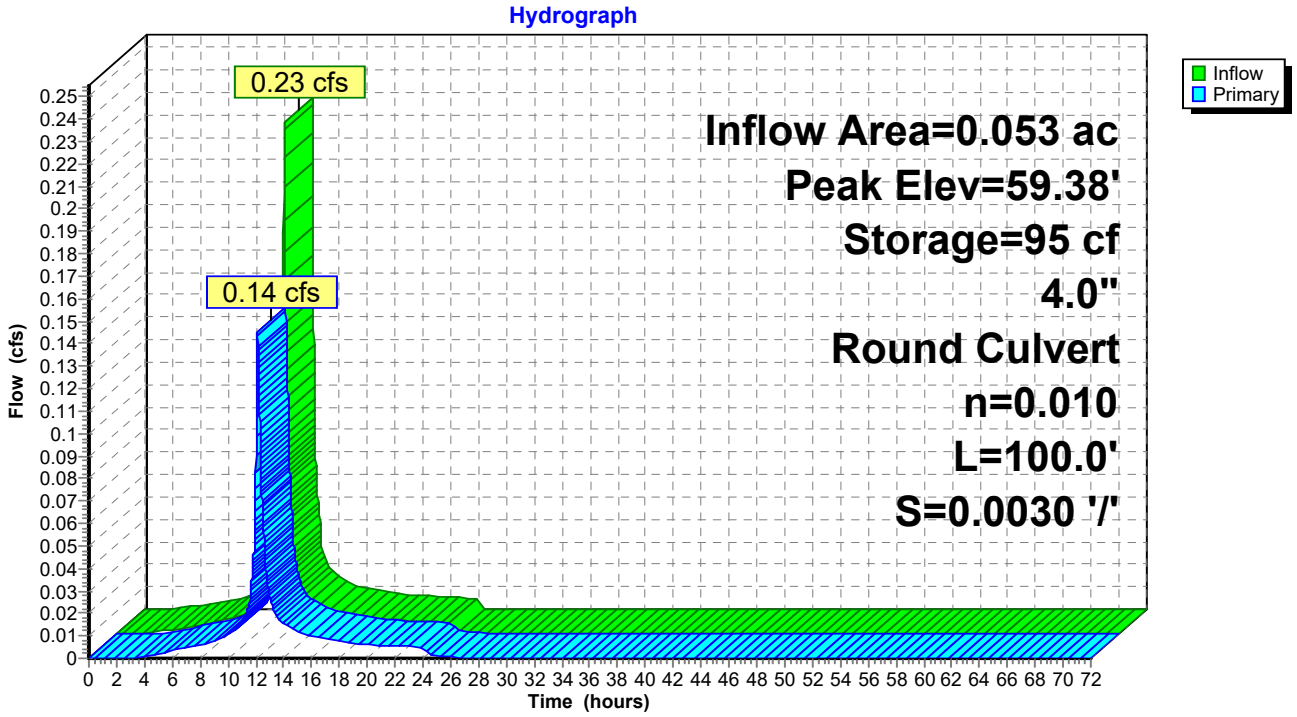
Volume	Invert	Avail.Storage	Storage Description
#1	59.00'	1,000 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,500 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
59.00	625	0	0	625
63.00	625	2,500	2,500	979

Device	Routing	Invert	Outlet Devices
#1	Primary	59.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.00' / 58.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.11 hrs HW=59.38' TW=43.79' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP111: Stone Storage for Lot 26



Summary for Pond PP112: Stone Storage for Lot 26

Inflow Area = 0.053 ac, 72.89% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.23 cfs @ 12.04 hrs, Volume= 0.020 af
Outflow = 0.14 cfs @ 12.11 hrs, Volume= 0.020 af, Atten= 36%, Lag= 4.6 min
Primary = 0.14 cfs @ 12.11 hrs, Volume= 0.020 af
Routed to Reach ER80 : West Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 61.38' @ 12.11 hrs Surf.Area= 625 sf Storage= 95 cf

Plug-Flow detention time= 30.0 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 30.1 min (826.1 - 796.0)

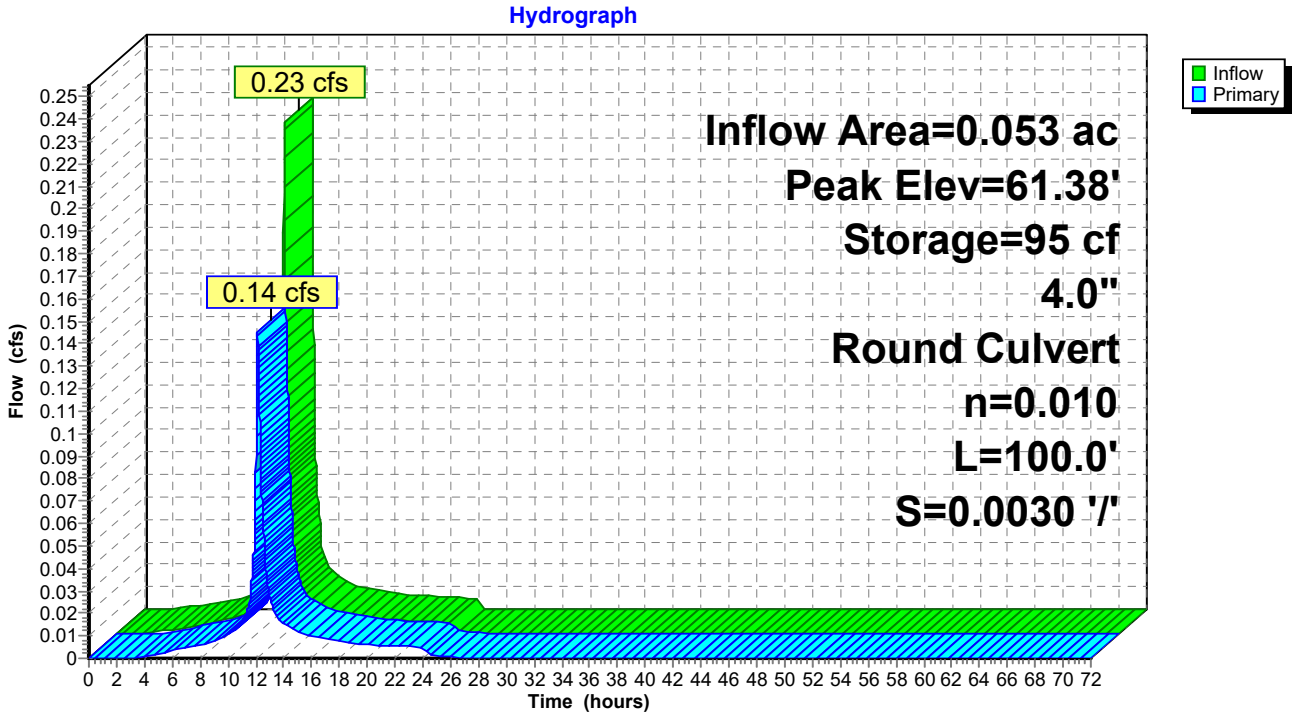
Volume	Invert	Avail.Storage	Storage Description
#1	61.00'	1,000 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,500 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
61.00	625	0	0	625
65.00	625	2,500	2,500	979

Device	Routing	Invert	Outlet Devices
#1	Primary	61.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.00' / 60.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.11 hrs HW=61.38' TW=51.10' (Dynamic Tailwater)
↑**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP112: Stone Storage for Lot 26



Summary for Pond PP151: Swale Along West Portion of Proposed Main Road

Inflow Area = 2.073 ac, 22.64% Impervious, Inflow Depth = 3.37" for 10-yr (+15%) event
Inflow = 3.46 cfs @ 12.34 hrs, Volume= 0.582 af
Outflow = 3.44 cfs @ 12.37 hrs, Volume= 0.581 af, Atten= 0%, Lag= 1.4 min
Primary = 3.44 cfs @ 12.37 hrs, Volume= 0.581 af
Routed to Pond PCB11 : Proposed Catch Basin 11

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.91' @ 12.37 hrs Surf.Area= 379 sf Storage= 148 cf
Flood Elev= 66.90' Surf.Area= 1,118 sf Storage= 851 cf

Plug-Flow detention time= 2.0 min calculated for 0.581 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (871.0 - 869.7)

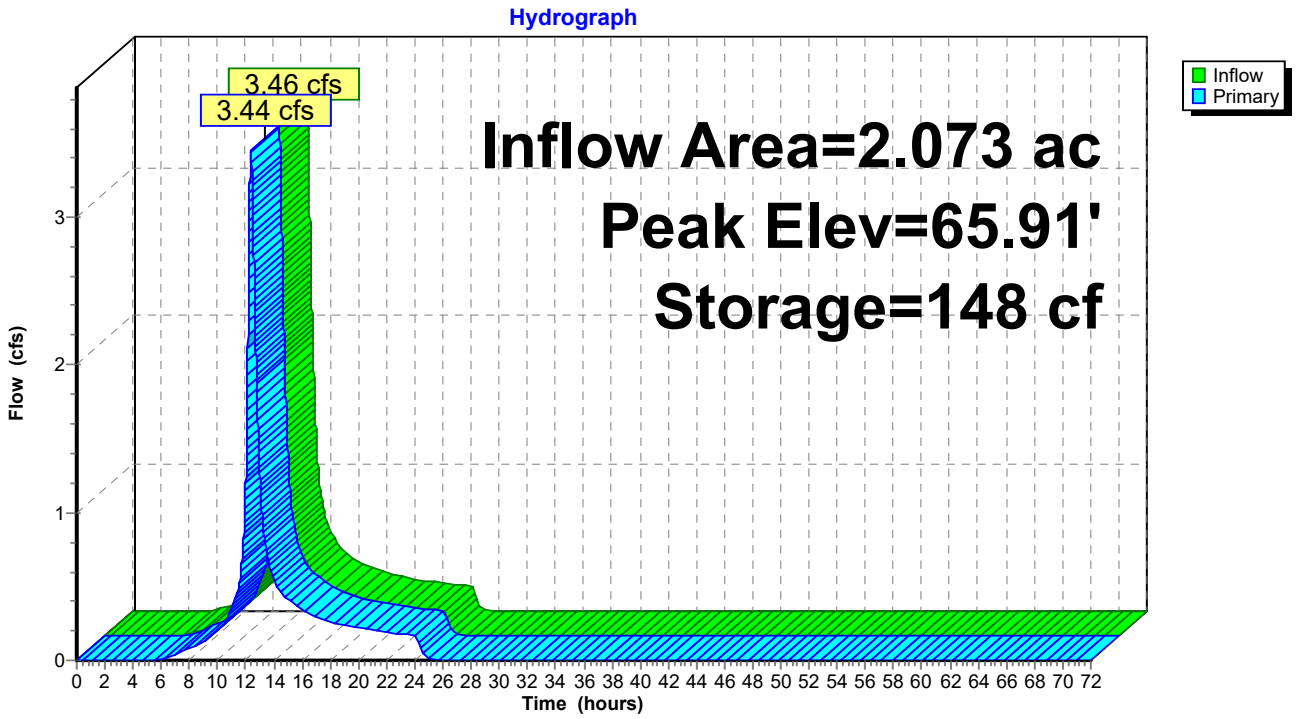
Volume	Invert	Avail.Storage	Storage Description
#1	64.95'	908 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.95	2	0	0
65.15	20	2	2
65.65	240	65	67
66.15	505	186	253
66.65	885	348	601
66.95	1,165	307	908

Device	Routing	Invert	Outlet Devices
#1	Primary	65.45'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.44 cfs @ 12.37 hrs HW=65.91' TW=64.13' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 3.44 cfs @ 2.58 fps)

Pond PP151: Swale Along West Portion of Proposed Main Road



Summary for Pond PP152: Swale Along East Portion of Proposed Main Road

Inflow Area = 0.485 ac, 45.31% Impervious, Inflow Depth = 3.97" for 10-yr (+15%) event
Inflow = 1.17 cfs @ 12.20 hrs, Volume= 0.161 af
Outflow = 1.16 cfs @ 12.22 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.8 min
Primary = 1.16 cfs @ 12.22 hrs, Volume= 0.161 af
Routed to Pond PCB12 : Proposed Catch Basin 12

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.96' @ 12.22 hrs Surf.Area= 145 sf Storage= 39 cf
Flood Elev= 67.40' Surf.Area= 660 sf Storage= 603 cf

Plug-Flow detention time= 0.5 min calculated for 0.161 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (836.8 - 836.4)

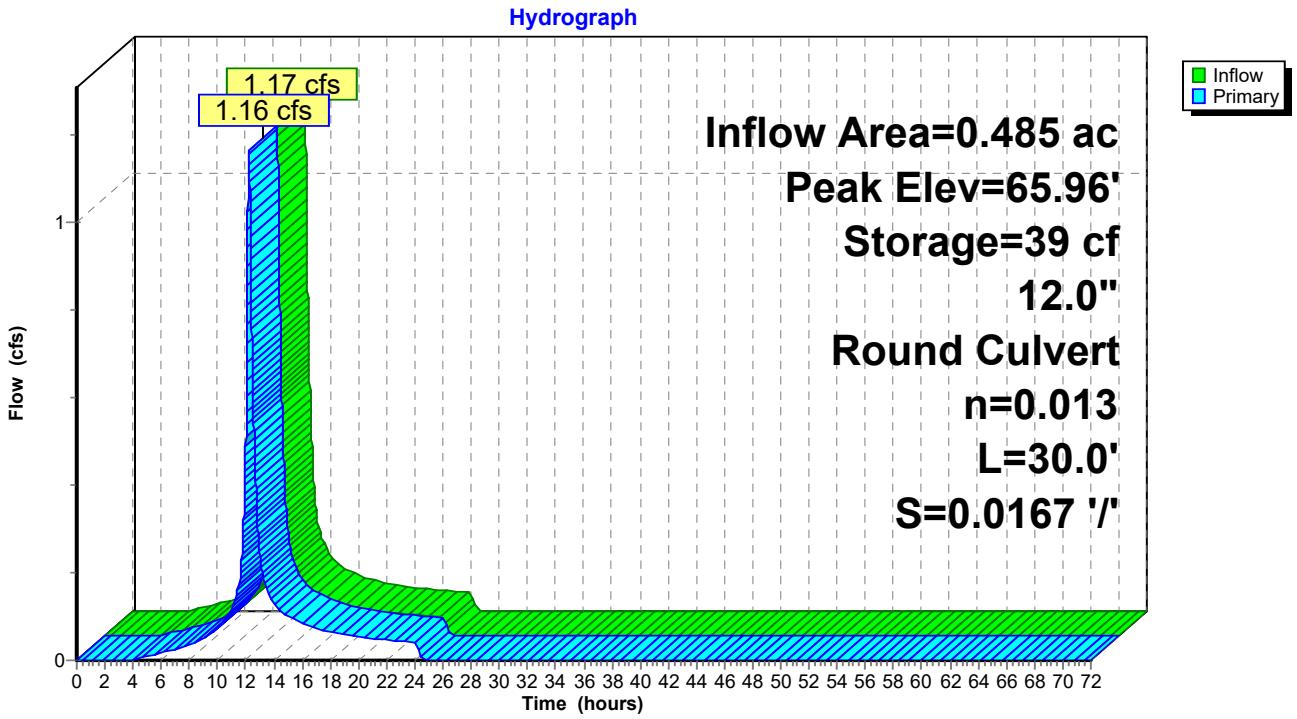
Volume	Invert	Avail.Storage	Storage Description
#1	65.40'	603 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.40	2	0	0
65.50	20	1	1
66.00	155	44	45
66.50	320	119	164
67.00	505	206	370
67.40	660	233	603

Device	Routing	Invert	Outlet Devices
#1	Primary	65.40'	**12.0" Round 12" HDPE Under Driveway** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.40' / 64.90' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.22 hrs HW=65.96' TW=64.00' (Dynamic Tailwater)
↑—**1=12" HDPE Under Driveway** (Inlet Controls 1.16 cfs @ 2.55 fps)

Pond PP152: Swale Along East Portion of Proposed Main Road



Summary for Pond PP153: Swale Along End of Cul-de-sac

Inflow Area = 0.609 ac, 47.89% Impervious, Inflow Depth = 3.97" for 10-yr (+15%) event
Inflow = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af
Outflow = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.1 min
Primary = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af
Routed to Pond PT13 : Proposed Pre-Tx 13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 61.45' @ 12.04 hrs Surf.Area= 116 sf Storage= 18 cf
Flood Elev= 63.25' Surf.Area= 559 sf Storage= 594 cf

Plug-Flow detention time= 0.1 min calculated for 0.201 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (824.5 - 824.4)

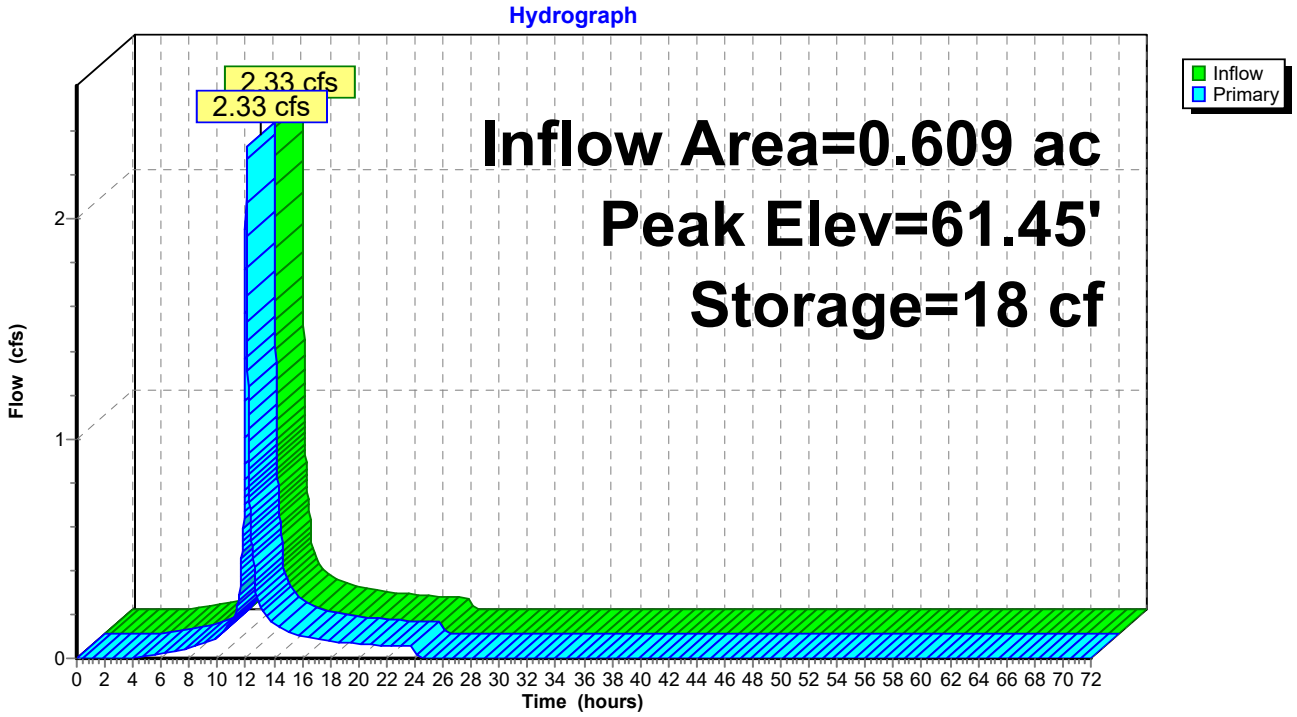
Volume	Invert	Avail.Storage	Storage Description
#1	61.25'	622 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.25	2	0	0
61.30	90	2	2
61.50	125	22	24
62.00	230	89	113
62.50	350	145	258
62.90	450	160	418
63.00	480	47	464
63.30	575	158	622

Device	Routing	Invert	Outlet Devices
#1	Primary	61.25'	**24.0" x 24.0" Horiz. Grate Inlet** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.33 cfs @ 12.04 hrs HW=61.45' TW=60.25' (Dynamic Tailwater)
↑—**1=Grate Inlet** (Weir Controls 2.33 cfs @ 1.46 fps)

Pond PP153: Swale Along End of Cul-de-sac



Summary for Pond PP154: Proposed Sediment Forebay

Inflow Area = 4.019 ac, 30.68% Impervious, Inflow Depth = 3.55" for 10-yr (+15%) event
Inflow = 7.16 cfs @ 12.06 hrs, Volume= 1.190 af
Outflow = 6.30 cfs @ 12.16 hrs, Volume= 0.976 af, Atten= 12%, Lag= 6.1 min
Primary = 6.30 cfs @ 12.16 hrs, Volume= 0.976 af
Routed to Pond PCB14 : Proposed Catch Basin 14

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 63.42' @ 12.16 hrs Surf.Area= 4,820 sf Storage= 10,930 cf
Flood Elev= 64.00' Surf.Area= 5,350 sf Storage= 13,354 cf

Plug-Flow detention time= 146.2 min calculated for 0.976 af (82% of inflow)
Center-of-Mass det. time= 58.8 min (914.9 - 856.1)

Volume	Invert	Avail.Storage	Storage Description
#1	56.49'	12,287 cf	**Sediment Forebay (Prismatic)** Listed below (Recalc)
#2	61.00'	1,067 cf	**Slope Stone (Prismatic)** Listed below (Recalc) 2,668 cf Overall x 40.0% Voids
		13,354 cf	Total Available Storage

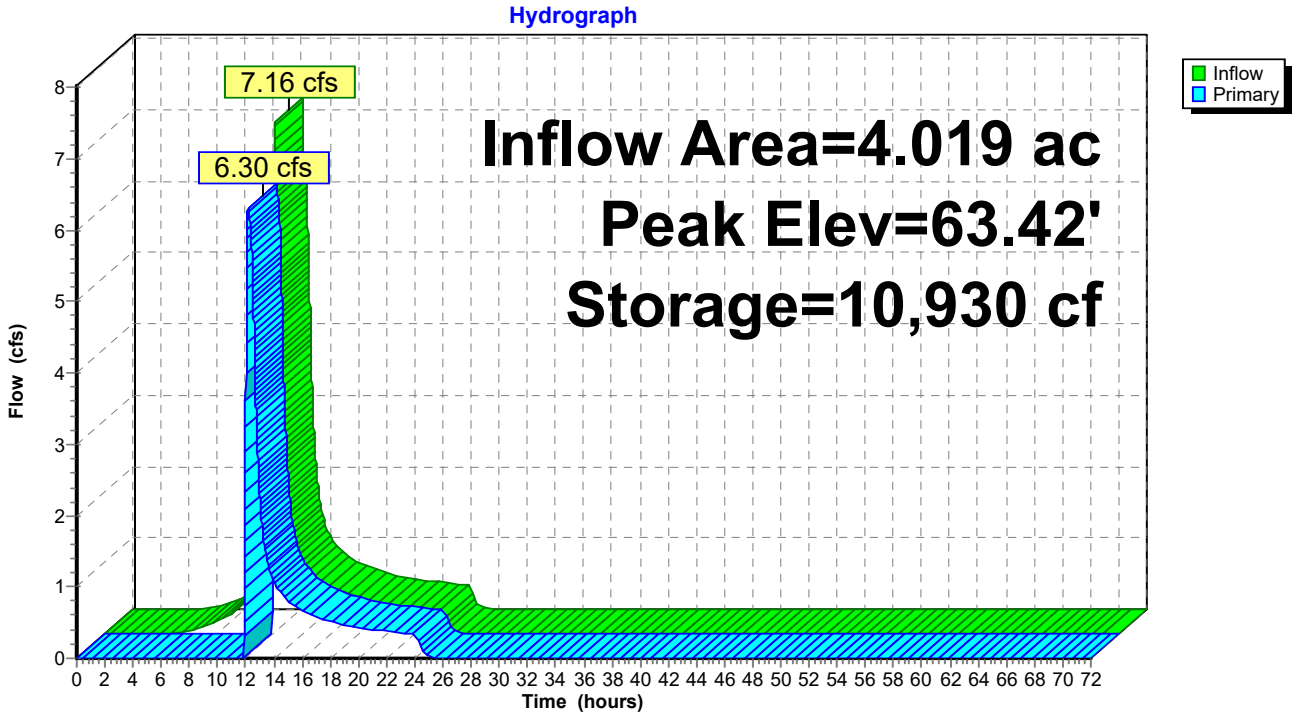
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.49	2,000	0.0	0	0
56.50	2,000	40.0	8	8
60.99	2,000	40.0	3,592	3,600
61.00	2,000	100.0	20	3,620
63.00	3,220	100.0	5,220	8,840
64.00	3,675	100.0	3,448	12,287

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.00	0	0	0
63.00	1,220	1,220	1,220
64.00	1,675	1,448	2,668

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**12.0" W x 4.0" H Vert. (8) 4"x12" Knockouts X 8.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.29 cfs @ 12.16 hrs HW=63.42' TW=58.21' (Dynamic Tailwater)
↑—**1=(8) 4"x12" Knockouts** (Orifice Controls 6.29 cfs @ 2.36 fps)

Pond PP154: Proposed Sediment Forebay



Summary for Pond PP155: Proposed Bioretention Basin "B2"

Inflow Area = 4.985 ac, 30.58% Impervious, Inflow Depth = 3.04" for 10-yr (+15%) event
Inflow = 8.86 cfs @ 12.06 hrs, Volume= 1.264 af
Outflow = 0.94 cfs @ 15.21 hrs, Volume= 1.252 af, Atten= 89%, Lag= 188.9 min
Primary = 0.94 cfs @ 15.21 hrs, Volume= 1.252 af
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 46.75' Surf.Area= 15,600 sf Storage= 3,682 cf
Peak Elev= 50.72' @ 15.21 hrs Surf.Area= 15,600 sf Storage= 29,684 cf (26,002 cf above start)
Flood Elev= 52.00' Surf.Area= 15,600 sf Storage= 48,312 cf (44,631 cf above start)

Plug-Flow detention time= 486.7 min calculated for 1.167 af (92% of inflow)
Center-of-Mass det. time= 406.7 min (1,303.8 - 897.2)

Volume	Invert	Avail.Storage	Storage Description
#1	46.16'	20,452 cf	**Bioretention "B2" Subsurface (Conic)** Listed below (Recalc)
#2	50.00'	27,861 cf	**Bioretention Basin "B2" Open Storage (Conic)** Listed below (Recalc) -Imper
		48,312 cf	Total Available Storage

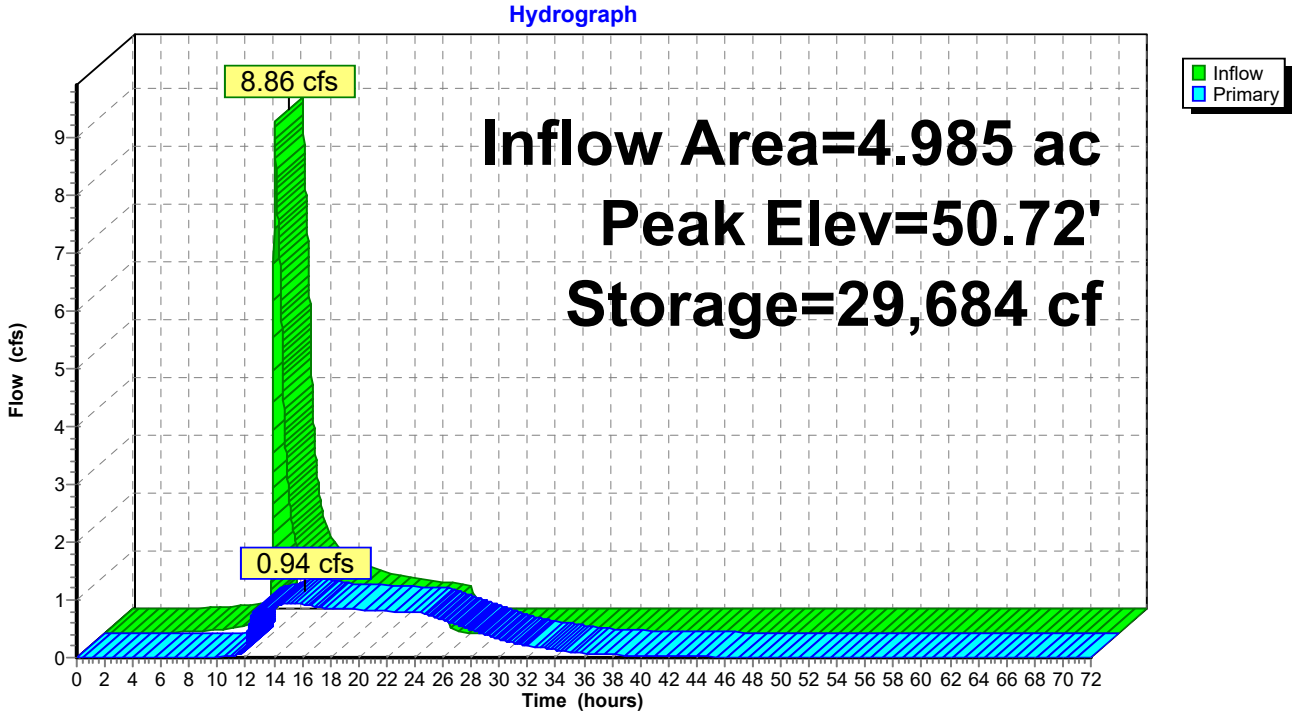
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
46.16	15,600	0.0	0	0	15,600
46.17	15,600	40.0	62	62	15,604
47.75	15,600	40.0	9,859	9,922	16,304
47.76	15,600	30.0	47	9,968	16,308
50.00	15,600	30.0	10,483	20,452	17,300

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	12,325	0	0	12,325
52.00	15,600	27,861	27,861	15,705

Device	Routing	Invert	Outlet Devices
#1	Primary	46.75'	**12.0" Round 12" HDPE (PDL21)** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.75' / 46.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	46.75'	**6.0" Round 6" Perforated Underdrain (PUD20)** L= 205.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.75' / 46.75' S= 0.0000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#3	Device 2	46.16'	**10.000 in/hr Exfiltration through Bioretention Media over Wetted area** Phase-In= 0.01'
#4	Device 1	50.60'	**3.0" Vert. (3) 3" Diameter Weep Holes in CB X 3.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	51.50'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.94 cfs @ 15.21 hrs HW=50.72' TW=0.00' (Dynamic Tailwater)
└─**1=12" HDPE (PDL21)** (Passes 0.94 cfs of 6.83 cfs potential flow)
  ├─**2=6" Perforated Underdrain (PUD20)** (Barrel Controls 0.87 cfs @ 4.41 fps)
  │ └─**3=Exfiltration through Bioretention Media** (Passes 0.87 cfs of 4.00 cfs potential flow)
  ├─**4=(3) 3" Diameter Weep Holes in CB** (Orifice Controls 0.08 cfs @ 1.16 fps)
  └─**5=(4) 4"x12" Knockouts** (Controls 0.00 cfs)

Pond PP155: Proposed Bioretention Basin "B2"



Summary for Pond PP50: Wetlands East of Existing Driveway

Inflow Area = 0.537 ac, 0.00% Impervious, Inflow Depth = 2.89" for 10-yr (+15%) event
Inflow = 1.51 cfs @ 12.04 hrs, Volume= 0.129 af
Outflow = 1.44 cfs @ 12.06 hrs, Volume= 0.128 af, Atten= 5%, Lag= 1.1 min
Primary = 1.44 cfs @ 12.06 hrs, Volume= 0.128 af
Routed to Reach ER75 : Northernmost Stream on Site

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.76' @ 12.06 hrs Surf.Area= 339 sf Storage= 221 cf
Flood Elev= 95.00' Surf.Area= 16,000 sf Storage= 19,508 cf

Plug-Flow detention time= 15.8 min calculated for 0.128 af (99% of inflow)
Center-of-Mass det. time= 9.7 min (875.8 - 866.1)

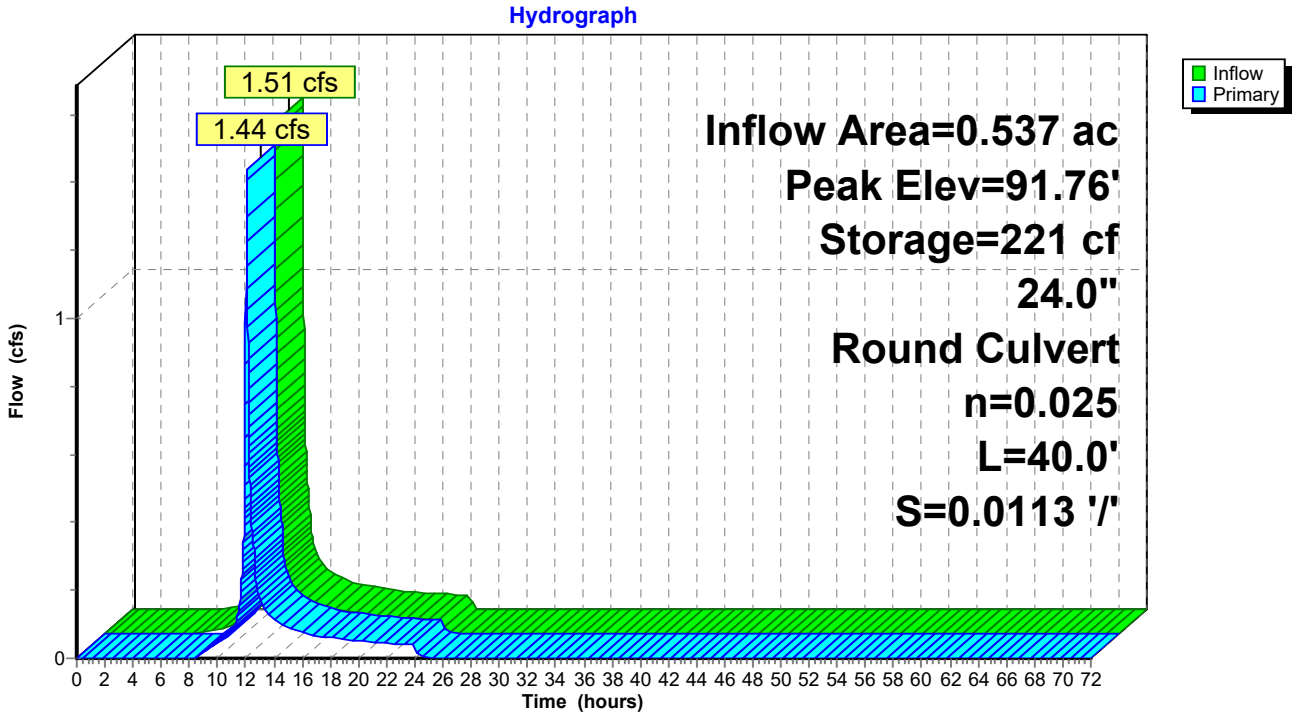
Volume	Invert	Avail.Storage	Storage Description
#1	90.50'	19,508 cf	**Wetlands East of Existing Driveway (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	10	0	0
92.00	400	308	308
94.00	7,200	7,600	7,908
95.00	16,000	11,600	19,508

Device	Routing	Invert	Outlet Devices
#1	Primary	91.15'	**24.0" Round 24" HDPE Pipe (PDL22)** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 91.15' / 90.70' S= 0.0113 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=1.44 cfs @ 12.06 hrs HW=91.76' TW=90.74' (Dynamic Tailwater)
↑—**1=24" HDPE Pipe (PDL22)** (Barrel Controls 1.44 cfs @ 2.63 fps)

Pond PP50: Wetlands East of Existing Driveway



Summary for Pond PP52A: Proposed Swale Along West Side of Main Road

Inflow Area = 0.709 ac, 38.73% Impervious, Inflow Depth = 3.77" for 10-yr (+15%) event
Inflow = 2.12 cfs @ 12.09 hrs, Volume= 0.222 af
Outflow = 2.08 cfs @ 12.11 hrs, Volume= 0.222 af, Atten= 2%, Lag= 1.1 min
Primary = 2.08 cfs @ 12.11 hrs, Volume= 0.222 af
Routed to Pond PT1 : Proposed Pre-Tx 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 80.71' @ 12.11 hrs Surf.Area= 264 sf Storage= 103 cf
Flood Elev= 81.80' Surf.Area= 722 sf Storage= 622 cf

Plug-Flow detention time= 0.7 min calculated for 0.222 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (837.3 - 836.7)

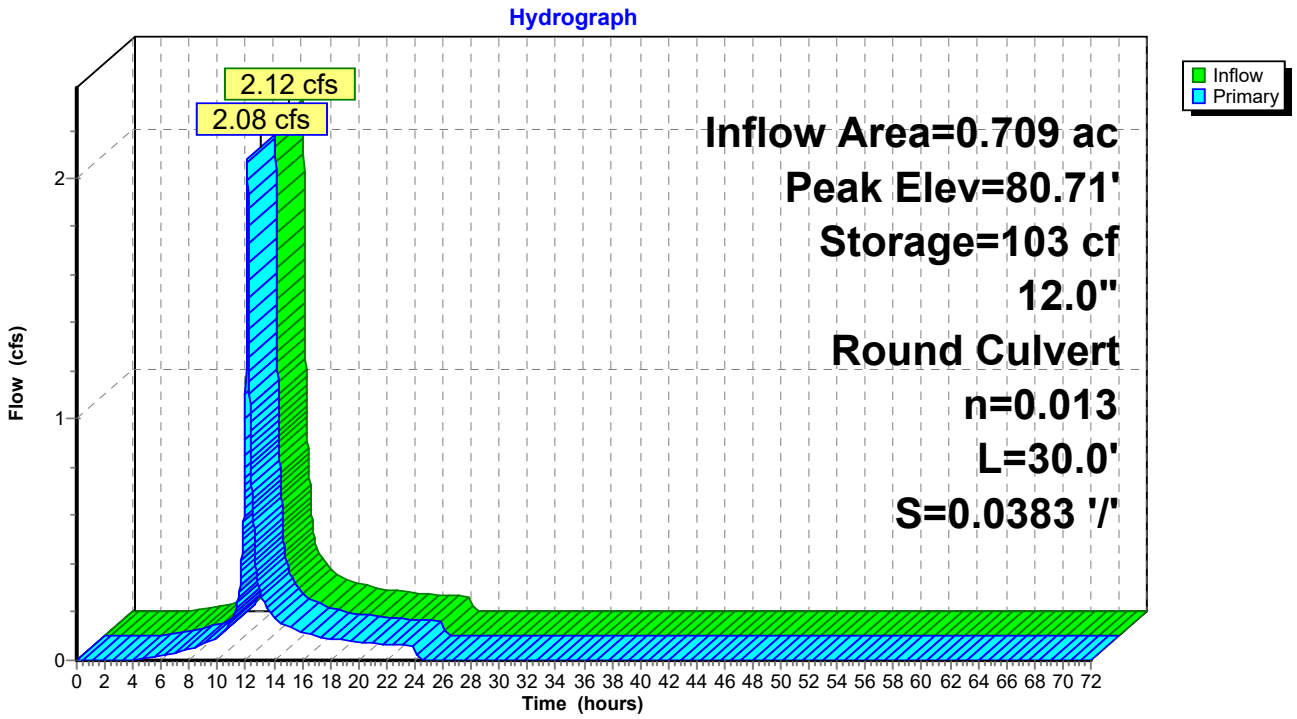
Volume	Invert	Avail.Storage	Storage Description
#1	79.80'	783 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.80	2	0	0
80.00	20	2	2
81.00	365	193	195
81.75	680	392	587
82.00	890	196	783

Device	Routing	Invert	Outlet Devices
#1	Primary	79.90'	**12.0" Round 12" HDPE To Pre-Tx** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 79.90' / 78.75' S= 0.0383 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.08 cfs @ 12.11 hrs HW=80.71' TW=79.74' (Dynamic Tailwater)
↑—**1=12" HDPE To Pre-Tx** (Inlet Controls 2.08 cfs @ 3.06 fps)

Pond PP52A: Proposed Swale Along West Side of Main Road



Summary for Pond PP53A: Proposed Swale Along East Side of Main Road

Inflow Area = 0.471 ac, 49.72% Impervious, Inflow Depth = 4.08" for 10-yr (+15%) event
Inflow = 1.51 cfs @ 12.09 hrs, Volume= 0.160 af
Outflow = 1.51 cfs @ 12.10 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.5 min
Primary = 1.51 cfs @ 12.10 hrs, Volume= 0.159 af
Routed to Pond PT2 : Proposed Pre-Tx 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 80.29' @ 12.10 hrs Surf.Area= 296 sf Storage= 80 cf
Flood Elev= 81.55' Surf.Area= 1,400 sf Storage= 1,087 cf

Plug-Flow detention time= 5.8 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 3.2 min (827.3 - 824.1)

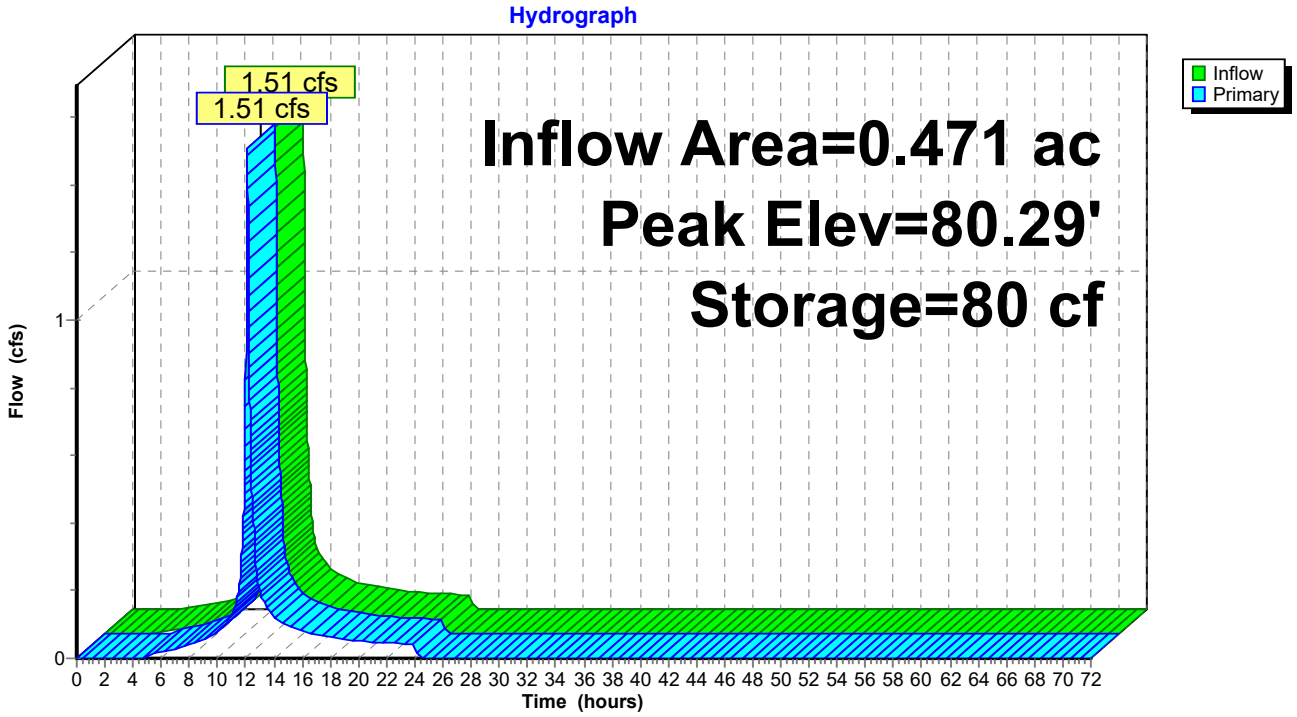
Volume	Invert	Avail.Storage	Storage Description
#1	79.55'	1,087 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.55	2	0	0
80.00	100	23	23
81.00	775	438	460
81.30	1,220	299	760
81.55	1,400	328	1,087

Device	Routing	Invert	Outlet Devices
#1	Primary	80.05'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.51 cfs @ 12.10 hrs HW=80.29' TW=79.66' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 1.51 cfs @ 1.57 fps)

Pond PP53A: Proposed Swale Along East Side of Main Road



Summary for Pond PP54: Proposed Bioretention Basin "A2"

Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth = 3.78" for 10-yr (+15%) event
Inflow = 3.90 cfs @ 12.10 hrs, Volume= 0.420 af
Outflow = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af, Atten= 75%, Lag= 29.9 min
Primary = 0.96 cfs @ 12.60 hrs, Volume= 0.419 af
Routed to Pond PDMH3A : Proposed Manhole 3A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 74.25' Surf.Area= 4,035 sf Storage= 952 cf
Peak Elev= 77.83' @ 12.60 hrs Surf.Area= 4,035 sf Storage= 6,022 cf (5,070 cf above start)
Flood Elev= 79.50' Surf.Area= 4,035 sf Storage= 11,321 cf (10,368 cf above start)

Plug-Flow detention time= 135.3 min calculated for 0.397 af (95% of inflow)
Center-of-Mass det. time= 83.8 min (919.6 - 835.8)

Volume	Invert	Avail.Storage	Storage Description
#1	73.66'	5,290 cf	**Bioretention "A2" Subsurface (Conic)** Listed below (Recalc)
#2	77.50'	6,031 cf	**Bioretention "A2" Open Storage (Conic)** Listed below (Recalc) -Impervious
		11,321 cf	Total Available Storage

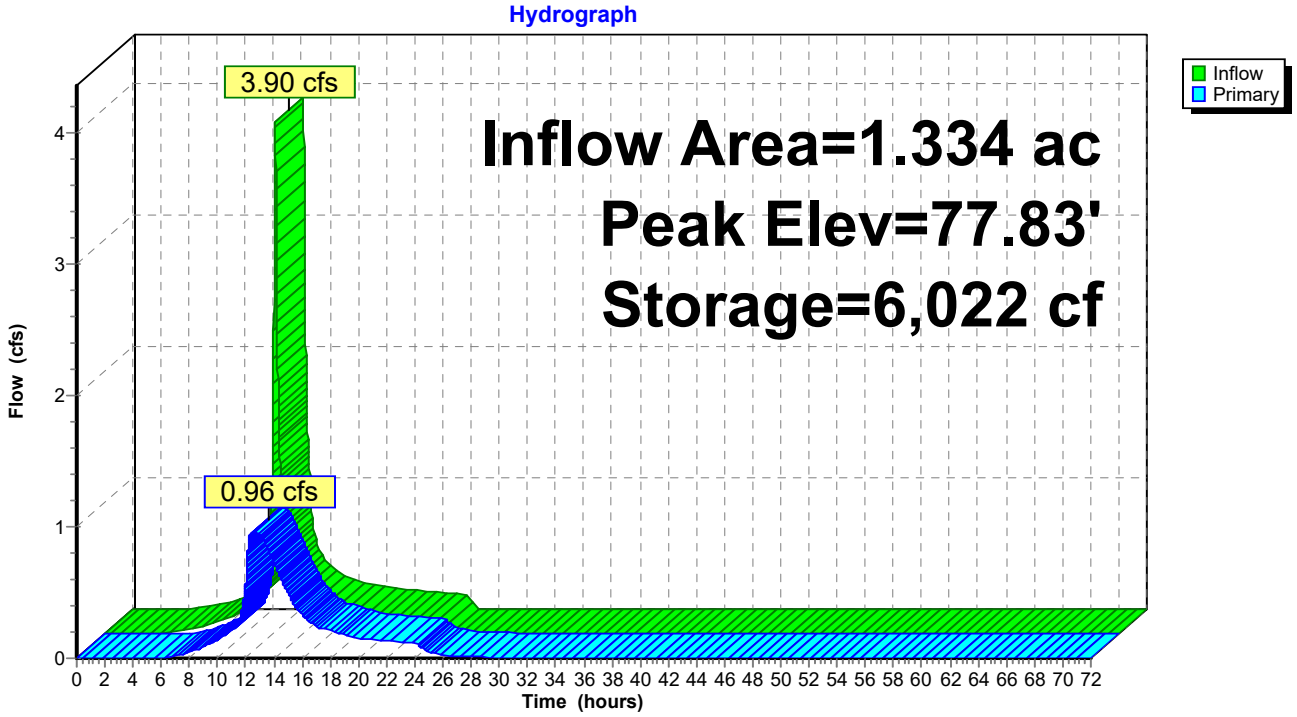
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.66	4,035	0.0	0	0	4,035
73.67	4,035	40.0	16	16	4,037
75.25	4,035	40.0	2,550	2,566	4,393
75.26	4,035	30.0	12	2,578	4,395
77.50	4,035	30.0	2,712	5,290	4,900

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.50	2,100	0	0	2,100
79.50	4,035	6,031	6,031	4,073

Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Round 12" HDPE Pipe (PDL4)** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.25' / 73.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	74.25'	**6.0" Round 6" Perforated Underdrain (PUD3)** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.25' / 74.25' S= 0.0000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#3	Device 2	73.66'	**10.000 in/hr Exfiltration through Bioretention Media over Wetted area**
#4	Device 1	79.00'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.96 cfs @ 12.60 hrs HW=77.83' TW=73.95' (Dynamic Tailwater)
└─**1=12" HDPE Pipe (PDL4)** (Passes 0.96 cfs of 4.61 cfs potential flow)
  └─**2=6" Perforated Underdrain (PUD3)** (Barrel Controls 0.96 cfs @ 4.91 fps)
    └─**3=Exfiltration through Bioretention Media** (Passes 0.96 cfs of 1.13 cfs potential flow)
  └─**4=(4) 4"x12" Knockouts** (Controls 0.00 cfs)

Pond PP54: Proposed Bioretention Basin "A2"



Summary for Pond PP55: Proposed Swale Along North Portion of Proposed Secondary Road

Inflow Area = 0.198 ac, 46.41% Impervious, Inflow Depth = 3.97" for 10-yr (+15%) event
Inflow = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af
Outflow = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.2 min
Primary = 0.76 cfs @ 12.04 hrs, Volume= 0.066 af
Routed to Pond PCB5 : Proposed Catch Basin 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.38' @ 12.04 hrs Surf.Area= 59 sf Storage= 6 cf
Flood Elev= 74.20' Surf.Area= 1,670 sf Storage= 883 cf

Plug-Flow detention time= 0.1 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (824.5 - 824.4)

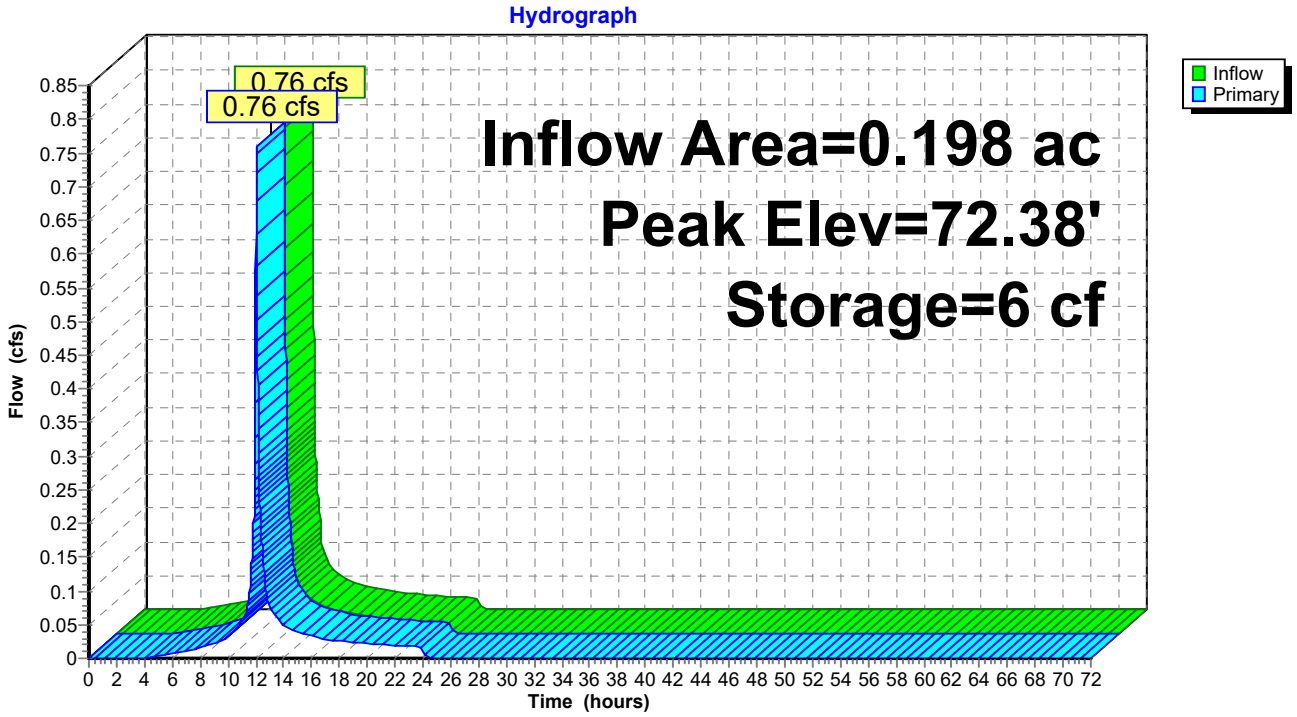
Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	883 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.20	2	0	0
72.50	95	15	15
73.00	285	95	110
73.50	525	203	312
74.00	780	326	638
74.20	1,670	245	883

Device	Routing	Invert	Outlet Devices
#1	Primary	72.20'	**12.0" W x 4.0" H Vert. (3) 4"x12" Knockouts X 3.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.76 cfs @ 12.04 hrs HW=72.38' TW=70.95' (Dynamic Tailwater)
↑—**1=(3) 4"x12" Knockouts** (Orifice Controls 0.76 cfs @ 1.38 fps)

Pond PP55: Proposed Swale Along North Portion of Proposed Secondary Road



Summary for Pond PP56: Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac

Inflow Area = 0.206 ac, 49.33% Impervious, Inflow Depth = 4.08" for 10-yr (+15%) event
Inflow = 0.81 cfs @ 12.04 hrs, Volume= 0.070 af
Outflow = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.2 min
Primary = 0.80 cfs @ 12.04 hrs, Volume= 0.070 af
Routed to Pond PCB6 : Proposed Catch Basin 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.41' @ 12.04 hrs Surf.Area= 88 sf Storage= 23 cf
Flood Elev= 74.75' Surf.Area= 630 sf Storage= 476 cf

Plug-Flow detention time= 5.0 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 2.6 min (822.7 - 820.1)

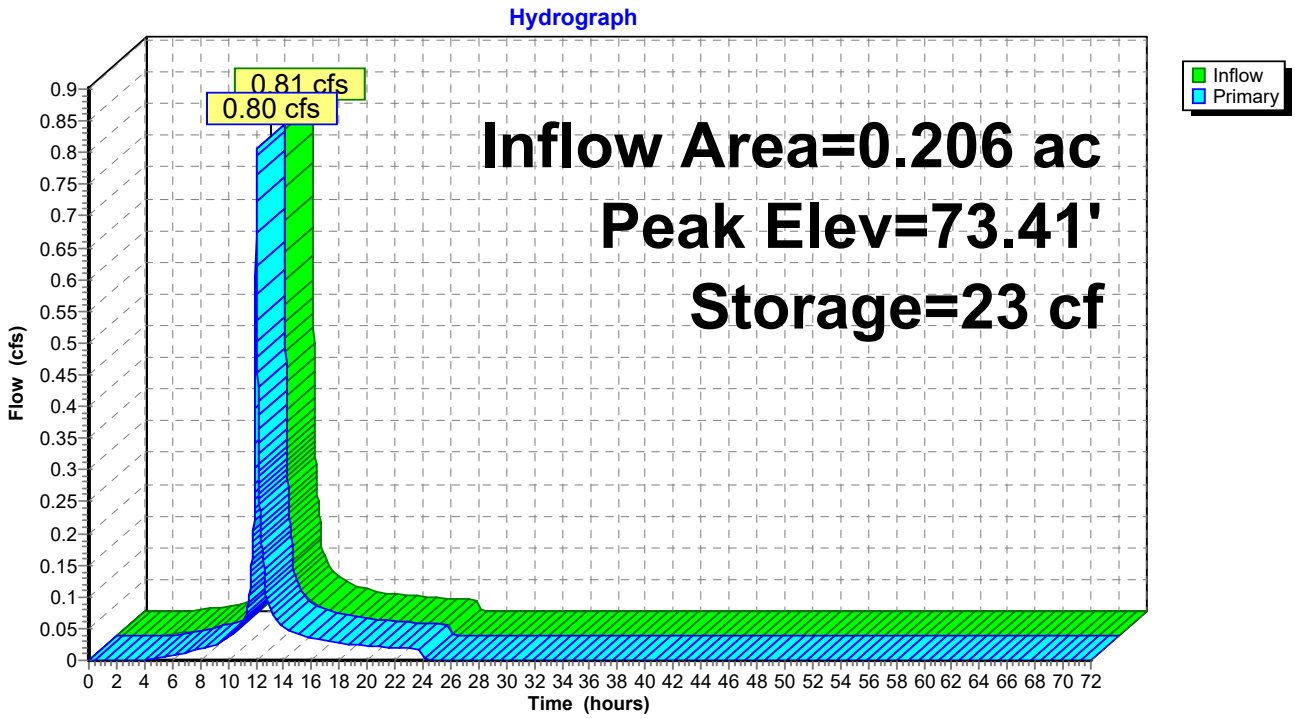
Volume	Invert	Avail.Storage	Storage Description
#1	72.75'	476 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.75	2	0	0
73.00	15	2	2
73.50	105	30	32
74.00	290	99	131
74.75	630	345	476

Device	Routing	Invert	Outlet Devices
#1	Primary	73.25'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.80 cfs @ 12.04 hrs HW=73.41' TW=71.82' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 0.80 cfs @ 1.28 fps)

Pond PP56: Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac



Summary for Pond PP57: Proposed Swale Along South Side of Secondary Road

Inflow Area = 0.328 ac, 53.66% Impervious, Inflow Depth = 4.18" for 10-yr (+15%) event
Inflow = 1.31 cfs @ 12.04 hrs, Volume= 0.114 af
Outflow = 1.15 cfs @ 12.07 hrs, Volume= 0.106 af, Atten= 12%, Lag= 2.0 min
Primary = 1.15 cfs @ 12.07 hrs, Volume= 0.106 af
Routed to Pond PCB7 : Proposed Catch Basin 7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.44' @ 12.07 hrs Surf.Area= 1,060 sf Storage= 599 cf
Flood Elev= 74.20' Surf.Area= 4,870 sf Storage= 2,056 cf

Plug-Flow detention time= 80.2 min calculated for 0.106 af (92% of inflow)
Center-of-Mass det. time= 37.5 min (853.2 - 815.6)

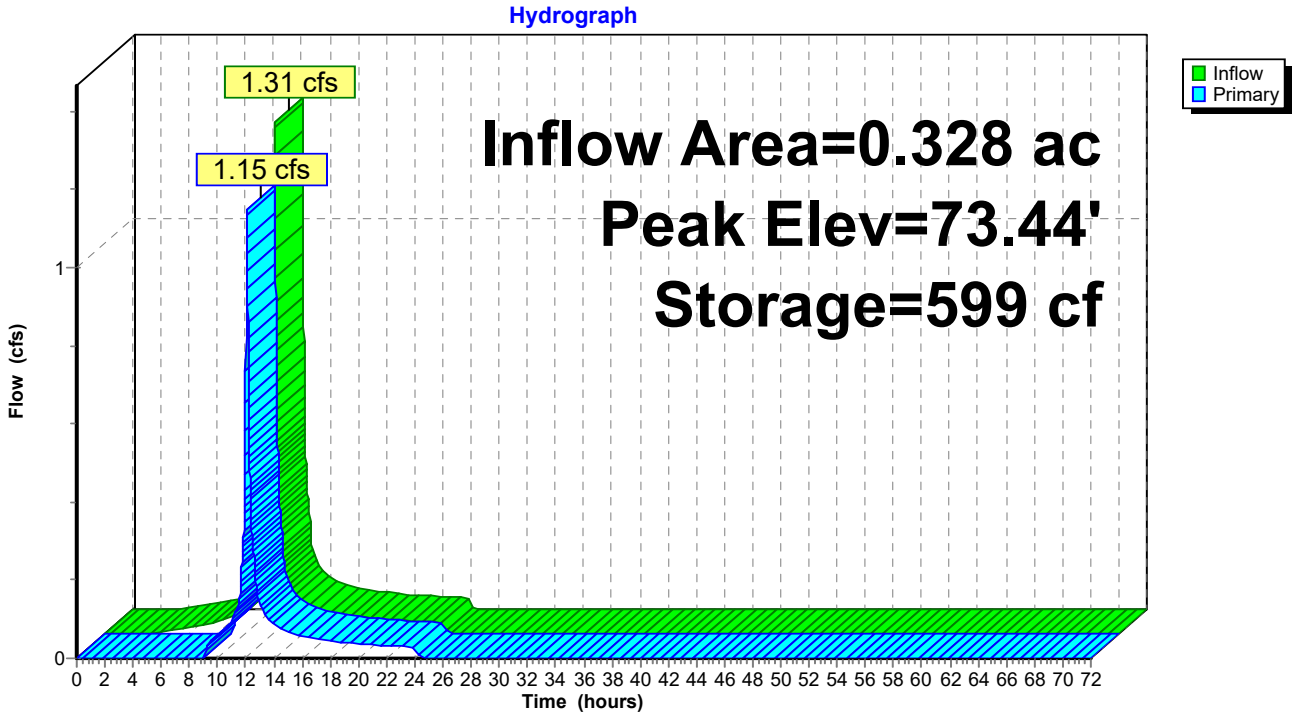
Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	2,056 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.20	2	0	0
72.50	205	31	31
73.00	600	201	232
73.50	1,120	430	662
74.00	1,790	728	1,390
74.20	4,870	666	2,056

Device	Routing	Invert	Outlet Devices
#1	Primary	73.20'	**12.0" W x 4.0" H Vert. (3) 4"x12" Knockouts X 3.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.15 cfs @ 12.07 hrs HW=73.44' TW=70.83' (Dynamic Tailwater)
↑—**1=(3) 4"x12" Knockouts** (Orifice Controls 1.15 cfs @ 1.58 fps)

Pond PP57: Proposed Swale Along South Side of Secondary Road



Summary for Pond PP58: Swale Along Middle-East Portion of Proposed Main Road

Inflow Area = 0.543 ac, 32.10% Impervious, Inflow Depth = 3.67" for 10-yr (+15%) event
Inflow = 1.93 cfs @ 12.04 hrs, Volume= 0.166 af
Outflow = 1.92 cfs @ 12.04 hrs, Volume= 0.162 af, Atten= 1%, Lag= 0.4 min
Primary = 1.92 cfs @ 12.04 hrs, Volume= 0.162 af
Routed to Pond PCB4 : Proposed Catch Basin 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.78' @ 12.04 hrs Surf.Area= 265 sf Storage= 234 cf
Flood Elev= 77.50' Surf.Area= 440 sf Storage= 476 cf

Plug-Flow detention time= 24.8 min calculated for 0.162 af (98% of inflow)
Center-of-Mass det. time= 11.5 min (848.1 - 836.6)

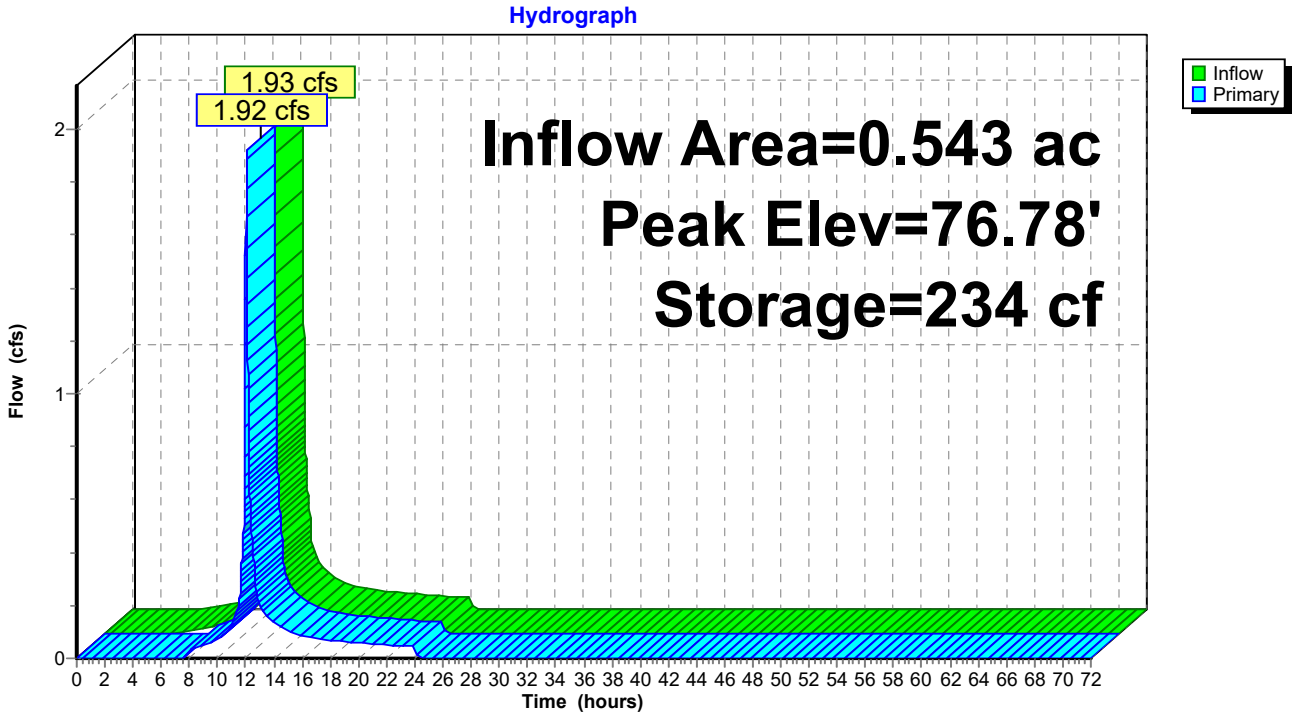
Volume	Invert	Avail.Storage	Storage Description
#1	75.50'	476 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
75.50	2	0	0
76.00	205	52	52
76.50	240	111	163
77.00	285	131	294
77.50	440	181	476

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.91 cfs @ 12.04 hrs HW=76.78' TW=74.01' (Dynamic Tailwater)
↑**1=(4) 4"x12" Knockouts** (Orifice Controls 1.91 cfs @ 1.70 fps)

Pond PP58: Swale Along Middle-East Portion of Proposed Main Road



Summary for Pond PP59: Existing Transferance Swale

Inflow Area = 5.183 ac, 8.64% Impervious, Inflow Depth > 2.01" for 10-yr (+15%) event
Inflow = 4.97 cfs @ 12.04 hrs, Volume= 0.869 af
Outflow = 2.90 cfs @ 12.17 hrs, Volume= 0.869 af, Atten= 42%, Lag= 7.4 min
Primary = 2.90 cfs @ 12.17 hrs, Volume= 0.869 af
Routed to Reach PR81 : East Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.19' @ 12.17 hrs Surf.Area= 3,798 sf Storage= 1,778 cf
Flood Elev= 74.00' Surf.Area= 18,200 sf Storage= 21,723 cf

Plug-Flow detention time= 11.3 min calculated for 0.869 af (100% of inflow)
Center-of-Mass det. time= 9.2 min (1,024.0 - 1,014.7)

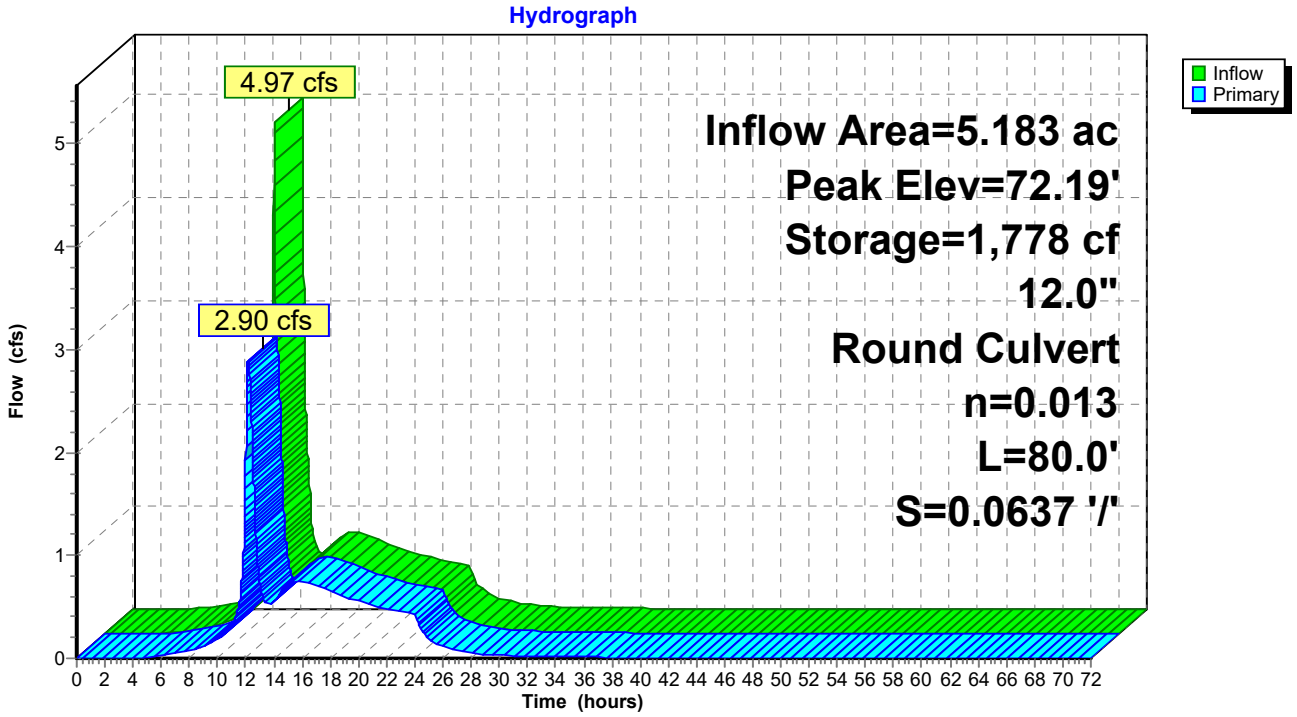
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	21,723 cf	**Transferance Swale behind Existing House (Prismatic)**Listed below (Recal

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	100	0	0
72.00	2,315	1,208	1,208
74.00	18,200	20,515	21,723

Device	Routing	Invert	Outlet Devices
#1	Primary	71.10'	**12.0" Round 12" HDPE Pipe (PDL23)** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.10' / 66.00' S= 0.0637 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.90 cfs @ 12.17 hrs HW=72.19' TW=66.17' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL23)** (Inlet Controls 2.90 cfs @ 3.69 fps)

Pond PP59: Existing Transferance Swale



Summary for Pond PP64: Stone Storage for Lot 20

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

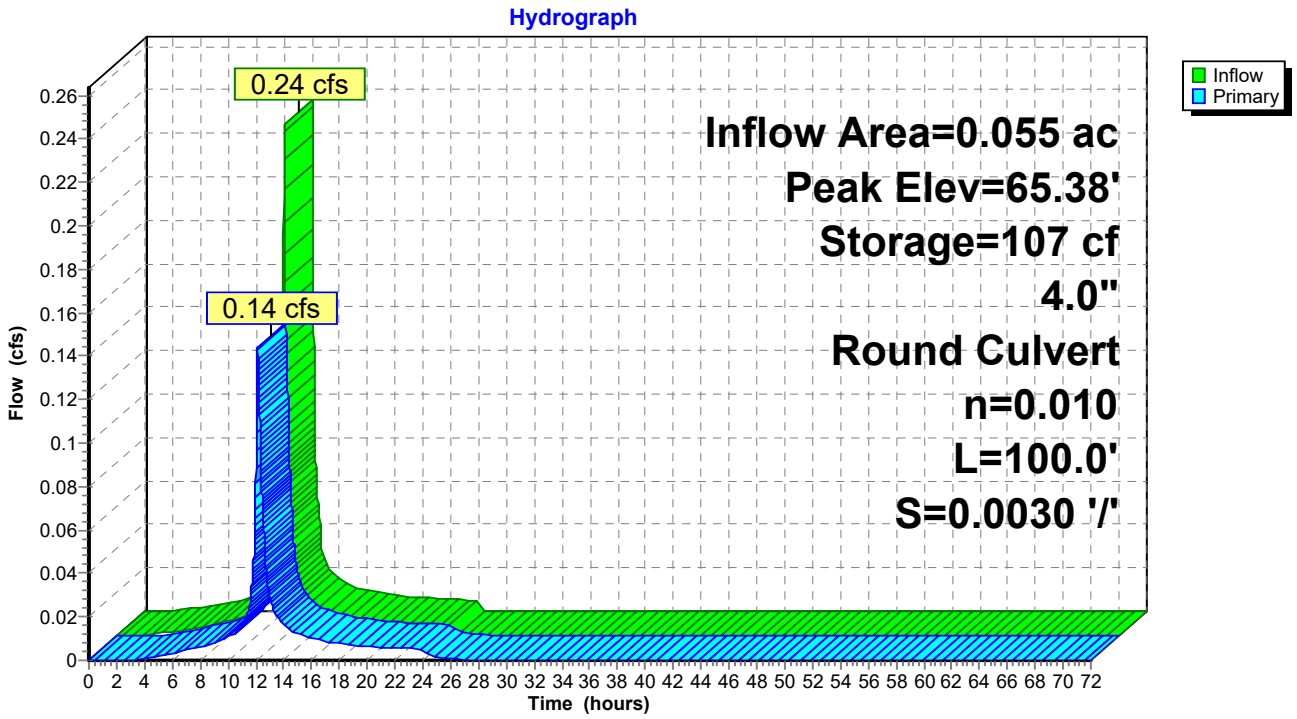
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=65.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP64: Stone Storage for Lot 20



Summary for Pond PP65: Stone Storage for Lot 19

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

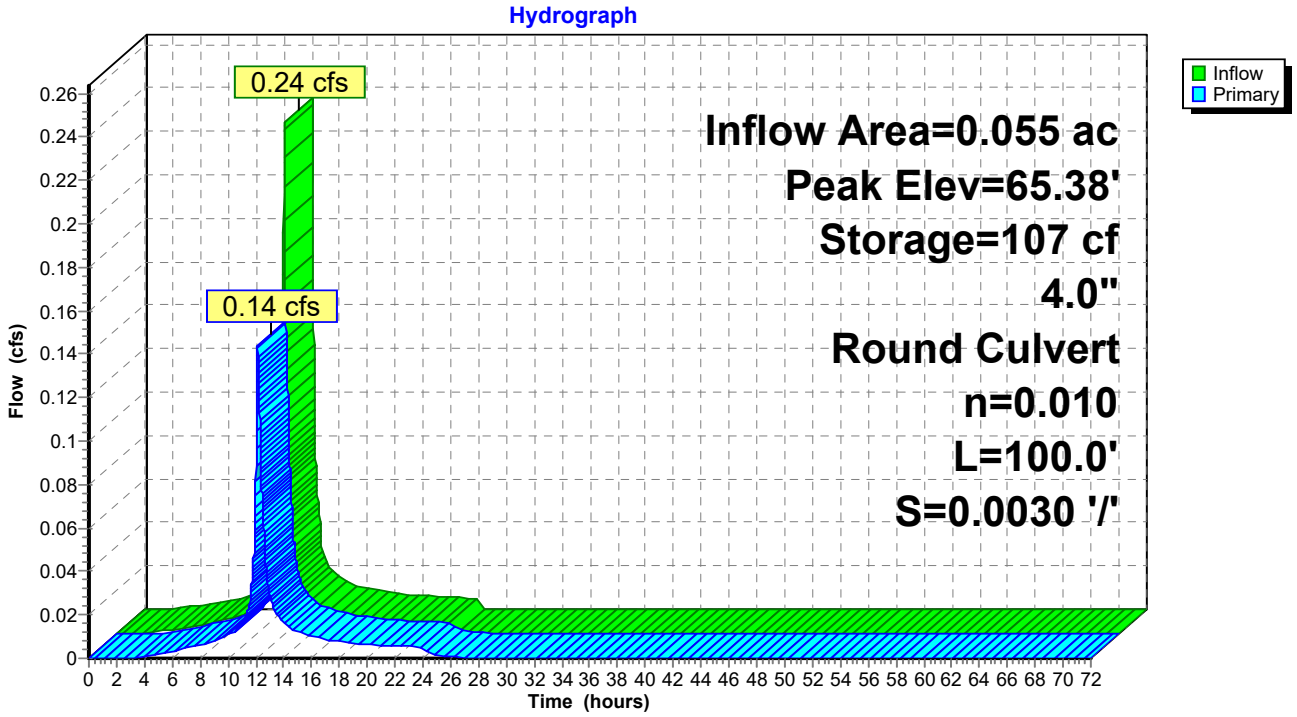
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=65.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP65: Stone Storage for Lot 19



Summary for Pond PP66: Stone Storage for Lot 18

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

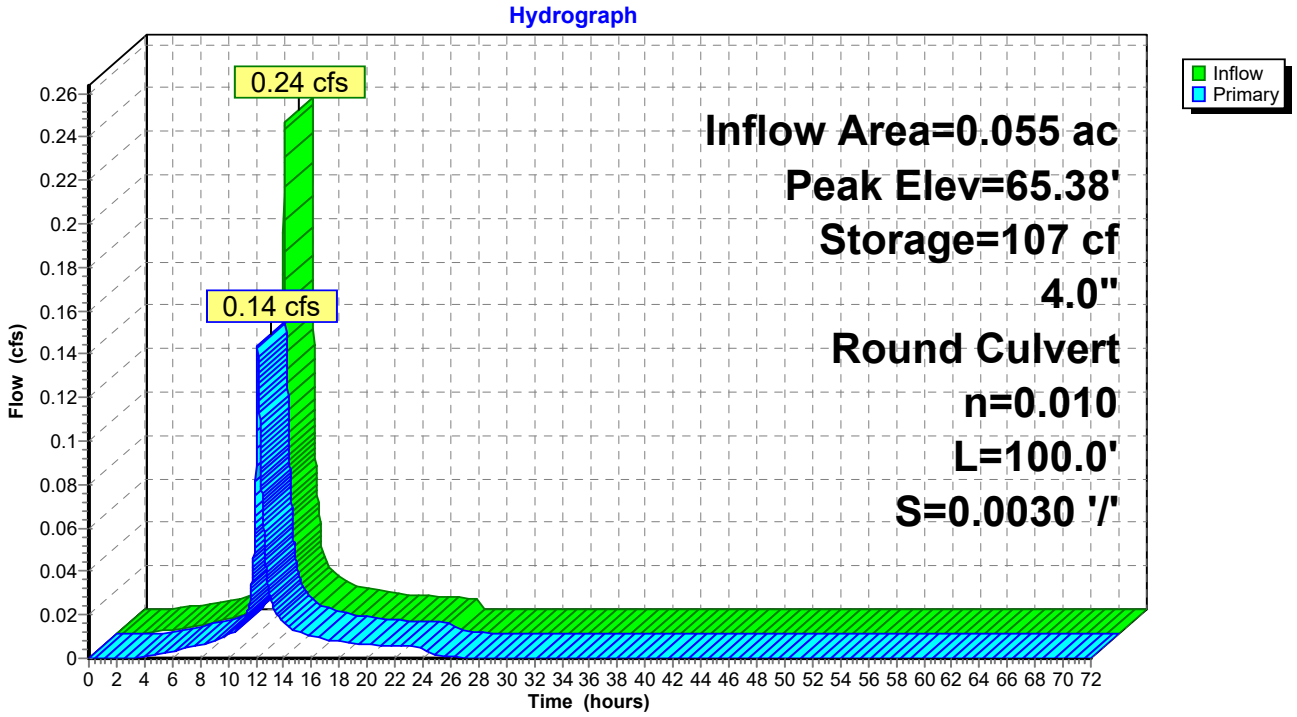
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=65.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP66: Stone Storage for Lot 18



Summary for Pond PP67: Stone Storage for Lot 17

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

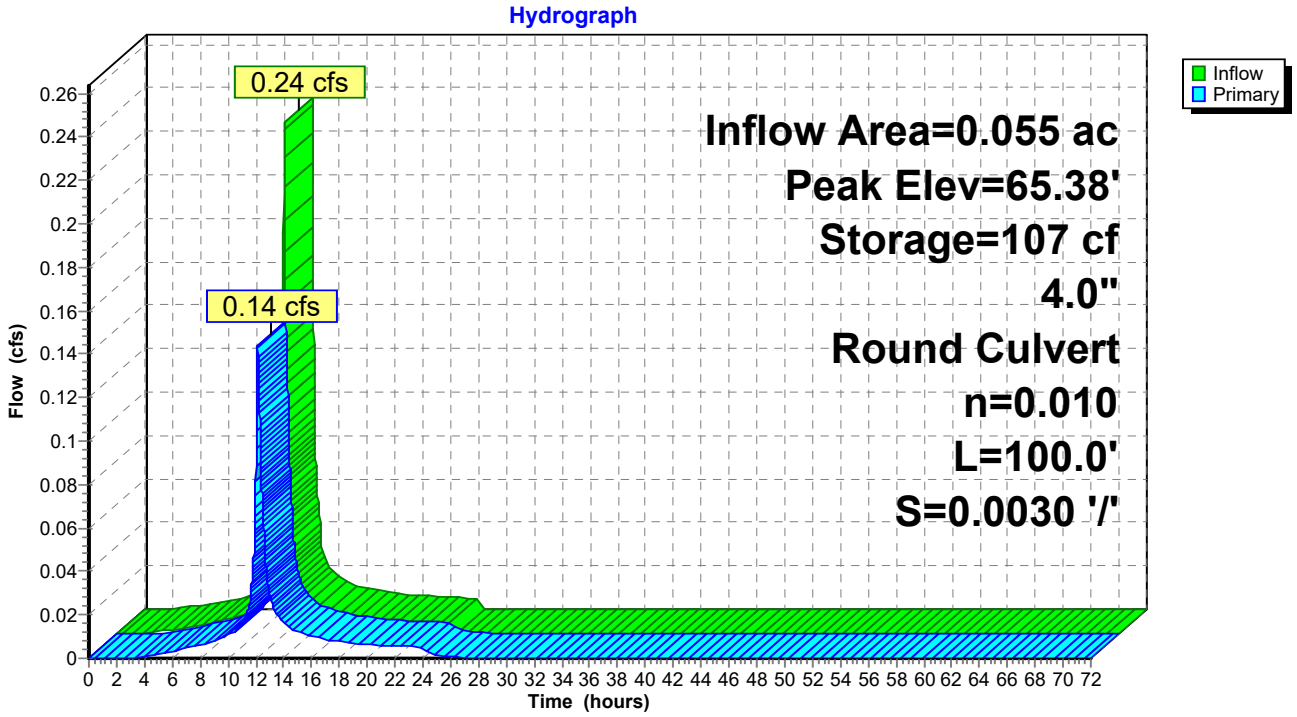
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Drip Edge (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=65.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP67: Stone Storage for Lot 17



Summary for Pond PP68: Stone Storage for Lot 16

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

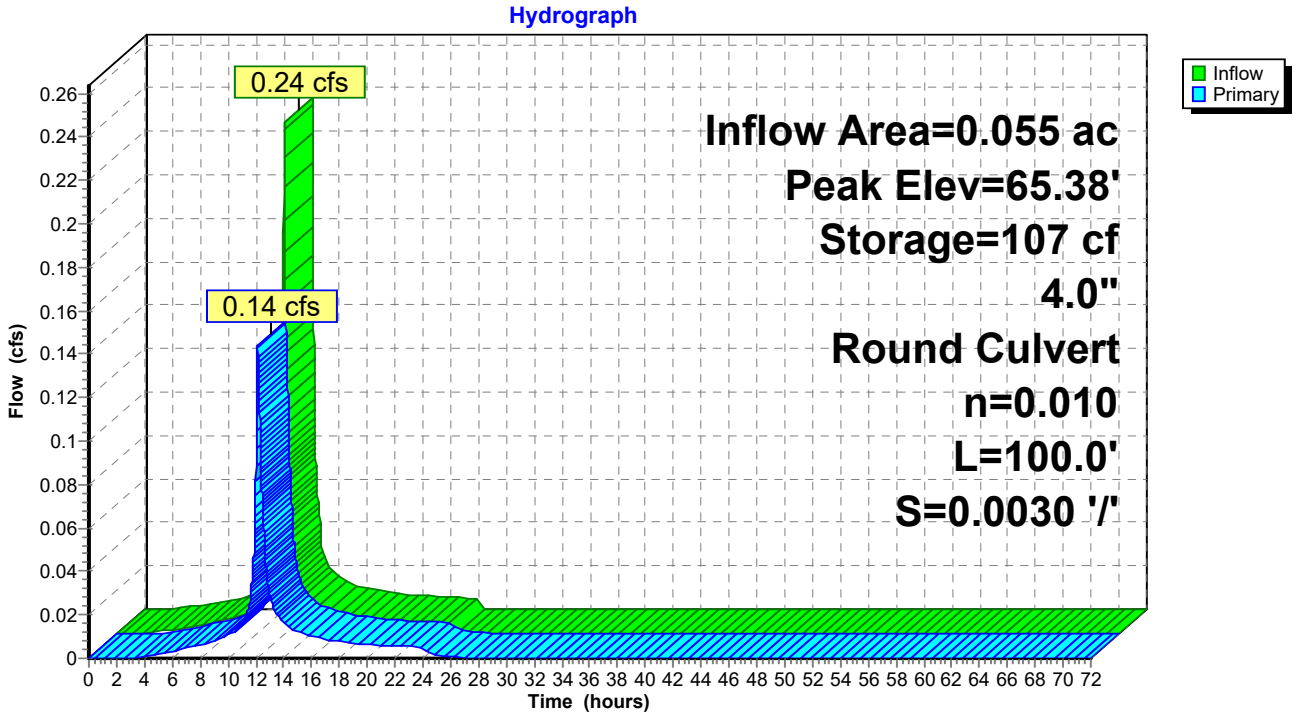
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=65.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP68: Stone Storage for Lot 16



Summary for Pond PP69: Stone Storage for Lot 28

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

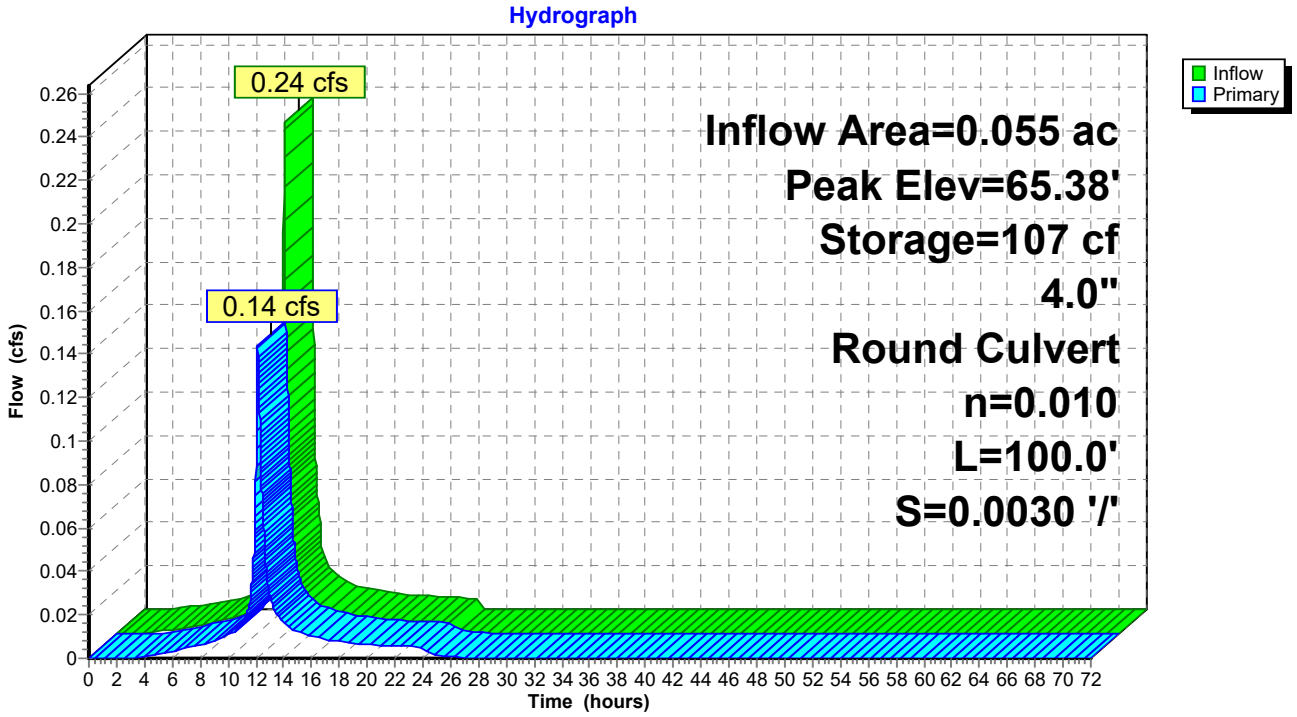
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=65.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP69: Stone Storage for Lot 28



Summary for Pond PP70: Stone Storage for Lot 25

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

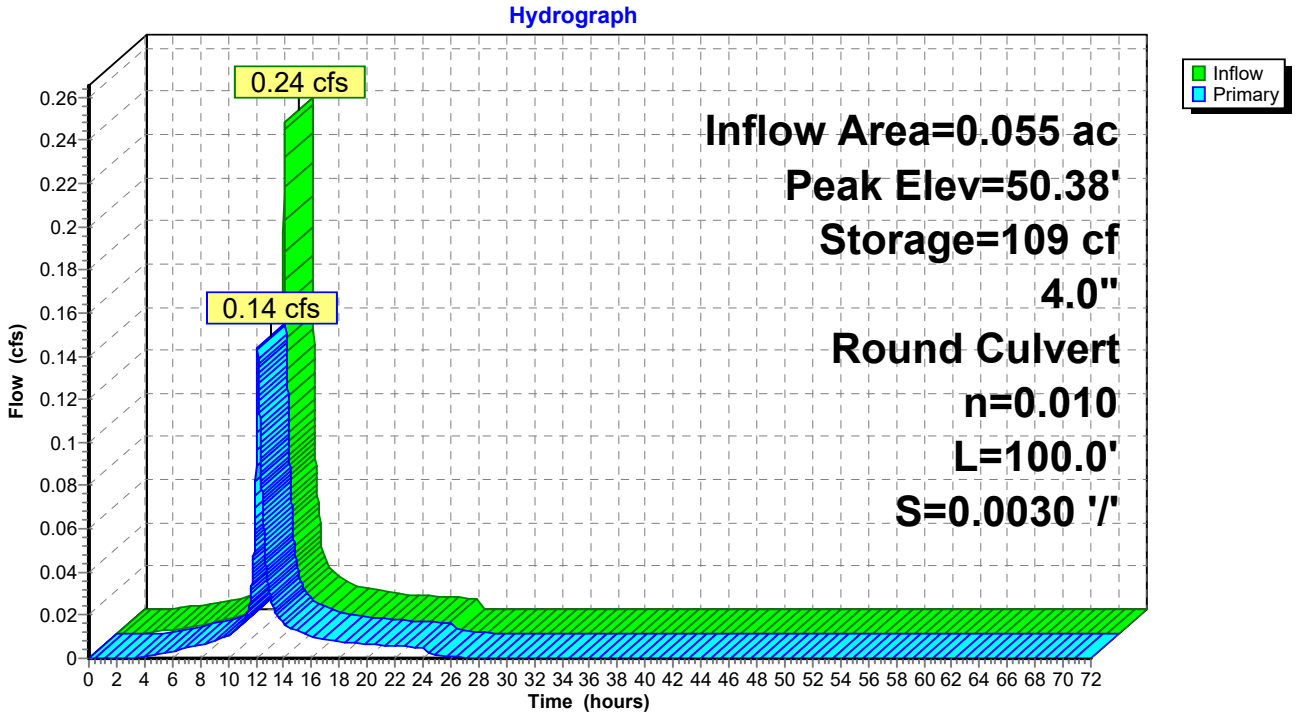
Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	720	0	0	720
54.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.00' / 49.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=50.38' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP70: Stone Storage for Lot 25



Summary for Pond PP71: Stone Storage for Lot 24

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L101 : Wetlands to the West

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

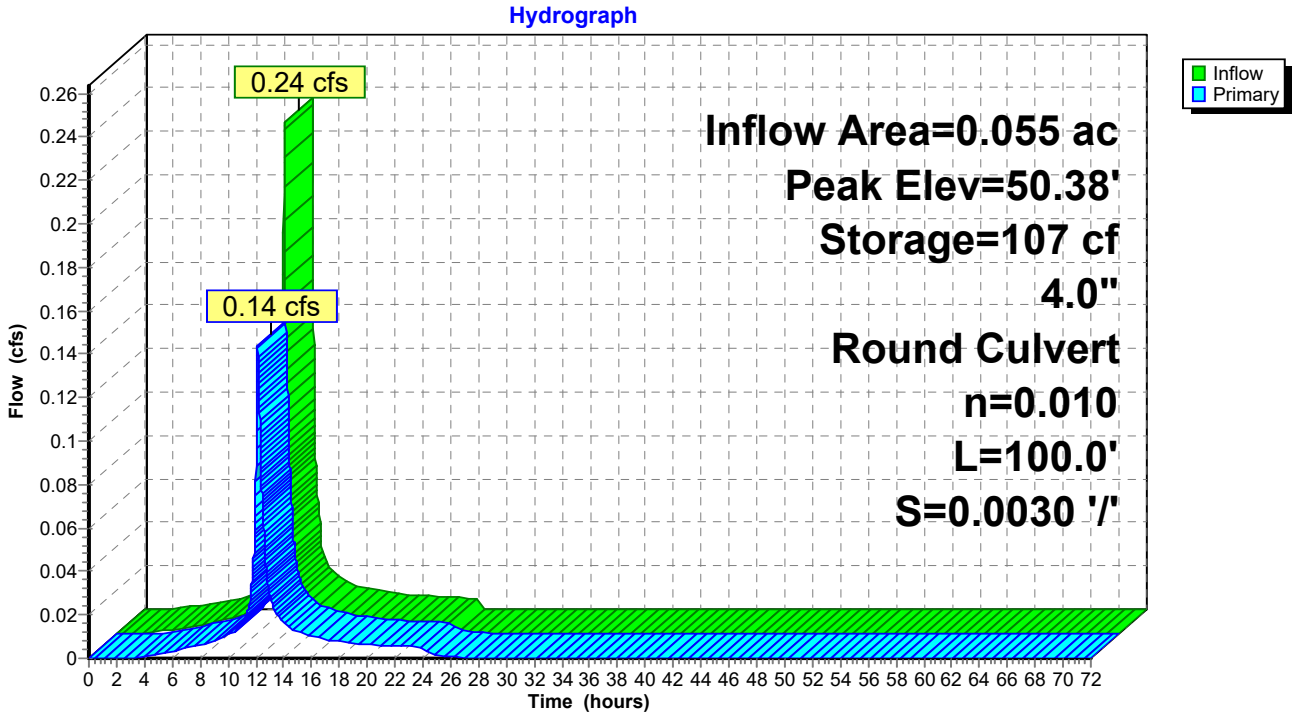
Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,128 cf	**Drip Edge (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	705	0	0	705
54.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.00' / 49.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=50.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP71: Stone Storage for Lot 24



Summary for Pond PP72: Stone Storage for Lot 23

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

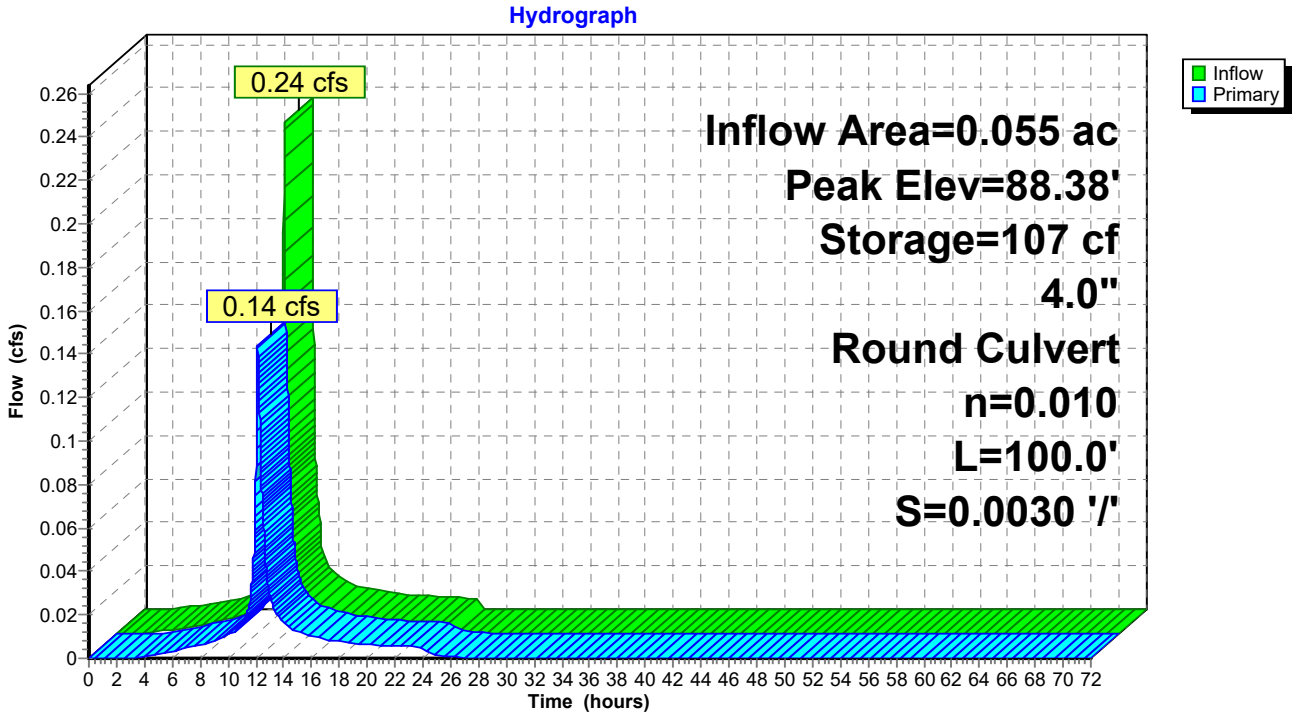
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP72: Stone Storage for Lot 23



Summary for Pond PP73: Stone Storage for Lot 22

Inflow Area = 0.056 ac, 68.57% Impervious, Inflow Depth = 4.51" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 41%, Lag= 5.3 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.37' @ 12.12 hrs Surf.Area= 770 sf Storage= 114 cf

Plug-Flow detention time= 36.7 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 36.3 min (837.6 - 801.3)

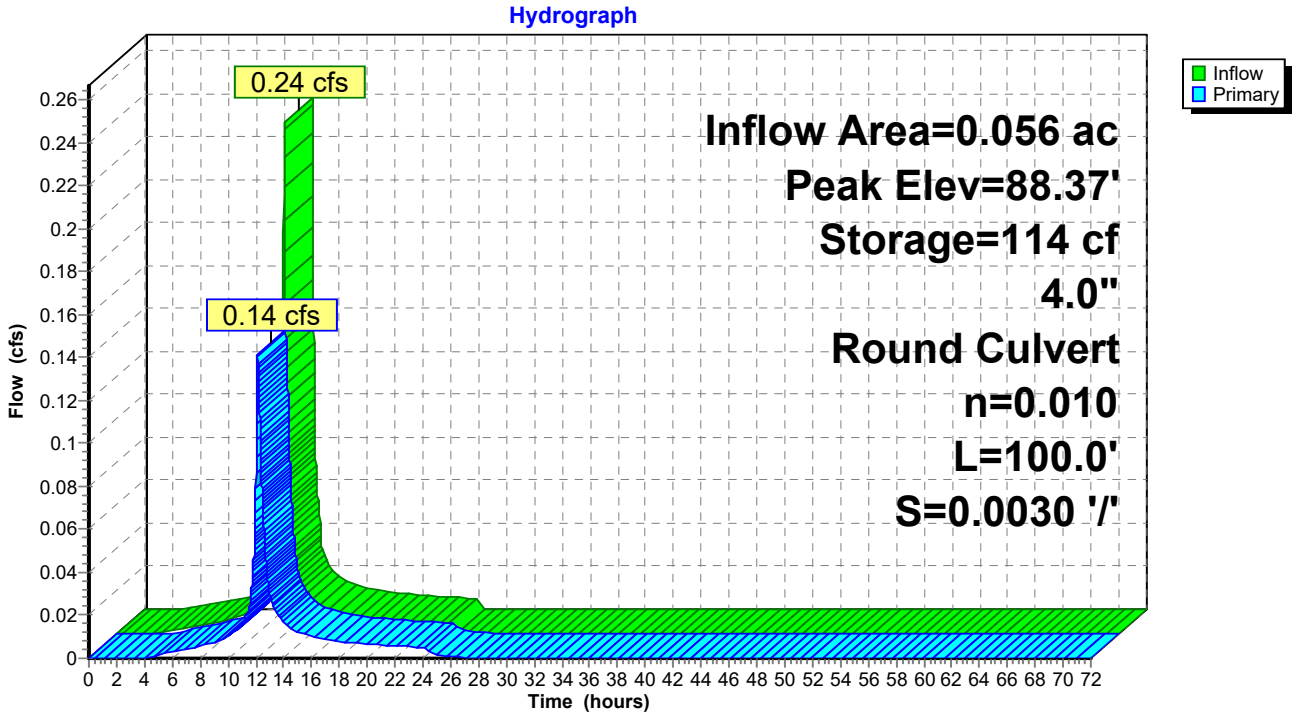
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,232 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,080 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	770	0	0	770
92.00	770	3,080	3,080	1,163

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.37' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP73: Stone Storage for Lot 22



Summary for Pond PP74: Stone Storage for Lot 21

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

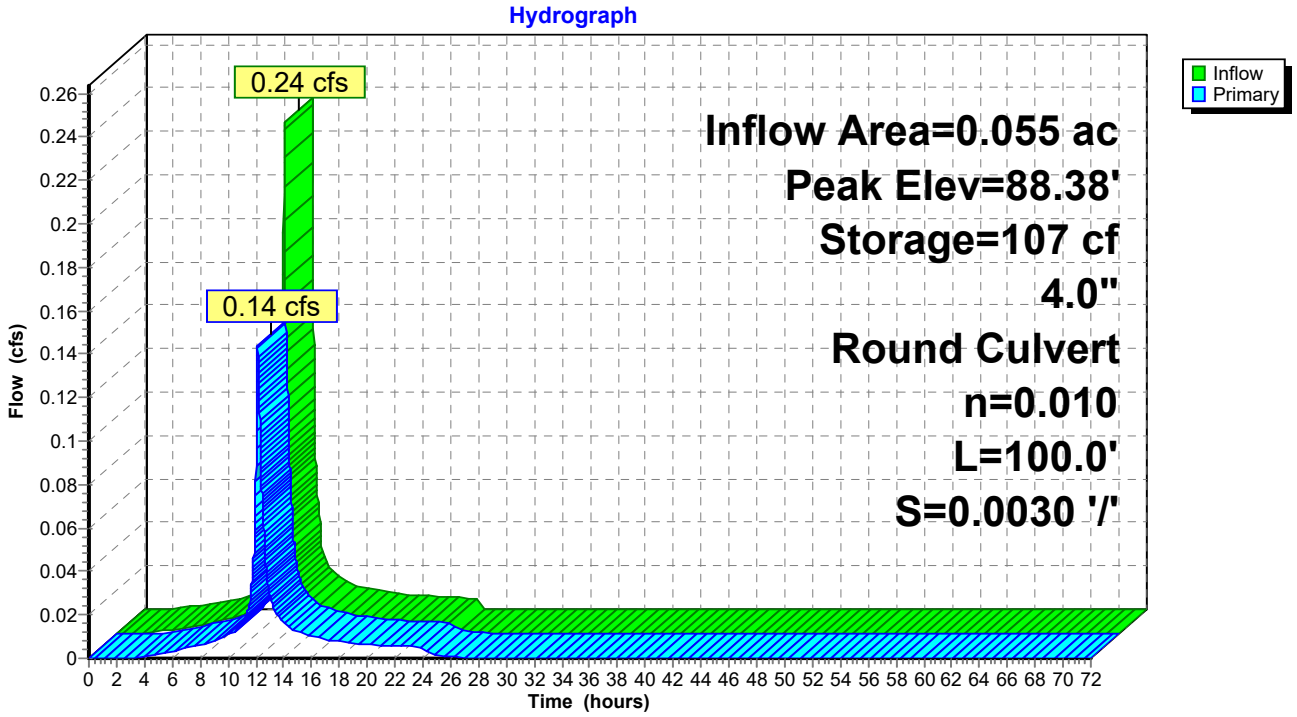
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP74: Stone Storage for Lot 21



Summary for Pond PP75: Stone Storage for Lot 15

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 40%, Lag= 5.2 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 110 cf

Plug-Flow detention time= 34.6 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.3 min (830.3 - 796.0)

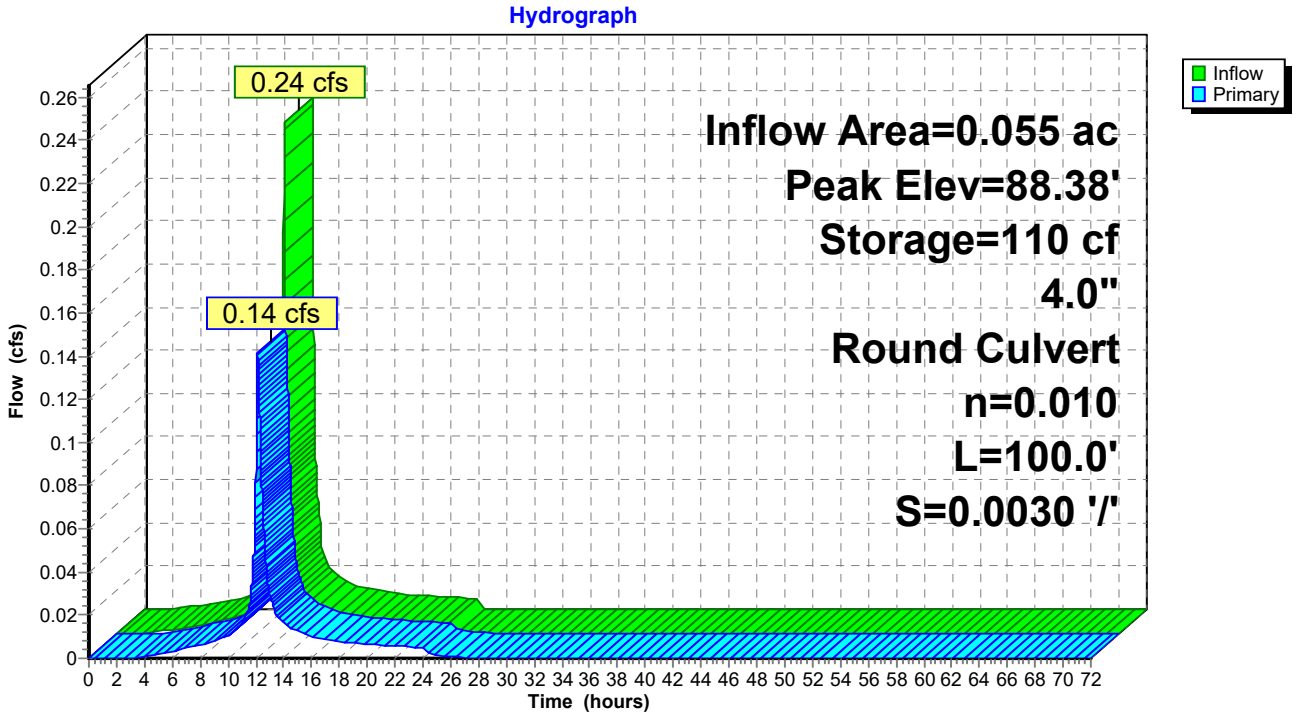
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.77 fps)

Pond PP75: Stone Storage for Lot 15



Summary for Pond PP76: Stone Storage for Lot 14

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

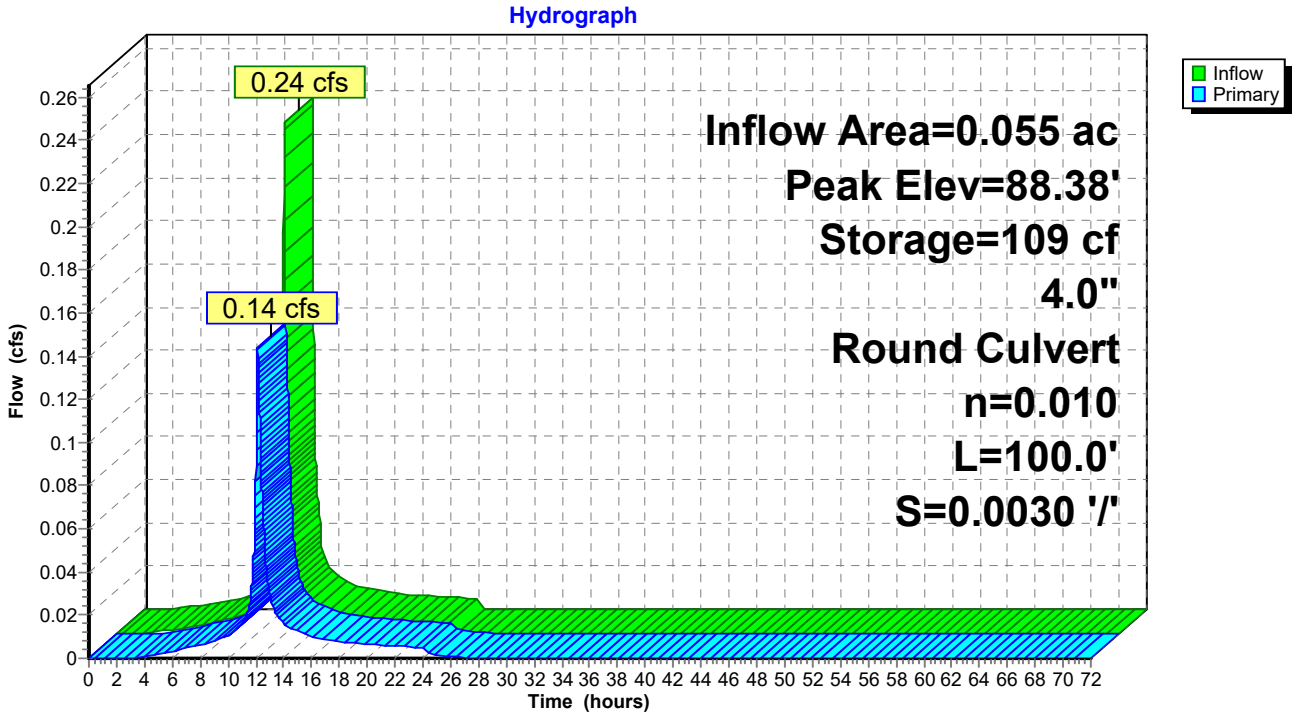
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP76: Stone Storage for Lot 14



Summary for Pond PP77: Stone Storage for Lot 13

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

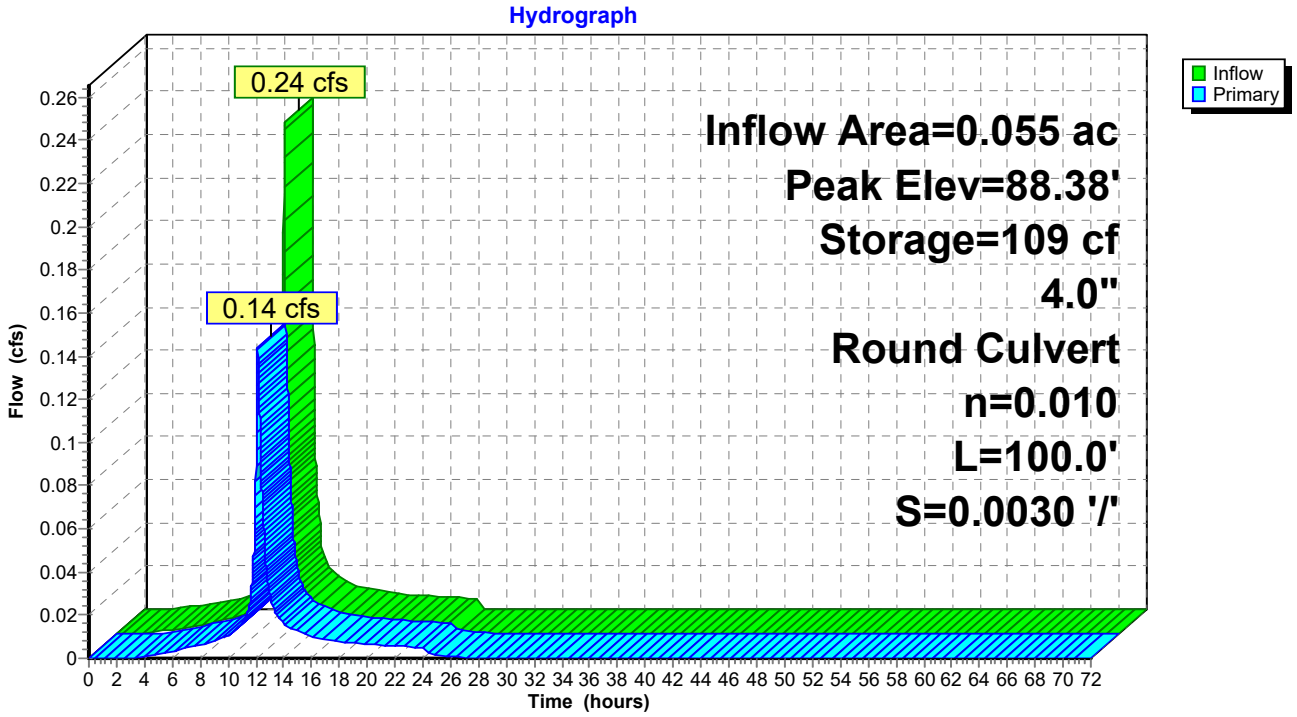
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP77: Stone Storage for Lot 13



Summary for Pond PP78: Stone Storage for Lot 12

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

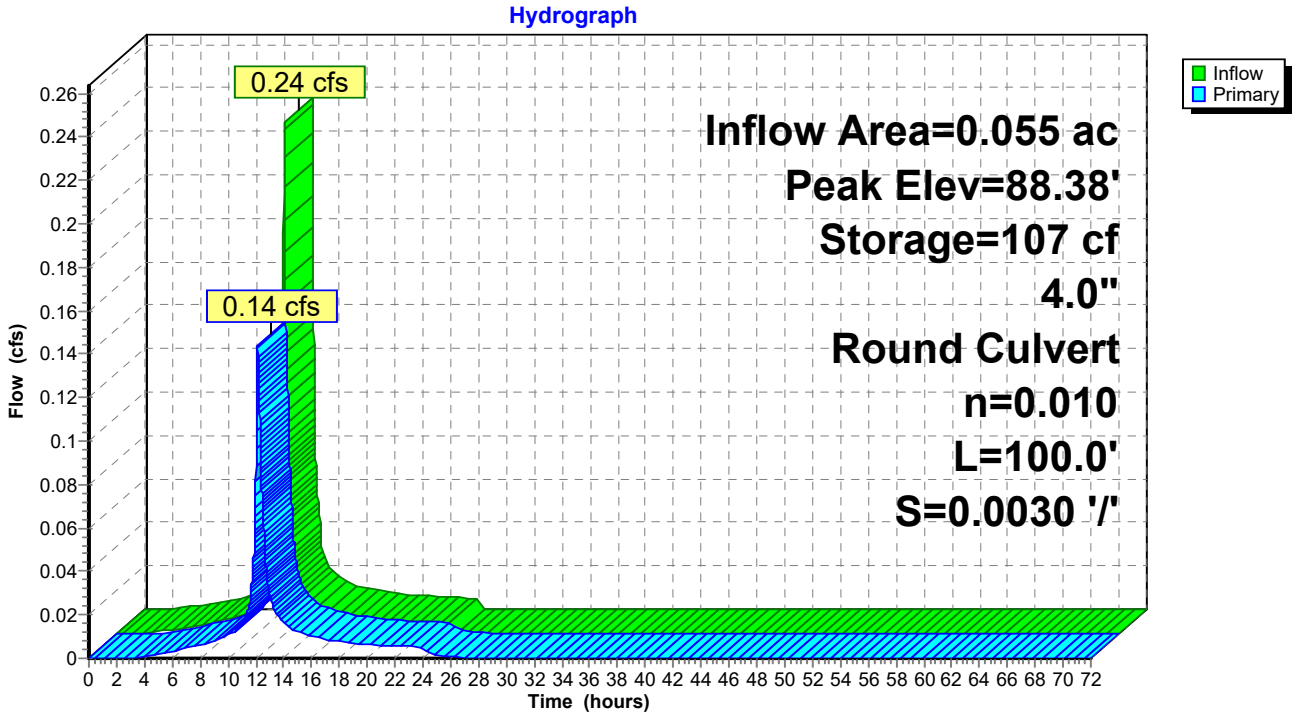
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,410 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,525 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081
93.00	705	705	3,525	1,176

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP78: Stone Storage for Lot 12



Summary for Pond PP79: Stone Storage for Lot 8

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 33.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (829.5 - 796.0)

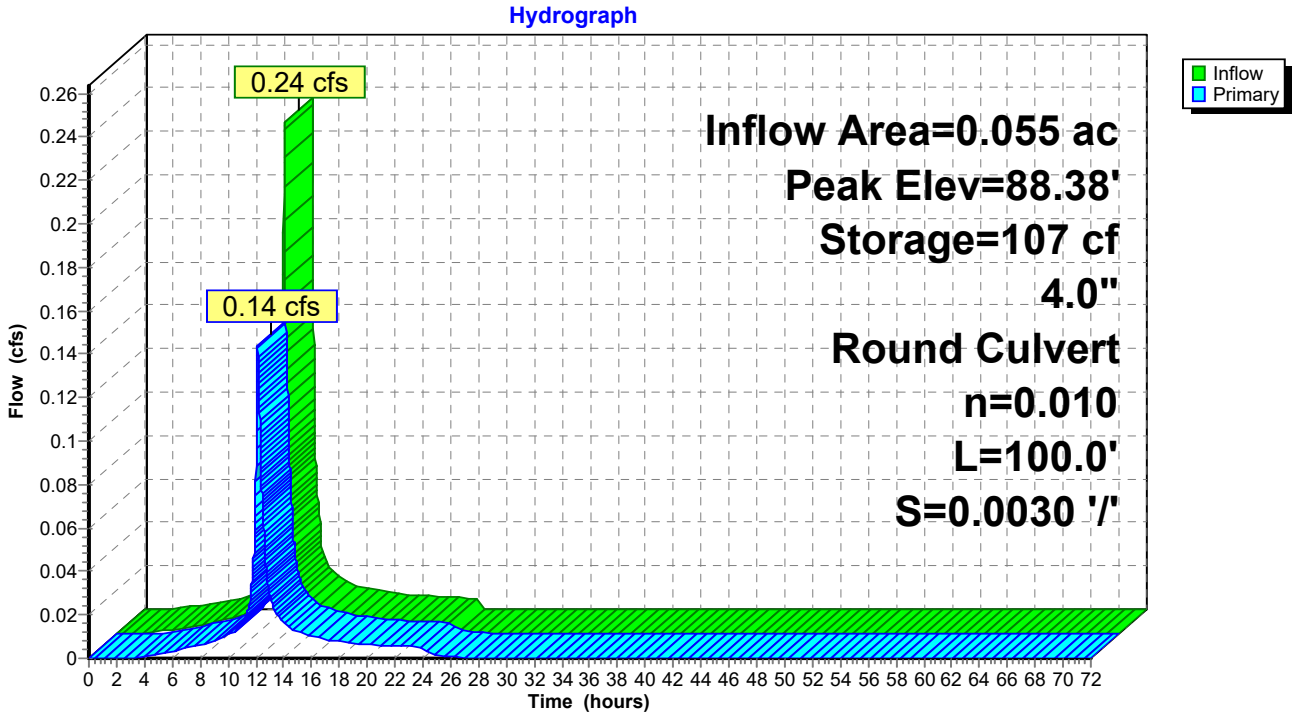
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,410 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,525 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081
93.00	705	705	3,525	1,176

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP79: Stone Storage for Lot 8



Summary for Pond PP80: Stone Storage for Lot 7

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

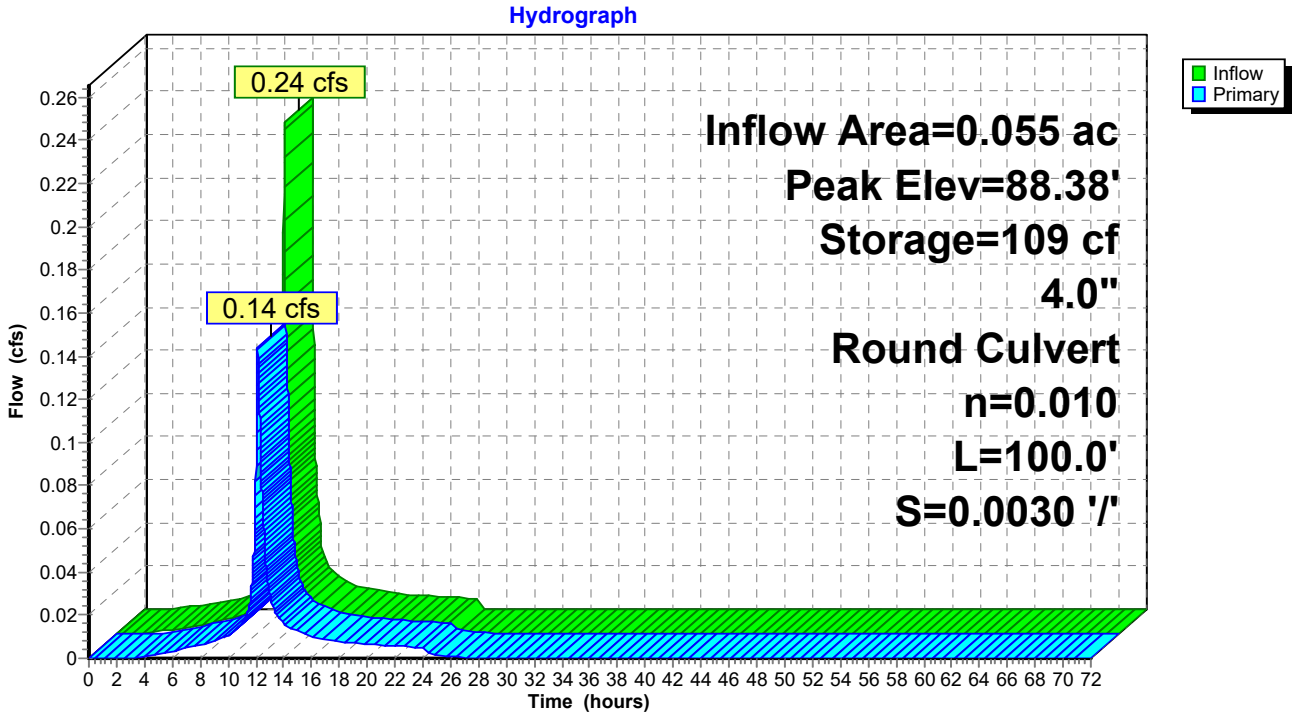
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP80: Stone Storage for Lot 7



Summary for Pond PP81: Stone Storage for Lot 6

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

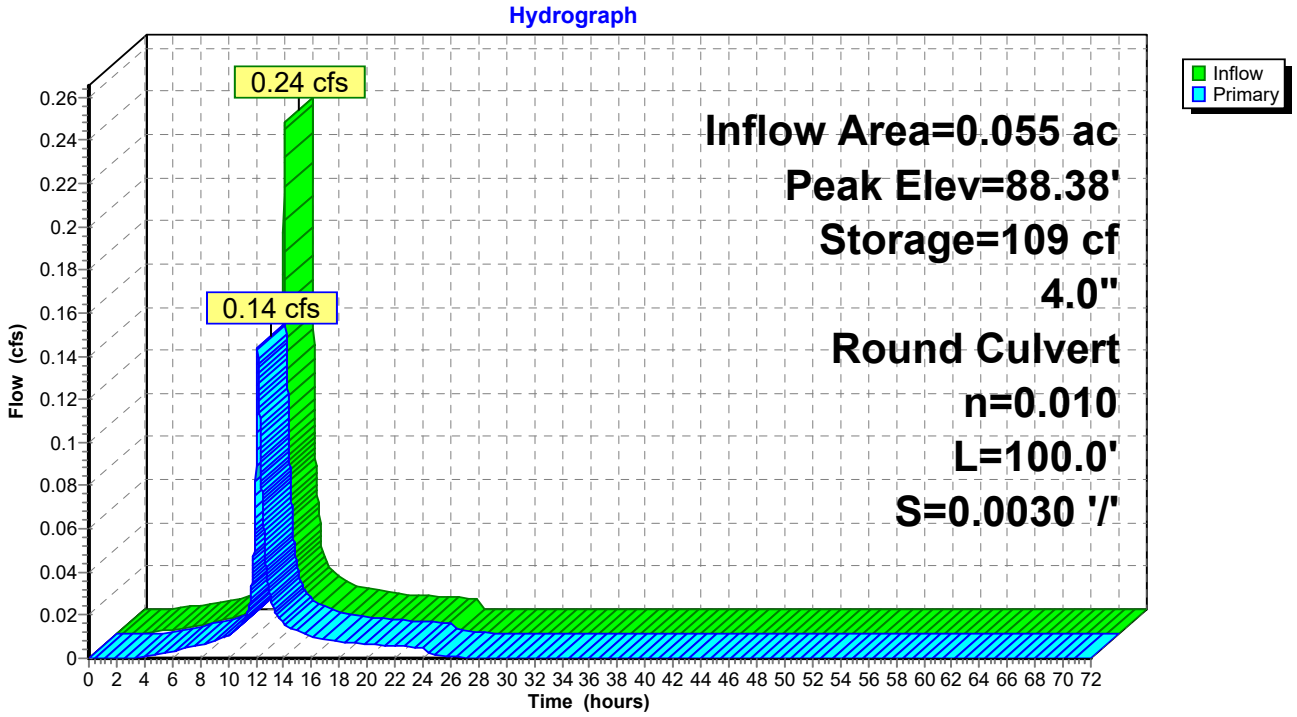
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP81: Stone Storage for Lot 6



Summary for Pond PP82: Stone Storage for Lot 5

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

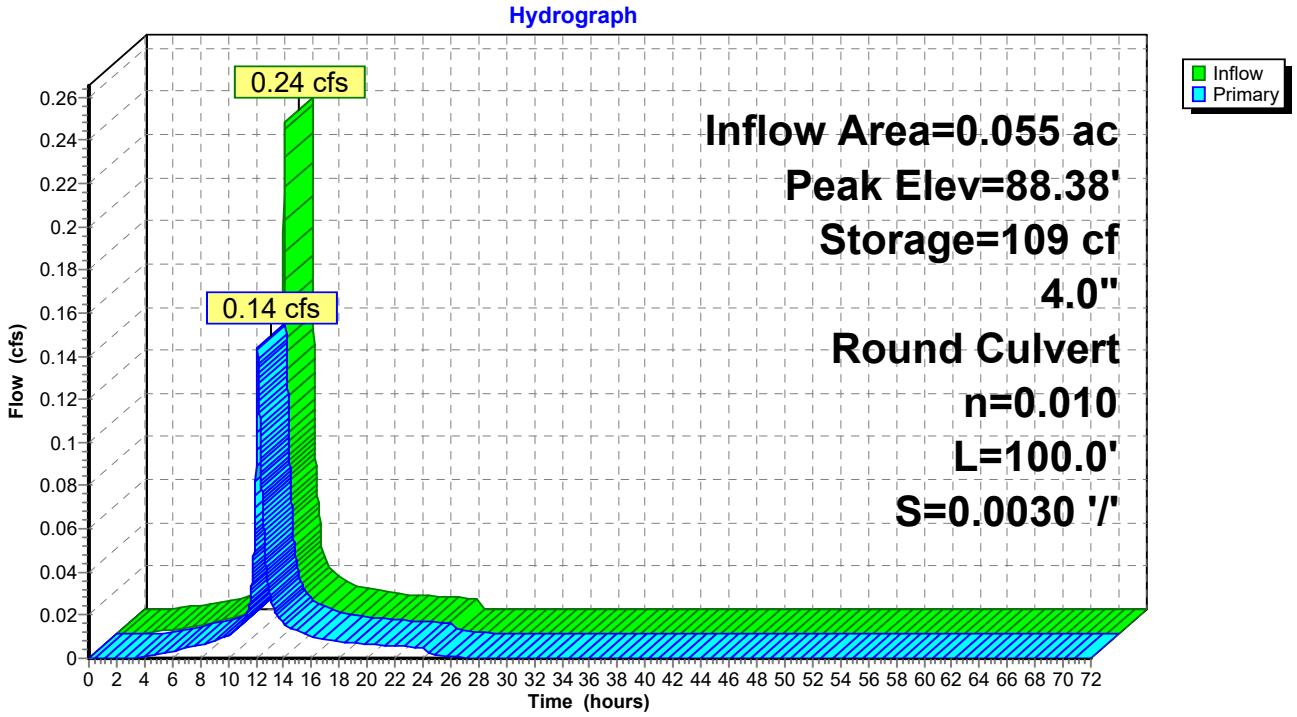
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP82: Stone Storage for Lot 5



Summary for Pond PP83: Stone Storage for Lot 4

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

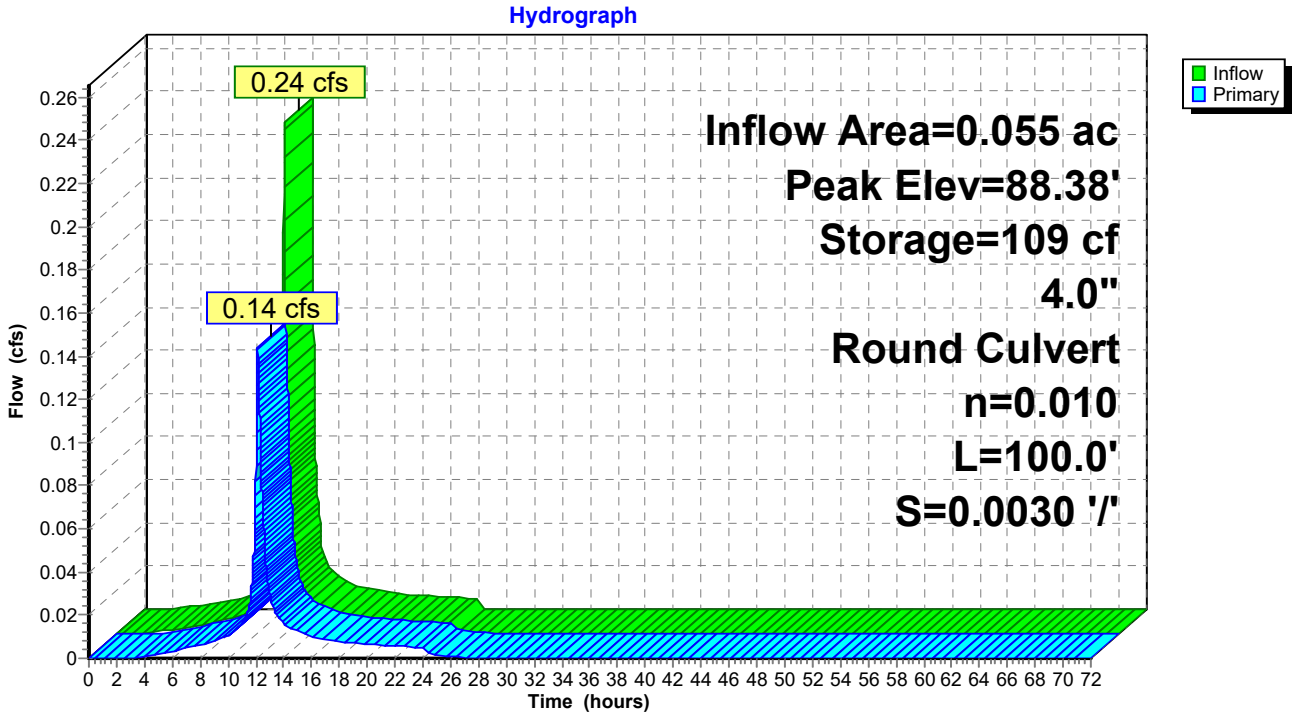
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP83: Stone Storage for Lot 4



Summary for Pond PP84: Stone Storage for Lot 3

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

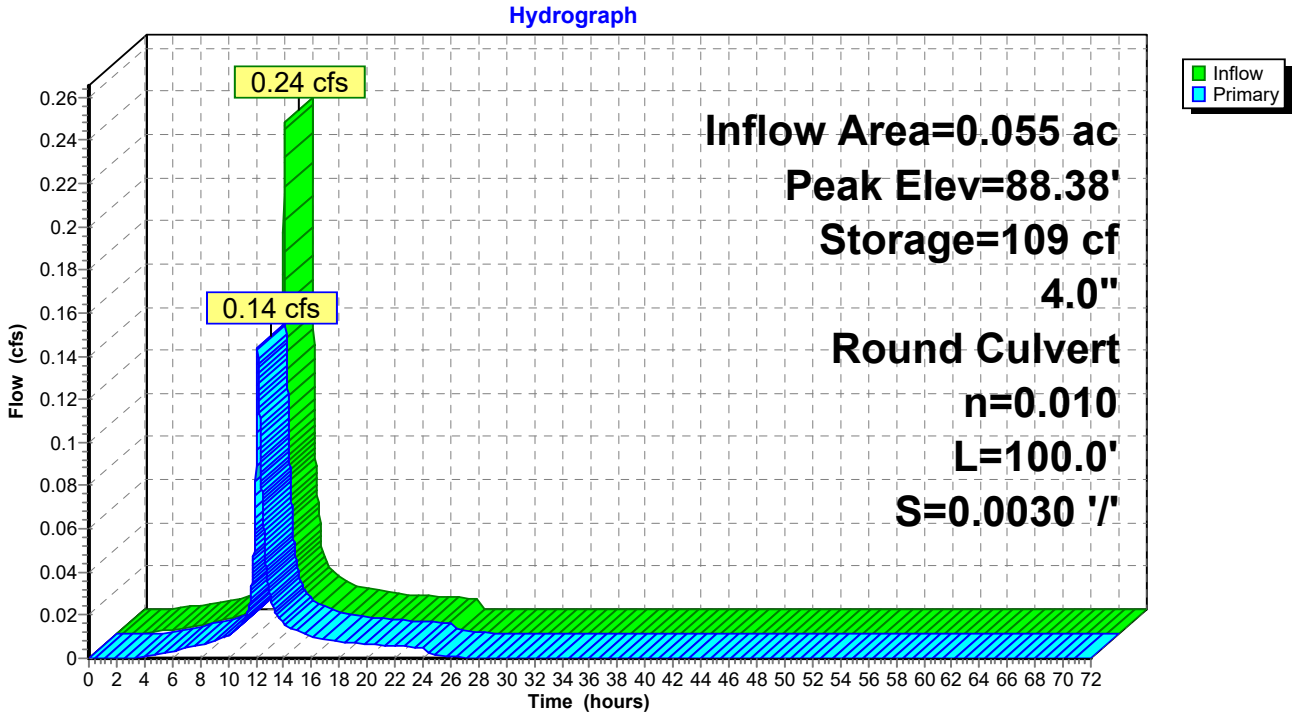
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP84: Stone Storage for Lot 3



Summary for Pond PP85: Stone Storage for Lot 2

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.38' @ 12.12 hrs Surf.Area= 720 sf Storage= 109 cf

Plug-Flow detention time= 34.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 34.1 min (830.1 - 796.0)

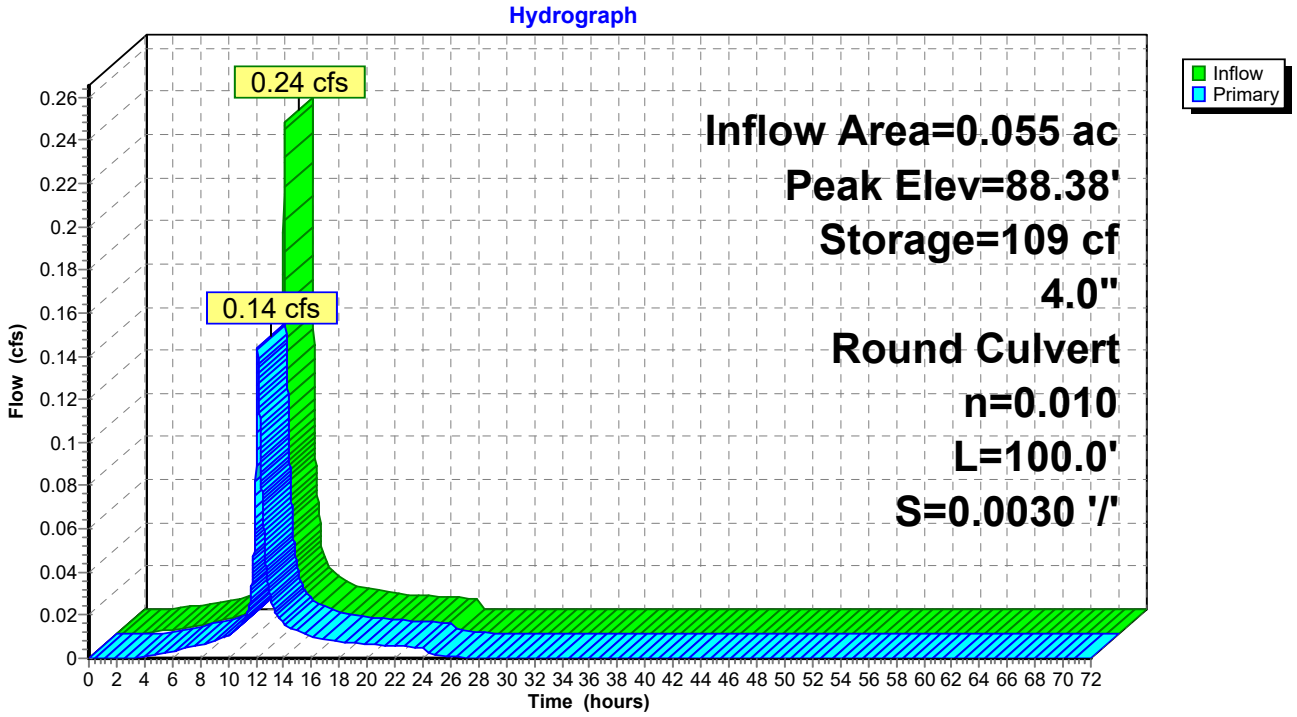
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=88.38' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.81 fps)

Pond PP85: Stone Storage for Lot 2



Summary for Pond PP86: Stone Storage for Lot 1

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.16 cfs @ 12.10 hrs, Volume= 0.021 af, Atten= 31%, Lag= 3.9 min
Primary = 0.16 cfs @ 12.10 hrs, Volume= 0.021 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.31' @ 12.10 hrs Surf.Area= 705 sf Storage= 88 cf

Plug-Flow detention time= 25.5 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 25.6 min (821.6 - 796.0)

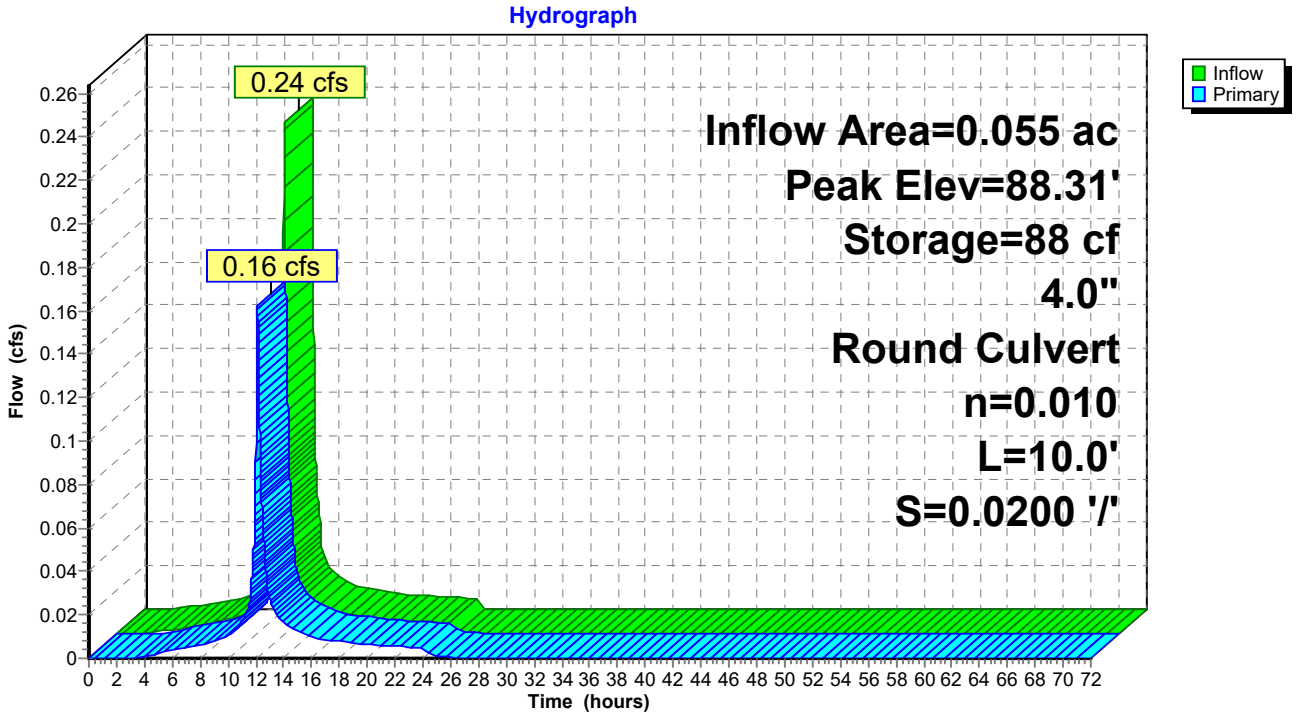
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.80' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 12.10 hrs HW=88.31' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Inlet Controls 0.16 cfs @ 1.91 fps)

Pond PP86: Stone Storage for Lot 1



Summary for Pond PP87: Stone Storage for Lot 11

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 41.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 41.1 min (837.1 - 796.0)

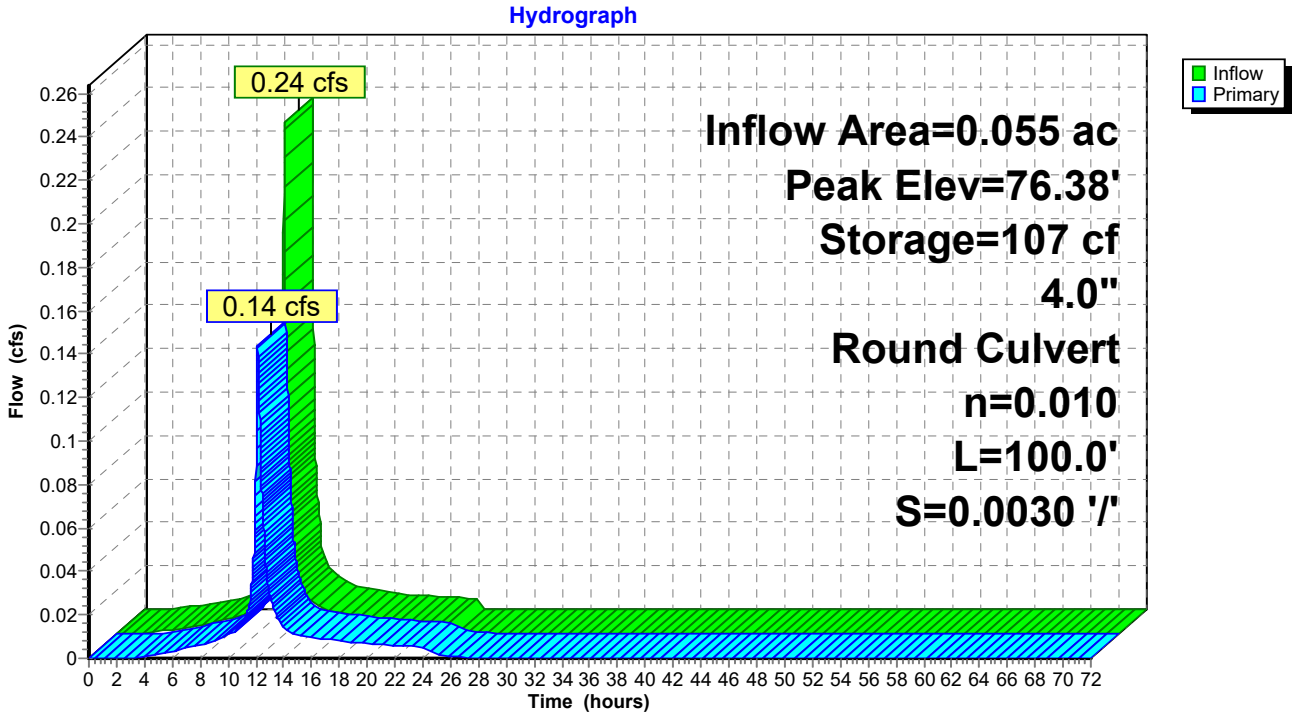
Volume	Invert	Avail.Storage	Storage Description
#1	76.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.00	705	0	0	705
80.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	76.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.00' / 75.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=76.38' TW=74.69' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP87: Stone Storage for Lot 11



Summary for Pond PP88: Stone Storage for Lot 10

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af, Atten= 39%, Lag= 5.0 min
Primary = 0.14 cfs @ 12.12 hrs, Volume= 0.021 af
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.38' @ 12.12 hrs Surf.Area= 705 sf Storage= 107 cf

Plug-Flow detention time= 41.4 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 41.1 min (837.1 - 796.0)

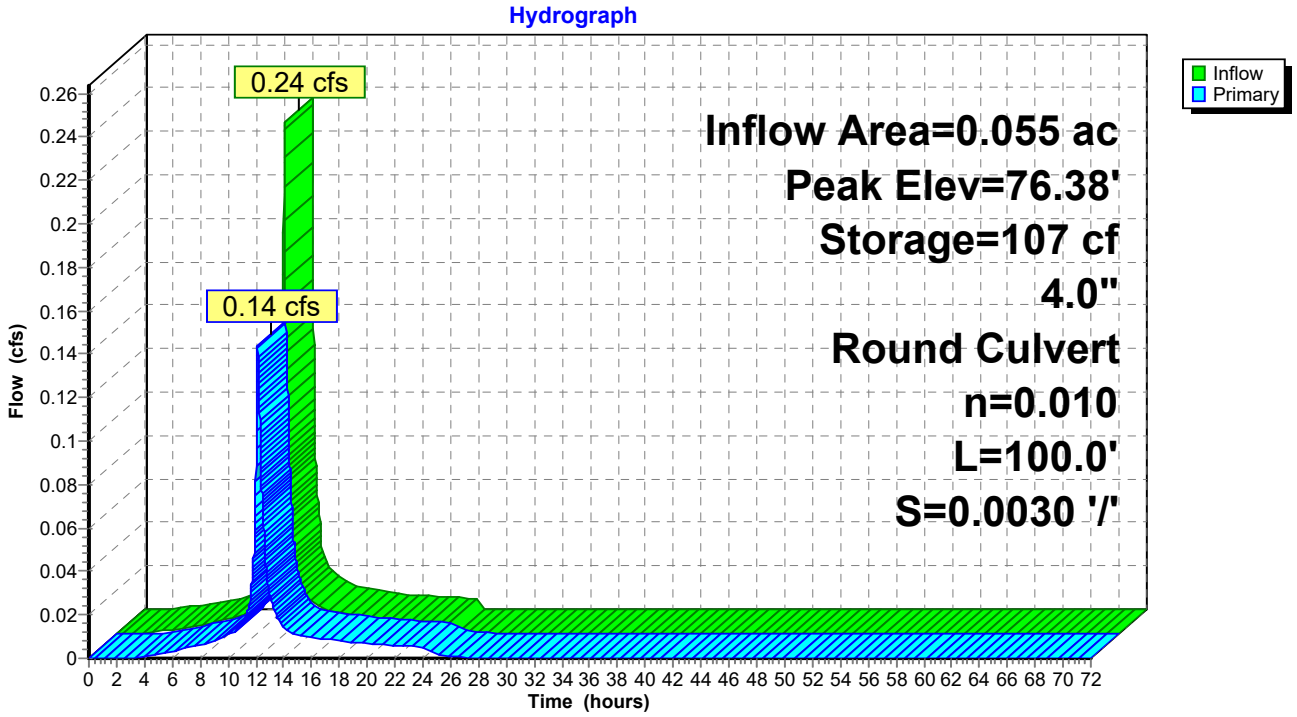
Volume	Invert	Avail.Storage	Storage Description
#1	76.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.00	705	0	0	705
80.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	76.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.00' / 75.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.14 cfs @ 12.12 hrs HW=76.38' TW=74.69' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.14 cfs @ 1.82 fps)

Pond PP88: Stone Storage for Lot 10



Summary for Pond PP89: Stone Storage for the House on Lot 9

Inflow Area = 0.043 ac, 72.75% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.8 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Pond PP59 : Existing Transferance Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.84' @ 12.10 hrs Surf.Area= 515 sf Storage= 70 cf

Plug-Flow detention time= 27.2 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 27.2 min (823.3 - 796.0)

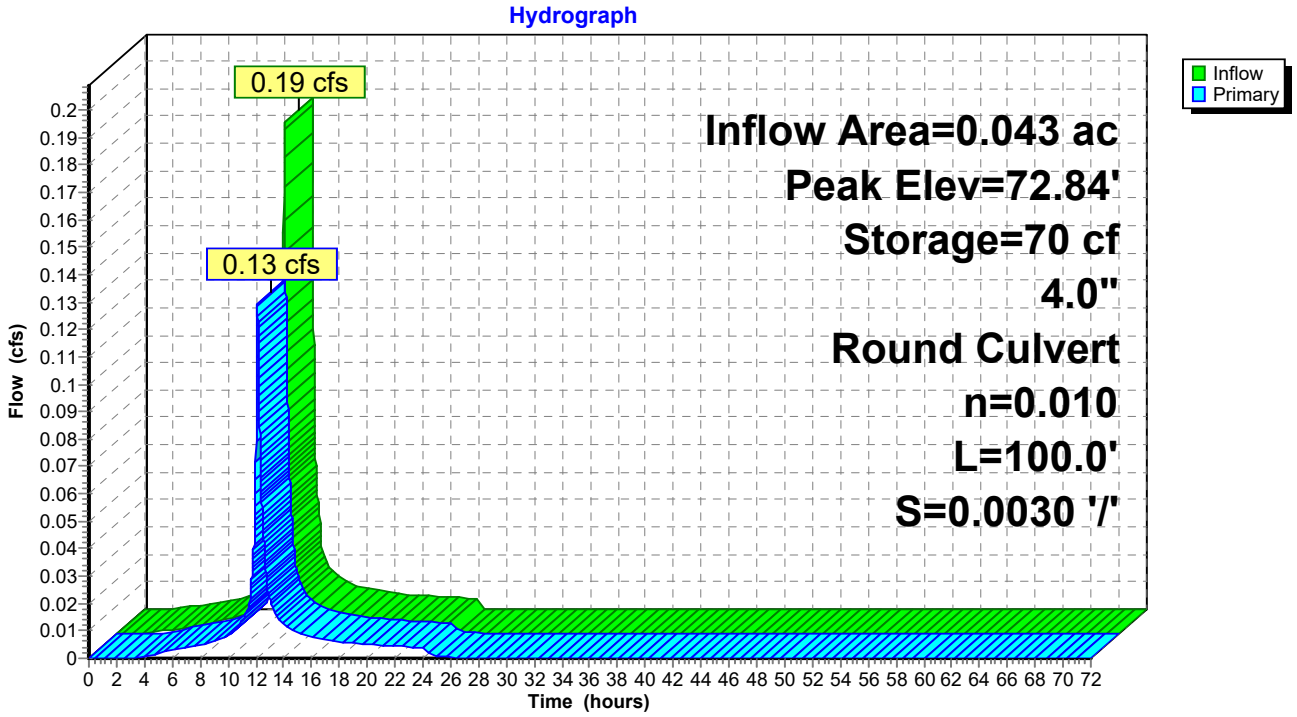
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	824 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,060 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.50	515	0	0	515
76.50	515	2,060	2,060	837

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.20' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=72.84' TW=72.16' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.79 fps)

Pond PP89: Stone Storage for the House on Lot 9



Summary for Pond PP90: Stone Storage for the Barn on Lot 9

Inflow Area = 0.078 ac, 74.12% Impervious, Inflow Depth = 4.73" for 10-yr (+15%) event
Inflow = 0.34 cfs @ 12.04 hrs, Volume= 0.031 af
Outflow = 0.16 cfs @ 12.17 hrs, Volume= 0.031 af, Atten= 54%, Lag= 8.0 min
Primary = 0.16 cfs @ 12.17 hrs, Volume= 0.031 af
Routed to Pond PP59 : Existing Transferance Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.01' @ 12.17 hrs Surf.Area= 880 sf Storage= 180 cf

Plug-Flow detention time= 35.6 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 35.6 min (826.1 - 790.5)

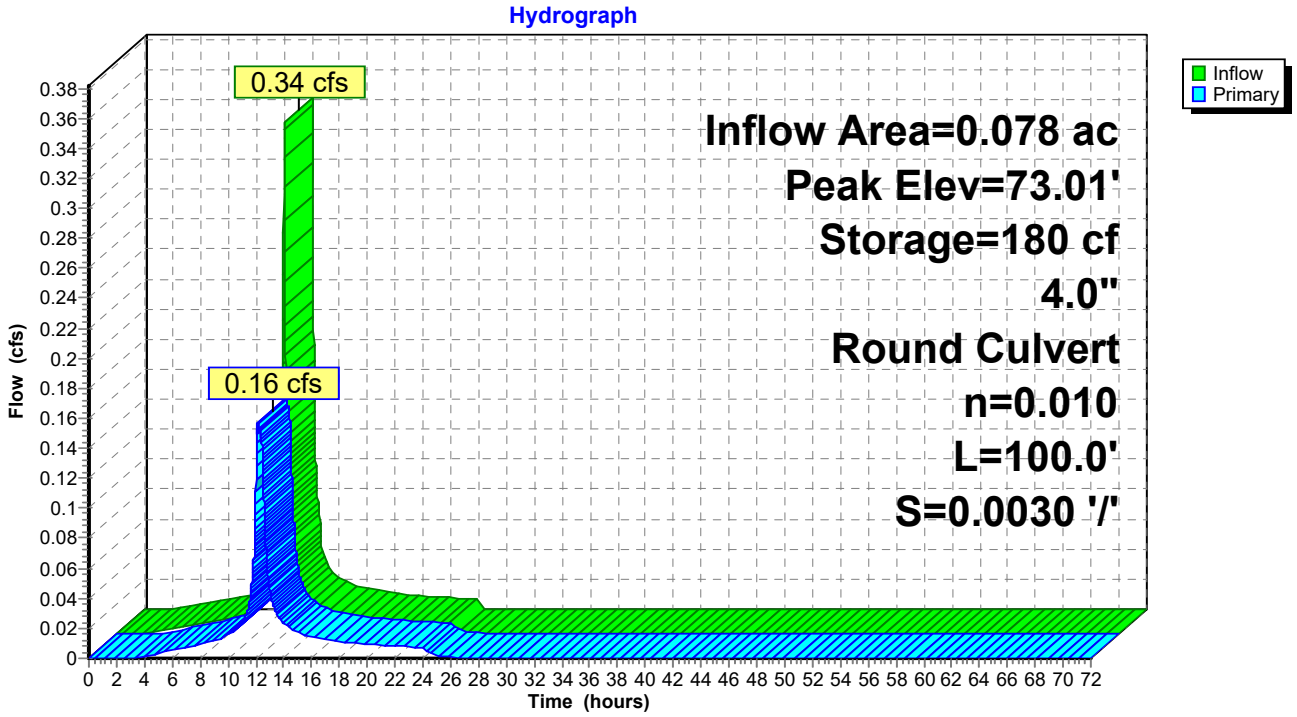
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	1,408 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,520 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.50	880	0	0	880
76.50	880	3,520	3,520	1,301

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.20' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.16 cfs @ 12.17 hrs HW=73.01' TW=72.19' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.16 cfs @ 1.80 fps)

Pond PP90: Stone Storage for the Barn on Lot 9



Summary for Pond PP91: Stone Storage for House D of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.33' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

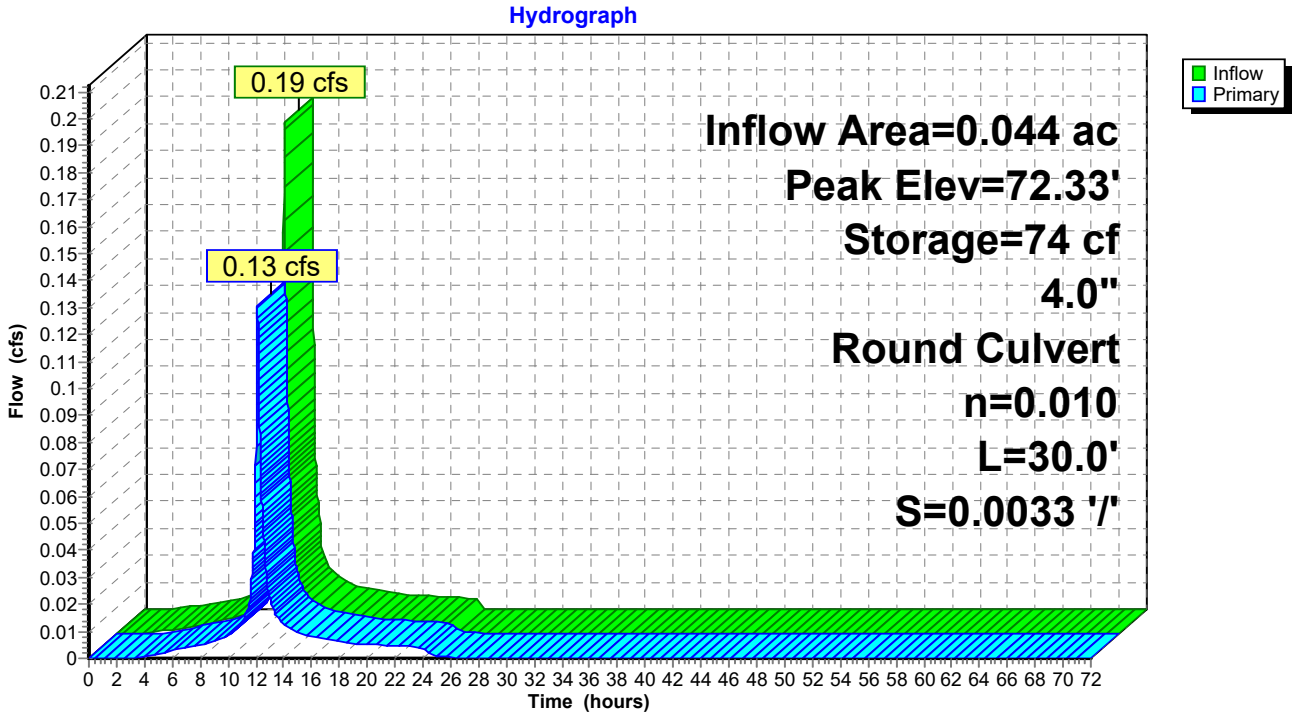
Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.00	560	0	0	560
76.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=72.33' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP91: Stone Storage for House D of Lot 33



Summary for Pond PP92: Stone Storage for House C of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.33' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

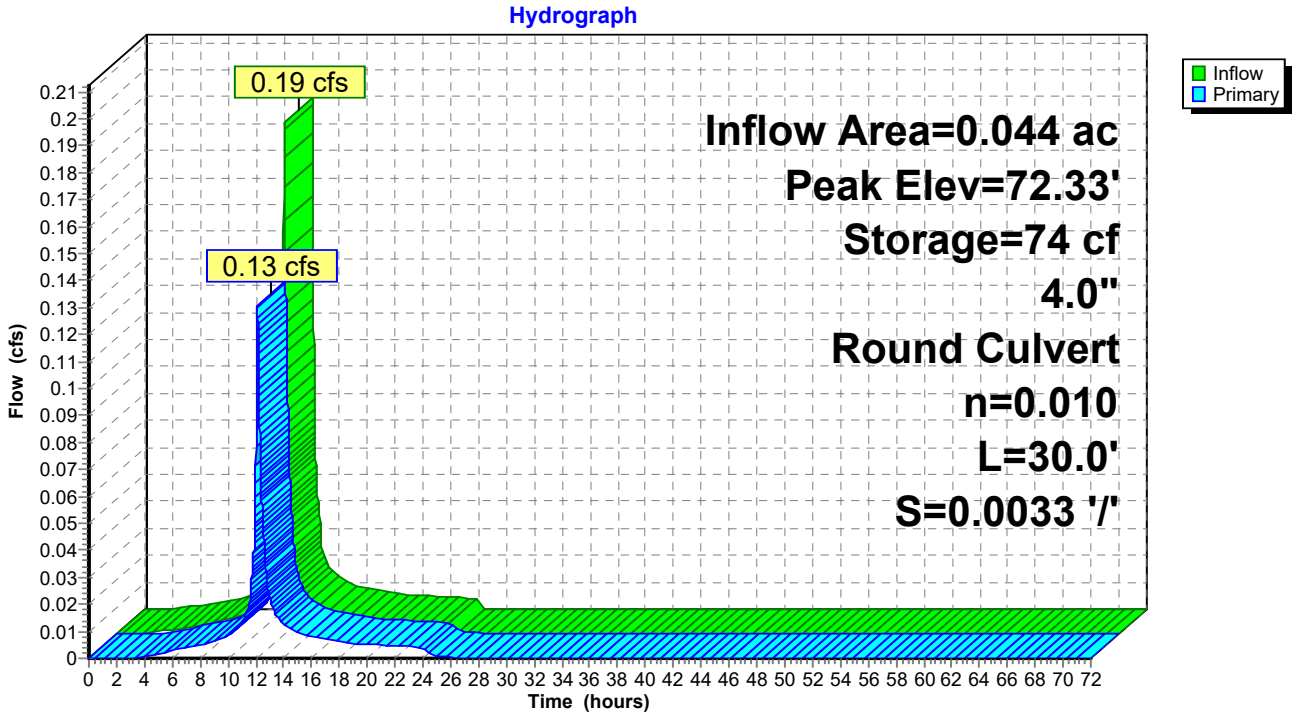
Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.00	560	0	0	560
76.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=72.33' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP92: Stone Storage for House C of Lot 33



Summary for Pond PP93: Stone Storage for House B of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.83' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

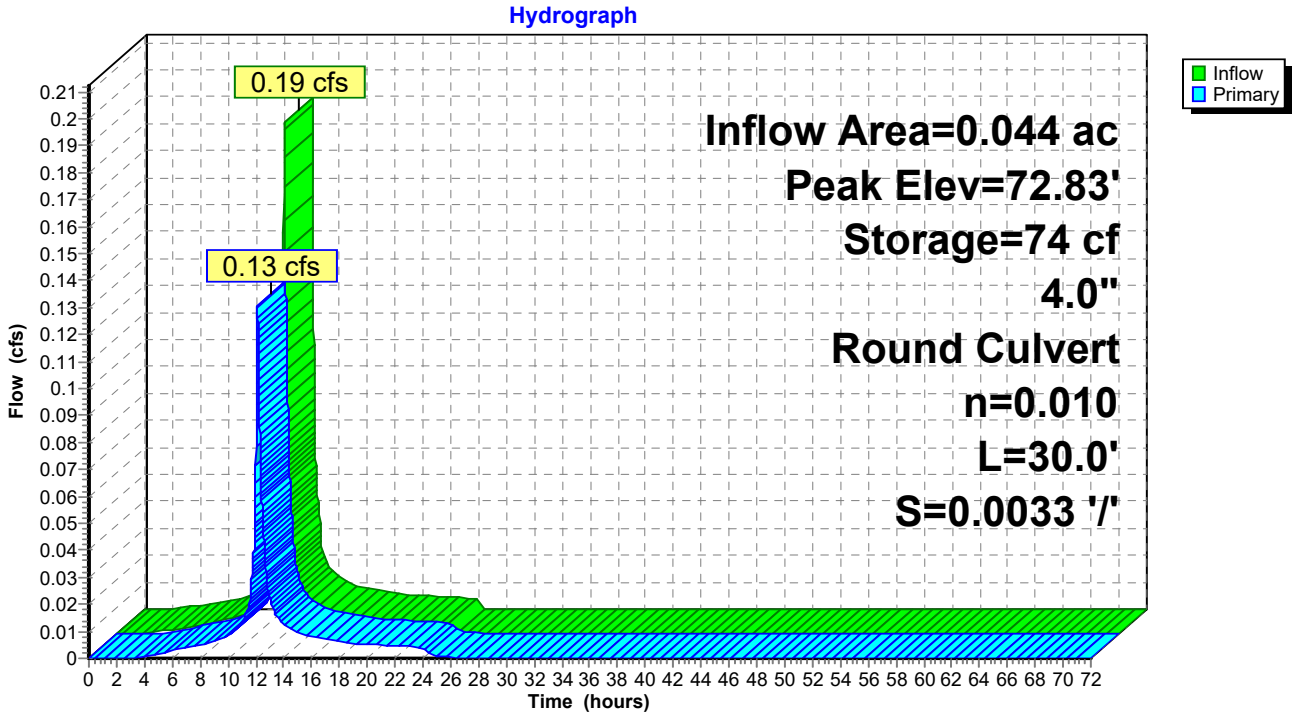
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.50	560	0	0	560
76.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.40' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=72.83' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP93: Stone Storage for House B of Lot 33



Summary for Pond PP94: Stone Storage for House A of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 75.33' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

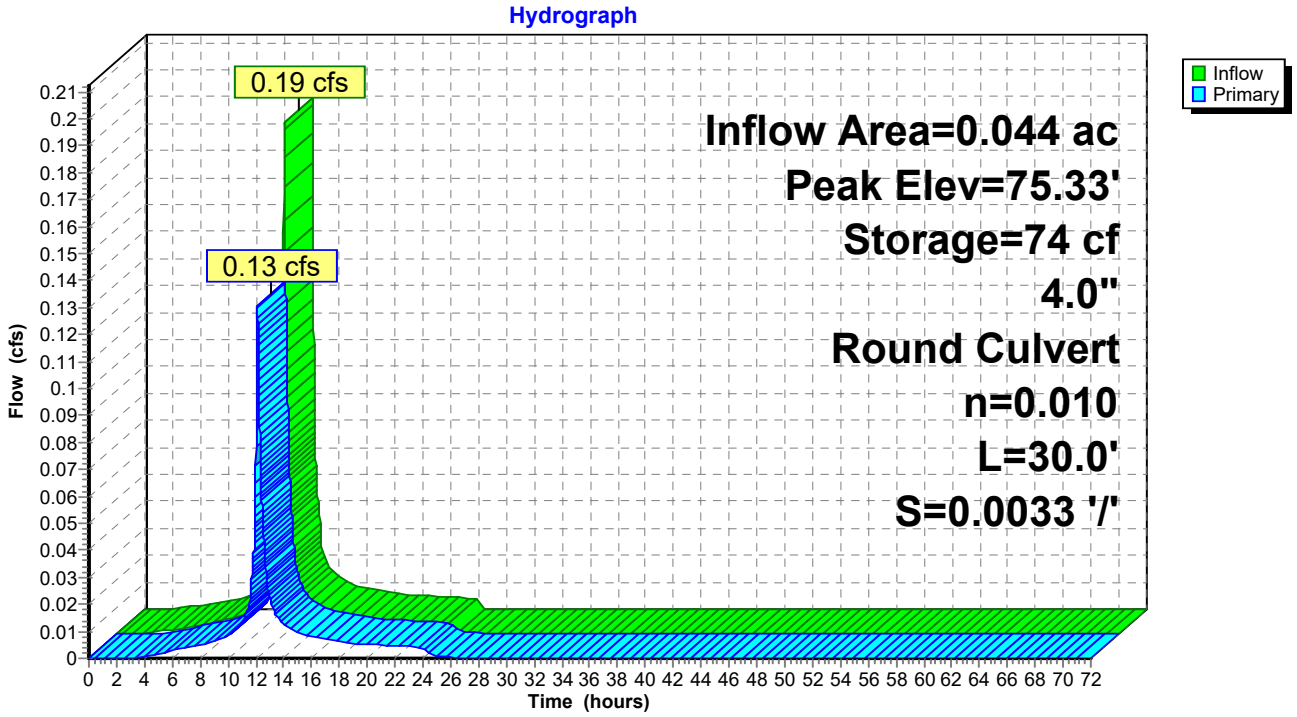
Volume	Invert	Avail.Storage	Storage Description
#1	75.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.00	560	0	0	560
79.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=75.33' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP94: Stone Storage for House A of Lot 33



Summary for Pond PP95: Stone Storage for House A of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.83' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

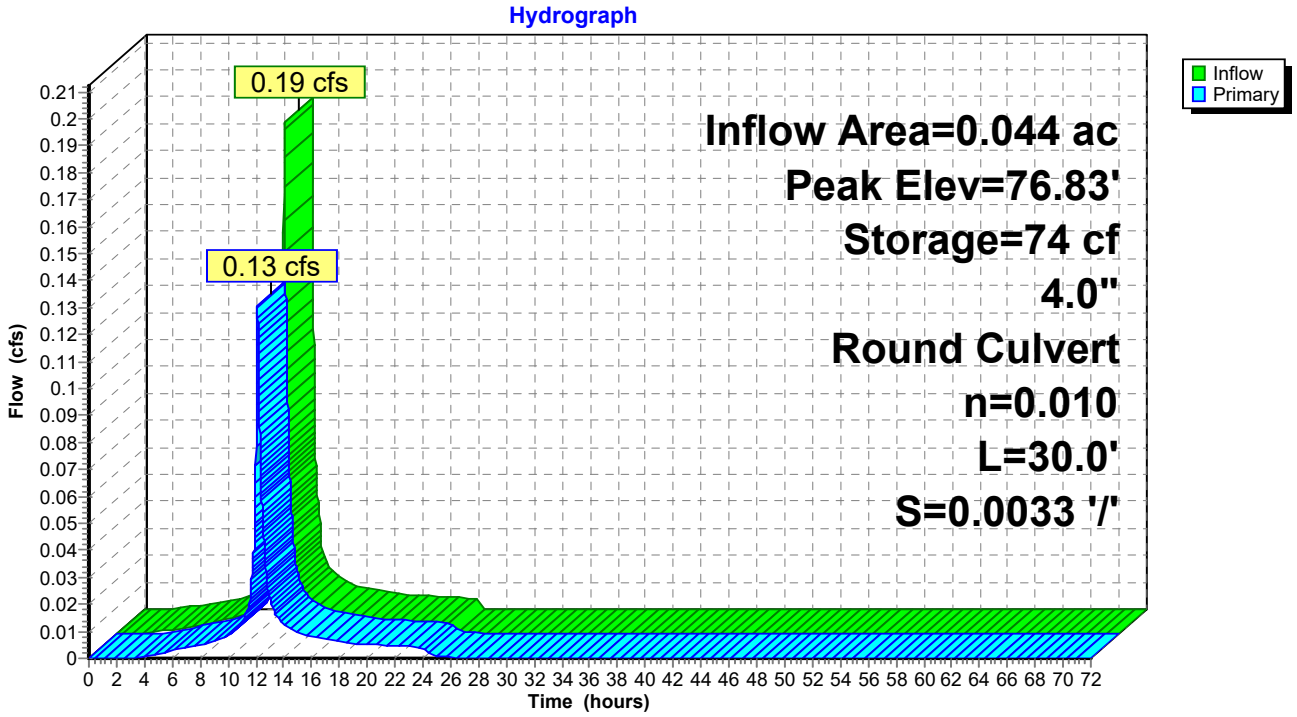
Volume	Invert	Avail.Storage	Storage Description
#1	76.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.50	560	0	0	560
80.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 76.40' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=76.83' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP95: Stone Storage for House A of Lot 32



Summary for Pond PP96: Stone Storage for House B of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 75.33' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

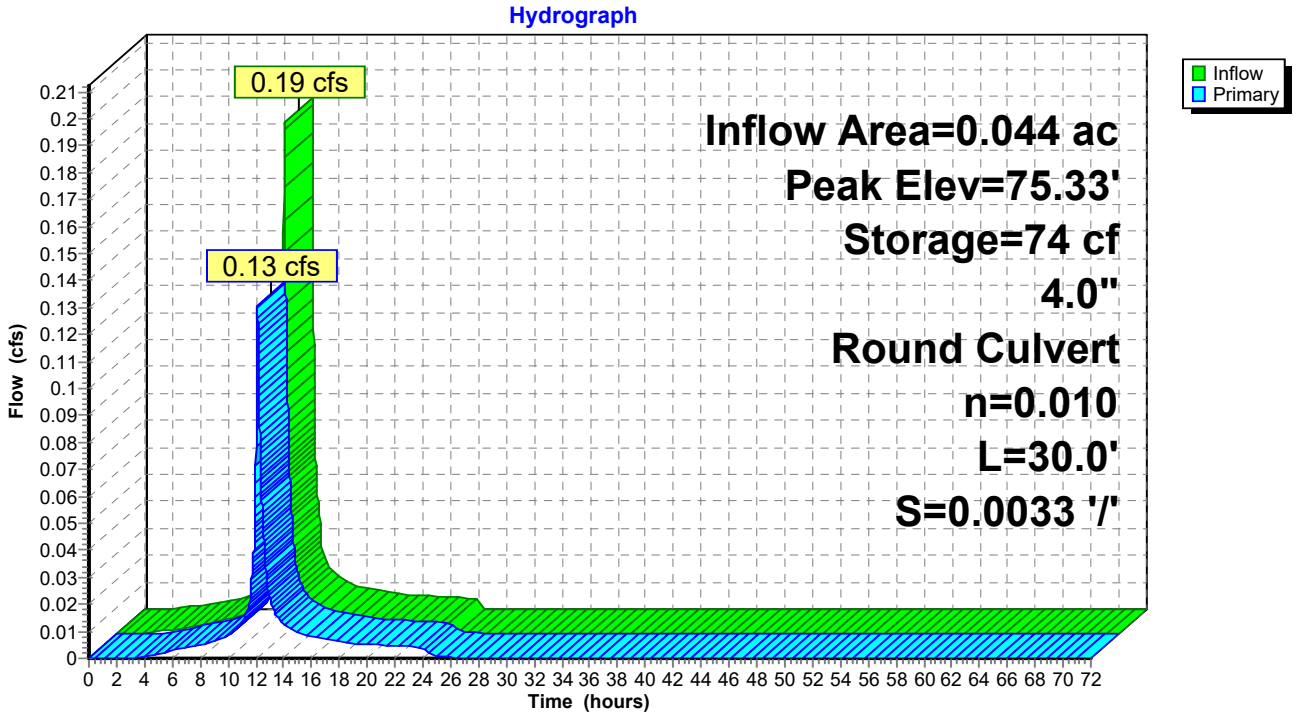
Volume	Invert	Avail.Storage	Storage Description
#1	75.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.00	560	0	0	560
79.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=75.33' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP96: Stone Storage for House B of Lot 32



Summary for Pond PP97: Stone Storage for House C of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 31%, Lag= 3.9 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.33' @ 12.10 hrs Surf.Area= 560 sf Storage= 74 cf

Plug-Flow detention time= 29.0 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (824.8 - 796.0)

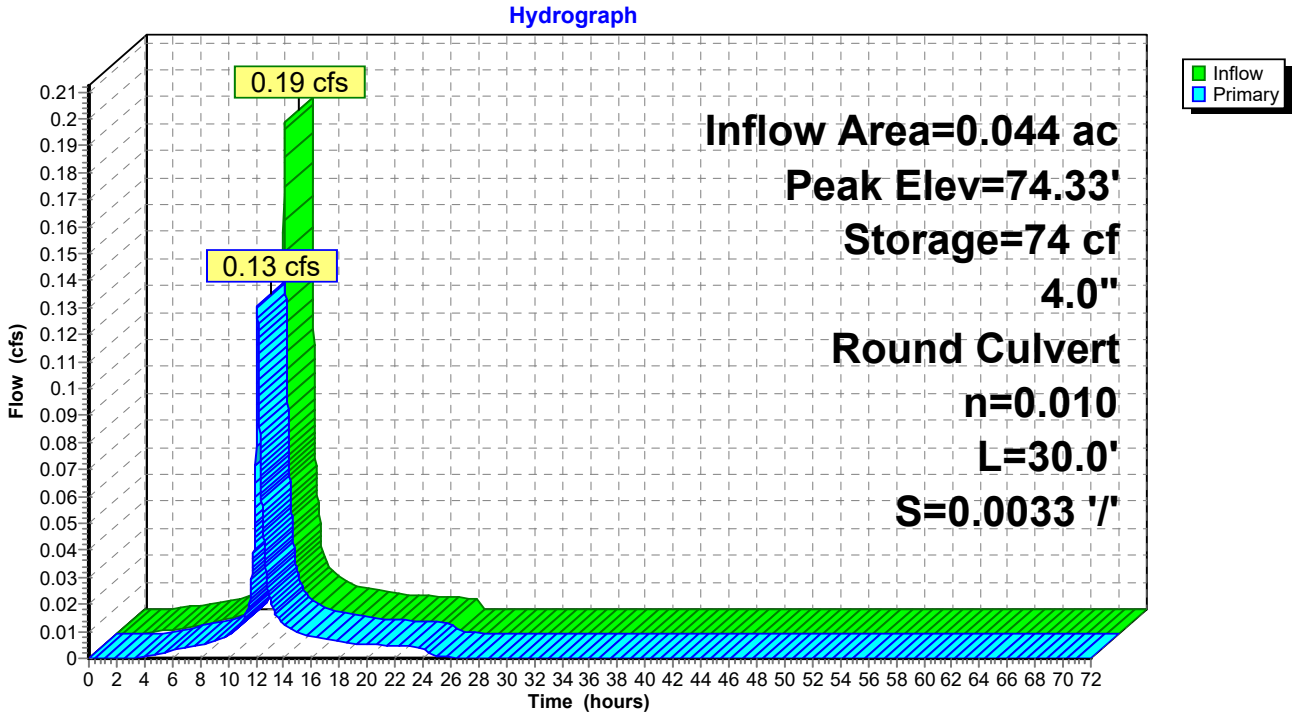
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=74.33' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.87 fps)

Pond PP97: Stone Storage for House C of Lot 32



Summary for Pond PP98: Stone Storage for House D of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 33%, Lag= 4.1 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 76 cf

Plug-Flow detention time= 29.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.5 min (825.5 - 796.0)

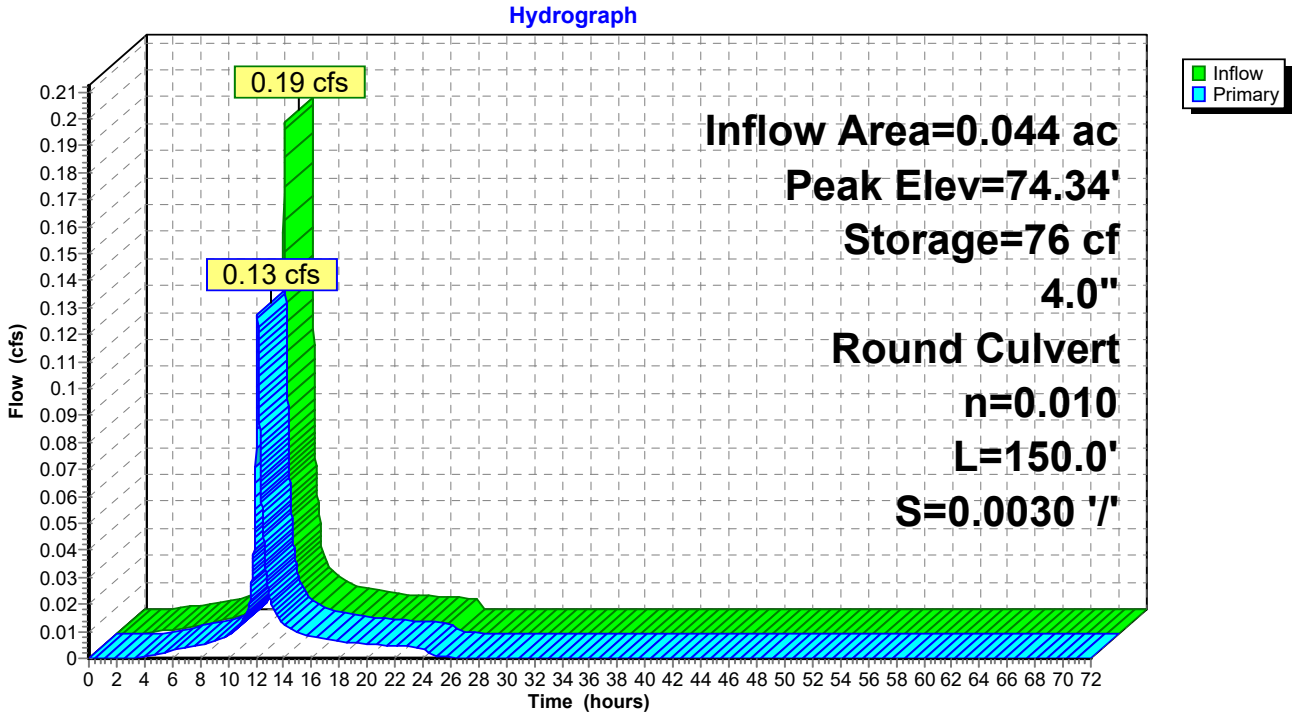
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=74.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.78 fps)

Pond PP98: Stone Storage for House D of Lot 32



Summary for Pond PP99: Stone Storage for House A of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 4.62" for 10-yr (+15%) event
Inflow = 0.19 cfs @ 12.04 hrs, Volume= 0.017 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 32%, Lag= 4.0 min
Primary = 0.13 cfs @ 12.10 hrs, Volume= 0.017 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.34' @ 12.10 hrs Surf.Area= 560 sf Storage= 75 cf

Plug-Flow detention time= 29.1 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 29.1 min (825.2 - 796.0)

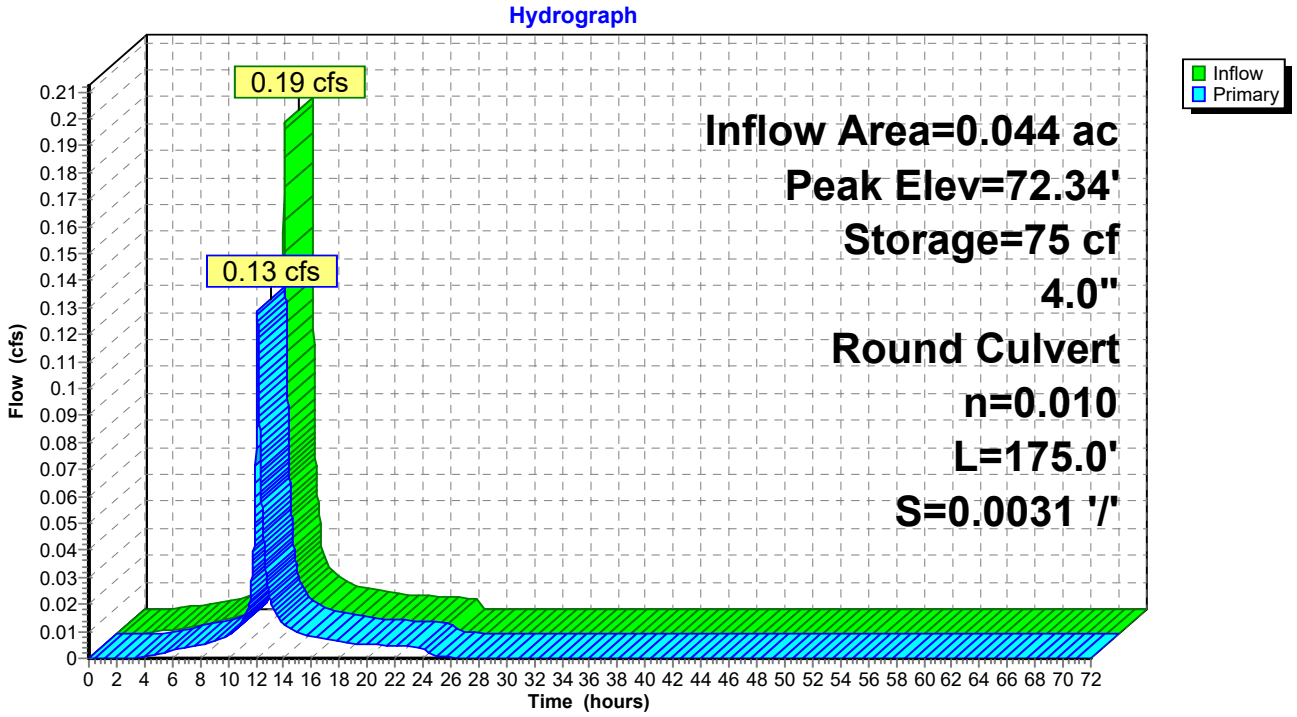
Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.00	560	0	0	560
76.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	**4.0" Round 4" PVC** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.45' S= 0.0031 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.10 hrs HW=72.34' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.13 cfs @ 1.81 fps)

Pond PP99: Stone Storage for House A of Lot 31



Summary for Pond PT1: Proposed Pre-Tx 1

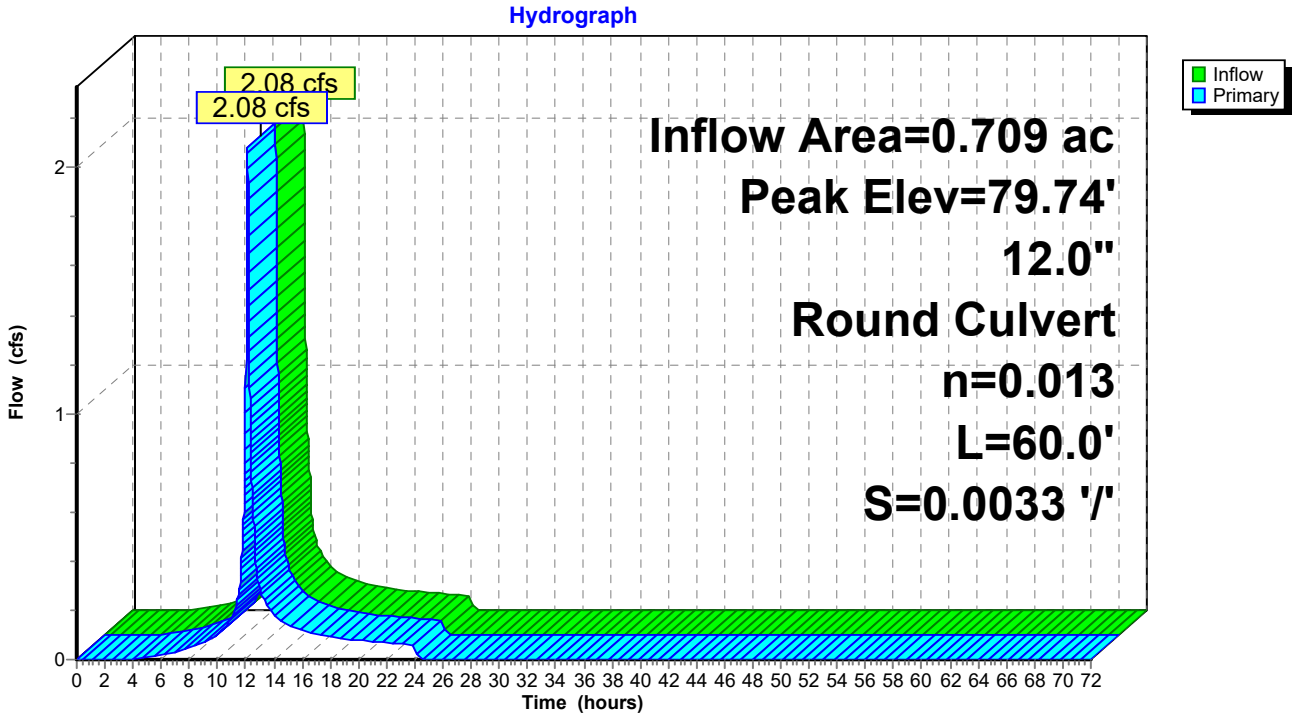
Inflow Area = 0.709 ac, 38.73% Impervious, Inflow Depth = 3.77" for 10-yr (+15%) event
Inflow = 2.08 cfs @ 12.11 hrs, Volume= 0.222 af
Outflow = 2.08 cfs @ 12.11 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min
Primary = 2.08 cfs @ 12.11 hrs, Volume= 0.222 af
Routed to Pond PP54 : Proposed Bioretention Basin "A2"

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 79.74' @ 12.11 hrs
Flood Elev= 80.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	78.70'	**12.0" Round 12" HDPE (PDL1)** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 78.70' / 78.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.08 cfs @ 12.11 hrs HW=79.74' TW=76.68' (Dynamic Tailwater)
1=12" HDPE (PDL1) (Barrel Controls 2.08 cfs @ 3.17 fps)

Pond PT1: Proposed Pre-Tx 1



Summary for Pond PT13: Proposed Pre-Tx 13

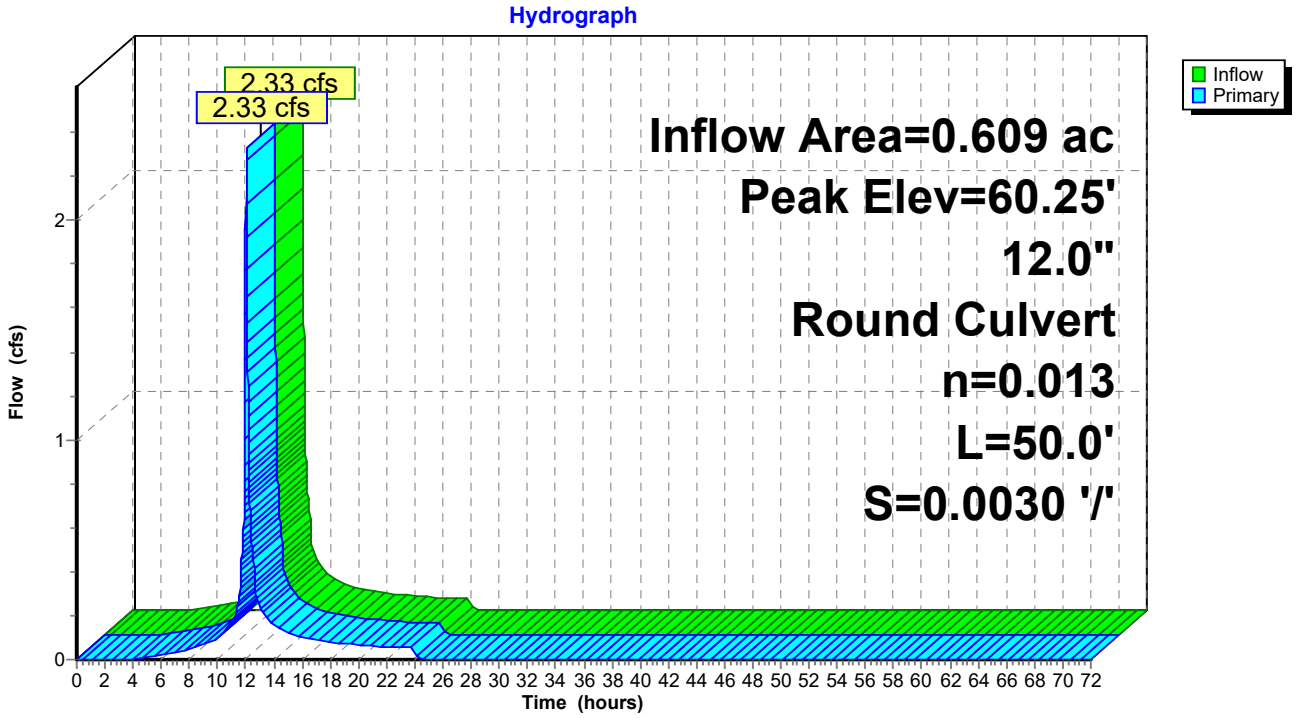
Inflow Area = 0.609 ac, 47.89% Impervious, Inflow Depth = 3.97" for 10-yr (+15%) event
Inflow = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af
Outflow = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
Primary = 2.33 cfs @ 12.04 hrs, Volume= 0.202 af
Routed to Pond PCB14 : Proposed Catch Basin 14

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 60.25' @ 12.04 hrs
Flood Elev= 61.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.10'	**12.0" Round 12" HDPE (PDL16)** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.10' / 58.95' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.33 cfs @ 12.04 hrs HW=60.25' TW=58.21' (Dynamic Tailwater)
1=12" HDPE (PDL16) (Barrel Controls 2.33 cfs @ 3.22 fps)

Pond PT13: Proposed Pre-Tx 13



Summary for Pond PT2: Proposed Pre-Tx 2

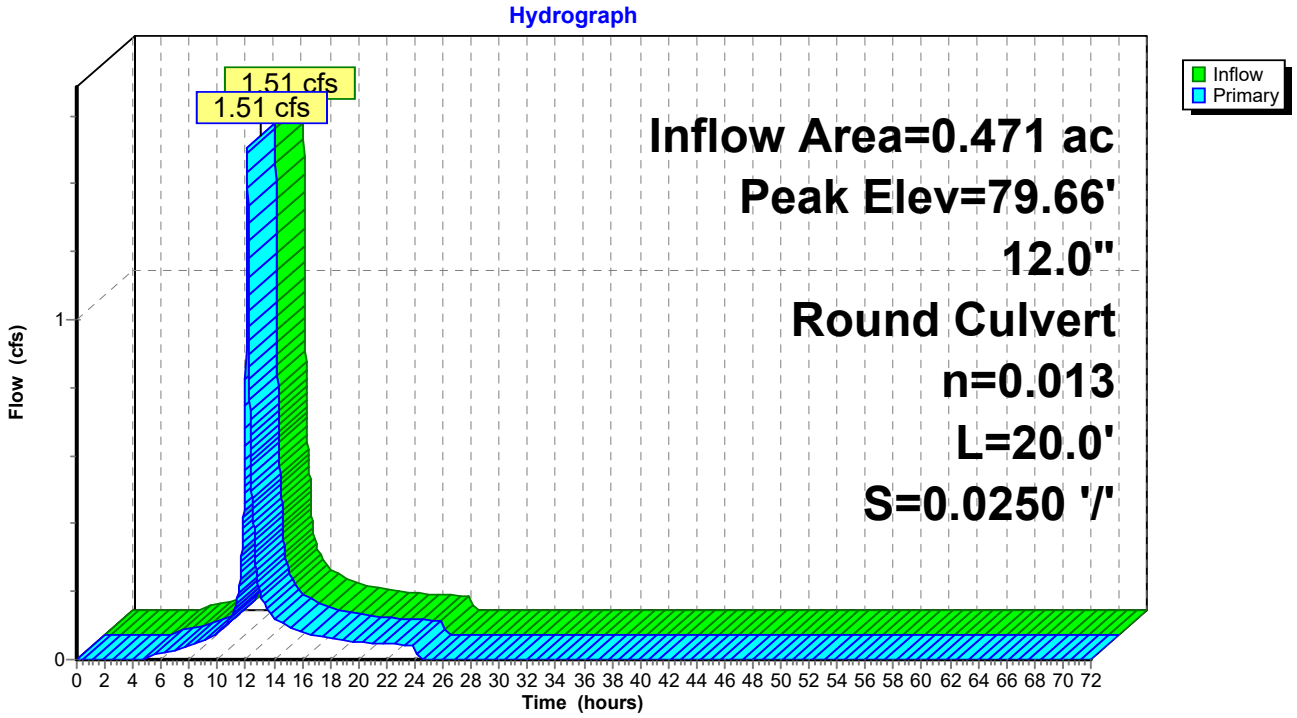
Inflow Area = 0.471 ac, 49.72% Impervious, Inflow Depth = 4.06" for 10-yr (+15%) event
Inflow = 1.51 cfs @ 12.10 hrs, Volume= 0.159 af
Outflow = 1.51 cfs @ 12.10 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min
Primary = 1.51 cfs @ 12.10 hrs, Volume= 0.159 af
Routed to Pond PP54 : Proposed Bioretention Basin "A2"

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 79.66' @ 12.10 hrs
Flood Elev= 81.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	79.00'	**12.0" Round 12" HDPE (PDL2)** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 79.00' / 78.50' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.51 cfs @ 12.10 hrs HW=79.66' TW=76.59' (Dynamic Tailwater)
↑**1=12" HDPE (PDL2)** (Inlet Controls 1.51 cfs @ 2.76 fps)

Pond PT2: Proposed Pre-Tx 2

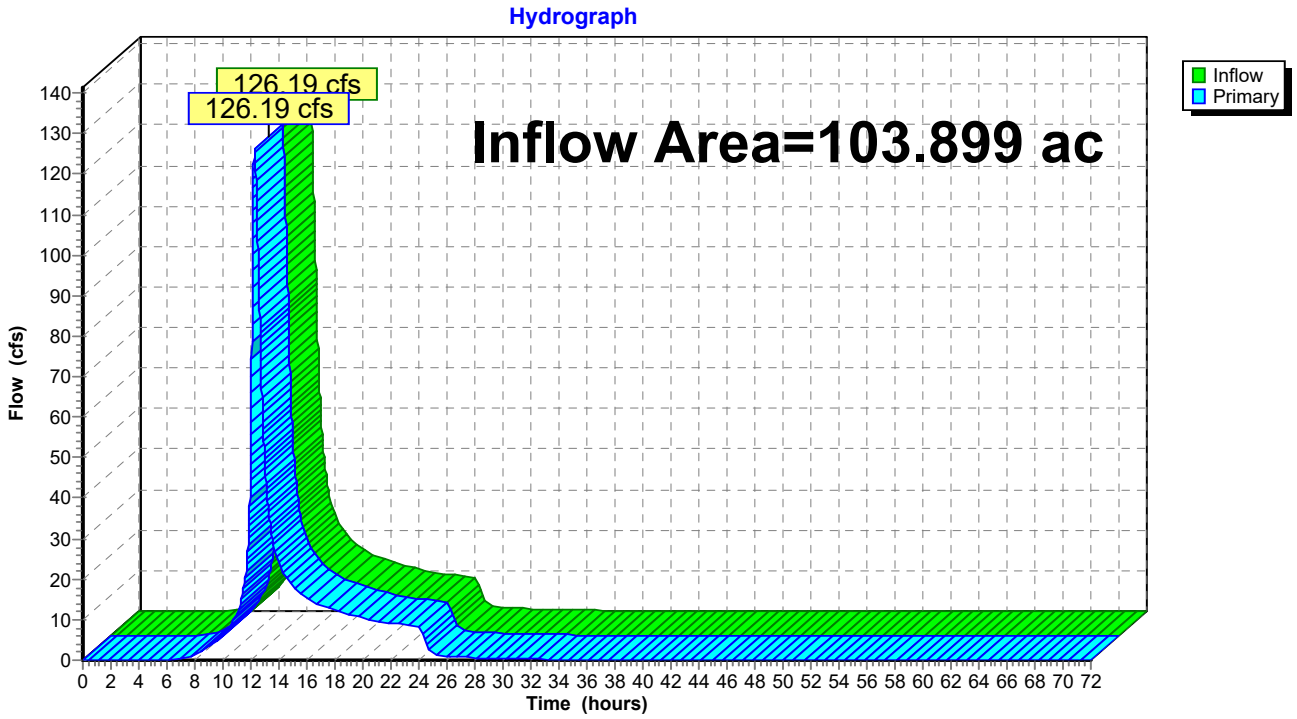


Summary for Link L101: Wetlands to the West

Inflow Area = 103.899 ac, 5.04% Impervious, Inflow Depth = 2.80" for 10-yr (+15%) event
Inflow = 126.19 cfs @ 12.27 hrs, Volume= 24.275 af
Primary = 126.19 cfs @ 12.27 hrs, Volume= 24.275 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L101: Wetlands to the West

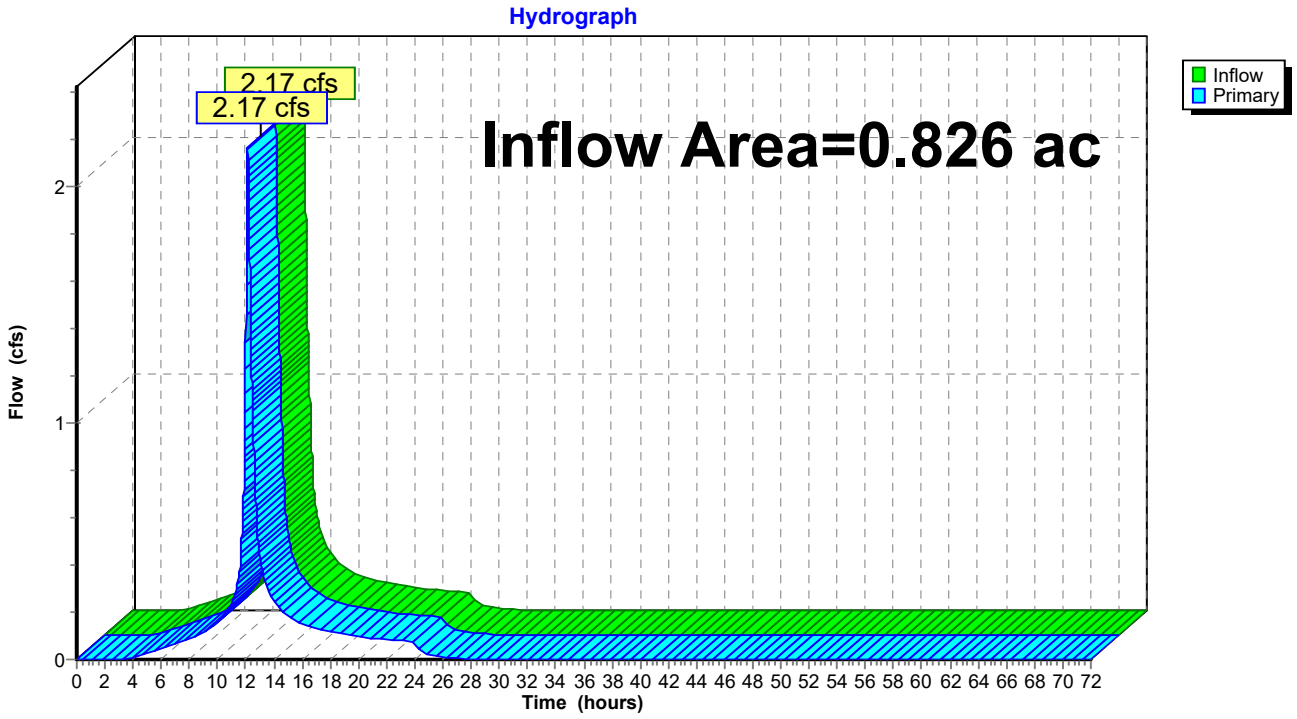


Summary for Link L102: Flow and Volumes from HousesFlowing into Link L101

Inflow Area = 0.826 ac, 70.05% Impervious, Inflow Depth = 4.61" for 10-yr (+15%) event
Inflow = 2.17 cfs @ 12.12 hrs, Volume= 0.317 af
Primary = 2.17 cfs @ 12.12 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min
Routed to Link L101 : Wetlands to the West

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L102: Flow and Volumes from HousesFlowing into Link L101

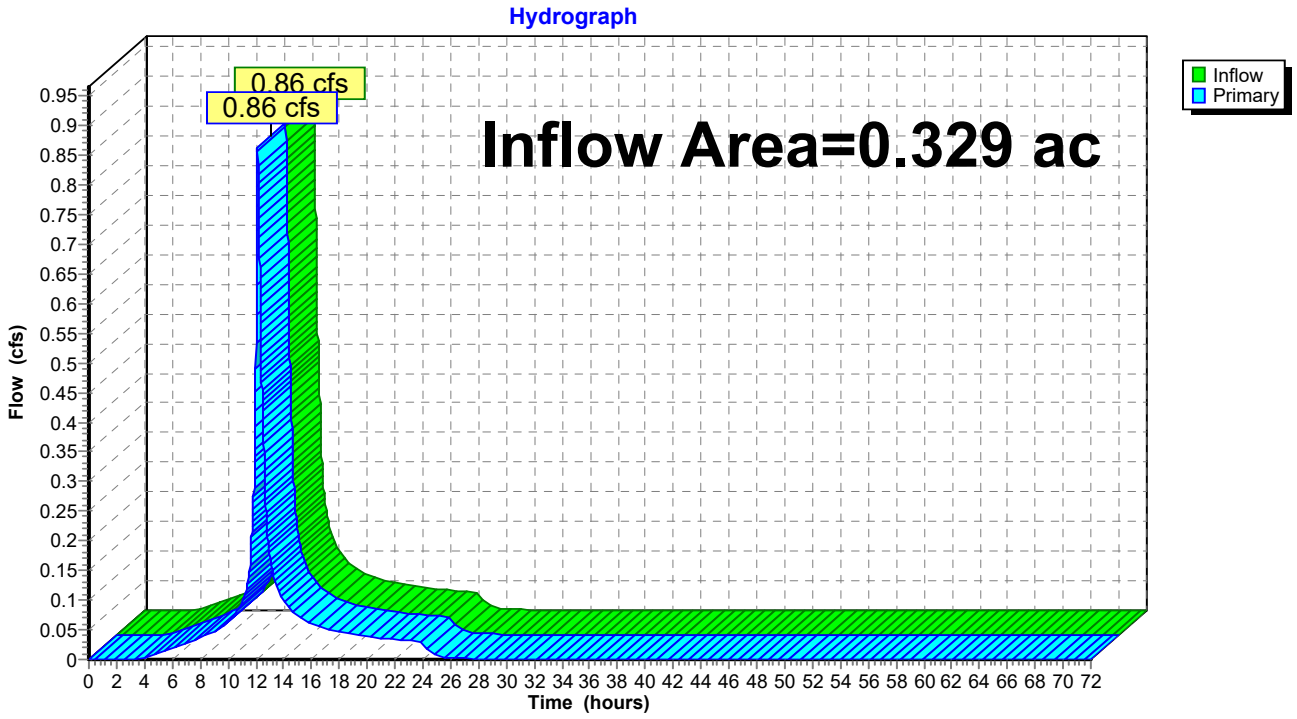


Summary for Link L103: Flow and Volumes from Houses Flowing into Reach ER80

Inflow Area = 0.329 ac, 70.44% Impervious, Inflow Depth = 4.61" for 10-yr (+15%) event
Inflow = 0.86 cfs @ 12.12 hrs, Volume= 0.126 af
Primary = 0.86 cfs @ 12.12 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L103: Flow and Volumes from Houses Flowing into Reach ER80

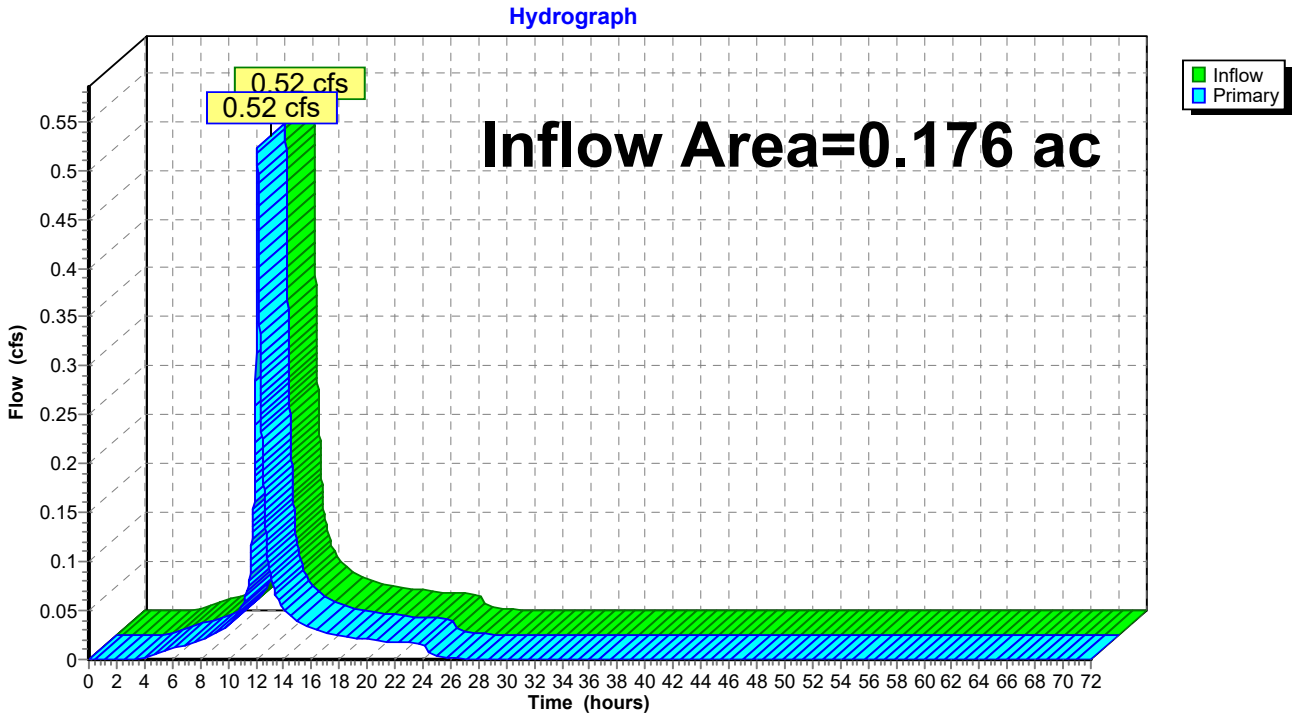


Summary for Link L104: Flow and Volumes from Houses Flowing into Pond PP59

Inflow Area = 0.176 ac, 70.83% Impervious, Inflow Depth = 4.61" for 10-yr (+15%) event
Inflow = 0.52 cfs @ 12.10 hrs, Volume= 0.068 af
Primary = 0.52 cfs @ 12.10 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Routed to Pond PP59 : Existing Transferance Swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L104: Flow and Volumes from Houses Flowing into Pond PP59

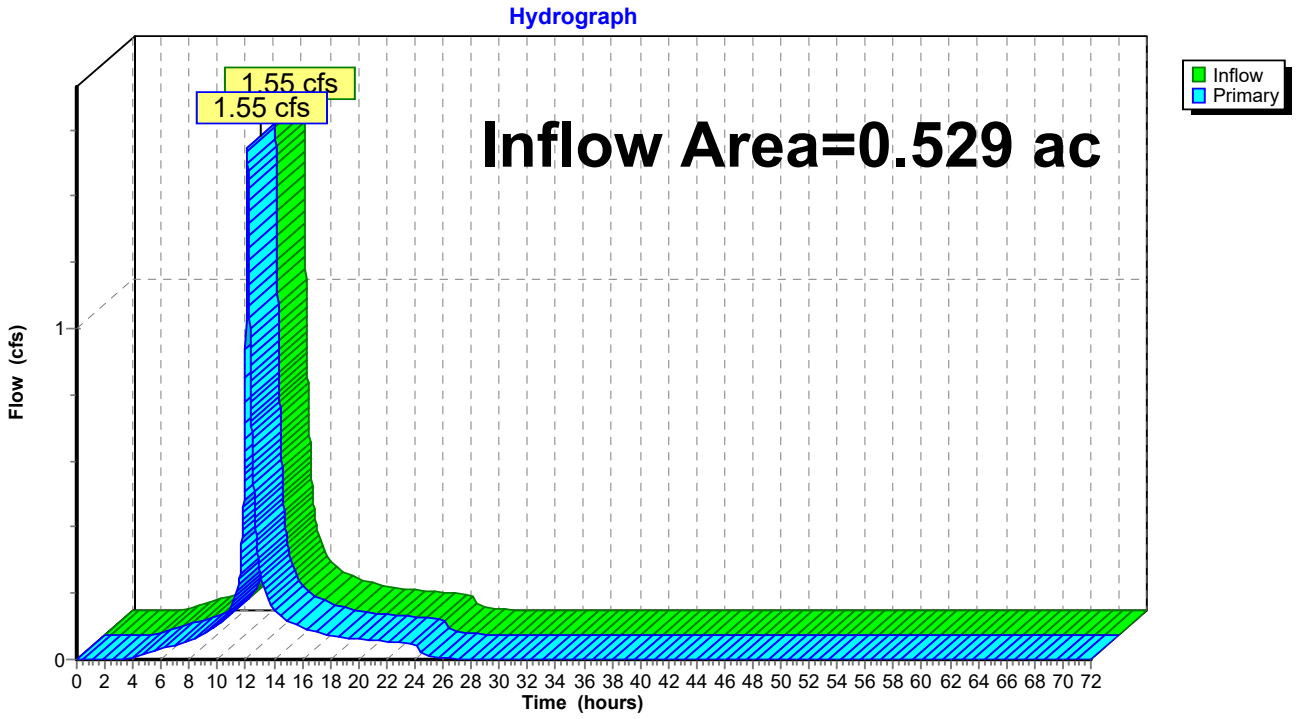


Summary for Link L105: Flow and Volumes from Houses Flowing into Reach ER76

Inflow Area = 0.529 ac, 70.83% Impervious, Inflow Depth = 4.61" for 10-yr (+15%) event
Inflow = 1.55 cfs @ 12.10 hrs, Volume= 0.203 af
Primary = 1.55 cfs @ 12.10 hrs, Volume= 0.203 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER76 : Existing Swale from East Portion of Site

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L105: Flow and Volumes from Houses Flowing into Reach ER76

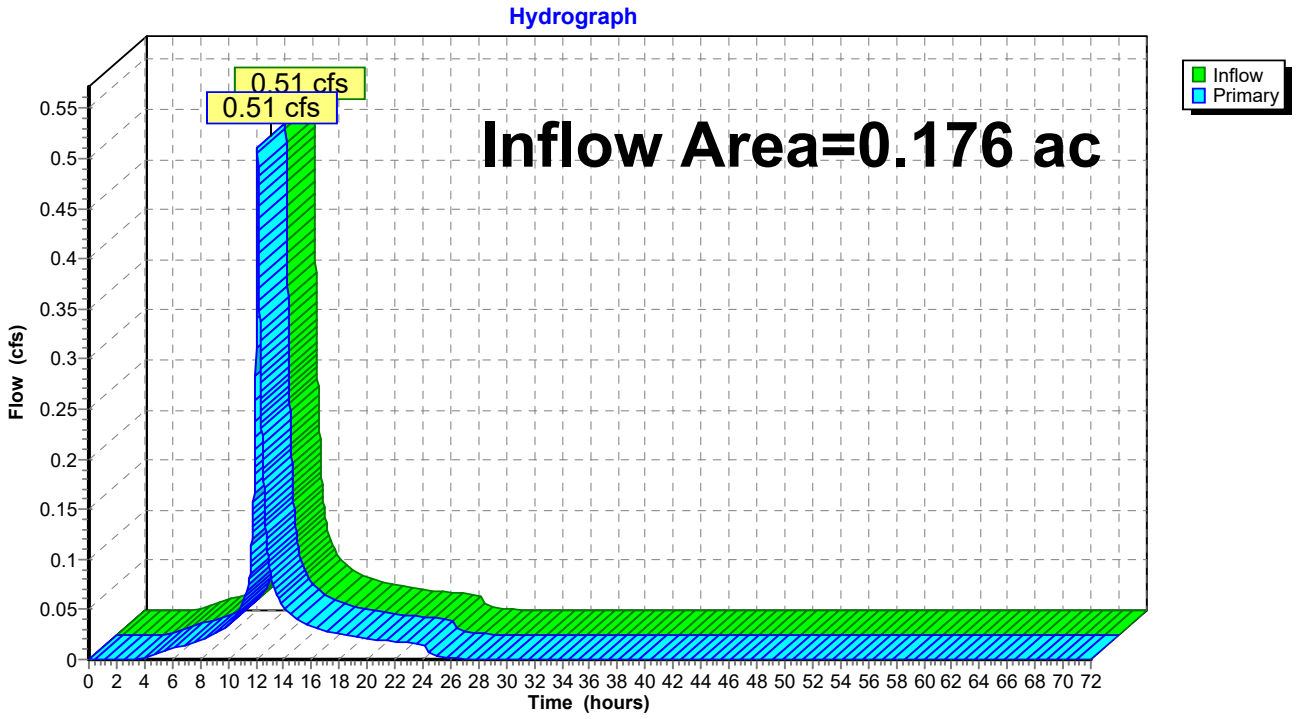


Summary for Link L106: Flow and Volumes from Houses Flowing into Reach ER80

Inflow Area = 0.176 ac, 70.83% Impervious, Inflow Depth = 4.61" for 10-yr (+15%) event
Inflow = 0.51 cfs @ 12.10 hrs, Volume= 0.068 af
Primary = 0.51 cfs @ 12.10 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L106: Flow and Volumes from Houses Flowing into Reach ER80



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS1: Wetlands on Western Runoff Area=556,155 sf 0.44% Impervious Runoff Depth=1.39"
Flow Length=495' Tc=19.4 min CN=74 Runoff=11.38 cfs 1.476 af

SubcatchmentPS10: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=5.55 cfs 0.782 af

SubcatchmentPS11: Southwestern Runoff Area=121,920 sf 0.00% Impervious Runoff Depth=1.32"
Flow Length=765' Tc=17.6 min CN=73 Runoff=2.47 cfs 0.309 af

SubcatchmentPS12: West-Central Portion Runoff Area=192,970 sf 2.95% Impervious Runoff Depth=1.39"
Flow Length=800' Tc=10.8 min CN=74 Runoff=5.21 cfs 0.512 af

SubcatchmentPS13B: Area of Bioretention Runoff Area=15,600 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=0.53 cfs 0.041 af

SubcatchmentPS13E: East Portion of Runoff Area=21,120 sf 45.31% Impervious Runoff Depth=2.20"
Flow Length=680' Slope=0.0138 '/' Tc=18.9 min CN=85 Runoff=0.72 cfs 0.089 af

SubcatchmentPS13S: South Portion of Runoff Area=26,510 sf 47.89% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=85 Runoff=1.49 cfs 0.112 af

SubcatchmentPS13SF: Area of Sediment Runoff Area=8,085 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=0.28 cfs 0.021 af

SubcatchmentPS13W: West Portion of Runoff Area=90,320 sf 22.64% Impervious Runoff Depth=1.73"
Flow Length=1,125' Slope=0.0124 '/' Tc=29.3 min CN=79 Runoff=1.92 cfs 0.299 af

SubcatchmentPS14: Middle-East Portion Runoff Area=23,645 sf 32.10% Impervious Runoff Depth=1.96"
Tc=6.0 min CN=82 Runoff=1.18 cfs 0.089 af

SubcatchmentPS15: North Portion of Runoff Area=8,640 sf 46.41% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=85 Runoff=0.49 cfs 0.036 af

SubcatchmentPS16: Area South of Runoff Area=51,745 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=1.76 cfs 0.137 af

SubcatchmentPS17: North Portion of Runoff Area=8,970 sf 49.33% Impervious Runoff Depth=2.29"
Tc=6.0 min CN=86 Runoff=0.52 cfs 0.039 af

SubcatchmentPS18A: Proposed Driveway Runoff Area=34,870 sf 35.93% Impervious Runoff Depth=2.04"
Flow Length=257' Slope=0.0200 '/' Tc=8.6 min CN=83 Runoff=1.59 cfs 0.136 af

SubcatchmentPS18B: House D of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18C: House C of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18D: House B of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18E: House A of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18F: House A of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18G: House B of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18H: House C of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18I: House D of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19A: West Half of Runoff Area=5,205 sf 100.00% Impervious Runoff Depth=3.48"
Flow Length=785' Tc=7.3 min CN=98 Runoff=0.39 cfs 0.035 af

SubcatchmentPS19B: East Half of Runoff Area=21,895 sf 37.09% Impervious Runoff Depth=2.04"
Flow Length=945' Tc=11.2 min CN=83 Runoff=0.89 cfs 0.085 af

SubcatchmentPS19C: House D of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19D: House C of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19E: House B of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19F: House A of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS2: Area along Runoff Area=938,365 sf 0.22% Impervious Runoff Depth=1.32"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=17.31 cfs 2.375 af

SubcatchmentPS20: South Portion of Runoff Area=14,275 sf 53.66% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=87 Runoff=0.86 cfs 0.065 af

SubcatchmentPS21: East-Central Portion Runoff Area=219,360 sf 2.18% Impervious Runoff Depth=1.32"
Flow Length=945' Tc=11.7 min CN=73 Runoff=5.36 cfs 0.555 af

SubcatchmentPS22A: Proposed Shared Runoff Area=10,995 sf 75.58% Impervious Runoff Depth=2.84"
Flow Length=705' Tc=10.4 min CN=92 Runoff=0.63 cfs 0.060 af

SubcatchmentPS22B: House of Lot 26 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.012 af

SubcatchmentPS22C: House of Lot 27 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.012 af

SubcatchmentPS23: House of Lot 20 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS24: House of Lot 19 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS25: House of Lot 18 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS26: House of Lot 17 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS27: House of Lot 16 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS28: House of Lot 28 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS29: House of Lot 25 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS3: West Portion of Runoff Area=30,865 sf 38.73% Impervious Runoff Depth=2.04"
Flow Length=570' Tc=10.3 min CN=83 Runoff=1.30 cfs 0.120 af

SubcatchmentPS30: House of Lot 24 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS31: House of Lot 23 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS32: House of Lot 22 Runoff Area=2,450 sf 68.57% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=90 Runoff=0.16 cfs 0.012 af

SubcatchmentPS33: House of Lot 21 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS34: House of Lot 15 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS35: House of Lot 14 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS36: House of Lot 13 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS37: House of Lot 12 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS38: House of Lot 8 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS39: House of Lot 7 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS4: East Portion of Runoff Area=20,515 sf 49.72% Impervious Runoff Depth=2.29"
Flow Length=570' Tc=10.3 min CN=86 Runoff=0.97 cfs 0.090 af

SubcatchmentPS40: House of Lot 6 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS41: House of Lot 5 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS42: House of Lot 4 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS43: House of Lot 3 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS44: House of Lot 2 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS45: House of Lot 1 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS46: House of Lot 11 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS47: House of Lot 10 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS48: Eastern Half of Runoff Area=1,890 sf 72.75% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS49: Relocated Barn of Lot Runoff Area=3,400 sf 74.12% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=92 Runoff=0.24 cfs 0.018 af

SubcatchmentPS4A: Area of Proposed Runoff Area=6,725 sf 3.12% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=75 Runoff=0.24 cfs 0.019 af

SubcatchmentPS5: Area on Northeast Runoff Area=23,375 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=0.80 cfs 0.062 af

SubcatchmentPS6: Area East of Runoff Area=145,690 sf 0.96% Impervious Runoff Depth=1.45"
Flow Length=415' Tc=7.6 min CN=75 Runoff=4.79 cfs 0.405 af

SubcatchmentPS7A: Proposed Driveway Runoff Area=10,610 sf 51.13% Impervious Runoff Depth=2.29"
Flow Length=165' Tc=6.4 min CN=86 Runoff=0.61 cfs 0.046 af

Subcatchment PS7B: Proposed Driveway Runoff Area=18,235 sf 37.48% Impervious Runoff Depth=2.04"
Flow Length=575' Tc=17.7 min CN=83 Runoff=0.60 cfs 0.071 af

Subcatchment PS7C: House D of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7D: House C of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7E: House B of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7F: House A of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7G: House A of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7H: House B of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7I: House C of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS7J: House D of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

Subcatchment PS8: Eastern Portion of Runoff Area=806,305 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=10.75 cfs 1.944 af

Subcatchment PS9: Southeastern Portion Runoff Area=644,095 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=8.11 cfs 1.478 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.03' Max Vel=0.70 fps Inflow=0.74 cfs 0.061 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.16 cfs 0.061 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.17' Max Vel=2.08 fps Inflow=3.01 cfs 0.328 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=2.28 cfs 0.328 af

Reach ER79: Southern Swale Avg. Flow Depth=1.10' Max Vel=2.50 fps Inflow=31.89 cfs 6.170 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=31.48 cfs 6.170 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.49' Max Vel=2.70 fps Inflow=17.05 cfs 3.326 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=16.95 cfs 3.326 af

Reach PR81: East Portion of Existing Avg. Flow Depth=0.13' Max Vel=1.74 fps Inflow=1.91 cfs 0.252 af
n=0.030 L=760.0' S=0.0204 '/' Capacity=138.56 cfs Outflow=1.72 cfs 0.252 af

Pond EP51: Existing Pond Along Existing Peak Elev=75.45' Storage=18,723 cf Inflow=4.96 cfs 0.430 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond PCB11: Proposed Catch Basin 11 Peak Elev=63.76' Inflow=1.92 cfs 0.298 af
15.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=1.92 cfs 0.298 af

Pond PCB12: Proposed Catch Basin 12 Peak Elev=63.95' Inflow=3.24 cfs 0.305 af
18.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=3.24 cfs 0.305 af

Pond PCB14: Proposed Catch Basin 14 Peak Elev=57.67' Inflow=2.58 cfs 0.523 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0268 '/' Outflow=2.58 cfs 0.523 af

Pond PCB4: Proposed Catch Basin 4 Peak Elev=73.82' Inflow=1.17 cfs 0.085 af
12.0" Round Culvert n=0.013 L=65.0' S=0.0346 '/' Outflow=1.17 cfs 0.085 af

Pond PCB5: Proposed Catch Basin 5 Peak Elev=70.70' Inflow=0.49 cfs 0.036 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0114 '/' Outflow=0.49 cfs 0.036 af

Pond PCB6: Proposed Catch Basin 6 Peak Elev=71.71' Inflow=0.52 cfs 0.039 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0129 '/' Outflow=0.52 cfs 0.039 af

Pond PCB7: Proposed Catch Basin 7 Peak Elev=70.55' Inflow=1.70 cfs 0.132 af
18.0" Round Culvert n=0.013 L=175.0' S=0.0029 '/' Outflow=1.70 cfs 0.132 af

Pond PDMH10: Proposed Manhole 10 Peak Elev=65.64' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=230.0' S=0.0074 '/' Outflow=2.87 cfs 0.216 af

Pond PDMH14A: Proposed Manhole 14A Peak Elev=52.28' Inflow=2.58 cfs 0.523 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0027 '/' Outflow=2.58 cfs 0.523 af

Pond PDMH14B: Proposed Manhole 14B Peak Elev=51.61' Inflow=2.58 cfs 0.523 af
24.0" Round Culvert n=0.013 L=140.0' S=0.0025 '/' Outflow=2.58 cfs 0.523 af

Pond PDMH3A: Proposed Manhole 3A Peak Elev=73.85' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=225.0' S=0.0062 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3B: Proposed Manhole 3B Peak Elev=72.31' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=180.0' S=0.0161 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3C: Proposed Manhole 3C Peak Elev=69.31' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=295.0' S=0.0149 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3D: Proposed Manhole 3D Peak Elev=64.81' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=190.0' S=0.0126 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3E: Proposed Manhole 3E Peak Elev=62.31' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=300.0' S=0.0230 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH6A: Proposed Manhole 6A Peak Elev=71.20' Inflow=0.52 cfs 0.039 af
12.0" Round Culvert n=0.013 L=45.0' S=0.0067 '/' Outflow=0.52 cfs 0.039 af

Pond PDMH8: Proposed Manhole 8 Peak Elev=70.10' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=105.0' S=0.0029 '/' Outflow=2.87 cfs 0.216 af

Pond PDMH8A: Proposed Manhole 8A Peak Elev=69.55' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=2.87 cfs 0.216 af

Pond PDMH9: Proposed Manhole 9 Peak Elev=67.79' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=150.0' S=0.0133 '/' Outflow=2.87 cfs 0.216 af

Pond PP100: Stone Storage for House B of Lot Peak Elev=73.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP101: Stone Storage for House C of Lot Peak Elev=74.25' Storage=56 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=75.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP102: Stone Storage for House D of Lot Peak Elev=74.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP103: Stone Storage for House A of Lot Peak Elev=71.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP104: Stone Storage for House B of Lot Peak Elev=70.75' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP105: Stone Storage for House C of Lot Peak Elev=70.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP106: Stone Storage for House D of Lot Peak Elev=71.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP107: Stone Storage for House A of Lot Peak Elev=68.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP108: Stone Storage for House B of Lot Peak Elev=68.76' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP109: Stone Storage for House C of Lot Peak Elev=66.76' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP110: Stone Storage for House C of Lot Peak Elev=66.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP111: Stone Storage for Lot 26 Peak Elev=59.28' Storage=71 cf Inflow=0.16 cfs 0.012 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP112: Stone Storage for Lot 26 Peak Elev=61.28' Storage=71 cf Inflow=0.16 cfs 0.012 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP151: Swale Along West Portion of Peak Elev=65.73' Storage=89 cf Inflow=1.92 cfs 0.299 af
Outflow=1.92 cfs 0.298 af

Pond PP152: Swale Along East Portion of Peak Elev=65.83' Storage=22 cf Inflow=0.72 cfs 0.089 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0167 '/' Outflow=0.72 cfs 0.089 af

Pond PP153: Swale Along End of Cul-de-sac Peak Elev=61.40' Storage=12 cf Inflow=1.49 cfs 0.112 af
Outflow=1.49 cfs 0.112 af

Pond PP154: Proposed Sediment Forebay Peak Elev=63.20' Storage=10,092 cf Inflow=4.21 cfs 0.625 af
Outflow=2.34 cfs 0.411 af

Pond PP155: Proposed Bioretention Basin Peak Elev=48.40' Storage=12,986 cf Inflow=2.68 cfs 0.564 af
Outflow=0.50 cfs 0.553 af

Pond PP50: Wetlands East of Existing Driveway Peak Elev=91.59' Storage=166 cf Inflow=0.80 cfs 0.062 af
24.0" Round Culvert n=0.025 L=40.0' S=0.0113 '/' Outflow=0.74 cfs 0.061 af

Pond PP52A: Proposed Swale Along West Side Peak Elev=80.50' Storage=55 cf Inflow=1.30 cfs 0.120 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0383 '/' Outflow=1.28 cfs 0.120 af

Pond PP53A: Proposed Swale Along East Side Peak Elev=80.23' Storage=63 cf Inflow=0.97 cfs 0.090 af
Outflow=0.97 cfs 0.089 af

Pond PP54: Proposed Bioretention Basin Peak Elev=76.25' Storage=3,776 cf Inflow=2.42 cfs 0.228 af
Outflow=0.67 cfs 0.227 af

Pond PP55: Proposed Swale Along North Portion Peak Elev=72.34' Storage=3 cf Inflow=0.49 cfs 0.036 af
Outflow=0.49 cfs 0.036 af

Pond PP56: Proposed Swale Along North Peak Elev=73.37' Storage=20 cf Inflow=0.52 cfs 0.039 af
Outflow=0.52 cfs 0.039 af

Pond PP57: Proposed Swale Along South Side Peak Elev=73.38' Storage=535 cf Inflow=0.86 cfs 0.065 af
Outflow=0.74 cfs 0.056 af

Pond PP58: Swale Along Middle-East Portion Peak Elev=76.70' Storage=213 cf Inflow=1.18 cfs 0.089 af
Outflow=1.17 cfs 0.085 af

Pond PP59: Existing Transferance Swale Peak Elev=71.86' Storage=908 cf Inflow=2.83 cfs 0.252 af
12.0" Round Culvert n=0.013 L=80.0' S=0.0637 '/' Outflow=1.91 cfs 0.252 af

Pond PP64: Stone Storage for Lot 20 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP65: Stone Storage for Lot 19 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP66: Stone Storage for Lot 18 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP67: Stone Storage for Lot 17 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP68: Stone Storage for Lot 16 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP69: Stone Storage for Lot 28 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP70: Stone Storage for Lot 25 Peak Elev=50.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP71: Stone Storage for Lot 24 Peak Elev=50.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP72: Stone Storage for Lot 23 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP73: Stone Storage for Lot 22 Peak Elev=88.27' Storage=84 cf Inflow=0.16 cfs 0.012 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.012 af

Pond PP74: Stone Storage for Lot 21 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP75: Stone Storage for Lot 15 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP76: Stone Storage for Lot 14 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP77: Stone Storage for Lot 13 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP78: Stone Storage for Lot 12 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP79: Stone Storage for Lot 8 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP80: Stone Storage for Lot 7 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP81: Stone Storage for Lot 6 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP82: Stone Storage for Lot 5 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP83: Stone Storage for Lot 4 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP84: Stone Storage for Lot 3 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP85: Stone Storage for Lot 2 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP86: Stone Storage for Lot 1 Peak Elev=88.24' Storage=67 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=10.0' S=0.0200 '/' Outflow=0.11 cfs 0.012 af

Pond PP87: Stone Storage for Lot 11 Peak Elev=76.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP88: Stone Storage for Lot 10 Peak Elev=76.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP89: Stone Storage for the House on Lot Peak Elev=72.76' Storage=53 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP90: Stone Storage for the Barn on Lot 9 Peak Elev=72.85' Storage=123 cf Inflow=0.24 cfs 0.018 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.018 af

Pond PP91: Stone Storage for House D of Lot 33 Peak Elev=72.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP92: Stone Storage for House C of Lot 33 Peak Elev=72.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP93: Stone Storage for House B of Lot 33 Peak Elev=72.75' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP94: Stone Storage for House A of Lot 33 Peak Elev=75.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP95: Stone Storage for House A of Lot 32 Peak Elev=76.75' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP96: Stone Storage for House B of Lot 32 Peak Elev=75.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP97: Stone Storage for House C of Lot 32 Peak Elev=74.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP98: Stone Storage for House D of Lot 32 Peak Elev=74.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP99: Stone Storage for House A of Lot 31 Peak Elev=72.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=175.0' S=0.0031 '/' Outflow=0.09 cfs 0.010 af

Pond PT1: Proposed Pre-Tx 1 Peak Elev=79.46' Inflow=1.28 cfs 0.120 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0033 '/' Outflow=1.28 cfs 0.120 af

Pond PT13: Proposed Pre-Tx 13 Peak Elev=59.94' Inflow=1.49 cfs 0.112 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0030 '/' Outflow=1.49 cfs 0.112 af

Pond PT2: Proposed Pre-Tx 2 Peak Elev=79.51' Inflow=0.97 cfs 0.089 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0250 '/' Outflow=0.97 cfs 0.089 af

Link L101: Wetlands to the West Inflow=61.90 cfs 11.382 af
Primary=61.90 cfs 11.382 af

Link L102: Flow and Volumes from HousesFlowing into Link L101 Inflow=1.48 cfs 0.188 af
Primary=1.48 cfs 0.188 af

Link L103: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.59 cfs 0.075 af
Primary=0.59 cfs 0.075 af

Link L104: Flow and Volumes from Houses Flowing into Pond PP59 Inflow=0.35 cfs 0.040 af
Primary=0.35 cfs 0.040 af

Link L105: Flow and Volumes from Houses Flowing into Reach ER76 Inflow=1.03 cfs 0.121 af
Primary=1.03 cfs 0.121 af

Link L106: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.34 cfs 0.040 af
Primary=0.34 cfs 0.040 af

Total Runoff Area = 103.899 ac Runoff Volume = 12.055 af Average Runoff Depth = 1.39"
94.96% Pervious = 98.664 ac 5.04% Impervious = 5.236 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS1: Wetlands on Western Runoff Area=556,155 sf 0.44% Impervious Runoff Depth=2.89"
Flow Length=495' Tc=19.4 min CN=74 Runoff=22.25 cfs 3.078 af

SubcatchmentPS10: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=11.66 cfs 1.707 af

SubcatchmentPS11: Southwestern Runoff Area=121,920 sf 0.00% Impervious Runoff Depth=2.80"
Flow Length=765' Tc=17.6 min CN=73 Runoff=4.91 cfs 0.653 af

SubcatchmentPS12: West-Central Portion Runoff Area=192,970 sf 2.95% Impervious Runoff Depth=2.89"
Flow Length=800' Tc=10.8 min CN=74 Runoff=10.02 cfs 1.068 af

SubcatchmentPS13B: Area of Bioretention Runoff Area=15,600 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=1.01 cfs 0.086 af

SubcatchmentPS13E: East Portion of Runoff Area=21,120 sf 45.31% Impervious Runoff Depth=3.97"
Flow Length=680' Slope=0.0138 '/' Tc=18.9 min CN=85 Runoff=1.17 cfs 0.161 af

SubcatchmentPS13S: South Portion of Runoff Area=26,510 sf 47.89% Impervious Runoff Depth=3.97"
Tc=6.0 min CN=85 Runoff=2.33 cfs 0.202 af

SubcatchmentPS13SF: Area of Sediment Runoff Area=8,085 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=0.52 cfs 0.045 af

SubcatchmentPS13W: West Portion of Runoff Area=90,320 sf 22.64% Impervious Runoff Depth=3.37"
Flow Length=1,125' Slope=0.0124 '/' Tc=29.3 min CN=79 Runoff=3.46 cfs 0.582 af

SubcatchmentPS14: Middle-East Portion Runoff Area=23,645 sf 32.10% Impervious Runoff Depth=3.67"
Tc=6.0 min CN=82 Runoff=1.93 cfs 0.166 af

SubcatchmentPS15: North Portion of Runoff Area=8,640 sf 46.41% Impervious Runoff Depth=3.97"
Tc=6.0 min CN=85 Runoff=0.76 cfs 0.066 af

SubcatchmentPS16: Area South of Runoff Area=51,745 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=3.34 cfs 0.286 af

SubcatchmentPS17: North Portion of Runoff Area=8,970 sf 49.33% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=86 Runoff=0.81 cfs 0.070 af

SubcatchmentPS18A: Proposed Driveway Runoff Area=34,870 sf 35.93% Impervious Runoff Depth=3.77"
Flow Length=257' Slope=0.0200 '/' Tc=8.6 min CN=83 Runoff=2.58 cfs 0.251 af

SubcatchmentPS18B: House D of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18C: House C of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18D: House B of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18E: House A of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18F: House A of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18G: House B of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18H: House C of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS18I: House D of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19A: West Half of Runoff Area=5,205 sf 100.00% Impervious Runoff Depth=5.41"
Flow Length=785' Tc=7.3 min CN=98 Runoff=0.52 cfs 0.054 af

SubcatchmentPS19B: East Half of Runoff Area=21,895 sf 37.09% Impervious Runoff Depth=3.77"
Flow Length=945' Tc=11.2 min CN=83 Runoff=1.46 cfs 0.158 af

SubcatchmentPS19C: House D of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19D: House C of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19E: House B of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS19F: House A of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS2: Area along Runoff Area=938,365 sf 0.22% Impervious Runoff Depth=2.80"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=34.65 cfs 5.028 af

SubcatchmentPS20: South Portion of Runoff Area=14,275 sf 53.66% Impervious Runoff Depth=4.18"
Tc=6.0 min CN=87 Runoff=1.31 cfs 0.114 af

SubcatchmentPS21: East-Central Portion Runoff Area=219,360 sf 2.18% Impervious Runoff Depth=2.80"
Flow Length=945' Tc=11.7 min CN=73 Runoff=10.58 cfs 1.175 af

SubcatchmentPS22A: Proposed Shared Runoff Area=10,995 sf 75.58% Impervious Runoff Depth=4.73"
Flow Length=705' Tc=10.4 min CN=92 Runoff=0.90 cfs 0.099 af

SubcatchmentPS22B: House of Lot 26 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.020 af

SubcatchmentPS22C: House of Lot 27 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.020 af

SubcatchmentPS23: House of Lot 20 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS24: House of Lot 19 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS25: House of Lot 18 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS26: House of Lot 17 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS27: House of Lot 16 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS28: House of Lot 28 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS29: House of Lot 25 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS3: West Portion of Runoff Area=30,865 sf 38.73% Impervious Runoff Depth=3.77"
Flow Length=570' Tc=10.3 min CN=83 Runoff=2.12 cfs 0.222 af

SubcatchmentPS30: House of Lot 24 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS31: House of Lot 23 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS32: House of Lot 22 Runoff Area=2,450 sf 68.57% Impervious Runoff Depth=4.51"
Tc=6.0 min CN=90 Runoff=0.24 cfs 0.021 af

SubcatchmentPS33: House of Lot 21 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS34: House of Lot 15 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS35: House of Lot 14 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS36: House of Lot 13 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS37: House of Lot 12 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS38: House of Lot 8 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS39: House of Lot 7 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS4: East Portion of Runoff Area=20,515 sf 49.72% Impervious Runoff Depth=4.08"
Flow Length=570' Tc=10.3 min CN=86 Runoff=1.51 cfs 0.160 af

SubcatchmentPS40: House of Lot 6 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS41: House of Lot 5 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS42: House of Lot 4 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS43: House of Lot 3 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS44: House of Lot 2 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS45: House of Lot 1 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS46: House of Lot 11 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS47: House of Lot 10 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.24 cfs 0.021 af

SubcatchmentPS48: Eastern Half of Runoff Area=1,890 sf 72.75% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

SubcatchmentPS49: Relocated Barn of Lot Runoff Area=3,400 sf 74.12% Impervious Runoff Depth=4.73"
Tc=6.0 min CN=92 Runoff=0.34 cfs 0.031 af

SubcatchmentPS4A: Area of Proposed Runoff Area=6,725 sf 3.12% Impervious Runoff Depth=2.99"
Tc=6.0 min CN=75 Runoff=0.45 cfs 0.038 af

SubcatchmentPS5: Area on Northeast Runoff Area=23,375 sf 0.00% Impervious Runoff Depth=2.89"
Tc=6.0 min CN=74 Runoff=1.51 cfs 0.129 af

SubcatchmentPS6: Area East of Runoff Area=145,690 sf 0.96% Impervious Runoff Depth=2.99"
Flow Length=415' Tc=7.6 min CN=75 Runoff=8.94 cfs 0.832 af

SubcatchmentPS7A: Proposed Driveway Runoff Area=10,610 sf 51.13% Impervious Runoff Depth=4.08"
Flow Length=165' Tc=6.4 min CN=86 Runoff=0.93 cfs 0.083 af

Subcatchment PS7B: Proposed Driveway Runoff Area=18,235 sf 37.48% Impervious Runoff Depth=3.77"
Flow Length=575' Tc=17.7 min CN=83 Runoff=0.99 cfs 0.131 af

Subcatchment PS7C: House D of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7D: House C of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7E: House B of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7F: House A of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7G: House A of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7H: House B of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7I: House C of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS7J: House D of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=91 Runoff=0.19 cfs 0.017 af

Subcatchment PS8: Eastern Portion of Runoff Area=806,305 sf 0.00% Impervious Runoff Depth=2.71"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=22.38 cfs 4.180 af

Subcatchment PS9: Southeastern Portion Runoff Area=644,095 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=17.22 cfs 3.228 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.06' Max Vel=1.02 fps Inflow=1.44 cfs 0.128 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.46 cfs 0.128 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.23' Max Vel=2.56 fps Inflow=4.80 cfs 0.586 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=4.00 cfs 0.586 af

Reach ER79: Southern Swale Avg. Flow Depth=1.59' Max Vel=3.05 fps Inflow=65.09 cfs 13.358 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=64.55 cfs 13.358 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.68' Max Vel=3.25 fps Inflow=33.73 cfs 7.236 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=33.62 cfs 7.236 af

Reach PR81: East Portion of Existing Avg. Flow Depth=0.17' Max Vel=2.08 fps Inflow=2.90 cfs 0.869 af
n=0.030 L=760.0' S=0.0204 '/' Capacity=138.56 cfs Outflow=2.80 cfs 0.869 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.08' Storage=24,829 cf Inflow=9.21 cfs 0.874 af
Primary=0.49 cfs 0.385 af Secondary=0.00 cfs 0.000 af Outflow=0.49 cfs 0.385 af

Pond PCB11: Proposed Catch Basin 11 Peak Elev=64.13' Inflow=3.44 cfs 0.581 af
15.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=3.44 cfs 0.581 af

Pond PCB12: Proposed Catch Basin 12 Peak Elev=64.28' Inflow=5.20 cfs 0.564 af
18.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=5.20 cfs 0.564 af

Pond PCB14: Proposed Catch Basin 14 Peak Elev=58.26' Inflow=7.96 cfs 1.177 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0268 '/' Outflow=7.96 cfs 1.177 af

Pond PCB4: Proposed Catch Basin 4 Peak Elev=74.02' Inflow=1.92 cfs 0.162 af
12.0" Round Culvert n=0.013 L=65.0' S=0.0346 '/' Outflow=1.92 cfs 0.162 af

Pond PCB5: Proposed Catch Basin 5 Peak Elev=70.96' Inflow=0.76 cfs 0.066 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0114 '/' Outflow=0.76 cfs 0.066 af

Pond PCB6: Proposed Catch Basin 6 Peak Elev=71.82' Inflow=0.80 cfs 0.070 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0129 '/' Outflow=0.80 cfs 0.070 af

Pond PCB7: Proposed Catch Basin 7 Peak Elev=70.86' Inflow=2.65 cfs 0.241 af
18.0" Round Culvert n=0.013 L=175.0' S=0.0029 '/' Outflow=2.65 cfs 0.241 af

Pond PDMH10: Proposed Manhole 10 Peak Elev=65.93' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=230.0' S=0.0074 '/' Outflow=4.57 cfs 0.403 af

Pond PDMH14A: Proposed Manhole 14A Peak Elev=53.13' Inflow=7.96 cfs 1.177 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0027 '/' Outflow=7.96 cfs 1.177 af

Pond PDMH14B: Proposed Manhole 14B Peak Elev=52.36' Inflow=7.96 cfs 1.177 af
24.0" Round Culvert n=0.013 L=140.0' S=0.0025 '/' Outflow=7.96 cfs 1.177 af

Pond PDMH3A: Proposed Manhole 3A Peak Elev=73.95' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=225.0' S=0.0062 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3B: Proposed Manhole 3B Peak Elev=72.41' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=180.0' S=0.0161 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3C: Proposed Manhole 3C Peak Elev=69.41' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=295.0' S=0.0149 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3D: Proposed Manhole 3D Peak Elev=64.91' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=190.0' S=0.0126 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH3E: Proposed Manhole 3E Peak Elev=62.41' Inflow=0.96 cfs 0.419 af
12.0" Round Culvert n=0.013 L=300.0' S=0.0230 '/' Outflow=0.96 cfs 0.419 af

Pond PDMH6A: Proposed Manhole 6A Peak Elev=71.31' Inflow=0.80 cfs 0.070 af
12.0" Round Culvert n=0.013 L=45.0' S=0.0067 '/' Outflow=0.80 cfs 0.070 af

Pond PDMH8: Proposed Manhole 8 Peak Elev=70.45' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=105.0' S=0.0029 '/' Outflow=4.57 cfs 0.403 af

Pond PDMH8A: Proposed Manhole 8A Peak Elev=69.83' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=4.57 cfs 0.403 af

Pond PDMH9: Proposed Manhole 9 Peak Elev=68.04' Inflow=4.57 cfs 0.403 af
18.0" Round Culvert n=0.013 L=150.0' S=0.0133 '/' Outflow=4.57 cfs 0.403 af

Pond PP100: Stone Storage for House B of Lot Peak Elev=73.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP101: Stone Storage for House C of Lot Peak Elev=74.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=75.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP102: Stone Storage for House D of Lot Peak Elev=74.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP103: Stone Storage for House A of Lot Peak Elev=71.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP104: Stone Storage for House B of Lot Peak Elev=70.83' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP105: Stone Storage for House C of Lot Peak Elev=70.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP106: Stone Storage for House D of Lot Peak Elev=71.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP107: Stone Storage for House A of Lot Peak Elev=68.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP108: Stone Storage for House B of Lot Peak Elev=68.84' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP109: Stone Storage for House C of Lot Peak Elev=66.84' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP110: Stone Storage for House C of Lot Peak Elev=66.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP111: Stone Storage for Lot 26 Peak Elev=59.38' Storage=95 cf Inflow=0.23 cfs 0.020 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.020 af

Pond PP112: Stone Storage for Lot 26 Peak Elev=61.38' Storage=95 cf Inflow=0.23 cfs 0.020 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.020 af

Pond PP151: Swale Along West Portion of Peak Elev=65.91' Storage=148 cf Inflow=3.46 cfs 0.582 af
Outflow=3.44 cfs 0.581 af

Pond PP152: Swale Along East Portion of Peak Elev=65.96' Storage=39 cf Inflow=1.17 cfs 0.161 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0167 '/' Outflow=1.16 cfs 0.161 af

Pond PP153: Swale Along End of Cul-de-sac Peak Elev=61.45' Storage=18 cf Inflow=2.33 cfs 0.202 af
Outflow=2.33 cfs 0.202 af

Pond PP154: Proposed Sediment Forebay Peak Elev=63.42' Storage=10,930 cf Inflow=7.16 cfs 1.190 af
Outflow=6.30 cfs 0.976 af

Pond PP155: Proposed Bioretention Basin Peak Elev=50.72' Storage=29,684 cf Inflow=8.86 cfs 1.264 af
Outflow=0.94 cfs 1.252 af

Pond PP50: Wetlands East of Existing Driveway Peak Elev=91.76' Storage=221 cf Inflow=1.51 cfs 0.129 af
24.0" Round Culvert n=0.025 L=40.0' S=0.0113 '/' Outflow=1.44 cfs 0.128 af

Pond PP52A: Proposed Swale Along West Side Peak Elev=80.71' Storage=103 cf Inflow=2.12 cfs 0.222 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0383 '/' Outflow=2.08 cfs 0.222 af

Pond PP53A: Proposed Swale Along East Side Peak Elev=80.29' Storage=80 cf Inflow=1.51 cfs 0.160 af
Outflow=1.51 cfs 0.159 af

Pond PP54: Proposed Bioretention Basin Peak Elev=77.83' Storage=6,022 cf Inflow=3.90 cfs 0.420 af
Outflow=0.96 cfs 0.419 af

Pond PP55: Proposed Swale Along North Portion Peak Elev=72.38' Storage=6 cf Inflow=0.76 cfs 0.066 af
Outflow=0.76 cfs 0.066 af

Pond PP56: Proposed Swale Along North Peak Elev=73.41' Storage=23 cf Inflow=0.81 cfs 0.070 af
Outflow=0.80 cfs 0.070 af

Pond PP57: Proposed Swale Along South Side Peak Elev=73.44' Storage=599 cf Inflow=1.31 cfs 0.114 af
Outflow=1.15 cfs 0.106 af

Pond PP58: Swale Along Middle-East Portion Peak Elev=76.78' Storage=234 cf Inflow=1.93 cfs 0.166 af
Outflow=1.92 cfs 0.162 af

Pond PP59: Existing Transferance Swale Peak Elev=72.19' Storage=1,778 cf Inflow=4.97 cfs 0.869 af
12.0" Round Culvert n=0.013 L=80.0' S=0.0637 '/' Outflow=2.90 cfs 0.869 af

Pond PP64: Stone Storage for Lot 20 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP65: Stone Storage for Lot 19 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP66: Stone Storage for Lot 18 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP67: Stone Storage for Lot 17 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP68: Stone Storage for Lot 16 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP69: Stone Storage for Lot 28 Peak Elev=65.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP70: Stone Storage for Lot 25 Peak Elev=50.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP71: Stone Storage for Lot 24 Peak Elev=50.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP72: Stone Storage for Lot 23 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP73: Stone Storage for Lot 22 Peak Elev=88.37' Storage=114 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP74: Stone Storage for Lot 21 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP75: Stone Storage for Lot 15 Peak Elev=88.38' Storage=110 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP76: Stone Storage for Lot 14 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP77: Stone Storage for Lot 13 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP78: Stone Storage for Lot 12 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP79: Stone Storage for Lot 8 Peak Elev=88.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP80: Stone Storage for Lot 7 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP81: Stone Storage for Lot 6 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP82: Stone Storage for Lot 5 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP83: Stone Storage for Lot 4 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP84: Stone Storage for Lot 3 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP85: Stone Storage for Lot 2 Peak Elev=88.38' Storage=109 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP86: Stone Storage for Lot 1 Peak Elev=88.31' Storage=88 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=10.0' S=0.0200 '/' Outflow=0.16 cfs 0.021 af

Pond PP87: Stone Storage for Lot 11 Peak Elev=76.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP88: Stone Storage for Lot 10 Peak Elev=76.38' Storage=107 cf Inflow=0.24 cfs 0.021 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.14 cfs 0.021 af

Pond PP89: Stone Storage for the House on Lot Peak Elev=72.84' Storage=70 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP90: Stone Storage for the Barn on Lot 9 Peak Elev=73.01' Storage=180 cf Inflow=0.34 cfs 0.031 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.16 cfs 0.031 af

Pond PP91: Stone Storage for House D of Lot 33 Peak Elev=72.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP92: Stone Storage for House C of Lot 33 Peak Elev=72.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP93: Stone Storage for House B of Lot 33 Peak Elev=72.83' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP94: Stone Storage for House A of Lot 33 Peak Elev=75.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP95: Stone Storage for House A of Lot 32 Peak Elev=76.83' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP96: Stone Storage for House B of Lot 32 Peak Elev=75.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP97: Stone Storage for House C of Lot 32 Peak Elev=74.33' Storage=74 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.13 cfs 0.017 af

Pond PP98: Stone Storage for House D of Lot 32 Peak Elev=74.34' Storage=76 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.13 cfs 0.017 af

Pond PP99: Stone Storage for House A of Lot 31 Peak Elev=72.34' Storage=75 cf Inflow=0.19 cfs 0.017 af
4.0" Round Culvert n=0.010 L=175.0' S=0.0031 '/' Outflow=0.13 cfs 0.017 af

Pond PT1: Proposed Pre-Tx 1 Peak Elev=79.74' Inflow=2.08 cfs 0.222 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0033 '/' Outflow=2.08 cfs 0.222 af

Pond PT13: Proposed Pre-Tx 13 Peak Elev=60.25' Inflow=2.33 cfs 0.202 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0030 '/' Outflow=2.33 cfs 0.202 af

Pond PT2: Proposed Pre-Tx 2 Peak Elev=79.66' Inflow=1.51 cfs 0.159 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0250 '/' Outflow=1.51 cfs 0.159 af

Link L101: Wetlands to the West Inflow=126.19 cfs 24.275 af
Primary=126.19 cfs 24.275 af

Link L102: Flow and Volumes from HousesFlowing into Link L101 Inflow=2.17 cfs 0.317 af
Primary=2.17 cfs 0.317 af

Link L103: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.86 cfs 0.126 af
Primary=0.86 cfs 0.126 af

Link L104: Flow and Volumes from Houses Flowing into Pond PP59 Inflow=0.52 cfs 0.068 af
Primary=0.52 cfs 0.068 af

Link L105: Flow and Volumes from Houses Flowing into Reach ER76 Inflow=1.55 cfs 0.203 af
Primary=1.55 cfs 0.203 af

Link L106: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.51 cfs 0.068 af
Primary=0.51 cfs 0.068 af

Total Runoff Area = 103.899 ac Runoff Volume = 25.008 af Average Runoff Depth = 2.89"
94.96% Pervious = 98.664 ac 5.04% Impervious = 5.236 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS1: Wetlands on Western Runoff Area=556,155 sf 0.44% Impervious Runoff Depth=4.20"
Flow Length=495' Tc=19.4 min CN=74 Runoff=30.88 cfs 4.468 af

SubcatchmentPS10: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=3.88"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=16.62 cfs 2.526 af

SubcatchmentPS11: Southwestern Runoff Area=121,920 sf 0.00% Impervious Runoff Depth=4.09"
Flow Length=765' Tc=17.6 min CN=73 Runoff=6.87 cfs 0.954 af

SubcatchmentPS12: West-Central Portion Runoff Area=192,970 sf 2.95% Impervious Runoff Depth=4.20"
Flow Length=800' Tc=10.8 min CN=74 Runoff=13.82 cfs 1.550 af

SubcatchmentPS13B: Area of Bioretention Runoff Area=15,600 sf 0.00% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=74 Runoff=1.38 cfs 0.125 af

SubcatchmentPS13E: East Portion of Runoff Area=21,120 sf 45.31% Impervious Runoff Depth=5.42"
Flow Length=680' Slope=0.0138 '/' Tc=18.9 min CN=85 Runoff=1.50 cfs 0.219 af

SubcatchmentPS13S: South Portion of Runoff Area=26,510 sf 47.89% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=85 Runoff=2.96 cfs 0.275 af

SubcatchmentPS13SF: Area of Sediment Runoff Area=8,085 sf 0.00% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=74 Runoff=0.72 cfs 0.065 af

SubcatchmentPS13W: West Portion of Runoff Area=90,320 sf 22.64% Impervious Runoff Depth=4.75"
Flow Length=1,125' Slope=0.0124 '/' Tc=29.3 min CN=79 Runoff=4.65 cfs 0.821 af

SubcatchmentPS14: Middle-East Portion Runoff Area=23,645 sf 32.10% Impervious Runoff Depth=5.09"
Tc=6.0 min CN=82 Runoff=2.50 cfs 0.230 af

SubcatchmentPS15: North Portion of Runoff Area=8,640 sf 46.41% Impervious Runoff Depth=5.42"
Tc=6.0 min CN=85 Runoff=0.96 cfs 0.090 af

SubcatchmentPS16: Area South of Runoff Area=51,745 sf 0.00% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=74 Runoff=4.58 cfs 0.416 af

SubcatchmentPS17: North Portion of Runoff Area=8,970 sf 49.33% Impervious Runoff Depth=5.54"
Tc=6.0 min CN=86 Runoff=1.02 cfs 0.095 af

SubcatchmentPS18A: Proposed Driveway Runoff Area=34,870 sf 35.93% Impervious Runoff Depth=5.20"
Flow Length=257' Slope=0.0200 '/' Tc=8.6 min CN=83 Runoff=3.33 cfs 0.347 af

SubcatchmentPS18B: House D of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18C: House C of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18D: House B of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18E: House A of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18F: House A of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18G: House B of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18H: House C of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS18I: House D of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS19A: West Half of Runoff Area=5,205 sf 100.00% Impervious Runoff Depth=6.94"
Flow Length=785' Tc=7.3 min CN=98 Runoff=0.62 cfs 0.069 af

SubcatchmentPS19B: East Half of Runoff Area=21,895 sf 37.09% Impervious Runoff Depth=5.20"
Flow Length=945' Tc=11.2 min CN=83 Runoff=1.88 cfs 0.218 af

SubcatchmentPS19C: House D of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS19D: House C of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS19E: House B of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS19F: House A of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS2: Area along Runoff Area=938,365 sf 0.22% Impervious Runoff Depth=4.09"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=48.53 cfs 7.344 af

SubcatchmentPS20: South Portion of Runoff Area=14,275 sf 53.66% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=87 Runoff=1.64 cfs 0.154 af

SubcatchmentPS21: East-Central Portion Runoff Area=219,360 sf 2.18% Impervious Runoff Depth=4.09"
Flow Length=945' Tc=11.7 min CN=73 Runoff=14.73 cfs 1.717 af

SubcatchmentPS22A: Proposed Shared Runoff Area=10,995 sf 75.58% Impervious Runoff Depth=6.23"
Flow Length=705' Tc=10.4 min CN=92 Runoff=1.11 cfs 0.131 af

SubcatchmentPS22B: House of Lot 26 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.28 cfs 0.027 af

SubcatchmentPS22C: House of Lot 27 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.28 cfs 0.027 af

SubcatchmentPS23: House of Lot 20 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS24: House of Lot 19 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS25: House of Lot 18 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS26: House of Lot 17 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS27: House of Lot 16 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS28: House of Lot 28 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS29: House of Lot 25 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS3: West Portion of Runoff Area=30,865 sf 38.73% Impervious Runoff Depth=5.20"
Flow Length=570' Tc=10.3 min CN=83 Runoff=2.74 cfs 0.307 af

SubcatchmentPS30: House of Lot 24 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS31: House of Lot 23 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS32: House of Lot 22 Runoff Area=2,450 sf 68.57% Impervious Runoff Depth=6.00"
Tc=6.0 min CN=90 Runoff=0.29 cfs 0.028 af

SubcatchmentPS33: House of Lot 21 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS34: House of Lot 15 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS35: House of Lot 14 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS36: House of Lot 13 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS37: House of Lot 12 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS38: House of Lot 8 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS39: House of Lot 7 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS4: East Portion of Runoff Area=20,515 sf 49.72% Impervious Runoff Depth=5.54"
Flow Length=570' Tc=10.3 min CN=86 Runoff=1.92 cfs 0.217 af

SubcatchmentPS40: House of Lot 6 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS41: House of Lot 5 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS42: House of Lot 4 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS43: House of Lot 3 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS44: House of Lot 2 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS45: House of Lot 1 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS46: House of Lot 11 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS47: House of Lot 10 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.29 cfs 0.028 af

SubcatchmentPS48: Eastern Half of Runoff Area=1,890 sf 72.75% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

SubcatchmentPS49: Relocated Barn of Lot Runoff Area=3,400 sf 74.12% Impervious Runoff Depth=6.23"
Tc=6.0 min CN=92 Runoff=0.42 cfs 0.041 af

SubcatchmentPS4A: Area of Proposed Runoff Area=6,725 sf 3.12% Impervious Runoff Depth=4.31"
Tc=6.0 min CN=75 Runoff=0.61 cfs 0.055 af

SubcatchmentPS5: Area on Northeast Runoff Area=23,375 sf 0.00% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=74 Runoff=2.07 cfs 0.188 af

SubcatchmentPS6: Area East of Runoff Area=145,690 sf 0.96% Impervious Runoff Depth=4.31"
Flow Length=415' Tc=7.6 min CN=75 Runoff=12.20 cfs 1.201 af

SubcatchmentPS7A: Proposed Driveway Runoff Area=10,610 sf 51.13% Impervious Runoff Depth=5.54"
Flow Length=165' Tc=6.4 min CN=86 Runoff=1.18 cfs 0.112 af

Subcatchment PS7B: Proposed Driveway Runoff Area=18,235 sf 37.48% Impervious Runoff Depth=5.20"
Flow Length=575' Tc=17.7 min CN=83 Runoff=1.28 cfs 0.181 af

Subcatchment PS7C: House D of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7D: House C of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7E: House B of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7F: House A of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7G: House A of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7H: House B of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7I: House C of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS7J: House D of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=6.12"
Tc=6.0 min CN=91 Runoff=0.23 cfs 0.022 af

Subcatchment PS8: Eastern Portion of Runoff Area=806,305 sf 0.00% Impervious Runoff Depth=3.98"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=31.83 cfs 6.144 af

Subcatchment PS9: Southeastern Portion Runoff Area=644,095 sf 0.00% Impervious Runoff Depth=3.88"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=24.67 cfs 4.775 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.08' Max Vel=1.24 fps Inflow=1.99 cfs 0.186 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.74 cfs 0.186 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.27' Max Vel=2.76 fps Inflow=6.07 cfs 0.798 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=5.17 cfs 0.798 af

Reach ER79: Southern Swale Avg. Flow Depth=1.88' Max Vel=3.34 fps Inflow=91.72 cfs 19.686 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=91.08 cfs 19.686 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.80' Max Vel=3.55 fps Inflow=46.97 cfs 10.676 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=46.81 cfs 10.676 af

Reach PR81: East Portion of Existing Avg. Flow Depth=0.19' Max Vel=2.21 fps Inflow=3.35 cfs 1.447 af
n=0.030 L=760.0' S=0.0204 '/' Capacity=138.56 cfs Outflow=3.30 cfs 1.447 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.36' Storage=27,836 cf Inflow=12.51 cfs 1.257 af
Primary=1.30 cfs 0.767 af Secondary=0.00 cfs 0.000 af Outflow=1.30 cfs 0.767 af

Pond PCB11: Proposed Catch Basin 11 Peak Elev=64.39' Inflow=4.60 cfs 0.820 af
15.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=4.60 cfs 0.820 af

Pond PCB12: Proposed Catch Basin 12 Peak Elev=64.54' Inflow=6.68 cfs 0.776 af
18.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=6.68 cfs 0.776 af

Pond PCB14: Proposed Catch Basin 14 Peak Elev=58.46' Inflow=10.09 cfs 1.722 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0268 '/' Outflow=10.09 cfs 1.722 af

Pond PCB4: Proposed Catch Basin 4 Peak Elev=74.18' Inflow=2.49 cfs 0.226 af
12.0" Round Culvert n=0.013 L=65.0' S=0.0346 '/' Outflow=2.49 cfs 0.226 af

Pond PCB5: Proposed Catch Basin 5 Peak Elev=71.19' Inflow=0.96 cfs 0.090 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0114 '/' Outflow=0.96 cfs 0.090 af

Pond PCB6: Proposed Catch Basin 6 Peak Elev=71.90' Inflow=1.02 cfs 0.095 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0129 '/' Outflow=1.02 cfs 0.095 af

Pond PCB7: Proposed Catch Basin 7 Peak Elev=71.11' Inflow=3.36 cfs 0.330 af
18.0" Round Culvert n=0.013 L=175.0' S=0.0029 '/' Outflow=3.36 cfs 0.330 af

Pond PDMH10: Proposed Manhole 10 Peak Elev=66.15' Inflow=5.84 cfs 0.557 af
18.0" Round Culvert n=0.013 L=230.0' S=0.0074 '/' Outflow=5.84 cfs 0.557 af

Pond PDMH14A: Proposed Manhole 14A Peak Elev=53.45' Inflow=10.09 cfs 1.722 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0027 '/' Outflow=10.09 cfs 1.722 af

Pond PDMH14B: Proposed Manhole 14B Peak Elev=52.63' Inflow=10.09 cfs 1.722 af
24.0" Round Culvert n=0.013 L=140.0' S=0.0025 '/' Outflow=10.09 cfs 1.722 af

Pond PDMH3A: Proposed Manhole 3A Peak Elev=73.98' Inflow=1.08 cfs 0.578 af
12.0" Round Culvert n=0.013 L=225.0' S=0.0062 '/' Outflow=1.08 cfs 0.578 af

Pond PDMH3B: Proposed Manhole 3B Peak Elev=72.44' Inflow=1.08 cfs 0.578 af
12.0" Round Culvert n=0.013 L=180.0' S=0.0161 '/' Outflow=1.08 cfs 0.578 af

Pond PDMH3C: Proposed Manhole 3C Peak Elev=69.44' Inflow=1.08 cfs 0.578 af
12.0" Round Culvert n=0.013 L=295.0' S=0.0149 '/' Outflow=1.08 cfs 0.578 af

Pond PDMH3D: Proposed Manhole 3D Peak Elev=64.94' Inflow=1.08 cfs 0.578 af
12.0" Round Culvert n=0.013 L=190.0' S=0.0126 '/' Outflow=1.08 cfs 0.578 af

Pond PDMH3E: Proposed Manhole 3E Peak Elev=62.44' Inflow=1.08 cfs 0.578 af
12.0" Round Culvert n=0.013 L=300.0' S=0.0230 '/' Outflow=1.08 cfs 0.578 af

Pond PDMH6A: Proposed Manhole 6A Peak Elev=71.44' Inflow=1.02 cfs 0.095 af
12.0" Round Culvert n=0.013 L=45.0' S=0.0067 '/' Outflow=1.02 cfs 0.095 af

Pond PDMH8: Proposed Manhole 8 Peak Elev=70.71' Inflow=5.84 cfs 0.557 af
18.0" Round Culvert n=0.013 L=105.0' S=0.0029 '/' Outflow=5.84 cfs 0.557 af

Pond PDMH8A: Proposed Manhole 8A Peak Elev=70.03' Inflow=5.84 cfs 0.557 af
18.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=5.84 cfs 0.557 af

Pond PDMH9: Proposed Manhole 9 Peak Elev=68.23' Inflow=5.84 cfs 0.557 af
18.0" Round Culvert n=0.013 L=150.0' S=0.0133 '/' Outflow=5.84 cfs 0.557 af

Pond PP100: Stone Storage for House B of Lot Peak Elev=73.41' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP101: Stone Storage for House C of Lot Peak Elev=74.39' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=75.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP102: Stone Storage for House D of Lot Peak Elev=74.40' Storage=90 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP103: Stone Storage for House A of Lot Peak Elev=71.40' Storage=90 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP104: Stone Storage for House B of Lot Peak Elev=70.89' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP105: Stone Storage for House C of Lot Peak Elev=70.41' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP106: Stone Storage for House D of Lot Peak Elev=71.41' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP107: Stone Storage for House A of Lot Peak Elev=68.41' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP108: Stone Storage for House B of Lot Peak Elev=68.91' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP109: Stone Storage for House C of Lot Peak Elev=66.91' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP110: Stone Storage for House C of Lot Peak Elev=66.41' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP111: Stone Storage for Lot 26 Peak Elev=59.48' Storage=121 cf Inflow=0.28 cfs 0.027 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.027 af

Pond PP112: Stone Storage for Lot 26 Peak Elev=61.48' Storage=121 cf Inflow=0.28 cfs 0.027 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.027 af

Pond PP151: Swale Along West Portion of Peak Elev=66.14' Storage=246 cf Inflow=4.65 cfs 0.821 af
Outflow=4.60 cfs 0.820 af

Pond PP152: Swale Along East Portion of Peak Elev=66.05' Storage=53 cf Inflow=1.50 cfs 0.219 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0167 '/' Outflow=1.49 cfs 0.219 af

Pond PP153: Swale Along End of Cul-de-sac Peak Elev=61.48' Storage=22 cf Inflow=2.96 cfs 0.275 af
Outflow=2.96 cfs 0.275 af

Pond PP154: Proposed Sediment Forebay Peak Elev=63.57' Storage=11,550 cf Inflow=9.44 cfs 1.661 af
Outflow=8.11 cfs 1.447 af

Pond PP155: Proposed Bioretention Basin Peak Elev=51.52' Storage=41,029 cf Inflow=11.34 cfs 1.847 af
Outflow=1.63 cfs 1.835 af

Pond PP50: Wetlands East of Existing Driveway Peak Elev=91.88' Storage=260 cf Inflow=2.07 cfs 0.188 af
24.0" Round Culvert n=0.025 L=40.0' S=0.0113 '/' Outflow=1.99 cfs 0.186 af

Pond PP52A: Proposed Swale Along West Side Peak Elev=80.88' Storage=154 cf Inflow=2.74 cfs 0.307 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0383 '/' Outflow=2.64 cfs 0.307 af

Pond PP53A: Proposed Swale Along East Side Peak Elev=80.33' Storage=93 cf Inflow=1.92 cfs 0.217 af
Outflow=1.91 cfs 0.217 af

Pond PP54: Proposed Bioretention Basin Peak Elev=78.58' Storage=8,054 cf Inflow=4.96 cfs 0.579 af
Outflow=1.08 cfs 0.578 af

Pond PP55: Proposed Swale Along North Portion Peak Elev=72.42' Storage=8 cf Inflow=0.96 cfs 0.090 af
Outflow=0.96 cfs 0.090 af

Pond PP56: Proposed Swale Along North Peak Elev=73.43' Storage=26 cf Inflow=1.02 cfs 0.095 af
Outflow=1.02 cfs 0.095 af

Pond PP57: Proposed Swale Along South Side Peak Elev=73.48' Storage=644 cf Inflow=1.64 cfs 0.154 af
Outflow=1.46 cfs 0.146 af

Pond PP58: Swale Along Middle-East Portion Peak Elev=76.83' Storage=248 cf Inflow=2.50 cfs 0.230 af
Outflow=2.49 cfs 0.226 af

Pond PP59: Existing Transferance Swale Peak Elev=72.39' Storage=2,698 cf Inflow=6.59 cfs 1.448 af
12.0" Round Culvert n=0.013 L=80.0' S=0.0637 '/' Outflow=3.35 cfs 1.447 af

Pond PP64: Stone Storage for Lot 20 Peak Elev=65.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP65: Stone Storage for Lot 19 Peak Elev=65.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP66: Stone Storage for Lot 18 Peak Elev=65.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP67: Stone Storage for Lot 17 Peak Elev=65.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP68: Stone Storage for Lot 16 Peak Elev=65.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP69: Stone Storage for Lot 28 Peak Elev=65.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP70: Stone Storage for Lot 25 Peak Elev=50.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP71: Stone Storage for Lot 24 Peak Elev=50.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP72: Stone Storage for Lot 23 Peak Elev=88.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP73: Stone Storage for Lot 22 Peak Elev=88.47' Storage=144 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP74: Stone Storage for Lot 21 Peak Elev=88.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP75: Stone Storage for Lot 15 Peak Elev=88.48' Storage=139 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP76: Stone Storage for Lot 14 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP77: Stone Storage for Lot 13 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP78: Stone Storage for Lot 12 Peak Elev=88.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP79: Stone Storage for Lot 8 Peak Elev=88.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP80: Stone Storage for Lot 7 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP81: Stone Storage for Lot 6 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP82: Stone Storage for Lot 5 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP83: Stone Storage for Lot 4 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP84: Stone Storage for Lot 3 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP85: Stone Storage for Lot 2 Peak Elev=88.48' Storage=137 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP86: Stone Storage for Lot 1 Peak Elev=88.38' Storage=106 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=10.0' S=0.0200 '/' Outflow=0.19 cfs 0.028 af

Pond PP87: Stone Storage for Lot 11 Peak Elev=76.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP88: Stone Storage for Lot 10 Peak Elev=76.48' Storage=135 cf Inflow=0.29 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP89: Stone Storage for the House on Lot Peak Elev=72.91' Storage=85 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP90: Stone Storage for the Barn on Lot 9 Peak Elev=73.15' Storage=229 cf Inflow=0.42 cfs 0.041 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.18 cfs 0.041 af

Pond PP91: Stone Storage for House D of Lot 33 Peak Elev=72.39' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP92: Stone Storage for House C of Lot 33 Peak Elev=72.39' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP93: Stone Storage for House B of Lot 33 Peak Elev=72.89' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP94: Stone Storage for House A of Lot 33 Peak Elev=75.39' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP95: Stone Storage for House A of Lot 32 Peak Elev=76.89' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP96: Stone Storage for House B of Lot 32 Peak Elev=75.39' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP97: Stone Storage for House C of Lot 32 Peak Elev=74.39' Storage=88 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.16 cfs 0.022 af

Pond PP98: Stone Storage for House D of Lot 32 Peak Elev=74.41' Storage=91 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.022 af

Pond PP99: Stone Storage for House A of Lot 31 Peak Elev=72.40' Storage=90 cf Inflow=0.23 cfs 0.022 af
4.0" Round Culvert n=0.010 L=175.0' S=0.0031 '/' Outflow=0.15 cfs 0.022 af

Pond PT1: Proposed Pre-Tx 1 Peak Elev=80.09' Inflow=2.64 cfs 0.307 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0033 '/' Outflow=2.64 cfs 0.307 af

Pond PT13: Proposed Pre-Tx 13 Peak Elev=60.63' Inflow=2.96 cfs 0.275 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0030 '/' Outflow=2.96 cfs 0.275 af

Pond PT2: Proposed Pre-Tx 2 Peak Elev=79.76' Inflow=1.91 cfs 0.217 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0250 '/' Outflow=1.91 cfs 0.217 af

Link L101: Wetlands to the West Inflow=177.23 cfs 35.527 af
Primary=177.23 cfs 35.527 af

Link L102: Flow and Volumes from HousesFlowing into Link L101 Inflow=2.32 cfs 0.420 af
Primary=2.32 cfs 0.420 af

Link L103: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.92 cfs 0.167 af
Primary=0.92 cfs 0.167 af

Link L104: Flow and Volumes from Houses Flowing into Pond PP59 Inflow=0.63 cfs 0.090 af
Primary=0.63 cfs 0.090 af

Link L105: Flow and Volumes from Houses Flowing into Reach ER76 Inflow=1.85 cfs 0.269 af
Primary=1.85 cfs 0.269 af

Link L106: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.60 cfs 0.090 af
Primary=0.60 cfs 0.090 af

Total Runoff Area = 103.899 ac Runoff Volume = 36.260 af Average Runoff Depth = 4.19"
94.96% Pervious = 98.664 ac 5.04% Impervious = 5.236 ac

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS1: Wetlands on Western Runoff Area=556,155 sf 0.44% Impervious Runoff Depth=5.47"
Flow Length=495' Tc=19.4 min CN=74 Runoff=38.56 cfs 5.815 af

SubcatchmentPS10: Southern Portion of Runoff Area=340,660 sf 0.00% Impervious Runoff Depth=5.10"
Flow Length=1,120' Tc=21.5 min CN=71 Runoff=21.10 cfs 3.327 af

SubcatchmentPS11: Southwestern Runoff Area=121,920 sf 0.00% Impervious Runoff Depth=5.35"
Flow Length=765' Tc=17.6 min CN=73 Runoff=8.62 cfs 1.247 af

SubcatchmentPS12: West-Central Portion Runoff Area=192,970 sf 2.95% Impervious Runoff Depth=5.47"
Flow Length=800' Tc=10.8 min CN=74 Runoff=17.19 cfs 2.018 af

SubcatchmentPS13B: Area of Bioretention Runoff Area=15,600 sf 0.00% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=74 Runoff=1.71 cfs 0.163 af

SubcatchmentPS13E: East Portion of Runoff Area=21,120 sf 45.31% Impervious Runoff Depth=6.79"
Flow Length=680' Slope=0.0138 '/' Tc=18.9 min CN=85 Runoff=1.78 cfs 0.274 af

SubcatchmentPS13S: South Portion of Runoff Area=26,510 sf 47.89% Impervious Runoff Depth=6.79"
Tc=6.0 min CN=85 Runoff=3.50 cfs 0.345 af

SubcatchmentPS13SF: Area of Sediment Runoff Area=8,085 sf 0.00% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=74 Runoff=0.89 cfs 0.085 af

SubcatchmentPS13W: West Portion of Runoff Area=90,320 sf 22.64% Impervious Runoff Depth=6.07"
Flow Length=1,125' Slope=0.0124 '/' Tc=29.3 min CN=79 Runoff=5.69 cfs 1.049 af

SubcatchmentPS14: Middle-East Portion Runoff Area=23,645 sf 32.10% Impervious Runoff Depth=6.43"
Tc=6.0 min CN=82 Runoff=2.99 cfs 0.291 af

SubcatchmentPS15: North Portion of Runoff Area=8,640 sf 46.41% Impervious Runoff Depth=6.79"
Tc=6.0 min CN=85 Runoff=1.14 cfs 0.112 af

SubcatchmentPS16: Area South of Runoff Area=51,745 sf 0.00% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=74 Runoff=5.67 cfs 0.541 af

SubcatchmentPS17: North Portion of Runoff Area=8,970 sf 49.33% Impervious Runoff Depth=6.91"
Tc=6.0 min CN=86 Runoff=1.20 cfs 0.119 af

SubcatchmentPS18A: Proposed Driveway Runoff Area=34,870 sf 35.93% Impervious Runoff Depth=6.55"
Flow Length=257' Slope=0.0200 '/' Tc=8.6 min CN=83 Runoff=3.98 cfs 0.437 af

SubcatchmentPS18B: House D of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18C: House C of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18D: House B of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18E: House A of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18F: House A of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18G: House B of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18H: House C of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS18I: House D of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS19A: West Half of Runoff Area=5,205 sf 100.00% Impervious Runoff Depth=8.36"
Flow Length=785' Tc=7.3 min CN=98 Runoff=0.71 cfs 0.083 af

SubcatchmentPS19B: East Half of Runoff Area=21,895 sf 37.09% Impervious Runoff Depth=6.55"
Flow Length=945' Tc=11.2 min CN=83 Runoff=2.25 cfs 0.274 af

SubcatchmentPS19C: House D of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS19D: House C of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS19E: House B of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS19F: House A of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

SubcatchmentPS2: Area along Runoff Area=938,365 sf 0.22% Impervious Runoff Depth=5.35"
Flow Length=2,265' Tc=21.2 min CN=73 Runoff=60.96 cfs 9.595 af

SubcatchmentPS20: South Portion of Runoff Area=14,275 sf 53.66% Impervious Runoff Depth=7.03"
Tc=6.0 min CN=87 Runoff=1.93 cfs 0.192 af

SubcatchmentPS21: East-Central Portion Runoff Area=219,360 sf 2.18% Impervious Runoff Depth=5.35"
Flow Length=945' Tc=11.7 min CN=73 Runoff=18.42 cfs 2.243 af

SubcatchmentPS22A: Proposed Shared Runoff Area=10,995 sf 75.58% Impervious Runoff Depth=7.64"
Flow Length=705' Tc=10.4 min CN=92 Runoff=1.29 cfs 0.161 af

SubcatchmentPS22B: House of Lot 26 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.32 cfs 0.033 af

SubcatchmentPS22C: House of Lot 27 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.32 cfs 0.033 af

SubcatchmentPS23: House of Lot 20 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS24: House of Lot 19 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS25: House of Lot 18 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS26: House of Lot 17 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS27: House of Lot 16 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS28: House of Lot 28 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS29: House of Lot 25 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS3: West Portion of Runoff Area=30,865 sf 38.73% Impervious Runoff Depth=6.55"
Flow Length=570' Tc=10.3 min CN=83 Runoff=3.28 cfs 0.387 af

SubcatchmentPS30: House of Lot 24 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS31: House of Lot 23 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS32: House of Lot 22 Runoff Area=2,450 sf 68.57% Impervious Runoff Depth=7.40"
Tc=6.0 min CN=90 Runoff=0.34 cfs 0.035 af

SubcatchmentPS33: House of Lot 21 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS34: House of Lot 15 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS35: House of Lot 14 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS36: House of Lot 13 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS37: House of Lot 12 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS38: House of Lot 8 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS39: House of Lot 7 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS4: East Portion of Runoff Area=20,515 sf 49.72% Impervious Runoff Depth=6.91"
Flow Length=570' Tc=10.3 min CN=86 Runoff=2.27 cfs 0.271 af

SubcatchmentPS40: House of Lot 6 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS41: House of Lot 5 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS42: House of Lot 4 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS43: House of Lot 3 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS44: House of Lot 2 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.035 af

SubcatchmentPS45: House of Lot 1 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS46: House of Lot 11 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS47: House of Lot 10 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.34 cfs 0.034 af

SubcatchmentPS48: Eastern Half of Runoff Area=1,890 sf 72.75% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.027 af

SubcatchmentPS49: Relocated Barn of Lot Runoff Area=3,400 sf 74.12% Impervious Runoff Depth=7.64"
Tc=6.0 min CN=92 Runoff=0.48 cfs 0.050 af

SubcatchmentPS4A: Area of Proposed Runoff Area=6,725 sf 3.12% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=75 Runoff=0.75 cfs 0.072 af

SubcatchmentPS5: Area on Northeast Runoff Area=23,375 sf 0.00% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=74 Runoff=2.56 cfs 0.244 af

SubcatchmentPS6: Area East of Runoff Area=145,690 sf 0.96% Impervious Runoff Depth=5.59"
Flow Length=415' Tc=7.6 min CN=75 Runoff=15.07 cfs 1.557 af

SubcatchmentPS7A: Proposed Driveway Runoff Area=10,610 sf 51.13% Impervious Runoff Depth=6.91"
Flow Length=165' Tc=6.4 min CN=86 Runoff=1.39 cfs 0.140 af

Subcatchment PS7B: Proposed Driveway Runoff Area=18,235 sf 37.48% Impervious Runoff Depth=6.55"
Flow Length=575' Tc=17.7 min CN=83 Runoff=1.54 cfs 0.229 af

Subcatchment PS7C: House D of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7D: House C of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7E: House B of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7F: House A of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7G: House A of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7H: House B of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7I: House C of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS7J: House D of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=7.52"
Tc=6.0 min CN=91 Runoff=0.27 cfs 0.028 af

Subcatchment PS8: Eastern Portion of Runoff Area=806,305 sf 0.00% Impervious Runoff Depth=5.22"
Flow Length=1,130' Tc=35.3 min CN=72 Runoff=40.34 cfs 8.059 af

Subcatchment PS9: Southeastern Portion Runoff Area=644,095 sf 0.00% Impervious Runoff Depth=5.10"
Flow Length=2,380' Tc=35.4 min CN=71 Runoff=31.44 cfs 6.290 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.10' Max Vel=1.39 fps Inflow=2.47 cfs 0.243 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=1.02 cfs 0.243 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.30' Max Vel=2.87 fps Inflow=6.93 cfs 0.997 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=6.03 cfs 0.997 af

Reach ER79: Southern Swale Avg. Flow Depth=2.10' Max Vel=3.55 fps Inflow=115.55 cfs 25.838 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=114.90 cfs 25.838 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.88' Max Vel=3.76 fps Inflow=58.92 cfs 14.010 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=58.69 cfs 14.010 af

Reach PR81: East Portion of Existing Avg. Flow Depth=0.22' Max Vel=2.37 fps Inflow=4.04 cfs 2.004 af
n=0.030 L=760.0' S=0.0204 '/' Capacity=138.56 cfs Outflow=4.04 cfs 2.004 af

Pond EP51: Existing Pond Along Existing Peak Elev=76.75' Storage=32,565 cf Inflow=15.37 cfs 1.626 af
Primary=2.44 cfs 1.136 af Secondary=0.00 cfs 0.000 af Outflow=2.44 cfs 1.136 af

Pond PCB11: Proposed Catch Basin 11 Peak Elev=64.87' Inflow=5.59 cfs 1.048 af
15.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=5.59 cfs 1.048 af

Pond PCB12: Proposed Catch Basin 12 Peak Elev=64.81' Inflow=7.95 cfs 0.976 af
18.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=7.95 cfs 0.976 af

Pond PCB14: Proposed Catch Basin 14 Peak Elev=58.61' Inflow=11.76 cfs 2.239 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0268 '/' Outflow=11.76 cfs 2.239 af

Pond PCB4: Proposed Catch Basin 4 Peak Elev=74.36' Inflow=2.96 cfs 0.287 af
12.0" Round Culvert n=0.013 L=65.0' S=0.0346 '/' Outflow=2.96 cfs 0.287 af

Pond PCB5: Proposed Catch Basin 5 Peak Elev=71.46' Inflow=1.14 cfs 0.112 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0114 '/' Outflow=1.14 cfs 0.112 af

Pond PCB6: Proposed Catch Basin 6 Peak Elev=72.00' Inflow=1.20 cfs 0.118 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0129 '/' Outflow=1.20 cfs 0.118 af

Pond PCB7: Proposed Catch Basin 7 Peak Elev=71.37' Inflow=3.97 cfs 0.414 af
18.0" Round Culvert n=0.013 L=175.0' S=0.0029 '/' Outflow=3.97 cfs 0.414 af

Pond PDMH10: Proposed Manhole 10 Peak Elev=66.38' Inflow=6.93 cfs 0.701 af
18.0" Round Culvert n=0.013 L=230.0' S=0.0074 '/' Outflow=6.93 cfs 0.701 af

Pond PDMH14A: Proposed Manhole 14A Peak Elev=53.73' Inflow=11.76 cfs 2.239 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0027 '/' Outflow=11.76 cfs 2.239 af

Pond PDMH14B: Proposed Manhole 14B Peak Elev=52.84' Inflow=11.76 cfs 2.239 af
24.0" Round Culvert n=0.013 L=140.0' S=0.0025 '/' Outflow=11.76 cfs 2.239 af

Pond PDMH3A: Proposed Manhole 3A Peak Elev=74.11' Inflow=1.50 cfs 0.728 af
12.0" Round Culvert n=0.013 L=225.0' S=0.0062 '/' Outflow=1.50 cfs 0.728 af

Pond PDMH3B: Proposed Manhole 3B Peak Elev=72.55' Inflow=1.50 cfs 0.728 af
12.0" Round Culvert n=0.013 L=180.0' S=0.0161 '/' Outflow=1.50 cfs 0.728 af

Pond PDMH3C: Proposed Manhole 3C Peak Elev=69.55' Inflow=1.50 cfs 0.728 af
12.0" Round Culvert n=0.013 L=295.0' S=0.0149 '/' Outflow=1.50 cfs 0.728 af

Pond PDMH3D: Proposed Manhole 3D Peak Elev=65.05' Inflow=1.50 cfs 0.728 af
12.0" Round Culvert n=0.013 L=190.0' S=0.0126 '/' Outflow=1.50 cfs 0.728 af

Pond PDMH3E: Proposed Manhole 3E Peak Elev=62.55' Inflow=1.50 cfs 0.728 af
12.0" Round Culvert n=0.013 L=300.0' S=0.0230 '/' Outflow=1.50 cfs 0.728 af

Pond PDMH6A: Proposed Manhole 6A Peak Elev=71.60' Inflow=1.20 cfs 0.118 af
12.0" Round Culvert n=0.013 L=45.0' S=0.0067 '/' Outflow=1.20 cfs 0.118 af

Pond PDMH8: Proposed Manhole 8 Peak Elev=70.99' Inflow=6.93 cfs 0.701 af
18.0" Round Culvert n=0.013 L=105.0' S=0.0029 '/' Outflow=6.93 cfs 0.701 af

Pond PDMH8A: Proposed Manhole 8A Peak Elev=70.21' Inflow=6.93 cfs 0.701 af
18.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=6.93 cfs 0.701 af

Pond PDMH9: Proposed Manhole 9 Peak Elev=68.40' Inflow=6.93 cfs 0.701 af
18.0" Round Culvert n=0.013 L=150.0' S=0.0133 '/' Outflow=6.93 cfs 0.701 af

Pond PP100: Stone Storage for House B of Lot Peak Elev=73.49' Storage=111 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP101: Stone Storage for House C of Lot Peak Elev=74.47' Storage=105 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=75.0' S=0.0033 '/' Outflow=0.16 cfs 0.028 af

Pond PP102: Stone Storage for House D of Lot Peak Elev=74.48' Storage=107 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.16 cfs 0.028 af

Pond PP103: Stone Storage for House A of Lot Peak Elev=71.48' Storage=107 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.16 cfs 0.028 af

Pond PP104: Stone Storage for House B of Lot Peak Elev=70.96' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP105: Stone Storage for House C of Lot Peak Elev=70.49' Storage=109 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP106: Stone Storage for House D of Lot Peak Elev=71.49' Storage=111 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP107: Stone Storage for House A of Lot Peak Elev=68.49' Storage=111 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP108: Stone Storage for House B of Lot Peak Elev=68.99' Storage=111 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP109: Stone Storage for House C of Lot Peak Elev=66.99' Storage=111 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP110: Stone Storage for House C of Lot Peak Elev=66.49' Storage=109 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP111: Stone Storage for Lot 26 Peak Elev=59.58' Storage=144 cf Inflow=0.32 cfs 0.033 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.033 af

Pond PP112: Stone Storage for Lot 26 Peak Elev=61.58' Storage=144 cf Inflow=0.32 cfs 0.033 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.033 af

Pond PP151: Swale Along West Portion of Peak Elev=66.38' Storage=388 cf Inflow=5.69 cfs 1.049 af
Outflow=5.59 cfs 1.048 af

Pond PP152: Swale Along East Portion of Peak Elev=66.13' Storage=67 cf Inflow=1.78 cfs 0.274 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0167 '/' Outflow=1.77 cfs 0.274 af

Pond PP153: Swale Along End of Cul-de-sac Peak Elev=61.51' Storage=25 cf Inflow=3.50 cfs 0.345 af
Outflow=3.49 cfs 0.345 af

Pond PP154: Proposed Sediment Forebay Peak Elev=63.73' Storage=12,205 cf Inflow=11.41 cfs 2.108 af
Outflow=9.60 cfs 1.894 af

Pond PP155: Proposed Bioretention Basin Peak Elev=51.87' Storage=46,241 cf Inflow=13.32 cfs 2.402 af
Outflow=4.53 cfs 2.389 af

Pond PP50: Wetlands East of Existing Driveway Peak Elev=91.96' Storage=292 cf Inflow=2.56 cfs 0.244 af
24.0" Round Culvert n=0.025 L=40.0' S=0.0113 '/' Outflow=2.47 cfs 0.243 af

Pond PP52A: Proposed Swale Along West Side Peak Elev=81.07' Storage=220 cf Inflow=3.28 cfs 0.387 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0383 '/' Outflow=3.09 cfs 0.387 af

Pond PP53A: Proposed Swale Along East Side Peak Elev=80.36' Storage=104 cf Inflow=2.27 cfs 0.271 af
Outflow=2.26 cfs 0.271 af

Pond PP54: Proposed Bioretention Basin Peak Elev=79.09' Storage=9,771 cf Inflow=5.82 cfs 0.729 af
Outflow=1.50 cfs 0.728 af

Pond PP55: Proposed Swale Along North Portion Peak Elev=72.44' Storage=9 cf Inflow=1.14 cfs 0.112 af
Outflow=1.14 cfs 0.112 af

Pond PP56: Proposed Swale Along North Peak Elev=73.46' Storage=28 cf Inflow=1.20 cfs 0.119 af
Outflow=1.20 cfs 0.118 af

Pond PP57: Proposed Swale Along South Side Peak Elev=73.52' Storage=682 cf Inflow=1.93 cfs 0.192 af
Outflow=1.72 cfs 0.184 af

Pond PP58: Swale Along Middle-East Portion Peak Elev=76.89' Storage=264 cf Inflow=2.99 cfs 0.291 af
Outflow=2.96 cfs 0.287 af

Pond PP59: Existing Transferance Swale Peak Elev=72.74' Storage=5,124 cf Inflow=8.03 cfs 2.005 af
12.0" Round Culvert n=0.013 L=80.0' S=0.0637 '/' Outflow=4.04 cfs 2.004 af

Pond PP64: Stone Storage for Lot 20 Peak Elev=65.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP65: Stone Storage for Lot 19 Peak Elev=65.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP66: Stone Storage for Lot 18 Peak Elev=65.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP67: Stone Storage for Lot 17 Peak Elev=65.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP68: Stone Storage for Lot 16 Peak Elev=65.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP69: Stone Storage for Lot 28 Peak Elev=65.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP70: Stone Storage for Lot 25 Peak Elev=50.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP71: Stone Storage for Lot 24 Peak Elev=50.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP72: Stone Storage for Lot 23 Peak Elev=88.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP73: Stone Storage for Lot 22 Peak Elev=88.56' Storage=172 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.16 cfs 0.035 af

Pond PP74: Stone Storage for Lot 21 Peak Elev=88.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP75: Stone Storage for Lot 15 Peak Elev=88.58' Storage=166 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.16 cfs 0.035 af

Pond PP76: Stone Storage for Lot 14 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP77: Stone Storage for Lot 13 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP78: Stone Storage for Lot 12 Peak Elev=88.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP79: Stone Storage for Lot 8 Peak Elev=88.57' Storage=161 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.034 af

Pond PP80: Stone Storage for Lot 7 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP81: Stone Storage for Lot 6 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP82: Stone Storage for Lot 5 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP83: Stone Storage for Lot 4 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP84: Stone Storage for Lot 3 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP85: Stone Storage for Lot 2 Peak Elev=88.57' Storage=164 cf Inflow=0.34 cfs 0.035 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.17 cfs 0.035 af

Pond PP86: Stone Storage for Lot 1 Peak Elev=88.44' Storage=123 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=10.0' S=0.0200 '/' Outflow=0.22 cfs 0.034 af

Pond PP87: Stone Storage for Lot 11 Peak Elev=76.78' Storage=220 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.16 cfs 0.034 af

Pond PP88: Stone Storage for Lot 10 Peak Elev=76.78' Storage=220 cf Inflow=0.34 cfs 0.034 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.16 cfs 0.034 af

Pond PP89: Stone Storage for the House on Peak Elev=73.00' Storage=102 cf Inflow=0.27 cfs 0.027 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.15 cfs 0.027 af

Pond PP90: Stone Storage for the Barn on Lot 9 Peak Elev=73.28' Storage=275 cf Inflow=0.48 cfs 0.050 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.19 cfs 0.050 af

Pond PP91: Stone Storage for House D of Lot Peak Elev=72.46' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP92: Stone Storage for House C of Lot Peak Elev=72.46' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP93: Stone Storage for House B of Lot Peak Elev=72.96' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP94: Stone Storage for House A of Lot Peak Elev=75.46' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP95: Stone Storage for House A of Lot Peak Elev=76.96' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP96: Stone Storage for House B of Lot Peak Elev=75.46' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP97: Stone Storage for House C of Lot Peak Elev=74.46' Storage=103 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.17 cfs 0.028 af

Pond PP98: Stone Storage for House D of Lot Peak Elev=74.49' Storage=111 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.15 cfs 0.028 af

Pond PP99: Stone Storage for House A of Lot Peak Elev=72.49' Storage=110 cf Inflow=0.27 cfs 0.028 af
4.0" Round Culvert n=0.010 L=175.0' S=0.0031 '/' Outflow=0.15 cfs 0.028 af

Pond PT1: Proposed Pre-Tx 1 Peak Elev=80.31' Inflow=3.09 cfs 0.387 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0033 '/' Outflow=3.09 cfs 0.387 af

Pond PT13: Proposed Pre-Tx 13 Peak Elev=60.89' Inflow=3.49 cfs 0.345 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0030 '/' Outflow=3.49 cfs 0.345 af

Pond PT2: Proposed Pre-Tx 2 Peak Elev=79.86' Inflow=2.26 cfs 0.271 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0250 '/' Outflow=2.26 cfs 0.271 af

Link L101: Wetlands to the West Inflow=222.65 cfs 46.442 af
Primary=222.65 cfs 46.442 af

Link L102: Flow and Volumes from HousesFlowing into Link L101 Inflow=2.53 cfs 0.517 af
Primary=2.53 cfs 0.517 af

Link L103: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=1.00 cfs 0.206 af
Primary=1.00 cfs 0.206 af

Link L104: Flow and Volumes from Houses Flowing into Pond PP59 Inflow=0.67 cfs 0.110 af
Primary=0.67 cfs 0.110 af

Link L105: Flow and Volumes from Houses Flowing into Reach ER76 Inflow=1.90 cfs 0.331 af
Primary=1.90 cfs 0.331 af

Link L106: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.60 cfs 0.110 af
Primary=0.60 cfs 0.110 af

Total Runoff Area = 103.899 ac Runoff Volume = 47.175 af Average Runoff Depth = 5.45"
94.96% Pervious = 98.664 ac 5.04% Impervious = 5.236 ac

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Civil & Structural Consultants, Land Planners
100 Griffin Road, Suite C, Portsmouth, NH 03801
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Pipe PDL1 & PDL2
Node (PT1 & PT2)

PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM/NCB	CHECKED BY :	BDS
DATE :	3/18/2026	DATE :	3/18/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	4.6	cfs
Channel Bottom Width =	6.0	Feet
Hydraulic Gradient =	0.01000	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	1.000	Feet
Manning's "n" =	0.0130	
Area =	9.00	Square Feet
Wetted Perimeter =	12.32	Feet
Hydraulic Radius =	0.73	Feet
Top Width =	12.00	Feet
Velocity =	9.27	Feet/Second
Peak Discharge Determined =	83.4	cfs

For the Peak Discahrge, PDL1 & PDL2's Combined Flow was used. For the Culvert Diameter, an equivalent diameter (17") was calculated for the two proposed 12" dia. Pipes.

La AND W CALCULATIONS:

Culvert Diameter (Do) =	17.0	Inches
Tail Water Depth (TW)* =	0.28	Feet
Length of Apron (La) =	15	Feet
Width of Apron @ D.S End (W) =	19	Feet
Width of D.S. Apron if Channel (W) =	6.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.38 Feet or 4.51 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=6", 18" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	6.8	to	9.0
85	5.9	to	8.1
50	4.5	to	6.8
15	1.4	to	2.3

Minimum Rock Riprap Blanket Thickness = 13.5 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL4E (Node PDMH3E)

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PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM/NCB	CHECKED BY :	BDS
DATE :	5/5/2026	DATE :	5/5/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	1.1	cfs
Channel Bottom Width =	6.0	Feet
Hydraulic Gradient =	0.02300	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	0.300	Feet
Manning's "n" =	0.0130	
Area =	2.07	Square Feet
Wetted Perimeter =	7.90	Feet
Hydraulic Radius =	0.26	Feet
Top Width =	7.80	Feet
Velocity =	7.10	Feet/Second
Peak Discharge Determined =	14.7	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	12.0	Inches
Tail Water Depth (TW)* =	0.20	Feet
Length of Apron (La) =	9	Feet
Width of Apron @ D.S End (W) =	12	Feet
Width of D.S. Apron if Channel (W) =	6.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.11 Feet or 1.33 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=6", 18" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	2.0	to	2.7
85	1.7	to	2.4
50	1.3	to	2.0
15	0.4	to	0.7

Minimum Rock Riprap Blanket Thickness = 6.0 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL19 (Node PDMH14B)

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PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM/NCB	CHECKED BY :	BDS
DATE :	3/18/2026	DATE :	3/18/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	10.1	cfs
Channel Bottom Width =	6.0	Feet
Hydraulic Gradient =	0.00250	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	1.870	Feet
Manning's "n" =	0.0130	
Area =	21.71	Square Feet
Wetted Perimeter =	17.83	Feet
Hydraulic Radius =	1.22	Feet
Top Width =	17.22	Feet
Velocity =	6.52	Feet/Second
Peak Discharge Determined =	141.5	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	24.0	Inches
Tail Water Depth (TW)* =	0.40	Feet
Length of Apron (La) =	20	Feet
Width of Apron @ D.S End (W) =	26	Feet
Width of D.S. Apron if Channel (W) =	6.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.55 Feet or 6.54 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=7", 21" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	9.8	to	13.1
85	8.5	to	11.8
50	6.5	to	9.8
15	2.0	to	3.3

Minimum Rock Riprap Blanket Thickness = 19.6 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL21 (Node P155B)

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PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM/NCB	CHECKED BY :	BDS
DATE :	5/5/2026	DATE :	5/5/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	1.6	cfs
Channel Bottom Width =	6.0	Feet
Hydraulic Gradient =	0.01000	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	0.475	Feet
Manning's "n" =	0.0130	
Area =	3.53	Square Feet
Wetted Perimeter =	9.00	Feet
Hydraulic Radius =	0.39	Feet
Top Width =	8.85	Feet
Velocity =	6.12	Feet/Second
Peak Discharge Determined =	21.6	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	12.0	Inches
Tail Water Depth (TW)* =	0.20	Feet
Length of Apron (La) =	10	Feet
Width of Apron @ D.S End (W) =	13	Feet
Width of D.S. Apron if Channel (W) =	6.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.19 Feet or 2.30 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=6", 18" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	3.5	to	4.6
85	3.0	to	4.1
50	2.3	to	3.5
15	0.7	to	1.2

Minimum Rock Riprap Blanket Thickness = 6.9 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL22 (Node PP50)

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PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM/NCB	CHECKED BY :	BDS
DATE :	5/5/2026	DATE :	5/5/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	2.0	cfs
Channel Bottom Width =	8.0	Feet
Hydraulic Gradient =	0.01130	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	0.720	Feet
Manning's "n" =	0.0130	
Area =	7.32	Square Feet
Wetted Perimeter =	12.55	Feet
Hydraulic Radius =	0.58	Feet
Top Width =	12.32	Feet
Velocity =	8.48	Feet/Second
Peak Discharge Determined =	62.0	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	24.0	Inches
Tail Water Depth (TW)* =	0.40	Feet
Length of Apron (La) =	15	Feet
Width of Apron @ D.S End (W) =	21	Feet
Width of D.S. Apron if Channel (W) =	8.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.06 Feet or 0.75 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=6", 18" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	1.1	to	1.5
85	1.0	to	1.4
50	0.8	to	1.1
15	0.2	to	0.4

Minimum Rock Riprap Blanket Thickness = 6.0 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe PDL23 (Node PP59)

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PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM	CHECKED BY :	BDS
DATE :	5/5/2026	DATE :	5/5/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	3.4	cfs
Channel Bottom Width =	6.0	Feet
Hydraulic Gradient =	0.06380	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	1.000	Feet
Manning's "n" =	0.0130	
Area =	9.00	Square Feet
Wetted Perimeter =	12.32	Feet
Hydraulic Radius =	0.73	Feet
Top Width =	12.00	Feet
Velocity =	23.41	Feet/Second
Peak Discharge Determined =	210.7	cfs

La AND W CALCULATIONS:

Culvert Diameter (Do) =	12.0	Inches
Tail Water Depth (TW)* =	0.20	Feet
Length of Apron (La) =	13	Feet
Width of Apron @ D.S End (W) =	16	Feet
Width of D.S. Apron if Channel (W) =	6.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 0.50 Feet or 6.02 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=7", 21" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	9.0	to	12.0
85	7.8	to	10.8
50	6.0	to	9.0
15	1.8	to	3.0

Minimum Rock Riprap Blanket Thickness = 18.0 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

PIPE OUTLET PROTECTION APRON DESIGN & d_{50} RIPRAP SIZING

Pipe under Lot 26 & 27 driveway

Civil & Structural Consultants, Land Planners
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PROJECT NAME :	Copley-Gallant 80 Winnicutt Road		
PROJECT # :	24-1061		
BY :	JJM	CHECKED BY :	BDS
DATE :	3/18/2026	DATE :	3/18/2026

DOWNSTREAM CHANNEL (OR SPREADER) HYDRAULICS

Peak Discharge Required =	65.3	cfs
Channel Bottom Width =	15.0	Feet
Hydraulic Gradient =	0.01130	Feet/Feet
Left Side Slope =	3.0	:1(h:v)
Right Side Slope =	3.0	:1(h:v)
Depth of Flow =	2.840	Feet
Manning's "n" =	0.0117	
Area =	66.80	Square Feet
Wetted Perimeter =	32.96	Feet
Hydraulic Radius =	2.03	Feet
Top Width =	32.04	Feet
Velocity =	21.62	Feet/Second
Peak Discharge Determined =	1444.2	cfs

Note: a 51" diameter culvert was determiend to be approximate to two (2) 36" diameter culverts

La AND W CALCULATIONS:

Culvert Diameter (Do) =	51.0	Inches
Tail Water Depth (TW)* =	0.85	Feet
Length of Apron (La) =	43	Feet
Width of Apron @ D.S End (W) =	56	Feet
Width of D.S. Apron if Channel (W) =	15.0	Feet

Assumes Channel Bottom at the Culvert Equals the Invert Outlet Elevation of the Pipe. If this is not the case, the calculations involving the Tailwater will have to be calculated by hand.

*If outletting to flat area use TW depth = 0.2 x Do

ROCK RIPRAP SIZE

d_{50} = 1.45 Feet or 17.46 Inches

$d_{50} = (0.02 \times Q^{4/3})/(Tw \times Do)$

Use D50=18", 54" deep

ROCK RIPRAP GRADATION (TABLE 7-24 OF NHDES HANDBOOK)

% of Weight Smaller Than The Given Size	Size of Stone in Inches		
100	26.2	to	34.9
85	22.7	to	31.4
50	17.5	to	26.2
15	5.2	to	8.7

Minimum Rock Riprap Blanket Thickness = 52.4 Inches

Minimum Six inch Sand/Gravel Bedding or Geotextile Fabric Required Under All Rock Riprap

FORMULAS USED (Reference NHDES HANDBOOK, Pages 7-114, 7-115)

Manning's Uniform Channel Flow -	Q = (A x 1.486 x R^(2/3) x S^(1/2))/"n"
Length of Apron (La) TW< Do/2 -	La = (1.8 x Q/Do^1.5) + 7 x Do
Length of Apron (La) TW>= Do/2 -	La = 3.0 x Q/Do^1.5 + 7 x Do
Width of Apron @ D.S End TW < Do/2 -	W = 3xDo + La
Width of Apron @ D.S End TW >= Do/2 -	W = 3xDo + 0.4 x La
Width of D.S. Apron if in Channel -	W = Channel Bottom Width
Width of Apron @ Culvert -	Wc = 3 x Do

Hurley Environmental
AND LAND PLANNING, LLC

SITE-SPECIFIC SOIL SURVEY REPORT
For
80 Winnicut Road
Stratham

1. MAPPING STANDARDS

Site-Specific Soil Mapping Standards for New Hampshire and Vermont. SSSNNE Special Publication No. 3, Version 7.0, July 2021. This map product is within the technical standards of the National Cooperative Soil Survey. It is a special product, intended for the submission to NH DES Alteration of Terrain. It was produced by a professional soil scientist and is not a product of the USDA Natural Resource Conservation Service.

Hydrologic Soil Group was determined using SSSNNE Special Publication No. 5.
Scale of soil map:
Approximately 1" equals 150'
Contours:
Intervals of 2 feet

2. DATE SOIL MAP PRODUCED

Date(s) of on-site field work: 5/9/24
Date(s) of test pits: 5/9/24
Test pits recorded by: Luke Hurley, CSS #095

3. GEOGRAPHIC LOCATION AND SIZE OF SITE

City or town where soil mapping was conducted: Stratham
Location: Tax Map 14, Lots 56 and 57
Size of area: approximately 100 acres
Was the map for the entire lot? Yes
The area where the map was created for is a single-family residential lot with existing home, barn, out building and manmade pond. Some areas are partially wooded with some recent and historical logging. Several large wetland are located on site associated with several intermittent and perennial streams. The site is generally flat with open hay fields and some steep slopes dropping don to some of the steams in the central and rear portions of the site.

4. PURPOSE OF THE SOIL MAP

Was the map prepared to meet the requirement of Alteration of Terrain? Yes
If no, what was the purpose of the map?
Who was the map prepared for? Civil Design Consultants

5. SOIL IDENTIFICATION LEGEND

SSSM SYM.	SSS MAP NAME	HISS SYM.	HYDROLOGIC SOIL GRP.
32	Boxford	353	C
38	Eldridge	323	C

33	Scitico	553	C
134	Maybid	653	D

SLOPE PHASE:
0-8% B 8-15% C 15-25% D 25%+ E

32 Boxford 353 C

The Boxford series consists of very deep, moderately well to somewhat poorly drained soils formed in clayey marine sediments. These soils are nearly level and are on terraces. Permeability is slow in the upper part of the B horizon and slow to very slow in the lower part of the B and in the C horizons. Slope ranges from 0 to 15 percent. This is one of the two main soil series on site. These are found in the far southern corner and in the southeast corner of the site, They have an ESHWT between 15-40" and no ledge was encountered. Ksat ranges from 0.1 in the Low B and 0.00 in the Low C based on published rates.

Typical Profile
0-4" 10YR3/3, FSL, GR, FR
4-25" 10YR4/3, FSL, GR, FR
25-60" 2.5Y5/3, SICL, BLKY, FI Redox 20%
ESHWT 25"
Observed Water None
No Refusal

38 Eldridge 323 C

The Eldridge series consists of very deep, moderately well drained soils on glacial lake plains, terraces, and glacial outwash areas. The soils formed in sandy glaciofluvial or aeolian deposits underlain by loamy estaurine or glaciolacustrine deposits. Permeability is rapid in the solum and moderately slow or slow in the substratum. Slope ranges from 0 to 50 percent. This series makes up the bulk of the soils in the open fields and northern portion of the site. The ESHWT was encountered between 15-40 inches and no ledge was observer. Ksat ranges from 6.0 in the Low B and 0.06 in the Low C based on published rates.

Typical Profile
0-19" 10YR3/2, FSL, GR, FR
19-26" 10YR4/6, FSL, GR, FR
26-55" 2.5Y5/3, SL, BLKY, Fi Redox 15%
ESHWT 26"
Observed Water None
No Refusal

33 Scitico 553 C

The Scitico series consists of very deep, poorly drained soils formed in silty and clayey sediments. They are nearly level to very gently sloping soils in low-lying positions of glaciolacustrine and marine terraces. Slope ranges from 0 to 5 percent. Permeability is moderate or moderately slow in the surface layer, moderately slow or slow in the upper part of the subsoil, slow or very slow in the lower part of the subsoil, and very slow in the substratum.

134 Maybid 653 D

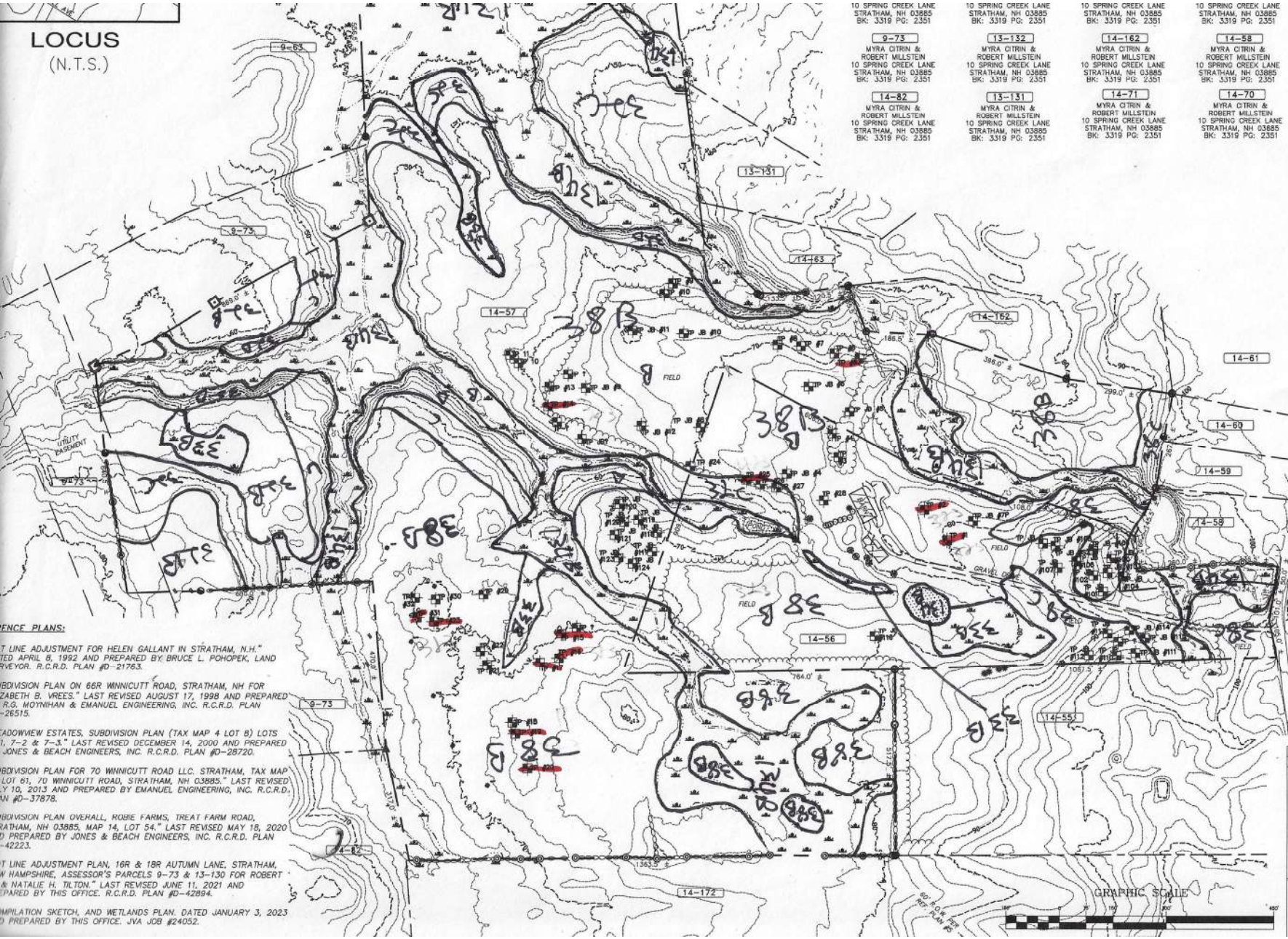
The Maybid series consists of very deep, very poorly drained soils formed in lacustrine or marine sediments. They are nearly level or level soils on lowlands. Slope ranges from 0 to 3 percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and very low to moderately high in the subsoil and substratum.

Typical Profile
0-4” 10YR3/2, FSL, GR, FR
4-20” 10YR4/6, FSL, GR, FR
20-40” 2.5Y5/4, S, GR, FR
ESHWT None
Observed Water None
Refusal None

6. RESPONSIBLE SOIL SCIENTIST
Name: Luke Hurley
Certified Soil Scientist Number: CSS #095

7. OTHER DISTINGUISHING FEATURES OF SITE
Is the site in a natural condition? The current mapping portion, yes.

8. Inclusions
No Inclusions were mapped.



3. THE INTENT OF THIS PLAN IS TO SERVE AS A
FUTURE DEVELOPMENT POTENTIAL OF THE SUB
SHOWN ON THE PLAN WERE BASED OFF OF EXI
MONUMENTATION LOCATED IN THE FIELD. VERY
WAS DONE, THESE LINES SHOULD BE CONSIDER
TO CHANGE. THIS IS NOT A BOUNDARY SURVEY
2019-2020 NH COASTAL LIDAR OBTAINED FROM
FLAG LOCATIONS ARE BASED ON ON THE GROU
BUILDINGS, TREE LINE AND OTHER FEATURES W
PHOTOGRAPHY AND WERE NOT FIELD LOCATED.

4. THE LOCATION OF ALL UNDERGROUND UTILITIES
AND ARE BASED UPON THE FIELD LOCATION OF
BASINS, MANHOLES, WATER GATES ETC.) AND I
PROVIDED BY UTILITY COMPANIES AND GOVERNM
SHOULD NOTIFY, IN WRITING, SAID AGENCIES PR
CALL DIG-SAFE @ 1-888-DIG-SAFE.

5. HORIZONTAL DATUM: NAD83, VERTICAL DATUM:
GRADE GPS OBSERVATION AND PROCESSED BY

6. THE PARCEL SHOWN HEREON LIES WITHIN ZONE
AS IDENTIFIED ON FLOOD INSURANCE RATE MAP
HAMPSHIRE, MAP NUMBER 33015C0245F, EFFEC
EMERGENCY MANAGEMENT AGENCY.

7. WETLANDS WERE DELINEATED BY JOSEPH NOELL
LUKE HURLEY REVISITED THE SITE IN APRIL-MA
HUNG, AND WERE FIELD LOCATED BY JVA.

8. CONTRACTOR TO VERIFY SITE BENCHMARKS BY
PRIOR TO THE ESTABLISHMENT OF ANY GRADES
TO BE REPORTED TO JAMES VERRA AND ASSOC

32 Boxford
38 Eldridge
33 Scitico
134 Mayhew

PL
SUBJ

ENCE PLANS:

T LINE ADJUSTMENT FOR HELEN GALLANT IN STRATHAM, N.H."
TED APRIL 8, 1992 AND PREPARED BY BRUCE L. POHOPEK, LAND
RVEYOR. R.C.R.D. PLAN #D-21763.

BDIVISION PLAN ON 66R WINNICUTT ROAD, STRATHAM, NH FOR
ZABETH B. VREES." LAST REVISED AUGUST 17, 1998 AND PREPARED
R.G. MOYNIHAN & EMANUEL ENGINEERING, INC. R.C.R.D. PLAN
-26515.

TADOWVIEW ESTATES, SUBDIVISION PLAN (TAX MAP 4 LOT 8) LOTS
1, 7-2 & 7-3." LAST REVISED DECEMBER 14, 2000 AND PREPARED
JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN #D-28720.

BDIVISION PLAN FOR 70 WINNICUTT ROAD LLC. STRATHAM, TAX MAP
LOT 61, 70 WINNICUTT ROAD, STRATHAM, NH 03885." LAST REVISED
Y 10, 2013 AND PREPARED BY EMANUEL ENGINEERING, INC. R.C.R.D.
N #D-37878.

BDIVISION PLAN OVERALL, ROBIE FARMS, TREAT FARM ROAD,
RATHAM, NH 03885, MAP 14, LOT 54." LAST REVISED MAY 18, 2020
D PREPARED BY JONES & BEACH ENGINEERS, INC. R.C.R.D. PLAN
-42223.

T LINE ADJUSTMENT PLAN, 16R & 18R AUTUMN LANE, STRATHAM,
W HAMPSHIRE, ASSESSOR'S PARCELS 9-73 & 13-130 FOR ROBERT
& NATALIE H. TILTON." LAST REVISED JUNE 11, 2021 AND
PARED BY THIS OFFICE. R.C.R.D. PLAN #D-42894.

MPILATION SKETCH, AND WETLANDS PLAN. DATED JANUARY 3, 2023
D PREPARED BY THIS OFFICE. JVA JOB #24052.

REV. NO.	DATE	DESCRIPTION

OVERALL EXISTING CO

80 & 80R WINNICU
STRATHAM,
TAX MAP 14 LOT 5
PREPARED FOR: COPELY
LAND OF: HELEN E. GALLA

JVA

Inspection & Maintenance Plan

Copley Properties, LLC
80 & 80R Winnicutt Road (Site)
Stratham, NH 03885

December 11, 2024
Revised: September 19, 2025
Revised: March 17, 2026

Prepared for:

Copley Properties, LLC
Andrew Goddard (Member)
(781) 706-1531
drew@copleyproperties.com
94 Portsmouth Avenue
Stratham, NH 03885

Department of Public Works
Town of Stratham
(603) 772-5550
70 Bunker Hill Avenue
Stratham, NH 03885

Prepared by: Emanuel Engineering, Inc.
100 Griffin Road, Unit C
Portsmouth, NH 03801
EEI Project # 24-1061

Introduction

Emanuel Engineering, Inc. has prepared the following Stormwater Management System Inspection & Maintenance Plan for **80 & 80R Winnicutt Road, Stratham, NH 03885**. The intent of this plan is to provide the client, **Copley Properties, LLC,** with a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. By following the enclosed procedures, the owners and property management will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Stormwater Management System Components

The Stormwater Management System has been designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, its design included the following elements:

Non-Structural Best Management Practices (BMP's)

Non-Structural best management practices (BMP's) are designed to minimize and/or remove contaminants before they enter the stormwater collection system. Several of these BMP's have been incorporated into the Stormwater Management System including pavement sweeping, reduced use of road salt, and litter/trash removal. These types of BMP's are a highly effective initial treatment measure for reducing stormwater pollutant loading.

Closed Drainage Collection and Piping System

The closed drainage system is designed to collect and convey stormwater runoff from the paved areas and infiltrate stormwater back into the water table. Stormwater is collected by catch basins located throughout the site. Key catch basins are designed with deep sumps to provide storage areas for sediment and control sediment outflow.

Source Control & Maintenance

This plan is to provide **Copley Properties, LLC** with an outline of best management practices (BMPs) and operations that are prohibited on site. Descriptions and maintenance requirements of BMPs and operations in this section were taken from the *New Hampshire Stormwater Manual, Volume 2* dated December 2008 (http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-08-20b.pdf). A log is attached at the end of this document for the owner or designee to confirm that best management practices are occurring on-site.

Street Sweeping

Street sweeping is a pollution prevention practice that removes sediment, debris and trash that accumulates along streets and roads from winter sanding practices and everyday use. Street sweeping is often performed to improve aesthetics and to reduce the export of sand to the drainage network and receiving waters. In addition to sediment, debris and trash, other pollutants that may be minimized through street sweeping include some nutrients, oxygen-demanding substances and trace metals.

Maintenance - At a minimum, street sweeping should be performed once annually for traditional pavement, preferably as soon as possible after the snow melts to reduce the amount of sand, grit, and debris and associated pollutants from winter sanding from entering surface waters. Street sweeping should be performed more frequently for permeable pavements.

Snow & Ice Management

To address the concerns associated with the application of chlorides and other deicing materials, NHDES recommends the development of a Road Salt and Deicing Minimization Plan when a development will create one acre or more of pavement, including parking lots and roadways. The plan should address the policies that the development will keep in place to minimize salt and other deicer use after the project has been completed. A component of the plan should include tracking the use of salt and other deicers for each storm event and compiling salt use data annually. The use of sand as a deicer should be avoided or minimized so as to avoid clogging the drainage structures on site. See below for deicing application rate guidelines.

New Hampshire does not yet have salt reduction guidance, but recommends following the guidelines available in reference cited below.
Minnesota Snow and Ice Control handbook, available at:
http://www.mnltap.umn.edu/publications/handbooks/documents/snice_2012_wb.pdf

Deicing Application Rate Guidelines

24' of pavement (typical two-lane road)

These rates are not fixed values, but rather the low end of a range to be selected and adjusted by an agency according to its local conditions and experience.

			Lbs/ two-lane mile			
Pavement Temp. (°F) and Trend (↑↓)	Weather Condition	Maintenance Actions	Salt Prewetted/ Pretreated With Salt Brine	Salt Prewetted/ Pretreated With Other Blends	Dry Salt*	Winter Sand (abrasives)
>30° ↑	Snow	Plow, treat intersections only	80 (40/lane mile)	70	100*	Not recommended
	Frz. rain	Apply chemical	80 – 160	70 – 140	100 – 200*	Not recommended
30° ↓	Snow	Plow & apply chemical	80 – 160	70 – 140	100 – 200*	Not recommended
	Frz. rain	Apply chemical	150 – 200	130 – 180	180 – 240*	Not recommended
25 - 30° ↑	Snow	Plow & apply chemical	120 – 160	100 – 140	150 – 200*	Not recommended
	Frz. rain	Apply chemical	150 – 200	130 – 180	180 – 240*	Not recommended
25 - 30° ↓	Snow	Plow & apply chemical	120 – 160	100 – 140	150 – 200*	Not recommended
	Frz. rain	Apply chemical	160 – 240	140 – 210	200 – 300*	400
20 - 25° ↑	Snow or frz. rain	Plow & apply chemical	160 – 240	140 – 210	200 – 300*	400
20 - 25° ↓	Snow	Plow & apply chemical	200 – 280	175 – 250	250 – 350*	Not recommended
	Frz. rain	Apply chemical	240 – 320	210 – 280	300 – 400*	400
15 - 20° ↑	Snow	Plow & apply chemical	200 – 280	175 – 250	250 – 350*	Not recommended
	Frz. rain	Apply chemical	240 – 320	210 – 280	300 – 400*	400
15 - 20° ↓	Snow or Frz. rain	Plow & apply chemical	240 – 320	210 – 280	300 – 400*	500 for frz. rain
0 to 15° ↑↓	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	300 – 400	Not recommended	500 – 750 spot treat as needed
< 0°	Snow	Plow, treat with blends, sand hazardous areas	Not recommended	400 – 600**	Not recommended	500 – 750 spot treat as needed

*Dry salt is not recommended. It is likely to blow off the road before it melts ice.

**A blend of 6 – 8 gal/ton $MgCl_2$ or $CaCl_2$ added to NaCl can melt ice as low as -10°.

Drip Edge

A drip edge is designed to collect minimal amounts of stormwater runoff, mostly from roof runoff, and store it within the voids between the stones that make up the drainage structure. The stone drainage area may be designed with an underdrain, to collect water and convey it to discharge, or it may be designed to infiltrate the water directly to the subsoil. Stone drainage areas also protect the ground from erosion caused by concentrated stormwater.

Maintenance -

- The stone drainage area should be checked at least annually and after every major storm.
- If the stone drainage area has been displaced, undermined, or damaged, it should be repaired immediately.
- The channel immediately below any outlet should be checked to see that erosion is not occurring.
- The downstream channel should be kept clear of obstructions such as; fallen trees, debris, and sediment that could change flow patterns and/or tail water depths on the pipes.
- Repairs must be carried out immediately to avoid additional damage to the outlet protection apron.
- If the area exposed to the surface is visibly clogged, the rock above the Mirafi 140N shall be removed and replaced in kind.

Bioretention

Bioretention systems collect stormwater runoff in a landscaped depression, where it ponds, filters through the engineered soil media, and infiltrates into the ground or is collected and discharged to the surface. Bioretention systems can reduce sediment, nutrients, oil and grease, and trace metals.

The major difference between bioretention systems and other filtration systems is the composition of the filter media and the use of vegetation. A typical surface sand filter is designed to be maintained with no vegetation, whereas a bioretention cell is planted with a variety of vegetation whose roots assist with pollutant uptake. The use of vegetation allows these systems to blend in with other landscaping features.

Maintenance -

- Maintenance activities need to comply with laws that protect wildlife, including but not limited to RSA 209:8, RSA 209:9, RSA 209:10, and RSA 212-A:7.
- Special attention should be given to maintenance in the first two years of operation as vegetation is established.
- Systems should be inspected at least twice annually and following any rainfall event exceeding 2.5 inches in a 24- hour period, with maintenance or rehabilitation conducted as warranted by such inspection.

- Pre-treatment measures should be inspected at least twice annually, and cleaned of accumulated sediment as warranted by inspection, but no less than once annually.
- Trash and debris should be removed at each inspection.
- At least once annually, system should be inspected for drawdown time. If bioretention system does not drain within 72 hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore filtration function or infiltration function (as applicable), including but not limited to removal of accumulated sediments or reconstruction of the bioretention soil mixture.
- Vegetation should be inspected at least annually, and maintained in healthy condition, including pruning, removal, and replacement of dead or diseased vegetation, and removal of invasive species.
- Refer to UNHSC Maintenance Guidelines and Resources, “Checklist for Inspection of Bioretention Systems/ Tree Filters” for an example inspection checklist.

Conveyance Swales

Conveyance swales are stabilized channels designed to convey runoff at non-erosive velocities. They may be stabilized using vegetation, riprap, or a combination, or with an alternative lining designed to accommodate design flows while protecting the integrity of the sides and bottom of the channel. Conveyance channels may provide incidental water quality benefits, but are not specifically designed to provide treatment.

Maintenance -

- Grassed channels should be inspected periodically (at least annually) for sediment accumulation, erosion, and condition of surface lining (vegetation or riprap). Repairs, including stone or vegetation replacement, should be made based on this inspection.
- Remove sediment and debris annually, or more frequently as warranted by inspection.
- Mow vegetated channels based on frequency specified by design. Mowing at least once per year is required to control establishment of woody vegetation. It is recommended to cut grass no shorter than 4 inches.

Outlet Protection

Outlet protection is typically provided at stormwater discharge conduits from structural best management practices to reduce the velocity of concentrated stormwater flows to prevent scour and minimize the potential for downstream erosion. Outlet protection is also provided where conduits discharge runoff into an in-ground stormwater management practice (e.g., pond or swale) to prevent scour where flow enters the BMP.

Maintenance - Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.

Manicured Landscaped Areas – Litter Control

Landscaped areas tend to filter debris and contaminates that may block drainage systems and pollute the surface and ground waters.

Maintenance -

- Litter control and lawn maintenance involves removing litter such as trash, leaves, lawn clippings, pet wastes, oil and chemicals from streets, parking lots, and lawns before materials are transported into surface water.
- Litter control should be implemented as part of the daily grounds maintenance program.

Manicured Landscaped Areas – Litter Control

Landscaped areas tend to filter debris and contaminates that may block drainage systems and pollute the surface and ground waters.

Maintenance -

- Litter control and lawn maintenance involves removing litter such as trash, leaves, lawn clippings, pet wastes, oil and chemicals from streets, parking lots, and lawns before materials are transported into surface water.
- Litter control should be implemented as part of the daily grounds maintenance program.

Manicured Landscaped Areas – Fertilizer Management

Fertilizer management involves controlling the rate, timing, and method of fertilizer application so that the nutrients are taken up by the plants, thereby reducing the chance of polluting the surface and ground waters. Fertilizer management can be effective in reducing the amounts of phosphorus and nitrogen in runoff from landscape areas, particularly lawns. Soil tests should be conducted to determine fertilizer application rates.

Maintenance -

- Have the soil tested by your landscaper or local Soil Conservation Service for nutrient requirements and follow the recommendations.
- Do not apply fertilizer to frozen ground.
- Clean up any fertilizer spills
- Do not allow fertilizer to be broadcast into water bodies.
- When fertilizing a lawn, water thoroughly, but do not create a situation where water runs off the surface of the lawn.

Culverts, Drainage Pipes, and Roof Drains

Culverts, drainage pipes, and roof drains convey stormwater away from buildings, walkways, and parking areas.

Maintenance – Culverts, drainage pipes, and roof drains should be inspected semi-annually, or more often as needed, for accumulation of debris and structural integrity. Leaves and other debris should be removed from the inlet and outlet to insure the functionality of drainage structures. Debris shall be disposed of on the site where it will not concentrate back at the drainage structures or at a solid waste disposal facility.

Deep Sump Catch Basin

A deep sump catch basin consists of a manhole-type structure with an inlet grate, an outlet pipe connected to the piped drainage system, and a sump with a depth several times the diameter of the outlet pipe. The inlet grate is located at the surface, and is sometimes combined with a vertical inlet integrated with a street or parking area curb. The sump's purpose is to capture coarse sediments and debris from the runoff intercepted by the structure. The outlet pipe can be fitted with a "hood" consisting of a cast metal or formed plastic fitting, designed to prevent floating materials from exiting the structure.

Deep sump catch basins used as pretreatment are most effective if sited "off-line" since flow-through basins are more susceptible to sediment re-suspension. The outlet hood provides benefits for trapping floating trash, as well as for short-term spill containment.

Maintenance –

- Catch basins may require frequent maintenance. Depending on location, this may require several cleanings of the sumps each year. At a minimum, it is recommended that catch basins be inspected at least twice annually, once following snow-melt and once following leaf-drop, and cleaned as indicated by inspection.
- Sediment should be removed when it approaches half the sump depth.
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed in conformance with applicable state and federal regulations.
- Cleaning may require Vacuum-truck instead of "clam-shell" to avoid damage to hood.
- Damaged hoods should be replaced when noted by inspection

Sediment Forebay

A sediment forebay is an impoundment or basin designed to collect, store, and dissipate the energy of incoming stormwater runoff and allow for initial settling of coarse sediments. Forebays are used for pre-treatment of stormwater runoff prior to discharge into the primary water quality treatment SCM. Forebays are generally integrated into the design of larger stormwater management structures.

Maintenance –

- Maintenance activities need to comply with laws that protect wildlife, including but not limited to RSA 209:8, RSA 209:9, RSA 209:10, and RSA 212-A:7.
- Forebays help reduce the sediment load to downstream SCMs, and will therefore require more frequent cleaning.
- Inspect quarterly for sedimentation, debris accumulation, erosion, and other issues.
- Conduct periodic mowing of embankments (generally 2 times per year) to control growth of woody vegetation on embankments.
- Replace displaced riprap on spillways/ check dams.
- Vegetation should be inspected at least annually, and maintained in healthy condition, including pruning, removal, and replacement of dead or diseased vegetation, and removal of invasive species.

- The floor and sidewalls of the forebay must remain stabilized.
- Remove debris from outlet structures at least once annually.
- Remove and dispose of accumulated sediment based on inspection.
- Accumulated sediment or debris must be removed when it reaches approximately 40 percent of the depth capacity.
- Install and maintain a staff gage or other measuring device, to indicate depth of sediment accumulation and level at which clean-out is required.

PreTX Pretreatment (Pretreatment Catch Basins)

Routine annual inspection and period maintenance is required for the effective operation of PreTX pretreatment catch basins.

The following maintenance items are required as needed for the PreTX pretreatment catch basins. The PreTX pretreatment catch basins are located upstream of the bioretention systems. The PreTX catch basins are located prior to discharge to the bioretention systems and provide pretreatment for sediment, trash, and debris. The PreTX catch basins are deep sumps with a combination of baffle, weir, and screened grate to provide rigorous pretreatment intended to minimize maintenance within the bioretention systems. Overflow structures drain to the catch basins within the bioretention systems. Maintenance elements included removal of trash and debris, sediment, periodic inspection of invasive species, and verification of proper infiltration and time to drain.

Temporary Check Dam

Temporary check dams are small temporary dams constructed across a swale, channel, or drainage ditch. Check dams are used to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale, channel, or ditch.

Check dams may also trap small amounts of sediment generated in the swale, channel, or ditch itself. However, the check dam is not a sediment trapping measure and should not be used as such.

The measure is limited to use in small open channels that drain one acre or less. It should not be used in either perennially flowing streams or intermittent stream channels.

Check dams can be constructed of stone. In locations where stone is not available, timber check dams may be considered. Typical applications include temporary or permanent ditches, channels, or swales, which need protection during the establishment of grass linings.

Hay or straw bales should generally not be used as check dams, or in any location where there is concentrated flow. However, they may be used for check dams in applications where installation access or other conditions prevent the use of

preferred materials such as stone; in such cases, installation must provide proper embedment of the straw or hay bale barrier, limit contributing drainage area to less than one acre, and provide for frequent monitoring of the barrier.

Maintenance –

- All E&SC measures should be inspected at least once per week and within 24 hours of any storm event exceeding 1/4-inch in a 24-hour period, or as stipulated by the applicable permits. Repairs should be made as necessary.
- Check dams should be inspected at least daily during prolonged rainfall.
- Inspections should verify that the center of the dam is lower than the edges.
- Erosion caused by high flows around the edges of the dam must be corrected immediately.
- If evidence of siltation in the water is apparent downstream from the check dam, the check dam should be inspected and adjusted immediately.
- Check dams should be checked for sediment accumulation after each significant rainfall. Sediment should be removed routinely and when it reaches a maximum depth of 1/2 of the original height.

Temporary Sediment Trap

A sediment trap is a small, temporary ponding area to intercept sediment-laden runoff from small disturbed areas. Intercepted runoff is retained long enough to allow for settling of the coarser sediment particles. A sediment trap is usually installed in a drainage swale or channel, at a storm drain or culvert inlet, or other points of discharge from a disturbed area.

Maintenance –

- Sediment traps should be inspected at least weekly during construction and after every storm (or daily during prolonged rainfall periods), to insure that they are functioning properly and are not damaged. Repairs should be made immediately.
- Sediment should be removed and the trap restored to original capacity when sediment has accumulated to 50% of the original volume.
- The materials removed from the trap should be properly disposed of and stabilized.
- Sediment trap outlets should be examined at the time of inspection for any damage, and repaired immediately if any such damage is observed.
- Geotextile fabric or stone used around a pipe-outlet riser should be checked periodically and replaced when the material has become clogged with sediment.

Invasive Species

Should any invasive species grow in the stormwater management practices, refer to the "Control of Invasive Plants" document provided after the Maintenance Logs of this document.

General Cleanup

Upon completion of the project, the contractor shall remove all temporary stormwater erosion control structures (i.e., temporary stone check dams, silt fence, etc.). Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared, and seeded. Culverts and catch basins shall be cleaned, removing any sediment that may have accumulated during construction.

Inspection & Maintenance Log

The following pages contain an Inspection & Maintenance Log and blank copy of the Stormwater Management System's Inspection & Maintenance Log. These forms are provided to **Copley Properties, LLC** with the inspection and maintenance of the **80 & 80R Winnicutt Road, Stratham, NH 03885** Stormwater Management System. When Inspection & Maintenance Logs are submitted, they shall be accompanied by photographs of each BMP on the day of the visit.

Proper inspection, maintenance, and repair are key elements in maintaining a successful stormwater management program on a developed property. Programs should be implemented at all of the owner's properties to ensure permit compliance and the highest quality of stormwater discharge. Routine inspection can also reduce the potential for deterioration of infrastructure or a catastrophic event, like a breach of detention pond.

For the purpose of this Stormwater Management Program, a significant rainfall event is considered an event of three (3) inches in a 24-hour period or 0.5 inches in a one-hour period. It is anticipated that a short, intense event is likely to have a higher potential of erosion for the site than a longer, high volume event.

_____

Owner Date

Stormwater Management System Inspection & Maintenance Log

Copley Properties, LLC at 80 & 80R Winnicutt Road, Stratham, NH 03885

BMP/System Component	Date Inspected	Inspector	Cleaning/Repair Needed (*List Items/Comments)*	Date of Cleaning/Repair	Performed By

EXISTING WETLANDS (TYPICAL)

OPEN SPACE

OPEN SPACE

SPRING CREEK LANE

EXISTING STREAM (TYPICAL)

MILL BROOK

EOW

LOT #23

LOT #22

LOT #24

LOT #15

LOT #14

LOT #21

LOT #13

LOT #12

LOT #8

OPEN SPACE

LOT #6

LOT #3

LOT #1

LOT #5

LOT #4

LOT #2

LOT #7

LOT #25

OPEN SPACE

EOW

LOT #11

LOT #28

LOT #16

LOT #17

LOT #18

LOT #19

LOT #20

LOT #9

LOT #10

EDGE OF WETLANDS (EOW)

LOT #26

LOT #33

LOT #27

LOT #29

LOT #30

LOT #32

LOT #31

WINNICUTT ROAD

LEGEND

- NEW HAMPSHIRE HIGHWAY BOUND FOUND
- IRON PIPE FOUND
- IRON ROD FOUND (TYP)
- TYPICAL
- PROPERTY LINE
- WETLAND DELINEATION
- WETLAND SYMBOL
- SOIL DELINEATION
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT GRADE
- EDGE OF PAVEMENT (EOP)
- UG — UNDERGROUND UTILITIES
- OHE — OVERHEAD UTILITIES
- UTILITY POLE
- GUY WIRE
- DRAIN MANHOLE
- SERVICE CLEANOUT
- SEPTIC LINE
- DRAIN LINE
- PROPANE TANK
- WATER LINE
- WELL
- GAS — GAS LINE
- SIGN
- XX — # OF PARKING SPACES
- TREE LINE
- TREE

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5948 PG0405
2. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF STORMWATER STRUCTURES AND OTHER ITEMS TO BE MAINTAINED LISTED WITHIN THE INSPECTION & MAINTENANCE PLAN FOR THE OPEN SPACE CLUSTER SUBDIVISION PLAN ON STRATHAM TAX MAP 14, LOTS 56 & 57.
3. PARCEL IS ZONED RESIDENTIAL/AGRICULTURAL PER THE TOWN OF STRATHAM OFFICIAL ZONING MAP 2022. PARCEL IS WITHIN STRATHAM'S MS4 REGULATED AREA.
4. PARCEL IS NOT IN A FLOOD HAZARD ZONE; REFERENCE FLOOD INSURANCE RATE MAP 33015C0245F, DATED JANUARY 29, 2021.
5. FIELDWORK CONDUCTED BY JAMES VERRA & ASSOCIATES, INC. (JVA) IN SPRING 2023 AND 2024.
6. WETLANDS WERE DELINEATED BY JOSEPH NOEL CWS #86 IN SPRING 2023, AND CONFIRMED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC IN SPRING 2024.

   SOILS WERE DELINEATED BY HURLEY ENVIRONMENTAL & LAND PLANNING, LLC ON MAY 9, 2024.
7. PROPERTY TO BE SERVICED BY ON-SITE WELL AND SEPTIC.
8. ALL CONSTRUCTION SHOULD COMPLY WITH FEDERAL, STATE, AND LOCAL STANDARDS AND REGULATIONS.
9. THIS PLAN WAS PREPARED WITH ON-SITE FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHOULD NOTIFY EMANUEL ENGINEERING, INC. DURING CONSTRUCTION IF ANY DISCREPANCY TO THE PLAN IS FOUND ON SITE.
10. BEFORE ANY EXCAVATION, DIG SAFE AND ALL UTILITY COMPANIES SHOULD BE CONTACTED 72 HOURS BEFORE COMMENCING BY THE CONTRACTOR. CALL DIG SAFE @ 811 OR 1-888-DIG-SAFE.
11. ALL UTILITIES SHALL BE LOCATED UNDERGROUND EXCEPT AS NOTED ON PLAN APPROVED BY THE PLANNING BOARD.

LEGEND:

- DRIP EDGE
- CONVEYANCE SWALE
- PRETX PRETREATMENT
- OUTLET PROTECTION
- CULVERTS
- CATCH BASIN
- BIORETENTION BASIN
- SEDIMENT FOREBAY

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
3	MAR 17, 2026	FOR I&M PLAN	
2	SEP 19, 2025	FOR I&M PLAN	
1	MAR 12, 2025	FOR I&M PLAN	

DRAWN: JJM | DESIGN: JJM

CHECKED: BDS | CHECKED: BDS

CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:

COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

TITLE:

INSPECTION AND MAINTENANCE PLAN

FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	IM1

APPENDIX A
CHANNEL PROTECTION

STORMWATER ANALYSIS AREA WORKSHEET (CHANNEL PROTECTION)

EMANUEL ENGINEERING INC.

JOB: 24-1061 Copley-Gallant-80 Winnicutt Road
DATE: 5/4/2026
ENGINEER: JJM

PRE DEVELOPMENT DRAINAGE AREAS:

SOIL TYPE	*SOIL GROUP*	*CN#*	***SUBCAT ES1*** *Area (SF)*	***SUBCAT ES2*** *Area (SF)*	***SUBCAT ES3*** *Area (SF)*	***SUBCAT ES4*** *Area (SF)*	***SUBCAT ES4A*** *Area (SF)*	***SUBCAT ES4B*** *Area (SF)*	***SUBCAT ES5*** *Area (SF)*
Grass	C	74	22,600	215,410	2,480	51,210	4,130	6,125	59,250
Grass	D	80	0	0	0	0	0	0	0
Woods	C	70	111,460	37,875	1,270	115	0	0	970
Woods	D	77	0	365	180	0	0	0	0
Gravel	C	96	0	4,465	1,730	3,930	1,835	0	0
Building	C	98	0	885	0	0	0	0	3,670
Pavement	C	98	0	3,560	0	0	155	0	3,385
Total Area (SF)			**134,060**	**262,560**	**5,660**	**55,255**	**6,120**	**6,125**	**67,275**
Area (Acres)			**3.08**	**6.03**	**0.13**	**1.27**	**0.14**	**0.14**	**1.54**

Total Impervious (SF)			**0**	**8,910**	**1,730**	**3,930**	**1,990**	**0**	**7,055**
Impervious (Acres)			**0.00**	**0.20**	**0.04**	**0.09**	**0.05**	**0.00**	**0.16**

SUBCAT ES5A *Area (SF)*	***SUBCAT ES6*** *Area (SF)*	***SUBCAT ES6A*** *Area (SF)*	***SUBCAT ES6B*** *Area (SF)*	***SUBCAT ES7*** *Area (SF)*	***SUBCAT ES9*** *Area (SF)*	***SUBCAT ES10*** *Area (SF)*	***SUBCAT ES11*** *Area (SF)*	***TOTAL AREA*** *(SF)*
3,275	0	43,060	0	0	0	5,935	241,560	**655,035**
0	0	0	0	0	0	0	0	**0**
0	33,770	31,335	11,480	19,965	13,855	47,480	33,010	**342,585**
0	965	0	0	0	0	3,450	225	**5,185**
0	0	0	0	0	0	0	1,305	**13,265**
0	0	0	0	0	0	0	1,825	**6,380**
305	0	0	0	0	0	0	1,615	**9,020**
3,580	**34,735**	**74,395**	**11,480**	**19,965**	**13,855**	**56,865**	**279,540**	**1,031,470**
0.08	**0.80**	**1.71**	**0.26**	**0.46**	**0.32**	**1.31**	**6.42**	**23.68**

305	**0**	**0**	**0**	**0**	**0**	**0**	**4,745**	**28,665**
0.01	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.66**

STORMWATER ANALYSIS AREA WORKSHEET (CHANNEL PROTECTION)

EMANUEL ENGINEERING INC.

JOB: 24-1061 Copley-Gallant-80 Winnicutt Road
DATE: 5/4/2026
ENGINEER: JJM

POST DEVELOPMENT DRAINAGE AREAS:

SOIL TYPE	*SOIL GROUP*	*CN#*	***SUBCAT PS1*** *Area (SF)*	***SUBCAT PS2*** *Area (SF)*	***SUBCAT PS3*** *Area (SF)*	***SUBCAT PS4*** *Area (SF)*	***SUBCAT PS4A*** *Area (SF)*	***SUBCAT PS5*** *Area (SF)*	***SUBCAT PS6*** *Area (SF)*	***SUBCAT PS6A*** *Area (SF)*	***SUBCAT PS6B*** *Area (SF)*	***SUBCAT PS7C*** *Area (SF)*	***SUBCAT PS7D*** *Area (SF)*
Grass	C	74	58,335	189,850	18,910	10,315	6,515	2,355	24,690	2,870	3,360	560	560
Grass	D	80	0	80	0	0	0	70	0	0	0	0	0
Woods	C	70	0	0	0	0	0	0	0	0	0	0	0
Woods	D	77	0	0	0	0	0	0	0	0	0	0	0
Building	C	98	0	0	0	0	210	0	0	200	0	1,360	1,360
Pavement	C	98	2,455	2,095	11,955	10,200	0	0	1,195	0	0	0	0
Pavement	D	98	0	0	0	0	0	0	0	0	0	0	0
Total Area (SF)			**60,790**	**192,025**	**30,865**	**20,515**	**6,725**	**2,425**	**25,885**	**3,070**	**3,360**	**1,920**	**1,920**
Area (Acres)			**1.40**	**4.41**	**0.71**	**0.47**	**0.15**	**0.06**	**0.59**	**0.07**	**0.08**	**0.04**	**0.04**
Total Impervious (SF)			**2,455**	**2,095**	**11,955**	**10,200**	**210**	**0**	**1,195**	**200**	**0**	**1,360**	**1,360**
Impervious (Acres)			**0.06**	**0.05**	**0.27**	**0.23**	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.03**	**0.03**

SUBCAT PS7E *Area (SF)*	***SUBCAT PS7F*** *Area (SF)*	***SUBCAT PS7G*** *Area (SF)*	***SUBCAT PS7H*** *Area (SF)*	***SUBCAT PS7I*** *Area (SF)*	***SUBCAT PS7J*** *Area (SF)*	***SUBCAT PS8*** *Area (SF)*	***SUBCAT PS8A*** *Area (SF)*	***SUBCAT PS9*** *Area (SF)*	***SUBCAT PS11*** *Area (SF)*	***SUBCAT PS12*** *Area (SF)*	***SUBCAT PS13B*** *Area (SF)*	***SUBCAT PS13E*** *Area (SF)*	***SUBCAT PS13W*** *Area (SF)*
560	560	560	560	560	560	105,495	6,845	16,325	12,820	55,905	15,600	11,550	69,870
0	0	0	0	0	0	965	0	0	0	3,205	0	0	0
0	0	0	0	0	0	0	0	2,730	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,360	1,360	1,360	1,360	1,360	1,360	0	0	0	0	0	0	0	0
0	0	0	0	0	0	27,485	0	0	0	13,350	0	9,570	20,450
0	0	0	0	0	0	0	0	0	0	645	0	0	0
1,920	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**	**133,945**	**6,845**	**19,055**	**12,820**	**73,105**	**15,600**	**21,120**	**90,320**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**3.07**	**0.16**	**0.44**	**0.29**	**1.68**	**0.36**	**0.48**	**2.07**

1,360	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**	**27,485**	**0**	**0**	**0**	**13,995**	**0**	**9,570**	**20,450**
0.03	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.63**	**0.00**	**0.00**	**0.00**	**0.32**	**0.00**	**0.22**	**0.47**

SUBCAT PS13S *Area (SF)*	***SUBCAT PS13SF*** *Area (SF)*	***SUBCAT PS14*** *Area (SF)*	***SUBCAT PS15*** *Area (SF)*	***SUBCAT PS16*** *Area (SF)*	***SUBCAT PS16A*** *Area (SF)*	***SUBCAT PS16B*** *Area (SF)*	***SUBCAT PS17*** *Area (SF)*	***SUBCAT PS18B*** *Area (SF)*	***SUBCAT PS18C*** *Area (SF)*	***SUBCAT PS18D*** *Area (SF)*	***SUBCAT PS18E*** *Area (SF)*	***SUBCAT PS18F*** *Area (SF)*
13,815	8,085	16,055	4,630	15,960	3,065	1,685	4,545	560	560	560	560	560
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1,250	0	0	0	0	0	1,360	1,360	1,360	1,360	1,360
12,695	0	6,340	4,010	5,425	0	0	4,425	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
26,510	**8,085**	**23,645**	**8,640**	**21,385**	**3,065**	**1,685**	**8,970**	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**
0.61	**0.19**	**0.54**	**0.20**	**0.49**	**0.07**	**0.04**	**0.21**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**

12,695	**0**	**7,590**	**4,010**	**5,425**	**0**	**0**	**4,425**	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**
0.29	**0.00**	**0.17**	**0.09**	**0.12**	**0.00**	**0.00**	**0.10**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**

SUBCAT PS18G	***SUBCAT PS18H***	***SUBCAT PS18I***	***SUBCAT PS19C***	***SUBCAT PS19D***	***SUBCAT PS19E***	***SUBCAT PS19F***	***SUBCAT PS20***	***SUBCAT PS21***	***SUBCAT PS21A***	***SUBCAT PS22B***	***SUBCAT PS22C***	***SUBCAT PS23***	***SUBCAT PS24***
Area (SF)	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*	*Area (SF)*
560	560	560	560	560	560	560	6,545	70,690	7,770	625	625	705	705
0	0	0	0	0	0	0	70	150	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,360	1,360	1,360	1,360	1,360	1,360	1,360	0	0	0	1,680	1,680	1,680	1,680
0	0	0	0	0	0	0	7,660	4,785	5,205	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,920	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**	**1,920**	**14,275**	**75,625**	**12,975**	**2,305**	**2,305**	**2,385**	**2,385**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.33**	**1.74**	**0.30**	**0.05**	**0.05**	**0.05**	**0.05**

1,360	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**	**1,360**	**7,660**	**4,785**	**5,205**	**1,680**	**1,680**	**1,680**	**1,680**
0.03	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.18**	**0.11**	**0.12**	**0.04**	**0.04**	**0.04**	**0.04**

SUBCAT PS25 *Area (SF)*	***SUBCAT PS26*** *Area (SF)*	***SUBCAT PS27*** *Area (SF)*	***SUBCAT PS28*** *Area (SF)*	***SUBCAT PS29*** *Area (SF)*	***SUBCAT PS30*** *Area (SF)*	***SUBCAT PS31*** *Area (SF)*	***SUBCAT PS32*** *Area (SF)*	***SUBCAT PS33*** *Area (SF)*	***SUBCAT PS34*** *Area (SF)*	***SUBCAT PS35*** *Area (SF)*	***SUBCAT PS36*** *Area (SF)*	***SUBCAT PS37*** *Area (SF)*	***SUBCAT PS38*** *Area (SF)*
705	705	705	705	720	705	705	770	705	720	720	720	705	705
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,385	**2,385**	**2,385**	**2,385**	**2,400**	**2,385**	**2,385**	**2,450**	**2,385**	**2,400**	**2,400**	**2,400**	**2,385**	**2,385**
0.05	**0.05**	**0.05**	**0.05**	**0.06**	**0.05**	**0.05**	**0.06**	**0.05**	**0.06**	**0.06**	**0.06**	**0.05**	**0.05**

1,680	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**

SUBCAT PS39 *Area (SF)*	***SUBCAT PS40*** *Area (SF)*	***SUBCAT PS41*** *Area (SF)*	***SUBCAT PS42*** *Area (SF)*	***SUBCAT PS43*** *Area (SF)*	***SUBCAT PS44*** *Area (SF)*	***SUBCAT PS45*** *Area (SF)*	***SUBCAT PS46*** *Area (SF)*	***SUBCAT PS47*** *Area (SF)*	***SUBCAT PS48*** *Area (SF)*	***SUBCAT PS49*** *Area (SF)*	***TOTAL AREA*** *(SF)*
720	720	720	720	720	720	705	705	705	515	880	**796,140**
0	0	0	0	0	0	0	0	0	0	0	**4,540**
0	0	0	0	0	0	0	0	0	0	0	**2,730**
0	0	0	0	0	0	0	0	0	0	0	**0**
1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,375	2,520	**78,115**
0	0	0	0	0	0	0	0	0	0	0	**149,300**
0	0	0	0	0	0	0	0	0	0	0	**645**
2,400	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,385**	**2,385**	**2,385**	**1,890**	**3,400**	**1,031,470**
0.06	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.05**	**0.05**	**0.05**	**0.04**	**0.08**	**23.679**

1,680	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,680**	**1,375**	**2,520**	**228,060**
0.04	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.03**	**0.06**	**5.24**

STORMWATER/DRAINAGE SUMMARY (CHANNEL PROTECTION)

EMANUEL ENGINEERING, INC.

JOB: 24-1061 Copley-Gallant-80 Winnicutt Road
DATE: 5/4/2026
ENGINEER: JJM

PEAK FLOWS FROM HYDROCAD

Subcatchment Area	2-Year Storm 3.71"	
	Pre (CFS)	Post (CFS)
POINTS OF DISCHARGE		
LINK L101A	7.48	6.01
LINK L101B	2.03	1.99
LINK L101C	9.41	8.95
FLOW TOTALS (CFS)	**18.92**	**16.95**
Net Increase/(Decrease) (CFS)		**(1.97)**

VOLUMES FROM HYDROCAD

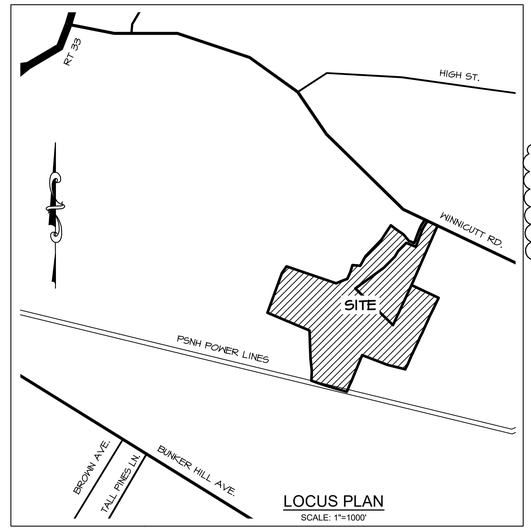
Subcatchment Area	2-Year Storm 3.71"	
	Pre (AF)	Post (AF)
POINTS OF DISCHARGE		
LINK L101A	0.715	0.715
LINK L101B	0.308	0.949
LINK L101C	1.432	1.486
Voume TOTALS (AF)	**2.455**	**3.150**
Net Increase/(Decrease) (AF)		**0.695**

Note:
1. Per Env-Wq 1503.08(l), Rainfall data has been increased by 15%.
2. This summary reflects analysis of the proposed disturbed areas only, prepared in accordance with the channel protection standards of Env-Wq 1507.05 (NHDES Alteration of Terrain regulations) per NHDES reviewer agreement. For full site pre- and post-development peak flow and volume comparisons, refer to the accompanying Stormwater/Drainage Summary (Full Lot).

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.



LOCUS PLAN
SCALE: 1"=1000'

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405
2. THE INTENT OF THIS PLAN IS TO CALCULATE PRE-DEVELOPMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH CHANNEL PROTECTION REQUIREMENTS AS REQUIRED BY NHDES ALTERATION OF TERRAIN PERMIT.
3. PRE-DEVELOPMENT DRAINAGE AREA CALCS FOR CHANNEL PROTECTION:

   DRAINAGE ANALYSIS TOTAL AREA = 1,031,470 SF

   DRAINAGE ANALYSIS IMPERVIOUS = 28,665 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 2.78%

LEGEND

- INDICATES FLOW PATH
- INDICATES SUBCATCHMENT BOUNDARIES
- XX — INDICATES SUBCATCHMENT AREA LABEL
- XX — INDICATES POND LABEL
- XX — INDICATES REACH LABEL
- XX — INDICATES LINK LABEL

ISS.	DATE:	DESCRIPTION OF ISSUE:	CHK.
9	MAY 4, 2026	FOR APPROVAL	
8	MAR 17, 2026	FOR APPROVAL	
1	DEC 11, 2024	FOR APPROVAL	

DRAWN: JJM | DESIGN: -
CHECKED: BDS | CHECKED: -

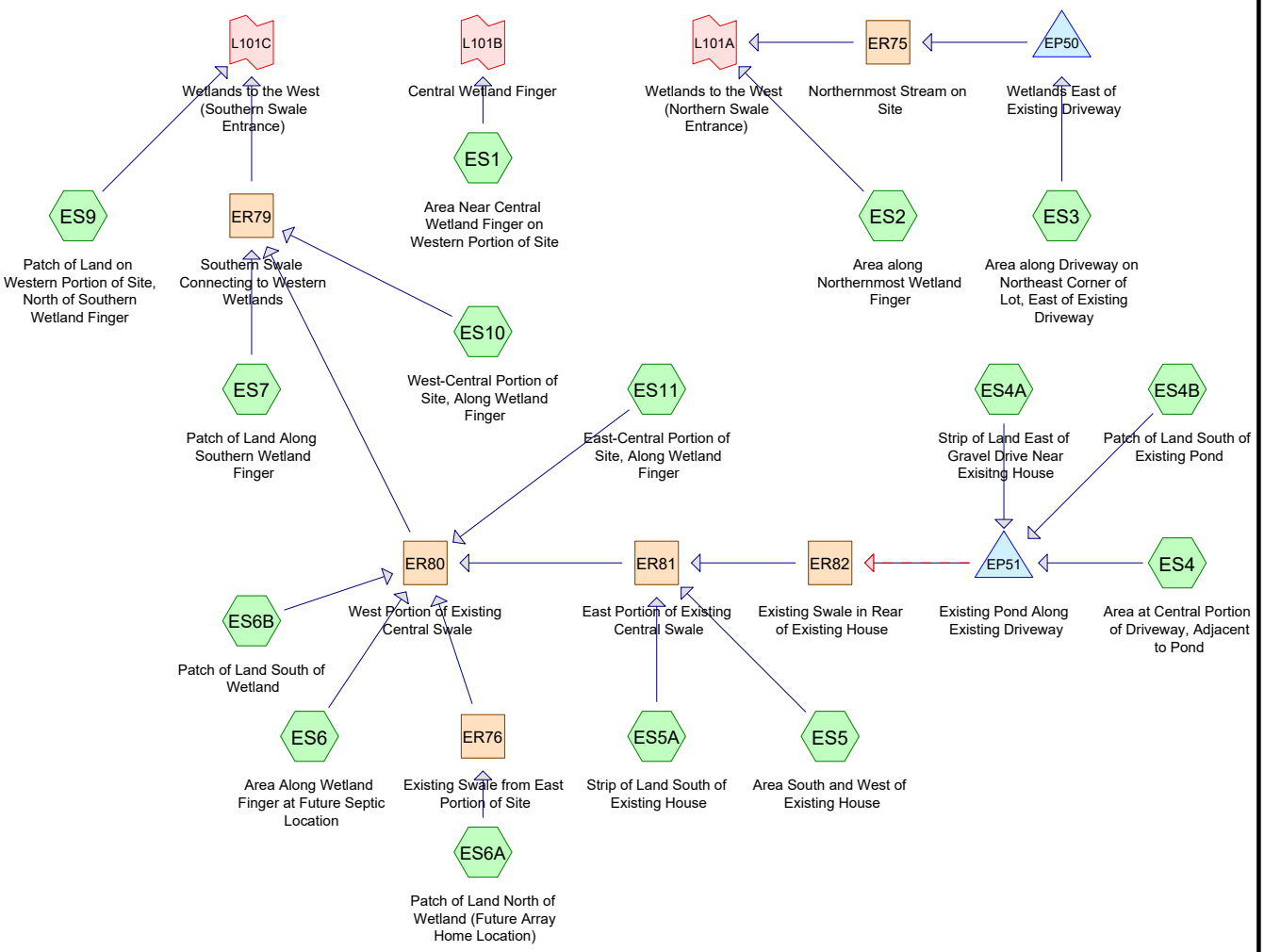
CIVIL & STRUCTURAL CONSULTANTS, LAND PLANNERS
100 GRIFFIN ROAD, UNIT C, PORTSMOUTH, NH 03801
603-772-4400 | EMANUELENGINEERING.COM ©2025

CLIENT:
COPLEY PROPERTIES, LLC
94 PORTSMOUTH AVENUE
STRATHAM, NH 03885

BRUCE D. SCAMMAN No. 11236 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE
5/4/26

TITLE: PRE-DEVELOPMENT DRAINAGE PLAN (CHANNEL PROTECTION)
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	SW1A



Routing Diagram for Predevelopment HydroCAD (Channel Protection) 04-14-26

Prepared by Emanuel Engineering, Printed 5/4/2026

HydroCAD® 10.20-8a s/n 01104 © 2025 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr (+15%)	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.71	

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
15.038	74	>75% Grass cover, Good, HSG C (ES1, ES10, ES11, ES2, ES3, ES4, ES4A, ES4B, ES5, ES5A, ES6A)
0.305	96	Gravel surface, HSG C (ES11, ES2, ES3, ES4, ES4A)
0.207	98	Paved parking, HSG C (ES11, ES2, ES4A, ES5, ES5A)
0.146	98	Roofs, HSG C (ES11, ES2, ES5)
7.865	70	Woods, Good, HSG C (ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6, ES6A, ES6B, ES7, ES9)
0.119	77	Woods, Good, HSG D (ES10, ES11, ES2, ES3, ES6)
23.679	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
23.560	HSG C	ES1, ES10, ES11, ES2, ES3, ES4, ES4A, ES4B, ES5, ES5A, ES6, ES6A, ES6B, ES7, ES9
0.119	HSG D	ES10, ES11, ES2, ES3, ES6
0.000	Other	
23.679		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	15.038	0.000	0.000	15.038	>75% Grass cover, Good	ES1, ES10, ES11, ES2, ES3, ES4, ES4A, ES4B, ES5, ES5A, ES6A
0.000	0.000	0.305	0.000	0.000	0.305	Gravel surface	ES11, ES2, ES3, ES4, ES4A
0.000	0.000	0.207	0.000	0.000	0.207	Paved parking	ES11, ES2, ES4A, ES5, ES5A
0.000	0.000	0.146	0.000	0.000	0.146	Roofs	ES11, ES2, ES5
0.000	0.000	7.865	0.119	0.000	7.984	Woods, Good	ES1, ES10, ES11, ES2, ES3, ES4, ES5, ES6, ES6A, ES6B, ES7, ES9
0.000	**0.000**	**23.560**	**0.119**	**0.000**	**23.679**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	EP50	91.13	90.70	30.0	0.0143	0.025	0.0	24.0	0.0	
2	EP51	75.71	75.04	20.0	0.0335	0.025	0.0	12.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES1: Area Near Central Runoff Area=134,060 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=985' Tc=24.8 min CN=71 Runoff=2.03 cfs 0.308 af

SubcatchmentES10: West-Central Portion Runoff Area=56,865 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=625' Tc=9.9 min CN=71 Runoff=1.33 cfs 0.130 af

SubcatchmentES11: East-Central Portion Runoff Area=279,540 sf 1.23% Impervious Runoff Depth=1.39"
Flow Length=900' Tc=16.2 min CN=74 Runoff=6.22 cfs 0.742 af

SubcatchmentES2: Area along Runoff Area=262,560 sf 1.69% Impervious Runoff Depth=1.39"
Flow Length=2,480' Tc=9.5 min CN=74 Runoff=7.46 cfs 0.697 af

SubcatchmentES3: Area along Driveway on Runoff Area=5,660 sf 0.00% Impervious Runoff Depth=1.80"
Tc=6.0 min CN=80 Runoff=0.26 cfs 0.020 af

SubcatchmentES4: Area at Central Portion Runoff Area=55,255 sf 0.00% Impervious Runoff Depth=1.52"
Flow Length=250' Tc=6.1 min CN=76 Runoff=2.08 cfs 0.161 af

SubcatchmentES4A: Strip of Land East of Runoff Area=6,120 sf 2.53% Impervious Runoff Depth=1.88"
Flow Length=95' Tc=3.9 min CN=81 Runoff=0.33 cfs 0.022 af

SubcatchmentES4B: Patch of Land South of Runoff Area=6,125 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=120' Tc=4.7 min CN=74 Runoff=0.22 cfs 0.016 af

SubcatchmentES5: Area South and West Runoff Area=67,275 sf 10.49% Impervious Runoff Depth=1.52"
Flow Length=395' Tc=8.4 min CN=76 Runoff=2.25 cfs 0.196 af

SubcatchmentES5A: Strip of Land South of Runoff Area=3,580 sf 8.52% Impervious Runoff Depth=1.52"
Tc=0.0 min CN=76 Runoff=0.17 cfs 0.010 af

SubcatchmentES6: Area Along Wetland Runoff Area=34,735 sf 0.00% Impervious Runoff Depth=1.14"
Flow Length=890' Tc=19.7 min CN=70 Runoff=0.55 cfs 0.076 af

SubcatchmentES6A: Patch of Land North Runoff Area=74,395 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=390' Tc=14.5 min CN=72 Runoff=1.56 cfs 0.179 af

SubcatchmentES6B: Patch of Land South Runoff Area=11,480 sf 0.00% Impervious Runoff Depth=1.14"
Flow Length=405' Tc=10.6 min CN=70 Runoff=0.24 cfs 0.025 af

SubcatchmentES7: Patch of Land Along Runoff Area=19,965 sf 0.00% Impervious Runoff Depth=1.14"
Flow Length=690' Tc=12.5 min CN=70 Runoff=0.39 cfs 0.044 af

SubcatchmentES9: Patch of Land on Runoff Area=13,855 sf 0.00% Impervious Runoff Depth=1.14"
Flow Length=765' Tc=17.6 min CN=70 Runoff=0.23 cfs 0.030 af

Reach ER75: Northernmost Stream on Avg. Flow Depth=0.01' Max Vel=0.63 fps Inflow=0.23 cfs 0.018 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.05 cfs 0.018 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.09' Max Vel=1.87 fps Inflow=1.56 cfs 0.179 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=1.13 cfs 0.179 af

Reach ER79: Southern Swale Avg. Flow Depth=0.57' Max Vel=1.73 fps Inflow=10.11 cfs 1.402 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=9.21 cfs 1.402 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.35' Max Vel=2.26 fps Inflow=9.62 cfs 1.228 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=9.01 cfs 1.228 af

Reach ER81: East Portion of Existing Avg. Flow Depth=0.13' Max Vel=1.85 fps Inflow=2.32 cfs 0.206 af
n=0.030 L=800.0' S=0.0231 '/' Capacity=147.54 cfs Outflow=1.81 cfs 0.206 af

Reach ER82: Existing Swale in Rear of Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.022 L=300.0' S=0.0137 '/' Capacity=482.56 cfs Outflow=0.00 cfs 0.000 af

Pond EP50: Wetlands East of Existing Driveway Peak Elev=91.37' Storage=107 cf Inflow=0.26 cfs 0.020 af
24.0" Round Culvert n=0.025 L=30.0' S=0.0143 '/' Outflow=0.23 cfs 0.018 af

Pond EP51: Existing Pond Along Existing Peak Elev=74.27' Storage=8,664 cf Inflow=2.59 cfs 0.199 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Link L101A: Wetlands to the West (Northern Swale Entrance) Inflow=7.48 cfs 0.715 af
Primary=7.48 cfs 0.715 af

Link L101B: Central Wetland Finger Inflow=2.03 cfs 0.308 af
Primary=2.03 cfs 0.308 af

Link L101C: Wetlands to the West (Southern Swale Entrance) Inflow=9.41 cfs 1.432 af
Primary=9.41 cfs 1.432 af

Total Runoff Area = 23.679 ac Runoff Volume = 2.655 af Average Runoff Depth = 1.35"
98.51% Pervious = 23.326 ac 1.49% Impervious = 0.354 ac

Summary for Subcatchment ES1: Area Near Central Wetland Finger on Western Portion of Site

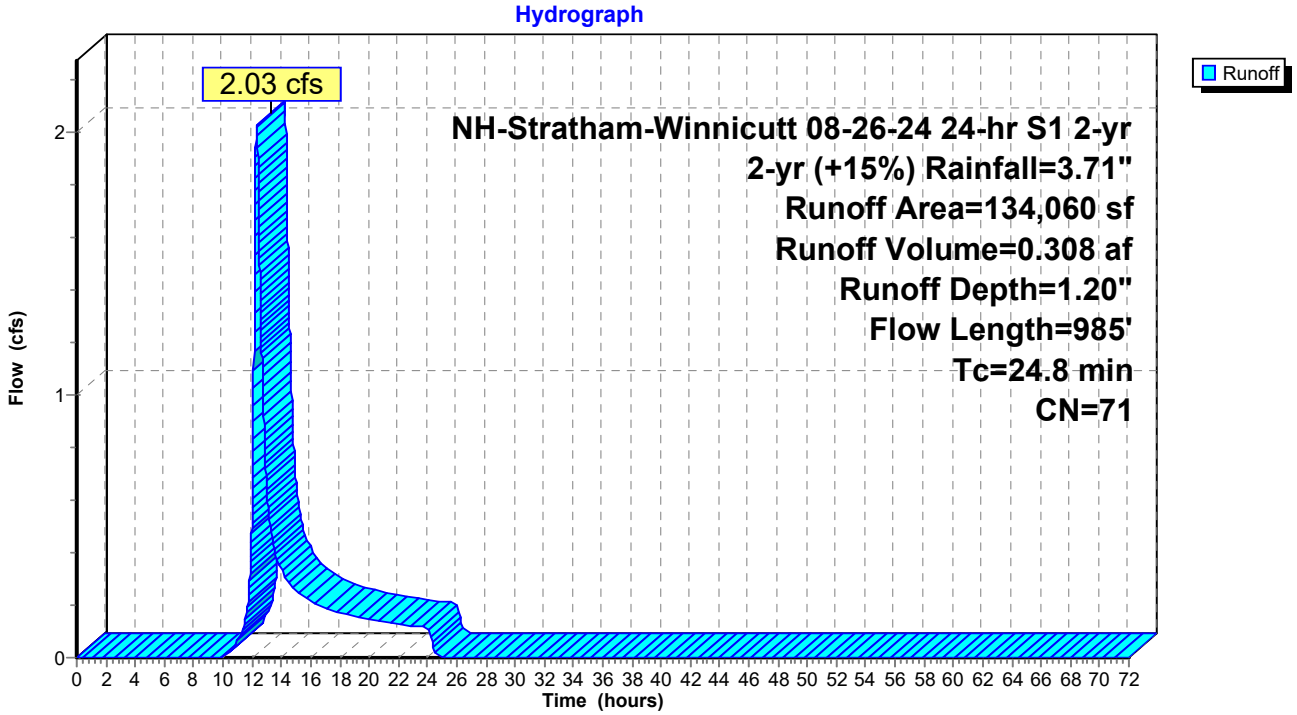
Runoff = 2.03 cfs @ 12.32 hrs, Volume= 0.308 af, Depth= 1.20"
Routed to Link L101B : Central Wetland Finger

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
22,600	74	>75% Grass cover, Good, HSG C
111,460	70	Woods, Good, HSG C
134,060	71	Weighted Average
134,060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.3	20	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
19.3	915	0.0250	0.79		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
24.8	985	Total			

Subcatchment ES1: Area Near Central Wetland Finger on Western Portion of Site



Summary for Subcatchment ES10: West-Central Portion of Site, Along Wetland Finger

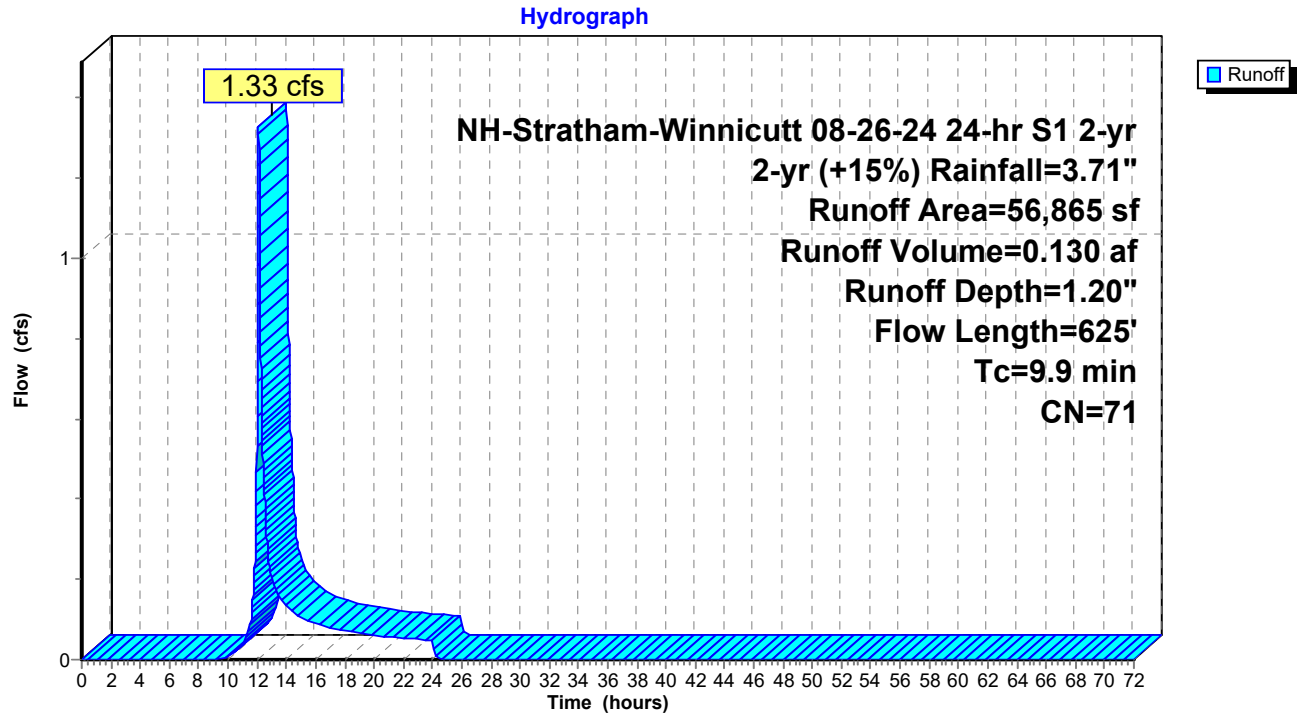
Runoff = 1.33 cfs @ 12.09 hrs, Volume= 0.130 af, Depth= 1.20"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
5,935	74	>75% Grass cover, Good, HSG C
47,480	70	Woods, Good, HSG C
3,450	77	Woods, Good, HSG D
56,865	71	Weighted Average
56,865		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0800	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
1.7	150	0.0900	1.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	425	0.0100	4.52	169.55	**Channel Flow, West Portion of Existing Central Swale** Area= 37.5 sf Perim= 43.0' r= 0.87' n= 0.030 Earth, grassed & winding
9.9	625	Total			

Subcatchment ES10: West-Central Portion of Site, Along Wetland Finger



Summary for Subcatchment ES11: East-Central Portion of Site, Along Wetland Finger

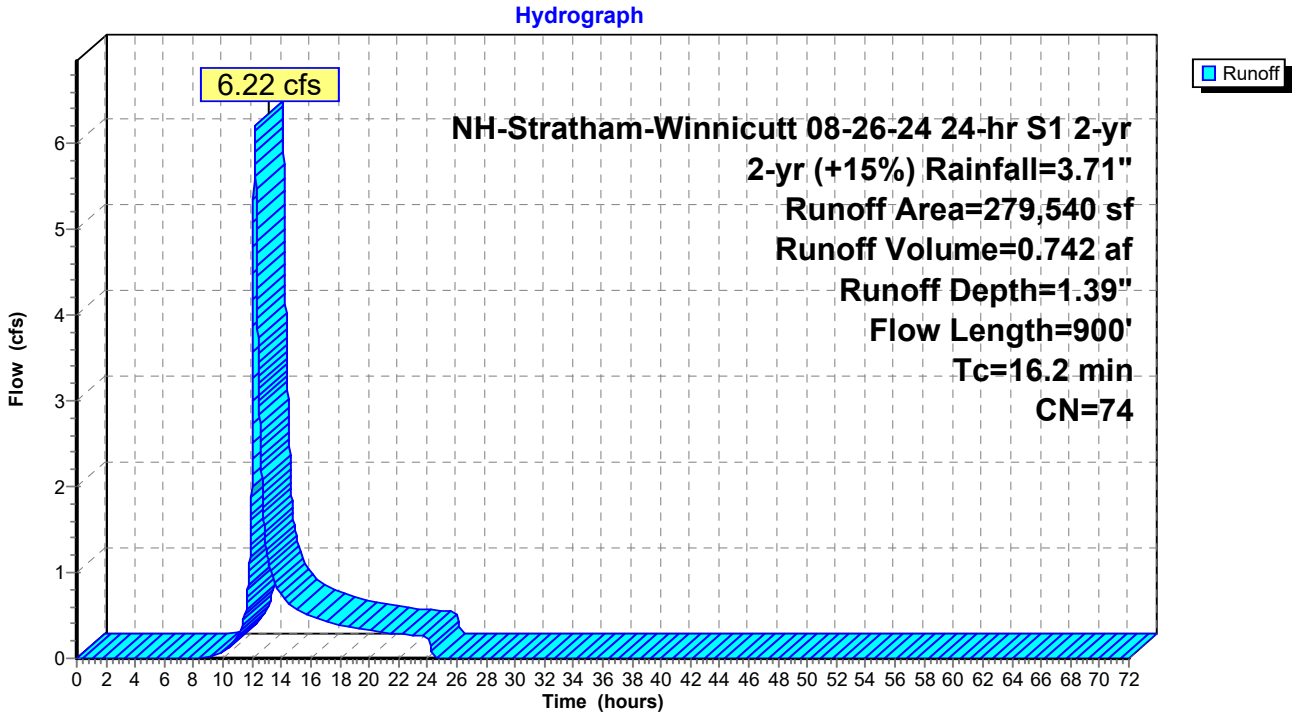
Runoff = 6.22 cfs @ 12.18 hrs, Volume= 0.742 af, Depth= 1.39"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
241,560	74	>75% Grass cover, Good, HSG C
33,010	70	Woods, Good, HSG C
225	77	Woods, Good, HSG D
1,305	96	Gravel surface, HSG C
1,825	98	Roofs, HSG C
1,615	98	Paved parking, HSG C
279,540	74	Weighted Average
276,100		98.77% Pervious Area
3,440		1.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0150	0.14		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
9.4	560	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	30	0.1500	1.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.6	260	0.0250	7.83	152.72	**Channel Flow, East Portion of Existing Central Swale** Area= 19.5 sf Perim= 19.5' r= 1.00' n= 0.030 Earth, grassed & winding
16.2	900	Total			

Subcatchment ES11: East-Central Portion of Site, Along Wetland Finger



Summary for Subcatchment ES2: Area along Northernmost Wetland Finger

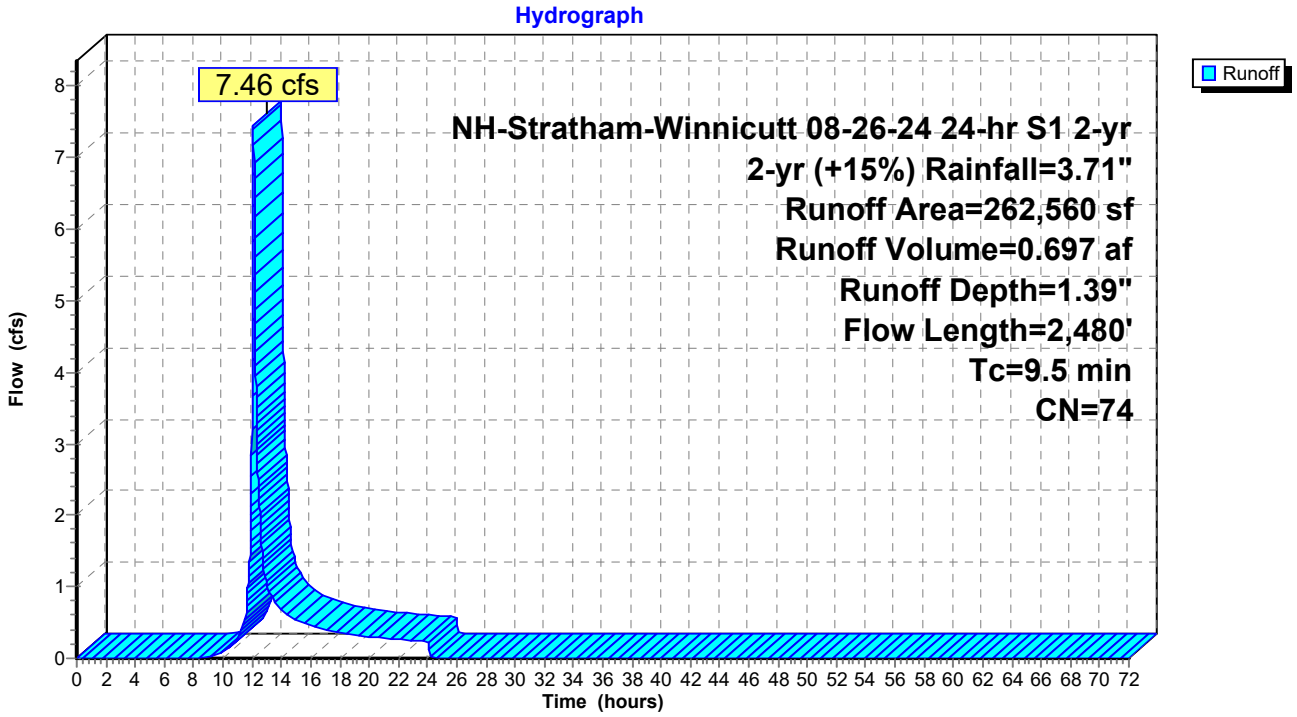
Runoff = 7.46 cfs @ 12.08 hrs, Volume= 0.697 af, Depth= 1.39"
Routed to Link L101A : Wetlands to the West (Northern Swale Entrance)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
215,410	74	>75% Grass cover, Good, HSG C
37,875	70	Woods, Good, HSG C
365	77	Woods, Good, HSG D
4,465	96	Gravel surface, HSG C
885	98	Roofs, HSG C
3,560	98	Paved parking, HSG C
262,560	74	Weighted Average
258,115		98.31% Pervious Area
4,445		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.6	60	0.0600	1.71		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	80	0.1500	1.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
4.2	2,290	0.0150	9.13	438.22	**Channel Flow, Mill Brook** Area= 48.0 sf Perim= 26.0' r= 1.85' n= 0.030 Earth, grassed & winding
9.5	2,480	Total			

Subcatchment ES2: Area along Northernmost Wetland Finger



Summary for Subcatchment ES3: Area along Driveway on Northeast Corner of Lot, East of Existing Driv

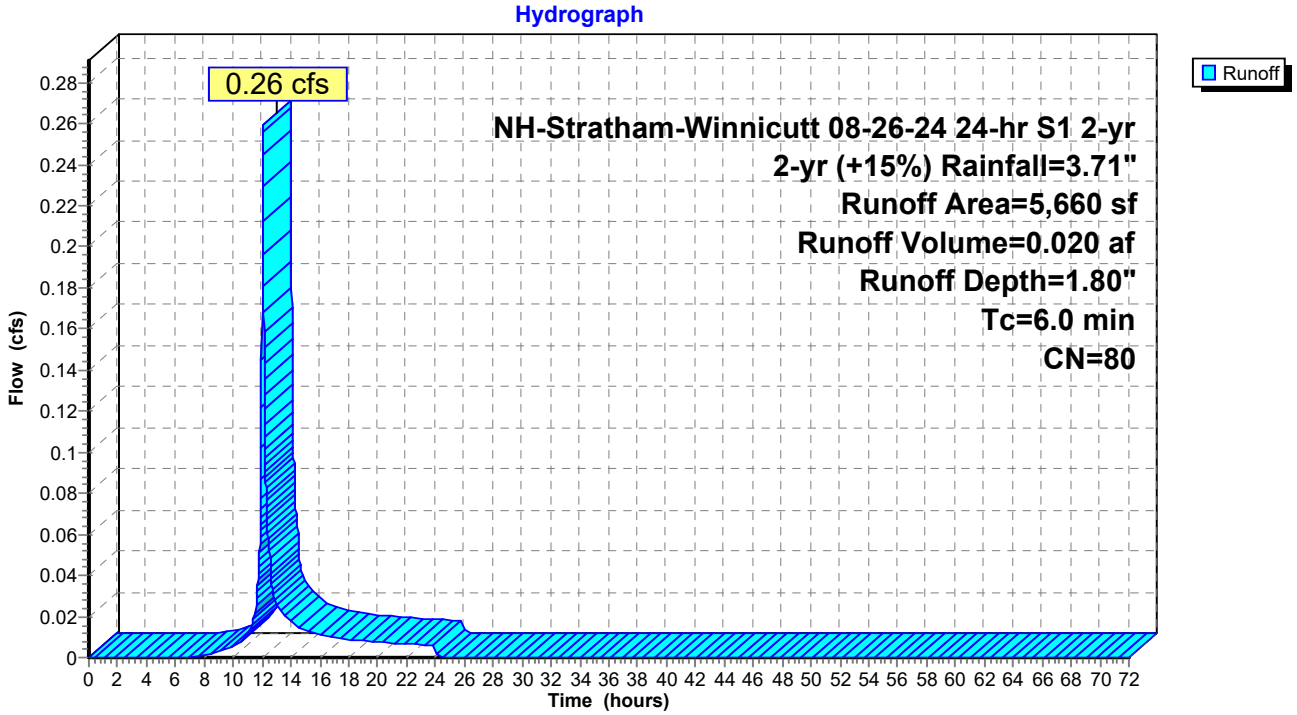
Runoff = 0.26 cfs @ 12.04 hrs, Volume= 0.020 af, Depth= 1.80"
Routed to Pond EP50 : Wetlands East of Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
2,480	74	>75% Grass cover, Good, HSG C
1,270	70	Woods, Good, HSG C
180	77	Woods, Good, HSG D
1,730	96	Gravel surface, HSG C
5,660	80	Weighted Average
5,660		100.00% Pervious Area

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

Subcatchment ES3: Area along Driveway on Northeast Corner of Lot, East of Existing Driveway



Summary for Subcatchment ES4: Area at Central Portion of Driveway, Adjacent to Pond

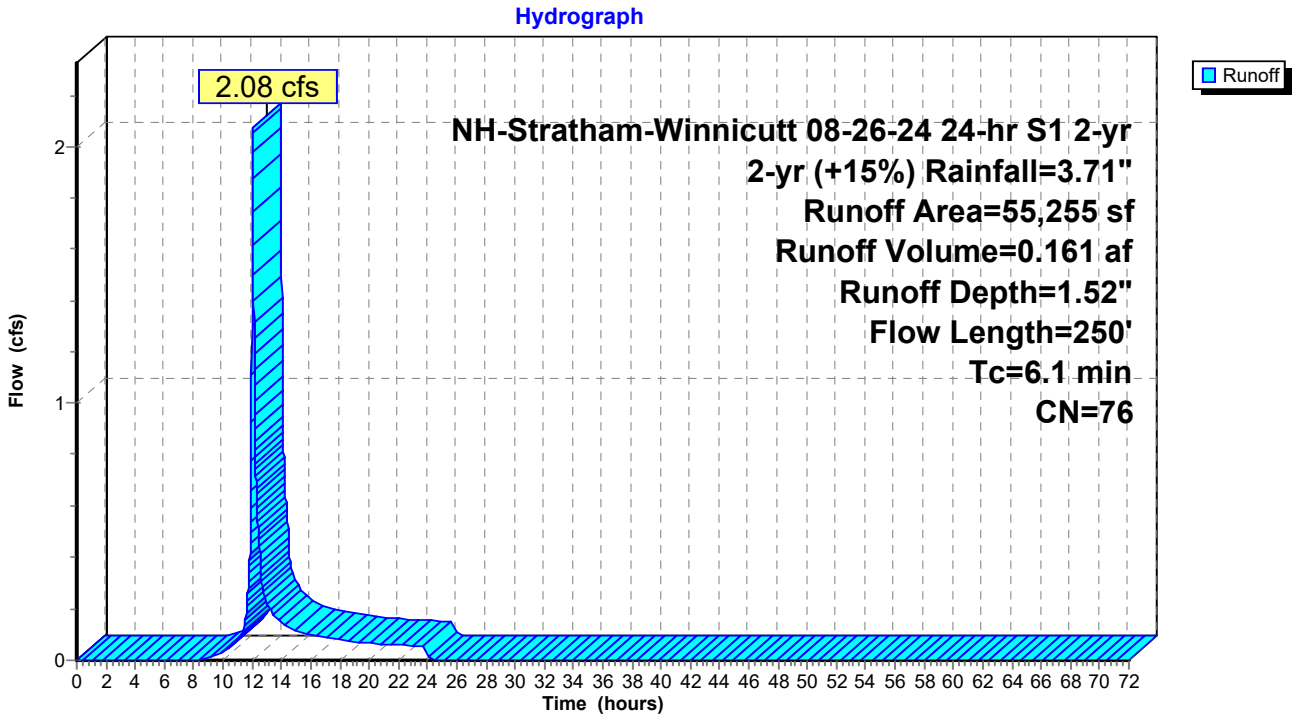
Runoff = 2.08 cfs @ 12.04 hrs, Volume= 0.161 af, Depth= 1.52"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
51,210	74	>75% Grass cover, Good, HSG C
115	70	Woods, Good, HSG C
3,930	96	Gravel surface, HSG C
55,255	76	Weighted Average
55,255		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
2.1	200	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
6.1	250	Total			

Subcatchment ES4: Area at Central Portion of Driveway, Adjacent to Pond



Summary for Subcatchment ES4A: Strip of Land East of Gravel Drive Near Exisitng House

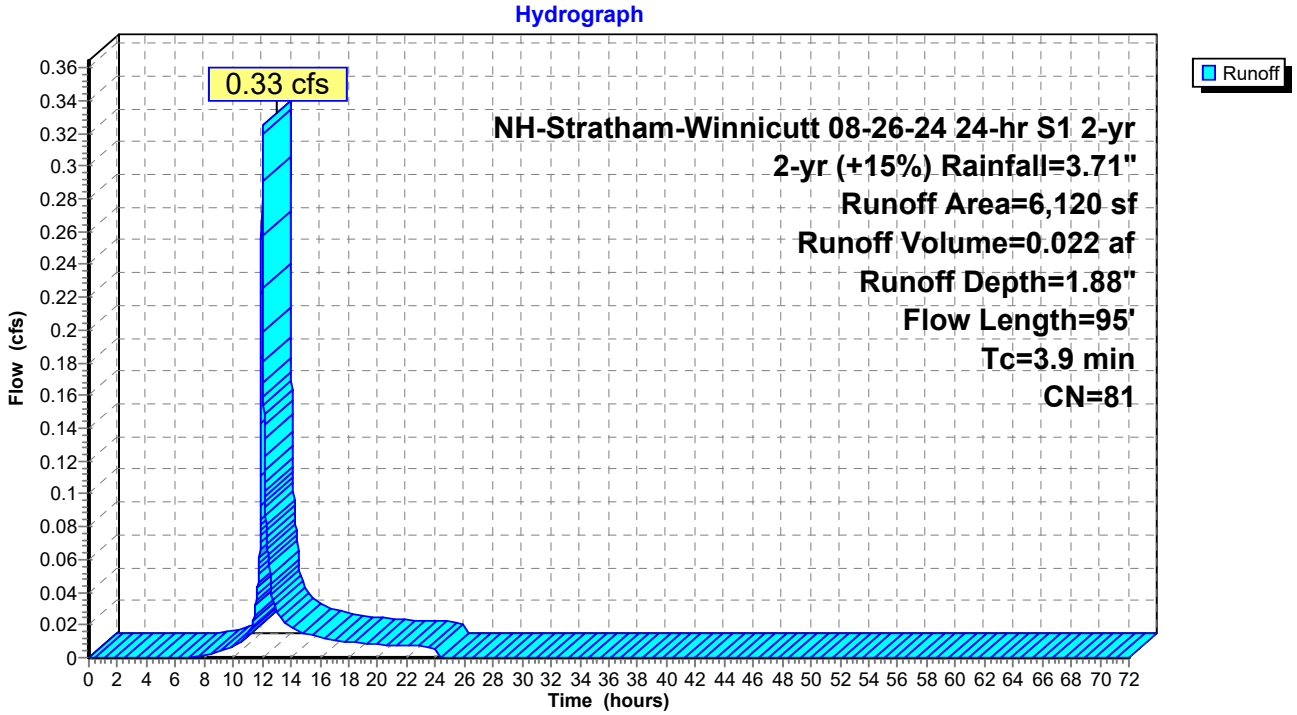
Runoff = 0.33 cfs @ 12.02 hrs, Volume= 0.022 af, Depth= 1.88"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
4,130	74	>75% Grass cover, Good, HSG C
1,835	96	Gravel surface, HSG C
155	98	Paved parking, HSG C
6,120	81	Weighted Average
5,965		97.47% Pervious Area
155		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0600	0.25		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.5	45	0.0450	1.48		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.9	95	Total			

Subcatchment ES4A: Strip of Land East of Gravel Drive Near Exisitng House



Summary for Subcatchment ES4B: Patch of Land South of Existing Pond

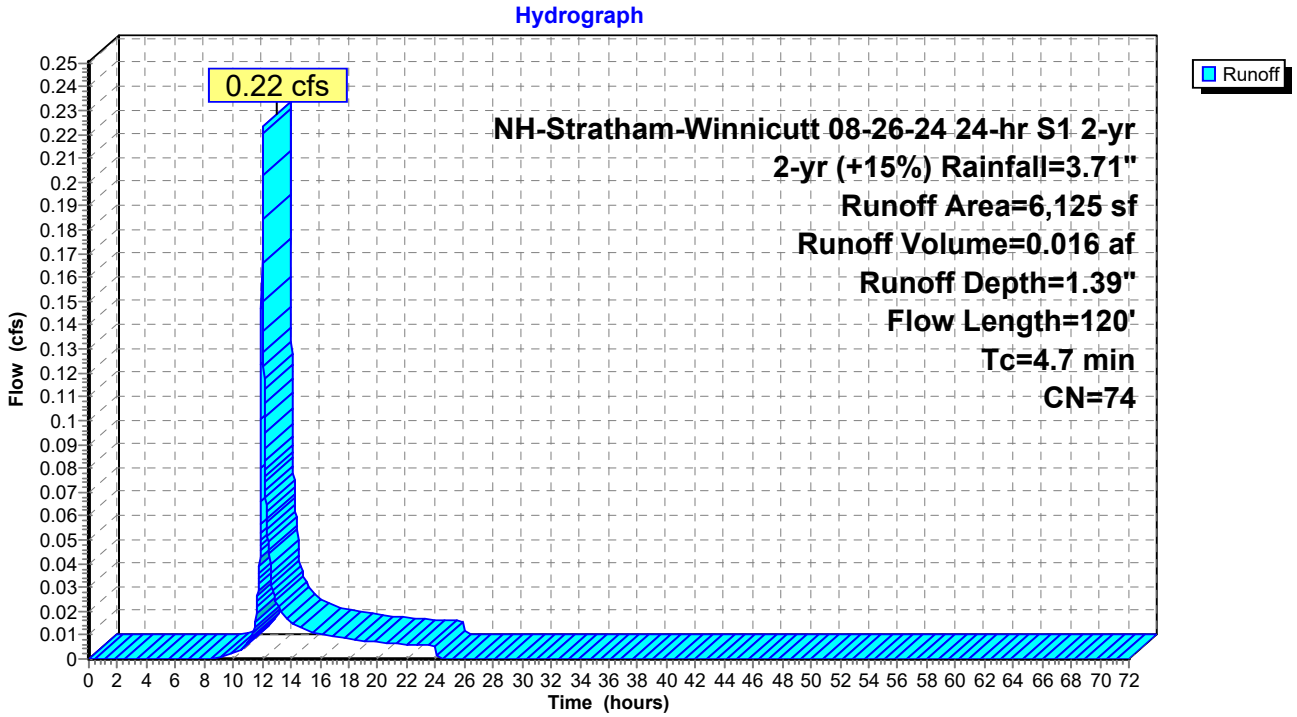
Runoff = 0.22 cfs @ 12.03 hrs, Volume= 0.016 af, Depth= 1.39"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
6,125	74	>75% Grass cover, Good, HSG C
6,125		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.7	70	0.0600	1.71		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
4.7	120	Total			

Subcatchment ES4B: Patch of Land South of Existing Pond



Summary for Subcatchment ES5: Area South and West of Existing House

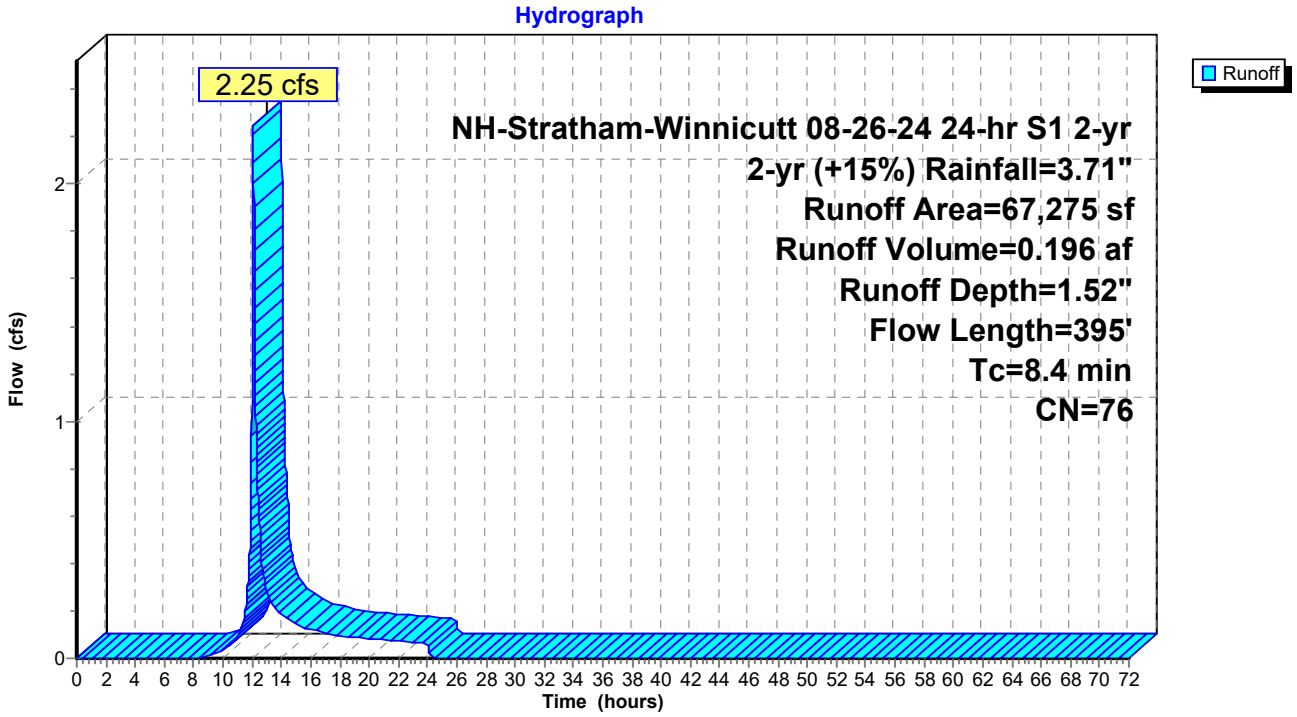
Runoff = 2.25 cfs @ 12.07 hrs, Volume= 0.196 af, Depth= 1.52"
Routed to Reach ER81 : East Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
59,250	74	>75% Grass cover, Good, HSG C
970	70	Woods, Good, HSG C
3,670	98	Roofs, HSG C
3,385	98	Paved parking, HSG C
67,275	76	Weighted Average
60,220		89.51% Pervious Area
7,055		10.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	50	0.0150	0.14		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.5	135	0.0450	1.48		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.0	210	0.0100	3.66	128.26	**Channel Flow, Existing Swale in Rear of Existing House** Area= 35.0 sf Perim= 55.0' r= 0.64' n= 0.030 Earth, grassed & winding
8.4	395	Total			

Subcatchment ES5: Area South and West of Existing House



Summary for Subcatchment ES5A: Strip of Land South of Existing House

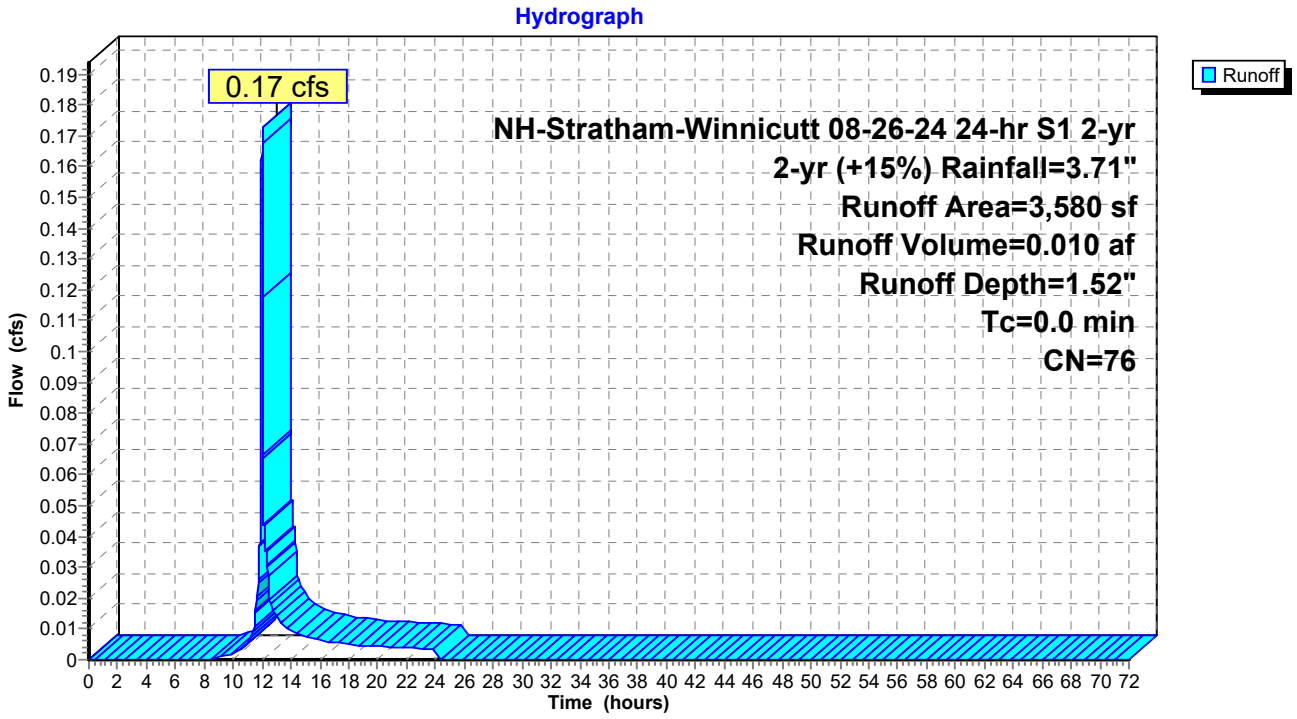
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.17 cfs @ 11.99 hrs, Volume= 0.010 af, Depth= 1.52"
Routed to Reach ER81 : East Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
3,275	74	>75% Grass cover, Good, HSG C
305	98	Paved parking, HSG C
3,580	76	Weighted Average
3,275		91.48% Pervious Area
305		8.52% Impervious Area

Subcatchment ES5A: Strip of Land South of Existing House



Summary for Subcatchment ES6: Area Along Wetland Finger at Future Septic Location

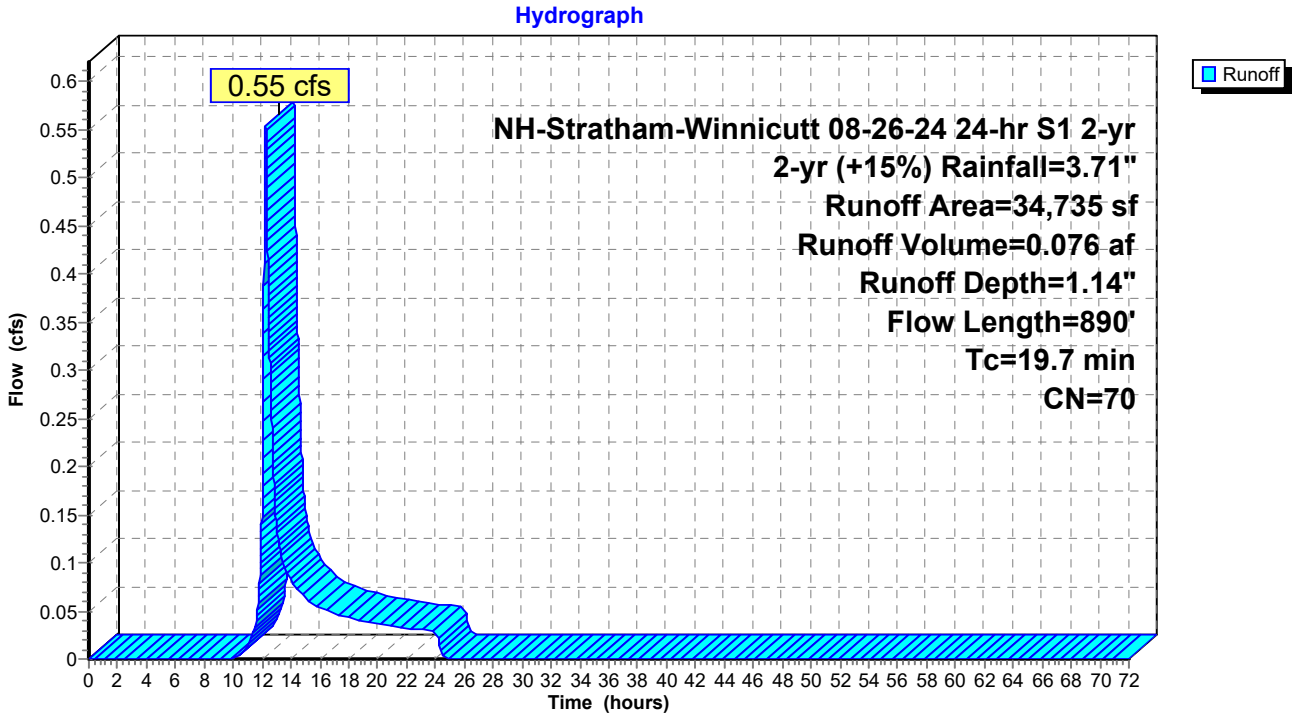
Runoff = 0.55 cfs @ 12.24 hrs, Volume= 0.076 af, Depth= 1.14"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
33,770	70	Woods, Good, HSG C
965	77	Woods, Good, HSG D
34,735	70	Weighted Average
34,735		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
2.7	150	0.0333	0.91		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
9.4	380	0.0180	0.67		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
0.2	310	0.0380	21.06	3,054.41	**Channel Flow, Existing Swale from East Portion of Site** Area= 145.0 sf Perim= 45.0' r= 3.22' n= 0.030 Earth, grassed & winding
19.7	890	Total			

Subcatchment ES6: Area Along Wetland Finger at Future Septic Location



Summary for Subcatchment ES6A: Patch of Land North of Wetland (Future Array Home Location)

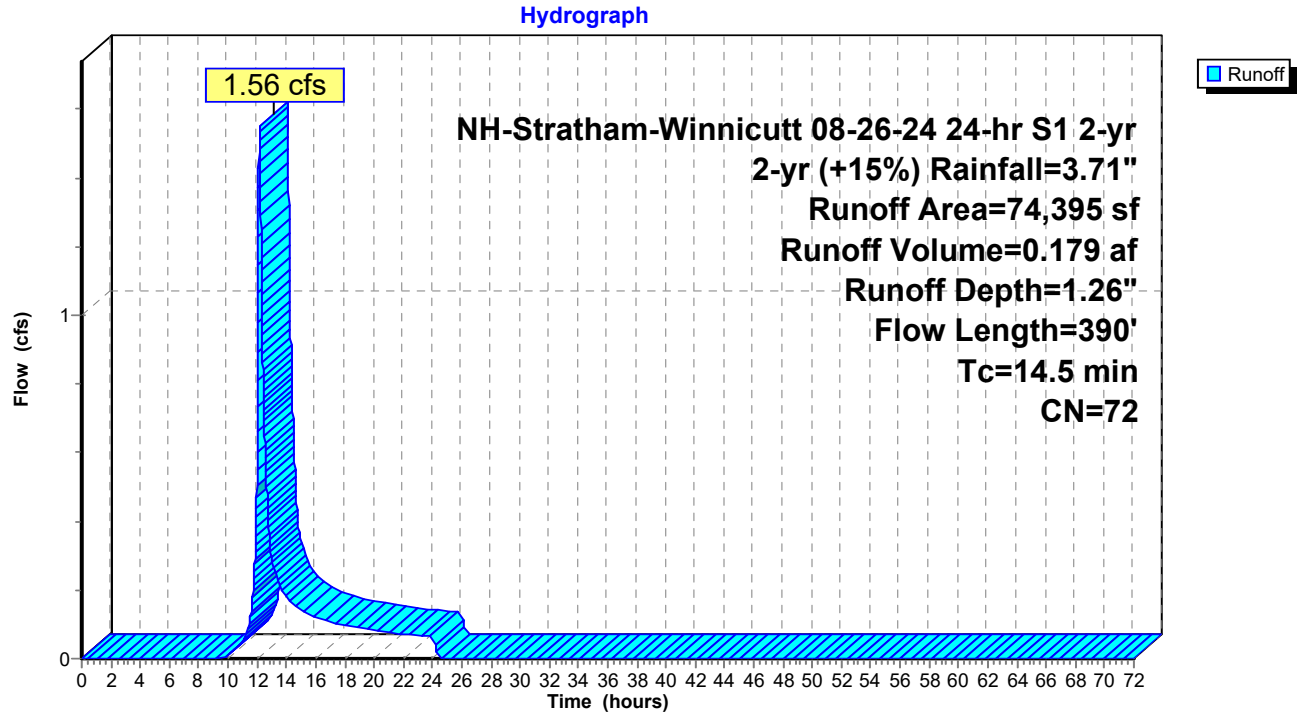
Runoff = 1.56 cfs @ 12.16 hrs, Volume= 0.179 af, Depth= 1.26"
Routed to Reach ER76 : Existing Swale from East Portion of Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
43,060	74	>75% Grass cover, Good, HSG C
31,335	70	Woods, Good, HSG C
74,395	72	Weighted Average
74,395		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
9.3	340	0.0150	0.61		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
14.5	390	Total			

Subcatchment ES6A: Patch of Land North of Wetland (Future Array Home Location)



Summary for Subcatchment ES6B: Patch of Land South of Wetland

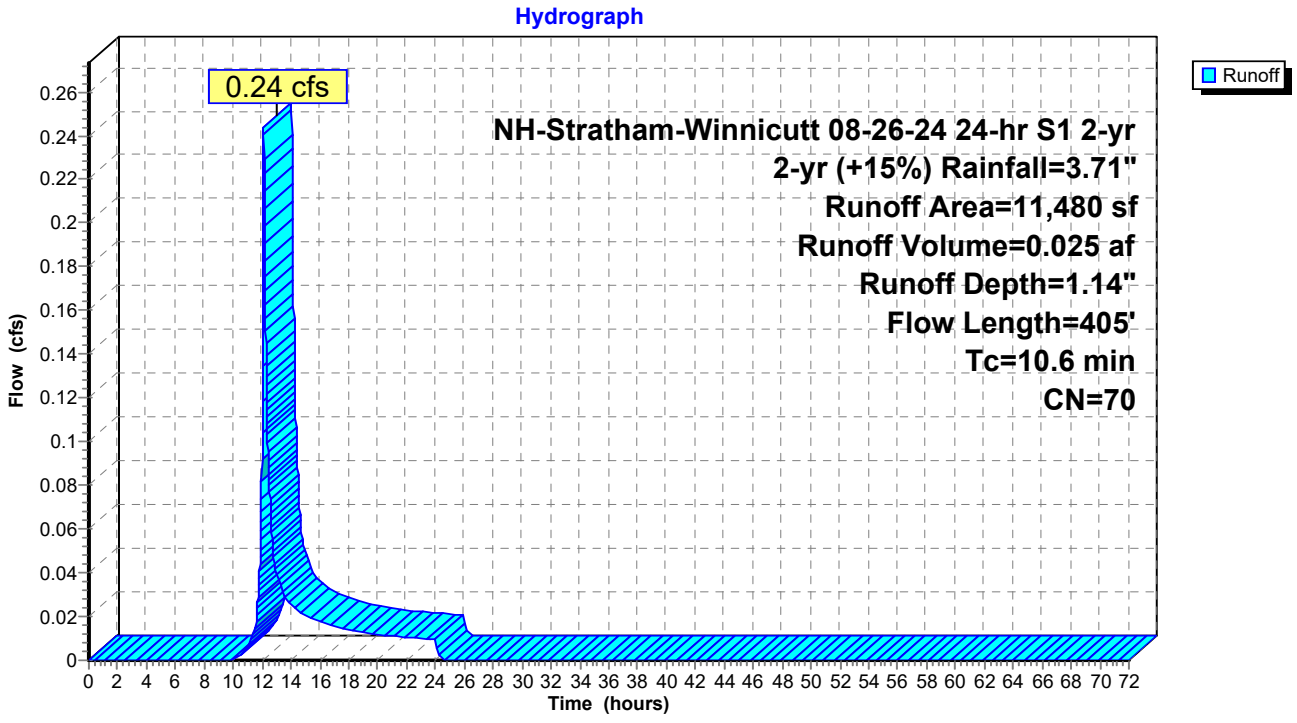
Runoff = 0.24 cfs @ 12.10 hrs, Volume= 0.025 af, Depth= 1.14"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
11,480	70	Woods, Good, HSG C
11,480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
3.1	215	0.0550	1.17		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.1	140	0.0380	21.06	3,054.41	**Channel Flow, Existing Swale from East Portion of Site** Area= 145.0 sf Perim= 45.0' r= 3.22' n= 0.030 Earth, grassed & winding
10.6	405	Total			

Subcatchment ES6B: Patch of Land South of Wetland



Summary for Subcatchment ES7: Patch of Land Along Southern Wetland Finger

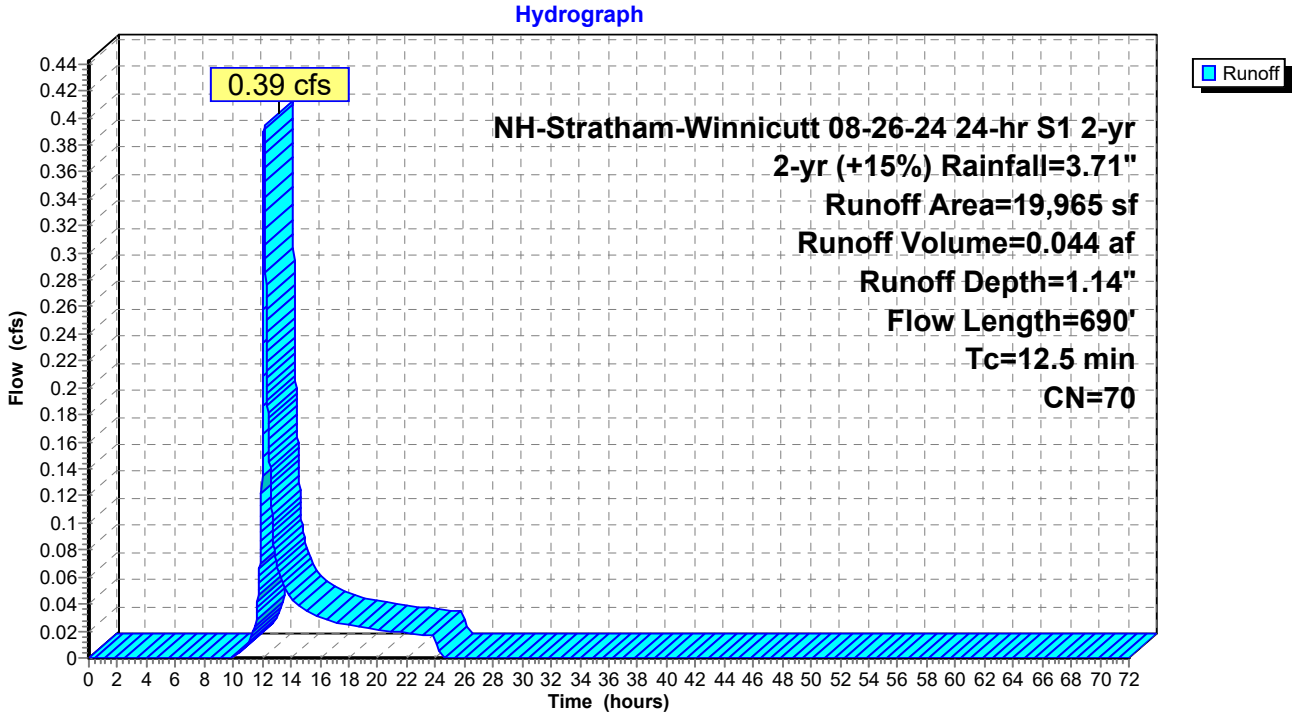
Runoff = 0.39 cfs @ 12.13 hrs, Volume= 0.044 af, Depth= 1.14"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
19,965	70	Woods, Good, HSG C
19,965		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
3.7	260	0.0550	1.17		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	30	0.1000	1.58		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
1.1	350	0.0113	5.27	168.49	**Channel Flow, Existing Swale from Southeastern Portion of Site** Area= 32.0 sf Perim= 32.0' r= 1.00' n= 0.030 Earth, grassed & winding
12.5	690	Total			

Subcatchment ES7: Patch of Land Along Southern Wetland Finger



ummary for Subcatchment ES9: Patch of Land on Western Portion of Site, North of Southern Wetland F

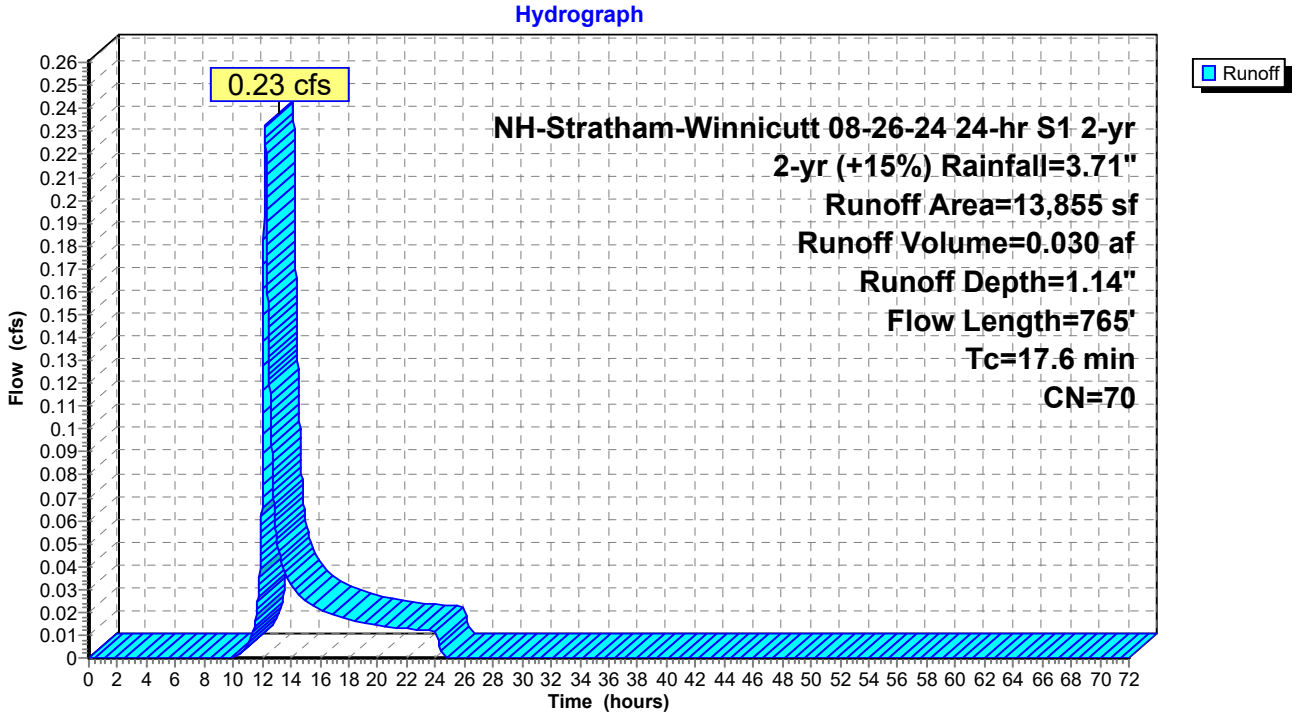
Runoff = 0.23 cfs @ 12.21 hrs, Volume= 0.030 af, Depth= 1.14"
Routed to Link L101C : Wetlands to the West (Southern Swale Entrance)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
13,855	70	Woods, Good, HSG C
13,855		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0150	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
1.5	120	0.0750	1.37		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
2.7	110	0.0180	0.67		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
0.5	485	0.0300	14.95	1,375.30	**Channel Flow, Southern Swale Connecting to Western Wetlands** Area= 92.0 sf Perim= 40.0' r= 2.30' n= 0.030 Earth, grassed & winding
17.6	765	Total			

Subcatchment ES9: Patch of Land on Western Portion of Site, North of Southern Wetland Finger



Summary for Reach ER75: Northernmost Stream on Site

Inflow Area = 0.130 ac, 0.00% Impervious, Inflow Depth = 1.68" for 2-yr (+15%) event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.05 cfs @ 12.60 hrs, Volume= 0.018 af, Atten= 79%, Lag= 32.0 min
Routed to Link L101A : Wetlands to the West (Northern Swale Entrance)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.63 fps, Min. Travel Time= 78.6 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 78.6 min

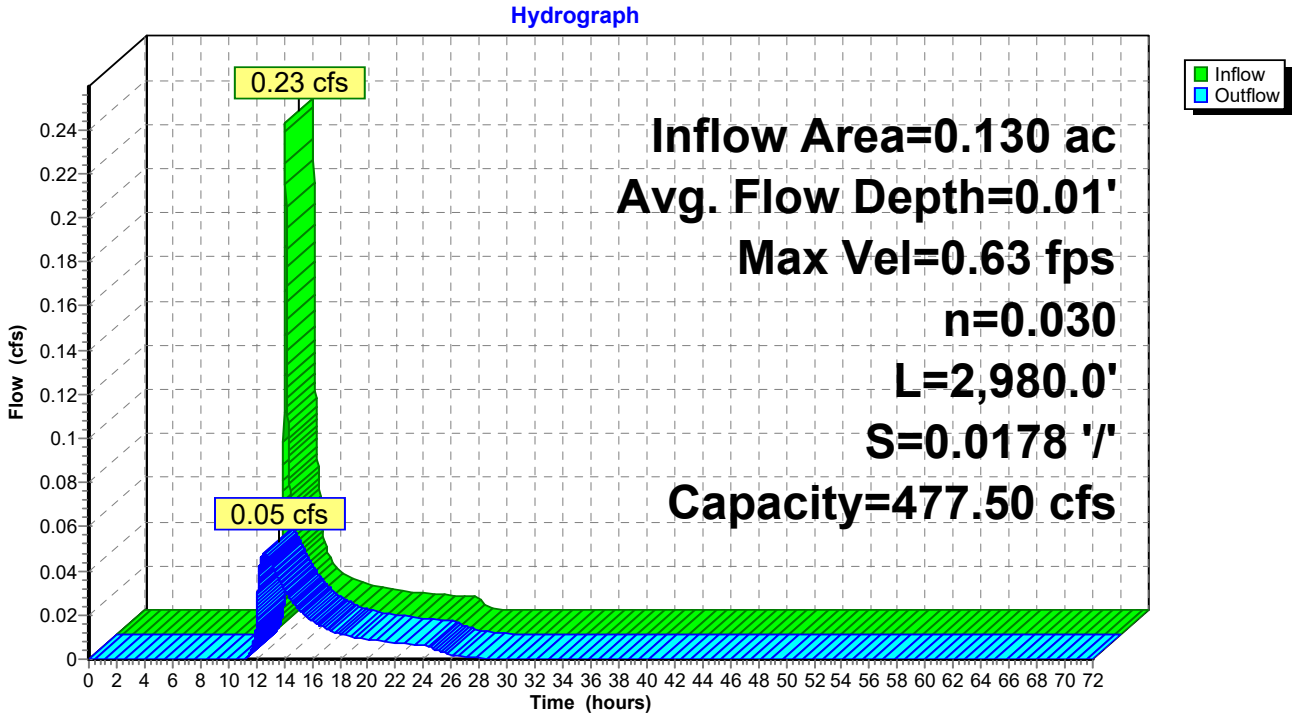
Peak Storage= 226 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 7.06'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 477.50 cfs

7.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 25.00'
Length= 2,980.0' Slope= 0.0178 '/'
Inlet Invert= 90.70', Outlet Invert= 37.70'



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Reach ER75: Northernmost Stream on Site



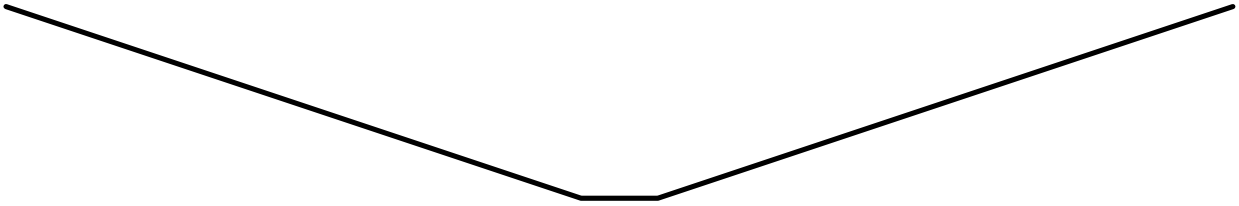
Summary for Reach ER76: Existing Swale from East Portion of Site

Inflow Area = 1.708 ac, 0.00% Impervious, Inflow Depth = 1.26" for 2-yr (+15%) event
Inflow = 1.56 cfs @ 12.16 hrs, Volume= 0.179 af
Outflow = 1.13 cfs @ 12.29 hrs, Volume= 0.179 af, Atten= 28%, Lag= 8.0 min
Routed to Reach ER80 : West Portion of Existing Central Swale

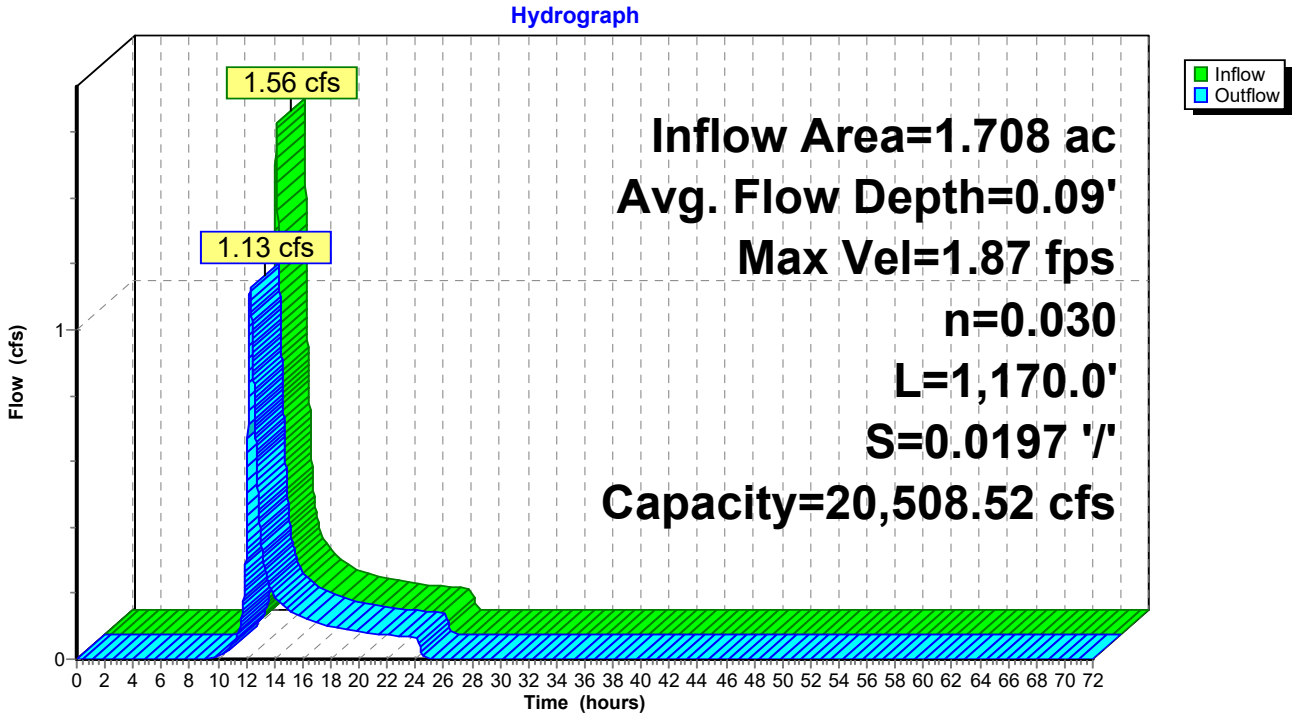
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.87 fps, Min. Travel Time= 10.5 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 10.5 min

Peak Storage= 707 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.09' , Surface Width= 6.56'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 20,508.52 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 1,170.0' Slope= 0.0197 '/'
Inlet Invert= 74.00', Outlet Invert= 51.00'



Reach ER76: Existing Swale from East Portion of Site



Summary for Reach ER79: Southern Swale Connecting to Western Wetlands

[62] Hint: Exceeded Reach ER80 OUTLET depth by 0.24' @ 12.38 hrs

Inflow Area = 14.126 ac, 1.78% Impervious, Inflow Depth = 1.19" for 2-yr (+15%) event
Inflow = 10.11 cfs @ 12.23 hrs, Volume= 1.402 af
Outflow = 9.21 cfs @ 12.31 hrs, Volume= 1.402 af, Atten= 9%, Lag= 5.1 min
Routed to Link L101C : Wetlands to the West (Southern Swale Entrance)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.73 fps, Min. Travel Time= 6.8 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 18.7 min

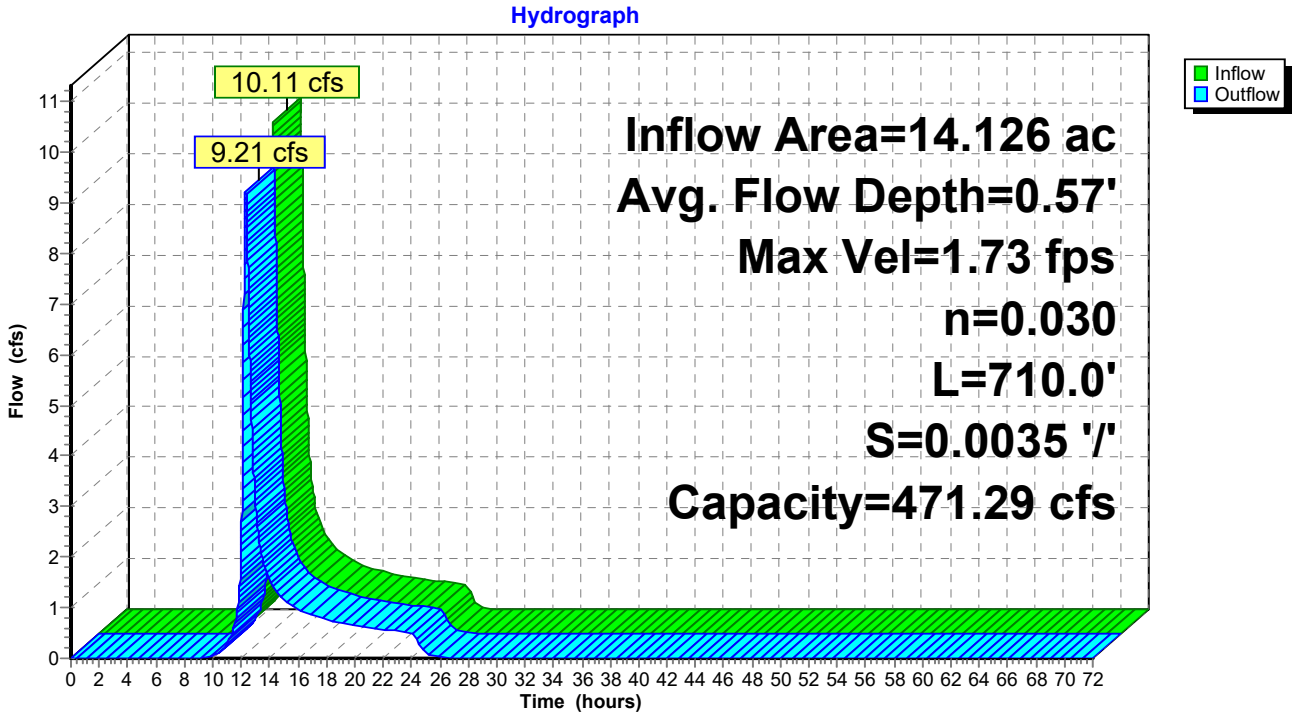
Peak Storage= 3,769 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 11.57'
Bank-Full Depth= 4.00' Flow Area= 92.0 sf, Capacity= 471.29 cfs

7.00' x 4.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 39.00'
Length= 710.0' Slope= 0.0035 '/'
Inlet Invert= 42.50', Outlet Invert= 40.00'



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Reach ER79: Southern Swale Connecting to Western Wetlands



Summary for Reach ER80: West Portion of Existing Central Swale

[62] Hint: Exceeded Reach ER81 OUTLET depth by 0.24' @ 12.28 hrs

Inflow Area = 12.362 ac, 2.03% Impervious, Inflow Depth = 1.19" for 2-yr (+15%) event
Inflow = 9.62 cfs @ 12.18 hrs, Volume= 1.228 af
Outflow = 9.01 cfs @ 12.24 hrs, Volume= 1.228 af, Atten= 6%, Lag= 3.5 min
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.26 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 12.5 min

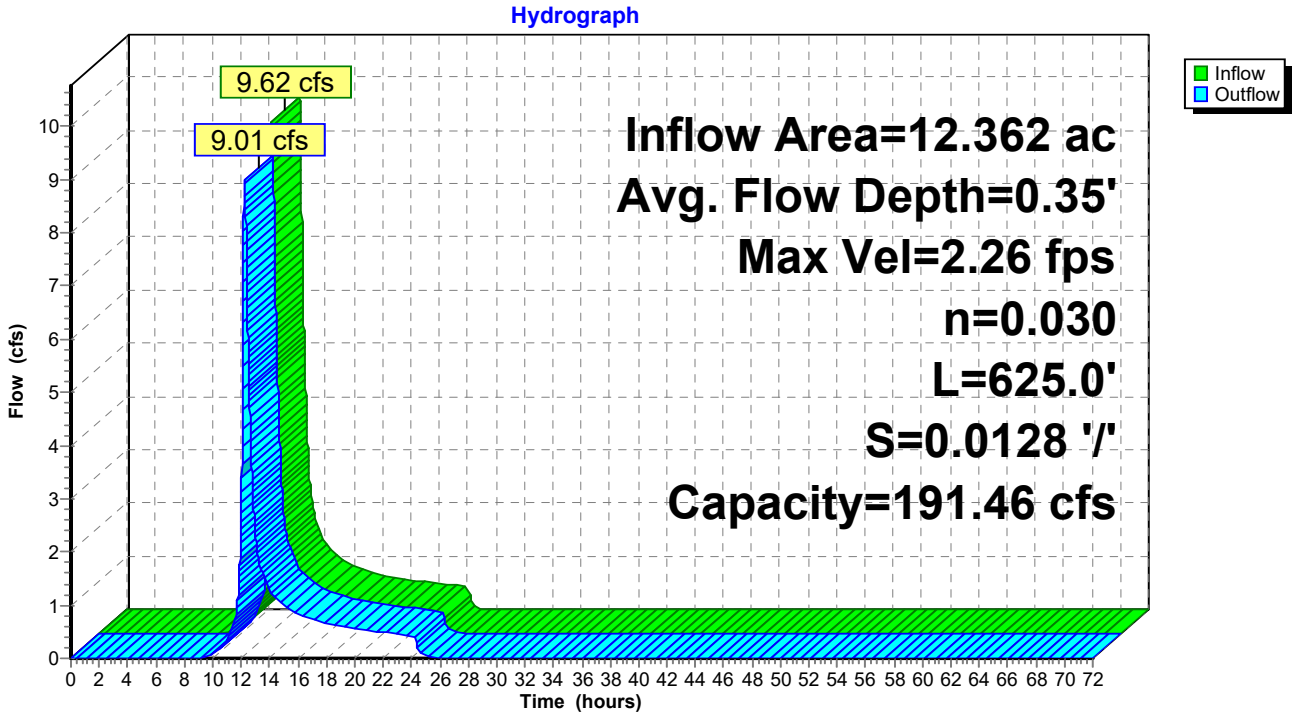
Peak Storage= 2,488 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.35' , Surface Width= 15.49'
Bank-Full Depth= 1.50' Flow Area= 37.5 sf, Capacity= 191.46 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 43.00'
Length= 625.0' Slope= 0.0128 '/'
Inlet Invert= 50.50', Outlet Invert= 42.50'



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Reach ER80: West Portion of Existing Central Swale



Summary for Reach ER81: East Portion of Existing Central Swale

Inflow Area = 3.176 ac, 5.43% Impervious, Inflow Depth = 0.78" for 2-yr (+15%) event
Inflow = 2.32 cfs @ 12.07 hrs, Volume= 0.206 af
Outflow = 1.81 cfs @ 12.14 hrs, Volume= 0.206 af, Atten= 22%, Lag= 4.0 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.85 fps, Min. Travel Time= 7.2 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 21.0 min

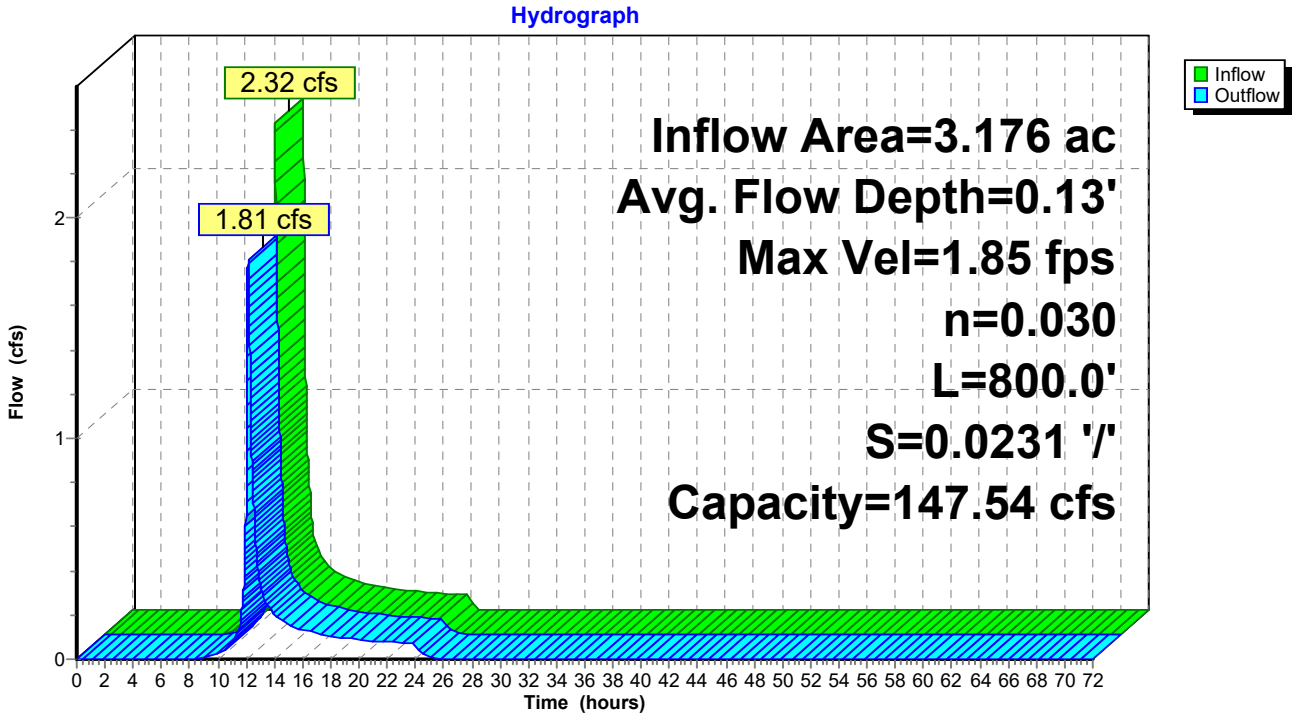
Peak Storage= 783 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 8.04'
Bank-Full Depth= 1.50' Flow Area= 19.5 sf, Capacity= 147.54 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 19.00'
Length= 800.0' Slope= 0.0231 '/'
Inlet Invert= 69.00', Outlet Invert= 50.50'



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Reach ER81: East Portion of Existing Central Swale



Summary for Reach ER82: Existing Swale in Rear of Existing House

Inflow Area = 1.550 ac, 0.23% Impervious, Inflow Depth = 0.00" for 2-yr (+15%) event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER81 : East Portion of Existing Central Swale

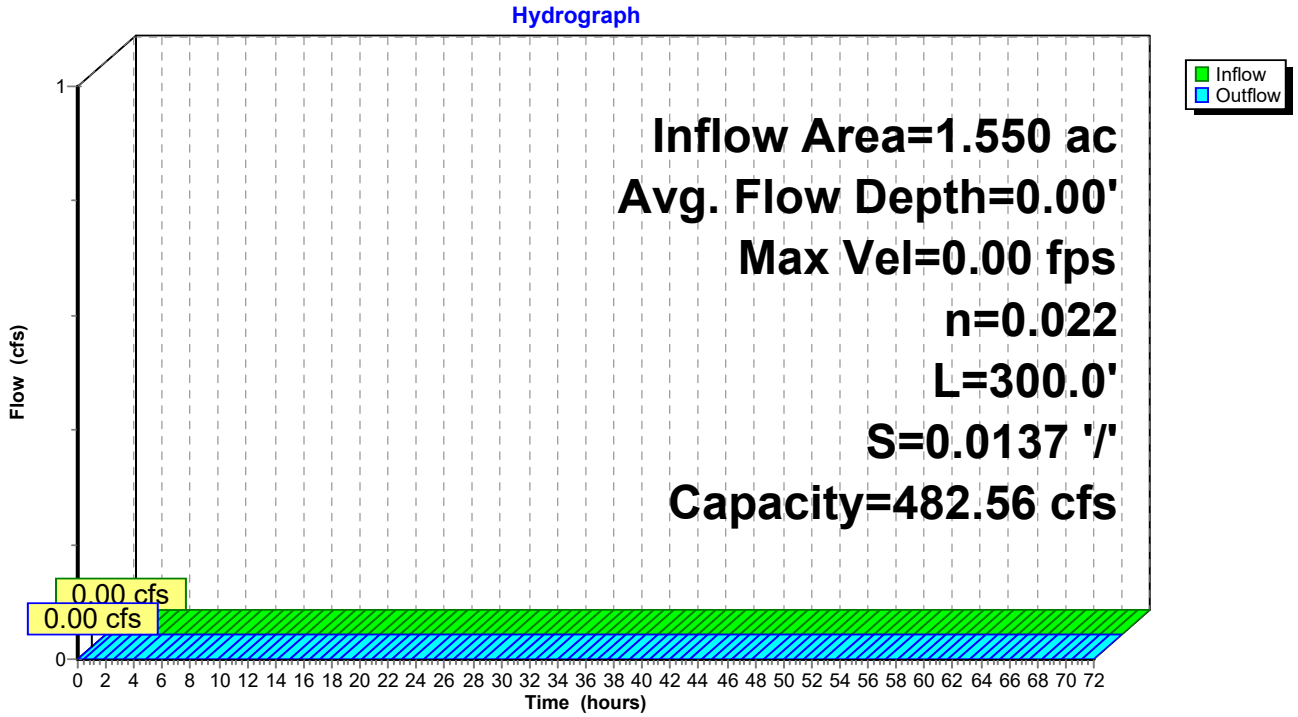
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50' Flow Area= 66.0 sf, Capacity= 482.56 cfs

14.00' x 1.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 20.0 '/' Top Width= 74.00'
Length= 300.0' Slope= 0.0137 '/'
Inlet Invert= 75.00', Outlet Invert= 70.90'



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Summary for Pond EP50: Wetlands East of Existing Driveway

Inflow Area = 0.130 ac, 0.00% Impervious, Inflow Depth = 1.80" for 2-yr (+15%) event
Inflow = 0.26 cfs @ 12.04 hrs, Volume= 0.020 af
Outflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Atten= 11%, Lag= 1.8 min
Primary = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Routed to Reach ER75 : Northernmost Stream on Site

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.37' @ 12.07 hrs Surf.Area= 236 sf Storage= 107 cf
Flood Elev= 95.00' Surf.Area= 16,000 sf Storage= 19,508 cf

Plug-Flow detention time= 68.0 min calculated for 0.018 af (93% of inflow)
Center-of-Mass det. time= 31.4 min (898.1 - 866.7)

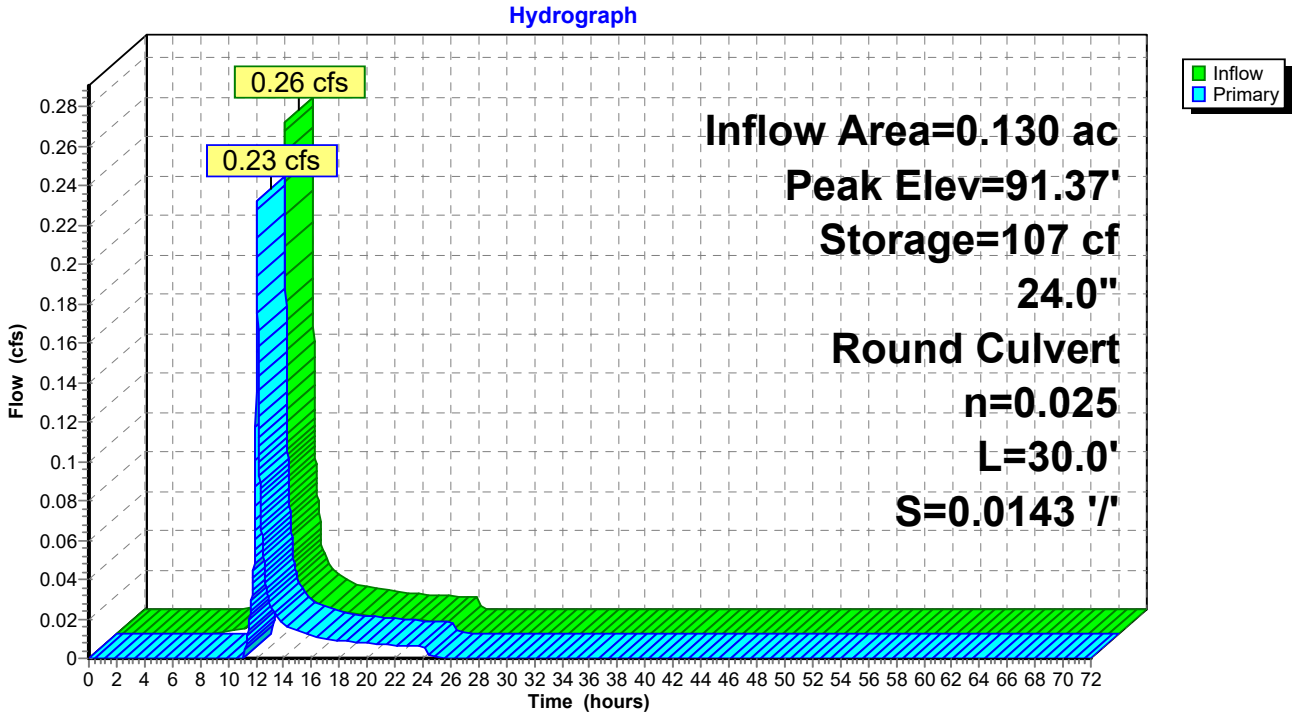
Volume	Invert	Avail.Storage	Storage Description
#1	90.50'	19,508 cf	**Wetlands East of Existing Driveway (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	10	0	0
92.00	400	308	308
94.00	7,200	7,600	7,908
95.00	16,000	11,600	19,508

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**24.0" Round 24" CMP** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 91.13' / 90.70' S= 0.0143 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=0.23 cfs @ 12.07 hrs HW=91.37' TW=90.71' (Dynamic Tailwater)
↑—**1=24" CMP** (Barrel Controls 0.23 cfs @ 1.65 fps)

Pond EP50: Wetlands East of Existing Driveway



Summary for Pond EP51: Existing Pond Along Existing Driveway

Inflow Area = 1.550 ac, 0.23% Impervious, Inflow Depth = 1.54" for 2-yr (+15%) event
Inflow = 2.59 cfs @ 12.04 hrs, Volume= 0.199 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach ER82 : Existing Swale in Rear of Existing House
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach ER82 : Existing Swale in Rear of Existing House

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.27' @ 24.36 hrs Surf.Area= 7,688 sf Storage= 8,664 cf
Flood Elev= 77.50' Surf.Area= 16,000 sf Storage= 43,500 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	43,500 cf	**Existing Pond (Prismatic)**Listed below (Recalc)

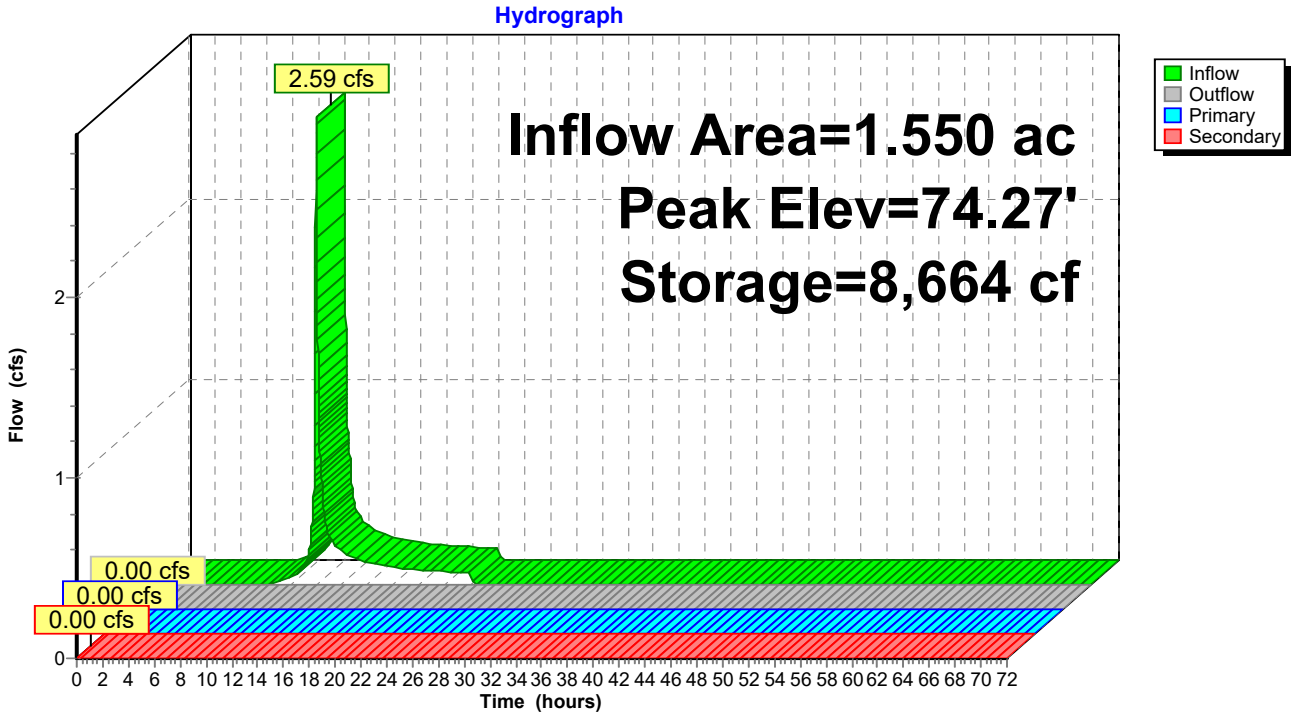
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	6,000	0	0
76.00	10,000	24,000	24,000
77.50	16,000	19,500	43,500

Device	Routing	Invert	Outlet Devices
#1	Primary	75.71'	**12.0" Round 12" CMP** L= 20.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 75.71' / 75.04' S= 0.0335 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	77.00'	**20.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=75.00' (Dynamic Tailwater)
1=12" CMP (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=75.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EP51: Existing Pond Along Existing Driveway

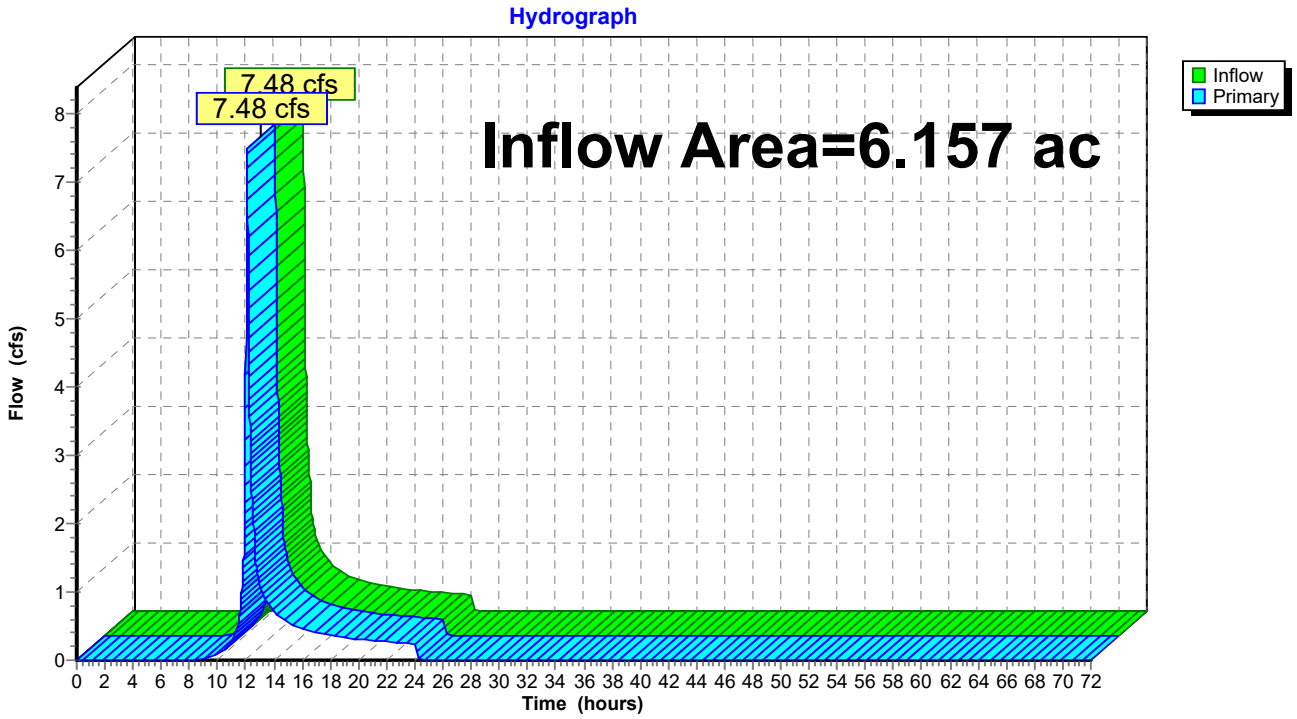


Summary for Link L101A: Wetlands to the West (Northern Swale Entrance)

Inflow Area = 6.157 ac, 1.66% Impervious, Inflow Depth = 1.39" for 2-yr (+15%) event
Inflow = 7.48 cfs @ 12.08 hrs, Volume= 0.715 af
Primary = 7.48 cfs @ 12.08 hrs, Volume= 0.715 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L101A: Wetlands to the West (Northern Swale Entrance)

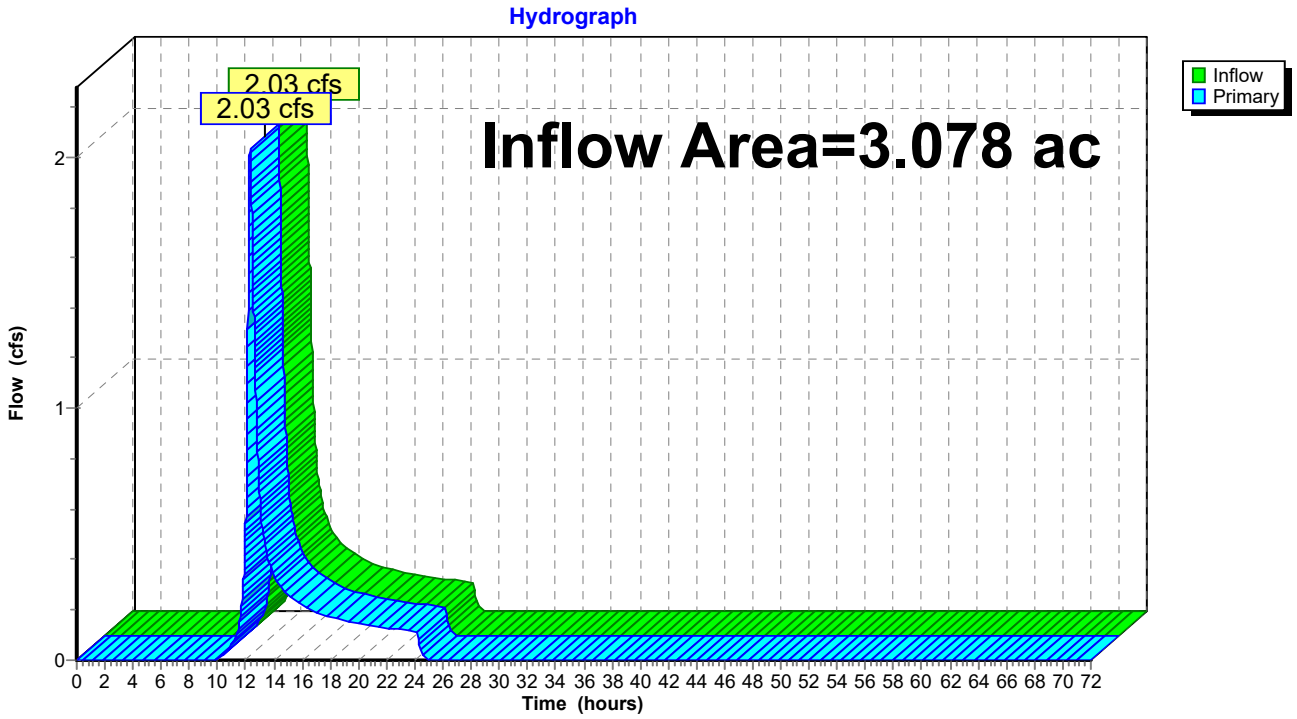


Summary for Link L101B: Central Wetland Finger

Inflow Area = 3.078 ac, 0.00% Impervious, Inflow Depth = 1.20" for 2-yr (+15%) event
Inflow = 2.03 cfs @ 12.32 hrs, Volume= 0.308 af
Primary = 2.03 cfs @ 12.32 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L101B: Central Wetland Finger

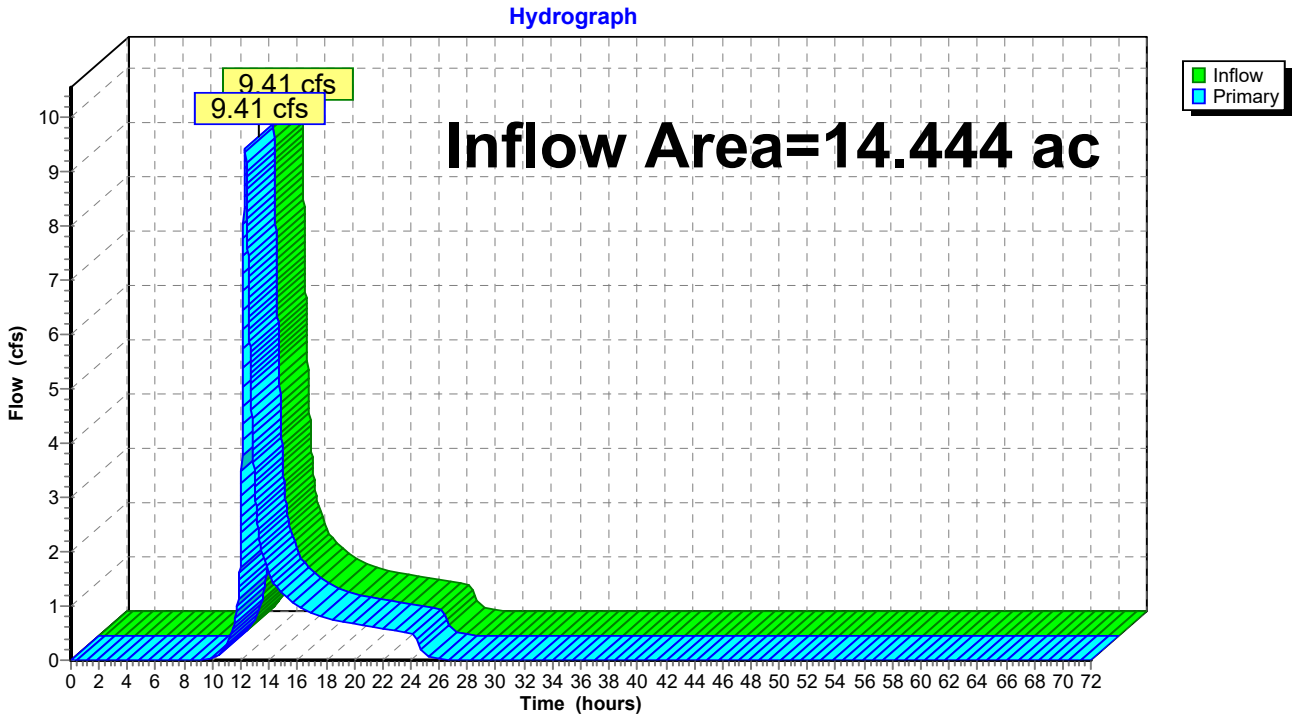


Summary for Link L101C: Wetlands to the West (Southern Swale Entrance)

Inflow Area = 14.444 ac, 1.74% Impervious, Inflow Depth = 1.19" for 2-yr (+15%) event
Inflow = 9.41 cfs @ 12.31 hrs, Volume= 1.432 af
Primary = 9.41 cfs @ 12.31 hrs, Volume= 1.432 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

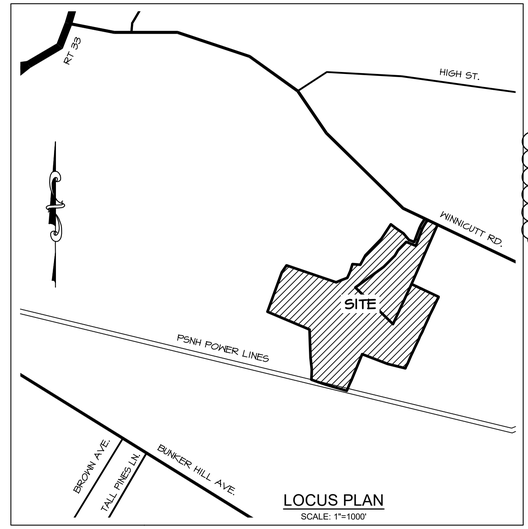
Link L101C: Wetlands to the West (Southern Swale Entrance)



GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.



LOCUS PLAN
SCALE: 1"=1000'

NOTES:

1. OWNER OF RECORD:
   TAX MAP 14, LOT 56 & 57
   HELEN E. GALLANT REVOCABLE TRUST
   HELEN E. GALLANT, TRUSTEE
   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 PG0266
   MAP 14, LOT 57 DEED: RCRD BK5548 PG0405
2. THE INTENT OF THIS PLAN IS TO CALCULATE POST-DEVELOPMENT SUBCATCHMENT AREAS AND FLOW PATHS FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH CHANNEL PROTECTION REQUIREMENTS AS REQUIRED BY NHDES ALTERATION OF TERRAIN PERMIT.
3. POST-DEVELOPMENT DRAINAGE AREA CALCS FOR CHANNEL PROTECTION:
   DRAINAGE ANALYSIS TOTAL AREA = 1,031,470 SF
   DRAINAGE ANALYSIS IMPERVIOUS = 228,060 SF
   DRAINAGE ANALYSIS % IMPERVIOUS = 22.11%
4. CALLOUT IDENTIFIES EXISTING 12" CORRUGATED METAL PIPE (CMP), 20 FEET IN LENGTH, WITH INVERT IN = 75.71 AND INVERT OUT = 75.04.
5. MINIMUM TC = 6 MINUTES FOR ALL SUBCATCHMENTS. TC FLOW PATHS MAY NOT BE SHOWN FOR VERY SMALL DRAINAGE AREAS; HOWEVER, A TC OF 6 MINUTES HAS BEEN APPLIED IN THE HYDROLOGIC CALCULATIONS.

LEGEND

- INDICATES FLOW PATH
- INDICATES SUBCATCHMENT BOUNDARIES
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1	DEC 11, 2024	FOR APPROVAL	

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STRATHAM, NH 03885

STATE OF NEW HAMPSHIRE
BRUCE D. SCAMMAN
No. 11236
LICENSED PROFESSIONAL ENGINEER
5/4/26

TITLE:
POST-DEVELOPMENT DRAINAGE PLAN (CHANNEL PROTECTION)
FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=150'	SW2A



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTES:

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   HELEN E. GALLANT REVOCABLE TRUST
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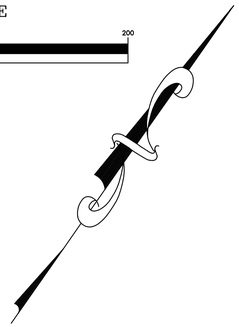
PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.1A

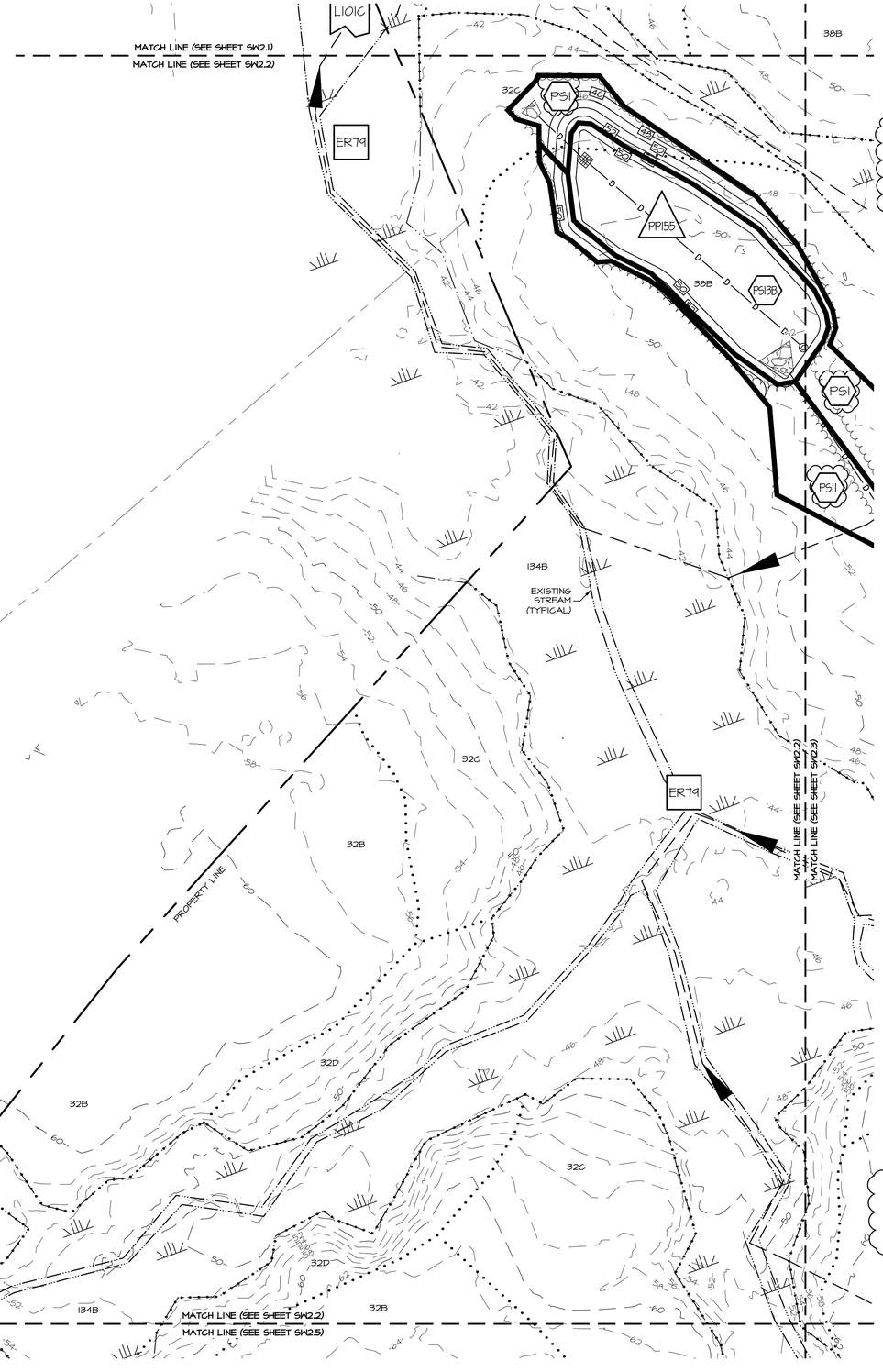
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft.





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REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.2A

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTES:

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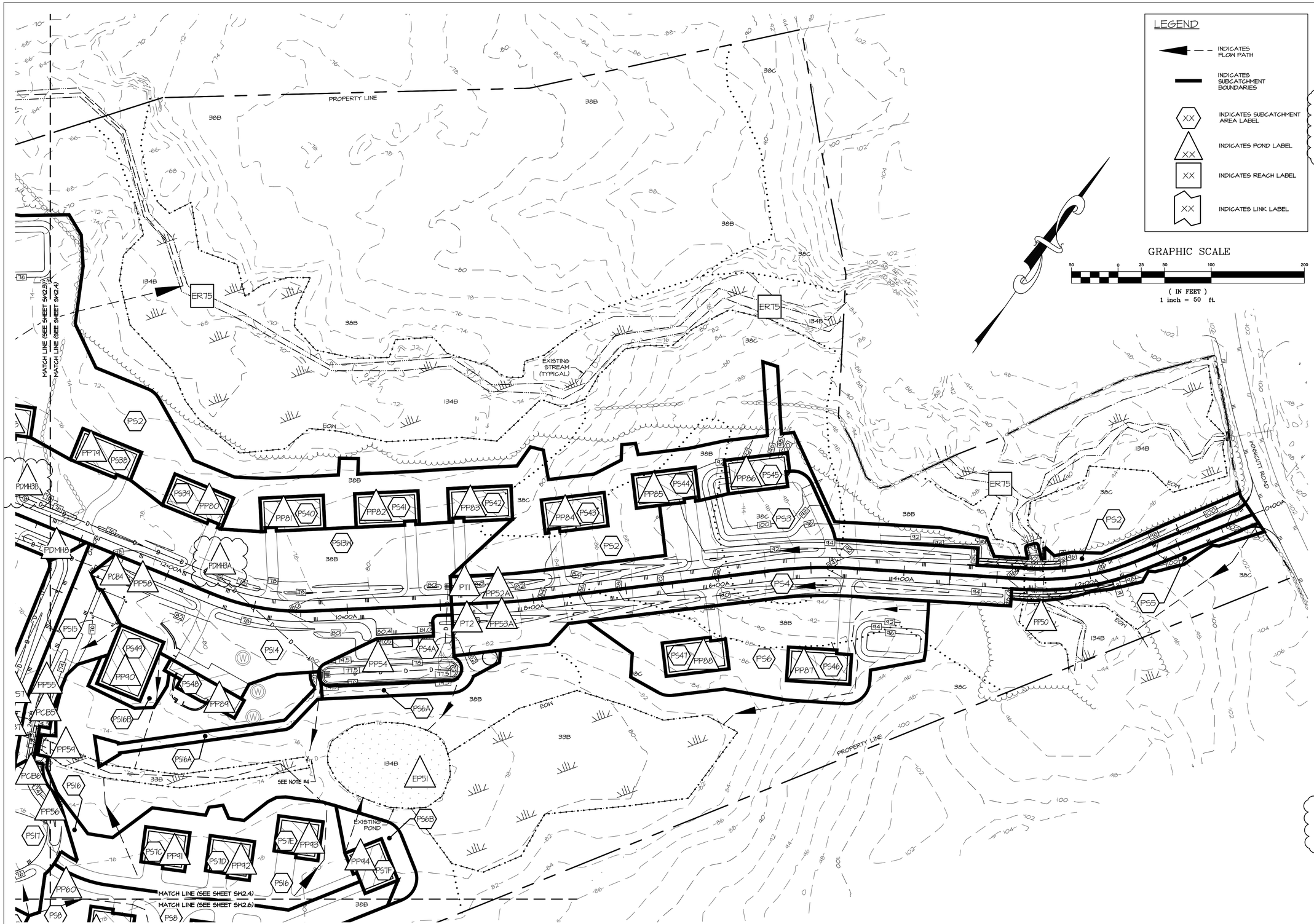
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STRATHAM, NH 03885

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FOR
HELEN E. GALLANT
REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.3A



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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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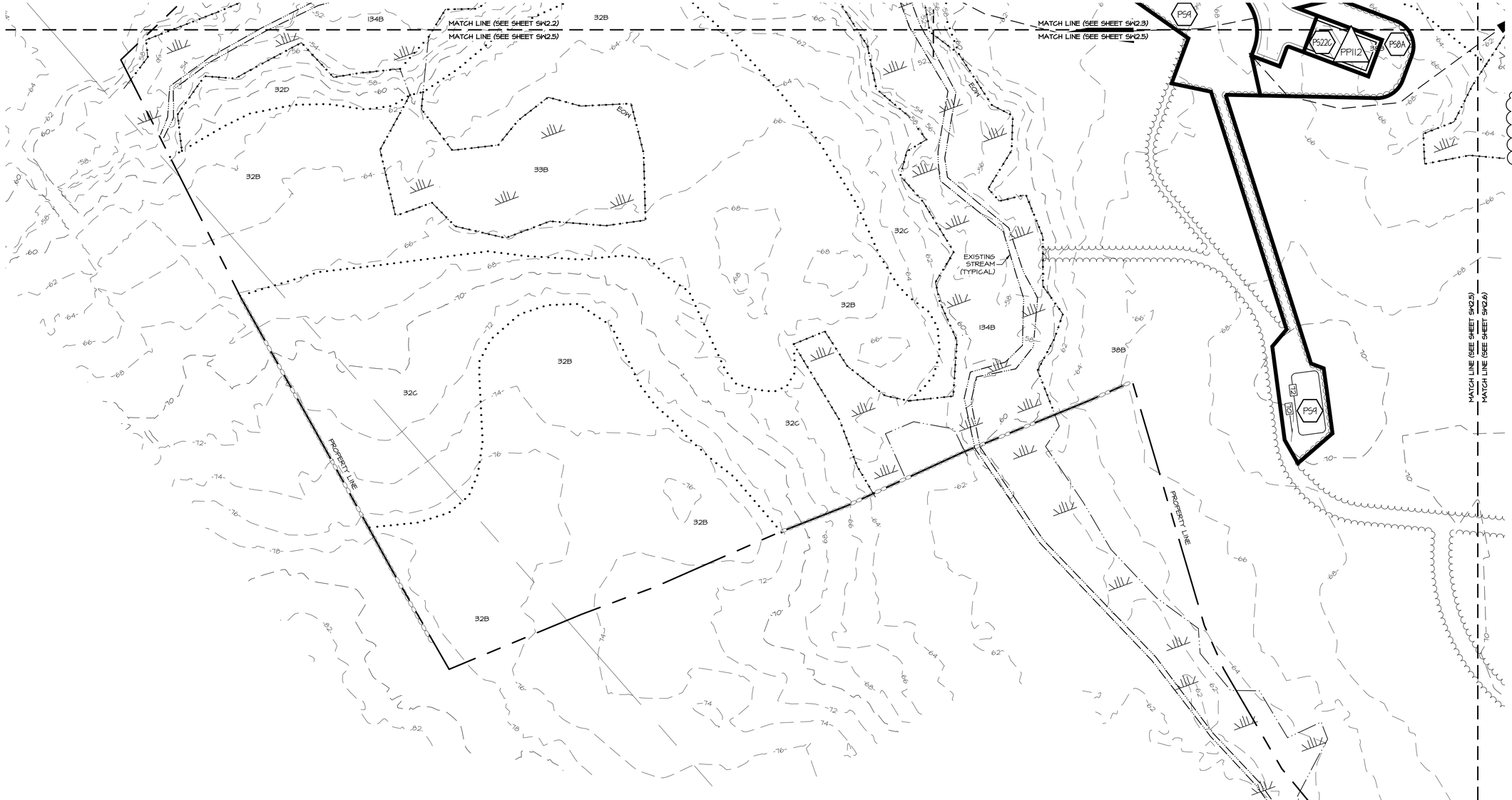
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REVOCABLE TRUST
80 & 80R WINNICUTT ROAD (SITE)
STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.4A



NOTES:

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   C/O PAUL GALLANT
   2642 BOLERO DRIVE - #501
   NAPLES, FL 34109
   MAP 14, LOT 56 DEED: RCRD BK5504 P60266
   MAP 14, LOT 57 DEED: RCRD BK5598 P60405
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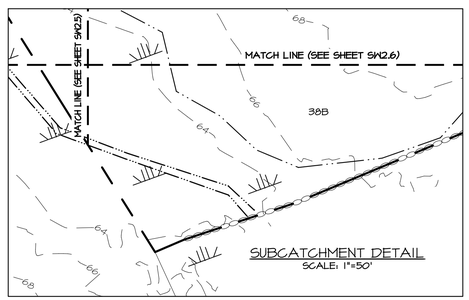
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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



SUBCATCHMENT DETAIL
SCALE: 1"=50'

SEAL:

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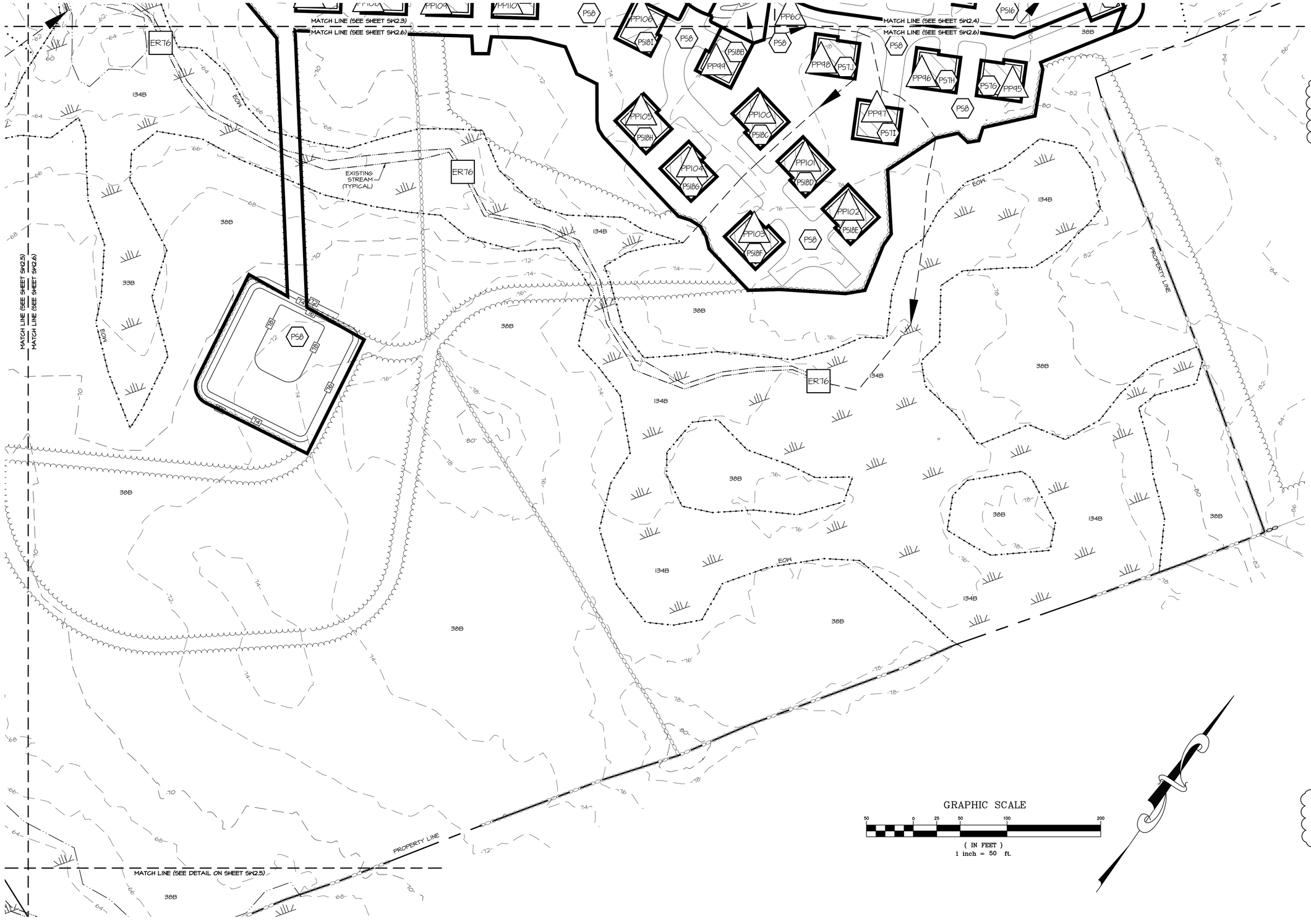
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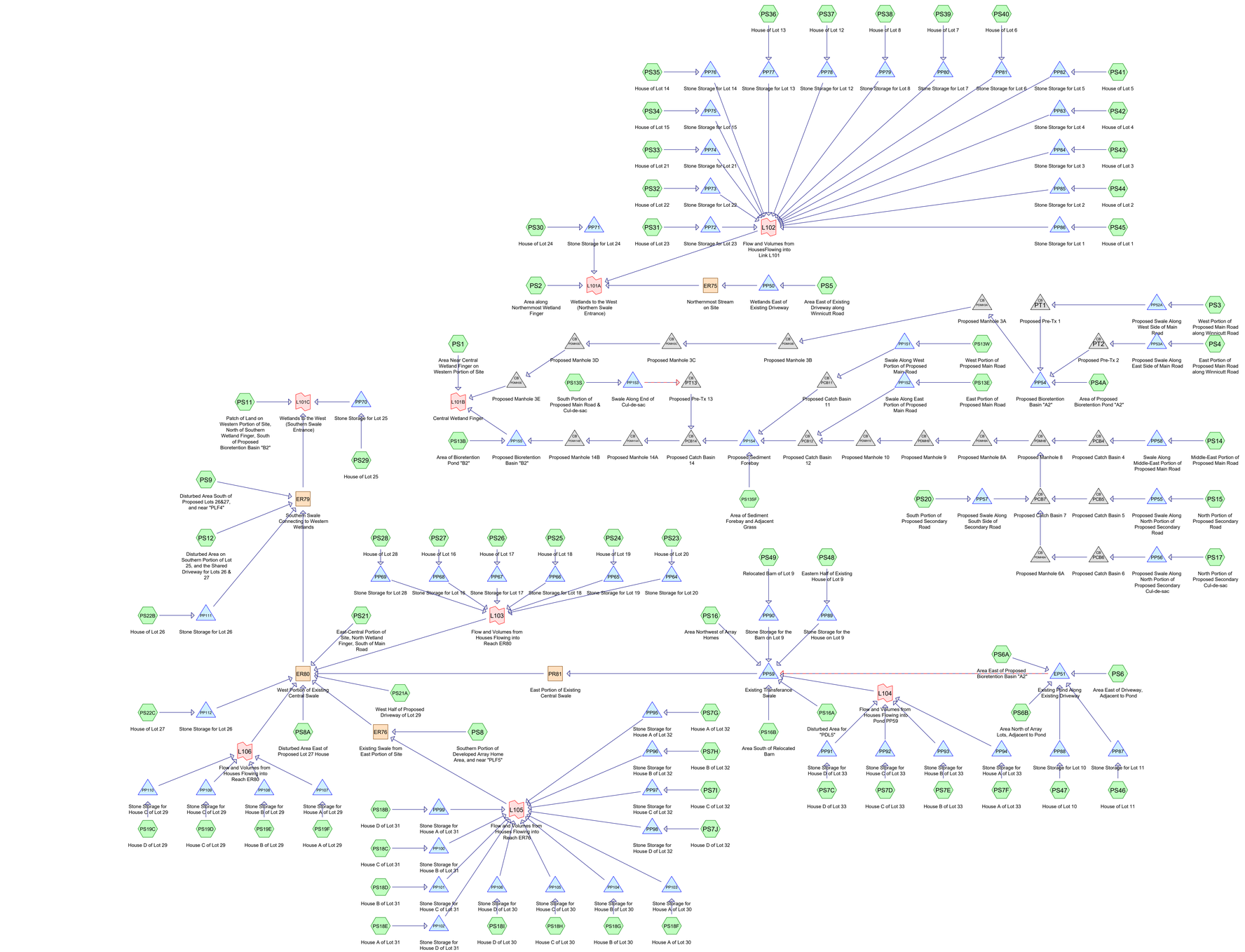
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STRATHAM, NH 03885

PROJECT:	SCALE:	SHEET:
24-1061	1"=50'	SW2.6A



Routing Diagram for Postdevelopment HydroCAD (Channel Protection) 04-29-26

Prepared by Emanuel Engineering, Printed 5/4/2026

HydroCAD® 10.20-8a s/n 01104 © 2025 HydroCAD Software Solutions LLC

Project Notes

Copied 9 events from NH-Stratham-Winnicutt 08-26-24 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr (+15%)	NH-Stratham-Winnicutt 08-26-24 24-hr S1	2-yr	Default	24.00	1	3.71	

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
18.277	74	>75% Grass cover, Good, HSG C (PS1, PS11, PS12, PS13B, PS13E, PS13S, PS13SF, PS13W, PS14, PS15, PS16, PS16A, PS16B, PS17, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS2, PS20, PS21, PS21A, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS3, PS30, PS31, PS32, PS33, PS34, PS35, PS36, PS37, PS38, PS39, PS4, PS40, PS41, PS42, PS43, PS44, PS45, PS46, PS47, PS48, PS49, PS4A, PS5, PS6, PS6A, PS6B, PS7C, PS7D, PS7E, PS7F, PS7G, PS7H, PS7I, PS7J, PS8, PS8A, PS9)
0.104	80	>75% Grass cover, Good, HSG D (PS12, PS2, PS20, PS21, PS5, PS8)
3.427	98	Paved parking, HSG C (PS1, PS12, PS13E, PS13S, PS13W, PS14, PS15, PS16, PS17, PS2, PS20, PS21, PS21A, PS3, PS4, PS6, PS8)
0.015	98	Paved parking, HSG D (PS12)
1.793	98	Roofs, HSG C (PS14, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS30, PS31, PS32, PS33, PS34, PS35, PS36, PS37, PS38, PS39, PS40, PS41, PS42, PS43, PS44, PS45, PS46, PS47, PS48, PS49, PS4A, PS6A, PS7C, PS7D, PS7E, PS7F, PS7G, PS7H, PS7I, PS7J)
0.063	70	Woods, Good, HSG C (PS9)
23.679	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
23.560	HSG C	PS1, PS11, PS12, PS13B, PS13E, PS13S, PS13SF, PS13W, PS14, PS15, PS16, PS16A, PS16B, PS17, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS2, PS20, PS21, PS21A, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS3, PS30, PS31, PS32, PS33, PS34, PS35, PS36, PS37, PS38, PS39, PS4, PS40, PS41, PS42, PS43, PS44, PS45, PS46, PS47, PS48, PS49, PS4A, PS5, PS6, PS6A, PS6B, PS7C, PS7D, PS7E, PS7F, PS7G, PS7H, PS7I, PS7J, PS8, PS8A, PS9
0.119	HSG D	PS12, PS2, PS20, PS21, PS5, PS8
0.000	Other	
23.679		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	18.277	0.104	0.000	18.381	>75% Grass cover, Good	PS1, PS11, PS12, PS13B, PS13E, PS13S, PS13SF, PS13W, PS14, PS15, PS16, PS16A, PS16B, PS17, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS2, PS20, PS21, PS21A, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS3, PS30, PS31, PS32, PS33, PS34,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	3.427	0.015	0.000	3.442	Paved parking	PS1, PS12, PS13E, PS13S, PS13W, PS14, PS15, PS16, PS17, PS2, PS20, PS21, PS21A, PS3, PS4, PS6, PS8
0.000	0.000	1.793	0.000	0.000	1.793	Roofs	PS14, PS18B, PS18C, PS18D, PS18E, PS18F, PS18G, PS18H, PS18I, PS19C, PS19D, PS19E, PS19F, PS22B, PS22C, PS23, PS24, PS25, PS26, PS27, PS28, PS29, PS30, PS31, PS32, PS33, PS34, PS35, PS36,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.063	0.000	0.000	0.063	Woods, Good	PS9
0.000	**0.000**	**23.560**	**0.119**	**0.000**	**23.679**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	EP51	75.71	75.04	20.0	0.0335	0.025	0.0	12.0	0.0	
2	PCB11	63.00	62.50	85.0	0.0059	0.013	0.0	15.0	0.0	
3	PCB12	63.00	62.50	85.0	0.0059	0.013	0.0	18.0	0.0	
4	PCB14	57.00	51.50	205.0	0.0268	0.013	0.0	24.0	0.0	
5	PCB4	73.25	71.00	65.0	0.0346	0.013	0.0	12.0	0.0	
6	PCB5	70.20	69.80	35.0	0.0114	0.013	0.0	12.0	0.0	
7	PCB6	71.35	70.90	35.0	0.0129	0.013	0.0	12.0	0.0	
8	PCB7	69.70	69.20	175.0	0.0029	0.013	0.0	18.0	0.0	
9	PDMH10	64.80	63.10	230.0	0.0074	0.013	0.0	18.0	0.0	
10	PDMH14A	51.40	50.85	205.0	0.0027	0.013	0.0	24.0	0.0	
11	PDMH14B	50.75	50.40	140.0	0.0025	0.013	0.0	24.0	0.0	
12	PDMH3A	73.40	72.00	225.0	0.0062	0.013	0.0	12.0	0.0	
13	PDMH3B	71.90	69.00	180.0	0.0161	0.013	0.0	12.0	0.0	
14	PDMH3C	68.90	64.50	295.0	0.0149	0.013	0.0	12.0	0.0	
15	PDMH3D	64.40	62.00	190.0	0.0126	0.013	0.0	12.0	0.0	
16	PDMH3E	61.90	55.00	300.0	0.0230	0.013	0.0	12.0	0.0	
17	PDMH6A	70.80	70.50	45.0	0.0067	0.013	0.0	12.0	0.0	
18	PDMH8	69.10	68.80	105.0	0.0029	0.013	0.0	18.0	0.0	
19	PDMH8A	68.70	67.50	200.0	0.0060	0.013	0.0	18.0	0.0	
20	PDMH9	67.00	65.00	150.0	0.0133	0.013	0.0	18.0	0.0	
21	PP100	73.00	72.55	150.0	0.0030	0.010	0.0	4.0	0.0	
22	PP101	74.00	73.75	75.0	0.0033	0.010	0.0	4.0	0.0	
23	PP102	74.00	73.85	50.0	0.0030	0.010	0.0	4.0	0.0	
24	PP103	71.00	70.85	50.0	0.0030	0.010	0.0	4.0	0.0	
25	PP104	70.50	70.40	30.0	0.0033	0.010	0.0	4.0	0.0	
26	PP105	70.00	69.70	100.0	0.0030	0.010	0.0	4.0	0.0	
27	PP106	71.00	70.55	150.0	0.0030	0.010	0.0	4.0	0.0	
28	PP107	68.00	67.55	150.0	0.0030	0.010	0.0	4.0	0.0	
29	PP108	68.50	68.05	150.0	0.0030	0.010	0.0	4.0	0.0	
30	PP109	66.50	66.05	150.0	0.0030	0.010	0.0	4.0	0.0	
31	PP110	66.00	65.70	100.0	0.0030	0.010	0.0	4.0	0.0	
32	PP111	59.00	58.70	100.0	0.0030	0.010	0.0	4.0	0.0	
33	PP112	61.00	60.70	100.0	0.0030	0.010	0.0	4.0	0.0	
34	PP152	65.40	64.90	30.0	0.0167	0.013	0.0	12.0	0.0	
35	PP155	46.75	46.30	45.0	0.0100	0.013	0.0	12.0	0.0	
36	PP155	46.75	46.75	205.0	0.0000	0.010	0.0	6.0	0.0	
37	PP50	91.15	90.70	40.0	0.0113	0.025	0.0	24.0	0.0	
38	PP52A	79.90	78.75	30.0	0.0383	0.013	0.0	12.0	0.0	
39	PP54	74.25	73.50	150.0	0.0050	0.013	0.0	12.0	0.0	
40	PP54	74.25	74.25	135.0	0.0000	0.010	0.0	6.0	0.0	
41	PP59	71.10	66.00	80.0	0.0637	0.013	0.0	12.0	0.0	

Pipe Listing (all nodes) (continued)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
42	PP64	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
43	PP65	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
44	PP66	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
45	PP67	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
46	PP68	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
47	PP69	65.00	64.70	100.0	0.0030	0.010	0.0	4.0	0.0	
48	PP70	50.00	49.70	100.0	0.0030	0.010	0.0	4.0	0.0	
49	PP71	50.00	49.70	100.0	0.0030	0.010	0.0	4.0	0.0	
50	PP72	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
51	PP73	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
52	PP74	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
53	PP75	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
54	PP76	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
55	PP77	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
56	PP78	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
57	PP79	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
58	PP80	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
59	PP81	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
60	PP82	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
61	PP83	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
62	PP84	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
63	PP85	88.00	87.70	100.0	0.0030	0.010	0.0	4.0	0.0	
64	PP86	88.00	87.80	10.0	0.0200	0.010	0.0	4.0	0.0	
65	PP87	76.00	75.70	100.0	0.0030	0.010	0.0	4.0	0.0	
66	PP88	76.00	75.70	100.0	0.0030	0.010	0.0	4.0	0.0	
67	PP89	72.50	72.20	100.0	0.0030	0.010	0.0	4.0	0.0	
68	PP90	72.50	72.20	100.0	0.0030	0.010	0.0	4.0	0.0	
69	PP91	72.00	71.90	30.0	0.0033	0.010	0.0	4.0	0.0	
70	PP92	72.00	71.90	30.0	0.0033	0.010	0.0	4.0	0.0	
71	PP93	72.50	72.40	30.0	0.0033	0.010	0.0	4.0	0.0	
72	PP94	75.00	74.90	30.0	0.0033	0.010	0.0	4.0	0.0	
73	PP95	76.50	76.40	30.0	0.0033	0.010	0.0	4.0	0.0	
74	PP96	75.00	74.90	30.0	0.0033	0.010	0.0	4.0	0.0	
75	PP97	74.00	73.90	30.0	0.0033	0.010	0.0	4.0	0.0	
76	PP98	74.00	73.55	150.0	0.0030	0.010	0.0	4.0	0.0	
77	PP99	72.00	71.45	175.0	0.0031	0.010	0.0	4.0	0.0	
78	PT1	78.70	78.50	60.0	0.0033	0.013	0.0	12.0	0.0	
79	PT13	59.10	58.95	50.0	0.0030	0.013	0.0	12.0	0.0	
80	PT2	79.00	78.50	20.0	0.0250	0.013	0.0	12.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS1: Area Near Central Runoff Area=60,790 sf 4.04% Impervious Runoff Depth=1.45"
Flow Length=770' Tc=21.5 min CN=75 Runoff=1.25 cfs 0.169 af

SubcatchmentPS11: Patch of Land on Runoff Area=12,820 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=765' Tc=17.6 min CN=74 Runoff=0.27 cfs 0.034 af

SubcatchmentPS12: Disturbed Area on Runoff Area=73,105 sf 19.14% Impervious Runoff Depth=1.73"
Flow Length=800' Tc=10.8 min CN=79 Runoff=2.54 cfs 0.242 af

SubcatchmentPS13B: Area of Bioretention Runoff Area=15,600 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=0.53 cfs 0.041 af

SubcatchmentPS13E: East Portion of Runoff Area=21,120 sf 45.31% Impervious Runoff Depth=2.20"
Flow Length=680' Slope=0.0138 '/' Tc=18.9 min CN=85 Runoff=0.72 cfs 0.089 af

SubcatchmentPS13S: South Portion of Runoff Area=26,510 sf 47.89% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=85 Runoff=1.49 cfs 0.112 af

SubcatchmentPS13SF: Area of Sediment Runoff Area=8,085 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=0.28 cfs 0.021 af

SubcatchmentPS13W: West Portion of Runoff Area=90,320 sf 22.64% Impervious Runoff Depth=1.73"
Flow Length=1,125' Slope=0.0124 '/' Tc=29.3 min CN=79 Runoff=1.92 cfs 0.299 af

SubcatchmentPS14: Middle-East Portion Runoff Area=23,645 sf 32.10% Impervious Runoff Depth=1.96"
Tc=6.0 min CN=82 Runoff=1.18 cfs 0.089 af

SubcatchmentPS15: North Portion of Runoff Area=8,640 sf 46.41% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=85 Runoff=0.49 cfs 0.036 af

SubcatchmentPS16: Area Northwest of Runoff Area=21,385 sf 25.37% Impervious Runoff Depth=1.80"
Tc=6.0 min CN=80 Runoff=0.98 cfs 0.074 af

SubcatchmentPS16A: Disturbed Area for Runoff Area=3,065 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=90' Tc=3.8 min CN=74 Runoff=0.12 cfs 0.008 af

SubcatchmentPS16B: Area South of Runoff Area=1,685 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=130' Tc=6.1 min CN=74 Runoff=0.06 cfs 0.004 af

SubcatchmentPS17: North Portion of Runoff Area=8,970 sf 49.33% Impervious Runoff Depth=2.29"
Tc=6.0 min CN=86 Runoff=0.52 cfs 0.039 af

SubcatchmentPS18B: House D of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18C: House C of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18D: House B of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18E: House A of Lot 31 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18F: House A of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18G: House B of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18H: House C of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS18I: House D of Lot 30 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19C: House D of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19D: House C of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19E: House B of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS19F: House A of Lot 29 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS2: Area along Runoff Area=192,025 sf 1.09% Impervious Runoff Depth=1.39"
Flow Length=2,160' Tc=14.7 min CN=74 Runoff=4.47 cfs 0.509 af

SubcatchmentPS20: South Portion of Runoff Area=14,275 sf 53.66% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=87 Runoff=0.86 cfs 0.065 af

SubcatchmentPS21: East-Central Portion Runoff Area=75,625 sf 6.33% Impervious Runoff Depth=1.52"
Flow Length=945' Tc=11.7 min CN=76 Runoff=2.18 cfs 0.220 af

SubcatchmentPS21A: West Half of Runoff Area=12,975 sf 40.12% Impervious Runoff Depth=2.12"
Flow Length=785' Tc=7.3 min CN=84 Runoff=0.66 cfs 0.053 af

SubcatchmentPS22B: House of Lot 26 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.012 af

SubcatchmentPS22C: House of Lot 27 Runoff Area=2,305 sf 72.89% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.012 af

SubcatchmentPS23: House of Lot 20 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS24: House of Lot 19 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS25: House of Lot 18 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS26: House of Lot 17 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS27: House of Lot 16 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS28: House of Lot 28 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS29: House of Lot 25 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS3: West Portion of Runoff Area=30,865 sf 38.73% Impervious Runoff Depth=2.04"
Flow Length=570' Tc=10.3 min CN=83 Runoff=1.30 cfs 0.120 af

SubcatchmentPS30: House of Lot 24 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS31: House of Lot 23 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS32: House of Lot 22 Runoff Area=2,450 sf 68.57% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=90 Runoff=0.16 cfs 0.012 af

SubcatchmentPS33: House of Lot 21 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS34: House of Lot 15 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS35: House of Lot 14 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS36: House of Lot 13 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS37: House of Lot 12 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS38: House of Lot 8 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS39: House of Lot 7 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS4: East Portion of Runoff Area=20,515 sf 49.72% Impervious Runoff Depth=2.29"
Flow Length=570' Tc=10.3 min CN=86 Runoff=0.97 cfs 0.090 af

SubcatchmentPS40: House of Lot 6 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS41: House of Lot 5 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS42: House of Lot 4 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS43: House of Lot 3 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS44: House of Lot 2 Runoff Area=2,400 sf 70.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.17 cfs 0.013 af

SubcatchmentPS45: House of Lot 1 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS46: House of Lot 11 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS47: House of Lot 10 Runoff Area=2,385 sf 70.44% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.16 cfs 0.013 af

SubcatchmentPS48: Eastern Half of Runoff Area=1,890 sf 72.75% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS49: Relocated Barn of Lot Runoff Area=3,400 sf 74.12% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=92 Runoff=0.24 cfs 0.018 af

SubcatchmentPS4A: Area of Proposed Runoff Area=6,725 sf 3.12% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=75 Runoff=0.24 cfs 0.019 af

SubcatchmentPS5: Area East of Existing Runoff Area=2,425 sf 0.00% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=74 Runoff=0.08 cfs 0.006 af

SubcatchmentPS6: Area East of Driveway, Runoff Area=25,885 sf 4.62% Impervious Runoff Depth=1.45"
Flow Length=310' Tc=10.0 min CN=75 Runoff=0.76 cfs 0.072 af

SubcatchmentPS6A: Area East of Proposed Runoff Area=3,070 sf 6.51% Impervious Runoff Depth=1.52"
Flow Length=80' Tc=4.3 min CN=76 Runoff=0.13 cfs 0.009 af

SubcatchmentPS6B: Area North of Array Runoff Area=3,360 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=65' Tc=7.1 min CN=74 Runoff=0.11 cfs 0.009 af

SubcatchmentPS7C: House D of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7D: House C of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7E: House B of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7F: House A of Lot 33 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7G: House A of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7H: House B of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7I: House C of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS7J: House D of Lot 32 Runoff Area=1,920 sf 70.83% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=91 Runoff=0.13 cfs 0.010 af

SubcatchmentPS8: Southern Portion of Runoff Area=133,945 sf 20.52% Impervious Runoff Depth=1.73"
Flow Length=575' Tc=17.7 min CN=79 Runoff=3.68 cfs 0.444 af

SubcatchmentPS8A: Disturbed Area East of Runoff Area=6,845 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=485' Tc=8.2 min CN=74 Runoff=0.21 cfs 0.018 af

SubcatchmentPS9: Disturbed Area South Runoff Area=19,055 sf 0.00% Impervious Runoff Depth=1.32"
Flow Length=2,380' Tc=35.4 min CN=73 Runoff=0.27 cfs 0.048 af

Reach ER75: NorthernmostStream on Avg. Flow Depth=0.00' Max Vel=0.63 fps Inflow=0.03 cfs 0.005 af
n=0.030 L=2,980.0' S=0.0178 '/' Capacity=477.50 cfs Outflow=0.01 cfs 0.005 af

Reach ER76: Existing Swale from East Avg. Flow Depth=0.23' Max Vel=2.57 fps Inflow=4.58 cfs 0.564 af
n=0.030 L=1,170.0' S=0.0197 '/' Capacity=20,508.52 cfs Outflow=4.03 cfs 0.564 af

Reach ER79: Southern Swale Avg. Flow Depth=0.55' Max Vel=1.70 fps Inflow=9.19 cfs 1.439 af
n=0.030 L=710.0' S=0.0035 '/' Capacity=471.29 cfs Outflow=8.66 cfs 1.439 af

Reach ER80: West Portion of Existing Avg. Flow Depth=0.32' Max Vel=2.14 fps Inflow=7.75 cfs 1.137 af
n=0.030 L=625.0' S=0.0128 '/' Capacity=191.46 cfs Outflow=7.44 cfs 1.137 af

Reach PR81: East Portion of Existing Avg. Flow Depth=0.10' Max Vel=1.43 fps Inflow=1.15 cfs 0.155 af
n=0.030 L=760.0' S=0.0204 '/' Capacity=138.56 cfs Outflow=1.01 cfs 0.155 af

Pond EP51: Existing Pond Along Existing Peak Elev=73.77' Storage=4,999 cf Inflow=1.13 cfs 0.115 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond PCB11: Proposed Catch Basin 11 Peak Elev=63.76' Inflow=1.92 cfs 0.298 af
15.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=1.92 cfs 0.298 af

Pond PCB12: Proposed Catch Basin 12 Peak Elev=63.95' Inflow=3.24 cfs 0.305 af
18.0" Round Culvert n=0.013 L=85.0' S=0.0059 '/' Outflow=3.24 cfs 0.305 af

Pond PCB14: Proposed Catch Basin 14 Peak Elev=57.67' Inflow=2.58 cfs 0.523 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0268 '/' Outflow=2.58 cfs 0.523 af

Pond PCB4: Proposed Catch Basin 4 Peak Elev=73.82' Inflow=1.17 cfs 0.085 af
12.0" Round Culvert n=0.013 L=65.0' S=0.0346 '/' Outflow=1.17 cfs 0.085 af

Pond PCB5: Proposed Catch Basin 5 Peak Elev=70.70' Inflow=0.49 cfs 0.036 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0114 '/' Outflow=0.49 cfs 0.036 af

Pond PCB6: Proposed Catch Basin 6 Peak Elev=71.71' Inflow=0.52 cfs 0.039 af
12.0" Round Culvert n=0.013 L=35.0' S=0.0129 '/' Outflow=0.52 cfs 0.039 af

Pond PCB7: Proposed Catch Basin 7 Peak Elev=70.55' Inflow=1.70 cfs 0.132 af
18.0" Round Culvert n=0.013 L=175.0' S=0.0029 '/' Outflow=1.70 cfs 0.132 af

Pond PDMH10: Proposed Manhole 10 Peak Elev=65.64' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=230.0' S=0.0074 '/' Outflow=2.87 cfs 0.216 af

Pond PDMH14A: Proposed Manhole 14A Peak Elev=52.28' Inflow=2.58 cfs 0.523 af
24.0" Round Culvert n=0.013 L=205.0' S=0.0027 '/' Outflow=2.58 cfs 0.523 af

Pond PDMH14B: Proposed Manhole 14B Peak Elev=51.61' Inflow=2.58 cfs 0.523 af
24.0" Round Culvert n=0.013 L=140.0' S=0.0025 '/' Outflow=2.58 cfs 0.523 af

Pond PDMH3A: Proposed Manhole 3A Peak Elev=73.85' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=225.0' S=0.0062 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3B: Proposed Manhole 3B Peak Elev=72.31' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=180.0' S=0.0161 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3C: Proposed Manhole 3C Peak Elev=69.31' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=295.0' S=0.0149 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3D: Proposed Manhole 3D Peak Elev=64.81' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=190.0' S=0.0126 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH3E: Proposed Manhole 3E Peak Elev=62.31' Inflow=0.67 cfs 0.227 af
12.0" Round Culvert n=0.013 L=300.0' S=0.0230 '/' Outflow=0.67 cfs 0.227 af

Pond PDMH6A: Proposed Manhole 6A Peak Elev=71.20' Inflow=0.52 cfs 0.039 af
12.0" Round Culvert n=0.013 L=45.0' S=0.0067 '/' Outflow=0.52 cfs 0.039 af

Pond PDMH8: Proposed Manhole 8 Peak Elev=70.10' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=105.0' S=0.0029 '/' Outflow=2.87 cfs 0.216 af

Pond PDMH8A: Proposed Manhole 8A Peak Elev=69.55' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=200.0' S=0.0060 '/' Outflow=2.87 cfs 0.216 af

Pond PDMH9: Proposed Manhole 9 Peak Elev=67.79' Inflow=2.87 cfs 0.216 af
18.0" Round Culvert n=0.013 L=150.0' S=0.0133 '/' Outflow=2.87 cfs 0.216 af

Pond PP100: Stone Storage for House B of Lot Peak Elev=73.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP101: Stone Storage for House C of Lot Peak Elev=74.25' Storage=56 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=75.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP102: Stone Storage for House D of Lot Peak Elev=74.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP103: Stone Storage for House A of Lot Peak Elev=71.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=50.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP104: Stone Storage for House B of Lot Peak Elev=70.75' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP105: Stone Storage for House C of Lot Peak Elev=70.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP106: Stone Storage for House D of Lot Peak Elev=71.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP107: Stone Storage for House A of Lot Peak Elev=68.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP108: Stone Storage for House B of Lot Peak Elev=68.76' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP109: Stone Storage for House C of Lot Peak Elev=66.76' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP110: Stone Storage for House C of Lot Peak Elev=66.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP111: Stone Storage for Lot 26 Peak Elev=59.28' Storage=71 cf Inflow=0.16 cfs 0.012 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP112: Stone Storage for Lot 26 Peak Elev=61.28' Storage=71 cf Inflow=0.16 cfs 0.012 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP151: Swale Along West Portion of Peak Elev=65.73' Storage=89 cf Inflow=1.92 cfs 0.299 af
Outflow=1.92 cfs 0.298 af

Pond PP152: Swale Along East Portion of Peak Elev=65.83' Storage=22 cf Inflow=0.72 cfs 0.089 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0167 '/' Outflow=0.72 cfs 0.089 af

Pond PP153: Swale Along End of Cul-de-sac Peak Elev=61.40' Storage=12 cf Inflow=1.49 cfs 0.112 af
Outflow=1.49 cfs 0.112 af

Pond PP154: Proposed Sediment Forebay Peak Elev=63.20' Storage=10,092 cf Inflow=4.21 cfs 0.625 af
Outflow=2.34 cfs 0.411 af

Pond PP155: Proposed Bioretention Basin Peak Elev=48.40' Storage=12,986 cf Inflow=2.68 cfs 0.564 af
Outflow=0.50 cfs 0.553 af

Pond PP50: Wetlands East of Existing Driveway Peak Elev=91.24' Storage=80 cf Inflow=0.08 cfs 0.006 af
24.0" Round Culvert n=0.025 L=40.0' S=0.0113 '/' Outflow=0.03 cfs 0.005 af

Pond PP52A: Proposed Swale Along West Side Peak Elev=80.50' Storage=55 cf Inflow=1.30 cfs 0.120 af
12.0" Round Culvert n=0.013 L=30.0' S=0.0383 '/' Outflow=1.28 cfs 0.120 af

Pond PP53A: Proposed Swale Along East Side Peak Elev=80.23' Storage=63 cf Inflow=0.97 cfs 0.090 af
Outflow=0.97 cfs 0.089 af

Pond PP54: Proposed Bioretention Basin Peak Elev=76.25' Storage=3,776 cf Inflow=2.42 cfs 0.228 af
Outflow=0.67 cfs 0.227 af

Pond PP55: Proposed Swale Along North Portion Peak Elev=72.34' Storage=3 cf Inflow=0.49 cfs 0.036 af
Outflow=0.49 cfs 0.036 af

Pond PP56: Proposed Swale Along North Peak Elev=73.37' Storage=20 cf Inflow=0.52 cfs 0.039 af
Outflow=0.52 cfs 0.039 af

Pond PP57: Proposed Swale Along South Side Peak Elev=73.38' Storage=535 cf Inflow=0.86 cfs 0.065 af
Outflow=0.74 cfs 0.056 af

Pond PP58: Swale Along Middle-East Portion Peak Elev=76.70' Storage=213 cf Inflow=1.18 cfs 0.089 af
Outflow=1.17 cfs 0.085 af

Pond PP59: Existing Transferance Swale Peak Elev=71.66' Storage=548 cf Inflow=1.60 cfs 0.155 af
12.0" Round Culvert n=0.013 L=80.0' S=0.0637 '/' Outflow=1.15 cfs 0.155 af

Pond PP64: Stone Storage for Lot 20 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP65: Stone Storage for Lot 19 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP66: Stone Storage for Lot 18 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP67: Stone Storage for Lot 17 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP68: Stone Storage for Lot 16 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP69: Stone Storage for Lot 28 Peak Elev=65.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP70: Stone Storage for Lot 25 Peak Elev=50.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP71: Stone Storage for Lot 24 Peak Elev=50.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP72: Stone Storage for Lot 23 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP73: Stone Storage for Lot 22 Peak Elev=88.27' Storage=84 cf Inflow=0.16 cfs 0.012 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.012 af

Pond PP74: Stone Storage for Lot 21 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP75: Stone Storage for Lot 15 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP76: Stone Storage for Lot 14 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP77: Stone Storage for Lot 13 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP78: Stone Storage for Lot 12 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP79: Stone Storage for Lot 8 Peak Elev=88.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP80: Stone Storage for Lot 7 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP81: Stone Storage for Lot 6 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP82: Stone Storage for Lot 5 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP83: Stone Storage for Lot 4 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP84: Stone Storage for Lot 3 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP85: Stone Storage for Lot 2 Peak Elev=88.28' Storage=81 cf Inflow=0.17 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.013 af

Pond PP86: Stone Storage for Lot 1 Peak Elev=88.24' Storage=67 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=10.0' S=0.0200 '/' Outflow=0.11 cfs 0.012 af

Pond PP87: Stone Storage for Lot 11 Peak Elev=76.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP88: Stone Storage for Lot 10 Peak Elev=76.28' Storage=79 cf Inflow=0.16 cfs 0.013 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.10 cfs 0.012 af

Pond PP89: Stone Storage for the House on Lot Peak Elev=72.76' Storage=53 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP90: Stone Storage for the Barn on Lot 9 Peak Elev=72.85' Storage=123 cf Inflow=0.24 cfs 0.018 af
4.0" Round Culvert n=0.010 L=100.0' S=0.0030 '/' Outflow=0.13 cfs 0.018 af

Pond PP91: Stone Storage for House D of Lot 33 Peak Elev=72.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP92: Stone Storage for House C of Lot 33 Peak Elev=72.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP93: Stone Storage for House B of Lot 33 Peak Elev=72.75' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP94: Stone Storage for House A of Lot 33 Peak Elev=75.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP95: Stone Storage for House A of Lot 32 Peak Elev=76.75' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP96: Stone Storage for House B of Lot 32 Peak Elev=75.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP97: Stone Storage for House C of Lot 32 Peak Elev=74.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=30.0' S=0.0033 '/' Outflow=0.09 cfs 0.010 af

Pond PP98: Stone Storage for House D of Lot 32 Peak Elev=74.26' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=150.0' S=0.0030 '/' Outflow=0.09 cfs 0.010 af

Pond PP99: Stone Storage for House A of Lot 31 Peak Elev=72.25' Storage=57 cf Inflow=0.13 cfs 0.010 af
4.0" Round Culvert n=0.010 L=175.0' S=0.0031 '/' Outflow=0.09 cfs 0.010 af

Pond PT1: Proposed Pre-Tx 1 Peak Elev=79.46' Inflow=1.28 cfs 0.120 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0033 '/' Outflow=1.28 cfs 0.120 af

Pond PT13: Proposed Pre-Tx 13 Peak Elev=59.94' Inflow=1.49 cfs 0.112 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0030 '/' Outflow=1.49 cfs 0.112 af

Pond PT2: Proposed Pre-Tx 2 Peak Elev=79.51' Inflow=0.97 cfs 0.089 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0250 '/' Outflow=0.97 cfs 0.089 af

Link L101A: Wetlands to the West (Northern Swale Entrance) Inflow=6.01 cfs 0.715 af
Primary=6.01 cfs 0.715 af

Link L101B: Central Wetland Finger Inflow=1.99 cfs 0.949 af
Primary=1.99 cfs 0.949 af

Link L101C: Wetlands to the West (Southern Swale Entrance) Inflow=8.95 cfs 1.486 af
Primary=8.95 cfs 1.486 af

Link L102: Flow and Volumes from HousesFlowing into Link L101 Inflow=1.48 cfs 0.188 af
Primary=1.48 cfs 0.188 af

Link L103: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.59 cfs 0.075 af
Primary=0.59 cfs 0.075 af

Link L104: Flow and Volumes from Houses Flowing into Pond PP59 Inflow=0.35 cfs 0.040 af
Primary=0.35 cfs 0.040 af

Link L105: Flow and Volumes from Houses Flowing into Reach ER76 Inflow=1.03 cfs 0.121 af
Primary=1.03 cfs 0.121 af

Link L106: Flow and Volumes from Houses Flowing into Reach ER80 Inflow=0.34 cfs 0.040 af
Primary=0.34 cfs 0.040 af

Total Runoff Area = 23.679 ac Runoff Volume = 3.506 af Average Runoff Depth = 1.78"
77.89% Pervious = 18.444 ac 22.11% Impervious = 5.236 ac

Summary for Subcatchment PS1: Area Near Central Wetland Finger on Western Portion of Site

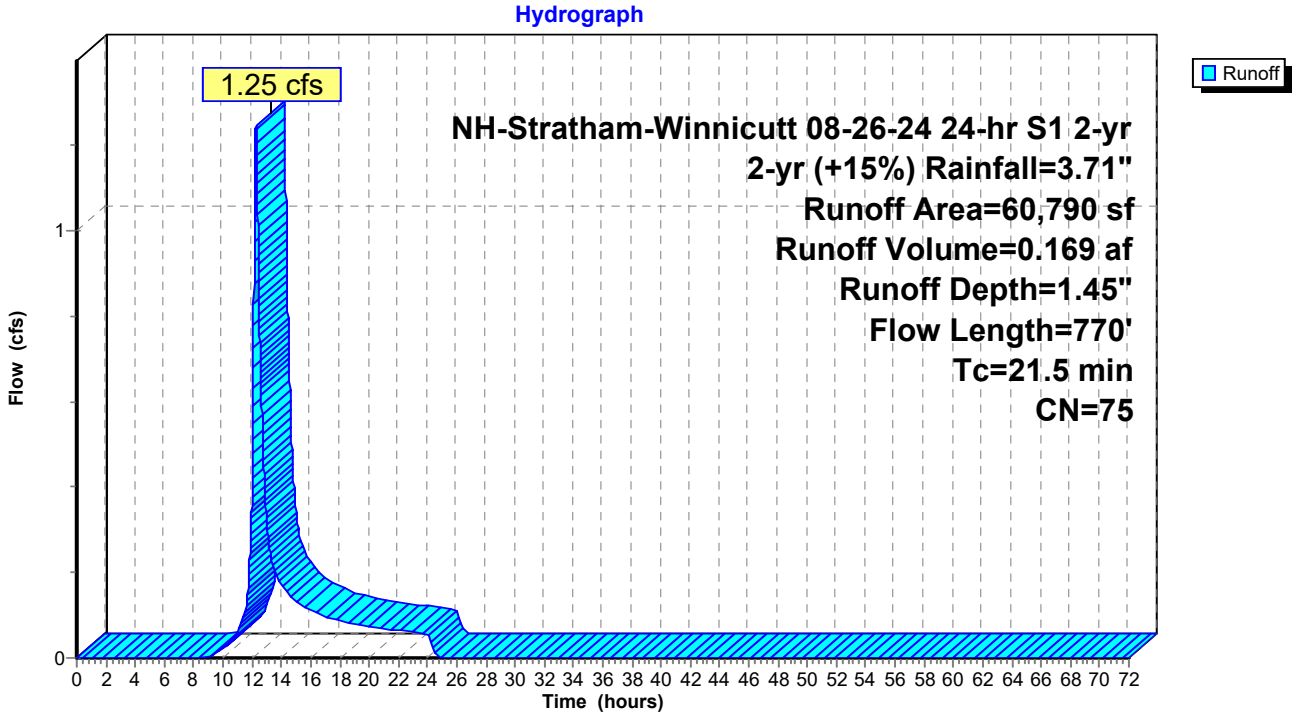
Runoff = 1.25 cfs @ 12.26 hrs, Volume= 0.169 af, Depth= 1.45"
Routed to Link L101B : Central Wetland Finger

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
58,335	74	>75% Grass cover, Good, HSG C
2,455	98	Paved parking, HSG C
60,790	75	Weighted Average
58,335		95.96% Pervious Area
2,455		4.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.2	80	0.0250	1.11		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
15.1	640	0.0200	0.71		**Shallow Concentrated Flow, Woodlands/Wetlands** Woodland Kv= 5.0 fps
21.5	770	Total			

Subcatchment PS1: Area Near Central Wetland Finger on Western Portion of Site



ment PS11: Patch of Land on Western Portion of Site, North of Southern Wetland Finger, South of Propo

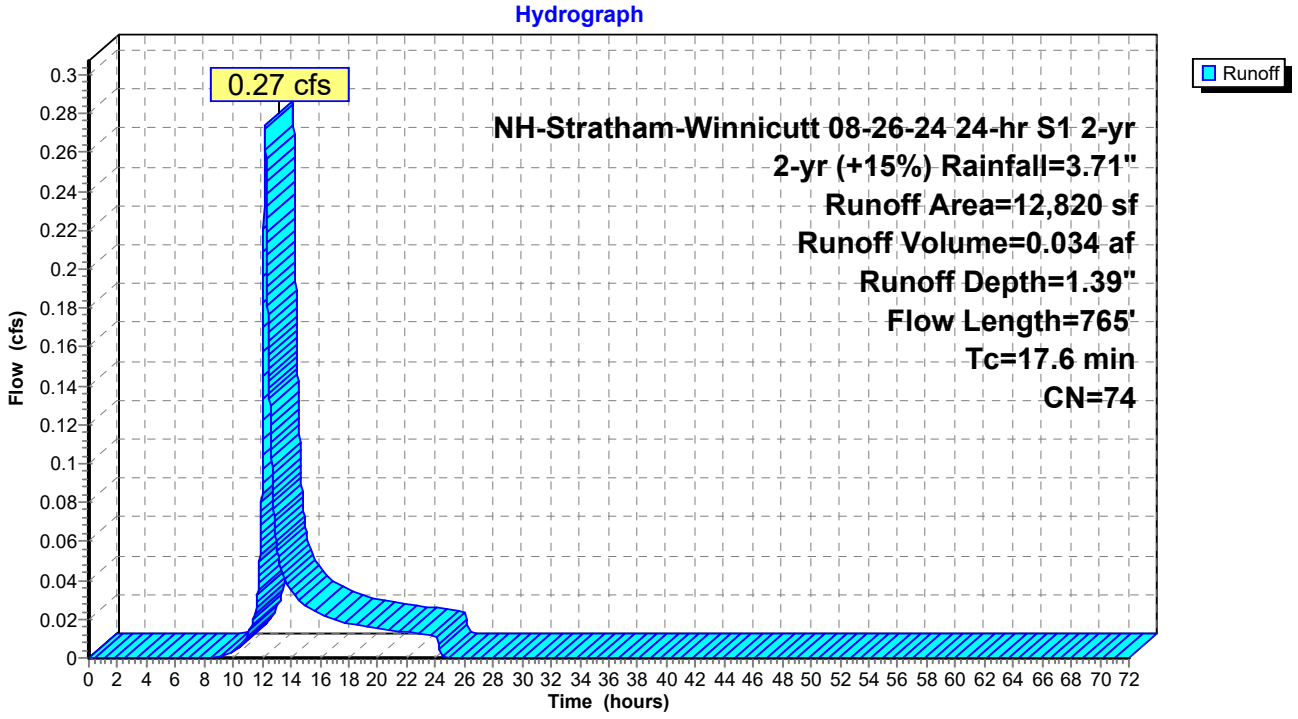
Runoff = 0.27 cfs @ 12.20 hrs, Volume= 0.034 af, Depth= 1.39"
Routed to Link L101C : Wetlands to the West (Southern Swale Entrance)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
12,820	74	>75% Grass cover, Good, HSG C
12,820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0150	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
1.5	120	0.0750	1.37		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
2.7	110	0.0180	0.67		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
0.5	485	0.0300	14.95	1,375.30	**Channel Flow, Southern Swale Connecting to Western Wetlands** Area= 92.0 sf Perim= 40.0' r= 2.30' n= 0.030 Earth, grassed & winding
17.6	765	Total			

S11: Patch of Land on Western Portion of Site, North of Southern Wetland Finger, South of Proposed Bi



ry for Subcatchment PS12: Disturbed Area on Southern Portion of Lot 25, and the Shared Driveway for

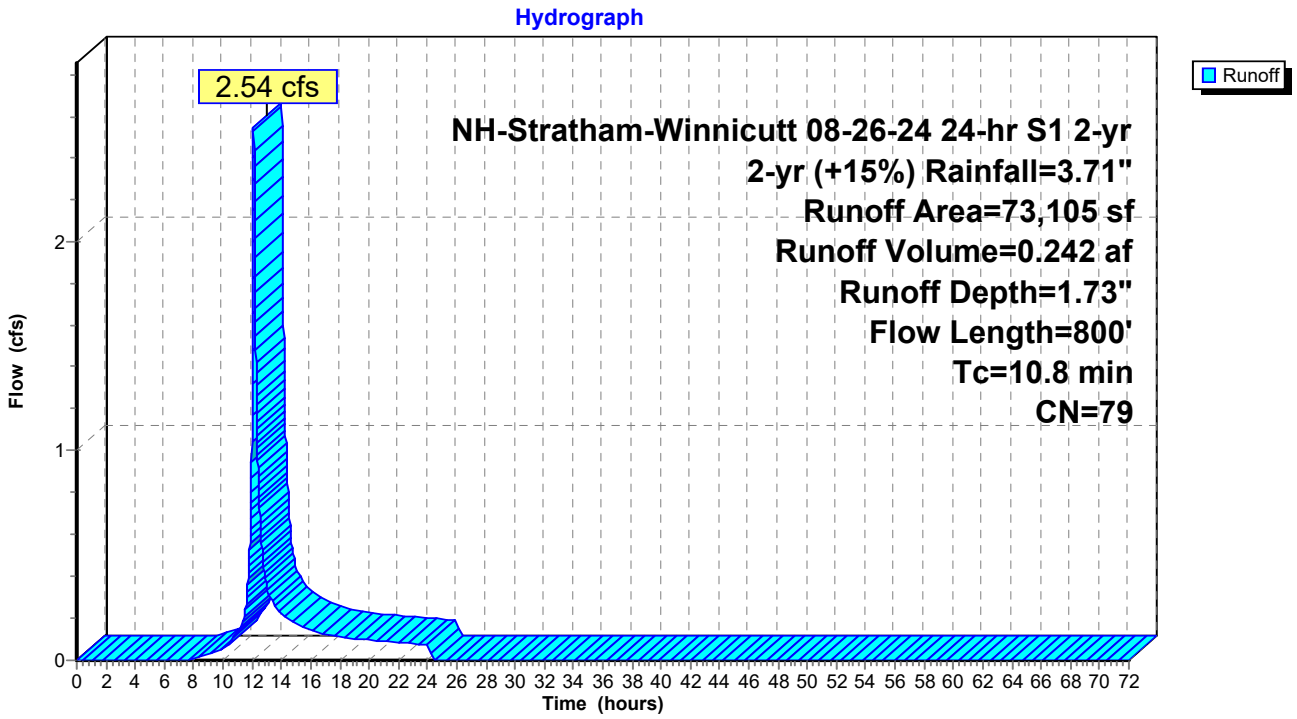
Runoff = 2.54 cfs @ 12.10 hrs, Volume= 0.242 af, Depth= 1.73"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
55,905	74	>75% Grass cover, Good, HSG C
3,205	80	>75% Grass cover, Good, HSG D
13,350	98	Paved parking, HSG C
645	98	Paved parking, HSG D
73,105	79	Weighted Average
59,110		80.86% Pervious Area
13,995		19.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
1.1	80	0.0300	1.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.5	50	0.1000	1.58		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
2.3	620	0.0100	4.52	169.55	**Channel Flow, West Portion of Existing Central Swale** Area= 37.5 sf Perim= 43.0' r= 0.87' n= 0.030 Earth, grassed & winding
10.8	800	Total			

ubcatchment PS12: Disturbed Area on Southern Portion of Lot 25, and the Shared Driveway for Lots 26



Summary for Subcatchment PS13B: Area of Bioretention Pond "B2"

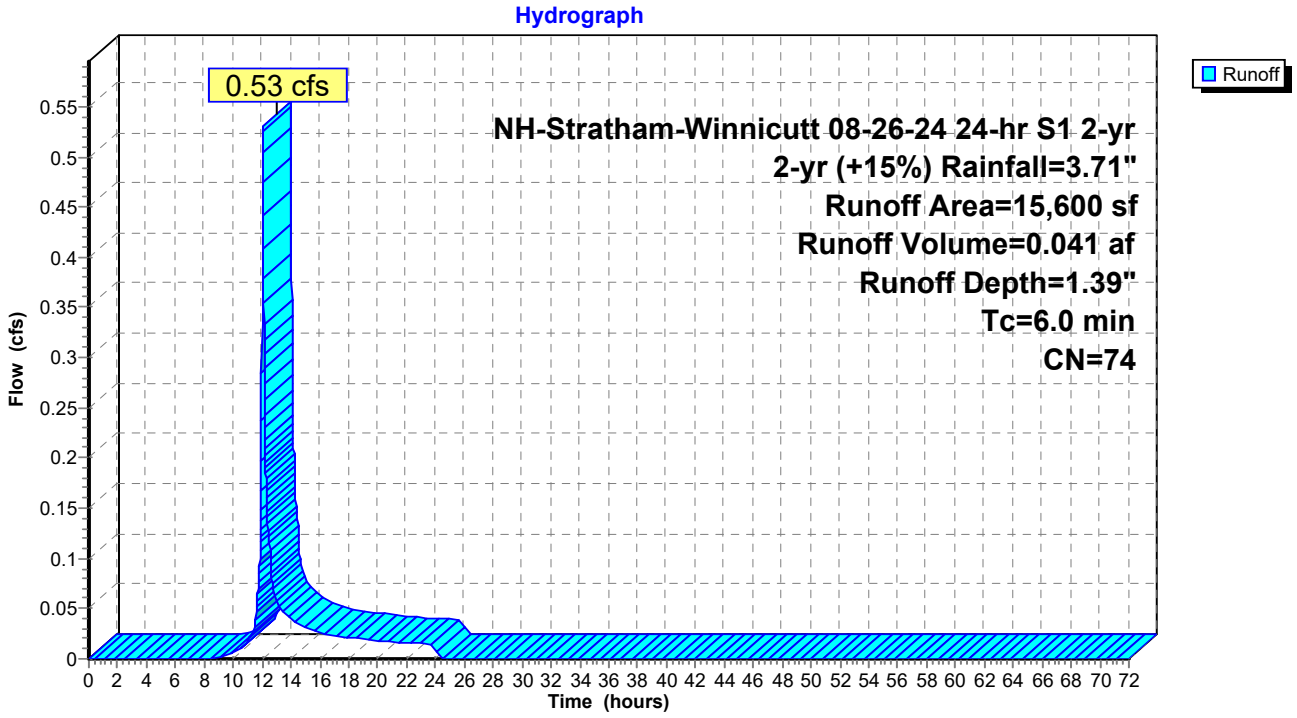
Runoff = 0.53 cfs @ 12.04 hrs, Volume= 0.041 af, Depth= 1.39"
Routed to Pond PP155 : Proposed Bioretention Basin "B2"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
15,600	74	>75% Grass cover, Good, HSG C
15,600		100.00% Pervious Area

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

Subcatchment PS13B: Area of Bioretention Pond "B2"



Summary for Subcatchment PS13E: East Portion of Proposed Main Road

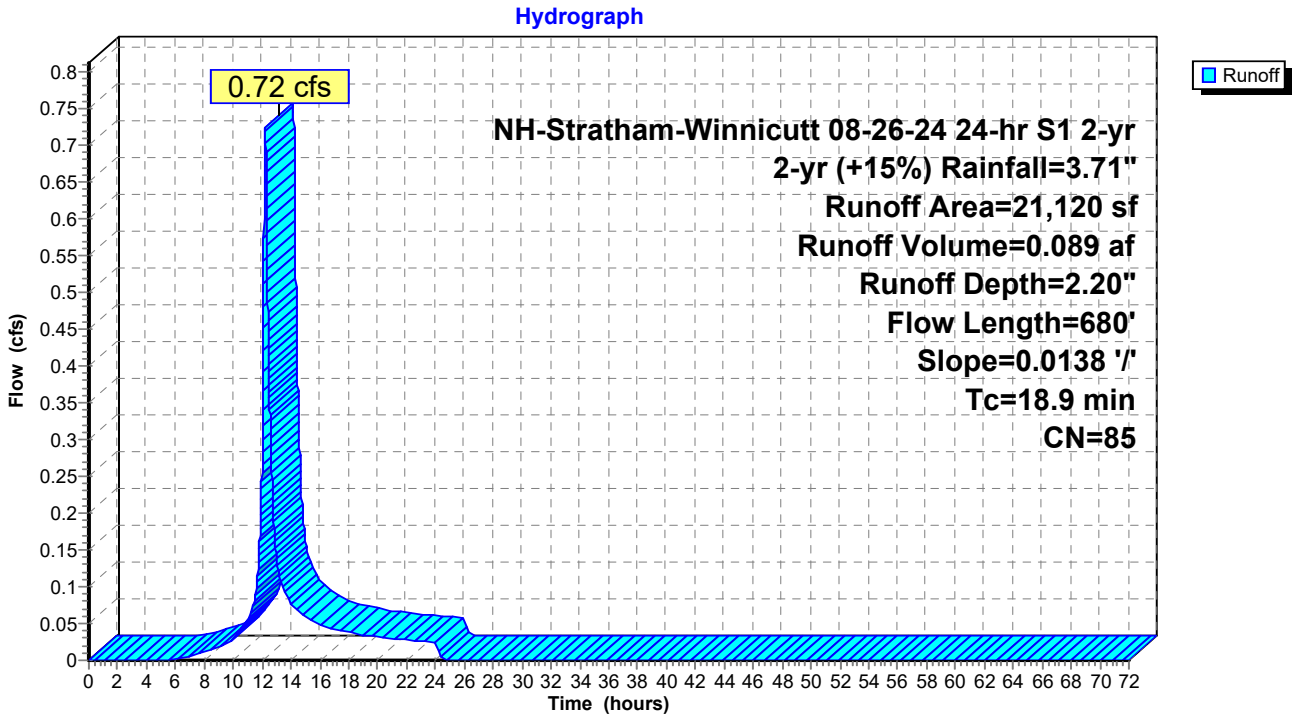
Runoff = 0.72 cfs @ 12.20 hrs, Volume= 0.089 af, Depth= 2.20"
Routed to Pond PP152 : Swale Along East Portion of Proposed Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
11,550	74	>75% Grass cover, Good, HSG C
9,570	98	Paved parking, HSG C
21,120	85	Weighted Average
11,550		54.69% Pervious Area
9,570		45.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.0138	0.14		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
12.8	630	0.0138	0.82		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
18.9	680	Total			

Subcatchment PS13E: East Portion of Proposed Main Road



Summary for Subcatchment PS13S: South Portion of Proposed Main Road & Cul-de-sac

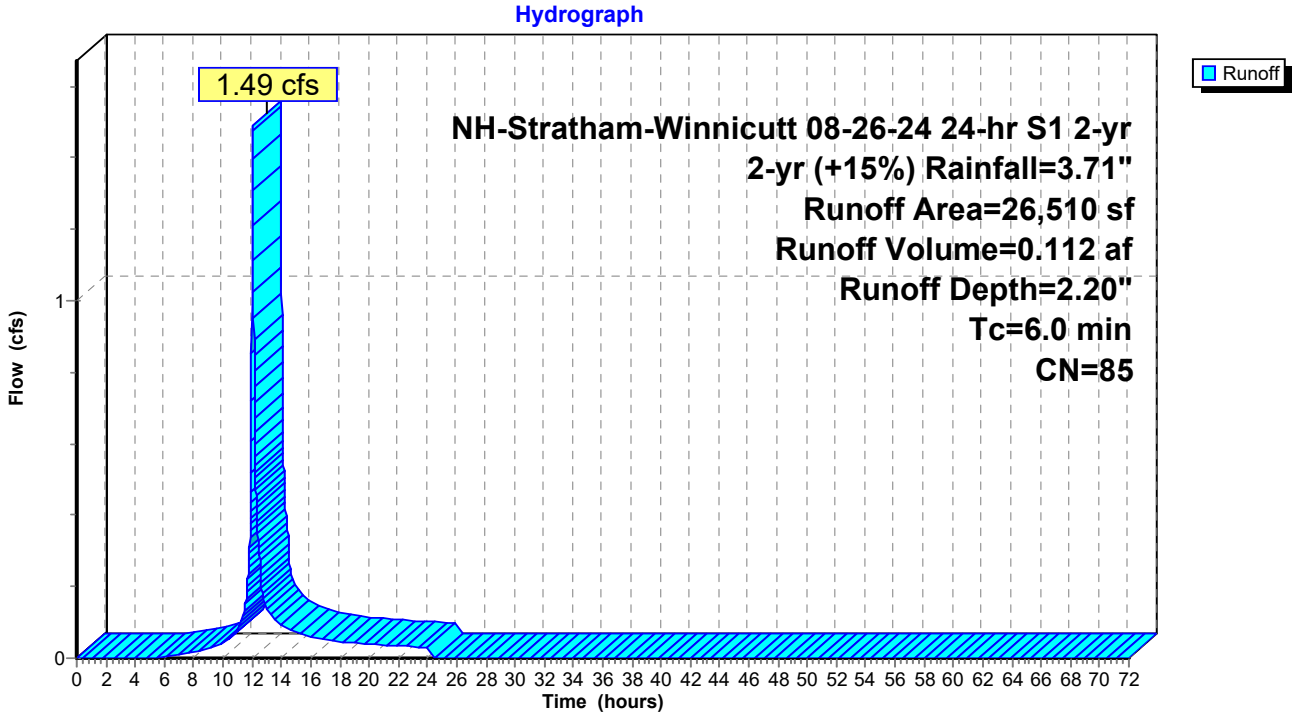
Runoff = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af, Depth= 2.20"
Routed to Pond PP153 : Swale Along End of Cul-de-sac

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
13,815	74	>75% Grass cover, Good, HSG C
12,695	98	Paved parking, HSG C
26,510	85	Weighted Average
13,815		52.11% Pervious Area
12,695		47.89% Impervious Area

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

Subcatchment PS13S: South Portion of Proposed Main Road & Cul-de-sac



Summary for Subcatchment PS13SF: Area of Sediment Forebay and Adjacent Grass

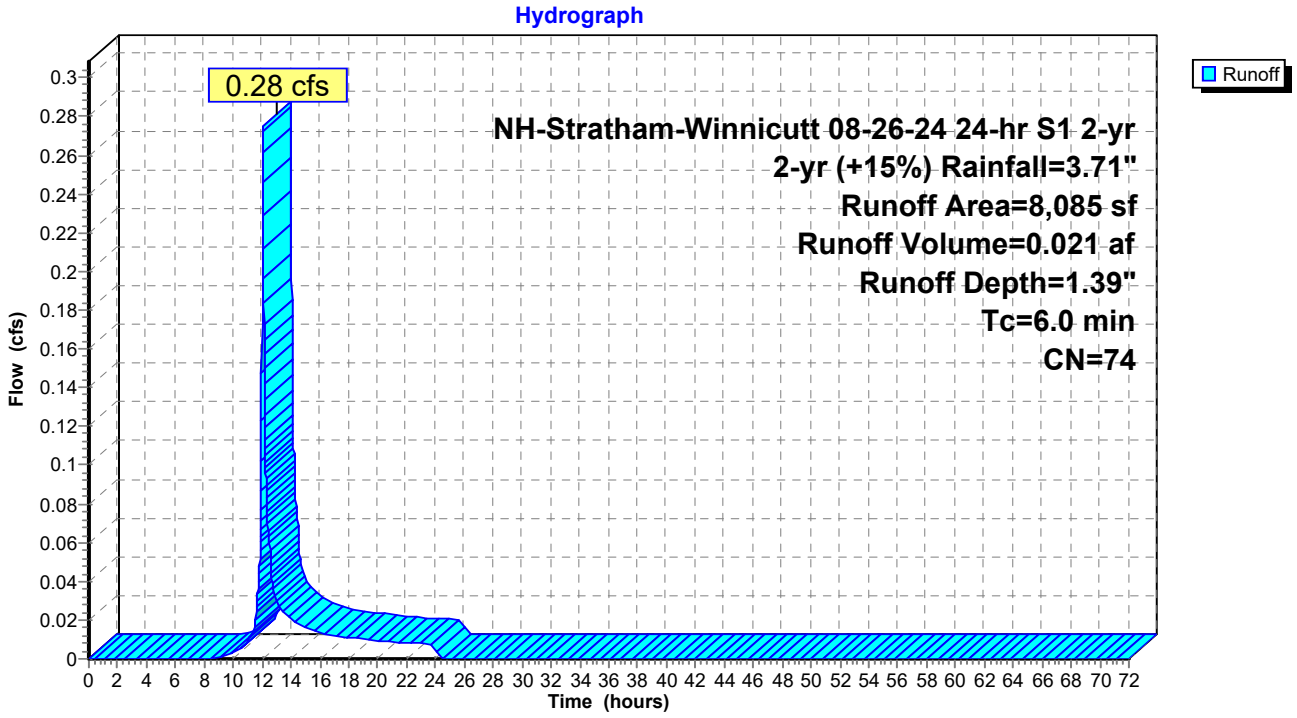
Runoff = 0.28 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 1.39"
Routed to Pond PP154 : Proposed Sediment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
8,085	74	>75% Grass cover, Good, HSG C
8,085		100.00% Pervious Area

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

Subcatchment PS13SF: Area of Sediment Forebay and Adjacent Grass



Summary for Subcatchment PS13W: West Portion of Proposed Main Road

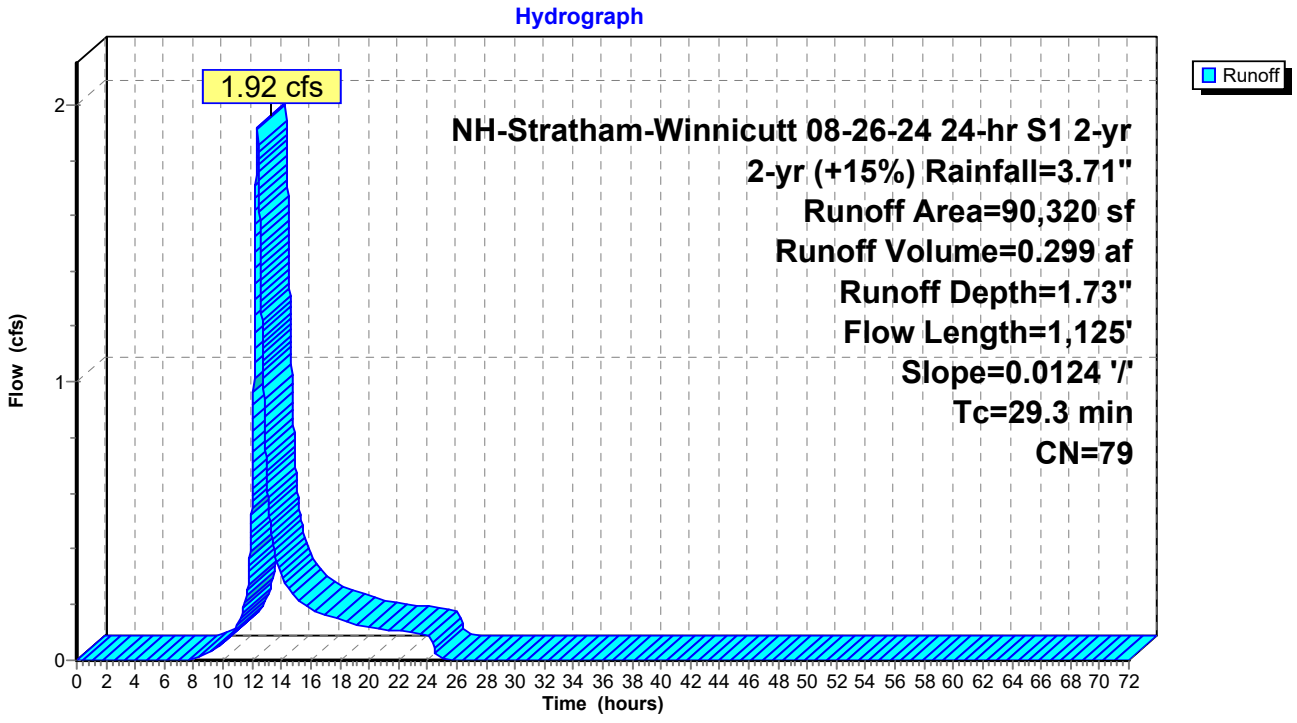
Runoff = 1.92 cfs @ 12.34 hrs, Volume= 0.299 af, Depth= 1.73"
Routed to Pond PP151 : Swale Along West Portion of Proposed Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
69,870	74	>75% Grass cover, Good, HSG C
20,450	98	Paved parking, HSG C
90,320	79	Weighted Average
69,870		77.36% Pervious Area
20,450		22.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0124	0.13		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
23.0	1,075	0.0124	0.78		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
29.3	1,125	Total			

Subcatchment PS13W: West Portion of Proposed Main Road



Summary for Subcatchment PS14: Middle-East Portion of Proposed Main Road

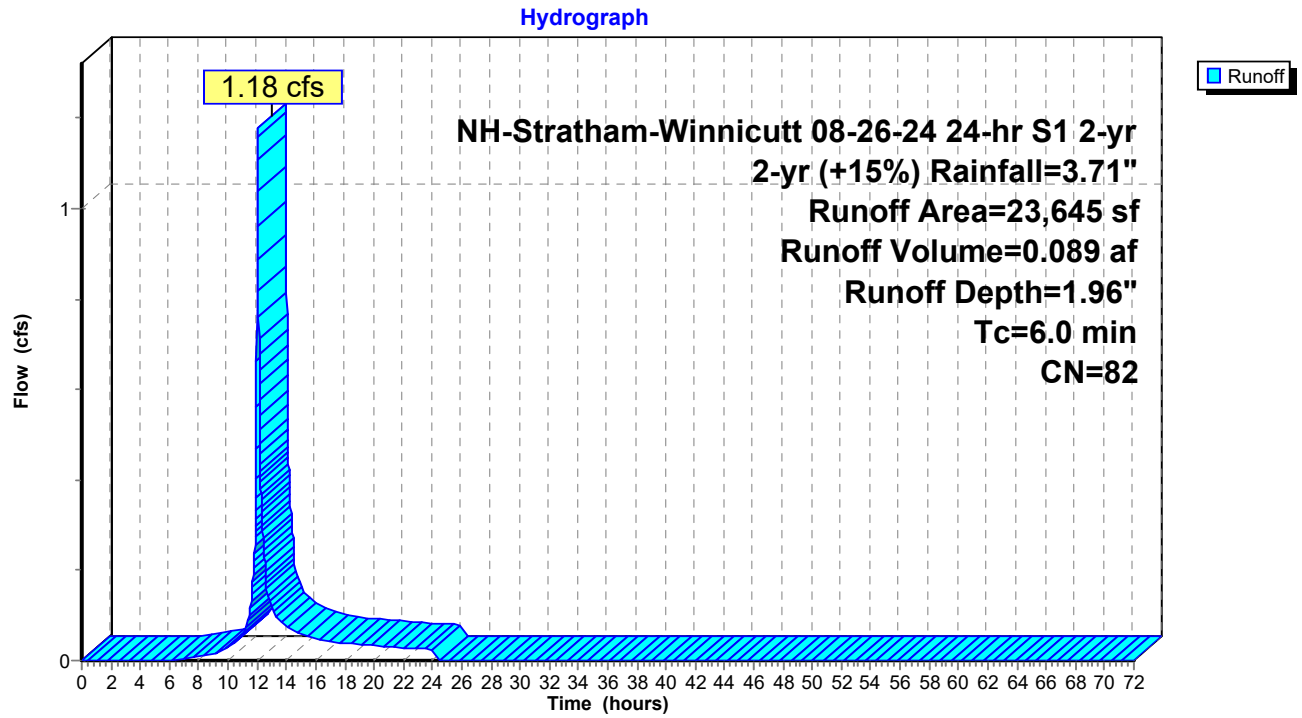
Runoff = 1.18 cfs @ 12.04 hrs, Volume= 0.089 af, Depth= 1.96"
Routed to Pond PP58 : Swale Along Middle-East Portion of Proposed Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
16,055	74	>75% Grass cover, Good, HSG C
1,250	98	Roofs, HSG C
6,340	98	Paved parking, HSG C
23,645	82	Weighted Average
16,055		67.90% Pervious Area
7,590		32.10% Impervious Area

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

Subcatchment PS14: Middle-East Portion of Proposed Main Road



Summary for Subcatchment PS15: North Portion of Proposed Secondary Road

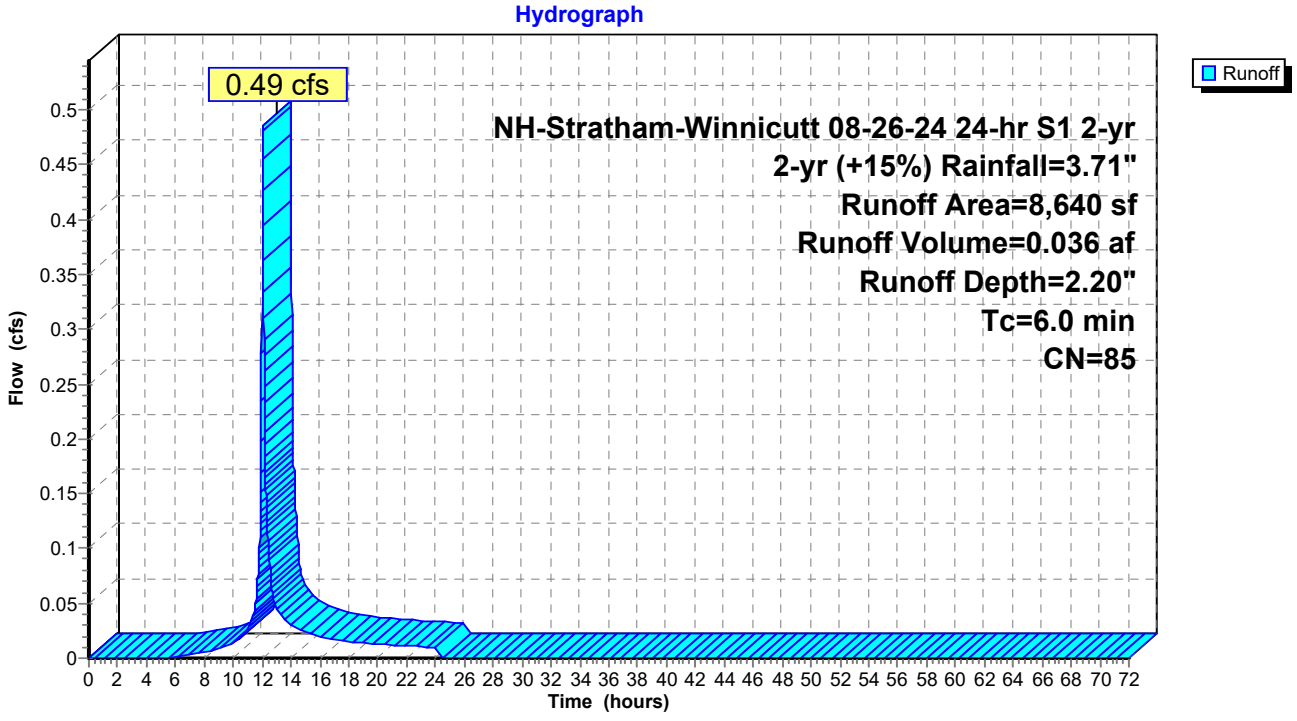
Runoff = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af, Depth= 2.20"
Routed to Pond PP55 : Proposed Swale Along North Portion of Proposed Secondary Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
4,630	74	>75% Grass cover, Good, HSG C
4,010	98	Paved parking, HSG C
8,640	85	Weighted Average
4,630		53.59% Pervious Area
4,010		46.41% Impervious Area

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

Subcatchment PS15: North Portion of Proposed Secondary Road



Summary for Subcatchment PS16: Area Northwest of Array Homes

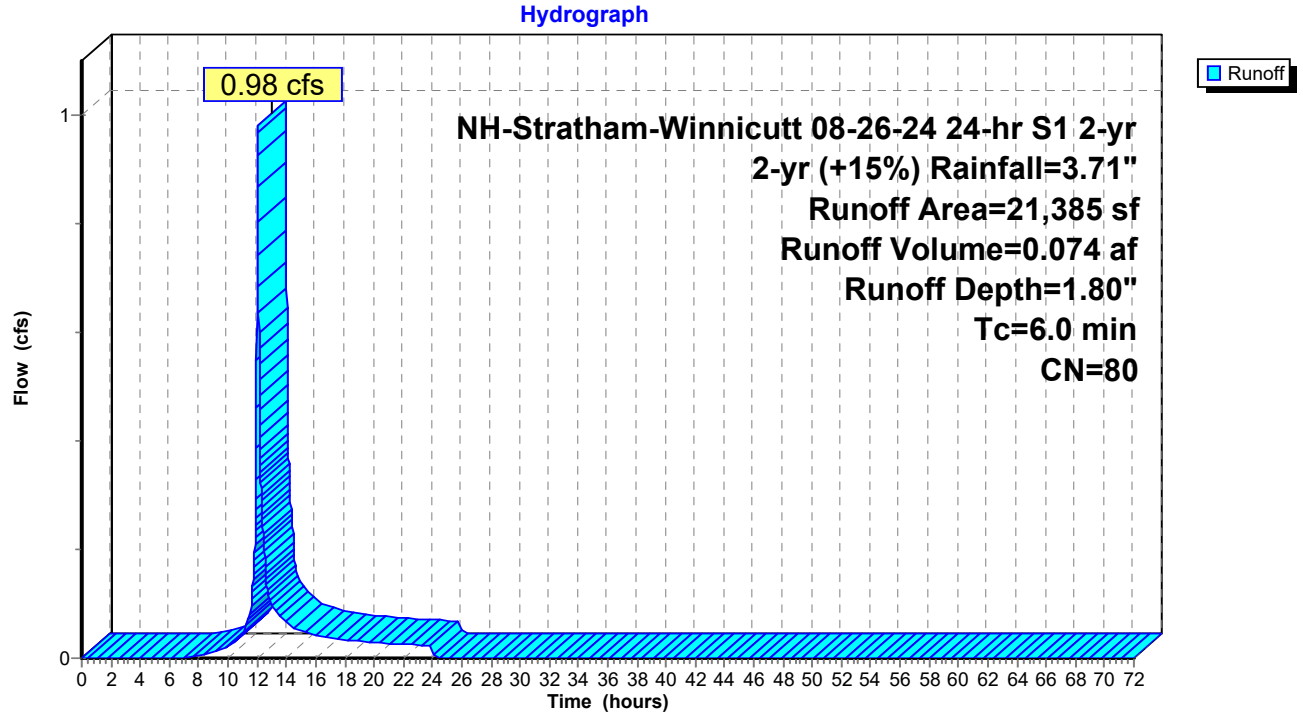
Runoff = 0.98 cfs @ 12.04 hrs, Volume= 0.074 af, Depth= 1.80"
Routed to Pond PP59 : Existing Transferance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
15,960	74	>75% Grass cover, Good, HSG C
5,425	98	Paved parking, HSG C
21,385	80	Weighted Average
15,960		74.63% Pervious Area
5,425		25.37% Impervious Area

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

Subcatchment PS16: Area Northwest of Array Homes



Summary for Subcatchment PS16A: Disturbed Area for "PDL5"

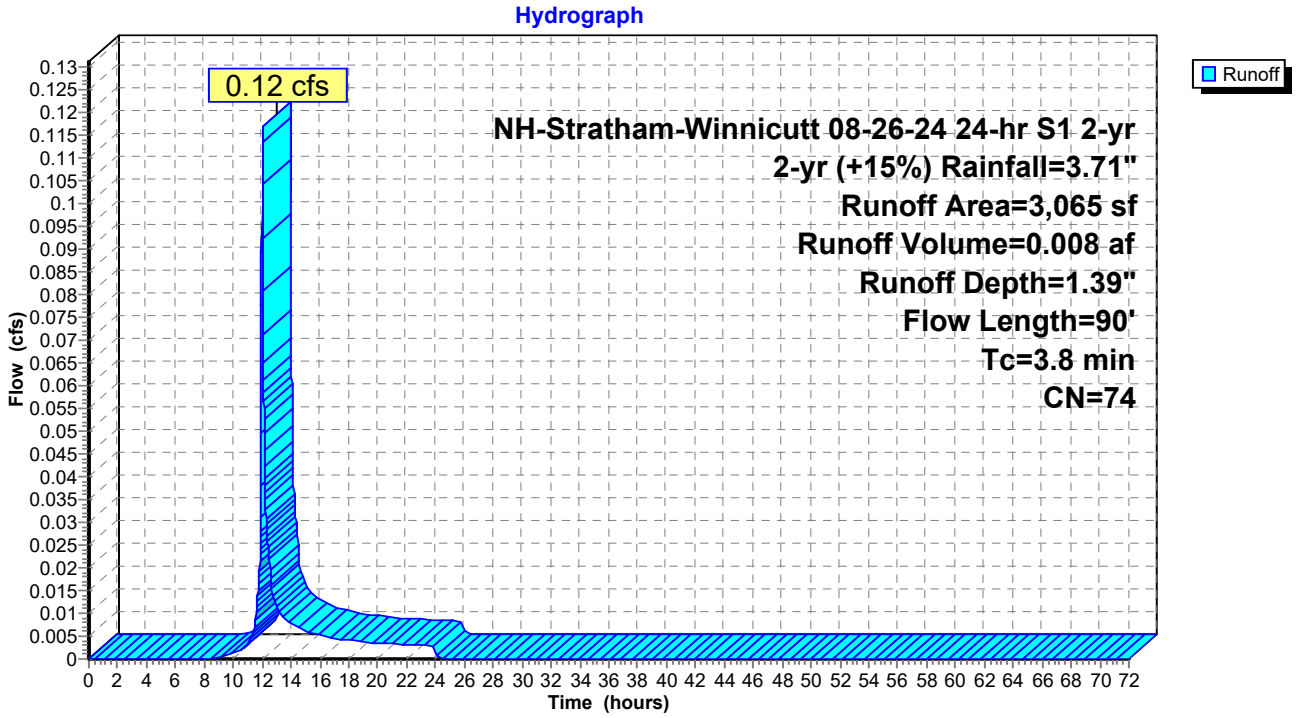
Runoff = 0.12 cfs @ 12.02 hrs, Volume= 0.008 af, Depth= 1.39"
Routed to Pond PP59 : Existing Transferance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
3,065	74	>75% Grass cover, Good, HSG C
3,065		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0600	0.25		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.4	40	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.8	90	Total			

Subcatchment PS16A: Disturbed Area for "PDL5"



Summary for Subcatchment PS16B: Area South of Relocated Barn

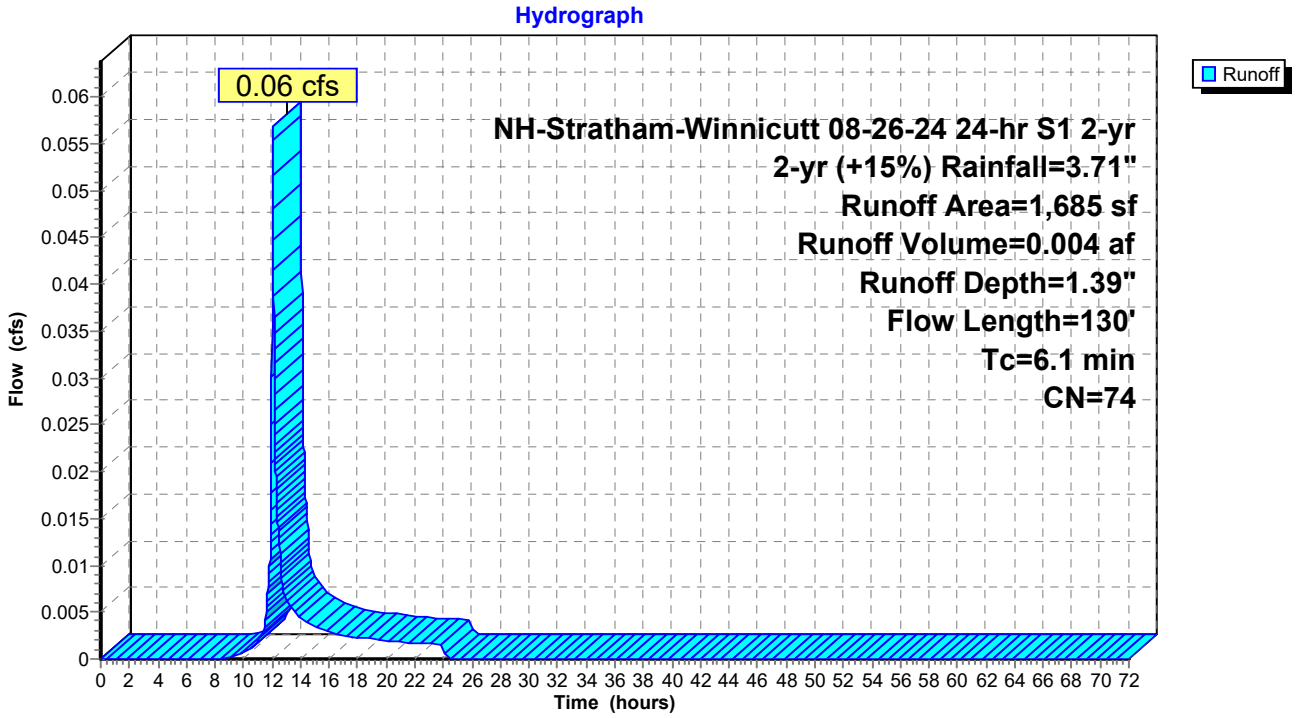
Runoff = 0.06 cfs @ 12.04 hrs, Volume= 0.004 af, Depth= 1.39"
Routed to Pond PP59 : Existing Transferance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
1,685	74	>75% Grass cover, Good, HSG C
1,685		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.9	80	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
6.1	130	Total			

Subcatchment PS16B: Area South of Relocated Barn



Summary for Subcatchment PS17: North Portion of Proposed Secondary Cul-de-sac

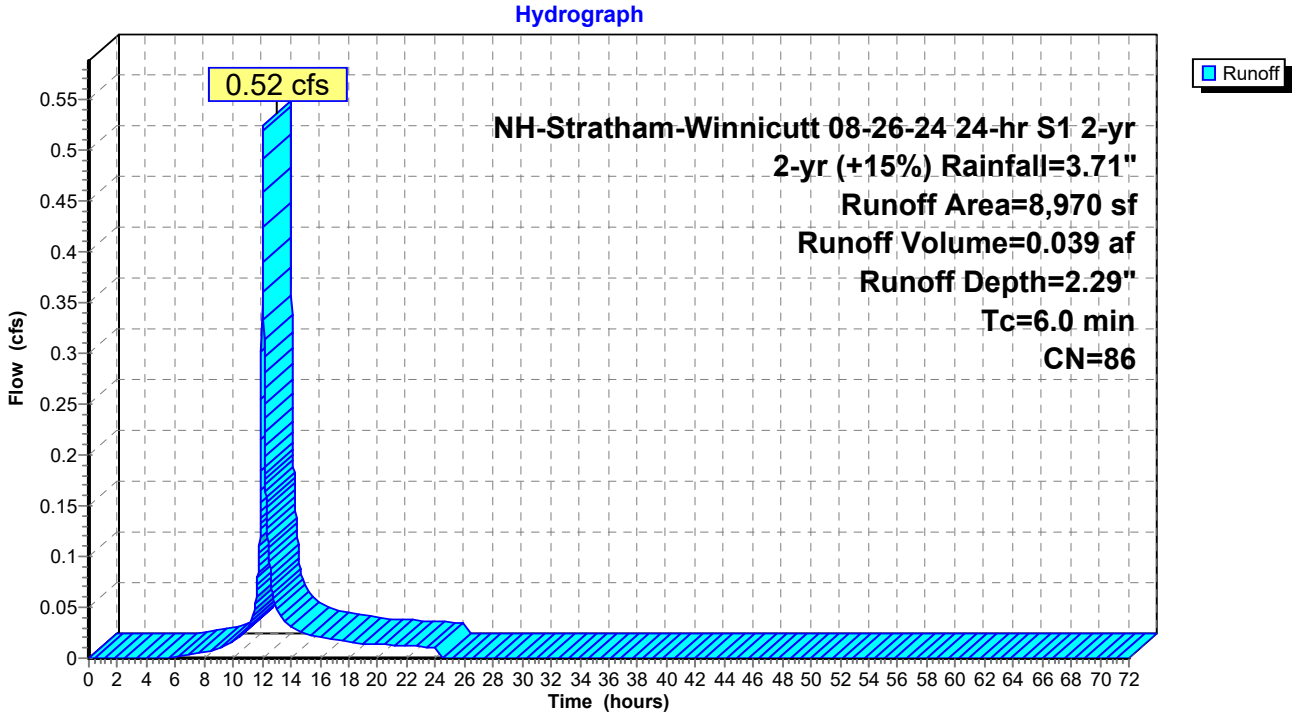
Runoff = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af, Depth= 2.29"
Routed to Pond PP56 : Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
4,545	74	>75% Grass cover, Good, HSG C
4,425	98	Paved parking, HSG C
8,970	86	Weighted Average
4,545		50.67% Pervious Area
4,425		49.33% Impervious Area

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

Subcatchment PS17: North Portion of Proposed Secondary Cul-de-sac



Summary for Subcatchment PS18B: House D of Lot 31

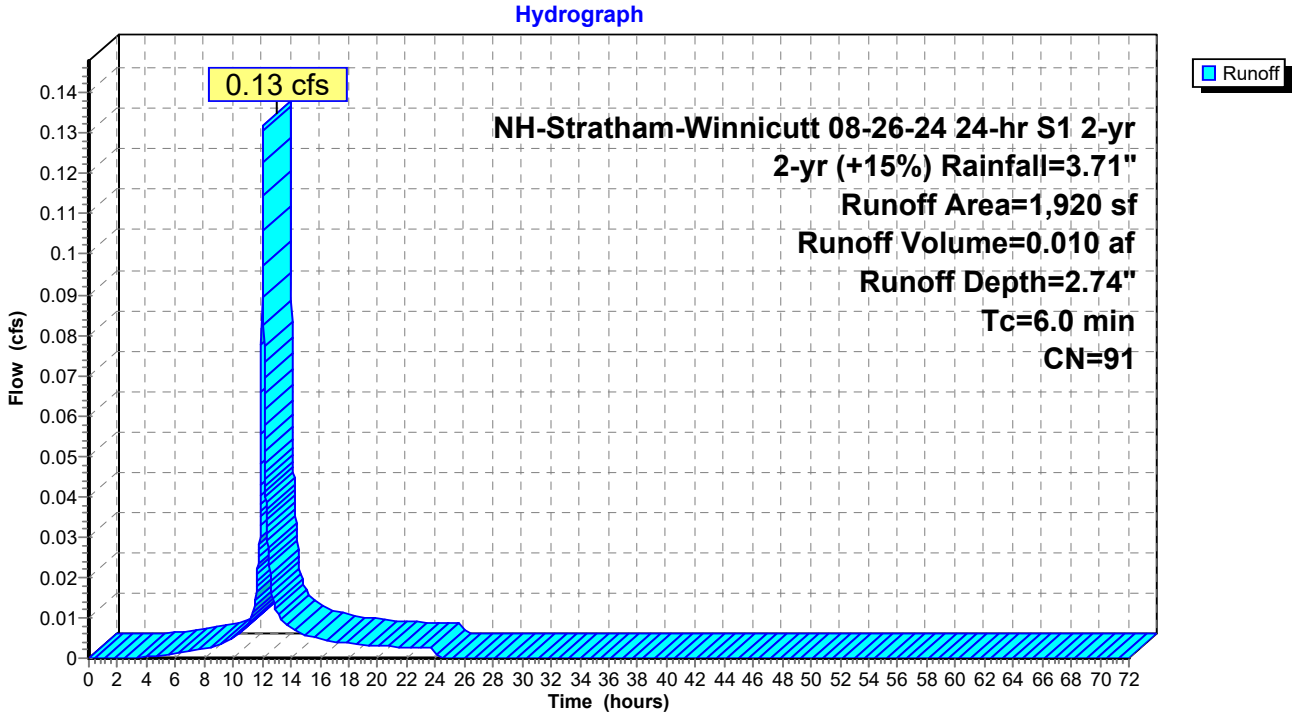
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP99 : Stone Storage for House A of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18B: House D of Lot 31



Summary for Subcatchment PS18C: House C of Lot 31

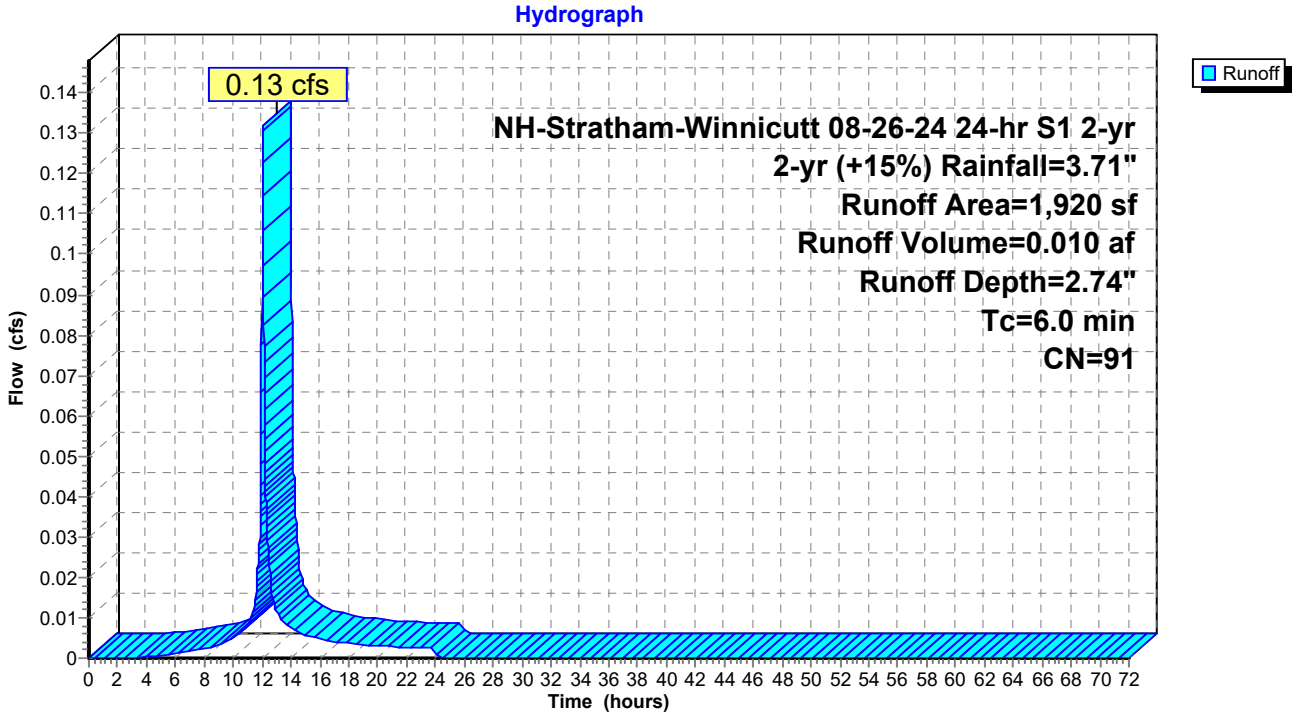
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP100 : Stone Storage for House B of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18C: House C of Lot 31



Summary for Subcatchment PS18D: House B of Lot 31

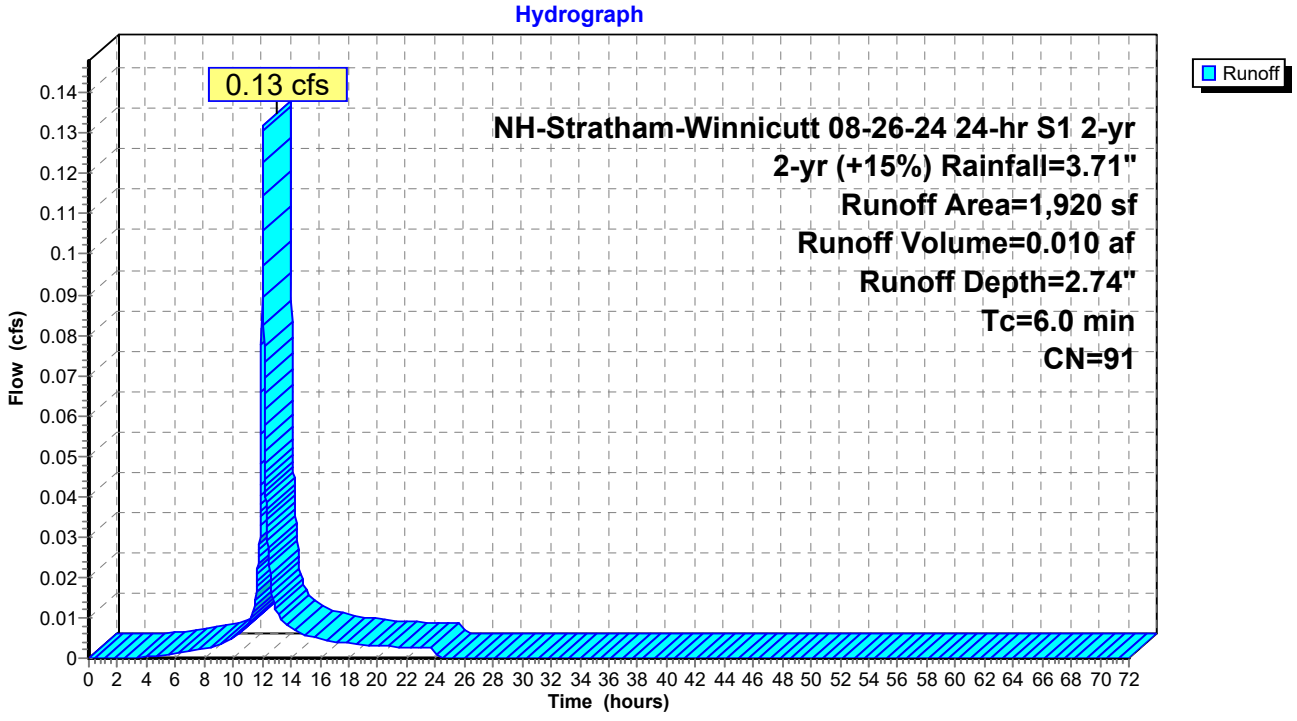
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP101 : Stone Storage for House C of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18D: House B of Lot 31



Summary for Subcatchment PS18E: House A of Lot 31

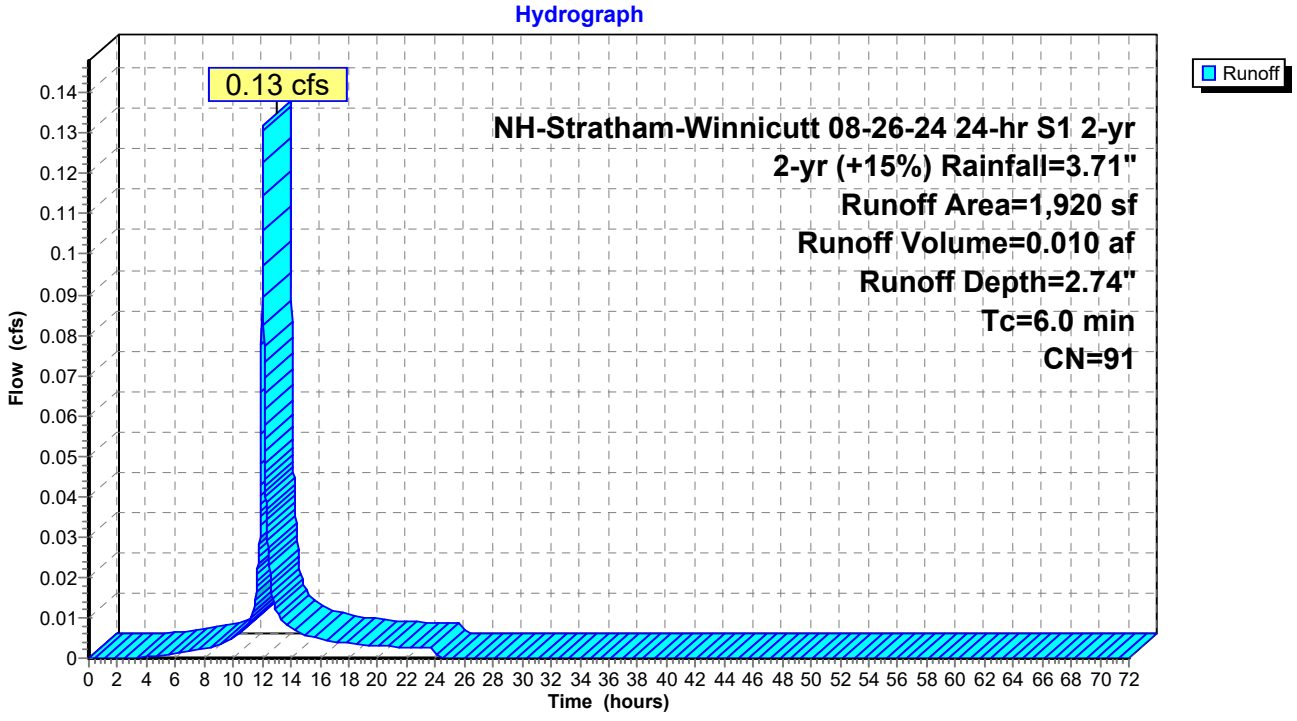
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP102 : Stone Storage for House D of Lot 31

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18E: House A of Lot 31



Summary for Subcatchment PS18F: House A of Lot 30

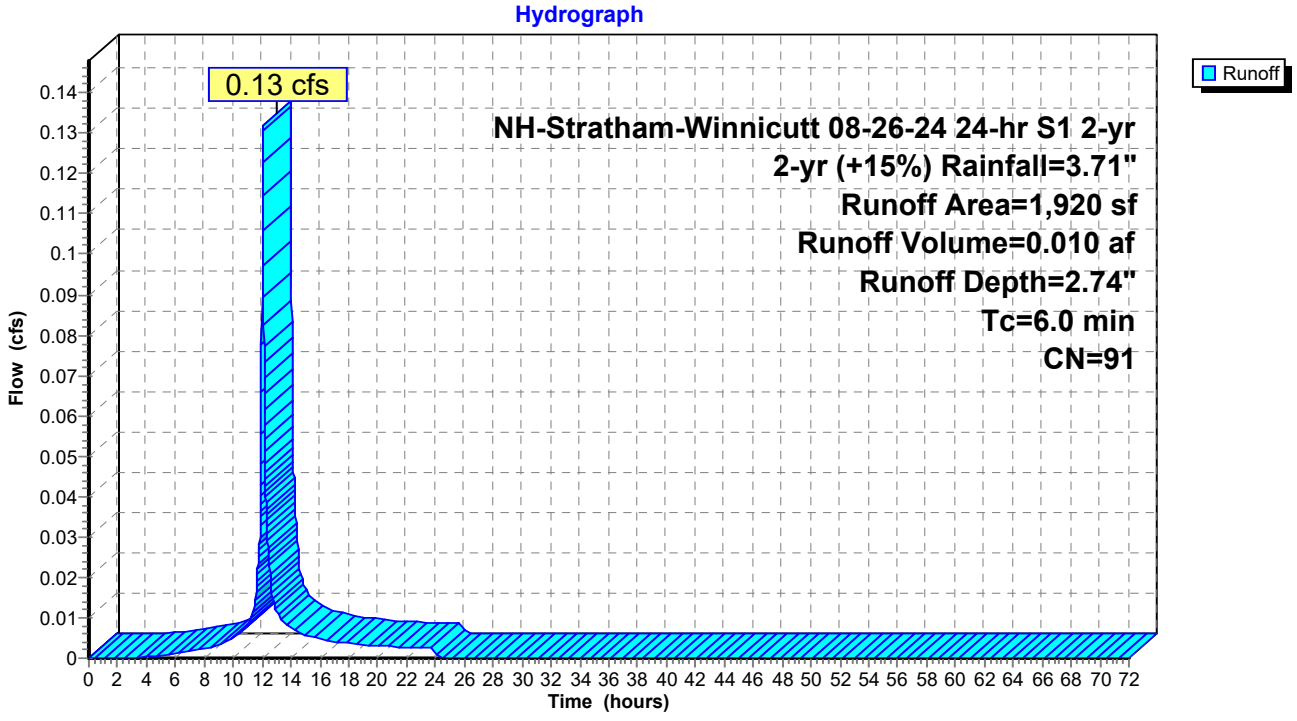
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP103 : Stone Storage for House A of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18F: House A of Lot 30



Summary for Subcatchment PS18G: House B of Lot 30

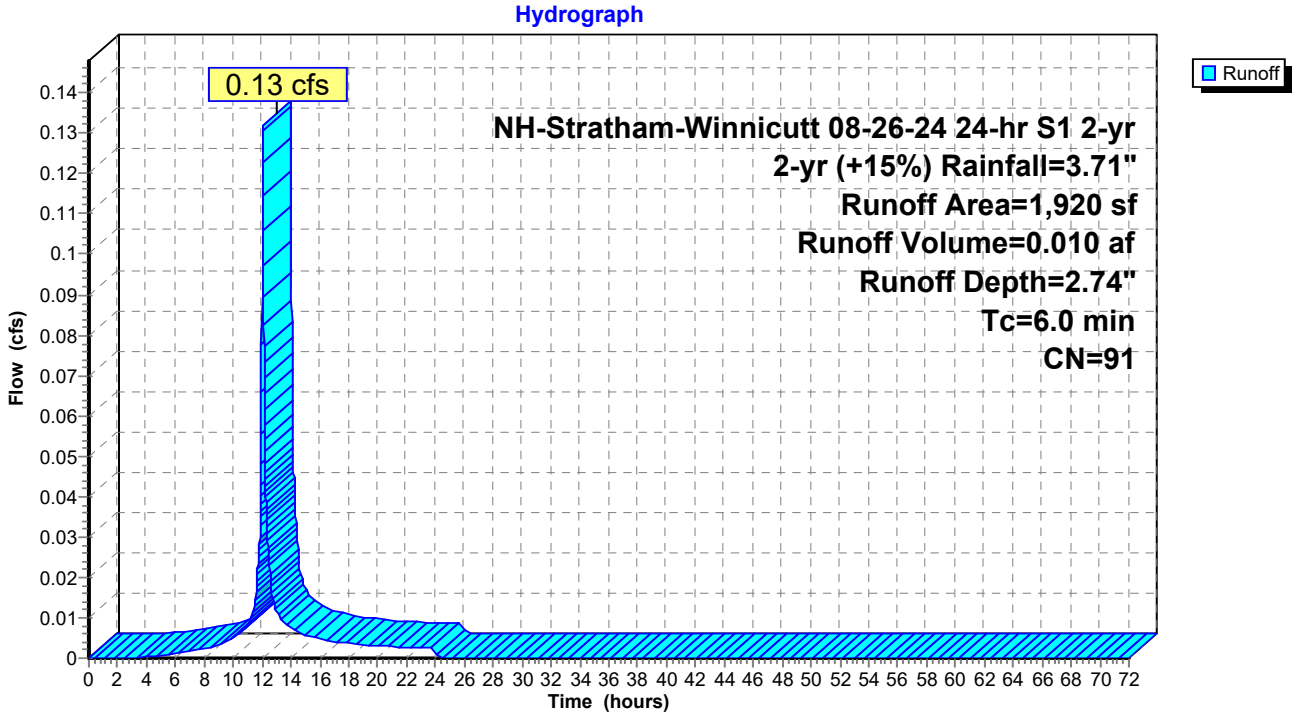
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP104 : Stone Storage for House B of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18G: House B of Lot 30



Summary for Subcatchment PS18H: House C of Lot 30

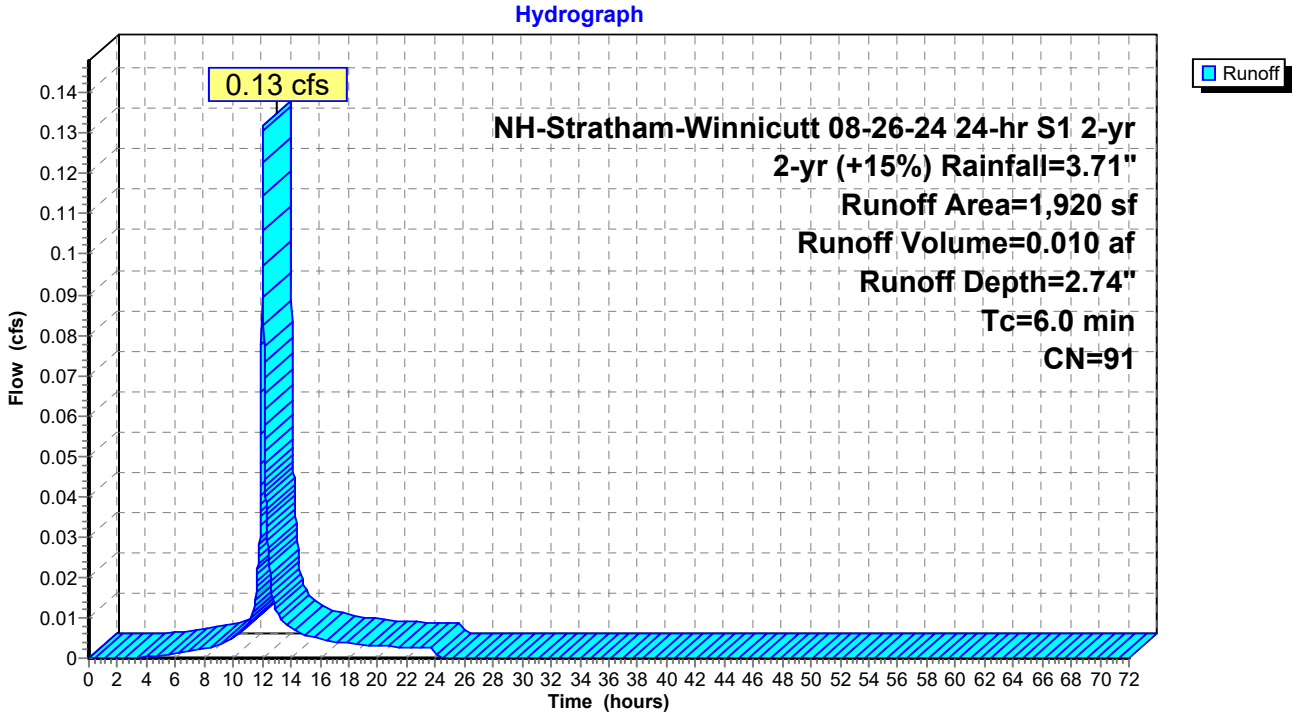
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP105 : Stone Storage for House C of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18H: House C of Lot 30



Summary for Subcatchment PS18I: House D of Lot 30

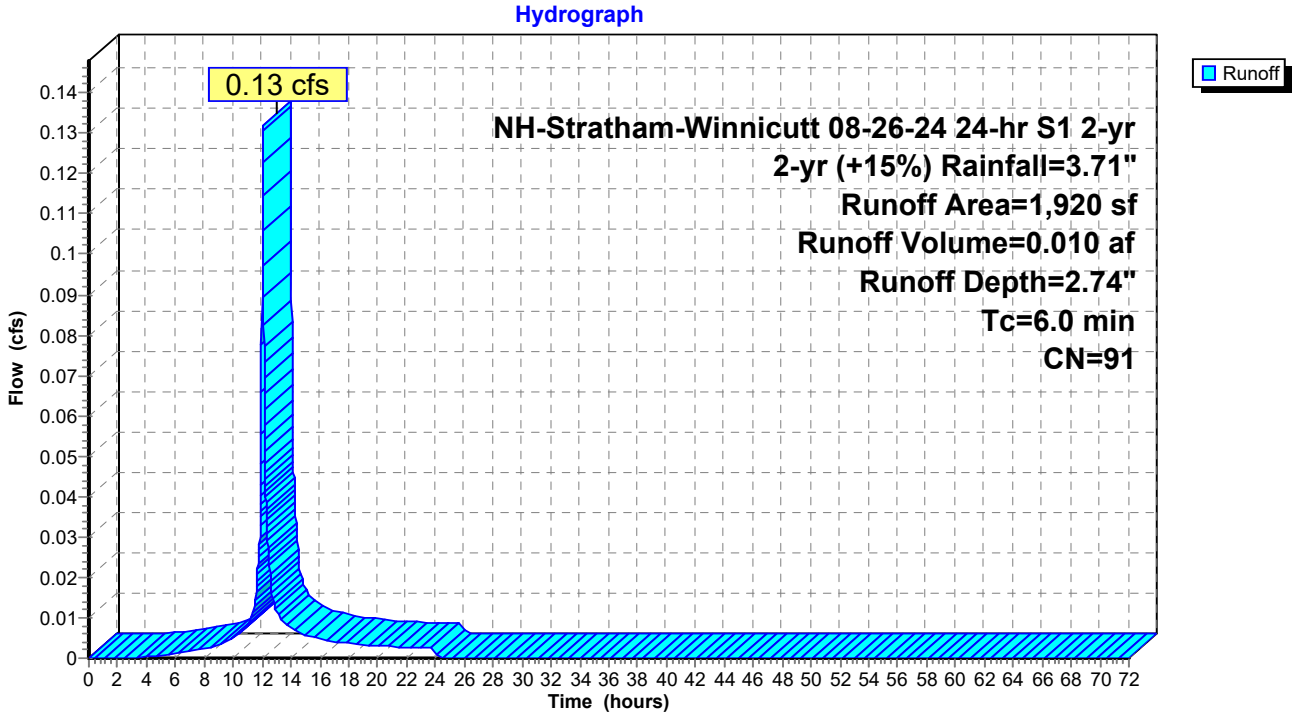
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP106 : Stone Storage for House D of Lot 30

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS18I: House D of Lot 30



Summary for Subcatchment PS19C: House D of Lot 29

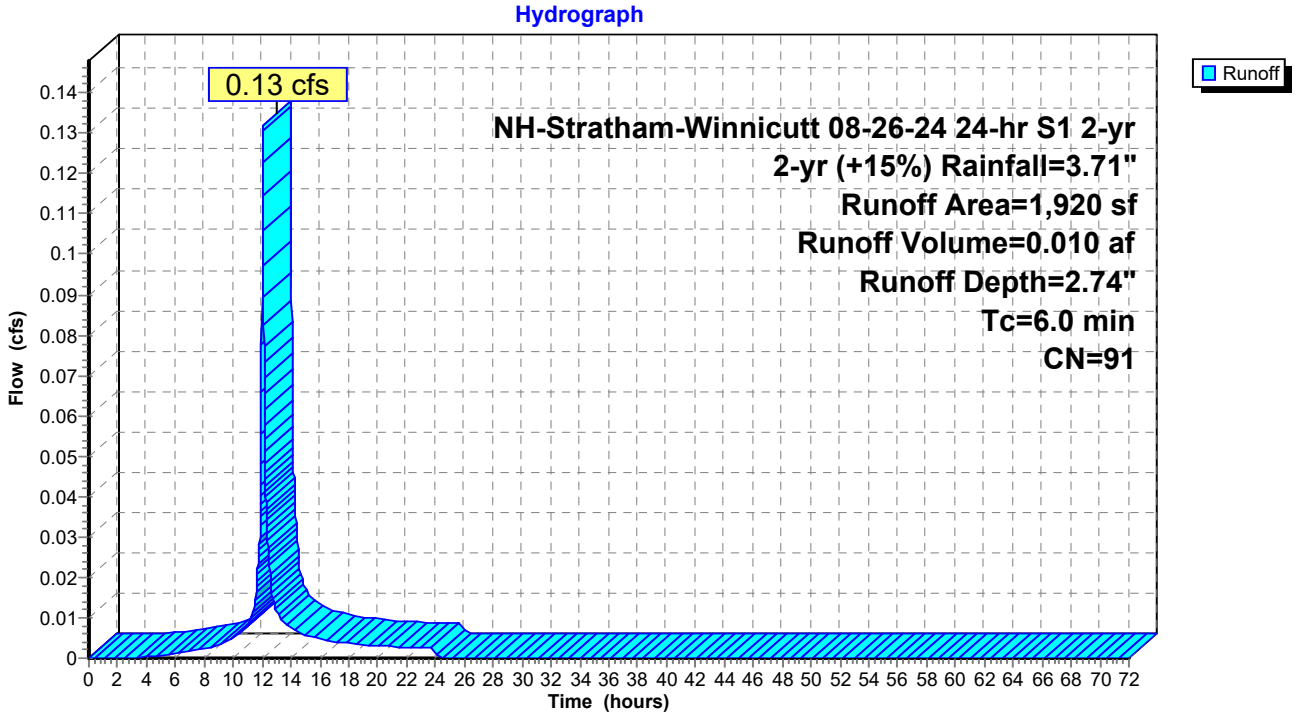
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP110 : Stone Storage for House C of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19C: House D of Lot 29



Summary for Subcatchment PS19D: House C of Lot 29

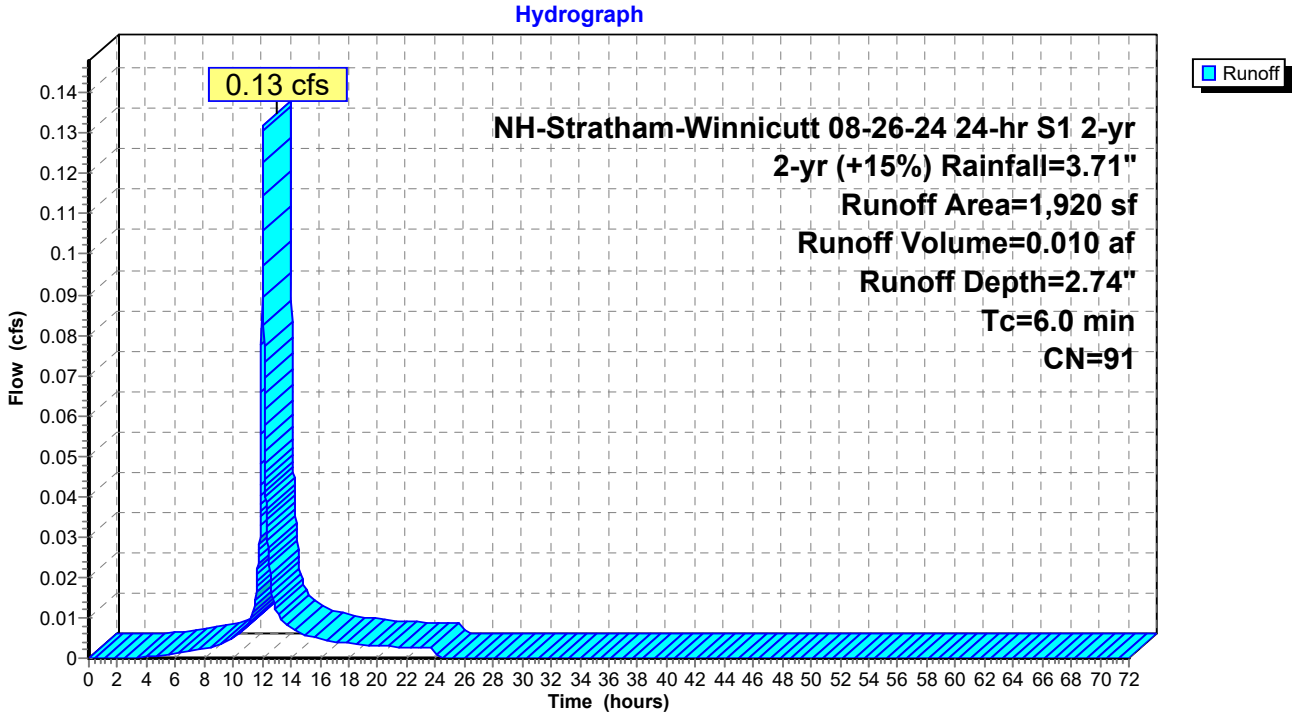
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP109 : Stone Storage for House C of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19D: House C of Lot 29



Summary for Subcatchment PS19E: House B of Lot 29

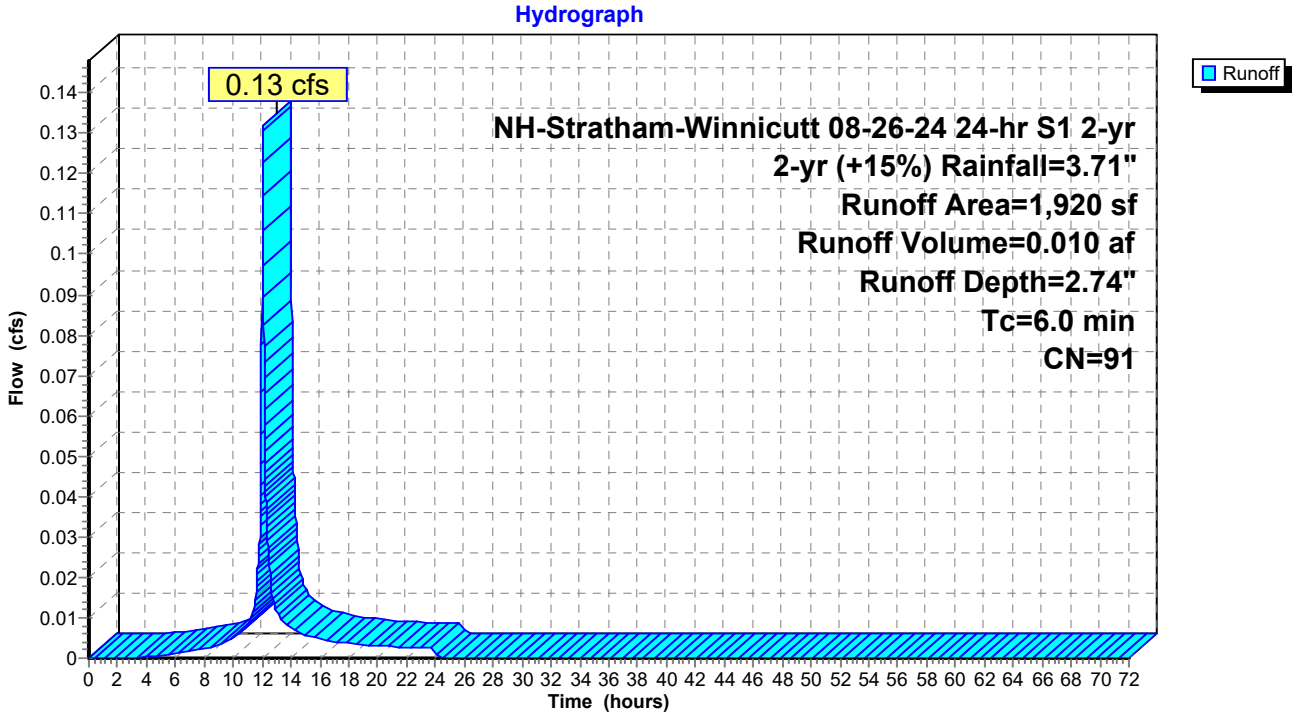
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP108 : Stone Storage for House B of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19E: House B of Lot 29



Summary for Subcatchment PS19F: House A of Lot 29

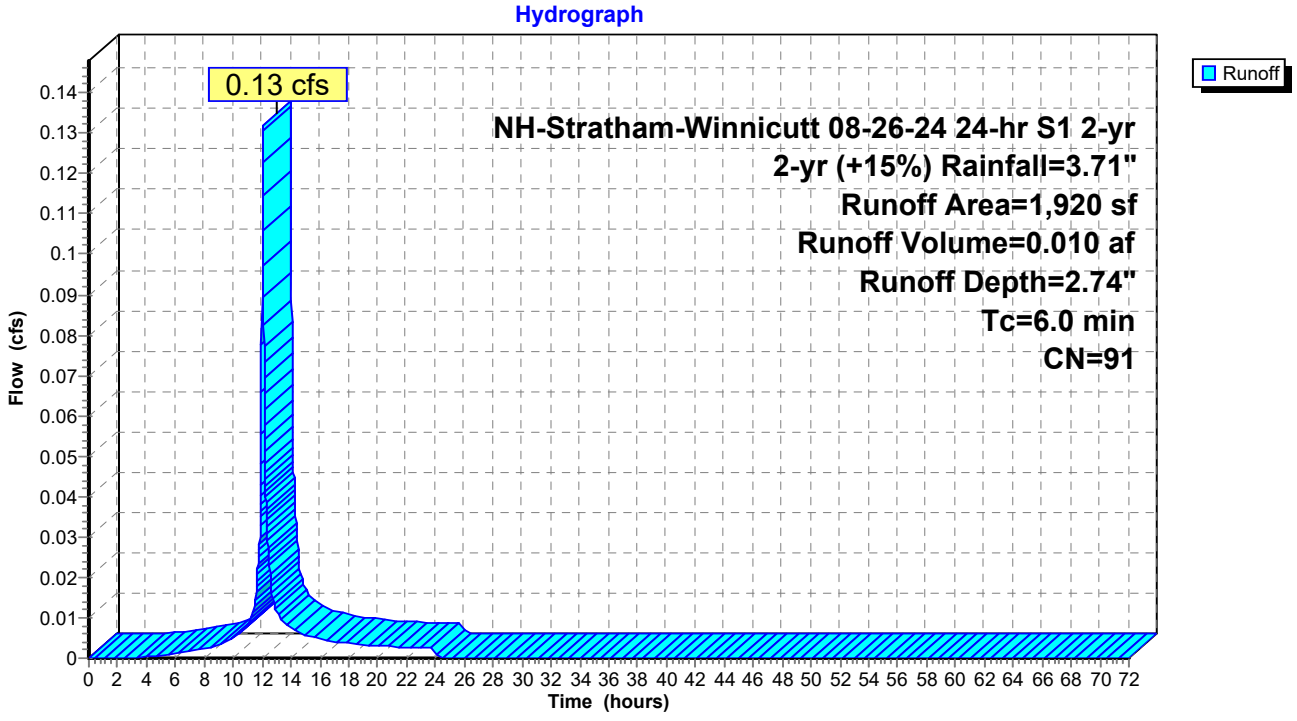
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP107 : Stone Storage for House A of Lot 29

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS19F: House A of Lot 29



Summary for Subcatchment PS2: Area along Northernmost Wetland Finger

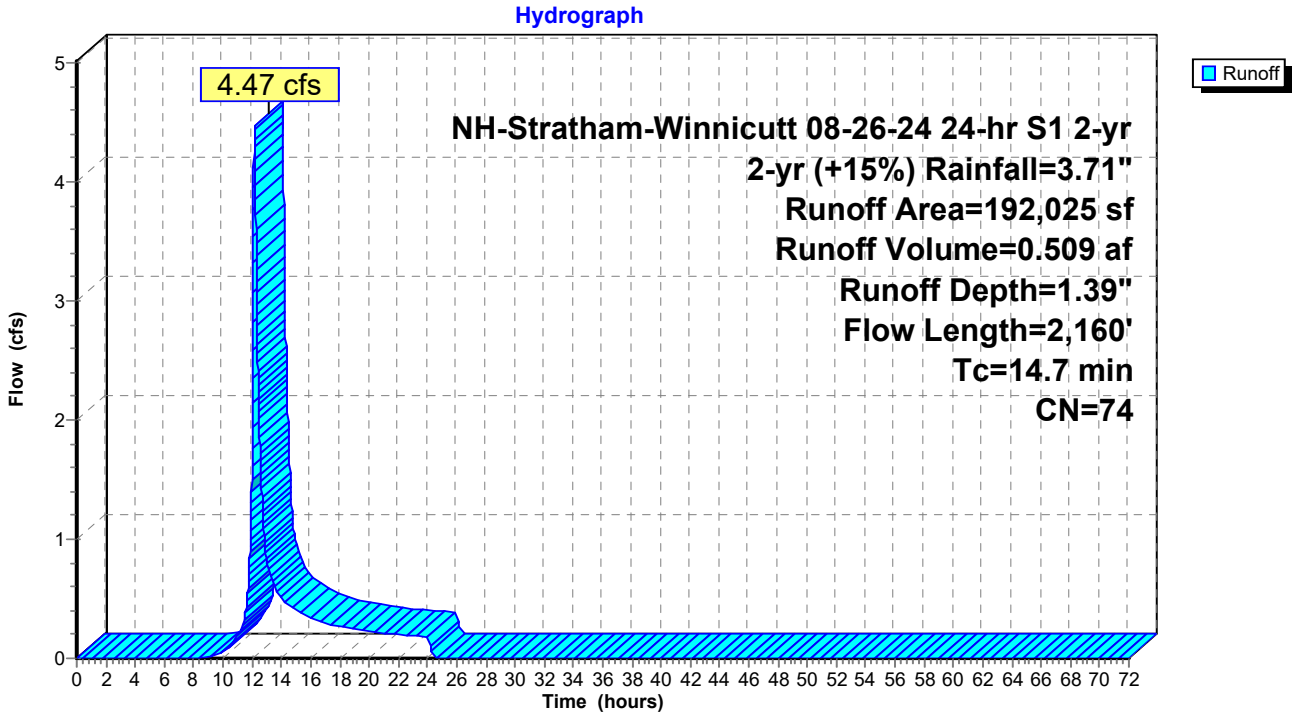
Runoff = 4.47 cfs @ 12.16 hrs, Volume= 0.509 af, Depth= 1.39"
Routed to Link L101A : Wetlands to the West (Northern Swale Entrance)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
189,850	74	>75% Grass cover, Good, HSG C
80	80	>75% Grass cover, Good, HSG D
2,095	98	Paved parking, HSG C
192,025	74	Weighted Average
189,930		98.91% Pervious Area
2,095		1.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.9	115	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
3.4	1,845	0.0150	9.13	438.22	**Channel Flow, Mill Brook** Area= 48.0 sf Perim= 26.0' r= 1.85' n= 0.030 Earth, grassed & winding
14.7	2,160	Total			

Subcatchment PS2: Area along Northernmost Wetland Finger



Summary for Subcatchment PS20: South Portion of Proposed Secondary Road

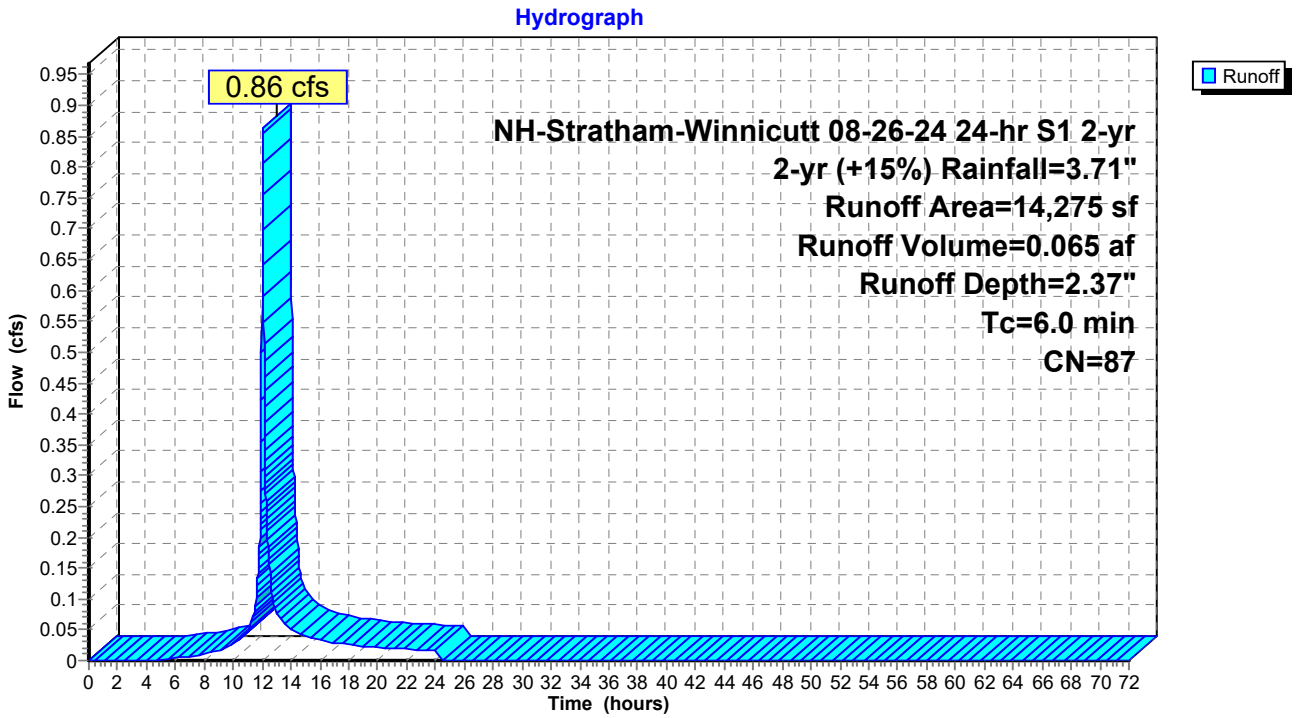
Runoff = 0.86 cfs @ 12.04 hrs, Volume= 0.065 af, Depth= 2.37"
Routed to Pond PP57 : Proposed Swale Along South Side of Secondary Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
6,545	74	>75% Grass cover, Good, HSG C
70	80	>75% Grass cover, Good, HSG D
7,660	98	Paved parking, HSG C
14,275	87	Weighted Average
6,615		46.34% Pervious Area
7,660		53.66% Impervious Area

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

Subcatchment PS20: South Portion of Proposed Secondary Road



Summary for Subcatchment PS21: East-Central Portion of Site, North Wetland Finger, South of Main R

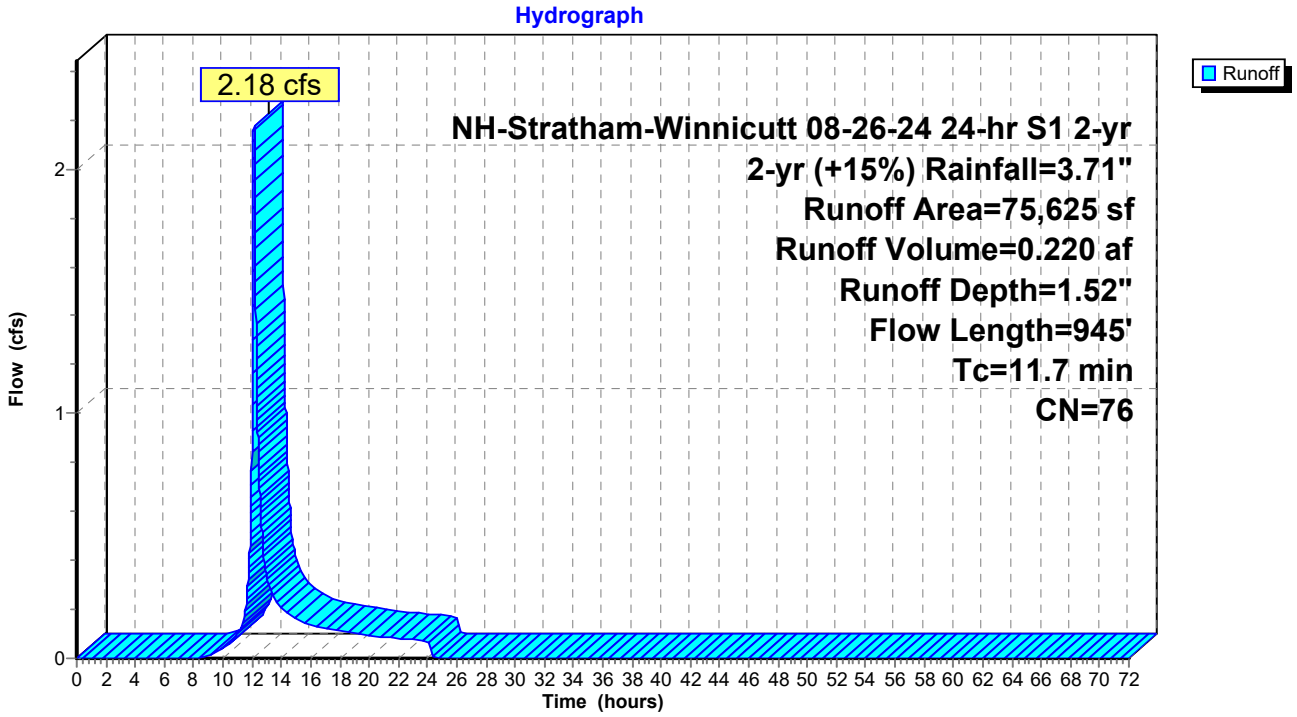
Runoff = 2.18 cfs @ 12.11 hrs, Volume= 0.220 af, Depth= 1.52"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
70,690	74	>75% Grass cover, Good, HSG C
150	80	>75% Grass cover, Good, HSG D
4,785	98	Paved parking, HSG C
75,625	76	Weighted Average
70,840		93.67% Pervious Area
4,785		6.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	60	0.0600	1.22		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.5	685	0.0250	7.83	152.72	**Channel Flow, East Portion of Existing Central Swale** Area= 19.5 sf Perim= 19.5' r= 1.00' n= 0.030 Earth, grassed & winding
11.7	945	Total			

Subcatchment PS21: East-Central Portion of Site, North Wetland Finger, South of Main Road



Summary for Subcatchment PS21A: West Half of Proposed Driveway of Lot 29

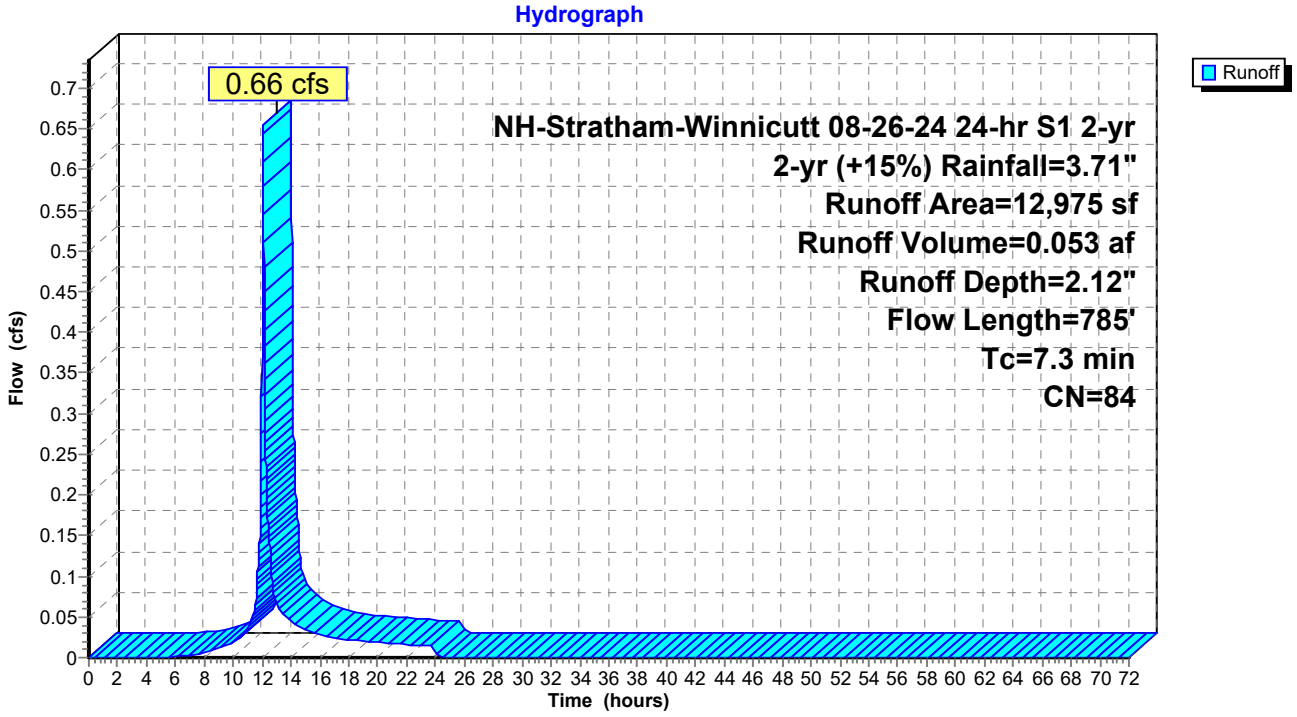
Runoff = 0.66 cfs @ 12.05 hrs, Volume= 0.053 af, Depth= 2.12"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
7,770	74	>75% Grass cover, Good, HSG C
5,205	98	Paved parking, HSG C
12,975	84	Weighted Average
7,770		59.88% Pervious Area
5,205		40.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
2.0	110	0.0350	0.94		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.3	625	0.0250	7.83	152.72	**Channel Flow, East Portion of Existing Central Swale** Area= 19.5 sf Perim= 19.5' r= 1.00' n= 0.030 Earth, grassed & winding
7.3	785	Total			

Subcatchment PS21A: West Half of Proposed Driveway of Lot 29



Summary for Subcatchment PS22B: House of Lot 26

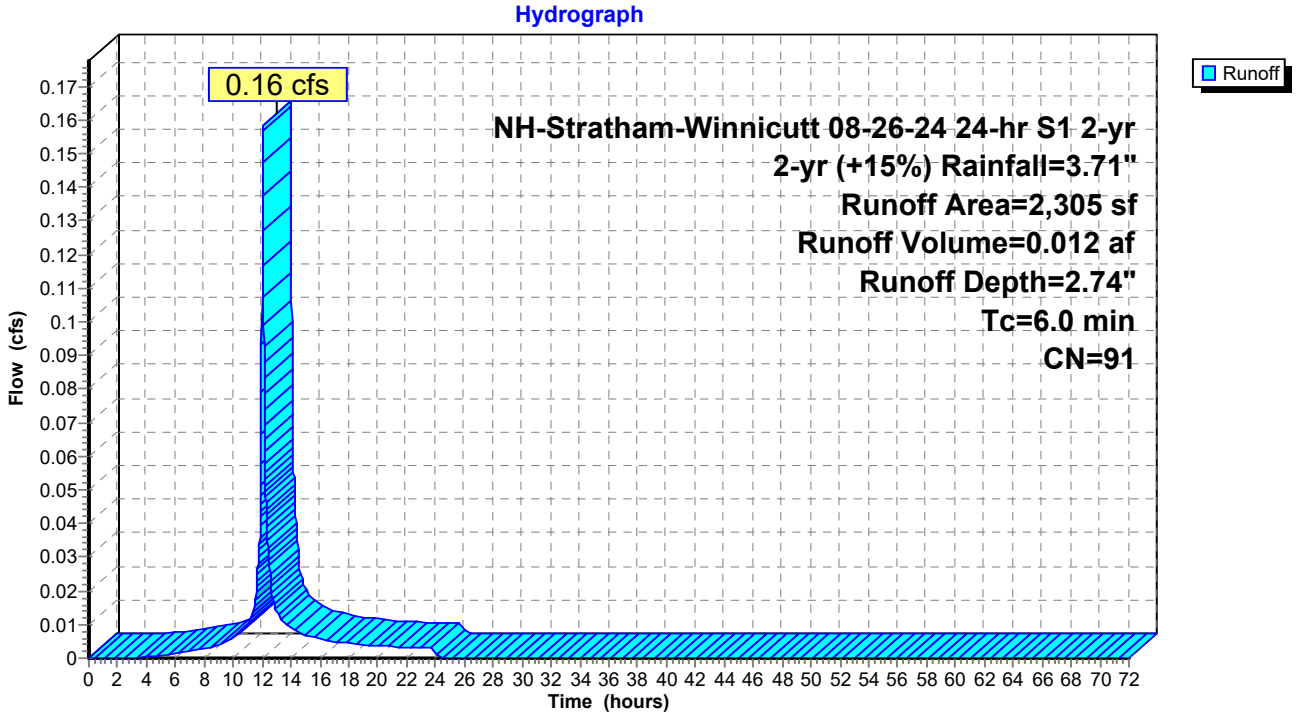
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.012 af, Depth= 2.74"
Routed to Pond PP111 : Stone Storage for Lot 26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
625	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,305	91	Weighted Average
625		27.11% Pervious Area
1,680		72.89% Impervious Area

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

Subcatchment PS22B: House of Lot 26



Summary for Subcatchment PS22C: House of Lot 27

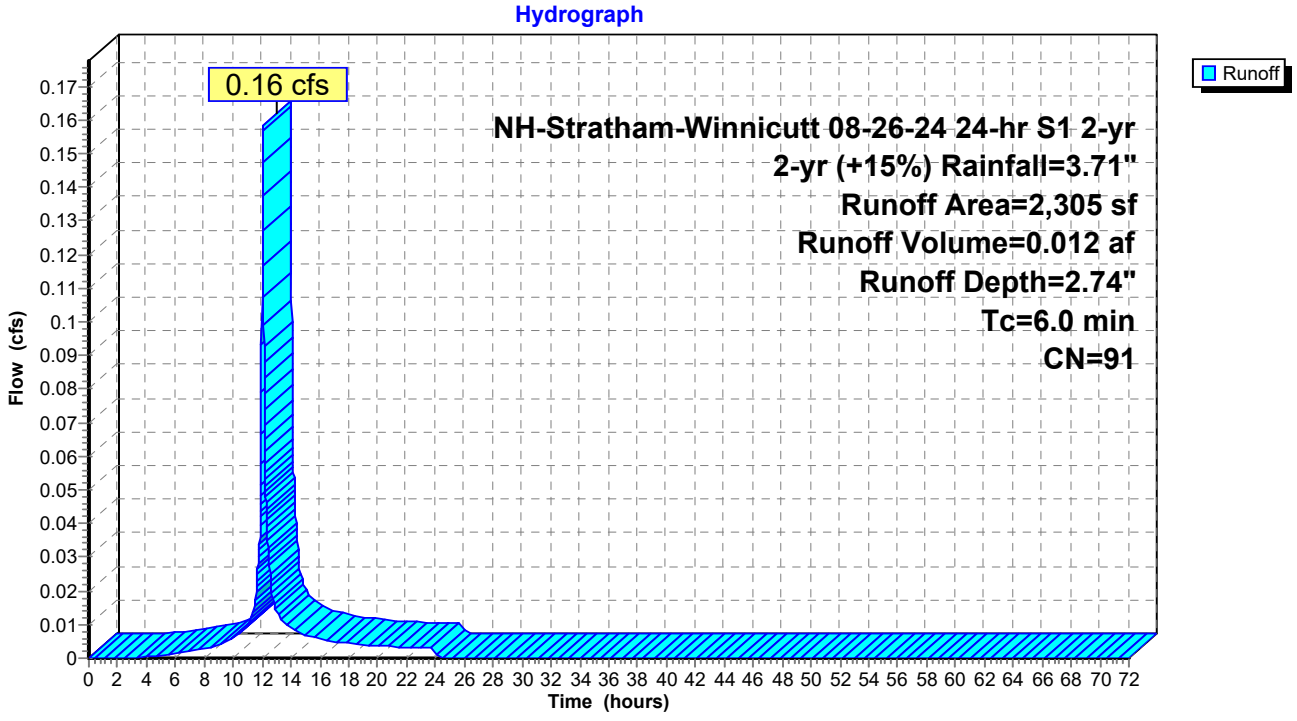
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.012 af, Depth= 2.74"
Routed to Pond PP112 : Stone Storage for Lot 26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
625	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,305	91	Weighted Average
625		27.11% Pervious Area
1,680		72.89% Impervious Area

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

Subcatchment PS22C: House of Lot 27



Summary for Subcatchment PS23: House of Lot 20

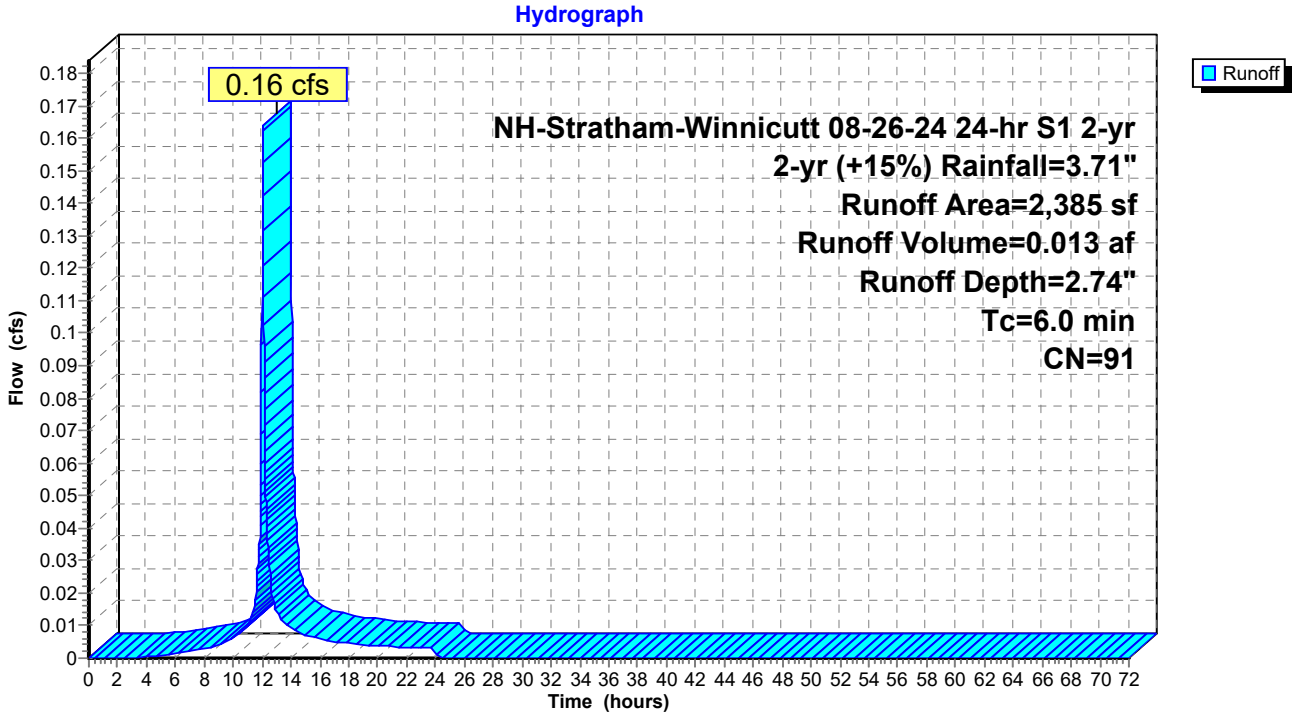
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP64 : Stone Storage for Lot 20

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS23: House of Lot 20



Summary for Subcatchment PS24: House of Lot 19

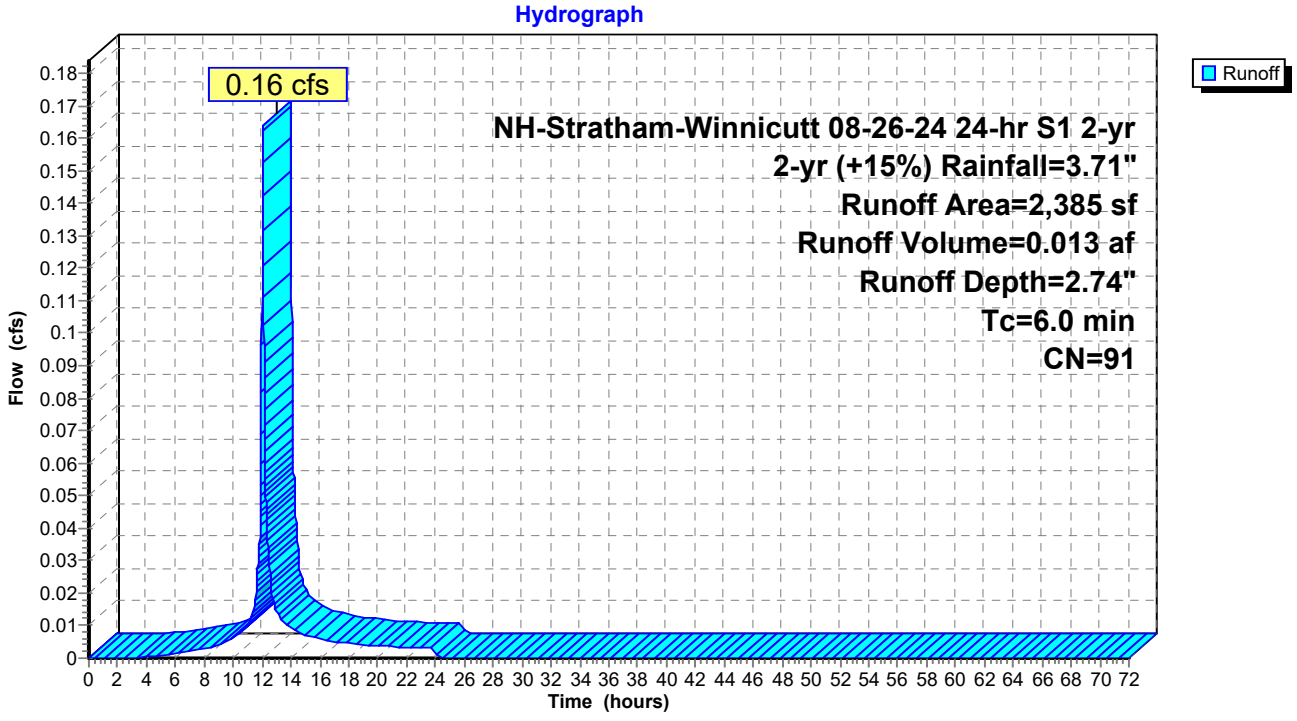
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP65 : Stone Storage for Lot 19

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS24: House of Lot 19



Summary for Subcatchment PS25: House of Lot 18

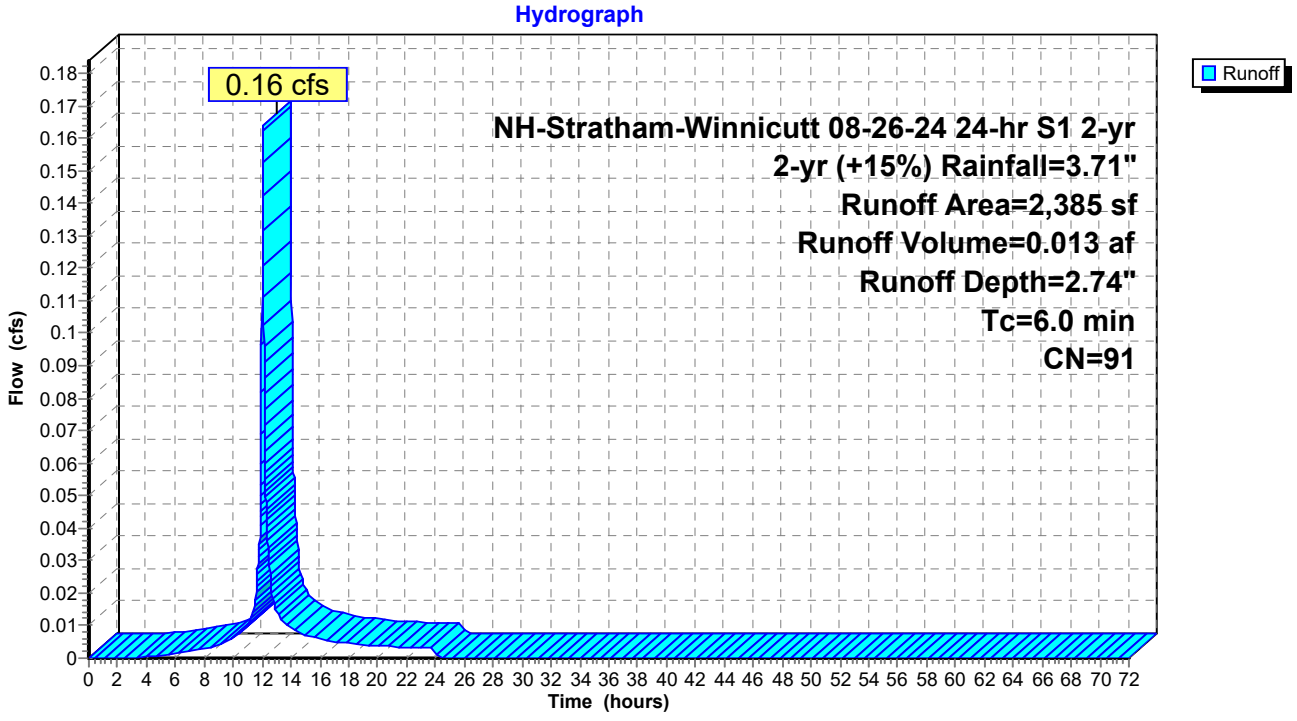
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP66 : Stone Storage for Lot 18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS25: House of Lot 18



Summary for Subcatchment PS26: House of Lot 17

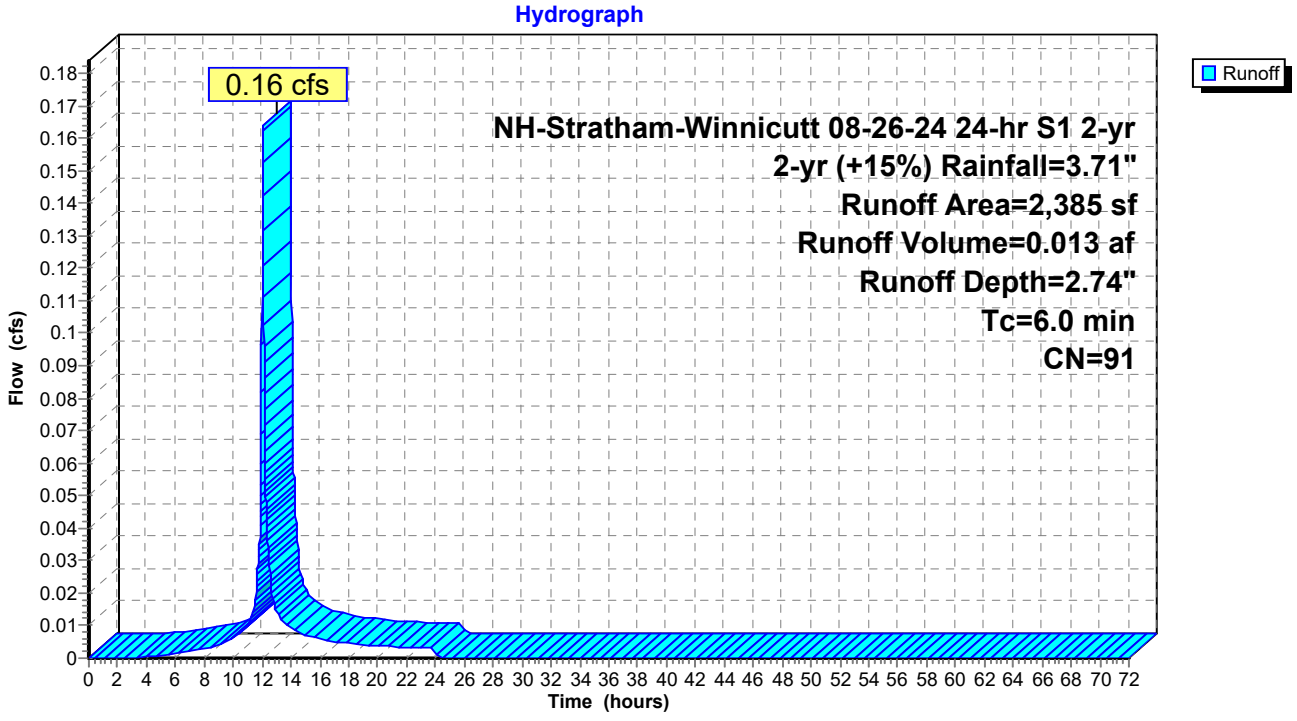
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP67 : Stone Storage for Lot 17

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS26: House of Lot 17



Summary for Subcatchment PS27: House of Lot 16

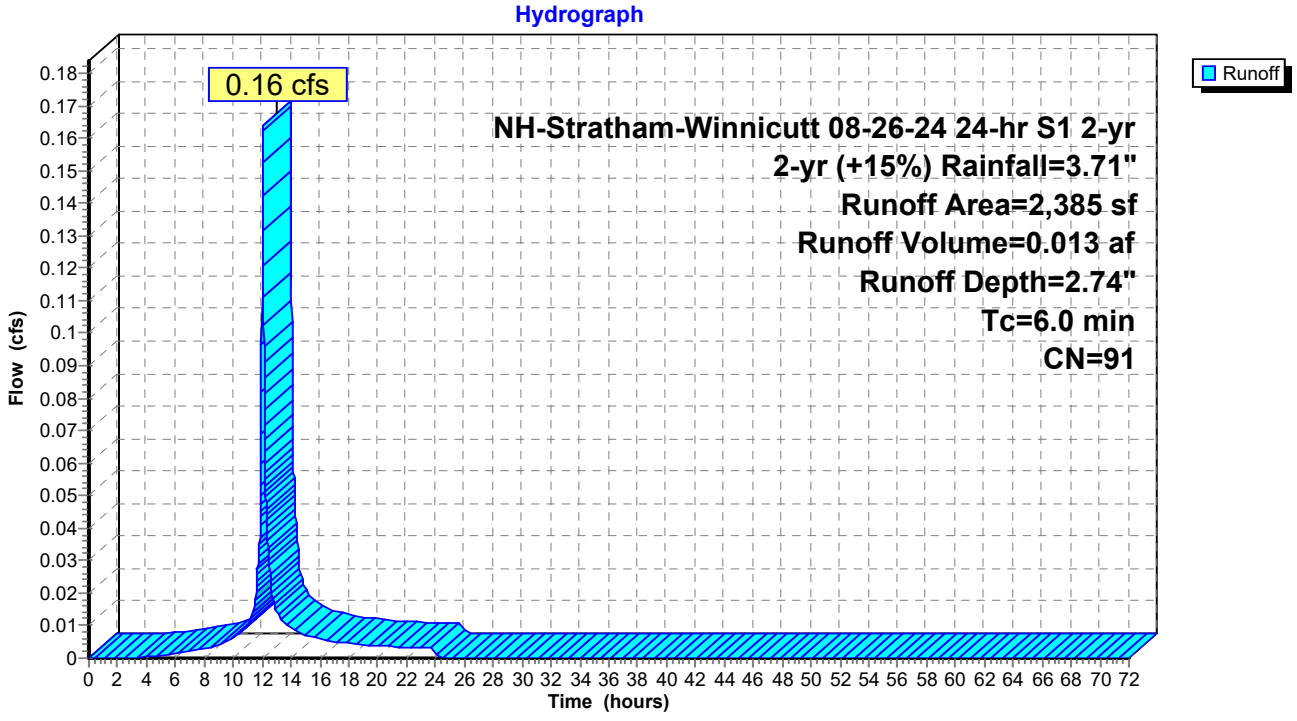
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP68 : Stone Storage for Lot 16

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS27: House of Lot 16



Summary for Subcatchment PS28: House of Lot 28

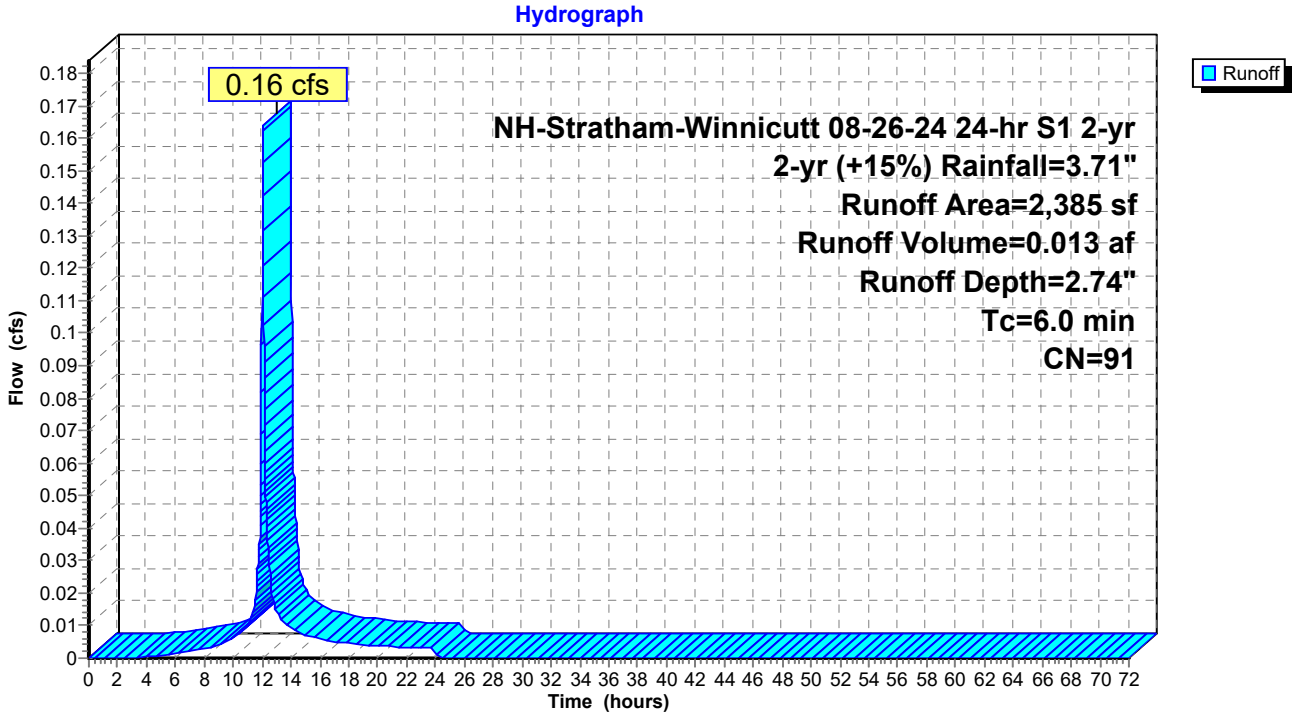
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP69 : Stone Storage for Lot 28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS28: House of Lot 28



Summary for Subcatchment PS29: House of Lot 25

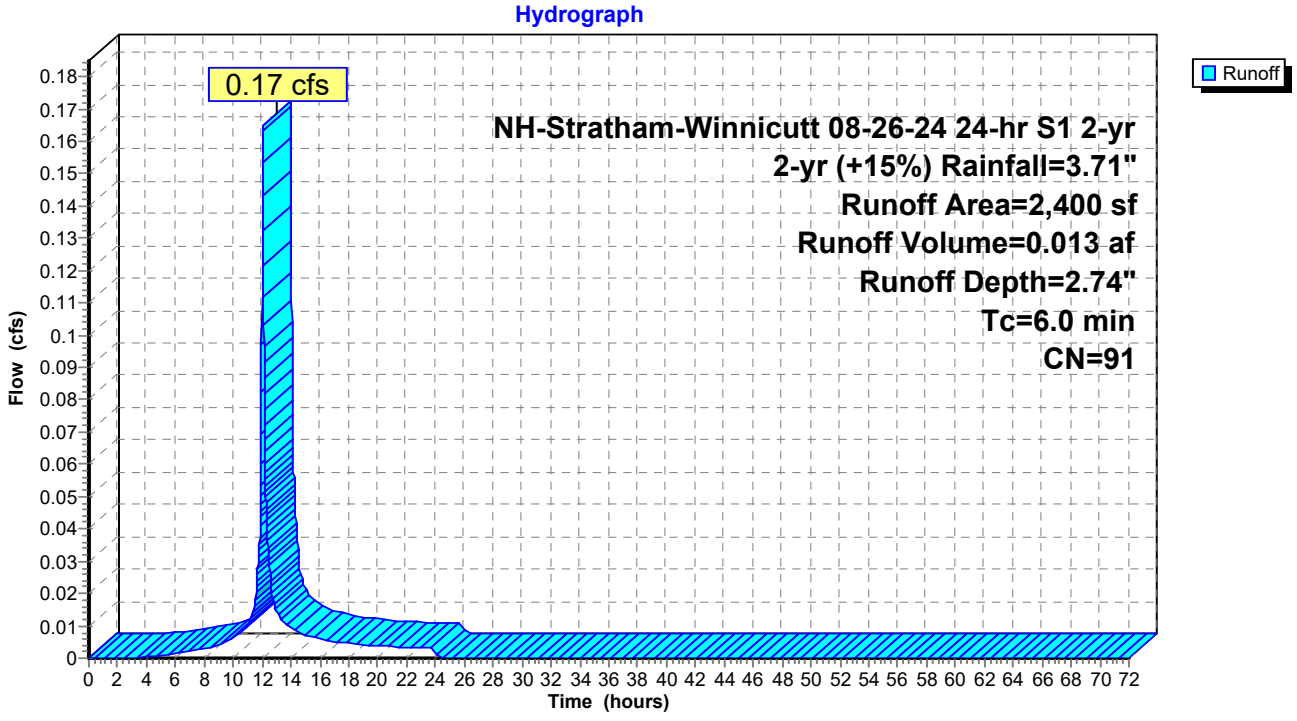
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP70 : Stone Storage for Lot 25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS29: House of Lot 25



Summary for Subcatchment PS3: West Portion of Proposed Main Road along Winnicutt Road

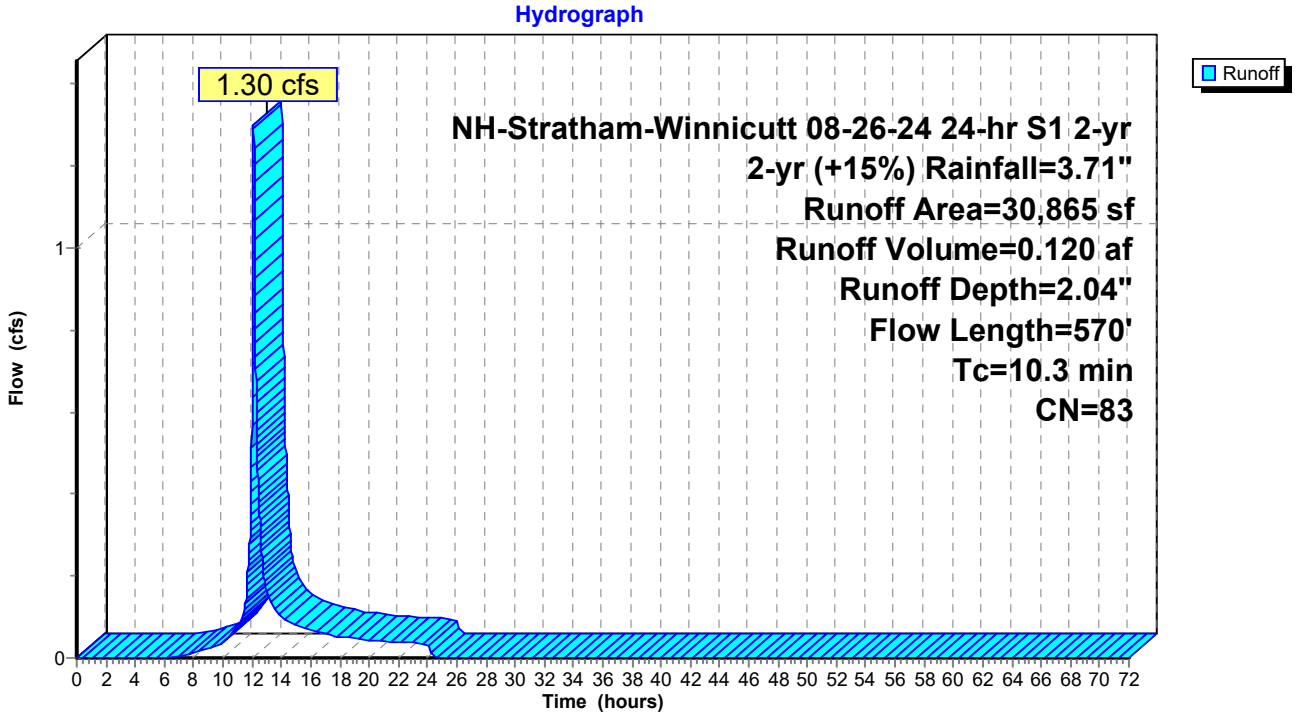
Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.120 af, Depth= 2.04"
Routed to Pond PP52A : Proposed Swale Along West Side of Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
18,910	74	>75% Grass cover, Good, HSG C
11,955	98	Paved parking, HSG C
30,865	83	Weighted Average
18,910		61.27% Pervious Area
11,955		38.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0200	0.98		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.71"
1.3	37	0.3300	0.46		**Sheet Flow, Grass Swale** Grass: Short n= 0.150 P2= 3.71"
8.8	520	0.0200	0.99		**Shallow Concentrated Flow, Grass Swale** Short Grass Pasture Kv= 7.0 fps
10.3	570	Total			

Subcatchment PS3: West Portion of Proposed Main Road along Winnicutt Road



Summary for Subcatchment PS30: House of Lot 24

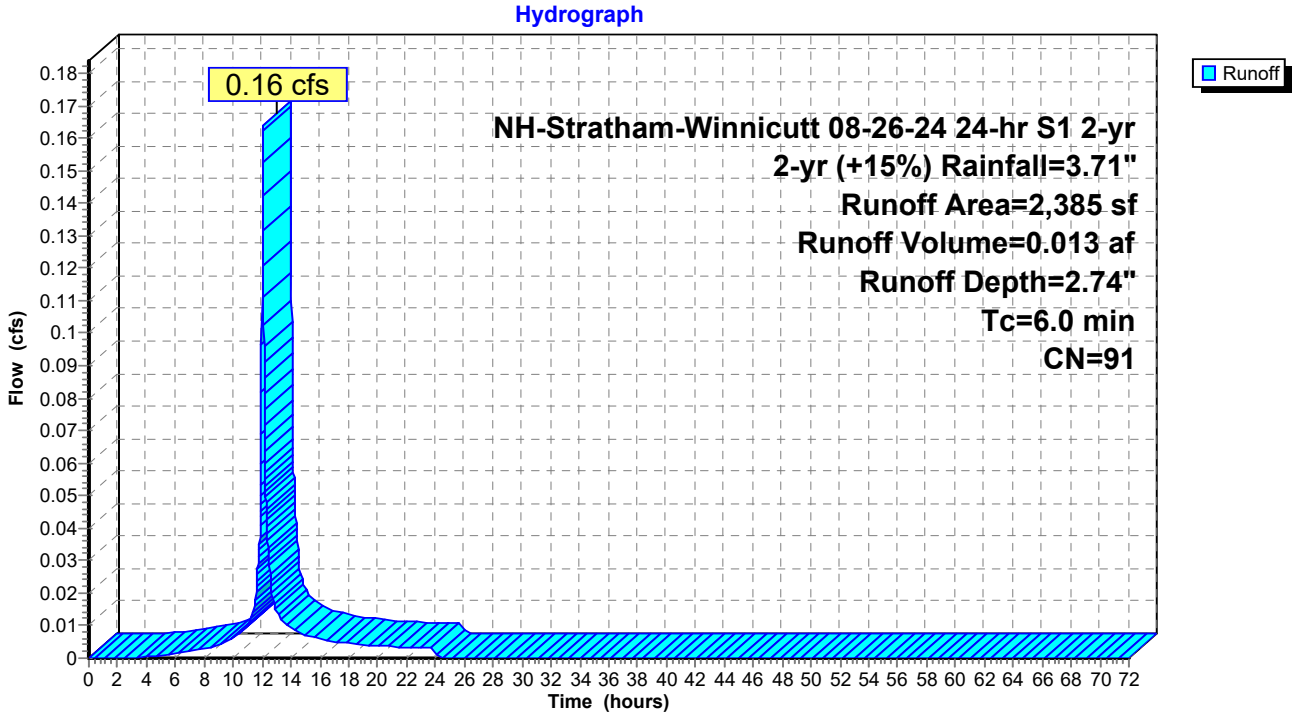
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP71 : Stone Storage for Lot 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS30: House of Lot 24



Summary for Subcatchment PS31: House of Lot 23

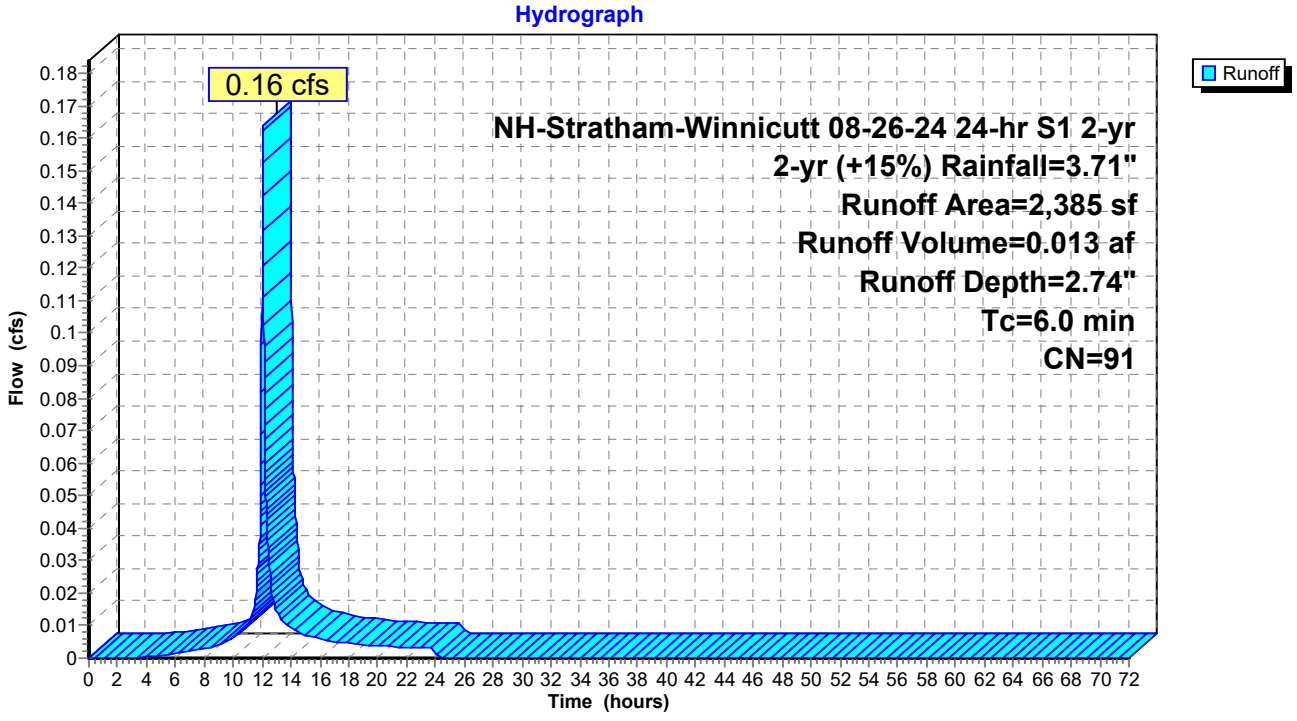
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP72 : Stone Storage for Lot 23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS31: House of Lot 23



Summary for Subcatchment PS32: House of Lot 22

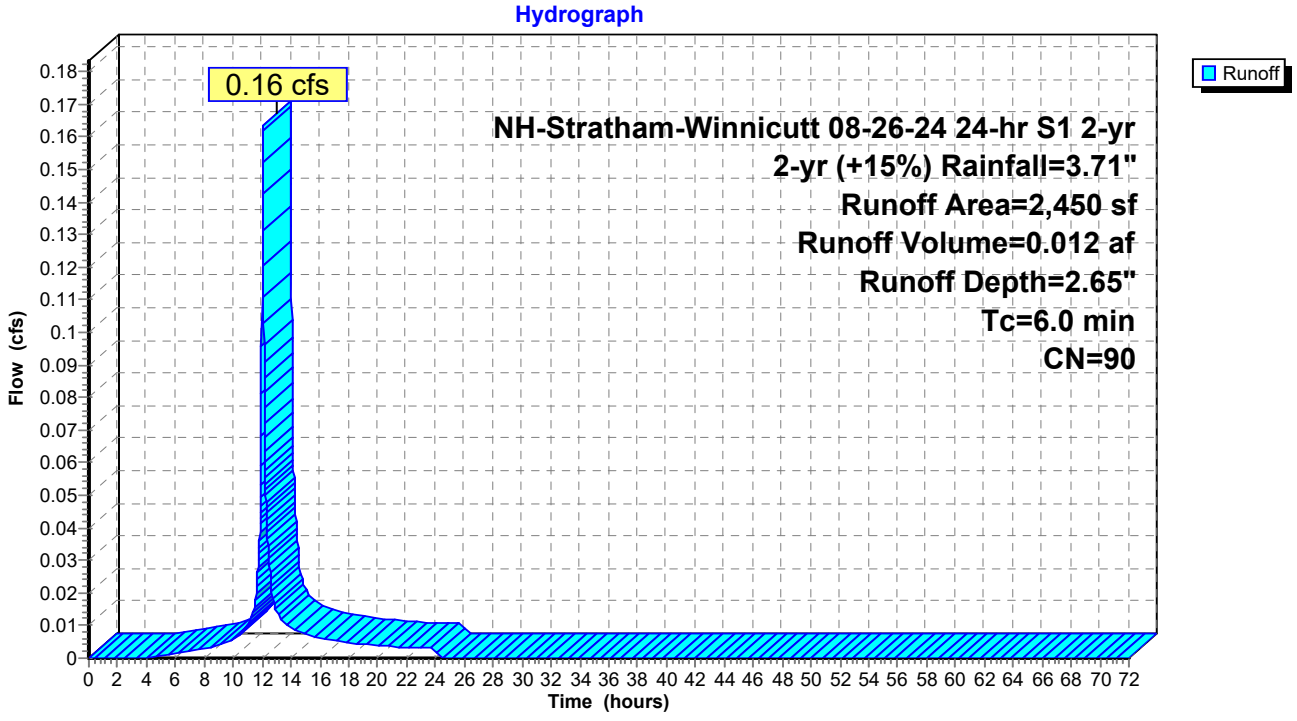
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.012 af, Depth= 2.65"
Routed to Pond PP73 : Stone Storage for Lot 22

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
770	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,450	90	Weighted Average
770		31.43% Pervious Area
1,680		68.57% Impervious Area

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

Subcatchment PS32: House of Lot 22



Summary for Subcatchment PS33: House of Lot 21

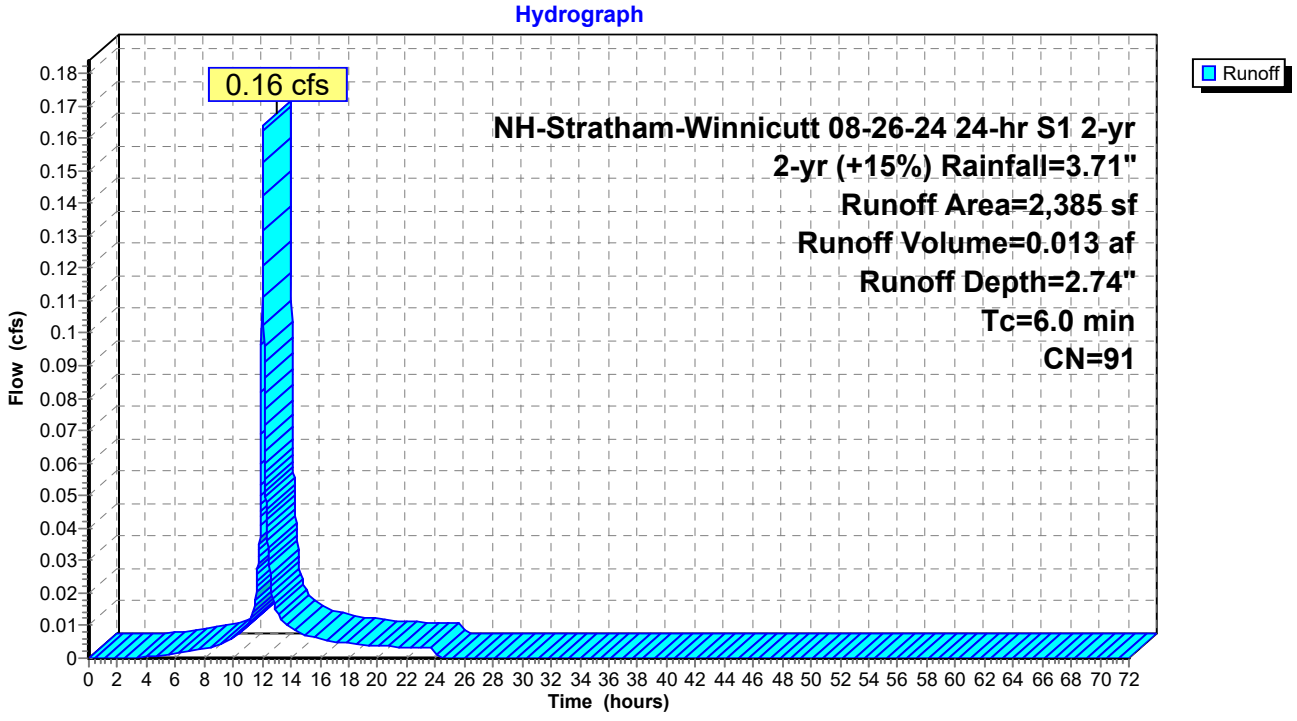
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP74 : Stone Storage for Lot 21

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS33: House of Lot 21



Summary for Subcatchment PS34: House of Lot 15

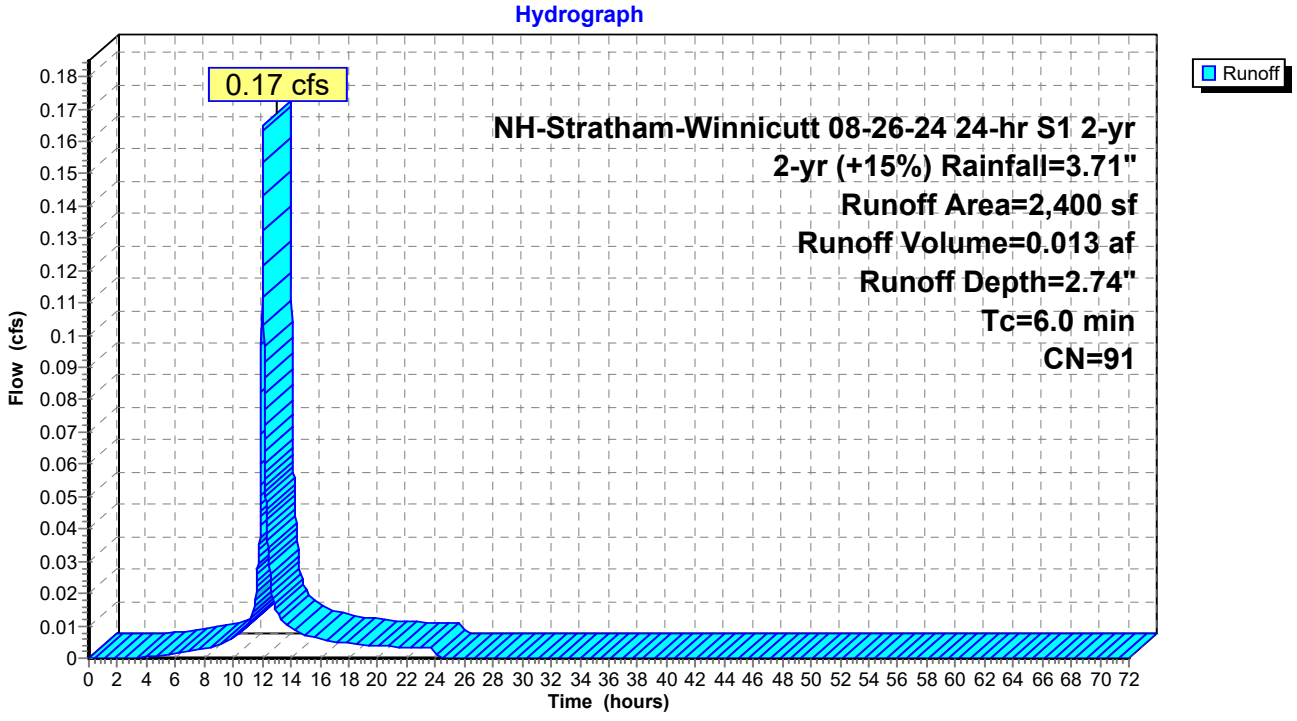
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP75 : Stone Storage for Lot 15

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS34: House of Lot 15



Summary for Subcatchment PS35: House of Lot 14

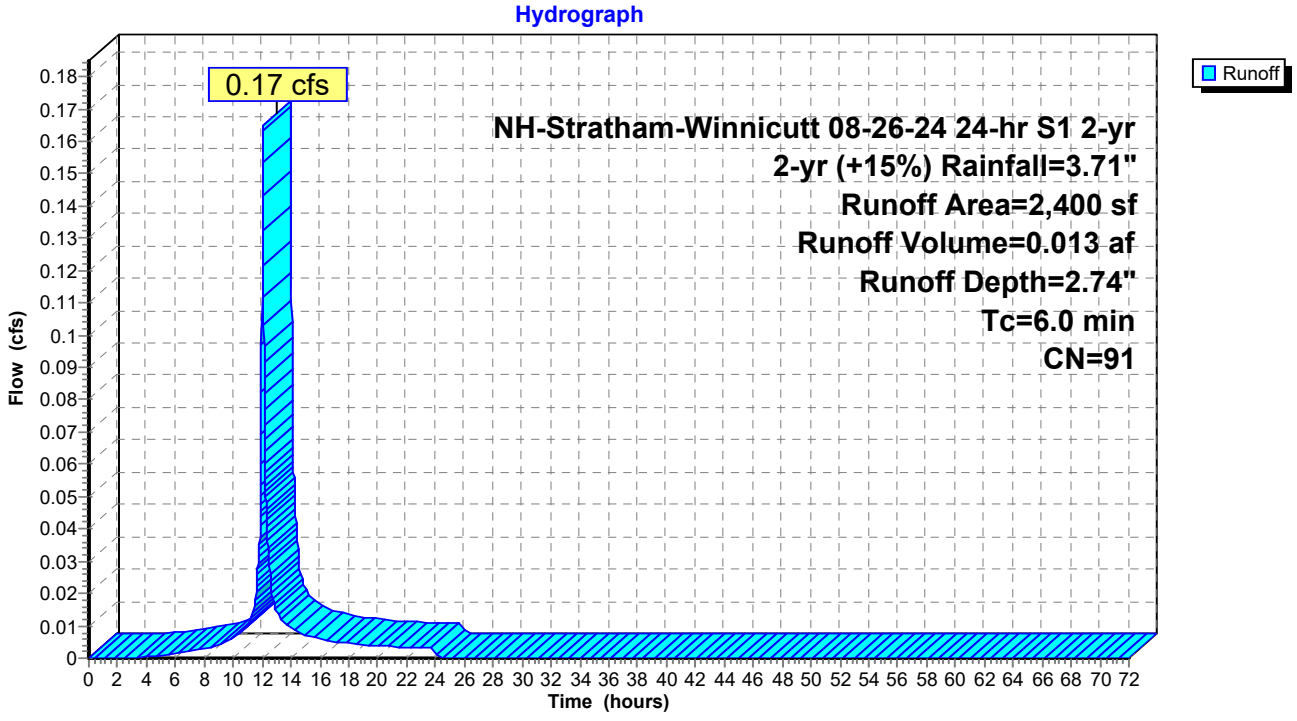
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP76 : Stone Storage for Lot 14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS35: House of Lot 14



Summary for Subcatchment PS36: House of Lot 13

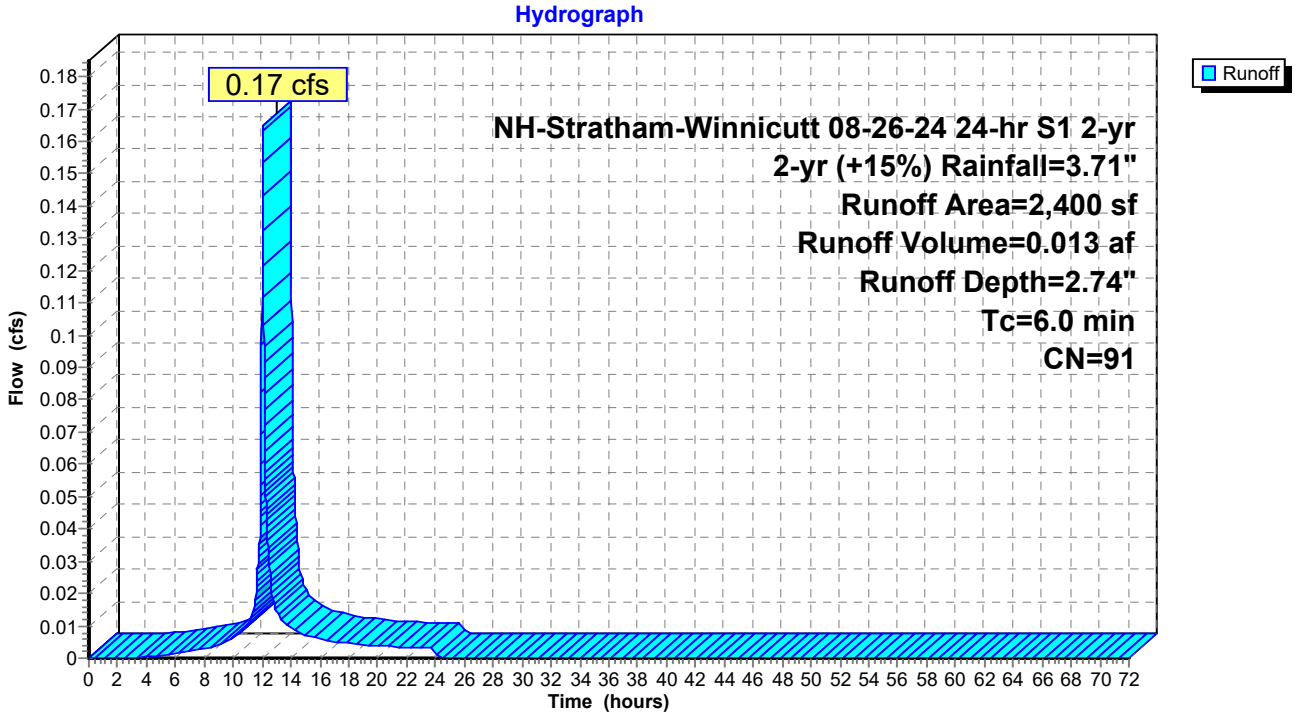
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP77 : Stone Storage for Lot 13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS36: House of Lot 13



Summary for Subcatchment PS37: House of Lot 12

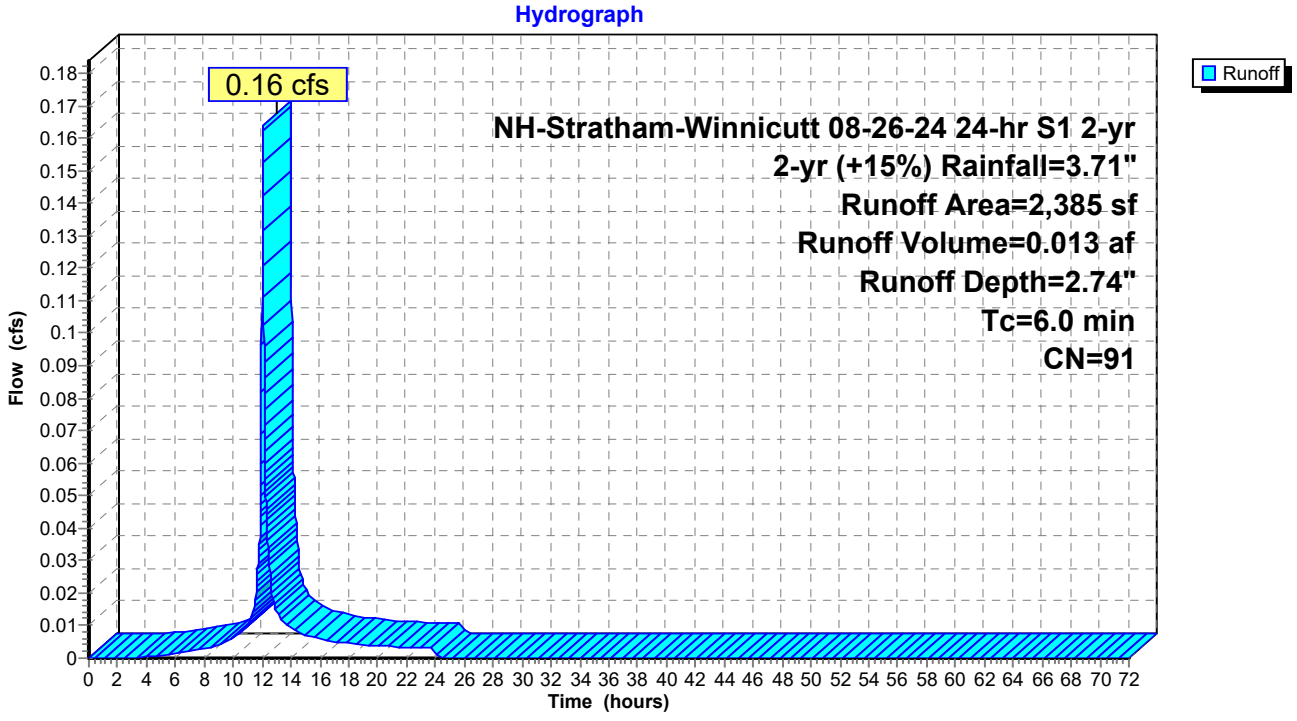
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP78 : Stone Storage for Lot 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS37: House of Lot 12



Summary for Subcatchment PS38: House of Lot 8

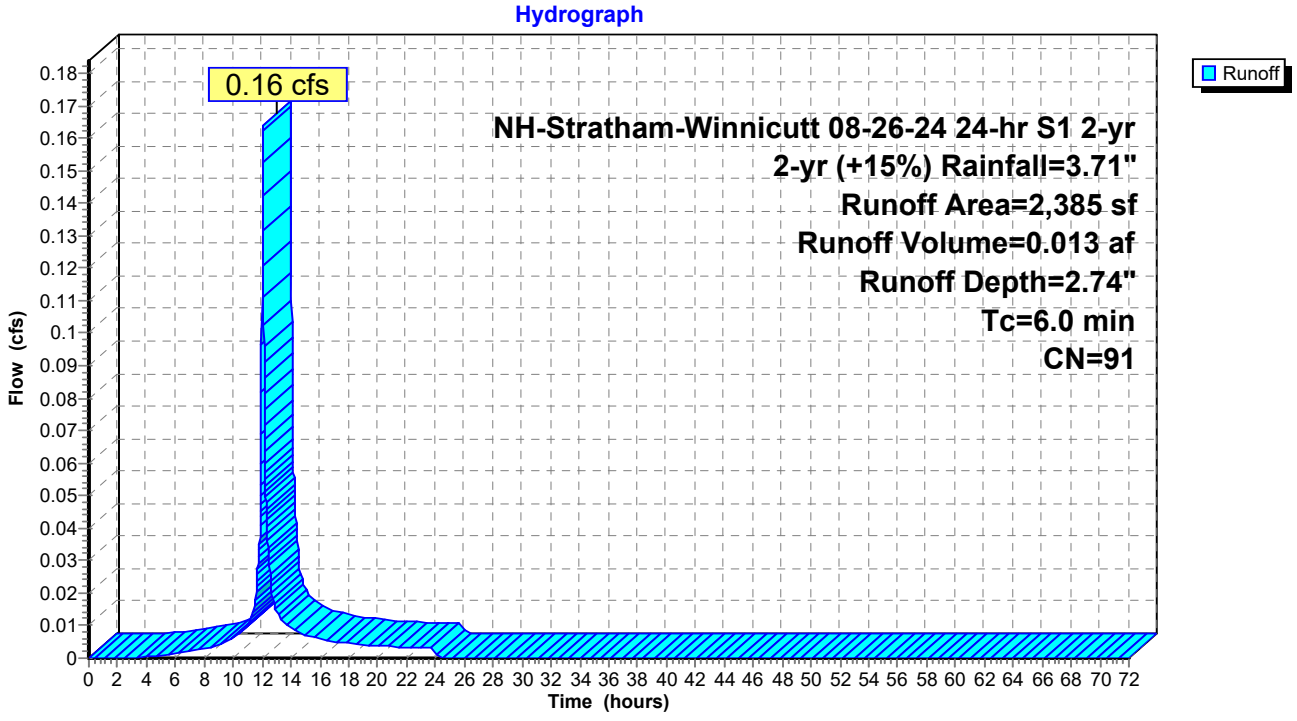
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP79 : Stone Storage for Lot 8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS38: House of Lot 8



Summary for Subcatchment PS39: House of Lot 7

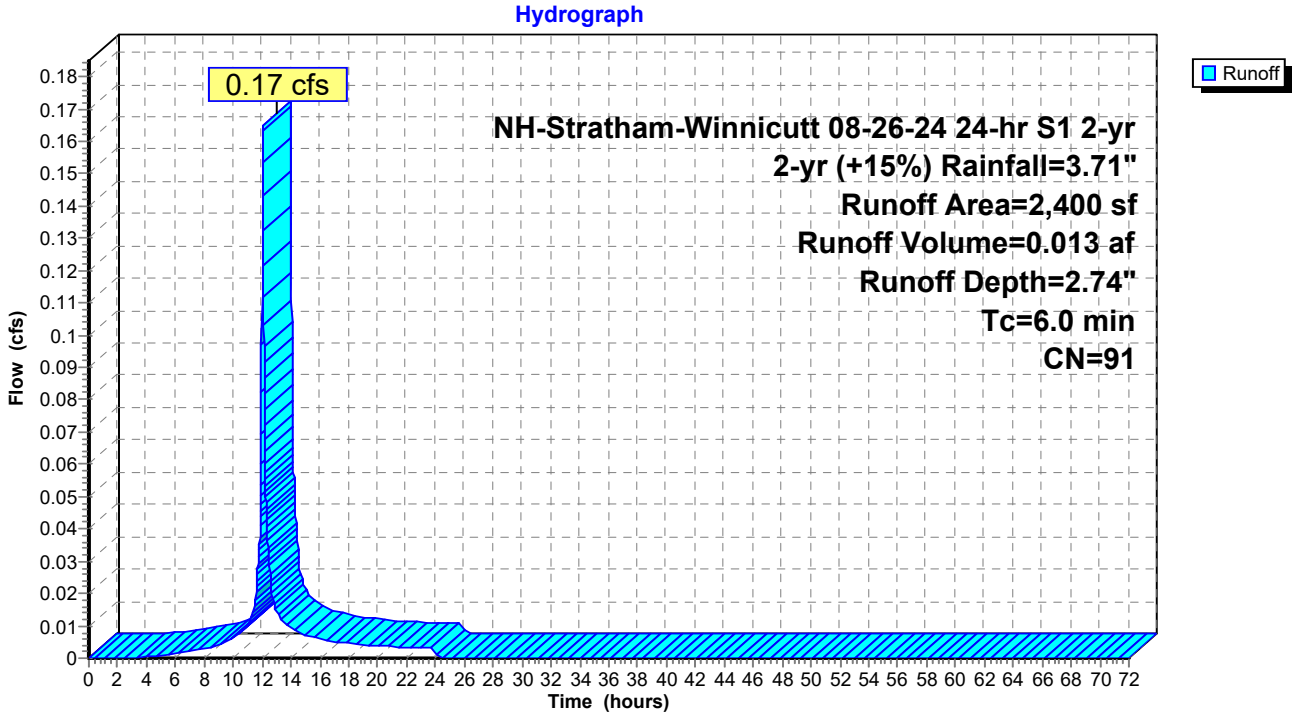
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP80 : Stone Storage for Lot 7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS39: House of Lot 7



Summary for Subcatchment PS4: East Portion of Proposed Main Road along Winnicutt Road

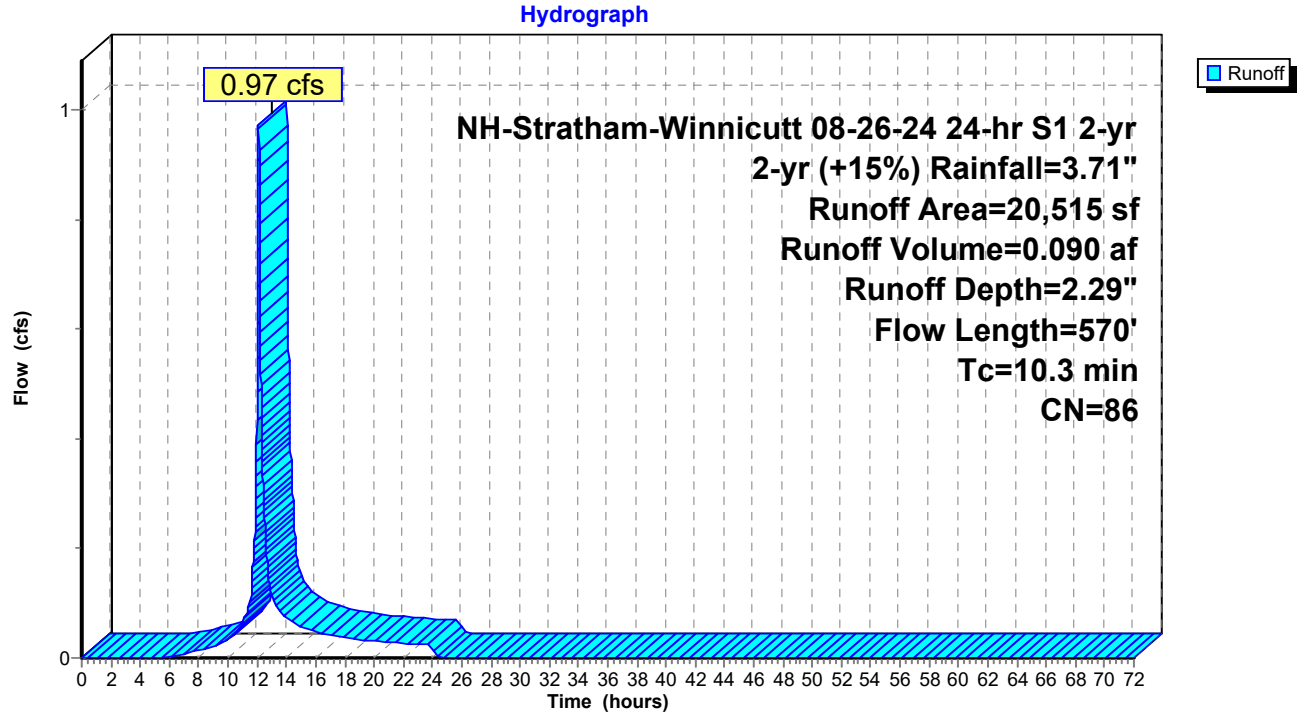
Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.090 af, Depth= 2.29"
Routed to Pond PP53A : Proposed Swale Along East Side of Main Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

	Area (sf)	CN	Description
	10,315	74	>75% Grass cover, Good, HSG C
*	10,200	98	Paved parking, HSG C
	20,515	86	Weighted Average
	10,315		50.28% Pervious Area
	10,200		49.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	13	0.0200	0.98		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.71"
1.3	37	0.3300	0.46		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
8.8	520	0.0200	0.99		**Shallow Concentrated Flow, Grass Swale** Short Grass Pasture Kv= 7.0 fps
10.3	570	Total			

Subcatchment PS4: East Portion of Proposed Main Road along Winnicutt Road



Summary for Subcatchment PS40: House of Lot 6

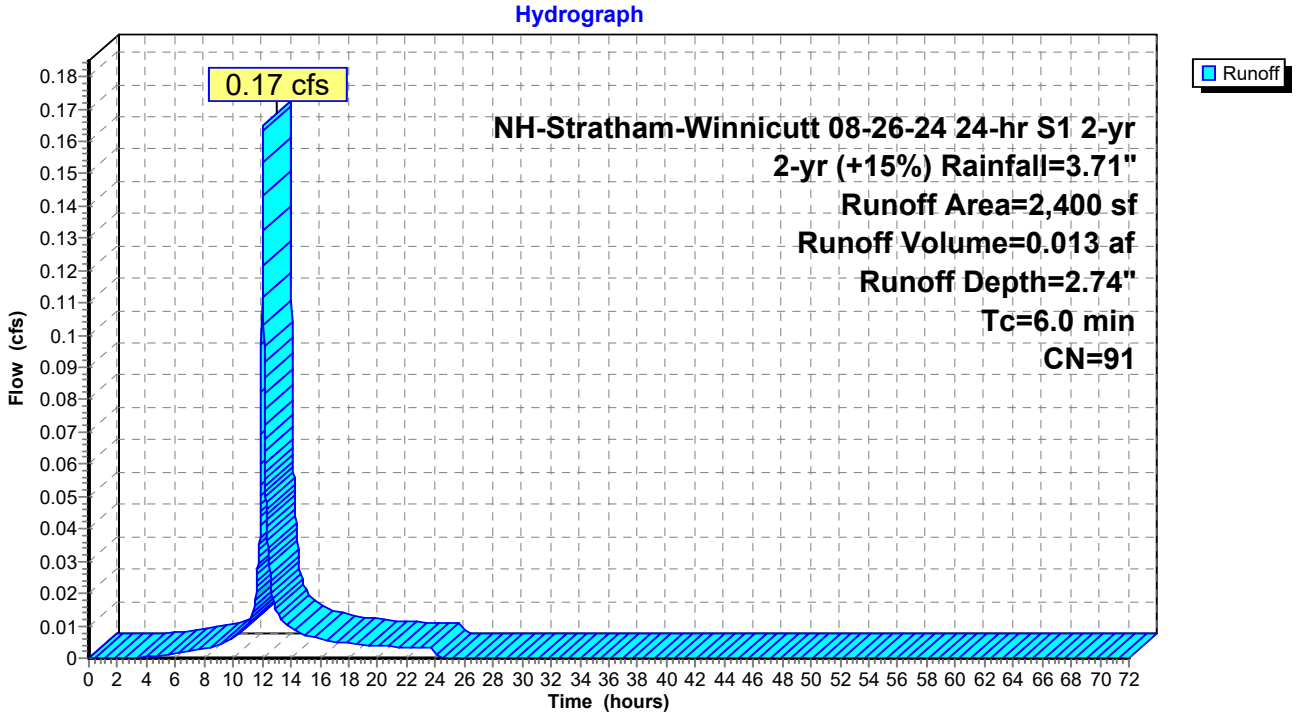
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP81 : Stone Storage for Lot 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS40: House of Lot 6



Summary for Subcatchment PS41: House of Lot 5

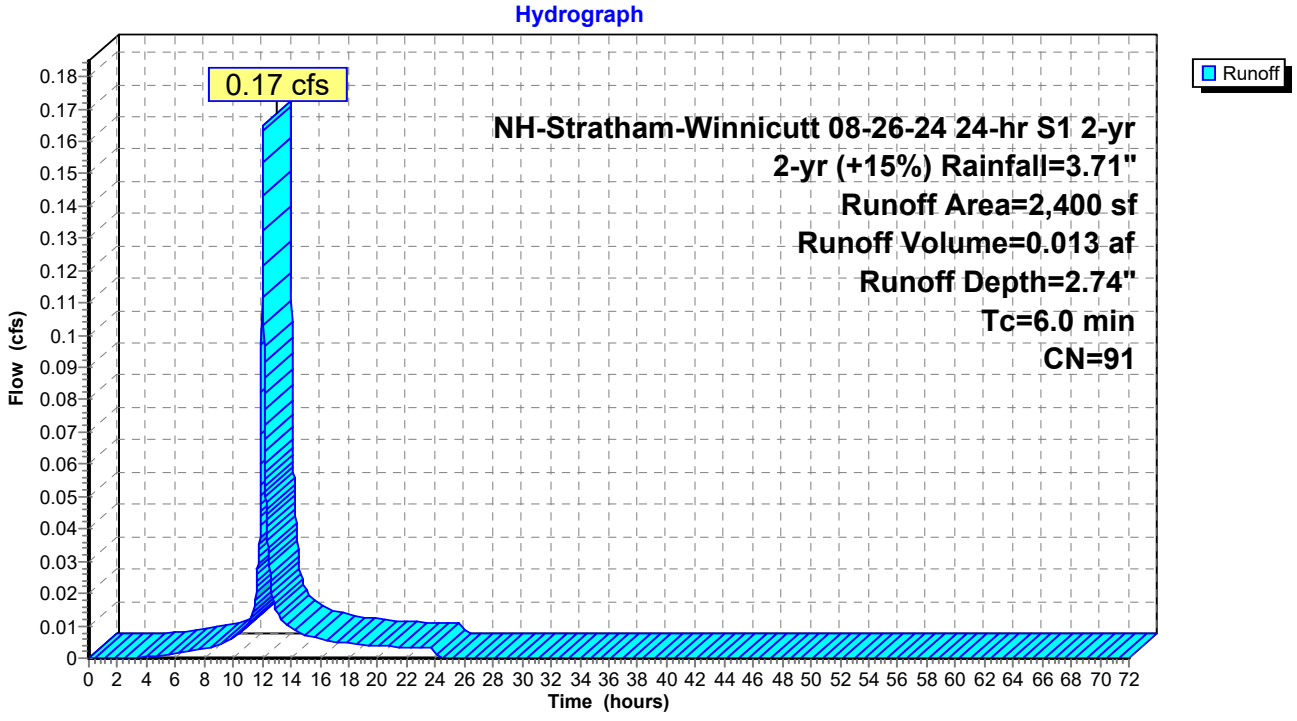
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP82 : Stone Storage for Lot 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS41: House of Lot 5



Summary for Subcatchment PS42: House of Lot 4

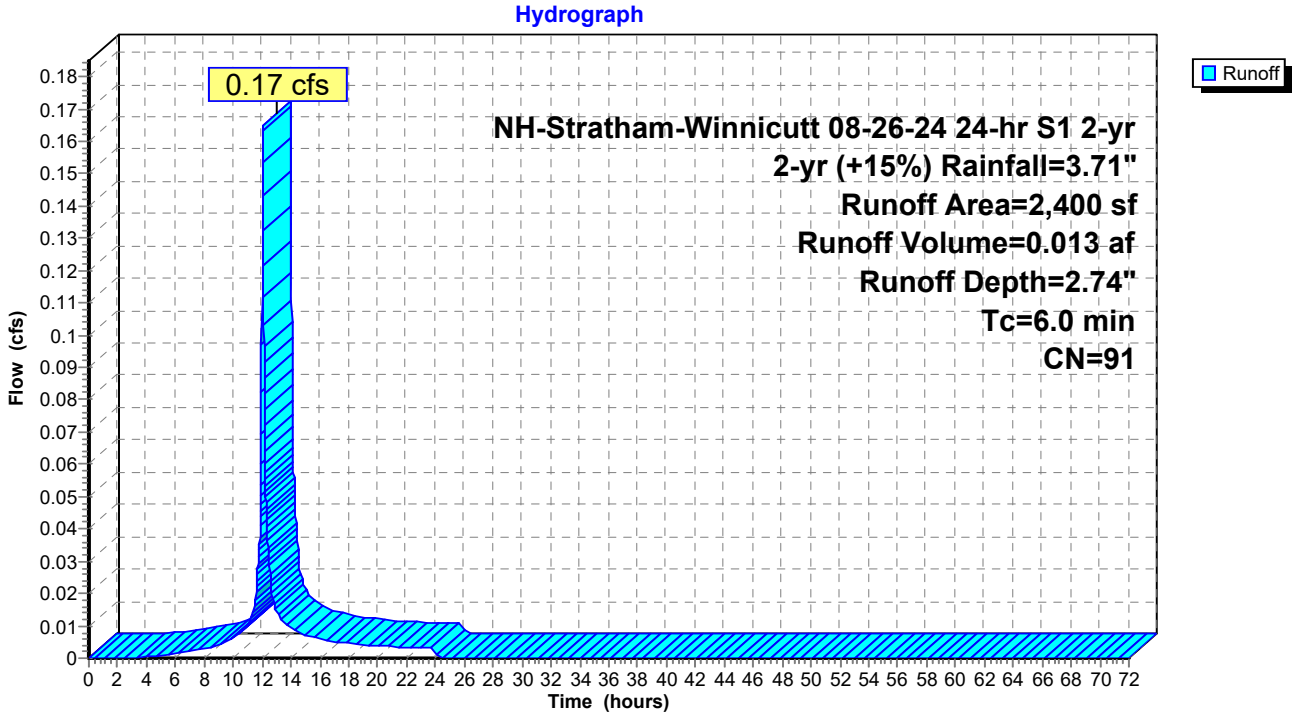
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP83 : Stone Storage for Lot 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS42: House of Lot 4



Summary for Subcatchment PS43: House of Lot 3

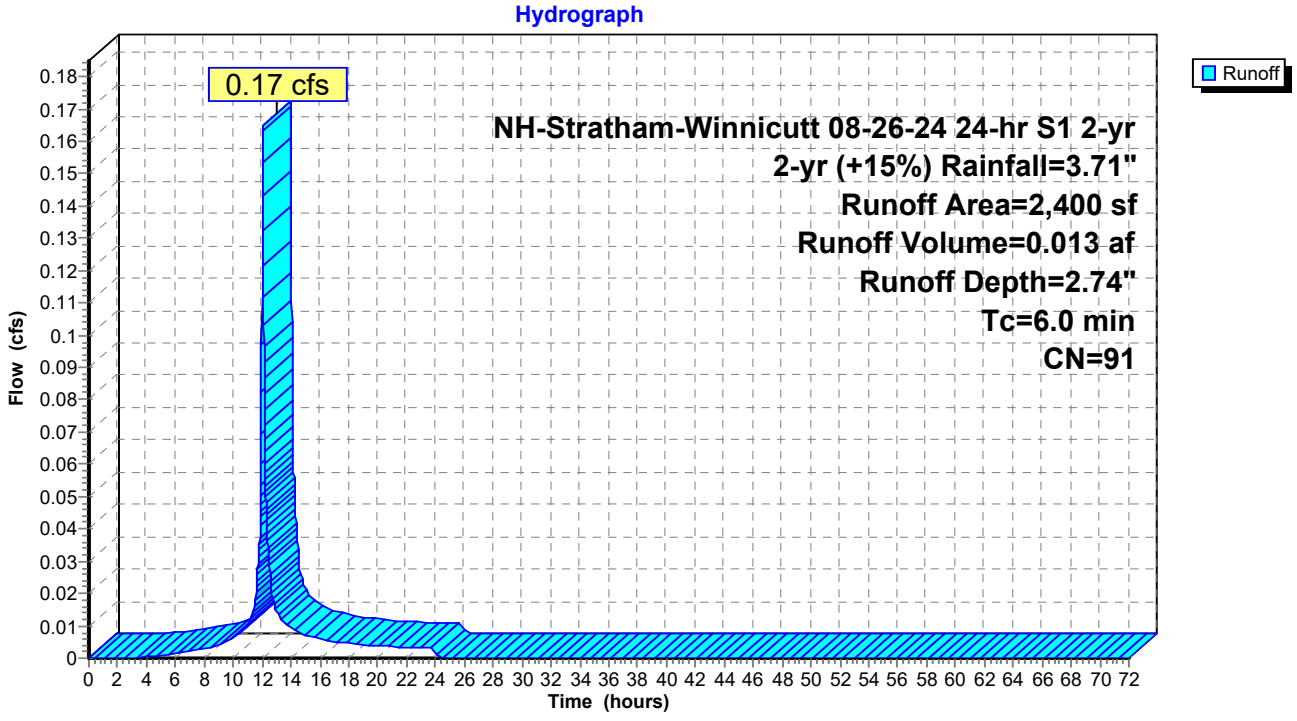
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP84 : Stone Storage for Lot 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS43: House of Lot 3



Summary for Subcatchment PS44: House of Lot 2

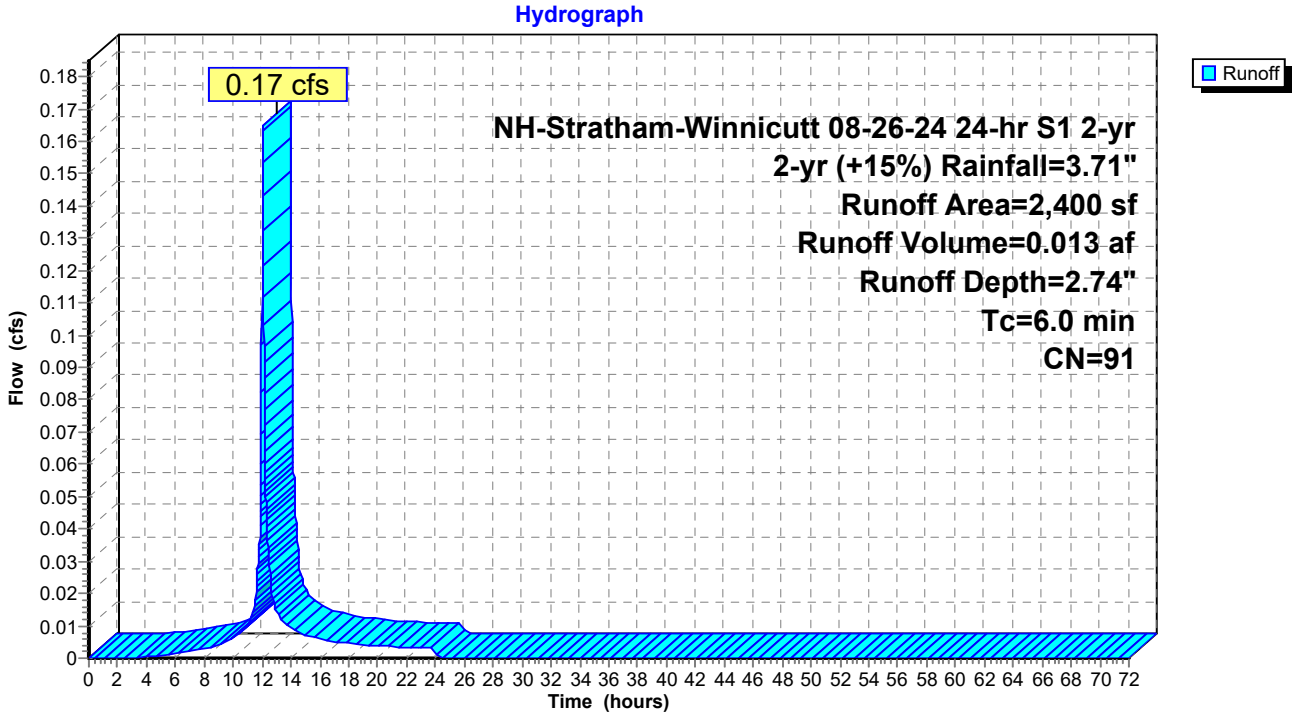
Runoff = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP85 : Stone Storage for Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
720	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,400	91	Weighted Average
720		30.00% Pervious Area
1,680		70.00% Impervious Area

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

Subcatchment PS44: House of Lot 2



Summary for Subcatchment PS45: House of Lot 1

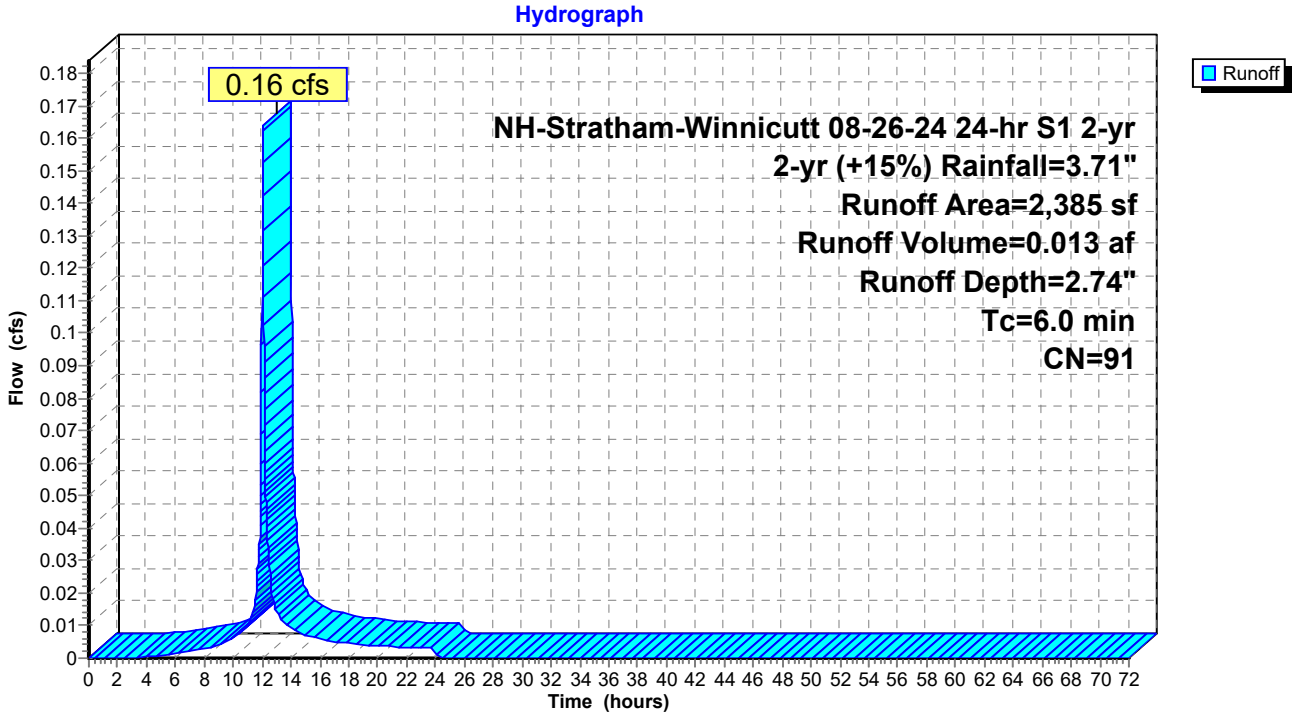
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP86 : Stone Storage for Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS45: House of Lot 1



Summary for Subcatchment PS46: House of Lot 11

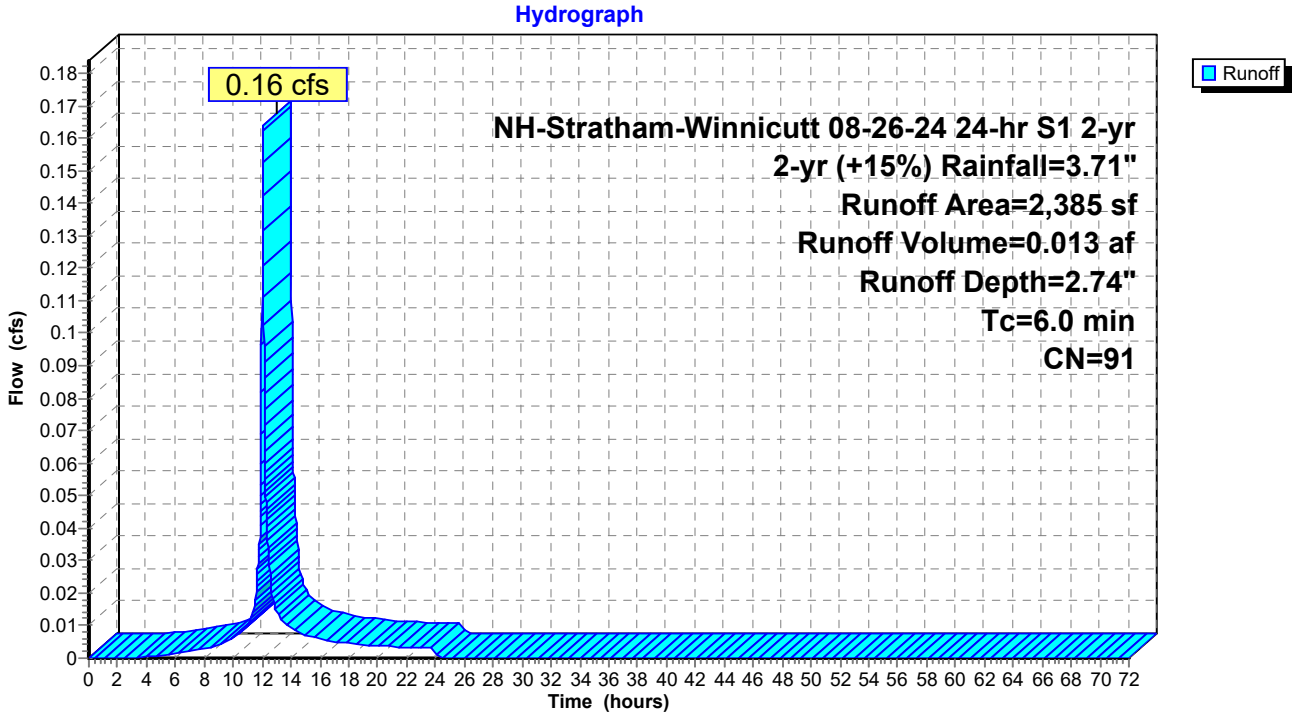
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP87 : Stone Storage for Lot 11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS46: House of Lot 11



Summary for Subcatchment PS47: House of Lot 10

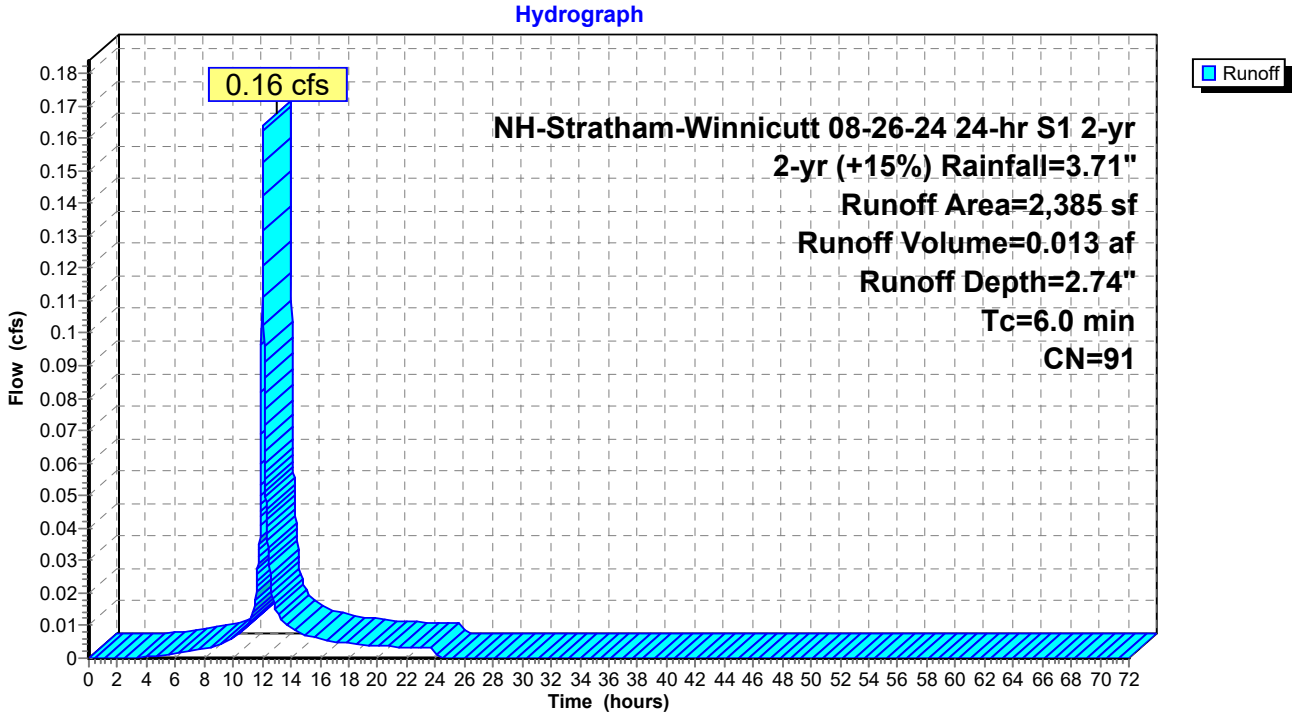
Runoff = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af, Depth= 2.74"
Routed to Pond PP88 : Stone Storage for Lot 10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
705	74	>75% Grass cover, Good, HSG C
1,680	98	Roofs, HSG C
2,385	91	Weighted Average
705		29.56% Pervious Area
1,680		70.44% Impervious Area

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

Subcatchment PS47: House of Lot 10



Summary for Subcatchment PS48: Eastern Half of Existing House of Lot 9

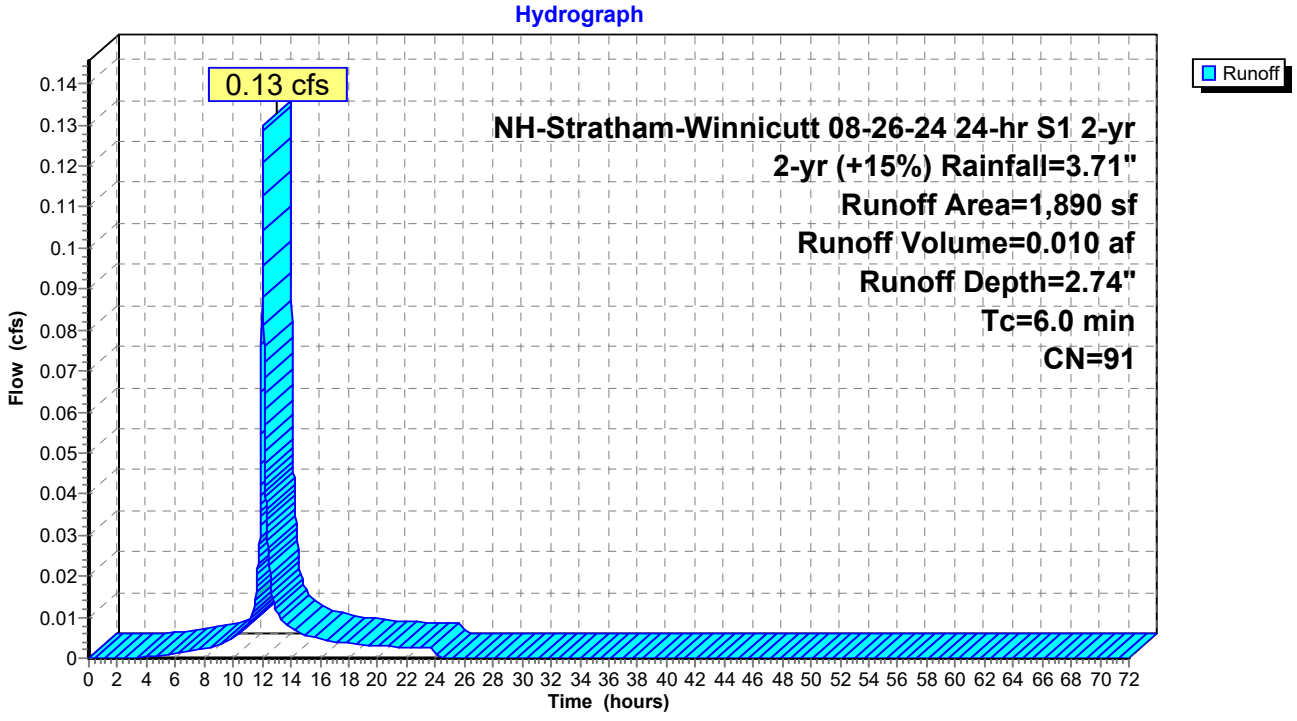
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP89 : Stone Storage for the House on Lot 9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
515	74	>75% Grass cover, Good, HSG C
1,375	98	Roofs, HSG C
1,890	91	Weighted Average
515		27.25% Pervious Area
1,375		72.75% Impervious Area

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

Subcatchment PS48: Eastern Half of Existing House of Lot 9



Summary for Subcatchment PS49: Relocated Barn of Lot 9

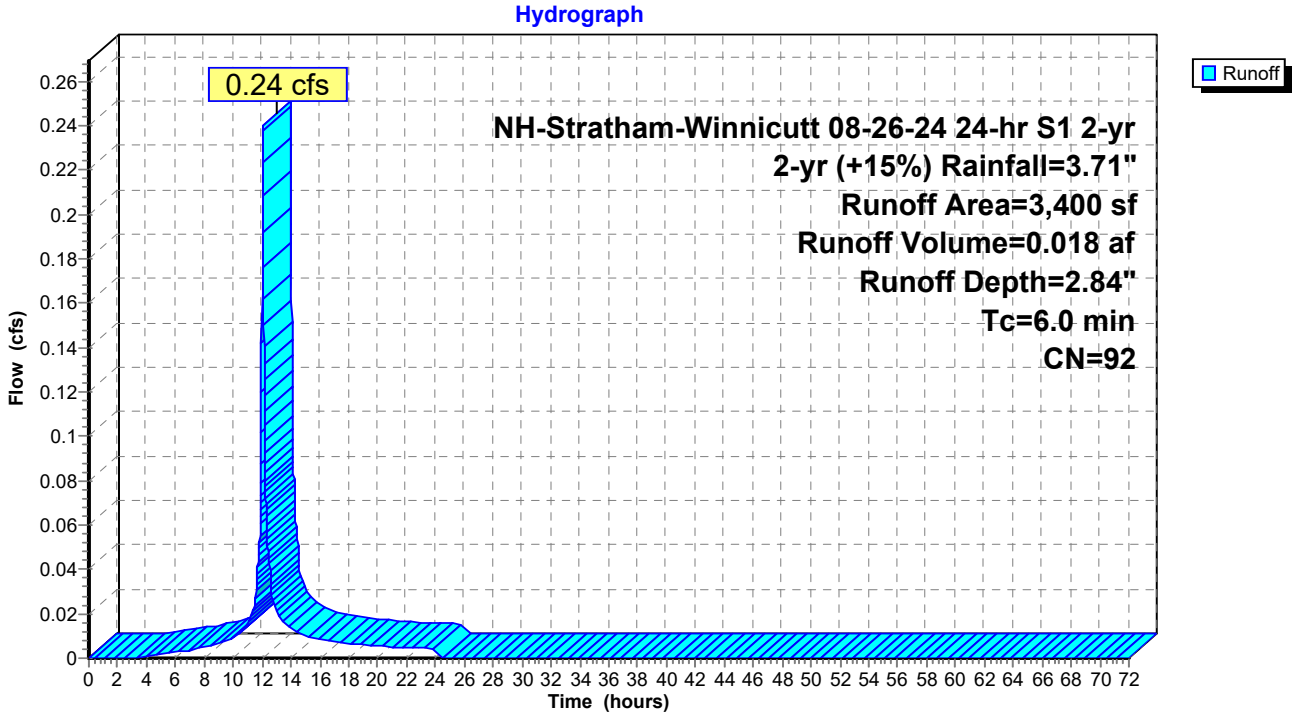
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.018 af, Depth= 2.84"
Routed to Pond PP90 : Stone Storage for the Barn on Lot 9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
880	74	>75% Grass cover, Good, HSG C
2,520	98	Roofs, HSG C
3,400	92	Weighted Average
880		25.88% Pervious Area
2,520		74.12% Impervious Area

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

Subcatchment PS49: Relocated Barn of Lot 9



Summary for Subcatchment PS4A: Area of Proposed Bioretention Pond "A2"

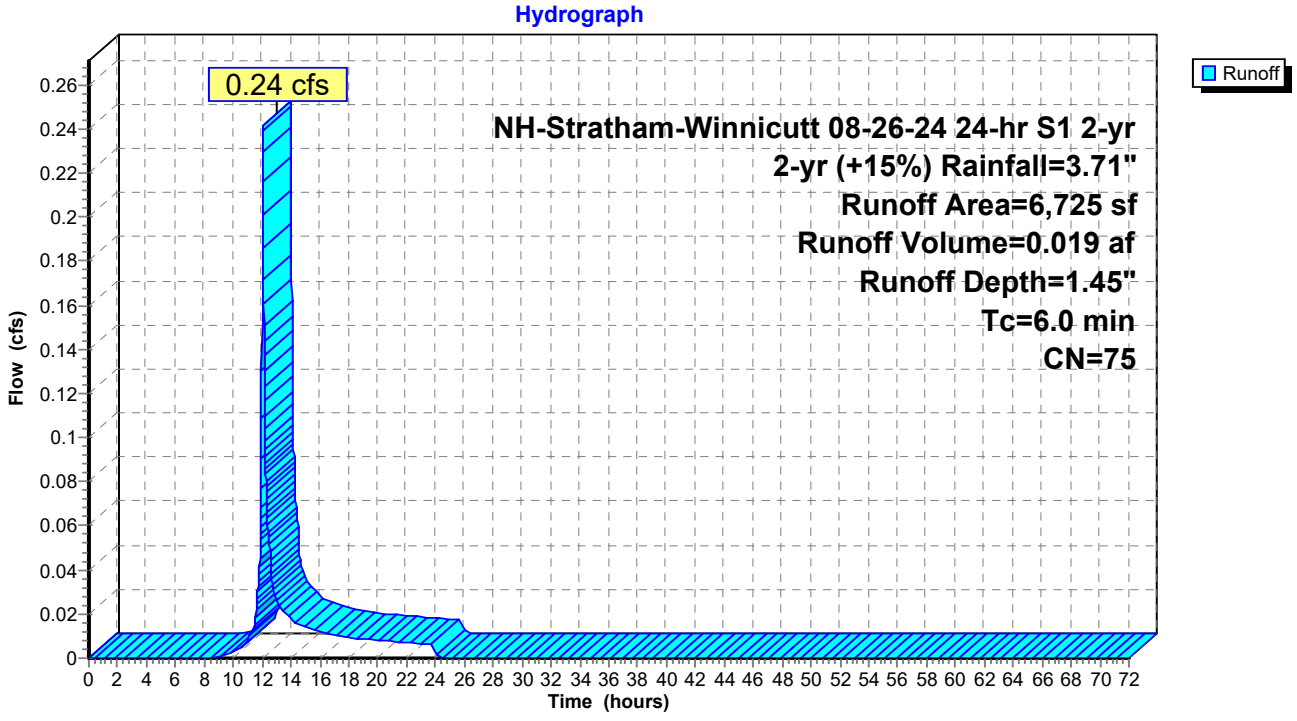
Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.019 af, Depth= 1.45"
Routed to Pond PP54 : Proposed Bioretention Basin "A2"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
6,515	74	>75% Grass cover, Good, HSG C
210	98	Roofs, HSG C
6,725	75	Weighted Average
6,515		96.88% Pervious Area
210		3.12% Impervious Area

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

Subcatchment PS4A: Area of Proposed Bioretention Pond "A2"



Summary for Subcatchment PS5: Area East of Existing Driveway along Winnicutt Road

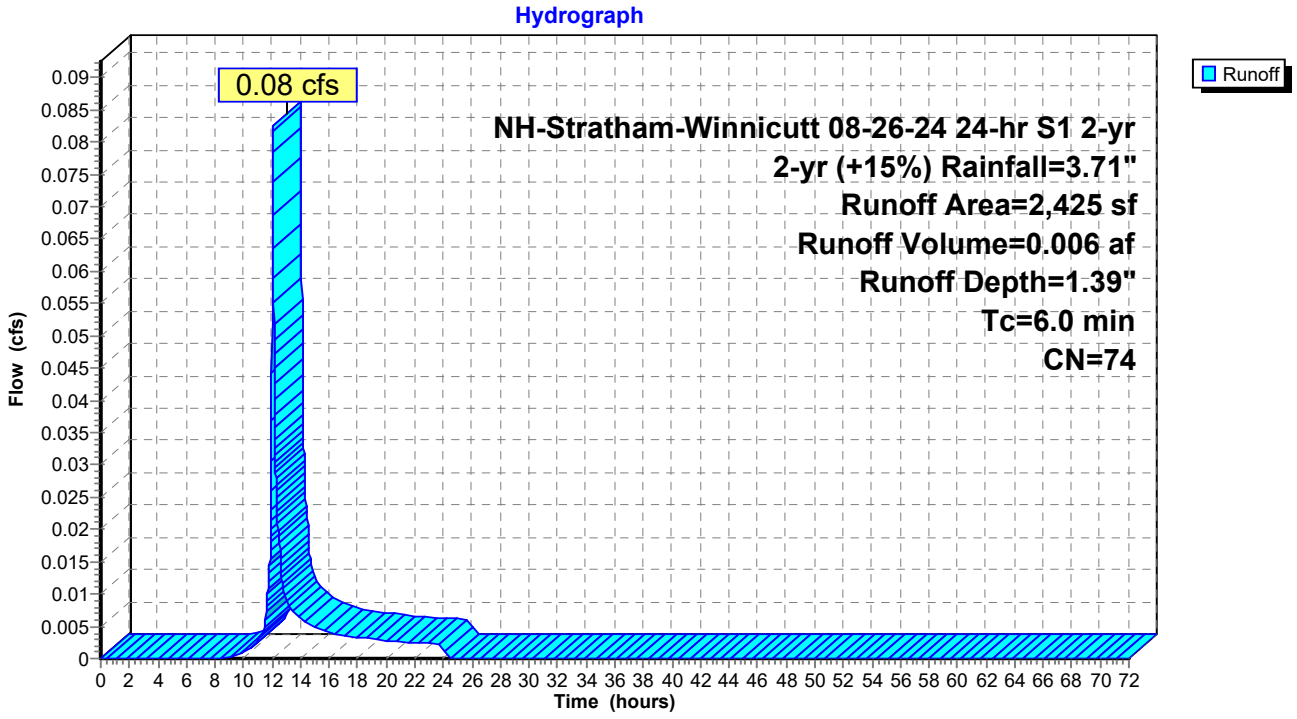
Runoff = 0.08 cfs @ 12.04 hrs, Volume= 0.006 af, Depth= 1.39"
Routed to Pond PP50 : Wetlands East of Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
2,355	74	>75% Grass cover, Good, HSG C
70	80	>75% Grass cover, Good, HSG D
2,425	74	Weighted Average
2,425		100.00% Pervious Area

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

Subcatchment PS5: Area East of Existing Driveway along Winnicutt Road



Summary for Subcatchment PS6: Area East of Driveway, Adjacent to Pond

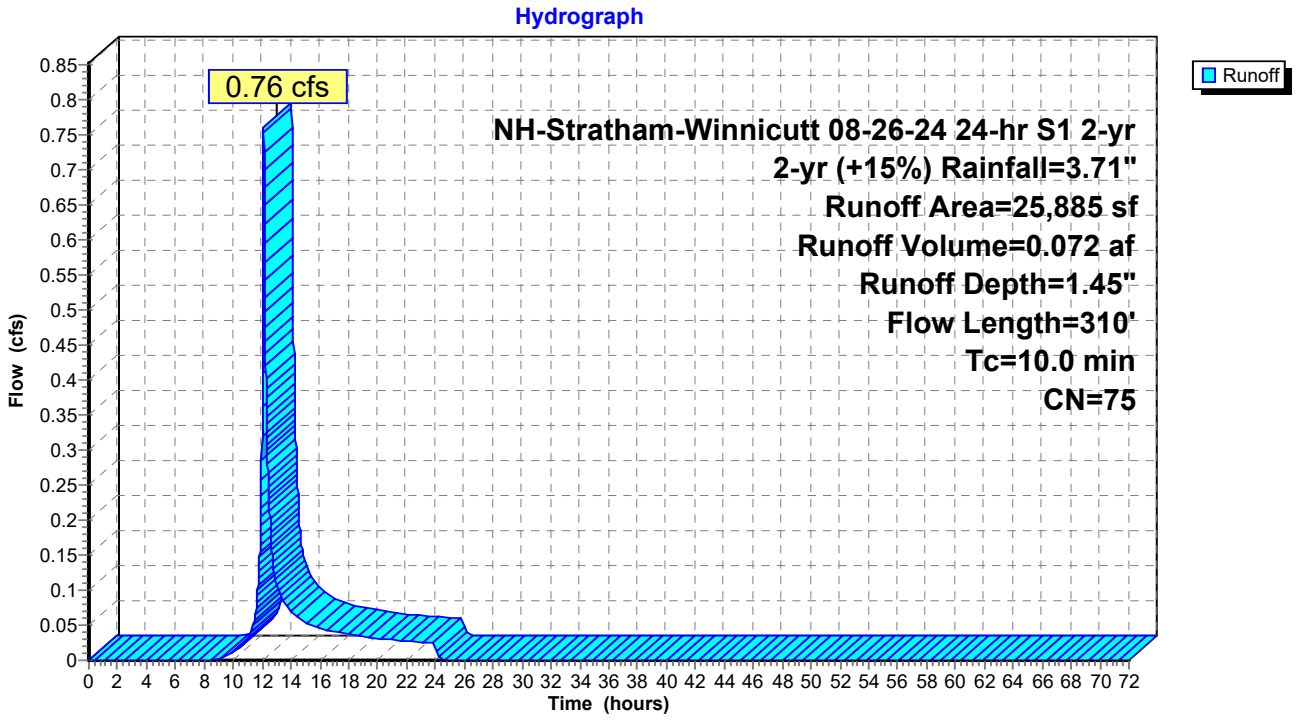
Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.072 af, Depth= 1.45"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
24,690	74	>75% Grass cover, Good, HSG C
1,195	98	Paved parking, HSG C
25,885	75	Weighted Average
24,690		95.38% Pervious Area
1,195		4.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
3.1	260	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
10.0	310	Total			

Subcatchment PS6: Area East of Driveway, Adjacent to Pond



Summary for Subcatchment PS6A: Area East of Proposed Bioretention Basin "A2"

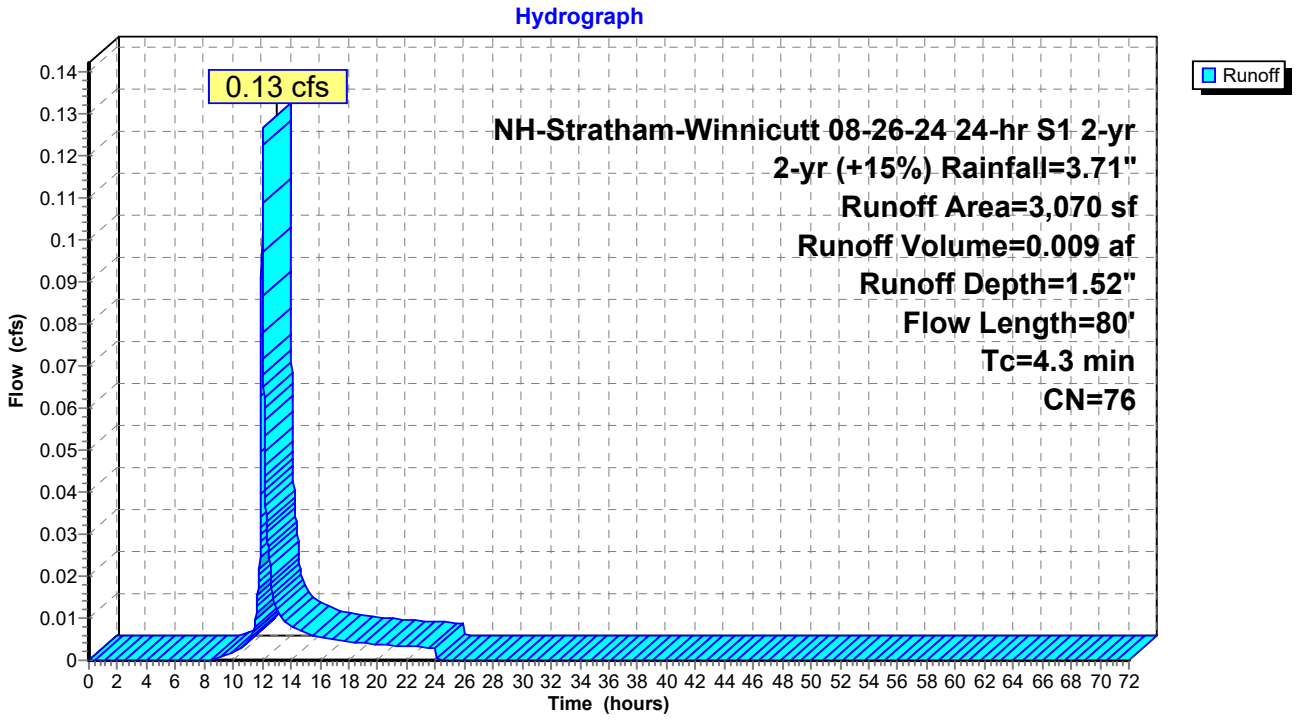
Runoff = 0.13 cfs @ 12.02 hrs, Volume= 0.009 af, Depth= 1.52"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
2,870	74	>75% Grass cover, Good, HSG C
200	98	Roofs, HSG C
3,070	76	Weighted Average
2,870		93.49% Pervious Area
200		6.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0400	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.3	30	0.0700	1.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
4.3	80	Total			

Subcatchment PS6A: Area East of Proposed Bioretention Basin "A2"



Summary for Subcatchment PS6B: Area North of Array Lots, Adjacent to Pond

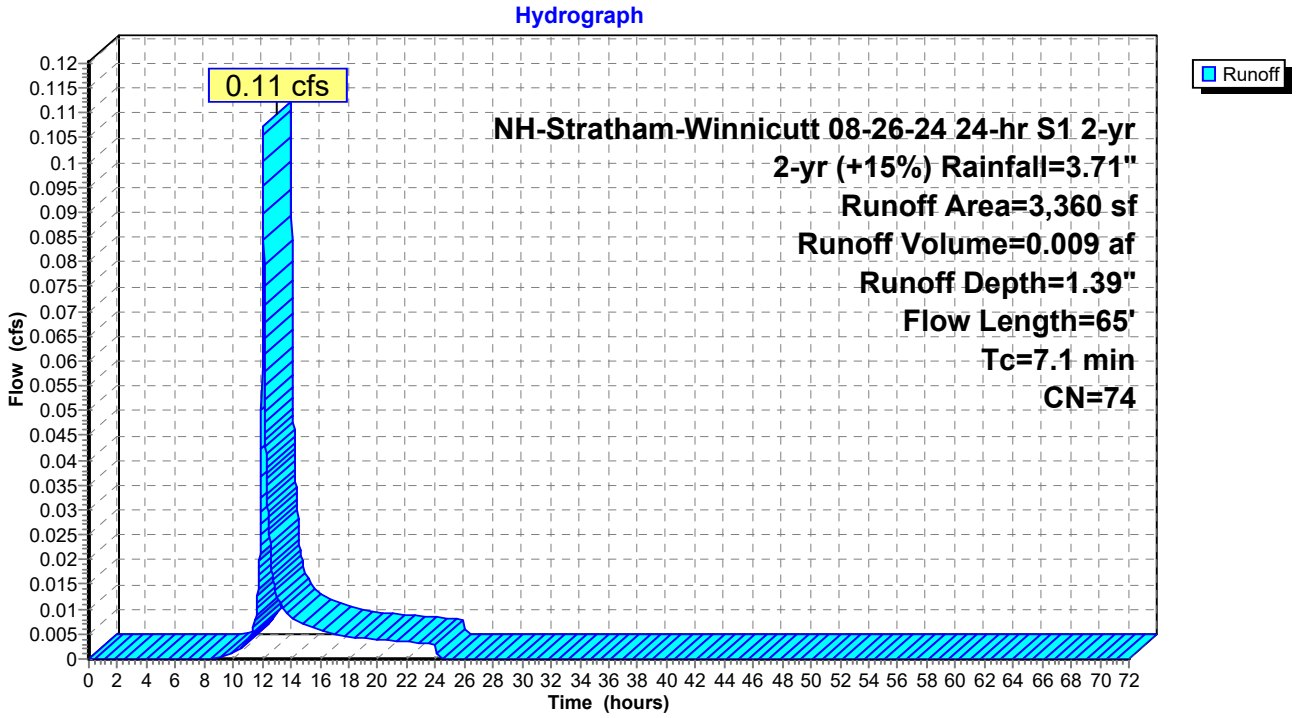
Runoff = 0.11 cfs @ 12.05 hrs, Volume= 0.009 af, Depth= 1.39"
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
3,360	74	>75% Grass cover, Good, HSG C
3,360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0100	0.12		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.2	15	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
7.1	65	Total			

Subcatchment PS6B: Area North of Array Lots, Adjacent to Pond



Summary for Subcatchment PS7C: House D of Lot 33

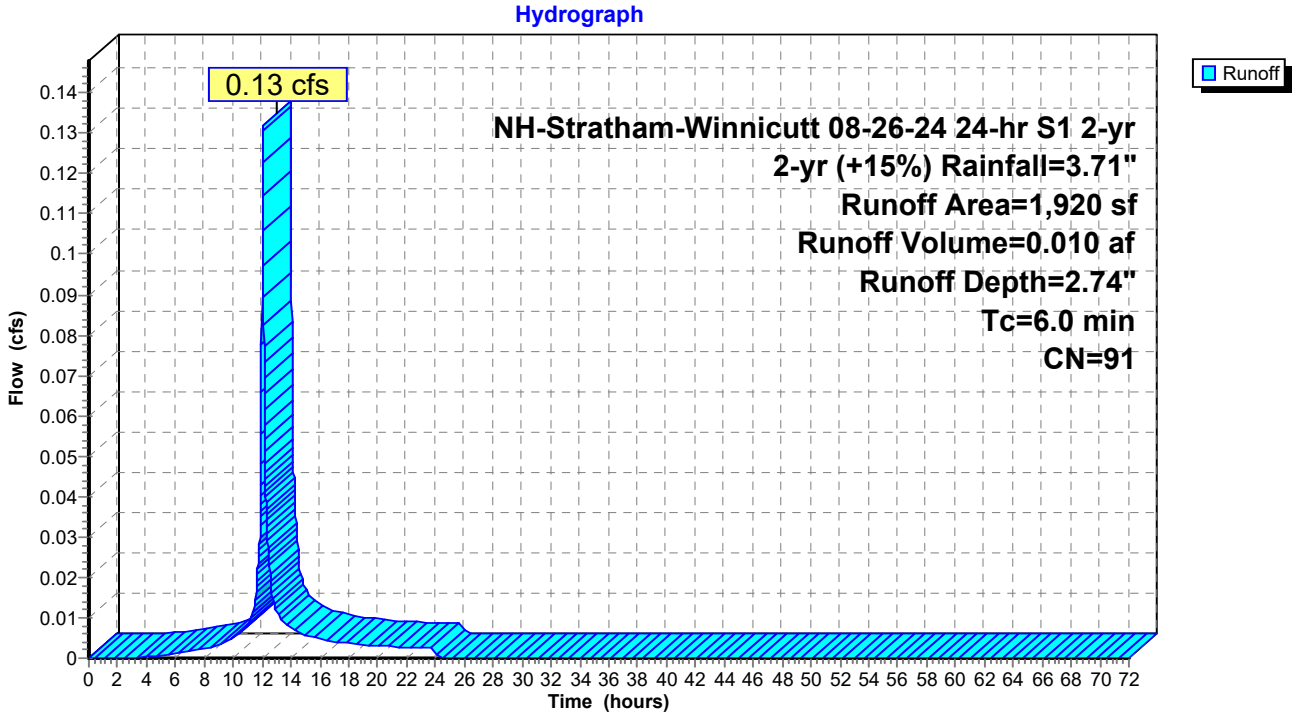
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP91 : Stone Storage for House D of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7C: House D of Lot 33



Summary for Subcatchment PS7D: House C of Lot 33

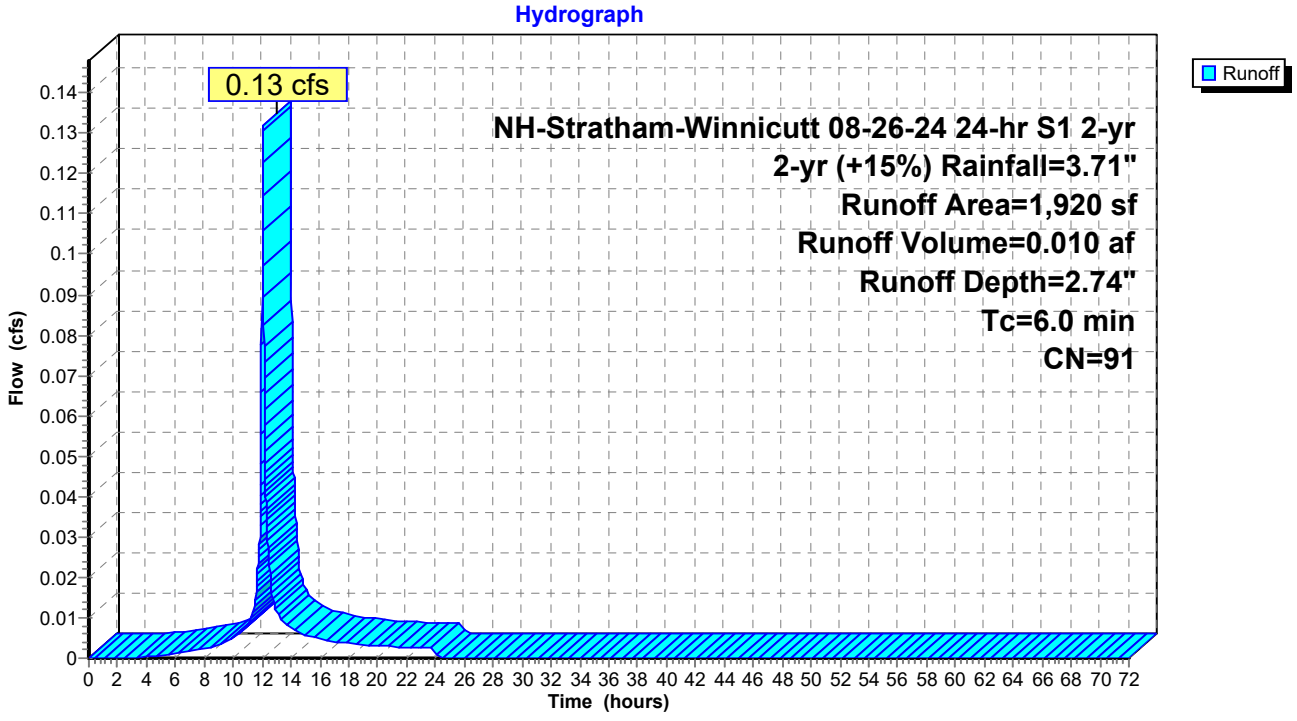
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP92 : Stone Storage for House C of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7D: House C of Lot 33



Summary for Subcatchment PS7E: House B of Lot 33

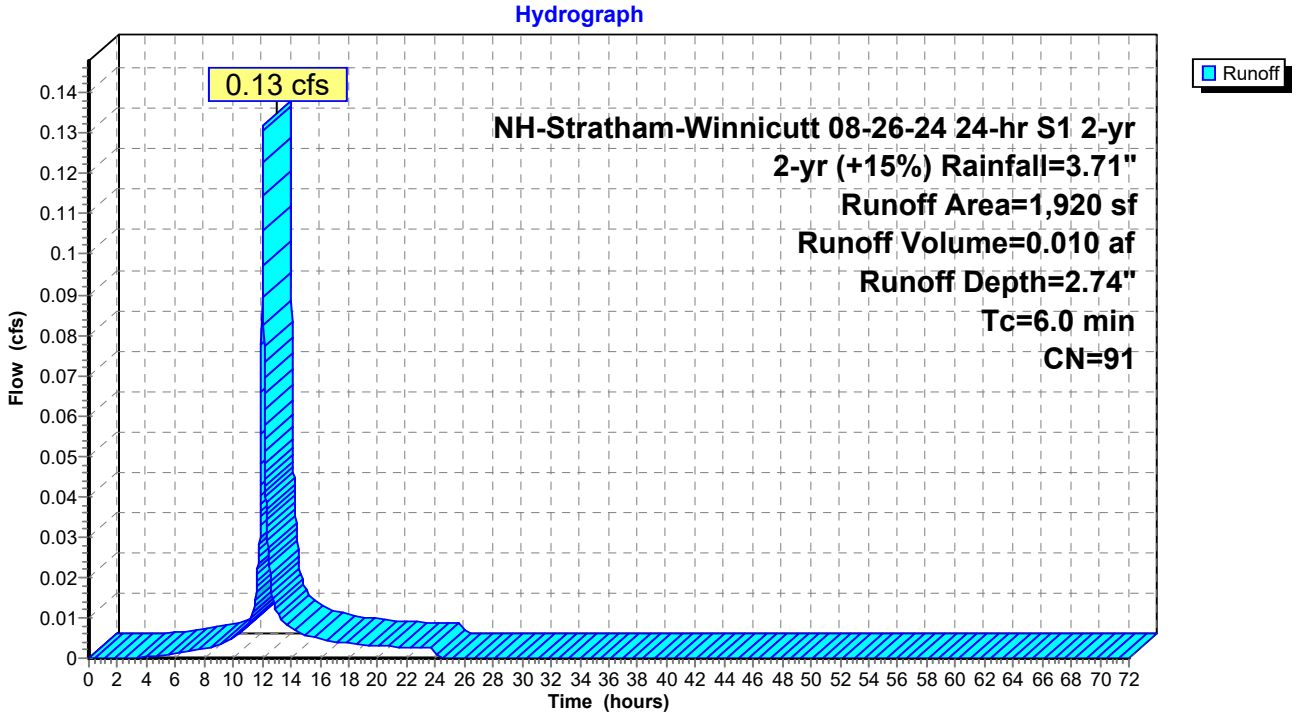
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP93 : Stone Storage for House B of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7E: House B of Lot 33



Summary for Subcatchment PS7F: House A of Lot 33

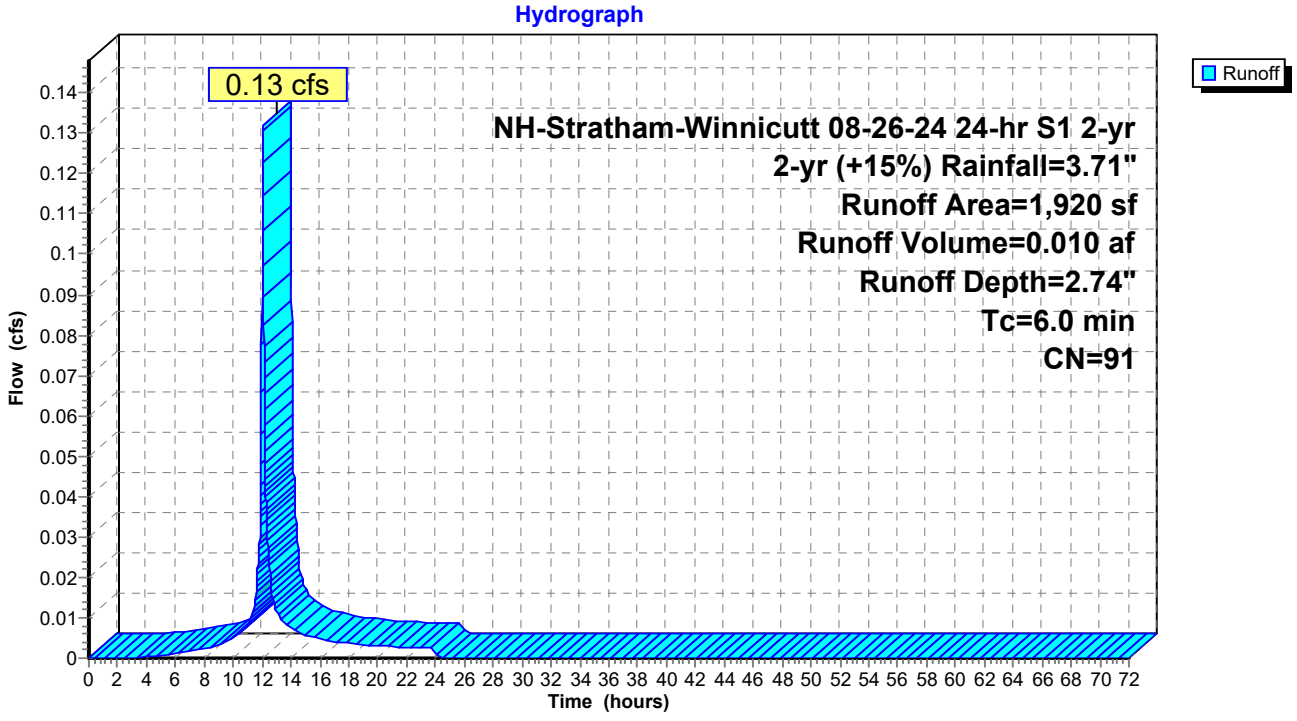
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP94 : Stone Storage for House A of Lot 33

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7F: House A of Lot 33



Summary for Subcatchment PS7G: House A of Lot 32

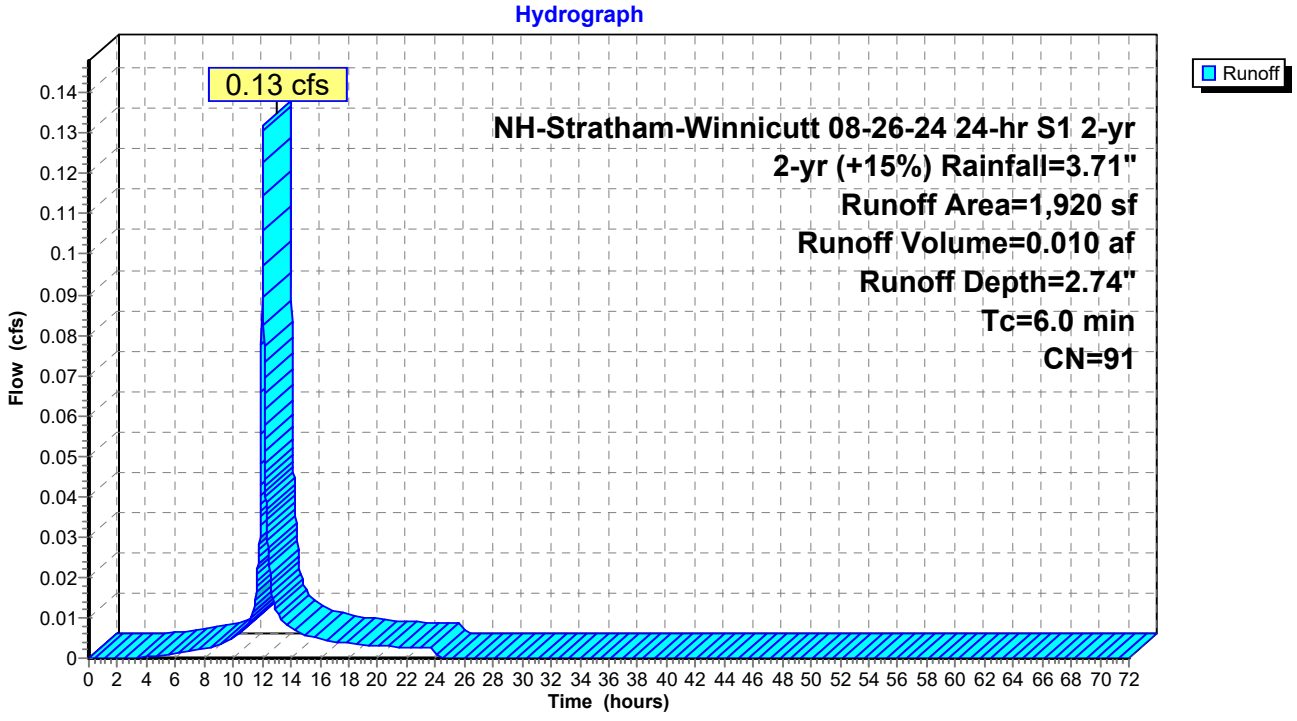
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP95 : Stone Storage for House A of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7G: House A of Lot 32



Summary for Subcatchment PS7H: House B of Lot 32

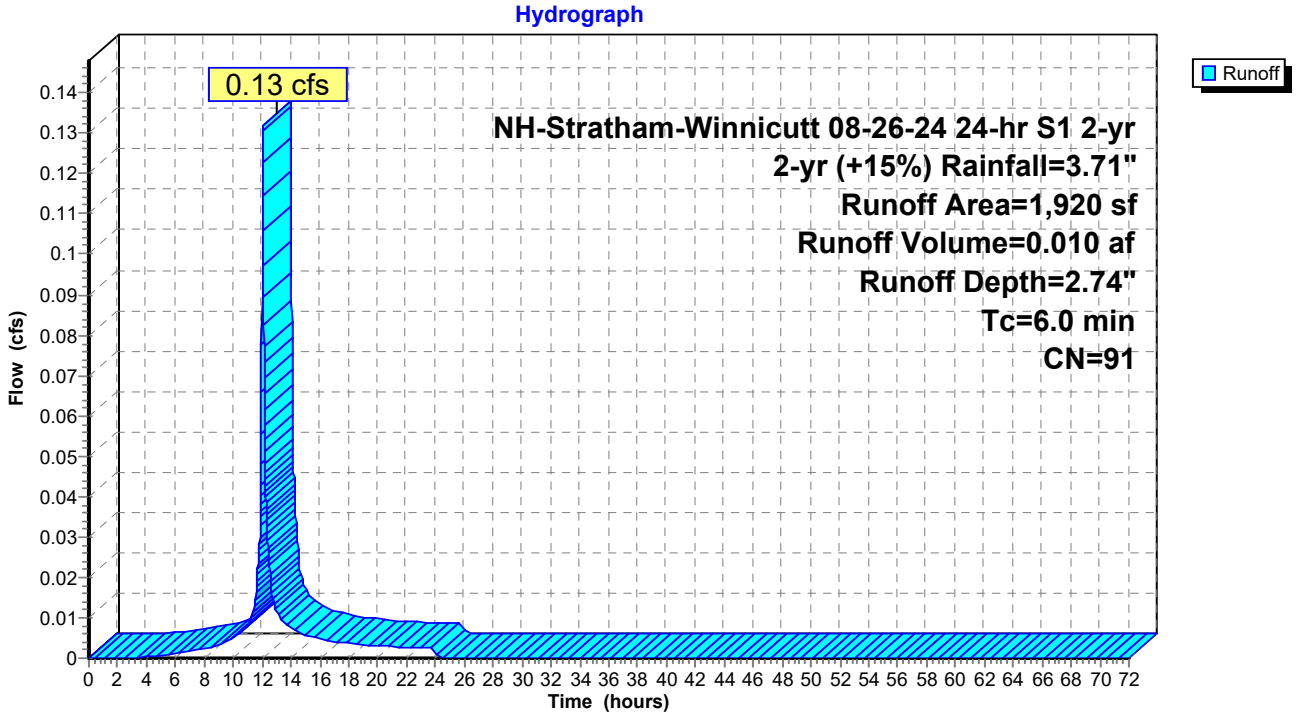
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP96 : Stone Storage for House B of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7H: House B of Lot 32



Summary for Subcatchment PS7I: House C of Lot 32

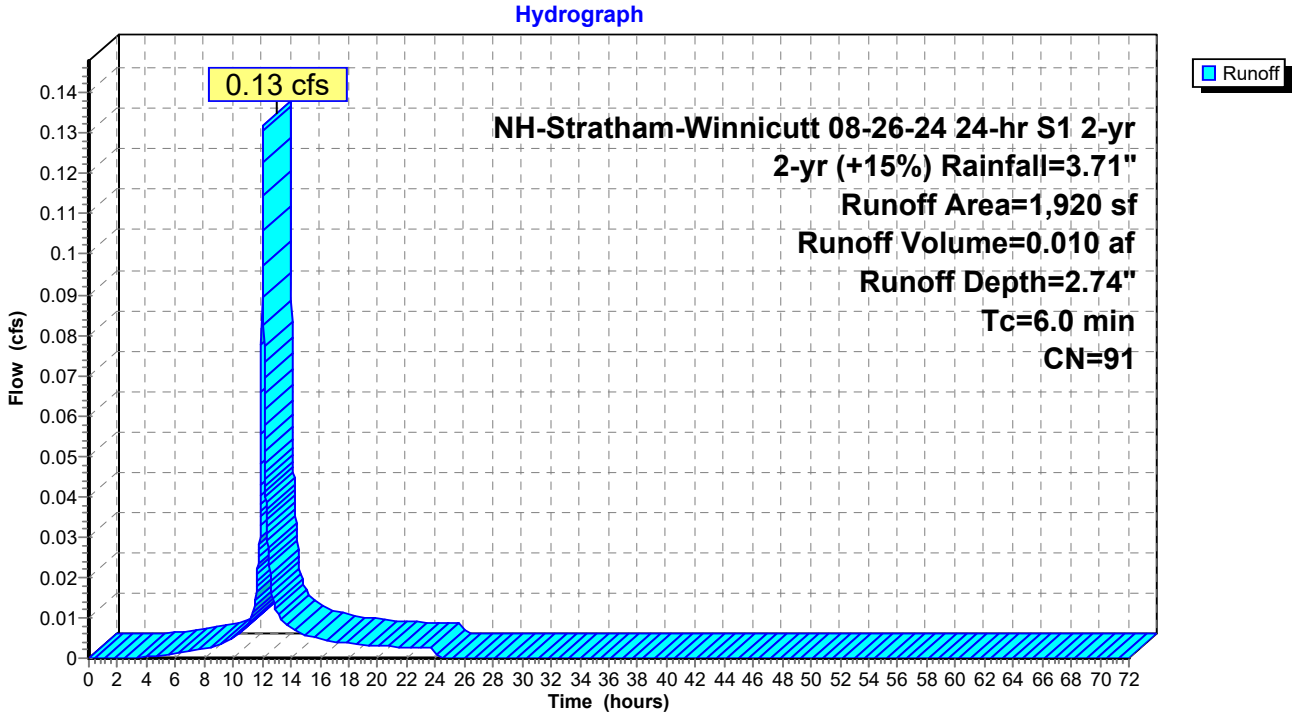
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP97 : Stone Storage for House C of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7I: House C of Lot 32



Summary for Subcatchment PS7J: House D of Lot 32

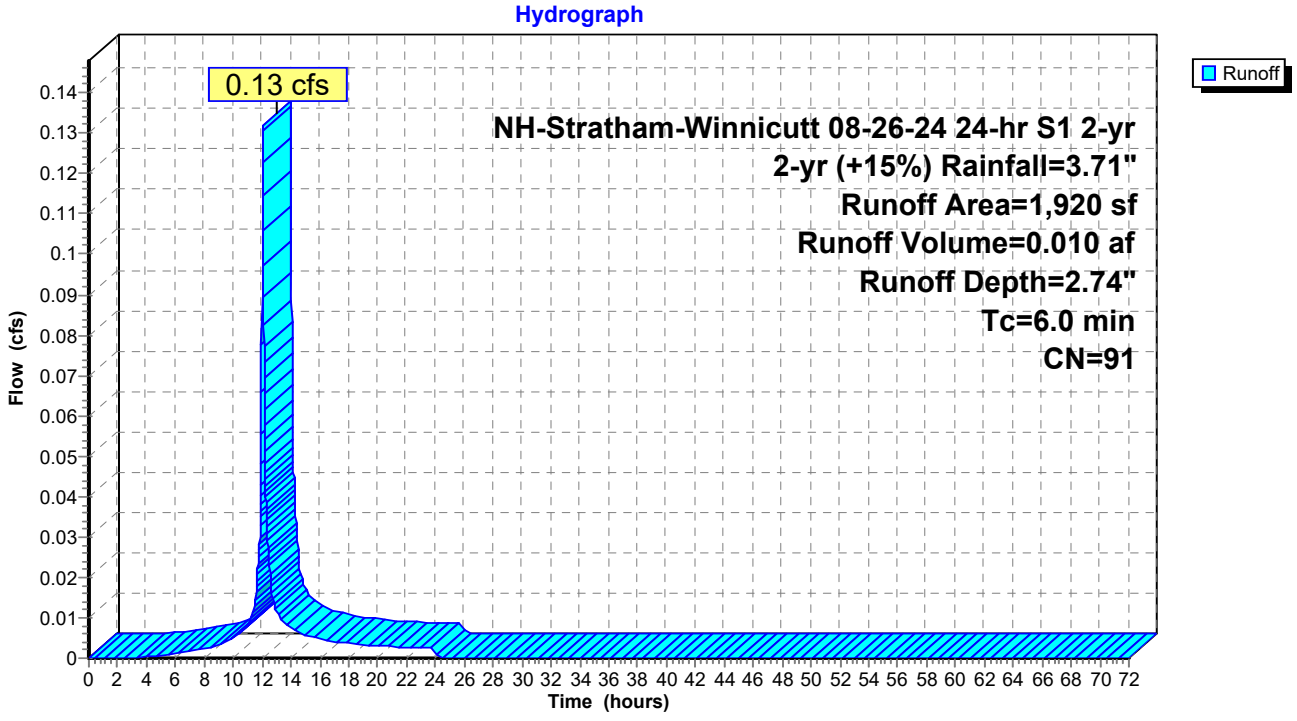
Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 2.74"
Routed to Pond PP98 : Stone Storage for House D of Lot 32

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
560	74	>75% Grass cover, Good, HSG C
1,360	98	Roofs, HSG C
1,920	91	Weighted Average
560		29.17% Pervious Area
1,360		70.83% Impervious Area

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

Subcatchment PS7J: House D of Lot 32



Summary for Subcatchment PS8: Southern Portion of Developed Array Home Area, and near "PLF5"

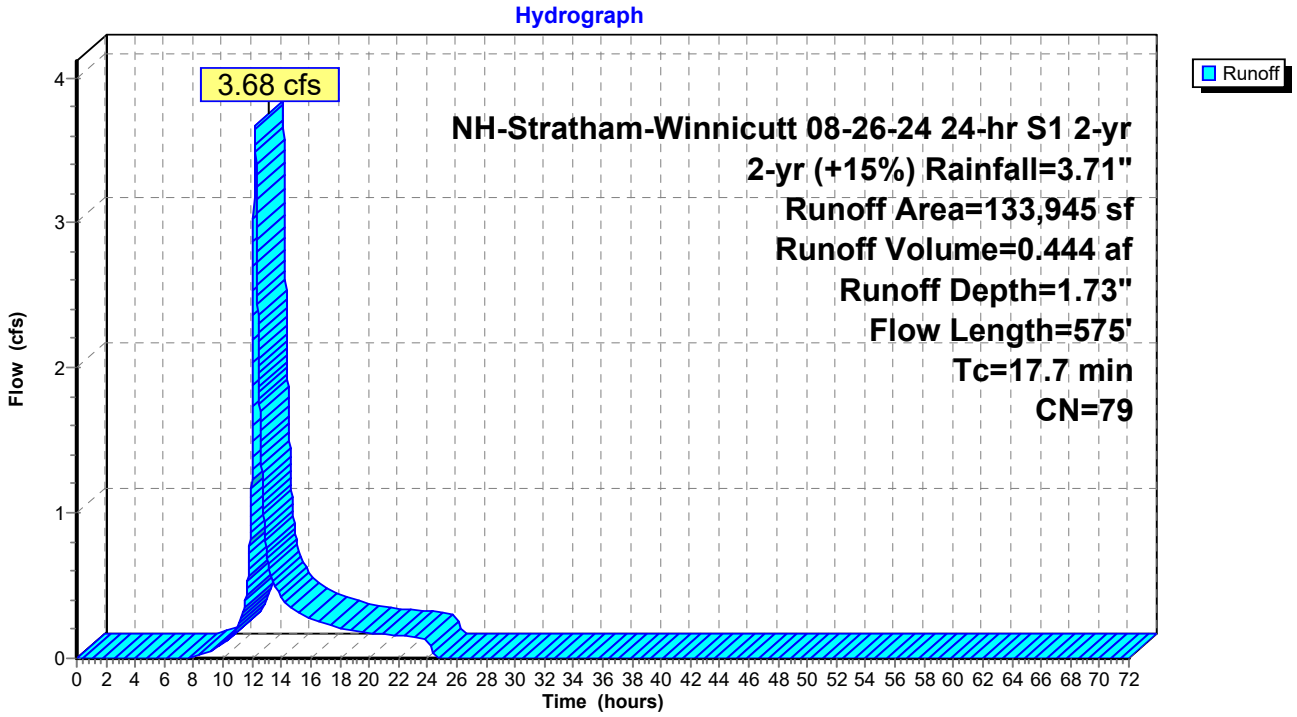
Runoff = 3.68 cfs @ 12.20 hrs, Volume= 0.444 af, Depth= 1.73"
Routed to Reach ER76 : Existing Swale from East Portion of Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
105,495	74	>75% Grass cover, Good, HSG C
965	80	>75% Grass cover, Good, HSG D
27,485	98	Paved parking, HSG C
133,945	79	Weighted Average
106,460		79.48% Pervious Area
27,485		20.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	50	0.0200	0.16		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
0.7	30	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow, Pavement** Paved Kv= 20.3 fps
1.7	70	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow, Pavement** Paved Kv= 20.3 fps
1.0	60	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
2.6	110	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
6.1	215	0.0140	0.59		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
17.7	575	Total			

Subcatchment PS8: Southern Portion of Developed Array Home Area, and near "PLF5"



Summary for Subcatchment PS8A: Disturbed Area East of Proposed Lot 27 House

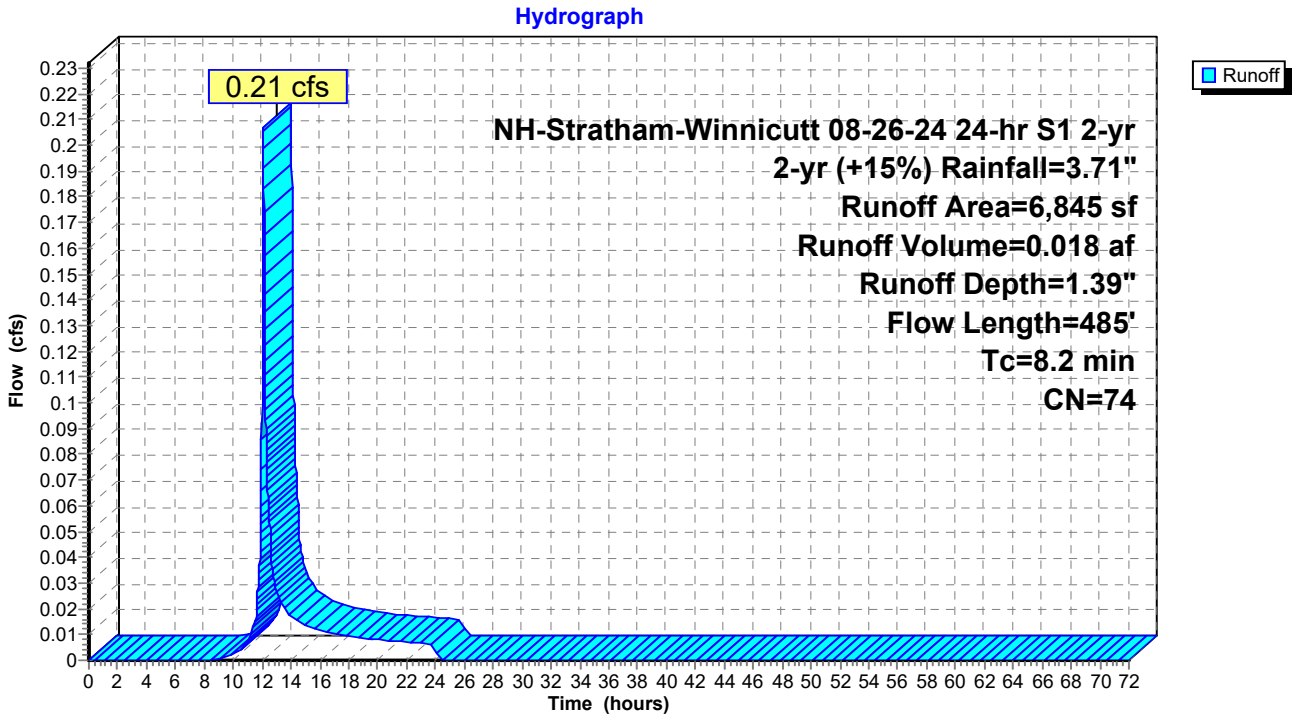
Runoff = 0.21 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 1.39"
Routed to Reach ER80 : West Portion of Existing Central Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
6,845	74	>75% Grass cover, Good, HSG C
6,845		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.0300	0.19		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.71"
3.7	250	0.0500	1.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.1	185	0.0380	21.06	3,054.41	**Channel Flow, Existing Swale from East Portion of Site** Area= 145.0 sf Perim= 45.0' r= 3.22' n= 0.030 Earth, grassed & winding
8.2	485	Total			

Subcatchment PS8A: Disturbed Area East of Proposed Lot 27 House



Summary for Subcatchment PS9: Disturbed Area South of Proposed Lots 26&27, and near "PLF4"

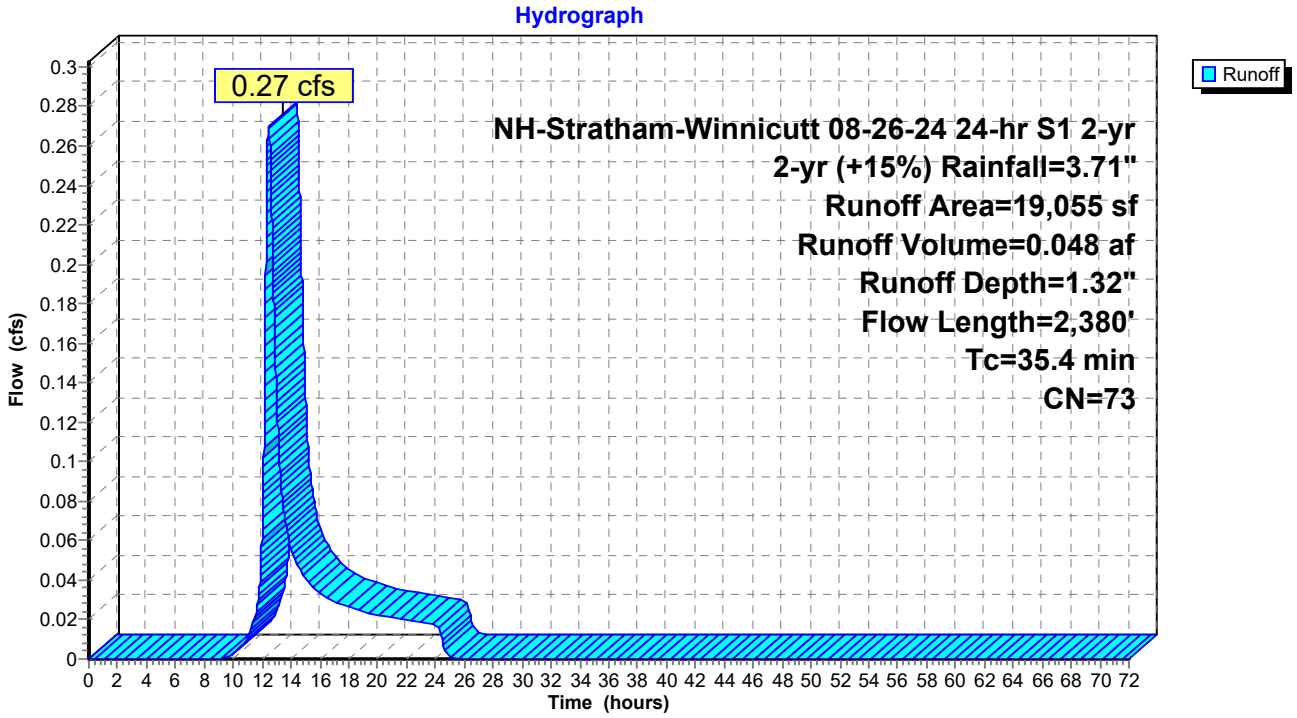
Runoff = 0.27 cfs @ 12.47 hrs, Volume= 0.048 af, Depth= 1.32"
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NH-Stratham-Winnicutt 08-26-24 24-hr S1 2-yr 2-yr (+15%) Rainfall=3.71"

Area (sf)	CN	Description
16,325	74	>75% Grass cover, Good, HSG C
2,730	70	Woods, Good, HSG C
19,055	73	Weighted Average
19,055		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	50	0.0100	0.06		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.71"
10.1	400	0.0175	0.66		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
4.7	200	0.0200	0.71		**Shallow Concentrated Flow, Wetlands** Woodland Kv= 5.0 fps
5.5	1,730	0.0113	5.27	168.49	**Channel Flow, Existing Swale from Southeastern Portion of Site** Area= 32.0 sf Perim= 32.0' r= 1.00' n= 0.030 Earth, grassed & winding
35.4	2,380	Total			

Subcatchment PS9: Disturbed Area South of Proposed Lots 26&27, and near "PLF4"



Summary for Reach ER75: Northernmost Stream on Site

Inflow Area = 0.056 ac, 0.00% Impervious, Inflow Depth = 1.08" for 2-yr (+15%) event
Inflow = 0.03 cfs @ 12.25 hrs, Volume= 0.005 af
Outflow = 0.01 cfs @ 13.23 hrs, Volume= 0.005 af, Atten= 69%, Lag= 59.1 min
Routed to Link L101A : Wetlands to the West (Northern Swale Entrance)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.63 fps, Min. Travel Time= 78.6 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 78.6 min

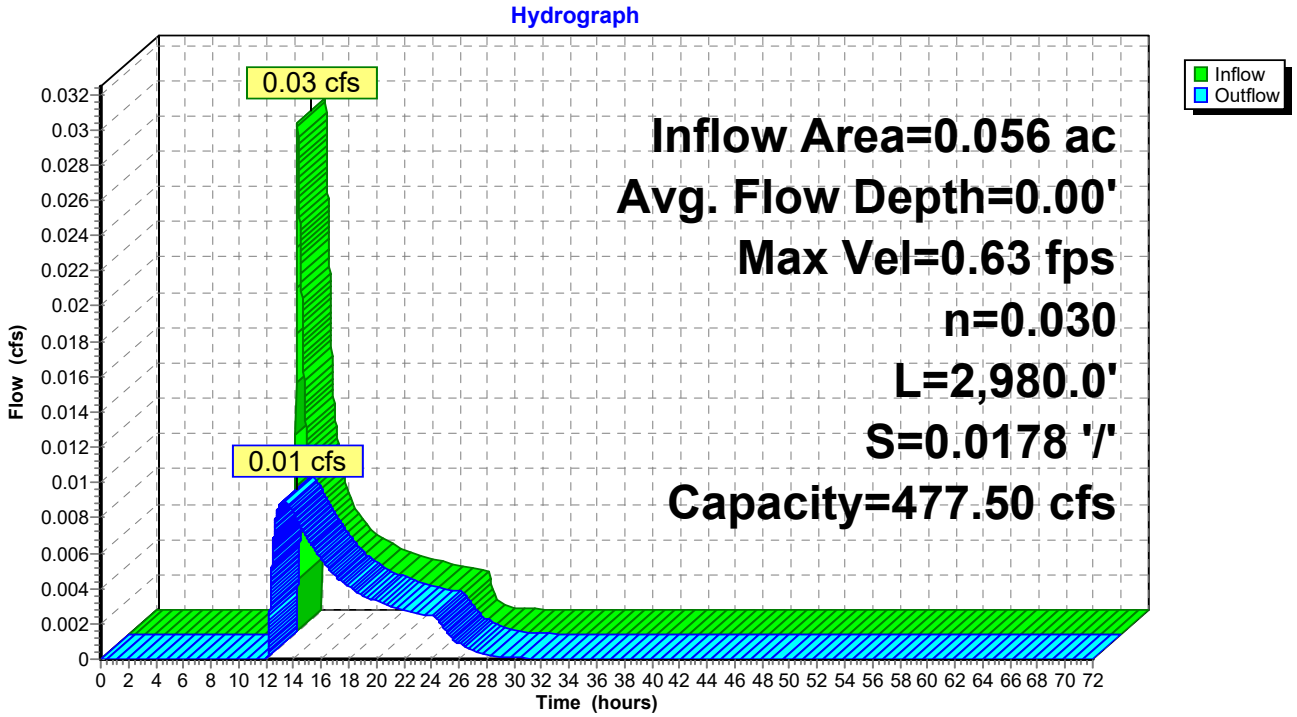
Peak Storage= 42 cf @ 13.23 hrs
Average Depth at Peak Storage= 0.00' , Surface Width= 7.01'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 477.50 cfs

7.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 25.00'
Length= 2,980.0' Slope= 0.0178 '/'
Inlet Invert= 90.70', Outlet Invert= 37.70'



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Reach ER75: Northernmost Stream on Site



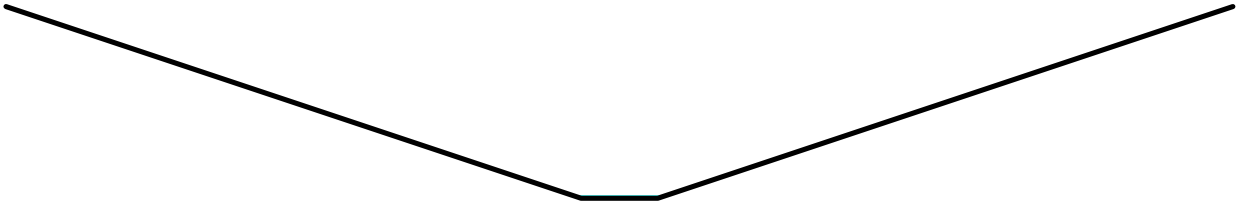
Summary for Reach ER76: Existing Swale from East Portion of Site

Inflow Area = 3.604 ac, 27.90% Impervious, Inflow Depth = 1.88" for 2-yr (+15%) event
Inflow = 4.58 cfs @ 12.18 hrs, Volume= 0.564 af
Outflow = 4.03 cfs @ 12.27 hrs, Volume= 0.564 af, Atten= 12%, Lag= 5.5 min
Routed to Reach ER80 : West Portion of Existing Central Swale

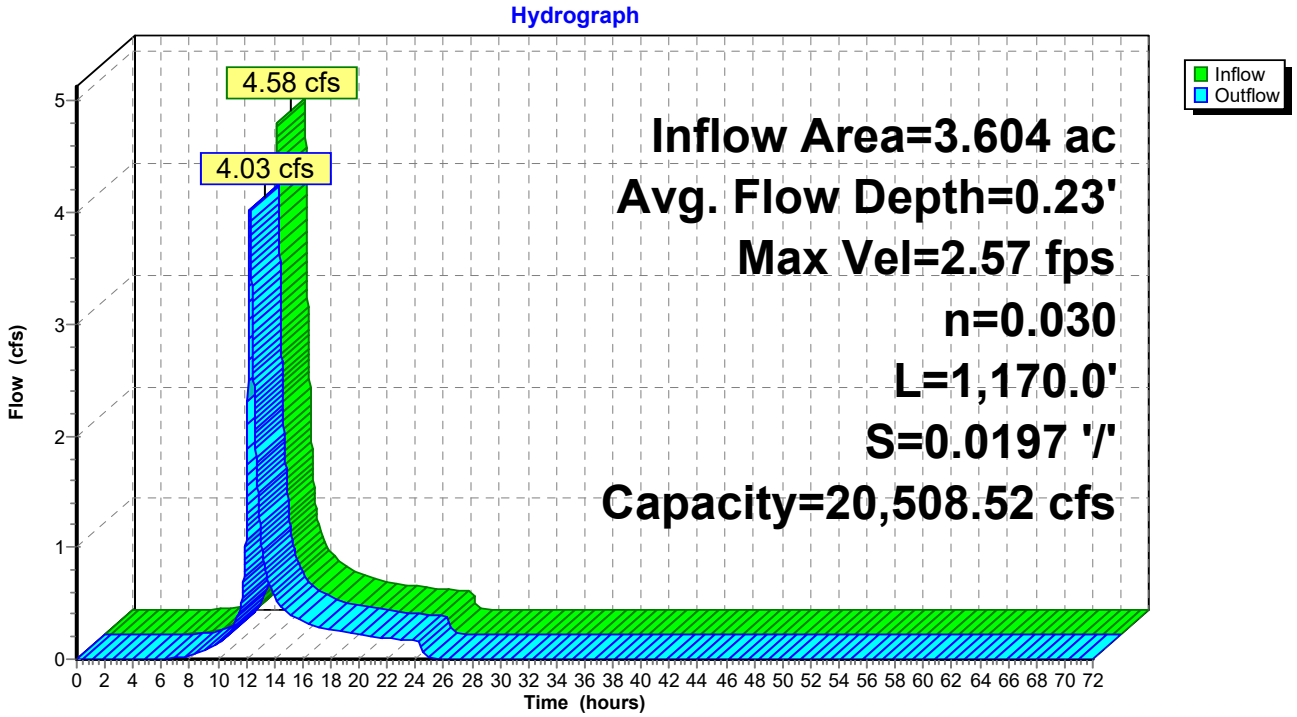
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.57 fps, Min. Travel Time= 7.6 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 10.4 min

Peak Storage= 1,835 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 7.39'
Bank-Full Depth= 15.00' Flow Area= 765.0 sf, Capacity= 20,508.52 cfs

6.00' x 15.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 96.00'
Length= 1,170.0' Slope= 0.0197 '/'
Inlet Invert= 74.00', Outlet Invert= 51.00'



Reach ER76: Existing Swale from East Portion of Site



Summary for Reach ER79: Southern Swale Connecting to Western Wetlands

[62] Hint: Exceeded Reach ER80 OUTLET depth by 0.24' @ 12.40 hrs

Inflow Area = 10.270 ac, 23.73% Impervious, Inflow Depth = 1.68" for 2-yr (+15%) event
Inflow = 9.19 cfs @ 12.23 hrs, Volume= 1.439 af
Outflow = 8.66 cfs @ 12.32 hrs, Volume= 1.439 af, Atten= 6%, Lag= 5.7 min
Routed to Link L101C : Wetlands to the West (Southern Swale Entrance)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.70 fps, Min. Travel Time= 7.0 min
Avg. Velocity = 0.44 fps, Avg. Travel Time= 27.0 min

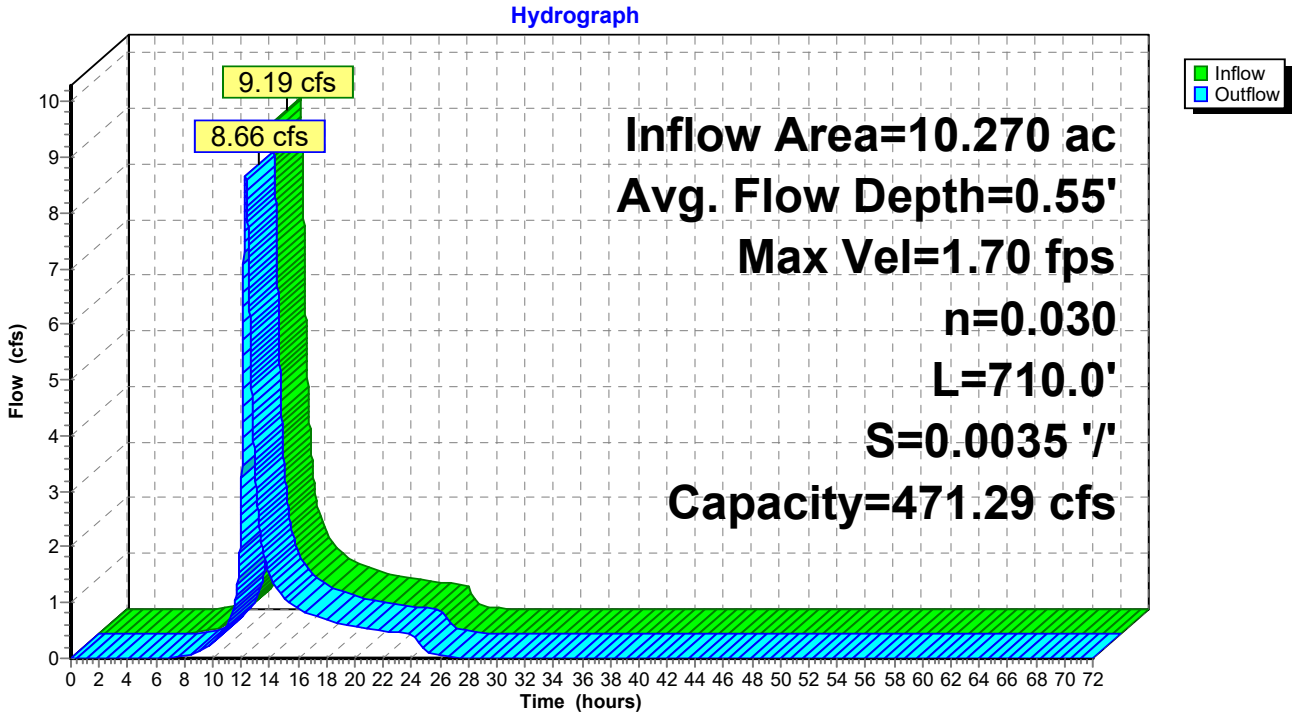
Peak Storage= 3,614 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 11.42'
Bank-Full Depth= 4.00' Flow Area= 92.0 sf, Capacity= 471.29 cfs

7.00' x 4.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 39.00'
Length= 710.0' Slope= 0.0035 '/'
Inlet Invert= 42.50', Outlet Invert= 40.00'



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Reach ER79: Southern Swale Connecting to Western Wetlands



Summary for Reach ER80: West Portion of Existing Central Swale

[62] Hint: Exceeded Reach PR81 OUTLET depth by 0.22' @ 12.28 hrs

Inflow Area = 8.102 ac, 25.65% Impervious, Inflow Depth = 1.68" for 2-yr (+15%) event
Inflow = 7.75 cfs @ 12.20 hrs, Volume= 1.137 af
Outflow = 7.44 cfs @ 12.27 hrs, Volume= 1.137 af, Atten= 4%, Lag= 4.3 min
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.14 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.49 fps, Avg. Travel Time= 21.4 min

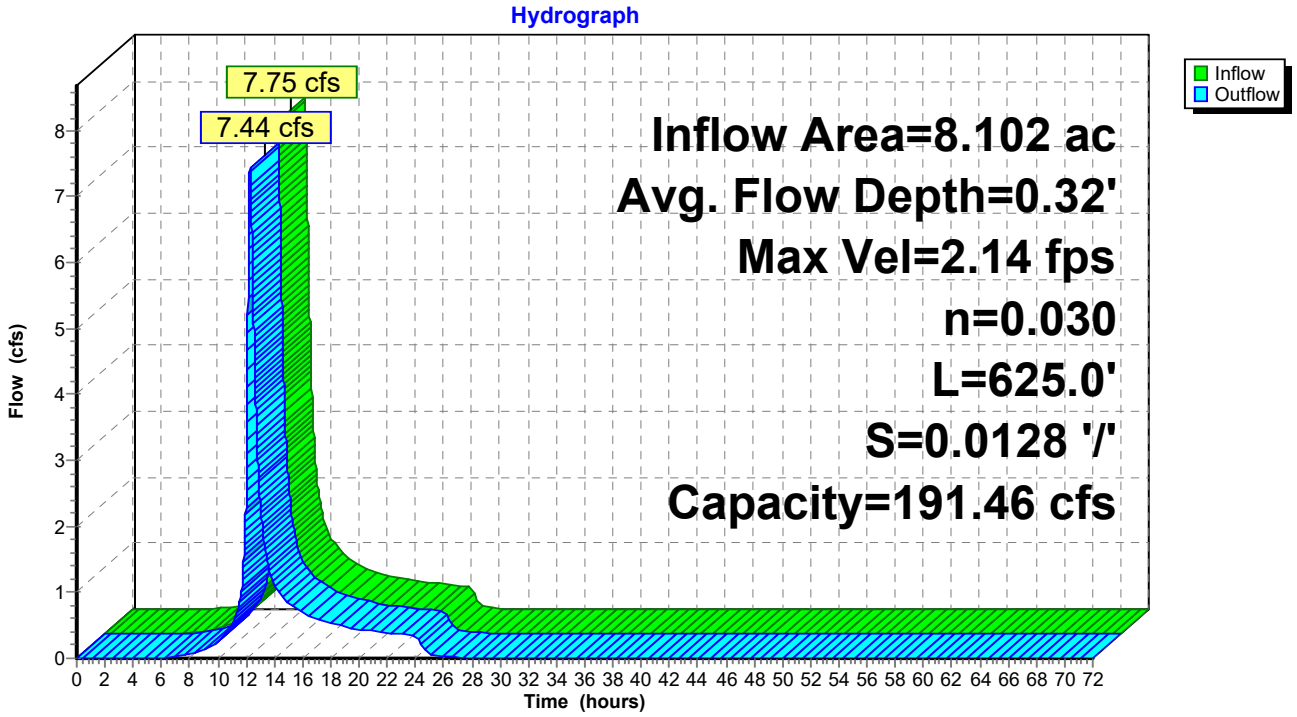
Peak Storage= 2,172 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.32' , Surface Width= 14.69'
Bank-Full Depth= 1.50' Flow Area= 37.5 sf, Capacity= 191.46 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 12.0 '/' Top Width= 43.00'
Length= 625.0' Slope= 0.0128 '/'
Inlet Invert= 50.50', Outlet Invert= 42.50'



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Reach ER80: West Portion of Existing Central Swale



Summary for Reach PR81: East Portion of Existing Central Swale

Inflow Area = 1.749 ac, 25.61% Impervious, Inflow Depth = 1.06" for 2-yr (+15%) event
Inflow = 1.15 cfs @ 12.15 hrs, Volume= 0.155 af
Outflow = 1.01 cfs @ 12.26 hrs, Volume= 0.155 af, Atten= 12%, Lag= 6.7 min
Routed to Reach ER80 : West Portion of Existing Central Swale

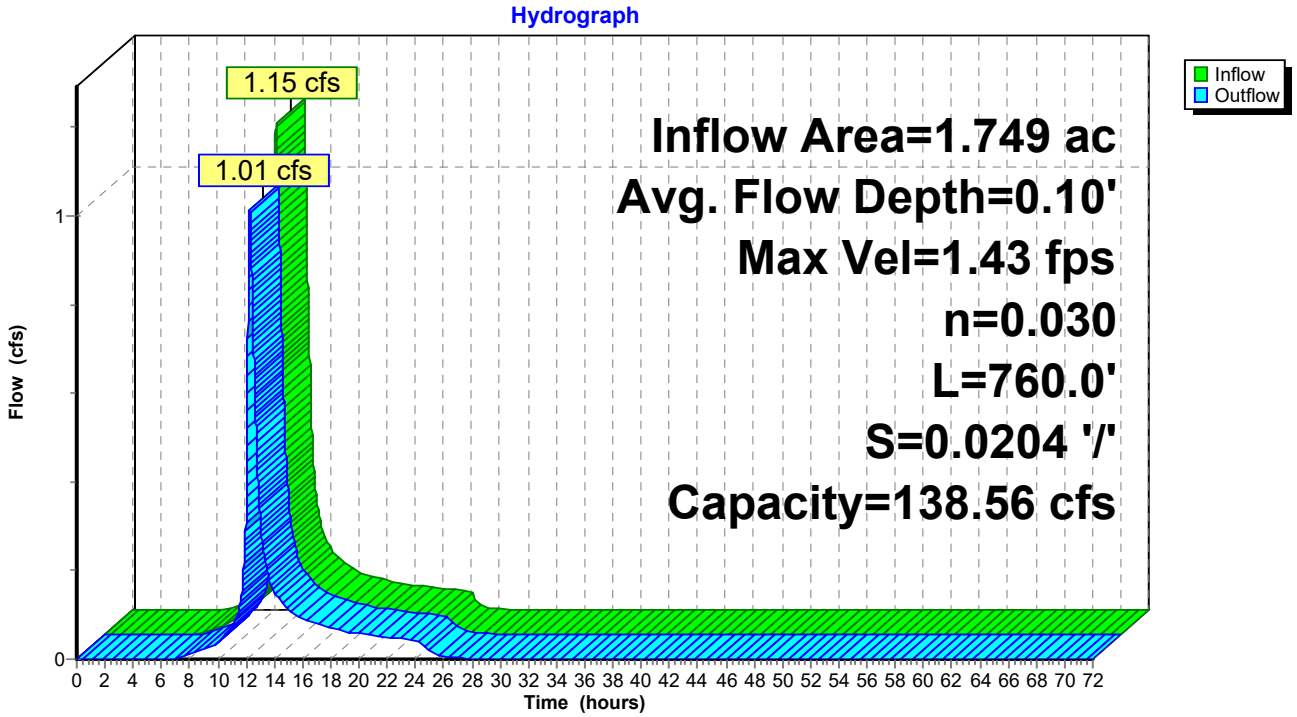
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.43 fps, Min. Travel Time= 8.8 min
Avg. Velocity = 0.48 fps, Avg. Travel Time= 26.3 min

Peak Storage= 537 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 7.77'
Bank-Full Depth= 1.50' Flow Area= 19.5 sf, Capacity= 138.56 cfs

7.00' x 1.50' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 19.00'
Length= 760.0' Slope= 0.0204 '/'
Inlet Invert= 66.00', Outlet Invert= 50.50'



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Summary for Pond EP51: Existing Pond Along Existing Driveway

Inflow Area = 0.851 ac, 12.82% Impervious, Inflow Depth = 1.62" for 2-yr (+15%) event
Inflow = 1.13 cfs @ 12.08 hrs, Volume= 0.115 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond PP59 : Existing Transferance Swale
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond PP59 : Existing Transferance Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.77' @ 72.00 hrs Surf.Area= 7,024 sf Storage= 4,999 cf
Flood Elev= 77.50' Surf.Area= 16,000 sf Storage= 43,500 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	43,500 cf	**Existing Pond (Prismatic)**Listed below (Recalc)

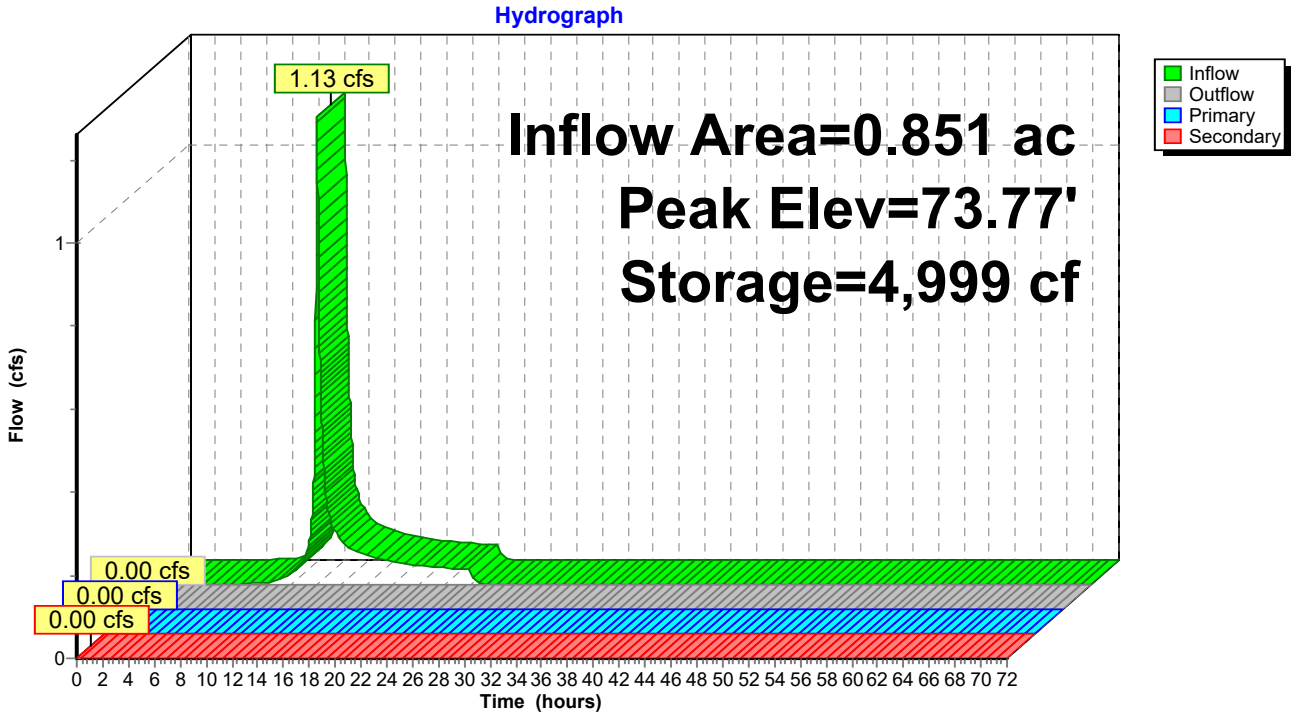
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.00	6,000	0	0
76.00	10,000	24,000	24,000
77.50	16,000	19,500	43,500

Device	Routing	Invert	Outlet Devices
#1	Primary	75.71'	**12.0" Round 12" CMP** L= 20.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 75.71' / 75.04' S= 0.0335 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	77.00'	**20.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=71.00' (Dynamic Tailwater)
1=12" CMP (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=73.00' TW=71.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond EP51: Existing Pond Along Existing Driveway



Summary for Pond PCB11: Proposed Catch Basin 11

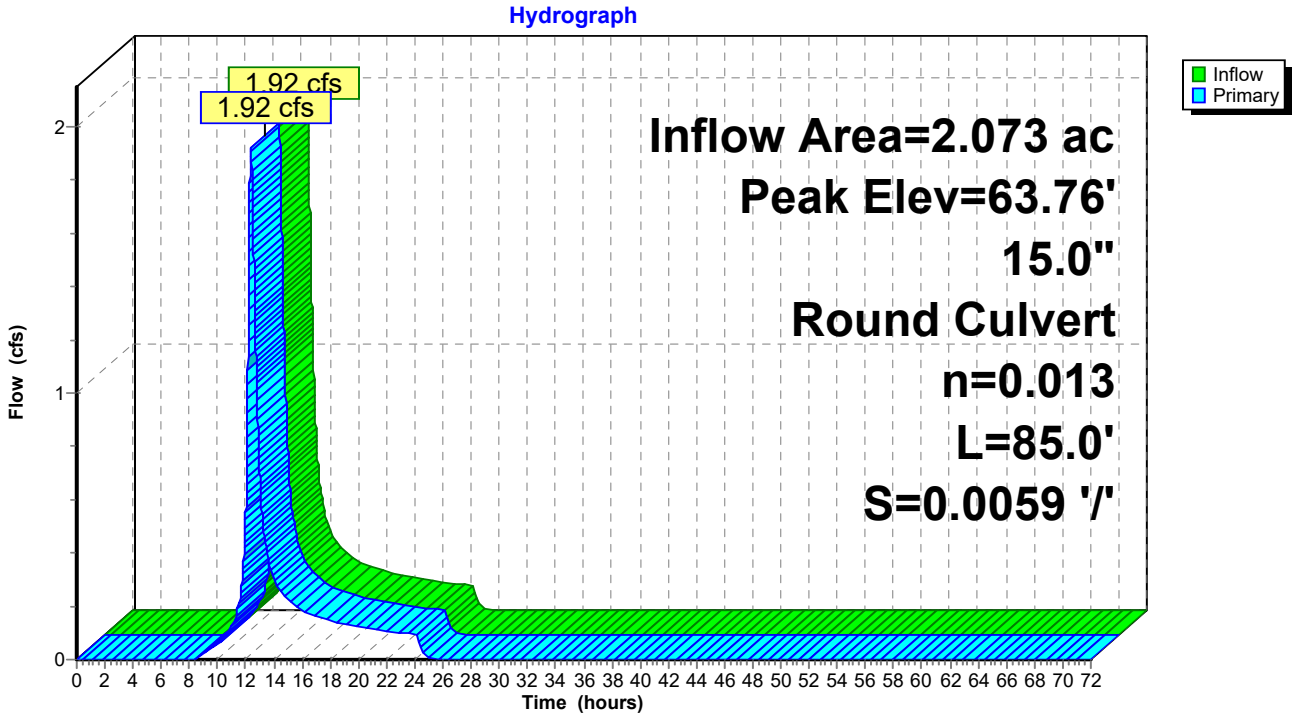
Inflow Area = 2.073 ac, 22.64% Impervious, Inflow Depth = 1.73" for 2-yr (+15%) event
Inflow = 1.92 cfs @ 12.36 hrs, Volume= 0.298 af
Outflow = 1.92 cfs @ 12.36 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min
Primary = 1.92 cfs @ 12.36 hrs, Volume= 0.298 af
Routed to Pond PP154 : Proposed Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 63.76' @ 12.36 hrs
Flood Elev= 68.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**15.0" Round 15" HDPE (PDL14)** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 63.00' / 62.50' S= 0.0059 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.92 cfs @ 12.36 hrs HW=63.76' TW=62.86' (Dynamic Tailwater)
↑—**1=15" HDPE (PDL14)** (Barrel Controls 1.92 cfs @ 3.50 fps)

Pond PCB11: Proposed Catch Basin 11



Summary for Pond PCB12: Proposed Catch Basin 12

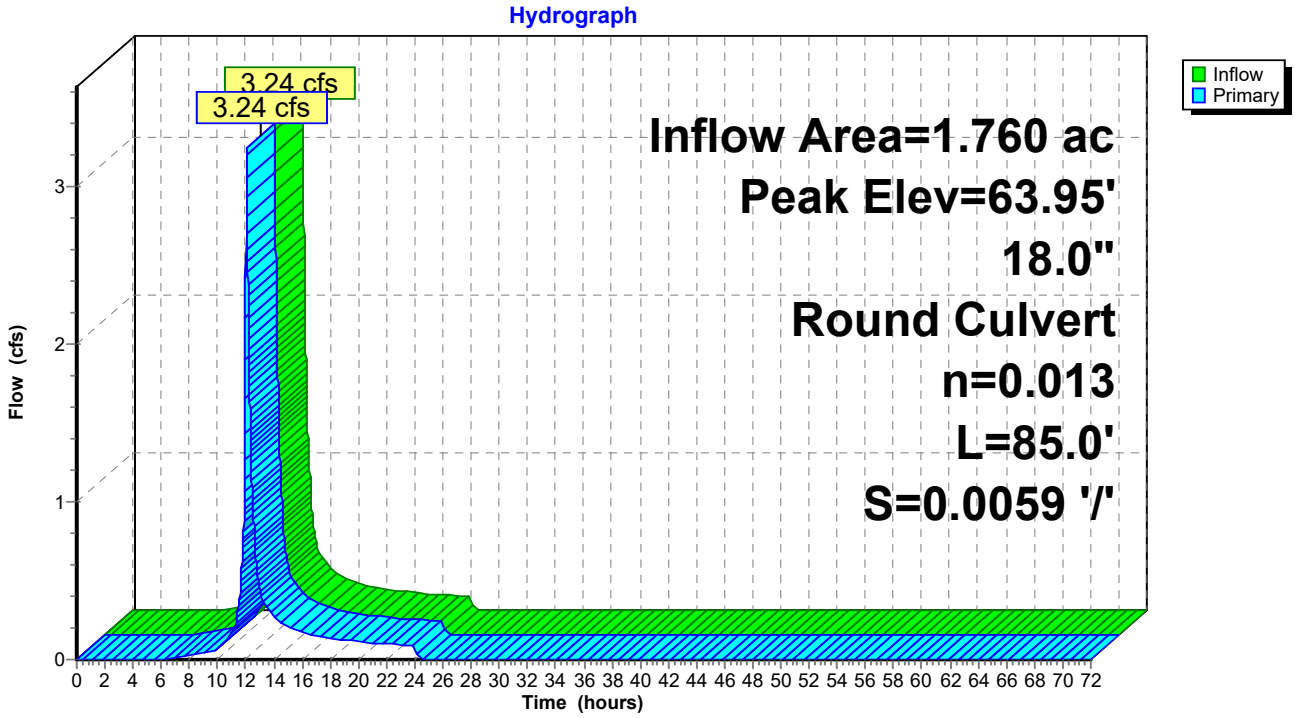
Inflow Area = 1.760 ac, 43.39% Impervious, Inflow Depth = 2.08" for 2-yr (+15%) event
Inflow = 3.24 cfs @ 12.05 hrs, Volume= 0.305 af
Outflow = 3.24 cfs @ 12.05 hrs, Volume= 0.305 af, Atten= 0%, Lag= 0.0 min
Primary = 3.24 cfs @ 12.05 hrs, Volume= 0.305 af
Routed to Pond PP154 : Proposed Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 63.95' @ 12.05 hrs
Flood Elev= 66.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**18.0" Round 18" HDPE (PDL13)** L= 85.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 63.00' / 62.50' S= 0.0059 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.23 cfs @ 12.05 hrs HW=63.95' TW=61.52' (Dynamic Tailwater)
↑**1=18" HDPE (PDL13)** (Barrel Controls 3.23 cfs @ 3.90 fps)

Pond PCB12: Proposed Catch Basin 12



Summary for Pond PCB14: Proposed Catch Basin 14

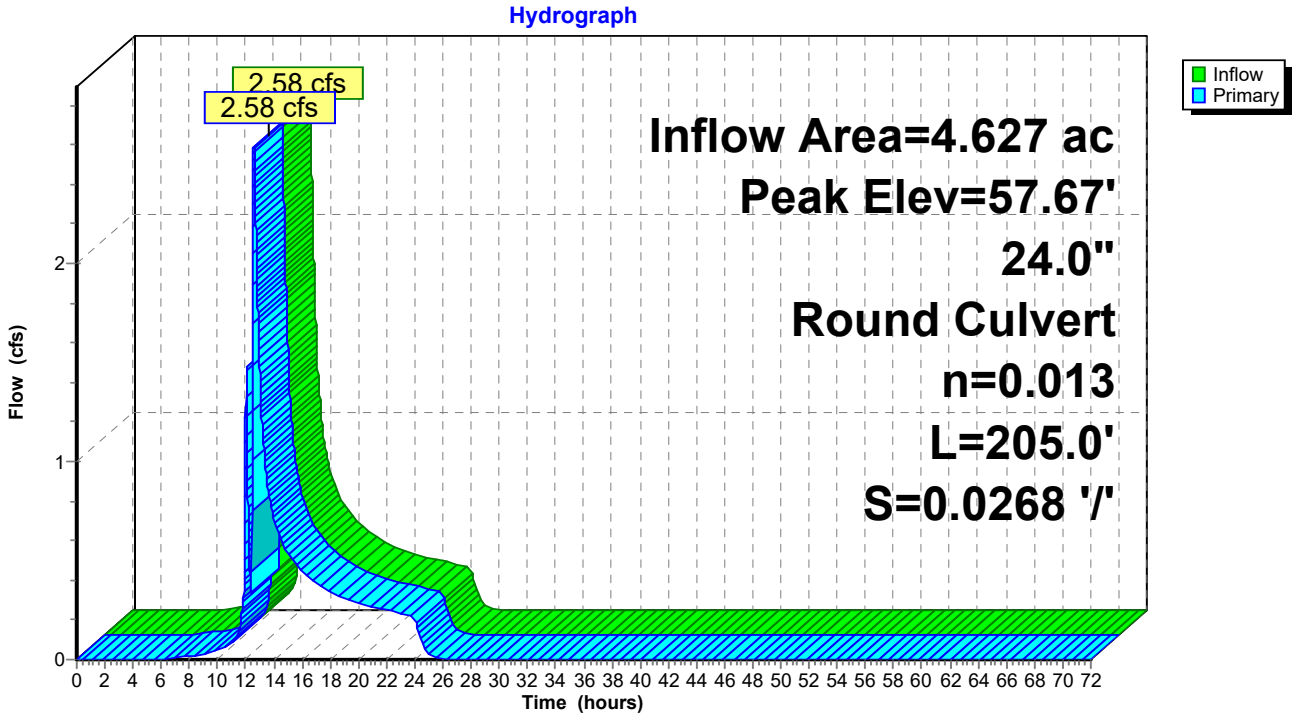
Inflow Area = 4.627 ac, 32.94% Impervious, Inflow Depth = 1.36" for 2-yr (+15%) event
Inflow = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af
Outflow = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af
Routed to Pond PDMH14A : Proposed Manhole 14A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 57.67' @ 12.57 hrs
Flood Elev= 64.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**24.0" Round 24" HDPE (PDL17)** L= 205.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 57.00' / 51.50' S= 0.0268 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.58 cfs @ 12.57 hrs HW=57.67' TW=52.28' (Dynamic Tailwater)
↑—**1=24" HDPE (PDL17)** (Inlet Controls 2.58 cfs @ 2.79 fps)

Pond PCB14: Proposed Catch Basin 14



Summary for Pond PCB4: Proposed Catch Basin 4

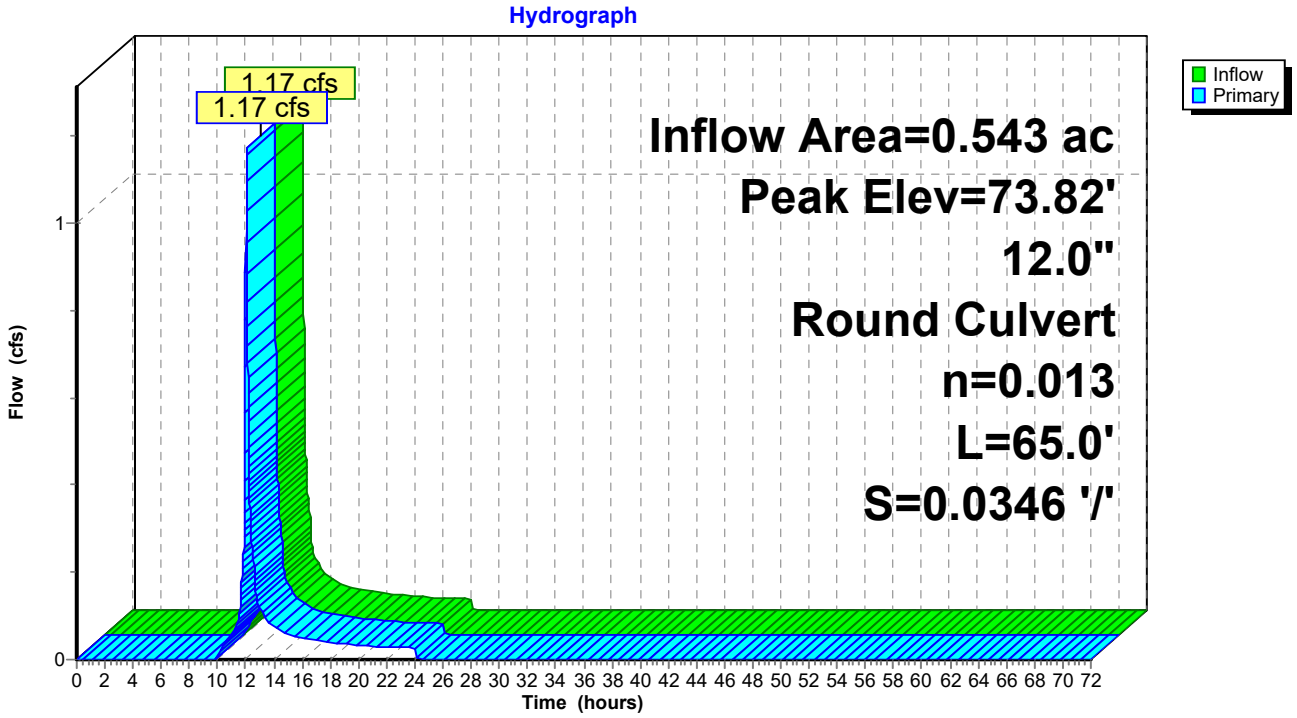
Inflow Area = 0.543 ac, 32.10% Impervious, Inflow Depth = 1.87" for 2-yr (+15%) event
Inflow = 1.17 cfs @ 12.05 hrs, Volume= 0.085 af
Outflow = 1.17 cfs @ 12.05 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.05 hrs, Volume= 0.085 af
Routed to Pond PDMH8 : Proposed Manhole 8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.82' @ 12.05 hrs
Flood Elev= 77.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.25'	**12.0" Round 12" HDPE (PDL9)** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.25' / 71.00' S= 0.0346 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.17 cfs @ 12.05 hrs HW=73.81' TW=70.10' (Dynamic Tailwater)
↑**1=12" HDPE (PDL9)** (Inlet Controls 1.17 cfs @ 2.56 fps)

Pond PCB4: Proposed Catch Basin 4



Summary for Pond PCB5: Proposed Catch Basin 5

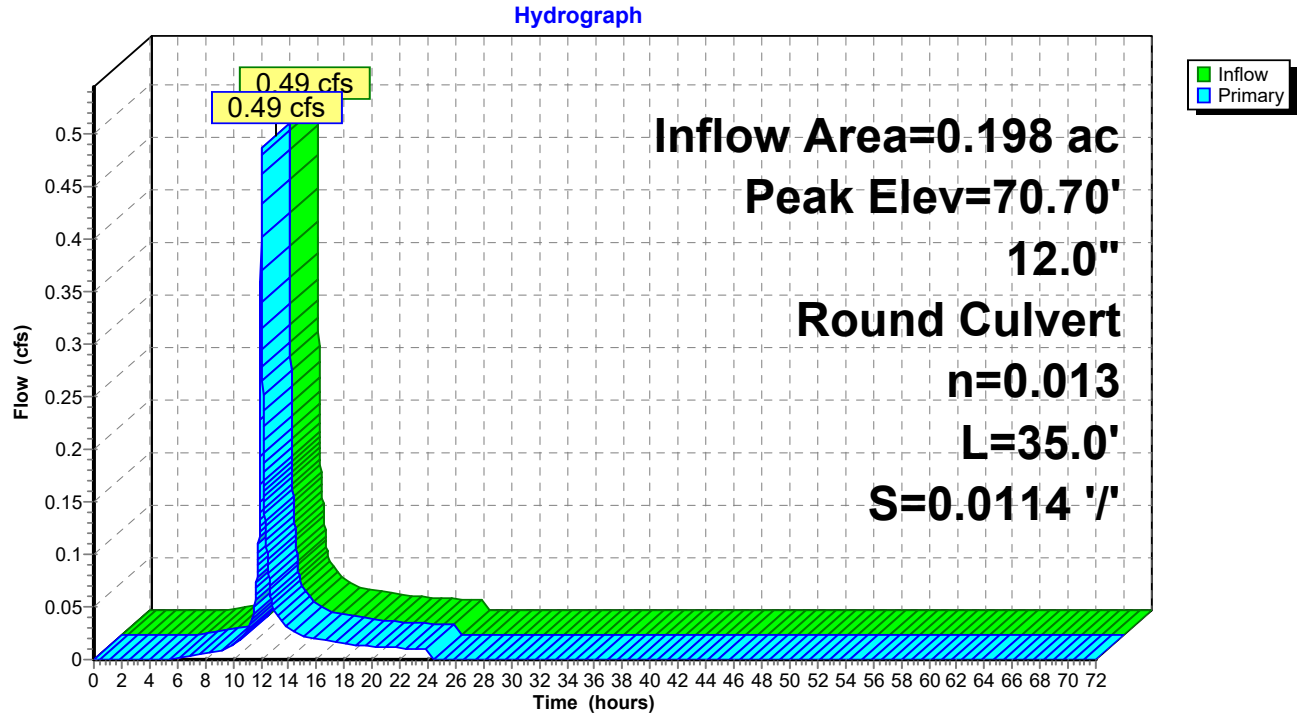
Inflow Area = 0.198 ac, 46.41% Impervious, Inflow Depth = 2.20" for 2-yr (+15%) event
Inflow = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af
Outflow = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af
Routed to Pond PCB7 : Proposed Catch Basin 7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.70' @ 12.05 hrs
Flood Elev= 73.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.20'	**12.0" Round 12" HDPE (PDL6)** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.20' / 69.80' S= 0.0114 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.47 cfs @ 12.04 hrs HW=70.69' TW=70.55' (Dynamic Tailwater)
1=12" HDPE (PDL6) (Outlet Controls 0.47 cfs @ 1.79 fps)

Pond PCB5: Proposed Catch Basin 5



Summary for Pond PCB6: Proposed Catch Basin 6

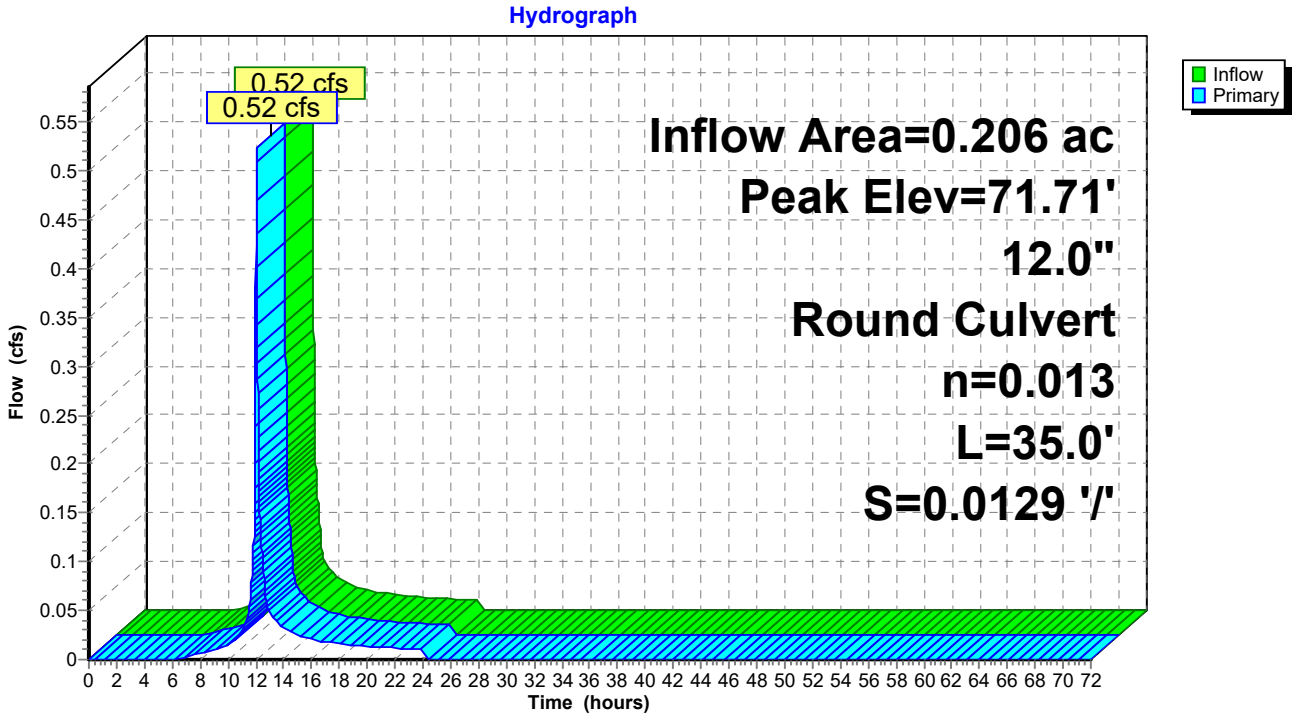
Inflow Area = 0.206 ac, 49.33% Impervious, Inflow Depth = 2.27" for 2-yr (+15%) event
Inflow = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af
Outflow = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af
Routed to Pond PDMH6A : Proposed Manhole 6A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.71' @ 12.04 hrs
Flood Elev= 73.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	71.35'	**12.0" Round 12" HDPE (PDL7A)** L= 35.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.35' / 70.90' S= 0.0129 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.52 cfs @ 12.04 hrs HW=71.71' TW=71.20' (Dynamic Tailwater)
1=12" HDPE (PDL7A) (Outlet Controls 0.52 cfs @ 3.04 fps)

Pond PCB6: Proposed Catch Basin 6



Summary for Pond PCB7: Proposed Catch Basin 7

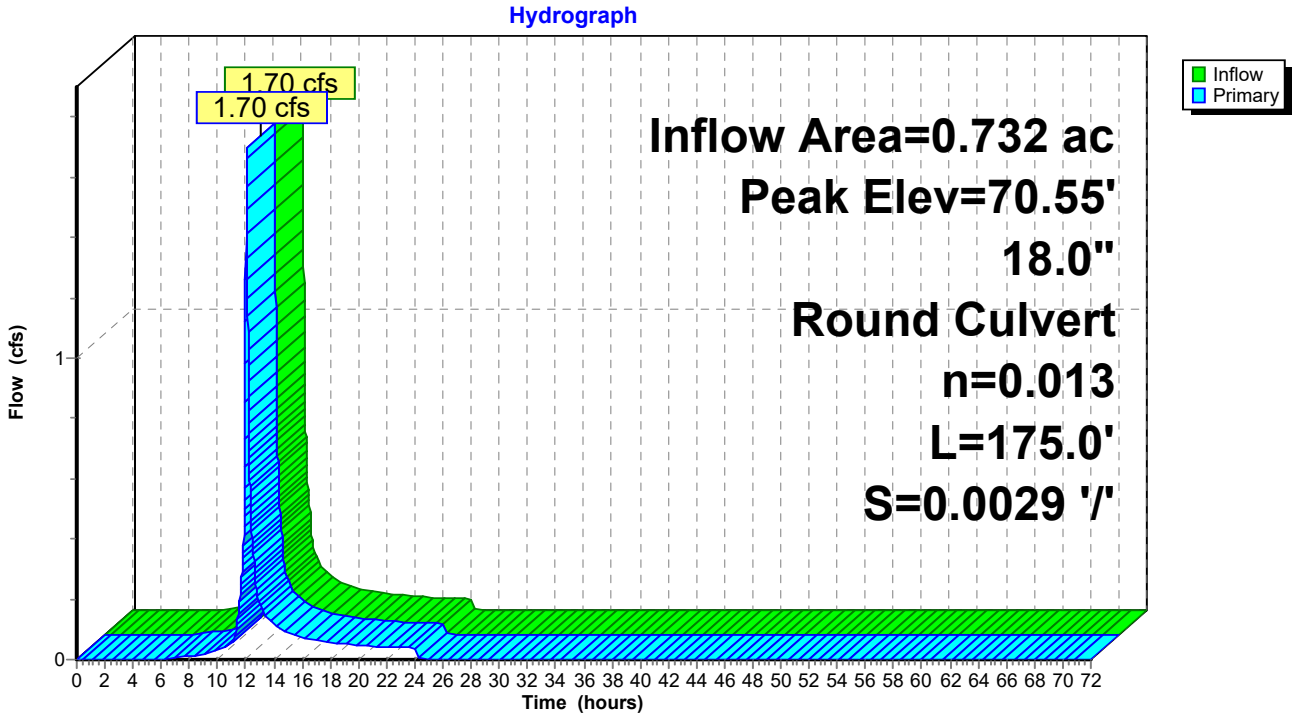
Inflow Area = 0.732 ac, 50.48% Impervious, Inflow Depth = 2.16" for 2-yr (+15%) event
Inflow = 1.70 cfs @ 12.05 hrs, Volume= 0.132 af
Outflow = 1.70 cfs @ 12.05 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min
Primary = 1.70 cfs @ 12.05 hrs, Volume= 0.132 af
Routed to Pond PDMH8 : Proposed Manhole 8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.55' @ 12.05 hrs
Flood Elev= 74.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	69.70'	**18.0" Round 18" HDPE (PDL8)** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 69.70' / 69.20' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.69 cfs @ 12.05 hrs HW=70.55' TW=70.10' (Dynamic Tailwater)
↑**1=18" HDPE (PDL8)** (Outlet Controls 1.69 cfs @ 2.36 fps)

Pond PCB7: Proposed Catch Basin 7



Summary for Pond PDMH10: Proposed Manhole 10

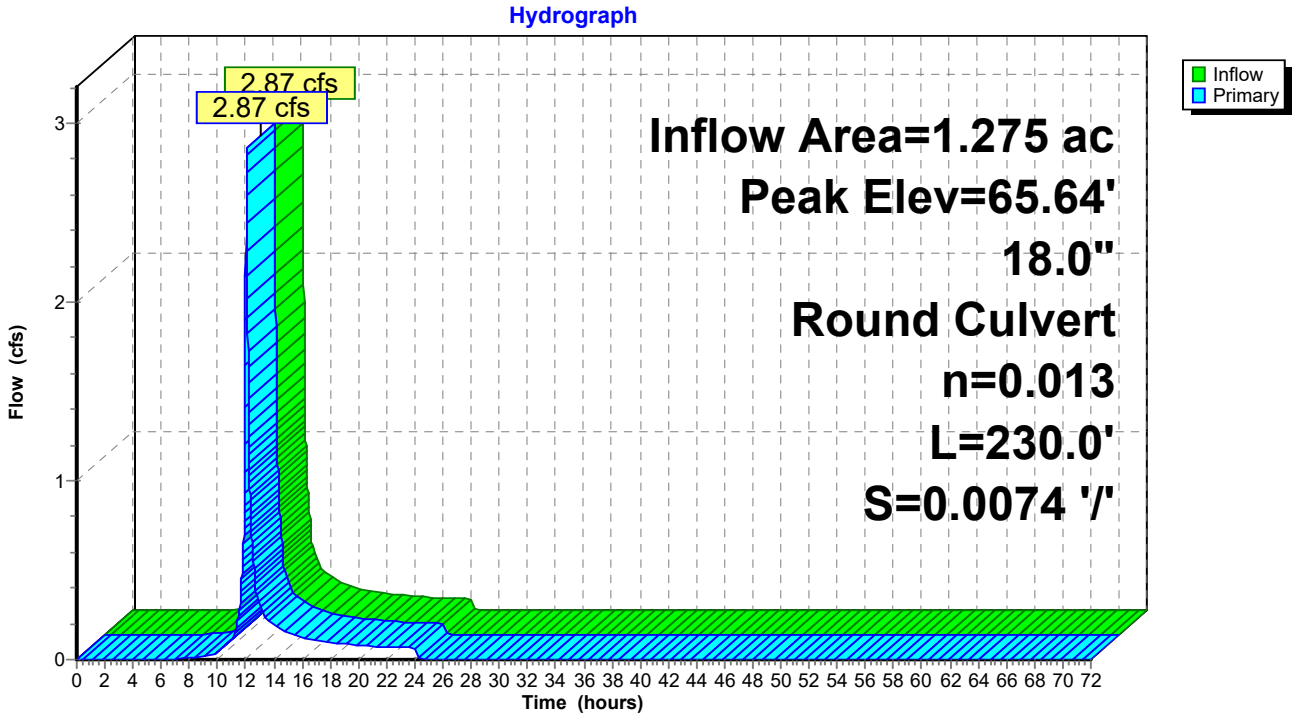
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 2.04" for 2-yr (+15%) event
Inflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Outflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Routed to Pond PCB12 : Proposed Catch Basin 12

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.64' @ 12.05 hrs
Flood Elev= 67.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	64.80'	**18.0" Round 18" HDPE (PDL12)** L= 230.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 64.80' / 63.10' S= 0.0074 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.87 cfs @ 12.05 hrs HW=65.64' TW=63.95' (Dynamic Tailwater)
↑**1=18" HDPE (PDL12)** (Outlet Controls 2.87 cfs @ 4.10 fps)

Pond PDMH10: Proposed Manhole 10



Summary for Pond PDMH14A: Proposed Manhole 14A

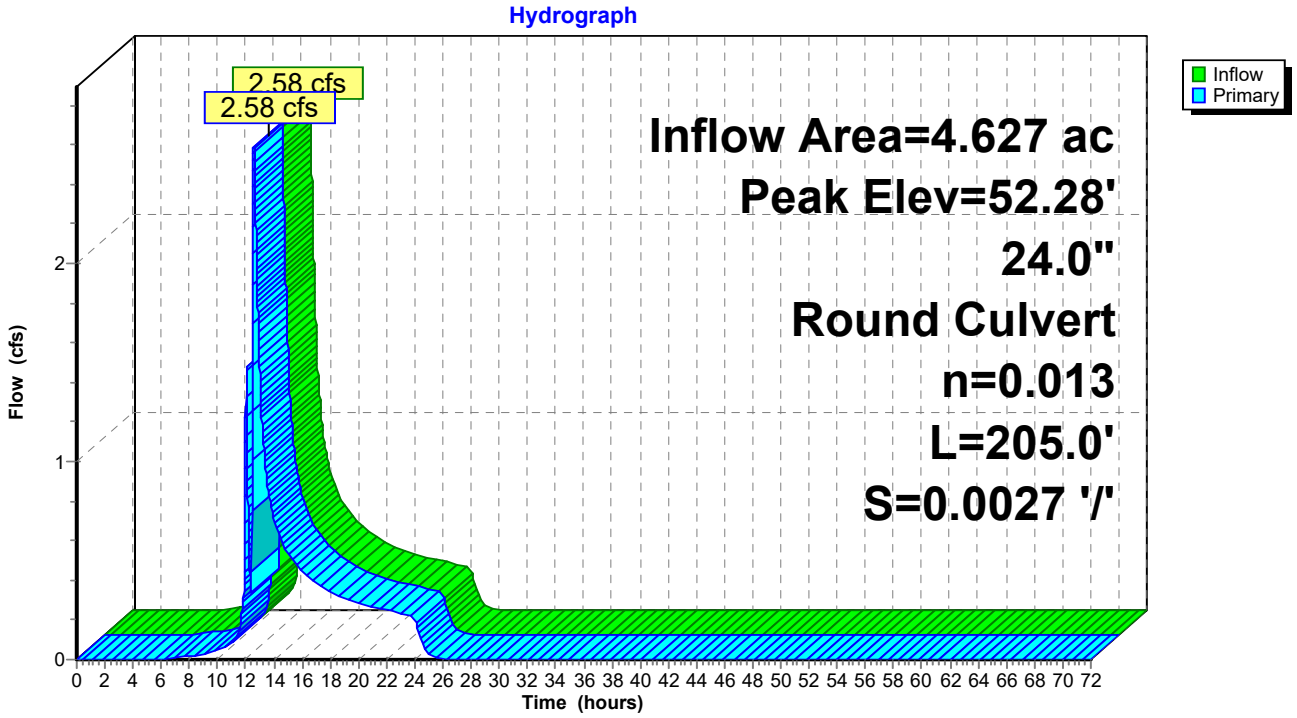
Inflow Area = 4.627 ac, 32.94% Impervious, Inflow Depth = 1.36" for 2-yr (+15%) event
Inflow = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af
Outflow = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af
Routed to Pond PDMH14B : Proposed Manhole 14B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 52.28' @ 12.57 hrs
Flood Elev= 64.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.40'	**24.0" Round 24" HDPE (PDL18)** L= 205.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.40' / 50.85' S= 0.0027 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.58 cfs @ 12.57 hrs HW=52.28' TW=51.61' (Dynamic Tailwater)
↑—**1=24" HDPE (PDL18)** (Outlet Controls 2.58 cfs @ 2.85 fps)

Pond PDMH14A: Proposed Manhole 14A



Summary for Pond PDMH14B: Proposed Manhole 14B

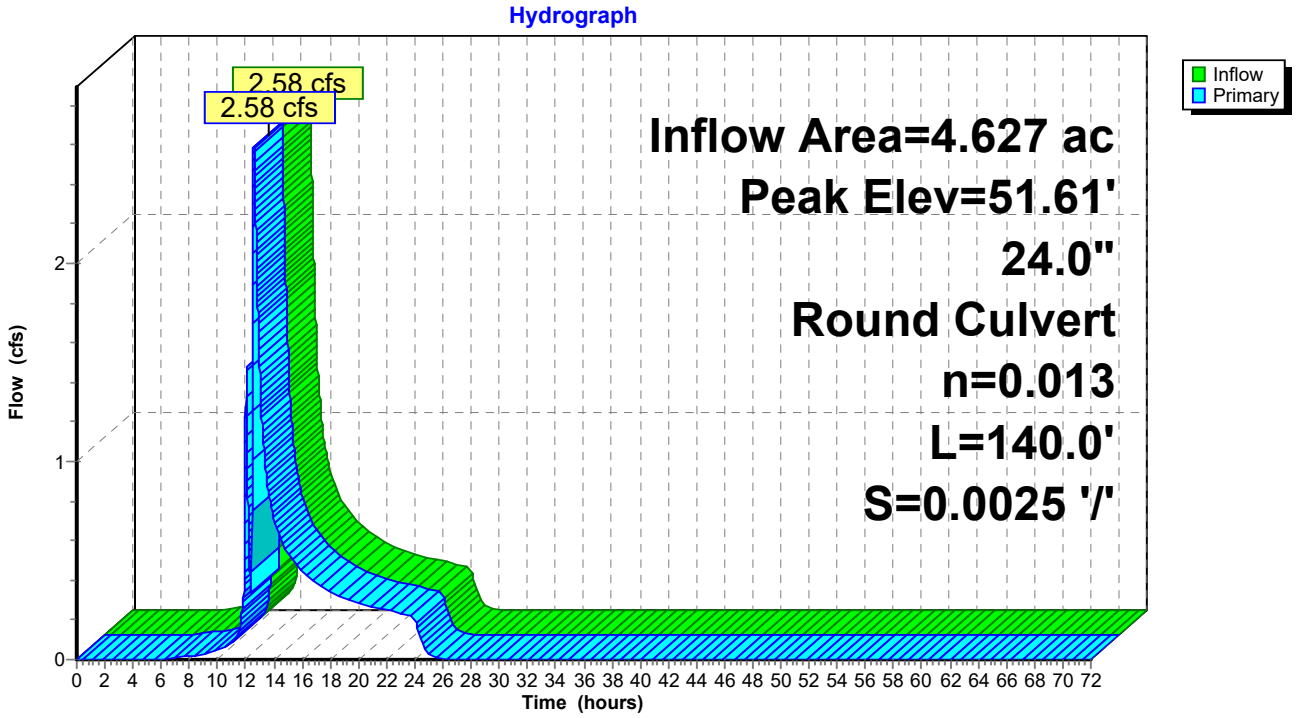
Inflow Area = 4.627 ac, 32.94% Impervious, Inflow Depth = 1.36" for 2-yr (+15%) event
Inflow = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af
Outflow = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.57 hrs, Volume= 0.523 af
Routed to Pond PP155 : Proposed Bioretention Basin "B2"

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 51.61' @ 12.57 hrs
Flood Elev= 64.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.75'	**24.0" Round 24" HDPE (PDL19)** L= 140.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.75' / 50.40' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.58 cfs @ 12.57 hrs HW=51.61' TW=47.37' (Dynamic Tailwater)
↑—**1=24" HDPE (PDL19)** (Barrel Controls 2.58 cfs @ 2.95 fps)

Pond PDMH14B: Proposed Manhole 14B



Summary for Pond PDMH3A: Proposed Manhole 3A

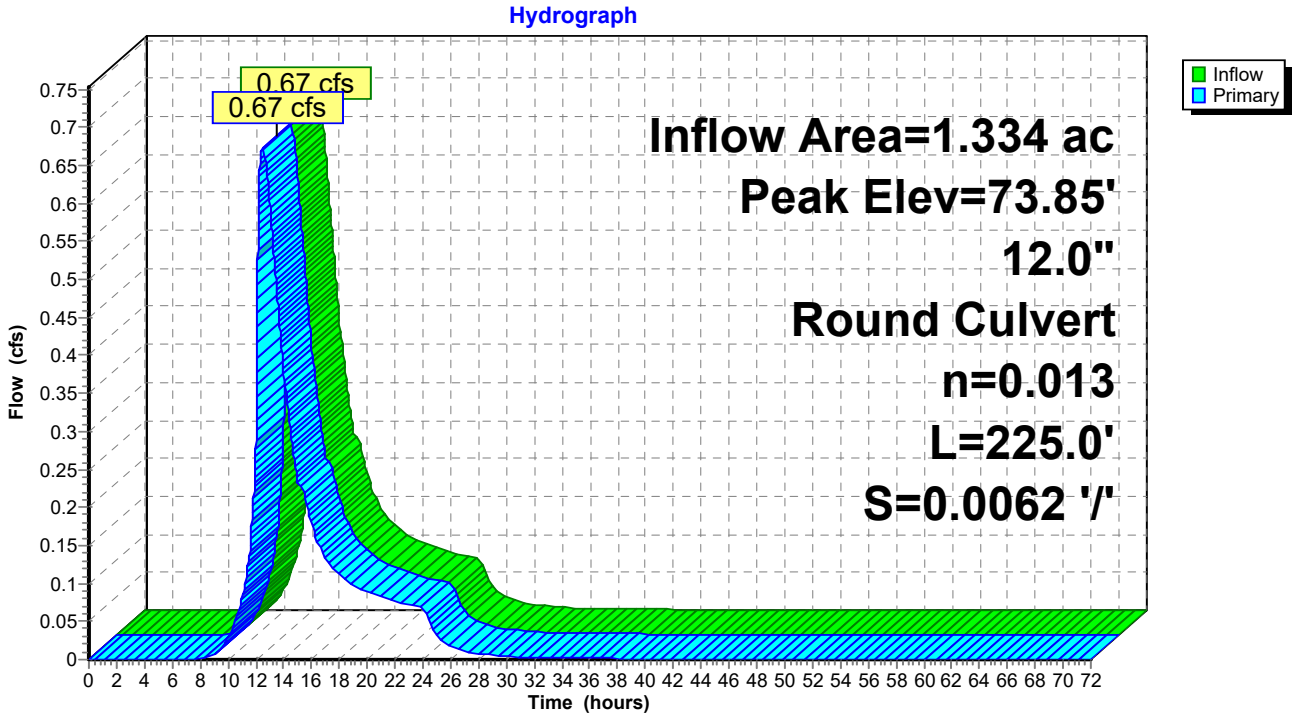
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 2.04" for 2-yr (+15%) event
Inflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Outflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Routed to Pond PDMH3B : Proposed Manhole 3B

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.85' @ 12.50 hrs
Flood Elev= 76.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	73.40'	**12.0" Round 12" HDPE Pipe (PDL4A)** L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.40' / 72.00' S= 0.0062 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.50 hrs HW=73.85' TW=72.31' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4A)** (Barrel Controls 0.67 cfs @ 2.87 fps)

Pond PDMH3A: Proposed Manhole 3A



Summary for Pond PDMH3B: Proposed Manhole 3B

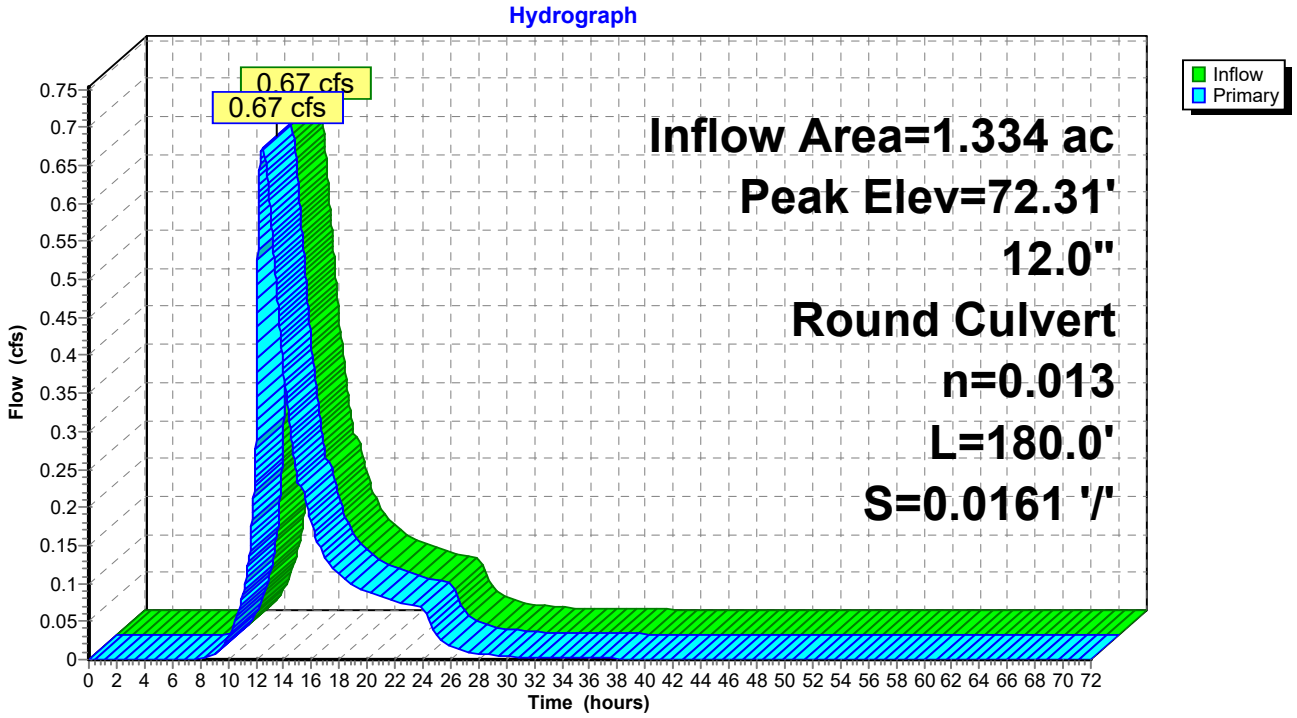
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 2.04" for 2-yr (+15%) event
Inflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Outflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Routed to Pond PDMH3C : Proposed Manhole 3C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.31' @ 12.50 hrs
Flood Elev= 74.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	71.90'	**12.0" Round 12" HDPE Pipe (PDL4B)** L= 180.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.90' / 69.00' S= 0.0161 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.50 hrs HW=72.31' TW=69.31' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4B)** (Inlet Controls 0.67 cfs @ 2.19 fps)

Pond PDMH3B: Proposed Manhole 3B



Summary for Pond PDMH3C: Proposed Manhole 3C

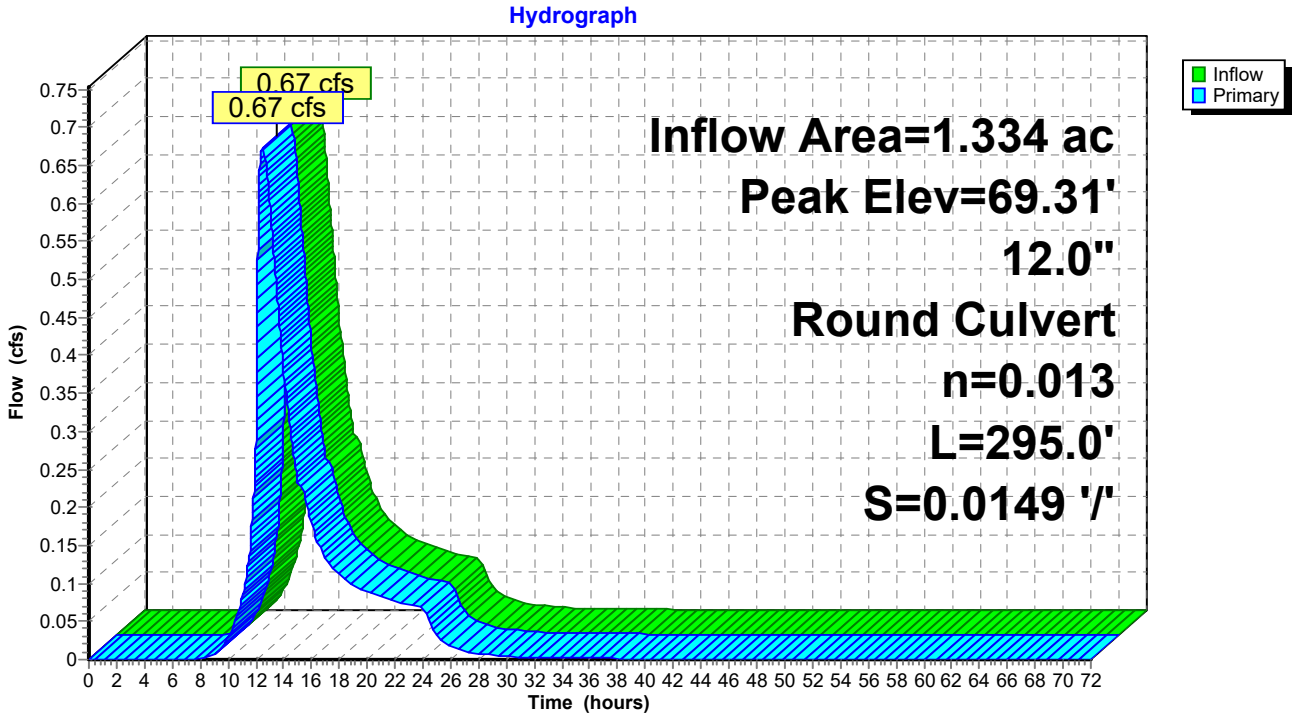
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 2.04" for 2-yr (+15%) event
Inflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Outflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Routed to Pond PDMH3D : Proposed Manhole 3D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 69.31' @ 12.50 hrs
Flood Elev= 71.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	68.90'	**12.0" Round 12" HDPE Pipe (PDL4C)** L= 295.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.90' / 64.50' S= 0.0149 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.50 hrs HW=69.31' TW=64.81' (Dynamic Tailwater)
↑**1=12" HDPE Pipe (PDL4C)** (Inlet Controls 0.67 cfs @ 2.19 fps)

Pond PDMH3C: Proposed Manhole 3C



Summary for Pond PDMH3D: Proposed Manhole 3D

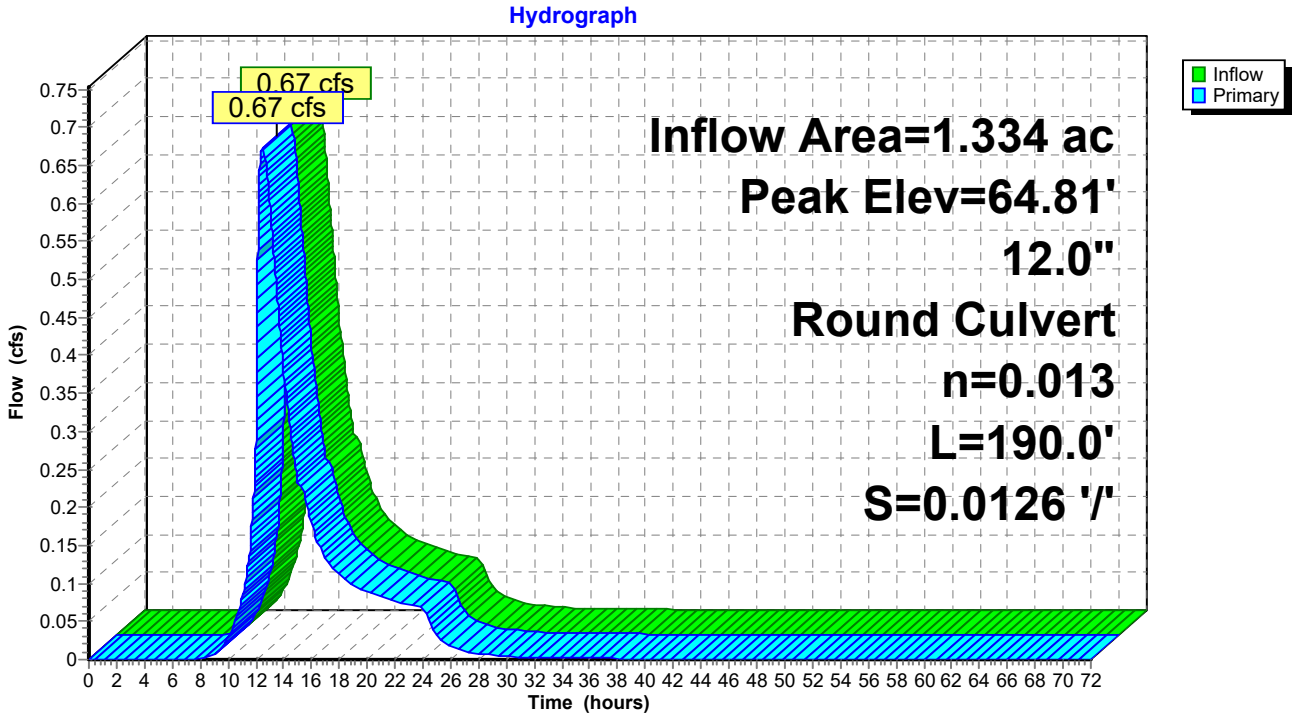
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 2.04" for 2-yr (+15%) event
Inflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Outflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Routed to Pond PDMH3E : Proposed Manhole 3E

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 64.81' @ 12.50 hrs
Flood Elev= 67.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	64.40'	**12.0" Round 12" HDPE Pipe (PDL4D)** L= 190.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 64.40' / 62.00' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.50 hrs HW=64.81' TW=62.31' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4D)** (Inlet Controls 0.67 cfs @ 2.19 fps)

Pond PDMH3D: Proposed Manhole 3D



Summary for Pond PDMH3E: Proposed Manhole 3E

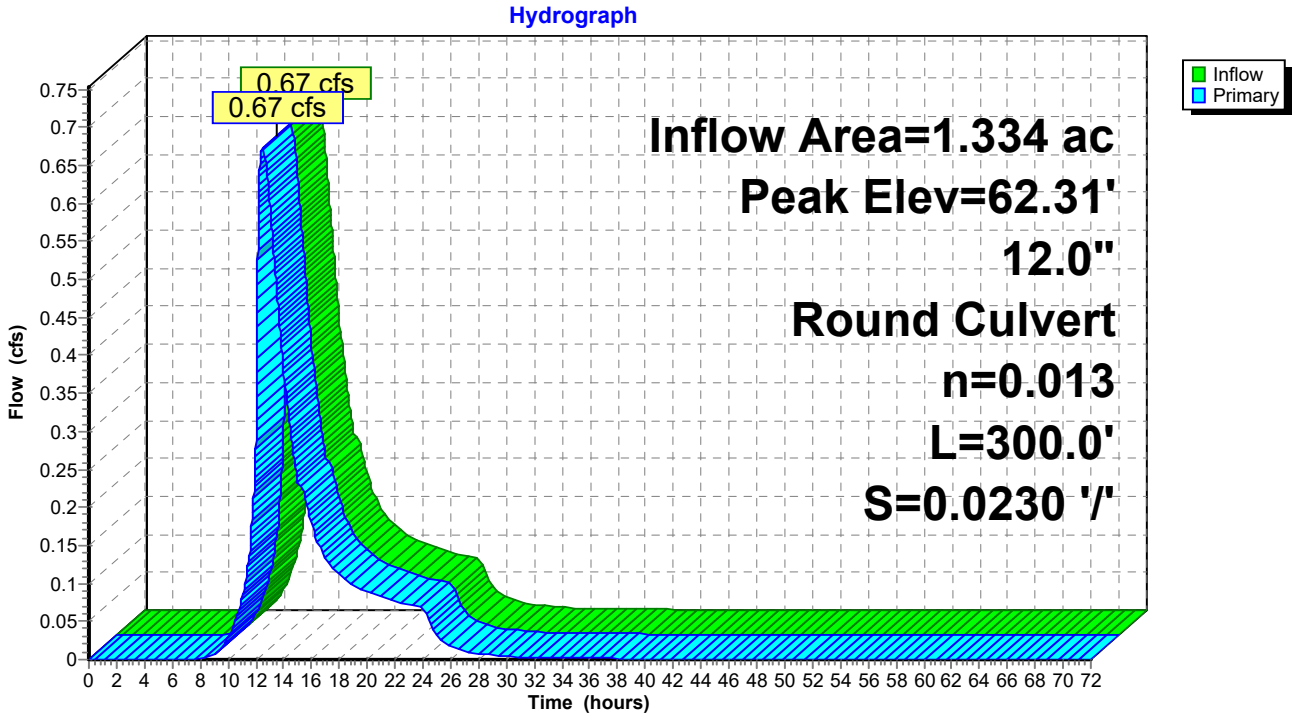
Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth > 2.04" for 2-yr (+15%) event
Inflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Outflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Routed to Link L101B : Central Wetland Finger

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 62.31' @ 12.50 hrs
Flood Elev= 68.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	61.90'	**12.0" Round 12" HDPE Pipe (PDL4E)** L= 300.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.90' / 55.00' S= 0.0230 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.50 hrs HW=62.31' TW=0.00' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL4E)** (Inlet Controls 0.67 cfs @ 2.19 fps)

Pond PDMH3E: Proposed Manhole 3E



Summary for Pond PDMH6A: Proposed Manhole 6A

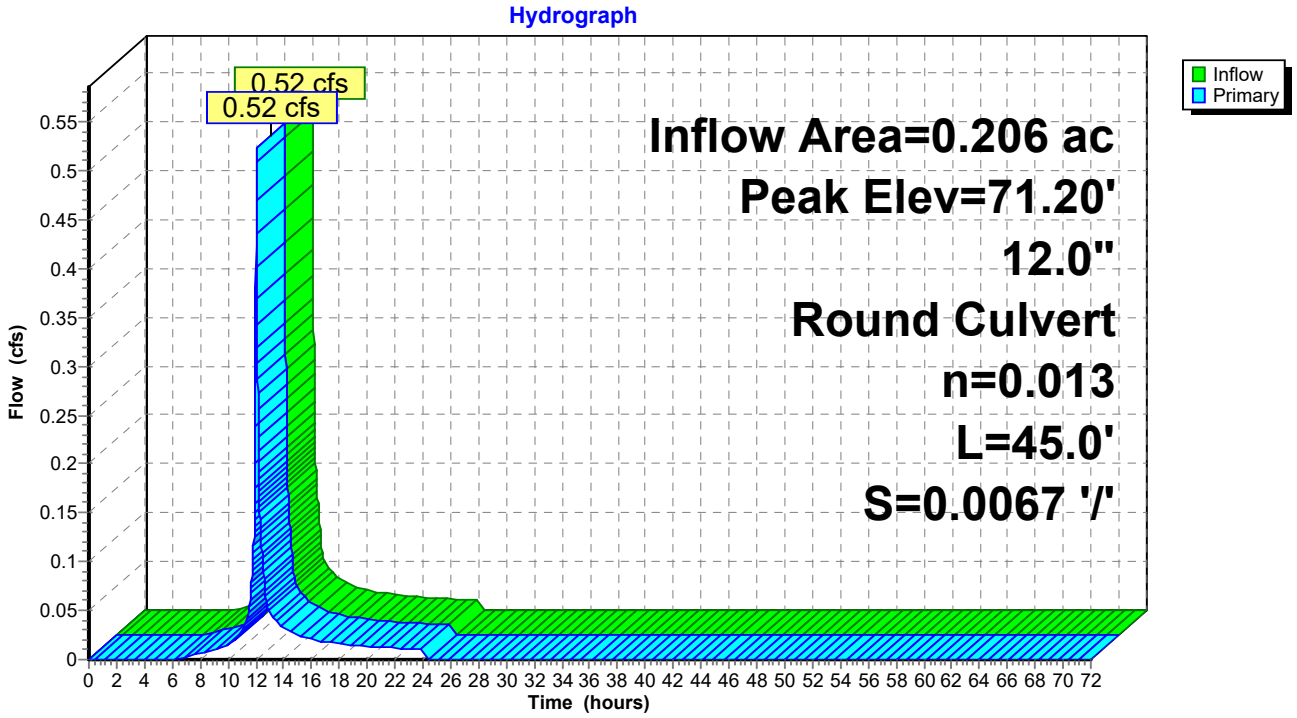
Inflow Area = 0.206 ac, 49.33% Impervious, Inflow Depth = 2.27" for 2-yr (+15%) event
Inflow = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af
Outflow = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af
Routed to Pond PCB7 : Proposed Catch Basin 7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.20' @ 12.04 hrs
Flood Elev= 72.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	70.80'	**12.0" Round 12" HDPE Pipe (PDL7B)** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.80' / 70.50' S= 0.0067 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.52 cfs @ 12.04 hrs HW=71.20' TW=70.55' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL7B)** (Barrel Controls 0.52 cfs @ 2.60 fps)

Pond PDMH6A: Proposed Manhole 6A



Summary for Pond PDMH8: Proposed Manhole 8

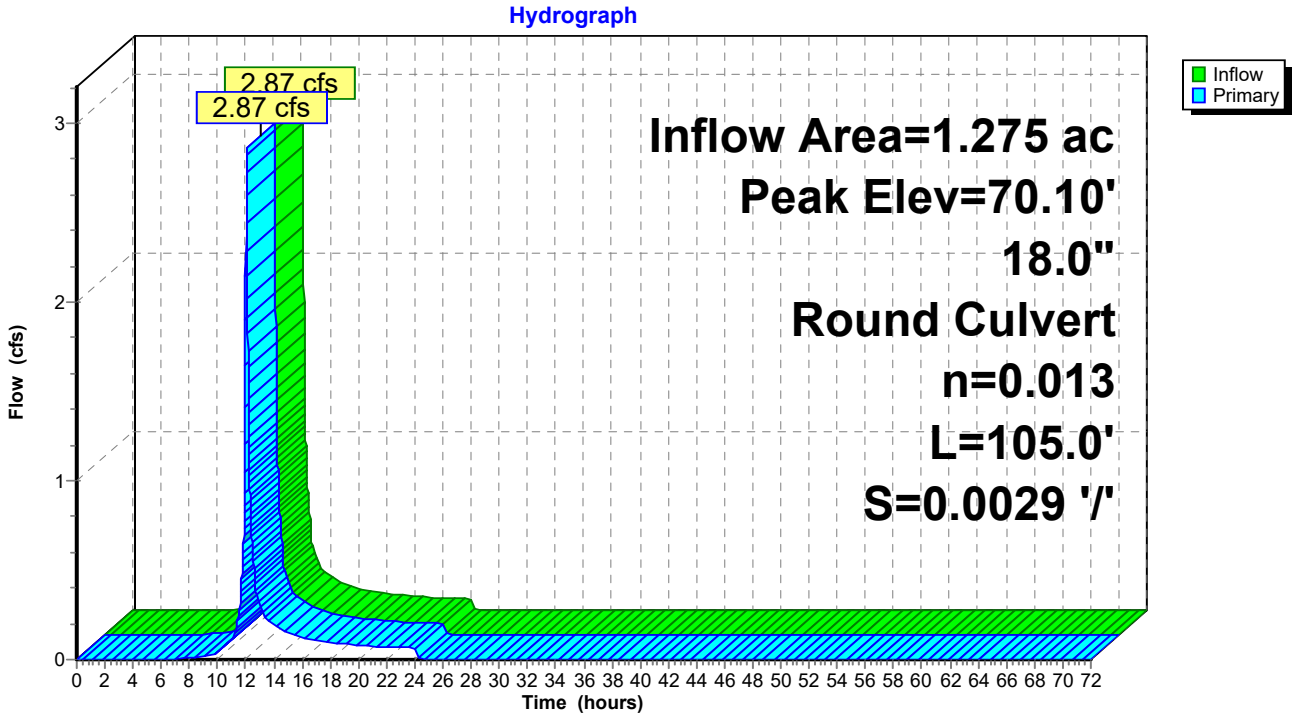
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 2.04" for 2-yr (+15%) event
Inflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Outflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Routed to Pond PDMH8A : Proposed Manhole 8A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.10' @ 12.05 hrs
Flood Elev= 75.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	69.10'	**18.0" Round 18" HDPE (PDL10A)** L= 105.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 69.10' / 68.80' S= 0.0029 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.87 cfs @ 12.05 hrs HW=70.10' TW=69.55' (Dynamic Tailwater)
1=18" HDPE (PDL10A) (Barrel Controls 2.87 cfs @ 3.22 fps)

Pond PDMH8: Proposed Manhole 8



Summary for Pond PDMH8A: Proposed Manhole 8A

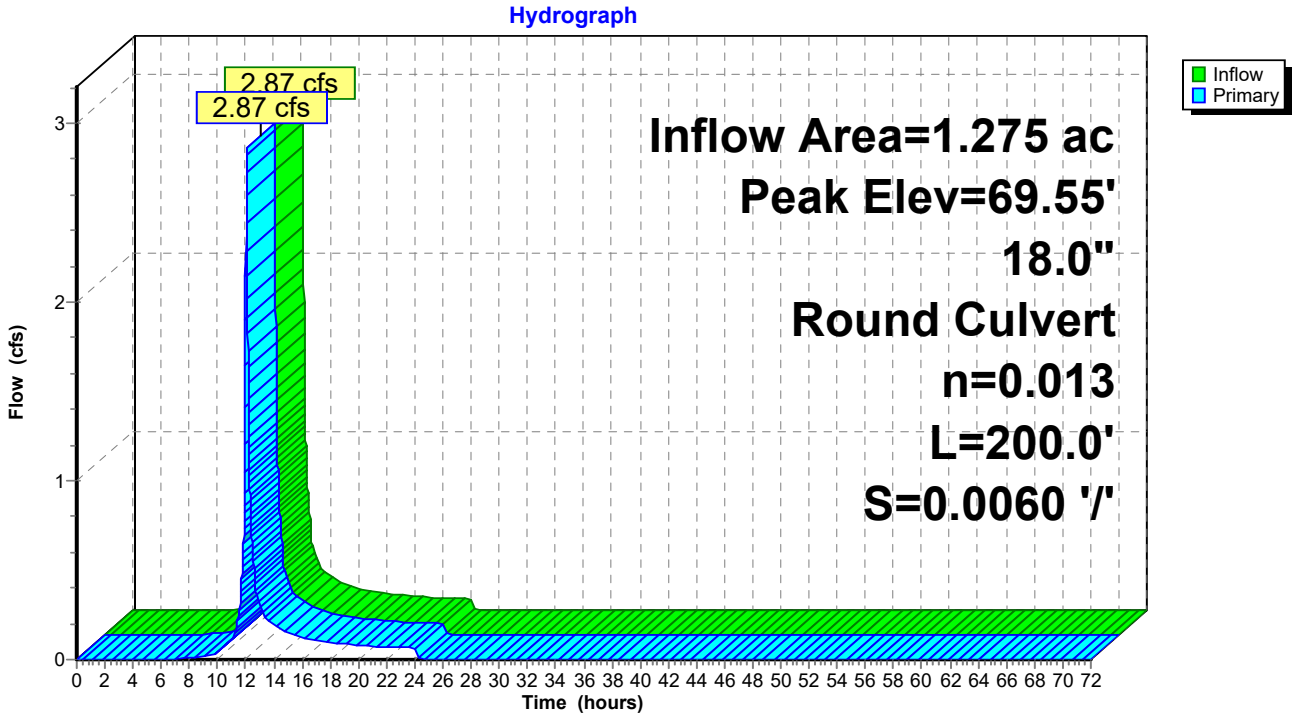
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 2.04" for 2-yr (+15%) event
Inflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Outflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Routed to Pond PDMH9 : Proposed Manhole 9

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 69.55' @ 12.05 hrs
Flood Elev= 73.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	68.70'	**18.0" Round 18" HDPE (PDL10B)** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.70' / 67.50' S= 0.0060 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.87 cfs @ 12.05 hrs HW=69.55' TW=67.79' (Dynamic Tailwater)
1=18" HDPE (PDL10B) (Barrel Controls 2.87 cfs @ 3.99 fps)

Pond PDMH8A: Proposed Manhole 8A



Summary for Pond PDMH9: Proposed Manhole 9

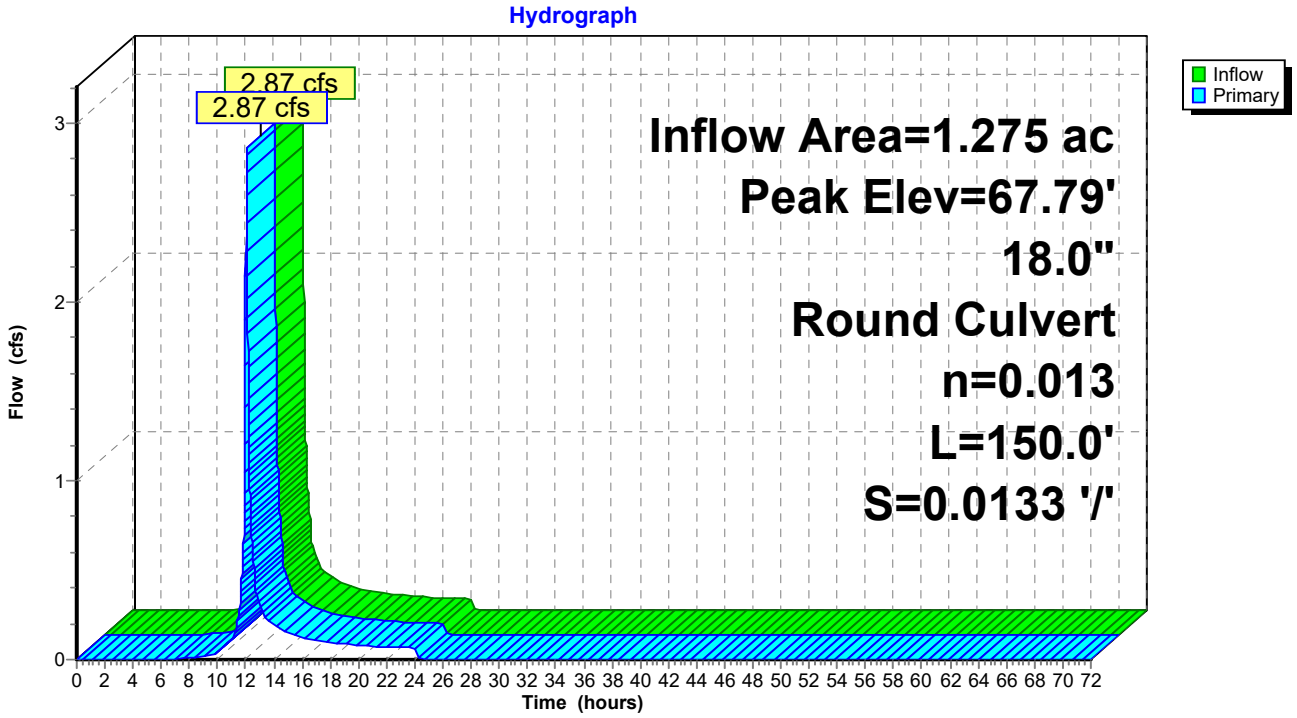
Inflow Area = 1.275 ac, 42.65% Impervious, Inflow Depth = 2.04" for 2-yr (+15%) event
Inflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Outflow = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.05 hrs, Volume= 0.216 af
Routed to Pond PDMH10 : Proposed Manhole 10

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 67.79' @ 12.05 hrs
Flood Elev= 70.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.00'	**18.0" Round 18" HDPE (PDL11)** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 67.00' / 65.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.87 cfs @ 12.05 hrs HW=67.79' TW=65.64' (Dynamic Tailwater)
↑**1=18" HDPE (PDL11)** (Inlet Controls 2.87 cfs @ 3.03 fps)

Pond PDMH9: Proposed Manhole 9



Summary for Pond PP100: Stone Storage for House B of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

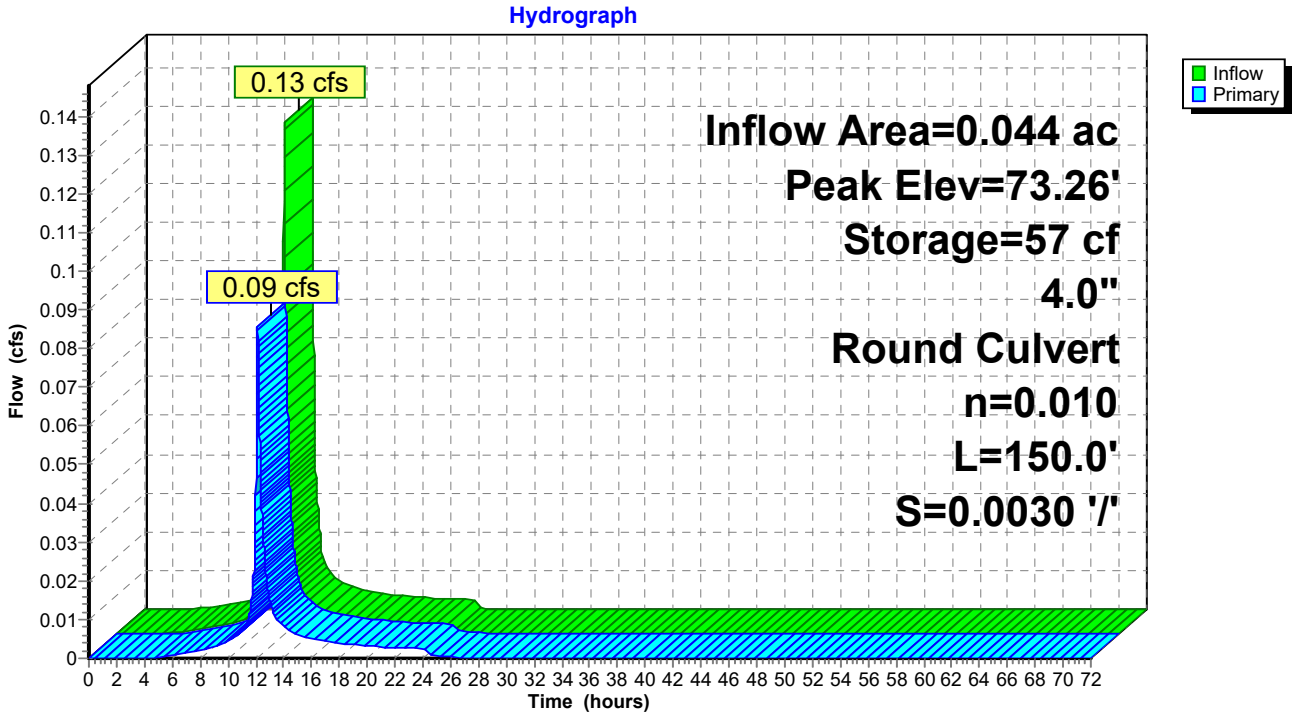
Volume	Invert	Avail.Storage	Storage Description
#1	73.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.00	560	0	0	560
77.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	73.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.00' / 72.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=73.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP100: Stone Storage for House B of Lot 31



Summary for Pond PP101: Stone Storage for House C of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 56 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

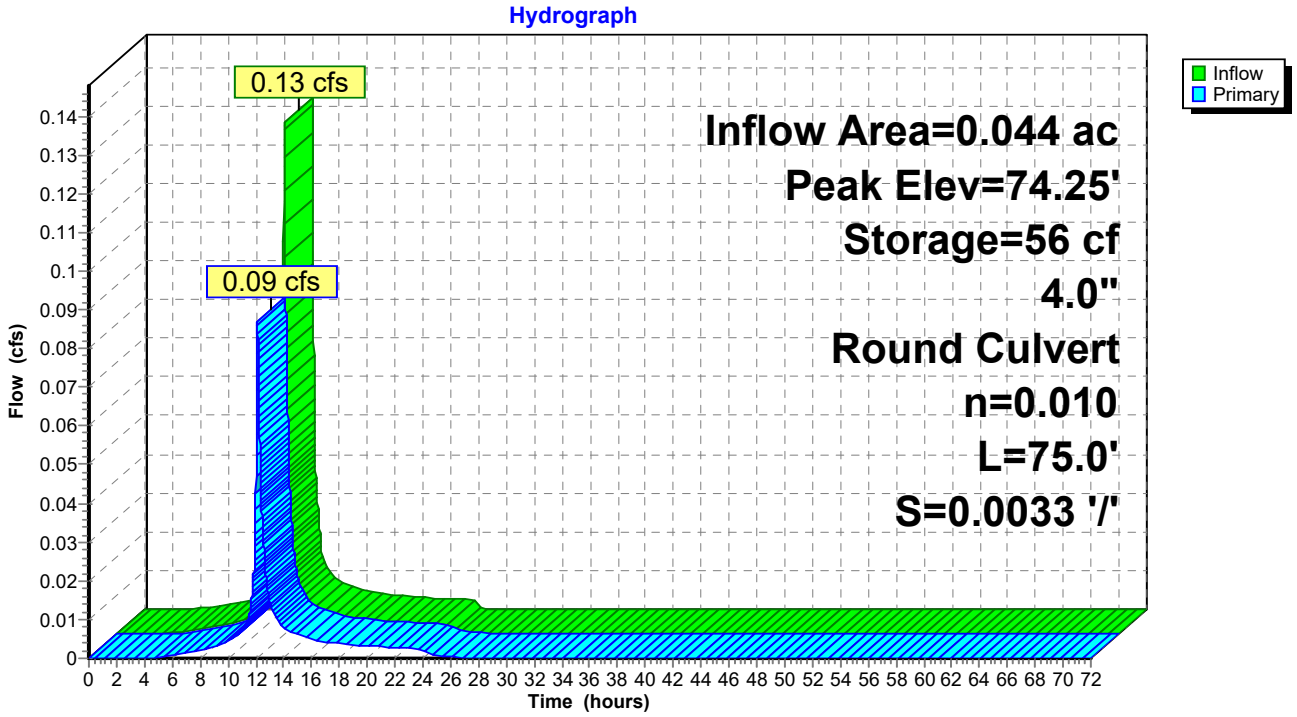
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.75' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=74.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.70 fps)

Pond PP101: Stone Storage for House C of Lot 31



Summary for Pond PP102: Stone Storage for House D of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.4 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.0 min (850.6 - 813.6)

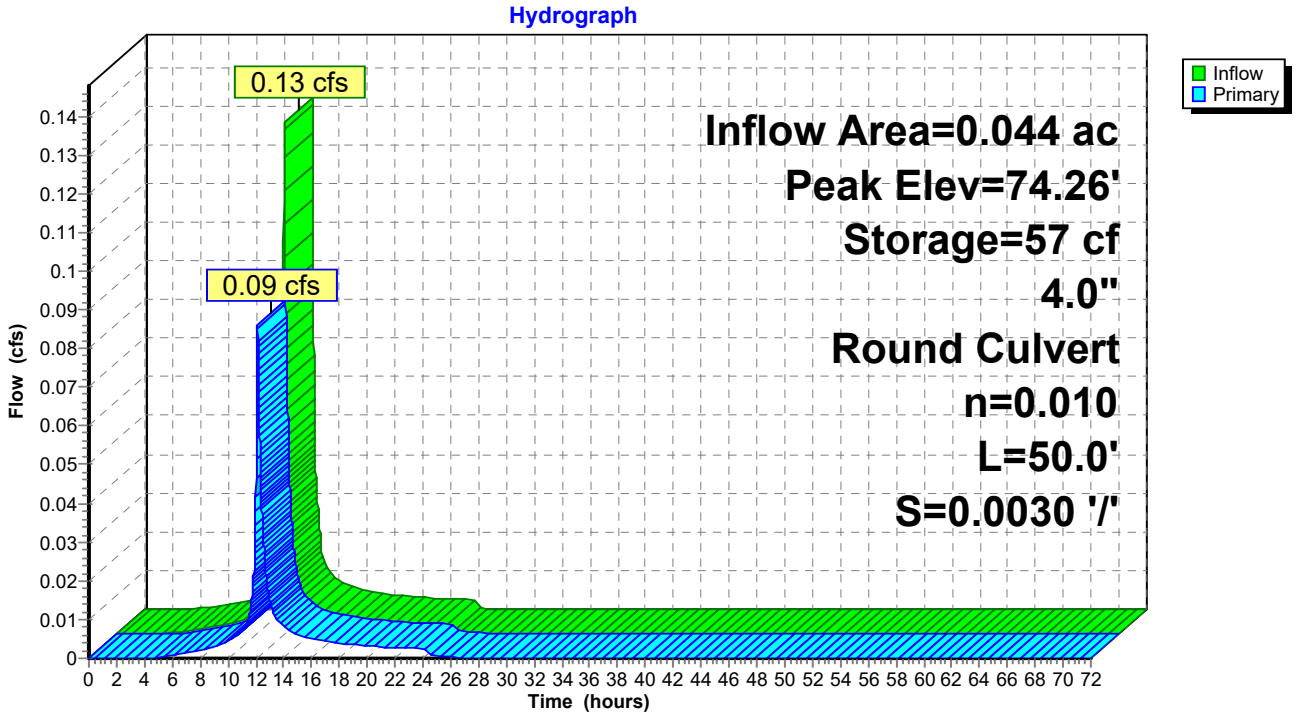
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.85' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=74.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.65 fps)

Pond PP102: Stone Storage for House D of Lot 31



Summary for Pond PP103: Stone Storage for House A of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.4 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.0 min (850.6 - 813.6)

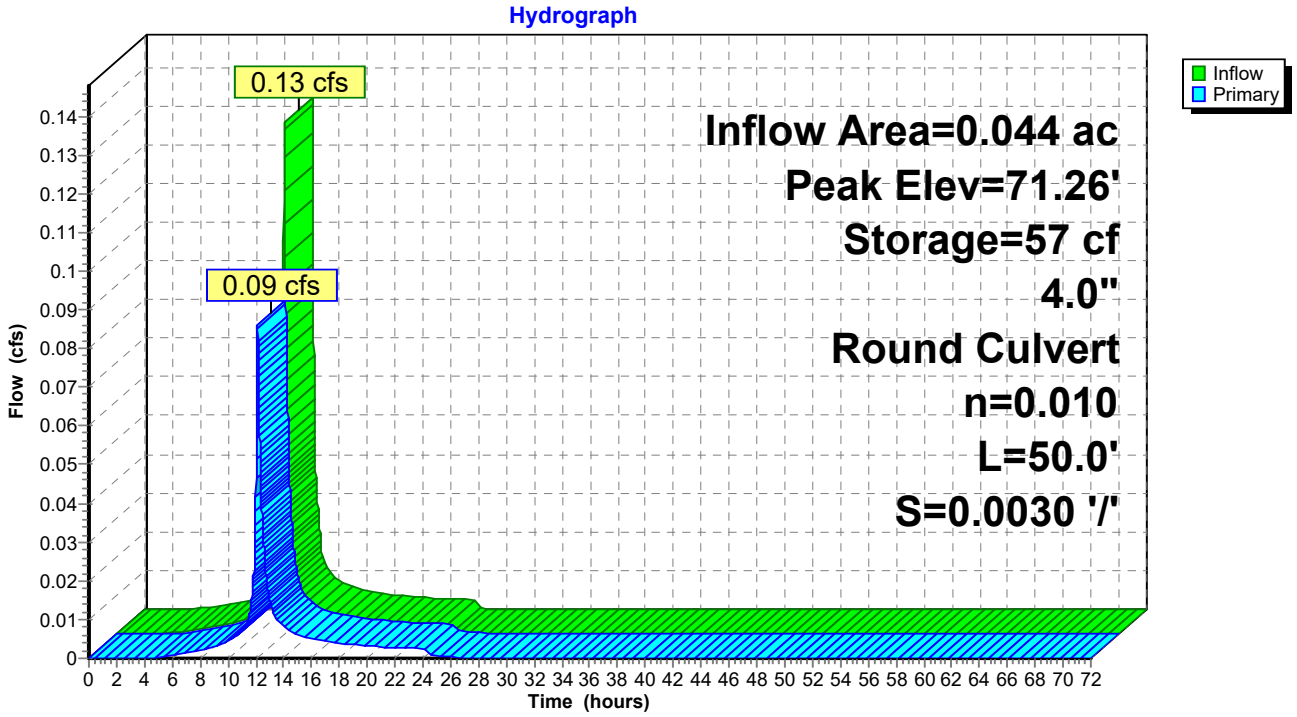
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.00	560	0	0	560
75.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	**4.0" Round 4" PVC** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.00' / 70.85' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=71.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.65 fps)

Pond PP103: Stone Storage for House A of Lot 30



Summary for Pond PP104: Stone Storage for House B of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.75' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

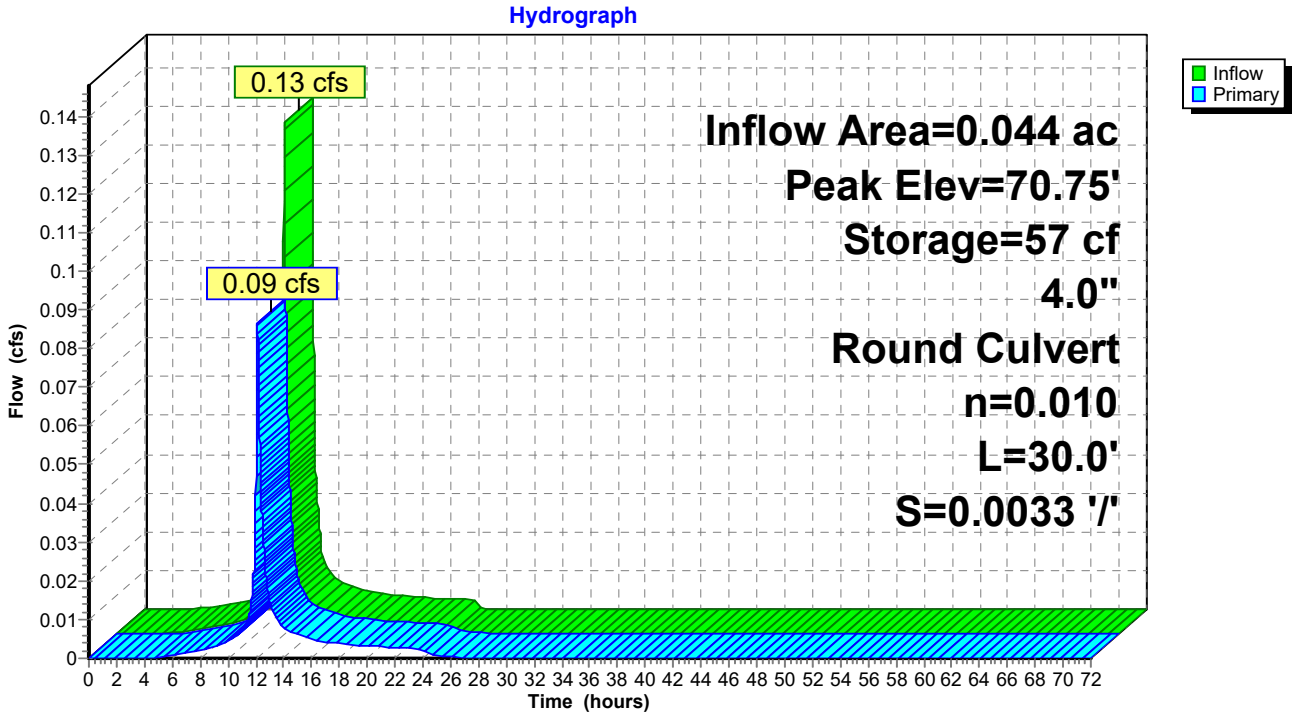
Volume	Invert	Avail.Storage	Storage Description
#1	70.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
70.50	560	0	0	560
74.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	70.50'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.50' / 70.40' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=70.75' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP104: Stone Storage for House B of Lot 30



Summary for Pond PP105: Stone Storage for House C of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 70.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

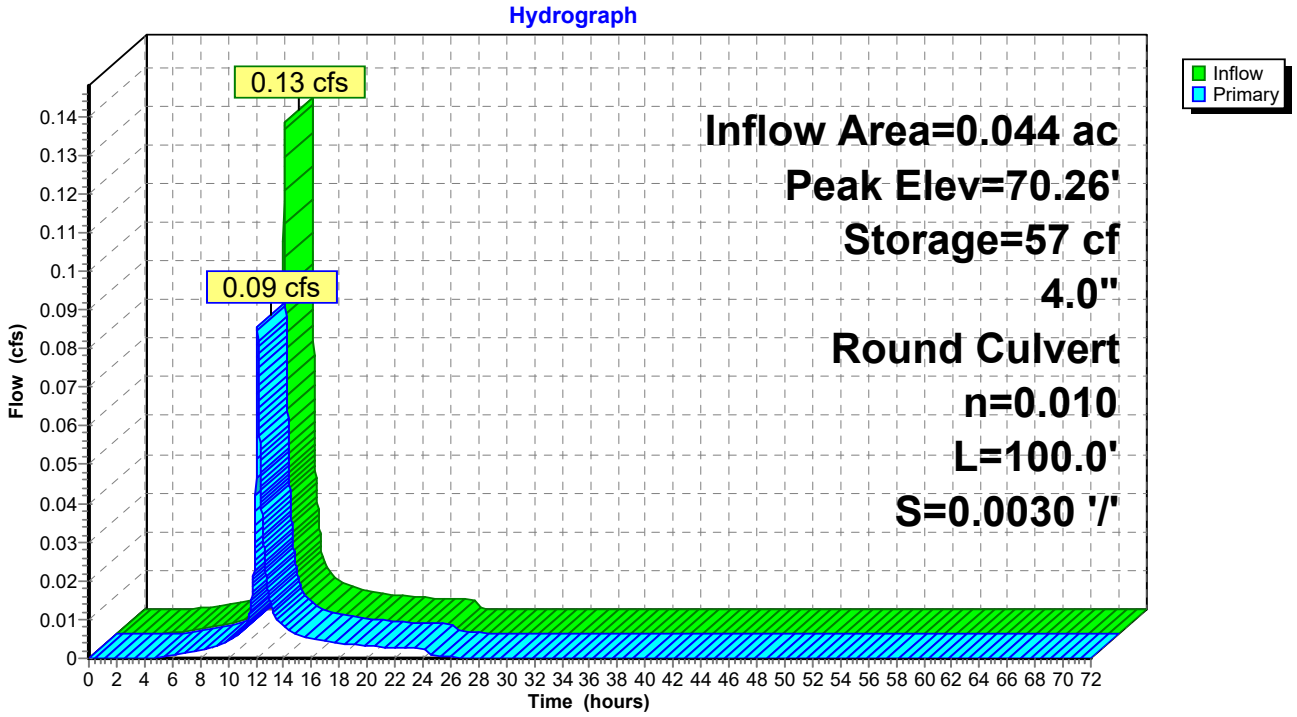
Volume	Invert	Avail.Storage	Storage Description
#1	70.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
70.00	560	0	0	560
74.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	70.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 70.00' / 69.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=70.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP105: Stone Storage for House C of Lot 30



Summary for Pond PP106: Stone Storage for House D of Lot 30

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

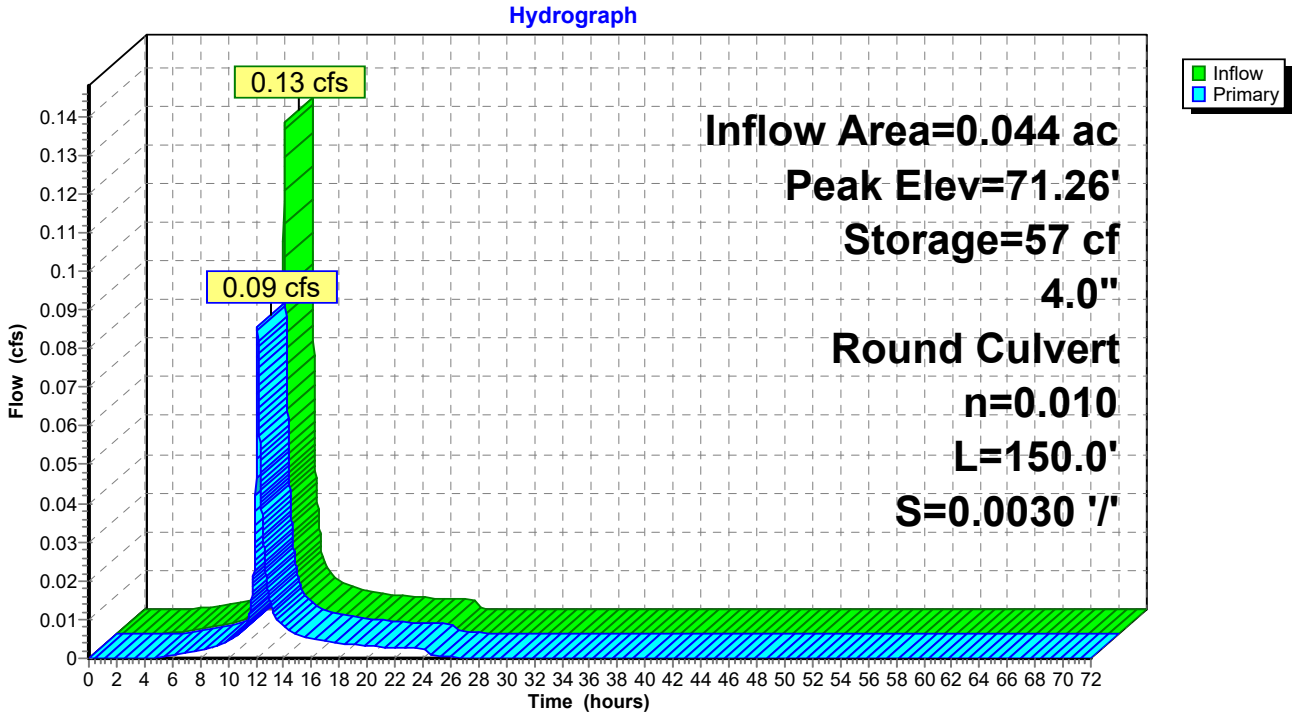
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
71.00	560	0	0	560
75.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	71.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.00' / 70.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=71.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP106: Stone Storage for House D of Lot 30



Summary for Pond PP107: Stone Storage for House A of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 68.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

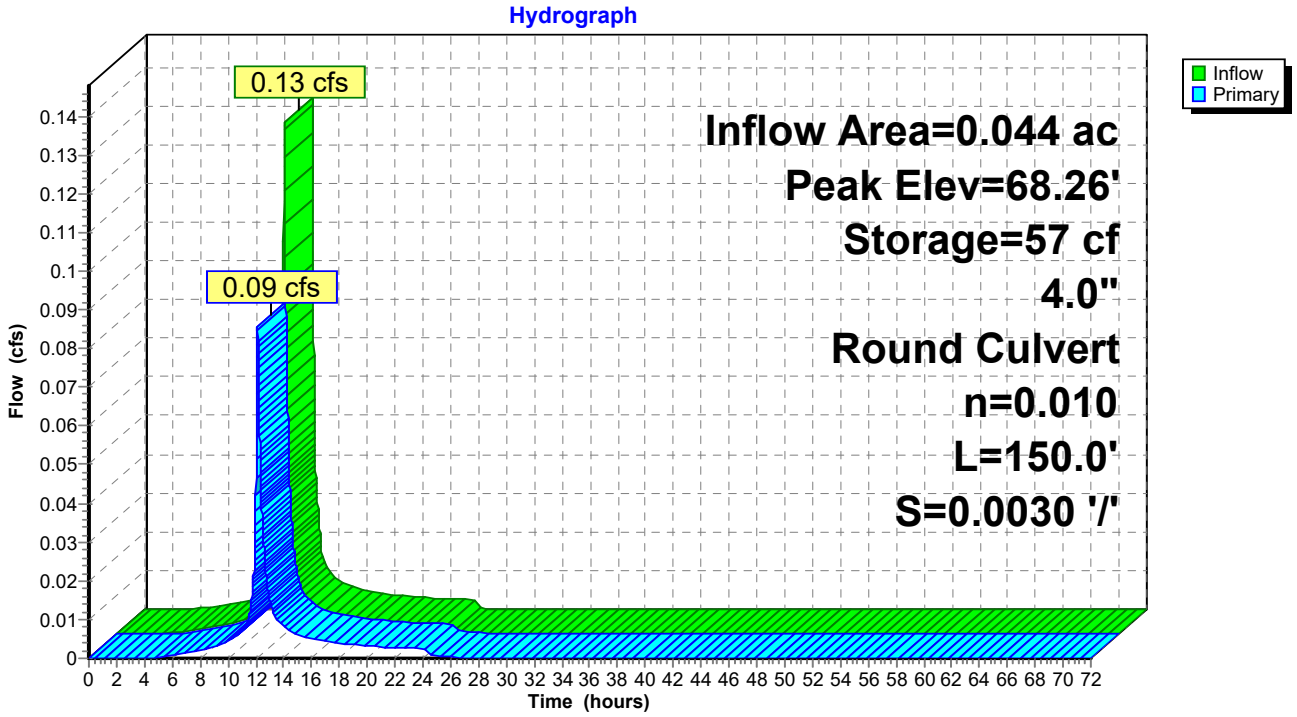
Volume	Invert	Avail.Storage	Storage Description
#1	68.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.00	560	0	0	560
72.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	68.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.00' / 67.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=68.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP107: Stone Storage for House A of Lot 29



Summary for Pond PP108: Stone Storage for House B of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 68.76' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

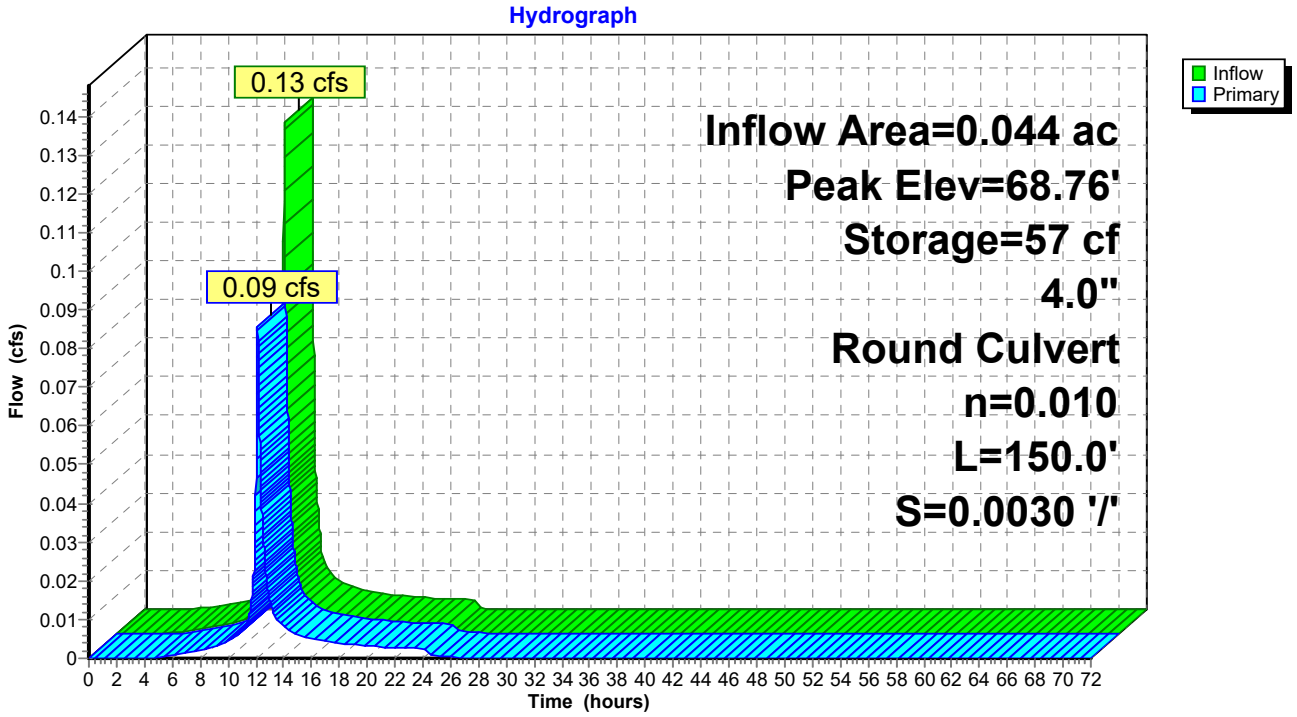
Volume	Invert	Avail.Storage	Storage Description
#1	68.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
68.50	560	0	0	560
72.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	68.50'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 68.50' / 68.05' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=68.76' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP108: Stone Storage for House B of Lot 29



Summary for Pond PP109: Stone Storage for House C of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 66.76' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

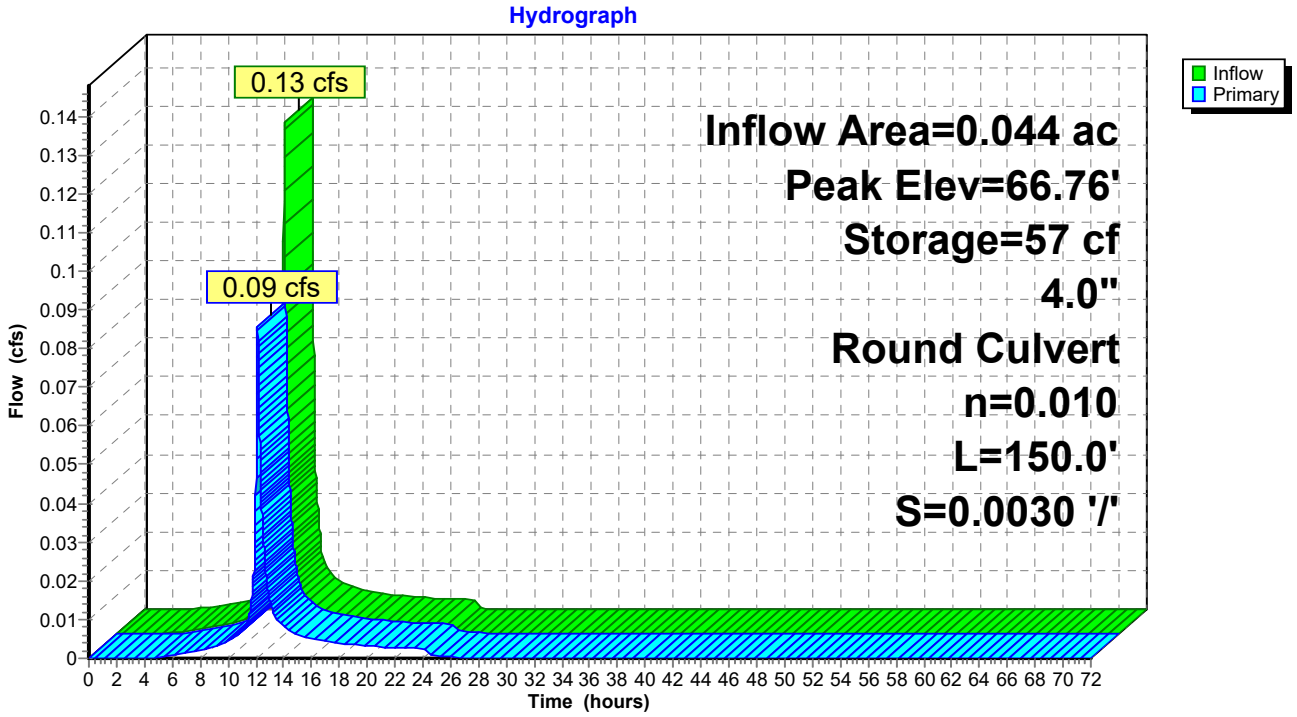
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
66.50	560	0	0	560
70.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	66.50'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 66.50' / 66.05' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=66.76' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP109: Stone Storage for House C of Lot 29



Summary for Pond PP110: Stone Storage for House C of Lot 29

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L106 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 66.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

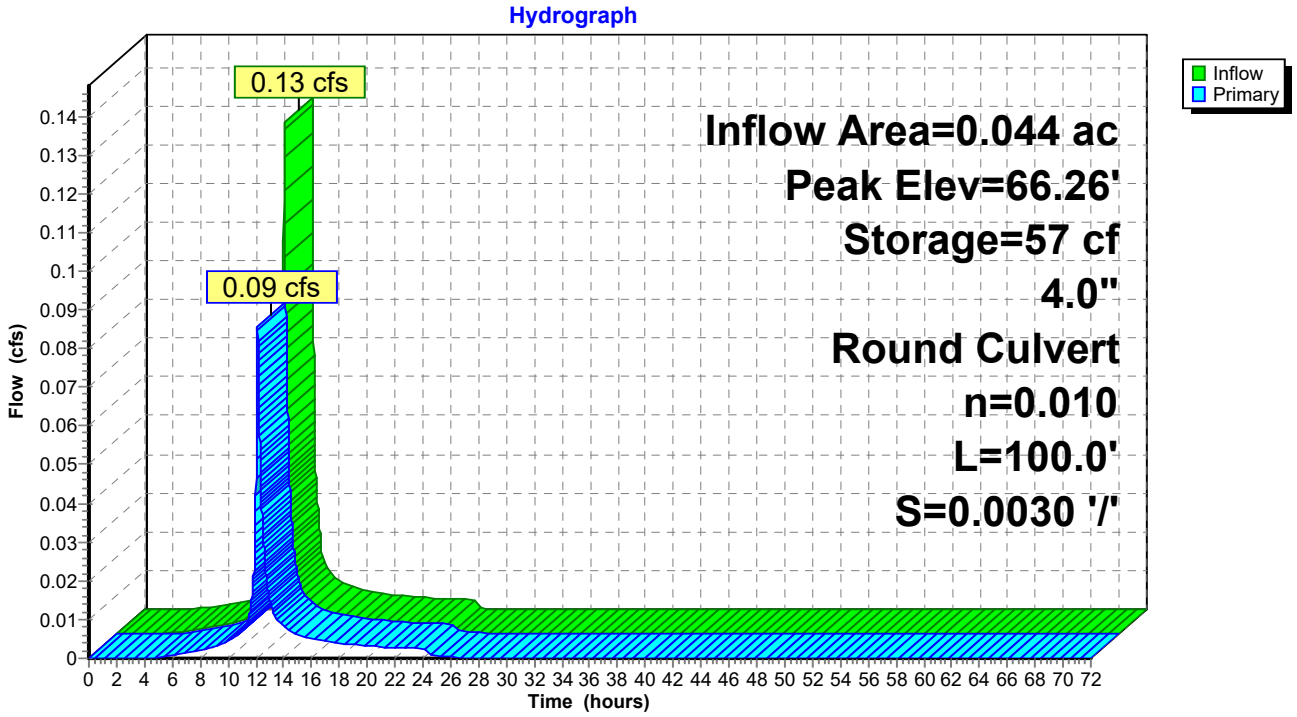
Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
66.00	560	0	0	560
70.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	66.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 66.00' / 65.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=66.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP110: Stone Storage for House C of Lot 29



Summary for Pond PP111: Stone Storage for Lot 26

Inflow Area = 0.053 ac, 72.89% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.012 af
Outflow = 0.10 cfs @ 12.11 hrs, Volume= 0.012 af, Atten= 37%, Lag= 4.4 min
Primary = 0.10 cfs @ 12.11 hrs, Volume= 0.012 af
Routed to Reach ER79 : Southern Swale Connecting to Western Wetlands

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 59.28' @ 12.11 hrs Surf.Area= 625 sf Storage= 71 cf

Plug-Flow detention time= 38.2 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 37.7 min (851.3 - 813.6)

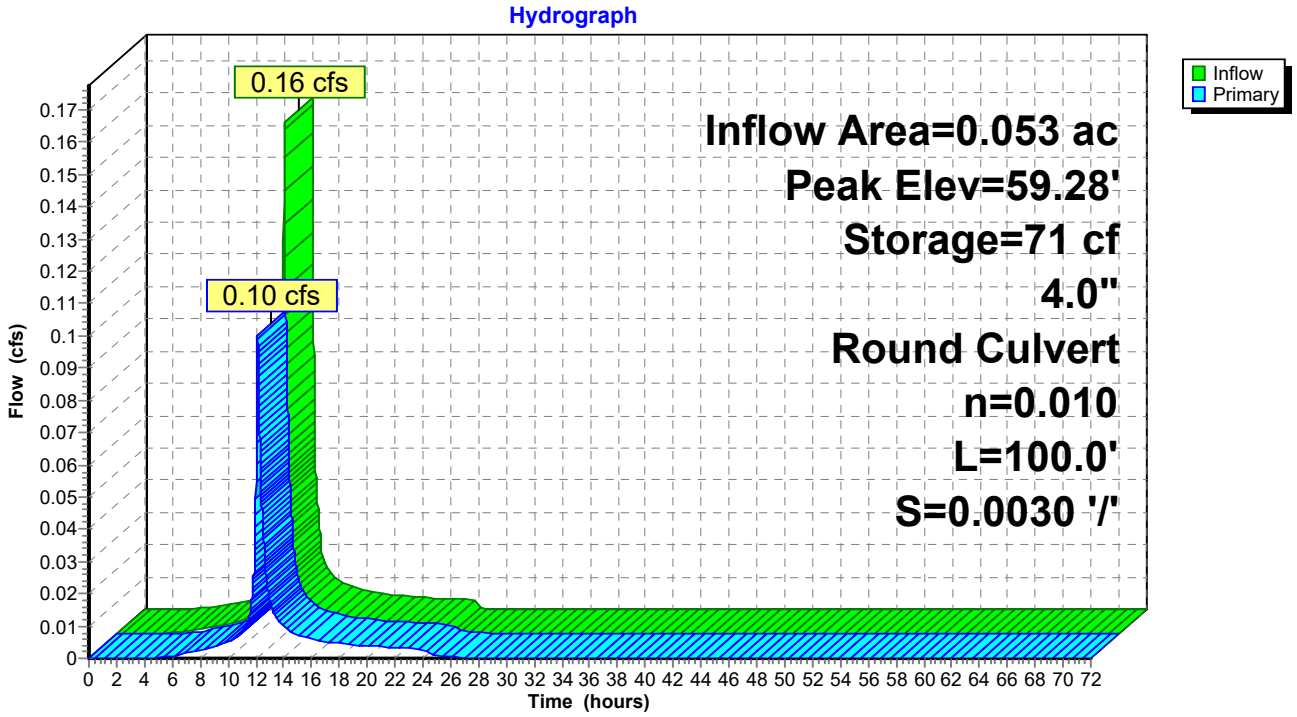
Volume	Invert	Avail.Storage	Storage Description
#1	59.00'	1,000 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,500 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
59.00	625	0	0	625
63.00	625	2,500	2,500	979

Device	Routing	Invert	Outlet Devices
#1	Primary	59.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.00' / 58.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.11 hrs HW=59.28' TW=42.91' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP111: Stone Storage for Lot 26



Summary for Pond PP112: Stone Storage for Lot 26

Inflow Area = 0.053 ac, 72.89% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.012 af
Outflow = 0.10 cfs @ 12.11 hrs, Volume= 0.012 af, Atten= 37%, Lag= 4.4 min
Primary = 0.10 cfs @ 12.11 hrs, Volume= 0.012 af
Routed to Reach ER80 : West Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 61.28' @ 12.11 hrs Surf.Area= 625 sf Storage= 71 cf

Plug-Flow detention time= 38.2 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 37.7 min (851.3 - 813.6)

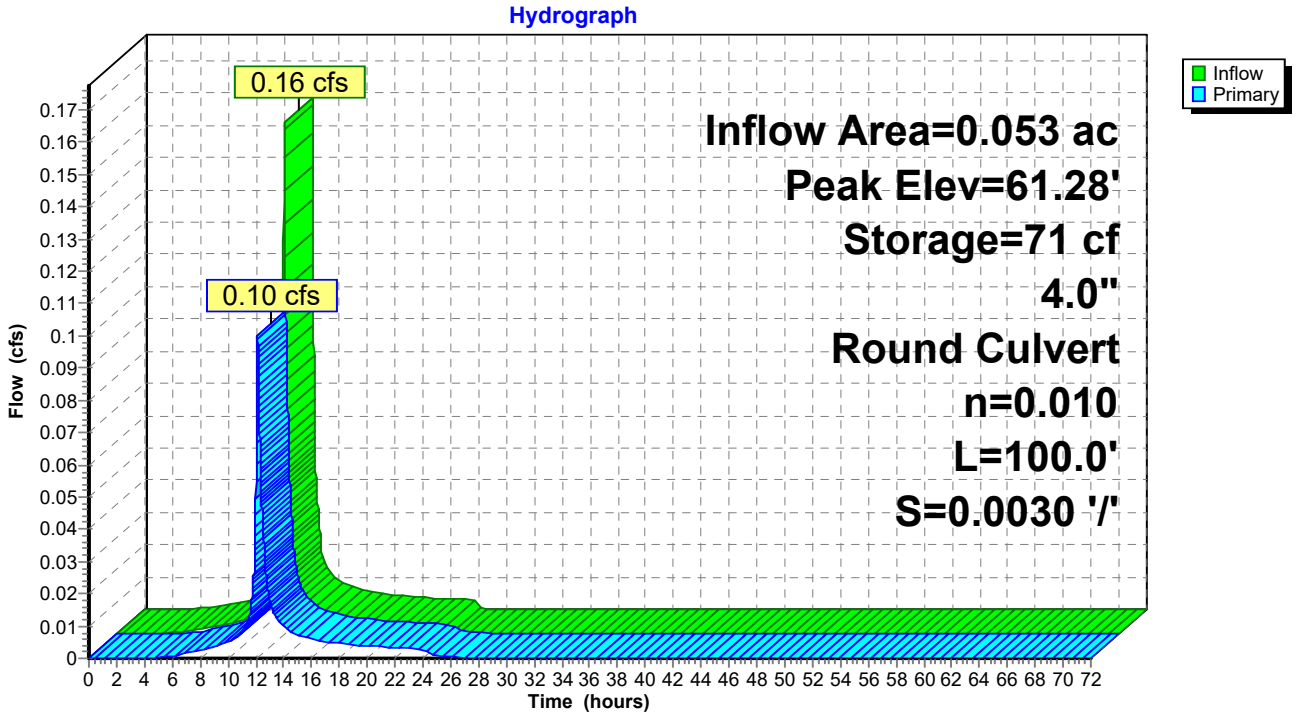
Volume	Invert	Avail.Storage	Storage Description
#1	61.00'	1,000 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,500 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
61.00	625	0	0	625
65.00	625	2,500	2,500	979

Device	Routing	Invert	Outlet Devices
#1	Primary	61.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.00' / 60.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.11 hrs HW=61.28' TW=50.77' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP112: Stone Storage for Lot 26



Summary for Pond PP151: Swale Along West Portion of Proposed Main Road

Inflow Area = 2.073 ac, 22.64% Impervious, Inflow Depth = 1.73" for 2-yr (+15%) event
Inflow = 1.92 cfs @ 12.34 hrs, Volume= 0.299 af
Outflow = 1.92 cfs @ 12.36 hrs, Volume= 0.298 af, Atten= 0%, Lag= 1.3 min
Primary = 1.92 cfs @ 12.36 hrs, Volume= 0.298 af
Routed to Pond PCB11 : Proposed Catch Basin 11

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.73' @ 12.36 hrs Surf.Area= 283 sf Storage= 89 cf
Flood Elev= 66.90' Surf.Area= 1,118 sf Storage= 851 cf

Plug-Flow detention time= 2.9 min calculated for 0.298 af (100% of inflow)
Center-of-Mass det. time= 1.6 min (894.1 - 892.5)

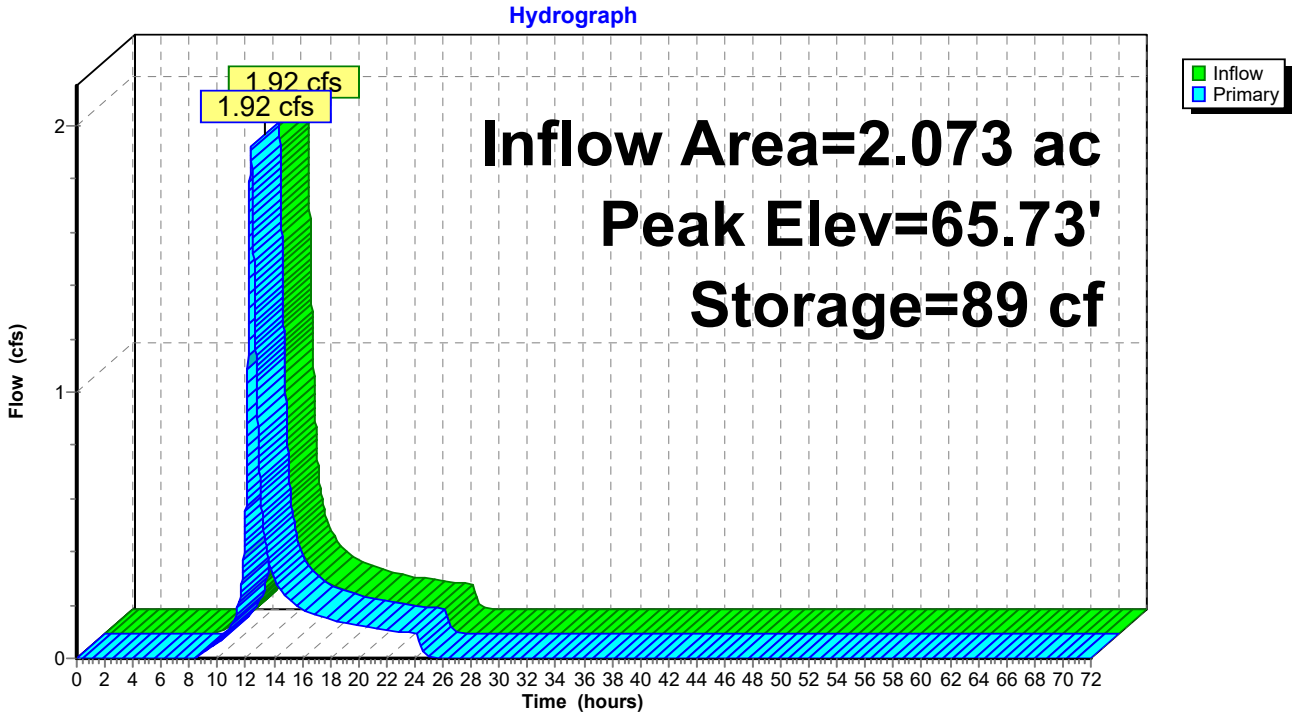
Volume	Invert	Avail.Storage	Storage Description
#1	64.95'	908 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
64.95	2	0	0
65.15	20	2	2
65.65	240	65	67
66.15	505	186	253
66.65	885	348	601
66.95	1,165	307	908

Device	Routing	Invert	Outlet Devices
#1	Primary	65.45'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.92 cfs @ 12.36 hrs HW=65.73' TW=63.76' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 1.92 cfs @ 1.70 fps)

Pond PP151: Swale Along West Portion of Proposed Main Road



Summary for Pond PP152: Swale Along East Portion of Proposed Main Road

Inflow Area = 0.485 ac, 45.31% Impervious, Inflow Depth = 2.20" for 2-yr (+15%) event
Inflow = 0.72 cfs @ 12.20 hrs, Volume= 0.089 af
Outflow = 0.72 cfs @ 12.22 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.8 min
Primary = 0.72 cfs @ 12.22 hrs, Volume= 0.089 af
Routed to Pond PCB12 : Proposed Catch Basin 12

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.83' @ 12.22 hrs Surf.Area= 109 sf Storage= 22 cf
Flood Elev= 67.40' Surf.Area= 660 sf Storage= 603 cf

Plug-Flow detention time= 0.4 min calculated for 0.089 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (857.3 - 856.9)

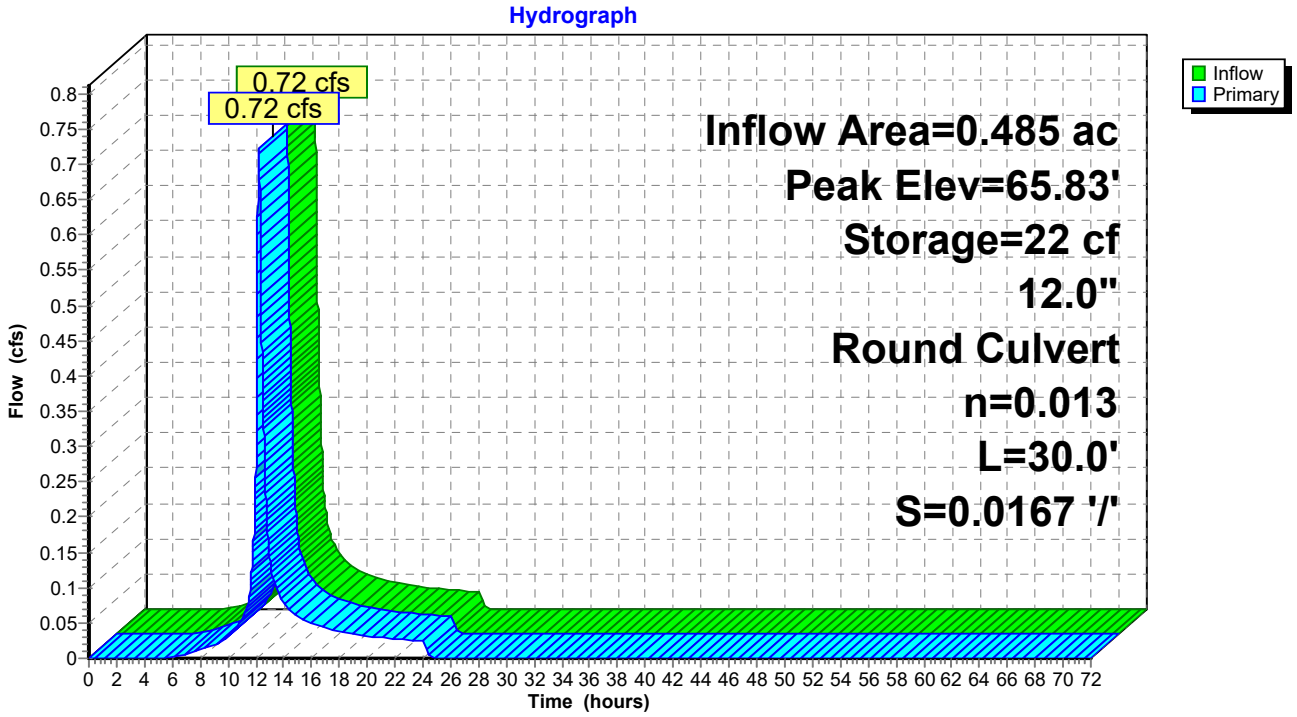
Volume	Invert	Avail.Storage	Storage Description
#1	65.40'	603 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.40	2	0	0
65.50	20	1	1
66.00	155	44	45
66.50	320	119	164
67.00	505	206	370
67.40	660	233	603

Device	Routing	Invert	Outlet Devices
#1	Primary	65.40'	**12.0" Round 12" HDPE Under Driveway** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.40' / 64.90' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.22 hrs HW=65.83' TW=63.71' (Dynamic Tailwater)
↑—**1=12" HDPE Under Driveway** (Inlet Controls 0.72 cfs @ 2.23 fps)

Pond PP152: Swale Along East Portion of Proposed Main Road



Summary for Pond PP153: Swale Along End of Cul-de-sac

Inflow Area = 0.609 ac, 47.89% Impervious, Inflow Depth = 2.20" for 2-yr (+15%) event
Inflow = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af
Outflow = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.1 min
Primary = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af
Routed to Pond PT13 : Proposed Pre-Tx 13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 61.40' @ 12.04 hrs Surf.Area= 107 sf Storage= 12 cf
Flood Elev= 63.25' Surf.Area= 559 sf Storage= 594 cf

Plug-Flow detention time= 0.1 min calculated for 0.112 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (845.0 - 844.9)

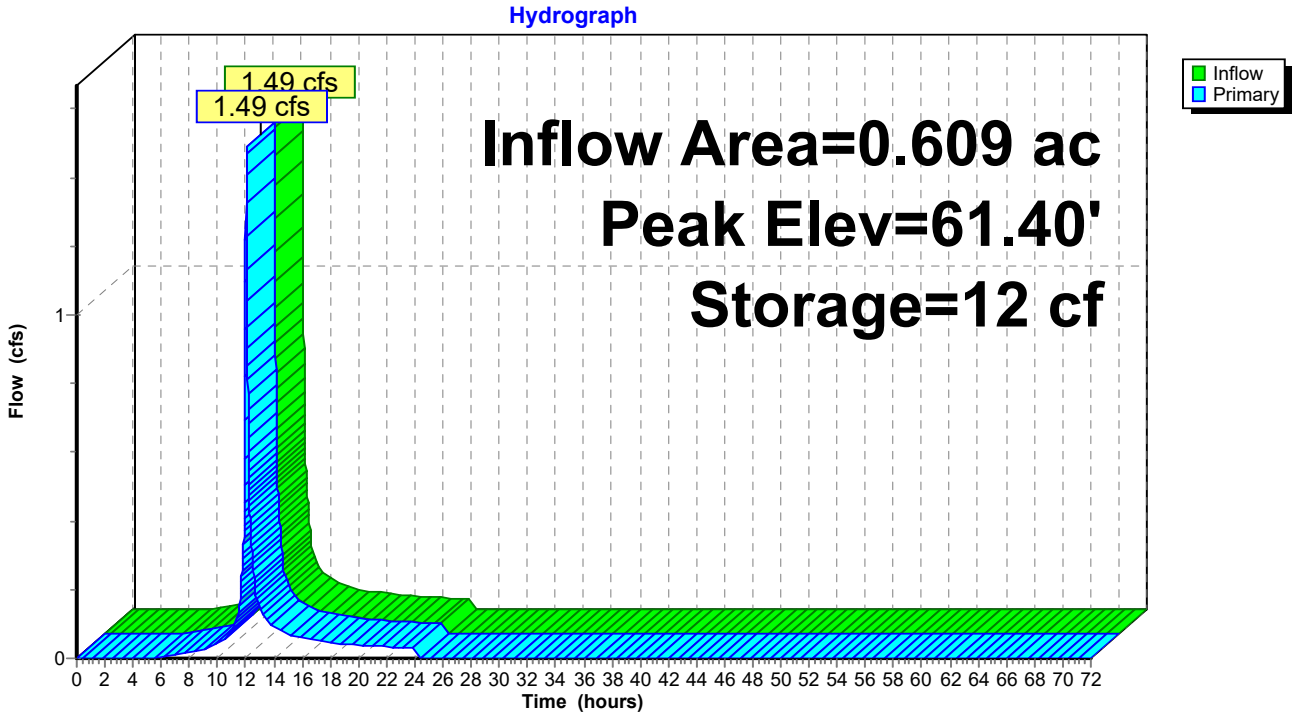
Volume	Invert	Avail.Storage	Storage Description
#1	61.25'	622 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.25	2	0	0
61.30	90	2	2
61.50	125	22	24
62.00	230	89	113
62.50	350	145	258
62.90	450	160	418
63.00	480	47	464
63.30	575	158	622

Device	Routing	Invert	Outlet Devices
#1	Primary	61.25'	**24.0" x 24.0" Horiz. Grate Inlet** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.49 cfs @ 12.04 hrs HW=61.40' TW=59.94' (Dynamic Tailwater)
↑—**1=Grate Inlet** (Weir Controls 1.49 cfs @ 1.26 fps)

Pond PP153: Swale Along End of Cul-de-sac



Summary for Pond PP154: Proposed Sediment Forebay

Inflow Area = 4.019 ac, 30.68% Impervious, Inflow Depth = 1.87" for 2-yr (+15%) event
Inflow = 4.21 cfs @ 12.06 hrs, Volume= 0.625 af
Outflow = 2.34 cfs @ 12.58 hrs, Volume= 0.411 af, Atten= 44%, Lag= 31.5 min
Primary = 2.34 cfs @ 12.58 hrs, Volume= 0.411 af
Routed to Pond PCB14 : Proposed Catch Basin 14

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 63.20' @ 12.58 hrs Surf.Area= 4,624 sf Storage= 10,092 cf
Flood Elev= 64.00' Surf.Area= 5,350 sf Storage= 13,354 cf

Plug-Flow detention time= 233.2 min calculated for 0.411 af (66% of inflow)
Center-of-Mass det. time= 100.7 min (979.7 - 879.0)

Volume	Invert	Avail.Storage	Storage Description
#1	56.49'	12,287 cf	**Sediment Forebay (Prismatic)** Listed below (Recalc)
#2	61.00'	1,067 cf	**Slope Stone (Prismatic)** Listed below (Recalc) 2,668 cf Overall x 40.0% Voids
		13,354 cf	Total Available Storage

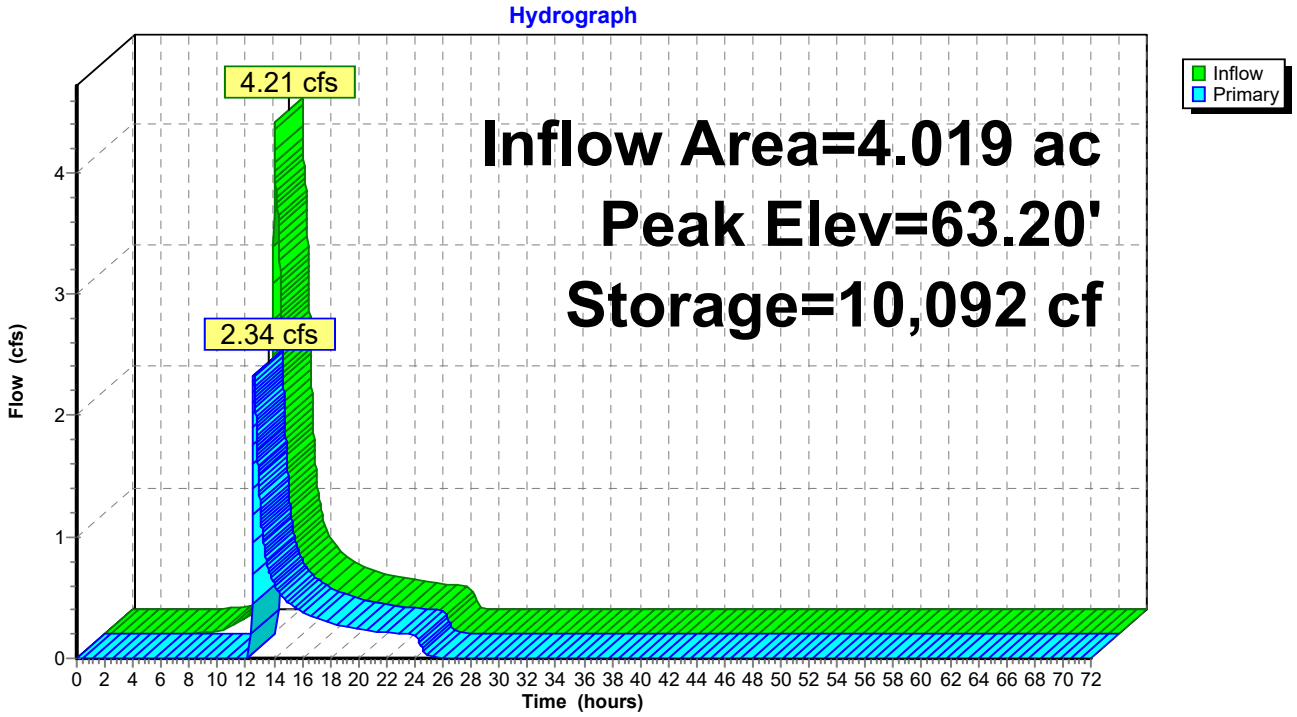
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.49	2,000	0.0	0	0
56.50	2,000	40.0	8	8
60.99	2,000	40.0	3,592	3,600
61.00	2,000	100.0	20	3,620
63.00	3,220	100.0	5,220	8,840
64.00	3,675	100.0	3,448	12,287

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
61.00	0	0	0
63.00	1,220	1,220	1,220
64.00	1,675	1,448	2,668

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**12.0" W x 4.0" H Vert. (8) 4"x12" Knockouts X 8.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.34 cfs @ 12.58 hrs HW=63.20' TW=57.67' (Dynamic Tailwater)
↑—**1=(8) 4"x12" Knockouts** (Orifice Controls 2.34 cfs @ 1.44 fps)

Pond PP154: Proposed Sediment Forebay



Summary for Pond PP155: Proposed Bioretention Basin "B2"

Inflow Area = 4.985 ac, 30.58% Impervious, Inflow Depth = 1.36" for 2-yr (+15%) event
Inflow = 2.68 cfs @ 12.57 hrs, Volume= 0.564 af
Outflow = 0.50 cfs @ 15.60 hrs, Volume= 0.553 af, Atten= 81%, Lag= 181.6 min
Primary = 0.50 cfs @ 15.60 hrs, Volume= 0.553 af
Routed to Link L101B : Central Wetland Finger

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 46.75' Surf.Area= 15,600 sf Storage= 3,682 cf
Peak Elev= 48.40' @ 15.60 hrs Surf.Area= 15,600 sf Storage= 12,986 cf (9,304 cf above start)
Flood Elev= 52.00' Surf.Area= 15,600 sf Storage= 48,312 cf (44,631 cf above start)

Plug-Flow detention time= 478.2 min calculated for 0.468 af (83% of inflow)
Center-of-Mass det. time= 320.2 min (1,266.7 - 946.5)

Volume	Invert	Avail.Storage	Storage Description
#1	46.16'	20,452 cf	**Bioretention "B2" Subsurface (Conic)** Listed below (Recalc)
#2	50.00'	27,861 cf	**Bioretention Basin "B2" Open Storage (Conic)** Listed below (Recalc) -Imper
		48,312 cf	Total Available Storage

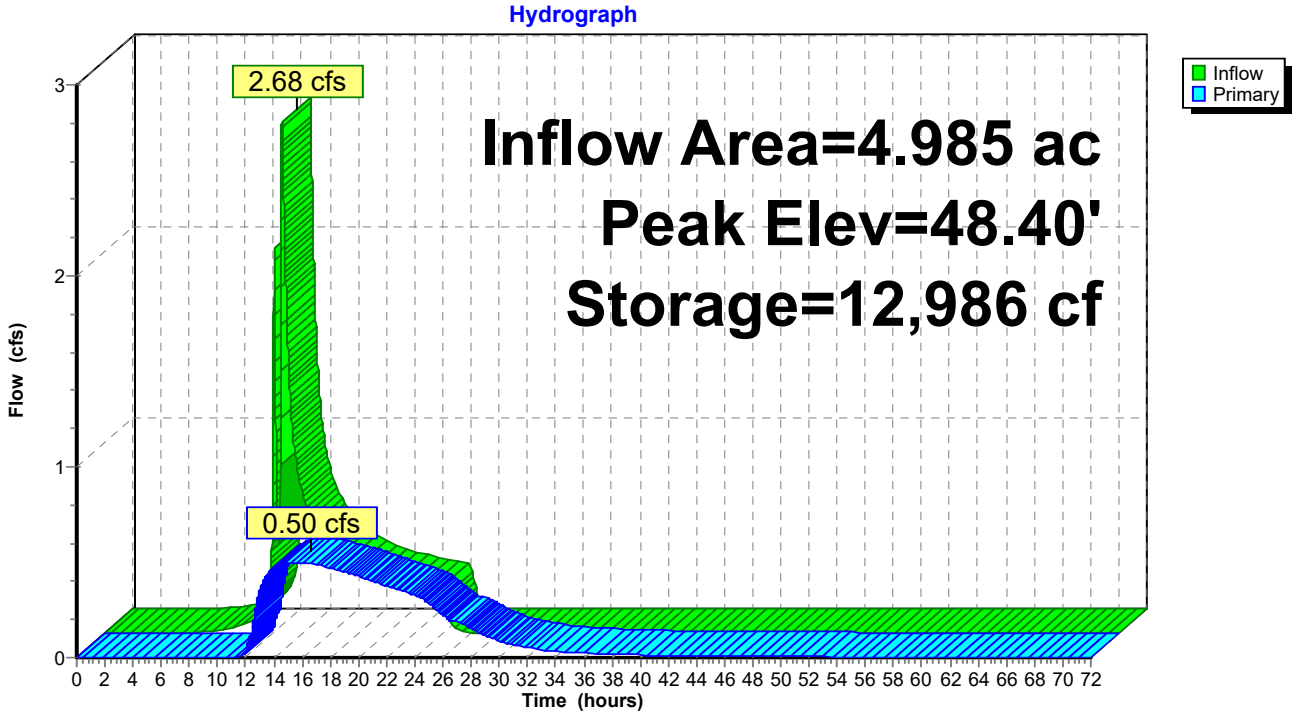
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
46.16	15,600	0.0	0	0	15,600
46.17	15,600	40.0	62	62	15,604
47.75	15,600	40.0	9,859	9,922	16,304
47.76	15,600	30.0	47	9,968	16,308
50.00	15,600	30.0	10,483	20,452	17,300

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	12,325	0	0	12,325
52.00	15,600	27,861	27,861	15,705

Device	Routing	Invert	Outlet Devices
#1	Primary	46.75'	**12.0" Round 12" HDPE (PDL21)** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.75' / 46.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	46.75'	**6.0" Round 6" Perforated Underdrain (PUD20)** L= 205.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.75' / 46.75' S= 0.0000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#3	Device 2	46.16'	**10.000 in/hr Exfiltration through Bioretention Media over Wetted area** Phase-In= 0.01'
#4	Device 1	50.60'	**3.0" Vert. (3) 3" Diameter Weep Holes in CB X 3.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	51.50'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 15.60 hrs HW=48.40' TW=0.00' (Dynamic Tailwater)
└─**1=12" HDPE (PDL21)** (Passes 0.50 cfs of 3.88 cfs potential flow)
  └─**2=6" Perforated Underdrain (PUD20)**(Barrel Controls 0.50 cfs @ 2.54 fps)
    └─**3=Exfiltration through Bioretention Media**(Passes 0.50 cfs of 3.84 cfs potential flow)
  └─**4=(3) 3" Diameter Weep Holes in CB**(Controls 0.00 cfs)
  └─**5=(4) 4"x12" Knockouts** (Controls 0.00 cfs)

Pond PP155: Proposed Bioretention Basin "B2"



Summary for Pond PP50: Wetlands East of Existing Driveway

Inflow Area = 0.056 ac, 0.00% Impervious, Inflow Depth = 1.39" for 2-yr (+15%) event
Inflow = 0.08 cfs @ 12.04 hrs, Volume= 0.006 af
Outflow = 0.03 cfs @ 12.25 hrs, Volume= 0.005 af, Atten= 65%, Lag= 12.4 min
Primary = 0.03 cfs @ 12.25 hrs, Volume= 0.005 af
Routed to Reach ER75 : Northernmost Stream on Site

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 91.24' @ 12.25 hrs Surf.Area= 204 sf Storage= 80 cf
Flood Elev= 95.00' Surf.Area= 16,000 sf Storage= 19,508 cf

Plug-Flow detention time= 179.3 min calculated for 0.005 af (78% of inflow)
Center-of-Mass det. time= 80.9 min (971.9 - 891.0)

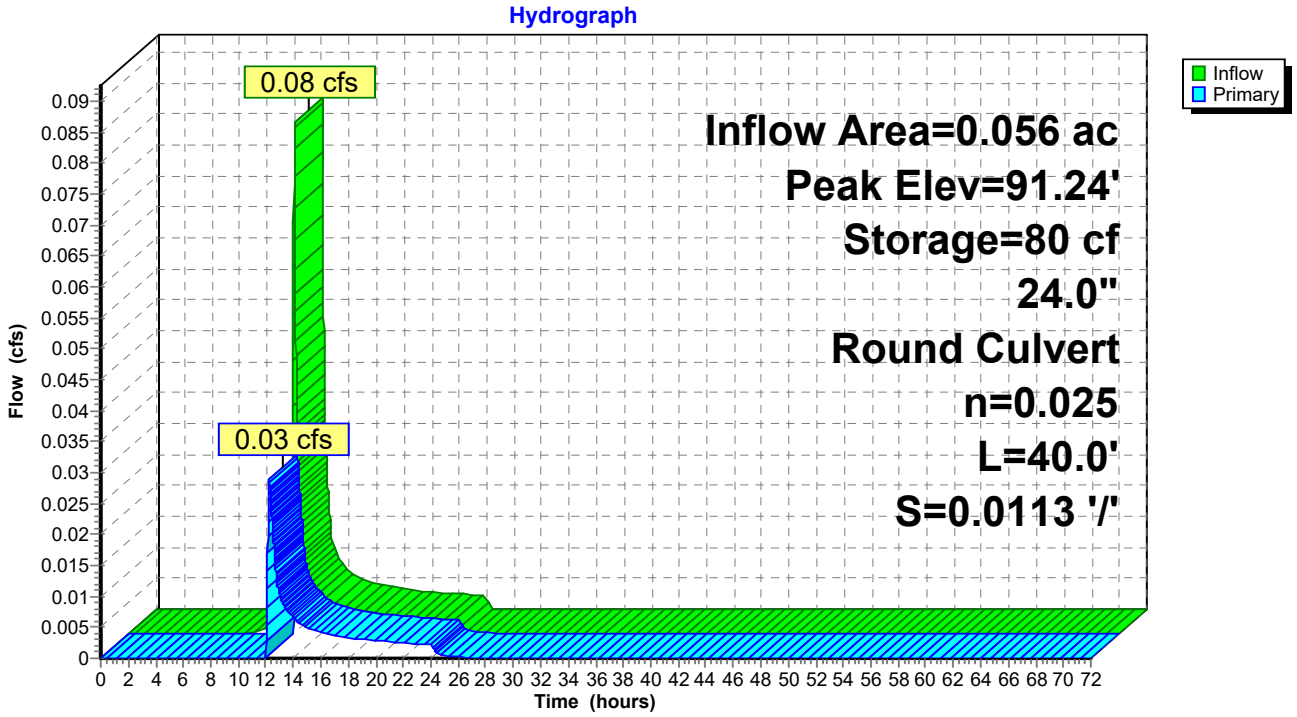
Volume	Invert	Avail.Storage	Storage Description
#1	90.50'	19,508 cf	**Wetlands East of Existing Driveway (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.50	10	0	0
92.00	400	308	308
94.00	7,200	7,600	7,908
95.00	16,000	11,600	19,508

Device	Routing	Invert	Outlet Devices
#1	Primary	91.15'	**24.0" Round 24" HDPE Pipe (PDL22)** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 91.15' / 90.70' S= 0.0113 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=0.03 cfs @ 12.25 hrs HW=91.24' TW=90.70' (Dynamic Tailwater)
↑—**1=24" HDPE Pipe (PDL22)** (Barrel Controls 0.03 cfs @ 0.82 fps)

Pond PP50: Wetlands East of Existing Driveway



Summary for Pond PP52A: Proposed Swale Along West Side of Main Road

Inflow Area = 0.709 ac, 38.73% Impervious, Inflow Depth = 2.04" for 2-yr (+15%) event
Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.120 af
Outflow = 1.28 cfs @ 12.11 hrs, Volume= 0.120 af, Atten= 1%, Lag= 0.9 min
Primary = 1.28 cfs @ 12.11 hrs, Volume= 0.120 af
Routed to Pond PT1 : Proposed Pre-Tx 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 80.50' @ 12.11 hrs Surf.Area= 191 sf Storage= 55 cf
Flood Elev= 81.80' Surf.Area= 722 sf Storage= 622 cf

Plug-Flow detention time= 0.9 min calculated for 0.120 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (858.6 - 857.9)

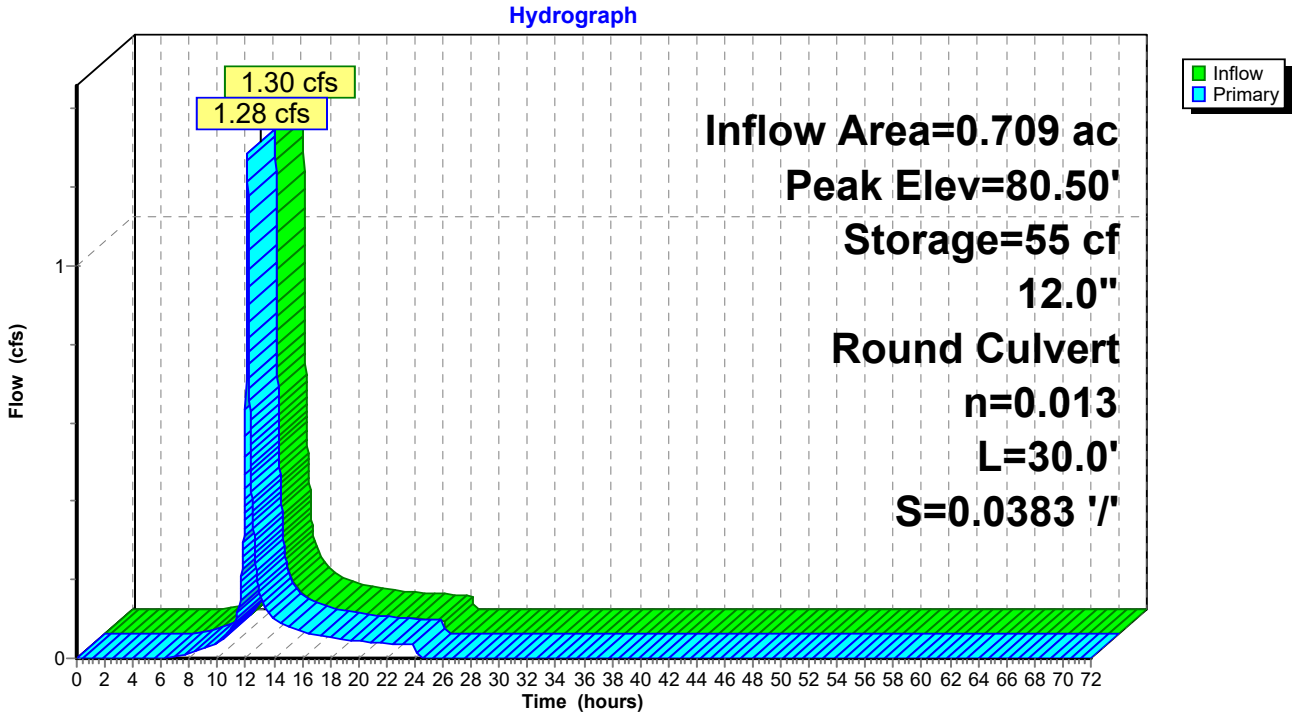
Volume	Invert	Avail.Storage	Storage Description
#1	79.80'	783 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.80	2	0	0
80.00	20	2	2
81.00	365	193	195
81.75	680	392	587
82.00	890	196	783

Device	Routing	Invert	Outlet Devices
#1	Primary	79.90'	**12.0" Round 12" HDPE To Pre-Tx** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 79.90' / 78.75' S= 0.0383 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.28 cfs @ 12.11 hrs HW=80.50' TW=79.46' (Dynamic Tailwater)
↑—**1=12" HDPE To Pre-Tx** (Inlet Controls 1.28 cfs @ 2.63 fps)

Pond PP52A: Proposed Swale Along West Side of Main Road



Summary for Pond PP53A: Proposed Swale Along East Side of Main Road

Inflow Area = 0.471 ac, 49.72% Impervious, Inflow Depth = 2.29" for 2-yr (+15%) event
Inflow = 0.97 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 0.97 cfs @ 12.10 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.5 min
Primary = 0.97 cfs @ 12.10 hrs, Volume= 0.089 af
Routed to Pond PT2 : Proposed Pre-Tx 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 80.23' @ 12.10 hrs Surf.Area= 254 sf Storage= 63 cf
Flood Elev= 81.55' Surf.Area= 1,400 sf Storage= 1,087 cf

Plug-Flow detention time= 8.8 min calculated for 0.089 af (99% of inflow)
Center-of-Mass det. time= 4.4 min (848.6 - 844.2)

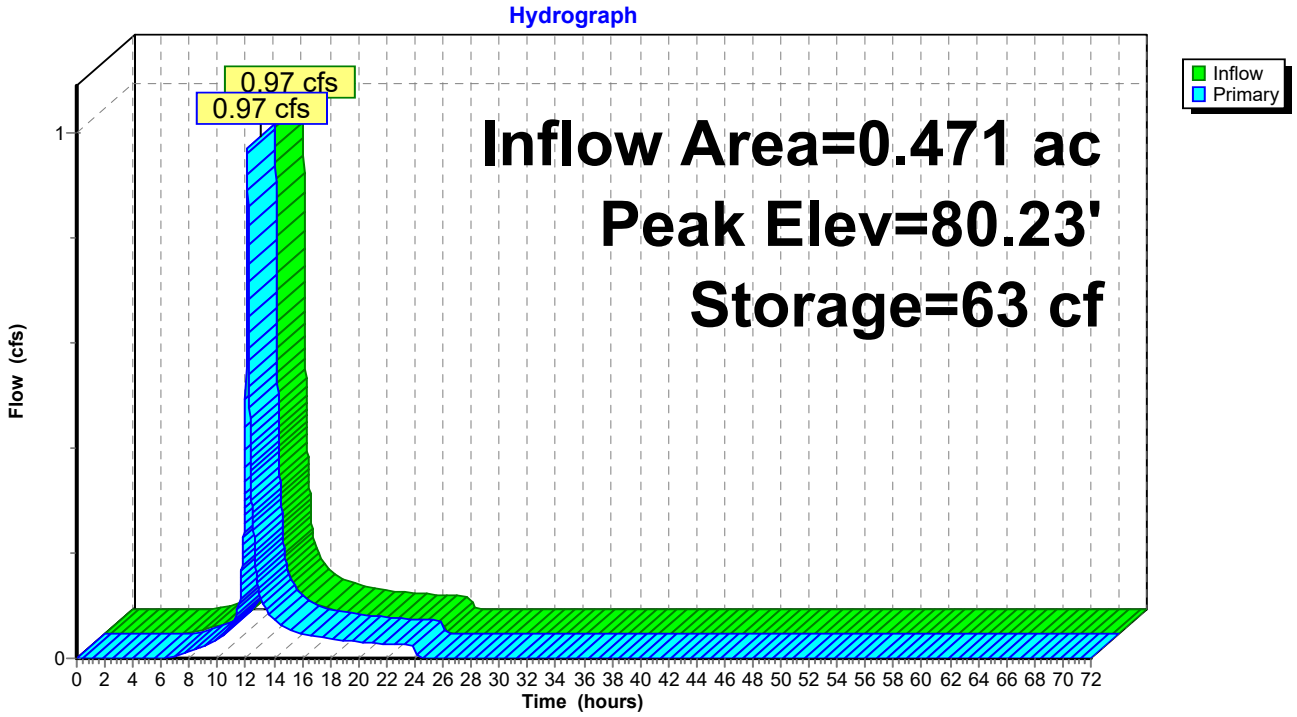
Volume	Invert	Avail.Storage	Storage Description
#1	79.55'	1,087 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.55	2	0	0
80.00	100	23	23
81.00	775	438	460
81.30	1,220	299	760
81.55	1,400	328	1,087

Device	Routing	Invert	Outlet Devices
#1	Primary	80.05'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.97 cfs @ 12.10 hrs HW=80.23' TW=79.51' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 0.97 cfs @ 1.36 fps)

Pond PP53A: Proposed Swale Along East Side of Main Road



Summary for Pond PP54: Proposed Bioretention Basin "A2"

Inflow Area = 1.334 ac, 38.49% Impervious, Inflow Depth = 2.05" for 2-yr (+15%) event
Inflow = 2.42 cfs @ 12.10 hrs, Volume= 0.228 af
Outflow = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af, Atten= 72%, Lag= 24.0 min
Primary = 0.67 cfs @ 12.50 hrs, Volume= 0.227 af
Routed to Pond PDMH3A : Proposed Manhole 3A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 74.25' Surf.Area= 4,035 sf Storage= 952 cf
Peak Elev= 76.25' @ 12.50 hrs Surf.Area= 4,035 sf Storage= 3,776 cf (2,824 cf above start)
Flood Elev= 79.50' Surf.Area= 4,035 sf Storage= 11,321 cf (10,368 cf above start)

Plug-Flow detention time= 172.8 min calculated for 0.205 af (90% of inflow)
Center-of-Mass det. time= 91.8 min (948.8 - 857.0)

Volume	Invert	Avail.Storage	Storage Description
#1	73.66'	5,290 cf	**Bioretention "A2" Subsurface (Conic)** Listed below (Recalc)
#2	77.50'	6,031 cf	**Bioretention "A2" Open Storage (Conic)** Listed below (Recalc) -Impervious
		11,321 cf	Total Available Storage

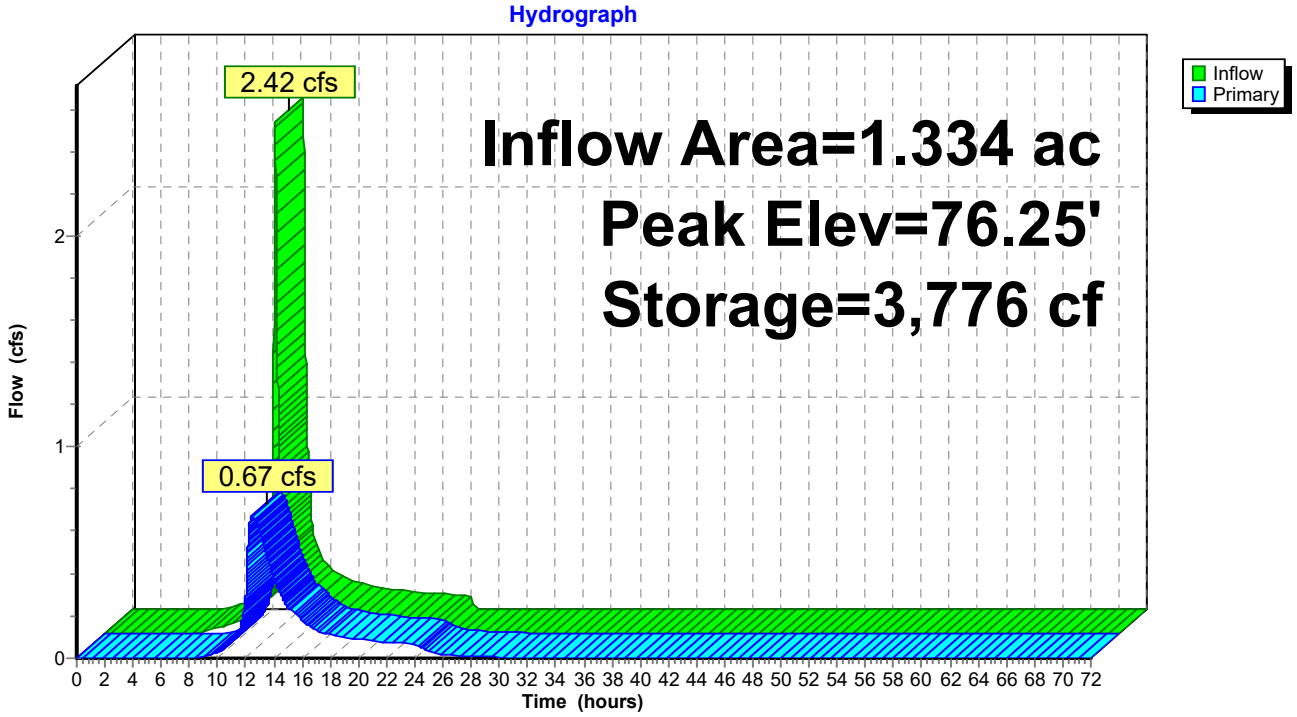
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
73.66	4,035	0.0	0	0	4,035
73.67	4,035	40.0	16	16	4,037
75.25	4,035	40.0	2,550	2,566	4,393
75.26	4,035	30.0	12	2,578	4,395
77.50	4,035	30.0	2,712	5,290	4,900

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
77.50	2,100	0	0	2,100
79.50	4,035	6,031	6,031	4,073

Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Round 12" HDPE Pipe (PDL4)** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.25' / 73.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	74.25'	**6.0" Round 6" Perforated Underdrain (PUD3)** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.25' / 74.25' S= 0.0000 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf
#3	Device 2	73.66'	**10.000 in/hr Exfiltration through Bioretention Media over Wetted area**
#4	Device 1	79.00'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.67 cfs @ 12.50 hrs HW=76.25' TW=73.85' (Dynamic Tailwater)
└─**1=12" HDPE Pipe (PDL4)** (Passes 0.67 cfs of 3.35 cfs potential flow)
  └─**2=6" Perforated Underdrain (PUD3)** (Barrel Controls 0.67 cfs @ 3.43 fps)
    └─**3=Exfiltration through Bioretention Media** (Passes 0.67 cfs of 1.07 cfs potential flow)
  └─**4=(4) 4"x12" Knockouts** (Controls 0.00 cfs)

Pond PP54: Proposed Bioretention Basin "A2"



Summary for Pond PP55: Proposed Swale Along North Portion of Proposed Secondary Road

Inflow Area = 0.198 ac, 46.41% Impervious, Inflow Depth = 2.20" for 2-yr (+15%) event
Inflow = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af
Outflow = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.1 min
Primary = 0.49 cfs @ 12.04 hrs, Volume= 0.036 af
Routed to Pond PCB5 : Proposed Catch Basin 5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.34' @ 12.04 hrs Surf.Area= 44 sf Storage= 3 cf
Flood Elev= 74.20' Surf.Area= 1,670 sf Storage= 883 cf

Plug-Flow detention time= 0.1 min calculated for 0.036 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (845.0 - 844.9)

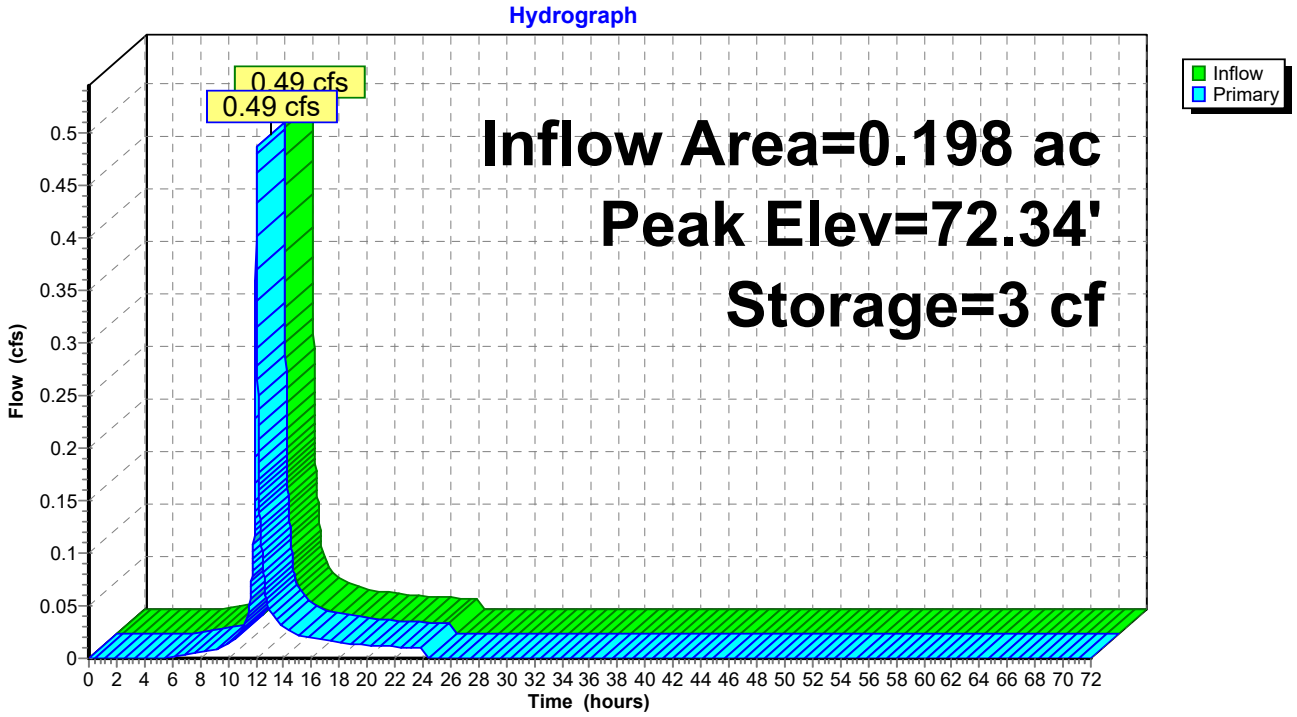
Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	883 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.20	2	0	0
72.50	95	15	15
73.00	285	95	110
73.50	525	203	312
74.00	780	326	638
74.20	1,670	245	883

Device	Routing	Invert	Outlet Devices
#1	Primary	72.20'	**12.0" W x 4.0" H Vert. (3) 4"x12" Knockouts X 3.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.49 cfs @ 12.04 hrs HW=72.34' TW=70.69' (Dynamic Tailwater)
↑—**1=(3) 4"x12" Knockouts** (Orifice Controls 0.49 cfs @ 1.19 fps)

Pond PP55: Proposed Swale Along North Portion of Proposed Secondary Road



Summary for Pond PP56: Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac

Inflow Area = 0.206 ac, 49.33% Impervious, Inflow Depth = 2.29" for 2-yr (+15%) event
Inflow = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af
Outflow = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.2 min
Primary = 0.52 cfs @ 12.04 hrs, Volume= 0.039 af
Routed to Pond PCB6 : Proposed Catch Basin 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.37' @ 12.04 hrs Surf.Area= 81 sf Storage= 20 cf
Flood Elev= 74.75' Surf.Area= 630 sf Storage= 476 cf

Plug-Flow detention time= 7.7 min calculated for 0.039 af (99% of inflow)
Center-of-Mass det. time= 3.7 min (843.9 - 840.2)

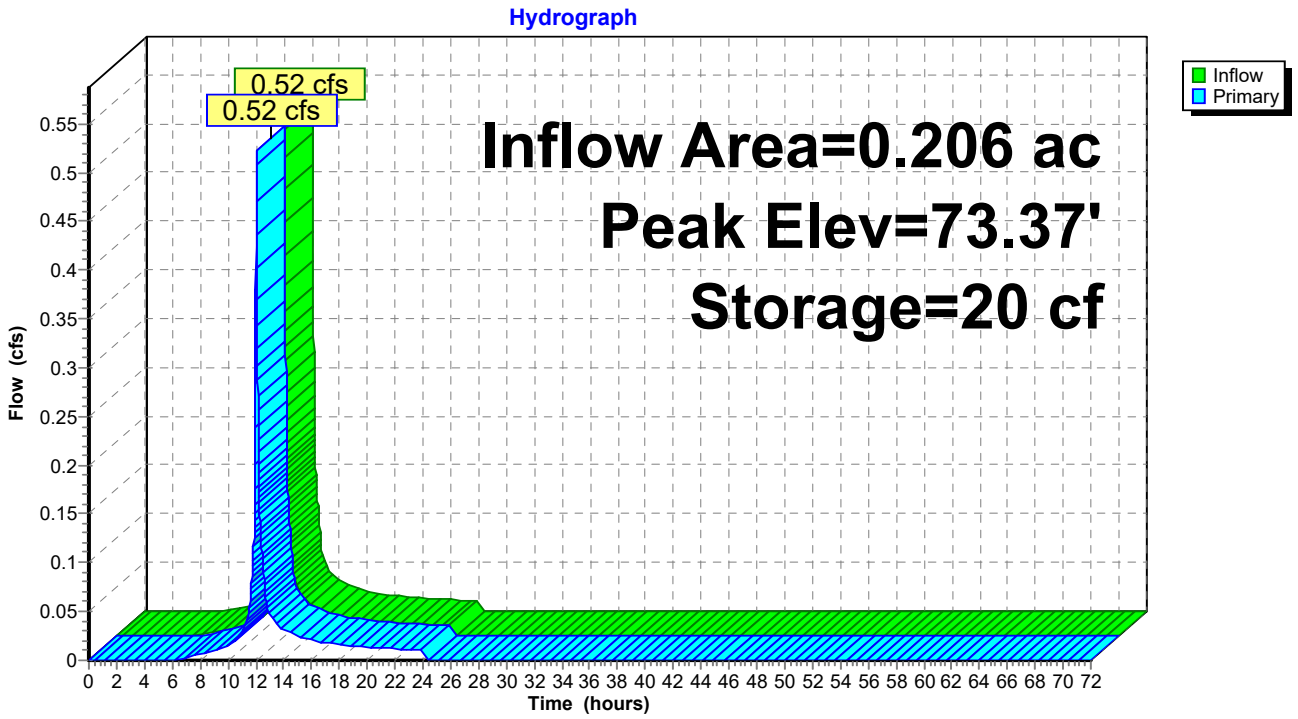
Volume	Invert	Avail.Storage	Storage Description
#1	72.75'	476 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.75	2	0	0
73.00	15	2	2
73.50	105	30	32
74.00	290	99	131
74.75	630	345	476

Device	Routing	Invert	Outlet Devices
#1	Primary	73.25'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.52 cfs @ 12.04 hrs HW=73.37' TW=71.71' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 0.52 cfs @ 1.10 fps)

Pond PP56: Proposed Swale Along North Portion of Proposed Secondary Cul-de-sac



Summary for Pond PP57: Proposed Swale Along South Side of Secondary Road

Inflow Area = 0.328 ac, 53.66% Impervious, Inflow Depth = 2.37" for 2-yr (+15%) event
Inflow = 0.86 cfs @ 12.04 hrs, Volume= 0.065 af
Outflow = 0.74 cfs @ 12.07 hrs, Volume= 0.056 af, Atten= 15%, Lag= 2.2 min
Primary = 0.74 cfs @ 12.07 hrs, Volume= 0.056 af
Routed to Pond PCB7 : Proposed Catch Basin 7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 73.38' @ 12.07 hrs Surf.Area= 995 sf Storage= 535 cf
Flood Elev= 74.20' Surf.Area= 4,870 sf Storage= 2,056 cf

Plug-Flow detention time= 114.7 min calculated for 0.056 af (87% of inflow)
Center-of-Mass det. time= 47.2 min (882.5 - 835.3)

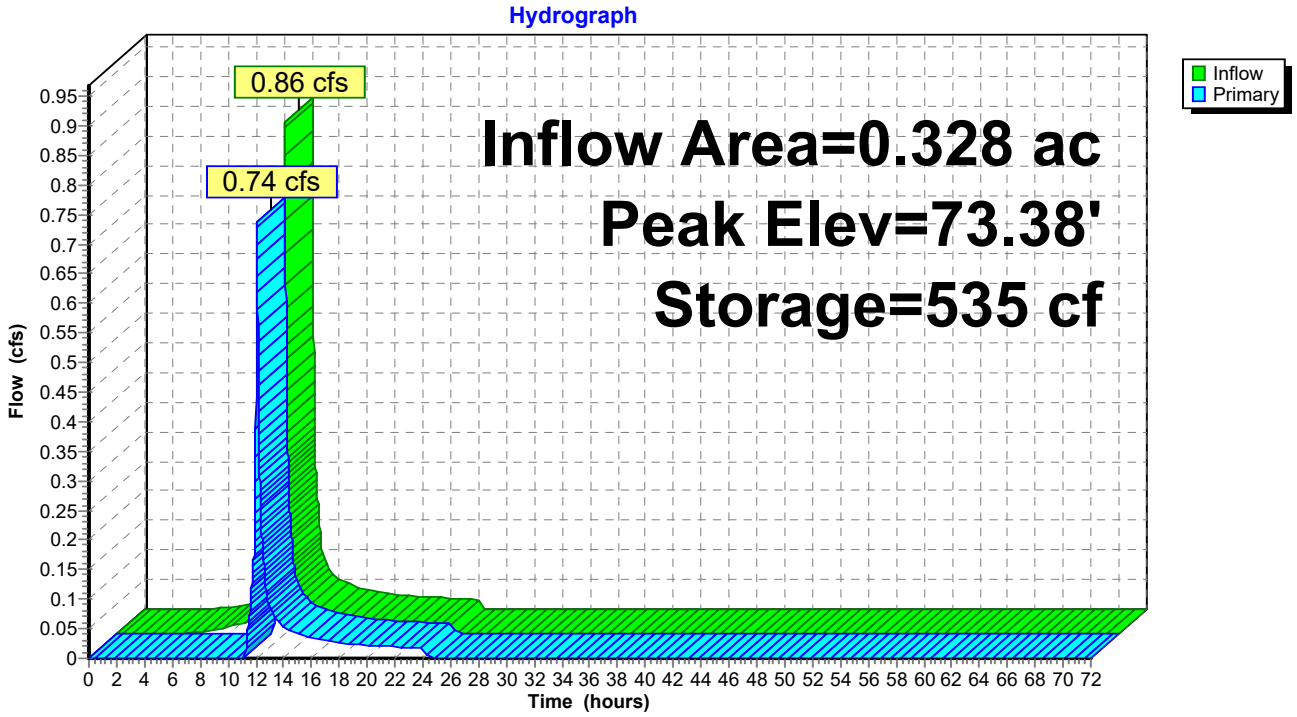
Volume	Invert	Avail.Storage	Storage Description
#1	72.20'	2,056 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.20	2	0	0
72.50	205	31	31
73.00	600	201	232
73.50	1,120	430	662
74.00	1,790	728	1,390
74.20	4,870	666	2,056

Device	Routing	Invert	Outlet Devices
#1	Primary	73.20'	**12.0" W x 4.0" H Vert. (3) 4"x12" Knockouts X 3.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.73 cfs @ 12.07 hrs HW=73.38' TW=70.53' (Dynamic Tailwater)
↑—**1=(3) 4"x12" Knockouts** (Orifice Controls 0.73 cfs @ 1.36 fps)

Pond PP57: Proposed Swale Along South Side of Secondary Road



Summary for Pond PP58: Swale Along Middle-East Portion of Proposed Main Road

Inflow Area = 0.543 ac, 32.10% Impervious, Inflow Depth = 1.96" for 2-yr (+15%) event
Inflow = 1.18 cfs @ 12.04 hrs, Volume= 0.089 af
Outflow = 1.17 cfs @ 12.05 hrs, Volume= 0.085 af, Atten= 1%, Lag= 0.5 min
Primary = 1.17 cfs @ 12.05 hrs, Volume= 0.085 af
Routed to Pond PCB4 : Proposed Catch Basin 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.70' @ 12.05 hrs Surf.Area= 258 sf Storage= 213 cf
Flood Elev= 77.50' Surf.Area= 440 sf Storage= 476 cf

Plug-Flow detention time= 39.0 min calculated for 0.085 af (96% of inflow)
Center-of-Mass det. time= 15.4 min (873.7 - 858.3)

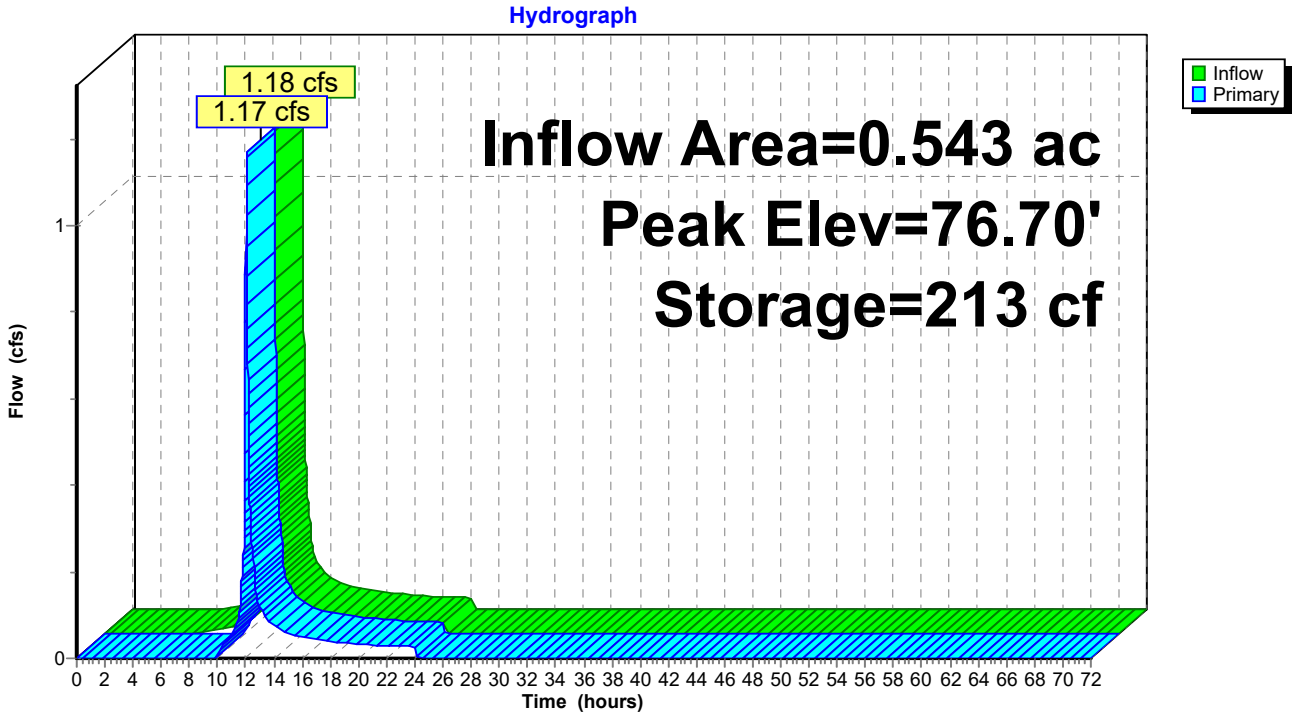
Volume	Invert	Avail.Storage	Storage Description
#1	75.50'	476 cf	**Ponding Area (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
75.50	2	0	0
76.00	205	52	52
76.50	240	111	163
77.00	285	131	294
77.50	440	181	476

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**12.0" W x 4.0" H Vert. (4) 4"x12" Knockouts X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.17 cfs @ 12.05 hrs HW=76.70' TW=73.81' (Dynamic Tailwater)
↑—**1=(4) 4"x12" Knockouts** (Orifice Controls 1.17 cfs @ 1.44 fps)

Pond PP58: Swale Along Middle-East Portion of Proposed Main Road



Summary for Pond PP59: Existing Transferance Swale

Inflow Area = 1.749 ac, 25.61% Impervious, Inflow Depth = 1.06" for 2-yr (+15%) event
Inflow = 1.60 cfs @ 12.05 hrs, Volume= 0.155 af
Outflow = 1.15 cfs @ 12.15 hrs, Volume= 0.155 af, Atten= 28%, Lag= 6.0 min
Primary = 1.15 cfs @ 12.15 hrs, Volume= 0.155 af
Routed to Reach PR81 : East Portion of Existing Central Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 71.66' @ 12.15 hrs Surf.Area= 1,561 sf Storage= 548 cf
Flood Elev= 74.00' Surf.Area= 18,200 sf Storage= 21,723 cf

Plug-Flow detention time= 16.6 min calculated for 0.154 af (100% of inflow)
Center-of-Mass det. time= 13.5 min (874.6 - 861.1)

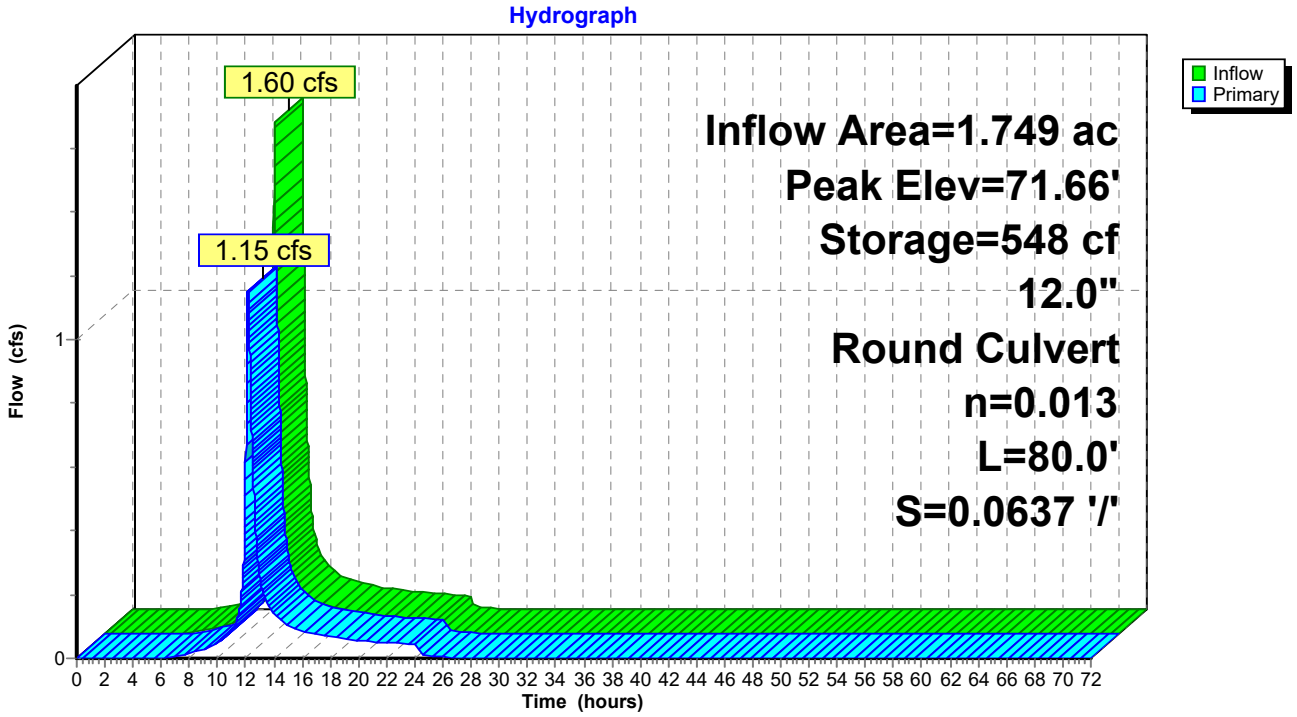
Volume	Invert	Avail.Storage	Storage Description
#1	71.00'	21,723 cf	**Transferance Swale behind Existing House (Prismatic)**Listed below (Recal

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.00	100	0	0
72.00	2,315	1,208	1,208
74.00	18,200	20,515	21,723

Device	Routing	Invert	Outlet Devices
#1	Primary	71.10'	**12.0" Round 12" HDPE Pipe (PDL23)** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 71.10' / 66.00' S= 0.0637 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.15 hrs HW=71.66' TW=66.09' (Dynamic Tailwater)
↑—**1=12" HDPE Pipe (PDL23)** (Inlet Controls 1.15 cfs @ 2.55 fps)

Pond PP59: Existing Transferance Swale



Summary for Pond PP64: Stone Storage for Lot 20

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

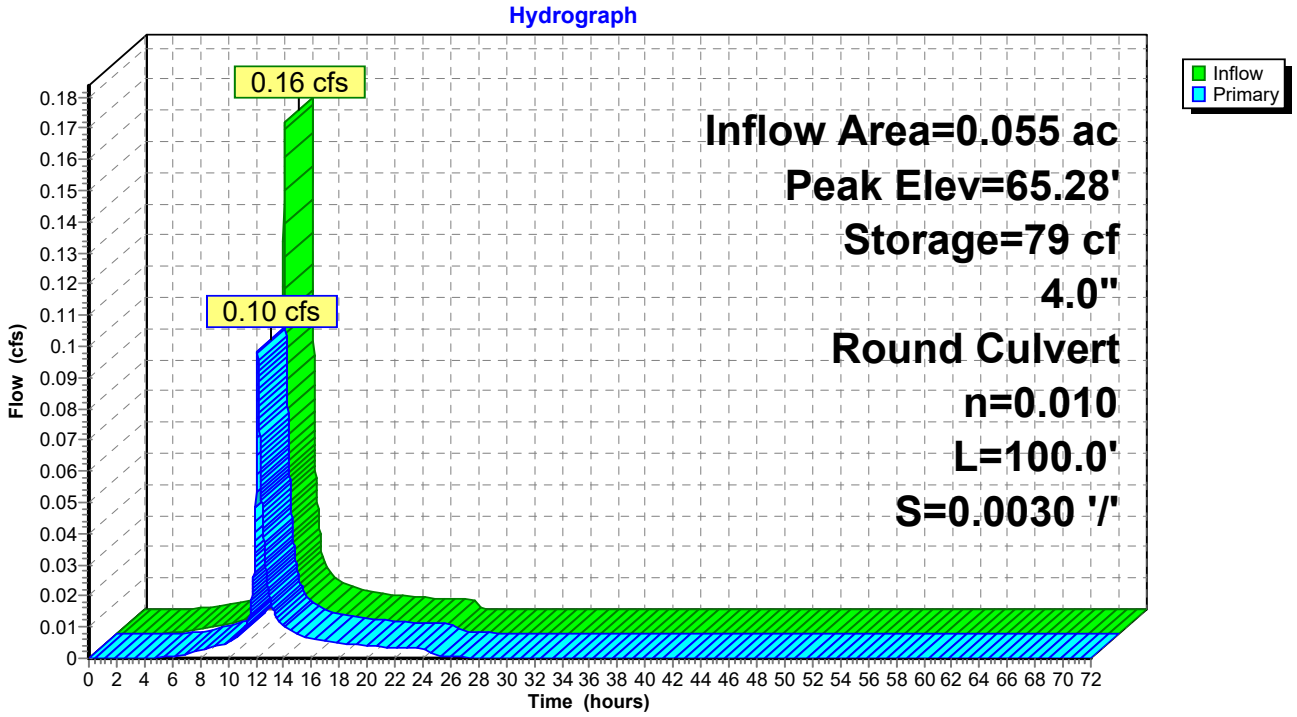
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=65.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP64: Stone Storage for Lot 20



Summary for Pond PP65: Stone Storage for Lot 19

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

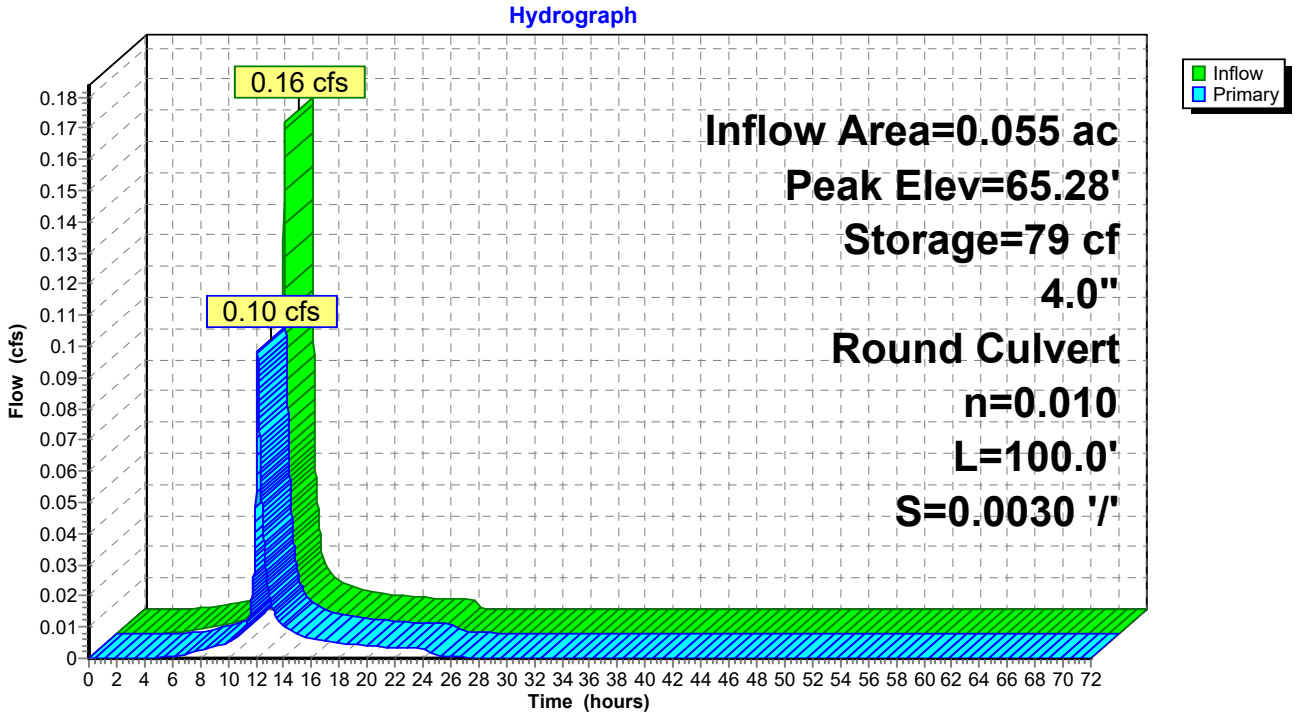
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=65.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP65: Stone Storage for Lot 19



Summary for Pond PP66: Stone Storage for Lot 18

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

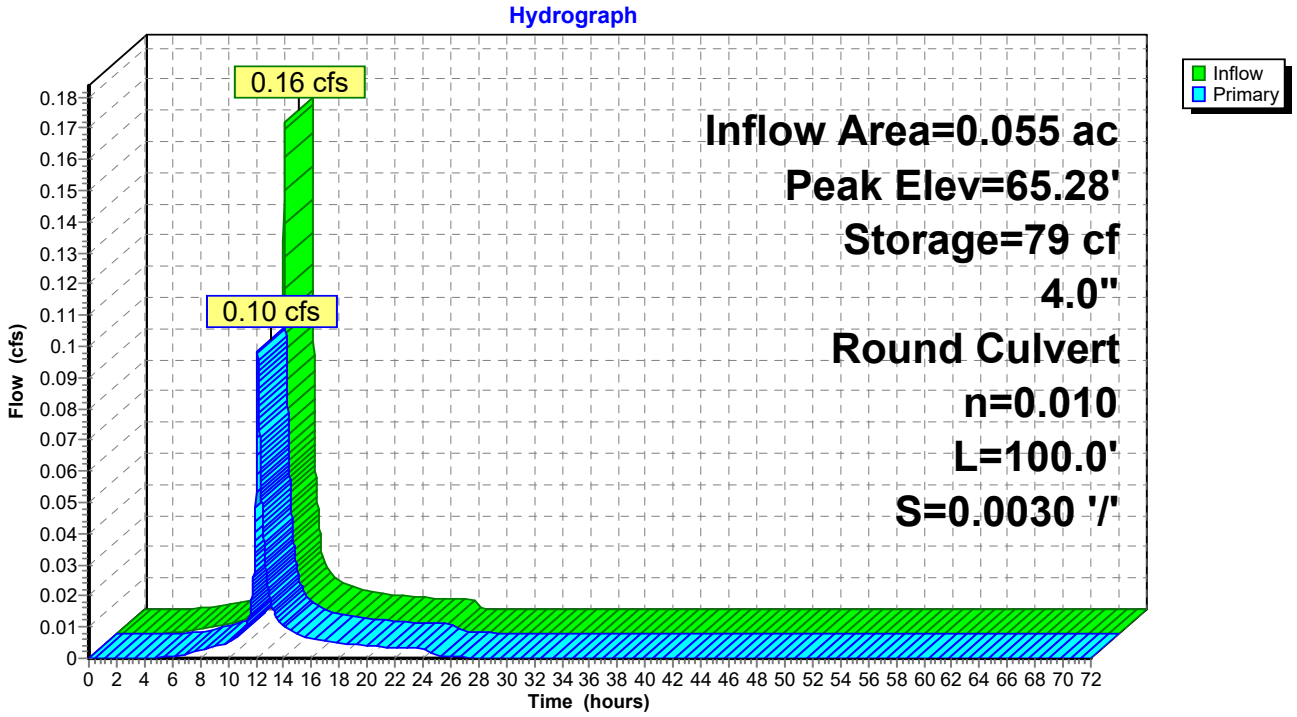
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=65.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP66: Stone Storage for Lot 18



Summary for Pond PP67: Stone Storage for Lot 17

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

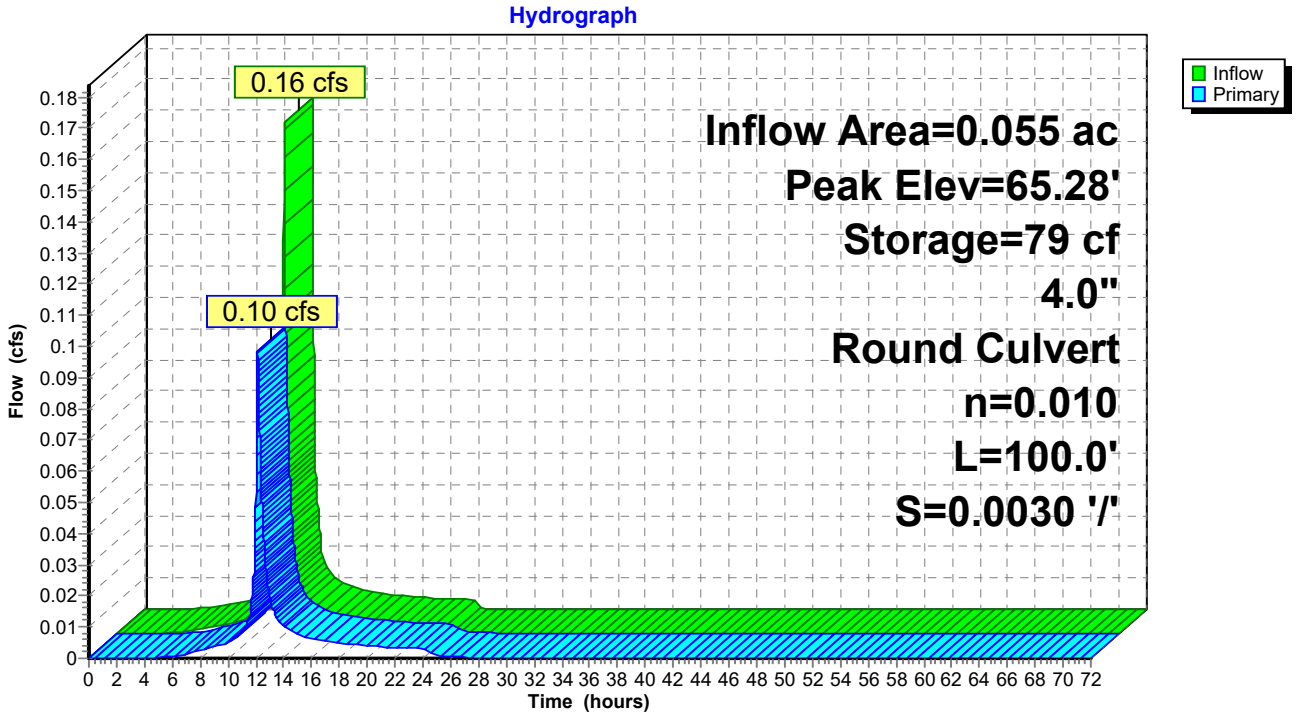
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Drip Edge (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=65.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP67: Stone Storage for Lot 17



Summary for Pond PP68: Stone Storage for Lot 16

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

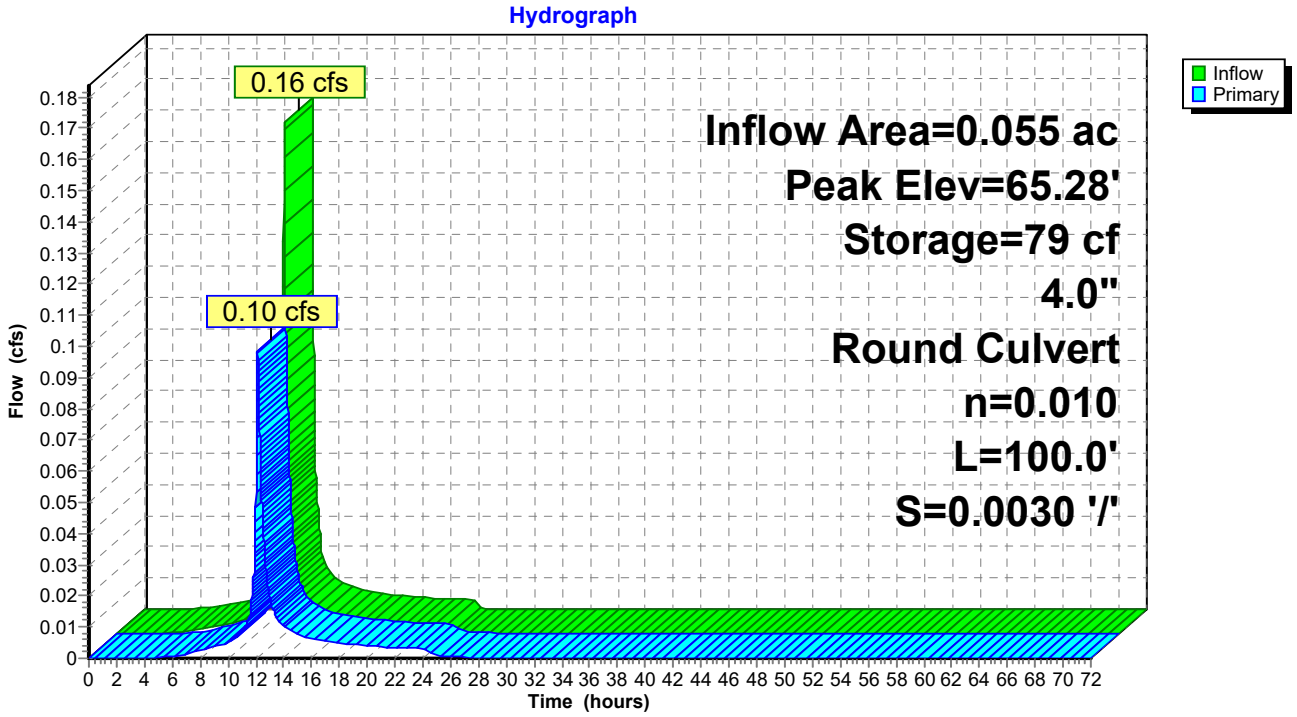
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=65.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP68: Stone Storage for Lot 16



Summary for Pond PP69: Stone Storage for Lot 28

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L103 : Flow and Volumes from Houses Flowing into Reach ER80

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 65.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

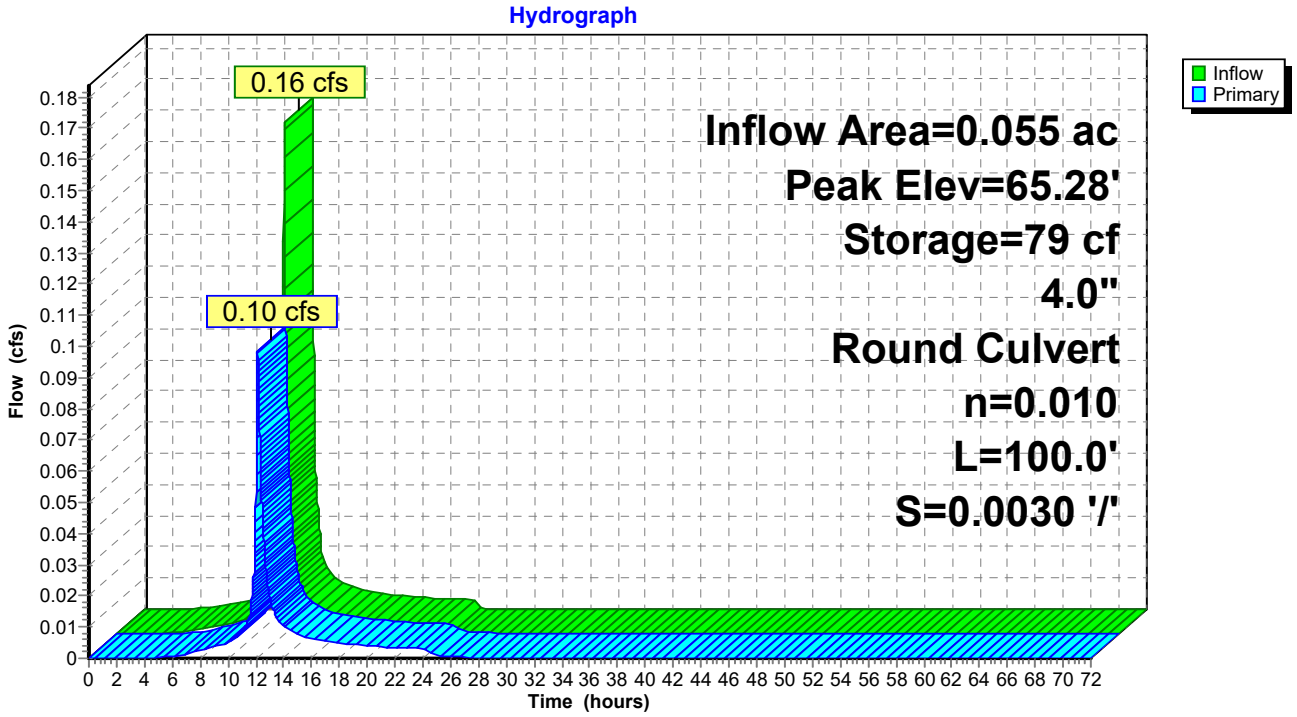
Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
65.00	705	0	0	705
69.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	65.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 65.00' / 64.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=65.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP69: Stone Storage for Lot 28



Summary for Pond PP70: Stone Storage for Lot 25

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L101C : Wetlands to the West (Southern Swale Entrance)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

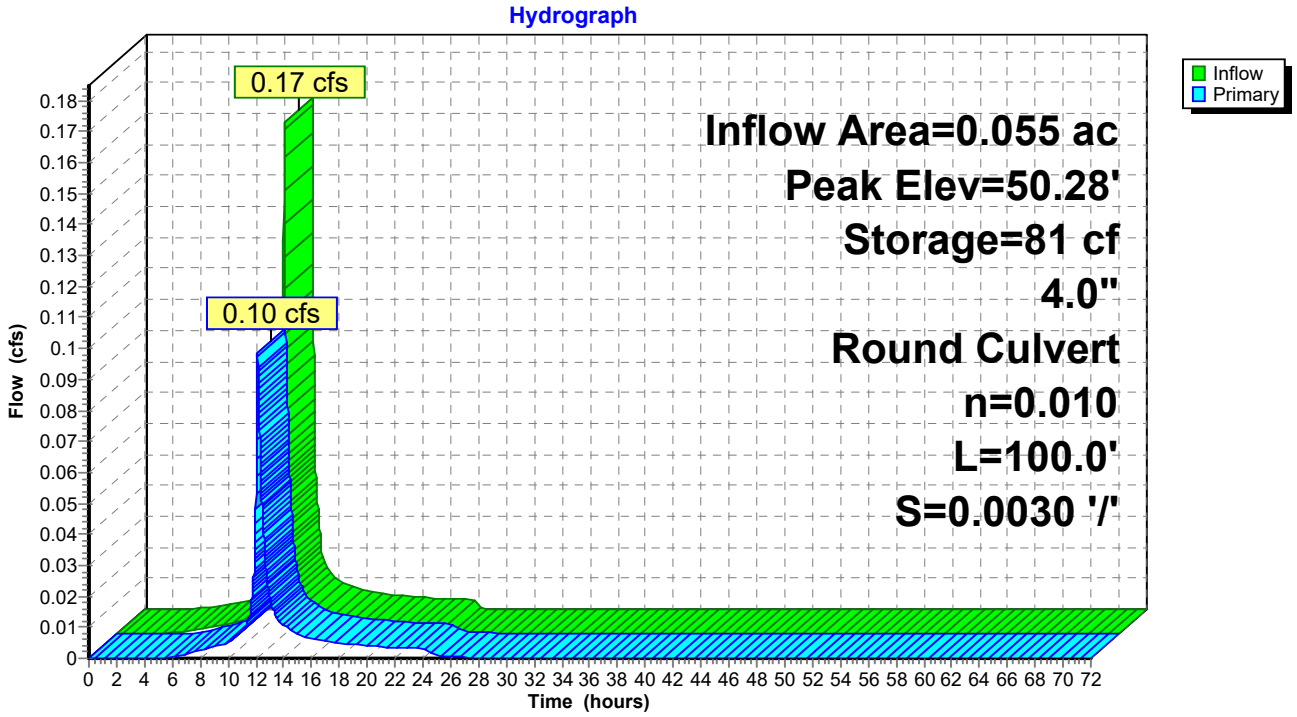
Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	720	0	0	720
54.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.00' / 49.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=50.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP70: Stone Storage for Lot 25



Summary for Pond PP71: Stone Storage for Lot 24

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L101A : Wetlands to the West (Northern Swale Entrance)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

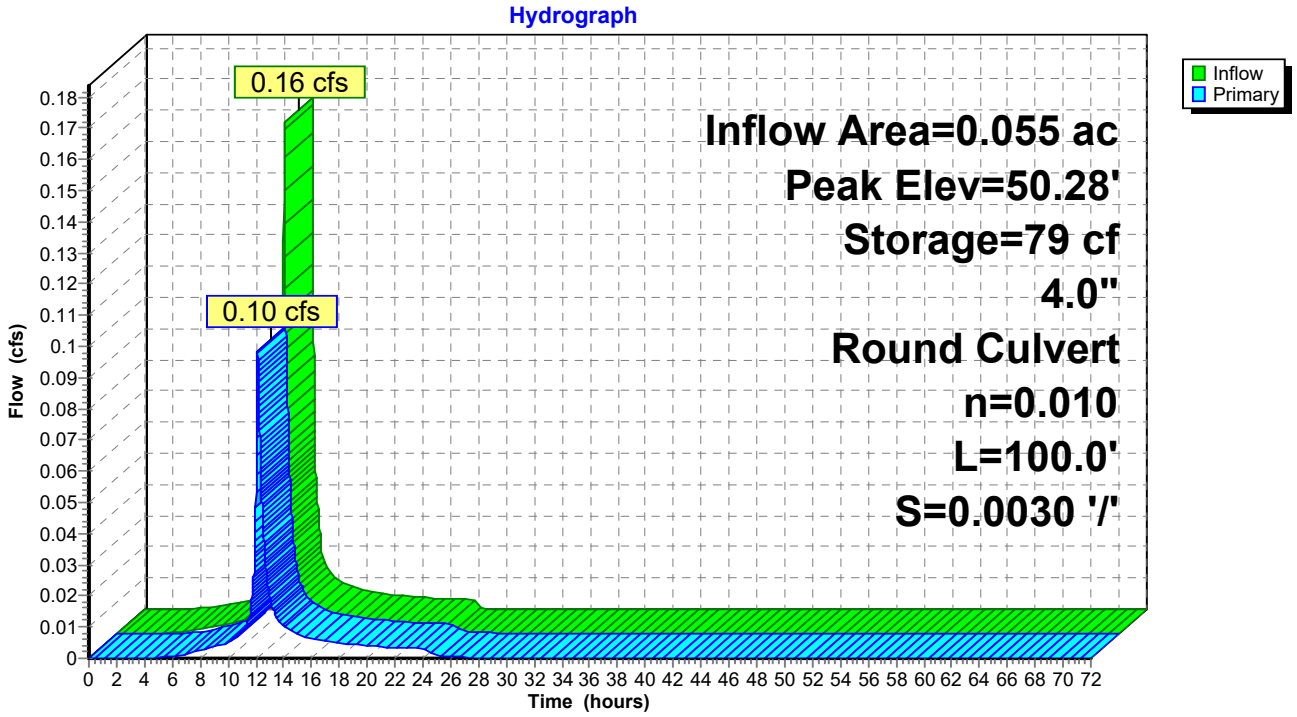
Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,128 cf	**Drip Edge (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	705	0	0	705
54.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.00' / 49.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=50.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP71: Stone Storage for Lot 24



Summary for Pond PP72: Stone Storage for Lot 23

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

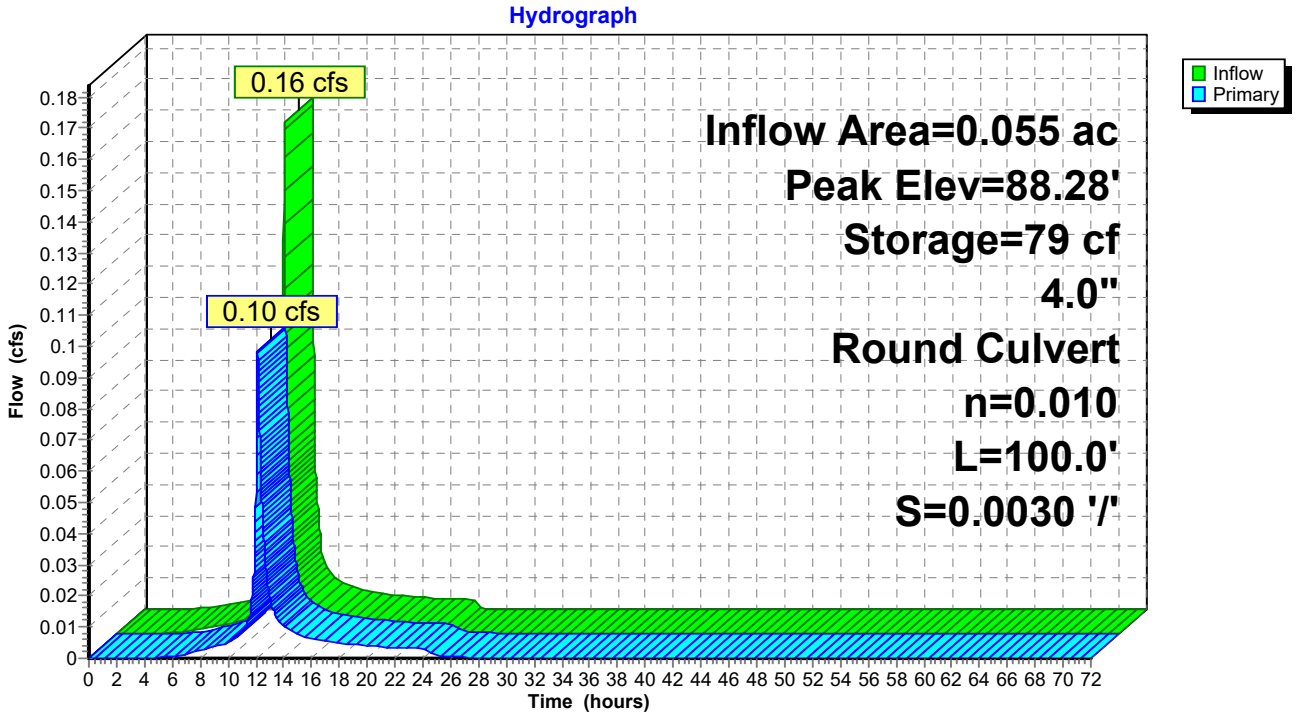
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP72: Stone Storage for Lot 23



Summary for Pond PP73: Stone Storage for Lot 22

Inflow Area = 0.056 ac, 68.57% Impervious, Inflow Depth = 2.65" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.012 af
Outflow = 0.09 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 42%, Lag= 5.2 min
Primary = 0.09 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.27' @ 12.12 hrs Surf.Area= 770 sf Storage= 84 cf

Plug-Flow detention time= 46.4 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 45.8 min (865.3 - 819.5)

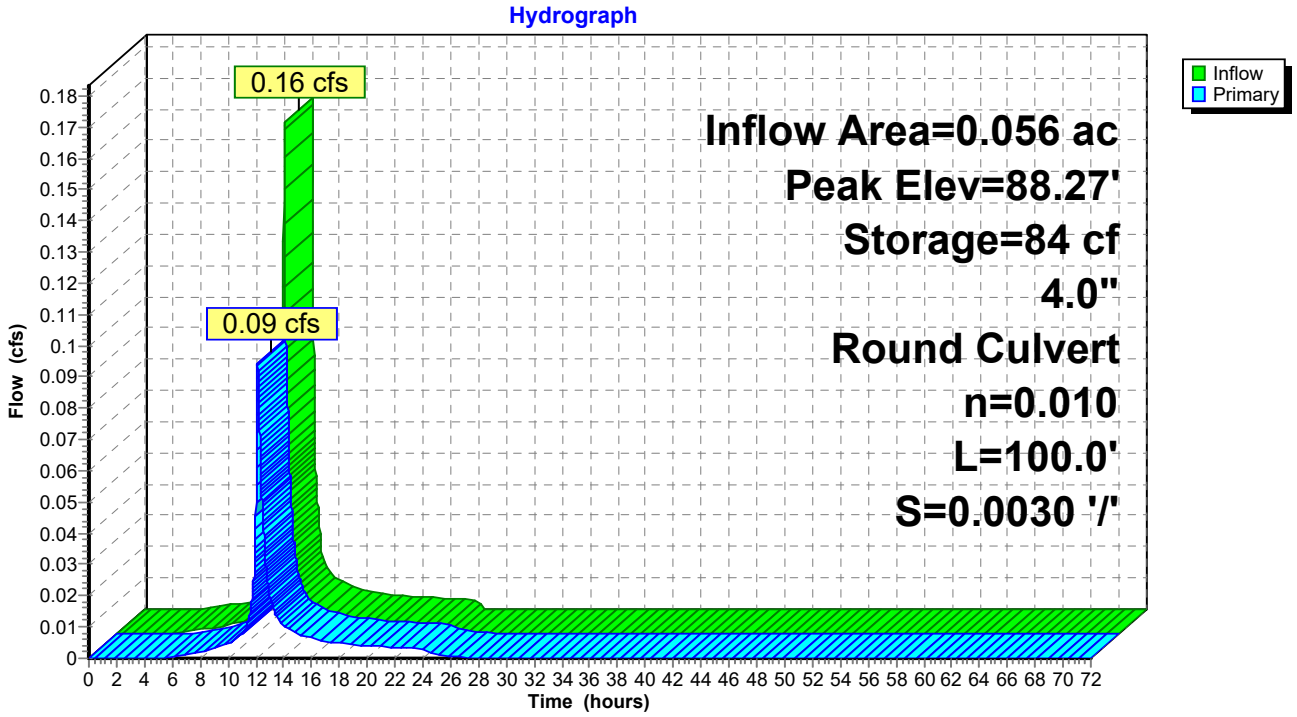
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,232 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,080 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	770	0	0	770
92.00	770	3,080	3,080	1,163

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.12 hrs HW=88.27' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.68 fps)

Pond PP73: Stone Storage for Lot 22



Summary for Pond PP74: Stone Storage for Lot 21

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

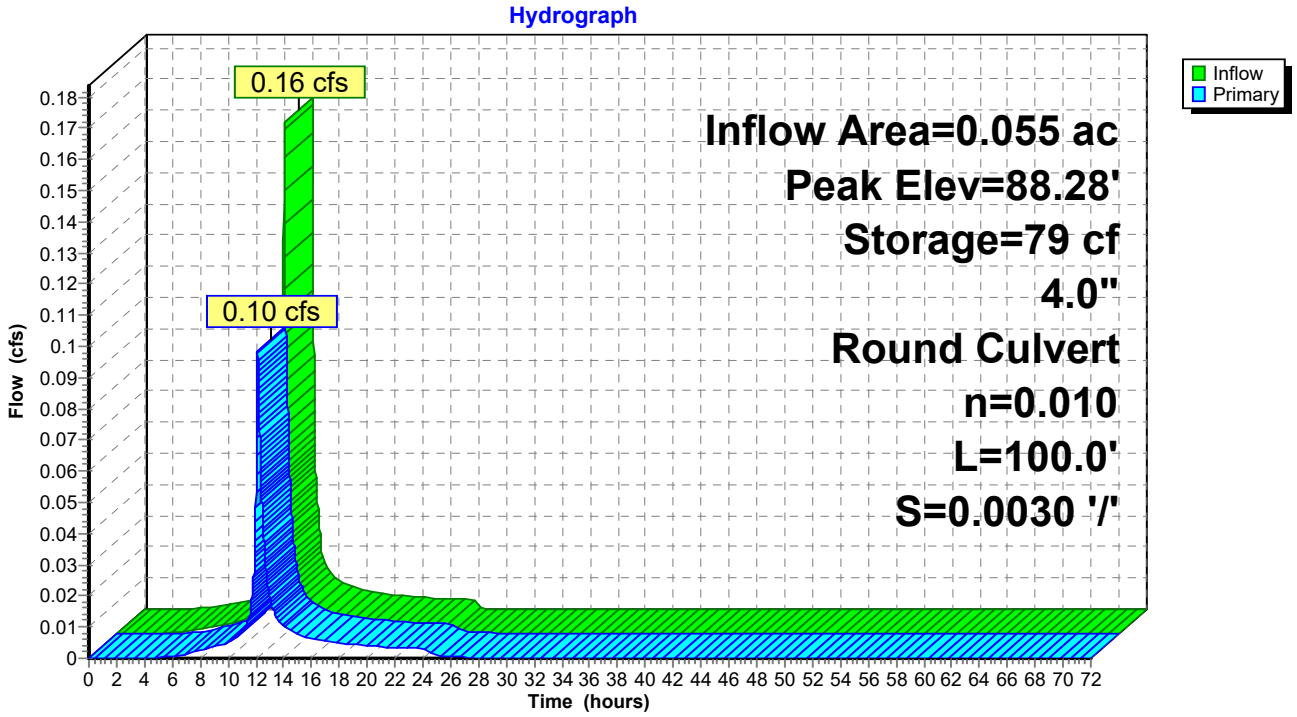
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP74: Stone Storage for Lot 21



Summary for Pond PP75: Stone Storage for Lot 15

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 41%, Lag= 5.0 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 43.1 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.9 min (856.5 - 813.6)

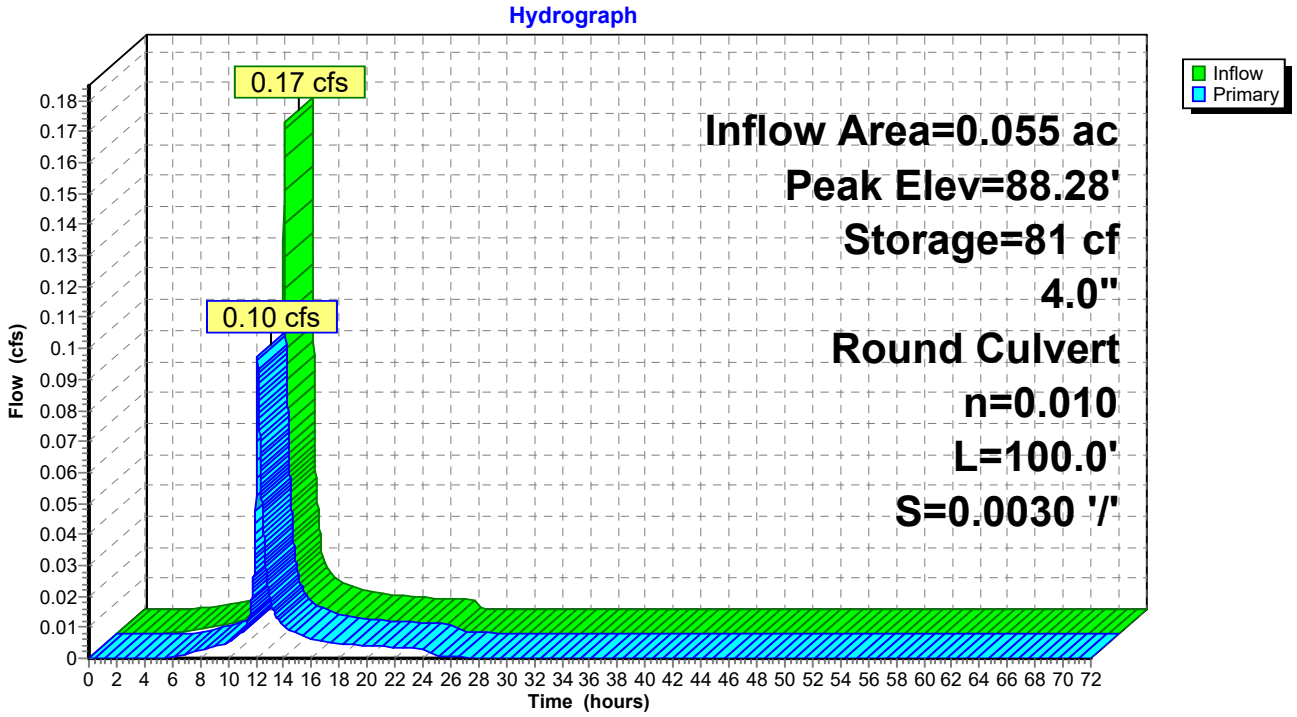
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.66 fps)

Pond PP75: Stone Storage for Lot 15



Summary for Pond PP76: Stone Storage for Lot 14

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

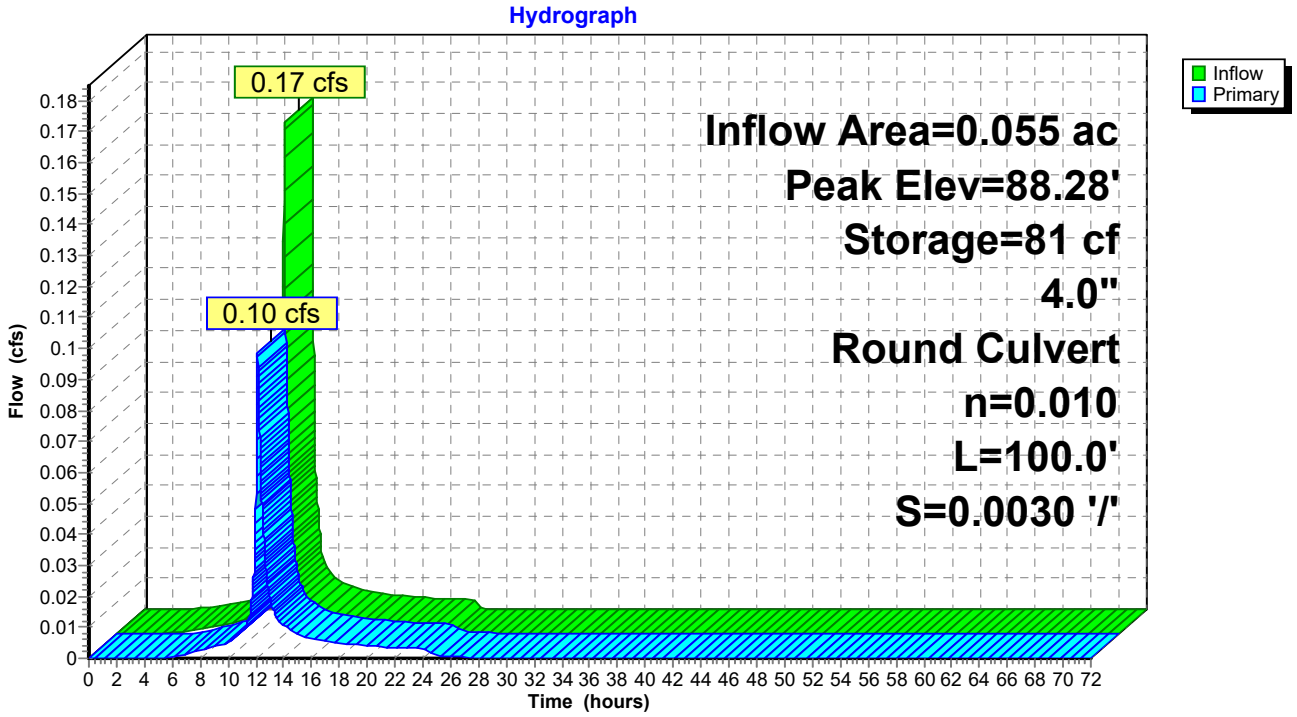
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP76: Stone Storage for Lot 14



Summary for Pond PP77: Stone Storage for Lot 13

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

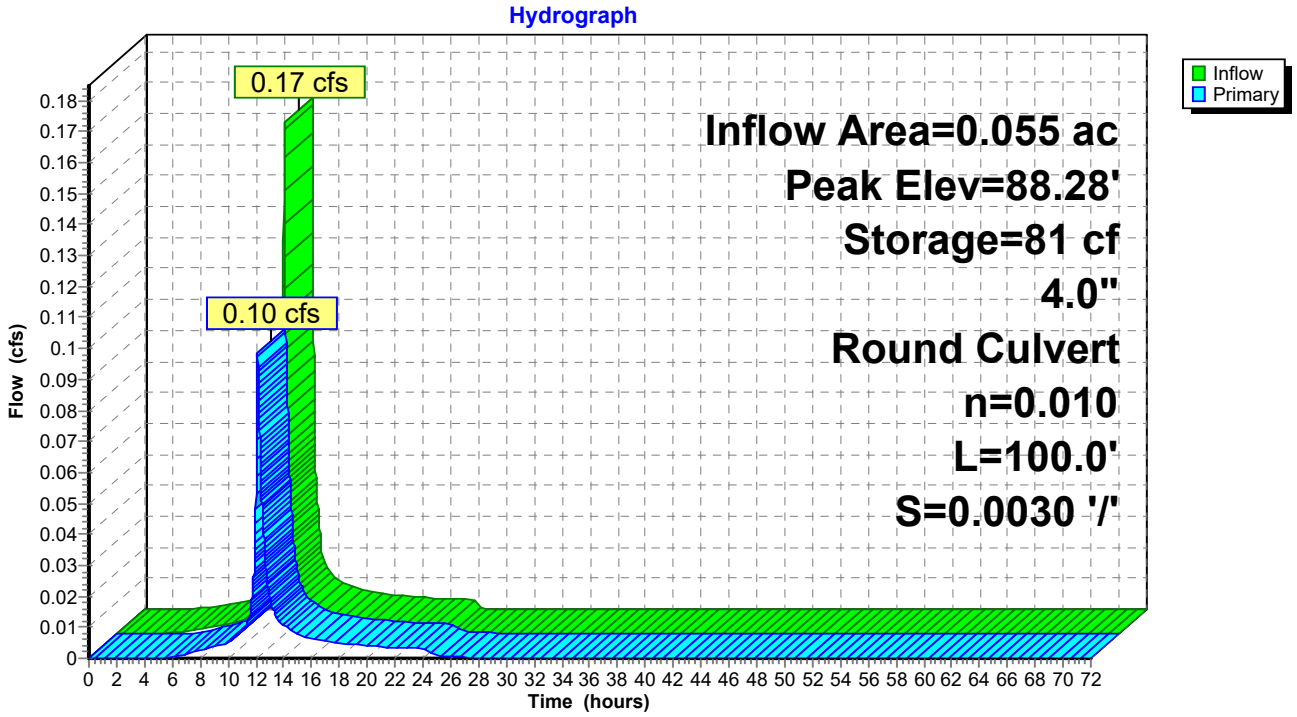
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP77: Stone Storage for Lot 13



Summary for Pond PP78: Stone Storage for Lot 12

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

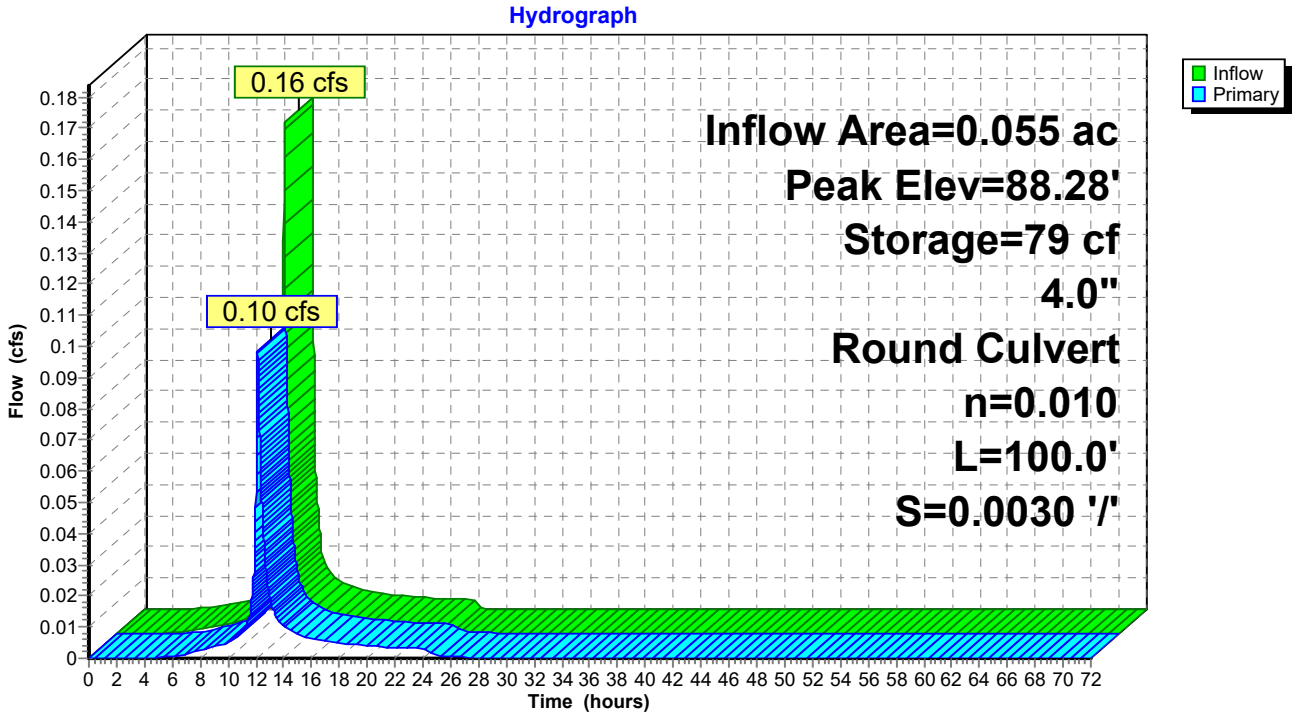
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,410 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,525 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081
93.00	705	705	3,525	1,176

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP78: Stone Storage for Lot 12



Summary for Pond PP79: Stone Storage for Lot 8

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

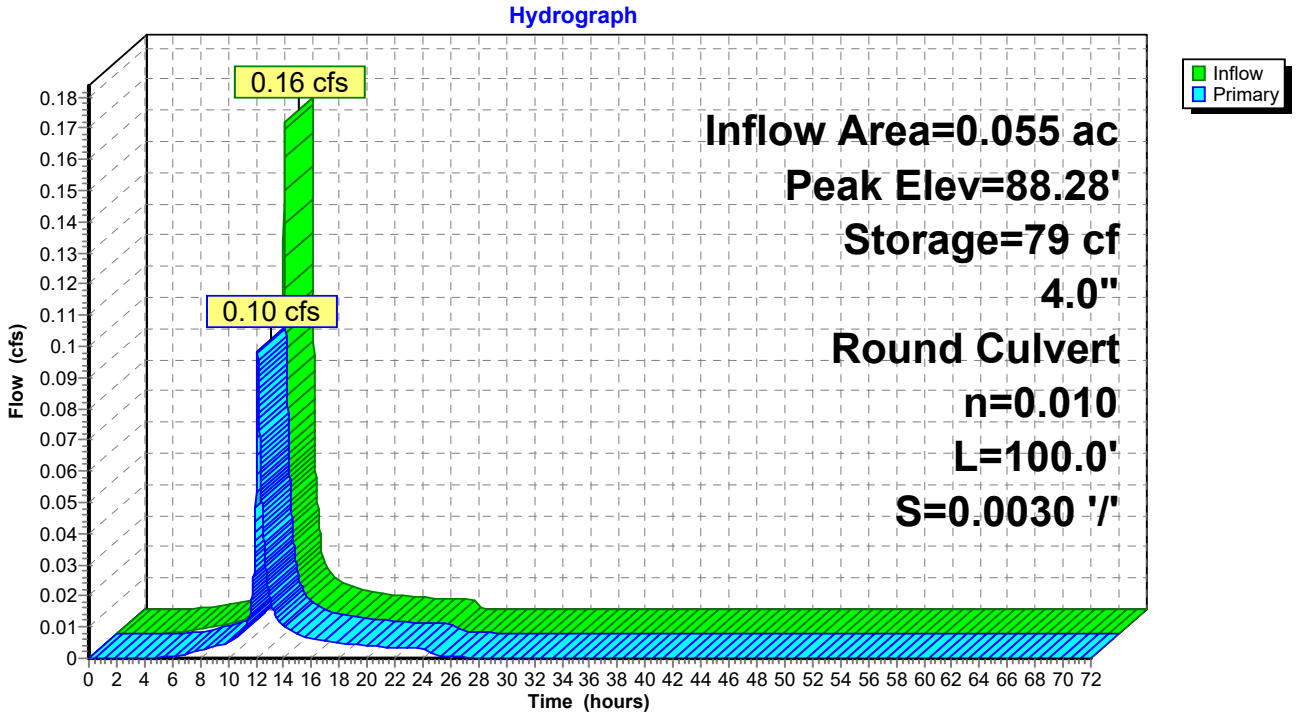
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,410 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,525 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081
93.00	705	705	3,525	1,176

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
↑—**1=4" PVC** (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP79: Stone Storage for Lot 8



Summary for Pond PP80: Stone Storage for Lot 7

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

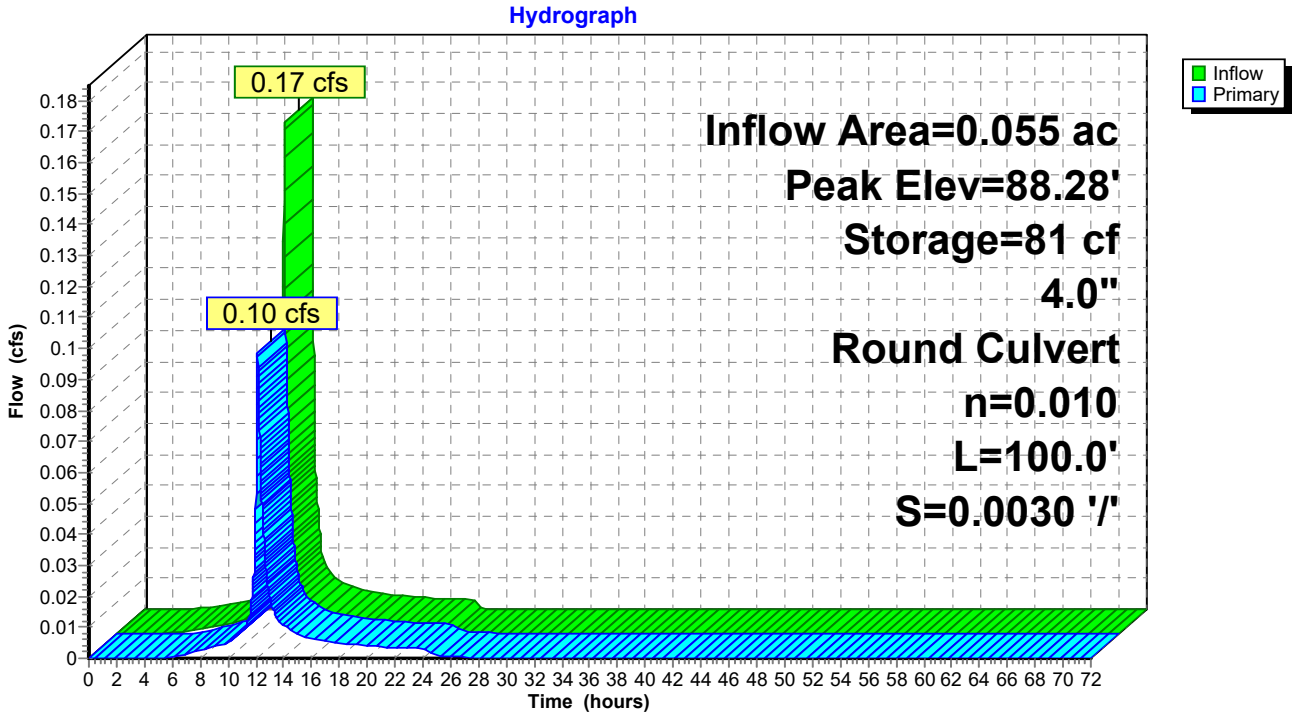
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP80: Stone Storage for Lot 7



Summary for Pond PP81: Stone Storage for Lot 6

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

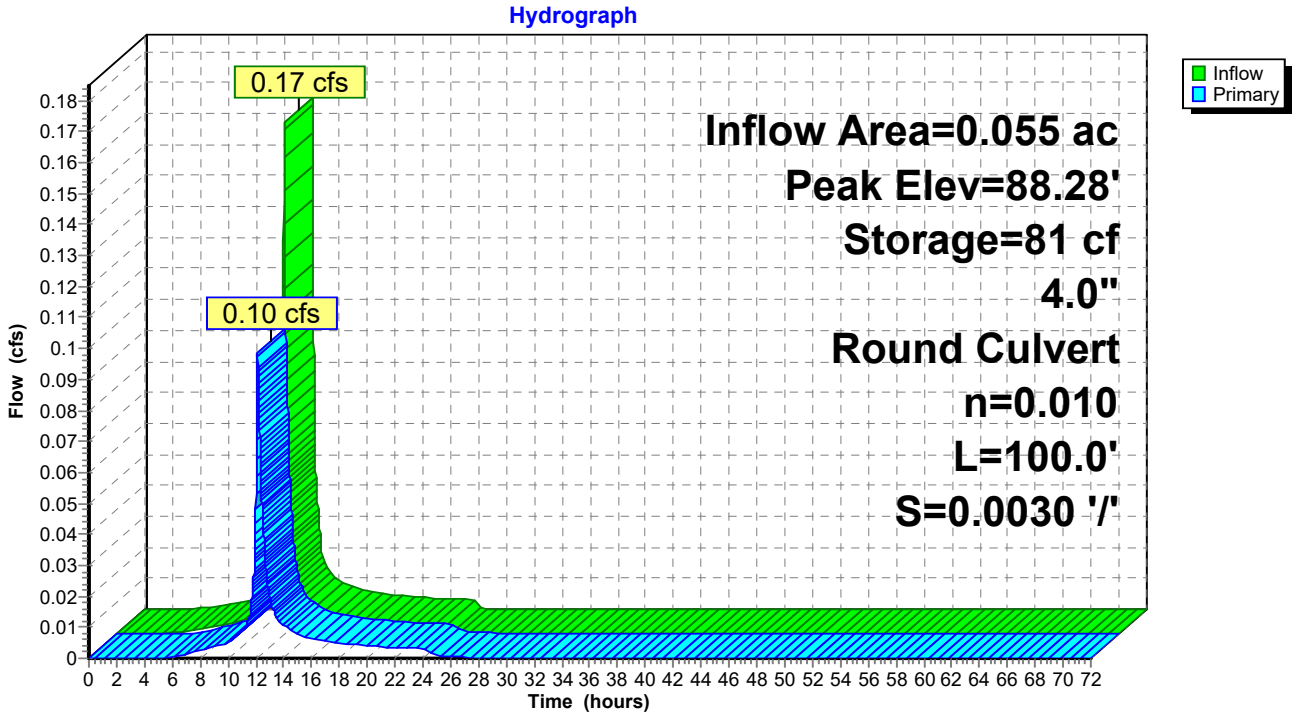
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP81: Stone Storage for Lot 6



Summary for Pond PP82: Stone Storage for Lot 5

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

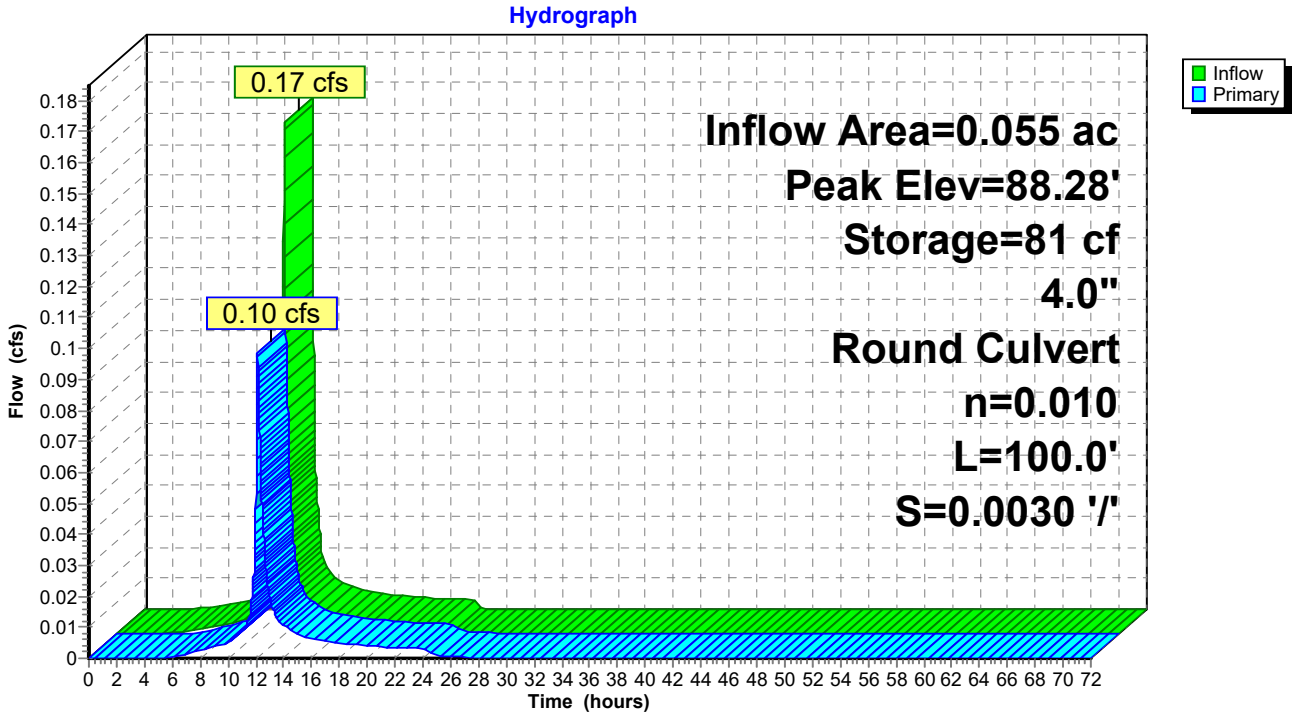
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP82: Stone Storage for Lot 5



Summary for Pond PP83: Stone Storage for Lot 4

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

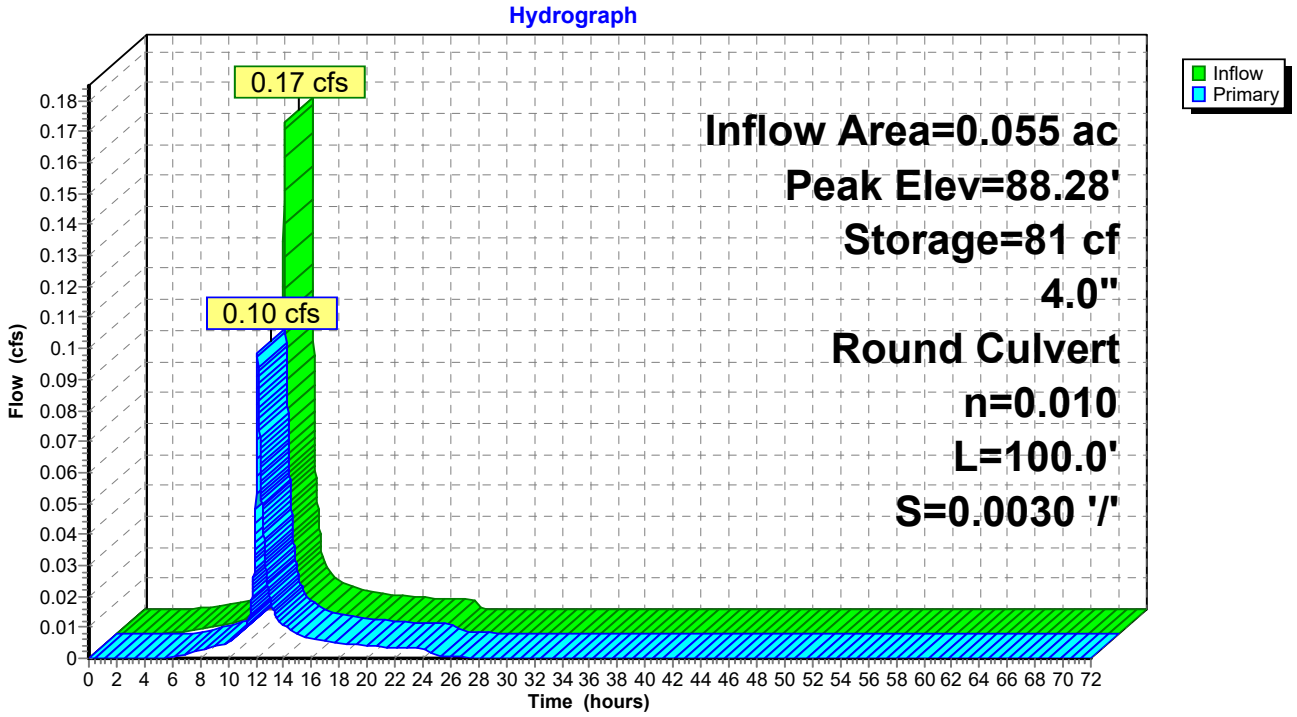
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP83: Stone Storage for Lot 4



Summary for Pond PP84: Stone Storage for Lot 3

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

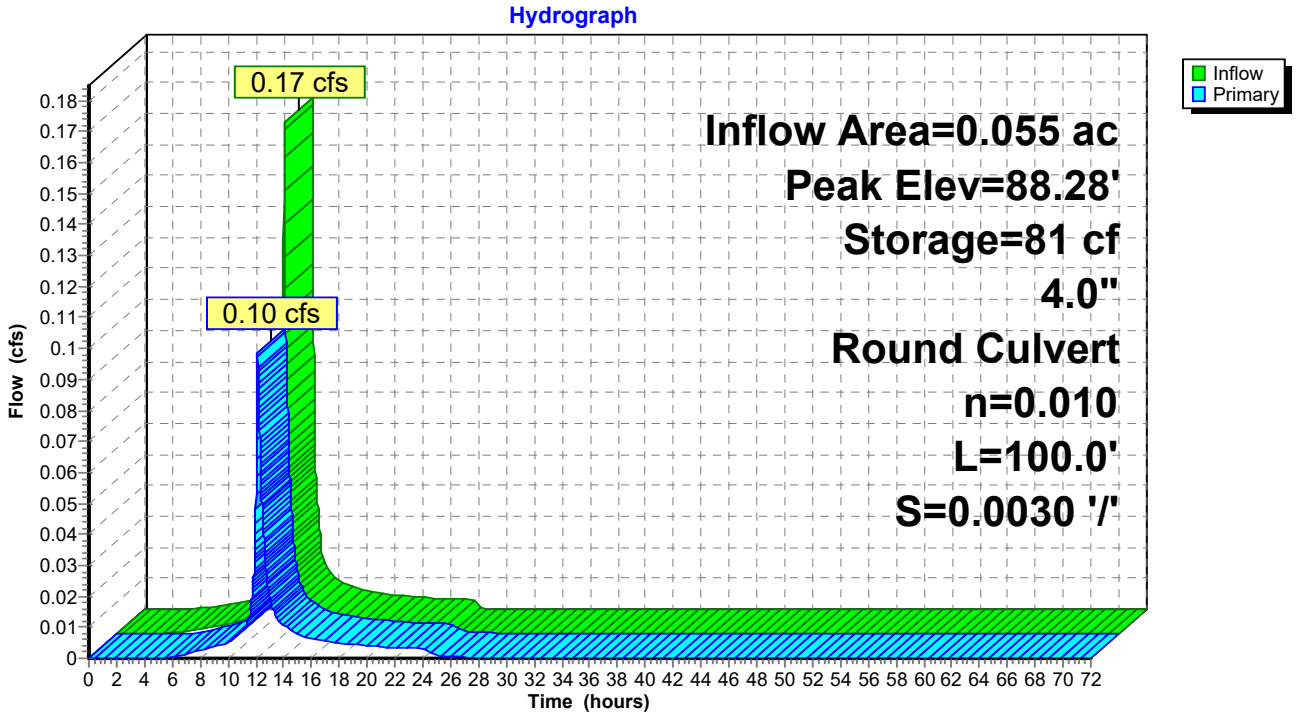
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP84: Stone Storage for Lot 3



Summary for Pond PP85: Stone Storage for Lot 2

Inflow Area = 0.055 ac, 70.00% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.17 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af, Atten= 40%, Lag= 4.9 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.013 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.28' @ 12.12 hrs Surf.Area= 720 sf Storage= 81 cf

Plug-Flow detention time= 42.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 42.8 min (856.4 - 813.6)

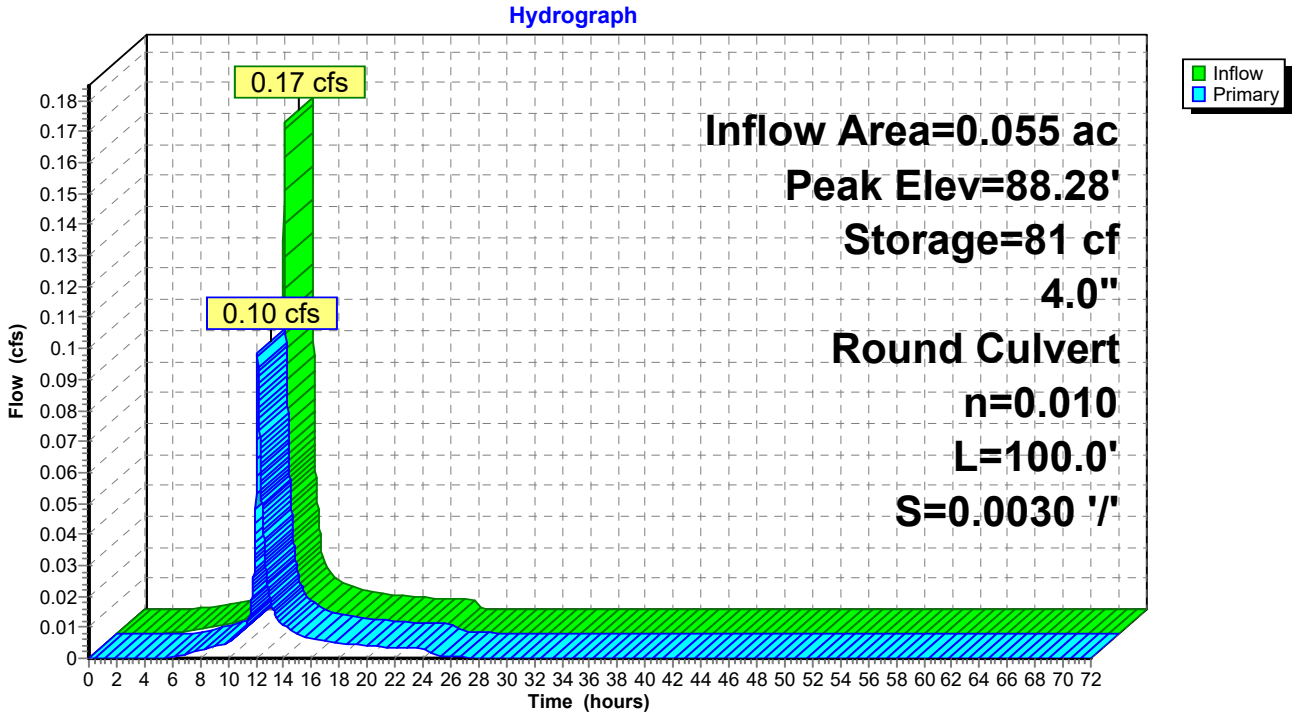
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,152 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,880 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	720	0	0	720
92.00	720	2,880	2,880	1,100

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=88.28' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP85: Stone Storage for Lot 2



Summary for Pond PP86: Stone Storage for Lot 1

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.11 cfs @ 12.10 hrs, Volume= 0.012 af, Atten= 33%, Lag= 3.9 min
Primary = 0.11 cfs @ 12.10 hrs, Volume= 0.012 af
Routed to Link L102 : Flow and Volumes from HousesFlowing into Link L101

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 88.24' @ 12.10 hrs Surf.Area= 705 sf Storage= 67 cf

Plug-Flow detention time= 32.0 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 31.7 min (845.3 - 813.6)

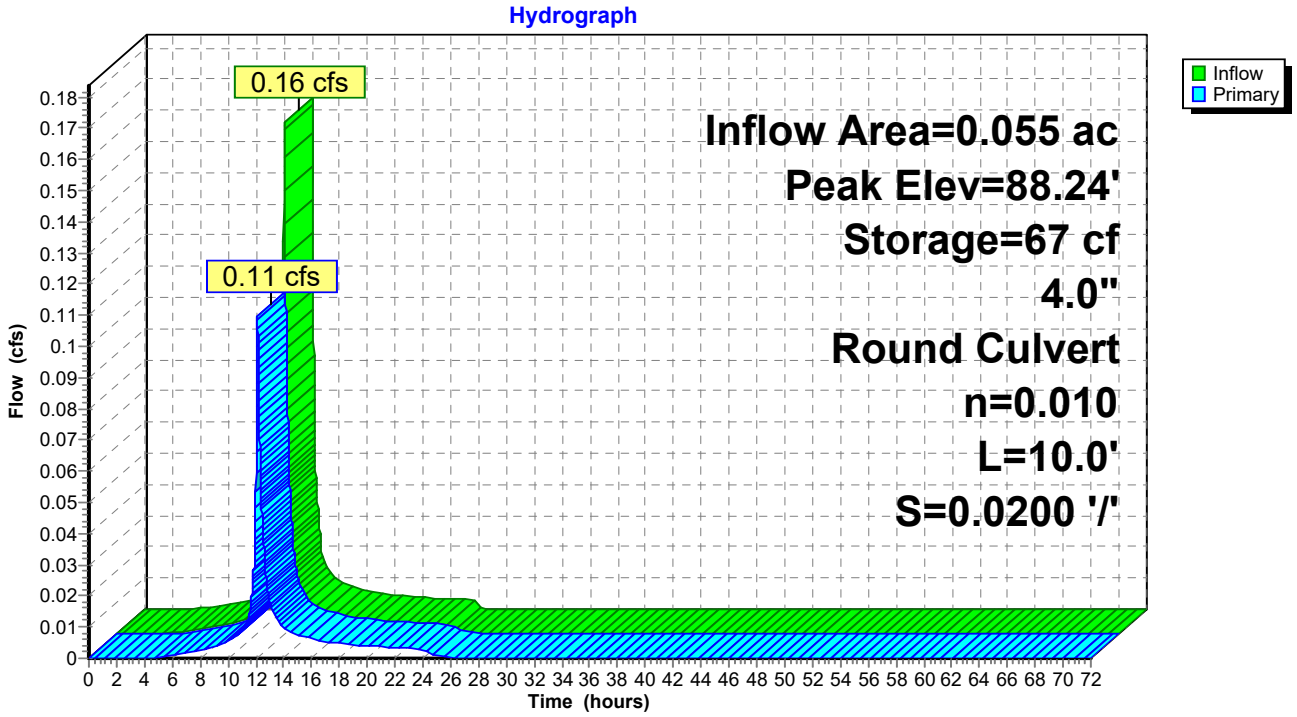
Volume	Invert	Avail.Storage	Storage Description
#1	88.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
88.00	705	0	0	705
92.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	88.00'	**4.0" Round 4" PVC** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 88.00' / 87.80' S= 0.0200 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.11 cfs @ 12.10 hrs HW=88.24' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Inlet Controls 0.11 cfs @ 1.66 fps)

Pond PP86: Stone Storage for Lot 1



Summary for Pond PP87: Stone Storage for Lot 11

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

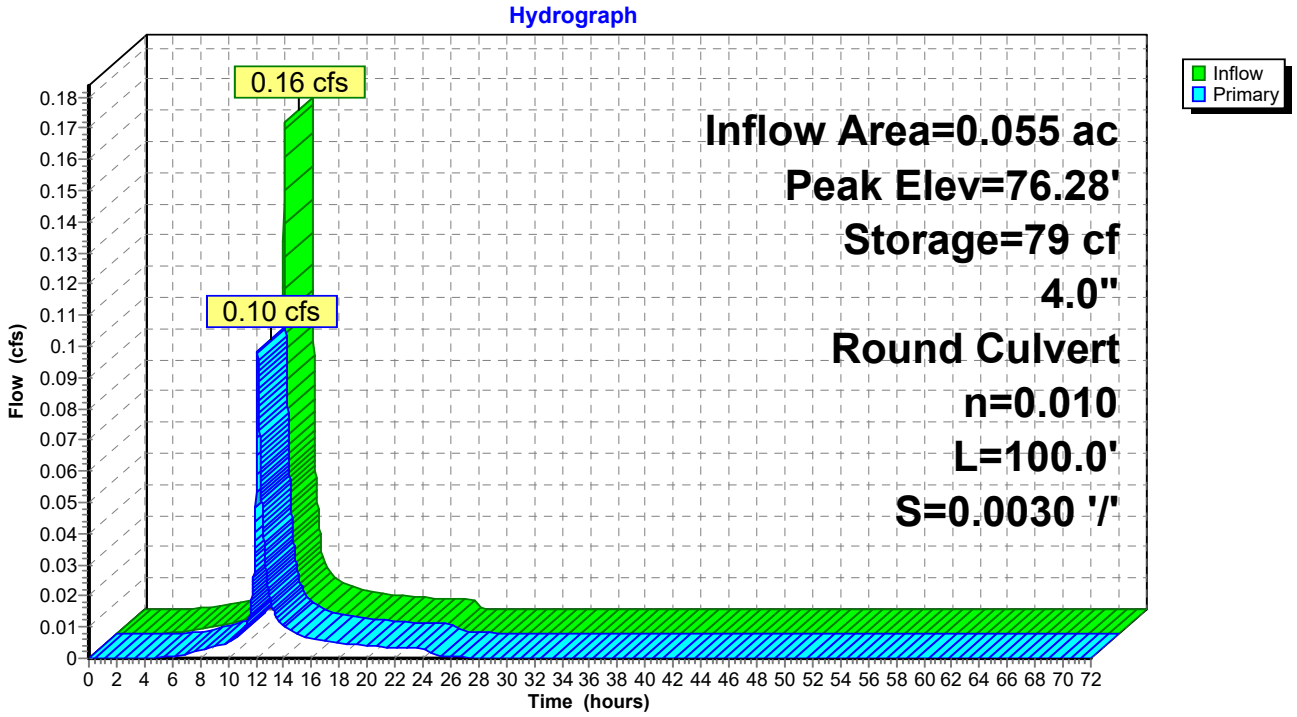
Volume	Invert	Avail.Storage	Storage Description
#1	76.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.00	705	0	0	705
80.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	76.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.00' / 75.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=76.28' TW=73.20' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP87: Stone Storage for Lot 11



Summary for Pond PP88: Stone Storage for Lot 10

Inflow Area = 0.055 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.16 cfs @ 12.04 hrs, Volume= 0.013 af
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af, Atten= 40%, Lag= 4.8 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 0.012 af
Routed to Pond EP51 : Existing Pond Along Existing Driveway

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.28' @ 12.12 hrs Surf.Area= 705 sf Storage= 79 cf

Plug-Flow detention time= 42.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 42.0 min (855.6 - 813.6)

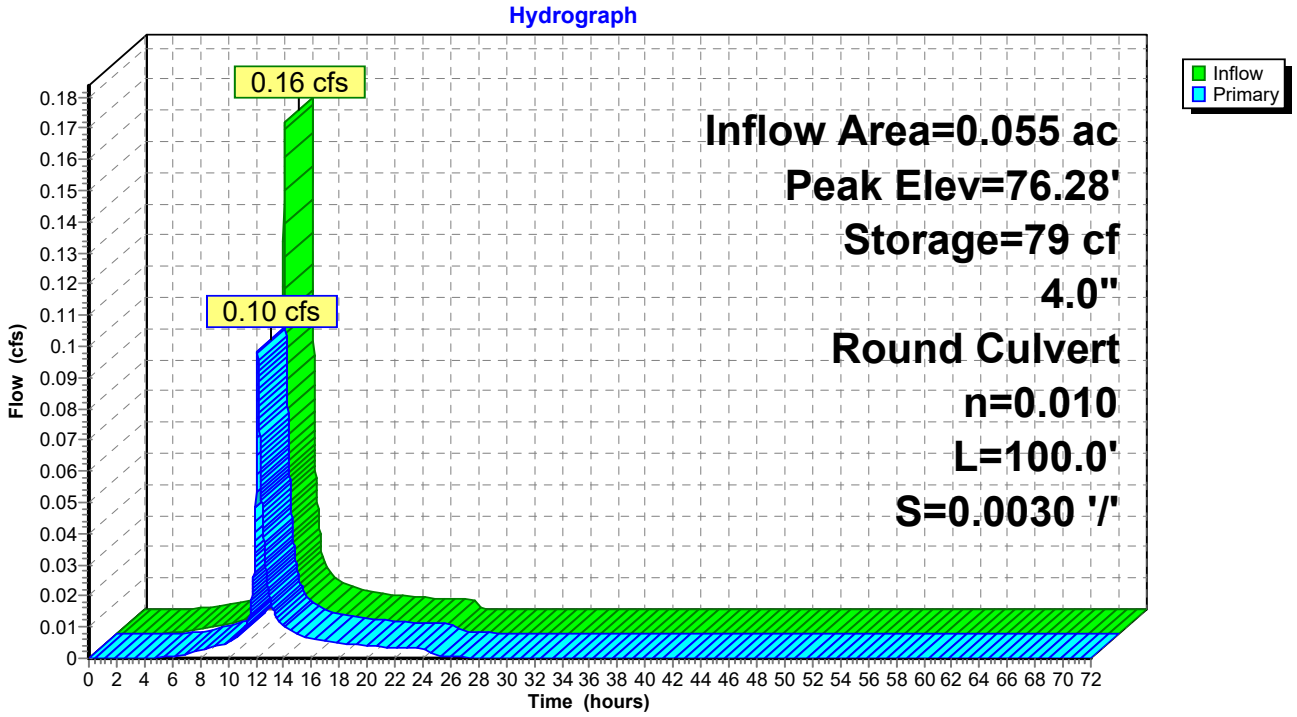
Volume	Invert	Avail.Storage	Storage Description
#1	76.00'	1,128 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,820 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.00	705	0	0	705
80.00	705	2,820	2,820	1,081

Device	Routing	Invert	Outlet Devices
#1	Primary	76.00'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.00' / 75.70' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.10 cfs @ 12.12 hrs HW=76.28' TW=73.20' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.10 cfs @ 1.70 fps)

Pond PP88: Stone Storage for Lot 10



Summary for Pond PP89: Stone Storage for the House on Lot 9

Inflow Area = 0.043 ac, 72.75% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 33%, Lag= 3.9 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Pond PP59 : Existing Transferance Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.76' @ 12.10 hrs Surf.Area= 515 sf Storage= 53 cf

Plug-Flow detention time= 34.6 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 34.3 min (847.9 - 813.6)

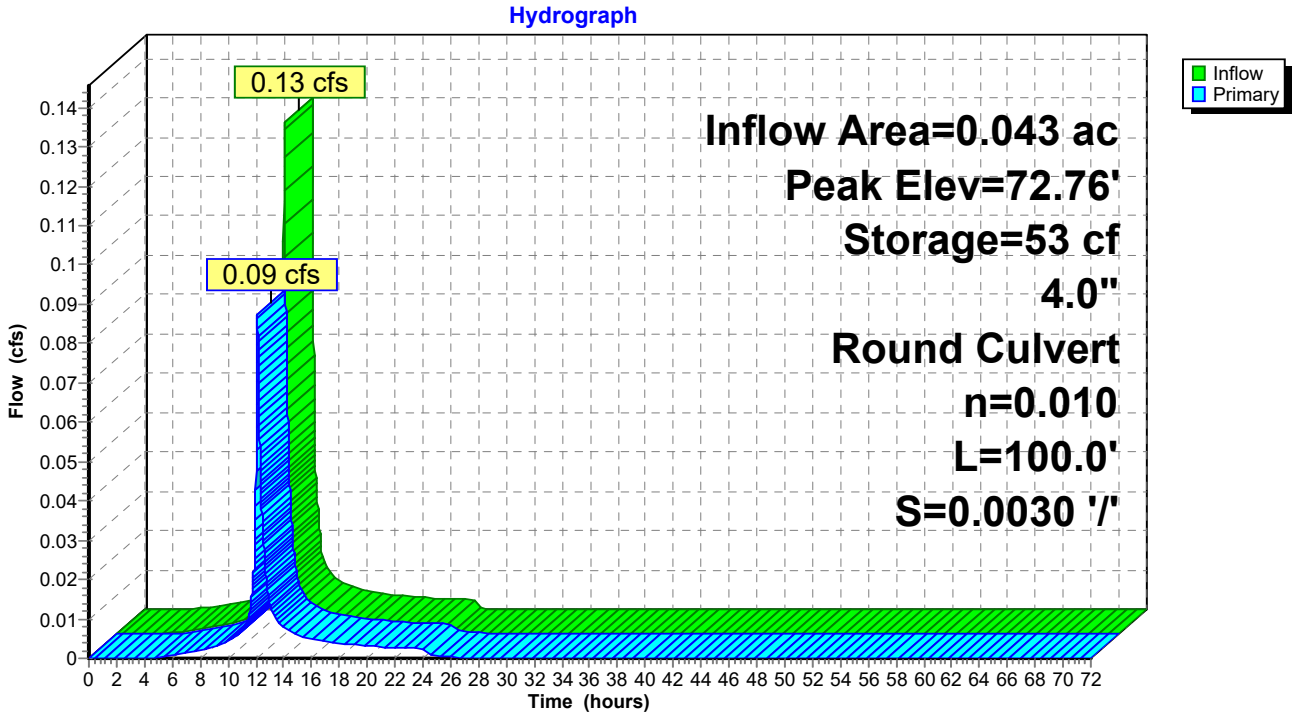
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	824 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,060 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.50	515	0	0	515
76.50	515	2,060	2,060	837

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.20' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=72.76' TW=71.65' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.65 fps)

Pond PP89: Stone Storage for the House on Lot 9



Summary for Pond PP90: Stone Storage for the Barn on Lot 9

Inflow Area = 0.078 ac, 74.12% Impervious, Inflow Depth = 2.84" for 2-yr (+15%) event
Inflow = 0.24 cfs @ 12.04 hrs, Volume= 0.018 af
Outflow = 0.13 cfs @ 12.13 hrs, Volume= 0.018 af, Atten= 45%, Lag= 5.6 min
Primary = 0.13 cfs @ 12.13 hrs, Volume= 0.018 af
Routed to Pond PP59 : Existing Transferance Swale

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.85' @ 12.13 hrs Surf.Area= 880 sf Storage= 123 cf

Plug-Flow detention time= 44.1 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 43.6 min (851.0 - 807.4)

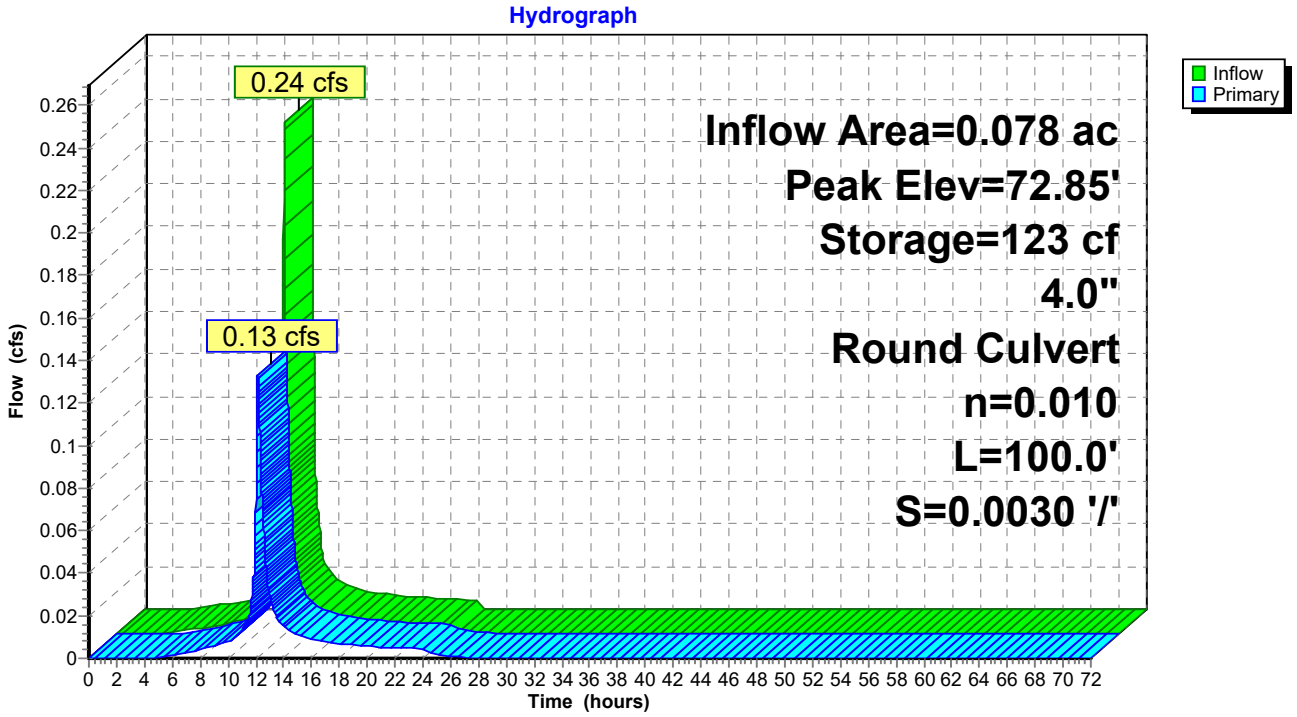
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	1,408 cf	**Stone Storage (Conic)**Listed below (Recalc) 3,520 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.50	880	0	0	880
76.50	880	3,520	3,520	1,301

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**4.0" Round 4" PVC** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.20' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.13 cfs @ 12.13 hrs HW=72.85' TW=71.66' (Dynamic Tailwater)
↑**1=4" PVC** (Barrel Controls 0.13 cfs @ 1.80 fps)

Pond PP90: Stone Storage for the Barn on Lot 9



Summary for Pond PP91: Stone Storage for House D of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

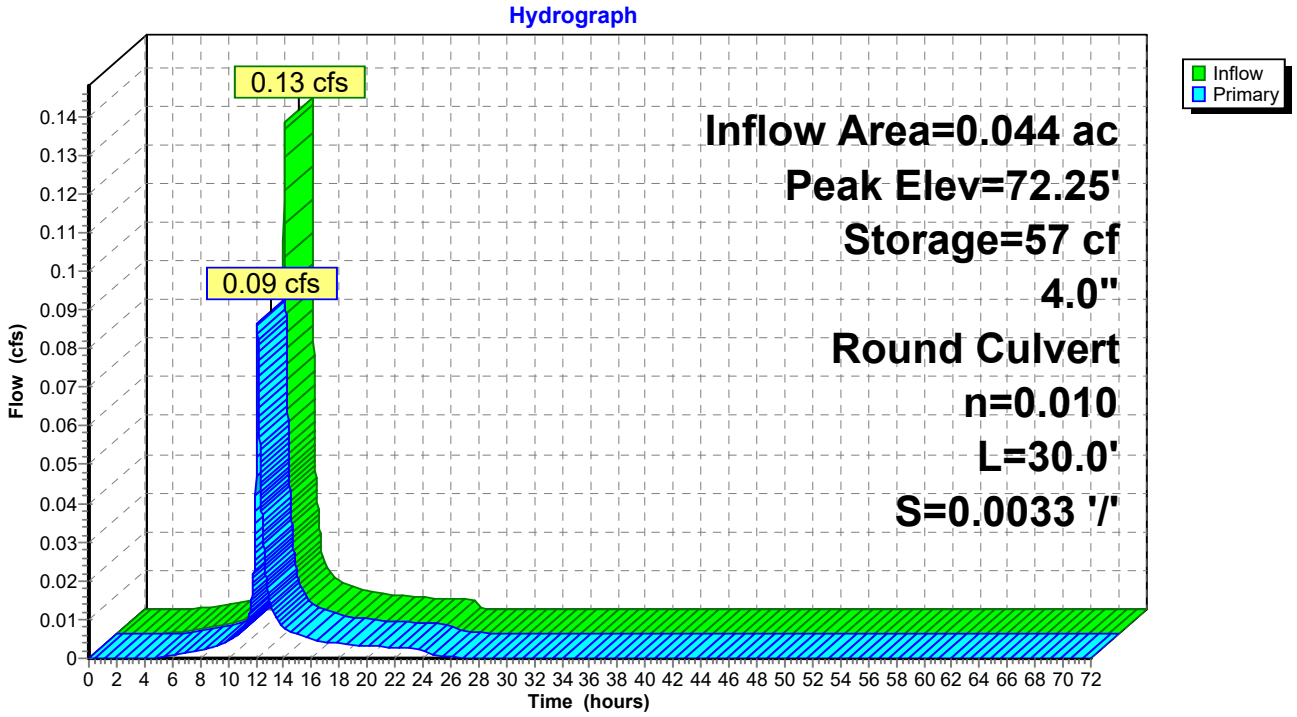
Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.00	560	0	0	560
76.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=72.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP91: Stone Storage for House D of Lot 33



Summary for Pond PP92: Stone Storage for House C of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

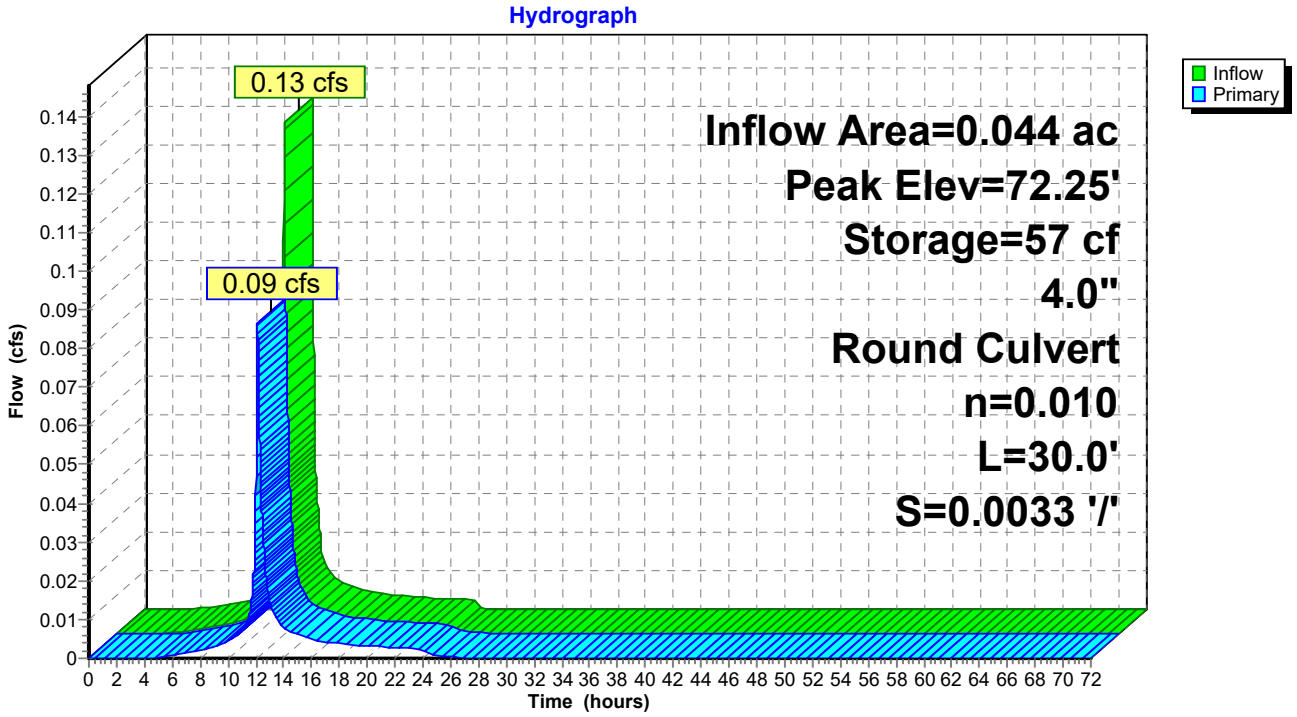
Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.00	560	0	0	560
76.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=72.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP92: Stone Storage for House C of Lot 33



Summary for Pond PP93: Stone Storage for House B of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.75' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

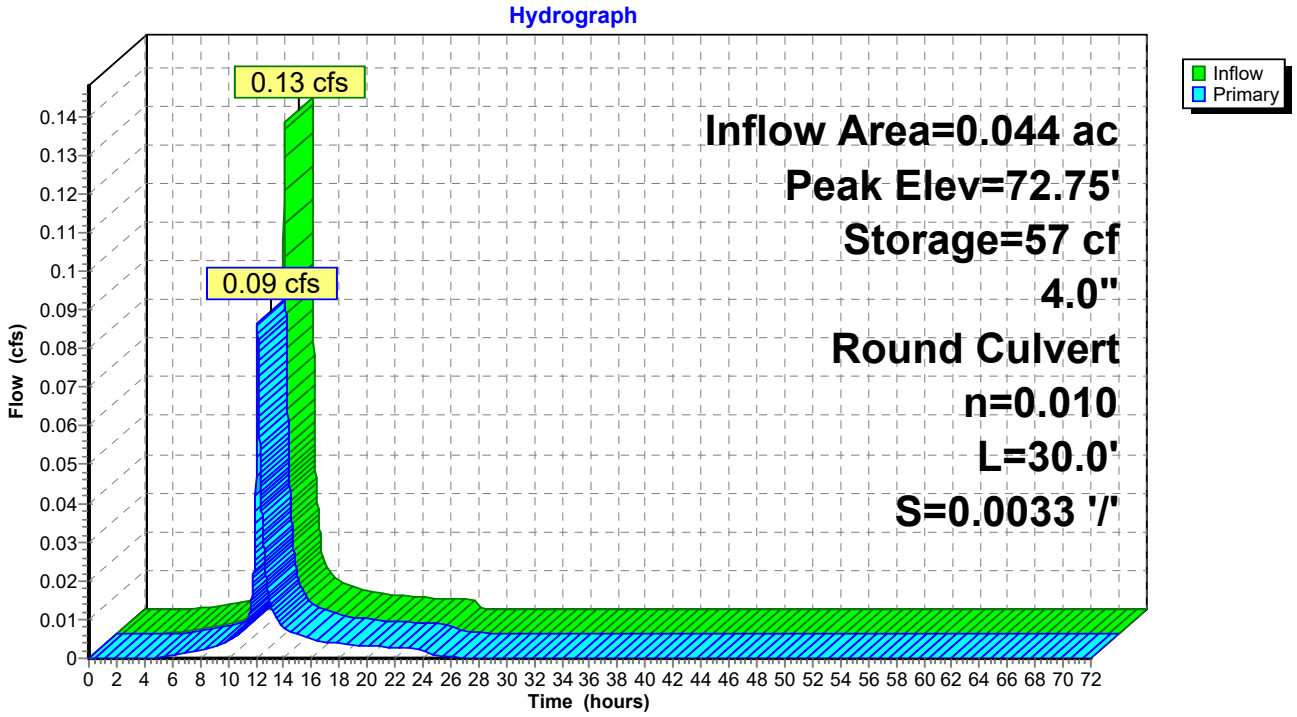
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.50	560	0	0	560
76.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.50' / 72.40' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=72.75' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP93: Stone Storage for House B of Lot 33



Summary for Pond PP94: Stone Storage for House A of Lot 33

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L104 : Flow and Volumes from Houses Flowing into Pond PP59

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 75.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

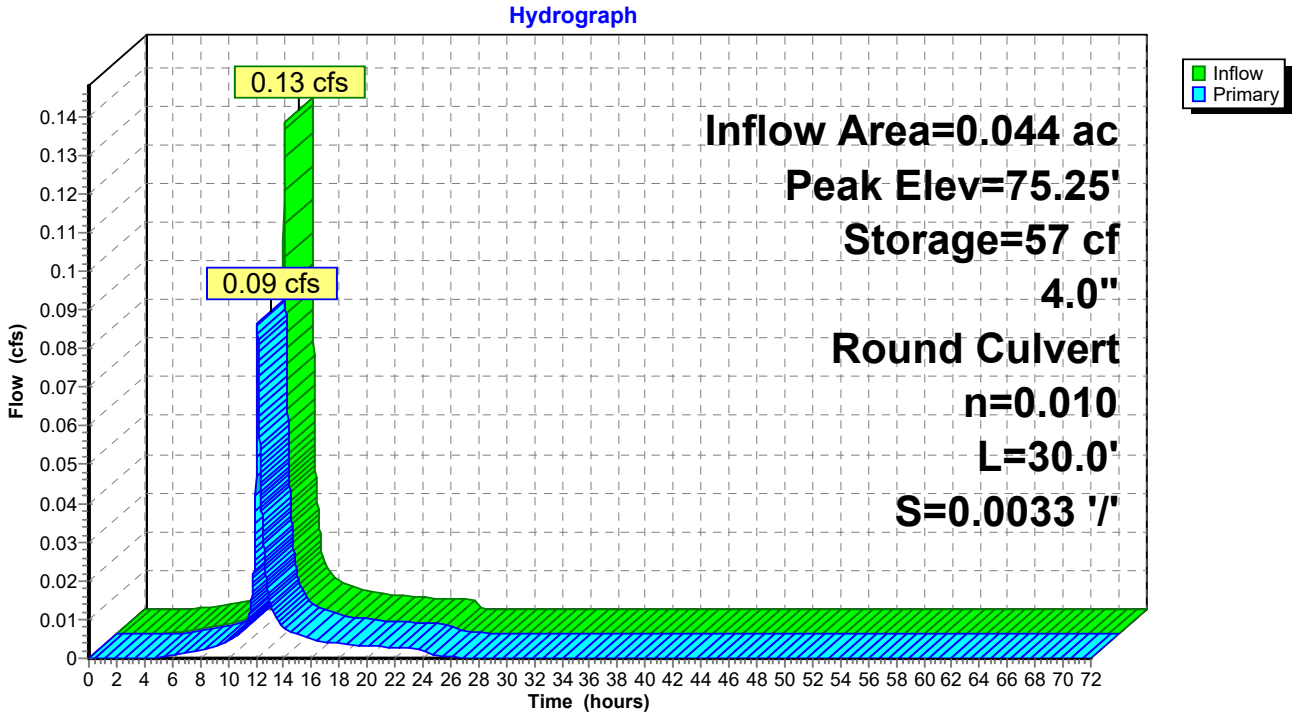
Volume	Invert	Avail.Storage	Storage Description
#1	75.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.00	560	0	0	560
79.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=75.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP94: Stone Storage for House A of Lot 33



Summary for Pond PP95: Stone Storage for House A of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 76.75' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

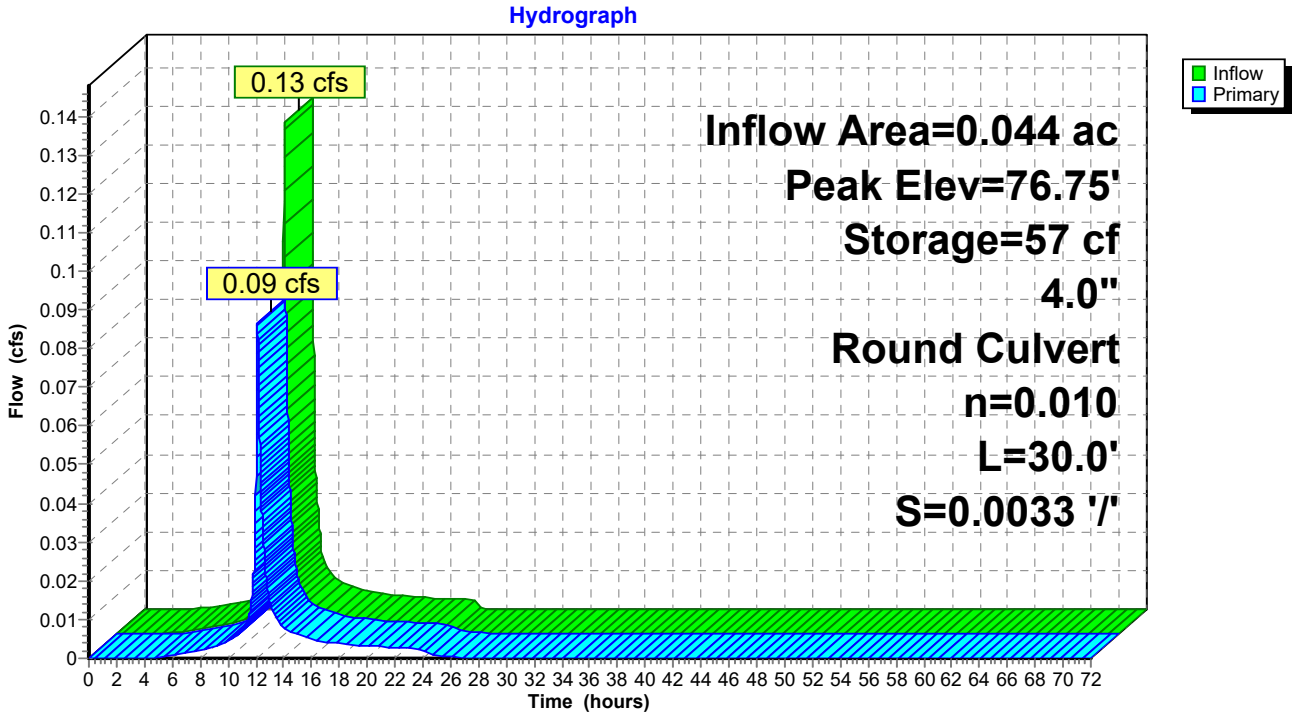
Volume	Invert	Avail.Storage	Storage Description
#1	76.50'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
76.50	560	0	0	560
80.50	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	76.50'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 76.50' / 76.40' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=76.75' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP95: Stone Storage for House A of Lot 32



Summary for Pond PP96: Stone Storage for House B of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 75.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

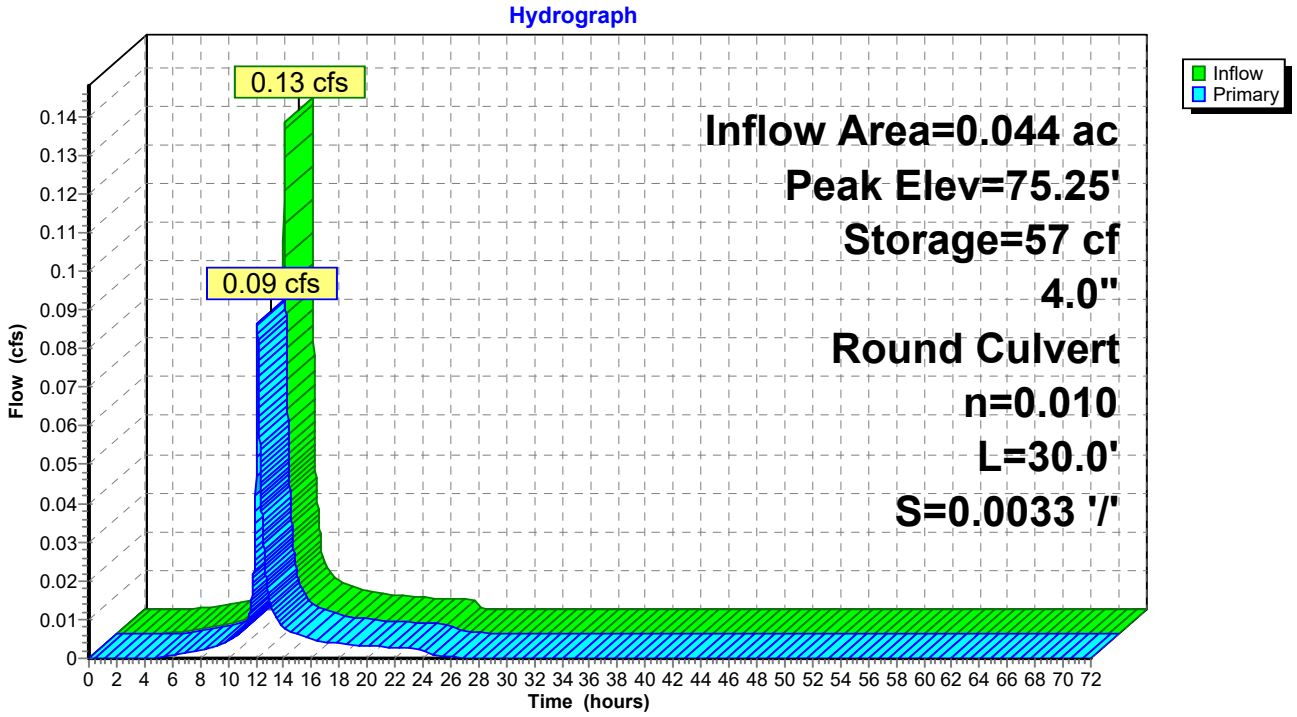
Volume	Invert	Avail.Storage	Storage Description
#1	75.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
75.00	560	0	0	560
79.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	75.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 75.00' / 74.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=75.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP96: Stone Storage for House B of Lot 32



Summary for Pond PP97: Stone Storage for House C of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 34%, Lag= 4.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 36.2 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (849.8 - 813.6)

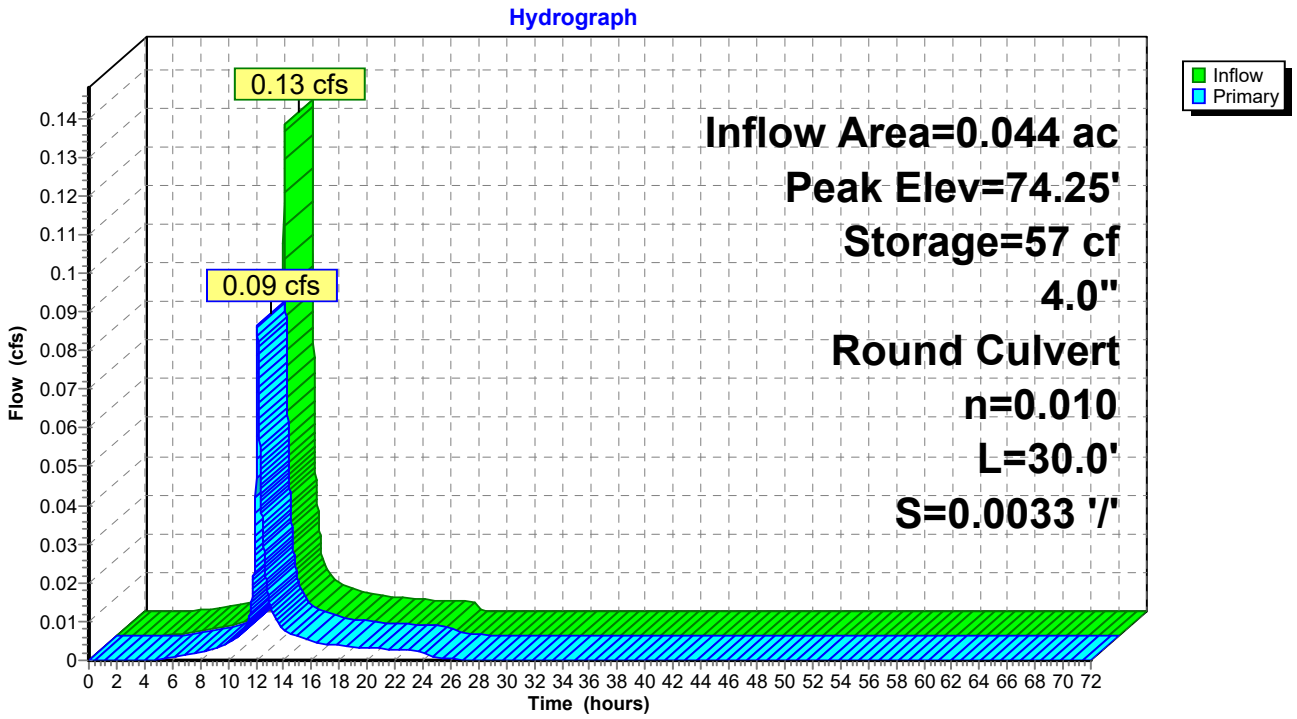
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.90' S= 0.0033 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=74.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.69 fps)

Pond PP97: Stone Storage for House C of Lot 32



Summary for Pond PP98: Stone Storage for House D of Lot 32

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.11 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 74.26' @ 12.11 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.5 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 37.1 min (850.7 - 813.6)

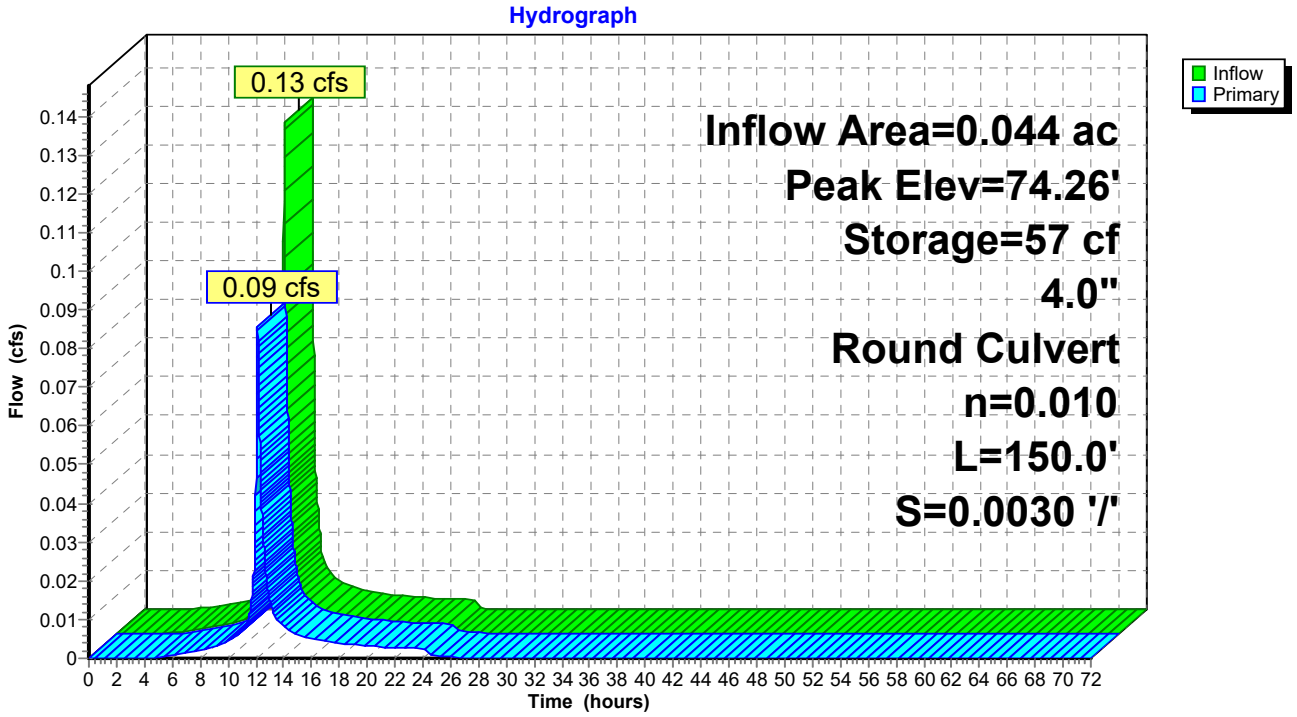
Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
74.00	560	0	0	560
78.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**4.0" Round 4" PVC** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.55' S= 0.0030 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.11 hrs HW=74.26' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.64 fps)

Pond PP98: Stone Storage for House D of Lot 32



Summary for Pond PP99: Stone Storage for House A of Lot 31

Inflow Area = 0.044 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 35%, Lag= 4.1 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 0.010 af
Routed to Link L105 : Flow and Volumes from Houses Flowing into Reach ER76

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 72.25' @ 12.10 hrs Surf.Area= 560 sf Storage= 57 cf

Plug-Flow detention time= 37.1 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 36.7 min (850.3 - 813.6)

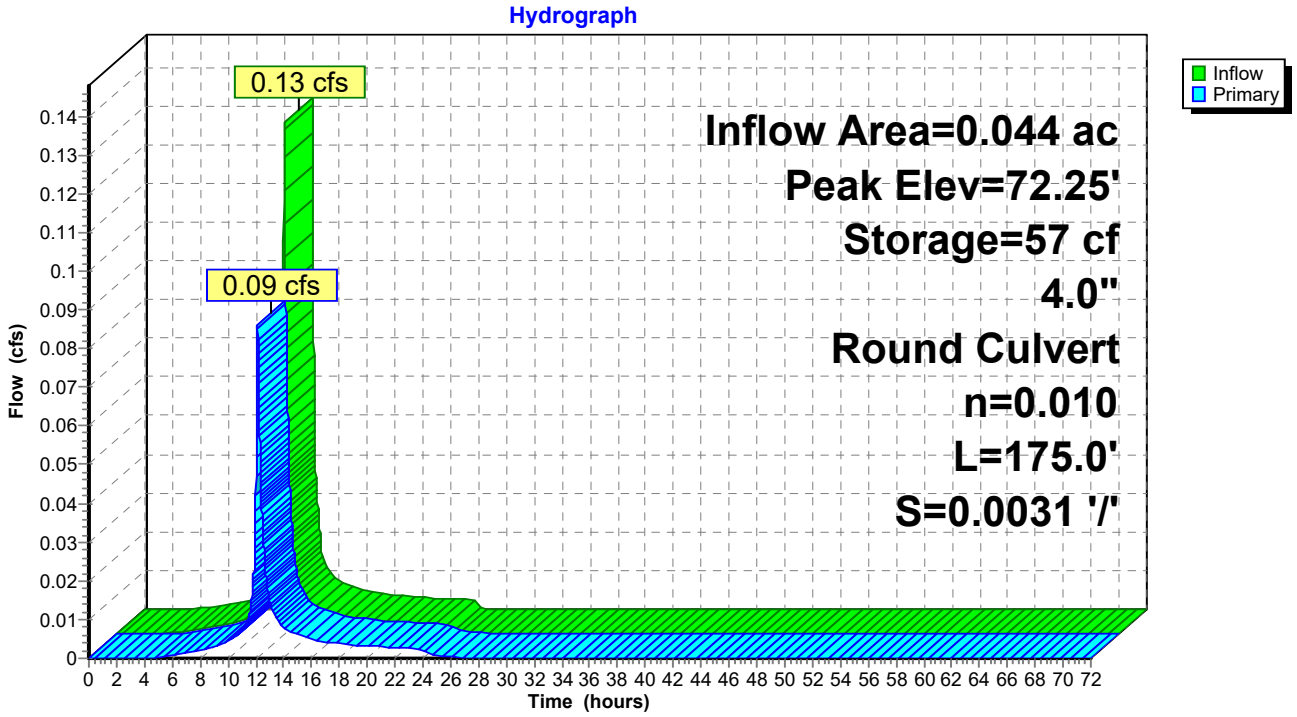
Volume	Invert	Avail.Storage	Storage Description
#1	72.00'	896 cf	**Stone Storage (Conic)**Listed below (Recalc) 2,240 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
72.00	560	0	0	560
76.00	560	2,240	2,240	896

Device	Routing	Invert	Outlet Devices
#1	Primary	72.00'	**4.0" Round 4" PVC** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 72.00' / 71.45' S= 0.0031 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.09 cfs @ 12.10 hrs HW=72.25' TW=0.00' (Dynamic Tailwater)
1=4" PVC (Barrel Controls 0.09 cfs @ 1.67 fps)

Pond PP99: Stone Storage for House A of Lot 31



Summary for Pond PT1: Proposed Pre-Tx 1

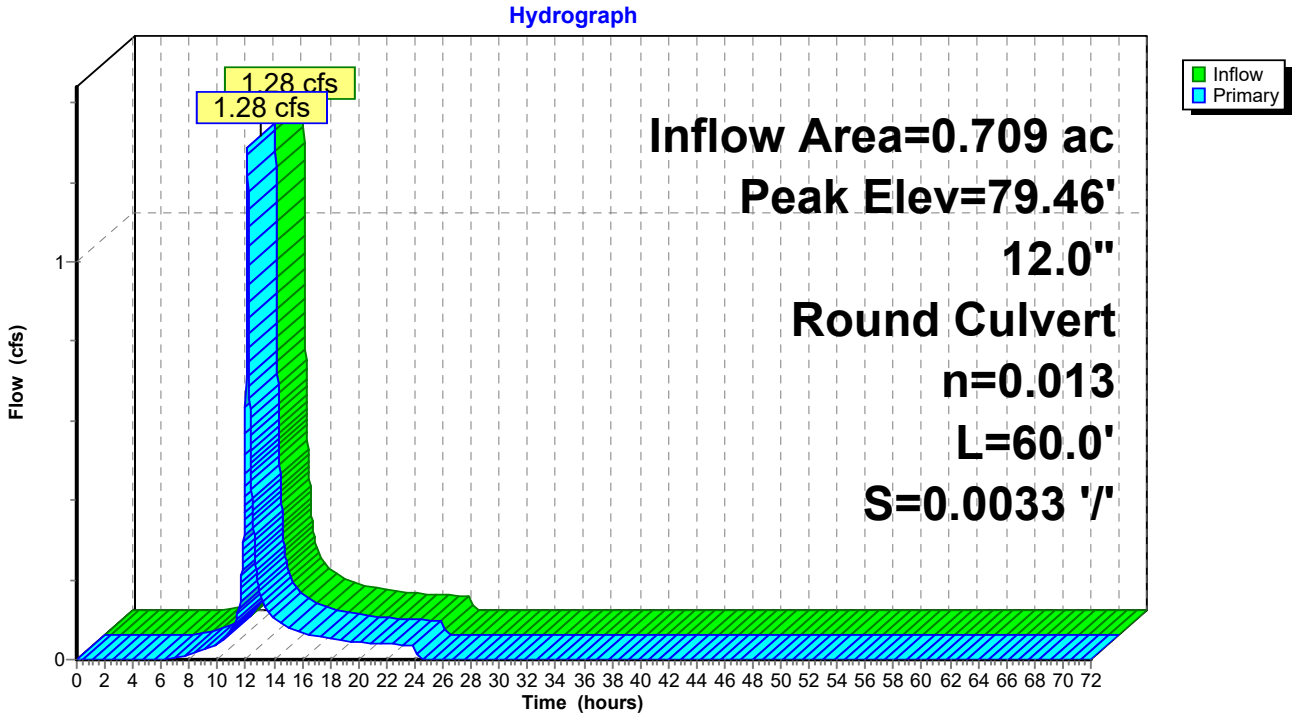
Inflow Area = 0.709 ac, 38.73% Impervious, Inflow Depth = 2.04" for 2-yr (+15%) event
Inflow = 1.28 cfs @ 12.11 hrs, Volume= 0.120 af
Outflow = 1.28 cfs @ 12.11 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.11 hrs, Volume= 0.120 af
Routed to Pond PP54 : Proposed Bioretention Basin "A2"

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 79.46' @ 12.11 hrs
Flood Elev= 80.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	78.70'	**12.0" Round 12" HDPE (PDL1)** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 78.70' / 78.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.28 cfs @ 12.11 hrs HW=79.46' TW=75.48' (Dynamic Tailwater)
↳**1=12" HDPE (PDL1)** (Barrel Controls 1.28 cfs @ 2.80 fps)

Pond PT1: Proposed Pre-Tx 1



Summary for Pond PT13: Proposed Pre-Tx 13

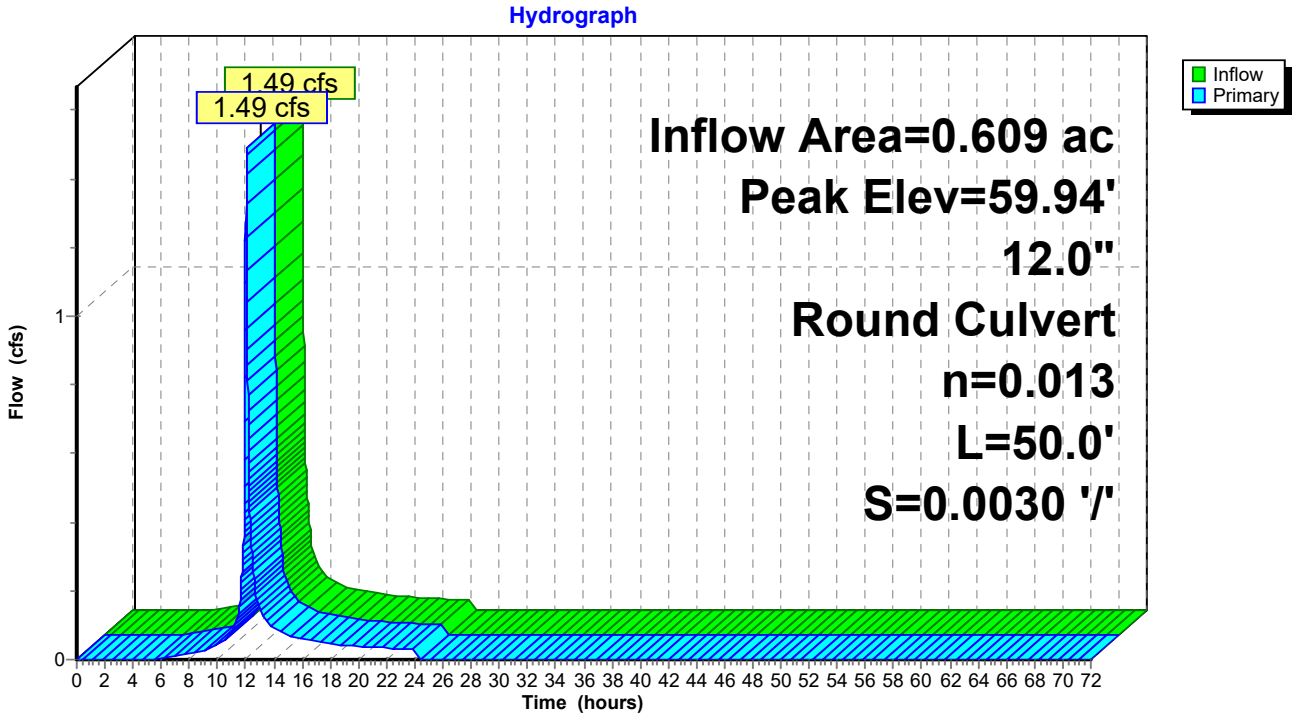
Inflow Area = 0.609 ac, 47.89% Impervious, Inflow Depth = 2.20" for 2-yr (+15%) event
Inflow = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af
Outflow = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min
Primary = 1.49 cfs @ 12.04 hrs, Volume= 0.112 af
Routed to Pond PCB14 : Proposed Catch Basin 14

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 59.94' @ 12.04 hrs
Flood Elev= 61.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	59.10'	**12.0" Round 12" HDPE (PDL16)** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 59.10' / 58.95' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.49 cfs @ 12.04 hrs HW=59.94' TW=57.50' (Dynamic Tailwater)
1=12" HDPE (PDL16) (Barrel Controls 1.49 cfs @ 2.86 fps)

Pond PT13: Proposed Pre-Tx 13



Summary for Pond PT2: Proposed Pre-Tx 2

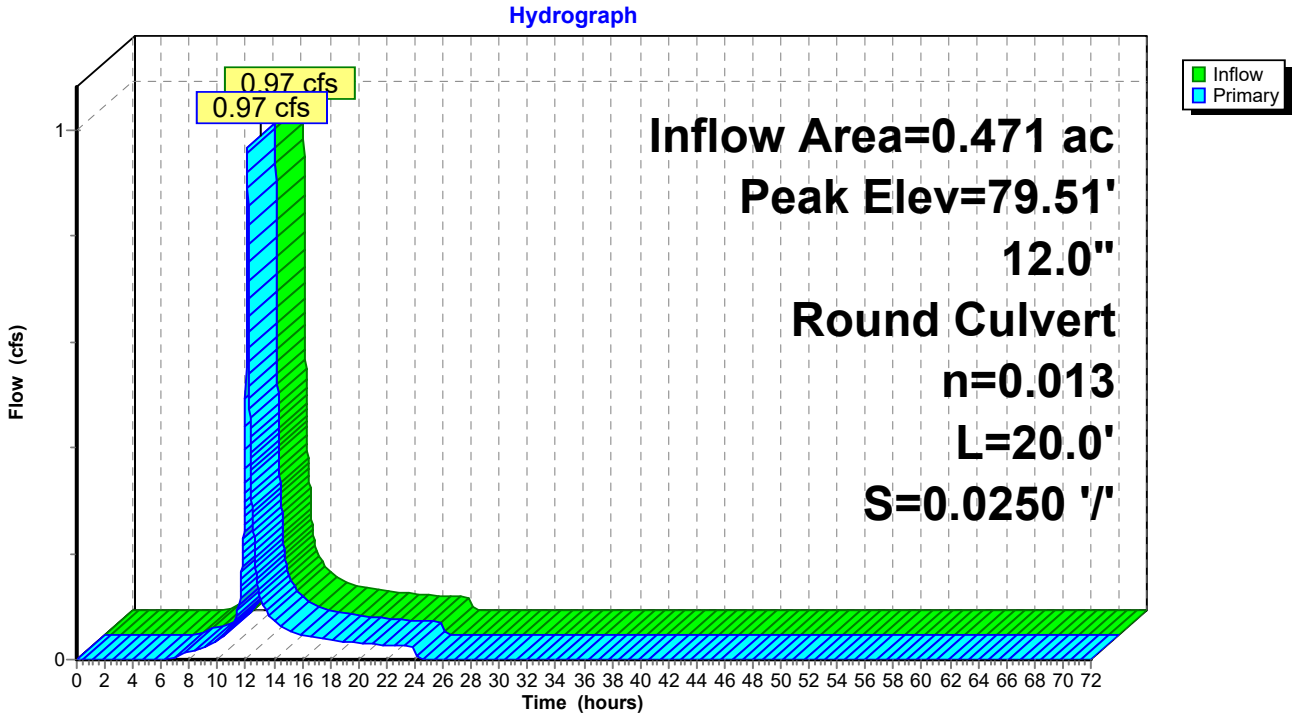
Inflow Area = 0.471 ac, 49.72% Impervious, Inflow Depth = 2.27" for 2-yr (+15%) event
Inflow = 0.97 cfs @ 12.10 hrs, Volume= 0.089 af
Outflow = 0.97 cfs @ 12.10 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.10 hrs, Volume= 0.089 af
Routed to Pond PP54 : Proposed Bioretention Basin "A2"

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 79.51' @ 12.10 hrs
Flood Elev= 81.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	79.00'	**12.0" Round 12" HDPE (PDL2)** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 79.00' / 78.50' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.97 cfs @ 12.10 hrs HW=79.51' TW=75.44' (Dynamic Tailwater)
1=12" HDPE (PDL2) (Inlet Controls 0.97 cfs @ 2.42 fps)

Pond PT2: Proposed Pre-Tx 2

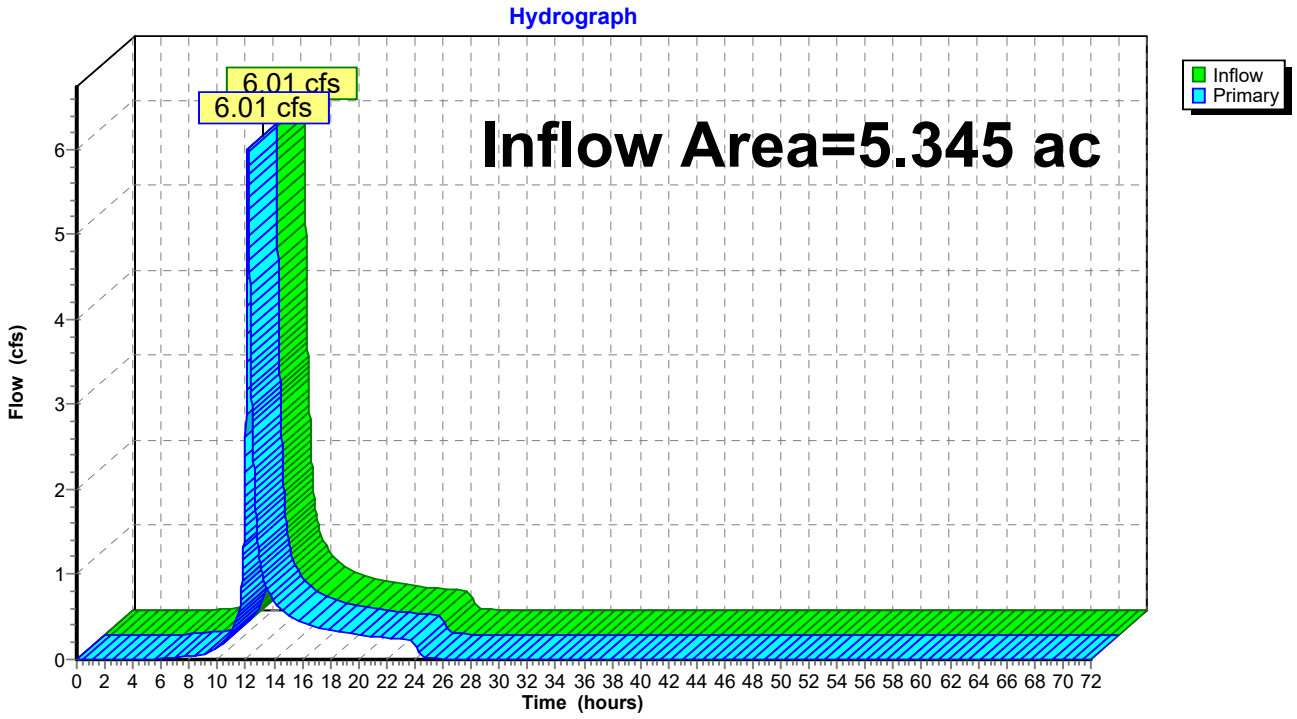


Summary for Link L101A: Wetlands to the West (Northern Swale Entrance)

Inflow Area = 5.345 ac, 12.45% Impervious, Inflow Depth = 1.61" for 2-yr (+15%) event
Inflow = 6.01 cfs @ 12.15 hrs, Volume= 0.715 af
Primary = 6.01 cfs @ 12.15 hrs, Volume= 0.715 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L101A: Wetlands to the West (Northern Swale Entrance)

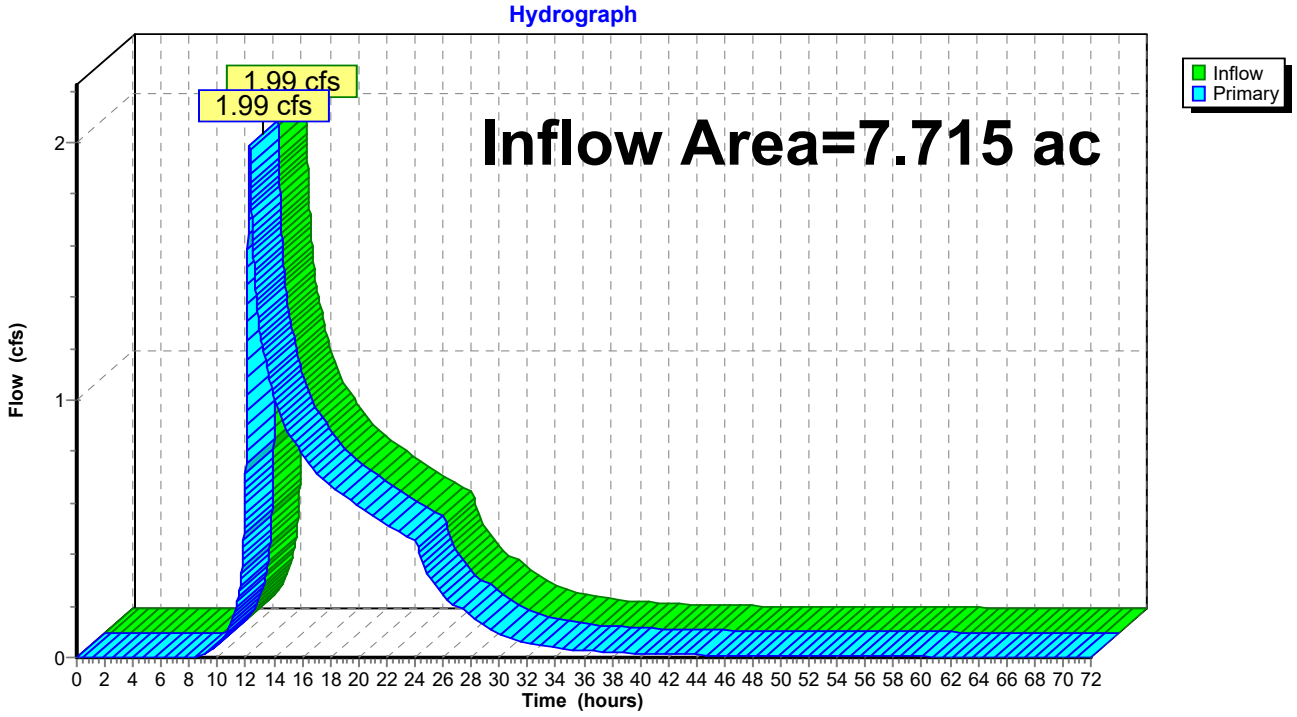


Summary for Link L101B: Central Wetland Finger

Inflow Area = 7.715 ac, 27.14% Impervious, Inflow Depth > 1.48" for 2-yr (+15%) event
Inflow = 1.99 cfs @ 12.27 hrs, Volume= 0.949 af
Primary = 1.99 cfs @ 12.27 hrs, Volume= 0.949 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L101B: Central Wetland Finger

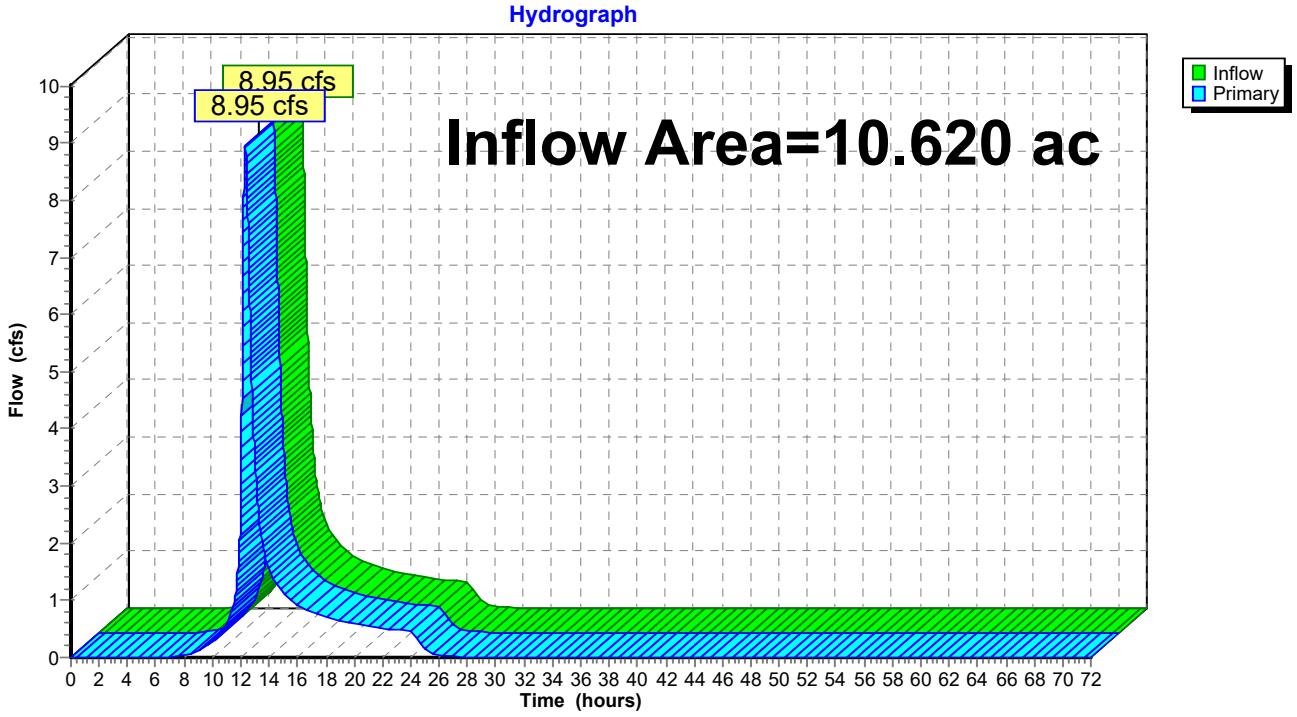


Summary for Link L101C: Wetlands to the West (Southern Swale Entrance)

Inflow Area = 10.620 ac, 23.32% Impervious, Inflow Depth = 1.68" for 2-yr (+15%) event
Inflow = 8.95 cfs @ 12.32 hrs, Volume= 1.486 af
Primary = 8.95 cfs @ 12.32 hrs, Volume= 1.486 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 1L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L101C: Wetlands to the West (Southern Swale Entrance)

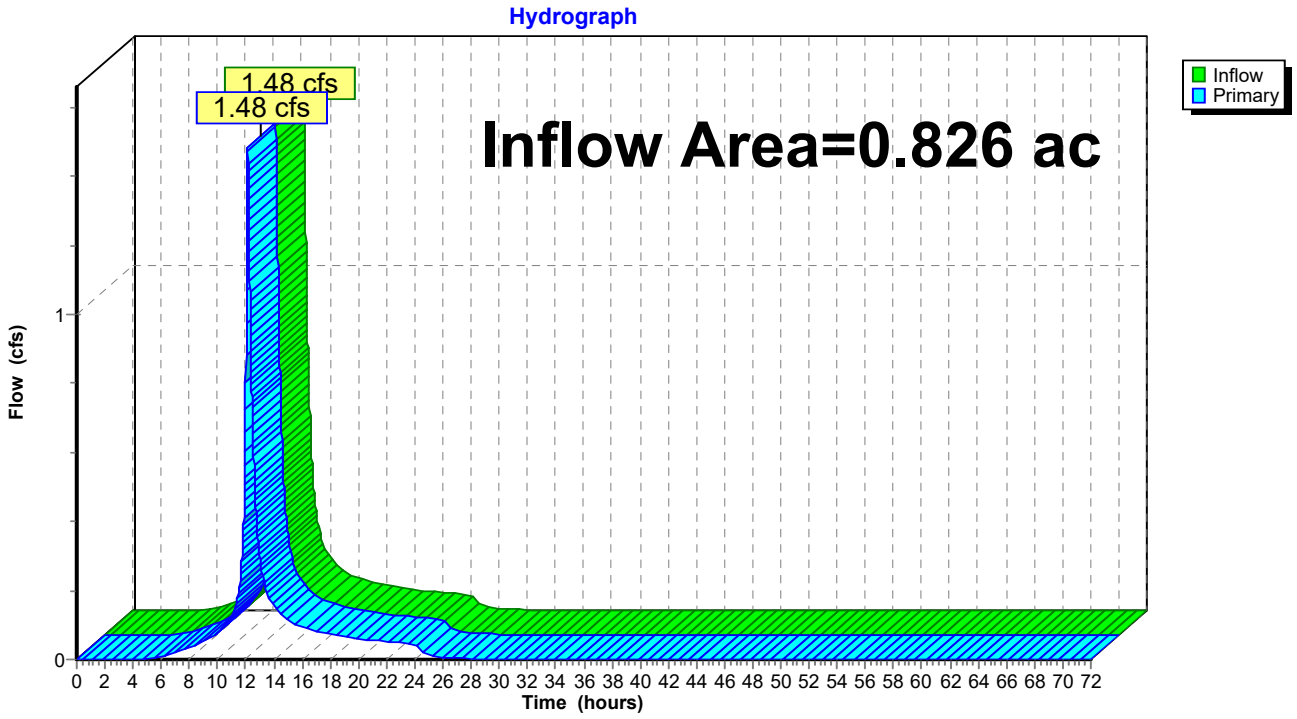


Summary for Link L102: Flow and Volumes from HousesFlowing into Link L101

Inflow Area = 0.826 ac, 70.05% Impervious, Inflow Depth = 2.73" for 2-yr (+15%) event
Inflow = 1.48 cfs @ 12.12 hrs, Volume= 0.188 af
Primary = 1.48 cfs @ 12.12 hrs, Volume= 0.188 af, Atten= 0%, Lag= 0.0 min
Routed to Link L101A : Wetlands to the West (Northern Swale Entrance)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L102: Flow and Volumes from HousesFlowing into Link L101

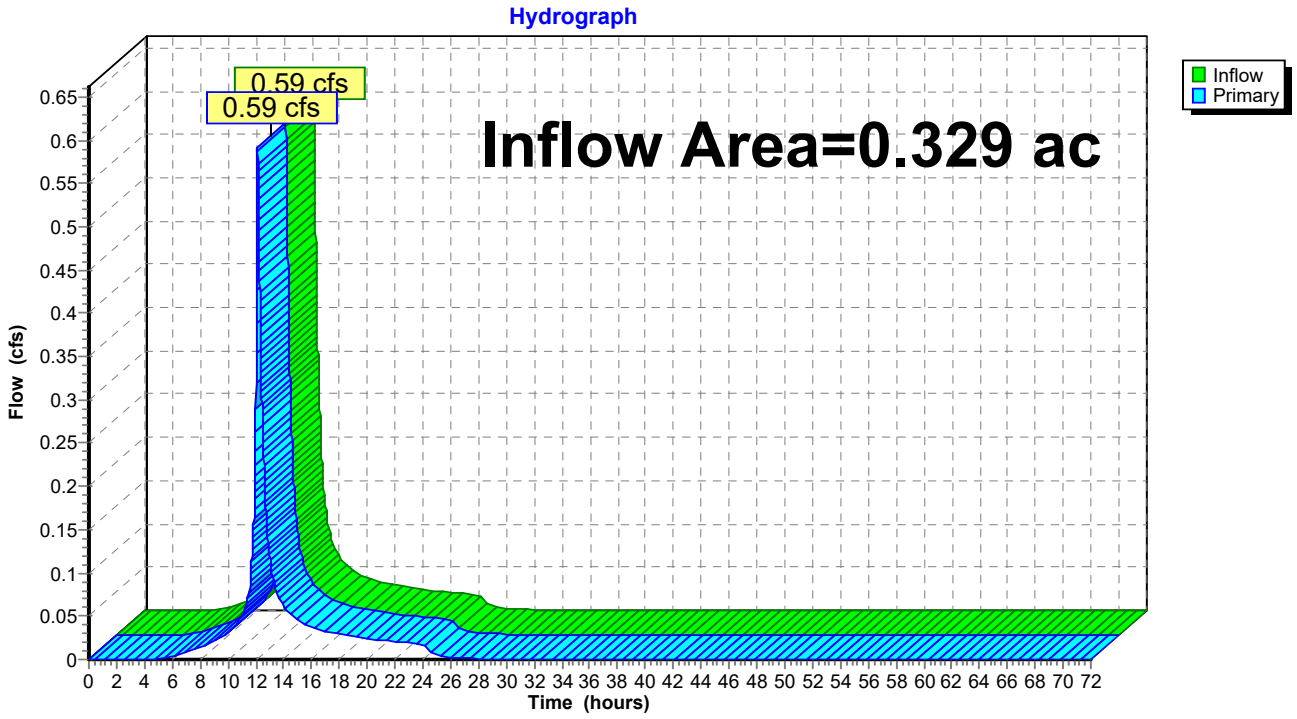


Summary for Link L103: Flow and Volumes from Houses Flowing into Reach ER80

Inflow Area = 0.329 ac, 70.44% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.59 cfs @ 12.12 hrs, Volume= 0.075 af
Primary = 0.59 cfs @ 12.12 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L103: Flow and Volumes from Houses Flowing into Reach ER80

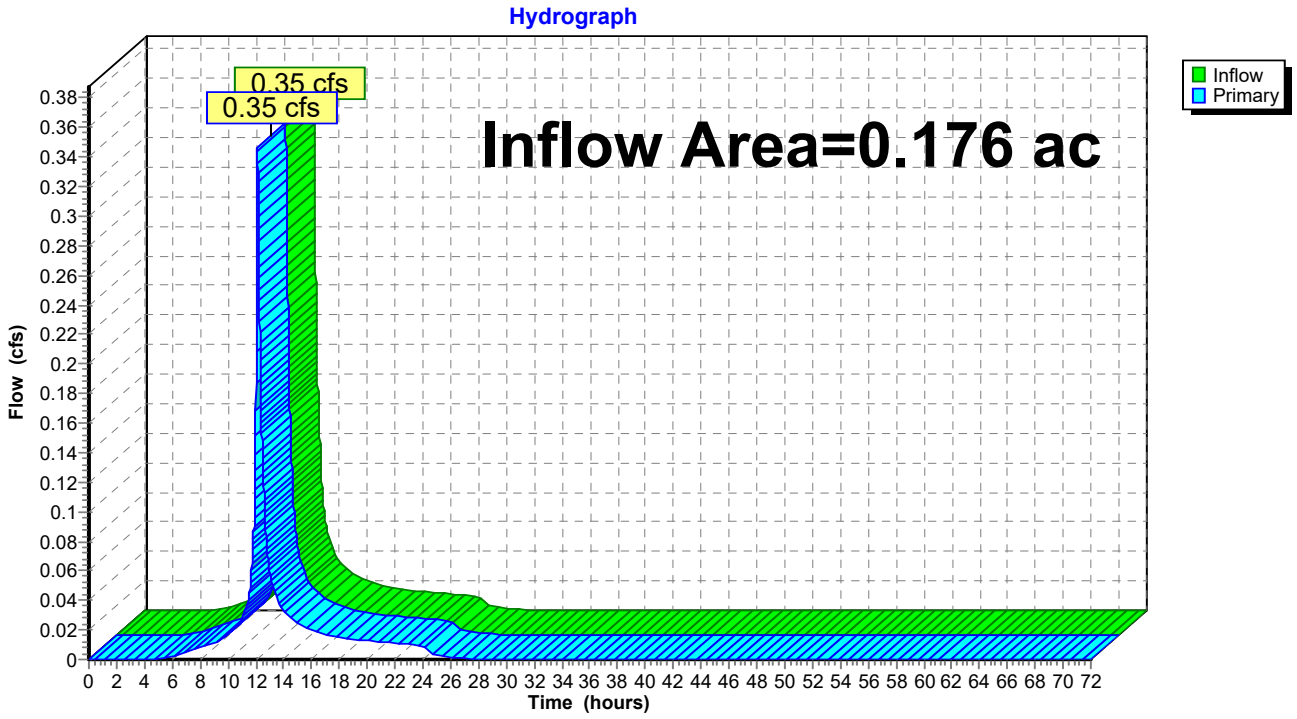


Summary for Link L104: Flow and Volumes from Houses Flowing into Pond PP59

Inflow Area = 0.176 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.35 cfs @ 12.10 hrs, Volume= 0.040 af
Primary = 0.35 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Routed to Pond PP59 : Existing Transferance Swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L104: Flow and Volumes from Houses Flowing into Pond PP59

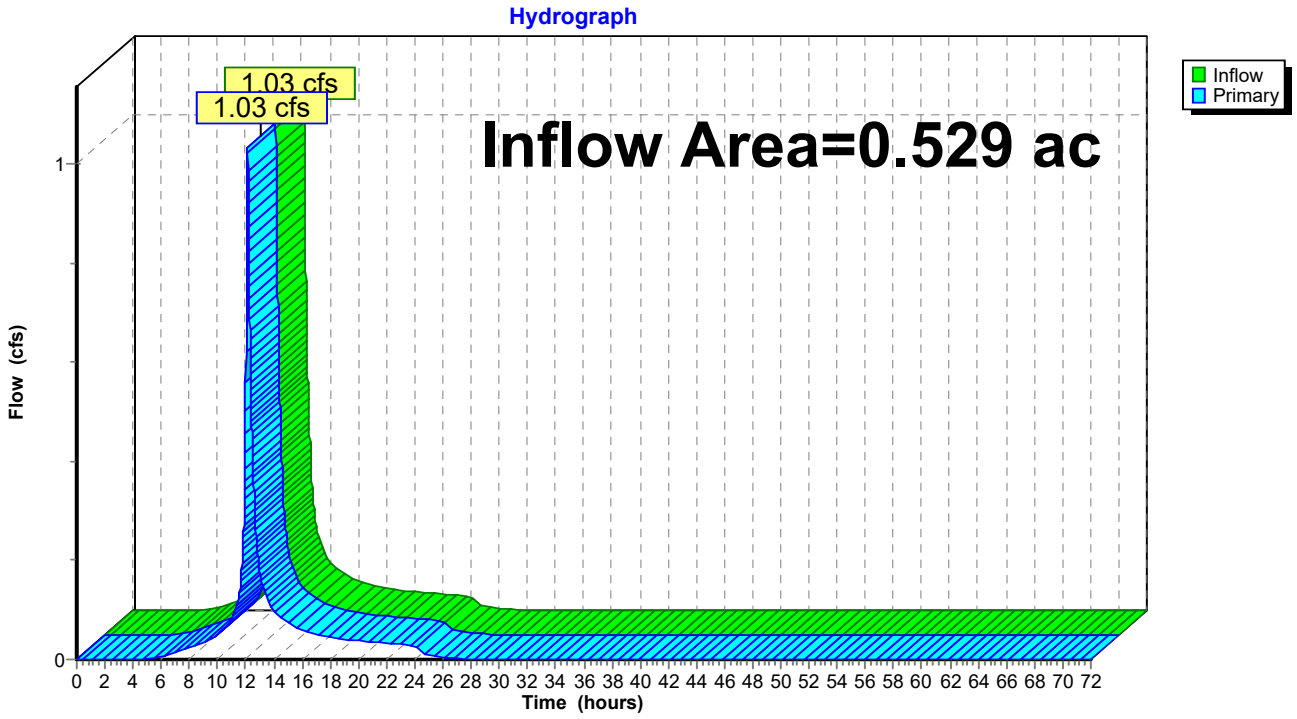


Summary for Link L105: Flow and Volumes from Houses Flowing into Reach ER76

Inflow Area = 0.529 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 1.03 cfs @ 12.10 hrs, Volume= 0.121 af
Primary = 1.03 cfs @ 12.10 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER76 : Existing Swale from East Portion of Site

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L105: Flow and Volumes from Houses Flowing into Reach ER76



Summary for Link L106: Flow and Volumes from Houses Flowing into Reach ER80

Inflow Area = 0.176 ac, 70.83% Impervious, Inflow Depth = 2.74" for 2-yr (+15%) event
Inflow = 0.34 cfs @ 12.11 hrs, Volume= 0.040 af
Primary = 0.34 cfs @ 12.11 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Routed to Reach ER80 : West Portion of Existing Central Swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link L106: Flow and Volumes from Houses Flowing into Reach ER80

